To: hagler Tom [hagler.Tom@EPA.gov]
Cc: []
Bcc: []
From: CN=Tom Hagler/OU=R9/O=USEPA/C=US
Sent: Wed 5/7/2014 7:00:14 PM
Subject: Fw: Purpose Statement
Purpose_and_Need_Letter_-_October_26_2010[1].pdf
Ch2_Purpose-Need_clean_111111.pdf

****
****
Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415) 972-3945
Email: hagler.tom@epamail.epa.gov
----- Forwarded by Tom Hagler/R9/USEPA/US on 05/07/2014 11:58 AM -----

From: Karen Schwinn/R9/USEPA/US
To: Erin Foresman/R9/USEPA/US@EPA, "Michael G SPK Nepstad" <Michael.G.Nepstad@usace.army.mil>, "Mike Jewell" <Michael.S.Jewell@usace.army.mil>, "Paul Robershotte" <Paul.j.robershotte@usace.army.mil>,
Cc: Tom Hagler/R9/USEPA/US@EPA
Date: 02/13/2012 04:46 PM
Subject: Fw: Purpose Statement

Just in. Haven't got a chance to read and think about it yet.
~~~~~~~~~~~~~~~~~~~~~~~~
KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~~~

From: "Nawi, David" [David_Nawi@ios.doi.gov]
Sent: 02/13/2012 07:27 PM EST
To: Karen Schwinn; Tom Hagler; "Belin, Letty" <Letty_Belin@ios.doi.gov>; "Idlof, Patricia S (Patti)"

<Pldlof@usbr.gov>; "Barajas, Federico" <FBarajas@usbr.gov>; 'Deanna Harwood' <Deanna.Harwood@noaa.gov>; "Monroe, Jim" <James.Monroe@sol.doi.gov>; "Michael Tucker" <Michael.Tucker@NOAA.GOV>; "Chotkowski, Michael" <michael_chotkowski@fws.gov>
Subject: Purpose Statement

Mark Cowin would like to add the highlighted language to the purpose statement in the current version of the DEIS/EIR, set out below. The language is a direct quote from the October 26, 2010 letter from the three federal lead agency RDs to EPA (letter attached for you reference, as well as Chapter 2 of draft BDCP, see p. 5 for relevant language). As I understand it, the intent in proposing the inclusion of the added language is to make clear that the language is focused on average amounts.

Please provide a reaction to the proposed additional language, and include anyone else who should review this.

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

ED_000733_DD_NSF_00001004-00002

To: "hagler Tom" [hagler.Tom@EPA.gov]
Cc: []
Bcc: []
From: CN=Tom Hagler/OU=R9/O=USEPA/C=US
Sent: Wed 5/7/2014 7:02:53 PM
Subject: Fw: NEPA Purpose Statement
David_Nawi@ios.doi.gov

****
Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415) 972-3945
Email: hagler.tom@epamail.epa.gov
----- Forwarded by Tom Hagler/R9/USEPA/US on 05/07/2014 12:01 PM -----

From: Karen Schwinn/R9/USEPA/US
To: "Nawi, David" <David_Nawi@ios.doi.gov>,
Cc: "Barajas, Federico" <FBarajas@usbr.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, "Belin, Letty" <Letty_Belin@ios.doi.gov>, Michael Tucker <Michael.Tucker@noaa.gov>, "Chotkowski, Michael" <michael_chotkowski@fws.gov>, "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>, Tom Hagler/R9/USEPA/US@EPA, Deanna Harwood <deanna.harwood@noaa.gov>, Paul.j.robershotte@usace.army.mil, Michael.G.Nepstad@usace.army.mil, Erin Foresman/R9/USEPA/US@EPA
Date: 02/15/2012 10:41 AM
Subject: Re: NEPA Purpose Statement

We are ok with both Mark and Deanna's suggestions. If you like, we can concur more formally if the lead agencies submit a revision.

~~~~~~~~~~~~~~~~~~~~~~~~
KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

From: Deanna Harwood <deanna.harwood@noaa.gov>
To: "Nawi, David" <David_Nawi@ios.doi.gov>
Cc: Karen Schwinn/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA, "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>, "Barajas, Federico" <FBarajas@usbr.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, Michael Tucker <Michael.Tucker@noaa.gov>, "Chotkowski, Michael" <michael_chotkowski@fws.gov>
Date: 02/13/2012 05:25 PM
Subject: Re: Purpose Statement

Although the following sentence (also from the 10-26-10 letter) is not related to achieving the project purposes, it gives some context to the mention of "average" deliveries - perhaps put into in a footnote.

Average annual south of Delta CVP and SWP deliveries over the past 30 years have been well below full contract amounts.

-Deanna

On Mon, Feb 13, 2012 at 4:27 PM, Nawi, David <David_Nawi@ios.doi.gov> wrote:
Mark Cowin would like to add the highlighted language to the purpose statement in the current version of the DEIS/EIR, set out below. The language is a direct quote from the October 26, 2010 letter from the three federal lead agency RDs to EPA (letter attached for you reference, as well as Chapter 2 of draft BDCP, see p. 5 for relevant language). As I understand it, the intent in proposing the inclusion of the added language is to make clear that the language is focused on average amounts.

Please provide a reaction to the proposed additional language, and include anyone else who should review this.

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

To: Tom Hagler/R9/USEPA/US@EPA;"Monroe, Jim" [James.Monroe@sol.doi.gov]; Monroe, Jim" [James.Monroe@sol.doi.gov]; rin Foresman/R9/USEPA/US@EPA;"Allen, Kaylee" [Kaylee.Allen@sol.doi.gov]; Allen, Kaylee" [Kaylee.Allen@sol.doi.gov]
Cc: Karen Schwinn/R9/USEPA/US@EPA;'Deanna Harwood' [Deanna.Harwood@noaa.gov]; Deanna Harwood' [Deanna.Harwood@noaa.gov]
From: "Nawi, David"
Sent: Thur 2/2/2012 7:59:40 PM
Subject: RE: Concurrence on 404 Purpose statements (UNCLASSIFIED)
mailto:cenos@water.ca.gov
mailto:Michael.S.Jewell@usace.army.mil
http://per2.nwp.usace.army.mil/survey.html
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html
www.facebook.com/sacramentodistrict
www.youtube.com/sacramentodistrict
www.twitter.com/USACESacramento
mailto:cenos@water.ca.gov

Kaylee – Would you please look over the Overall Project Purpose statement toward the bottom of the email string below. That statement refers to actions – mainly operations of the CVP - within Reclamation's purview. Tom Hagler has raised the question of whether Reclamation needs to apply for 404 coverage, along with DWR. If the references to CVP operations are mainly descriptive, my guess is that the answer is no – but your opinion would be helpful. Please feel free to coordinate with Tom and anyone else.

David

****
****

Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415) 972-3945
Email: hagler.tom@epamail.epa.gov
----- Forwarded by Tom Hagler/R9/USEPA/US on 02/02/2012 09:22 AM -----

From: "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>
To: "cenos@water.ca.gov" <cenos@water.ca.gov>
Cc: "dalehf@water.ca.gov" <dalehf@water.ca.gov>, "mebbin@emsllp.com" <mebbin@emsllp.com>, Erin Foresman/R9/USEPA/US@EPA, "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>, "crothers@water.ca.gov" <crothers@water.ca.gov>, "mmmorrow@water.ca.gov" <mmmorrow@water.ca.gov>, Tom Hagler/R9/USEPA/US@EPA, "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>

Date: 02/01/2012 03:06 PM
Subject: RE: Concurrence on 404 Purpose statements (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Thanks for forwarding this, Cassandra. I had hoped we'd be given a chance to review a draft of the letter before it was signed/sent, as we discussed. We'll coordinate with EPA and brief our District Commander. Expect a response in a few weeks.

Michael S Jewell
Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District

-----Original Message-----
From: Enos, Cassandra [mailto:cenos@water.ca.gov]
Sent: Wednesday, February 01, 2012 2:28 PM
To: Jewell, Michael S SPK
Cc: Hoffman-Floerke, Dale; mebbin@emsllp.com; Foresman.Erin@epamail.epa.gov; Robershotte, Paul J SPD; Crothers, Cathy; Morrow, Michelle M; Hagler.Tom@epamail.epa.gov; Nepstad, Michael G SPK
Subject: RE: Concurrence on 404 Purpose statements (UNCLASSIFIED)

Mike - Attached is an electronic copy of the letter that went out to Col Leady requesting USACE concurrence on the purpose statements. You should be receiving a hardcopy shortly. Sorry this took so long. Please let me know if you have any questions.

Thank you, Cassandra

Cassandra Enos-Nobriga
Program Manager
Division of Environmental Services
901 P Street, Sacramento, CA 95814
(916) 651-2987

-----Original Message-----
From: Jewell, Michael S SPK [mailto:Michael.S.Jewell@usace.army.mil]
Sent: Friday, January 06, 2012 9:15 AM
To: Enos, Cassandra
Cc: Hoffman-Floerke, Dale; mebbin@emsllp.com; Foresman.Erin@epamail.epa.gov; Robershotte, Paul J SPD; Crothers, Cathy; Morrow, Michelle M; Hagler.Tom@epamail.epa.gov; Nepstad, Michael G SPK
Subject: RE: Concurrence on 404 Purpose statements (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Cassandra:

I'm not sure if Mike Nepstad had a chance to talk to you before he went on vacation but we'd like to concur "officially" on the purpose statements for CWA 404. Respectfully, we'd like a letter from you requesting our concurrence. The letter should be sent to:

COL William J Leady, Commander
US Army Corps of Engineers, Sacramento District
1325 J Street
Sacramento, CA 95814

Make sure to mention in your letter that you've been working with representatives of his Regulatory Division.

I know, I know... I'm sounding like a typical bureaucrat. But there are good reasons to do this officially. Once we get your letter, I promise we'll respond quickly. Thanks!

Michael S Jewell
Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District

-----Original Message-----
From: Nepstad, Michael G SPK
Sent: Thursday, December 22, 2011 5:06 PM
To: Enos, Cassandra; Hagler.Tom@epamail.epa.gov
Cc: Hoffman-Floerke, Dale; Marc Ebbin; Foresman.Erin@epamail.epa.gov; Jewell, Michael S SPK; Robershotte, Paul J SPD; Crothers, Cathy; Morrow, Michelle M
Subject: RE: Concurrence on 404 Purpose statements (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

The Corps has reviewed the attached MOU Checkpoint A - Basic and Overall Purpose for the Entire BDCP, and hereby AGREES, in accordance with the draft Memorandum of
Understanding on the Integration Process for the Bay Delta Conservation Plan, these statements are acceptable and consistent with USACE regulatory procedures under Section 404 of the Clean Water Act.

Basic and Overall Project Purpose Statement Pursuant to section 404 of the clean water act

Basic Purpose

ED_000733_DD_NSF_00002537-00003

The restoration and enhancement of ecological functions, including aquatic habitat restoration; and improvements to the water conveyance infrastructure and the supply and reliability of water deliveries conveyed.

Overall Project Purpose

To implement the Bay Delta Conservation Plan (BDCP), which has been designed to achieve the co-equal goals of providing for the conservation and management of aquatic and terrestrial species, including the restoration and enhancement of ecological functions in the Delta, and improving current water supplies and the reliability of delivery of water supplies conveyed through the State Water Project (SWP) and the Central Valley Project (CVP). To accomplish these goals, the BDCP sets out a comprehensive, integrated conservation strategy that involves: 1) substantial modifications and improvements to SWP and CVP water conveyance facilities in the Delta and vicinity, including the potential addition of new points of diversion in the north Delta and other facilities to convey water around the Delta; 2) operational changes to the SWP and CVP; 3) extensive protection and restoration of physical habitat, including actions to expand the extent and quality of intertidal, floodplain and other aquatic habitats in the Delta and vicinity; and 4) actions to address other stressors that adversely affect covered species. The BDCP will achieve these goals in a manner that meets the requirements of applicable federal and state laws, including the Endangered Species and Clean Water acts, and in accord with the Sacramento-San Joaquin Delta Reform Act of 2009.

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District 650 Capitol Mall, Suite 5-200 Sacramento, California 95814
(916) 557-7262 Fax:(916) 930-9506
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Enos, Cassandra [mailto:cenos@water.ca.gov]
Sent: Thursday, December 22, 2011 1:59 PM
To: Hagler.Tom@epamail.epa.gov; Nepstad, Michael G SPK

ED_000733_DD_NSF_00002537-00004

Cc: Hoffman-Floerke, Dale; Marc Ebbin; Foresman.Erin@epamail.epa.gov; Jewell, Michael S SPK; Robershotte, Paul J SPD; Crothers, Cathy; Morrow, Michelle M
Subject: Concurrence on 404 Purpose statements

Mike and Tom - Thanks for meeting today to discuss the BDCP CWA 404 purpose statements. Attached (and below) is the final language we agreed upon at the meeting. Please provide an email concurrence that these purpose statements are acceptable to your respective agencies. If you have any questions I will be available today and tomorrow morning then off until December 28th.

Thank you and have a happy holiday! Cassandra

Basic and Overall Project Purpose Statement Pursuant to section 404 of the clean water act

Basic Purpose

The restoration and enhancement of ecological functions, including aquatic habitat restoration; and improvements to the water conveyance infrastructure and the supply and reliability of water deliveries conveyed.

Overall Project Purpose

To implement the Bay Delta Conservation Plan (BDCP), which has been designed to achieve the co-equal goals of providing for the conservation and management of aquatic and terrestrial species, including the restoration and enhancement of ecological functions in the Delta, and improving current water supplies and the reliability of delivery of water supplies conveyed through the State Water Project (SWP) and the Central Valley Project (CVP). To accomplish these goals, the BDCP sets out a comprehensive, integrated conservation strategy that involves: 1) substantial modifications and improvements to SWP and CVP water conveyance facilities in the Delta and vicinity, including the potential addition of new points of diversion in the north Delta and other facilities to convey water around the Delta; 2) operational changes to the SWP and CVP; 3) extensive protection and restoration of physical habitat, including actions to expand the extent and quality of intertidal, floodplain and other aquatic habitats in the Delta and vicinity; and 4) actions to address other stressors that adversely affect covered species. The BDCP will achieve these goals in a manner that meets the requirements of applicable federal and state laws, including the

Endangered Species and Clean Water acts, and in accord with the Sacramento-San Joaquin Delta Reform Act of 2009.

action 1 - water operations and conveyance Infrastructure

The proposed action is the implementation of the Water Operations and Conveyance Conservation Measures component of the Bay Delta Conservation Plan. The water operations and conveyance conservations measures are designed to allow greater flexibility in balancing the needs of the Sacramento-San Joaquin Delta estuary (Delta) with reliable water supply. Specifically, actions include modifications to the State Water Project and Central Valley Project conveyance facilities, including the addition of new points of diversion in the north Delta, and other facilities to convey water around the Delta. These water conveyance measures will align water operations in the Delta to better reflect seasonal flow patterns, reduce the physical impact of a southern Delta diversion point, and protect fish with state of the art fish screens.

Cassandra Enos-Nobriga

Program Manager

Division of Environmental Services

901 P Street, Sacramento, CA 95814

(916) 651-2987

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00002537-00006

To: "Belin, Letty" [Letty_Belin@ios.doi.gov]; ichael Tucker [michael.tucker@noaa.gov]; Idlof, Patricia S (Patti)" [PIdlof@usbr.gov]
Cc: Karen Schwinn/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA;"Barajas, Federico" [FBarajas@usbr.gov]; om Hagler/R9/USEPA/US@EPA;"Barajas, Federico" [FBarajas@usbr.gov]; Barajas, Federico" [FBarajas@usbr.gov]; eanna Harwood [Deanna.Harwood@noaa.gov]; Monroe, Jim" [James.Monroe@sol.doi.gov]; Chotkowski, Michael" [michael_chotkowski@fws.gov]
From: "Nawi, David"
Sent: Wed 2/22/2012 8:59:40 PM
Subject: RE: Purpose Statement
PIdlof@usbr.gov
(916) 414-2404
pidlof@usbr.gov
hagler.tom@epamail.epa.gov

I doubt Mark knows this. I will close the loop with him. There appears to be a universal federal consensus that we are OK with his language added to the text that is o the website (and reflected in my original email), but not with the changes highlighted by Mike Tucker.

From: Belin, Letty
Sent: Wednesday, February 22, 2012 10:40 AM
To: Nawi, David; Michael Tucker; Idlof, Patricia S (Patti)
Cc: Karen Schwinn; hagler.tom@epamail.epa.gov; Barajas, Federico; Deanna Harwood; Monroe, Jim; Chotkowski, Michael
Subject: RE: Purpose Statement

Does Mark Cowin know this? If so, it is strange that he asked us about one proposed language change but not the others.

From: Nawi, David
Sent: Wednesday, February 22, 2012 1:29 PM
To: Michael Tucker; Idlof, Patricia S (Patti)
Cc: Karen Schwinn; hagler.tom@epamail.epa.gov; Belin, Letty; Barajas, Federico; Deanna Harwood; Monroe, Jim; Chotkowski, Michael
Subject: RE: Purpose Statement

Thanks Mike. We should discuss this soon.

From: Michael Tucker [mailto:michael.tucker@noaa.gov]
Sent: Wednesday, February 22, 2012 9:29 AM
To: Idlof, Patricia S (Patti)

Cc: Nawi, David; Karen Schwinn; hagler.tom@epamail.epa.gov; Belin, Letty; Barajas, Federico; Deanna Harwood; Monroe, Jim; Chotkowski, Michael
Subject: Re: Purpose Statement

Unfortunately, the text that Mark provided below is quite different from what has shown up in the draft document provided by ICF (Chapter 2 of EIR/EIS). The new draft includes Mark's addition, but also includes several other key words and qualifying phrases that I had not seen before (attached with differences highlighted). I think that all the Fed agencies need to look at this and decide if we can accept the new changes.

Mike

On Tue, Feb 21, 2012 at 4:14 PM, Idlof, Patricia S (Patti) <PIdlof@usbr.gov> wrote:

David,

Reclamation is agreeable to adding the proposed hi-lighted sentence below to the Purpose and Need Statement contained in Chapter 2 of the BDCP EIR/EIS.

Patti Idlof

Office: (916) 414-2404

pidlof@usbr.gov

Reclamation BCLogo Bluesm

From: Nawi, David
Sent: Monday, February 13, 2012 4:27 PM
To: Karen Schwinn; hagler.tom@epamail.epa.gov; Belin, Letty; Idlof, Patricia S (Patti); Barajas, Federico; 'Deanna Harwood'; Monroe, Jim; Michael Tucker; Chotkowski, Michael
Subject: Purpose Statement

Mark Cowin would like to add the highlighted language to the purpose statement in the current version of the DEIS/EIR, set out below. The language is a direct quote from the October 26, 2010 letter from the three federal lead agency RDs to EPA (letter attached for you reference, as well as Chapter 2 of draft BDCP, see p. 5 for relevant language). As I understand it, the intent in proposing the inclusion of the added language is to make clear that the language is focused on average amounts.

Please provide a reaction to the proposed additional language, and include anyone else who should review this.

ED_000733_DD_NSF_00002600-00002

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

--
Michael Tucker
BDCP Branch Supervisor
NOAA Fisheries Central Valley Office
(916)-930-3604

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

ED_000733_DD_NSF_00002600-00004

To: "Nawi, David" [David_Nawi@ios.doi.gov]; om Hagler/R9/USEPA/US@EPA;Michael Tucker [michael.tucker@noaa.gov]; ichael Tucker [michael.tucker@noaa.gov]
Cc: Deanna Harwood [Deanna.Harwood@noaa.gov]; Barajas, Federico" [FBarajas@usbr.gov]; Monroe, Jim" [James.Monroe@sol.doi.gov]; aren Schwinn/R9/USEPA/US@EPA;"Chotkowski, Michael" [michael_chotkowski@fws.gov]; Chotkowski, Michael" [michael_chotkowski@fws.gov]; Idlof, Patricia S (Patti)" [PIdlof@usbr.gov]; Allen, Kaylee" [Kaylee.Allen@sol.doi.gov]
From: "Belin, Letty"
Sent: Thur 2/23/2012 7:21:21 PM
Subject: RE: Purpose Statement
PIdlof@usbr.gov
(916) 414-2404
pidlof@usbr.gov
hagler.tom@epamail.epa.gov

Great work in chasing this down, David. Let's hope we really are done with this and no one will force us to play Whack-a-Mole on this issue.

From: Nawi, David
Sent: Thursday, February 23, 2012 12:25 PM
To: Tom Hagler; Michael Tucker
Cc: Deanna Harwood; Barajas, Federico; Monroe, Jim; Karen Schwinn; Belin, Letty; Chotkowski, Michael; Idlof, Patricia S (Patti); Allen, Kaylee
Subject: RE: Purpose Statement

I just spoke to Mark. He has not intended to propose the change Mike Tucker distributed, and has agreed to incorporate just the added sentence in the language currently on the website and reflected in my earlier email. I believe (and hope) that this issue is closed, at least for now.

From: Tom Hagler [mailto:Hagler.Tom@epamail.epa.gov]
Sent: Wednesday, February 22, 2012 10:42 AM
To: Michael Tucker
Cc: Nawi, David; Deanna Harwood; Barajas, Federico; Monroe, Jim; Karen Schwinn; Belin, Letty; Chotkowski, Michael; Idlof, Patricia S (Patti)
Subject: Re: Purpose Statement

Karen is having a nice break in Hawaii, so I will give you some initial comments. These are necessarily abbreviated.

(1) It is troubling that we are reopening something that was represented to all of us as being closed more than a year ago. It is also troubling that there now appear to be two different purpose statements - a federal view and a state or contractor view. I'm not sure how that would or should be evaluated under NEPA or CEQA. It may have happened before, but it can't be anything but complicated.

(2) The action agencies have wide latitude to define their project purpose. But the scope of the proposed project determines the scope of the alternatives that must be evaluated. The federal action agency letter from late 2010, which is reflected in the federal purpose statement, provided the basis for characterizing the BDCP as a change in the method of conveyance through or around the Delta. That is a fairly narrow project purpose that would have a correspondingly narrow set of alternatives.

If, on the other hand, the project purpose is to significantly increase exports (that is, a water supply augmentation purpose), that is a different project that would require a broader set of alternatives.

(3) Although there are some differences between 404 and NEPA, this same issue of project purpose and scope of alternatives arises in the 404 context.

And that's about it for first reactions.

(And thanks to Rhonda Reed for her comments at the State Board hearing yesterday. It was nice to see NMFS, DFG, and EPA saying the same thing in terms of moving the Board process forward.)

****
****

Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415) 972-3945
Email: hagler.tom@epamail.epa.gov

From: Michael Tucker <michael.tucker@noaa.gov>
To: "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>
Cc: "Nawi, David" <David_Nawi@ios.doi.gov>, Karen Schwinn/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA, "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Barajas, Federico" <FBarajas@usbr.gov>, Deanna Harwood <Deanna.Harwood@noaa.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, "Chotkowski, Michael" <michael_chotkowski@fws.gov>
Date: 02/22/2012 09:28 AM
Subject: Re: Purpose Statement

Unfortunately, the text that Mark provided below is quite different from what has shown up in the draft document provided by ICF (Chapter 2 of EIR/EIS). The new draft includes Mark's addition, but also includes several other key words and qualifying phrases that I had not seen before (attached with differences highlighted). I think that all the Fed agencies need to look at this and decide if we can accept the new changes.

Mike

On Tue, Feb 21, 2012 at 4:14 PM, Idlof, Patricia S (Patti) <PIdlof@usbr.gov> wrote:

David,

Reclamation is agreeable to adding the proposed hi-lighted sentence below to the Purpose and Need Statement contained in Chapter 2 of the BDCP EIR/EIS.

Patti Idlof

Office: (916) 414-2404

pidlof@usbr.gov

From: Nawi, David
Sent: Monday, February 13, 2012 4:27 PM
To: Karen Schwinn; hagler.tom@epamail.epa.gov; Belin, Letty; Idlof, Patricia S (Patti); Barajas, Federico; 'Deanna Harwood'; Monroe, Jim; Michael Tucker; Chotkowski, Michael
Subject: Purpose Statement

Mark Cowin would like to add the highlighted language to the purpose statement in the current version of the DEIS/EIR, set out below. The language is a direct quote from the October 26, 2010 letter from the three federal lead agency RDs to EPA (letter attached for you reference, as well as Chapter 2 of draft BDCP, see p. 5 for relevant language). As I understand it, the intent in proposing the inclusion of the added language is to make clear that the language is focused on average amounts.

Please provide a reaction to the proposed additional language, and include anyone else who should review this.

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

--
Michael Tucker
BDCP Branch Supervisor

ED_000733_DD_NSF_00002704-00003

NOAA Fisheries Central Valley Office
(916)-930-3604

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

ED_000733_DD_NSF_00002704-00004

To: Tom Hagler/R9/USEPA/US@EPA;"Nawi, David" [David_Nawi@ios.doi.gov]; Nawi, David" [David_Nawi@ios.doi.gov]
Cc: Michael Tucker [michael.tucker@noaa.gov]; eanna Harwood [Deanna.Harwood@noaa.gov]; Monroe, Jim" [James.Monroe@sol.doi.gov]; aren Schwinn/R9/USEPA/US@EPA;"Belin, Letty" [Letty_Belin@ios.doi.gov]; Belin, Letty" [Letty_Belin@ios.doi.gov]; Chotkowski, Michael" [michael_chotkowski@fws.gov]; Idlof, Patricia S (Patti)" [PIdlof@usbr.gov]; Allen, Kaylee" [Kaylee.Allen@sol.doi.gov]; Chrisney, Ann C" [achrisney@usbr.gov]; Chotkowski, Michael" [michael_chotkowski@fws.gov]; Rinek, Lori" [lori_rinek@fws.gov]
From: "Barajas, Federico"
Sent: Tue 3/6/2012 2:59:17 PM
Subject: RE: Purpose Statement
PIdlof@usbr.gov
(916) 414-2404
pidlof@usbr.gov
hagler.tom@epamail.epa.gov

Thanks for pointing this out Tom. I understand that ICF distributed the wrong version of Chapter 2 Purpose & Need for review. They are distributing and posting a replacement version. We'll make sure you get the revised version. Thanks, FB

From: Tom Hagler [Hagler.Tom@epamail.epa.gov]
Sent: Monday, March 05, 2012 2:36 PM
To: Nawi, David
Cc: Michael Tucker; Deanna Harwood; Barajas, Federico; Monroe, Jim; Karen Schwinn; Belin, Letty; Chotkowski, Michael; Idlof, Patricia S (Patti); Allen, Kaylee
Subject: RE: Purpose Statement

I note, mainly FYI, that the Purpose Statement included in the publicly released materials last week is not the same language that was "agreed to" between David N. and Mark C.

Here is what went out last week, taken from the Draft EIS at Chapter 2, at page 2-4:

14 The above Purpose Statement reflects the intent to advance the coequal goals set forth in the
15 Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for
16 California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore
17 and protect the ability of the SWP and CVP to deliver up to full contract amounts—is related to the
18 upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for
19 development of EIR/EIS alternatives, not a target. As indicated by the use of "up to full contract
20 amounts," alternatives need not be capable of delivering full contract amounts on average in order
21 to meet the project purposes. It is not intended to imply that increased quantities of water will be
22 delivered under the BDCP. For the purpose of NEPA, alternatives that depict design capacities or
23 operational parameters that would result in deliveries of less than full contract amounts are
24 consistent with this purpose.

The highlighted language was added. It was not included in the paragraph as circulated by David on Feb 23 (included below).

I am assuming that this language was added because someone wants to be able to argue that the CEQA purpose, as opposed to the NEPA purpose, requires some quantity of deliveries in order to meet the CEQA purposes. That is, with this new language, there are two different purpose statements.

Interesting.

From: "Nawi, David" <David_Nawi@ios.doi.gov>
To: Tom Hagler/R9/USEPA/US@EPA, Michael Tucker <michael.tucker@noaa.gov>
Cc: Deanna Harwood <Deanna.Harwood@noaa.gov>, "Barajas, Federico" <FBarajas@usbr.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, Karen Schwinn/R9/USEPA/US@EPA, "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Chotkowski, Michael" <michael_chotkowski@fws.gov>, "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>, "Allen, Kaylee" <Kaylee.Allen@sol.doi.gov>
Date: 02/23/2012 09:25 AM
Subject: RE: Purpose Statement

I just spoke to Mark. He has not intended to propose the change Mike Tucker distributed, and has agreed to incorporate just the added sentence in the language currently on the website and reflected in my earlier email. I believe (and hope) that this issue is closed, at least for now.

From: Michael Tucker <michael.tucker@noaa.gov>
To: "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>
Cc: "Nawi, David" <David_Nawi@ios.doi.gov>, Karen Schwinn/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA, "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Barajas, Federico" <FBarajas@usbr.gov>, Deanna Harwood <Deanna.Harwood@noaa.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, "Chotkowski, Michael" <michael_chotkowski@fws.gov>
Date: 02/22/2012 09:28 AM
Subject: Re: Purpose Statement

Unfortunately, the text that Mark provided below is quite different from what has shown up in the draft document provided by ICF (Chapter 2 of EIR/EIS). The new draft includes Mark's addition, but also includes several other key words and qualifying phrases that I had not seen before (attached with differences highlighted). I think that all the Fed agencies need to look at this and decide if we can accept the new changes.

Mike

On Tue, Feb 21, 2012 at 4:14 PM, Idlof, Patricia S (Patti) <PIdlof@usbr.gov> wrote:
David,

Reclamation is agreeable to adding the proposed hi-lighted sentence below to the Purpose and Need Statement contained in Chapter 2 of the BDCP EIR/EIS.

Patti Idlof

Office: (916) 414-2404

pidlof@usbr.gov

From: Nawi, David
Sent: Monday, February 13, 2012 4:27 PM
To: Karen Schwinn; hagler.tom@epamail.epa.gov; Belin, Letty; Idlof, Patricia S (Patti); Barajas, Federico; 'Deanna Harwood'; Monroe, Jim; Michael Tucker; Chotkowski, Michael
Subject: Purpose Statement

Mark Cowin would like to add the highlighted language to the purpose statement in the current version of the DEIS/EIR, set out below. The language is a direct quote from the October 26, 2010 letter from the three federal lead agency RDs to EPA (letter attached for you reference, as well as Chapter 2 of draft BDCP, see p. 5 for relevant language). As I understand it, the intent in proposing the inclusion of the added language is to make clear that the language is focused on average amounts.

Please provide a reaction to the proposed additional language, and include anyone else who should review this.

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

--
Michael Tucker
BDCP Branch Supervisor
NOAA Fisheries Central Valley Office
(916)-930-3604

ED_000733_DD_NSF_00002743-00003

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at
(866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

To: "Rinek, Lori" [lori_rinek@fws.gov]; om Hagler/R9/USEPA/US@EPA;Karen Schwinn/R9/USEPA/US@EPA;"ldlof, Patricia S (Patti)" [Pldlof@usbr.gov]; aren Schwinn/R9/USEPA/US@EPA;"ldlof, Patricia S (Patti)" [Pldlof@usbr.gov]; ldlof, Patricia S (Patti)" [Pldlof@usbr.gov]; Allen, Kaylee" [Kaylee.Allen@sol.doi.gov]; eanna Harwood [deanna.harwood@noaa.gov]; Monroe, Jim" [James.Monroe@sol.doi.gov]; ichael Tucker [Michael.Tucker@NOAA.GOV]; Barajas, Federico" [FBarajas@usbr.gov]
Cc: "Belin, Letty" [Letty_Belin@ios.doi.gov]; Sobeck, Eileen" [Eileen_Sobeck@ios.doi.gov]
From: "Nawi, David"
Sent: Wed 3/14/2012 8:55:43 PM
Subject: Purpose and Need - Again

(b) (5)

David

Received: from itrabqexedge01.local (161.217.6.73) by IIAMIBEXCH02.ia.doi.net (161.217.233.186) with Microsoft SMTP Server (TLS) id 8.3.213.0; Thu, 23 Feb 2012 15:11:20 -0500
Received: from itfalbasg01-prv.bia.gov (10.1.1.10) by ITRABQEXEDGE01.LOCAL (10.1.1.13) with Microsoft SMTP Server id 8.1.393.1; Thu, 23 Feb 2012 13:09:56 -0700
Received: from mrsbmapp20303.water.ca.gov (HELO dwrhost.water.ca.gov) ([136.200.247.11]) by maila.bia.gov with ESMTP; 23 Feb 2012 12:08:37 -0700
Received: from mrsbmapp20307.ad.water.ca.gov ([10.3.132.11]) by mrsbmapp20303.ad.water.ca.gov ([10.3.132.7]) with mapi; Thu, 23 Feb 2012 12:10:15 -0800
From: "Cowin, Mark" <mcowin@water.ca.gov>
To: "Nawi, David" <David_Nawi@ios.doi.gov>
CC: "Crothers, Cathy" <crothers@water.ca.gov>
Date: Thu, 23 Feb 2012 15:10:14 -0500
Subject: RE: Purpose Statement
Message-ID: <B33306B77E0C964499C414BBCE53D71E0A166D5233@mrsbmapp20307.ad.water.ca.gov>
In-Reply-To: <67BC36F6966AB848A6EB2422BADC8602078B3D55EC@IIAMIBEXCHANGE.ia.doi.net>
Content-Type: multipart/alternative;
boundary="_000_B33306B77E0C964499C414BBCE53D71E0A166D5233mrsbmapp20307_"
Content-Language: en-US
Thread-Topic: Purpose Statement
Thread-Index: AczxpqUdKRr4uCpRHOi3FCYILZ2WAAqNAVAAAXkWYA=
References: <67BC36F6966AB848A6EB2422BADC8602078B3D55EC@IIAMIBEXCHANGE.ia.doi.net>
Accept-Language: en-US
X-MS-Exchange-Organization-AuthAs: Anonymous
X-MS-Exchange-Organization-AuthSource: IIAMIBEXCH02.ia.doi.net
X-MS-Has-Attach:
X-MS-TNEF-Correlator:
acceptlanguage: en-US
x-sender-reputation: 5.3
x-sender-ip: 136.200.247.11
x-ironport-av: E=Sophos;i="4.73,470,1325487600"; d="scan'208,217";a="6708597"
MIME-Version: 1.0

Yes, I am OK with this language for the draft.

From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, February 23, 2012 9:22 AM
To: Cowin, Mark
Subject: FW: Purpose Statement

Mark – Confirming that we are good to go with the language below, and that it will be reflected without further change in the draft DEIS/EIR.

Thanks.

David

From: Nawi, David
Sent: Wednesday, February 22, 2012 1:12 PM
To: mark.cowin@water.ca.gov
Subject: Purpose Statement

Mark – Would you please give me a call re the Purpose Statement language we discussed last week – set out below.

David

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

ED_000733_DD_NSF_00002752-00003

To: "Nawi, David" [David_Nawi@ios.doi.gov]; Rinek, Lori" [lori_rinek@fws.gov]; om Hagler/R9/USEPA/US@EPA;Karen Schwinn/R9/USEPA/US@EPA;"Idlof, Patricia S (Patti)" [PIdlof@usbr.gov]; aren Schwinn/R9/USEPA/US@EPA;"Idlof, Patricia S (Patti)" [PIdlof@usbr.gov]; Idlof, Patricia S (Patti)" [PIdlof@usbr.gov]; Allen, Kaylee" [Kaylee.Allen@sol.doi.gov]; eanna Harwood [deanna.harwood@noaa.gov]; ichael Tucker [Michael.Tucker@NOAA.GOV]; Barajas, Federico" [FBarajas@usbr.gov]
Cc: "Belin, Letty" [Letty_Belin@ios.doi.gov]; Sobeck, Eileen" [Eileen_Sobeck@ios.doi.gov]
From: "Monroe, Jim"
Sent: Wed 3/14/2012 9:31:49 PM
Subject: RE: Purpose and Need - Again

David,

(b) (5) [redacted]

Jim

Jim Monroe

U.S. Department of the Interior

Office of the Regional Solicitor

(916) 978-5674

(916) 978-5694 (fax)

james.monroe@sol.doi.gov

From: Nawi, David
Sent: Wednesday, March 14, 2012 1:56 PM
To: Rinek, Lori; Tom Hagler; Karen Schwinn; Idlof, Patricia S (Patti); Allen, Kaylee; Deanna Harwood; Monroe, Jim; Michael Tucker; Barajas, Federico
Cc: Belin, Letty; Sobeck, Eileen
Subject: Purpose and Need - Again

(b) (5) [redacted]

(b) (5)

David

To: "Nawi, David" [David_Nawi@ios.doi.gov]
Cc: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
Bcc: CN=Tom Hagler/OU=R9/O=USEPA/C=US[]
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Fri 3/16/2012 11:27:03 PM
Subject: RE: Section 404 Meeting (UNCLASSIFIED)

I think David states the status accurately. I noted my understanding on each of David's questions below (in red).

I think we could have a more substantive conversation after we'd all had a chance to review the relevant pierces of the draft DEIS. But I'm happy to talk in the interim as well. Thanks. - Karen

~~~~~~~~~~~~~~~~~~~~~~~~
KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

From: "Nawi, David" <David_Nawi@ios.doi.gov>
To: "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>
Cc: Karen Schwinn/R9/USEPA/US@EPA
Date: 03/16/2012 08:55 AM
Subject: RE: Section 404 Meeting (UNCLASSIFIED)

Paul - Waiting for Mike Jewelll seems wise. Let's see what we can do for the following week.

Based on what I know - and as you know I have not been intimately involved - I believe we need a clear common understanding on the federal side that we can then discuss with DWR of how section 404 permitting fits into the BDCP EIS/EIR. I believe that the BDCP EIS is intended to serve as the project specific NEPA document for USACE permitting of the conveyance facility. If there is agreement on that fundamental point, we then need to address

- the process and timing to accomplish this - when will a project description for the conveyance for Corps purposes under NEPA be needed/ available; the applicant can submit a 404 permit application to the Corps whenever they want. Seems like the sooner they do, the sooner the Corps can determine "the basic and overall project purpose".

- what if any added elements will be required for the NEPA analysis to meet Corps needs (e.g., LEDPA analysis); We defer to the Corps on determining what they need for their NEPA compliance, and note that they will have broader information needs.

- role of lead agencies working with USACE and DWR to bring this all together; not our issue

ED_000733_DD_NSF_00002779-00001

- permitting MOU - are we going to proceed without one, and if so what will the process and timing be for moving forward; I'm assuming no MOU.....But as we review the draft EIR/S, I hope to provide feedback on where we believe additional information/detail will be needed for 404 permitting, and where we are ok. This would encompass those milestones that were originally in the draft NEPA/404 MOU. We plan to coordinate these comments with the Corps, same as we would've if we were operating under an MOU.

- and last, perhaps an understanding of how section 408 permitting will be addressed. no EPA role here

I am taking the liberty of copying Karen, who can likely correct or add to the above.

I hope this helps, and I would be glad to discuss with you at your convenience.

David

From: Robershotte, Paul J SPD [Paul.J.Robershotte@usace.army.mil]
Sent: Friday, March 16, 2012 6:43 AM
To: Nawi, David
Subject: Re: Section 404 Meeting (UNCLASSIFIED)

David
Yes, it would be good to wait for Jewell. What would also help is understanding what the issue is. I may not see the situation the same way as my Federal brethren and if you could share their take on the situation, it would help a lot.
Thanks
Paul

----- Original Message -----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, March 15, 2012 03:34 PM
To: Robershotte, Paul J SPD
Cc: Karen Schwinn <Schwinn.Karen@epamail.epa.gov>
Subject: FW: Section 404 Meeting (UNCLASSIFIED)

Paul - Do you prefer to await Mike Jewell's return to have this meeting? I understand that it is not time critical, so that moving the meeting until the following week would be OK.

Please let me know - it's your call.

Thanks.

David
-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Thursday, March 15, 2012 2:54 PM
To: Nawi, David; Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Robershotte, Paul J SPD; Jewell, Michael S SPK; Monroe, Jim; Foresman.Erin@epamail.epa.gov
Subject: RE: Section 404 Meeting (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Either time works for me. Michael Jewell is out for that entire week

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
(916) 557-7262 Fax:(916) 930-9506
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, March 15, 2012 1:29 PM
To: Nawi, David; Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Robershotte, Paul J SPD; Jewell, Michael S SPK; Nepstad, Michael G SPK; Monroe, Jim; Foresman.Erin@epamail.epa.gov
Subject: RE: Section 404 Meeting

Based on Paul's schedule, can we do this call/meeting at 1:30 p.m. on Tuesday march 20?

From: Nawi, David
Sent: Thursday, March 15, 2012 12:17 PM
To: Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Robershotte, Paul J SPD; michael.s.jewell@usace.army.mil; Nepstad, Michael G SPK; Monroe, Jim
Subject: Section 404 Meeting

Based on the discussion at the federal coordination meeting this morning, it appears that we would benefit from a meeting/conference call to clarify where we are in terms of 404 permitting and the BDCP NEPA document. Once we

come to a common understanding, I believe the next step would be to engage DWR to see if we can all be on the same page. Would next Tuesday, March 20 at 10:00 a.m. work?

Classification: UNCLASSIFIED
Caveats: NONE

To: Tom Hagler/R9/USEPA/US@EPA[]
From: "Monroe, Jim"
Sent: Mon 3/19/2012 3:54:43 PM
Subject: FW: Draft Alternatives Screening Memorandum
Alternatives Screening Memorandum Feb. 21 2012 (00173013).DOCX
Tables for Alternative Screening Memo (Feb 21 2012) (00173017).DOCX

Tom,

Am using bogus "lite" version of email; as that is all that will work on my Apple IT architecture at home. Blip me a note and let me know you got this.

Jim

"Never, never, never give up." – Winston Churchill

From: Monroe, Jim
Sent: Tuesday, February 21, 2012 1:37 PM
To: Tom Hagler
Subject: FW: Draft Alternatives Screening Memorandum

Haven't done much more than skim the index...

Jim

"Never, never, never give up." – Winston Churchill

From: Jim Moose [mailto:JMoose@rmmenvirolaw.com]
Sent: Tuesday, February 21, 2012 11:34 AM
To: Monroe, Jim; Harwood, Deanna
Cc: Michelle Morrow (mmmorrow@water.ca.gov); Cathy Crothers (crothers@water.ca.gov); Ken Bogdan (KBogdan@icfi.com); Gwen Buchholz (Gwendolyn.Buchholz@CH2M.com); Chuck Gardner
Subject: Draft Alternatives Screening Memorandum

Jim and Deanna:

Attached are the long-anticipated draft Alternatives Screening Memorandum (shorthand name) and accompanying tables for the BDCP EIR/EIS. Please give me your comments at your earliest convenience, as we would like the documents to reflect a joint effort of the state and federal attorneys before we release the documents to a larger audience. Ideally, you would provide us with a single set of comments that you both can stand behind. I apologize for how long it has taken to get them to you. I think that, once you look at the documents, you will understand the level of effort that went into them.

Jim Moose

[cid:image001.jpg@01CCF08B.44558F00]
455 Capitol Mall, Suite 210 | Sacramento, CA 95814
P (916) 443-2745 | F (916) 443-9017 |
jmoose@rmmenvirolaw.com<mailto:jmoose@rmmenvirolaw.com> |
www.rmmenvirolaw.com<http://www.rmmenvirolaw.com/>

ED_000733_DD_NSF_00002783-00001

CONFIDENTIAL COMMUNICATION: This electronic mail message and any attachments are intended only for the use of the addressee(s) named above and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If you are not an intended recipient, or the employee or agent responsible for delivering this e-mail to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you received this e-mail message in error, please immediately notify the sender by replying to this message or by telephone. Thank you.

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at
(866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name

extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

Appendix X.

(Draft) Identification of Water Conveyance Alternatives for Bay Delta Conservation Plan Environmental Impact Report/Environmental Impact Statement (Conservation Measure No. 1)

ED_000733_DD_NSF_00002784-00001

TABLE OF CONTENTS

Appendix X. Identification of Water Conveyance Alternatives for Bay Delta Conservation Plan Environmental Impact Report/Environmental Impact Statement (Conservation Measure No. 1)..... X-1

X.1 Introduction and Purpose of this Appendix.....X-1

X.1.1 Organization of this Appendix..... X-1

X.2 BDCP Project Background.....X-3

X.2.1 Background of the Bay Delta Conservation Plan Process..... X-4

X.2.2 Background of the BDCP Environmental Impact Report/Environmental Impact Statement Process.....X-5

X.3 Development of EIR/EIS Screening and Consistency Criteria.....X-7

X.3.1 Identification of Alternatives under CEQA and NEPA (First and Second Level Screening).....X-7

X.3.1.1 Process for Identification of Alternatives under CEQA..... X-7

X.3.1.2 Process for Identification of Alternatives under NEPA..... X-8

X.3.1.3 First Level of Screening: Identification of Alternatives under CEQA and NEPA X-10

X.3.1.4 Second Level of Screening: Identification of Alternatives under CEQA and NEPA X-11

X.3.2 Third Level Screening: Defining Potentially Feasible Alternatives under CEQA and Reasonable Alternatives under NEPA.....X-11

X.3.3 Finding of Consistency with Sacramento-San Joaquin Delta Reform Act..... X-13

X.3.4 Finding of Consistency with Scoping Comments from Responsible and Cooperating Agencies Related to Range of Alternatives..... X-14

X.3.5 Finding of Consistency with Legal Rights of Entities that are not BDCP Participants..... X-17

X.4 Alternative Conveyance Concepts Identified in Programs Prior to the BDCP Process X-18

X.4.1 Historical Development of Existing CVP and SWP Conveyance Concepts.....X-18

X.4.2 Existing Delta Conveyance Concept.....X-19

X.4.3 Delta Conveyance Concepts Considered Prior to the BDCP Process..... X-20

X.4.3.1 Western Delta Salinity Control Barrier.....X-20

1957 DWR Evaluation of Salinity Control Barriers..... X-20

1960 DWR Evaluation of Salinity Control Facilities..... X-21

X.4.3.2 Improved Through Delta Conveyance..... X-23

1995 - 2000/2000 - 2008 CALFED Evaluations of Through Delta Conveyance Improvements..... X-23

1960 to Present DWR/CALFED Evaluations of South Delta and Western Delta

ED_000733_DD_NSF_00002784-00002

Salinity Control Barriers....X-23
2007 Metropolitan Water District of Southern California Concept for Separated Delta Corridor for Water Supply Conveyance.... X-24
2007 - 2009 South Delta Water Agency Evaluation of Separated Delta Corridors for Water Supply Conveyance and Fish Passage....X-24
X.4.3.3 Isolated Eastern Conveyance....X-25
1963 Interagency Delta Committee Evaluation of a Peripheral Canal....X-25
1965 - 1974 DWR Evaluations of a Peripheral Canal.... X-25
1995 - 2000 CALFED Evaluations of an Isolated Facility....X-26
X.4.3.4 Isolated Western Conveyance Using the Sacramento Deep Water Ship Channel.... X-27
1977 Association of State Water Project Agencies Evaluation Montezuma Hills Canal.... X-27
1995 - 2000 CALFED Evaluation of an Isolated Western Facility Using the Sacramento Deep Water Ship Channel....X-27
2001 DWR Evaluation Using the Sacramento Deep Water Ship Channel for Fish Passage....X-28
X.4.3.5 2007 Governor Schwarzenegger's Direction for Sustainable Management of the Delta....X-28
X.5 Delta Conveyance Concepts Identified in BDCP Steering Committee Process: 2007 - 2010X-29
X.5.1.1 Development of Conveyance Concepts by the Conservation Strategy Workgroup X-29
X.5.1.2 Identification of Conveyance Concept for Further Analysis by BDCP Steering Committee.... X-30
X.6 Alternative Conveyance Concepts Identified in EIR/EIS Scoping CommentsX-32
X.7 Results of Initial Screening of Conveyance Concepts....X-35
X.8 Development of Conveyance Operations Concept by BDCP Steering Committee in 2010.... X-40
X.8.1 BDCP Steering Committee Conveyance Workgroup and Habitat and Operations Technical Team Development of Operations Concepts.... X-40
X.8.2 Delta Regional Ecosystem Restoration Implementation Plan (DRERIP) Assessment of Core Elements.... X-43
X.8.3 BDCP Steering Committee Project Description for Preliminary Effects Analysis....X-44
X.9 Conveyance Operations Concepts Identified in 2011....X-46
X.9.1 Federal and State Agencies Concept: Scenario 6 Concept....X-46
X.9.2 Federal and State Agencies Concept: Enhanced Ecosystem Conveyance Operations Concept.... X-48

ED_000733_DD_NSF_00002784-00003

X.9.3 State Water Resources Control Board Enhanced Spring Delta Outflow Concept X-49
X.9.4 Environmental Organizations Conveyance Operations Concepts X-51
X.9.4.1 Proportional North Delta Inflow Bypass Concept X-52
X.9.4.2 Conveyance Operations Concept based on the State Water Resources Control Board Flow Recommendations for the Sacramento-San Joaquin Delta Ecosystem X-52
X.9.4.3 Scenario 6 Conveyance Operations Concept with Limited Dual Conveyance Facility Capacity of North Delta Intakes X-54
X.9.5 Contra Costa Water District Conveyance Operations Concept with Limited Dual Conveyance Facility Capacity X-55
X.9.6 Range of Capacities for Conveyance Concepts X-55
X.10 Results of the Second Screening of Conveyance Concepts X-58
X.10.1 Range of Conveyance Alignment Concepts Identified through the Initial Screening Process X-58
X.10.2 Range of Conveyance Operations Concepts Combined with the Conveyance Alignment Concepts X-58
X.10.3 Results of the Second Screening of Conveyance Concepts X-60
X.10.4 Identification of Conveyance Concepts with Similar Conveyance Facilities X-61
X.10.5 Identification of Conveyance Concepts with Similar Conveyance Operations X-61
X.10.6 Range of Conveyance Alternatives to be Evaluated in Detail in the EIR/EIS X-62
X.11 References X-63
X.12 Attachments X-67

LIST OF TABLES

Table X-1. Initial Screening: Comparison of Potential Conveyance Alignment Concepts with First Level Screening Criteria that Reflect CEQA and NEPA Requirements with Project Objectives and Purpose Statements in the NOP and NOI T-1

Table X-2. Initial Screening: Comparison of Potential Conveyance Alignment Concepts with Second Level Screening Criteria Related to CEQA and NEPA T-3

Table X-3. Initial Screening: Comparison of Potential Conveyance Alignment Concepts with Third Level Screening Criteria Related to Economically Feasibility under CEQA and Reasonableness under NEPAT-5

Table X-4. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS based upon "January 2010 BDCP Steering Committee Presentation" for Dual Conveyance (revised February 2010) T-8

ED_000733_DD_NSF_00002784-00004

Table X-5. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS based upon "January 2010 BDCP Steering Committee Presentation" for Isolated Conveyance..... T-14

Table X-6. Long-Term BDCP Water Operations Proposal for Scenario 6 for Dual Conveyance (DWR, DFG, Reclamation, USFWS, and NMFS 2011)..... T-19

Table X-7. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS based upon "Enhanced Ecosystem Operations" for Dual Conveyance..... T-26

Table X-8. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS based upon "Enhanced Spring Delta Outflow" for Dual Conveyance..... T-31

Table X-9. Long-Term BDCP Water Operations Proposal for Proportional North Delta Inflow Bypass Concept (American Rivers et al 2011)..... T-36

Table X-10. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS based upon "Limited Dual Conveyance Facility" (CCWD 2011)..... T-44

Table X-11. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS Separated Corridors..... .....T-50

Table X-12. Second Screening: Comparison of Conveyance Concepts with First Level Screening Criteria that Reflect CEQA and NEPA Requirements with Project Objectives and Purpose Statements in the NOP and NOI..... T-53

Table X-13. Second Screening: Comparison of Conveyance Concepts with Second Level Screening Criteria Related to CEQA and NEPA..... T-55

Table X-14. Second Screening: Comparison of Conveyance Concepts with Third Level Screening Criteria Related to Economically Feasibility under CEQA and Reasonableness under NEPA..... T-57

Table X-15. Second Screening: Determination of Consistency of the Range of Alternatives to Sacramento-San Joaquin River Restoration Act..... T-59

Table X-16. Determination of Consistency of the Range of Alternatives Scoping Comments by CEQA Responsible Agencies and Federal Cooperating Agencies with Jurisdiction by Law or Special Expertise.. .....T-60

Table X-17. Determination of Consistency of with Legal Rights of Entities that are Not BDCP Participants T-61

Table X-18. Results of Initial Screening for Conveyance Alignment Concepts..... T-62

Table X-19. Results of Second Screening Process for Conveyance Alignment and Operations ConceptsT-63

ED_000733_DD_NSF_00002784-00005

X.1 Introduction and Purpose of this Appendix

The process for developing the Bay Development Conservation Plan (BDCP) was initiated in 2006.Its primary objective was to achieve long-term compliance with the federal Endangered Species Act (ESA) and parallel state species protection laws (e.g., the California Natural Community Conservation Planning Act [NCCPA]) with respect to (i) the operation of existing State Water Project (SWP) facilities in the Sacramento-San Joaquin Delta (Delta) and (ii) the construction and operation of new conveyance facilities for the movement of water entering the Delta from the Sacramento Valley watershed to the existing SWP and federal Central Valley Project (CVP) pumping plants in the southern Delta. The proposed BDCP also provides for the conservation and management of covered species through actions—conservation measures—within the BDCP Plan Area that will contribute to the recovery of the species.

The proposed BDCP as currently contemplated consists of a set of 23 Conservation Measures (CMs). Conservation Measure 1 (CM1) consists of water conveyance facilities components combined with water conveyance operational components. The BDCP also includes conservation measures that address restoration and conservation strategies for aquatic and terrestrial habitat (CM2–CM11), and other stressors reduction measures(CM12–CM23).

The BDCP Environmental Impact Report/Environmental Impact Statement (EIR/EIS) is being prepared to evaluate the potential impacts of implementing a range of reasonable alternatives representing different potential versions of the ultimate BDCP. The purpose of this appendix is to define the range of alternatives for CM1 to be evaluated in detail in the EIR/EIS. This appendix focuses on:

- A range of conveyance alignment concepts to convey water from the Sacramento River watershed to existing SWP and CVP pumping plants located in the South Delta, and
- A range of conveyance water supply operations concepts related to the timing and capacity of water diversions from the Sacramento River watershed and/or from existing SWP and CVP intakes in the South Delta.

Separate analyses have been prepared to describe the development of specific locations and design criteria of intakes along the conveyance alignments and the development of alternative concepts for CM2 - CM23. Separate analyses also will be prepared to evaluate concepts for Water Demand Management, such as water conservation and water recycling.

X.1.1 Organization of this Appendix

This appendix provides the following: a brief description of the background of the development the BDCP and the EIR/EIS; descriptions of the screening criteria to be used to identify potentially feasible and reasonable alternatives to be fully evaluated in the EIR/EIS; and a chronological description of identification of the range of alternative components related to CM1 to be evaluated in the EIR/EIS. The chronological development of the range of water conveyance alternative components related to CM1 occurred in the following manner.

- Initially, State and federal agencies participating in BDCP identified Delta conveyance concepts described in previous reports as potential means for maintaining good water quality in the Delta and water supply availability to users of Delta water..

ED_000733_DD_NSF_00002784-00006

- The BDCP Steering Committee conducted a preliminary analysis of broadly defined conveyance alignment concepts to consider benefits and constraints of different conveyance alignment approaches and completed a "Conservation Strategy Options Evaluation Report" in September 2007 (BDCP 2007a) (also known as the "Options Report").
- The EIR/EIS process initiated scoping in early 2008 and re-opened the process in early 2009. The majority of the comments related to BDCP water supply components were related to conveyance alignment approaches.
- An initial screening process was completed for the EIR/EIS process to identify a broad range of conveyance alignment concepts to be used in the development of a range of conveyance operations concepts.
- During 2008 through 2010, the BDCP Steering Committee conducted analyses of preliminary conveyance operations concepts, and in early 2010 developed a set of conveyance operations criteria to be evaluated for the initial BDCP Effects Analysis.
- In 2011, State and federal agencies involved in the BDCP process continued to receive comments related to conveyance concepts.
- In late 2009, the California Legislature enacted a package of related water bills that included the Sacramento–San Joaquin Delta Reform Act of 2009 (Delta Reform Act), which addressed issues that should be considered in the development of the EIR/EIS alternatives if the BDCP were to be included via a new statutory process within the newly required Delta Plan to be prepared by the newly constituted Delta Stewardship Council (DSC).
- The Lead Agency staff and consultants involved in the EIR/EIS process considered (i) the set of conveyance operations criteria developed through the BDCP Steering Committee process, (ii) 2008 and 2009 scoping comments related to conveyance operations, (iii) issues included in the Delta Reform Act to develop a range of conveyance operations concepts, and (iv) comments received in 2011 by other State and federal agencies involved in the BDCP process. All of this information was used to develop a range of conveyance operations concepts to be considered with the previously screened conveyance alignment concepts.
- Lead Agency staff and consultants completed a second screening process for the conveyance concepts to identify the final range of alternatives to be fully considered for CM1 in the EIR/EIS.

This appendix describes both the information used at each point in this overall process and the results of the first and second screening processes to define the final range of alternatives to be considered for CM1 in the EIR/EIS.

ED_000733_DD_NSF_00002784-00007

X.2 BDCP Project Background

In August of 2000, a broad array of State and federal agencies, including the Department of Water Resources (DWR), adopted the CALFED Bay-Delta Program (CALFED) as a 30-year planning roadmap for restoring the Delta's ecology and improving water management. Prior to reaching this milestone, the CALFED agencies had conducted a lengthy, public, and multi-phased evaluation of potential alternatives in connection with preparation of a Program EIR/EIS. In a far-reaching attempt to develop possible alternatives to achieve the mission of the participating agencies, CALFED's scoping process had resulted in the identification of nearly 50 categories of potential actions and 100 preliminary solution alternatives. (CALFED Programmatic Record of Decision, Attachment 1, Aug. 28, 2000, pp. 124-125.) In order to ensure maximum sensitivity to the policies and positions of the CALFED agencies and stakeholder groups, the Program involved technical experts, Program staff teams, and the public to refine the initial set of potential alternatives to 31, and then down to 20. (CALFED Bay-Delta Program Phase I Final Report, Sep. 1996, pp. 7-8.) Further consolidation and refinement led to 10 alternatives, with their various components characterized at modest, moderate, and extensive levels of implementation. (*Id.*) The 10 alternatives were as follows:

- Extensive Demand Management, with the focus on diverting less water from the Delta;
- New Storage To Improve Delta flow, with the focus on changing the timing of flows to benefit all uses;
- Dual Delta Conveyance, with the focus on providing diversified storage and conveyance;
- Through-Delta Conveyance, with the focus on modifying the timing of diversions;
- Delta Channel Habitat and Conveyance, with the focus on improving Delta channel habitat and conveyance;
- Extensive Habitat Restoration With Storage, with the focus on concentrating and improving San Joaquin River flows;
- East-Side Foothills Conveyance, with the focus on isolating conveyance and improving San Joaquin River flows;
- Chain of Lakes Conveyance, with the focus on isolating conveyance within the Delta;
- West-Side Conveyance and River Restoration, with the focus on isolating conveyance and removing diversions from the Sacramento River; and
- East-Side Conveyance, with the focus on isolating conveyance around the Delta.

(CALFED Bay-Delta Program Progress Report, April 1996, p. 12.)

After additional technical analysis, and the evaluation of comments received from the public and various agencies, the CALFED collaboration narrowed and reclassified the 10 potential alternatives into three generalized approaches for conveying water across the Delta, which were carried forward into the alternatives that were studied in detail the Program EIR/EIS. (CALFED Programmatic Record of Decision, Attachment 1, Aug. 28, 2000, pp. 124-125; CALFED Final Programmatic EIR/EIS,

ED_000733_DD_NSF_00002784-00008

Response to Comments Vol. 1, July 2000, p. CR-25 - 26.).

With respect reducing Delta exports, the CALFED carefully considered and rejected the concept as unreasonable. In responding to comments concerning a potential reduced Delta exports alternative, the Program EIR/EIS stated as follows:

> Among these [potential alternatives developed in Phase I] were alternatives that emphasized water use efficiency and de-emphasized or eliminated actions to improve export water supplies and improve the adequacy of Bay-Delta water to meet Delta outflow needs. Based on input from public workshops, scoping meetings, the BDAC, and the CALFED agencies, CALFED concluded that these actions would not achieve the primary objective for water supply reliability . . . an alternative that would achieve water quality objectives by reducing or capping exports would prevent the CALFED Program from achieving its objectives regarding water supply reliability.

(*Id.*, p. CR-30.)

As reflected in the CALFED EIR/EIS Programmatic Record of Decision (CALFED ROD), the Preferred Program for water deliveries from the Delta was continued use of the existing Through Delta Conveyance with the following improvements (CALFED 2000a).[1]

- New screened intakes at Clifton Court and Tracy (South Delta intakes for SWP and CVP pumping plants).
- Joint point of diversion and construction of an intertie to allow for joint use of both pumping plants by SWP and CVP (estimated completion of construction in 2012). Increase pumping criteria to fully use the capacity of the SWP pumping plant.
- New permanent operable barrier at the Head of Old River on the San Joaquin River.
- New operable barriers and floodway improvements in the South Delta to improve quantities and quality of water available for South Delta agricultural diverters.
- Evaluation of a new screened diversion facility on the Sacramento River near Hood or Georgiana Slough and a channel to convey water between the Sacramento and Mokelumne rivers.
- New setback levees and dredged or improved channels and levees along the lower Mokelumne River between Interstate 5 and San Joaquin River.

The CALFED ROD also recommended continued evaluation of a screened diversion facility on the Sacramento River in coordination with modifications of Delta Cross Channel operations and a channel between the Sacramento and Mokelumne rivers to improve drinking water quality if the CALFED ROD recommendations for water quality programs did not improve drinking water quality.

Since 2000, further studies and information have become available that have caused reconsideration of the Through Delta Conveyance component of the CALFED ROD. Pelagic organisms, including delta smelt, have experienced a precipitous decline in recent years. Revised biological opinions for the coordinated operation of the CVP and SWP issued by U.S. Fish and Wildlife Service (USFWS 2005 and 2008) and National Marine Fisheries Service (NMFS 2005 and 2009) and related judicial decisions arising from federal court litigation have resulted in current and potential future substantial reductions in water supply availability for both the SWP and the CVP. Recent DWR evaluations indicate a higher degree of risk to Delta levees from earthquakes than was previously understood

[1] The California Supreme Court ultimately upheld the adequacy of the EIR component of the EIR/EIS for the CALFED ROD, rejecting an argument, among others, that the document should have included a "Reduced Export Alternative." (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1166.)

ED_000733_DD_NSF_00002784-00009

during preparation of the CALFED analysis. The higher potential for levee failure could result in substantial sea water intrusion in the Delta channels that would increase the risk of water supply availability for the SWP and CVP, as well as for Delta water users and the Delta ecosystem. There is also growing consensus among scientific experts suggesting that climate change over the next 50 to 100 years will cause considerable sea level rise, which would increase the risk of levee failure and degrade water quality due to salt water intrusion, thereby increasing the risks of a severe reduction or loss of water supply availability in and from the Delta.

Based upon these predictions and other information collected by State and federal agencies, then-Governor Arnold Schwarzenegger issued Executive Order 2-17-06 on September 28, 2006, initiating the Delta Vision process to develop "a durable vision for sustainable management of the Delta," and a letter to State Senators Perata, Machado and Steinberg, stated his intention to direct DWR to proceed with preparation of the BDCP environmental review and permitting activities, as described in Subsection X.4.3.5.

X.2.1 Background of the Bay Delta Conservation Plan Process

The BDCP is being developed through a collaboration of DWR and federal Bureau of Reclamation (Reclamation), and the project proponents including Metropolitan Water District of Southern California, Kern County Water Agency, Santa Clara Valley Water District, Zone 7 Water Agency (Alameda County Flood Control and Water Conservation District, Zone 7), San Luis and Delta-Mendota Water Authority, and Westlands Water District (BDCP 2010a). Although the BDCP process began prior to enactment of the 2009 Delta Reform Act, the BDCP's original objectives anticipated and will help to meet California's statutory coequal goals for Delta management: water supply reliability and ecosystem restoration through the actions listed below.

- New and/or redesigned water conveyance and operation of the State Water Project [SWP] and the federal Central Valley Project [CVP]
- Habitat restoration within the Delta, including restoring native fish, wildlife and plant habitats.
- Addressing other ecological stressors to covered aquatic species in the Delta.

The BDCP will result in the development of a Habitat Conservation Plan (HCP) under the provisions of federal ESA (section 10(a)(1)(B)) and a Natural Community Conservation Plan (NCCP) under the NCCPA (Fish and Game Code sections 2800 et seq.) and/or the California Endangered Species Act (CESA) (sections 2050 et seq.). If the BDCP is to be integrated into the Delta Stewardship Council's Delta Plan via the statutory process laid out in Water Code section 85320 from the 2009 Delta Reform Act, the BDCP must take the form of an NCCP under California law and an HCP under federal law. The HCP and NCCP processes are conducted by the project proponents proposing to undertake "covered activities." For the BDCP, the covered activities include continued operations and maintenance of existing, improved, and future facilities (including emergency preparedness or response actions) for the SWP and CVP, as well as other conservation measures included in the BDCP to improve Delta ecosystem.

The BDCP Steering Committee, established in order to provide a public forum where key policies and strategy issues could be publicly discussed, met over 120 times between 2006 and 2010. The BDCP Steering Committee established several working groups and technical teams to develop and evaluate alternative concepts. The BDCP Steering Committee identified an initial set of conservation measures and conducted a preliminary Effects Analysis in 2010 in accordance with the requirements for a HCP and an NCCP. Following completion of the preliminary Effects Analysis, the

ED_000733_DD_NSF_00002784-00010

State and federal agencies and the project proponents have continued to work with stakeholders and the public to prepare the draft HCP and NCCP for publication in 2012.

X.2.2 Background of the BDCP Environmental Impact Report/Environmental Impact Statement Process

An EIR/EIS is being prepared for the BDCP by DWR as the California Environmental Quality Act (CEQA) state lead agency, and Reclamation, USFWS, and NMFS as the National Environmental Policy Act (NEPA) federal co-lead agencies. DWR is participating as the CEQA lead agency to evaluate potential impacts of approval of BDCP with respect to improved SWP water conveyance infrastructure and other habitat conservation measures and to meet its CEQA obligations. This improved infrastructure and these measures are intended to help DWR and its water contractors meet their common goal of restoring and protecting the SWP water supply, water quality, and the health of the Delta ecosystem. USFWS and NMFS are participating as NEPA co-lead agencies to evaluate potential impacts of approval of the HCP, issuance of incidental take permits to DWR, and issuance of incidental take statements and biological opinions to Reclamation. Reclamation is participating as a NEPA co-lead agency to evaluate potential impacts of approval of BDCP with respect to actions to improve CVP water supply reliability while meeting its ESA and NEPA obligations. Although State and Federal water contractors are not among the Lead Agencies, they are "potential authorized entities" with respect to BDCP, and intend to use the certified Final EIR/EIS in making discretionary decisions associated with implementation of BDCP.

The CEQA and NEPA lead agencies initiated the EIR/EIS in 2008 with the publication of notices of the scoping process. More specifically, on January 24, 2008, USFWS and NMFS issued a Notice of Intent (NOI) under NEPA to prepare an EIS. The NOI was re-issued on April 15, 2008 to include Reclamation as a co-lead Federal agency, to update the status of the planning process, and to provide updated information related to scoping meetings (USFWS, NMFS, Reclamation 2008). On March 17, 2008, DWR issued a Notice of Preparation (NOP) under CEQA to prepare an EIR (DWR 2008). At the time of the publication of the NOP and NOI in 2008, the proposed description of the BDCP was in development and information related to the potential EIR/EIS alternatives was preliminary.

Following development of additional information to describe the proposed BDCP, the lead agencies published a revised NOP and a revised NOI on February 13, 2009 (DWR 2009a, and USFWS, NMFS, Reclamation 2009).The two documents described potential alternative concepts that would likely be considered in the EIR/EIS. The potential alternative concepts included potential elements for conservation measures to improve ecological productivity and sustainability in the Delta, including the creation and/or restoration of floodplains, tidal marsh, channel margin, and riparian habitats, and the reduction of threats to listed species by minimization of other stressors. Potential water conveyance concepts identified in the NOP and NOI were described as follows.

- **Dual Conveyance** - may include potential new points of diversion at various locations in the North Delta, facilities to move water from new points of diversion to the existing SWP and CVP pumping facilities in the South Delta, and continued use of the existing diversions [intakes] in the South Delta.
- **Fully Isolated Conveyance** - may include potential new points of diversion at various locations in the North Delta and facilities to move water from new points of diversion to the existing SWP and CVP pumping facilities in the South Delta.
- **Improved Through Delta Conveyance** - may include new temporary or permanent barriers to modify existing hydraulics or fish movement within the Delta, armoring of levees along Delta

ED_000733_DD_NSF_00002784-00011

waterways to ensure continued conveyance capacity, and/or actions to improve conveyance capacity in existing Delta waterways.

The 2009 NOP and NOI stated that the new points of diversion could be located along the Sacramento River between south Sacramento and Walnut Grove. The new conveyance facility could extend from the new points of diversion to the existing SWP and CVP pumping facilities in the South Delta and be located either to the west or east of the Sacramento River. The NOP and NOI also stated that the alternatives could include potential changes to SWP and CVP water diversion operations, including seasonal, daily, and real time diversion amounts, rates, and timing of water diverted through and/or around the Delta.

During the EIR/EIS scoping process, 2,950 separate comments were submitted in 305 letters, emails, and comments cards; and verbal comments from 178 individuals were transcribed. There were 1,051 comments related to the development of alternative concepts. Some comments described specific potential alternatives related to conveyance concepts, such as pipelines/tunnels or unlined and lined canals, as described in Section X.7 of this appendix. Many comments about alternative concepts were related to specific measures for protection and restoration of the Delta ecosystem and/or water supplies currently conveyed through the Delta. Some comments described methods to reduce reliance upon Delta water supplies, including water conservation, recycling, and use of other water supplies such as conjunctive use programs to ensure adequate groundwater recharge operations.

ED_000733_DD_NSF_00002784-00012

X.3 Development of EIR/EIS Screening and Consistency Criteria

The alternative development process for the EIR/EIS is based upon a number of legal considerations including:

- The legal requirements for adequate discussions of alternatives in an EIR and EIS, as set forth in CEQA and NEPA and the regulations and case law interpreting those statutory schemes; and
- The concepts of "potential feasibility" under CEQA and "reasonableness" under NEPA.

The results of a multi-level screening process reflecting these considerations were then compared to the requirements of the Sacramento-San Joaquin Delta Reform Act, and scoping comments related to the definition of potential EIR/EIS alternatives as identified by responsible and cooperating agencies under CEQA and NEPA, respectively.

Finally, the potential alternatives were evaluated to determine if the potential alternative would require changes in legal rights, including water rights, of entities that are not participants in the BDCP in a way that could not lawfully or practically be accomplished through the mechanism of an HCP/NCCP.

X.3.1 Identification of Potential Alternatives under CEQA and NEPA (First and Second Level Screening)

X.3.1.1 Process for Identification of Potential Alternatives under CEQA

Under CEQA, alternatives to be included in an EIR, in addition to the No Project Alternative, must be: 1) potentially feasible, 2) attain most of the basic objectives of the project,[2] and 3) avoid or substantially lessen any of the significant effects of the project. DWR, as the CEQA lead agency, may structure its alternative analysis around a reasonable definition of a fundamental underlying purpose, and need not study alternatives that cannot achieve that basic goal.

The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible.

According to CEQA case law, where the alternatives analyzed in the EIR allow for a wide range of choices with varying degrees of environmental impact, the document may support the ultimate approval not only of the fully developed alternatives, but also what might be called "hybrid" alternatives whose features and impacts occur within the analytical continuum between the "bookends" created by the least-impacting and most-impacting alternatives, respectively. With

[2] According to the California Supreme Court, CEQA lead agencies have the discretion to require that *all* action alternatives (i.e., alternatives other than No Project) carried forward in an EIR be able to satisfy a project's "underlying fundamental purpose." (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165.) The requirement that a CEQA alternative must meet "most" project objectives should be understood with this qualification in mind.

ED_000733_DD_NSF_00002784-00013

respect to such hybrid options, agency staff should prepare a written analysis, perhaps for inclusion in the Final EIR, demonstrating the adequacy of the draft document to support approval of the hybrid, citing substantial evidence as appropriate.

For BDCP, the CEQA project objectives, as they were characterized at the time, were identified in the February 13, 2009, NOP to achieve the following purposes:

- To be granted incidental take permits for the covered species that authorize take related to:
  - The operation of existing State Water Project (SWP) Delta facilities and construction and operation of facilities for the movement of water entering the Delta from the Sacramento Valley watershed to the existing SWP and federal Central Valley Project (CVP) pumping plants located in the southern Delta;
  - The implementation of any conservation actions that have the potential to result in take of species that are or may become listed under the federal ESA, pursuant to the ESA at section 10(a)(1)(B) and its implementing regulations and policies; and
  - The diversion and discharge of water by Mirant for power generation in the western Delta.[3]
- To improve the ecosystem of the Delta by:
  - Providing for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species;
  - Protecting, restoring, and enhancing certain aquatic, riparian, and associated terrestrial natural communities and ecosystems; and
  - Reducing the adverse effects to certain listed species of diverting water by relocating the intakes of the SWP and CVP.
- Restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of State and Federal law and the terms and conditions of water delivery contracts and other existing applicable agreements.

X.3.1.2 Process for Identification of Alternatives under NEPA

Both the Department of the Interior (DOI) (including Reclamation and USFWS) and the Department of Commerce (including NMFS)obtain NEPA guidance from a document issued by the Council on Environmental Quality (CEQ) entitled, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations. The CEQ guidance indicates that the "range of alternatives" (addressed in Question 1b and referred to in 40 CFR Part 1502.14) includes all *reasonable* alternatives, which must be rigorously explored and objectively evaluated. In addition, there must be a discussion of other alternatives, eliminated from detailed study, with a brief discussion of the reasons for eliminating them. The reasonable range of alternatives can also include alternatives not within the jurisdiction of the lead agencies. The CEQ guidance also states that what constitutes a reasonable range of alternatives may depend on the nature of a proposed federal action and the facts of a particular case.

When there are potentially a very large number of potential alternatives, a reasonable number of alternatives covering the full spectrum of reasonable alternatives can be identified for detailed analyses in the NEPA document. As noted earlier in discussing CEQA requirements, such an approach creates what in common practice are known as analytical "bookends," referring to a range

[3] Mirant is no longer seeking incidental take authorization for its existing power generation facility in the West Delta. This reference is therefore no longer operative.

ED_000733_DD_NSF_00002784-00014

of decision-making options (alternatives) consisting of a continuum of choices. Alternatives with comparatively low levels of environmental impact occupy one end of the continuum or range, while alternatives with comparatively higher levels of impact occupy the other end. Where specific policy options within the continuum consist of reasonable mid-points between the low bookend and the high bookend, agency decision-makers retain discretion to ultimately choose to approve an alternative anywhere within the continuum, provided that the information developed for the various bookends and the mid-points suffices to address the actual projected impacts of the precise option chosen. As with CEQA, the creation of "hybrid" options similar, if not identical, to fully developed alternatives is also permissible. As a practical matter based on experience, policy-making options with lower levels of environmental impact often are less effective than other, more impacting options in fully meeting a project purpose and need reflecting economic, rather than environmental, objectives. The ultimate choice of an alternative thus often reflects the need for agency decision-makers to balance competing environmental and economic objectives.

DOI has adopted additional regulations (43 CFR Section 46.415(b)) that state that alternatives to be included in an EIS, in addition to the No Action Alternative, must be: 1) reasonable, 2) meet the purpose and need of the proposed action, and 3) address one or more significant issues related to the proposed action. The statement of purpose and need, in this context, must be related to the underlying statutes that govern the federal action agencies' activities and duties with respect to the proposed action or project, with application of a "reasonableness" standard to the federal agencies' interpretation and application of the relevant statutes.

The DOI NEPA regulations further provide that "when there are potentially a very large number of alternatives then a reasonable number of *examples* covering the full spectrum of reasonable alternatives" will suffice. This latter principle appears to reflect two important practical points. First, the NEPA requirement to look at all reasonable alternatives should be interpreted in a practical manner so as to avoid the economically wasteful result of examining in detail (and at not inconsiderable expense) a whole series of alternatives that differ from each other in only comparatively minor respects. Second, a series of potential alternatives representing *examples* of potential policy-making options impliedly functions as a continuum of choices, which can be bounded by *bookends* representing comparatively lower and higher levels of environmental impact.

The DOI NEPA regulations also state that the lead agencies should also include any consensus-based alternatives consistent with the purpose and need of the proposed project that are proposed by participating persons, organizations, or communities who may be interested in or affected by the proposed project. Any consensus-based alternative must be consistent with the requirements of NEPA, the Council on Environmental Quality regulations, and all applicable statutory and regulatory provisions, as well as DOI written policies and guidance. Any consensus-based alternative, like any other reasonable alternative, must meet the purpose and need of the proposed project to be properly considered for detailed analysis in the EIR/EIS. The DOI NEPA regulations do not define the term "consensus-based alternative" but do state that consensus-based management incorporates direct community involvement in consideration of DOI activities subject to NEPA analyses, from initial scoping to implementation of the decision.

For BDCP, the NEPA project purpose and need were identified in the February 13, 2009, NOI as seeking to achieve the following purposes:

- Respond to the applications for incidental take permits for the covered species that authorize take related to:

ED_000733_DD_NSF_00002784-00015

  - The operation of existing SWP Delta facilities and construction and operation of facilities for the movement of water entering the Delta from the Sacramento Valley watershed to the existing SWP and CVP pumping plants located in the southern Delta;
  - The implementation of any conservation actions that have the potential to result in take of species that are or may become listed under the ESA, pursuant to the ESA at section 10(a)(1)(B) and its implementing regulations and policies; and
  - The diversion and discharge of water by Mirant for power generation in the western Delta.[4]
- Improve the ecosystem of the Delta by:
  - Providing for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species;
  - Protecting, restoring, and enhancing certain aquatic, riparian, and associated terrestrial natural communities and ecosystems; and
  - Reducing the adverse effects to certain listed species of diverting water by relocating the intakes of the SWP and CVP.
- Restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority.

X.3.1.3 First Level of Screening: Identification of Alternatives under CEQA and NEPA

The legal requirements of CEQA and NEPA were considered with the project objectives and purpose statement included in the February 13, 2009, NOP and NOI to develop the following First Level Screening Criteria.[5]

- Could the potential alternative provide for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species?
- Could the potential alternative protect, restore, and enhance certain aquatic, riparian, and associated terrestrial natural communities and ecosystems?
- Could the potential alternative reduce the adverse effects to certain listed species of diverting water by relocating the intakes of the SWP and CVP?
- Could the potential alternative restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority, and other existing applicable agreements?

[4] As noted earlier, Mirant is no longer seeking incidental take authorization for its existing power generation facility in the West Delta.

[5] These screening criteria reflect the project objectives and purpose and need as they read at the time the NOP and NOI are issued. Nothing in CEQA or NEPA requires the Lead Agencies to continue to use this precise language throughout the remainder of the environmental review process. In fact, such preliminary language has evolved since 2009, and the project objectives now reflect DWR's view that its "*fundamental purpose* in the proposing the BDCP is to make *physical and operational improvements* to the SWP system in the Delta necessary both to minimize adverse effects on listed species due to operations of existing SWP plants in the southern Delta and, consistent with its statutory and contractual obligations, to facilitate the delivery, at reasonable costs, of reliable water supplies to SWP contractors."

ED_000733_DD_NSF_00002784-00016

Under CEQA, the answers to *most* of these questions should be "Possibly" or "Unknown" for an alternative concept to continue to be considered in the Second Level Screening. (See the earlier reference to the CEQA requirement that a potentially feasible alternative must "feasibly attain *most* of the basic objectives of the project".) If, however, the answers to most of these questions are "No" or "Not Likely," the alternative concept may need not be considered in the Second Level Screening.

Under general NEPA principles, the answers to *all* of these questions should be "Possibly" or "Unknown" if an alternative is to continue to be considered in the Second Level Screening. (See the earlier reference to the DOI NEPA requirement that an alternative must meet a federal agency's stated purpose and need, not just "most" aspects of them.) However, because the EIR/EIS is a joint document and the project/action will be a joint state/federal undertaking, alternative concepts with "Possibly" or "Unknown" answers to *most* of these questions (the CEQA standard) is adequate to continue consideration in the Second Level Screening. If the answers to most of the questions are "Not Likely," the alternative concept would not be considered under subsequent levels of screening under either NEPA or CEQA.

X.3.1.4 Second Level of Screening: Identification of Alternatives under CEQA and NEPA

Under CEQA, alternative concepts that continued to the Second Level Screening would be evaluated with the following Second Level Screening Criterion.

- Would the potential alternative avoid or substantially lessen any of the expected significant environmental effects of the "proposed project"?

If the answer to the CEQA criterion question is "Possibly" or "Unknown," the alternative concept would be considered for the Third Level Screening.

Under NEPA, alternative concepts that continued to the Second Level Screening would be evaluated with the following Second Level Screening Criterion.

- Would the potential alternative "address one or more significant issues" related to the proposed action?

If the answer to the NEPA criterion question is "Possibly" or "Unknown," the alternative concept would be considered for the Third Level Screening. If the answers to both questions are "No" or "Not Likely," the alternative concept would not be considered under subsequent levels of screening.

As described for the First Level Screening, the alternative concept does not need to comply with both CEQA and NEPA requirements to be considered in the next step of screening. Meeting the requirements under one of the statutory schemes is enough for purposes of these initial levels of screening. If any NEPA-only alternatives and/or CEQA only-alternatives are found to exist at this stage, however, those alternatives must also meet their respective legal requirements in the subsequent analytical stages as well, because the final range of alternatives will be analyzed in full compliance with both CEQA and NEPA requirements.

X.3.2 Third Level Screening: Defining Potentially Feasible Alternatives under CEQA and Reasonable Alternatives under NEPA

Under CEQA, alternative concepts should be evaluated with a focus on issues of potential feasibility.

ED_000733_DD_NSF_00002784-00017

CEQA defines feasible as capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

Under NEPA, an EIS must rigorously explore and objectively evaluate all reasonable alternatives. Reasonable alternatives include those that are practical or feasible from the technical or economic standpoint and using common sense, rather than just desirability from the standpoint of the applicant.

Under both CEQA and NEPA, alternative concepts can be developed using economic considerations, social factors, legal infeasibility under species protection laws, and other laws and technical factors to inform the general concepts of feasibility under CEQA and reasonableness under NEPA.

Under CEQA, excessive cost as compared to other alternative concepts can be a basis for rejecting an alternative concept as being infeasible or impracticable. However, an alternative concept cannot be rejected simply because it would impede to some degree the attainment of project objectives, or would be more costly. In this context, the relevant question related is whether the additional costs are sufficiently severe to render it impractical to proceed with the project. Put another way, the question is whether the marginal costs of the alternative as compared to the cost of the proposed project are so great that a reasonably prudent project proponent would not proceed with the alternative. Under CEQA, an alternative concept also can be rejected due to excessive time needed for implementation.

Furthermore, "feasibility" under CEQA encompasses "desirability" from a policy standpoint, or in terms of the effectiveness in meeting project objectives, to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors supported by substantial evidence.

It is also possible for CEQA determinations regarding the potential feasibility of alternative concepts to be considered under NEPA to determine if an alternative would be practical or feasible from the technical or economic standpoint and using common sense. Although, in most instances, federal agencies do not reject alternatives under NEPA solely because they do not qualify as valid CEQA alternatives, such rejection may be appropriate for the BDCP, which, by its very nature, is a joint state-federal undertaking that cannot succeed unless state agencies can make alternatives work under state law and federal agencies can make the same alternatives work under federal law. Here, then, alternative concepts that, even with reasonable modifications and feasible mitigation, could not be approved under either state or federal laws may be rejected under both CEQA and NEPA. Notably, since DWR is the primary advocate of, and applicant for, the BDCP, an alternative that would not satisfy DWR's fundamental purpose (see footnote 5 above) or that would not be consistent with the California Legislature's co-equal goals for the Delta, as set forth in the Delta Reform Act, could not be a potentially feasible alternative under either CEQA or NEPA.

These considerations are reflected in the following Third Level Screening Criteria.

- Are the marginal costs of the potential alternative, as compared to the cost of the proposed project or action, so substantial that a reasonably prudent public agency would not proceed with the alternative?
- Are the marginal costs of the potential alternative, as compared to the cost of the proposed project or action, so substantial that it would be impractical to proceed with the alternative?
- Would the potential alternative take so long to implement, as compared with the proposed project or action, that it would not meet the project objectives or purpose within an acceptable time frame?

ED_000733_DD_NSF_00002784-00018

- Would the potential alternative require technology or physical components that are clearly technically infeasible based on currently available science and engineering criteria for the scope of the potential alternative?
- Would construction, operation, and/or maintenance of the potential alternative violate any federal or state statutes or regulations (other than sources of law that would be amended or eliminated as part of the alternative)?
- Would the potential alternative involve an outcome that is clearly undesirable from a policy standpoint in that the outcome could not reflect a reasonable balancing of relevant economic, environmental, social, and technological factors?

If the answers to all of these questions are "Not Likely" or "Unknown," the alternative concept would be considered in the EIR/EIS. If the answers to any of these questions are "LIKELY" or "Yes," the alternative concept would not be considered for detailed analysis in the EIR/EIS, unless its inclusion is contemplated by the Delta Reform Act (discussed below), or is necessary in light of reasonable requests by a public agency that has approval authority over some aspect of the project (e.g., a CEQA responsible agency or federal agency with permitting authority, such as the United States Army Corps of Engineers (USACE)) (also discussed below).

X.3.3 Finding of Consistency with Sacramento-San Joaquin Delta Reform Act

On November 12, 2009, Governor Schwarzenegger signed into law Senate Bill 7X 1 (SB7X 1),which included the Sacramento-San Joaquin Delta Reform Act of 2009 (Delta Reform Act) (Division 35 of Water Code, Commencing from section 85000).

The Delta Reform Act created a new agency, the Delta Stewardship Council (DSC), to develop and implement a long-term management plan for the Delta, known as the Delta Plan. The Delta Plan must further the coequal goals for the Delta as set forth in the 2009 legislation. These co-equal goals are "providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta Ecosystem." The Delta Reform Act provides that following completion of the BDCP, the BDCP shall be incorporated into the Delta Plan by operation of law if the DFG determines that the BDCP meets the requirements of Water Code sections 85320 and 85321, including that the BDCP:

- Complies with the requirements for preparation of an NCCP (Chapter 10 (commencing with section 2800) of Division 3 of the Fish and Game Code).
- Complies with CEQA (Division 13 [commencing with section 21000] of the Public Resources Code),[6] including a comprehensive review and analysis of all of the following:
    - A reasonable range of flow criteria, rates of diversion, and other operational criteria required to satisfy the criteria for approval of an NCCP (as provided in subdivision (a) of Section 2820 of the Fish and Game Code), and other operational requirements and flows necessary for recovering the Delta ecosystem and restoring fisheries under a reasonable range of hydrologic conditions, which will identify the remaining water available for export and other beneficial uses.
    - A reasonable range of Delta conveyance alternatives, including through-Delta, dual conveyance, and isolated conveyance alternatives and including further capacity and design options of a lined canal, an unlined canal, and pipelines.
    - The potential effects of climate change, possible sea level rise up to 55 inches, and possible

[6] Notably, in enacting the Delta Reform Act, the Legislature stated that its legislation "does not amend, or create any additional legal obligation or cause of action under" CEQA. (Water Code section 85322.)

ED_000733_DD_NSF_00002784-00019

changes in total precipitation and runoff patterns on the conveyance alternatives and habitat restoration activities considered in the EIR.

  - The potential effects on migratory fish and aquatic resources.
  - The potential effects on Sacramento River and San Joaquin River flood management.
  - The resilience and recovery of Delta conveyance alternatives in the event of catastrophic loss caused by earthquake or flood or other natural disaster.
  - The potential effects of each Delta conveyance alternative on Delta water quality.
- Has been approved as a HCP pursuant to the federal Endangered Species Act (16 U.S.C. Section 1531 et seq.).

These criteria must be addressed, and other factors must be present, if the BDCP is to be automatically incorporated into the Delta Plan by the DSC as contemplated by the Delta Reform Act. Although, as noted above, DFG is charged by statute with the responsibility for making initial determinations as to whether the BDCP meets these requirements, its decisions can be appealed to the DSC. Notably, the above-quoted statutory language, with its repeated references to the need for a "reasonable range" of such things as "flow criteria," "rates of diversion," "other operational criteria," and "conveyance alternatives" seems to anticipate the kind of "bookend" approach to formulating alternatives described earlier. The Legislature's apparent intention in providing a detailed roadmap for an alternatives analysis in the BDCP EIR was to ensure that State agency decision-makers ultimately had the benefit of a wide range of choices with varying levels of environmental impacts and tradeoffs. New conveyance options figure prominently among the alternatives to be considered. Nothing in the legislation, however, suggests any intention to modify or repudiate general CEQA case law principles governing the formulation of a range of alternatives or to impair State agencies' ultimate discretion to take final actions consistent with their underlying statutory functions and other legal commitments, except to the extent that the policy prescriptions in the Delta Reform Act (e.g., the need to pursue the State's "coequal goals") must be honored for incorporation into the Delta Plan.

Although the roadmap for CEQA alternatives laid out in the Delta Reform Act do not qualify as project objectives, these statutory considerations are nevertheless relevant to the choice of alternatives, in that DWR would like to avail itself of the statutory process for automatic inclusion of the BDCP in the Delta Plan. These considerations are therefore reflected in the following questions, which are to be applied to the range of alternative concepts that remain following the Third Screening Level.

- Does the range of alternatives provide a reasonable range of flow criteria?
- Does the range of alternatives provide a reasonable range of diversion rates?
- Does the range of alternatives provide a reasonable range of other operational criteria to satisfy the criteria of approval as a Natural Community Conservation Plan?
- Does the range of alternatives provide a reasonable range of hydrologic conditions?
- Does the range of alternatives include a Through Delta Conveyance alternative?
- Does the range of alternatives include a Dual Conveyance alternative?
- Does the range of alternatives include an Isolated Conveyance alternative?
- Does the range of alternatives include a Dual or Isolated Conveyance - Lined Canal alternative?
- Does the range of alternatives include a Dual or Isolated Conveyance - Unlined Canal alternative?

ED_000733_DD_NSF_00002784-00020

- Does the range of alternatives include a Pipeline/Tunnel Conveyance alternative?

If the answers to any of these questions are "No," then an additional alternative should be included or an alternative concept should be modified to support a "Yes" answer. A single alternative could meet several requirements. For example, a dual conveyance unlined canal alternative would be considered for a "Yes" answer for questions related to both Dual Conveyance and an unlined canal.

X.3.4 Finding of Consistency with Scoping Comments from Responsible and Cooperating Agencies Related to Range of Alternatives

The EIR/EIS will be used by "responsible agencies" under CEQA to provide environmental clearance for their discretionary approvals related to the BDCP and CEQA "trustee agencies" to assist with their commenting function. Responsible agencies are those that have a legal responsibility to approve some aspect or portion of the project, and will have to rely upon the EIR as a basis for preparation and issuance of findings (CEQA Guidelines section 15096). Trustee agencies are those that have jurisdiction over certain resources held in trust for the people of California but do not have legal authority over approving or implementation of the proposed project. The California Department of Fish and Game (DFG), California Department of Parks and Recreation, California State Water Resources Control Board, California Air Resources Control Board, California Department of Boating and Waterways, California Department of Transportation, California State Lands Commission, and San Francisco Bay Conservation and Development Commission are responsible or trustee agencies.

Under NEPA, the CEQ guidance defines a "cooperating agency" as any other agency than the lead agencies with discretionary authority over the proposed project or action, jurisdiction by law, or special expertise with respect to the environmental impacts expected from the proposed project or action (40 CFR Section 1508.5). In general, a federal lead agency shall "[u]se the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise to the maximum extent possible consistent with its responsibility as lead agency" (40CFR Section 1501.6). The U.S. Environmental Protection Agency (USEPA) and USACE are cooperating agencies with jurisdiction by law or special expertise.

The only scoping comments by CEQA responsible and trustee agencies that specifically addressed the range of alternatives were submitted by the State Water Resources Control Board and the Delta Stewardship Council. The following scoping comments were submitted by the State Water Resources Control Board in a May 30, 2008 scoping letter.

> *"...to achieve BDCP's project objectives to assure protection and restoration of fish and wildlife resources, the EIR/EIS should analyze a broad range of alternate water quality objectives and operational strategies, including reductions in exports, that may be more protective of fish and wildlife beneficial uses...the State Water Board requests analyses of a broad range of alternatives under the following scenarios: (1) potential interim changes to the Bay-Delta Plan; (2) long-term changes to the Bay-Delta Plan with new conveyance facilities; and (3) long-term changes to the Bay-Delta Plan without new conveyance facilities."*
>
> *"Specifically, the State Water Board requests analysis of a broad range of conveyance alternatives, flows (including changes to Delta outflow objectives), and diversions by the SWP and CVP (including reduced diversions or a cap on diversions) for providing open water habitat under the above scenarios."*

The State Water Resources Control Board addressed the range of alternatives in a May 15, 2009

ED_000733_DD_NSF_00002784-00021

scoping letter with the following scoping comments.

> *"A reduced diversion alternative should be lower than diversions allowed for in the current delta smelt biological opinion and soon-to-be released salmonid and green sturgeon biological opinions for the Long-Term CVP and SWP Operations, Criteria, and Plan. This reduced diversion alternative should be low enough to assure not only continued existence of the species, but also some level of rehabilitation for the estuary. To determine what this level should be, State Water Board staff suggests reviewing historic fisheries data and water export data to arrive at a low export level that is reflective of the quantity of water that could be diverted from the Delta with reasonable confidence of not causing significant or long term impacts to the estuary. Through environmental analysis of such an alternative and higher export alternatives, the State Water Board and other responsible agencies will have information on which to consider the various environmental tradeoffs related to export restrictions."*

> *"Combined with analyzing potential reductions in exports, an alternative for changes to Delta outflows (and potentially inflow requirements) should also be analyzed that reflects a more natural hydrograph. Current outflows and operations have tended to flatten the natural hydrograph and produce more static flow conditions in the Delta. Outflows and export regimes that support a more natural variable hydrograph should be analyzed, including both the naturally high outflow and naturally low outflow ends of the hydrograph for both the interim and long-term. One way to conduct this analysis would be to analyze the effects of providing various percentages of the unimpaired Delta inflow and outflow, and managing storage releases and exports to attempt to parallel this pattern."*

Under the Delta Reform Act, the Delta Stewardship Council (DSC) is characterized as a "responsible agency" for purposes of working with DWR in the development of the BDCP EIR/EIS. (California Water Code section 85320, subdivision (c).) In that capacity, the DSC sent two scoping letters to DWR, dated June 28, 2010, and November 15, 2010, respectively. These letters came long after the end of the formal scoping process, reflecting the fact that the DSC did not exist as a legal entity during the formal scoping period. In both letters, the DSC stated its view that the EIR/EIS alternatives should reflect the "co-equal goals" of the Delta Reform Act, as well as the policy of "[r]educing reliance on the Delta in meeting California's future water needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency." In the first of its two letters, the DSC also stated its view that the EIR "must include 'a comprehensive review and analysis of' seven specifically described items concerning flow and other operational criteria, *conveyance alternatives*, climate change, fish and aquatic resources, flood management, natural disasters, and Delta water quality." (Emphasis added.)

Scoping comments by cooperating agencies with jurisdiction by law or special expertise that specifically addressed the range of alternatives only were submitted by the USEPA. The following scoping comments were submitted by the USEPA in a May 14, 2008 scoping letter.

> *"... EPA believes that reduced inflow and reduced export scenarios are not just reasonable alternatives to evaluate, but represent a likely future for the Bay Delta basin that needs to be reflected in the EIS/EIR."*

In preparing the EIR/EIS range of alternatives, DWR as CEQA lead agency must carefully consider comments from CEQA responsible agencies as long as such comments are within the area of expertise of such agencies (California Public Resources Code, section 21104(c)), and the federal NEPA lead agencies, as noted earlier, must "[u]se the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise to the maximum extent possible consistent with its responsibility as lead agency" (40 CFR Section 1501.6). Although input from responsible, trustee, and cooperating agencies does not alter lead agencies' project objectives, fundamental purposes, or policy reasons for pursuing a proposed project or action, the input from these agencies are nevertheless are reflected in the following questions to be applied to the range of concepts that remain following the Third Screening Level and finding of consistency with the Delta

ED_000733_DD_NSF_00002784-00022

Reform Act.

- Does the range of alternatives include alternatives with a broad range of water quality objectives and operational strategies?
- Does the range of alternatives include an alternative with potential interim changes to the State Water Resources Control Board Bay-Delta Plan?
- Does the range of alternatives include an alternative with long-term changes to the State Water Resources Control Board Bay-Delta Plan with new conveyance facilities?
- Does the range of alternatives include an alternative with long-term changes to the State Water Resources Control Board Bay-Delta Plan without new conveyance facilities?
- Does the range of alternatives include an alternative with reduced diversions lower than diversions allowed for in the USFWS and NMFS biological opinions to assure continued existence of the species and some level of rehabilitation for the estuary?
- Does the range of alternatives include an alternative with Delta outflows, and potentially Delta inflows, that reflect a more natural hydrograph then current State Water Resources Control Board Bay-Delta Plan?
- Does the range of alternatives reflect the co-equal goals of the Delta Reform Act of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem?
- Does the range of alternatives include an alternative that would contribute to reducing reliance on the Delta in meeting California's future water needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency?

Out of deference to the State Water Resources Control Board (State Water Board), the DSC, and EPA, the Lead Agencies have determined that, if the answers to any of these questions are "No," an additional alternative should be included or an alternative concept should be modified to support a "Yes" answer. A single alternative could meet several requirements. For example, a dual conveyance alternative with operational criteria for Delta outflow and inflow patterns similar to a natural hydrograph would be considered for a "Yes" answer for questions related to new conveyance and operations that reflect a more natural hydrograph.

As a practical matter, alternatives responding to the requests from State Water Board, the DSC, and EPA will likely form low-impact "bookends," given the relatively greater weight given by those agencies to in-Delta environmental considerations than to the "coequal" California statutory objective of "providing a more reliable water supply for California." State Water Board specifically asked for an alternative involving "*reductions* in exports," with diversions "*lower* than . . . allowed for in the current delta smelt biological opinion and soon-to-be released salmonid and green sturgeon biological opinions for the Long-Term CVP and SWP Operations, Criteria, and Plan." EPA similarly asked for "reduced export scenarios." The DSC asked for an alternative that reflected the policy of reducing California's reliance on the Delta in connection with future water needs. At least arguably, the alternatives envisioned by the three agencies seemed unlikely to fully meet the purpose and need of the BDCP, and thus could be eliminated from further formal environmental analysis. Even so, Lead Agency staff opted to proceed with the three agencies' requests. Notably, in making its request, State Water Board specifically (though impliedly) invoked the "bookend" concept. According to that agency, "[t]hrough environmental analysis of such an alternative and higher export alternatives, the State Water Board and other responsible agencies will have information on which to consider the various environmental tradeoffs related to export restrictions." The Lead Agencies found this logic to be persuasive.

ED_000733_DD_NSF_00002784-00023

X.3.5 Consideration of Legal Rights of Entities that are not BDCP Participants

Some of the suggested BDCP alternative concepts that emerged through scoping and otherwise could affect or require changes to legal rights, including long-standing water rights, of entities that are not participants in the BDCP and whose legal rights and entitlements are beyond the regulatory authority and reach of DFG, which approves NCCPs under California law, and of both USFWS and NMFS, which approve HCPs under federal law. For example, several scoping comments suggested that the BDCP EIR/EIS should include alternatives that would achieve increased Delta inflow or outflow through mandatory reductions in existing water diversions occurring upstream in the Delta watershed from parties other than DWR and Reclamation. These proposed reductions would come from entities that are *not* seeking incidental take authorization as part of the BDCP process and that possess long-standing water rights or other entitlements that, as a legal matter, could not be infringed by DFG, USFWS, or NFMS through those agencies' actions in response either to an HCP/NCCP application filed by DWR or through "ESA section 7 consultation" with Reclamation. Since the potentially affected upstream parties other than DWR and Reclamation are not parties to the BDCP process, the approved BDCP cannot dictate terms to those agencies. Regardless of one's views about the potential wisdom of possible future efforts by the State Water Board, separate and apart from the BDCP process, to adjust the existing water rights of upstream interests, the BDCP process operates within a legal framework that does not give DFG, USWFS, or NMFS the authority to make such adjustments through the BDCP.

These considerations are reflected in the following question to be applied to the range of concepts that remain following the Third Screening Level and findings of consistency with the Delta Reform Act and scoping comments from responsible and cooperating agencies.

- Would the potential alternative result in the impairment of existing water rights in the Sacramento-San Joaquin Rivers watershed who are not applicants for incidental take authorization through the proposed Bay Delta Conservation Plan?

If the answers to this question are "Not Likely" or "Unknown," the alternative concept would be considered in the EIR/EIS. If the answers to this question are "LIKELY" or "Yes," the alternative concept would not be considered for detailed analysis in the EIR/EIS, unless its inclusion is required by the Delta Reform Act process for incorporation of the BDCP into the Delta Plan, or is necessary in light of reasonable requests by a public agency that has approval authority over some aspect of the project (e.g., a CEQA responsible agency or federal agency with permitting authority).

ED_000733_DD_NSF_00002784-00024

X.4 Alternative Conveyance Concepts Identified in Programs Prior to the BDCP Process

This section includes a brief history of water supply concepts that have been considered to convey water from the Sacramento River watershed to San Joaquin Valley (including Tulare Lake basin in southern San Joaquin Valley), San Francisco Bay area, central coastal areas (San Luis Obispo and Ventura counties), and southern California.

X.4.1 Historical Development of Existing CVP and SWP Conveyance Concepts

California water resources changed substantially during the first 100 years following the granting of statehood in 1850. The demand for irrigated crops increased in the late 1860s and 1870s following completion of the transcontinental railroad that enabled fruits and vegetables from California to be delivered to markets throughout the nation. In 1873, following a severe drought in the 1870s, Congress authorized the Alexander Commission to develop solutions for water supplies of the Sacramento and San Joaquin valleys. The report outlined a system of large-scale irrigation-water supply facilities and suggested that federal assistance would be required to accomplish these recommendations (DPW 1930).

In 1919, the U.S. Geological Survey completed the Marshall Plan, which recommended the transfer of water from northern California to meet urban and agricultural needs of central and southern California (CSIA 1919). The Marshall Plan recommended a series of storage reservoirs on the Sacramento River near the confluence with the McCloud and Pit rivers, with large canals along the west and east sides of the Sacramento and San Joaquin valleys; a storage reservoir on the San Joaquin River near Friant,with canals to along the east side of the San Joaquin Valley to deliver water to areas north and south of the San Joaquin River; and diversion of the Kern River to Los Angeles. A portion of the water from the Sacramento River would be conveyed through the Delta to lower San Joaquin River water rights holders in exchange for water diverted at Friant Dam to the eastern San Joaquin Valley, including the Kern River area.

During the 1920s, the State continued investigation of the Marshall Plan and other concepts to reduce salinity intrusion in the Delta and provide water to the San Joaquin Valley. Most of the alternatives included construction of reservoirs in northern California and conveyance through the Delta to San Francisco Bay area and San Joaquin Valley water users. Delta conveyance concepts included isolated canals or use of Delta channels with a Cross Delta Channel that would convey water from the Sacramento River near Walnut Grove to the San Joaquin River (DPW 1930). In 1930, the Division of Water Resources Bulletin No. 25outlined a statewide water plan, which was approved by the State legislature in 1941 as the State Water Plan.

Construction of the recommended facilities began in 1937 by the federal government as part of the CVP with the completion of Shasta Dam in 1944, followed by the completion of Friant Dam, and the Madera, Friant-Kern and Contra Costa canals between 1945 and 1949. In 1951, the Delta Cross Channel, Tracy Pumping Plant (now known as the Jones Pumping Plant), and Delta-Mendota Canal were completed to convey water through the Delta to users in the San Joaquin Valley. As these facilities were completed, however, it became apparent that California's rapid urban, agricultural,

ED_000733_DD_NSF_00002784-00025

and industrial growth would quickly increase demands for water and power to levels that exceeded the initial CVP system capacity. In response to this increase in projected demand, Reclamation expanded the CVP upstream storage facilities, as well as conveyance facilities, to serve users in the Sacramento Valley, San Francisco Bay area, and San Joaquin Valley. By the late 1980s, the CVP was the largest surface water storage and delivery system in California, with a geographic scope covering 35 of the state's 58 counties.

In 1947, the State began an investigation to meet additional water needs through development of the SWP. In 1957, DWR Bulletin No. 3 defined the need for new SWP facilities for flood control in northern California and for conveying water from the Sacramento Valley to water-short areas of California in the San Francisco Bay area, San Joaquin Valley, and central coast and southern California areas due to projected population and industrial growth and irrigation needs for approximately 25 percent of irrigated agricultural acreage in the United States in 1950 (DWR 1957a). The study identified a seasonal deficiency of 2,675,000 acre-feet of water in 1950 that had been met with groundwater pumping primarily from over-drafted aquifers. In 1960, California voters authorized the Burns-Porter Act to construct the initial SWP facilities, including Oroville Dam on the Feather River, San Luis Dam (to be jointly constructed and operated with the CVP), North and South Bay aqueducts, and the California Aqueduct. Most of these facilities were constructed before 1970.

Both the SWP and CVP facilities relied upon a Through Delta Conveyance strategy using Delta channels and the Delta Cross Channel facility to convey water from the Sacramento River to South Delta intakes that diverted water to the SWP and CVP pumping plants. Even before construction of the SWP and CVP pumping plants, however, the Delta was already characterized by high salinity, especially in late summer and fall months or during drought periods. Use of the Delta Cross Channel improved water quality in the central and South Delta during some periods by diverting Sacramento River water from its natural path towards San Francisco Bay into artificial paths that direct this fresh water into the lower quality flows of the Mokelumne and San Joaquin Rivers. Although both the State and federal agencies have continued to evaluate Delta conveyance concepts to improve Delta water quality for water users located in the Delta as well in areas of the San Francisco Bay area, in the meantime Delta water has been used continuously in export areas in the San Joaquin Valley, the central coast, and southern California.

X.4.2 Existing Delta Conveyance Concept

The current method for conveying water from the Sacramento River to the South Delta intakes of the SWP and CVP pumping plants is based solely upon through-delta conveyance. The Sacramento and San Joaquin rivers and Delta sloughs are effectively used as conveyance channels to convey water to the South Delta. Water from the Sacramento River flows along one of two paths to the SWP and CVP South Delta intakes. One method is based on Sacramento River water flowing towards the western Delta near the confluence with the San Joaquin River, and then being pulled in a reverse-flow manner along Old and Middle Rivers by the momentum created by the SWP and CVP pumping plants. Under this method, the reverse flows also convey saline water from Suisun Bay into the Delta towards the SWP and CVP South Delta intakes and decrease the ability for fish passage through the Delta. During periods of low-flow conditions along the Sacramento and San Joaquin rivers, Delta salinity increases and the ability to divert water by the SWP and CVP is restricted in order to protect Delta water quality.

The second Through Delta Conveyance method is based upon flows diverted through the Delta Cross

ED_000733_DD_NSF_00002784-00026

Channel located along the Sacramento River near Walnut Grove. Flows through the Delta Cross Channel are controlled with operable gates. When the gates are open, freshwater from the Sacramento River flows through the southern Mokelumne River system to the San Joaquin River and then is pulled in a reverse-flow manner along Middle River towards the SWP and CVP South Delta intakes. Although this method also results in a reverse flow along Middle River, the potential for drawing salt water in from Suisun Bay is less likely than under the first method. The Delta Cross Channel gates are closed during flood events to protect the interior Delta and during periods when juvenile salmon are migrating in the Mokelumne and Sacramento rivers corridors.

In December 1999, low flow conditions on the Sacramento River occurred at the same time as the emigration of juvenile Sacramento Basin salmon. The Delta Cross Channel gates were closed to protect the salmon and Delta salinity increased substantially (DWR 2007).

X.4.3 Delta Conveyance Concepts Considered Prior to the BDCP Process

Many of the studies that proposed the CVP and SWP facilities also identified the need for facilities to control Delta salinity to protect water quality of agricultural and municipal/industrial water supplies. This subsection describes the following concepts.

- Western Delta Salinity Control Barrier.
- Improved Through Delta Conveyance.
- Isolated Eastern Conveyance.
- Isolated Western Conveyance Using the Sacramento Deep Water Ship Channel.

This subsection also describes Governor Schwarzenegger's direction for sustainable management of the Delta and initiation of the BDCP process.

X.4.3.1 Western Delta Salinity Control Barrier

Western Delta salinity control facilities have been evaluated since the late 1940s, including:

- 1957 DWR Evaluation of Salinity Control Barriers
- 1960 DWR Evaluation of Salinity Control Facilities

1957 DWR Evaluation of Salinity Control Barriers

In 1957, DWR prepared Bulletin No. 60 in accordance with the Abshire-Kelly Salinity Control Barrier Act (DWR 1957b). This study investigated methods (i) to convey large quantities of water across the Delta without major losses to Suisun Bay and property damage to Delta property owners;(ii) to reduce salinity in the Delta; and (iii) to deliver water to the San Francisco Bay area. The study results indicated that freshwater could be maintained in the Delta by either of the following methods.

- Maintaining Delta outflows to dilute poor quality water from Suisun Bay. However, this method would require additional releases of water from upstream reservoirs and would reduce the amount of water available for water supplies to be used in other parts of California.
- Isolate poor quality water from Suisun Bay from high quality Delta water with a physical barrier.

The study evaluated three salinity barrier concepts: the Junction Point Barrier Plan, Biemond Plan, and Chipps Island Barrier Plan. The Junction Point Barrier Plan and the Biemond Plan were similar,

ED_000733_DD_NSF_00002784-00027

with barriers and fish passage facilities located in slightly different positions along the Sacramento River as described below.

- Operable barriers would be constructed across the Sacramento River and Steamboat Slough to prevent salinity intrusion into the Sacramento River and to increase the elevation of the Sacramento River so that the flow would be directed through a new Cross Delta Channel with a diversion structure near Isleton or through the existing CVP Delta Cross Channel with continued flow into the southern Mokelumne River system.
- Channels along the southern Mokelumne River system would be expanded to increase conveyance of freshwater from the Sacramento River to the San Joaquin River.
- A siphon would be constructed under the San Joaquin River to convey water from the Mokelumne River to Middle River for continued conveyance to the South Delta intakes of the SWP and CVP pumping plants.
- Major flood control levees would be constructed throughout the central Delta to maintain flood waters within the Delta, including a flood control structure on the San Joaquin River at Paradise Cut with a possible channel to divert flood waters to the South Delta intakes of the SWP and CVP pumping plants.
- The North Bay Aqueduct pumping plant and canal would be constructed to deliver water to the northern San Francisco Bay counties.
- The South Bay Aqueduct pumping plant and canal would be constructed to deliver water to the southern San Francisco Bay counties.

The Chipps Island Barrier Plan would include the following facilities to form a freshwater Delta.

- A 22,000-foot long barrier with ship locks would be constructed across the Sacramento River from a location near the City of Pittsburg to a location near Collinsville. The barrier would be designed to pass flood waters from the Delta and to withstand high tide and wave events from San Francisco Bay.
- Major flood control levees would be constructed throughout the Delta and Yolo Bypass to maintain flood waters within the Delta.
- Major flood control levees would be constructed along Suisun Bay due to increased tidal amplitude that would occur along the Contra Costa and Solano counties shorelines on the west side ofthe barrier.
- Methods would be developed to provide mixing within the Delta to dilute waste products from municipal and industrial wastewater treatment plants, high temperature flows from industrial plants in the Delta, accumulated salts from discharges in the Delta watershed, and salt water that would enter the Delta through the ship locks on the barrier.

The study indicated that there would be adverse impacts of these plans on anadromous fish; however, there could be benefits to other fish that could accommodate warmer waters. The study recommended continued evaluation of the Biemond Plan, including levee improvements to reduce flood risks in the Delta, and implementation of the North Bay Aqueduct.

1960 DWR Evaluation of Salinity Control Facilities

In 1960, DWR prepared the Preliminary Edition of Bulletin 76(DWR 1960), which evaluated the following plans.

- Chipps Island Barrier Project, as described above.
- Single Purpose Delta Water Project, similar to the Biemond Plan, with barriers on the Sacramento River near Walnut Grove, Steamboat Slough, San Joaquin River, Piper Slough,

ED_000733_DD_NSF_00002784-00028

Holland Cut, Old River at Connection Slough, and Head of Old River to maintain the freshwater within the central and South Delta. The Contra Costa Canal would be expanded to provide freshwater to the western Delta communities and industries.

- Typical Alternative Delta Water Project, same as Single Purpose Delta Water Project with additional levee improvements along Mokelumne and San Joaquin rivers to improve flood protection.
- Comprehensive Delta Water Project, same as Typical Alternative Delta Water Project with additional barriers along Middle River to improve freshwater flows in the central and western Delta).

The results of the study stated that:

> "The Chipps Island Barrier would be functionally feasible… However, the net benefits would be less than the project costs...Therefore, the project would not be economically justified...would probably cause disastrous reductions in the fisheries resources of the Delta...
>
> The Single Purpose Delta Water Project would be the least detrimental of all projects...
>
> Losses resulting from the Typical Alternative Delta Water Project and Comprehensive Delta Water Project would be slightly greater than with the Single Purpose Delta Water Project...
>
> The Single Purpose Delta Water Project and Typical Alternative Delta Water Project would be financially feasible.
>
> The Comprehensive Delta Water Project would not be completely feasible unless local tax revenues could be obtained to recover additional costs allocated to flood and seepage control.
>
> Recommendations...that the Single Purpose Delta Water Project be adopted as an integral feature of the State Water Resources Development System...the United States Corps of Engineers and Bureau of Reclamation be requested to investigate the extent of federal interest...that further planning for the Delta Water Project include consideration of joint financing and construction by federal, state, and local agencies to the extent that respective interests are involved."

These concepts were further evaluated in 1963 (IDC 1963) by the Coordination of Delta Planning Subcommittee of the Interagency Delta Committee in coordination with analysis of a "peripheral canal," as described in Subsection X.4.3.2. The results of this report stated:

> "The construction of a physical barrier [as described for Chipps Island Barrier in this and Preliminary Edition of Bulletin 76] and the creation of a fresh-water pool operated for water supply could effectively conserve water and provide local water supply. This approach, however, would limit future development of navigation in the two Central Valley deep water ports. In addition, the fisheries resources of the Delta area would be jeopardized. Water quality problems related to necessary waste discharge of industry and agriculture within the Delta area are not, as yet, entirely defined but in general would tend to the disadvantage of this plan...
>
> Control structure, channel enlargements and overland canals [as described in Single Purpose Delta Water Project, Typical Alternative Delta Water Project, and Comprehensive Delta Water Project] could provide water transfers across the Delta and meet the quantity and quality requirements of the local water user. While this plan would not interfere with deep draft navigation, there would be restrictions of recreational navigation movements. The influence of the export pumps presents a serious problem to young fish, eggs, and fry. Additional channel closures would be required to solve the San Joaquin flow reversal problem. This alternative would be the least expensive solution."

The analysis recommended additional study of a peripheral canal.

ED_000733_DD_NSF_00002784-00029

X.4.3.2 Improved Through Delta Conveyance

DWR and other agencies also evaluated methods to improve Delta water quality and to maintain Delta water supply availability with the continued use of a Through-Delta Conveyance, including:

- 1995 - 2000 and 2000 – 2008: CALFED Evaluations of Through Delta Conveyance Improvements
- 1960 - Present : Various DWR Evaluations of South Delta and Western Delta Salinity Control Barriers
- 1960 DWR Evaluation of Separate Corridors Conveyance
- 2007 Metropolitan Water District of Southern California Eco-Crescent/Middle River Corridor Conveyance
- 2007 - 2009 Delta Corridors Conveyance and Fish Passage
- 1960 Through Delta Conveyance improvements that included separated South Delta water supply corridors, as suggested in the Preliminary Edition of Bulletin 76 in the Typical Alternative Delta Water Project.

1995 - 2000/2000 - 2008 CALFED Evaluations of Through Delta Conveyance Improvements

Between 1995 and 2000, CALFED considered methods to preserve both the fish benefits of closing the Delta Cross Channel gates and the water quality benefits of diverting Sacramento River water into the northern interior Delta, particularly during low-flow periods. One of the options considered the possibility of a single channel, originating at a variety of locations, or the possibility of using several smaller channels. Various combinations of fish screens at the Delta Cross Channel and the new channel(s) were evaluated by CALFED. As described in Subsection X.2, the CALFED ROD recommended continued use of the Through Delta Conveyance with improved fish screens at the SWP and CVP South Delta intakes, changes in operations of the SWP and CVP pumping plants and construction of an intertie between the facilities, and operable barriers along the San Joaquin River system to improve quantity and quality of Delta water.

Since 2000, numerous studies have investigated various approaches to improve the existingsystem for conveying water through the Delta. DWR has evaluated numerous concepts, including (i) the Franks Tract Project (described below),which would reduce tidal mixing of waters from the western Delta into the central Delta and the water supply corridor, (ii) improvements to the Through Delta Facility recommended by CALFED ROD to increase transfer of water from the Sacramento River to the central Delta,(iii) increasing the western outflow of the San Joaquin River, (iv) reoperating the Delta Cross Channel gates, and (v) isolating a freshwater water supply corridor (described below) along Old and Middle rivers. These concepts were evaluated to be independently implemented. Several of the concepts, such as reoperating the Delta Cross Channel, also have been evaluated in coordination with several other concepts listed above.

1960 to Present DWR/CALFED Evaluations of South Delta and Western Delta Salinity Control Barriers

Between 1960 and 2000, DWR focused on evaluation of South Delta barriers to improve water supply and flood management programs. In the 1990s and 2000s, DWR installed temporary barriers at the Head of Old River on the San Joaquin River, Middle River near Victoria Canal, Grant Line Canal near Old River, and Old River near the Delta Mendota Canal Barrier. These barriers were installed to improve water elevations, water circulation, and fisheries habitat. The use of permanent gates was

ED_000733_DD_NSF_00002784-00030

recommended in the DWR South Delta Improvements Program. However, installation of permanent barriers in the South Delta was suspended following publication of the NMFS 2009 Biological Opinion (NMFS 2009).

The CALFED Bay-Delta Authorization Act of 2004 (Public Law 108-361, Section 103) authorized the Secretary of the Interior to prepare a feasibility study of actions at Franks Tract to improve water quality in the Delta. Reclamation and DWR are conducting feasibility studies and participating in the preparation of an EIR/EIS. Under the Franks Tract Project, Reclamation and DWR are evaluating construction of operable gates to control the flow of water in the western Delta at Threemile Slough and/or West False River to limit the entry of certain fish species of concern and higher salinity water into Franks Tract. In addition to improving water quality, the gates would limit migration of fish species of concern into the central and South Delta. By protecting fish resources, this project also would improve operational reliability of the SWP and CVP because South Delta diversion restrictions could be less frequent.

The Franks Tract project is currently delayed for reasons described in DWR's website on the project. (See water.ca.gov/frankstract; accessed 021312). The "Separate Corridors" concept identified through the BDCP process, however, also would include an operable barrier at Threemile Slough, as would the Franks Tract Project. The Separate Corridors concept would include Franks Tract as part of the fish passage corridor to allow fish to move from Old River through Franks Tract to the San Joaquin River near Jersey Island. The Separate Corridors concept would isolate Franks Tract for fish passage, with operable barriers along the San Joaquin River at Franks Tract and Fisherman's Cut to prevent fish from moving towards Middle River and the water supply corridor

2007 Metropolitan Water District of Southern California Concept for Separated Delta Corridor for Water Supply Conveyance

In 2007, a concept named "Eco-Crescent/Middle River Corridor Conveyance" was developed (MWD 2007). The concept was to develop an area within the central and South Delta that would improve habitat for delta smelt and other native fishes with variable salinity and turbidity to mimic historic estuarine conditions. A separate water supply corridor would convey water from the Delta Cross Channel through the lower Mokelumne River system to a siphon under the San Joaquin River for continued conveyance in an isolated Middle River corridor. The Middle River corridor would be isolated from Old and San Joaquin rivers by barriers along Middle River at Connection Slough, Railroad Cut, and Woodward Canal.

The separated Delta corridors were similar to those recommended in Preliminary Edition of Bulletin 76 Comprehensive Delta Water Project (DWR 1960), as described above in Subsection X.4.3.1.

2007 - 2009 South Delta Water Agency Evaluation of Separated Delta Corridors for Water Supply Conveyance and Fish Passage

In 2007, the South Delta Water Agency developed the Delta Corridors Plan (SDWA 2007). The Delta Corridors Plan provided an estuarine fish passage corridor along Old River from the Head of Old River into the Delta, and a water supply corridor that extended from the Delta Cross Channel and Georgiana Slough confluences along the Sacramento River through the lower Mokelumne River and along Middle River and Victoria Canal to the SWP and CVP South Delta intakes. Fish screens would be installed at Delta Cross Channel and Georgiana Slough along the Sacramento River. Fish-handling facilities would be improved at the SWP and CVP intakes. Portions of Middle River would be dredged

ED_000733_DD_NSF_00002784-00031

to improve capacity. Portions of Old River near the Delta Mendota Canal intake and along Victoria Canal would be divided to separate the fish passage and water supply corridors. Barriers would be constructed at the Head of Old River near the San Joaquin River, Old River near the Delta Mendota Canal approach channel, Old River at Grant Line Canal, Old River at Victoria Canal, Old River at West Canal, Woodward Canal at Middle River, Railroad Cut at Middle River, Connection Slough at Middle River, Middle River at Victoria Canal, and Franks Tract at San Joaquin River. Water would be siphoned from Victoria Canal under Old River and Coney Island into West Canal. Water would be pumped from north to south at the Head of Old River Barrier and at the barrier on Middle River at Victoria Canal. This concept was presented to the Delta Vision Blue Ribbon Task Force and the BDCP Steering Committee.

The Delta Corridors Plan was revised in 2009 to provide fisheries protection in the Mokelumne River system upstream of Delta Cross Channel (SDWA 2009). Under existing conditions, fish passage in the Mokelumne River is from the upper Mokelumne River through Snodgrass Slough into the lower Mokelumne River and into the San Joaquin River. However, use of the lower Mokelumne River for a water supply corridor could increase entrapment of fish in the SWP and CVP intakes. Therefore, under the 2009 version of the Delta Corridors Plan, Meadows Slough would be connected through a new channel to the Sacramento River and operable barriers would be constructed to provide a fish passage corridor from the upper Mokelumne River into the Sacramento River via Lost and Meadows sloughs.

X.4.3.3 Isolated Eastern Conveyance

DWR and other agencies also evaluated Isolated Eastern Conveyance concepts for many years, including:

- 1963 Interagency Delta Committee Evaluation of a Peripheral Canal
- 1965 - 1974 DWR Evaluations of a Peripheral Canal
- 1995 - 2000 CALFED Evaluations of an Isolated Eastern Facility

1963 Interagency Delta Committee Evaluation of a Peripheral Canal

In the early 1960s, an Interagency Delta Committee was convened to coordinate water resources planning for the SWP, CVP, and local agencies. In a 1963 report, the Interagency Delta Committee evaluated alternatives to protect Delta water quality and water supplies, maintain flood protection, control drainage and seepage in the Delta, maintain Delta navigation, maintain Delta recreation, protect fish and wildlife, and maintain vehicular transportation (IDC 1963). The study considered hydraulic and physical barriers and Delta waterway control and a peripheral canal. The peripheral canal would be constructed along the eastern edge of the Delta from Walnut Grove on the Sacramento River to Stockton and continue to Italian Slough near the Clifton Court Tract. The report concluded that the peripheral canal allowed for balanced growth of Delta-oriented activities and recommended that further study be completed.

1965 - 1974 DWR Evaluations of a Peripheral Canal

A DWR study in 1965 defined the peripheral canal alignment along the eastern edge of the Delta as starting from Hood on the Sacramento River with siphons beneath the Mokelumne, San Joaquin, and Old Rivers and connecting canals to the SWP and CVP pumping plants (DWR 1965). In the 1970s, construction of Interstate 5 involved some initial excavation ofborrow pits along the potential

ED_000733_DD_NSF_00002784-00032

Peripheral Canal alignment (DWR 1970).

The 1974 Draft EIR for the Peripheral Canal Project described an isolated facility to convey freshwater from the Sacramento River to the SWP and CVP pumping plants with up to 12 release facilities to distribute water from the canal into Delta channels (DWR 1974). The canal was planned to initially operate by gravity with the addition of a pumping plant within 10 years following construction. Other purposes of the project were to convey floodflows from Morrison Creek in Sacramento County and Middle River in San Joaquin County into the Peripheral Canal and to incorporate recreational facilities into the project. A 1982 statewide ballot referendum on construction of the Peripheral Canal was defeated.

1995 - 2000 CALFED Evaluations of an Isolated Facility

The CALFED Phase II Alternative Descriptions included an Isolated Facility with a canal that extended from Hood or Freeport to Clifton Court Forebay in conjunction with Through Delta improvements (CALFED 1997a). The study described an isolated facility that ranged in size from 5,000 to 15,000 cubic feet per second (cfs). The CALFED Phase II Alternative Descriptions also included Isolated Facility alignments between a storage facility on Holland Tract and Clifton Court Forebay along Old River, and between Lower Roberts Island and Upper Roberts Island on the San Joaquin River and Clifton Court Forebay. The isolated conveyance facility was to be operated in coordination with a Through Delta Facility.

The 2000 CALFED Record of Decision (CALFED 2000) recommended a Through Delta approach with new screened intakes as the SWP and CVP South Delta intakes; new conveyance to intertie the SWP and CVP pumping plants and allow for joint operations; new operable barrier at the Head of Old River and other locations in the South Delta to improve water quality, protect fish, and protect water elevations for Delta water diverters; and changes in SWP pumping plant operations to fully use the existing capacity of the facilities. The Preferred Program also included recommendations for further evaluation of new screens on facilities in the Sacramento River, levee improvements on the Mokelumne and San Joaquin rivers, and methods to provide public health protection for drinking water. The Record of Decision stated that:

> "Although the CALFED Agencies did not rule out the possibility of constructing an isolated conveyance facility in the future, they were mindful that, even if approved immediately following the ROD, such a facility could not be studied, approved, funded, and constructed within Stage 1of implementation.
>
> In light of the technical and feasibility issues discussed above, the CALFED Agencies propose to begin with through-Delta modifications. As part of the Preferred Program Alternative, the Program also would :
>
> • Continue to investigate storage opportunities in the context of the broader water management strategy.
>
> • Evaluate and implement storage projects, predicated on complying with all environmental review and permitting requirements. These efforts will be coordinated under CALFED's Integrated Storage Investigation.
>
> • Implement the Stage 1 of the Ecosystem Restoration, Water Quality, Water Use Efficiency, Water Transfers, Watershed, and Levee System Integrity Program Plans.
>
> • Monitor the results of these actions to determine whether an isolated conveyance facility as part of a dual-Delta conveyance configuration is necessary to meet the Program objectives.
>
> If the Program purposes cannot be fully achieved with the actions proposed in the Preferred

ED_000733_DD_NSF_00002784-00033

Program Alternative, additional actions including an isolated conveyance facility will need to be considered in the future. Until additional information is available to determine whether water quality objectives and fish recovery goals can be met and which, if any, additional actions will be necessary to achieve the Program goals and objectives, the Preferred Program Alternative is the best alternative to achieve overall project purposes and provide significant beneficial improvements over the conditions anticipated under the No Action Alternative, while establishing a process for obtaining this additional information. Moreover, the way the alternatives are structured, going forward with the Preferred Program Alternative does not preclude the Program's ability to undertake additional conveyance actions in the future, subject to appropriate environmental review."

X.4.3.4 Isolated Western Conveyance Using the Sacramento Deep Water Ship Channel

State agencies evaluated Isolated Western Conveyance in several evaluations, including:

- 1977 Association of State Water Project Agencies Evaluation Montezuma Hills Canal
- 1995 - 2000 CALFED Evaluation of an Isolated Western Facility Using the Sacramento Deep Water Ship Channel
- 2001 DWR Evaluation of Using the Sacramento Deep Water Ship Channel for Fish Passage
- 2009 DWR/DFG evaluation in response to Pubic Scoping comments

1977 Association of State Water Project Agencies Evaluation Montezuma Hills Canal

Isolated Western Conveyance concepts have been considered since the 1970s. A February 1977 report prepared by the Association of State Water Project Agencies describes a potential Montezuma Hills Canal that could be constructed with an intake along the Sacramento River near Rio Vista and siphons under Sacramento River, Sherman Island, and the San Joaquin River to a canal that extends to Clifton Court Forebay (ASWPA 1976). The canal and siphon would cross islands with peat soils that had been previously inundated, including Brannon and Andrus islands and Webb, Frank, and Bethel tracts. The report stated that, because the islands were located below sea level and the soils were not ideal to support a canal structure, the canal embankments would need to be both very high to protect the canal if the island became inundated and very wide to provide foundational support to the canal levees. In addition, the report stated that, although this concept would eliminate reverse-flow impacts in the central and south Delta, it would not be possible to supply freshwater into the extreme eastern Delta to maintain water quality for beneficial uses.

1995 - 2000 CALFED Evaluation of an Isolated Western Facility Using the Sacramento Deep Water Ship Channel

In 1997, CALFED identified an isolated conveyance alternative ("Alternative 3G") with an intake along the Sacramento River near West Sacramento to divert water into the Sacramento Deep Water Ship Channel(CALFED 1997a). A ship lock would be constructed near the western boundary of the Sacramento Deep Water Ship Channel. An intake would be located along the Sacramento Deep Water Ship Channel levee upstream of the ship lock to divert water into a conveyance facility that includes siphons under Sacramento River, Sherman Island, and the San Joaquin River to a canal that extends to Clifton Court Forebay. The isolated conveyance facility was to be operated in coordination with the Through Delta Facility (or Dual Conveyance). This report also identified seven other conveyance alternatives that included isolated facilities, as well as eight conveyance alternatives that relied upon

ED_000733_DD_NSF_00002784-00034

Through Delta concepts. The alternative concepts were evaluated in an "alternative narrowing process" in July 1997 (CALFED 1997b). The results of this narrowing process stated that Alternative 3G had "no major technical problems" and only "slight differences" in environmental impacts as compared to other isolated conveyance concepts evaluated. However, because the preliminary cost estimates were two to three times greater than an isolated eastern canal, the recommendation was to eliminate Alternative 3G from further consideration. The results were reviewed with the CALFED Policy Group and the Bay Delta Advisory Committee. In October 1997, a summary of that review process stated:

> "Alternative 3G - Ship Channel. More detailed study indicated that the diversion point near Sacramento did not provide the fishery benefits originally anticipated when the alternative was formulated. Alternative 3B [Isolated Canal with Through Delta conveyance] was judged to provide the same conveyance function at substantially lower cost."

2001 DWR Evaluation Using the Sacramento Deep Water Ship Channel for Fish Passage

In 2001, CALFED and DWR initiated a study of the use of the Sacramento Deep Water Ship Channel to provide an alternative for fish passage as compared to the mainstem of the Sacramento River (DWR 2001). The study was to evaluate conditions needed to move upstream migrating fish of concern into and through the existing boat locks near the Port of West Sacramento. The species of concern included delta smelt, Sacramento splittail, Chinook salmon, steelhead, American shad, striped bass, and white sturgeon. Data was collected through 2005.

X.4.3.5 2007 Governor Schwarzenegger's Direction for Sustainable Management of the Delta

As described in Subsection X.2, then-Governor Arnold Schwarzenegger issued Executive Order 2-17-06 on September 28, 2006, initiating the Delta Vision process to develop “a durable vision for sustainable management of the Delta.” In December 2007, the Delta Vision process resulted in a Blue Ribbon Task Force of experts issuing to a committee of State agency directors a final set of recommendations to chart a new course for the Delta.

One of the recommendations of the Delta Vision process is that the State should consider a different approach to water conveyance from the Sacramento River to areas south of the Delta than the Through Delta Conveyance that the State had approved as part of the CALFED ROD but not fully implemented. On February 28, 2008, Governor Schwarzenegger, in a letter to State Senators Perata, Machado and Steinberg, stated his intention to direct DWR to proceed with preparation of the BDCP environmental review and permitting activities, including the evaluation of at least four alternative Delta conveyance strategies developed in coordination with the BDCP efforts to better protect at-risk fish species. Alternatives were to be developed in light of broad habitat conservation principles, recognizing at the same time, as suggested by the Delta Vision Task Force, the importance of water supply reliability and other issues such as seismic safety, flood durability, ecosystem health and resilience, water quality, schedule considerations, and the costsof various options. The four conveyance strategies included (i) continued use of existing Through Delta Conveyance, (ii) Dual Conveyance (including an Isolated Conveyance facility to convey water from the Sacramento River to the South Delta in conjunction with continued use of existing Through Delta Conveyance), (iii) Isolated Conveyance (to convey water from the Sacramento River to the South Delta without continued use of the Through Delta Conveyance), and (iv) use of an improved Through Delta Conveyance (new or enhanced facilities would include improvements to reduce risk to water

ED_000733_DD_NSF_00002784-00035

supplies of future levee failures).

ED_000733_DD_NSF_00002784-00036

X.5 Delta Conveyance Concepts Identified in BDCP Steering Committee Process: 2007 - 2010

Starting in 2007, the BDCP Steering Committee developed and evaluated a wide range of concepts related to conveyance and other conservation measures. In 2007, Conservation Strategy Options were identified and evaluated in a preliminary manner. Based upon the results of this preliminary analysis, the BDCP Steering Committee process focused on development of a range of long-term operational criteria for a Dual Conveyance option between 2008 and 2010.

X.5.3.1 Development of Conveyance Concepts by the Conservation Strategy Workgroup

In 2007, the BDCP Steering Committee formed the Conservation Strategy Workgroup, which identified potential Conservation Strategy Alternatives that included conveyance concepts (BDCP 2007b, BDCP 2007c, BDCP 2007d, BDCP 2007e). The following conveyance concepts were identified through this process.

- Existing Through Delta Conveyance (with modified operations) (*Conservation Strategy Alternatives 1, 2, 3, 6, and 7*)
- Isolated Conveyance to convey water from the Sacramento River to the Lower San Joaquin River and continued use of existing South Delta intakes for the SWP and CVP pumping plants (*Conservation Strategy Alternative 4*)
- Isolated Conveyance to convey water from the Sacramento River to the existing SWP and CVP pumping plants (*Conservation Strategy Alternatives 5 and 9*)
- Isolated Conveyance to convey water from the Sacramento River to the existing SWP and CVP pumping plants and to the Lower San Joaquin River with continued use of existing South Delta intakes (*Conservation Strategy Alternative 8*)
- Through Delta Conveyance with separate a water supply corridor along Middle River and a fish passage corridor along Old River (*Conservation Strategy Alternative 10*)

Following several months of evaluation, the BDCP Steering Committee reduced the number of potential Conservation Strategy Alternatives to the following four Conservation Strategy Options (BDCP 2007a).

- Option 1 - Existing Through Delta Conveyance with Opportunistic Delta Operations and Potential New Storage
- Option 2 - Through Delta Conveyance with San Joaquin River Isolation (Separate Corridors for Water Supply and Fish Passage)
- Option 3 - Dual Conveyance: Isolated Conveyance between Sacramento River and SWP and CVP Pumping Plants and Through Delta Conveyance with San Joaquin River Isolation (as in Option 2)
- Option 4 - Isolated Conveyance between Sacramento River and SWP and CVP Pumping Plants

The options were evaluated to determine how well they fared with respect to the following: overall biological benefits primarily for estuarine species dependent on the Delta; ability to meet BDCP water supply goals with practicable implementation methods; comparative costs for initial and long-term costs; ability to be flexible, durable, and sustainable; and ability to minimize unintended

ED_000733_DD_NSF_00002784-00037

adverse effects on the human environment and other biological resources. The results of the report are summarized below.

- **Biological Criteria:** Option 4 was determined to provide the greatest benefits among all options to estuarine species, with the most benefits for delta smelt, longfin smelt, and splittail; and benefits for salmonids. Option 3 was determined to provide the next greatest benefits to the estuarine fish and salmonids. Option 2 had fewer benefits for estuarine species than Option 3. Option 1 was determined to provide the lowest benefits of all options for delta smelt, longfin smelt, San Joaquin River salmonids and white sturgeon, but was similar to all other options for Sacramento River salmonids, green sturgeon, and splittail.
- **Planning Criteria:** Option 4 was determined to be slightly more cost effective and practicable than Option 3, although Option 3 provided greater flexibility to meet water supply goals. Option 1was determined to be limited in the ability to meet habitat conservation and water supply goals and could result in poorDelta water quality.
- **Flexibility/Durability/Sustainability Criteria:** Option 4 was determined to have the most flexibility and adaptability to adjust conservation approaches both for habitat restoration and flow management with the least input of future resources. Option 3 was determined to have more limited adaptability for restoration of natural hydrology and physical habitat restoration. Option 2 was determined to be less durable and less flexible related to adaptive management than Options 3 and 4 and more durable than Option 1. Option 1 was determined to be the most reversible but was ranked the lowest for this criterion because of a high risk of loss of habitat and water supply from catastrophic events and sea level rise, and low flexibility for adaptive management.
- **Other Resource Impacts Criteria:** Option 1 was determined to be the most favorable for avoiding direct impacts on other biological and human resources because of the minimal amount of new infrastructure. Option 3 was determined to have the highest impact than other options on the human and biological environment due to the more extensive new infrastructure.

X.5.3.2 Identification of Conveyance Concept for Further Analysis by BDCP Steering Committee

In September and October 2007, the BDCP Steering Committee considered the results of the "Conservation Strategy Options Evaluation Report" during the development of the Points of Agreement to define the subsequent methods for completion of the BDCP (BDCP 2007f). The "Draft Bay Delta Conservation Plan Framework (October 29, 2007)" (BDCP 2007g) stated that, in order to improve biological productivity, improve water quality, and reduce entrainment, the most promising long-term solution would involve an isolated conveyance facility. The draft framework documentation stated that the long-term approach to water conveyance would include (i) intake facilities with positive barrier fish screens on the Sacramento River near Hood or Clarksburg; (ii) a peripheral aqueduct and associated appurtenant facilities (e.g., pumping plant and siphons) that would (a) traverse from the new intake facilities on the Sacramento River southerly along an alignment in the east Delta parallel to, and west of, Interstate 5,(b) terminate south of Clifton Court Forebay, and (c) tie into the existing SWP and CVP pumping and conveyance facilities; (iii) improved through-Delta conveyance, potentially using channel improvements, operable barriers, and levee improvements in the areas around Old and Middle Rivers to reduce entrainment and improve habitat functions; and (iv) continued use of the existing CVP Jones Pumping Plant and SWP Banks Pumping Plant and associated project facilities in the South Delta.

The final Points of Agreement (BDCP 2007f) stated that the Steering Committee agrees that the most promising approach involves a conveyance system with new points of diversion: "The main new

ED_000733_DD_NSF_00002784-00038

physical feature of this conveyance system includes the construction and operation of a new point (or points) of diversion in the North Delta on the Sacramento River and an isolated conveyance facility around the Delta. Modifications to existing South Delta facilities to reduce entrainment and otherwise improve the State Water Project's (SWP) and Central Valley Project's (CVP) ability to convey water through the Delta while contributing to near and long-term conservation and water supply goals will also be evaluated. This approach may provide enhanced operational flexibility and greater opportunities for habitat improvements and fishery protection."

ED_000733_DD_NSF_00002784-00039

X.6 Alternative Conveyance Concepts Identified in EIR/EIS Scoping Comments

As described in previous sections, the EIR/EIS scoping process occurred in 2008 and 2009 and resulted in 1,051 comments related to the development of alternative concepts. As also noted above, the DSC submitted two scoping letters in June and November 2010. All of this input, along with the conveyance alignment concepts identified in the BDCP Steering Committee Process between 2006 and 2010, were compiled in putting together the following initial list of conveyance concepts.

- **Conveyance Concept Al -** Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes - Tunnel could be up to 50 miles in length with North Delta intake pumping plant capacity from 3,000 cfs to 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise.
- **Conveyance Concept A2 -** Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes - East Canal could be up to 45 miles in length with North Delta intake pumping plant capacity from 3,000 cfs to 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.
- **Conveyance Concept A3 -** Dual Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes - West Canal could be up to 55 miles in length with North Delta intake pumping plant capacity from 3,000 cfs to 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.
- **Conveyance Concept A4 -** Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the Lower San Joaquin River, and Continued Use of Existing South Delta Intakes - East Canal could be up to 30 miles in length with North Delta intake pumping plant capacity from 3,000 cfs to 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.
- **Conveyance Concept Bl -** Isolated Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - Tunnel could be up to 50 miles in length with North Delta intake pumping plant capacity of 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise.
- **Conveyance Concept B2 -** Isolated Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - East Canal could be up to 45 miles in length with North Delta intake pumping plant capacity of 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.
- **Conveyance Concept B3 -** Isolated Conveyance with a Lined or Unlined West Canal between

ED_000733_DD_NSF_00002784-00040

North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - West Canal could be up to 55 miles in length with North Delta intake pumping plant capacity of 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). The facilities could include over 36 miles of canals located between the Sacramento River and the eastern boundary of the Sacramento Deep Water Ship Channel and between Hotchkiss Tract and a new forebay on Byron Tract; 17 miles of tunnels under the western Delta islands and the Sacramento and San Joaquin rivers; and connecting pipelines between the intakes and western canal alignment. Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.

- **Conveyance Concept B4 -** Isolated Conveyance with a Lined or Unlined East Canal between the Sacramento River near the Confluence with the Feather River and the and Lower San Joaquin River, and Abandonment of Existing South Delta Intakes - East Canal could be up to 150 miles in length with ability to discharge water into American River and Stanislaus River. The intake and pumping plant near the Feather River would be at least 15,000 cfs in capacity (approximately 2 to 3 miles in length) unless a smaller size pumping plant would be required because less water flows in the Sacramento River upstream of the American River. Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.
- **Conveyance Concept B5 -** Isolated Conveyance with Diversion from the Sacramento River near West Sacramento into the Sacramento Deep Water Ship Channel and a Tunnel between the Deep Water Ship Channel and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - New diversion would be constructed near West Sacramento with a pumping capacity of 15,000 cfs (approximately 2 to 3 miles in length), as previously described in SubsectionX.4.3.4. Sacramento Deep Water Ship Channel would be modified through rebuilding of levees, locks, and spillways to withstand the 200-year return flood and 55-inches of sea level rise. A new barrier would be constructed near the southern boundary of the Deep Water Ship Channel with a ship lock to prevent freshwater from flowing from the Deep Water Ship Channel into the Sacramento River. A 15,000 cfs new intake and pumping plant would be constructed along the southeastern levee near Prospect Island. A 40-mile conveyance that would include both a tunnel and canal would be constructed between the Sacramento Deep Water Ship Channel and the existing SWP and CVP pumping plants.
- **Conveyance Concept B6 -** Isolated Conveyance with Diversion from the San Joaquin River near Antioch and Desalination Facilities, a Tunnel between the Desalination Facilities and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - An intake and pumping plant would be located along the San Joaquin River near Antioch. It is unclear the capacity of the proposed intake, pumping plant, and desalination facility, and therefore, the size of the facility is unclear. A recent study of potential desalination facilities in eastern Contra Costa County indicated that a 25 mgd desalination facility would require approximately 10 acres of land (EBMUD 2010). That facility probably would require an intake of less than 100 cfs capacity. A tunnel would be constructed to convey treated water from the desalination facility approximately 18 miles to the existing SWP and CVP pumping plants.
- **Conveyance Concept C1 -** Separate Corridors - New fish screens with operable gates and boat locks along the Sacramento River at the Delta Cross Channel and Georgiana Slough to allow increased use of the Delta transfer of water, as previously described in Subsection X.4.3.2. Water would be conveyed through the lower Mokelumne River system and across the San Joaquin River (within the surface water, not a tunnel) to Middle River and eventually to Victoria Canal in existing channels. A barrier would be constructed at the western boundary of Victoria Canal and water would be conveyed into Clifton Court through a siphon under Old River for continued conveyance to the existing SWP and CVP pumping plants. Operable barriers would be constructed on Snodgrass Slough to reduce risk to salmon migration in the upper Mokelumne

ED_000733_DD_NSF_00002784-00041

River. Operable barriers would be constructed along cross channels between Old River and Middle River (at Woodward Canal, Railroad Cut, and Connection Slough) to isolate Middle River for water supply flows and Old River for fish passage. Operable barriers would be constructed at the Head of Old River and San Joaquin River with a small pumping plant to transfer water into the existing lower San Joaquin River channel to maintain water quality and facilitate downstream flows in the existing San Joaquin River channel. Operable barriers would be constructed along Three Mile Slough or Seven Mile Slough to improve fish passage and water quality in the central and South Delta. Dredging would occur and setback levees would be constructed along portions of Middle River. Continued use of the existing SWP and CVP South Delta intakes would occur during flood periods. This concept would require over 10 million cubic yards of materials to be dredged along the water supply corridor and placed in areas within the Delta.

- **Conveyance Concept C2 -** Through Delta Conveyance with Armored Corridors - Approximately 78 miles of setback levees or traditional levees would be modified or constructed along the Mokelumne and Middle rivers and Victoria Canal to convey water from the Sacramento River to existing SWP and CVP South Delta intakes. Over 10 operable barriers would be constructed to isolate the water supply corridor along the Mokelumne and Middle rivers in case of levee failure in other locations throughout the Delta. This concept also could include two intakes along the Sacramento River near Hood, 12 miles of canals, and approximately 2 miles of tunnel to convey water from the Sacramento River into the armored corridor. The capacity of the facilities would be 15,000 cfs. This concept would require over 150 million cubic yards of materials to be transported to eastern Delta to strengthen the levees along the water supply corridor.
- **Conveyance Concept C3 -** Through Delta Conveyance with West Delta Salinity Barrier - This concept includes construction of an operable barrier near Chipps Island with boat locks and fish passage facilities to maintain a fresh water lake in the Delta, as previously described in Subsection X.4.3.1. Water would continue to flow through existing channels to existing SWP and CVP South Delta intakes.

At the time of the EIR/EIS scoping process, operational scenarios had not been considered or developed. Therefore, these concepts were focused on conveyance alignments.

ED_000733_DD_NSF_00002784-00042

X.7 Results of Initial Screening of Conveyance Concepts

The conveyance concepts identified in Subsection X.6 were compared to the First, Second, and Third Level Screening Criteria based upon legal considerations under CEQA and NEPA, as described in Subsection X.3. The results of that comparison are summarized in Tables X.1 through X.3 (located at the end of this appendix).

This initial screening was completed prior to consideration of a range of operations for each of the conveyance alignment concepts. The initial screening was focused upon the legal considerations under CEQA and NEPA because the consistency criteria related to the Delta Reform Act, comments received from Responsible and Cooperating Agencies, and legal rights of entities that are not BDCP participants had a greater emphasis on factors related to water conveyance operations, such as timing of diversions or capacity of facilities. Therefore, the consistency criteria will be used for the secondary screening process presented in Subsection X.10.

The results of the initial screening resulted in elimination of the following conveyance concepts.

- **Conveyance Concept A4** - Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the Lower San Joaquin River, and Continued Use of Existing South Delta Intakes - this concept was eliminated from further evaluation because this concept would result in discharge of Sacramento River water directly into the San Joaquin River, which could cause false attraction flows for sturgeon and salmonids upstream of the area currently affected by reverse flows from the Delta and Sacramento River. ("Attraction flows" are flows that historically have occurred due to rainfall in a watershed that trigger the migration of anadromous fish from the ocean or an estuary into the upper watershed for subsequent spawning. "Attraction flows" from each watershed have unique water quality characteristics that appear to trigger the return of fish that were spawned in that watershed. "False attraction flows" can occur due to discharges that can trigger seasonal migration at times or locations that are not appropriate for spawning for the fish that are lured into the watershed. Therefore, if water from the Sacramento River is discharged to the San Joaquin River, this discharge could falsely attract fish that spawned in the Sacramento River watershed into the San Joaquin River watershed.)
- **Conveyance Concept B4** - Isolated Conveyance with a Lined or Unlined East Canal between the Sacramento River near the Confluence with the Feather River and the and Lower San Joaquin River, and Abandonment of Existing South Delta Intakes - this concept was eliminated from further evaluation because this concept would be at least three times longer than other isolated conveyance alignments considered and would therefore increase the extent of disturbance to communities and habitat along this conveyance alignment and be drastically more expensive to construct than substantially shorter alignments.
- **Conveyance Concept B5** - Isolated Conveyance with Diversions from the Sacramento River near West Sacramento into the Sacramento Deep Water Ship Channel, a 15,000 cfs intake along the eastern levee of the Deep Water Ship Channel upstream of Prospect Island, Pumping Plant near the intake, a Tunnel between the Deep Water Ship Channel and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes. A ship lock would be constructed immediately downstream of the intake to prevent the conveyed water from flowing into the Sacramento River and to prevent fish from swimming from the Delta into the conveyance facility.

  DWR and DFG evaluated the use of the Sacramento Deep Water Ship Channel for Conveyance in 2008 in response to Public Scoping comments and presented the results at two meetings of the BDCP Steering Committee in 2009 (BDCP 2009a and BDCP 2009b). The analysis considered use

ED_000733_DD_NSF_00002784-00043

of the five North Delta intakes located along the Sacramento River to avoid disruption of operations of the Port of West Sacramento and provide multiple intake locations as compared to only one intake location near the port.

The January 14, 2009 presentation stated that use of the Deep Water Ship Channel would avoid impacts to about 2,200 acres due to construction and operations of a portion of western isolated canal that would be parallel to the eastern levee of the Deep Water Ship Channel. However, the presentation stated that this concept would cause delays to ship transit times in the Deep Water Ship Channel due to ship handling/piloting through the new lock. The presentation also stated that there was a potential for delta smelt to enter the conveyance facility by passing through the lock. Considerations of potential adverse impacts to delta smelt included the following:

1. It is one of the last remaining concentrations of delta smelt.

a. Sampling of adults (Spring Kodiak Trawl) shows that it is one of the major areas for this species (Source : www.dfg.ca.gov).

b. Collections of fish in the 20 mm survey show that the DWSC is one of the primary spawning areas for delta smelt (Source : www.dfg .ca .gov)

c. It appears that at least some delta smelt use this region on a year-round basis (Source : www.dfg.ca.gov. Sommer, unpublished data).

2. It has important habitat features that attract delta smelt.

a. Delta smelt are attracted to areas with high turbidity, low salinities, and high levels of zooplankton (Source: Feyrer et al. 2007: IEP, Baxter et al. 2007)

b . It is likely that delta smelt spawn on sandy shoals (Sommer et al. In prep).

c. The DWSC has all of these features (Source: IEP, unpublished data).

3. Removing this habitat from their range would have a serious effect on their population.

a. Reducing the amount of delta smelt habitat can have population level effects (Feyrer et al. 2007).

b. Substantially altering the DWSC could have huge hydrodynamic effects that would radiate throughout the delta, the primary habitat for delta smelt. For example, USGS data indicate that 80 percent of tidal flows pass through the Cache Slough Complex (Jon Burau, USGS, unpublished data). The DWSC is the largest channel in this complex, so it probably dominates tidal flows through the region."

The presentation also stated that the Deep Water Ship Channel would require reconstruction because the facility (i) does not meet the Seismic Criteria for the Isolated Conveyance Facility, (ii) was not designed to withstand the 200-year return flood and associated inundation, and (iii) was not designed to withstand sea level rise that could occur over the next 100 years, and because levees may require improvement to store the additional water at higher elevations than existing flows.

The April 15, 2009 presentation included results from the 2006, 2007, and 2008 delta smelt surveys. The results showed the presence of over 700 delta smelt/10,000 cubic meters along the lower Deep Water Ship Channel near the potential locations of the new ship lock and intake. The information included in the presentation included results of an analysis that showed that the number of delta smelt observed was generally less than 5 percent of the delta smelt observed in the western Delta.

This concept was eliminated from further evaluation because it could adversely affect delta smelt and navigation along a federal navigation corridor. This concept would include the same intakes and conveyance facilities between the Sacramento River to the eastern levee of the Deep Water Ship Channel as in Conveyance Concept A3. Therefore, the difference in potential adverse impacts to the lands located to the east of the Deep Water Ship Channel would be limited to the

ED_000733_DD_NSF_00002784-00044

lands located along the toe of the Deep Water Ship Channel levee. If the intake were located near the Port of West Sacramento, a single, large intake would be constructed at one location along the Sacramento River, which could result in localized impacts to aquatic resources and navigation, and could require modification of the locks at the Port of West Sacramento.

- **Conveyance Concept B6** - Isolated Conveyance with Diversion from the San Joaquin River near Antioch and Desalination Facilities, a Tunnel between the Desalination Facilities and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - this concept was eliminated from further evaluation because this concept would depend upon the capacity of the desalination facility, the intake along the San Joaquin River shoreline could extend over three miles for a 15,000 cfs intake and the desalination facility could be several square miles in size. This could result in substantial impacts to land use, given the generally dense existing development in the affected areas. In addition, desalination of up to 15,000 cfs of flow would add an enormous ongoing cost not required for other options andwould result in substantial energy use and, absent the development of practicable "green" power sourcesthat could replace fossil fuel inputs, related substantial greenhouse gas emissions.Such emissions could undermine California's ability to meet its legislative mandate under the California Global Warming Solutions Act of 2006 to reduce the State's 2020 greenhouse gas emissions to 1990 levels. Other options would convey fresh water that would not need to be desalted prior to transport.
- **Conveyance Concept C2** - Through Delta Conveyance with Armored Corridors was evaluated with conceptual engineering designs (CER)- this concept was eliminated from further evaluation because this concept would result in substantial disturbance and either removal or placement of over 120 million cubic yards of materials for levee construction along the Mokelumne and Middle rivers and Victoria Canal. This could result in substantial adverse impacts to aquatic habitat, land use, air quality, and transportation in the area during construction. In particular, concentrated air quality effects from the huge number of diesel-powered truck trips could create hotspots of toxic air contaminants that would not exist with other potential alternatives. This concept would also take substantially longer to construct, again given the huge number of truck trips associated with importing 120 million cubic yards of materials.
- **Conveyance Concept C3 -** Through Delta Conveyance with West Delta Salinity Barrier- this concept was eliminated from further evaluation because this concept would result in the Delta becoming a freshwater lake that would not support the estuarine habitat required by the BDCP covered species and would reduce the ability of fish passage for anadromous fish. This concept would not support project objectives and aspects of the project purpose and need that focus on creating ecological improvements in the Delta ecosystem and contributing to recovery of declining listed species. Nor would the concept meet the coequal goal under the 2009 Delta Reform Act of "protecting, restoring, and enhancing the Delta ecosystem."

The remaining conveyance concepts were renumbered and presented below.

- **Dual Conveyance Concept A-** *Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*(Conveyance Concept A1).
- **Dual Conveyance Concept B -** *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*(Conveyance Concept A2).
- **Dual Conveyance Concept C -** *Dual Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*(Conveyance Concept A3).
- **Isolated Conveyance Concept A -** *Isolated Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*(Conveyance Concept B1).
- **Isolated Conveyance Concept B -** *Isolated Conveyance with a Lined or Unlined East Canal*

ED_000733_DD_NSF_00002784-00045

between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes(Conveyance Concept B2).

- **Isolated Conveyance Concept C -** *Isolated Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*(Conveyance Concept B3).
- **Through Delta Conveyance Concept -** *Separate Corridors with new fish screens along the Sacramento River at the Delta Cross Channel and Georgiana Slough to convey water through the lower Mokelumne River system and across the San Joaquin River to Middle River and Victoria Canal; a siphon under Old River for continued conveyance to the existing SWP and CVP pumping plants; operable barriers on Snodgrass Slough, Head of Old River, Three Mile Slough or Seven Mile Slough, and at between Old River and Middle River (at Woodward Canal, Railroad Cut, and Connection Slough); dredging and setback levees along portions of Middle River; and continued use of the existing SWP and CVP South Delta intakes would occur during flood periods* (Conveyance Concept C1).

The general approaches to conveyance could be implemented with facilities of different diversion and conveyance capacities (e.g., 3,000, 6,000, 9,000, or 15,000 cfs). The ultimate decisions regarding what capacities should be addressed in particular EIR/EIS alternatives would turn in large part on how differing capacities would affect overall SWP/CVP systems operations. Operational issues are discussed below.

ED_000733_DD_NSF_00002784-00046

X.8 Development of Conveyance Operations Concept by BDCP Steering Committee in 2010

This section describes the processes conducted by the BDCP Steering Committee to develop and evaluate a range of Delta water operations and integration of those operations with various habitat restoration elements. These processes included specific evaluations by the Conveyance Workgroup and the Habitat and Operations Technical Team, an independent review by scientists using an approach developed for the Delta Regional Ecosystem Restoration Implementation Plan, and the BDCP Steering Committee.

X.8.1 BDCP Steering Committee Conveyance Workgroup and Habitat and Operations Technical Team Development of Operations Concepts

In October 2007, the BDCP Steering Committee formed the Conveyance Workgroup and the Habitat and Operations Technical Team (HOTT) to develop and consider screening-level evaluations for the operations of conveyance facilities and restoration programs in the north, west, and South Delta. Working groups and technical teams met periodically to develop technical information or recommendations about aspects of the Conservation Plan elements for consideration by the Steering Committee. The following operational issues related to the Dual Conveyance and/or Isolated Conveyance concepts were evaluated.

- Diversion criteria for the new North Delta intakes along the Sacramento River for use with a Dual or Isolated Conveyance concepts, including limitations on timing and quantities of water to be diverted from the Sacramento River between the City of Sacramento and Walnut Grove.
- Diversion criteria for the new North Delta intakes along the Sacramento River for use with a Dual or Isolated Conveyance concepts, including river bypass flows, effects on Delta Cross Channel and Threemile Slough flows, and Rio Vista flows.
- West Delta outflow criteria.
- Summer-fall flow criteria on the San Joaquin River at Vernalis.
- Two alternative spring X2 operating assumptions:
  - (1) operations where salinity is maintained roughly to the requirements of State Water Resources Control Board Decision 1641 (D1641) but implemented as a function of Eight River Index and over the 5-month period between February and June, and
  - (2) a proposal by the environmental stakeholders where outflow is increased in many years and implemented as a function of the Eight River Index (which includes four more rivers in addition to the four Sacramento River basin rivers used in the more traditional Four-River Index that is used by DWR to define water year types).

These groups also addressed operational issues that were more related toNorth Delta diversion intake design criteria and habitat restoration conservation measures, including inundation of Yolo Bypass; establishment of new floodplain bypasses to be located to the east of the existing Sacramento Deep Water Ship Channel and between Sacramento River and Stone Lakes; hydraulic connections between the Sacramento River and upper reaches of Sutter and Steamboat sloughs; tidal habitat in the west Delta, South Delta, and Suisun Marsh; and effects of conveyance along Old

ED_000733_DD_NSF_00002784-00047

River. As described in Subsection X.1, separate appendices have been prepared to describe the development of intake design criteria and habitat restoration conservation measures.

Throughout 2008, the work products and findings of several BDCP Steering Committee workgroups and technical teams were presented to the BDCP Steering Committee. The work products can be accessed on the BDCP website (baydeltaconservationplan.com/BDCPPlanningProcess/ BackgroundDocuments/SteeringCommittee/SteeringCommitteeAgendasandHandouts.aspx). The results were considered and incorporated into the following interactive screening evaluations by the Conveyance Workgroup, Habitat and Operations Technical Team, and Integration Team.

- **Fluctuating Delta Salinity.** Relaxations in the net Delta outflow requirements were investigated for summer and fall (4000 cfs in wet years, 3000 cfs in above normal years, 2000 cfs in below normal years, 1000 cfs in dry years, and 0 cfs in critical dry years) to explore a range of salinity and X2 effects (X2 is the location in the Delta that represents the location of 2 parts per thousand salinity contour, or isohaline contour, measured one meter above the bottom of the estuary, and reported in kilometers upstream of the Golden Gate Bridge [State Water Board 2000].)Rio Vista, salinity and Delta Export/Inflow (EI) ratio standards were also relaxed during this period. The goal was to evaluate the range of variable salinity conditions (increasing salinity in summer and fall of dry years) to be achieved and believed to provide a competitive advantage to native species. Preliminary results of the analyses are summarized below.
    - Higher fall and/or summer salinity could be managed with a rather rapid return to fresher water quality conditions in the western Delta in early winter, as long as salinity intrusion in the South Delta was not substantial.
    - South Delta water quality could be severely degraded during times without increased San Joaquin River flows or discharge of water from the Isolated Conveyance into the Lower San Joaquin River.
    - Upstream storage in the Sacramento River watershed is significantly enhanced and coldwater pools improved with fluctuating Delta salinity throughout the year, but Sacramento River flows would be reduced when Delta salinity is allowed to increase. Increased flow requirements at Rio Vista would increase Sacramento River flows.
    - Available water for SWP and CVP is increased under fluctuating salinity criteria, particularly if westernDelta salinity is allowed to increase in the summer.
    - Fluctuating salinity scenarios with increased Rio Vista flow criteria did not have a significant impact on upstream or Delta conditions.
- **Flooded Western Island.** Based on the DWR Delta Risk Management Study (DRMS) analyses, scenarios related to salinity intrusion due to levee failures and Sherman Island flooding were conducted. The workgroup and technical teams determined that the DRMS work suggested that such a flooding event could result in an eastward shift in X2 of approximately 6 kilometers (km). The conditions were evaluated to determine if flooding of large tracts of western islands may create large areas of low salinity habitat and allow X2 to be managed more at a more easterly location than under existing conditions. Preliminary results of the analyses are summarized below.
    - Significant salt water intrusion would occur if Sherman Island were flooded, and X2 would move eastward by almost 6 km if there were no changes in Delta outflow criteria.
    - Under the same X2 compliance conditions as prescribed in D1641, Delta outflow requirements would cause significant loss of water supply availability and largely eliminate the ability for coldwater pool management in upstream Sacramento River reservoirs due to the need to release water to maintain X2.
- **Preferential Diversion on the Sacramento River at Hood as Compared to South Delta Diversions.** All D1641 standards were removed from a basic Dual Conveyance simulation to

ED_000733_DD_NSF_00002784-00048

evaluate system operations effects and incremental tradeoffs of potential regulatory actions. Preliminary results of the analyses are summarized below.

- North Delta Bypass criteria (also known as Hood Bypass Rules), Delta outflow criteria, and Old and Middle Rivers (OMR) reverse flow criteria in the South Delta could be used to modify Delta conditions in accordance with biological goals and objectives.
- Use of North Delta Bypass criteria without additional Delta outflow and OMR criteria did not substantially change water supply availability for SWP and CVP.
- Changing the location of the diversions from the North Delta to the existing South Delta intakes resulted in changes in salinity that were similar to those of the fluctuating salinity scenario.

- **Increased Spring River Flows.** Reservoir releases to increase peak flows in the Sacramento and San Joaquin rivers in March and April and achieve Yolo Bypass inundation of approximately 5,000 cfs were evaluated to determine the effects of substantially restoring spring hydrographs on the Sacramento and San Joaquin rivers. Preliminary results of the analyses are summarized below.
  - Spring releases both increased the extent of flooding with higher flows and re-shaped the hydrograph along the Sacramento River from Keswick Reservoir to Rio Vista.
  - Reductions in available water supplies for SWP and CVP due to spring reservoir release actions were potentially as high as 250,000 to 300,000 acre-feet/year without consideration of additional releases of San Joaquin River flows.
  - Increased San Joaquin River flows generally had a positive effect on spring time QWEST (net flow of the Lower San Joaquin River) and OMR flows, potentially decreasing entrainment effects and improving water quality at the existing South Delta SWP and CVP intakes.
  - Changing the flow targets to increase river flows in December through January could achieve some biological benefits for winter run salmon and improve water supply availability as compared to increase spring releases.
- **Increased Spring Delta Outflow.** The Eight-River Index approach to defining release patterns from upstream reservoirs to meet X2 criteria between February and June was evaluated except for critical dry years when the index was less than 5 million acre-feet. The objective was to evaluate the potential for achieving substantially higher Delta outflow without creating adverse coldwater pool management concerns in upstream reservoirs on the Sacramento River. Preliminary results of the analyses are summarized below.
  - Spring X2 was moved towards the west; however, water supply availability for SWP and CVP and Sacramento Valley water rights and CVP water users was reduced.
  - High Delta outflow requirements in the spring reduced upstream reservoir storage, especially during sequential drier years with some system recovery occurs during wetter periods.
  - Provision of "off-ramps," or adjustments (e.g., provisions to allow additional diversions from the Sacramento River if water storage in upstream reservoirs exceeded agreed upon values), based on upstream storage conditions reduced the impact, but failed to protect declining storage during extended drought periods.
- **Increased Fall X2 Delta Outflow.** Implementation of Fall X2 targets between September and November were explored based on water year types under the Eight River Index. Storage criteria were included to limit reductions in upstream storage, including maintaining Shasta Lake storage greater than 2.8 million acre-feet and Oroville Reservoir storage greater than 1.0 million acre-feet. The goal was to evaluate the potential for achieving higher fall Delta outflow targets without creating adverse coldwater pool management conditions in upstream reservoirs. Initial assessments indicated that the Fall X2 targets using a sliding scale based on the prior water year

ED_000733_DD_NSF_00002784-00049

types under the Eight River Index appeared achievable with some reductions in SWP and CVP water supply availability.

- **Preferred South Delta Diversion.** Continued use of the existing South Delta intakes at an increased diversion rate resulted in limited reduction of entrainment effects as compared to existing conditions while reducing the need for higher diversion in the North Delta. Preliminary results of the analyses are summarized below.
  - Dual Conveyance operations with a preference for South Delta diversions could be configured to result in SWP and CVP water supply availability similar to what occurs under existing conditions.
  - Reducing flow conditions at the SWP and CVP South Delta intakes that may lead to entrainment could be accomplished through modification of OMR or managing South Delta intake diversions as a function of San Joaquin River flows.
  - Greater flexibility in opening of the Delta Cross Channel gates after August would reduce the potential for central and South Delta water quality degradation and could increase SWP and CVP water supply availability under a South Delta preferred point of diversion.
- **Fully Isolated Hood Diversion.** A set of scenarios were explored to evaluate the potential of a fully Isolated Conveyance from a North Delta diversion only and with more restrictive North Delta bypass flow operations. Preliminary results of the analyses are summarized below.
  - Project operations under a fully Isolated Conveyance with high flow North Delta bypass rules possibly could result in substantial reductions in SWP and CVP water supply availability in dry or critical dry years.
  - Increasing North Delta bypass flows would not necessarily result in a more natural hydrograph in the Sacramento River unless there were increased upstream reservoir releases.
  - Limitations on SWP and CVP water supply availability are often controlled by the North Delta Bypass requirements and Rio Vista flow requirements.

X.8.2 Delta Regional Ecosystem Restoration Implementation Plan (DRERIP) Assessment of Core Elements

At the end of 2008, the BDCP Steering Committee approved a draft set of Core Elements of a Conservation Strategy for preliminary evaluation (BDCP 2008). The preliminary evaluation was principally designed to provide information for the conceptual ecosystem and species evaluation process known as the Delta Regional Ecosystem Restoration Implementation Plan (DRERIP). The goal of this evaluation was to refine existing and develop new Delta specific restoration actions as well as to provide Delta specific implementation guidance, program tracking, performance evaluation and adaptive management feedback. The Core Elements consisted of the following items.

- Move primary point of diversion to a new North Delta diversion facilities with state-of-the-art fish screens with up to 15,000 cfs capacity subject to North Delta Bypass criteria, upstream river flows, downstream flow requirements, and conveyance limitations.
- Establishment of North Delta Bypass flow criteria (two scenarios) at North Delta diversion to limit diversions during low Sacramento River flows and during periods of concern for covered species, including 11,000 cfs and 5,000 cfs bypass flow scenarios in winter and spring.
- Manage diversions at existing South Delta intakes to reduce entrainment of fish and food resources, including limiting diversions when OMR is greater than -3,500 cfs in December through June, and greater than -5000 cfs in July through November.
- Closure of the Delta Cross Channel except during July, August, half of September, and October to

ED_000733_DD_NSF_00002784-00050

protect central and South Delta water quality.

- Modification of Fremont Weir and Yolo Bypass to provide more frequent and greater duration of inundation, up to 4,000 cfs during December 1 through May 15.
- Large-scale tidal marsh restoration in the Cache Slough area of 5,000 - 15,000 acres; strategic tidal marsh restoration in the west Delta, and large-scale tidal marsh restoration in the Suisun Marsh area.

The results of modeling studies of these elements under two scenarios (Scenario 1 with high North Delta Bypass flow criteria, and Scenario 2 with low North Delta Bypass flow criteria) were presented to the DRERIP panel in early 2009 (BDCP 2009c).

The BDCP Steering Committee and the BDCP HOTT team considered the results of the DRERIP Course Evaluation in early 2009. The DRERIP analysis evaluated individual portions of the BDCP and synthesis of all portions of the BDCP (assuming a Dual Conveyance operations). The results related to conveyance indicated that joint operations of the North Delta diversions, Yolo Bypass, and South Delta intakes appeared to provide benefits for several covered fish species, but that more information would be needed to more fully understand potential outcomes (BDCP 2009d).

X.8.3 BDCP Steering Committee Project Description for Preliminary Effects Analysis

Based on the results of the DRERIP analysis, the following additional analyses were completed for the BDCP Steering Committee during 2009 to further evaluate water conveyance and operations.

- **Climate Change "Early-Look".** In order to include changes in hydrology in the Delta watershed due to climate change and increased sea level rise over the next fifty to sixty years, regional climate change scenarios were developed based on the climate scenarios developed by DWR, Reclamation, USFWS, and NMFS. Results from a preliminary set of model simulations indicated that climate change could have a substantial effect on the timing of watershed runoff with earlier runoff patterns due to more rain and less snow and earlier snowmelt due to higher temperatures. These changes resulted in significant reductions in late spring and summer streamflows. Upstream reservoir and coldwater pool management were found to be severely challenged under climate change and the ability to divert water from the Delta became less dependent upon upstream SWP and CVP storage operations. Salinity increased in the western and central Delta and X2 occurred at locations east of existing conditions. This required release of more Delta outflow to maintain the X2 location which resulted in less water availability for SWP and CVP.
- **North Delta Bypass Flows and Operations.** Operational criteria for North Delta diversion facilities were developed to refine tidal operations under low flow conditions.
- **Tidal Marsh and Delta Simulation.** Corroborative simulations with a two dimensional model were conducted to improve simulation of Suisun Marsh restoration components, other tidal marsh restoration actions, Cache Slough, and current inundation of Liberty Island.
- **Daily Operations.** Other modeling improvements were completed to incorporate daily operations of the Fremont weir operations and North Delta Bypass criteria and diversions.
- **Delta Island Consumptive Use Estimates.** The Delta island consumptive use and drainage assumptions were reviewed to better represent the local land uses and estimated water uses.

In December 2009, a "mini- effects analysis" was performed. The objective of this analysis was to prepare a final set of conservation measures for the hydrologic and water quality modeling of the Preliminary Proposed Project to be defined in January 2010. The results of the mini-effects analysis

ED_000733_DD_NSF_00002784-00051

were considered with other information presented to the BDCP Steering Committee as part of the effort to define the long-term water operations criteria for evaluation in the Effects Analysis (BDCP 2010a). The results of this analysis were used to complete a preliminary Effects Analysis that was completed in 2010 and presented in the BDCP Steering Committee Progress Report published in November 2010 (BDCP 2010b). The description of the operational criteria as presented to the BDCP Steering Committee in February 2010, is presented in Table X-4 (located at the end of this appendix).

The operations, presented in Table X-4, were defined as the "January 2010 BDCP Operations" for Dual Conveyance. Initial modeling analysis completed for BDCP indicate that January 2010 BDCP Operations would increase SWP and CVP water supply availability as compared to existing conditions and would not adversely affect water deliveries to water rights holders and SWP and CVP water users located in the Sacramento Valley as compared to existing conditions.

Use of January 2010 BDCP Operations for Isolated Conveyance would be slightly different because the South Delta intakes would be abandoned, and therefore, there would not be any operations criteria for those intakes, as presented in Table X-5.

ED_000733_DD_NSF_00002784-00052

X.9 Conveyance Operations Concepts Identified in 2011

Following the completion of the BDCP Steering Committee November 2010 Project Status Report, several additional conveyance concepts were identified or more fully defined by the following agencies or groups.

- Following collaborative efforts a series of model runs, Federal and State Agencies developed an operations proposal that became known as "Scenario 6," based on the fact that the final version was the product of six sets of model runs. Working together, the agencies used the "January 2010 BDCP Operations" as a starting point, but made several changes, including the addition of the "Fall X2" requirement from the USFWS 2008 Biological Opinion (USFWS 2008), modifications of Old and Middle River(OMR) criteria, modifications of the Head of Old River Barrier operations, and implementation of South Delta temporary agricultural barriers, as under existing conditions.[7]
- Federal and State Agencies proposed an "Enhanced Ecosystem Conveyance Operations Concept" - similar to "January 2010 BDCP Operations" with Fall X2 as under the USFWS 2008 Biological Opinion (USFWS 2008), reduced ability to divert water at the North Delta intakes through more stringent North Delta intake bypass criteria and Sacramento River flow requirements at Rio Vista, changes to OMR criteria, and reduced ability to divert water at the South Delta intakes.
- State Water Resources Control Board provided additional information related to the scoping comments submitted in 2008 and 2009 (State Water Board 2011a, State Water Board 2011b, and State Water Board 2011c). The proposal, "Enhanced Spring Delta Outflow," would provide additional spring Delta outflow in all water year types to promote abundance and productivity of longfin smelt and other estuarine species, and Delta inflows be modified to promote a more natural hydrograph.
- Several environmental organizations proposed three concepts (American Rivers et al 2011):
    - A concept to (i) achieve Fall X2, protections in the South Delta, (ii) re-establishment of a more natural hydrograph during winter and spring months, and (iii) reservoir operations to prevent unintended draw downs with a range of potential conveyance capacities. The operations would be similar to Scenario 6 with (i) Fall X2 as under the USFWS 2008 Biological Opinion (USFWS 2008), (ii) modifications to OMR flow criteria, (iii) proportional inflow bypasses from Shasta Lake, Folsom Lake, and Oroville Reservoir into the Sacramento River, and (iv) additional pulse flows in the late winter and through the spring to protect outmigrating fall run and spring run Chinook salmon.
    - Operations to provide Delta outflow as described in the State Water Resources Control Board Flow Recommendations for the Sacramento-San Joaquin Delta Ecosystem published in 2010 (State Water Board 2010b).
    - Operations as described above under Scenario 6 with a conveyance capacity of 9,000 cfs.
- Contra Costa Water District and other commenters proposed a Limited Dual Conveyance Facility - similar to "January 2010 BDCP Operations" with only 3,000 cfs capacity for the North Delta intakes, addition of Fall X2as under the USFWS 2008 Biological Opinion (USFWS 2008), and modifications to the San Joaquin River Inflow/Export ratio.

This section discusses considerations for these concepts.

[7] See "Rationale for Five Agency Proposed Alternative BDCP Initial Project Operations Criteria," May 18, 2011 Working Draft.

ED_000733_DD_NSF_00002784-00053

X.9.1 Federal and State Agencies Concept: Scenario 6 Concept

Following the completion of the 2010 Project Status Report, which included a preliminary draft Effects Analysis, DWR, DFG, Reclamation, USFWS, and NMFS (Five Agencies) developed a series of critical issues to be addressed by a Five Agency Alternative for BDCP Initial Project Operations Criteria (DWR, DFG, Reclamation, USFWS, and NMFS 2011). The alternative operating criteria are based on the BDCP Steering Committee 2010 Project Operations with modifications as briefly described in section X.9 above and as more fully described below.

The issues of concern to DFG, USFWS, and NFMS can be characterized as follows (the references to "the PP" are intended to refer to the "Preliminary Proposal" based on the 2010 Project Operations):.

- **Reduced Sacramento River flows downstream of the intakes**. "New North Delta diversions will reduce net Sacramento River flows near Rio Vista…although the CALSIM II modeling showed the agreed upon North Delta diversion bypass criteria [in the PP] has generally been met, identified reductions in flow remain a concern…" (California Department of Water Resources et al. 2011).
- **San Joaquin River migratory fish survival.** "[The PP] proposed a 'non-physical barrier' and habitat restoration in the south Delta. The latter was not scheduled to come online until the late long-term time frame. This was not considered adequately protective of San Joaquin River basin salmonid fishes. There was also concern over Old and Middle River (OMR) flow levels during certain months"(California Department of Water Resources et al. 2011).
- **April–May OMR flows.** "The original 'Big 6' version of this issue was that April–May OMR flows in the January 2010 Project Operations modeling were more negative than the flows modeled for the Existing Baseline Condition scenarios. The issue expanded to include OMR flow criteria during other months to take advantage of operational flexibility the CALSIM II modeling indicated would be afforded by dual conveyance. The goal was to increase San Joaquin River flow variability (improving OMR flows in the Delta and flows in the San Joaquin River below the Head of Old River), and maximize improvements to south Delta hydrodynamics…" (California Department of Water Resources et al. 2011).
- **Spring Delta outflow issues related to longfin smelt.** "Changes in winter-spring Delta outflows correlate positively with changes in abundance of longfin smelt. A review of CALSIM II model output shows that the combination of new operating rules and increased conveyance capacity [in the PP] results in reduced net Delta outflows in the winter-spring period of wetter water years…instances of reduced Spring flows, food web productivity and other stressors remain a concern…"(California Department of Water Resources et al. 2011).
- **Fall X2**. "The existing U.S. Fish and Wildlife Service (UFWS) Biological Opinion (BiOp) includes a Reasonable and Prudent Alternative (RPA) element that specifies X2 location in September–October of above-normal and wet water year types. The January 2010 Project Operations did not include any action to meet or mimic the Fall X2 RPA component, raising concerns from USFWS and others whether the project operations would meet permit issuance criteria" (California Department of Water Resources et al. 2011).

"Scenario 6," proposed by the agencies as an alternative to the 2010 Operating criteria for evaluation in the Effects Analysis, includes modified criteria intended to address three of the five operational issues identified above: San Joaquin River migratory fish survival, April–May OMR flows, and Fall X2.

ED_000733_DD_NSF_00002784-00054

Scenario 6 also includes an operable barrier at the head of Old River. Scenario 6 does not include modifications to address reduced Sacramento River flows downstream of the new intakes, or the Winter-Spring outflow issues related to longfin smelt (or the location of the north Delta intakes). The agencies' intent was to address these two issues in the development of adaptive ranges subsequent to completion of the Effects Analysis.

The operational criteria for Scenario 6 are presented in Table X-6. Initial modeling analysis completed for BDCP indicate that Scenario 6 operations would reduce SWP and CVP water supply availability as compared to the January 2010 BDCP Operations, increase SWP and CVP water supply availability as compared to Existing Conditions, and would not adversely affect water deliveries to water rights holders and SWP and CVP water users located in the Sacramento Valley as compared to existing conditions.

X.9.2 Federal and State Agencies Concept: Enhanced Ecosystem Conveyance Operations Concept

The Enhanced Ecosystem conveyance operations concept was developed by DFG, USFWS, and NMFS to be considered in the EIR/EIS. The operations were based upon the January 2010 BDCP Operations with Fall X2 as under the USFWS 2008 Biological Opinion (USFWS 2008). This concept increased the Sacramento River flow requirement at Rio Vista and constrained the ability to divert water at the North Delta intakes through more stringent North Delta intake bypass criteria than under the January 2010 BDCP Operations. This concept also reduced the potential for reverse flow in the South Delta with (i) changes to OMR criteria; (ii) changes to San Joaquin River inflow/export ratio criteria; and (iii) not allowing use of the South Delta SWP and CVP intakes in April, May, October, and November to protect migrating fish. The operational criteria for the Enhanced Ecosystem concept are presented in Table X-7.

It was determined that this concept would include a tunnel conveyance alignment concept to minimize surface disturbance to the ecosystem during construction and operations.

X.9.3 State Water Resources Control Board Enhanced Spring Delta Outflow Concept

Following development of the Enhanced Ecosystem Conveyance Operations Concept, preliminary modeling results were considered to determine if this concept also could be responsive to the scoping comments submitted by the State Water Board because this agency is a responsible agency with jurisdiction by law and special expertise. It was determined that based upon scoping comments and other information provided by the State Water Board, an additional concept would be required to be responsive to the agency's scoping comments. The State Water Board provided comments to the DWR 2008 and 2009 NOPs regarding the scope and content of the environmental analyses for the BDCP in letters dated May 30, 2008 (State Water Board 2008) and May 15, 2009 (State Water Board 2009). Additional information was provided from the Executive Director of the State Water Board to the Deputy Secretary of the Natural Resources Agency, in three letters dated April 19, 2011, August 24, 2011, and December 19, 2011 (State Water Board 2011a, State Water Board 2011b, and State Water Board 2011c).

The State Water Board's May 30, 2008 NOP scoping comments cited, among other things, the need for the BDCP EIR/EIS to "analyze a broad range of alternate water quality objectives and operational

ED_000733_DD_NSF_00002784-00055

strategies, including reduction in exports, that may be more protective of fish and wildlife beneficial uses." The State Water Board's May 15, 2009 scoping comment letter referred specifically to the value of analyzing increased Delta outflow, as a percent of unimpaired flows (unimpaired flow is roughly defined as the flow that would occur without upstream reservoirs or diversions):

> "Combined with analyzing potential reductions in exports, an alternative for changes to Delta outflows (and potentially inflow requirements) should also be analyzed that reflects a more natural hydrograph. Current outflows and operations have tended to flatten the natural hydrograph and produce more static flow conditions in the Delta. Outflows and export regimes that support a more natural variable hydrograph should be analyzed, including both the naturally high outflow and naturally low outflow ends of the hydrograph for both the interim and long-term. One way to conduct this analysis would be to analyze the effects of providing various percentages of the unimpaired Delta inflow and outflow, and managing storage releases and exports to attempt to parallel this pattern."

Pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009, the State Water Board prepared a report with flow criteria for the Sacramento-San Joaquin Delta Ecosystem that can be used to aid in the development of potential alternatives for Delta outflows (State Water Board 2010b), including the reduced export concept referenced in the State Water Board's previous NOP comments. On April 19, 2011, the Executive Director of the State Water Board sent a letter to the Deputy Secretary of the Natural Resources Agency stating (State Water Board 2011a):

> "The State Water Board's Delta Flow Criteria Report includes determinations of flow criteria for the Delta ecosystem to protect public trust resources. The report makes clear that the flow criteria do not consider the balancing of public trust resource protection with public interest needs for water. The flow criteria also did not consider other public trust resource needs such as the need to manage cold-water resources in reservoirs tributary to the Delta. Nonetheless, the flow determinations contained in the Delta Flow Criteria Report, together with recent scientific conclusions of other State and federal agencies, including the Department of Fish and Game, National Marine Fisheries Service, and the Interagency Ecological Program provide a useful guide to establish one side of a reasonable range of alternatives. State Water Board staff suggests that a reasonable range of alternatives may be established by making changes to the operational criteria already being evaluated in one or several of the alternatives considered by the BDCP per the September 1, 2010 Table 1: Modified Array of Alternatives. The changes should be made to address two of the summary determinations in the Delta Flow Criteria Report: 1) provide additional spring Delta outflow in all years to promote increased abundance and improved productivity for longfin smelt and other estuarine species; and 2) provide flows that promote a more natural hydrograph at all times."

The Delta Flow Criteria Report summary determination was presented as 75 percent of unimpaired net Delta outflow for January through June. As described in the letter, this determination did not consider the competing needs for water or other public trust resource needs such as the need to manage cold-water resources in tributaries to the Delta. Implementing such a flow would also likely affect water users beyond just CVP and SWP south of Delta deliveries. The letter therefore described an approach that could be used to develop a BDCP alternative concept that increased Spring Delta outflow:

> "Model runs for these revised alternatives should be made in an iterative fashion to ascertain the maximum additional fixed quantity of additional Delta outflow that would provide useful information to evaluate balancing of the beneficial uses of water and achieving the coequal goals. As a starting point, staff suggests adding 1.5 million acre-feet per year to Delta outflow."

The letter also suggested that State Water Board and DWR could refine this modeling approach. Staff met several times in the following months and identified a general approach that could be used to

ED_000733_DD_NSF_00002784-00056

model an increased Spring Delta outflow concept.

As described in the August 24, 2011 letter from the Executive Director of the State Water Board to the Deputy Secretary of the Natural Resources Agency (State Water Board 2011b), the goal of this general approach was to increase Spring Delta outflow above that achieved in the Enhanced Ecosystem Conveyance Operations Concept (described in Subsection X.9.2) and increase Spring Delta outflow by approximately 1.5 million acre-feet, on average, above the NEPA baseline assumptions (No Action Alternative without the effects of sea level rise or climate change). The State Water Board anticipated that this would result in:

- No negative effects on cold water pool storage;
- Not drawing down Sacramento Valley groundwater levels;
- No decreased water supplies other than south-of-Delta Central Valley Project and State Water Project deliveries;
- No failure to deliver San Joaquin River exchange water rights; and
- No failure to deliver refuge water.

The specific goal for this concept was to increase Spring Delta Delta outflow by approximately 1.5 million acre-feet per year, on average. It was expected that this potential alternative would also result in an approximate average annual reduction in south of Delta deliveries of 1.5 million acre-feet per year. To achieve these goals, and to avoid the effects listed above, the concept includes a requirement of 55% of unimpaired flow, as estimated for the Sacramento River at Freeport, to become Delta outflow. No Sacramento River inflow-specific objective is intended; however, the goal of the concept is to achieve an increase in net Delta outflow of about 1.5 million acre-feet per year, on average. The State Water Board included modifications to minimum storage requirements for upstream reservoirs on the Sacramento River system in an attempt to achieve cold water pool storage goals of the State Water Board and the USFWS and NMFS biological opinions that affect operations of the SWP and CVP.

On December 19, 2011, the Executive Director of the State Water Board sent a letter to the Deputy Secretary of the Natural Resources Agency that summarized the results of the preliminary modeling of the proposed enhanced ecosystem alternative:

> "The State Water Board has been working with DWR to analyze an enhanced ecosystem protection alternative for the BDCP that results in reduced south of Delta diversions. Preliminary model results show that this alternative would result in increases to mean annual Delta outflow of approximately 1.6 million acre-feet per year for the February through June period at a cost of approximately 1.5 million acre-feet per year on average reduction in south of Delta diversions relative to the no action alternative. This alternative will allow DWR and other lead agencies, and the State Water Board to evaluate a sufficiently broad range of alternatives to inform their respective processes. As this enhanced ecosystem alternative results in a large negative water supply effect, it provides an alternative to the BDCP's preferred alternative that will assist in analyzing the project's effects. It is therefore useful to evaluate the tradeoffs that need be considered to achieve the two coequal goals required by the Delta Reform Act. Similar to what the State Water Board is doing for the evaluation of San Joaquin River flow objectives, an evaluation of the water supply and economic effects of the enhanced ecosystem BDCP alternative would be useful for the Board's decision-making. Ideally this evaluation of the water supply and economic effects of the enhanced ecosystem alternative could be performed in conjunction with an analysis of the costs and effects of obtaining alternative water supplies."

The operational criteria for the Enhanced Spring Delta Outflow concept are presented in Table X-8.

ED_000733_DD_NSF_00002784-00057

X.9.4 Environmental Organizations Conveyance Operations Concepts

Following the completion of the 2010 Project Status Report, a consortium of environmental organizations (American River et al 2011) proposed three concepts (American Rivers et al 2011):

- A concept to (i) achieve Fall X2, protections in the South Delta, (ii) re-establishment of a more natural hydrograph during winter and spring months, and (iii) reservoir operations to prevent unintended draw downs with a range of potential conveyance capacities. The operations would be similar to Scenario 6 with (i) Fall X2 as under the USFWS 2008 Biological Opinion (USFWS 2008), (ii) modifications to OMR flow criteria, (iii) proportional inflow bypasses from Shasta Lake, Folsom Lake, and Oroville Reservoir into the Sacramento River, and (iv)additional pulse flows in the late winter and through the spring to protect outmigrating fall run and spring run Chinook salmon. For the purposes of this document, this concept is referred to as the "Proportional North Delta Inflow Bypass Concept."
- Operations to provide Delta outflow as described in the State Water Resources Control Board Flow Recommendations for the Sacramento-San Joaquin Delta Ecosystem published in 2010 (State Water Board 2010b).
- Operations as described above under Scenario 6 with a conveyance capacity of 9,000 cfs.

X.9.4.1 Proportional North Delta Inflow Bypass Concept

This potential alternative was proposed in a letter from American Rivers and other environmental organizations (American Rivers et al 2011). The letter stated:

> "The first alternative includes criteria to achieve the fall X2 requirement, additional protections in the South Delta, reservoir bypass criteria to reestablish a more natural hydrograph during winter and spring months, and reservoir release off ramps to prevent unintended draw downs. Criteria for the North Delta diversion are similar to scenario 6, but will require additional pulse protection in the late winter and through the spring (e.g. an extension of the protections for winter run juveniles that were incorporated in previous operational alternatives) in order to protect outmigrating fall run and spring run Chinook salmon. Partial details for these criteria are provided in tables 1, 2 and 3..., but the North Delta diversion rules will need to be more fully described. These criteria should be modeled with a broad range of canal sizes ... to identify the optimal canal size for this operating regime."

The operational criteria included in "tables 1, 2, and 3" and other criteria are presented in Table X-9.

X.9.4.2 Conveyance Operations Concept based on the State Water Resources Control Board Flow Recommendations for the Sacramento-San Joaquin Delta Ecosystem

Another conveyance operations concept proposed by the consortium of environmental organizations (American River et al 2011) was based on the 2010 State Water Resources Control Board flow recommendations for the Sacramento-San Joaquin Delta Ecosystem (State Water Board 2010).

In 2009, the State adopted SBX7 1, which requires the State Water Board to develop new flow criteria for the Delta ecosystem to protect public trust resources and a prioritized schedule to complete instream flow studies for the Delta and high priority streams in the Delta watershed as identified by DFG. In August 2010, the State Water Board completed the Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem (State Water Board 2010a and State Water

ED_000733_DD_NSF_00002784-00058

Board 2010b). The final report presented flow criteria to protect the Delta and its ecological resources. This report provided an assessment of the flows needed to protect the Delta and its ecological resources, but does not address other public trust considerations. More specifically, as explained on page 3 of the final report,

> "[n]one of the determinations in this report have regulatory or adjudicatory effect. Any process with regulatory or adjudicative effect must take place through the State Water Board's water quality control planning, water rights processes, or public trust proceedings in conformance with applicable law. In the State Water Board's development of Delta flow objectives with regulatory effect, it must ensure the reasonable protection of beneficial uses, which may entail balancing of competing beneficial uses of water, including municipal and industrial uses, agricultural uses, and other environmental uses. The State Water Board's evaluation will include an analysis of the effect of any changed flow objectives on the environment in the watersheds in which Delta flows originate, the Delta, and the areas in which Delta water is used. It will also include an analysis of the economic impacts that result from changed flow objectives.
>
> Nothing in either the Delta Reform Act or in this report amends or otherwise affects the water rights of any person. In carrying out its water right responsibilities, the State Water Board may impose any conditions that in its judgment will best develop, conserve, and utilize in the public interest the water to be appropriated. In making this determination, the State Water Board considers the relative benefit to be derived from all beneficial uses of the water concerned and balances competing interests.
>
> The State Water Board has continuing authority over water right permits and licenses it issues. In the exercise of that authority and duty, the State Water Board may, if appropriate, amend terms and conditions of water right permits and licenses to impose further limitations on the diversion and use of water by the water right holder to protect public trust uses or to meet water quality and flow objectives in Water Quality Control Plans it has adopted. The State Water Board must provide notice to the water permit or license holder and an opportunity for hearing before it may amend a water right permit or license."

While informing the broader flow-standard-setting process, the report also underscores the importance to California of resolving future flow regime needs. SBX7 1 also stated that this report should be used to inform DWR in its preparation of environmental documentation for the BDCP. The flow criteria do not have regulatory effect but rather provide information to the State Water Resources Control Board that may be used in the development of future flow and water quality objectives and water rights decisions, including the ongoing Bay-Delta Plan Update and consideration for future BDCP permits and approvals. Although by statute State Water Board must consider its August 2010 flow recommendations at the point in time at which DWR and Reclamation seek to amend their existing water rights permits to include new authorized points of diversion, State Water Board's final August 2010 report makes it clear (on pages 3 and 4) that State Water Board's ultimate determinations regarding what Delta flow criteria to impose as part of such permit amendment must take into account a variety of factors, including ramifications for "all beneficial uses of water":

> "If the DWR and/or the USBR in the future request the State Water Board to amend the water right permits for the State Water Project (SWP) and/or the Central Valley Project (CVP) to move the authorized points of diversion for the projects from the southern Delta to the Sacramento River, Water Code section 85086 directs the State Water Board to include in any order approving a change in the point of the diversion of the projects appropriate Delta flow criteria.
>
> At that time, the State Water Board will determine appropriate permit terms and conditions. That decision will be informed by the analysis in this report, but will also take many other factors into consideration, including any newly developed scientific information, habitat conditions at the time, and other policies of the State, including the relative benefit to be derived

ED_000733_DD_NSF_00002784-00059

> from all beneficial uses of water. The flow criteria in this report are not pre-decisional in regard to any State Water Board action. (See, e.g., Wat. Code, § 85086, subd. (c)(1).)"

The phrase, "other policies of the state," as used above, presumably includes the coequal objective of "providing a more reliable water supply for California," as well as the codified water rights priority system that has been place in some form since not much after statehood. Elsewhere in its August 2010 final report, State Water Board emphasized ongoing parallel processes – beyond the scope of the BDCP – in which the water rights of entities other than DWR and Reclamation might be affected. On pages 14 and 15, State Water Board explained that it

> " has a number of ongoing proceedings that may be informed by the development of flow criteria. Some of these proceedings will result in regulatory requirements that affect flow, or otherwise affect the volume, quality, or timing of flows into, within, or out of the Delta. In July 2008, the State Water Board adopted a strategic work plan for actions to protect beneficial uses of the San Francisco Bay/Delta (Bay-Delta). In accordance with the work plan, the State Water Board recently completed a periodic review of the 2006 Water Quality Control Plan for the Bay-Delta Estuary (Bay-Delta Plan) that recommended the Delta Outflow objectives, as well as other flow objectives, for further review in the water quality control planning process. Currently, the State Water Board is in the process of reviewing the southern Delta salinity and the San Joaquin River flow objectives contained in the Bay-Delta Plan."

On page 17, the final report notes that the *water quality control planning* process will provide another regulatory venue independent of the BDCP in which the August 2010 Delta flow recommendation can be revisited with far more players than just DWR and Reclamation "at the table," so to speak:

> "SB 1 requires any order approving a change in the point of diversion of the State Water Project (SWP) or the Central Valley Project (CVP) from the southern Delta to a point on the Sacramento River to include appropriate flow criteria and to be informed by the analysis in this report. (Wat. Code, § 85086, subd. (c)(2).) The statute also specifies, however, that the criteria shall not be considered predecisional with respect to the State Water Board's subsequent consideration of a permit. (*Id.*, § 85086, subd. (c)(1).) Thus, any process with regulatory or adjudicative effect must take place through the State Water Board's *water quality control planning* or water rights processes in conformance with applicable law. Any person who wishes to introduce information produced during this informational proceeding, or the State Water Board's ultimate determinations in this report, into a later rulemaking or adjudicative proceeding must comply with the rules for submission of information or evidence applicable to that proceeding."

Notwithstanding the numerous regulatory and legal impediments associated with any long-term attempt to integrate State Water Board's 2010 flow recommendation into the fabric of California water quality control planning and water rights law, some initial modeling was conducted for the State Water Board in order to learn more about the real-world consequences of attempting to implement the 2010 recommended flows. The Draft report published in July 2010 (State Water Board 2010a) included results of preliminary model runs. Due to the inability to consider a balanced approach for implementation of the recommended flows, though, the final report did not include the model results (State Water Board 2010b). Even so, however, the preliminary results could be informative to determine general approaches to achieve increased Delta outflows. The two modeled scenarios provided for net Delta outflow of 75 percent of a 14-day average unimpaired flow for January through June and Fall X2 for September through November for wet and above normal years. One of the modeled scenarios also included estimated operations criteria for BDCP. Results of model runs indicated reductions in SWP and CVP water supplies and "end of September" reservoir storage in Trinity Lake, Shasta Lake, Oroville Reservoir and Folsom Lake in more years with the 2010 flow recommendations than under the baseline conditions (pages 178 - 191, State Water Board 2011a).

ED_000733_DD_NSF_00002784-00060

The reduction in reservoir storage also resulted in an increased frequency of non-compliance with cold water storage in accordance with NMFS biological opinion requirements. It should be noted that these reductions would have become more severe if the model assumptions had not reduced agricultural water demands in the Sacramento Valley, including water demands of pre-1914 water rights holders, to reduce surface water diversions. Since these water rights holders are not applicants for the BDCP, these modeling assumptions do not represent a reasonable component of a BDCP action alternative. Reduced water diversions from these water rights holders cannot be feasibly accomplished through approval of the BDCP. The Lead Agencies therefore concluded that, absent reduced diversions by pre-1914 water rights holders, the adverse effects of cold water storage under a scenario based on the State Water Board's 2010 flow recommendation would be even worse than was predicted by the above-described modeling.

X.9.4.3 Scenario 6 Conveyance Operations Concept with Limited Dual Conveyance Facility Capacity of North Delta Intakes

Another conveyance operations concept proposed by the consortium of environmental organizations (American River et al 2011) was based on Scenario 6, as described in Subsection X.9.1 with a capacity of 9,000 cfs.

X.9.5 Contra Costa Water District Conveyance Operations Concept with Limited Dual Conveyance Facility Capacity

On February 2, 2011, Contra Costa Water District (CCWD 2011) submitted a letter to the Deputy Secretary of Natural Resources Agency identifying three key objectives towards resolving technical and policy issues the Delta ecosystem, water quality, and water supply reliability. The objectives included (i) providing assurances to in-Delta water users that water quality impacts will be mitigated; (ii) incorporating immediate and interim projects that address critical issues now, and will continue to provide benefits in the long-term; and (iii) reassessing the configuration of new facilities in the current draft BDCP. The new configuration addressed in the third objective was described in the following manner in the letter.

> "The 2009 legislative policy called for a reduction in reliance on the Delta in meeting California's future water supply needs (SBX7-1 85021). Nonetheless, some contractors have indicated they would not move forward with the project unless they can increase their water supply. Other BDCP participants oppose increasing water exports from the Delta. This disagreement must be addressed head-on before more money is wasted planning a project that either the contractors will not fund or the fishery agencies will not permit.
>
> A smaller conveyance facility (3 ,000 cfs instead of the 15,000 cfs now under consideration) appears to be the optimum solution based on the BDCP analysis and CCWD's own analysis, providing nearly the same water supply yield at half the cost of the larger facilities, and it allows the option to expand capacity later if necessary. The current BDCP studies show that 62% of the time, any capacity over 3,000 cfs is unused and unnecessary, and the full 15,000 cfs capacity is used only 1 % of the time ... The studies also make clear that the most pressing problem is extended droughts: there is more than a 30% chance of any year being dry or critically dry, and an isolated facility does nothing to change that or the water supply situation that results. Resolution of water supplies in dry years for fish and human activities is where the real focus should be: currently up to 80% of the water is removed from the system in dry years, and we still face severe shortages. It appears that incorporating storage is necessary to meet co-equal goals and would allow more water supplies to be captured in wet years, taking the stress off the ecosystem in dry years."

ED_000733_DD_NSF_00002784-00061

Subsequently, DWR staff consulted with the Contra Costa Water District staff and also determined that this operations concept also should include Fall X2 and modifications to the San Joaquin River Inflow/Export ratio in order to improve water quality and to reduce impacts to fish in the South Delta, in accordance with the first objective in their letter. The letter was commenting on results of preliminary model runs for the "January 2010 Operations" and, therefore, it was assumed that this concept would be based upon those operations criteria. Operations criteria for Limited Dual Conveyance Facility Concept is presented in Table X-10.

X.9.6 Range of Capacities for Conveyance Concepts

In addition to a range of conveyance alignments and operations, the State and federal agencies also addressed the need to consider a range of North Delta intake capacities. Initial modeling results indicated that there was limited difference between SWP and CVP water supply availability for Dual Conveyance concepts between 15,000 cfs and 12,000 cfs capacity at the North Delta intakes based upon the January 2010 BDCP Operations (BDCP 2010c). These results occurred because the reduction in diversion capacity in the North Delta could be replaced with increased diversions at the existing South Delta intakes. The differences between 15,000 cfs capacity at the North Delta intakes and 9,000 cfs and 6,000 cfs capacities also was minimal but greater than the difference with 12,000 cfs.

Therefore, the EIR/EIS lead agencies determined that a range of capacities should be considered for Dual Conveyance concepts that included North Delta intake capacities of 3,000 cfs, 6,000 cfs, 9,000 cfs, and 15,000 cfs. Based upon the preliminary modeling results for the January 2010 BDCP Operations (BDCP 2010c), it appeared that results for capacities of 6,000 cfs, 9,000 cfs, and 15,000 cfs would be similar for Dual Conveyance concepts because in general when diversions were limited at the North Delta intakes water could be diverted at the South Delta intakes. Therefore, based upon the preliminary information, it was determined that the range of concepts to be considered in the second screening should include the following Dual Conveyance concepts to provide a range of flow criteria.

- Dual Conveyance with 15,000 cfs capacity at the North Delta intakes with January 2010 BDCP Operations Concept
- Dual Conveyance with 15,000 cfs capacity at the North Delta intakes with Scenario 6 Concept
- Dual Conveyance with 6,000 cfs capacity at the North Delta intakes with January 2010 BDCP Operations Concept
- Dual Conveyance with 9,000 cfs capacity at the North Delta intakes with Scenario 6 Concept

The Enhanced Ecosystem Conveyance Operations Concept also could be evaluated at a range of capacities. It was determined that a middle range value of 9,000 cfs for the North Delta intakes would be considered for the second screening process for the Enhanced Ecosystem Operations, Modified Enhanced Ecosystem Operations, Scenario 7a, and State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem Operations. Taken together, this range of capacity options was determined to be sufficient to meet the directive in the Delta Reform Act that the BDCP EIR, in order for the BDCP to be considered for automatic inclusion in the Delta Plan, include a “reasonable range of . . . rates of diversion.” (Cal. Water Code Section 85320[b][2][A].)

Based upon the preliminary modeling results for the January 2010 BDCP Operations of the Isolated Conveyance Concept (BDCP 2010c), it appeared that the long-term average Delta exports for an Isolated Conveyance facility with capacities of 3,000 to 15,000 cfs would be less than for the No

ED_000733_DD_NSF_00002784-00062

Action Alternative, as summarized below; and therefore would not necessarily meet the project objectives of the voluntary BDCP process.

- No Action Alternative (no Isolated Conveyance, continued use of Through Delta Conveyance) - 4.9 million acre-feet/year long-term average Delta exports
- 15,000 cfs Isolated Conveyance (no Through Delta Conveyance) - 4.5 million acre-feet/year long-term average Delta exports
- 12,000 cfs Isolated Conveyance (no Through Delta Conveyance) - 4.4 million acre-feet/year long-term average Delta exports
- 9,000 cfs Isolated Conveyance (no Through Delta Conveyance) - 3.8 million acre-feet/year long-term average Delta exports
- 6,000 cfs Isolated Conveyance (no Through Delta Conveyance) - 2.9 million acre-feet/year long-term average Delta exports
- 3,000 cfs Isolated Conveyance (no Through Delta Conveyance) - 1.7 million acre-feet/year long-term average Delta exports

Based upon this preliminary information, it was determined that it was not necessary to evaluate a range of North Delta intake capacities for the Isolated Conveyance concept for a reasonable range of alternatives.

The Through Delta Conveyance - Separate Corridors concept does not include facilities to reduce the amount of water to be conveyed from the Sacramento River to the South Delta intakes. Water would flow from the Sacramento River through Delta Cross Channel and Georgiana Slough by gravity through existing channels. Improvements to the channels and the diversion structures would be sized based upon existing channel capacity and not necessarily upon conveyance capacity, with the exception of improvements near Clifton Court. It was determined that maintaining the Through Delta Conveyance - Separate Corridors concept at the existing Through Delta capacity of 15,000 cfs would be more appropriate than construction of facilities to restrict the capacity of existing channels. Operations criteria for the Separate Corridors concept is presented in Table X-11.

ED_000733_DD_NSF_00002784-00063

X.10 Results of the Second Screening of Conveyance Concepts

As described in Subsection X.7, the EIR/EIS process considered the results of the initial screening of conveyance concept alignments. Subsequently, as described in Subsections X.8 and X.9, operational concepts were identified to be considered in the second screening process. The conveyance concepts identified in Subsection X.10 were compared to the First, Second, and Third Level Screening Criteria and the Consistency Criteria, as described in Subsection X.3.The results of this process are summarized in this subsection.

X.10.1 Range of Conveyance Alignment Concepts Identified through the Initial Screening Process

The EIR/EIS process considered the following conveyance alignment concepts identified through the initial screening process.

- **Dual Conveyance Alignment Concept A-** *Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*
- **Dual Conveyance Alignment Concept B -** *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*
- **Dual Conveyance Alignment Concept C -** *Dual Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*
- **Isolated Conveyance Alignment Concept A -** *Isolated Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*
- **Isolated Conveyance Alignment Concept B -** *Isolated Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*
- **Isolated Conveyance Alignment Concept C -** *Isolated Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*
- **Through Delta Conveyance Alignment Concept -** *Separate Corridors*

X.10.2 Range of Conveyance Operations Concepts Combined with the Conveyance Alignment Concepts

As described in Subsections X.8 and X.9, the following range of conveyance operations concepts were identified for the conveyance alignment concepts. The concepts were combined to develop the following Delta Conveyance Concepts to be compared to the screening criteria and identify the final range of conveyance alternatives to be evaluated in detail in the EIR/EIS.

- **Dual Conveyance Concept 1A-** *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*

ED_000733_DD_NSF_00002784-00064

- **Dual Conveyance Concept 1B -** *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 1C -** *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 2A-** *Dual Conveyance with a Tunnel - Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 2B -** *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 2C -** *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 3A-** *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 3B -** *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 3C -** *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 4A-** *Dual Conveyance with a Tunnel - Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 4B -** *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 4C -** *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 5A-** *Dual Conveyance with a Tunnel - Limited Conveyance Operations Concept - January 2010 BDCP Operations and Fall X2 - 3,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 6A-** *Dual Conveyance with a Tunnel - Enhanced Ecosystem Concept - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 7A-** *Dual Conveyance with a Tunnel - Enhanced Spring Delta Outflow Concept - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 8A-** *Dual Conveyance with a Tunnel - Proportional North Delta Inflow Bypass Concept - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 9A-** *Dual Conveyance with a Tunnel - State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem - 9,000 cfs North Delta Intake Capacity*
- **Isolated Conveyance Concept 1A -** *Isolated Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfsNorth Delta Intake Capacity*
- **Isolated Conveyance Concept 1B -** *Isolated Conveyance with a Lined or Unlined East Cana - January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Isolated Conveyance Concept 1C -** *Isolated Conveyance with a Lined or Unlined West Canal - January 2010 BDCP Operations - 15,000 cfsNorth Delta Intake Capacity*
- **Through Delta Conveyance Concept 1 -** *Separate Corridors Operations - 15,000 cfsNorth Delta Intake Capacity*

These concepts were compared to the screening criteria in a second screening process. The results of that process are described in the following subsection.

ED_000733_DD_NSF_00002784-00065

X.10.3 Results of the Second Screening of Conveyance Concepts

The results of that comparison are summarized in Tables X.12 through X.17 (located at the end of this appendix).

Based upon the results of the comparison of the Conveyance Concepts to the screening criteria, Dual Conveyance Concept 9A - *Dual Conveyance with a Tunnel - State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem - 9,000 cfs North Delta Intake Capacity* - was eliminated from further analysis. This concept was eliminated because of the preliminary modeling results presented in a draft report by the State Water Board (State Water Board 2010a) that indicated the possibility of reductions in cold water pool storage in Trinity Lake, Shasta Lake, Oroville Reservoir, and Folsom Lake that would lead to increased levels of non-compliance with the NMFS Biological Opinion and adverse impacts to salmonids in the Sacramento and Feather rivers as compared to Existing Conditions or No Action Alternative. It is also noted that the preliminary model runs resulted in the possibility of these adverse impacts following the reduction of water available to pre-1914 water rights holders in the Sacramento River basin. This would have the potential to require changes in the legal Sacramento River water rights or water entitlements of third parties other than BDCP permit applicants that are beyond the scope of the regulatory authority of the agencies charged with considering approval of the proposed BDCP (including DFG that approves the NCCP and USFWS and NMFS that approve the HCP). In addition, the State Water Board specifically stated in the 2010 report (State Water Board 2010b) that the report provided an assessment of the flows needed to protect the Delta and its ecological resources, but does not address other public trust considerations. More specifically, the final report describes that "Any process with regulatory or adjudicative effect must take place through the State Water Board's water quality control planning, water rights processes, or public trust proceedings in conformance with applicable law." For these reasons, it was determined that, in addition to failing to meet the purpose and need for the BDCP, this alternative concept was likely to violate federal and state statutes or regulations and was not considered in a detail analysis in the EIR/EIS.

X.10.4 Identification of Conveyance Concepts with Similar Conveyance Facilities

As described in Subsections X.3.1.1 and X.3.1.2, the range of reasonable alternatives need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. The DOI NEPA regulations are more specific and provide that "when there are potentially a very large number of alternatives then a reasonable number of *examples* covering the full spectrum of reasonable alternatives" will suffice.

Based upon a review of the range of conveyance concepts, it was determined that the Conveyance Facilities for Dual Conveyance Concepts 1A through 1C and Dual Conveyance Concepts 2A through 2C would be identical to Conveyance Facilities for Dual Conveyance Concepts 3A through 3C and Dual Conveyance Concepts 4A through 4C except for the number of North Delta intakes. The footprint of disturbance for construction of a tunnel would be assumed to be the same for a range of North Delta intake capacities between 6,000 and 15,000 cfs. Similarly, the footprint of disturbance

ED_000733_DD_NSF_00002784-00066

for construction of a canal would be assumed to be the same for a range of North Delta intake capacities between 6,000 and 15,000 cfs. In addition, the North Delta intakes are anticipated to be identical between concepts with conveyance concepts using a tunnel, eastern canal, or western canal. Therefore, it was determined that results of detailed analyses of construction of conveyance facilities with an eastern canal or western canal for Dual Conveyance Concepts 1B through 1C and 2B through 2C would be adequate to disclose potential adverse impacts and benefits that could occur for Dual Conveyance Concepts 3B and 3C and 4B and 4C. Therefore, the following conveyance concepts were eliminated from further detailed analyses in the EIR/EIS.

- **Dual Conveyance Concept 3B -** *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
  - Potential impacts due to construction and operations of the North Delta and South Delta intakes will be the same as under Dual Conveyance Concept 3A
  - Potential impacts due to construction of the eastern canal will be the same as under Dual Conveyance Concept 1B
- **Dual Conveyance Concept 3C -** *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
  - Potential impacts due to construction and operations of the North Delta and South Delta intakes will be the same as under Dual Conveyance Concept 3A
  - Potential impacts due to construction of the western canal will be the same as under Dual Conveyance Concept 1C
- **Dual Conveyance Concept 4B -** *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
  - Potential impacts due to construction and operations of the North Delta and South Delta intakes will be the same as under Dual Conveyance Concept 4A
  - Potential impacts due to construction of the eastern canal will be the same as under Dual Conveyance Concept 1B
- **Dual Conveyance Concept 4C -** *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
  - Potential impacts due to construction and operations of the North Delta and South Delta intakes will be the same as under Dual Conveyance Concept 4A
  - Potential impacts due to construction of the western canal will be the same as under Dual Conveyance Concept 1C

X.10.5 Identification of Conveyance Concepts with Similar Conveyance Operations

In a similar manner as described in Subsection X.10.4, operations under the following conveyance concepts appear to be similar.

- **Dual Conveyance Concept 7A-** *Dual Conveyance with a Tunnel - Enhanced Spring Delta Outflow Concept - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 8A** - *Dual Conveyance with a Tunnel - Proportional North Delta Inflow Bypass Concept - 15,000 cfs North Delta Intake Capacity*

Both of these concepts include methods to achieve Fall X2, provide additional protections for the South Delta as compared to the January 2010 Operations or Scenario 6, include reservoir releases to

ED_000733_DD_NSF_00002784-00067

achieve a more natural hydrograph as compared to Existing Conditions or No Action Alternative, include provisions to minimize reductions in cold water storage, and provide for additional Delta outflow as compared to Existing Conditions or No Action Alternative. Because the Proportional North Delta Inflow Bypass Concept (proposed, as noted above, by the consortium of environmental organizations) maybe more protective of the cold water pool due to the restrictions provided to reduce reservoir bypasses during periods of low storage, it is anticipated that the Enhanced Spring Delta Outflow Concept (proposed by the State Board) may result in lower Delta exports and more severe cold water pool storage reductions. Therefore, the Enhanced Spring Delta Outflow Concept will be evaluated in detail in the EIR/EIS as the "bookend" alternative with the most severe potential adverse impacts and less Delta exports of these two concepts.

Notably, the Proportional North Delta Inflow Bypass Concept is very similar to the Enhanced Spring Delta Outflow Concept, and would also function as either a low-end bookend or as an option close to the low end of the spectrum of potential alternatives.

X.10.6 Range of Conveyance Alternatives to be Evaluated in Detail in the EIR/EIS

Based upon the results of the screening analysis and consideration of similar conveyance concepts, as summarized in Tables X-18 and X-19, the final range of conveyance alternatives to be evaluated in the EIR/EIS is presented below. The conveyance alternatives have been renumbered to be consistent with information presented in the BDCP process.

- **Alternative 1A -** *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative 1B -** *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative1C -** *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative2A-** *Dual Conveyance with a Tunnel - Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative2B -** *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative 2C -** *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative 3-** *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
- **Alternative4-** *Dual Conveyance with a Tunnel - Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
- **Alternative 5-** *Dual Conveyance with a Tunnel - January 2010 BDCP Operations and Fall X2 - 3,000 cfs North Delta Intake Capacity*
- **Alternative 6A -** *Isolated Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative 6B -** *Isolated Conveyance with a Lined or Unlined East Canal- January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative 6C -** *Isolated Conveyance with a Lined or Unlined West Canal - January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*

ED_000733_DD_NSF_00002784-00068

- **Alternative 7 -** *Dual Conveyance with a Tunnel - Enhanced Ecosystem Operations - 9,000 cfs North Delta Intake Capacity*
- **Alternative 8 -** *Dual Conveyance with a Tunnel - Modified Enhanced Ecosystem Operations to Increase Delta Outflow per Scoping Comments from State Water Resources Control Board - 9,000 cfs North Delta Intake Capacity*
- **Alternative 9 -** *Through Delta Conveyance - Separate Corridors Operations - 15,000 cfs North Delta Intake Capacity*

X.11 References

American River et al 2011. American Rivers, The Bay Institute, Defenders of Wildlife, The Endangered Species Coalition, Environmental Defense Fund, Natural Resources Defense Council, The Nature Conservancy, and Planning and Conservation League, letter to Jerry Meral and David Nawi, 2011, August 23.

ASWPA 1976. Association of State Water Project Agencies, Sacramento-San Joaquin Delta - A Summary of Facts, 1976.

BDCP 2007a. Bay Delta Conservation Plan Steering Committee, Conservation Strategy Options Evaluation Report, 2007, September 17.

BDCP 2007b. Bay Delta Conservation Plan Steering Committee, Preliminary Conceptual Conservation Strategy Alternatives and BDCP Conservation Strategy Workgroup Presentation, 2007, February 26.

BDCP 2007c. Bay Delta Conservation Plan Steering Committee, Descriptions - Conservation Strategy Alternatives, 2007, March 5.

BDCP 2007d. Bay Delta Conservation Plan Steering Committee, Handout 2, 2007, April 9.

BDCP 2007e. Bay Delta Conservation Plan Steering Committee, Handout 1, 2007, April 24.

BDCP 2007f. Bay Delta Conservation Plan Steering Committee, BDCP Points of Agreement for Continuing into the Planning Process, 2007, November 16.

BDCP 2007g. Bay Delta Conservation Plan Steering Committee, Draft Bay Delta Conservation Plan Framework (October 29, 2007), Intro & Descriptions Sections Only_102907 Handout, 2007, November 2.

BDCP 2008. Bay Delta Conservation Plan Steering Committee, Draft An Overview of the Conservation Strategy for the Bay Delta Conservation Plan, 2008, December 12.

BDCP 2009a. Bay Delta Conservation Plan Steering Committee, Sacramento River Deep Water Ship Channel Conveyance, 2009, January 14.

BDCP 2009b. Bay Delta Conservation Plan Steering Committee,Sacramento River Deep Water Ship Channel Conveyance, 2009, April 15.

BDCP 2009c. Bay Delta Conservation Plan Steering Committee, Overview of the Draft Conservation Strategy for the Bay Delta Conservation Plan, 2009, January 12.

BDCP 2009d. Bay Delta Conservation Plan Steering Committee, DRERIP Evaluation of BDCP Draft

ED_000733_DD_NSF_00002784-00069

Conservation Measures, 2009, May 8.

BDCP 2010a. Bay Delta Conservation Plan Steering Committee, Changes in BDCP Conservation Measures from July 2009 Draft Chapter 3 Conservation Strategy as agreed to by Steering Committee at January 29, 2010, 2010, February 9.

BDCP 2010b. Bay Delta Conservation Plan Steering Committee, Progress Report on the Bay Delta Conservation Plan, April 28, 2006 - November 18, 2010, 2010.

BDCP 2010c. Bay Delta Conservation Plan Steering Committee, New Delta Conveyance Analysis of Tunnel Sizing Informational Briefing Only, 2010, July 1.

CALFED 1997a. CALFED Bay-Delta Program, Phase II Alternative Descriptions, 1997.

CALFED 1997b. CALFED Bay-Delta Program, Alternative Narrowing Process, Alternative 3G, 1997, July 28.

CALFED 1997c. CALFED Bay-Delta Program, Review of the Decision Process, 1997, October 16.

CALFED 2000a. CALFED Bay-Delta Program, Programmatic Record of Decision, 2000, August 28.

CCWD 2011. Contra Costa Water District, Letter to Gerald H. Meral from Gregory Gartrell, 2011, February 2.

CSIA 1919. California State Irrigation Association, Irrigation of Twelve Million Acres in the Valley of California - California's Greatest Opportunity - Reclaiming an Empire the Valley of California, Colonel Robert Bradford Marshall, 1919.

DWR, DFG, Reclamation, USFWS, and NMFS 2011. California Department of Water Resources, California Department of Fish and Game, federal Bureau of Reclamation, U.S. Fish and Wildlife Service, and National Marine Fisheries Service, Rationale for Five Agency Proposed Alternative BDCP Initial Project Operations Criteria, 2011, May 18.

DPW 1930. California Department of Public Works, Bulletin No. 25, Report to Legislature of 1931 on State Water Plan, 1930.

DWR 1957a. California Department of Water Resources, Bulletin No. 3 California Water Plan, 1957.

DWR 1957b. California Department of Water Resources, Bulletin No. 60, Interim Report to the California State Legislature on the Salinity Control Barrier Investigation, 1957.

DWR 1960. California Department of Water Resources, Preliminary Edition of Bulletin 76, Delta Water Facilities, 1960.

DWR 1965. California Department of Water Resources, Peripheral Canal, Geologic Investigation, 1965.

DWR 1970. California Department of Water Resources, Peripheral Canal Summary of Geologic Investigation, 1970.

DWR 1974. California Department of Water Resources, Summary of the Draft Environmental Impact Report, Peripheral Canal Project, 1974.

DWR 2001. California Department of Water Resources, Sacramento Deep Water Ship Channel Locks Fish Passage Study, 2001, March 27.

ED_000733_DD_NSF_00002784-00070

DWR 2007. California Department of Water Resources, Delta Risk Management Strategy (DRMS) Phase 1, Technical Memorandum: Topical Area – Seismology, 2007.

DWR 2008. California Department of Water Resources, Environmental Impact Report and Environmental Impact Statement for the Bay Delta Conservation Plan, 2008, March 17.

DWR 2009a. California Department of Water Resources, Revised Notice of Preparation of Environmental Impact Report and Environmental Impact Statement for the Bay Delta Conservation Plan, State Clearinghouse Number 2008032062, 2009, February 13.

DWR 2009b. California Department of Water Resources, Sacramento River Deep Water Ship Channel Conveyance Presentation to BDCP Steering Committee January 14, 2009, 2009.

DWR, USFWS, NMFS, Reclamation 2010. California Department of Water Resources, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and federal Bureau of Reclamation, Scoping Report, Bay Delta Conservation Plan Environmental Impact Report/Environmental Impact Statement, 2010, March.

EBMUD 2010. East Bay Municipal Utility District, Memorandum from David Fee to Hasan Abudullah, Bay Area Regional Desalination Project, Existing Facilities Evaluation Task 3 Submittal: Facility Scenarios FINAL, 2010, March 24.

IDC 1963. Interagency Delta Committee, Coordination of Delta Planning, 1963.

MWD 2007. Metropolitan Water District of Southern California, CALFED Science Program Workshops, Science Issues Relating to Delta Conveyance Infrastructure, Design and Operations Issues, 2007.

NMFS 2009. National Marine Fisheries Service, Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project, 2009, June 4.

SDWA 2007. South Delta Water Agency, Submittal to Delta Vision Blue Ribbon Task Force, 2007, November 9.

SDWA 2009. South Delta Water Agency, The Delta Corridors Plan and Its Potential Benefits, 2009.

State Water Board 2000. State Water Resources Control Board, Revised Water Right Decision 1641, 2000, March 15.

State Water Board 2008. State Water Resources Control Board, Letter to Delores Brown from Dorothy Rice, 2008, May 30.

State Water Board 2009. State Water Resources Control Board, Letter to Delores Brown from Dorothy Rice, 2009, May 15.

State Water Board 2010a. State Water Resources Control Board, DRAFT- Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem, 2010, July 20.

State Water Board 2010b. State Water Resources Control Board, Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem, 2010, August 3.

State Water Board 2011a. State Water Resources Control Board, Letter to Gerald H. Meral from Thomas Howard, 2011, April 19.

ED_000733_DD_NSF_00002784-00071

State Water Board 2011b. State Water Resources Control Board, Letter to Gerald H. Meral from Thomas Howard, 2011, April 19.

State Water Board 2011c. State Water Resources Control Board, Letter to Gerald H. Meral from Thomas Howard, 2011, December 19.

USFWS 2008. U.S. Fish and Wildlife Service, Formal Endangered Species Act Consultation on the Proposed Coordinated Operations of the Central Valley Project and State Water Project, 2008, December 15.

USFWS, NMFS, Reclamation 2008. U.S. Fish and Wildlife Service, National Marine Fisheries Service, and federal Bureau of Reclamation, Notice of Intent to prepare an Environmental Impact Statement/Environmental Impact Report and notice of public scoping meetings, Bay Delta Conservation Plan for the Sacramento-San Joaquin Delta, 2008, April 15.

USFWS, NMFS, Reclamation 2009. U.S. Fish and Wildlife Service, National Marine Fisheries Service, and federal Bureau of Reclamation, Notice of Intent to prepare an Environmental Impact Statement/Environmental Impact Report and notice of public scoping meetings, Bay Delta Conservation Plan for the Sacramento-San Joaquin Delta, 2009, February 13.

ED_000733_DD_NSF_00002784-00072

X.12 Attachments

Bay Delta Conservation Plan Steering Committee, Conservation Strategy Options Evaluation Report, 2007.

Bay Delta Conservation Plan Steering Committee, BDCP Points of Agreement for Continuing into the Planning Process, 2007.

Bay Delta Conservation Plan Steering Committee, Progress Report on the Bay Delta Conservation Plan, April 28, 2006 - November 18, 2010, 2010.

California Department of Water Resources, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and U.S. Bureau of Reclamation, Scoping Report, Bay Delta Conservation Plan Environmental Impact Report/Environmental Impact Statement, 2010.

California Department of Water Resources, California Department of Fish and Game, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and U.S. Bureau of Reclamation See Rationale for Five Agency Proposed Alternative BDCP Initial Project Operations Criteria, May 18, 2011 Working Draft.

ED_000733_DD_NSF_00002784-00073

Table X-1. Initial Screening: Comparison of Potential Conveyance Alignment Concepts with First Level Screening Criteria that Reflect CEQA and NEPA Requirements with Project Objectives and Purpose Statements in the NOP and NOI

Under CEQA, the answers to most of these questions should be "Possibly" or "Unknown" to continue to be considered under the Second Level Screening Criteria. If the answers to most of these questions are "No" or "Not Likely," the alternative concept need not be considered in the Second Level Screening Criteria.

Under general NEPA principles, the answers to all of these questions should be "Possibly" or "Unknown" if an alternative is to continue to be considered under the Second Level Screening Criteria. However, because the EIR/EIS is a joint document and the project/action will be a joint state/federal undertaking, alternative concepts with "Possibly" or "Unknown" answers to most of these questions is adequate to continue consideration under the Second Level Screening Criteria. If the answers to most of the questions are "Not Likely," the alternative concept would not be considered under subsequent screening criteria.

Potential Alternative	Could the potential alternative provide for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species?	Could the potential alternative protect, restore, and enhance certain aquatic, riparian, and associated terrestrial natural communities and ecosystems?	Could the potential alternative reduce the adverse effects to certain listed species of diverting water by relocating the intakes of the SWP and CVP?	Could the potential alternative restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority, and other existing applicable agreements?	Results of First Level Screening
1. Conveyance Concept AI - *Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
2. Conveyance Concept A2 - *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
3. Conveyance Concept A3 - *Dual Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
4. Conveyance Concept A4 - *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the Lower San Joaquin River, and Continued Use of Existing South Delta Intakes*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
5. Conveyance Concept BI - *Isolated Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
6. Conveyance Concept B2 - *Isolated Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
7. Conveyance Concept B3 - *Isolated Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening

ED_000733_DD_NSF_00002785-00001

8. Conveyance Concept B4 - *Isolated Conveyance with a Lined or Unlined East Canal between the Sacramento River near the Confluence with the Feather River and the and Lower San Joaquin River, and Abandonment of Existing South Delta Intakes*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
9. Conveyance Concept B5 - *Isolated Conveyance with Diversion from the Sacramento River near West Sacramento into the Sacramento Deep Water Ship Channel and a Tunnel between the Deep Water Ship Channel and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
10. Conveyance Concept B6 - *Isolated Conveyance with Diversion from the San Joaquin River near Antioch and Desalination Facilities, a Tunnel between the Desalination Facilities and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
11. Conveyance Concept C1 - *Separate Corridors*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
12. Conveyance Concept C2 - *Through Delta Conveyance with Armored Corridors*	Unknown at this time because the analysis is focused on conveyance facilities	Unknown at this time because the analysis is focused on conveyance facilities	Possibly	Possibly	Continue to Second Level Screening
13. Conveyance Concept C3 - *Through Delta Conveyance with West Delta Salinity Barrier*	Not likely because Delta would become a freshwater lake that would not support an estuarine habitat and the barrier would reduce fish passage for anadromous fish. This concept would not support project objectives and aspects of the project purpose and need that focus on creating ecological improvements in the Delta ecosystem and contributing to recovery of declining listed species. Nor would the concept meet the coequal goal under the 2009 Delta Reform Act of "protecting, restoring, and enhancing the Delta ecosystem."	Not likely because Delta would become a freshwater lake that would not support an estuarine habitat and the barrier would reduce fish passage for anadromous fish. This concept would not support project objectives and aspects of the project purpose and need that focus on creating ecological improvements in the Delta ecosystem and contributing to recovery of declining listed species. Nor would the concept meet the coequal goal under the 2009 Delta Reform Act of "protecting, restoring, and enhancing the Delta ecosystem."	Not likely because Delta would become a freshwater lake that would not support an estuarine habitat and the barrier would reduce fish passage for anadromous fish. This concept would not support project objectives and aspects of the project purpose and need that focus on creating ecological improvements in the Delta ecosystem and contributing to recovery of declining listed species. Nor would the concept meet the coequal goal under the 2009 Delta Reform Act of "protecting, restoring, and enhancing the Delta ecosystem."	Possibly	Eliminate from further evaluation

ED_000733_DD_NSF_00002785-00002

Table X-2. Initial Screening: Comparison of Potential Conveyance Alignment Concepts with Second Level Screening Criteria Related to CEQA and NEPA

If the answer to the CEQA Criteria and/or the NEPA Criteria question is "Possibly" or "Unknown," the alternative concept would be considered in the Third Level Screening. If the answers to both questions are "No" or "Not Likely," the alternative concept would not be considered under subsequent screening criteria.

Potential Alternative	CEQA Criteria: Would the potential alternative avoid or substantially lessen any of the expected significant environmental effects of the "proposed project"?	NEPA Criteria: Would the potential alternative "address one or more significant issues" related to the proposed action?	Results of Second Level Screening
1. Conveyance Concept AI - *Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	Unknown at this Time	Possibly	Continue to Third Level Screening
2. Conveyance Concept A2 - *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	Unknown at this Time	Possibly	Continue to Third Level Screening
3. Conveyance Concept A3 - *Dual Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	Unknown at this Time	Possibly	Continue to Third Level Screening
4. Conveyance Concept A4 - *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the Lower San Joaquin River, and Continued Use of Existing South Delta Intakes*	Unknown at this time. Discharge of Sacramento River water directly into the San Joaquin River would improve water quality. However, discharge of Sacramento River water directly into the Lower San Joaquin River could cause false attraction flows for sturgeon and salmonids upstream of the area currently affected by reverse flows from the Delta and Sacramento River.	Possibly	Continue to Third Level Screening
5. Conveyance Concept BI - *Isolated Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Unknown at this Time	Possibly	Continue to Third Level Screening
6. Conveyance Concept B2 - *Isolated Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Unknown at this Time	Possibly	Continue to Third Level Screening
7. Conveyance Concept B3 - *Isolated Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Unknown at this Time	Possibly	Continue to Third Level Screening
8. Conveyance Concept B4 - *Isolated Conveyance with a Lined or Unlined East Canal between the Sacramento River near the Confluence with the Feather River and the and Lower San Joaquin River, and Abandonment of Existing South Delta Intakes*	Not Likely. This conveyance alignment would be at least three times longer than other isolated conveyance alignments considered and would increase the extent of disturbance to communities and habitat along this conveyance alignment.	Possibly	Continue to Third Level Screening
9. Conveyance Concept B5 - *Isolated Conveyance with Diversion from the Sacramento River near West Sacramento into the Sacramento Deep Water Ship Channel and a Tunnel between the Deep Water Ship Channel and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Yes. The area of disturbance of the intake along the Sacramento River near West Sacramento could be 2 to 3 miles in length. In addition, construction of a barrier and an additional ship lock in the Sacramento Deep Water Ship Channel could adversely impact navigation along a federal navigation corridor. Initial discussions with DFG have indicated that delta smelt use portions of the Sacramento Deep Water Ship Channel and therefore, construction of a barrier and use of the channel for freshwater conveyance could affect delta smelt populations (DWR, Sacramento River Deep Water Ship Channel Conveyance Presentation to BDCP Steering Committee January 14, 2009)	Possibly	Continue to Third Level Screening
10. Conveyance Concept B6 - *Isolated Conveyance with Diversion from the San Joaquin River near Antioch and Desalination Facilities, a Tunnel between the Desalination Facilities and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Not Likely. Depending upon the capacity of the desalination facility, the intake along the San Joaquin River shoreline could extend over three miles for a 15,000 cfs intake and the desalination facility could be several square miles in size. This could result in substantial impacts to land use existing development in the affected areas. In addition, desalination of up to 15,000 cfs of flow could result in substantial energy use and related greenhouse gas emissions. Such emissions could undermine California's ability to meet its legislative mandate under the California Global Warming Solutions Act of 2006 to reduce the State's 2020 greenhouse gas emissions to 1990 levels.	Possibly	Continue to Third Level Screening
11. Conveyance Concept C1 - *Separate Corridors*	Unknown at this Time	Possibly	Continue to Third Level Screening

ED_000733_DD_NSF_00002785-00003

12. Conveyance Concept C2 - *Through Delta Conveyance with Armored Corridors*	Not Likely. This conveyance alignment would result in substantial disturbance and either removal or placement of over 120 million cubic yards of materials for levee construction along the Mokelumne and Middle rivers and Victoria Canal. This could result in substantial adverse impacts to aquatic habitat, land use, air quality, and transportation in the area during construction.	Possibly	Continue to Third Level Screening
13. Conveyance Concept C3 - *Through Delta Conveyance with West Delta Salinity Barrier*	This concept was eliminated from consideration under the First Screening Criteria.	This concept was eliminated from consideration under the First Screening Criteria.	This concept was eliminated from consideration under the First Screening Criteria.

ED_000733_DD_NSF_00002785-00004

Table X-3. Initial Screening: Comparison of Potential Conveyance Alignment Concepts with Third Level Screening Criteria Related to Economically Feasibility under CEQA and Reasonableness under NEPA

If the answers to all of these questions are "Not Likely" or "Unknown," the alternative concept would be considered in the EIR/EIS. If the answers to any of these questions are "LIKELY" or "YES," the alternative concept would not be considered in the EIR/EIS.

	Are the marginal costs of the potential alternative, as compared to the cost of the proposed project or action, so substantial that a reasonably prudent public agency would not proceed with the alternative?	Are the marginal costs of the potential alternative, as compared to the cost of the proposed project or action, so substantial that it would be impractical to proceed with the alternative?	Would the potential alternative take so long to implement, as compared with the proposed project or action, that it would not meet the project objectives or purpose within an acceptable time frame?	Would the potential alternative require technology or physical components that are clearly technically infeasible based on currently available science and engineering criteria for the scope of the potential alternative?	Would construction, operation, and/or maintenance of the potential alternative violate any federal or state statutes or regulations (other than sources of law that would be amended or eliminated as part of the alternative)?	Would the potential alternative involve an outcome that is clearly undesirable from a policy standpoint in that the outcome could not reflect a reasonable balancing of relevant economic, environmental, social, and technological factors?	Results of Third Level Screening
1. Conveyance Concept AI - *Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative in the Second Screening Process
2. Conveyance Concept A2 - *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative in the Second Screening Process
3. Conveyance Concept A3 - *Dual Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative in the Second Screening Process
4. Conveyance Concept A4 - *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the Lower San Joaquin River, and Continued Use of Existing South Delta Intakes*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Likely. Discharge of Sacramento River water directly into the San Joaquin River would improve water quality. However, discharge of Sacramento River water directly into the Lower San Joaquin River could cause false attraction flows for sturgeon and salmonids upstream of the area currently affected by reverse flows from the Delta and Sacramento River.	Eliminate from further evaluation
5. Conveyance Concept BI - *Isolated Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative in the Second Screening Process
6. Conveyance Concept B2 - *Isolated Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative in the Second Screening Process

ED_000733_DD_NSF_00002785-00005

7. Conveyance Concept B3 - *Isolated Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative in the Second Screening Process
8. Conveyance Concept B4 - *Isolated Conveyance with a Lined or Unlined East Canal between the Sacramento River near the Confluence with the Feather River and the and Lower San Joaquin River, and Abandonment of Existing South Delta Intakes*	Yes. The area of disturbance along conveyance alignment is approximately three times as long as other Isolated Conveyance alignments. This concept would also be drastically more expensive to construct than substantially shorter alignments.	Yes. The area of disturbance along conveyance alignment is approximately three times as long as other Isolated Conveyance alignments. This concept would also be drastically more expensive to construct than substantially shorter alignments.	Yes. The area of disturbance along conveyance alignment is approximately three times as long as other Isolated Conveyance alignments.	Not Likely	Not Likely	Yes. The extent of disturbance to communities and habitat along the conveyance alignment is substantially more than other isolated conveyance alternatives because the length of the conveyance would be approximately three times as long.	Eliminated from further evaluation
9. Conveyance Concept B5 - *Isolated Conveyance with Diversion from the Sacramento River near West Sacramento into the Sacramento Deep Water Ship Channel and a Tunnel between the Deep Water Ship Channel and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Yes. The area of disturbance of the intake along the Sacramento River near West Sacramento could be 2 to 3 miles in length. This could result in substantial impacts to land use. In addition, construction of a barrier and an additional ship lock in the Sacramento Deep Water Ship Channel could adversely impact navigation along a federal navigation corridor.	Yes. The area of disturbance of the intake along the Sacramento River near West Sacramento could be 2 to 3 miles in length. This could result in substantial impacts to land use. In addition, construction of a barrier and an additional ship lock in the Sacramento Deep Water Ship Channel could adversely impact navigation along a federal navigation corridor.	Yes. The area of disturbance of the intake along the Sacramento River near West Sacramento could be 2 to 3 miles in length. This could result in substantial impacts to land use. In addition, construction of a barrier and an additional ship lock in the Sacramento Deep Water Ship Channel could adversely impact navigation along a federal navigation corridor.	Not Likely	Likely. This alternative would require Congressional action to modify the authorization for the Sacramento Deep Water Ship Channel to include water supply functions	Not Likely	Eliminated from further evaluation
10. Conveyance Concept B6 - *Isolated Conveyance with Diversion from the San Joaquin River near Antioch and Desalination Facilities, a Tunnel between the Desalination Facilities and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Yes. Depending upon the capacity of the desalination facility, the intake along the San Joaquin River shoreline could extend over three miles for a 15,000 cfs intake and the desalination facility could be several square miles in size. This could result in substantial impacts to land use, given the generally dense existing development in the affected areas. In addition, desalination of up to 15,000 cfs of flow would add an enormous ongoing cost not required for other options and would result in substantial energy use and related substantial greenhouse gas emissions. Such emissions could undermine California's ability to meet its legislative mandate under the California Global Warming Solutions Act of 2006 to reduce the State's 2020 greenhouse gas emissions to 1990 levels.	Yes. Depending upon the capacity of the desalination facility, the intake along the San Joaquin River shoreline could extend over three miles for a 15,000 cfs intake and the desalination facility could be several square miles in size. This could result in substantial impacts to land use given the generally dense existing development in the affected areas. In addition, desalination of up to 15,000 cfs of flow would add an enormous ongoing cost not required for other options and would result in substantial energy use and related substantial greenhouse gas emissions. Such emissions could undermine California's ability to meet its legislative mandate under the California Global Warming Solutions Act of 2006 to reduce the State's 2020 greenhouse gas emissions to 1990 levels.	Not Likely	Not Likely	Not Likely	Likely. Desalination of up to 15,000 cfs of flow would add an enormous ongoing cost not required for other options and would result in substantial energy use and related substantial greenhouse gas emissions. Such emissions could undermine California's ability to meet its legislative mandate under the California Global Warming Solutions Act of 2006 to reduce the State's 2020 greenhouse gas emissions to 1990 levels.	Eliminated from further evaluation
11. Conveyance Concept C1 - *Separate Corridors*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative the Second Screening

ED_000733_DD_NSF_00002785-00006

12. Conveyance Concept C2 - *Through Delta Conveyance with Armored Corridors*	Yes. This conveyance alignment would result in substantial disturbance and either removal or placement of over 120 million cubic yards of materials for levee construction along the Mokelumne and Middle rivers and Victoria Canal. This could result in substantial adverse impacts to aquatic habitat, land use, and transportation in the area during construction.	Yes. This conveyance alignment would result in substantial disturbance and either removal or placement of over 120 million cubic yards of materials for levee construction along the Mokelumne and Middle rivers and Victoria Canal. This could result in substantial adverse impacts to aquatic habitat, land use, air quality, and transportation in the area during construction.	Yes. This conveyance alignment would result in substantial disturbance and either removal or placement of over 120 million cubic yards of materials for levee construction along the Mokelumne and Middle rivers and Victoria Canal. This could result in substantial adverse impacts to aquatic habitat, land use, air quality, and transportation in the area during construction.	Not Likely	Not Likely	Yes. This conveyance alignment would result in substantial disturbance and either removal or placement of over 120 million cubic yards of materials for levee construction along the Mokelumne and Middle rivers and Victoria Canal. This could result in substantial adverse impacts to aquatic habitat, land use, air quality, and transportation in the area during construction. In particular, concentrated air quality effects from the huge number of diesel-powered truck trips or barges could create hotspots of toxic air contaminants that would not exist with other alternatives. This concept would also take substantially longer to construct, again given the huge number of truck trips associated with importing 120 million cubic yards of materials.	Eliminated from further evaluation
13. Conveyance Concept C3 - *Through Delta Conveyance with West Delta Salinity Barrier*	This concept was eliminated from consideration under the First Screening Criteria.	This concept was eliminated from consideration under the First Screening Criteria.	This concept was eliminated from consideration under the First Screening Criteria.	This concept was eliminated from consideration under the First Screening Criteria.	This concept was eliminated from consideration under the First Screening Criteria.	This concept was eliminated from consideration under the First Screening Criteria.	This concept was eliminated from consideration under the First Screening Criteria.

ED_000733_DD_NSF_00002785-00007

Table X-4. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS based upon "January 2010 BDCP Steering Committee Presentation" for Dual Conveyance (revised February 2010)

North Delta Diversion Bypass Flows

1. North Delta Diversion Bypass Flows

Objectives include flows of the functional equivalent thereof to (1) maintain fish screen sweeping velocities, (2) reduce upstream transport from downstream channels, (3) support salmonid and pelagic fish transport to regions of suitable habitat, (4) reduce predation effects downstream, and (5) maintain or improve rearing habitat in the north Delta.

Constant Low-Level Pumping (Dec-Jun):

Diversions up to 6% of river flow for flows greater than 5,000 cfs. No more than 300 cfs at any one intake.

Initial Pulse Protection:

Low level pumping maintained through the initial pulse period. For the purpose of monitoring, the initiation of the pulse is defined by the following criteria: (1) Wilkins Slough flow changing by more than 45% over a five day period and (2) flow greater than 12,000 cfs. Low-level pumping continues until (1) Wilkins Slough returns to prepulse flows (flow on first day of 5-day increase), (2) flows decrease for 5 consecutive days, or (3) flows are greater than 20,000 cfs for 10 consecutive days. After pulse period has ended, operations will return to the bypass flow table (SubTable A). These parameters are for modeling purposes. Actual operations will be based on real-time monitoring of fish movement.

If the first flush begins before Dec 1, May bypass criteria must be initiated following first flush and the second pulse period will have the same protective operation.

Post-Pulse Operations:

After initial flush(es), go to Level I post-pulse bypass rule (see SubTable A) until 15 total days of bypass flows above 20,000 cfs. Then go to the Level II post-pulse bypass rule until 30 total days of bypass flows above 20,000 cfs. Then go to the Level III post-pulse bypass rule.

Sub-Table A. Post-Pulse Operations for North Delta Diversion Bypass Flows

Level I Post-Pulse Operations			Level II Post-Pulse Operations			Level III Post Pulse Operations		
Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.			Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.			Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.		
Dec - Apr			**Dec - Apr**			**Dec - Apr**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs

ED_000733_DD_NSF_00002785-00008

5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 80% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 60% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 50% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,600 cfs plus 60% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,400 cfs plus 50% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	12,000 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	18,400 cfs plus 30% of the amount over 20,000 cfs	20,000 cfs	no limit	15,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,000 cfs plus 0% of the amount over 20,000 cfs
May			**May**			**May**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 70% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 50% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 40% of the amount over 9,000 cfs

ED_000733_DD_NSF_00002785-00009

17,000 cfs	20,000 cfs	16,400 cfs plus 50% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,000 cfs plus 35% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	11,400 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	14,750 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	12,400 cfs plus 0% of the amount over 20,000 cfs
Jun			**Jun**			**Jun**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 60% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 40% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 30% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,200 cfs plus 40% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	12,600 cfs plus 20% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	10,800 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,400 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,600 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	11,800 cfs plus 0% of the amount over 20,000 cfs
Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs		
South Delta Channel Flows								
2. South Delta Channel Flows								

ED_000733_DD_NSF_00002785-00010

Minimize take at south Delta pumps by reducing incidence and magnitude of reverse flows during critical periods for pelagic species.

OMR Flows

• FWS smelt and NMFS BO's model of adaptive restrictions (temperature, turbidity, salinity, smelt presence)

Table below provides a rough representation of the current estimate of "most likely" operation under FWS and NMFS BO's for modeling purposes.

Combined Old and Middle River flows no less than values below* (cfs)					
Month	**W**	**AN**	**BN**	**D**	**C**
Jan	-4000	-4000	-4000	-5000	-5000
Feb	-5000	-4000	-4000	-4000	-4000
Mar	-5000	-4000	-4000	-3500	-3000
Apr	-5000	-4000	-4000	-3500	-2000
May	-5000	-4000	-4000	-3500	-2000
Jun	-5000	-5000	-5000	-5000	-2000
Jul	N/A	N/A	N/A	N/A	N/A
Aug	N/A	N/A	N/A	N/A	N/A
Sep	N/A	N/A	N/A	N/A	N/A
Oct	N/A	N/A	N/A	N/A	N/A
Nov	N/A	N/A	N/A	N/A	N/A
Dec	-6800	-6800	-6300	-6300	-6100

* Values are monthly average for use in modeling. December 20-31 targets are -5000 cfs (W, AN), -3500 cfs (BN, D), and -3000 cfs (C), and are averaged with an assumed background of -8000 cfs for December 1-19. Values are reflective of the "most likely" operation under the FWS Delta Smelt Biological Opinion. Values for modeling may be updated based on review by fishery agencies.

South Delta Export - San Joaquin Inflow Ratio:

- Sliding scale for flows above the established OMR to share additional SJR flows between export and environment; export share would increase at higher flows
- Time value of benefit; crediting outside of period in which flows are acquired

Fremont Weir/Yolo Bypass

3. Fremont Weir/Yolo Bypass

Considerations include (1) increasing spawning and rearing habitat for splittail and rearing habitat for salmonids for >30 days, (2) providing alternate migration corridor to the mainstem Sacramento River, and (3) increasing effectiveness of habitat and food transport in Cache Slough.

ED_000733_DD_NSF_00002785-00011

Sacramento Weir - No change in operations; improve upstream fish passage facilities
Lisbon Weir - No change in operations; improve upstream fish passage facilities
Fremont Weir – Improve fish passage at existing weir elevation; construct opening and operable gates at elevation 17.5 feet with fish passage facilities; construct opening and operable gates at a smaller opening with fish passage enhancement at elevation 11.5 feet
Fremont Weir Gate Operations -
December 1-March 30 (extend to May 15, depending on hydrologic conditions and measures to minimize land use and ecological conflicts) open the 17.5 foot and 11.5 foot elevation gates when Sacramento River flow at Freeport is greater than 25,000 cfs (provides local and regional flood control benefit and coincides with pulse flows and juvenile salmonid migration cues, provides seasonal floodplain inundation for food production, juvenile rearing, and spawning) to provide Yolo Bypass inundation of 3,000 to 6,000 cfs depending on river stage. Operating the gates to allow Yolo Bypass inundation when Sacramento River flow is greater than 25,000 cfs will reduce impacts to water supply associated with Hood bypass flow constraints. Potential impacts to water supply would be avoided or minimized through an operations plan.
Close the 17.5 foot elevation gates when Sacramento River flow at Freeport recedes to less than 20,000 cfs but keep 11.5 foot elevation gates open to provide greater opportunity for fish within the bypass to migrate upstream into the Sacramento River; close 11.5 foot elevation gates when Sacramento River flow at Freeport recedes to less than 15,000 cfs
Delta Cross Channel Gate Operations
4. Delta Cross Channel Gate Operations Considerations include (1) reduce transport of outmigrating Sacramento River fish into central Delta, (2) maintain flows downstream on Sacramento River, (3) and providing sufficient Sacramento River flow into interior Delta when water quality for M&I and AG may be of concern.
Oct-Nov: DCC gate closed if fish are present (assume 15 days per month; may be open longer depending on presence of fish) Dec-Jun: DCC gate closed Jul-Sep: DCC gate open
Rio Vista Minimum Instream Flows
5. Rio Vista Minimum Instream Flows Maintain minimum flows for outmigrating salmonids and smelt.
Sep-Dec: Per D-1641 Jan-Aug: Minimum of 3,000 cfs
Delta Inflow & Outflow
6. Delta Inflow & Outflow Considerations include (1) Provide sufficient outflow to maintain desirable salinity regime downstream of Collinsville during the spring, (2) explore range of approaches toward providing additional variability to Delta inflow and outflow.
Delta Outflow: Jul-Jan: Per D-1641 Feb-Jun: Per D-1641 - Proportional Reservoir Release concept will continue to be evaluated to the extent that it provides similar response to outflow, inflow, and upstream storage conditions
Operations for Delta Water Quality and Residence Time
7. Operations for Delta Water Quality and Residence Time Considerations include (1) maintain a minimum level of pumping from the south Delta during summer to provide limited flushing for general water quality conditions (reduce residence times), (2) for M&I and AG salinity improvements, and (3) to allow operational flexibility during other periods to operate either north or south diversions based on real-time assessments of benefits to fish and water quality.

ED_000733_DD_NSF_00002785-00012

Assumptions: Jul-Sep: Prefer south delta pumping up to 3,000 cfs before diverting from north Oct-Jun: Prefer north delta pumping (real-time operational flexibility)
In-Delta Agricultural and Municipal & Industrial Water Quality Requirements
8. In-Delta Agricultural and Municipal & Industrial Water Quality Requirements Existing M&I and AG salinity requirements
Assumptions: Existing D-1641 North and Western Delta AG and MI standards EXCEPT move compliance point from Emmaton to Three Mile Slough juncture. Maintain all water quality requirements contained in the NDWA/ DWR Contract and other DWR contractual obligations.

ED_000733_DD_NSF_00002785-00013

Table X-5. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS based upon "January 2010 BDCP Steering Committee Presentation" for Isolated Conveyance

North Delta Diversion Bypass Flows

1. North Delta Diversion Bypass Flows

Objectives include flows or the functional equivalent thereof to (1) maintain fish screen sweeping velocities, (2) reduce upstream transport from downstream channels, (3) support salmonid and pelagic fish transport to regions of suitable habitat, (4) reduce predation effects downstream, and (5) maintain or improve rearing habitat in the north Delta.

Constant Low-Level Pumping (Dec-Jun):

Diversions up to 6% of river flow for flows greater than 5,000 cfs. No more than 300 cfs at any one intake.

Initial Pulse Protection:

Low level pumping maintained through the initial pulse period. For the purpose of monitoring, the initiation of the pulse is defined by the following criteria: (1) Wilkins Slough flow changing by more than 45% over a five day period and (2) flow greater than 12,000 cfs. Low-level pumping continues until (1) Wilkins Slough returns to prepulse flows (flow on first day of 5-day increase), (2) flows decrease for 5 consecutive days, or (3) flows are greater than 20,000 cfs for 10 consecutive days. After pulse period has ended, operations will return to the bypass flow table (SubTable A). These parameters are for modeling purposes. Actual operations will be based on real-time monitoring of fish movement.

If the first flush begins before Dec 1, May bypass criteria must be initiated following first flush and the second pulse period will have the same protective operation.

Post-Pulse Operations:

After initial flush(es), go to Level I post-pulse bypass rule (see SubTable A) until 15 total days of bypass flows above 20,000 cfs. Then go to the Level II post-pulse bypass rule until 30 total days of bypass flows above 20,000 cfs. Then go to the Level III post-pulse bypass rule.

Sub-Table A. Post-Pulse Operations for North Delta Diversion Bypass Flows

Level I Post-Pulse Operations			Level II Post-Pulse Operations			Level III Post Pulse Operations		
Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.			Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.			Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.		
Dec - Apr			**Dec - Apr**			**Dec - Apr**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs

ED_000733_DD_NSF_00002785-00014

5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 80% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 60% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 50% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,600 cfs plus 60% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,400 cfs plus 50% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	12,000 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	18,400 cfs plus 30% of the amount over 20,000 cfs	20,000 cfs	no limit	15,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,000 cfs plus 0% of the amount over 20,000 cfs
May			**May**			**May**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 70% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 50% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 40% of the amount over 9,000 cfs

ED_000733_DD_NSF_00002785-00015

17,000 cfs	20,000 cfs	16,400 cfs plus 50% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,000 cfs plus 35% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	11,400 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	14,750 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	12,400 cfs plus 0% of the amount over 20,000 cfs
Jun			**Jun**			**Jun**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 60% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 40% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 30% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,200 cfs plus 40% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	12,600 cfs plus 20% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	10,800 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,400 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,600 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	11,800 cfs plus 0% of the amount over 20,000 cfs
Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs		
South Delta Channel Flows - not included due to no operations of South Delta Intakes								

ED_000733_DD_NSF_00002785-00016

Fremont Weir/Yolo Bypass
2. Fremont Weir/Yolo Bypass *Considerations include (1) increasing spawning and rearing habitat for splittail and rearing habitat for salmonids for >30 days, (2) providing alternate migration corridor to the mainstem Sacramento River, and (3) increasing effectiveness of habitat and food transport in Cache Slough.*
Sacramento Weir - No change in operations; improve upstream fish passage facilities
Lisbon Weir - No change in operations; improve upstream fish passage facilities
Fremont Weir – Improve fish passage at existing weir elevation; construct opening and operable gates at elevation 17.5 feet with fish passage facilities; construct opening and operable gates at a smaller opening with fish passage enhancement at elevation 11.5 feet
Fremont Weir Gate Operations -
December 1-March 30 (extend to May 15, depending on hydrologic conditions and measures to minimize land use and ecological conflicts) open the 17.5 foot and 11.5 foot elevation gates when Sacramento River flow at Freeport is greater than 25,000 cfs (provides local and regional flood control benefit and coincides with pulse flows and juvenile salmonid migration cues, provides seasonal floodplain inundation for food production, juvenile rearing, and spawning) to provide Yolo Bypass inundation of 3,000 to 6,000 cfs depending on river stage. Operating the gates to allow Yolo Bypass inundation when Sacramento River flow is greater than 25,000 cfs will reduce impacts to water supply associated with Hood bypass flow constraints. Potential impacts to water supply would be avoided or minimized through an operations plan.
Close the 17.5 foot elevation gates when Sacramento River flow at Freeport recedes to less than 20,000 cfs but keep 11.5 foot elevation gates open to provide greater opportunity for fish within the bypass to migrate upstream into the Sacramento River; close 11.5 foot elevation gates when Sacramento River flow at Freeport recedes to less than 15,000 cfs
Delta Cross Channel Gate Operations
3. Delta Cross Channel Gate Operations Considerations include (1) reduce transport of outmigrating Sacramento River fish into central Delta, (2) maintain flows downstream on Sacramento River, (3) and providing sufficient Sacramento River flow into interior Delta when water quality for M&I and AG may be of concern.
Oct-Nov: DCC gate closed if fish are present (assume 15 days per month; may be open longer depending on presence of fish) Dec-Jun: DCC gate closed Jul-Sep: DCC gate open
Rio Vista Minimum Instream Flows
4. Rio Vista Minimum Instream Flows Maintain minimum flows for outmigrating salmonids and smelt.
Sep-Dec: Per D-1641 Jan-Aug: Minimum of 3,000 cfs
Delta Inflow & Outflow
5. Delta Inflow & Outflow Considerations include (1) Provide sufficient outflow to maintain desirable salinity regime downstream of Collinsville during the spring, (2) explore range of approaches toward providing additional variability to Delta inflow and outflow.
Delta Outflow: Jul-Aug & Dec- Jan: Per D-1641 Sep-Nov: Fall X2 per FWS Smelt BO

ED_000733_DD_NSF_00002785-00017

Operations for Delta Water Quality and Residence Time - not included due to no operations of South Delta Intakes
In-Delta Agricultural and Municipal & Industrial Water Quality Requirements
6. In-Delta Agricultural and Municipal & Industrial Water Quality Requirements Existing M&I and AG salinity requirements
Assumptions: Existing D-1641 North and Western Delta AG and MI standards EXCEPT move compliance point from Emmaton to Three Mile Slough juncture. Maintain all water quality requirements contained in the NDWA/ DWR Contract and other DWR contractual obligations.

ED_000733_DD_NSF_00002785-00018

Table X-6. Long-Term BDCP Water Operations Proposal for Scenario 6 for Dual Conveyance (DWR, DFG, Reclamation, USFWS, and NMFS 2011)

North Delta Diversion Bypass Flows

1. North Delta Diversion Bypass Flows

Objectives include flows or the functional equivalent thereof to (1) provide North Delta bypass criteria with adaptive limits, (2) provide for Fall X2, (3) support salmonid and pelagic fish transport to regions of suitable habitat, (4) reduce predation effects downstream, and (5) maintain or improve rearing habitat in the north Delta.

Constant Low-Level Pumping (Dec-Jun)

Diversions up to 6% of river flow for flows greater than 5,000 cfs. No more than 300 cfs at any one intake.

Initial Pulse Protection

Low level pumping maintained through the initial pulse period. For the purpose of modeling, the initiation of the pulse is defined by the following criteria: (1) Wilkins Slough flow changing by more than 45% over a five day period and (2) flow greater than 12,000 cfs. Low-level pumping continues until (1) Wilkins Slough returns to pre-pulse flows (flow on first day of 5-day increase), (2) flows decrease for 5 consecutive days, or (3) flows are greater than 20,000 cfs for 10 consecutive days. After pulse period has ended, operations will return to the bypass flow table (Sub-Table A). These parameters are for modeling purposes. Actual operations will be based on real-time monitoring of fish movement.

If the first flush begins before Dec 1, May bypass criteria must be initiated following first flush and the second pulse period will have the same protective operation.

Post-Pulse Operations

After initial flush(es), go to Level I post-pulse bypass rule (see Sub-Table A) until 15 total days of bypass flows above 20,000 cfs. Then go to the Level II post-pulse bypass rule until 30 total days of bypass flows above 20,000 cfs. Then go to the Level III post-pulse bypass rule.

Sub-Table A. Post-Pulse Operations for North Delta Diversion Bypass Flows

Level I Post-Pulse Operations			Level II Post-Pulse Operations			Level III Post Pulse Operations		
Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.			Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.			Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.		
Dec - Apr			**Dec - Apr**			**Dec - Apr**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs

ED_000733_DD_NSF_00002785-00019

5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 80% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 60% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 50% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,600 cfs plus 60% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,400 cfs plus 50% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	12,000 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	18,400 cfs plus 30% of the amount over 20,000 cfs	20,000 cfs	no limit	15,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,000 cfs plus 0% of the amount over 20,000 cfs
May			**May**			**May**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 70% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 50% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 40% of the amount over 9,000 cfs

ED_000733_DD_NSF_00002785-00020

17,000 cfs	20,000 cfs	16,400 cfs plus 50% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,000 cfs plus 35% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	11,400 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	14,750 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	12,400 cfs plus 0% of the amount over 20,000 cfs
Jun			**Jun**			**Jun**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 60% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 40% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 30% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,200 cfs plus 40% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	12,600 cfs plus 20% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	10,800 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,400 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,600 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	11,800 cfs plus 0% of the amount over 20,000 cfs

ED_000733_DD_NSF_00002785-00021

Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs	Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs	Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs

Sub-Table B. San Joaquin Inflow Relationship to OMR

April and May	June	April and May	June
If San Joaquin flow at Vernalis is the following	Average OMR flows would be at least the following (interpolated linearly between values)	If San Joaquin flow at Vernalis is the following	Average OMR flows would be at least the following (interpolated linearly between values)
≤ 5,000 cfs	-2,000 cfs	≤ 5,000 cfs	-2,000 cfs
6,000 cfs	+1000 cfs	3,501 to 10,000 cfs	3,501 to 10,000 cfs
10,000 cfs	+2000 cfs		
15,000 cfs	+3000 cfs	10,001 to 15,000 cfs	+1000 cfs
≥30,000 cfs	+6000 cfs	>15,000 cfs	+2000 cfs

South Delta Channel Flows

2. South Delta Channel Flows

Minimize take at south Delta pumps by reducing incidence and magnitude of reverse flows during critical periods for pelagic species.

OMR Flows

All OMR criteria required by the various fish protection triggers (density, calendar, and flow based triggers) described in FWS and NMFS OCAP BOs were incorporated into the modeling of the baseline and the January, 2010 proposed project, as well as these newly proposed operational criteria. Whenever those triggers would result in OMRs higher than those shown below, the higher OMR requirements would be met.

Combined Old and Middle River flows no less than values below[1] (cfs)

Month	W	AN	BN	D	C
Jan	0	-3500	-4000	-5000	-5000
Feb	0	-3500	-4000	-4000	-4000
Mar	0	0	-3500	-3500	-3000
Apr	varies[2]	varies[2]	varies[2]	varies varies[2]	varies varies[2]
May	varies[2]	varies[2]	varies[2]	varies[2]	varies[2]
Jun	varies[2]	varies[2]	varies[2]	varies[2]	varies[2]
Jul	N/A	N/A	N/A	N/A	N/A
Aug	N/A	N/A	N/A	N/A	N/A
Sep	N/A	N/A	N/A	N/A	N/A
Oct	varies varies[3]	varies[3]	varies[3]	varies[3]	varies[3]
Nov	varies varies[3]	varies[3]	varies[3]	varies[3]	varies[3]
Dec	-5000[4]	-5000[4]	-5000[4]	-5000[4]	-5000[4]

ED_000733_DD_NSF_00002785-00022

1. These numbers represent the resulting average values based on the implementation of RPA-based triggers for the "most likely" scenario. OMR values assume the proposed OMR or the Reasonable and Prudent Alternative (RPA) (as modeled in the No Action Alternative), whichever provides higher OMR. Resulting operations are expected to be more positive than depicted in this table.

2. Based on San Joaquin inflow relationship to OMR provided below in Sub-Table B.

3. Before the D-1641pulse = HORB open, no OMR restrictions
During the D-1641pulse = no south Delta exports (two weeks); HORB closed
After the D-1641 pulse = -5,000 cfs OMR (through November); HORB open 50% for 2 weeks

4. OMR restriction of -5,000 cfs for Sacramento River winter-run Chinook salmon when North Delta initial pulse flows are triggered or OMR restriction of -2,000 cfs for delta smelt when triggered.

Head of Old River Operable Barrier (HORB) Operations/Modeling assumptions (% OPEN)

MONTH	HORB[1]	MONTH	HORB[1]
Oct	50%	May	50%
Nov	100%[2]	Jun 1-15	50%
Dec	100%	Jun 16-30	100%
Jan	50%[3]	Jul	100%
Feb	50%	Aug	100%
Mar	50%	Sep	100%
April	50%		

1. Percent of time the HORB is open. Agricultural barriers are in and operated consistent with current practices. HORB would be open 100% whenever flows are greater than 10,000 cfs at Vernalis.
2. For modeling assumption only. Action proposed:
Before the D-1641 pulse = no OMR restrictions (HORB open)
During the D-1641 pulse = no south Delta exports for two weeks (HORB closed)
After the D-1641 pulse = -5,000 cfs OMR through November (HORB open 50% for 2 weeks)
Exact timing of the action will be based on hydrologic conditions
3. The HORB becomes operational at 50% when salmon fry are immigrating (based on real time monitoring). This generally occurs when flood flow releases are being made.

Fremont Weir/Yolo Bypass

3. Fremont Weir/Yolo Bypass

Considerations include (1) increasing spawning and rearing habitat for splittail and rearing habitat for salmonids for >30 days, (2) providing alternate migration corridor to the mainstem Sacramento River, and (3) increasing effectiveness of habitat and food transport in Cache Slough.

ED_000733_DD_NSF_00002785-00023

Weir Improvements

Sacramento Weir - No change in operations; improve upstream fish passage facilities

Lisbon Weir - No change in operations; improve upstream fish passage facilities

Fremont Weir – Improve fish passage at existing weir elevation; construct opening and operable gates at elevation 17.5 feet with fish passage facilities; construct opening and operable gates at a smaller opening with fish passage enhancement at elevation 11.5 feet

Fremont Weir Gate Operations

To provide seasonal floodplain inundation in the Yolo Bypass, the 17.5 foot and the 11.5 foot elevation gates are assumed to be opened between December 1st and March 31st. This may extend to May 15th, depending on the hydrologic conditions and the measures to minimize land use and ecological conflicts in the bypass. As a simplification for modeling, the gates are assumed opened until April 30th in all years. The gates are operated to limit maximum spill to 6,000 cfs until the Sacramento River stage reaches the existing Fremont Weir elevation. While desired inundation period is on the order of 30 to 45 days, gates are not managed to limit to this range, instead the duration of the event is governed by the Sacramento River flow conditions. To provide greater opportunity for the fish in the bypass to migrate upstream into the Sacramento River, the 11.5 foot elevation gate is assumed to be open for an extended period between September 15th and June 30th. As a simplification for modeling, the period of operation for this gate is assumed to be September 1st to June 30th. The spills through the 11.5 ft elevation gate are limited to 100 cfs to support fish passage.

Delta Cross Channel Gate Operations

4. Delta Cross Channel Gate Operations
Considerations include (1) reduce transport of outmigrating Sacramento River fish into central Delta, (2) maintain flows downstream on Sacramento River, (3) and providing sufficient Sacramento River flow into interior Delta when water quality for M&I and AG may be of concern.

Assumptions

Per SRWCB D-1641 with additional days closed from Oct 1 – Jan 31 based on NMFS BO (Jun 2009) Action IV.1.2v (closed during flushing flows from Oct 1 – Dec 14 unless adverse water quality conditions).

Rio Vista Minimum Instream Flows

5. Rio Vista Minimum Instream Flows
Maintain minimum flows for outmigrating salmonids and smelt.

Assumptions

Sep-Dec: Per D-1641

Jan-Aug: Minimum of 3,000 cfs

Delta Inflow & Outflow

6. Delta Inflow & Outflow
Considerations include (1) Provide sufficient outflow to maintain desirable salinity regime downstream of Collinsville during the spring and fall, and (2) explore range of approaches toward providing additional variability to Delta inflow and outflow.

Delta Outflow

Feb-Jun: Per D-1641

Sep-Nov: Implement Fall X2 experiment (not included in modeling for Scenario 6)

Operations for Delta Water Quality and Residence Time

7. Operations for Delta Water Quality and Residence Time
Considerations include (1) maintain a minimum level of pumping from the south Delta during summer to provide limited flushing for general water quality conditions (reduce residence times), (2) for M&I and AG salinity improvements, and (3) to allow operational flexibility during other periods to operate either north or south diversions based on

ED_000733_DD_NSF_00002785-00024

real-time assessments of benefits to fish and water quality.
Assumptions Jul-Sep: Prefer south delta pumping up to 3,000 cfs before diverting from north Oct-Jun: Prefer north delta pumping (real-time operational flexibility)
In-Delta Agricultural and Municipal & Industrial Water Quality Requirements
8. In-Delta Agricultural and Municipal & Industrial Water Quality Requirements Existing M&I and AG salinity requirements
Assumptions Existing D-1641 North and Western Delta AG and MI standards EXCEPT move compliance point from Emmaton to Three Mile Slough juncture. Maintain all water quality requirements contained in the NDWA/ DWR Contract and other DWR contractual obligations.

ED_000733_DD_NSF_00002785-00025

Table X-7. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS based upon "Enhanced Ecosystem Operations" for Dual Conveyance

North Delta Diversion Bypass Flows

1. North Delta Diversion Bypass Flows

Objectives include flows to (1) maintain fish screen sweeping velocities, (2) minimize upstream transport from downstream channels, (3) support salmonid and pelagic fish transport to regions of suitable habitat, (4) minimize predation effects downstream, and (5) maintain or improve rearing habitat in the north Delta.

Constant Low-Level Pumping (Dec-Jun):

Diversions up to 5% of river flow for flows greater than 5,000 cfs. No more than 300 cfs at any one intake.

Initial Pulse Protection:

Low level pumping maintained through the initial pulse period. For the purpose of monitoring, the initiation of the pulse is defined by the following criteria: (1) Wilkins Slough flow changing by more than 45% over a five day period and (2) flow greater than 12,000 cfs. Low-level pumping continues until (1) Wilkins Slough returns to prepulse flows (flow on first day of 5-day increase), (2) flows decrease for 5 consecutive days, or (3) flows are greater than 20,000 cfs for 10 consecutive days. After pulse period has ended, operations will return to the bypass flow table (SubTable A for Level 1). These parameters are for modeling purposes. Actual operations will be based on real-time monitoring of fish movement.

If the first flush begins before Dec 1, May bypass criteria must be initiated following first flush and the second pulse period will have the same protective operation.

Post-Pulse Operations:

After initial flush(es), go to Level I post-pulse bypass rule (see SubTable A for Level1) until 20 total days of bypass flows above 20,000 cfs. Then go to the Level II post-pulse bypass rule (Subtable A for Level II) until 45 total days of bypass flows above 20,000 cfs. Then go to the Level III post-pulse bypass rule (Subtable A for Level III).

Sub-Table A. Post-Pulse Operations for North Delta Diversion Bypass Flows

Level I Post-Pulse Operations			Level II Post-Pulse Operations			Level III Post Pulse Operations		
Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough. **Percentages will vary linearly over a 10-day period when transitioning between months.								
Dec - Apr			Dec - Apr			Dec - Apr		
If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)

ED_000733_DD_NSF_00002785-00026

15,000 cfs	17,000 cfs	15,000 cfs plus 80% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 60% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 50% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,600 cfs plus 60% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,400 cfs plus 50% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	12,000 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	18,400 cfs plus 30% of the amount over 20,000 cfs	20,000 cfs	no limit	15,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,000 cfs plus 0% of the amount over 20,000 cfs
May			**May**			**May**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 70% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 50% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 40% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,400 cfs plus 50% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,000 cfs plus 35% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	11,400 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	14,750 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	12,400 cfs plus 0% of the amount over 20,000 cfs
Jun			**Jun**			**Jun**		

ED_000733_DD_NSF_00002785-00027

If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 60% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 40% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 30% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,200 cfs plus 40% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	12,600 cfs plus 20% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	10,800 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,400 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,600 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	11,800 cfs plus 0% of the amount over 20,000 cfs
Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs		
South Delta Channel Flows								
2. South Delta Channel Flows *Minimize mortality, including take at south Delta pumps, by reducing incidence and magnitude of reverse flows during critical periods for pelagic and anadromous species.*								
OMR Flows • South Delta exports cannot cause OMR to fall below +1,000 cfs during Dec-Mar. • South Delta exports cannot cause OMR to fall below +3,000 cfs during Jun. • South Delta pumping is not allowed during April, May, Oct, and Nov								
South Delta Export - San Joaquin Inflow Ratio: - 50% Dec - Mar & Jun								
Fremont Weir/Yolo Bypass								

ED_000733_DD_NSF_00002785-00028

3. Fremont Weir/Yolo Bypass *Considerations include (1) increasing spawning and rearing habitat for splittail and rearing habitat for salmonids for >30 days, (2) providing alternate migration corridor to the mainstem Sacramento River, and (3) increasing effectiveness of habitat and food transport in Cache Slough.*
• Spills into Yolo Bypass enabled at water surface elevation 17.5 ft NAVD88 (~15,000 cfs Sac R at Fremont flow) by notch and new gates, as compared to current weir elevation of 33.5 ft (~56,000 cfs Fremont flow). • Flows: 3,000-8,000 cfs* depending on hydrology • Duration: 30-45 days • Period: Gates operable December - April 15 (occasionally April 16 – May 15 depending on hydrologic conditions). * Flows less than 3,000 cfs may require physical modifications to the Yolo Bypass and toe drain to achieve levels of desired floodplain habitat.
Delta Cross Channel Gate Operations
4. Delta Cross Channel Gate Operations Considerations include (1) reduce transport of outmigrating Sacramento River fish into central Delta, (2) maintain flows downstream on Sacramento River, (3) and providing sufficient Sacramento River flow into interior Delta when water quality for M&I and AG may be of concern.
Oct-Nov: DCC gate closed if fish are present (assume 15 days per month; may be open longer depending on presence of fish) Dec-Jun: DCC gate closed Jul-Sep: DCC gate open
Rio Vista Minimum Instream Flows
5. Rio Vista Minimum Instream Flows Maintain minimum flows for outmigrating salmonids and smelt.
Sep-Dec: Per D-1641 Jan-Aug: Minimum of 5,000 cfs
Delta Inflow & Outflow
6. Delta Inflow & Outflow Considerations include (1) Provide sufficient outflow to maintain desirable salinity regime downstream of Collinsville during the spring, (2) explore range of approaches toward providing additional variability to Delta inflow and outflow.
Delta Outflow: Feb-Aug &Dec - Jan: Per D-1641 Sep-Nov: Fall X2 per FWS Smelt BO
Operations for Delta Water Quality and Residence Time
7. Operations for Delta Water Quality and Residence Time Considerations include (1) maintain a minimum level of pumping from the south Delta during summer to provide limited flushing for general water quality conditions (reduce residence times), (2) for M&I and AG salinity improvements, and (3) to allow operational flexibility during other periods to operate either north or south diversions based on real-time assessments of benefits to fish and water quality.
Assumptions: Jul-Sep: Prefer south delta pumping up to 3,000 cfs before diverting from north Oct-Jun: Prefer north delta pumping (real-time operational flexibility)

ED_000733_DD_NSF_00002785-00029

In-Delta Agricultural and Municipal & Industrial Water Quality Requirements
8. In-Delta Agricultural and Municipal & Industrial Water Quality Requirements Existing M&I and AG salinity requirements
Assumptions: Existing D-1641 North and Western Delta AG and MI standards EXCEPT move compliance point from Emmaton to Three Mile Slough juncture. Maintain all water quality requirements contained in the NDWA/ DWR Contract and other DWR contractual obligations.

ED_000733_DD_NSF_00002785-00030

Table X-8. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS based upon "Enhanced Spring Delta Outflow" for Dual Conveyance

North Delta Diversion Bypass Flows

1. North Delta Diversion Bypass Flows

Objectives include flows to (1) maintain fish screen sweeping velocities, (2) minimize upstream transport from downstream channels, (3) support salmonid and pelagic fish transport to regions of suitable habitat, (4) minimize predation effects downstream, and (5) maintain or improve rearing habitat in the north Delta.

Constant Low-Level Pumping (Dec-Jun):

Diversions up to 5% of river flow for flows greater than 5,000 cfs. No more than 300 cfs at any one intake.

Initial Pulse Protection:

Low level pumping maintained through the initial pulse period. For the purpose of monitoring, the initiation of the pulse is defined by the following criteria: (1) Wilkins Slough flow changing by more than 45% over a five day period and (2) flow greater than 12,000 cfs. Low-level pumping continues until (1) Wilkins Slough returns to prepulse flows (flow on first day of 5-day increase), (2) flows decrease for 5 consecutive days, or (3) flows are greater than 20,000 cfs for 10 consecutive days. After pulse period has ended, operations will return to the bypass flow table (SubTable A for Level 1). These parameters are for modeling purposes. Actual operations will be based on real-time monitoring of fish movement.

If the first flush begins before Dec 1, May bypass criteria must be initiated following first flush and the second pulse period will have the same protective operation.

Post-Pulse Operations:

After initial flush(es), go to Level I post-pulse bypass rule (see SubTable A for Level1) until 20 total days of bypass flows above 20,000 cfs. Then go to the Level II post-pulse bypass rule (Subtable A for Level II) until 45 total days of bypass flows above 20,000 cfs. Then go to the Level III post-pulse bypass rule (Subtable Level III).

Sub-Table A. Post-Pulse Operations for North Delta Diversion Bypass Flows

Level I Post-Pulse Operations			Level II Post-Pulse Operations			Level III Post Pulse Operations		
Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough. **Percentages will vary linearly over a 10-day period when transitioning between months.								
Dec - Apr			Dec - Apr			Dec - Apr		
If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)

ED_000733_DD_NSF_00002785-00031

15,000 cfs	17,000 cfs	15,000 cfs plus 80% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 60% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 50% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,600 cfs plus 60% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,400 cfs plus 50% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	12,000 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	18,400 cfs plus 30% of the amount over 20,000 cfs	20,000 cfs	no limit	15,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,000 cfs plus 0% of the amount over 20,000 cfs
May			**May**			**May**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 70% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 50% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 40% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,400 cfs plus 50% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,000 cfs plus 35% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	11,400 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	14,750 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	12,400 cfs plus 0% of the amount over 20,000 cfs
Jun			**Jun**			**Jun**		

ED_000733_DD_NSF_00002785-00032

If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 60% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 40% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 30% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,200 cfs plus 40% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	12,600 cfs plus 20% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	10,800 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,400 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,600 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	11,800 cfs plus 0% of the amount over 20,000 cfs
Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs		

South Delta Channel Flows

2. South Delta Channel Flows

Minimize mortality, including take at south Delta pumps, by reducing incidence and magnitude of reverse flows during critical periods for pelagic and anadromous species.

OMR Flows

- South Delta exports cannot cause OMR to fall below +1,000 cfs during Dec-Mar.
- South Delta exports cannot cause OMR to fall below +3,000 cfs during Jun.
- South Delta pumping is not allowed during April, May, Oct, and Nov

South Delta Export - San Joaquin Inflow Ratio:

- 50% Dec - Mar & Jun

ED_000733_DD_NSF_00002785-00033

Fremont Weir/Yolo Bypass
3. Fremont Weir/Yolo Bypass *Considerations include (1) increasing spawning and rearing habitat for splittail and rearing habitat for salmonids, (2) providing alternate migration corridor to the mainstem Sacramento River, and (3) increasing effectiveness of habitat and food transport in Cache Slough.*
• Spills into Yolo Bypass enabled at water surface elevation 17.5 ft NAVD88 (~15,000 cfs Sac R at Fremont flow) by notch and new gates, as compared to current weir elevation of 33.5 ft (~56,000 cfs Fremont flow). • Flows: 3,000-8,000 cfs* depending on hydrology • Duration: 30-45 days • Period: Gates operable December - April 15 (occasionally April 16 – May 15 depending on hydrologic conditions). * Flows less than 3,000 cfs may require physical modifications to the Yolo Bypass and toe drain to achieve levels of desired floodplain habitat.
Delta Cross Channel Gate Operations
4. Delta Cross Channel Gate Operations Considerations include (1) reduce transport of outmigrating Sacramento River fish into central Delta, (2) maintain flows downstream on Sacramento River, (3) and providing sufficient Sacramento River flow into interior Delta when water quality for M&I and AG may be of concern.
Oct-Nov: DCC gate closed if fish are present (assume 15 days per month; may be open longer depending on presence of fish) Dec-Jun: DCC gate closed Jul-Sep: DCC gate open
Rio Vista Minimum Instream Flows
5. Rio Vista Minimum Instream Flows Maintain minimum flows for outmigrating salmonids and smelt.
Sep-Dec: Per D-1641 Jan-Aug: Minimum of 5,000 cfs
Delta Inflow & Outflow
6. Delta Inflow & Outflow Considerations include (1) Provide sufficient outflow to maintain desirable salinity regime downstream of Collinsville during the spring, (2) explore range of approaches toward providing additional variability to Delta inflow and outflow.
Delta Outflow: Feb-Aug &Dec - Jan: Per D-1641 Sep-Nov: Fall X2 per FWS Smelt BO SWRCB Flow Criteria of 55% of Unimpaired Flow at Freeport (capped at 40,000 cfs)
Freeport Minimum Instream Flows
7. Freeport Minimum Instream Flows SWRCB Minimum Requirement of 55% of Unimpaired Flow at Freeport Jan-Jun

ED_000733_DD_NSF_00002785-00034

Minimum flow requirement capped at 40,000 cfs
Cold Water Pool Storage
8. Cold Water Pool Storage Trinity, Shasta, Oroville and Folsom storage were modified to enable more cold water pool storage: by increasing Storage Level 3 to 75% of the maximum storage, within Storage Level 3, exports are gradually reduced until Storage Level 2 is reached in the reservoir.
Operations for Delta Water Quality and Residence Time
9. Operations for Delta Water Quality and Residence Time Considerations include (1) maintain a minimum level of pumping from the south Delta during summer to provide limited flushing for general water quality conditions (reduce residence times), (2) for M&I and AG salinity improvements, and (3) to allow operational flexibility during other periods to operate either north or south diversions based on real-time assessments of benefits to fish and water quality.
Assumptions: Jul-Sep: Prefer south delta pumping up to 3,000 cfs before diverting from north Oct-Jun: Prefer north delta pumping (real-time operational flexibility)
In-Delta Agricultural and Municipal & Industrial Water Quality Requirements
10. In-Delta Agricultural and Municipal & Industrial Water Quality Requirements Existing M&I and AG salinity requirements
Assumptions: Existing D-1641 North and Western Delta AG and MI standards EXCEPT move compliance point from Emmaton to Three Mile Slough juncture. Maintain all water quality requirements contained in the NDWA/ DWR Contract and other DWR contractual obligations.

Table X-9. Long-Term BDCP Water Operations Proposal for Proportional North Delta Inflow Bypass Concept (American Rivers et al 2011)

North Delta Diversion Bypass Flows
1. North Delta Diversion Bypass Flows *Objectives to (i) achieve Fall X2, protections in the South Delta, (ii) re-establishment of a more natural hydrograph during winter and spring months, and (iii) reservoir operations to prevent unintended draw downs with a range of potential conveyance capacities.*
Constant Low-Level Pumping (Dec-Jun) Diversions up to 6% of river flow for flows greater than 5,000 cfs. No more than 300 cfs at any one intake.
Initial Pulse Protection Low level pumping maintained through the initial pulse period. For the purpose of modeling, the initiation of the pulse is defined by the following criteria: (1) Wilkins Slough

ED_000733_DD_NSF_00002785-00035

flow changing by more than 45% over a five day period and (2) flow greater than 12,000 cfs. Low-level pumping continues until (1) Wilkins Slough returns to pre-pulse flows (flow on first day of 5-day increase), (2) flows decrease for 5 consecutive days, or (3) flows are greater than 20,000 cfs for 10 consecutive days. After pulse period has ended, operations will return to the bypass flow table (Sub-Table A). These parameters are for modeling purposes. Actual operations will be based on real-time monitoring of fish movement.

If the first flush begins before Dec 1, May bypass criteria must be initiated following first flush and the second pulse period will have the same protective operation.

Post-Pulse Operations

After initial flush(es), go to Level I post-pulse bypass rule (see Sub-Table A) until 15 total days of bypass flows above 20,000 cfs. Then go to the Level II post-pulse bypass rule until 30 total days of bypass flows above 20,000 cfs. Then go to the Level III post-pulse bypass rule.

Sub-Table A. Post-Pulse Operations for North Delta Diversion Bypass Flows

Level I Post-Pulse Operations			Level II Post-Pulse Operations			Level III Post Pulse Operations		
Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.			Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.			Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.		
Dec - Apr			**Dec - Apr**			**Dec - Apr**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 80% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 60% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 50% of the amount over 9,000 cfs

ED_000733_DD_NSF_00002785-00036

17,000 cfs	20,000 cfs	16,600 cfs plus 60% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,400 cfs plus 50% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	12,000 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	18,400 cfs plus 30% of the amount over 20,000 cfs	20,000 cfs	no limit	15,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,000 cfs plus 0% of the amount over 20,000 cfs
May			**May**			**May**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 70% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 50% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 40% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,400 cfs plus 50% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,000 cfs plus 35% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	11,400 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	14,750 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	12,400 cfs plus 0% of the amount over 20,000 cfs
Jun			**Jun**			**Jun**		

ED_000733_DD_NSF_00002785-00037

If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...	If Sacramento River flow is over...	But not over...	The bypass is...
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 60% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 40% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 30% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,200 cfs plus 40% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	12,600 cfs plus 20% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	10,800 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,400 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,600 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	11,800 cfs plus 0% of the amount over 20,000 cfs
Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs		

Sub-Table B. San Joaquin Inflow Relationship to OMR

April and May	June	April and May	June
If San Joaquin flow at Vernalis is the following	Average OMR flows would be at least the following (interpolated linearly between values)	If San Joaquin flow at Vernalis is the following	Average OMR flows would be at least the following (interpolated linearly between values)
≤ 5,000 cfs	-2,000 cfs	≤ 5,000 cfs	-2,000 cfs
6,000 cfs	+1000 cfs	3,501 to 10,000 cfs	3,501 to 10,000 cfs
10,000 cfs	+2000 cfs		
15,000 cfs	+3000 cfs	10,001 to 15,000 cfs	+1000 cfs

ED_000733_DD_NSF_00002785-00038

≥30,000 cfs	+6000 cfs	>15,000 cfs	+2000 cfs

South Delta Channel Flows

OMR Flows

All OMR criteria required by the various fish protection triggers (density, calendar, and flow based triggers) described in FWS and NMFS OCAP BOs were incorporated into the modeling of the baseline and the January, 2010 proposed project, as well as these newly proposed operational criteria. Whenever those triggers would result in OMRs higher than those shown below, the higher OMR requirements would be met.

Combined Old and Middle River flows no less than values below[1] (cfs)

Month	W	AN	BN	D	C
Jan	0	0	-1000	-1500	-1500
Feb	0	0	-1000	-1500	-1500
Mar	0	0	-1000	-1500	-1500
Apr	0	0	-1000	-1500	-1500
May	0	0	-1000	-1500	-1500
Jun	0	0	-1000	-1500	-1500
Jul	-3500	-3500	-3500	-3500	-3500
Aug	-3500	-3500	-3500	-3500	-3500
Sep	-3500	-3500	-3500	-3500	-3500
Oct	-3500	-3500	-3500	-3500	-3500
Nov	-3500	-3500	-3500	-3500	-3500
Dec	-2500	-2500	-2500	-2500	-2500

Head of Old River Operable Barrier (HORB) Operations/Modeling assumptions (% OPEN)

MONTH	HORB[1]	MONTH	HORB[1]
Oct	50%	May	50%
Nov	100%[2]	Jun 1-15	50%
Dec	100%	Jun 16-30	100%
Jan	50%[3]	Jul	100%
Feb	50%	Aug	100%
Mar	50%	Sep	100%
April	50%		

1. Percent of time the HORB is open. Agricultural barriers are in and operated consistent with current practices. HORB would be open 100% whenever flows are greater than 10,000 cfs at Vernalis.
2. For modeling assumption only. Action proposed:
   Before the D-1641 pulse = no OMR restrictions (HORB open)

ED_000733_DD_NSF_00002785-00039

During the D-1641 pulse = no south Delta exports for two weeks (HORB closed)
After the D-1641 pulse = -5,000 cfs OMR through November (HORB open 50% for 2 weeks)

Exact timing of the action will be based on hydrologic conditions

3. The HORB becomes operational at 50% when salmon fry are immigrating (based on real time monitoring). This generally occurs when flood flow releases are being made.

Fremont Weir/Yolo Bypass

Weir Improvements

Sacramento Weir - No change in operations; improve upstream fish passage facilities

Lisbon Weir - No change in operations; improve upstream fish passage facilities

Fremont Weir – Improve fish passage at existing weir elevation; construct opening and operable gates at elevation 17.5 feet with fish passage facilities; construct opening and operable gates at a smaller opening with fish passage enhancement at elevation 11.5 feet

Fremont Weir Gate Operations

To provide seasonal floodplain inundation in the Yolo Bypass, the 17.5 foot and the 11.5 foot elevation gates are assumed to be opened between December 1st and March 31st. This may extend to May 15th, depending on the hydrologic conditions and the measures to minimize land use and ecological conflicts in the bypass. As a simplification for modeling, the gates are assumed opened until April 30th in all years. The gates are operated to limit maximum spill to 6,000 cfs until the Sacramento River stage reaches the existing Fremont Weir elevation. While desired inundation period is on the order of 30 to 45 days, gates are not managed to limit to this range, instead the duration of the event is governed by the Sacramento River flow conditions. To provide greater opportunity for the fish in the bypass to migrate upstream into the Sacramento River, the 11.5 foot elevation gate is assumed to be open for an extended period between September 15th and June 30th. As a simplification for modeling, the period of operation for this gate is assumed to be September 1st to June 30th. The spills through the 11.5 ft elevation gate are limited to 100 cfs to support fish passage.

Delta Cross Channel Gate Operations

Assumptions

Per SRWCB D-1641 with additional days closed from Oct 1 – Jan 31 based on NMFS BO (Jun 2009) Action IV.1.2v (closed during flushing flows from Oct 1 – Dec 14 unless adverse water quality conditions).

Rio Vista Minimum Instream Flows

Assumptions

Sep-Dec: Per D-1641

Jan-Aug: Minimum of 3,000 cfs

Delta Inflow & Outflow

Delta Outflow

Feb-Jun: Per D-1641

FALL X2

Month	W	AN	BN	D	C
Jan	NA	NA	NA	NA	NA
Feb	NA	NA	NA	NA	NA
Mar	NA	NA	NA	NA	NA
Apr	NA	NA	NA	NA	NA

ED_000733_DD_NSF_00002785-00040

May	NA	NA	NA	NA	NA
Jun	NA	NA	NA	NA	NA
Jul	NA	NA	NA	NA	NA
Aug	NA	NA	NA	NA	NA
Sep	74	81	NA	NA	NA
Oct	74	81	NA	NA	NA
Nov	74	81	NA	NA	NA
Dec	NA	NA	NA	NA	NA

Operations for Delta Water Quality and Residence Time

Assumptions

Jul-Sep: Prefer south delta pumping up to 3,000 cfs before diverting from north

Oct-Jun: Prefer north delta pumping (real-time operational flexibility)

In-Delta Agricultural and Municipal & Industrial Water Quality Requirements

Assumptions

Existing D-1641 North and Western Delta AG and MI standards

EXCEPT move compliance point from Emmaton to Three Mile Slough juncture.

Maintain all water quality requirements contained in the NDWA/ DWR Contract and other DWR contractual obligations.

Reservoir Release Percentages

Month	Release Percentage	Maximum Keswick Release	Maximum Thermalito Release	Maximum Nimbus Release
February	40%	15,000	10,000	3,000
March	100%	15,000	10,000	3,000
April	100%	15,000	10,000	3,000
May	60%	15,000	10,000	3,000
June	40%	15,000	10,000	3,000

Shasta Lake Offramps

Month	Cap 1	Storage 1	Cap 2	Storage 2	Cap 3
February	15,000	2,800	9,125	2,400	3,250
March	15,000	3,000	9,125	2,600	3,250
April	15,000	3,200	9,125	2,800	3,250
May	15,000	3,000	9,125	2,600	3,250
June	15,000	2,800	9,125	2,400	3,250

Oroville Reservoir Offramps

Month	Cap 1	Storage 1	Cap 2	Storage 2	Cap 3

ED_000733_DD_NSF_00002785-00041

February	10,000	2,000	5,375	1,300	750
March	10,000	2,200	5,375	1,500	750
April	10,000	2,300	5,375	1,700	750
May	10,000	2,200	5,375	1,500	750
June	10,000	2,000	5,375	1,300	750
Folsom Lake Offramps					
Month	**Cap 1**	**Storage 1**	**Cap 2**	**Storage 2**	**Cap 3**
February	3,000	350	1,900	250	800
March	3,000	400	1,900	300	800
April	3,000	450	1,900	350	800
May	3,000	400	1,900	300	800
June	3,000	350	1,900	250	800

ED_000733_DD_NSF_00002785-00042

Table X-10. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS based upon "Limited Dual Conveyance Facility" (CCWD 2011)

North Delta Diversion Bypass Flows

1. North Delta Diversion Bypass Flows

Objectives include flows of the functional equivalent thereof to (1) maintain fish screen sweeping velocities, (2) reduce upstream transport from downstream channels, (3) support salmonid and pelagic fish transport to regions of suitable habitat, (4) reduce predation effects downstream, and (5) maintain or improve rearing habitat in the north Delta.

Constant Low-Level Pumping (Dec-Jun):

Diversions up to 6% of river flow for flows greater than 5,000 cfs. No more than 300 cfs at any one intake.

Initial Pulse Protection:

Low level pumping maintained through the initial pulse period. For the purpose of monitoring, the initiation of the pulse is defined by the following criteria: (1) Wilkins Slough flow changing by more than 45% over a five day period and (2) flow greater than 12,000 cfs. Low-level pumping continues until (1) Wilkins Slough returns to prepulse flows (flow on first day of 5-day increase), (2) flows decrease for 5 consecutive days, or (3) flows are greater than 20,000 cfs for 10 consecutive days. After pulse period has ended, operations will return to the bypass flow table (SubTable A). These parameters are for modeling purposes. Actual operations will be based on real-time monitoring of fish movement.

If the first flush begins before Dec 1, May bypass criteria must be initiated following first flush and the second pulse period will have the same protective operation.

Post-Pulse Operations:

After initial flush(es), go to Level I post-pulse bypass rule (see SubTable A) until 15 total days of bypass flows above 20,000 cfs. Then go to the Level II post-pulse bypass rule until 30 total days of bypass flows above 20,000 cfs. Then go to the Level III post-pulse bypass rule.

Sub-Table A. Post-Pulse Operations for North Delta Diversion Bypass Flows

Level I Post-Pulse Operations			Level II Post-Pulse Operations			Level III Post Pulse Operations		
Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.			Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.			Based on the objectives stated above, it is recommended to implement the following operating criteria: • Bypass flows sufficient to prevent upstream tidal transport at two points of control: (1) Sacramento River upstream of Sutter Slough and (2) Sacramento River downstream of Georgiana Slough. These points are used to prevent upstream transport toward the proposed intakes and to prevent upstream transport into Georgiana Slough.		
Dec - Apr			**Dec - Apr**			**Dec - Apr**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs

ED_000733_DD_NSF_00002785-00043

5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 80% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 60% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 50% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,600 cfs plus 60% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,400 cfs plus 50% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	12,000 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	18,400 cfs plus 30% of the amount over 20,000 cfs	20,000 cfs	no limit	15,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,000 cfs plus 0% of the amount over 20,000 cfs
May			**May**			**May**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 70% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 50% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 40% of the amount over 9,000 cfs

ED_000733_DD_NSF_00002785-00044

17,000 cfs	20,000 cfs	16,400 cfs plus 50% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	13,000 cfs plus 35% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	11,400 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,900 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	14,750 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	12,400 cfs plus 0% of the amount over 20,000 cfs
Jun			**Jun**			**Jun**		
If Sacramento River flow is over...	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**	**If Sacramento River flow is over...**	**But not over...**	**The bypass is...**
0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs	0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	15,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	11,000 cfs	Flows remaining after constant low level pumping (main table)	5,000 cfs	9,000 cfs	Flows remaining after constant low level pumping (main table)
15,000 cfs	17,000 cfs	15,000 cfs plus 60% of the amount over 15,000 cfs	11,000 cfs	15,000 cfs	11,000 cfs plus 40% of the amount over 11,000 cfs	9,000 cfs	15,000 cfs	9,000 cfs plus 30% of the amount over 9,000 cfs
17,000 cfs	20,000 cfs	16,200 cfs plus 40% of the amount over 17,000 cfs	15,000 cfs	20,000 cfs	12,600 cfs plus 20% of the amount over 15,000 cfs	15,000 cfs	20,000 cfs	10,800 cfs plus 20% of the amount over 15,000 cfs
20,000 cfs	no limit	17,400 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	13,600 cfs plus 20% of the amount over 20,000 cfs	20,000 cfs	no limit	11,800 cfs plus 0% of the amount over 20,000 cfs
Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs			Jul-Sep: 5,000 cfs Oct-Nov: 7,000 cfs		
South Delta Channel Flows								
2. South Delta Channel Flows								

ED_000733_DD_NSF_00002785-00045

Minimize take at south Delta pumps by reducing incidence and magnitude of reverse flows during critical periods for pelagic species.

OMR Flows

• FWS smelt and NMFS BO's model of adaptive restrictions (temperature, turbidity, salinity, smelt presence)

Table below provides a rough representation of the current estimate of "most likely" operation under FWS and NMFS BO's for modeling purposes.

Combined Old and Middle River flows no less than values below* (cfs)					
Month	**W**	**AN**	**BN**	**D**	**C**
Jan	-4000	-4000	-4000	-5000	-5000
Feb	-5000	-4000	-4000	-4000	-4000
Mar	-5000	-4000	-4000	-3500	-3000
Apr	-5000	-4000	-4000	-3500	-2000
May	-5000	-4000	-4000	-3500	-2000
Jun	-5000	-5000	-5000	-5000	-2000
Jul	N/A	N/A	N/A	N/A	N/A
Aug	N/A	N/A	N/A	N/A	N/A
Sep	N/A	N/A	N/A	N/A	N/A
Oct	N/A	N/A	N/A	N/A	N/A
Nov	N/A	N/A	N/A	N/A	N/A
Dec	-6800	-6800	-6300	-6300	-6100

* Values are monthly average for use in modeling. December 20-31 targets are -5000 cfs (W, AN), -3500 cfs (BN, D), and -3000 cfs (C), and are averaged with an assumed background of -8000 cfs for December 1-19. Values are reflective of the "most likely" operation under the FWS Delta Smelt Biological Opinion. Values for modeling may be updated based on review by fishery agencies.

South Delta Export - San Joaquin Inflow Ratio:

- Vernalis flow-based export limits Apr 1st – May 31st as required by NMFS BO (Jun, 2009) as assumed in No Action Alternative

Fremont Weir/Yolo Bypass

3. Fremont Weir/Yolo Bypass

Considerations include (1) increasing spawning and rearing habitat for splittail and rearing habitat for salmonids for >30 days, (2) providing alternate migration corridor to the mainstem Sacramento River, and (3) increasing effectiveness of habitat and food transport in Cache Slough.

Sacramento Weir - No change in operations; improve upstream fish passage facilities

Lisbon Weir - No change in operations; improve upstream fish passage facilities

Fremont Weir – Improve fish passage at existing weir elevation; construct opening and operable gates at elevation 17.5 feet with fish passage facilities; construct opening and operable gates at a smaller opening with fish passage enhancement at elevation 11.5 feet

Fremont Weir Gate Operations -

December 1-March 30 (extend to May 15, depending on hydrologic conditions and measures to minimize land use and ecological conflicts) open the 17.5 foot and 11.5 foot

ED_000733_DD_NSF_00002785-00046

elevation gates when Sacramento River flow at Freeport is greater than 25,000 cfs (provides local and regional flood control benefit and coincides with pulse flows and juvenile salmonid migration cues, provides seasonal floodplain inundation for food production, juvenile rearing, and spawning) to provide Yolo Bypass inundation of 3,000 to 6,000 cfs depending on river stage. Operating the gates to allow Yolo Bypass inundation when Sacramento River flow is greater than 25,000 cfs will reduce impacts to water supply associated with Hood bypass flow constraints. Potential impacts to water supply would be avoided or minimized through an operations plan.
Close the 17.5 foot elevation gates when Sacramento River flow at Freeport recedes to less than 20,000 cfs but keep 11.5 foot elevation gates open to provide greater opportunity for fish within the bypass to migrate upstream into the Sacramento River; close 11.5 foot elevation gates when Sacramento River flow at Freeport recedes to less than 15,000 cfs
Delta Cross Channel Gate Operations
4. Delta Cross Channel Gate Operations Considerations include (1) reduce transport of outmigrating Sacramento River fish into central Delta, (2) maintain flows downstream on Sacramento River, (3) and providing sufficient Sacramento River flow into interior Delta when water quality for M&I and AG may be of concern.
Oct-Nov: DCC gate closed if fish are present (assume 15 days per month; may be open longer depending on presence of fish) Dec-Jun: DCC gate closed Jul-Sep: DCC gate open
Rio Vista Minimum Instream Flows
5. Rio Vista Minimum Instream Flows Maintain minimum flows for outmigrating salmonids and smelt.
Sep-Dec: Per D-1641 Jan-Aug: Minimum of 3,000 cfs
Delta Inflow & Outflow
6. Delta Inflow & Outflow Considerations include (1) Provide sufficient outflow to maintain desirable salinity regime downstream of Collinsville during the spring, (2) explore range of approaches toward providing additional variability to Delta inflow and outflow.
Delta Outflow: Feb-Jun: Per D-1641 Sep-Nov: Implement Fall X2 per FWS BO
Operations for Delta Water Quality and Residence Time
7. Operations for Delta Water Quality and Residence Time Considerations include (1) maintain a minimum level of pumping from the south Delta during summer to provide limited flushing for general water quality conditions (reduce residence times), (2) for M&I and AG salinity improvements, and (3) to allow operational flexibility during other periods to operate either north or south diversions based on real-time assessments of benefits to fish and water quality.
Assumptions: Jul-Sep: Prefer south delta pumping up to 3,000 cfs before diverting from north Oct-Jun: Prefer north delta pumping (real-time operational flexibility)
In-Delta Agricultural and Municipal & Industrial Water Quality Requirements
8. In-Delta Agricultural and Municipal & Industrial Water Quality Requirements

ED_000733_DD_NSF_00002785-00047

Existing M&I and AG salinity requirements
Assumptions: Existing D-1641 North and Western Delta AG and MI standards EXCEPT move compliance point from Emmaton to Three Mile Slough juncture. Maintain all water quality requirements contained in the NDWA/ DWR Contract and other DWR contractual obligations.

ED_000733_DD_NSF_00002785-00048

Table X-11. Long-Term BDCP Water Operations Proposal for BDCP EIR/EIS Separated Corridors

Delta Cross Channel Criteria

1. Delta Cross Channel Criteria

Objectives to provide separated corridors for South Delta fish passage and water conveyance from Sacramento River to South Delta intakes

Delta Cross Channel Criteria:

Sacramento River Flows less than 11,000 cfs or over 25,000 cfs: Gates Closed

Sacramento River Flows 11,000 cfs to 25,000 cfs: Divert up to 25 percent of Sacramento River flow

South Delta Channel Flows

2. South Delta Channel Flows

Minimize take at south Delta pumps by reducing incidence and magnitude of reverse flows during critical periods for pelagic species.

Apply only to Middle River Flows except during flood events when South Delta gates are open

OMR Flows

• FWS smelt and NMFS BO's model of adaptive restrictions (temperature, turbidity, salinity, smelt presence)

Table below provides a rough representation of the current estimate of "most likely" operation under FWS and NMFS BO's for modeling purposes.

Combined Old and Middle River flows no less than values below* (cfs)

Month	W	AN	BN	D	C
Jan	-4000	-4000	-4000	-5000	-5000
Feb	-5000	-4000	-4000	-4000	-4000
Mar	-5000	-4000	-4000	-3500	-3000
Apr	-5000	-4000	-4000	-3500	-2000
May	-5000	-4000	-4000	-3500	-2000
Jun	-5000	-5000	-5000	-5000	-2000
Jul	N/A	N/A	N/A	N/A	N/A
Aug	N/A	N/A	N/A	N/A	N/A
Sep	N/A	N/A	N/A	N/A	N/A
Oct	N/A	N/A	N/A	N/A	N/A
Nov	N/A	N/A	N/A	N/A	N/A
Dec	-6800	-6800	-6300	-6300	-6100

* Values are monthly average for use in modeling. December 20-31 targets are -5000 cfs (W, AN), -3500 cfs (BN, D), and -3000 cfs (C), and are averaged with an assumed background of -8000 cfs for December 1-19. Values are reflective of the "most likely" operation under the FWS Delta Smelt Biological Opinion. Values for modeling may be updated based on review by fishery agencies.

South Delta Export - San Joaquin Inflow Ratio:

- Vernalis flow-based export limits Apr 1st – May 31st as required by NMFS BO (Jun, 2009) as assumed in No Action Alternative

ED_000733_DD_NSF_00002785-00049

Fremont Weir/Yolo Bypass
3. Fremont Weir/Yolo Bypass *Considerations include (1) increasing spawning and rearing habitat for splittail and rearing habitat for salmonids for >30 days, (2) providing alternate migration corridor to the mainstem Sacramento River, and (3) increasing effectiveness of habitat and food transport in Cache Slough.*
Sacramento Weir - No change in operations; improve upstream fish passage facilities
Lisbon Weir - No change in operations; improve upstream fish passage facilities
Fremont Weir – Improve fish passage at existing weir elevation; construct opening and operable gates at elevation 17.5 feet with fish passage facilities; construct opening and operable gates at a smaller opening with fish passage enhancement at elevation 11.5 feet
Fremont Weir Gate Operations -
December 1-March 30 (extend to May 15, depending on hydrologic conditions and measures to minimize land use and ecological conflicts) open the 17.5 foot and 11.5 foot elevation gates when Sacramento River flow at Freeport is greater than 25,000 cfs (provides local and regional flood control benefit and coincides with pulse flows and juvenile salmonid migration cues, provides seasonal floodplain inundation for food production, juvenile rearing, and spawning) to provide Yolo Bypass inundation of 3,000 to 6,000 cfs depending on river stage. Operating the gates to allow Yolo Bypass inundation when Sacramento River flow is greater than 25,000 cfs will reduce impacts to water supply associated with Hood bypass flow constraints. Potential impacts to water supply would be avoided or minimized through an operations plan.
Close the 17.5 foot elevation gates when Sacramento River flow at Freeport recedes to less than 20,000 cfs but keep 11.5 foot elevation gates open to provide greater opportunity for fish within the bypass to migrate upstream into the Sacramento River; close 11.5 foot elevation gates when Sacramento River flow at Freeport recedes to less than 15,000 cfs
Delta Cross Channel and Georgiana Slough Gate Operations
4. Delta Cross Channel Gate Operations Considerations include (1) reduce transport of outmigrating Sacramento River fish into central Delta, (2) maintain flows downstream on Sacramento River, (3) and providing sufficient Sacramento River flow into interior Delta when water quality for M&I and AG may be of concern.
Delta Cross Channel: Sacramento River Flows less than 11,000 cfs or over 25,000 cfs: Closed Sacramento River Flows 11,000 cfs to 25,000 cfs: Divert up to 25 percent of Sacramento River flow Georgiana Slough: Operated to limit flow to less than 7,500 cfs all year to prevent impingement of fish on screens. This will usually allow Georgiana Slough to be open until Sacramento River flow exceeds 45,000 cfs.
Rio Vista Minimum Instream Flows
5. Rio Vista Minimum Instream Flows Maintain minimum flows for outmigrating salmonids and smelt.
Sep-Dec: Per D-1641 Jan-Aug: Minimum of 3,000 cfs
Delta Inflow & Outflow
6. Delta Inflow & Outflow Considerations include (1) Provide sufficient outflow to maintain desirable salinity regime downstream of Collinsville during the spring, (2) explore range of approaches toward providing additional variability to Delta inflow and outflow.
Delta Outflow:

ED_000733_DD_NSF_00002785-00050

Jul-Aug & Dec-Jan: Per D1641 Sep-Nov: Implement Fall X2 per FWS Smelt BO
Mokelumne River Barriers
7. Mokelumne River Barriers Jan-July: Gates Closed (possibly with fish ladder) Aug-Dec: Gates Open.
In-Delta Agricultural and Municipal & Industrial Water Quality Requirements
8. In-Delta Agricultural and Municipal & Industrial Water Quality Requirements Existing M&I and AG salinity requirements
Assumptions: Existing D-1641 North and Western Delta AG and MI standards EXCEPT move compliance point from Emmaton to Three Mile Slough juncture. Maintain all water quality requirements contained in the NDWA/ DWR Contract and other DWR contractual obligations.

ED_000733_DD_NSF_00002785-00051

ED_000733_DD_NSF_00002785-00052

Table X-12. Second Screening: Comparison of Conveyance Concepts with First Level Screening Criteria that Reflect CEQA and NEPA Requirements with Project Objectives and Purpose Statements in the NOP and NOI

Under CEQA, the answers to most of these questions should be "Possibly" or "Unknown" to continue to be considered under the Second Level Screening Criteria. If the answers to most of these questions are "No" or "Not Likely," the alternative concept need not be considered in the Second Level Screening Criteria.

Under general NEPA principles, the answers to all of these questions should be "Possibly" or "Unknown" if an alternative is to continue to be considered under the Second Level Screening Criteria. However, because the EIR/EIS is a joint document and the project/action will be a joint state/federal undertaking, alternative concepts with "Possibly" or "Unknown" answers to most of these questions is adequate to continue consideration under the Second Level Screening Criteria. If the answers to most of the questions are "Not Likely," the alternative concept would not be considered under subsequent screening criteria.

Potential Alternative	Could the potential alternative provide for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species?	Could the potential alternative protect, restore, and enhance certain aquatic, riparian, and associated terrestrial natural communities and ecosystems?	Could the potential alternative reduce the adverse effects to certain listed species of diverting water by relocating the intakes of the SWP and CVP?	Could the potential alternative restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority, and other existing applicable agreements?	Results of First Level Screening
1. Dual Conveyance Concept 1A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
2. Dual Conveyance Concept 1B - *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 15,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
3. Dual Conveyance Concept 1C - *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 15,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
4. Dual Conveyance Concept 2A- *Dual Conveyance with a Tunnel - Scenario 6 Operations - 15,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
5. Dual Conveyance Concept 2B - *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 15,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
6. Dual Conveyance Concept 2C - *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 15,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
7. Dual Conveyance Concept 3A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 6,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
8. Dual Conveyance Concept 3B - *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 6,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
9. Dual Conveyance Concept 3C - *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 6,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
10. Dual Conveyance Concept 4A- *Dual Conveyance with a Tunnel - Scenario 6 Operations - 9,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
11. Dual Conveyance Concept 4B - *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 9,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening

ED_000733_DD_NSF_00002785-00053

12. Dual Conveyance Concept 4C - *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 9,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
13. Dual Conveyance Concept 5A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations and Fall X2 - 3,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
14. Dual Conveyance Concept 6A- *Dual Conveyance with a Tunnel - Enhanced Ecosystem Concepts - 9,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
15. Dual Conveyance Concept 7A- *Dual Conveyance with a Tunnel - Enhanced Spring Delta Outflow Concept - 9,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
16. Dual Conveyance Concept 8A- *Dual Conveyance with a Tunnel - Proportional North Delta Inflow Bypass Concept - 9,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
17. Dual Conveyance Concept 9A- *Dual Conveyance with a Tunnel - State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem - 9,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
18. Isolated Conveyance Concept 1A - *Isolated Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
19. Isolated Conveyance Concept 1B - *Isolated Conveyance with a Lined or Unlined East Canal - January 2010 BDCP Operations - 15,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
20. Isolated Conveyance Concept 1C - *Isolated Conveyance with a Lined or Unlined West Canal - January 2010 BDCP Operations - 15,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening
21. Through Delta Conveyance Concept 1 - *Separate Corridors Operations - 15,000 cfs*	Possibly	Possibly	Possibly	Possibly	Continue to Second Level Screening

ED_000733_DD_NSF_00002785-00054

Table X-13. Second Screening: Comparison of Conveyance Concepts with Second Level Screening Criteria Related to CEQA and NEPA

If the answer to the CEQA Criteria and/or the NEPA Criteria question is "Possibly" or "Unknown," the alternative concept would be considered in the Third Level Screening. If the answers to both questions are "No" or "Not Likely," the alternative concept would not be considered under subsequent screening criteria.

Potential Alternative	CEQA Criteria: Would the potential alternative avoid or substantially lessen any of the expected significant environmental effects of the "proposed project"?	NEPA Criteria: Would the potential alternative "address one or more significant issues" related to the proposed action?	Results of Second Level Screening
1. Dual Conveyance Concept 1A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
2. Dual Conveyance Concept 1B - *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 15,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
3. Dual Conveyance Concept 1C - *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 15,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
4. Dual Conveyance Concept 2A- *Dual Conveyance with a Tunnel - Scenario 6 Operations - 15,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
5. Dual Conveyance Concept 2B - *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 15,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
6. Dual Conveyance Concept 2C - *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 15,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
7. Dual Conveyance Concept 3A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 6,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
8. Dual Conveyance Concept 3B - *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 6,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
9. Dual Conveyance Concept 3C - *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 6,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
10. Dual Conveyance Concept 4A- *Dual Conveyance with a Tunnel - Scenario 6 Operations - 9,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
11. Dual Conveyance Concept 4B - *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 9,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
12. Dual Conveyance Concept 4C - *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 9,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
13. Dual Conveyance Concept 5A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations and Fall X2 - 3,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
14. Dual Conveyance Concept 6A- *Dual Conveyance with a Tunnel - Enhanced Ecosystem Concepts - 9,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
15. Dual Conveyance Concept 7A- *Dual Conveyance with a Tunnel - Enhanced Spring Delta Outflow Concept - 9,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
16. Dual Conveyance Concept 8A- *Dual Conveyance with a Tunnel - Proportional North Delta Inflow Bypass Concept - 9,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
17. Dual Conveyance Concept 9A- *Dual Conveyance with a Tunnel - State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem - 9,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
18. Isolated Conveyance Concept 1A - *Isolated Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
19. Isolated Conveyance Concept 1B - *Isolated Conveyance with a Lined or Unlined East Canal - January 2010 BDCP Operations - 15,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening

ED_000733_DD_NSF_00002785-00055

20. Isolated Conveyance Concept 1C - *Isolated Conveyance with a Lined or Unlined West Canal - January 2010 BDCP Operations - 15,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening
21. Through Delta Conveyance Concept 1 - *Separate Corridors Operations - 15,000 cfs*	Unknown at this Time	Possibly	Continue to Third Level Screening

ED_000733_DD_NSF_00002785-00056

Table X-14. Second Screening: Comparison of Conveyance Concepts with Third Level Screening Criteria Related to Economically Feasibility under CEQA and Reasonableness under NEPA

If the answers to all of these questions are "Not Likely" or "Unknown," the alternative concept would be considered in the EIR/EIS. If the answers to any of these questions are "LIKELY" or "YES," the alternative concept would not be considered in the EIR/EIS.

	Are the marginal costs of the potential alternative, as compared to the cost of the proposed project or action, so substantial that a reasonably prudent public agency would not proceed with the alternative?	Are the marginal costs of the potential alternative, as compared to the cost of the proposed project or action, so substantial that it would be impractical to proceed with the alternative?	Would the potential alternative take so long to implement, as compared with the proposed project or action, that it would not meet the project objectives or purpose within an acceptable time frame?	Would the potential alternative require technology or physical components that are clearly technically infeasible based on currently available science and engineering criteria for the scope of the potential alternative?	Would construction, operation, and/or maintenance of the potential alternative violate any federal or state statutes or regulations (other than sources of law that would be amended or eliminated as part of the alternative)?	Would the potential alternative involve an outcome that is clearly undesirable from a policy standpoint in that the outcome could not reflect a reasonable balancing of relevant economic, environmental, social, and technological factors?	Results of Third Level Screening
1. Dual Conveyance Concept 1A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
2. Dual Conveyance Concept 1B - *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 15,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
3. Dual Conveyance Concept 1C - *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 15,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
4. Dual Conveyance Concept 2A- *Dual Conveyance with a Tunnel - Scenario 6 Operations - 15,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
5. Dual Conveyance Concept 2B - *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 15,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
6. Dual Conveyance Concept 2C - *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 15,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
7. Dual Conveyance Concept 3A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 6,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
8. Dual Conveyance Concept 3B - *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 6,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
9. Dual Conveyance Concept 3C - *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 6,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
10. Dual Conveyance Concept 4A- *Dual Conveyance with a Tunnel - Scenario 6 Operations - 9,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
11. Dual Conveyance Concept 4B - *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 9,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria

ED_000733_DD_NSF_00002785-00057

12. Dual Conveyance Concept 4C - *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 9,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
13. Dual Conveyance Concept 5A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations and Fall X2 - 3,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
14. Dual Conveyance Concept 6A- *Dual Conveyance with a Tunnel - Enhanced Ecosystem Concepts - 9,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Unknown	Not Likely	Evaluate this alternative for Consistency Criteria
15. Dual Conveyance Concept 7A- *Dual Conveyance with a Tunnel - Enhanced Spring Delta Outflow Concept - 9,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Unknown	Not Likely	Evaluate this alternative for Consistency Criteria
16. Dual Conveyance Concept 8A- *Dual Conveyance with a Tunnel - Proportional North Delta Inflow Bypass Concept - 9,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Unknown	Not Likely	Evaluate this alternative for Consistency Criteria
17. Dual Conveyance Concept 9A- *Dual Conveyance with a Tunnel - State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem - 9,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Likely because preliminary modeling analysis indicates that Delta outflow criteria could not be accomplished even with reducing deliveries to upstream water rights holders.	Not Likely	Could be eliminated from further consideration, however, maintained in this analysis for evaluation with Consistency Criteria
18. Isolated Conveyance Concept 1A - *Isolated Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
19. Isolated Conveyance Concept 1B - *Isolated Conveyance with a Lined or Unlined East Canal - January 2010 BDCP Operations - 15,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
20. Isolated Conveyance Concept 1C - *Isolated Conveyance with a Lined or Unlined West Canal - January 2010 BDCP Operations - 15,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria
21. Through Delta Conveyance Concept 1 - *Separate Corridors Operations - 15,000 cfs*	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Not Likely	Evaluate this alternative for Consistency Criteria

ED_000733_DD_NSF_00002785-00058

Table X-15. Second Screening: Determination of Consistency of the Range of Alternatives to Sacramento-San Joaquin River Restoration Act

Measures of Consistency	Results
Does the range of alternatives provide a reasonable range of flow criteria?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes seven different operations criteria with different flow criteria.
Does the range of alternatives provide a reasonable range of diversion rates?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes four different operations criteria with different diversion rates.
Does the range of alternatives provide a reasonable range of other operational criteria to satisfy the criteria of approval as a Natural Community Conservation Plan?	Unknown at this time. However, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes at three different operations criteria that were developed specifically to increase benefits for aquatic resources as compared to the January 2010 BDCP Operations based upon preliminary modeling results.
Does the range of alternatives provide a reasonable range of hydrologic conditions?	Yes, the conveyance operations concepts will be evaluated with and without the projected effects of climate change and sea level rise.
Does the range of alternatives include a Through Delta Conveyance alternative?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes the Separate Corridors Concept.
Does the range of alternatives include a Dual Conveyance alternative?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes seven Dual Conveyance Concepts.
Does the range of alternatives include an Isolated Conveyance alternative?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes one Isolated Conveyance Concept.
Does the range of alternatives include a Dual or Isolated Conveyance - Lined Canal alternative?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes eight Dual Conveyance Concepts and two Isolated Conveyance Concepts with a lined eastern or western canals.
Does the range of alternatives include a Dual or Isolated Conveyance - Unlined Canal alternative?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes eight Dual Conveyance Concepts and two Isolated Conveyance Concepts with an unlined eastern or western canals.
Does the range of alternatives include a Pipeline/Tunnel Conveyance alternative?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes seven Dual Conveyance Concepts and one Isolated Conveyance Concepts with a pipeline/tunnel

ED_000733_DD_NSF_00002785-00059

Table X-16. Determination of Consistency of the Range of Alternatives Scoping Comments by CEQA Responsible Agencies and Federal Cooperating Agencies with Jurisdiction by Law or Special Expertise

Measures of Consistency	Results
Does the range of alternatives include alternatives with a broad range of water quality objectives and operational strategies?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes five different operations criteria developed to meet different water quality objectives.
Does the range of alternatives include an alternative with potential interim changes to the SWRCB Bay-Delta Plan?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes operations criteria that include changes in operations of south Delta intakes that could be considered as potential interim changes to the SWRCB Bay-Delta Plan.
Does the range of alternatives include an alternative with long-term changes to the SWRCB Bay-Delta Plan with new conveyance facilities?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes 18 conveyance concepts with long-term changes to the SWRCB Bay-Delta Plan with new Dual Conveyance or Isolated Conveyance facilities.
Does the range of alternatives include an alternative with long-term changes to the SWRCB Bay-Delta Plan without new conveyance facilities?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes a Through Delta alternative with minimum modifications to existing conveyance facilities.
Does the range of alternatives include an alternative with reduced diversions lower than diversions allowed for in the USFWS and NMFS biological opinions to assure continued existence of the species and some level of rehabilitation for the estuary?	Likely, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes at least one alternative, Isolated Conveyance, that based upon preliminary model results would result in lower SWP and CVP water supplies than under existing conditions, especially with projected climate change and sea level rise conditions.
Does the range of alternatives include an alternative with Delta outflows, and potentially Delta inflows, that reflect a more natural hydrograph then current SWRCB Bay-Delta Plan?	Yes, the range of conveyance concepts that have been consistent with the three levels of screening criteria includes two conveyance concepts, Enhanced Ecosystem Concept and Modified Enhanced Ecosystem Concept, that would result in a more natural hydrograph than occurs under existing conditions.

ED_000733_DD_NSF_00002785-00060

Table X-17. Determination of Consistency of with Legal Rights of Entities that are Not BDCP Participants

If the answers to this questions are "Not Likely" or "Unknown," the alternative concept would be considered in the EIR/EIS. If the answers to this question are "LIKELY" or "YES," the alternative concept would not be considered in the EIR/EIS.	
Measures of Consistency	**Results**
Would the potential alternative result in the impairment of existing water rights in the Sacramento-San Joaquin Rivers watershed who are not applicants for incidental take authorization through the proposed Bay Delta Conservation Plan?	No for the range of conveyance concepts that have been consistent with the three levels of screening criteria would not require changes in legal rights although legal ownership may change due to sale of property. However, the answer would be Likely for Dual Conveyance Concept 8A, which includes operations concepts based on Scenario 7a, and Dual Conveyance Concept 9A, which includes operations concepts based on the State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem. Based upon preliminary model analyses, both of these concepts would result in reductions in water deliveries to Sacramento River water rights holders in order to achieve the flow and water quality objectives in these operations concepts.

ED_000733_DD_NSF_00002785-00061

Table X-18. Results of Initial Screening for Conveyance Alignment Concepts

Potential Alternative	Results of Initial Screening Process
1. Conveyance Concept AI - *Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	This alternative evaluated in the Second Screening Process
2. Conveyance Concept A2 - *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	This alternative evaluated in the Second Screening Process
3. Conveyance Concept A3 - *Dual Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*	This alternative evaluated in the Second Screening Process
4. Conveyance Concept A4 - *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the Lower San Joaquin River, and Continued Use of Existing South Delta Intakes*	Eliminate from further evaluation because the outcome probably would not reflect a reasonable balancing of relevant economic, environmental, social, and technological factors
5. Conveyance Concept BI - *Isolated Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	This alternative evaluated in the Second Screening Process
6. Conveyance Concept B2 - *Isolated Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	This alternative evaluated in the Second Screening Process
7. Conveyance Concept B3 - *Isolated Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	This alternative evaluated in the Second Screening Process
8. Conveyance Concept B4 - *Isolated Conveyance with a Lined or Unlined East Canal between the Sacramento River near the Confluence with the Feather River and the and Lower San Joaquin River, and Abandonment of Existing South Delta Intakes*	Eliminate from further evaluation because the outcome probably would not reflect a reasonable balancing of relevant economic, environmental, social, and technological factors
9. Conveyance Concept B5 - *Isolated Conveyance with Diversion from the Sacramento River near West Sacramento into the Sacramento Deep Water Ship Channel and a Tunnel between the Deep Water Ship Channel and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Eliminate from further evaluation because the construction, operation, and/or maintenance of the potential facilities probably would violate federal or state statutes or regulations
10. Conveyance Concept B6 - *Isolated Conveyance with Diversion from the San Joaquin River near Antioch and Desalination Facilities, a Tunnel between the Desalination Facilities and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*	Eliminate from further evaluation because the outcome probably would not reflect a reasonable balancing of relevant economic, environmental, social, and technological factors.
11. Conveyance Concept C1 - *Separate Corridors*	This alternative evaluated in the Second Screening Process
12. Conveyance Concept C2 - *Through Delta Conveyance with Armored Corridors*	Eliminate from further evaluation because the outcome probably would not reflect a reasonable balancing of relevant economic, environmental, social, and technological factors
13. Conveyance Concept C3 - *Through Delta Conveyance with West Delta Salinity Barrier*	Eliminate from further evaluation because the outcome could result in adverse effects to listed species by relocating the intakes of the SWP and CVP

ED_000733_DD_NSF_00002785-00062

Table X-19. Results of Second Screening Process for Conveyance Alignment and Operations Concepts

Potential Alternative	Results of Second Screening Process
1. Dual Conveyance Concept 1A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 1A**
2. Dual Conveyance Concept 1B - *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 15,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 1B**
3. Dual Conveyance Concept 1C - *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 15,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 1C**
4. Dual Conveyance Concept 2A- *Dual Conveyance with a Tunnel - Scenario 6 Operations - 15,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 2A**
5. Dual Conveyance Concept 2B - *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 15,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 2B**
6. Dual Conveyance Concept 2C - *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 15,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 2C**
7. Dual Conveyance Concept 3A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 6,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 3**
8. Dual Conveyance Concept 3B - *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 6,000 cfs*	This alternative was considered to be eligible for evaluation in the EIR/EIS following the Second Screening Process. However, as described in Subsection X.10,4, this alternative is similar to Dual Conveyance Concepts 3A and 1B and not evaluated separately.
9. Dual Conveyance Concept 3C - *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 6,000 cfs*	This alternative was considered to be eligible for evaluation in the EIR/EIS following the Second Screening Process. However, as described in Subsection X.10,4, this alternative is similar to Dual Conveyance Concepts 3A and 1C and not evaluated separately.
10. Dual Conveyance Concept 4A- *Dual Conveyance with a Tunnel - Scenario 6 Operations - 9,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 4**
11. Dual Conveyance Concept 4B - *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 9,000 cfs*	This alternative was considered to be eligible for evaluation in the EIR/EIS following the Second Screening Process. However, as described in Subsection X.10,4, this alternative is similar to Dual Conveyance Concepts 4A and 1B and not evaluated separately
12. Dual Conveyance Concept 4C - *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 9,000 cfs*	This alternative was considered to be eligible for evaluation in the EIR/EIS following the Second Screening Process. However, as described in Subsection X.10,4, this alternative is similar to Dual Conveyance Concepts 4A and 1C and not evaluated separately.
13. Dual Conveyance Concept 5A- *Dual Conveyance with a Tunnel - January 2010 BDCP Operations and Fall X2 - 3,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 5**
14. Dual Conveyance Concept 6A- *Dual Conveyance with a Tunnel - Enhanced Ecosystem Concepts - 9,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 7**
15. Dual Conveyance Concept 7A- *Dual Conveyance with a Tunnel - Enhanced Spring Delta Outflow Concept - 9,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 8**

ED_000733_DD_NSF_00002785-00063

16. Dual Conveyance Concept 8A- *Dual Conveyance with a Tunnel - Proportional North Delta Inflow Bypass Concept - 9,000 cfs*	This alternative was considered to be eligible for evaluation in the EIR/EIS following the Second Screening Process. However, as described in Subsection X.10,5, this alternative is similar to Dual Conveyance Concepts 7A and not evaluated separately.
17. Dual Conveyance Concept 9A- *Dual Conveyance with a Tunnel - State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem - 9,000 cfs*	Eliminate from further evaluation because the construction, operation, and/or maintenance of the potential facilities probably would violate federal or state statutes or regulations
18. Isolated Conveyance Concept 1A - *Isolated Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 6A**
19. Isolated Conveyance Concept 1B - *Isolated Conveyance with a Lined or Unlined East Canal - January 2010 BDCP Operations - 15,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 6B**
20. Isolated Conveyance Concept 1C - *Isolated Conveyance with a Lined or Unlined West Canal - January 2010 BDCP Operations - 15,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 6C**
21. Through Delta Conveyance Concept 1 - *Separate Corridors Operations - 15,000 cfs*	This alternative to be evaluated in the EIR/EIS as: **Alternative 9**

ED_000733_DD_NSF_00002785-00064

To: Karen Schwinn/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA[]; om Hagler/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Wed 4/11/2012 12:03:09 AM
Subject: FW: BDCP NEPA Baseline

From: Monroe, Jim
Sent: Tuesday, April 10, 2012 3:24 PM
To: Nawi, David; Michael.Tucker@NOAA.GOV; Chotkowski, Michael; Barajas, Federico; Rinek, Lori; Beggs, Barbara; Shelby Mendez
Cc: 'Deanna Harwood'; Allen, Kaylee
Subject: BDCP NEPA Baseline

David,

I spoke with Ken Bodgan at ICF on the topic of baseline. I was told that the environmental document was evaluating the proposed alternatives against three baselines; one CEQA and two NEPA. Most important to me is that he confirmed that one of the two NEPA baselines is current conditions, with Fall X2, evaluated to the Late Long Term and including climate change and sea level rise. I believe this is consistent with my statements on the Monday call and the draft CEQ guidance, as well as with guidance previously provided by myself, Deanna, and Kaylee. For NEPA purposes, this should be adequate.

My understanding was that the second NEPA baseline was current conditions with Fall X2, but for a shorter duration, with a purpose of understand operational impacts of the alternatives in the four water year types. While I think this might be superfluous, DWR seems to want it for some reason. However, its existence seems to have contributed to the current confusion on this topic. All three alternatives (including the freakish CEQA "snapshot" baseline, driven by the City of Sunnyvale decision) were all placed on the same graphic. Without having seen the graphic, I can imagine the confusion this could cause. Ken told me that he had recommended on graph for each baseline, but was vetoed by DWR. DWR has not released those graphics for review by the other agencies, so Ken was not able to send me a set. This may be topic of discussion eventually, but would not seem to be a NEPA flaw, other than that it may make the document confusing to the educated lay reader.

Jim

Jim Monroe

U.S. Department of the Interior

Office of the Regional Solicitor

ED_000733_DD_NSF_00003079-00001

(916) 978-5674

(916) 978-5694 (fax)

james.monroe@sol.doi.gov

"You cannot be memorably funny without at some point raising topics which the rich, the powerful and the complacent would prefer to see left alone." - George Orwell

ED_000733_DD_NSF_00003079-00002

To: "Nawi, David" [David_Nawi@ios.doi.gov]
Cc: CN=Karen Schwinn/OU=R9/O=USEPA/C=US@EPA[]
Bcc: []
From: CN=Tom Hagler/OU=R9/O=USEPA/C=US
Sent: Tue 4/17/2012 7:19:33 PM
Subject: Fw: Purpose and Need - Again

EPA would like to say that we are done with the NEPA P+N, but we aren't sure whether we finally resolved the issue below.

Our recollection was that you were going to check with Mike Connor on this whole brouhaha about changing "would" to "could."

Did this ever get resolved, or are we still in limbo?

(The exchange is summarized in your email from 03/14 below).

****
****

Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415) 972-3945
Email: hagler.tom@epamail.epa.gov
----- Forwarded by Tom Hagler/R9/USEPA/US on 04/17/2012 11:45 AM -----

From: "Nawi, David" <David_Nawi@ios.doi.gov>
To: "Rinek, Lori" <lori_rinek@fws.gov>, Tom Hagler/R9/USEPA/US@EPA, Karen Schwinn/R9/USEPA/US@EPA, "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>, "Allen, Kaylee" <Kaylee.Allen@sol.doi.gov>, Deanna Harwood <deanna.harwood@noaa.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, Michael Tucker <Michael.Tucker@NOAA.GOV>, "Barajas, Federico" <FBarajas@usbr.gov>
Cc: "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Sobeck, Eileen" <Eileen_Sobeck@ios.doi.gov>
Date: 03/14/2012 01:56 PM
Subject: Purpose and Need - Again

(b) (5) [redacted]

(b) (5)

David

----- Message from "Cowin, Mark" <mcowin@water.ca.gov> on Thu, 23 Feb 2012 15:10:14 -0500 -----
To: "Nawi, David" <David_Nawi@ios.doi.gov>
cc: "Crothers, Cathy" <crothers@water.ca.gov>
Subject: RE: Purpose Statement
Yes, I am OK with this language for the draft.

From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, February 23, 2012 9:22 AM
To: Cowin, Mark
Subject: FW: Purpose Statement

Mark – Confirming that we are good to go with the language below, and that it will be reflected without further change in the draft DEIS/EIR.

Thanks.

David

From: Nawi, David
Sent: Wednesday, February 22, 2012 1:12 PM
To: mark.cowin@water.ca.gov
Subject: Purpose Statement

Mark – Would you please give me a call re the Purpose Statement language we discussed last week – set out below.

David

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San

Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

ED_000733_DD_NSF_00003098-00003

To: Tom Hagler/R9/USEPA/US@EPA[]
Cc: Karen Schwinn/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Tue 4/17/2012 7:28:10 PM
Subject: RE: Purpose and Need - Again
mailto:David_Nawi@ios.doi.gov

Loop never closed with DWR. I think we will do that in the next few days. I will strongly support no change, and I predict that will be the outcome (hope I am not proven wrong).i

From: Tom Hagler [mailto:Hagler.Tom@epamail.epa.gov]
Sent: Tuesday, April 17, 2012 12:20 PM
To: Nawi, David
Cc: Karen Schwinn
Subject: Fw: Purpose and Need - Again

EPA would like to say that we are done with the NEPA P+N, but we aren't sure whether we finally resolved the issue below.

Our recollection was that you were going to check with Mike Connor on this whole brouhaha about changing "would" to "could."

Did this ever get resolved, or are we still in limbo?

(The exchange is summarized in your email from 03/14 below).

****
****
Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415) 972-3945
Email: hagler.tom@epamail.epa.gov
----- Forwarded by Tom Hagler/R9/USEPA/US on 04/17/2012 11:45 AM -----

From: "Nawi, David" <David_Nawi@ios.doi.gov>
To: "Rinek, Lori" <lori_rinek@fws.gov>, Tom Hagler/R9/USEPA/US@EPA, Karen Schwinn/R9/USEPA/US@EPA, "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>, "Allen, Kaylee" <Kaylee.Allen@sol.doi.gov>, Deanna Harwood <deanna.harwood@noaa.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, Michael Tucker <Michael.Tucker@NOAA.GOV>, "Barajas, Federico" <FBarajas@usbr.gov>
Cc: "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Sobeck, Eileen" <Eileen_Sobeck@ios.doi.gov>

ED_000733_DD_NSF_00003099-00001

Date: 03/14/2012 01:56 PM
Subject: Purpose and Need - Again

(b) (5)

David

----- Message from "Cowin, Mark" <mcowin@water.ca.gov> on Thu, 23 Feb 2012 15:10:14 -0500 -----

To:
"Nawi, David" <David_Nawi@ios.doi.gov>

cc:
"Crothers, Cathy" <crothers@water.ca.gov>

Subject:
RE: Purpose Statement

Yes, I am OK with this language for the draft.

From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, February 23, 2012 9:22 AM
To: Cowin, Mark
Subject: FW: Purpose Statement

Mark – Confirming that we are good to go with the language below, and that it will be reflected without further change in the draft DEIS/EIR.

Thanks.

David

From: Nawi, David
Sent: Wednesday, February 22, 2012 1:12 PM
To: mark.cowin@water.ca.gov
Subject: Purpose Statement

Mark – Would you please give me a call re the Purpose Statement language we discussed last week – set out below.

David

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

ED_000733_DD_NSF_00003099-00003

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTIO
N OF

Regulatory Division (SPK-2008-00861)

Ms. Dale K. Hoffman-Floerke
Acting Deputy Director
Department of Water Resources
1416 Ninth Street
Sacramento, California 94236-0001

Dear Ms. Hoffman-Floerke:

I am following up on our meeting on March 29, 2012, in which we discussed the purpose statements for the Bay Delta Conservation Plan (BDCP) for compliance with the National Environmental Policy Act (NEPA)(42 U.S.C. 4321 et seq), Section 404 of the Clean Water Act, and Section 10 of the Rivers and Harbors Act of 1899.

We recognize the BDCP will set out a comprehensive strategy which strives to achieve the goals of restoring ecological functions and improving water reliability. As you know, specific projects of the BDCP that result in the discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act, work or structures in or affecting navigable waters of the United States under Section 10 of the Rivers and Harbors Act of 1899, or modifications to a Federal project under Section 14 of the Rivers and Harbors Act of 1899, will require Department of the Army authorization prior to starting work.

For each of the individual projects of the BDCP requiring Department of the Army authorization under Sections 404 of the Clean Water Act, we will determine the specific basic and overall purpose statements after receiving a project description with sufficient detail. Under the 404(b)(1) Guidelines, we will use the basic purpose statement to determine whether the proposed project is water-dependent. The overall purpose for a project is necessary to evaluate practicable, less environmentally damaging alternatives as required by the Guidelines. Because each individual BDCP project functions as an integrated component of the plan, the overall purpose statement for each of these individual projects will reflect that the project must be consistent with the BDCP so that the range of alternatives analyzed under 404(b)(1) would be limited to only those which would be within the scope of activities and operations authorized by the finalized BDCP (the final Habitat Conservation Plan as approved by U.S. Fish and Wildlife Service and the National Marine Fisheries Service.).

The Corps has also reviewed the Purpose and Need Statements in 2.4 & 2.5 of the February 2012 Administrative Draft BDCP EIS/EIR, and hereby agrees that those statements meet the minimum requirements for compliance with NEPA.

I hope this information is helpful to you. Please refer to identification number SPK-2008-00861 in any correspondence concerning this project. If you have any questions, please contact Mr. Michael Nepstad, Deputy Chief, Regulatory Division, at email *Michael.G.Nepstad@usace.army.mil*, or telephone 916-557-7262.

Sincerely,

Michael S. Jewell
Chief, Regulatory Division

Enclosure

Copy Furnished:

Ms. Karen Schwinn, Associate Director, Water Division, U.S. Environmental Protection Agency Region 9, 75 Hawthorne Street (WTR-1), San Francisco, CA 94105
Mr. Paul Robershotte, Integrated Water Resource Planning, South Pacific Division, U.S. Army Corps of Engineers, 1455 Market Street, San Francisco, CA 95103-1399
Mr. David Nawi, Senior Advisor to the Secretary, California and Nevada, 650 Capital Mall, 5th Floor, Sacramento, CA 95814

NEPSTAD/dd
CESPK-RD

JEWELL
CESPK-RD

To: "Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; Idlof, Patricia S (Patti)" [PIdlof@usbr.gov]
Cc: Tom Hagler/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Tue 5/1/2012 7:02:27 PM
Subject: RE: BDCP: Draft Corps letter to DWR on Purpose (UNCLASSIFIED)

Mike - I have spoken with Patti, and we are on the verge of nailing this down. The only change from the version posted on the web at the end of February will be to change the order of two sentences - with no changes to the words. Let's hope that we can put this to rest for the last time.

David

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Monday, April 30, 2012 10:14 AM
To: Idlof, Patricia S (Patti); Nawi, David
Subject: FW: BDCP: Draft Corps letter to DWR on Purpose (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi David and Patti,

Is the NEPA purpose and need statement changing (again)? EPA (below) thinks the statement may still be unresolved. Thanks

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
(916) 557-7262 Fax:(916) 930-9506
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Tom Hagler [mailto:Hagler.Tom@epamail.epa.gov]
Sent: Monday, April 30, 2012 10:02 AM
To: Jewell, Michael S SPK
Cc: Erin Foresman; Karen Schwinn; Nepstad, Michael G SPK

ED_000733_DD_NSF_00003431-00001

Subject: Re: BDCP: Draft Corps letter to DWR on Purpose (UNCLASSIFIED)

One quick thought:

You may want to check in with Nawi as to whether the Federal lead agencies agree with the NEPA purpose and need statement. As of about a week ago, there was a debate over a word change ("could" v. "would") that was unresolved between the Feds and the State. This is not an EPA issue, but you may want to know whether that statement has the buy-in from the federal action agencies before you go endorsing it.\

****
****

Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415) 972-3945
Email: hagler.tom@epamail.epa.gov

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00003431-00002

To: "Monroe, Jim" [James.Monroe@sol.doi.gov]; Allen, Kaylee" [Kaylee.Allen@sol.doi.gov]; Deanna Harwood' [Deanna.Harwood@noaa.gov]; om Hagler/R9/USEPA/US@EPA;Karen Schwinn/R9/USEPA/US@EPA[]; aren Schwinn/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Tue 5/1/2012 7:58:49 PM
Subject: FW: BDCP Admin Draft EIR/EIS Section 2.4 Purpose Statement

FYI

From: Idlof, Patricia S (Patti)
Sent: Tuesday, May 01, 2012 12:45 PM
To: Stein, Russell
Cc: Nawi, David; Barajas, Federico; Fry, Susan M; Chrisney, Ann C; Maria.Rea@noaa.gov; Michael Tucker; Chotkowski, Michael; Rinek, Lori
Subject: BDCP Admin Draft EIR/EIS Section 2.4 Purpose Statement

Russ,

The version of Section 2.4 posted on the BDCP website and dated 2/29/12 does not contain the text agreed to by David Nawi and Mark Cowin on 2/23/12 (see attached email). The paragraph on page 2-4, lines 15-25, contains 5 sentences. In the posted (2/29/12) version, the 3rd and 4th sentences have been transposed and need to be corrected. As demonstrated in the attached email, the 3rd sentence should be the one starting with "It is not intended to imply..." The 4th sentence should be the one starting with "As indicated by the ..." With this correction, no further changes to Section 2.4 are anticipated. Please confirm your understanding and direction to ICF to make this correction. Hopefully this will put this issue to rest. Thanks!

Patti Idlof

Chief, Conservation and Conveyance Division

Bay-Delta Office

801 I Street, Suite 140

Sacramento, CA 95814

Office: (916) 414-2404

Cell: (916) 992-3566

pidlof@usbr.gov

Reclamation BCLogo Bluesm

ED_000733_DD_NSF_00003432-00001

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at
(866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at
(866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

ED_000733_DD_NSF_00003432-00002

Received: from IIAMIBEXCH01.ia.doi.net (161.217.233.187) by IBR5DENMXHUB01.bor.doi.net (140.215.123.133) with Microsoft SMTP Server (TLS) id 8.3.106.1; Tue, 1 May 2012 10:52:09 -0600
Received: from IIAMIBEXCHANGE.ia.doi.net ([161.217.233.177]) by IIAMIBEXCH01.ia.doi.net ([161.217.233.187]) with mapi; Tue, 1 May 2012 12:51:54 -0400
From: "Nawi, David" <David_Nawi@ios.doi.gov>
To: "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>
Date: Tue, 1 May 2012 12:51:53 -0400
Subject: FW: Purpose Statement
Message-ID: <67BC36F6966AB848A6EB2422BADC860208309ADA55@IIAMIBEXCHANGE.ia.doi.net>
Content-Type: multipart/alternative;
boundary="_000_67BC36F6966AB848A6EB2422BADC860208309ADA55IIAMIBEXCHANG_"
Content-Language: en-US
Thread-Topic: Purpose Statement
Thread-Index: AczxpqSUdKRr4uCpRHOi3FCYILZ2WAAqNAVAAAXkWYANVOd2QA==
Accept-Language: en-US
X-MS-Exchange-Organization-AuthAs: Internal
X-MS-Exchange-Organization-AuthMechanism: 04
X-MS-Exchange-Organization-AuthSource: IIAMIBEXCH01.ia.doi.net
X-MS-Has-Attach:
X-MS-Exchange-Organization-SCL: -1
X-MS-TNEF-Correlator:
acceptlanguage: en-US
MIME-Version: 1.0

From: Cowin, Mark [mailto:mcowin@water.ca.gov]
Sent: Thursday, February 23, 2012 12:10 PM
To: Nawi, David
Cc: Crothers, Cathy
Subject: RE: Purpose Statement

Yes, I am OK with this language for the draft.

From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, February 23, 2012 9:22 AM
To: Cowin, Mark
Subject: FW: Purpose Statement

Mark – Confirming that we are good to go with the language below, and that it will be reflected without further change in the draft DEIS/EIR.

Thanks.

David

From: Nawi, David
Sent: Wednesday, February 22, 2012 1:12 PM
To: mark.cowin@water.ca.gov
Subject: Purpose Statement

Mark – Would you please give me a call re the Purpose Statement language we discussed last week – set out below.

David

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

ISSUE PAPER
BDCP EIR/EIS Purpose Statement

ISSUE: Are the co-equal goals of ecosystem restoration and water supply reliability accurately and adequately described in the current version of the purpose statement in the Notice of Intent?

RECOMMENDED FEDERAL POSITION: We recommend that federal agencies confirm in writing their intent that projects need not be capable of delivering full contract amounts of water in order to be consistent with the purposes of BDCP.

BACKGROUND: On February 13, 2009, the NEPA Lead Agencies published a Notice of Intent (NOI) in the Federal Register to prepare an EIS for the Bay Delta Conservation Plan (BDCP). The NOI stated that the intent of the BDCP is "to secure authorizations that would allow projects that restore and protect water supplies, water quality, and ecosystem health to proceed within a stable regulatory framework." In addition, the NOI included the following language describing the water supply aspects of the purpose of BDCP:

> Restore and protect the ability of the SWP and CVP (State Water Project and Central Valley Project) to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts..... .

This language was developed in discussions among the Fish and Wildlife Service, Bureau of Reclamation, and the National Marine Fisheries Service, California Department of Fish and Game, California Department of Water Resources, and state and federal water contractors.

ANALYSIS: The addition of the reference to "full contract amounts" in the most recent NOI has raised the questions of 1) whether it is a purpose of the BDCP to provide for delivery of full contract amounts of water, and consequently, 2) whether project alternatives must have the capability of delivering full contract amounts in order to be considered and/or adopted as a preferred alternative under NEPA, an RPA under the ESA, or a LEDPA under Section 404 of the Clean Water Act. "Full contract amounts" would be considerably more than the average historic CVP/SWP water deliveries, and even significantly higher than the maximum water deliveries ever made under the two projects combined.

The EIS purpose statement is the key component of the document that drives the development of alternatives to the proposed action. All alternatives considered must be consistent with the purposes of the action. In addition, any "reasonable and prudent alternatives" proposed under the ESA must be consistent with the purposes of the project as stated in the BDCP and the EIR/EIS. During the development of alternatives, the meaning of "up to full contract amounts" has been a frequent issue of debate, particularly as it relates to the concept of water supply reliability. The debate is whether the wording means that an alternative must allow for the delivery of full contract amounts, or that no alternative should allow for deliveries in excess of full contract amounts --i.e., does the language establish a water supply cap, or a target? The current suite of alternatives was developed based on the belief that the language sets a cap, not a target.

The federal lead agencies should clarify in the EIR/EIS that the NOI's statement of purpose and need does not require that project alternatives be capable of delivering full contract amounts in order to be consistent with the project purposes. The agencies did not intend that all action alternatives be required to be capable of delivering full contract amounts of water – that is, amounts of water substantially greater than the amounts of water that have historically been delivered through the Delta. Nor did the agencies intend the NOI to impose such a requirement. To the contrary, the agencies believe that a reasonable

range of alternatives for the BDCP is one that meets the co-equal goals of 1) providing a more **reliable** water supply for California – in whatever amount is consistent with hydrologic conditions, laws and regulations, and the terms of water delivery contracts -- and 2) protecting, restoring, and enhancing the Delta ecosystem., The goal of providing a more reliable water supply can be met by decreasing the risk of major water supply disruption from widespread levy failure, sea level rise, and other current serious risks, whether or not the amount of water supplied from the Delta increases. Any proposal that increases water supply must also meet the other requirements articulated in the statement of purpose and need.

As stated in the NOI, it is imperative that alternatives must be consistent with federal and state law. They must comply, inter alia, with the federal ESA, NEPA, and Clean Water Act, and the California ESA, Natural Community Conservation Act, and the recently-enacted Delta Reform Act. The Delta Reform Act, Cal. Water Code Div. 35 (commencing with Section 85000) states that the policy of the State is to **reduce** reliance on the Delta in meeting California's future water supply needs. See Cal. Water Code sec. 85021. Since delivering full contract amounts would **increase reliance on the Delta** in meeting California's water needs, it is difficult to discern how an alternative that is capable of delivering full contract amounts would be consistent with this State policy embodied in the State's Water Code.

Furthermore, the agencies chose language for the NOI that explicitly does not require than an alternative be capable of delivering full contract amounts. The phrase "up to full contract amounts" indicates that both alternatives that could deliver full contract amounts and those that are not capable of delivering full contract amounts are consistent with this stated purpose.

The federal NEPA lead agencies, and all federal agencies that comprise the Federal Bay-Delta Leadership Committee, should confirm that the purpose and intent of BDCP does not require that it be capable of delivering full contract amounts of water. Alternatives to be considered should further the co-equal goals, should comply with federal and state laws, and should otherwise carry out the purposes set forth in the February 13, 2009, NOI, whether or not they are capable of delivering full contract amounts of water. The alternatives contemplated to date do not result in delivery of full contract amounts. In fact, several preliminary alternatives are anticipated to result in less south of Delta (SOD) exports than the currently defined BDCP proposed project. One or more alternatives will likely result in less SOD exports than under existing conditions and future no action modeling scenarios.

To: Tom Hagler/R9/USEPA/US@EPA[]
From: "Monroe, Jim"
Sent: Thur 6/21/2012 10:03:46 PM
Subject: Light Lunchtime Reading
BenefitCostDeltaTunnel_Web.pdf

Providing this on the off chance you had not seen it. It looks back of the envelope to me, but the author is pretty well respected. I actually watched a very collegial discussion on this subject matter of the attachment between the author of the attachment and David Sunding, who was the lead for the contractor's "Benefits Analysis"; about a year and half ago. Call me crazy, but I see 404(b)(1) implications...

EBERHARDT SCHOOL OF BUSINESS

BusinessForecasting Center

Benefit – Cost Analysis of Delta Water Conveyance Tunnels

June 14, 2012

Summary

This report is the first comprehensive economic benefit-cost analysis of the water conveyance tunnels at the center of the Bay Delta Conservation Plan (BDCP). We find the tunnel is not economically justified, because the costs of the tunnel are 2.5 times larger than its benefits.

Benefit-cost analysis is an essential and normal part of assessment and planning of large infrastructure projects such as the $13 billion water conveyance tunnel proposal, but has not been part of the BDCP. This report fills an important information gap for policy makers and water ratepayers who will ultimately bear the multi-billion dollar costs of the project. The results can be easily updated if changing plans generate updated estimates of benefits and costs, but the gap between benefits and costs is so large that it seems unlikely that the tunnels could be economically justified in any future scenario.

The principal author of this report is Dr. Jeffrey Michael, Director of the Business Forecasting Center (BFC) at the University of the Pacific. The BFC is among the most recognized economic research centers in California, and is known for its expertise on the Central Valley economy, growth resource issues facing the region. On water issues, the BFC is known for being the only academic or government entity to accurately assess employment impacts during the 2009 drought, and recently led the development of the Economic Sustainability Plan for the Delta Protection Commission. This report is part of the Center's independent research and analysis of economic issues and trends in the state and region.

Benefit – Cost Analysis of a Delta Water Conveyance Tunnel

A $13 billion water conveyance tunnel is being considered as the centerpiece of the Bay Delta Conservation Plan (BDCP). The tunnel would divert water from the Sacramento River and convey it around the Delta to state and federal water projects serving southern California rather than conveying the fresh water through Delta channels. Essentially, the project is an updated version of the peripheral canal defeated by California voters in 1982.

This report is the first comprehensive economic benefit-cost analysis of the proposed tunnel. We find the costs of the tunnel are 2.5 times larger than its benefits, and thus the project is not economically justified due to a benefit-cost ratio of 0.4.

Table 1: Summary of benefits and costs of Delta water conveyance tunnel in a typical year after it is complete, approximately 2030. (estimates in current dollars)

Benefits	**Annual benefits ($ millions)**
Export Water Supply at 5.5maf of exports	250
Earthquake Risk Reduction	50
Export Water Quality	200
Environmental Benefits at 5.5maf of exports	0
Total Annual Benefits	**500**
Costs	**Annual costs ($ millions)**
Debt Service Capital Cost	1,100
Operation and Maintenance	85
In-Delta and Upstream Impacts	65
Total Annual Costs	**1,250**

The BDCP is considering a variety of sizes and operating criteria for the water conveyance tunnel. This analysis focuses on a scenario that is reported in the press to be the preferred alternative emerging in BDCP negotiations. Reports suggest tunnels will be built that can accommodate conveyance of 15,000 cfs (cubic feet per second) with average annual water exports averaging between 4.5 maf (million acre feet) and 5.5 maf.[1] This assessment examines the most favorable operating criteria for financing the tunnels, the maximum average water exports of 5.5 maf. This analysis looks only at the water conveyance proposal in the BDCP, and does not evaluate habitat creation proposals that provide their own benefits and have

[1] "California Peripheral Canal Coming Soon." San Francisco Chronicle, June 3, 2012. Although there is no formal proposal, we have heard of a plan to build 3 intakes with 3,000 cfs capacity instead of 5 intakes, but to build the tunnels at 15,000 cfs capacity so that they could accommodate 2 additional intakes and increased pumping capacity in the future. This change would result in somewhat lower capital and operating costs, but is highly unlikely to result in a positive benefit-cost ratio.

ED_000733_DD_NSF_00003885-00002

several billion dollars in additional construction costs. As noted in a later section, this separate analysis is consistent with Department of Water Resources' economic analysis guidelines.

This preliminary benefit-cost assessment can be updated with new information as it becomes available. Our intention is to motivate public agencies and others to conduct comprehensive benefit-cost analysis, and to provide appropriate economic justification of the project. Given the poor performance of the tunnel in this initial benefit-cost analysis with several assumptions favorable to tunnel construction, it is highly unlikely that any subsequent benefit-cost analysis will find that the project is not economically justified.

Benefit-Cost Analysis

Benefit-cost analysis of large infrastructure projects is common practice, and broadly considered to be an essential part of good public policy analysis of large capital projects. For example, high-speed rail, the other California mega-project in the news, has included multiple benefit-cost assessments as the plan has evolved. The most recent accompanied the revised business plan and found most scenarios had about $2 in expected benefits for every $1 in expected costs.[2] The benefit-cost ratio of high-speed rail is five times higher than the benefit-cost ratio we have calculated for the Delta water conveyance tunnel.

Benefit-cost analysis of the tunnel conveyance has been called for in numerous reports and reviews of the BDCP, but still has not been appropriately conducted by any state agencies or published in any independent academic studies before this report. The Department of Water Resources (DWR) has an Economic Analysis Guidebook that provides a comprehensive description of DWR's approach to benefit-cost analysis.[3]

The DWR Economic Analysis Guidebook states the importance of benefit-cost analysis well,

> Economic analysis is a critical element of the water resources planning processes because it not only evaluates the economic justification of alternative plans but it can assist in plan formulation. (p. 1)
>
> The economic analysis should answer questions such as, Should the project be built at all? Should it be built now?, Should it be built to a different configuration or size? Will the project have a net positive social value for Californians irrespective of to whom the costs and benefits accrue? (p. 5)
>
> Benefit-cost analysis is the procedure where the different benefits and costs of proposed projects are identified and measured (usually in monetary terms) and

[2]The April 2012 high-speed rail benefit-cost analysis can be downloaded from http://www.cahighspeedrail.ca.gov/assets/0/152/431/6515fa4a-a098-4b88-9f19-19f0e1475e19.pdf. The business plan and benefit-cost analysis of high-speed rail have been criticized for optimistic ridership projections, but this debate has strengthened the policy and planning process for the high-speed rail project. Many of the economic benefits of high-speed rail are health related such as reduced traffic fatalities and air pollution from reduced highway travel and the benefit-cost analysis attached monetary values to health and environmental benefits.

[3] The DWR Economic Analysis Guidebook is on the web at http://www.water.ca.gov/pubs/planning/economic_analysis_guidebook/econguidebook.pdf

ED_000733_DD_NSF_00003885-00003

then compared with each other to determine if the benefits of the project exceed its costs. Benefit-cost analysis is the primary method used to determine if a project is economically justified. A project is justified when:

- estimated total benefits exceed total estimated economic costs;
- each separable purpose (for example, water supply, hydropower, flood damage reduction, ecosystem restoration, etc.) provides benefits at least equal to its costs;[4]
- the scale of development provides maximum net benefits; and
- there are no more-economical means of accomplishing the same purpose. (p. 13)

The Department of Water Resources has recently contracted with the Brattle Group to conduct an Economic Benefit Analysis led by Dr. David Sunding of UC-Berkeley.[5] The "Benefits Analysis" rather obviously ignores the cost side of the benefit-cost equation, including negative impacts on third parties such as in-Delta and upstream interests. Dr. Sunding's analysis has not yet been released, but could and should be expanded to a comprehensive benefit-cost analysis. The benefits analysis in this report follows the framework in the Scope of Work for the BDCP Economic Benefits Analysis, and the numbers could be easily updated once the Brattle report is complete and available.

In the meantime, the objective of this report is to fill an important information void, and to challenge tunnel proponents to make their economic case using an accepted and established benefit-cost framework. Most of the values for benefits and costs in this report are taken directly or clearly derived from BDCP documents or reports sponsored or cited by tunnel proponents. Most assumptions required to derive values are made in ways that favor building the tunnel. The detailed sources and discussion of study assumptions are in the sections that follow.

On a technical note, it should be noted that the standard benefit-cost calculation is slightly different than the average year benefits and costs illustrated in Table 1. The average annual framework is conceptually easier to understand and often used for non-technical audiences. However, benefit-cost analysis looks at a full stream of benefits and costs over time, and uses a discount rate (equivalent to an interest rate) to calculate a present value of the path of future benefits and costs. Depending on construction time lags, financing terms, and other factors, the net present value approach can sometimes yield different results. Thus, we also enumerated the benefits and costs out to 2100 and calculated present values for each stream following the DWR guidelines. With this approach, the present value of benefits was $4.1 billion and the present value of costs was $9.7 billion. The benefit-cost ratio of 0.42 was only marginally improved over the 0.4 benefit-cost ratio using the easier to understand annual method summarized in Table 1.

---

[4] This bullet point is critically important to the BDCP which some argue can only be evaluated as a package of water conveyance and habitat improvement projects. The DWR economic analysis guidebook is correct in stating that water supply and habitat projects should be evaluated separately.

[5] The Economic Benefit Scope of Work is available at http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Economics_Benefit_Scope_of_Work.sflb.ashx

ED_000733_DD_NSF_00003885-00004

Benefits of a Delta Water Supply Tunnel

Export Water Supply:

The best comparable estimate for increased water supplies arising from a Delta tunnel is a Berkeley Economic Consulting (Sunding et. al. 2008) report, "Economic Impacts of Wanger Interim Order for Delta Smelt"[6] that was prepared for water contractors affected by water supply reductions. Sunding et. al. estimated that the interim Delta Smelt restrictions reduced water exports in an average year by 586,000 af (acre feet), an amount that is close to the 800,000 af in exports that might be restored in the best water supply scenario for a Delta Tunnel. Sunding et. al. estimated the average 586 taf reduction in exports generated total long-run economic losses of $140 million ($92m urban, $48m ag) or about $239 per acre foot. Scaling the Berkeley estimate up to 800 taf (thousand acre feet) of water exports and current dollars results in an estimate that a tunnel could restore up to $200 million per year in water supply benefits.

Although socio-economic impacts are typically excluded from benefit-cost analysis ratios, it is important to note the special role of agriculture in the economic base of the impoverished San Joaquin Valley. Agriculture makes up about a 1/3 of the $200 million loss estimated above, and using typical income multipliers, an additional $50 million in indirect value added benefits could result from the increase in agricultural output and the resulting revenue is spent and circulates through the regional economy. Although these regional values are typically excluded from formal benefit-cost analysis, we have included them to increase the estimated total value of water supplies to $250 million annually so as not to underestimate the full socio-economic benefits of water to the Central Valley.

Earthquake Risk Reduction:

A massive earthquake that floods Delta islands and disrupts water conveyance is frequently used as justification for an isolated water conveyance facility around the Delta. However, if a massive earthquake were to cause ten or more Delta islands to simultaneously flood, the human and economic losses that would result are much larger than the impact on water supplies. According to the Delta Risk Management Strategy (DRMS) reports, hundreds of people in the Delta would drown in such a catastrophic flood, possibly more. In addition, the DRMS reports found that interruptions of export water supply would be only 20% of the economic loss of such a catastrophe. Much larger economic losses would come from disruptions to natural gas systems, electricity transmission and generation, state highways, ports, railroads, and significant losses of in-Delta businesses, homes, and farmland. If it makes sense to spend billions of dollars on a Delta tunnel to protect water exports from earthquake, it must certainly make sense to spend a similar amount on seismic upgrades to Delta levees which protect both water exports and a multitude of other economic risks that are collectively four times more valuable than water export interruption. Unlike a tunnel, seismic levee

[6] The report is available at http://www.berkeleyeconomics.com/BEC.FinalReport.8Dec08.pdf

ED_000733_DD_NSF_00003885-00005

upgrades could also save hundreds of lives and prevent environmental destruction of such a catastrophic flood.

Two reports by state agencies have identified seismic levee upgrades as a viable earthquake risk reduction strategy in the Delta.[7] The Delta Protection Commission Economic Sustainability Plan estimated the cost of seismic levee upgrades at between $2 billion and $4 billion, including riparian habitat enhancements on the enlarged levees. A 2007 PPIC report estimated the cost of a similar Dutch style, "Fortress Delta" strategy at $4 billion.[8] This strategy is 1/6 to 1/3 the cost of the proposed water conveyance tunnel, and provides a much larger and broader range of risk reduction benefits to the economy.

Understanding the larger picture of earthquake risk is essential because benefit-cost analysis is based on "with and without" comparisons to the next best alternative. It is hard to envision that the state and federal governments would allow the seismic risk to human life and other economic assets in the Delta to remain unaddressed even if water exporters moved ahead with a Delta tunnel. Since necessary seismic upgrades to Delta levees could be completed by the time a Delta tunnel conveyance was constructed, a water supply tunnel would create no additional seismic protection for water exports. In this scenario, the earthquake risk reduction benefits of the water supply tunnel are zero.[9]

If alternative strategies are ignored, an upper bound to earthquake risk reduction benefits could be calculated by assuming the extreme DRMS scenario occurs without any actions to reduce risk. Dr. Robert Gilbert of the University of Texas, a reviewer of DRMS and the Economic Sustainability Plan, recently testified to the Delta Stewardship Council that under DRMS the expected present value of earthquake losses to water exports is $2 billion over 100 years. The annualized expected value of these water supply losses is roughly $100 million per year. The DRMS scenario is an extreme case with high levee failure probabilities and an extreme assumption that no action is taken to reduce a known catastrophic risk. Thus, $100 million per year is a high estimate of expected annual earthquake related losses that could be avoided with a Delta water conveyance tunnel.

Although we include $100 million as an upper bound, we believe zero is a more appropriate value for benefit-cost analysis, since seismic upgrades to levees have already been identified in two state agency reports as a superior seismic risk reduction strategy than a canal or tunnel. To

---

[7] "Economic Sustainability Plan for the Sacramento-San Joaquin River Delta." Delta Protection Commission. January 2012. http://www.forecast.pacific.edu/desp.html. "Risks and Options to Reduce Risks to Fishery and Water Supply Uses of the Sacramento/San Joaquin Delta." Department of Water Resources and Department of Fish and Game. January 2008. http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/docs/AB1200_Report_to_Legislature.pdf.

[8] The PPIC ruled out a "fortress Delta" solution in 2007, because its $4 billion cost was seen as too high, and they assumed a peripheral canal cost only $3 billion. The PPIC also ignored or downplayed public safety and the risk to non-water supply infrastructure. See "Envisioning Futures for the Sacramento-San Joaquin Delta" Public Policy Institute of California, February 2007. http://www.ppic.org/main/publication.asp?i=671

[9] If the tunnel conveyance were implemented as part of a Delta policy package that prevented or delayed seismic levee upgrades in the Delta, one could argue that the earthquake risk reduction benefits to the state of a tunnel are negative compared to the best alternative.

ED_000733_DD_NSF_00003885-00006

be conservative, our summary uses a value of $50 million, the center of the range from $0 to $100 million.

Export Water Quality Benefits:

Improved export water quality is a significant benefit of the proposed Delta tunnel.

The potential water quality benefits of new Delta conveyance to exporters have been the subject of several assessments. The Southern California Water Committee has recently used a 1999 Salinity Management Study by Metropolitan Water District and the U.S. Department of Interior as a source for water quality benefit estimates. This report estimates $41 million in total water quality benefits in 2000 from a Cal-Fed dual conveyance proposal that is similar to the current tunnel proposal.[10] This is roughly $60 million in current dollars, comparable to a $30 - $90 million range of urban water treatment benefits the PPIC (2008) estimated would result from an isolated conveyance strategy that would take all export water from the north Delta. The 2008 PPIC report also estimates $140 million in benefits to agricultural water exporters from moving intakes from the South Delta to the Sacramento River near Hood. Taken together, the estimates of water quality benefits to urban and agricultural water exporters is roughly $200 million per year. Updated assessments are underway as part of the BDCP process, but $200 million is a reasonable approximation of water quality benefits for the purpose of this report. Water quality to Delta water exporters may be the most valuable of all the economic benefits.

It is important to note that the tunnel itself does not do anything to purify water supplies. It improves export water quality, because the tunnel moves Delta water exporters' diversion points to a stretch of the Sacramento River between Clarksburg and Courtland where water quality is better. The new intake would be upstream of the existing diversions of Sacramento River water by Delta farmers, the Contra Costa Water District, and the cities of Stockton and Antioch, whereas the current intakes are downstream of these users. Thus, any water quality benefits received to the export projects will be at least partially offset by a degradation of water quality to those water users who will now be downstream of the massive intakes of the new tunnel. Many of these offsetting costs have not been thoroughly analyzed, but are at the root of much of the in-Delta opposition to the proposed Delta tunnel. Some of these potential costs are included in the In-Delta and Upstream Impacts section in the cost assessment that follows.

Environmental Benefits:

At equal levels of water exports, a water supply tunnel could have environmental benefits for endangered fish over the current diversion location in the south Delta that causes reverse flows in some Delta rivers and entrainment of endangered fish in the pumps. However, as water exports are increased beyond the no-tunnel estimate of 4.7 maf of average exports, the marginal environmental benefits of a tunnel diminish. The BDCP's most recent "effects analysis" found that an operating plan that includes 5.9 maf of average exports would harm many of the endangered species the BDCP intends to help. This benefit-cost analysis assumes

[10] See table 3-6 of the Salinity Management Study. http://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/drinking_water_npdes_renew/attachments/att_22_mwd_usbr_salinity_mgmt_study_1999.pdf

ED_000733_DD_NSF_00003885-00007

an increase in water exports to a slightly lower level of 5.5 maf, the maximum of the 4.5maf to 5.5maf that is reported to be under current consideration. At the maximum level of water exports, most if not all environmental benefits that could directly result from a tunnel are consumed or monetized in the form of higher water exports.[11] If the tunnel were operated at lower levels of water exports, there would be an increase in environmental benefits, but the water supply benefits would drop substantially from our estimate of $250 million per year. This trade-off between export water supplies and environmental benefits has been at the center of much of Delta discussions. Because increased water exports are the key to financing the tunnel by water contractors, we believe that a more environmentally beneficial scenario of tunnel conveyance that does not result in increases export water supplies is financially infeasible and irrelevant. Thus, we focus on the most realistic case of maximum possible water exports.

Costs of a Delta Water Supply Tunnel

Capital Costs:

We use construction costs from Chapter 8 of the February 29, 2012 Draft Bay Delta Conservation Plan (BDCP).[12] The cost estimate of $12.7 billion is identical to the cost estimate in an earlier November 2010 draft of the BDCP. There are news reports that tunnel cost estimates have risen to $14 billion[13] and possibly more, but there are no official updated estimates available, so we are utilizing the lower estimate. Chapter 8 of the BDCP describes a financing strategy for construction that would involve issuing a series of 4 revenue bonds with 40 year repayment terms. Debt servicing costs are estimated at $1.1 billion annually from 2021 through 2056, and the last of the bonds would be retired in 2061.

Operating and Maintenance Costs:

The February 29, 2012 draft BDCP estimates operation and maintenance costs for the Delta tunnel at $85 million annually.

In-Delta and Upstream Costs:

The water supply tunnel will generate a variety of costs on in-Delta and upstream uses. As discussed before, the large new diversion on the Sacramento River will degrade water quality for those who divert Sacramento River downstream from the proposed intakes. These users include Delta farmers, the Contra Costa Water District, the Cities of Antioch and Stockton, industrial user such as power plants in eastern Contra Costa County, and the North Bay Aquaduct that serves Napa and Solano. In addition, the footprint of the tunnel facility will eliminate Delta farmland and property (although less than a surface canal), and five massive

---

[11] The effects analysis of the February 2012 BDCP draft found that a tunnel with somewhat higher average exports of 5.9 maf harmed the endangered fish species the BDCP is intended to conserve. Some argue that average exports of 5.5 maf will still result in environmental costs.

[12] http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/BDCP_Chapter_8_-_Implementation_Costs_and_Funding_Sources_2-29-12.sflb.ashx

[13] Weiser, M. *Sacramento Bee,* February 20, 2012. "Water Tunnels Would Be Huge Project—If They Clear Huge Obstacles."

ED_000733_DD_NSF_00003885-00008

new water intakes will create substantial visual and noise pollution along a scenic, rural stretch of the Sacramento River, harming Delta residents and detracting from recreation and tourism in the area. Upstream users, such as the North State Water Alliance, are concerned that the tunnel operation could reduce upstream water supplies, and result in lower reservoir levels which could affect hydroelectric power generation and recreational use of reservoirs.

Economic values have not been estimated for most of these impacts. The Delta Protection Commission Economic Sustainability Plan estimated a water conveyance tunnel would result in an average of $65 million in annual losses for Delta agriculture; including about $50 million in losses from reduced water quality, and an additional $15 million in annual crop losses from roughly 8,000 acres of farmland lost to construction impacts and the physical footprint of the facilities.[14] It is possible that a tunnel operated for environmental benefits would be more protective of in-Delta water quality and result in lower impacts on Delta agriculture. Even if Delta agriculture impacts were lower than $65 million, the other impacts to in-Delta urban water intakes, Delta communities, and upstream water users would surely push the overall cost of in-Delta and upstream impacts higher. We use $65 million as a very conservative, preliminary estimate of the costs to in-Delta and upstream interests.

Financial Feasibility and Ratepayer Impacts

Benefit-cost analysis is sometimes confused with financial analysis and ratepayer impacts. Benefit-cost analysis does not estimate rate increases as these depend upon a number of financing assumptions, the amount of public investment, and cost recovery principles. Benefit-cost analysis is a tool for policy analysis and decision making that informs whether a project should be built.

In contrast, financial feasibility analysis simply investigates whether a project can be financed and paid for, whether or not it is economically desirable or the most cost-effective way to meet a given objective. Financial feasibility must be demonstrated for certain regulatory requirements, and also must be proven to investors who are needed to buy bonds to finance construction. Financial feasibility is clearly linked to estimating ratepayer impacts since increased water rate revenue will be required to finance the bonds.

Although the BDCP has yet to develop a detailed financial plan, water contractors have said that the cost of the tunnel would be paid in proportion to the water received through the tunnel. For example, Metropolitan Water District, has said it expects its ratepayers to pay for 25% of the cost of the tunnel, equivalent to their share of Delta water exports. However, the high cost of the Delta project raises serious affordability questions for the agricultural users who receive the majority of water exported from the Delta. The cost of irrigating with water exported through the tunnels would exceed the profits of many crops grown in the Central Valley.

The most recent draft of the BDCP and a new report by the Southern California Water Committee suggests a different financing approach. These new reports compare the cost of the

[14] http://www.forecast.pacific.edu/desp.html

ED_000733_DD_NSF_00003885-00009

tunnel to urban rather than agricultural water supply projects. The draft BDCP financial analysis states the project is feasible because its per capita cost is smaller than some urban water projects financed by local urban water agencies.

The per capita financial feasibility analysis in the draft BDCP is inconsistent with the statements water contractors have made about financing for the past five years. The Delta water conveyance tunnel is primarily an agricultural water supply project; farms use double the amount of water conveyed through the Delta than cities. If costs are allocated on a per capita basis, Metropolitan Water District ratepayers would be responsible for 75% of the project costs (they are 18 million of 25 million people who receive some Delta water), not the 25% that is proportional to the water they receive. The use of financial feasibility analysis that allocates the full cost of the project on a per capita basis implies that urban ratepayers will be asked to pay large subsidies for agricultural water supplies in their bills. However, such a non-proportional financing scheme would seem at odds with California Proposition 218.

The bottom line is that water agencies that are responsible for financing the Delta tunnel have yet to prove that it is financially feasible. The BDCP financing chapter makes inconsistent statements about whether the project costs will be allocated on a per capita basis or proportional to water received.

Conclusion

This report is the first comprehensive benefit-cost analysis of the Delta water conveyance tunnel proposed as the centerpiece of the BDCP. We find a benefit-cost ratio of 0.4, meaning that there is $2.50 of costs for every $1 in economic benefits. When these very low benefit-cost ratios are considered alongside the inconsistent and incomplete financial plans, it is clear that the Delta water conveyance tunnel proposed in the draft BDCP is not justified on an economic or financial basis.

ED_000733_DD_NSF_00003885-00010

To: Karen Schwinn/R9/USEPA/US@EPA[]
Cc: Roger Gorke/DC/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA;"Nawi, David" [David_Nawi@ios.doi.gov]; om Hagler/R9/USEPA/US@EPA;"Nawi, David" [David_Nawi@ios.doi.gov]; Nawi, David" [David_Nawi@ios.doi.gov]
From: "Belin, Letty"
Sent: Mon 7/16/2012 2:34:04 PM
Subject: RE: Administration announcement on California Bay Delta -- Need your Help
David_Hayes@ios.doi.gov
Robert.Bonnie@OSEC.USDA.gov
kamerri@osec.usda.gov
joellen.darcy@us.army.mil
Dave.White@wdc.usda.gov
Dave.White@wdc.usda.gov
rock.salt@us.army.mil
MLConnor@usbr.gov
Letty_Belin@ios.doi.gov
Michael_J._Boots@ceq.eop.gov
Jay_J_Jensen@ceq.eop.gov
David_Nawi@ios.doi.gov

Karen, Tom and Roger: we will be sending you a package of documents later this afternoon summarizing the key points of our planned BDCP/California water announcement.

Letty

From: Karen Schwinn [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Friday, July 13, 2012 5:16 PM
To: Belin, Letty
Cc: gorke.roger@epa.gov; Tom Hagler; Nawi, David
Subject: Fw: Administration announcement on California Bay Delta -- Need your Help

Letty -

We were pleased to get David's message and very much want to work with you guys on a coherent announcement. Jared will be responding directly to David. in the meantime, if there is anything we should be doing to move forward on this, let me know.
Hope you are well and that you have a nice vacation planned after July 25 :) - Karen

~~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472

ED_000733_DD_NSF_00004571-00001
~~~~~~~~~~~~~~~~~~~~~~~~~

415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

----- Forwarded by Karen Schwinn/R9/USEPA/US on 07/13/2012 02:11 PM -----

From: "Hayes, David" <David_Hayes@ios.doi.gov>
To: Robert Bonnie <Robert.Bonnie@OSEC.USDA.gov>, Kathleen Merrigan <kamerri@osec.usda.gov>, Jared Blumenfeld/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA, Jo Darcy <joellen.darcy@us.army.mil>, "Dave.White@wdc.usda.gov" <Dave.White@wdc.usda.gov>, Terrance Salt <rock.salt@us.army.mil>, Karen Schwinn/R9/USEPA/US@EPA, "Connor, Michael L" <MLConnor@usbr.gov>
Cc: "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Boots, Michael J." <Michael_J._Boots@ceq.eop.gov>, "Jensen, Jay" <Jay_J_Jensen@ceq.eop.gov>, "Nawi, David" <David_Nawi@ios.doi.gov>
Date: 07/13/2012 12:47 PM
Subject: Administration announcement on California Bay Delta -- Need your Help

Secretary Salazar, Administrator Lubchenco and Governor Brown expect to make an announcement involving the California water situation in Sacramento on July 25th. Although most of the attention in the lead-up to this announcement has focused on the expected fed/state announcement of a preferred alternative that will be evaluated (along with other alternatives) to address the Delta infrastructure/pumps issue, Ken and I believe that we must include some parallel announcements which demonstrate that the federal government (and the state government) are taking a wide lens when looking at water management needs in California, including the promotion of water conservation, investments in science, and taking action to improve water quality.

Under the MOU that our agencies signed in late 2010, we committed to bring coordinated resources to bear to address these other issues, and we have done so. My question is what announcements we can make on July 25 with regard to these other areas of commitment. I don't think that we should blurt out a laundry list, but instead should focus on two or three major investments that illustrate the non-Delta-centric investments that we are making in sound water management throughout California. So the question is what we can come up with that fits that bill.

For example:

For USDA, we had a great announcement a few weeks ago regarding additional commitments of NRCS funds to help irrigators use their water more efficiently. (You guys have been great on this!) Is there anything more that we could pull into a meaningful announcement?

For EPA, can we help trumpet your new water quality announcement? What can we say about it?

For the Corps, are you funding any armoring of any of the Delta levees/islands or otherwise in making important investments in the Delta?

For DOI agencies, is there any sort of new announcement that we can make regarding a Science Center in the Delta, given previously-announced commitments? (BOR). Or recommitments to Title XVI funding or another "WaterSMART" initiative? (BOR). Or any impending habitat improvement investment(s)? Or an investment in south-of-the Delta storage to enhance flexibility in the Delta (e.g., proposed SLR rise)? Etc.

Please shoot your thoughts this way. This is a very important exercise.
~~~~~~~~~~~~~~~~~~~~~~~~

Thanks.

--David

David J. Hayes
Deputy Secretary
U.S. Department of the Interior
1849 C Street, N.W.
Washington, D.C. 20240
(202) 208-6291

ED_000733_DD_NSF_00004571-00003

To: CN=Tom Hagler/OU=R9/O=USEPA/C=US@EPA[]
Cc: []
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Mon 7/16/2012 5:56:25 PM
Subject: Fw: cal water
20120714 BDCP Other Elements_Preliminary Outline_version2 (for review by fed-state) minor edits-1-lb.docx

dont share

~~~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~~~

----- Forwarded by Karen Schwinn/R9/USEPA/US on 07/16/2012 10:55 AM -----

From: Roger Gorke/DC/USEPA/US
To: Karen Schwinn/R9/USEPA/US@EPA
Date: 07/16/2012 10:41 AM
Subject: Fw: cal water

Roger Gorke
Senior Policy Advisor
Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Ave NW, MC 4101 M
Washington, DC 20460
Phone: 202-564-0470
Fax: 202-564-0500

----- Forwarded by Roger Gorke/DC/USEPA/US on 07/16/2012 01:41 PM -----

From: "Belin, Letty" <Letty_Belin@ios.doi.gov>
To: Roger Gorke/DC/USEPA/US@EPA
Date: 07/16/2012 01:36 PM
Subject: cal water

Thanks for the call, Roger. Here is the draft summary of the elements other than BDCP that we will be highlighting. Basically programmatic stuff that would fit very well in with your water quality report. I'm

sure we'll catch up soon.
Letty

Letty Belin
Counselor to the Deputy Secretary
U.S. Department of the Interior
202-208-6291

ED_000733_DD_NSF_00004575-00002

Other Elements Contributing to Achieving the Co-Equal Goals and Protecting the Delta Preliminary Outline

Successful management of water resources to achieve the co-equal goals and overall Delta sustainability will require continued improvement in managing California's finite water resources. The urgent need for a comprehensive strategy to reduce reliance on the Delta for meeting California's growing water demand was a fundamental conclusion of the Delta Vision process, and was reiterated in a recent National Research Council Report (*Sustainable Water and Environmental Management in the California Bay-Delta*, 2012). There is much to gain in both water supply reliability and ecosystem protection and restoration, from improved water management throughout California.

The following elements, while not part of the BDCP itself, will clearly help enhance its success by promoting more flexibility and better management of water to satisfy current and future demands. The elements include a strong State and Federal commitment to using the Integrated Water Management approach to achieve: (1) Reductions in Water Demand; (2) Increases in Water Supply; and (3) Improvements in Efficiency of Operations.

The state and federal governments recognize the importance of continuing the substantial investments being made in improved water management in California through existing programs (e.g. WaterSMART, EQIP, IRWM). Accordingly, the state and federal governments will consider opportunities to ensure those investments continue, potentially through dedicated revenue sources, although any such proposals would likely require State and/or Federal legislation.

WORKING DRAFT

Overall, these additional elements are intended to be implemented in the manner they have been historically applied – through voluntary agreements that are cost-shared in recognition of the benefits to both the public at large and the entities involved. These programs represent opportunities, not mandates. Moreover, environmental review, with public input, will be necessary before binding commitments can be made to any of these elements. It is anticipated that they can be implemented by the state and federal governments as part of their broader responsibilities for California water planning, separate from but complementary to the BDCP.

Integrated Water Management

This element embraces an Integrated Water Management (IWM) approach within the upstream areas to the Delta, within the Delta proper, and within the Central Valley Project (CVP) and the State Water Project (SWP) service areas. Within the IWM context, all water management programs and projects are integral and interconnected—it is through this interconnectivity that IWM programs and projects maximize their value. The value of IWM is to integrate water management, flood management, and ecosystem programs to maximize limited resources and yield multiple benefits—life safety and reduction of flood risk, water supply reliability and economic stability, and environmental enhancements. IWM also provides value in integrating regional water supply reliability solutions with system wide solutions. Most California water management actions affect the Delta;

ED_000733_DD_NSF_00004576-00001

therefore, sustainable integrated flood and water management should include considerations of the Delta ecosystem, water supply and conveyance roles, and comprehensive flood risk management. The opportunity exists to build upon the numerous state and federal programs and projects currently underway in the Delta and throughout California. They include:

- Delta conveyance,
- Delta flood emergency response,
- flood management (special projects and subvention programs),
- fish passage improvements,
- tributary habitat restoration,
- long term management of dredge materials, and
- Integrated Regional Water Management Plans.

An IWM approach promotes system flexibility to adapt to changing conditions (such as climate change, policies and regulations, etc.) and enhances the natural environment. This element will enhance solution opportunities by partnering across all levels of government and interest groups to align water planning, policies, and regulations.

Reduce water demand

The state and federal governments will invest in measures that have the potential to help reduce water demand or increase supply reliability to make more efficient use of existing supplies. Water management actions under this element may utilize behavioral and technological improvements to use water more efficiently while still meeting existing and future beneficial needs. These actions may include:

- water conservation: The California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (Reclamation) will partner with districts that have potential for water saving by implementing water conservation practices such as regulation reservoirs, canal lining, system automation, modernization projects and efficient irrigation practices.
- agricultural water use efficiency: State and federal agencies will partner with water districts to encourage the use of drip and micro irrigation systems, irrigation scheduling, crop shifting, deficit irrigation, and other efficient water management practices. They will also provide assistance to enable implementation of SB7x7which requires certain agricultural water suppliers to measure water delivered to their customers and bill based at least in part on volume delivered.
- urban water use efficiency: State and federal agencies will assist with implementation of SB7x7, which requires California urban water suppliers to reduce urban per capita water use by 20% by the year 2020.

Increase Water Supply

This water management element involves finding or creating additional sources of water as well as improving management of existing water supplies to more efficiently store and provide water for California, even in drought years. The types of water management

ED_000733_DD_NSF_00004576-00002

actions that could be implemented to meet the goals of this element include:

- conjunctive management and groundwater storage: There is considerable interest and opportunity for additional ground water storage south of the Delta. Generally these projects need a state or federal partner to assist in permitting, aid in public acceptability, and contribute to cost effectiveness for the local partners. This is an area where commitment of funding and support could expand the quantity and efficiency of water supply particularly in the San Joaquin valley.
- desalination: Potential options regarding desalination should be explored as part of this element.
- recycled municipal water: To date, Reclamation has invested over $500 million in Title XVI recycle and reuse projects in California resulting in about 250,000 acre feet of new water annually. With an increase in the availability of state or federal (principally federal) funding, there is an opportunity to expand the usable water supply south of the Delta in both the SWP and CVP service areas. Accelerated completion of projects underway could yield up to an additional 400,000 acre feet of water annually. This illustrates the significant potential for adding to the available water supply for CVP and SWP contractors. Although this can be expensive water, it is becoming more competitive and has considerable political and public support.
- surface storage: It is believed that most potentially viable dam and reservoir sites have been identified and assessed as part of previous water resources studies at one time or another. However, the need to determine and pursue the most viable options merits consideration as part of this element. Also there may be opportunities to modify existing surface storage structures (e.g. modification to spillways and/or spillway gate structures or raising existing dams) in ways that can increase storage capacity or offer operational opportunities that can enhance water supplies without causing undue adverse environmental or other impacts. Hence, an interagency team drawn from state and federal agencies will be established to focus on the storage projects that offer the most potential and will provide information to be considered as part of additional sources of water. Once identified, those with the most potential for completion and the greatest cost effectiveness will be aggressively pursued.

FOR WORKING DRAFT

Improve Operational Efficiency and Transfers/Exchanges

Operational improvements of the two major water projects in California could lead to improved efficiencies to water supply, and improvements to [?]the biological resources. The CVP generally has more storage and less conveyance flexibility than the SWP. The opposite is true for the SWP. The SWP and CVP are operated by DWR and Reclamation, respectively. The operations of the two projects are coordinated through the 1986 Coordinated Operating Agreement. Even through coordinated operations, the SWP and CVP are not operating as one unit. They each have different contractual obligations and operating constraints. Operational improvements proposed under this element take advantage of the strengths of both projects. This water management element involves

ED_000733_DD_NSF_00004576-00003

changing the mode of transportation of water and the way water is used and stored to better meet current and future demand. In addition, there is considerable opportunity for increases in water transfers and exchanges throughout the Central Valley including SWP, CVP, and non-project interests. The types of water management actions that could be implemented to meet the goals of this element include:

- conveyance: The movement of water south of the Delta in order to facilitate efficient use of currently available supplies is significantly limited by the absence of east/west conveyance. There are many proposed projects for improving the movement of water from east to west and west to east that have good general support but lack funding to support local interest. State and federal support in the permitting process can also enhance their success.
- system reoperation: Reclamation and DWR will establish a joint team to evaluate CVP/SWP system reoperations and identify specific measures with quantifiable efficiencies.
- transfers/exchanges: There is considerable opportunity for increases in water transfers and exchanges throughout the Central Valley including SWP, CVP, and non-project interests. There is an opportunity to accelerate or expand on ongoing activities with additional funding from the federal or state agencies to support local interest in these historically private transactions. Examples include the 25 year Exchange Contractor transfer program and the North/South transfer program currently being evaluated under NEPA. There is also interest from certain San Joaquin River and tributary interests in a "Yuba Accord" type of arrangement. Exchange opportunities also offer flexibility in timing of deliveries so as to better take advantage of existing water supplies to meet demands at certain times of the year.

Working Draft

ED_000733_DD_NSF_00004576-00004

To: Tom Hagler/R9/USEPA/US@EPA[]
From: "Monroe, Jim"
Sent: Thur 11/15/2012 12:42:36 AM
Subject: FW: DRAFT - Alternatives Screening Report for review
Alternatives Screening Report-8-10-12draftforcomments.docx

Tom,

(b) (5) [redacted]

[redacted]

[redacted]

Jim

From: Morrow, Michelle M [mailto:mmmorrow@water.ca.gov]
Sent: Monday, August 13, 2012 3:09 PM
To: Monroe, Jim; Allen, Kaylee; Deanna Harwood (Deanna.Harwood@noaa.gov); 'slittle@dfg.ca.gov'
Cc: Jim Moose (JMoose@rmmenvirolaw.com)
Subject: DRAFT - Alternatives Screening Report for review

Co-Lead and DFG legal counsels:

Attached is a revised version of the Alternatives Development Report that includes updates and revisions. I have incorporated comments from BOR and FWS in this version.

Please provide comments by Monday next week. If you have any questions, please let contact me at: 916-

653-7352 (desk) or cell 916-205-3380.

Thank you

Michelle

ED_000733_DD_NSF_00006981-00002

Appendix 3A – *Draft for Comment 8-10-12*
(Draft) Identification of Water Conveyance Alternatives for Bay Delta Conservation Plan Environmental Impact Report/Environmental Impact Statement (Screening Report) (Conservation Measure No. 1)

ED_000733_DD_NSF_00006982-00001

TABLE OF CONTENTS

Appendix X. (Draft) Identification of Water Conveyance Alternatives for Bay Delta Conservation Plan Environmental Impact Report/Environmental Impact Statement (Conservation Measure No. 1)..... X-1

X.1 Introduction and Purpose of this Appendix.....X-1

X.1.1 Organization of this Appendix..... X-1

X.2 BDCP Project Background.....X-3

X.2.1 Background of the Bay Delta Conservation Plan Process..... X-5

X.2.2 Background of the BDCP Environmental Impact Report/Environmental Impact Statement Process.....X-6

X.3 Development of EIR/EIS Screening Criteria.....X-9

X.3.1 Identification of Potential Alternatives under CEQA and NEPA (First and Second Level Screening).....X-9

X.3.1.1 Process for Identification of Potential Alternatives under CEQA.....X-9

X.3.1.2 Process for Identification of Alternatives under NEPA..... X-10

X.3.1.3 First Level of Screening: Identification of Alternatives under CEQA and NEPA X-12

X.3.1.4 Second Level of Screening: Identification of Alternatives under CEQA and NEPA X-13

X.3.2 Third Level Screening: Defining Potentially Feasible Alternatives under CEQA and Reasonable Alternatives under NEPA.....X-14

X.3.3 Application of the Sacramento-San Joaquin Delta Reform Act.....X-15

X.3.4 Scoping Comments from Responsible and Cooperating Agencies Related to Range of Conveyance Alternatives..... X-17

X.3.5 Consideration of Legal Rights of Entities that are not BDCP Participants..... X-20

X.4 Alternative Conveyance Concepts Identified in Programs Prior to the BDCP Process X-22

X.4.1 Historical Development of Existing CVP and SWP Conveyance Concepts.....X-22

X.4.2 Existing Delta Conveyance Concept.....X-23

X.4.3 Delta Conveyance Concepts Considered Prior to the BDCP Process..... X-24

X.4.3.1 Western Delta Salinity Control Barrier.....X-24

1957 DWR Evaluation of Salinity Control Barriers..... X-24

1960 DWR Evaluation of Salinity Control Facilities..... X-26

X.4.3.2 Improved Through Delta Conveyance..... X-27

1995 - 2000/2000 - 2008 CALFED Evaluations of Through Delta Conveyance Improvements..... X-27

1960 to Present DWR/CALFED Evaluations of South Delta and Western Delta Salinity Control Barriers.....X-28

ED_000733_DD_NSF_00006982-00002

1990 DWR South Delta Water Management....X-29
2007 Metropolitan Water District of Southern California Concept for Separated Delta Corridor for Water Supply Conveyance.... X-29
2007 - 2009 South Delta Water Agency Evaluation of Separated Delta Corridors for Water Supply Conveyance and Fish Passage....X-30
2009 Conceptual Engineering Report Through Delta Facility Conveyance Option.... X-30
X.4.3.3 Isolated Eastern Conveyance....X-31
1963 Interagency Delta Committee Evaluation of a Peripheral Canal....X-31
1965 - 1974 DWR Evaluations of a Peripheral Canal.... X-31
1978 DWR Evaluation of Isolated Eastern Facilities....X-32
1983 DWR Evaluation of Delta Water Transfer Facilities....X-32
1995 - 2000 CALFED Evaluations of an Isolated Facility....X-33
2009 Conceptual Engineering Report Isolated Conveyance Facility East Option.... X-34
X.4.3.4 Isolated Western Conveyance Using the Sacramento Deep Water Ship Channel.... X-35
1977 Association of State Water Project Agencies Evaluation Montezuma Hills Canal.... X-35
1995 - 2000 CALFED Evaluation of an Isolated Western Facility Using the Sacramento Deep Water Ship Channel....X-35
2001 DWR Evaluation Using the Sacramento Deep Water Ship Channel for Fish Passage....X-36
X.4.3.5 2007 Governor Schwarzenegger's Direction for Sustainable Management of the Delta....X-36
X.5 Delta Conveyance Concepts Identified in BDCP Steering Committee Process: 2007 - 2010X-37
X.5.1.1 Development of Conveyance Concepts by the Conservation Strategy Workgroup X-37
X.5.1.2 Identification of Conveyance Concept for Further Analysis by BDCP Steering Committee.... X-38
X.6 Alternative Conveyance Concepts Identified in EIR/EIS Scoping Process and BDCP Process.... X-40
X.7 Results of Initial Screening of Conveyance Concepts....X-44
X.8 Development of Conveyance Operations Concept by BDCP Steering Committee in 2010.... X-51
X.8.1 BDCP Steering Committee Conveyance Workgroup and Habitat and Operations Technical Team Development of Operations Concepts.... X-51
X.8.2 Delta Regional Ecosystem Restoration Implementation Plan (DRERIP) Assessment of Core Elements.... X-54

ED_000733_DD_NSF_00006982-00003

X.8.3 BDCP Steering Committee Project Description for Preliminary Effects Analysis....X-55
X.9 Conveyance Operations Concepts Identified in 2011....X-57
X.9.1 Federal and State Agencies Concept: Scenario 6 Concept....X-58
X.9.2 Federal and State Agencies Concept: Enhanced Ecosystem Conveyance Operations Concept.... X-59
X.9.3 State Water Resources Control Board Enhanced Spring Delta Outflow Concept.... X-59
X.9.4 Environmental Organizations Conveyance Operations Concepts....X-62
X.9.4.1 Proportional North Delta Inflow Bypass Concept.... X-62
X.9.4.2 Conveyance Operations Concept based on the State Water Resources Control Board Flow Recommendations for the Sacramento-San Joaquin Delta Ecosystem.... X-63
X.9.4.3 Scenario 6 Conveyance Operations Concept with Limited Dual Conveyance Facility Capacity of North Delta Intakes.... X-65
X.9.5 Contra Costa Water District Conveyance Operations Concept with Limited Dual Conveyance Facility Capacity.... X-65
X.9.6 Range of Capacities for Conveyance Concepts.... X-66
X.10 Results of the Second Screening of Conveyance Concepts....X-68
X.10.1 Range of Conveyance Alignment Concepts Identified through the Initial Screening Process....X-68
X.10.2 Range of Conveyance Operations Concepts Combined with the Conveyance Alignment Concepts.... X-68
X.10.3 Results of the Second Screening of Conveyance Concepts.... X-70
X.10.4 Identification of Conveyance Concepts with Similar Conveyance Facilities X-70
X.10.5 Identification of Conveyance Concepts with Similar Conveyance Operations X-71
X.10.6 Range of Conveyance Alternatives to be Evaluated in Detail in the EIR/EIS X-72
X.11 References....X-73
X.12 Attachments.... X-78

ED_000733_DD_NSF_00006982-00004

X.1 Introduction and Purpose of this Appendix

The process for developing the Bay Delta Conservation Plan (BDCP) was initiated in 2006.Its primary objective was to achieve long-term compliance with the federal Endangered Species Act (ESA) and parallel state species protection laws (e.g., the California Natural Community Conservation Planning Act [NCCPA]) with respect to (i) the operation of existing State Water Project (SWP) facilities in the Sacramento-San Joaquin Delta (Delta) and (ii) the construction and operation of new conveyance facilities for the movement of water entering the Delta from the Sacramento Valley watershed to the existing SWP and federal Central Valley Project (CVP) pumping plants in the southern Delta. The proposed BDCP also provides for the conservation and management of covered species through actions—conservation measures—within the BDCP Plan Area that will contribute to the recovery of the species within the BDCP Plan Area

The proposed BDCP as currently contemplated consists of a set of 23 conservation measures (CMs). Conservation Measure 1 (CM1) consists of water conveyance facilities components combined with water conveyance operational components. The BDCP also includes conservation measures that address protection, restoration, enhancement and management of aquatic and terrestrial habitat (CM2–CM11), and other proposed conservation measures (CM12–CM22).

The BDCP Environmental Impact Report/Environmental Impact Statement (EIR/EIS) is being prepared to evaluate the potential impacts of implementing a range of reasonable alternatives. The purpose of this appendix is to define the range of alternatives for CM1 to be evaluated in detail in the EIR/EIS. This appendix focuses on:

- A range of conveyance alignment concepts to convey water from the Sacramento River watershed to existing SWP and CVP pumping plants located in the south Delta, and
- A range of conveyance water supply operations concepts related to the timing and capacity of water diversions from the Sacramento River watershed and/or from existing SWP and CVP intakes in the south Delta.

Separate analyses have been prepared to describe the development of specific locations and design criteria of intakes along the conveyance alignments and the development of alternative concepts for other conservation measures. Separate analyses also will be prepared to evaluate concepts for Water Demand Management, such as water conservation and water recycling.

X.1.1 Organization of this Appendix

This appendix provides the following: a brief description of the background of the development the BDCP and the EIR/EIS; descriptions of the screening criteria to be used to identify potentially feasible and reasonable alternatives to be fully evaluated in the EIR/EIS; and a chronological description of identification of the range of alternative components related to CM1 to be evaluated in the EIR/EIS. The chronological development of the range of water conveyance alternative components related to CM1 occurred in the following manner.

- Initially, State and federal agencies participating in BDCP identified Delta conveyance concepts described in previous reports as potential means for maintaining good water quality in the Delta and water supply availability Delta water users.
- The BDCP Steering Committee conducted a preliminary analysis of broadly defined conveyance

ED_000733_DD_NSF_00006982-00005

alignment concepts to consider benefits and constraints of different conveyance alignment approaches and completed a "Conservation Strategy Options Evaluation Report" in September 2007 (BDCP 2007a) (also known as the "Options Report").

- The EIR/EIS process initiated scoping in early 2008 and re-opened the process in early 2009. The majority of the comments related to BDCP water supply components referred to conveyance alignment approaches.
- An initial screening process was completed for the EIR/EIS process to identify a broad range of conveyance alignment concepts to be used in the development of a range of conveyance operations concepts.
- During 2008 through 2010, the BDCP Steering Committee conducted analyses of preliminary conveyance operations concepts, and in early 2010 developed a set of conveyance operations criteria to be evaluated for the initial BDCP Effects Analysis.
- .
- In late 2009, the California Legislature enacted a package of related water bills that included the Sacramento–San Joaquin Delta Reform Act of 2009 (Delta Reform Act), which addressed issues that should be considered in the development of the EIR/EIS alternatives if the BDCP were to be included via a new statutory process within the newly required Delta Plan to be prepared by the newly constituted Delta Stewardship Council (DSC).
- In 2011, State and federal agencies involved in the BDCP process continued to receive comments related to conveyance concepts
- The Lead Agency staff and consultants involved in the EIR/EIS process considered (i) the set of conveyance operations criteria developed through the BDCP Steering Committee process, (ii) 2008 and 2009 scoping comments related to conveyance operations, (iii) issues included in the Delta Reform Act to develop a range of conveyance operations concepts, and (iv) comments received in 2011 by other State and federal agencies involved in the BDCP process. All of this information was used to develop a range of conveyance operations concepts to be considered with the previously screened conveyance alignment concepts.
- Lead Agency staff and consultants completed a second screening process for the conveyance concepts to identify the final range of alternatives to be fully considered for CM1 in the EIR/EIS.

This appendix describes both the information used at each point in this overall process and the results of the first and second screening processes to define the final range of alternatives to be considered for CM1 in the EIR/EIS.

ED_000733_DD_NSF_00006982-00006

X.2 BDCP Project Background

In August of 2000, a broad array of State and federal agencies, including the Department of Water Resources (DWR), adopted the CALFED Bay-Delta Program (CALFED) as a 30-year planning roadmap for restoring the Delta's ecology and improving water management. Prior to reaching this milestone, the CALFED agencies had conducted a lengthy, public, and multi-phased evaluation of potential alternatives in connection with preparation of a Program EIR/EIS. In a far-reaching attempt to develop possible alternatives to achieve the mission of the participating agencies, CALFED's scoping process had resulted in the identification of nearly 50 categories of potential actions and 100 preliminary solution alternatives. (CALFED Programmatic Record of Decision, Attachment 1, Aug. 28, 2000, pp. 124-125.) In order to ensure maximum sensitivity to the policies and positions of the CALFED agencies and stakeholder groups, the Program involved technical experts, Program staff teams, and the public to refine the initial set of potential alternatives to 31, and then down to 20. (CALFED Bay-Delta Program Phase I Final Report, Sep. 1996, pp. 7-8.) Further consolidation and refinement led to 10 alternatives, with their various components characterized at modest, moderate, and extensive levels of implementation. (*Id.*) The 10 alternatives were as follows:

- Extensive Demand Management, with the focus on diverting less water from the Delta;
- New Storage To Improve Delta flow, with the focus on changing the timing of flows to benefit all uses;
- Dual Delta Conveyance, with the focus on providing diversified storage and conveyance;
- Through-Delta Conveyance, with the focus on modifying the timing of diversions;
- Delta Channel Habitat and Conveyance, with the focus on improving Delta channel habitat and conveyance;
- Extensive Habitat Restoration With Storage, with the focus on concentrating and improving San Joaquin River flows;
- East-Side Foothills Conveyance, with the focus on isolating conveyance and improving San Joaquin River flows;
- Chain of Lakes Conveyance, with the focus on isolating conveyance within the Delta;
- West-Side Conveyance and River Restoration, with the focus on isolating conveyance and removing diversions from the Sacramento River; and
- East-Side Conveyance, with the focus on isolating conveyance around the Delta.

(CALFED Bay-Delta Program Progress Report, April 1996, p. 12.)

After additional technical analysis and the evaluation of comments received from the public and various agencies, the CALFED collaboration narrowed and reclassified the 10 potential alternatives into three generalized approaches[1] for conveying water across the Delta, which were carried

[1] To provide list of CalFed approaches and reference.

ED_000733_DD_NSF_00006982-00007

forward into the alternatives that were studied in detail in the Program EIR/EIS. (CALFED Programmatic Record of Decision, Attachment 1, Aug. 28, 2000, pp. 124-125; CALFED Final Programmatic EIR/EIS, Response to Comments Vol. 1, July 2000, p. CR-25 - 26.).

With respect reducing Delta exports, the CALFED carefully considered and rejected the concept as unreasonable. In responding to comments concerning a potential reduced Delta exports alternative, the Program EIR/EIS stated as follows:

> Among these [potential alternatives developed in Phase I] were alternatives that emphasized water use efficiency and de-emphasized or eliminated actions to improve export water supplies and improve the adequacy of Bay-Delta water to meet Delta outflow needs. Based on input from public workshops, scoping meetings, the BDAC, and the CALFED agencies, CALFED concluded that these actions would not achieve the primary objective for water supply reliability . . . an alternative that would achieve water quality objectives by reducing or capping exports would prevent the CALFED Program from achieving its objectives regarding water supply reliability.

(*Id.*, p. CR-30.)

As reflected in the CALFED EIR/EIS Programmatic Record of Decision (CALFED ROD), the Preferred Program for water deliveries from the Delta was continued use of the existing Through Delta Conveyance with the following improvements (CALFED 2000a).[2]

- New screened intakes at Clifton Court and Tracy (south Delta intakes for SWP and CVP pumping plants).
- Joint point of diversion and construction of an intertie to allow for joint use of both pumping plants by SWP and CVP (estimated completion of construction in 2012). Increase pumping criteria to fully use the capacity of the SWP pumping plant.
- New permanent operable barrier at the Head of Old River on the San Joaquin River.
- New operable barriers and floodway improvements in the south Delta to improve quantities and quality of water available for south Delta agricultural diverters.
- Evaluation of a new screened diversion facility on the Sacramento River near Hood or Georgiana Slough and a channel to convey water between the Sacramento and Mokelumne rivers.
- New setback levees and dredged or improved channels and levees along the lower Mokelumne River between Interstate 5 and San Joaquin River.

The CALFED ROD also recommended continued evaluation of a screened diversion facility on the Sacramento River in coordination with modifications of Delta Cross Channel operations and a channel between the Sacramento and Mokelumne rivers to improve drinking water quality if the CALFED ROD recommendations for water quality programs did not improve drinking water quality.

Since 2000, further studies and information have become available that have caused reconsideration of the Through Delta Conveyance component of the CALFED ROD. Factors evaluated after CALFED are summarized in this appendix and include evaluation of low-flow screens at south pumping facilities, through-delta levee improvements and various fish screen/gate options. Pelagic organisms, including delta smelt, have experienced a precipitous decline in recent years. Revised biological opinions for the coordinated operation of the CVP and SWP issued by U.S. Fish and

[2] The California Supreme Court ultimately upheld the adequacy of the EIR component of the EIR/EIS for the CALFED ROD, rejecting an argument, among others, that the document should have included a "Reduced Export Alternative." (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1166.)

ED_000733_DD_NSF_00006982-00008

Wildlife Service (USFWS 2005 and 2008) and National Marine Fisheries Service (NMFS 2005 and 2009) and related judicial decisions arising from federal court litigation have resulted in current and potential future substantial reductions in water supply availability for both the SWP and the CVP. Recent DWR evaluations indicate a higher degree of risk to Delta levees from earthquakes than was previously understood during preparation of the CALFED analysis. The higher potential for levee failure could result in substantial sea water intrusion in the Delta channels that would increase the risk of water supply availability for the SWP and CVP, as well as for Delta water users and the Delta ecosystem. There is also growing consensus among scientific experts suggesting that climate change over the next 50 to 100 years will cause considerable sea level rise, which would increase the risk of levee failure and degrade water quality due to salt water intrusion, thereby increasing the risks of a severe reduction or loss of water supply availability in and from the Delta. (See: Appendix _3E, Seismic Risk and Climate Change).

Based upon these predictions and other information collected by State and federal agencies, then-Governor Arnold Schwarzenegger issued Executive Order 2-17-06 on September 28, 2006, initiating the Delta Vision process to develop "a durable vision for sustainable management of the Delta.," On February 28, 2008, Governor Arnold Schwarzenegger, in a letter to State Senators Pirate, Machado and Steinberg, stated his intention to direct DWR to proceed with preparation of the BDCP environmental review and permitting activities, including the evaluation of at least four alternative Delta conveyance strategies developed in coordination with the BDCP efforts to better protect at-risk fish species, as described in Subsection X.4.3.5. The four conveyance strategies included (i) continued use of existing Delta conveyance without improvements, (ii) Dual Conveyance (including an Isolated Conveyance facility to convey water from the Sacramento River to the South Delta in conjunction with continued use of existing Delta conveyance, as suggested by Delta Vision process), (iii) Isolated Conveyance (to convey water from the Sacramento River to the South Delta without continued use of the existing Delta conveyance), and (iv) Through Delta Conveyance with substantial improvements and protections of the existing facilities ("armoring the Delta" or "Through-Delta" Plan). In response to this directive, the Dual Conveyance, Isolated Conveyance, and Through Delta Conveyance concepts were evaluated further through the preparation of Conceptual Engineering Reports (CERs) in 2009. The Dual Conveyance and Isolated Conveyance concepts were evaluated in separate CERs for alignments located along the eastern and western borders of the Delta and through the center of the Delta. The Dual Conveyance concepts evaluated in the CERs are described in Subsection 6 as Conveyance Concepts A1, A2, and A3. The Isolated Conveyance concepts evaluated in the CERs are described in Subsection 6 as Conveyance Concepts B1, B2, and B3. The Through Delta Conveyance concept evaluated in the CERs are described in Subsection 6 as Conveyance Concept C2. The BDCP EIR/EIS will evaluate the continued use of existing facilities as the No Project/No Action Alternative.

X.2.1 Background of the Bay Delta Conservation Plan Process

The BDCP is being developed through a collaboration of DWR and federal Bureau of Reclamation (Reclamation), and the project proponents including Metropolitan Water District of Southern California, Kern County Water Agency, Santa Clara Valley Water District, Zone 7 Water Agency (Alameda County Flood Control and Water Conservation District, Zone 7), San Luis and Delta-Mendota Water Authority, and Westlands Water District (BDCP 2010a). Although the BDCP process began prior to enactment of the 2009 Delta Reform Act, the BDCP's original objectives, as steered by the Delta Vision effort, anticipated California's statutory coequal goals for Delta management: water supply reliability and ecosystem restoration through the actions listed below.

ED_000733_DD_NSF_00006982-00009

- New and/or redesigned water conveyance and operation of the State Water Project [SWP] and the federal Central Valley Project [CVP]
- Habitat restoration within the Delta, including restoring native fish, wildlife and plant habitats.
- Addressing other ecological stressors to covered aquatic species in the Delta.

The BDCP will result in the development of a Habitat Conservation Plan (HCP) under the provisions of federal ESA (section 10(a)(1)(B)) and a Natural Community Conservation Plan (NCCP) under the NCCPA (Fish and Game Code sections 2800 et seq.) and/or the California Endangered Species Act (CESA) (sections 2050 et seq.). If the BDCP is to be integrated into the Delta Stewardship Council's Delta Plan via the statutory process laid out in Water Code section 85320 from the 2009 Delta Reform Act, the BDCP must take the form of an NCCP under California law and an HCP under federal law. The HCP and NCCP processes are conducted by the project proponents proposing to undertake "covered activities." For the BDCP, the covered activities include continued operations and maintenance of existing, improved, and future facilities (including emergency preparedness or response actions) for the SWP , as well as other conservation measures included in the BDCP to improve the Delta ecosystem.

The BDCP Steering Committee, established in order to provide a public forum where key policies and strategy issues could be publicly discussed, met over 120 times between 2006 and 2010. The BDCP Steering Committee established several working groups and technical teams to develop and evaluate alternative concepts. The BDCP Steering Committee identified an initial set of conservation measures and conducted a preliminary Effects Analysis in 2010 in accordance with the requirements for a HCP and an NCCP. Following completion of the preliminary Effects Analysis, the State and federal agencies and the project proponents have continued to work with stakeholders and the public to prepare the draft HCP and NCCP for publication in 2012.

X.2.2 Background of the BDCP Environmental Impact Report/Environmental Impact Statement Process

An EIR/EIS is being prepared for the BDCP by DWR as the California Environmental Quality Act (CEQA) state lead agency, and Reclamation, U.S. Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NMFS) as the National Environmental Policy Act (NEPA) federal co-lead agencies. DWR is participating as the CEQA lead agency to evaluate potential impacts of approval of BDCP with respect to improved SWP water conveyance infrastructure and other habitat conservation measures and to meet its CEQA obligations. This improved infrastructure and these measures are intended to help DWR and its water contractors meet their common goal of restoring and protecting the SWP water supply reliability, water quality, and the health of the Delta ecosystem. USFWS and NMFS are participating as NEPA co-lead agencies to evaluate potential impacts of approval of the HCP, issuance of incidental take permits to DWR, and issuance of incidental take statements and biological opinions to Reclamation. Reclamation is participating as a NEPA co-lead agency to evaluate potential impacts of approval of BDCP with respect to actions to improve CVP water supply reliability while meeting its ESA and NEPA obligations. Although State and Federal water contractors are not among the Lead Agencies, they are "potential authorized entities" with respect to BDCP, and intend to use the certified Final EIR/EIS in making discretionary decisions associated with implementation of BDCP.

The CEQA and NEPA lead agencies initiated the EIR/EIS in 2008 with the publication of notices of the scoping process. More specifically, on January 24, 2008, USFWS and NMFS issued a Notice of

ED_000733_DD_NSF_00006982-00010

Intent (NOI) under NEPA to prepare an EIS. The NOI was re-issued on April 15, 2008 to include Reclamation as a co-lead Federal agency, to update the status of the planning process, and to provide updated information related to scoping meetings (USFWS, NMFS, Reclamation 2008). On March 17, 2008, DWR issued a Notice of Preparation (NOP) under CEQA to prepare an EIR (DWR 2008). At the time of the publication of the NOP and NOI in 2008, the proposed description of the BDCP was in development and information related to the potential EIR/EIS alternatives was preliminary.

Following development of additional information to describe the proposed BDCP, the lead agencies published a revised NOP and a revised NOI on February 13, 2009 (DWR 2009a, and USFWS, NMFS, Reclamation 2009).The two documents described potential alternative concepts that would likely be considered in the EIR/EIS. The potential alternative concepts included potential elements for conservation measures to improve ecological productivity and sustainability in the Delta, including the creation and/or restoration of floodplains, tidal marsh, channel margin, and riparian habitats, and the reduction of threats to listed species by minimization of other stressors. Potential water conveyance concepts identified in the NOP and NOI were described as follows.

- **Dual Conveyance** - may include potential new points of diversion at various locations in the North Delta, facilities to move water from new points of diversion to the existing SWP and CVP pumping facilities in the south Delta, and continued use of the existing diversions [intakes] in the south Delta.
- **Fully Isolated Conveyance** - may include potential new points of diversion at various locations in the north Delta and facilities to move water from new points of diversion to the existing SWP and CVP pumping facilities in the south Delta.
- **Improved Through Delta Conveyance** - may include new temporary or permanent barriers to modify existing hydraulics or fish movement within the Delta, armoring of levees along Delta waterways to ensure continued conveyance capacity, and/or actions to improve conveyance capacity in existing Delta waterways.

The 2009 NOP and NOI stated that the new points of diversion could be located along the Sacramento River between south Sacramento and Walnut Grove. The new conveyance facility could extend from the new points of diversion to the existing SWP and CVP pumping facilities in the South Delta and be located either to the west or east of the Sacramento River. The NOP and NOI also stated that the alternatives could include potential changes to SWP and CVP water diversion operations, including seasonal, daily, and real time diversion amounts, rates, and timing of water diverted through and/or around the Delta.

During the EIR/EIS scoping process, 2,950 separate comments were submitted in 305 letters, emails, and comments cards; and verbal comments from 178 individuals were transcribed. There were 1,051 comments related to the development of alternative concepts. Some comments described specific potential alternatives related to conveyance concepts, such as pipelines/tunnels or unlined and lined canals, as described in Section X.7 of this appendix. Many comments about alternative concepts were related to specific measures for protection and restoration of the Delta ecosystem and/or water supplies currently conveyed through the Delta. Some comments described methods to reduce reliance upon Delta water supplies, including water conservation, recycling, and use of other water supplies such as conjunctive use programs to ensure adequate groundwater recharge operations.

ED_000733_DD_NSF_00006982-00011

X.3 Development of EIR/EIS Screening Criteria

The alternative development process for the EIR/EIS is based upon a number of legal considerations including:

- The legal requirements for adequate discussions of alternatives in an EIR and EIS, as set forth in CEQA and NEPA and the regulations and case law interpreting those statutory schemes; and
- The concepts of "potential feasibility" under CEQA and "reasonableness" under NEPA.

The results of a multi-level screening process reflecting these considerations were then compared to the requirements of the Sacramento-San Joaquin Delta Reform Act, and scoping comments related to the definition of potential EIR/EIS alternatives as identified by responsible and cooperating agencies under CEQA and NEPA, respectively.

Finally, the potential alternatives were evaluated to determine if the potential alternative would require changes in legal rights, including water rights, of entities that are not participants in the BDCP in a way that could not lawfully or practically be accomplished through the mechanism of an HCP/NCCP.

X.3.1 Identification of Potential Alternatives under CEQA and NEPA (First and Second Level Screening)

X.3.1.1 Process for Identification of Potential Alternatives under CEQA

Under CEQA, alternatives to be included in an EIR, in addition to the No Project Alternative, must be: 1) potentially feasible, 2) attain most of the basic objectives of the project,[3] and 3) avoid or substantially lessen any of the significant effects of the project. DWR, as the CEQA lead agency, may structure its alternative analysis around a reasonable definition of a fundamental underlying purpose, and need not study alternatives that cannot achieve that basic goal.

The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible.

According to CEQA case law, where the alternatives analyzed in the EIR allow for a wide range of choices with varying degrees of environmental impact, the document may support the ultimate approval not only of the fully developed alternatives, but also what might be called "hybrid" alternatives whose features and impacts occur within the analytical continuum between the "bookends" created by the least-impacting and most-impacting alternatives, respectively. With respect to such hybrid options, agency staff should prepare a written analysis, perhaps for inclusion

[3] According to the California Supreme Court, CEQA lead agencies have the discretion to require that *all* action alternatives (i.e., alternatives other than No Project) carried forward in an EIR be able to satisfy a project's "underlying fundamental purpose." (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165.) The requirement that a CEQA alternative must meet "most" project objectives should be understood with this qualification in mind.

ED_000733_DD_NSF_00006982-00012

in the Final EIR, demonstrating the adequacy of the draft document to support approval of the hybrid, citing substantial evidence as appropriate.

For BDCP, the CEQA project objectives, as they were characterized at the time, were identified in the February 13, 2009, NOP to achieve the following purposes:

- To be granted incidental take permits for the covered species that authorize take related to:
  - The operation of existing State Water Project (SWP) Delta facilities and construction and operation of facilities for the movement of water entering the Delta from the Sacramento Valley watershed to the existing SWP and federal Central Valley Project (CVP) pumping plants located in the southern Delta;
  - The implementation of any conservation actions that have the potential to result in take of species that are or may become listed under the federal ESA, pursuant to the ESA at section 10(a)(1)(B) and its implementing regulations and policies; and
  - The diversion and discharge of water by Mirant for power generation in the western Delta.[4]
- To improve the ecosystem of the Delta by:
  - Providing for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species;
  - Protecting, restoring, and enhancing certain aquatic, riparian, and associated terrestrial natural communities and ecosystems; and
  - Reducing the adverse effects to certain listed species of diverting water by relocating the intakes of the SWP and CVP.
- Restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of State and Federal law and the terms and conditions of water delivery contracts and other existing applicable agreements.

X.3.1.2 Process for Identification of Alternatives under NEPA

Both the Department of the Interior (DOI) (including Reclamation and USFWS) and the Department of Commerce (including NMFS)obtain NEPA guidance from a document issued by the Council on Environmental Quality (CEQ) entitled, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations. The CEQ guidance indicates that the "range of alternatives" (addressed in Question 1b and referred to in 40 CFR Part 1502.14) includes all *reasonable* alternatives, which must be rigorously explored and objectively evaluated. In addition, there must be a discussion of other alternatives, eliminated from detailed study, with a brief discussion of the reasons for eliminating them. The reasonable range of alternatives can also include alternatives not within the jurisdiction of the lead agencies. The CEQ guidance also states that what constitutes a reasonable range of alternatives may depend on the nature of a proposed federal action and the facts of a particular case.

When there are potentially a very large number of potential alternatives, a reasonable number of alternatives covering the full spectrum of reasonable alternatives can be identified for detailed analyses in the NEPA document. As noted earlier in discussing CEQA requirements, such an approach creates what in common practice are known as analytical "bookends," referring to a range of decision-making options (alternatives) consisting of a continuum of choices. Alternatives with

[4] Mirant is no longer seeking incidental take authorization for its existing power generation facility in the West Delta. This reference is therefore no longer operative.

ED_000733_DD_NSF_00006982-00013

comparatively low levels of environmental impact occupy one end of the continuum or range, while alternatives with comparatively higher levels of impact occupy the other end. Where specific policy options within the continuum consist of reasonable mid-points between the low bookend and the high bookend, agency decision-makers retain discretion to ultimately choose to approve an alternative anywhere within the continuum, provided that the information developed for the various bookends and the mid-points suffices to address the actual projected impacts of the precise option chosen. As with CEQA, the creation of "hybrid" options similar, if not identical, to fully developed alternatives is also permissible. As a practical matter based on experience, policy-making options with lower levels of environmental impact often are less effective than other, more impacting options in fully meeting a project purpose and need reflecting economic, rather than environmental, objectives. The ultimate choice of an alternative thus often reflects the need for agency decision-makers to balance competing environmental and economic objectives.

DOI has adopted additional regulations (43 CFR Section 46.415(b)) that state that alternatives to be included in an EIS, in addition to the No Action Alternative, must be: 1) reasonable, 2) meet the purpose and need of the proposed action, and 3) address one or more significant issues related to the proposed action. The statement of purpose and need, in this context, must be related to the underlying statutes that govern the federal action agencies' activities and duties with respect to the proposed action or project, with application of a "reasonableness" standard to the federal agencies' interpretation and application of the relevant statutes.

The DOI NEPA regulations further provide that "when there are potentially a very large number of alternatives then a reasonable number of *examples* covering the full spectrum of reasonable alternatives" will suffice. This latter principle appears to reflect two important practical points. First, the NEPA requirement to look at all reasonable alternatives should be interpreted in a practical manner so as to avoid the economically wasteful result of examining in detail (and at not inconsiderable expense) a whole series of alternatives that differ from each other in only comparatively minor respects. Second, a series of potential alternatives representing *examples* of potential policy-making options impliedly functions as a continuum of choices, which can be bounded by *bookends* representing comparatively lower and higher levels of environmental impact.

The DOI NEPA regulations also state that the lead agencies should also include any consensus-based alternatives consistent with the purpose and need of the proposed project that are proposed by participating persons, organizations, or communities who may be interested in or affected by the proposed project. Any consensus-based alternative must be consistent with the requirements of NEPA, the Council on Environmental Quality regulations, and all applicable statutory and regulatory provisions, as well as DOI written policies and guidance. Any consensus-based alternative, like any other reasonable alternative, must meet the purpose and need of the proposed project to be properly considered for detailed analysis in the EIR/EIS. The DOI NEPA regulations do not define the term "consensus-based alternative" but do state that consensus-based management incorporates direct community involvement in consideration of DOI activities subject to NEPA analyses, from initial scoping to implementation of the decision.

For BDCP, the NEPA purpose and need for the action was identified in the February 13, 2009, NOI as seeking to achieve the following purposes:

- Respond to the applications for incidental take permits for the covered species that authorize take related to:
    - The operation of existing SWP Delta facilities and construction and operation of facilities for the movement of water entering the Delta from the Sacramento Valley watershed to the

ED_000733_DD_NSF_00006982-00014

existing SWP and CVP pumping plants located in the southern Delta;

- The implementation of any conservation actions that have the potential to result in take of species that are or may become listed under the ESA, pursuant to the ESA at section 10(a)(1)(B) and its implementing regulations and policies; and
- The diversion and discharge of water by Mirant for power generation in the western Delta.[5]

- Improve the ecosystem of the Delta by:
  - Providing for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species;
  - Protecting, restoring, and enhancing certain aquatic, riparian, and associated terrestrial natural communities and ecosystems; and
  - Reducing the adverse effects to certain listed species of diverting water by relocating the intakes of the SWP and CVP.
- Restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority.

X.3.1.3 First Level of Screening: Identification of Alternatives under CEQA and NEPA

The legal requirements of CEQA and NEPA were considered with the project objectives and purpose and need for the action included in the February 13, 2009, NOP and NOI to develop the following First Level Screening Criteria.[6]

- Could the potential alternative provide for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species?
- Could the potential alternative protect, restore, and enhance certain aquatic, riparian, and associated terrestrial natural communities and ecosystems?
- Could the potential alternative reduce the adverse effects to certain listed species of diverting water by relocating the intakes of the SWP and CVP?
- Could the potential alternative restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority, and other existing applicable agreements?

Under CEQA, the answers to *most* of these questions should be "Possibly" or "Unknown" for an alternative concept to continue to be considered in the Second Level Screening. (See the earlier

[5] As noted earlier, Mirant is no longer seeking incidental take authorization for its existing power generation facility in the West Delta.

[6] These screening criteria reflect the project objectives and purpose and need as they read at the time the NOP and NOI are issued. Nothing in CEQA or NEPA requires the Lead Agencies to continue to use this precise language throughout the remainder of the environmental review process. In fact, such preliminary language has evolved since 2009, and the project objectives now reflect DWR's view that its "*fundamental purpose* in the proposing the BDCP is to make *physical and operational improvements* to the SWP system in the Delta necessary to restore and protect ecosystem health, water supplies of the SWP and CVP south-of-Delta, and water quality within a stable regulatory framework, consistent with statutory and contractual obligations."

ED_000733_DD_NSF_00006982-00015

reference to the CEQA requirement that a potentially feasible alternative must "feasibly attain *most* of the basic objectives of the project".) If, however, the answers to most of these questions are "No" or "Not Likely," the alternative concept may need not be considered in the Second Level Screening.

Under general NEPA principles, the answers to *all* of these questions should be "Possibly" or "Unknown" if an alternative is to continue to be considered in the Second Level Screening. (See the earlier reference to the DOI NEPA requirement that an alternative must meet a federal agency's stated purpose and need, not just "most" aspects of them.) However, because the EIR/EIS is a joint document and the project/action will be a joint state/federal undertaking, alternative concepts with "Possibly" or "Unknown" answers to *most* of these questions (the CEQA standard) is adequate to continue consideration in the Second Level Screening. If the answers to most of the questions are "Not Likely," the alternative concept would not be considered under subsequent levels of screening under either NEPA or CEQA.

X.3.1.4 Second Level of Screening: Identification of Alternatives under CEQA and NEPA

Under CEQA, alternative concepts that continued to the Second Level Screening would be evaluated with the following Second Level Screening Criterion.

- Would the potential alternative avoid or substantially lessen any of the expected significant environmental effects of the "proposed project"?

If the answer to the CEQA criterion question is "Possibly" or "Unknown," the alternative concept would be considered for the Third Level Screening.

Under NEPA, alternative concepts that continued to the Second Level Screening would be evaluated with the following Second Level Screening Criterion.

- Would the potential alternative "address one or more significant issues" related to the proposed action?

If the answer to the NEPA criterion question is "Possibly" or "Unknown," the alternative concept would be considered for the Third Level Screening. If the answers to both questions are "No" or "Not Likely," the alternative concept would not be considered under subsequent levels of screening.

As described for the First Level Screening, the alternative concept does not need to comply with both CEQA and NEPA requirements to be considered in the next step of screening. Meeting the requirements under one of the statutory schemes is enough for purposes of these initial levels of screening. If any NEPA-only alternatives and/or CEQA only-alternatives are found to exist at this stage, however, those alternatives must also meet their respective legal requirements in the subsequent analytical stages as well, because the final range of alternatives will be analyzed in full compliance with both CEQA and NEPA requirements.

X.3.2 Third Level Screening: Defining Potentially Feasible Alternatives under CEQA and Reasonable Alternatives under NEPA

Under CEQA, alternative concepts should be evaluated with a focus on issues of potential feasibility. CEQA defines feasible as capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

ED_000733_DD_NSF_00006982-00016

Under NEPA, an EIS must rigorously explore and objectively evaluate all reasonable alternatives. Reasonable alternatives include those that are practical or feasible from the technical or economic standpoint and using common sense, rather than just desirability from the standpoint of the applicant.

Under both CEQA and NEPA, alternative concepts can be developed using economic considerations, social factors, legal infeasibility under species protection laws, and other laws and technical factors to inform the general concepts of feasibility under CEQA and reasonableness under NEPA.

Under CEQA, excessive cost as compared to other alternative concepts can be a basis for rejecting an alternative concept as being infeasible or impracticable. However, an alternative concept cannot be rejected simply because it would impede to some degree the attainment of project objectives, or would be more costly. In this context, the relevant question related is whether the additional costs are sufficiently severe to render it impractical to proceed with the project. Put another way, the question is whether the marginal costs of the alternative as compared to the cost of the proposed project are so great that a reasonably prudent project proponent would not proceed with the alternative. Under CEQA, an alternative concept also can be rejected due to excessive time needed for implementation.

Furthermore, "feasibility" under CEQA encompasses "desirability" from a policy standpoint, or in terms of the effectiveness in meeting project objectives, to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors supported by substantial evidence.

It is also possible for CEQA determinations regarding the potential feasibility of alternative concepts to be considered under NEPA to determine if an alternative would be practical or feasible from the technical or economic standpoint and using common sense. Although, in most instances, federal agencies do not reject alternatives under NEPA solely because they do not qualify as valid CEQA alternatives, such rejection may be appropriate for the BDCP, which, by its very nature, is a joint state-federal undertaking that cannot succeed unless state agencies can make alternatives work under state law and federal agencies can make the same alternatives work under federal law. Here, then, alternative concepts that, even with reasonable modifications and feasible mitigation, could not be approved under either state or federal laws may be rejected under both CEQA and NEPA. Notably, since DWR is the primary advocate of, and applicant for, the BDCP, an alternative that would not satisfy DWR's fundamental purpose (see footnote 5 above) or that would not be consistent with the California Legislature's co-equal goals for the Delta, as set forth in the Delta Reform Act, could not be a potentially feasible alternative under either CEQA or NEPA.

These considerations are reflected in the following Third Level Screening Criteria.

- Are the marginal costs of the potential alternative, as compared to the cost of the proposed project or action, so substantial that a reasonably prudent public agency would not proceed with the alternative?
- Are the marginal costs of the potential alternative, as compared to the cost of the proposed project or action, so substantial that it would be impractical to proceed with the alternative?
- Would the potential alternative take so long to implement, as compared with the proposed project or action, that it would not meet the project objectives or purpose within an acceptable

ED_000733_DD_NSF_00006982-00017

time frame?

- Would the potential alternative require technology or physical components that are clearly technically infeasible based on currently available science and engineering criteria for the scope of the potential alternative?
- Would construction, operation, and/or maintenance of the potential alternative violate any federal or state statutes or regulations (other than sources of law that would be amended or eliminated as part of the alternative)?
- Would the potential alternative involve an outcome that is clearly undesirable from a policy standpoint in that the outcome could not reflect a reasonable balancing of relevant economic, environmental, social, and technological factors?

If the answers to all of these questions are "Not Likely" or "Unknown," the alternative concept would be considered in the EIR/EIS. If the answers to any of these questions are "LIKELY" or "Yes," the alternative concept would not be considered for detailed analysis in the EIR/EIS, unless its inclusion is contemplated by the Delta Reform Act (discussed below), or is necessary in light of reasonable requests by a public agency that has approval authority over some aspect of the project (e.g., a CEQA responsible agency or federal agency with permitting authority, such as the United States Army Corps of Engineers (USACE)) (also discussed below).

X.3.3 Application of the Sacramento-San Joaquin Delta Reform Act

On November 12, 2009, Governor Schwarzenegger signed into law Senate Bill 7X 1 (SB7X 1),which included the Sacramento-San Joaquin Delta Reform Act of 2009 (Delta Reform Act) (Division 35 of Water Code, Commencing from section 85000).

The Delta Reform Act created a new agency, the Delta Stewardship Council (DSC), to develop and implement a long-term management plan for the Delta, known as the Delta Plan. The Delta Plan must further the coequal goals for the Delta as set forth in the 2009 legislation. These co-equal goals are "providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta Ecosystem." The Delta Reform Act provides that following completion of the BDCP, the BDCP shall be incorporated into the Delta Plan by operation of law if the California Department of Fish and Game (DFG) determines that the BDCP meets the requirements of Water Code sections 85320 and 85321, including that the BDCP:

- Complies with the requirements for preparation of an NCCP (Chapter 10 (commencing with section 2800) of Division 3 of the Fish and Game Code).
- Complies with CEQA (Division 13 [commencing with section 21000] of the Public Resources Code),[7] including a comprehensive review and analysis of all of the following:
    - A reasonable range of flow criteria, rates of diversion, and other operational criteria required to satisfy the criteria for approval of an NCCP (as provided in subdivision (a) of Section 2820 of the Fish and Game Code), and other operational requirements and flows necessary for recovering the Delta ecosystem and restoring fisheries under a reasonable range of hydrologic conditions, which will identify the remaining water available for export and other beneficial uses.
    - A reasonable range of Delta conveyance alternatives, including through-Delta, dual

[7] Notably, in enacting the Delta Reform Act, the Legislature stated that its legislation "does not amend, or create any additional legal obligation or cause of action under" CEQA. (Water Code section 85322.)

ED_000733_DD_NSF_00006982-00018

conveyance, and isolated conveyance alternatives and including further capacity and design options of a lined canal, an unlined canal, and pipelines.

  - The potential effects of climate change, possible sea level rise up to 55 inches, and possible changes in total precipitation and runoff patterns on the conveyance alternatives and habitat restoration activities considered in the EIR.
  - The potential effects on migratory fish and aquatic resources.
  - The potential effects on Sacramento River and San Joaquin River flood management.
  - The resilience and recovery of Delta conveyance alternatives in the event of catastrophic loss caused by earthquake or flood or other natural disaster.
  - The potential effects of each Delta conveyance alternative on Delta water quality.
- Has been approved as a HCP pursuant to the federal Endangered Species Act (16 U.S.C. Section 1531 et seq.).

These criteria must be addressed, and other factors must be present, if the BDCP is to be automatically incorporated into the Delta Plan by the DSC as contemplated by the Delta Reform Act. Although, as noted above, DFG is charged by statute with the responsibility for making initial determinations as to whether the BDCP meets these requirements, its decisions can be appealed to the DSC. Notably, the above-quoted statutory language, with its repeated references to the need for a "reasonable range" of such things as "flow criteria," "rates of diversion," "other operational criteria," and "conveyance alternatives" seems to anticipate the kind of "bookend" approach to formulating alternatives described earlier. The Legislature's apparent intention in providing a detailed roadmap for an alternatives analysis in the BDCP EIR was to ensure that State agency decision-makers ultimately had the benefit of a wide range of choices with varying levels of environmental impacts and tradeoffs. New conveyance options figure prominently among the alternatives to be considered. Nothing in the legislation, however, suggests any intention to modify or repudiate general CEQA case law principles governing the formulation of a range of alternatives or to impair State agencies' ultimate discretion to take final actions consistent with their underlying statutory functions and other legal commitments, except to the extent that the policy prescriptions in the Delta Reform Act (e.g., the need to pursue the State's "coequal goals") must be honored for incorporation into the Delta Plan.

Although the roadmap for CEQA alternatives laid out in the Delta Reform Act do not qualify as project objectives, these statutory considerations are nevertheless relevant to the choice of alternatives, in that DWR would like to avail itself of the statutory process for automatic inclusion of the BDCP in the Delta Plan. These considerations are therefore reflected in the following questions, which are to be applied to the range of alternative concepts that remain following the Third Screening Level.

- Does the range of alternatives provide a reasonable range of flow criteria?
- Does the range of alternatives provide a reasonable range of diversion rates?
- Does the range of alternatives provide a reasonable range of other operational criteria to satisfy the criteria of approval as a Natural Community Conservation Plan?
- Does the range of alternatives provide a reasonable range of hydrologic conditions?
- Does the range of alternatives include a Through Delta Conveyance alternative?
- Does the range of alternatives include a Dual Conveyance alternative?
- Does the range of alternatives include an Isolated Conveyance alternative?

ED_000733_DD_NSF_00006982-00019

- Does the range of alternatives include a Dual or Isolated Conveyance - Lined Canal alternative?
- Does the range of alternatives include a Dual or Isolated Conveyance - Unlined Canal alternative?
- Does the range of alternatives include a Pipeline/Tunnel Conveyance alternative?

If the answers to any of these questions are "No," then an additional alternative should be included or an alternative concept should be modified to support a "Yes" answer. A single alternative could meet several requirements. For example, a dual conveyance unlined canal alternative would be considered for a "Yes" answer for questions related to both Dual Conveyance and an unlined canal.

X.3.4 Scoping Comments from Responsible and Cooperating Agencies Related to Range of Conveyance Alternatives

The EIR/EIS will be used by "responsible agencies" under CEQA to provide environmental clearance for their discretionary approvals related to the BDCP and CEQA "trustee agencies" to assist with their commenting function. Responsible agencies are those that have a legal responsibility to approve some aspect or portion of the project, and will have to rely upon the EIR as a basis for preparation and issuance of findings (CEQA Guidelines section 15096). Trustee agencies are those that have jurisdiction over certain resources held in trust for the people of California but do not have legal authority over approving or implementation of the proposed project. The California Department of Fish and Game (DFG), California Department of Parks and Recreation, California State Water Resources Control Board, California Air Resources Control Board, California Department of Boating and Waterways, California Department of Transportation, California State Lands Commission, and San Francisco Bay Conservation and Development Commission are responsible or trustee agencies.

Under NEPA, the CEQ guidance defines a "cooperating agency" as any other agency than the lead agencies with discretionary authority over the proposed project or action, jurisdiction by law, or special expertise with respect to the environmental impacts expected from the proposed project or action (40 CFR Section 1508.5). In general, a federal lead agency shall "[u]see the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise to the maximum extent possible consistent with its responsibility as lead agency" (40CFR Section 1501.6). The U.S. Environmental Protection Agency (USEPA) and USACE are cooperating agencies with jurisdiction by law or special expertise.

Scoping comments were received from the following CEQA responsible and trustee agencies:

- Delta Stewardship Council
- California Department of Food and Agriculture
- California Department of Parks and Recreation
- California Department of Transportation
- California State Lands Commission
- California State Water Resources Control Board
- San Francisco Bay Conservation and Development Commission

ED_000733_DD_NSF_00006982-00020

- Alameda County Flood Control and Water Conservation District, Zone 7
- San Luis Delta-Mendota Water Authority

The scoping comments by CEQA responsible and trustee agencies that specifically addressed the range of conveyance concepts were submitted by the State Water Resources Control Board and the Delta Stewardship Council. The following scoping comments were submitted by the State Water Resources Control Board in a May 30, 2008 scoping letter.

> *"...to achieve BDCP's project objectives to assure protection and restoration of fish and wildlife resources, the EIR/EIS should analyze a broad range of alternate water quality objectives and operational strategies, including reductions in exports, that may be more protective of fish and wildlife beneficial uses...the State Water Board requests analyses of a broad range of alternatives under the following scenarios: (1) potential interim changes to the Bay-Delta Plan; (2) long-term changes to the Bay-Delta Plan with new conveyance facilities; and (3) long-term changes to the Bay-Delta Plan without new conveyance facilities."*
>
> *"Specifically, the State Water Board requests analysis of a broad range of conveyance alternatives, flows (including changes to Delta outflow objectives), and diversions by the SWP and CVP (including reduced diversions or a cap on diversions) for providing open water habitat under the above scenarios."*

The State Water Resources Control Board addressed the range of alternatives in a May 15, 2009 scoping letter with the following scoping comments.

> *"A reduced diversion alternative should be lower than diversions allowed for in the current delta smelt biological opinion and soon-to-be released salmon and green sturgeon biological opinions for the Long-Term CVP and SWP Operations, Criteria, and Plan. This reduced diversion alternative should be low enough to assure not only continued existence of the species, but also some level of rehabilitation for the estuary. To determine what this level should be, State Water Board staff suggests reviewing historic fisheries data and water export data to arrive at a low export level that is reflective of the quantity of water that could be diverted from the Delta with reasonable confidence of not causing significant or long term impacts to the estuary. Through environmental analysis of such an alternative and higher export alternatives, the State Water Board and other responsible agencies will have information on which to consider the various environmental tradeoffs related to export restrictions."*
>
> *"Combined with analyzing potential reductions in exports, an alternative for changes to Delta outflows (and potentially inflow requirements) should also be analyzed that reflects a more natural hydrograph. Current outflows and operations have tended to flatten the natural hydrograph and produce more static flow conditions in the Delta. Outflows and export regimes that support a more natural variable hydrograph should be analyzed, including both the naturally high outflow and naturally low outflow ends of the hydrograph for both the interim and long-term. One way to conduct this analysis would be to analyze the effects of providing various percentages of the unimpaired Delta inflow and outflow, and managing storage releases and exports to attempt to parallel this pattern."*

Under the Delta Reform Act, the Delta Stewardship Council (DSC) is characterized as a "responsible agency" for purposes of working with DWR in the development of the BDCP EIR/EIS. (California Water Code section 85320, subdivision (c).) In that capacity, the DSC sent two scoping letters to DWR, dated June 28, 2010, and November 15, 2010, respectively. These letters came long after the end of the formal scoping process, reflecting the fact that the DSC did not exist as a legal entity during the formal scoping period. In both letters, the DSC stated its view that the EIR/EIS alternatives should reflect the "co-equal goals" of the Delta Reform Act, as well as the policy of "[r]educing reliance on the Delta in meeting California's future water needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency." In the first of its two letters, the DSC also stated its view that the EIR "must include 'a comprehensive review and analysis of' seven specifically described items concerning flow and other operational

ED_000733_DD_NSF_00006982-00021

criteria, *conveyance alternatives*, climate change, fish and aquatic resources, flood management, natural disasters, and Delta water quality." (Emphasis added.)

Scoping comments by cooperating agencies with jurisdiction by law or special expertise that specifically addressed the range of alternatives only were submitted by the USEPA. The following scoping comments were submitted by the USEPA in a May 14, 2008 scoping letter.

> *"... EPA believes that reduced inflow and reduced export scenarios are not just reasonable alternatives to evaluate, but represent a likely future for the Bay Delta basin that needs to be reflected in the EIS/EIR."*

In preparing the EIR/EIS range of alternatives, DWR as CEQA lead agency must carefully consider comments from CEQA responsible agencies as long as such comments are within the area of expertise of such agencies (California Public Resources Code, section 21104(c)), and the federal NEPA lead agencies, as noted earlier, must "[u]see the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise to the maximum extent possible consistent with its responsibility as lead agency" (40 CFR Section 1501.6). Although input from responsible, trustee, and cooperating agencies does not alter lead agencies' project objectives, fundamental purposes, or policy reasons for pursuing a proposed project or action, the input from these agencies are nevertheless are reflected in the following questions to be applied to the range of concepts that remain following the Third Screening Level and application of the Delta Reform Act requirements in California Water Code section 85320.

- Does the range of alternatives include alternatives with a broad range of water quality objectives and operational strategies?
- Does the range of alternatives include an alternative with potential interim changes to the State Water Resources Control Board Bay-Delta Plan?
- Does the range of alternatives include an alternative with long-term changes to the State Water Resources Control Board Bay-Delta Plan with new conveyance facilities?
- Does the range of alternatives include an alternative with long-term changes to the State Water Resources Control Board Bay-Delta Plan without new conveyance facilities?
- Does the range of alternatives include an alternative with reduced diversions lower than diversions allowed for in the USFWS and NMFS biological opinions to assure continued existence of the species and some level of rehabilitation for the estuary?
- Does the range of alternatives include an alternative with Delta outflows, and potentially Delta inflows, that reflect a more natural hydrograph then current State Water Resources Control Board Bay-Delta Plan?
- Does the range of alternatives reflect the co-equal goals of the Delta Reform Act of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem?
- Does the range of alternatives include an alternative that would contribute to reducing reliance on the Delta in meeting California's future water needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency?

Out of deference to the State Water Resources Control Board (State Water Board), the DSC, and EPA, the Lead Agencies have determined that, if the answers to any of these questions are "No," an additional alternative should be included or an alternative concept should be modified to support a "Yes" answer. A single alternative could meet several requirements. For example, a dual conveyance alternative with operational criteria for Delta outflow and inflow patterns similar to a natural hydrograph would be considered for a "Yes" answer for questions related to new conveyance and operations that reflect a more natural hydrograph.

ED_000733_DD_NSF_00006982-00022

As a practical matter, alternatives responding to the requests from State Water Board, the DSC, and EPA will likely form low-impact "bookends," State Water Board specifically asked for an alternative involving "*reductions* in exports," with diversions "*lower* than . . . allowed for in the current delta smelt biological opinion and soon-to-be released salmon and green sturgeon biological opinions for the Long-Term CVP and SWP Operations, Criteria, and Plan." EPA similarly asked for "reduced export scenarios." The DSC asked for an alternative that reflected the policy of reducing California's reliance on the Delta in connection with future water needs. At least arguably, the alternatives envisioned by the three agencies seemed unlikely to fully meet the purpose and need of the BDCP, and thus could be eliminated from further formal environmental analysis. Even so, Lead Agency staff opted to proceed with the three agencies' requests. Notably, in making its request, State Water Board specifically (though impliedly) invoked the "bookend" concept. According to that agency, "[t]through environmental analysis of such an alternative and higher export alternatives, the State Water Board and other responsible agencies will have information on which to consider the various environmental tradeoffs related to export restrictions." The Lead Agencies found this logic to be persuasive.

X.3.5 Consideration of Legal Rights of Entities that are not BDCP Participants

Some of the suggested BDCP alternative concepts that emerged through scoping and otherwise could affect or require changes to legal rights, including senior water rights, of entities that are not participants in the BDCP and whose legal rights and entitlements are beyond the regulatory authority and reach of DFG, which approves NCCPs under California law, and of both USFWS and NMFS, which approve HCPs under federal law. For example, several scoping comments suggested that the BDCP EIR/EIS should include alternatives that would achieve increased Delta inflow or outflow through mandatory reductions in existing water diversions occurring upstream in the Delta watershed from parties other than DWR and Reclamation. These proposed reductions would come from entities that are *not* seeking incidental take authorization as part of the BDCP process and that possess senior water rights or other entitlements that, as a legal matter, could not be infringed by DFG, USFWS, or NFMS through those agencies' actions in response either to an HCP/NCCP application filed by DWR or through "ESA section 7 consultation" with Reclamation. Since the potentially affected upstream parties other than DWR and Reclamation are not parties to the BDCP process, the approved BDCP cannot dictate terms to those agencies. These considerations are reflected in the following question to be applied to the range of concepts that remain following the Third Screening Level and application of the Delta Reform Act and scoping comments from responsible and cooperating agencies.

- Would the potential alternative result in the impairment of existing water rights in the Sacramento-San Joaquin Rivers watershed who are not applicants for incidental take authorization through the proposed Bay Delta Conservation Plan?

If the answers to this question are "Not Likely" or "Unknown," the alternative concept would be considered in the EIR/EIS. If the answers to this question are "LIKELY" or "Yes," the alternative concept would not be considered for detailed analysis in the EIR/EIS, unless its inclusion is required by the Delta Reform Act process for incorporation of the BDCP into the Delta Plan, or is necessary in light of reasonable requests by a public agency that has approval authority over some aspect of the project (e.g., a CEQA responsible agency or federal agency with permitting authority).

ED_000733_DD_NSF_00006982-00023

X.4 Alternative Conveyance Concepts Identified in Programs Prior to the BDCP Process

This section includes a brief history of water supply concepts that have been considered to convey water from the Sacramento River watershed to San Joaquin Valley (including Tulare Lake basin in southern San Joaquin Valley), San Francisco Bay area, central coastal areas (San Luis Obispo and Ventura counties), and southern California.

X.4.1 Historical Development of Existing CVP and SWP Conveyance Concepts

California water resources changed substantially during the first 100 years following the granting of statehood in 1850. The demand for irrigated crops increased in the late 1860s and 1870s following completion of the transcontinental railroad that enabled fruits and vegetables from California to be delivered to markets throughout the nation. In 1873, following a severe drought in the 1870s, Congress authorized the Alexander Commission to develop solutions for water supplies of the Sacramento and San Joaquin valleys. The report outlined a system of large-scale irrigation-water supply facilities and suggested that federal assistance would be required to accomplish these recommendations (DPW 1930).

In 1919, the U.S. Geological Survey completed the Marshall Plan, which recommended the transfer of water from northern California to meet urban and agricultural needs of central and southern California (CSIA 1919). The Marshall Plan recommended a series of storage reservoirs on the Sacramento River near the confluence with the McCloud and Pit rivers, with large canals along the west and east sides of the Sacramento and San Joaquin valleys; a storage reservoir on the San Joaquin River near Friant , with canals to along the east side of the San Joaquin Valley to deliver water to areas north and south of the San Joaquin River; and diversion of the Kern River to Los Angeles. A portion of the water from the Sacramento River would be conveyed through the Delta to lower San Joaquin River water rights holders in exchange for water diverted at Friant Dam to the eastern San Joaquin Valley, including the Kern River area.

During the 1920s, the State continued investigation of the Marshall Plan and other concepts to reduce salinity intrusion in the Delta and provide water to the San Joaquin Valley. Most of the alternatives included construction of reservoirs in northern California and conveyance through the Delta to San Francisco Bay area and San Joaquin Valley water users. Delta conveyance concepts included isolated canals or use of Delta channels with a Cross Delta Channel that would convey water from the Sacramento River near Walnut Grove to the San Joaquin River (DPW 1930). In 1930, the Division of Water Resources Bulletin No. 25outlined a statewide water plan, which was approved by the State legislature in 1941 as the State Water Plan.

Construction of the recommended facilities began in 1937 by the federal government as part of the CVP with the completion of Shasta Dam in 1944, followed by the completion of Friant Dam, and the Madera, Friant-Kern and Contra Costa canals between 1945 and 1949. In 1951, the Delta Cross Channel, Tracy Pumping Plant (now known as the Jones Pumping Plant), and Delta-Mendota Canal were completed to convey water through the Delta to users in the San Joaquin Valley. As these facilities were completed, however, it became apparent that California's rapid urban, agricultural,

ED_000733_DD_NSF_00006982-00024

and industrial growth would quickly increase demands for water and power to levels that exceeded the initial CVP system capacity. In response to this increase in projected demand, Reclamation expanded the CVP upstream storage facilities, as well as conveyance facilities, to serve users in the Sacramento Valley, San Francisco Bay area, and San Joaquin Valley. By the late 1980s, the CVP was the largest surface water storage and delivery system in California, with a geographic scope covering 35 of the state's 58 counties.

In 1947, the State began an investigation to meet additional water needs through development of the SWP. In 1957, DWR Bulletin No. 3 defined the need for new SWP facilities for flood control in northern California and for conveying water from the Sacramento Valley to water-short areas of California in the San Francisco Bay area, San Joaquin Valley, and central coast and southern California areas due to projected population and industrial growth and irrigation needs for approximately 25 percent of irrigated agricultural acreage in the United States in 1950 (DWR 1957a). The study identified a seasonal deficiency of 2,675,000 acre-feet of water in 1950 that had been met with groundwater pumping primarily from over-drafted aquifers. In 1960, California voters authorized the Burns-Porter Act to construct the initial SWP facilities, including Oroville Dam on the Feather River, San Luis Dam (to be jointly constructed and operated with the CVP), North and South Bay aqueducts, and the California Aqueduct. Most of these facilities were constructed before 1970.

Both the SWP and CVP facilities relied upon a Through Delta Conveyance strategy using Delta channels and the Delta Cross Channel facility to convey water from the Sacramento River to South Delta intakes that diverted water to the SWP and CVP pumping plants. Even before construction of the SWP and CVP pumping plants, however, the Delta was already characterized by high salinity, especially in late summer and fall months or during drought periods. Use of the Delta Cross Channel improved water quality in the central and South Delta during some periods by diverting Sacramento River water from its natural path towards San Francisco Bay into artificial paths that direct this fresh water into the lower quality flows of the Mokelumne and San Joaquin Rivers. Although both the State and federal agencies have continued to evaluate Delta conveyance concepts to improve Delta water quality for water users located in the Delta as well in areas of the San Francisco Bay area, in the meantime Delta water has been used continuously in export areas in the San Joaquin Valley, the central coast, and southern California.

X.4.2 Existing Delta Conveyance Concept

The current method for conveying water from the Sacramento River to the South Delta intakes of the SWP and CVP pumping plants is based solely upon through-delta conveyance. The Sacramento and San Joaquin rivers and Delta sloughs are effectively used as conveyance channels to convey water to the South Delta. Water from the Sacramento River flows along one of two paths to the SWP and CVP South Delta intakes. One path is based on Sacramento River water flowing towards the western Delta near the confluence with the San Joaquin River, and then being pulled in a reverse-flow manner along Old and Middle Rivers by the momentum created by the SWP and CVP pumping plants. Under this method, the reverse flows also convey saline water from Suisun Bay into the Delta towards the SWP and CVP South Delta intakes and decrease the ability for fish passage through the Delta. During periods of low-flow conditions along the Sacramento and San Joaquin rivers, Delta salinity increases and the ability to divert water by the SWP and CVP is restricted in order to protect Delta water quality.

The second Through Delta Conveyance path is based upon flows diverted through the Delta Cross

ED_000733_DD_NSF_00006982-00025

Channel located along the Sacramento River near Walnut Grove. Flows through the Delta Cross Channel are controlled with operable gates. When the gates are open, freshwater from the Sacramento River flows through the southern Mokelumne River system to the San Joaquin River, and then, is pulled in a reverse-flow manner along Middle River towards the SWP and CVP South Delta intakes. Although this method also results in a reverse flow along Middle River, the potential for drawing salt water in from Suisun Bay is less likely than under the first method. The Delta Cross Channel gates are closed during flood events to protect the interior Delta and during periods when juvenile salmon are migrating in the Mokelumne and Sacramento rivers corridors.

In December 1999, low flow conditions on the Sacramento River occurred at the same time as the emigration of juvenile Sacramento Basin salmon. The Delta Cross Channel gates were closed to protect the salmon and Delta salinity increased substantially (DWR 2007). Following this event, DWR and other agencies initiated several studies to evaluate the feasibility of installation of fish passage facilities at the Delta Cross Channel, entrance to Clifton Court Forebay, and approach channel to the Jones Pumping Plant. In 2009, DWR evaluated the feasibility of installation of fish screens at Clifton Court Forebay for low flows (about 2,000 cfs, or about 20 percent of the capacity of the SWP facilities). As described in Subsection X.7, DWR, Reclamation, and other agencies have proceeded with other measures to protect fish survival in the south Delta prior to subsequent analysis of fish screens at Clifton Court. The studies related to the Delta Cross Channel gates are still ongoing by Reclamation.

X.4.3 Delta Conveyance Concepts Considered Prior to the BDCP Process

Many of the studies that originally analyzed or evaluated the existing CVP and SWP facilities also identified the need for facilities to control Delta salinity to protect water quality of agricultural and municipal/industrial water supplies. This subsection describes the following concepts.

- Western Delta Salinity Control Barrier.
- Improved Through Delta Conveyance.
- Isolated Eastern Conveyance.
- Isolated Western Conveyance Using the Sacramento Deep Water Ship Channel.

This subsection also describes Governor Schwarzenegger's direction for sustainable management of the Delta and initiation of the BDCP process.

X.4.3.1 Western Delta Salinity Control Barrier

Western Delta salinity control facilities have been evaluated since the late 1940s, including:

- 1957 DWR Evaluation of Salinity Control Barriers
- 1960 DWR Evaluation of Salinity Control Facilities

1957 DWR Evaluation of Salinity Control Barriers

In 1957, DWR prepared Bulletin No. 60 in accordance with the Abshire-Kelly Salinity Control Barrier Act (DWR 1957b). This study investigated methods (i) to convey large quantities of water across the Delta without major losses to Suisun Bay and property damage to Delta property owners;(ii) to reduce salinity in the Delta; and (iii) to deliver water to the San Francisco Bay area. The study results

ED_000733_DD_NSF_00006982-00026

indicated that freshwater could be maintained in the Delta by either of the following methods.

- Maintaining Delta outflows to dilute poor quality water from Suisun Bay. However, this method would require additional releases of water from upstream reservoirs and would reduce the amount of water available for water supplies to be used in other parts of California.
- Isolate poor quality water from Suisun Bay from high quality Delta water with a physical barrier.

The study evaluated three salinity barrier concepts: the Junction Point Barrier Plan, Biemond Plan, and Chipps Island Barrier Plan. The Junction Point Barrier Plan and the Biemond Plan were similar, with barriers and fish passage facilities located in slightly different positions along the Sacramento River as described below.

- Operable barriers would be constructed across the Sacramento River and Steamboat Slough to prevent salinity intrusion into the Sacramento River and to increase the elevation of the Sacramento River so that the flow would be directed through a new Cross Delta Channel with a diversion structure near Isleton or through the existing CVP Delta Cross Channel with continued flow into the southern Mokelumne River system.
- Channels along the southern Mokelumne River system would be expanded to increase conveyance of freshwater from the Sacramento River to the San Joaquin River.
- A siphon would be constructed under the San Joaquin River to convey water from the Mokelumne River to Middle River for continued conveyance to the South Delta intakes of the SWP and CVP pumping plants.
- Major flood control levees would be constructed throughout the central Delta to maintain flood waters within the Delta, including a flood control structure on the San Joaquin River at Paradise Cut with a possible channel to divert flood waters to the South Delta intakes of the SWP and CVP pumping plants.
- The North Bay Aqueduct pumping plant and canal would be constructed to deliver water to the northern San Francisco Bay counties.
- The South Bay Aqueduct pumping plant and canal would be constructed to deliver water to the southern San Francisco Bay counties.

The Chipps Island Barrier Plan would include the following facilities to form a freshwater Delta.

- A 22,000-foot long barrier with ship locks would be constructed across the Sacramento River from a location near the City of Pittsburg to a location near Collinsville. The barrier would be designed to pass flood waters from the Delta and to withstand high tide and wave events from San Francisco Bay.
- Major flood control levees would be constructed throughout the Delta and Yolo Bypass to maintain flood waters within the Delta.
- Major flood control levees would be constructed along Suisun Bay due to increased tidal amplitude that would occur along the Contra Costa and Solano counties shorelines on the west side of the barrier.
- Methods would be developed to provide mixing within the Delta to dilute waste products from municipal and industrial wastewater treatment plants, high temperature flows from industrial plants in the Delta, accumulated salts from discharges in the Delta watershed, and salt water that would enter the Delta through the ship locks on the barrier.

The study indicated that there would be adverse impacts of these plans on anadromous fish; however, there could be benefits to other fish that could accommodate warmer waters. The study recommended continued evaluation of the Biemond Plan, including levee improvements to reduce flood risks in the Delta, and implementation of the North Bay Aqueduct.

ED_000733_DD_NSF_00006982-00027

1960 DWR Evaluation of Salinity Control Facilities

In 1960, DWR prepared the Preliminary Edition of Bulletin 76(DWR 1960), which evaluated the following plans.

- Chipps Island Barrier Project, as described above.
- Single Purpose Delta Water Project, similar to the Biemond Plan, with barriers on the Sacramento River near Walnut Grove, Steamboat Slough, San Joaquin River, Piper Slough, Holland Cut, Old River at Connection Slough, and Head of Old River to maintain the freshwater within the central and South Delta. The Contra Costa Canal would be expanded to provide freshwater to the western Delta communities and industries.
- Typical Alternative Delta Water Project, same as Single Purpose Delta Water Project with additional levee improvements along Mokelumne and San Joaquin rivers to improve flood protection.
- Comprehensive Delta Water Project, same as Typical Alternative Delta Water Project with additional barriers along Middle River to improve freshwater flows in the central and western Delta).

The results of the study stated that:

> "The Chipps Island Barrier would be functionally feasible… However, the net benefits would be less than the project costs...Therefore, the project would not be economically justified...would probably cause disastrous reductions in the fisheries resources of the Delta...
>
> The Single Purpose Delta Water Project would be the least detrimental of all projects...
>
> Losses resulting from the Typical Alternative Delta Water Project and Comprehensive Delta Water Project would be slightly greater than with the Single Purpose Delta Water Project...
>
> The Single Purpose Delta Water Project and Typical Alternative Delta Water Project would be financially feasible.
>
> The Comprehensive Delta Water Project would not be completely feasible unless local tax revenues could be obtained to recover additional costs allocated to flood and seepage control.
>
> Recommendations...that the Single Purpose Delta Water Project be adopted as an integral feature of the State Water Resources Development System...the United States Corps of Engineers and Bureau of Reclamation be requested to investigate the extent of federal interest...that further planning for the Delta Water Project include consideration of joint financing and construction by federal, state, and local agencies to the extent that respective interests are involved."

These concepts were further evaluated in 1963 (IDC 1963) by the Coordination of Delta Planning Subcommittee of the Interagency Delta Committee in coordination with analysis of a "peripheral canal," as described in Subsection X.4.3.2. The results of this report stated:

> "The construction of a physical barrier [as described for Chipps Island Barrier in this and Preliminary Edition of Bulletin 76] and the creation of a fresh-water pool operated for water supply could effectively conserve water and provide local water supply. This approach, however, would limit future development of navigation in the two Central Valley deep water ports. In addition, the fisheries resources of the Delta area would be jeopardized. Water quality problems related to necessary waste discharge of industry and agriculture within the Delta area are not, as yet, entirely defined but in general would tend to the disadvantage of this plan...
>
> Control structure, channel enlargements and overland canals [as described in Single Purpose Delta Water Project, Typical Alternative Delta Water Project, and Comprehensive Delta Water Project] could provide water transfers across the Delta and meet the quantity and quality requirements of the local water user. While this plan would not interfere with deep draft navigation, there would be restrictions of recreational navigation movements. The influence of

ED_000733_DD_NSF_00006982-00028

the export pumps presents a serious problem to young fish, eggs, and fry. Additional channel closures would be required to solve the San Joaquin flow reversal problem. This alternative would be the least expensive solution."

The analysis recommended additional study of a peripheral canal.

X.4.3.2 Improved Through Delta Conveyance

DWR and other agencies also evaluated methods to improve Delta water quality and to maintain Delta water supply availability with the continued use of a Through-Delta Conveyance, including:

- 1995 - 2000 and 2000 – 2008: CALFED Evaluations of Through Delta Conveyance Improvements
- 1960 - Present: Various DWR Evaluations of South Delta and Western Delta Salinity Control Barriers
- 1960 DWR Evaluation of Separate Corridors Conveyance
- 1960 Through Delta Conveyance improvements that included separated South Delta water supply corridors, as suggested in the Preliminary Edition of Bulletin 76 in the Typical Alternative Delta Water Project.
- 1990 DWR South Delta Water Management
- 2007 Metropolitan Water District of Southern California Eco-Crescent/Middle River Corridor Conveyance

2007 - 2009 Delta Corridors Conveyance and Fish Passage1995 - 2000/2000 - 2008 CALFED Evaluations of Through Delta Conveyance Improvements

Between 1995 and 2000, CALFED considered methods to preserve both the fish benefits of closing the Delta Cross Channel gates and the water quality benefits of diverting Sacramento River water into the northern interior Delta, particularly during low-flow periods. One of the options considered the possibility of a single channel, originating at a variety of locations, or the possibility of using several smaller channels. Various combinations of fish screens at the Delta Cross Channel and the new channel(s) were evaluated by CALFED. As described in Subsection X.2, the CALFED ROD recommended continued use of the Through Delta Conveyance with improved fish screens at the SWP and CVP South Delta intakes, changes in operations of the SWP and CVP pumping plants and construction of an intertie between the facilities, and operable barriers within the south Delta to improve flow and fish conditions.

Since 2000, numerous studies have investigated various approaches to improve the existing system for conveying water through the Delta. DWR has evaluated numerous concepts, including (i) the Franks Tract Project (described below),which would reduce tidal mixing of waters from the western Delta into the central Delta and the water supply corridor, (ii) improvements to the Through Delta Facility recommended by CALFED ROD to increase transfer of water from the Sacramento River to the central Delta, (iii) increasing the western outflow of the San Joaquin River, (iv) operational criteria for closure of the Delta Cross Channel gates, and (v) isolating a freshwater water supply corridor (described below) along Old and Middle rivers. These concepts were evaluated to be independently implemented. Several of the concepts, such as reoperating the Delta Cross Channel, also have been evaluated in coordination with several other concepts listed above.

ED_000733_DD_NSF_00006982-00029

1960 to Present DWR/CALFED Evaluations of South Delta and Western Delta Salinity Control Barriers

Between 1960 and 2000, DWR focused on evaluation of South Delta barriers to improve water supply and flood management programs.

In the 1990s and 2000s, DWR installed temporary barriers at the Head of Old River on the San Joaquin River, Middle River near Victoria Canal, Grant Line Canal near Old River, and Old River near the Delta Mendota Canal Barrier (referred to as Old River near Tracy). These barriers were installed to improve water elevations, water circulation, and fisheries habitat. The use of permanent gates was recommended in the DWR South Delta Improvements Program. However, installation of the proposed gates was suspended following publication of the NMFS 2009 Biological Opinion (NMFS 2009).

DWR completed a Proposed Mitigated Negative Declaration and Initial Study (IS/MND) for the Temporary Barriers Project, 2001-2007, in 2000 (DWR 2000). The proposed project consisted of three tidal rock barriers—at Old River near Tracy, Middle River, and Grant Line Canal—designed to improve water levels and circulation for local South Delta farmers, and a fourth barrier—at the Head of Old River (HOR) barrier—designed to improve migration conditions in the South Delta for salmon migrating in the San Joaquin River during the spring and fall. The analysis in the IS/MND also considered 10 alternatives, including (i)No Project; (ii) a pumping plant on Middle River and a canal across Roberts Island to convey water to San Joaquin River and Old River; (iii) rechannelization of the Westley Wasteway to allow water diverted from the Delta Mendota Canal to augment the San Joaquin River; (iv) modification of water demands and reallocation of water supplies of the lower San Joaquin River watershed; (v) increasing San Joaquin River flows by reducing diversions into the San Francisco Public Utilities Commission's Hetch Hetchy facilities; (vi) modifying agricultural diversion facilities in the Delta to reduce the need for agricultural-related barriers; (vii) developing water treatment facilities for agricultural water users to reduce the need to maintain freshwater in the central and southern Delta in support of agricultural water uses; (viii) reducing SWP and CVP exports; (ix) dredging south Delta channels to improve water circulation; and (x) conveying water from Clifton Court to south Delta agricultural water users to reduce the need to maintain water elevation and quality for these users. These alternatives were determined either to have greater adverse impacts to the physical environment or not be institutionally feasible.

The CALFED Bay-Delta Authorization Act of 2004 (Public Law 108-361, Section 103) authorized the Secretary of the Interior to prepare a feasibility study of actions at Franks Tract to improve water quality in the Delta. In addition to improving water quality, the gates would be designed to limit migration of fish species of concern into the central and South Delta. The Franks Tract project is currently delayed.

The "Separate Corridors" concept identified through the BDCP process (described in the following subsection of this appendix), includes an operable barrier at Threemile Slough similar to the Franks Tract Project. The Separate Corridors concept includes Franks Tract as part of the fish passage corridor to allow fish to move from Old River through Franks Tract to the San Joaquin River near Jersey Island. The Separate Corridors concept would isolate Franks Tract for fish passage, with operable barriers along the San Joaquin River at Franks Tract and Fisherman's Cut to prevent fish from moving towards Middle River and the water supply corridor.

ED_000733_DD_NSF_00006982-00030

1990 DWR South Delta Water Management

In 1986, DWR, Reclamation, and South Delta Water Agency committed to develop long-term solutions to provide water supplies for all three entities and to address water supply problems of water users in South Delta Water Agency (DWR 1990). The project objectives were (i) to improve and maintain water levels, circulation patterns, and water quality in the south Delta for local agricultural diversions, (ii) to reduce fishery impacts, (iii) to improve fisheries conditions, (iv) to improve SWP and CVP water supply reliability and water quality (especially for drinking water users), (v) to connect Clifton Court Forebay and Contra Costa Canal in order to improve drinking water quality for Contra Costa Water District, (vi) to improve navigation and flood protection, and (vii) to increase recreational opportunities. The draft environmental impact report/environmental impact statement evaluated eight alternatives for south Delta facilities, including the following: barriers; expansion of Clifton Court Forebay without and with new intakes on Old River and Middle River near Victoria Canal; enlargement of south Delta channels to improve circulation; increasing the pumping rate at Banks Pumping Plant; and water conservation and recycling programs for SWP and CVP water users. The recommended alternative included the following components: installation of permanent barriers in the south Delta to improve water elevations and circulation; a permanent barrier at the Head of Old River and San Joaquin River to establish a pathway to reduce diversion of San Joaquin River flows; improvements of Clifton Court Forebay to enhance south Delta water quality; and increased interim releases from New Melones Reservoir to improve south Delta water quality. Relocation of the intakes was not recommended in this study.

2007 Metropolitan Water District of Southern California Concept for Separated Delta Corridor for Water Supply Conveyance

In 2007, a concept named "Eco-Crescent/Middle River Corridor Conveyance" was developed (MWD 2007). The concept was to develop an area within the central and South Delta that would improve habitat for delta smelt and other native fishes with variable salinity and turbidity to mimic historic estuarine conditions. A separate water supply corridor would convey water from the Delta Cross Channel through the lower Mokelumne River system to a siphon under the San Joaquin River for continued conveyance in an isolated Middle River corridor. The Middle River corridor would be isolated from Old and San Joaquin rivers by barriers along Middle River at Connection Slough, Railroad Cut, and Woodward Canal.

The separated Delta corridors were similar to those recommended in Preliminary Edition of Bulletin 76 Comprehensive Delta Water Project (DWR 1960), as described above in Subsection X.4.3.1.

2007 - 2009 South Delta Water Agency Evaluation of Separated Delta Corridors for Water Supply Conveyance and Fish Passage

In 2007, the South Delta Water Agency developed the Delta Corridors Plan (SDWA 2007). The Delta Corridors Plan provided an estuarine fish passage corridor along Old River from the Head of Old River into the Delta, and a water supply corridor that extended from the Delta Cross Channel and Georgiana Slough confluences along the Sacramento River through the lower Mokelumne River and along Middle River and Victoria Canal to the SWP and CVP South Delta intakes. Fish screens would be installed at Delta Cross Channel and Georgiana Slough along the Sacramento River. Fish-handling facilities would be improved at the SWP and CVP intakes. Portions of Middle River would be dredged to improve capacity. Portions of Old River near the Delta Mendota Canal intake and along Victoria Canal would be divided to separate the fish passage and water supply corridors. Barriers would be

ED_000733_DD_NSF_00006982-00031

constructed at the Head of Old River near the San Joaquin River, Old River near the Delta Mendota Canal approach channel, Old River at Grant Line Canal, Old River at Victoria Canal, Old River at West Canal, Woodward Canal at Middle River, Railroad Cut at Middle River, Connection Slough at Middle River, Middle River at Victoria Canal, and Franks Tract at San Joaquin River. Water would be siphoned from Victoria Canal under Old River and Coney Island into West Canal. Water would be pumped from north to south at the Head of Old River Barrier and at the barrier on Middle River at Victoria Canal. This concept was presented to the Delta Vision Blue Ribbon Task Force and the BDCP Steering Committee.

The Delta Corridors Plan was revised in 2009 to provide fisheries protection in the Mokelumne River system upstream of Delta Cross Channel (SDWA 2009). Under existing conditions, fish passage in the Mokelumne River is from the upper Mokelumne River through Snodgrass Slough into the lower Mokelumne River and into the San Joaquin River. However, use of the lower Mokelumne River for a water supply corridor could increase entrapment of fish in the SWP and CVP intakes. Therefore, under the 2009 version of the Delta Corridors Plan, Meadows Slough would be connected through a new channel to the Sacramento River and operable barriers would be constructed to provide a fish passage corridor from the upper Mokelumne River into the Sacramento River via Lost and Meadows sloughs.

2009 Conceptual Engineering Report Through Delta Facility Conveyance Option

In 2009, DWR prepared a conceptual engineering report to provide information to the BDCP EIR/EIS process (DWR 2009e). The facilities included:

- Intakes and pumping plants on the Sacramento and San Joaquin rivers, Victoria Canal, and potentially near Stone Lake Drain.
- Siphons under Mokelumne, San Joaquin, and Old rivers and West Canal.
- Nine to eleven operable barriers on the cross channels between Old and Middle River and potentially in the Mokelumne River system.
- Armoring of about 78 miles of existing levees or new setback levees along Snodgrass, Deadhorse Island, Beaver, Hog, Sycamore, Little Potato, White, Little Connection, Latham, and Trapper sloughs; Mokelumne, San Joaquin, and Middle rivers; Columbia and Empire cuts; and Victoria Canal.

This concept is considered in Subsection X.6 as Conveyance Concept C2.

X.4.3.3 Isolated Eastern Conveyance

DWR and other agencies also evaluated Isolated Eastern Conveyance concepts for many years, including:

- 1963 Interagency Delta Committee Evaluation of a Peripheral Canal.
- 1965 - 1974 DWR Evaluations of a Peripheral Canal.
- 1978 DWR Evaluation of Isolated Eastern Facilities.1983 DWR Evaluation of Delta Water Transfer Facilities.
- 1995 - 2000 CALFED Evaluations of an Isolated Eastern Facility.
- 2009 Conceptual Engineering Report Isolated Conveyance Facility East Option.

ED_000733_DD_NSF_00006982-00032

1963 Interagency Delta Committee Evaluation of a Peripheral Canal

In the early 1960s, an Interagency Delta Committee was convened to coordinate water resources planning for the SWP, CVP, and local agencies. In a 1963 report, the Interagency Delta Committee evaluated alternatives to protect Delta water quality and water supplies, maintain flood protection, control drainage and seepage in the Delta, maintain Delta navigation, maintain Delta recreation, protect fish and wildlife, and maintain vehicular transportation (IDC 1963). The study considered hydraulic and physical barriers and Delta waterway control and a peripheral canal. The peripheral canal would be constructed along the eastern edge of the Delta from Walnut Grove on the Sacramento River to Stockton and continue to Italian Slough near the Clifton Court Tract. The report concluded that the peripheral canal allowed for balanced growth of Delta-oriented activities and recommended that further study be completed.

1965 - 1974 DWR Evaluations of a Peripheral Canal

A DWR study in 1965 defined the peripheral canal alignment along the eastern edge of the Delta as starting from Hood on the Sacramento River with siphons beneath the Mokelumne, San Joaquin, and Old Rivers and connecting canals to the SWP and CVP pumping plants (DWR 1965). In the 1970s, construction of Interstate 5 involved some initial excavation of borrow pits along the potential Peripheral Canal alignment (DWR 1970).

The 1974 Draft EIR for the Peripheral Canal Project described an isolated facility to convey freshwater from the Sacramento River to the SWP and CVP pumping plants with up to 12 release facilities to distribute water from the canal into Delta channels (DWR 1974). The canal was planned to initially operate by gravity with the addition of a pumping plant within 10 years following construction. Other purposes of the project were to convey floodflows from Morrison Creek in Sacramento County and Middle River in San Joaquin County into the Peripheral Canal and to incorporate recreational facilities into the project. A 1982 statewide ballot referendum on construction of the Peripheral Canal was defeated.

1978 DWR Evaluation of Isolated Eastern Facilities

Comments submitted during the evaluation of the 1974 Draft EIR for the Peripheral Canal included numerous alternatives, including isolated eastern facility concepts. DWR evaluated a wide range of options during preparation of the Bulletin 76-78 (DWR 1978). This report identified a range of Delta conveyance alternatives and evaluated the alternatives using a two-step screening process. The first step considered: (i) adverse impacts on fish, wildlife, recreation, water quality, or other environmental resources; (ii) technological feasibility; (iii) legal, institutional, and political constraints; and (iv) whether proposed concepts were already part of a similar conceptual proposal. The second step included a rating system of the concepts by DWR and other technical specialists that considered: (i) System Effectiveness (e.g., implementability, public acceptance, flexibility in the future, and reliability); (ii) Adequacy of Supply (including supplies and water quality for Delta water users and other users of Delta water); (iii) Physical Environmental Factors (relating to, e.g., biological resources, drainage, and erosion); (iv) Socio-cultural Factors (e.g., land use and demography, archaeology, historic sites, paleontology, recreation, and aesthetics); (v) Economic Factors; (vi) Construction Factors, and (vii) Resource Supply and Demand (relating to, e.g., energy and construction materials).

A wide range of concepts were evaluated in the first screening process. Some concepts were

ED_000733_DD_NSF_00006982-00033

eliminated during the initial screening. For example, sea water desalination was eliminated due to potential adverse impacts to aquatic resources, energy requirements, and costs. Reductions in SWP and CVP contract amounts and increased diversions from Colorado River for southern California were eliminated based on institutional limitations. A proposal to tow icebergs from the Antarctic was eliminated due to technological infeasibility. And a proposal to extend the Folsom-South Canal to convey water from American River to the Delta was eliminated due to limited water supplies and based on factors considered as part of the American and Mokelumne rivers watershed studies.

The second screening analysis evaluated several conveyance routes and selected the Peripheral Canal alignment as the most appropriate concept. The other conveyance routes were eliminated for the following reasons.

- The North Stub alignment incorporated the northern portion of the Peripheral Canal route to convey water from the Sacramento River near Hood to the San Joaquin River, and was eliminated due to minimal benefits to the San Joaquin River fisheries as compared to the Peripheral Canal.
- The North Stub and South Stub alignment would be similar to the Peripheral Canal alignment, and was eliminated due to this similarity.
- The Mathena Landing Canal alignment would have diverted water from the Sacramento River between Walnut Grove and Isleton for conveyance to Clifton Court. This concept was eliminated due to geotechnical issues near the diversion location.
- The Isleton alignment would have diverted water at Isleton with conveyance to Clifton Court. That concept was eliminated due to the need for boat locks on Steamboat, Miner, and Georgiana sloughs that would result in recreational and fisheries adverse impacts.

The recommended alignment was the Peripheral Canal alignment that diverted water from the Sacramento River near Hood for conveyance to Clifton Court.

1983 DWR Evaluation of Delta Water Transfer Facilities

In 1983, following the 1982 statewide ballot referendum on construction of the Peripheral Canal, DWR initiated a study to identify other alternatives to reduce the limitations of the SWP through-Delta conveyance processes (DWR 1983). A study of Alternatives for Delta Water Transfer considered several concepts. One concept included enlargement of the South Fork Mokelumne River to increase its capacity to convey water from the Sacramento River at the Delta Cross Channel to the San Joaquin River. The second major concept included construction of a New Hope Cross Channel to convey water from the Sacramento River near Hood to the San Joaquin River. These conveyance facilities would replace the northern portion of the Peripheral Canal and continue conveyance of the water through Old and Middle rivers towards the south Delta intakes. The conveyance facilities were evaluated without and with (i) a new intake channel along Victoria Canal between Middle River and Clifton Court; (ii) expanded Clifton Court facilities; and (iii) a dual conveyance similar to a small Peripheral Canal facility. The concepts were evaluated with respect to public attitude, compatibility with established activities, ease of implementation, extent of fish screen problems, and potential for staged construction. The evaluation results indicated that use of dual conveyance Other portions of the concepts were eliminated due to need for barriers that would adversely affect boaters, require potentially federal participation, and need for "excessive" fish screens. No recommended project was included in the report.

1995 - 2000 CALFED Evaluations of an Isolated Facility

The CALFED Phase II Alternative Descriptions included an Isolated Facility with a canal that

ED_000733_DD_NSF_00006982-00034

extended from Hood or Freeport to Clifton Court Forebay in conjunction with Through Delta improvements (CALFED 1997a). The study described an isolated facility that ranged in size from 5,000 to 15,000 cubic feet per second (cfs). The CALFED Phase II Alternative Descriptions also included Isolated Facility alignments between a storage facility on Holland Tract and Clifton Court Forebay along Old River, and between Lower Roberts Island and Upper Roberts Island on the San Joaquin River and Clifton Court Forebay. The isolated conveyance facility was to be operated in coordination with a Through Delta Facility.

The 2000 CALFED Record of Decision (CALFED 2000) recommended a Through Delta approach with new screened intakes as the SWP and CVP South Delta intakes; new conveyance to connect the SWP and CVP pumping plants and allow for joint operations; new operable barrier at the Head of Old River and other locations in the South Delta to improve water quality, protect fish, and protect water elevations for Delta water diverters; and changes in SWP pumping plant operations to fully use the existing capacity of the facilities. The Preferred Program also included recommendations for further evaluation of new screens on facilities in the Sacramento River, levee improvements on the Mokelumne and San Joaquin rivers, and methods to provide public health protection for drinking water. The Record of Decision stated that:

> "Although the CALFED Agencies did not rule out the possibility of constructing an isolated conveyance facility in the future, they were mindful that, even if approved immediately following the ROD, such a facility could not be studied, approved, funded, and constructed within Stage 1of implementation.
>
> In light of the technical and feasibility issues discussed above, the CALFED Agencies propose to begin with through-Delta modifications. As part of the Preferred Program Alternative, the Program also would :
>
> • Continue to investigate storage opportunities in the context of the broader water management strategy.
>
> • Evaluate and implement storage projects, predicated on complying with all environmental review and permitting requirements. These efforts will be coordinated under CALFED's Integrated Storage Investigation.
>
> • Implement the Stage 1 of the Ecosystem Restoration, Water Quality, Water Use Efficiency, Water Transfers, Watershed, and Levee System Integrity Program Plans.
>
> • Monitor the results of these actions to determine whether an isolated conveyance facility as part of a dual-Delta conveyance configuration is necessary to meet the Program objectives.
>
> If the Program purposes cannot be fully achieved with the actions proposed in the Preferred Program Alternative, additional actions including an isolated conveyance facility will need to be considered in the future. Until additional information is available to determine whether water quality objectives and fish recovery goals can be met and which, if any, additional actions will be necessary to achieve the Program goals and objectives, the Preferred Program Alternative is the best alternative to achieve overall project purposes and provide significant beneficial improvements over the conditions anticipated under the No Action Alternative, while establishing a process for obtaining this additional information. Moreover, the way the alternatives are structured, going forward with the Preferred Program Alternative does not preclude the Program's ability to undertake additional conveyance actions in the future, subject to appropriate environmental review."

2009 Conceptual Engineering Report Isolated Conveyance Facility East Option

In 2009, DWR prepared a conceptual engineering report to provide information to the BDCP EIR/EIS process (DWR 2009f). The facilities included:

ED_000733_DD_NSF_00006982-00035

- Intakes and pumping plants on the Sacramento River between Freeport and Walnut Grove and a canal from the intakes to Byron Tract (near Clifton Court Forebay).
- Siphons and tunnels under a drain; six sloughs; a railroad; and Sacramento, Mokelumne, San Joaquin, and Old rivers.
- Intermediate pumping plant.
- New forebay near Byron Tract.

This concept is considered in Subsection X.6 as Conveyance Concept B2.

DWR also completed conceptual engineering reports for Isolated Conveyance Facility West Option (DWR 2009g), Isolated Conveyance Facility All Tunnel Option (2009h), and Dual Conveyance Facility with Isolated Conveyance Facility East Component and Through Delta Facility Component (2009i). The concepts evaluated in the these conceptual engineering reports included intakes and pumping plants on the Sacramento River between Freeport and Walnut Grove and a new forebay near Byron Tract. The West Option (Conveyance Concept B3 in Subsection X.6) included a canal from the intakes to Byron Tract; siphons under 10 sloughs and a railroad; tunnels under Sherman, Twitchell, Bradford, and Bethel Island and the Sacramento and San Joaquin rivers; and an intermediate pumping plant. The All Tunnel Option (Conveyance Concept B1 in Subsection X.6) included an intermediate forebay with an intermediate pumping plant and a tunnel from the intermediate forebay to Byron Tract. The Dual Conveyance Facility option (Conveyance Concept A2 in Subsection X.6) was a combination of the Isolated Conveyance Facility East Component and continued use of existing through Delta facilities without modification.

X.4.3.4 Isolated Western Conveyance Using the Sacramento Deep Water Ship Channel

State agencies evaluated Isolated Western Conveyance in several evaluations, including:

- 1977 Association of State Water Project Agencies Evaluation Montezuma Hills Canal
- 1995 - 2000 CALFED Evaluation of an Isolated Western Facility Using the Sacramento Deep Water Ship Channel
- 2001 DWR Evaluation of Using the Sacramento Deep Water Ship Channel for Fish Passage
- 2009 DWR/DFG evaluation in response to Pubic Scoping comments

1977 Association of State Water Project Agencies Evaluation Montezuma Hills Canal

Isolated Western Conveyance concepts have been considered since the 1970s. A February 1977 report prepared by the Association of State Water Project Agencies describes a potential Montezuma Hills Canal that could be constructed with an intake along the Sacramento River near Rio Vista and siphons under Sacramento River, Sherman Island, and the San Joaquin River to a canal that extends to Clifton Court Forebay (ASWPA 1976). The canal and siphon would cross islands with peat soils that had been previously inundated, including Brannon and Andrus islands and Webb, Frank, and Bethel tracts. The report stated that, because the islands were located below sea level and the soils were not ideal to support a canal structure, the canal embankments would need to be both very high to protect the canal if the island became inundated and very wide to provide foundational support to the canal levees. In addition, the report stated that, although this concept would eliminate reverse-flow impacts in the central and south Delta, it would not be possible to supply freshwater into the

ED_000733_DD_NSF_00006982-00036

extreme eastern Delta to maintain water quality for beneficial uses.

1995 - 2000 CALFED Evaluation of an Isolated Western Facility Using the Sacramento Deep Water Ship Channel

In 1997, CALFED identified an isolated conveyance alternative ("Alternative 3G") with an intake along the Sacramento River near West Sacramento to divert water into the Sacramento Deep Water Ship Channel(CALFED 1997a). A ship lock would be constructed near the western boundary of the Sacramento Deep Water Ship Channel. An intake would be located along the Sacramento Deep Water Ship Channel levee upstream of the ship lock to divert water into a conveyance facility that includes siphons under Sacramento River, Sherman Island, and the San Joaquin River to a canal that extends to Clifton Court Forebay. The isolated conveyance facility was to be operated in coordination with the Through Delta Facility (or Dual Conveyance). This report also identified seven other conveyance alternatives that included isolated facilities, as well as eight conveyance alternatives that relied upon Through Delta concepts. The alternative concepts were evaluated in an "alternative narrowing process" in July 1997 (CALFED 1997b). The results of this narrowing process stated that Alternative 3G had "no major technical problems" and only "slight differences" in environmental impacts as compared to other isolated conveyance concepts evaluated. However, because the preliminary cost estimates were two to three times greater than an isolated eastern canal, the recommendation was to eliminate Alternative 3G from further consideration. The results were reviewed with the CALFED Policy Group and the Bay Delta Advisory Committee. In October 1997, a summary of that review process stated:

> "Alternative 3G - Ship Channel. More detailed study indicated that the diversion point near Sacramento did not provide the fishery benefits originally anticipated when the alternative was formulated. Alternative 3B [Isolated Canal with Through Delta conveyance] was judged to provide the same conveyance function at substantially lower cost."

2001 DWR Evaluation Using the Sacramento Deep Water Ship Channel for Fish Passage

In 2001, CALFED and DWR initiated a study of the use of the Sacramento Deep Water Ship Channel to provide an alternative for fish passage as compared to the mainstem of the Sacramento River (DWR 2001). The study was to evaluate conditions needed to move upstream migrating fish of concern into and through the existing boat locks near the Port of West Sacramento. The species of concern included delta smelt, Sacramento splittail, Chinook salmon, steelhead, American shad, striped bass, and white sturgeon. Data was collected through 2005.

X.4.3.5 2007 Governor Schwarzenegger's Direction for Sustainable Management of the Delta

As described in Subsection X.2, then-Governor Arnold Schwarzenegger issued Executive Order 2-17-06 on September 28, 2006, initiating the Delta Vision process to develop “a durable vision for sustainable management of the Delta.” In December 2007, the Delta Vision process resulted in a Blue Ribbon Task Force of experts issuing to a committee of State agency directors a final set of recommendations to chart a new course for the Delta.

One of the recommendations of the Delta Vision process is that the State should consider a different approach to water conveyance from the Sacramento River to areas south of the Delta than the Through Delta Conveyance that the State had approved as part of the CALFED ROD but not fully

ED_000733_DD_NSF_00006982-00037

implemented. On February 28, 2008, Governor Schwarzenegger, in a letter to State Senators Perata, Machado and Steinberg, stated his intention to direct DWR to proceed with preparation of the BDCP environmental review and permitting activities, including the evaluation of at least four alternative Delta conveyance strategies developed in coordination with the BDCP efforts to better protect at-risk fish species. Alternatives were to be developed in light of broad habitat conservation principles, recognizing at the same time, as suggested by the Delta Vision Task Force, the importance of water supply reliability and other issues such as seismic safety, flood durability, ecosystem health and resilience, water quality, schedule considerations, and the costs of various options. The four conveyance strategies included (i) continued use of existing Through Delta Conveyance, (ii) Dual Conveyance (including an Isolated Conveyance facility to convey water from the Sacramento River to the South Delta in conjunction with continued use of existing Through Delta Conveyance), (iii) Isolated Conveyance (to convey water from the Sacramento River to the South Delta without continued use of the Through Delta Conveyance), and (iv) use of an improved Through Delta Conveyance (new or enhanced facilities would include improvements to reduce risk to water supplies of future levee failures).

ED_000733_DD_NSF_00006982-00038

X.5 Delta Conveyance Concepts Identified in BDCP Steering Committee Process: 2007 - 2010

Starting in 2007, the BDCP Steering Committee developed and evaluated a wide range of concepts related to conveyance and other conservation measures. In 2007, Conservation Strategy Options were identified and evaluated . Based upon the results of this preliminary analysis, the BDCP Steering Committee process focused on development of a range of long-term operational criteria for a Dual Conveyance option between 2008 and 2010.

X.5.3.1 Development of Conveyance Concepts by the Conservation Strategy Workgroup

In 2007, the BDCP Steering Committee formed the Conservation Strategy Workgroup, which identified potential Conservation Strategy Alternatives that included conveyance concepts (BDCP 2007b, BDCP 2007c, BDCP 2007d, BDCP 2007e). The following conveyance concepts were identified through this process.

- Existing Through Delta Conveyance (with modified operations) (*Conservation Strategy Alternatives 1, 2, 3, 6, and 7*)
- Isolated Conveyance to convey water from the Sacramento River to the Lower San Joaquin River and continued use of existing South Delta intakes for the SWP and CVP pumping plants (*Conservation Strategy Alternative 4*)
- Isolated Conveyance to convey water from the Sacramento River to the existing SWP and CVP pumping plants (*Conservation Strategy Alternatives 5 and 9*)
- Isolated Conveyance to convey water from the Sacramento River to the existing SWP and CVP pumping plants and to the Lower San Joaquin River with continued use of existing South Delta intakes (*Conservation Strategy Alternative 8*)
- Through Delta Conveyance with separate a water supply corridor along Middle River and a fish passage corridor along Old River (*Conservation Strategy Alternative 10*)

Following several months of evaluation, the BDCP Steering Committee reduced the number of potential Conservation Strategy Alternatives to the following four Conservation Strategy Options (BDCP 2007a).

- Option 1 - Existing Through Delta Conveyance with Opportunistic Delta Operations and Potential New Storage
- Option 2 - Through Delta Conveyance with San Joaquin River Isolation (Separate Corridors for Water Supply and Fish Passage)
- Option 3 - Dual Conveyance: Isolated Conveyance between Sacramento River and SWP and CVP Pumping Plants and Through Delta Conveyance with San Joaquin River Isolation (as in Option 2)
- Option 4 - Isolated Conveyance between Sacramento River and SWP and CVP Pumping Plants

The options were evaluated to determine how well they fared with respect to the following: overall biological benefits primarily for estuarine species dependent on the Delta; ability to meet BDCP water supply goals with practicable implementation methods; comparative costs for initial and long-term costs; ability to be flexible, durable, and sustainable; and ability to minimize unintended

ED_000733_DD_NSF_00006982-00039

adverse effects on the human environment and other biological resources. The results of the report are summarized below.

- **Biological Criteria:** Option 4 was determined to provide the greatest benefits among all options to estuarine species, with the most benefits for delta smelt, longfin smelt, and splittail; and benefits for salmonids. Option 3 was determined to provide the next greatest benefits to the estuarine fish and salmonids. Option 2 had fewer benefits for estuarine species than Option 3. Option 1 was determined to provide the lowest benefits of all options for delta smelt, longfin smelt, San Joaquin River salmonids and white sturgeon, but was similar to all other options for Sacramento River salmonids, green sturgeon, and splittail.
- **Planning Criteria:** Option 4 was determined to be slightly more cost effective and practicable than Option 3, although Option 3 provided greater flexibility to meet water supply goals. Option 1was determined to be limited in the ability to meet habitat conservation and water supply goals and could result in poorDelta water quality.
- **Flexibility/Durability/Sustainability Criteria:** Option 4 was determined to have the most flexibility and adaptability to adjust conservation approaches both for habitat restoration and flow management with the least input of future resources. Option 3 was determined to have more limited adaptability for restoration of natural hydrology and physical habitat restoration. Option 2 was determined to be less durable and less flexible related to adaptive management than Options 3 and 4 and more durable than Option 1. Option 1 was determined to be the most reversible but was ranked the lowest for this criterion because of a high risk of loss of habitat and water supply from catastrophic events and sea level rise, and low flexibility for adaptive management.
- **Other Resource Impacts Criteria:** Option 1 was determined to be the most favorable for avoiding direct impacts on other biological and human resources because of the minimal amount of new infrastructure. Option 3 was determined to have the highest impact than other options on the human and biological environment due to the more extensive new infrastructure.

X.5.3.2 Identification of Conveyance Concept for Further Analysis by BDCP Steering Committee

In September and October 2007, the BDCP Steering Committee considered the results of the "Conservation Strategy Options Evaluation Report" during the development of the Points of Agreement to define the subsequent methods for completion of the BDCP (BDCP 2007f). The "Draft Bay Delta Conservation Plan Framework (October 29, 2007)" (BDCP 2007g) stated that, in order to improve biological productivity, improve water quality, and reduce entrainment, the most promising long-term solution would involve an isolated conveyance facility. The draft framework documentation stated that the long-term approach to water conveyance would include (i) intake facilities with positive barrier fish screens on the Sacramento River near Hood or Clarksburg; (ii) a peripheral aqueduct and associated appurtenant facilities (e.g., pumping plant and siphons) that would (a) traverse from the new intake facilities on the Sacramento River southerly along an alignment in the east Delta parallel to, and west of, Interstate 5,(b) terminate south of Clifton Court Forebay, and (c) tie into the existing SWP and CVP pumping and conveyance facilities; (iii) improved through-Delta conveyance, potentially using channel improvements, operable barriers, and levee improvements in the areas around Old and Middle Rivers to reduce entrainment and improve habitat functions; and (iv) continued use of the existing CVP Jones Pumping Plant and SWP Banks Pumping Plant and associated project facilities in the South Delta.

The final Points of Agreement (BDCP 2007f) stated that the Steering Committee agrees that the most promising approach involves a conveyance system with new points of diversion: "The main new

ED_000733_DD_NSF_00006982-00040

physical feature of this conveyance system includes the construction and operation of a new point (or points) of diversion in the North Delta on the Sacramento River and an isolated conveyance facility around the Delta. Modifications to existing South Delta facilities to reduce entrainment and otherwise improve the State Water Project's (SWP) and Central Valley Project's (CVP) ability to convey water through the Delta while contributing to near and long-term conservation and water supply goals will also be evaluated. This approach may provide enhanced operational flexibility and greater opportunities for habitat improvements and fishery protection."

ED_000733_DD_NSF_00006982-00041

X.6 Alternative Conveyance Concepts Identified in EIR/EIS Scoping Process and BDCP Process

As described in previous sections, the EIR/EIS scoping process occurred in 2008 and 2009 and resulted in 1,051 comments related to the development of alternative concepts. As also noted above, the DSC submitted two scoping letters in June and November 2010. All of this input, along with the conveyance alignment concepts identified in the BDCP Steering Committee Process between 2006 and 2010 and conveyance alignment concepts identified in correspondence to the California Natural Resource Agency between 2006 and June 2012, were compiled in putting together the following initial list of conveyance concepts.

- **Conveyance Concept Al -** Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes - Tunnel could be up to 50 miles in length with North Delta intake pumping plant capacity from 3,000 cfs to 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise.
- **Conveyance Concept A2 -** Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes - East Canal could be up to 45 miles in length with North Delta intake pumping plant capacity from 3,000 cfs to 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.
- **Conveyance Concept A3 -** Dual Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes - West Canal could be up to 55 miles in length with North Delta intake pumping plant capacity from 3,000 cfs to 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.
- **Conveyance Concept A4 -** Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the Lower San Joaquin River, and Continued Use of Existing South Delta Intakes - East Canal could be up to 30 miles in length with North Delta intake pumping plant capacity from 3,000 cfs to 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.
- **Conveyance Concept Bl -** Isolated Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - Tunnel could be up to 50 miles in length with North Delta intake pumping plant capacity of 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise.
- **Conveyance Concept B2 -** Isolated Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - East Canal could be up to 45 miles in length with North Delta intake pumping plant capacity of 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal

ED_000733_DD_NSF_00006982-00042

levees will be similar to the amount of material excavated along the canal alignment.

- **Conveyance Concept B3 -** Isolated Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - West Canal could be up to 55 miles in length with North Delta intake pumping plant capacity of 15,000 cfs (assuming capacity of each pumping plant of 3,000 cfs). The facilities could include over 36 miles of canals located between the Sacramento River and the eastern boundary of the Sacramento Deep Water Ship Channel and between Hotchkiss Tract and a new forebay on Byron Tract; 17 miles of tunnels under the western Delta islands and the Sacramento and San Joaquin rivers; and connecting pipelines between the intakes and western canal alignment. Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.
- **Conveyance Concept B4 -** Isolated Conveyance with a Lined or Unlined East Canal between the Sacramento River near the Confluence with the Feather River and the and Lower San Joaquin River, and Abandonment of Existing South Delta Intakes - East Canal could be up to 150 miles in length with ability to discharge water into American River and Stanislaus River. The intake and pumping plant near the Feather River would be at least 15,000 cfs in capacity (approximately 2 to 3 miles in length) unless a smaller size pumping plant would be required because less water flows in the Sacramento River upstream of the American River. Above ground facilities would be designed to withstand the 200-year return flood and 55-inches of sea level rise. It is anticipated that the amount of materials required for construction of the canal levees will be similar to the amount of material excavated along the canal alignment.
- **Conveyance Concept B5 -** Isolated Conveyance with Diversion from the Sacramento River near West Sacramento into the Sacramento Deep Water Ship Channel and a Tunnel between the Deep Water Ship Channel and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - New diversion would be constructed near West Sacramento with a pumping capacity of 15,000 cfs (approximately 2 to 3 miles in length), as previously described in SubsectionX.4.3.4. Sacramento Deep Water Ship Channel would be modified through rebuilding of levees, locks, and spillways to withstand the 200-year return flood and 55-inches of sea level rise. A new barrier would be constructed near the southern boundary of the Deep Water Ship Channel with a ship lock to prevent freshwater from flowing from the Deep Water Ship Channel into the Sacramento River. A 15,000 cfs new intake and pumping plant would be constructed along the southeastern levee near Prospect Island. A 40-mile conveyance that would include both a tunnel and canal would be constructed between the Sacramento Deep Water Ship Channel and the existing SWP and CVP pumping plants.
- **Conveyance Concept B6 –** Isolated Conveyance with a Tunnel between the Sacramento River near Fremont Weir and the SWP and CVP Pumping Plants, Isolated Conveyance with a Tunnel between the Sacramento River near Decker Island to Clifton Court Forebay and Bethany Reservoir, and Continued Use of the South Delta Intakes – An intake and pumping plant would be located along the Sacramento River near Fremont Weir with an initial capacity of 3,000 cfs and an ultimate capacity of 7,000 cfs. A tunnel would be constructed from this location under the Yolo Bypass, Cache Slough, Montezuma Hills, Sacramento River near Decker Island, Sherman and Jersey islands, San Joaquin River, and Contra Costa County from a location near Oakley to a location near Clifton Court Forebay. The tunnel could be 80 to 90 miles in length. A second intake and pumping plant would be located along the Sacramento River near Decker Island with a capacity of 7,500 cfs. A conveyance using both tunnel and pipeline features would be constructed from this location along Decker, Sherman, and Jersey islands; under the San Joaquin River, and through Contra Costa County from a location near Oakley to Clifton Court Forebay and Bethany Reservoir along the South Bay Aqueduct. The conveyance, which could be 20 to 30 miles in length, would be constructed for connections to users within the north Delta and the North Bay Aqueduct, Contra Costa Water District conveyance facilities, and East Bay Municipal Utility District conveyance facilities. This concept is a combination of concepts submitted during the

ED_000733_DD_NSF_00006982-00043

scoping and BDCP processes (see Conveyance Concepts B4 and B7) and a concept recently identified by the Water Advisory Committee of Orange County (WACO 2012).

- **Conveyance Concept B7 -** Isolated Conveyance with Diversion from the San Joaquin River near Antioch and Desalination Facilities, a Tunnel between the Desalination Facilities and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - An intake and pumping plant would be located along the San Joaquin River near Antioch. It is unclear the capacity of the proposed intake, pumping plant, and desalination facility, and therefore, the size of the facility is unclear. A recent study of potential desalination facilities in eastern Contra Costa County indicated that a 25 mgd desalination facility would require approximately 10 acres of land (EBMUD 2010). That facility probably would require an intake of less than 100 cfs capacity. A tunnel would be constructed to convey treated water from the desalination facility approximately 18 miles to the existing SWP and CVP pumping plants.
- **Conveyance Concept C1 -** Separate Corridors - New fish screens with operable gates and boat locks along the Sacramento River at the Delta Cross Channel and Georgiana Slough to allow increased use of the Delta transfer of water, as previously described in Subsection X.4.3.2. Water would be conveyed through the lower Mokelumne River system and across the San Joaquin River (within the surface water, not a tunnel) to Middle River and eventually to Victoria Canal in existing channels. A barrier would be constructed at the western boundary of Victoria Canal and water would be conveyed into Clifton Court through a siphon under Old River for continued conveyance to the existing SWP and CVP pumping plants. Operable barriers would be constructed on Snodgrass Slough to reduce risk to salmon migration in the upper Mokelumne River. Operable barriers would be constructed along cross channels between Old River and Middle River (at Woodward Canal, Railroad Cut, and Connection Slough) to isolate Middle River for water supply flows and Old River for fish passage. Operable barriers would be constructed at the Head of Old River and San Joaquin River with a small pumping plant to transfer water into the existing lower San Joaquin River channel to maintain water quality and facilitate downstream flows in the existing San Joaquin River channel. Operable barriers would be constructed along Three Mile Slough or Seven Mile Slough to improve fish passage and water quality in the central and South Delta. Dredging would occur and setback levees would be constructed along portions of Middle River. Continued use of the existing SWP and CVP South Delta intakes would occur during flood periods. This concept would require over 10 million cubic yards of materials to be dredged along the water supply corridor and placed in areas within the Delta.
- **Conveyance Concept C2 -** Through Delta Conveyance with Armored Corridors - Several options for this concept were considered. To protect the channels that convey water from the Sacramento River to existing SWP and CVP South Delta intakes, approximately 78 miles of setback levees or traditional levees would be modified or constructed along the Mokelumne and Middle rivers and Victoria Canal. Over 10 operable barriers would be constructed to isolate the water supply corridor along the Mokelumne and Middle rivers in case of levee failure in other locations throughout the Delta. This concept also could include two intakes along the Sacramento River near Hood, 12 miles of canals, and approximately 2 miles of tunnel to convey water from the Sacramento River into the armored corridor. The capacity of the facilities would be 15,000 cfs. This concept would require over 150 million cubic yards of materials to be transported to central and southern Delta to strengthen the levees along the water supply corridor.

Another concept only would protect the channels that convey water from the San Joaquin River to existing SWP and CVP South Delta intakes with approximately 30 to 35 miles of setback levees or traditional levees modified or constructed primarily along Middle River and Victoria Canal. The capacity of the facilities would be 15,000 cfs. This concept would require extensive amounts of materials to be transported to southern Delta to strengthen the levees along the water supply corridor.

Another concept would protect channels throughout the Delta with a range of 300 to 600 miles of setback levees or traditional levees modified or constructed. The capacity of the facilities would

ED_000733_DD_NSF_00006982-00044

be 15,000 cfs. This concept would require extensive amounts of materials to be transported throughout the Delta to strengthen the levees along the water supply corridor.

- **Conveyance Concept C3 -** Through Delta Conveyance with West Delta Salinity Barrier - This concept includes construction of an operable barrier near Chipps Island with boat locks and fish passage facilities to maintain a fresh water lake in the Delta, as previously described in Subsection X.4.3.1. Water would continue to flow through existing channels to existing SWP and CVP South Delta intakes.

Conveyance Concept C4 - Through Delta Conveyance with Fish Screens at Clifton Court Forebay - This concept includes construction of fish screens along Old River at the existing Clifton Court Forebay and at entrance of the approach channel to the Jones Pumping Plant. Water would continue to flow through existing channels to existing SWP and CVP South Delta intakes. At the time of the EIR/EIS scoping process, operational scenarios had not been considered or developed. Therefore, these concepts were focused on conveyance alignments.

ED_000733_DD_NSF_00006982-00045

X.7 Results of Initial Screening of Conveyance Concepts

The conveyance concepts identified in Subsection X.6 were compared to the First, Second, and Third Level Screening Criteria based upon legal considerations under CEQA and NEPA, as described in Subsection X.3. The results of that comparison are summarized in Tables X.1 through X.3 (located at the end of this appendix).

This initial screening was completed prior to consideration of a range of operations for each of the conveyance alignment concepts. The initial screening was focused upon the legal considerations under CEQA and NEPA because of the application of the Delta Reform Act, comments received from Responsible and Cooperating Agencies, and legal rights of entities that are not BDCP participants had a greater emphasis on factors related to water conveyance operations, such as timing of diversions or capacity of facilities. Therefore, application of the Delta Reform Act will be considered for the secondary screening process presented in Subsection X.10.

The results of the initial screening resulted in elimination of the following conveyance concepts.

- **Conveyance Concept A4** - Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the Lower San Joaquin River, and Continued Use of Existing South Delta Intakes - This concept was eliminated from further evaluation because this concept would result in discharge of Sacramento River water directly into the San Joaquin River, which could cause false attraction flows for sturgeon and salmonids upstream of the area currently affected by reverse flows from the Delta and Sacramento River. ("Attraction flows" are flows that historically have occurred due to rainfall in a watershed that trigger the migration of anadromous fish from the ocean or an estuary into the upper watershed for subsequent spawning. "Attraction flows" from each watershed have unique water quality characteristics that appear to trigger the return of fish that were spawned in that watershed. "False attraction flows" can occur due to discharges that can trigger seasonal migration at times or locations that are not appropriate for spawning for the fish that are lured into the watershed. Therefore, if water from the Sacramento River is discharged to the San Joaquin River, this discharge could falsely attract fish that spawned in the Sacramento River watershed into the San Joaquin River watershed.)
- **Conveyance Concept B4** - Isolated Conveyance with a Lined or Unlined East Canal between the Sacramento River near the Confluence with the Feather River and the and Lower San Joaquin River, and Abandonment of Existing South Delta Intakes - This concept was eliminated from further evaluation because this concept would be at least three times longer than most other isolated conveyance alignments considered and would therefore increase the extent of disturbance to communities and habitat along this conveyance alignment and be drastically more expensive to construct than substantially shorter alignments. This concept also was eliminated because the amount of water available for export at the SWP and CVP pumping plants would be substantially less than under the existing conditions. Available flows in the Sacramento River upstream of the American River would be approximately 10 to 20 percent less than downstream of the American River, especially in the spring months. Results of a preliminary evaluation presented on July 29, 2010 at the BDCP Steering Committee indicated that diversions upstream of American River probably would not occur until the flows were greater than 5,000 cfs due to the need to provide water to diversions located between the Feather and American rivers (including over 200,000 acre-feet/year of water rights or CVP water rights settlement contracts with Natomas Central Mutual Water Company; the cities of West Sacramento, Davis, Woodland, and Sacramento; and several reclamation districts). The presentation to the BDCP Steering Committee indicated that these types of restrictions and the inability to divert water

ED_000733_DD_NSF_00006982-00046

from the American River could reduce the amount of diversions from the Sacramento River by 30 percent as compared to intakes located downstream of the American River. This conveyance concept does not include use of the existing south Delta intakes, and there would be no opportunity to replace the reduction in exports from these south Delta intakes. Therefore, the total SWP and CVP exports probably would be substantially less than under existing conditions.

- **Conveyance Concept B5** - Isolated Conveyance with Diversions from the Sacramento River near West Sacramento into the Sacramento Deep Water Ship Channel, a 15,000 cfs intake along the eastern levee of the Deep Water Ship Channel upstream of Prospect Island, Pumping Plant near the intake, a Tunnel between the Deep Water Ship Channel and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes – Under this concept, a ship lock would be constructed immediately downstream of the intake to prevent the conveyed water from flowing into the Sacramento River and to prevent fish from swimming from the Delta into the conveyance facility.

  DWR and DFG evaluated the use of the Sacramento Deep Water Ship Channel for Conveyance in 2008 in response to Public Scoping comments and presented the results at two meetings of the BDCP Steering Committee in 2009 (BDCP 2009a and BDCP 2009b). The analysis considered use of the five North Delta intakes located along the Sacramento River to avoid disruption of operations of the Port of West Sacramento and provide multiple intake locations as compared to only one intake location near the port.

  The January 14, 2009 presentation stated that use of the Deep Water Ship Channel would avoid impacts to about 2,200 acres due to construction and operations of a portion of western isolated canal that would be parallel to the eastern levee of the Deep Water Ship Channel. However, the presentation stated that this concept would cause delays to ship transit times in the Deep Water Ship Channel due to ship handling/piloting through the new lock. The presentation also stated that there was a potential for delta smelt to enter the conveyance facility by passing through the lock. Considerations of potential adverse impacts to delta smelt include impact to important habitat features and surveys find Delta smelt in this area

  The presentation also stated that the Deep Water Ship Channel would require reconstruction because the facility (i) does not meet the Seismic Criteria for the Isolated Conveyance Facility, (ii) was not designed to withstand the 200-year return flood and associated inundation, and (iii) was not designed to withstand sea level rise that could occur over the next 100 years, and because levees may require improvement to store the additional water at higher elevations than existing flows.

  The April 15, 2009 presentation included results from the 2006, 2007, and 2008 delta smelt surveys. The results showed the presence of over 700 delta smelt/10,000 cubic meters along the lower Deep Water Ship Channel near the potential locations of the new ship lock and intake. The information included in the presentation included results of an analysis that showed that the number of delta smelt observed was generally less than 5 percent of the delta smelt observed in the western Delta.

  This concept was eliminated from further evaluation because it could adversely affect delta smelt and navigation along a federal navigation corridor. This concept would include the same intakes and conveyance facilities between the Sacramento River to the eastern levee of the Deep Water Ship Channel as in Conveyance Concept A3. Therefore, the difference in potential adverse impacts to the lands located to the east of the Deep Water Ship Channel would be limited to the lands located along the toe of the Deep Water Ship Channel levee. If the intake were located near the Port of West Sacramento, a single, large intake would be constructed at one location along the Sacramento River, which could result in localized impacts to aquatic resources and navigation, and could require modification of the locks at the Port of West Sacramento.

- **Conveyance Concept B6 –** Isolated Conveyance with a Tunnel between the Sacramento River near Fremont Weir and the SWP and CVP Pumping Plants, Isolated Conveyance with a Tunnel between the Sacramento River near Decker Island to Clifton Court Forebay and Bethany

ED_000733_DD_NSF_00006982-00047

Reservoir, and Continued Use of the South Delta Intakes – This concept was eliminated from further evaluation because this concept would be require a longer alignment than most other isolated conveyance alignments considered, and would therefore increase the extent of disturbance to communities and habitat along this conveyance alignment and be drastically more expensive to construct than substantially shorter alignments. This concept also was eliminated because the amount of water diverted from the Sacramento River would be less than under other isolated conveyance concepts, and therefore, the amount of water to be diverted at the south Delta intakes would be greater than under isolated conveyance concepts. This would occur because use of the intake upstream of the American River and the intake in the western Delta probably would be more limited than for intakes located along the Sacramento River between Freeport and the southern confluence with Steamboat Slough. The reduced flows in the Sacramento River upstream of the American River and the need to provide water for water rights holders or CVP water rights settlement contractors would be the same as described above for Conveyance Concept B4.

The ability to divert water in the western Delta near Decker Island could be limited due to the presence of delta smelt in the western Delta. A recent pilot study completed by the Bay Area Regional Desalination Project in March 2010 for a desalination facility with a diversion in Mallard Slough indicated that during operations of a 25 mgd intake (approximately 40 cfs) from November 2008 through October 2009, prickly sculpin, bluegill, redear sunfish, longfin smelt, and delta smelt were entrained. The longfin smelt and delta smelt were entrained during January through June. Presence of these species in the western Delta during the period when high flows would occur in the Sacramento River could reduce the effectiveness of a western Delta intake. During July through November, salinity could be too high to for diversions from the western Delta especially as sea level rise progresses through the end of the study period in 2060.

- **Conveyance Concept B7** - Isolated Conveyance with Diversion from the San Joaquin River near Antioch and Desalination Facilities, a Tunnel between the Desalination Facilities and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes - This concept was eliminated from further evaluation because this concept would depend upon the capacity of the desalination facility, the intake along the San Joaquin River shoreline could extend over three miles for a 15,000 cfs intake and the desalination facility could be several square miles in size. This could result in substantial impacts to land use, given the generally dense existing development in the affected areas. In addition, desalination of up to 15,000 cfs of flow would add an enormous ongoing cost not required for other options and would result in substantial energy use and, absent the development of practicable "green" power sources that could replace fossil fuel inputs, related substantial greenhouse gas emissions. Such emissions could undermine California's ability to meet its legislative mandate under the California Global Warming Solutions Act of 2006 to reduce the State's 2020 greenhouse gas emissions to 1990 levels. Other options would convey fresh water that would not need to be desalted prior to transport.

The ability to divert water in the western Delta near Antioch also could be limited due to the presence of delta smelt in the western Delta, as described for Conveyance Concept B-6. Presence of delta smelt and longfin smelt in the western Delta during the period when high flows would occur in the Sacramento River could reduce the effectiveness of a western Delta intake. During July through November, salinity could be too high to for diversions from the western Delta especially as sea level rise progresses through the end of the study period in 2060.

- **Conveyance Concept C2** - Through Delta Conveyance with Armored Corridors was evaluated with conceptual engineering designs (CER)- This concept was eliminated from further evaluation because this concept would result in substantial disturbance and either removal or placement of over 120 million cubic yards of materials for levee construction along the Mokelumne and Middle rivers and Victoria Canal. This could result in substantial adverse impacts to aquatic habitat, land use, air quality, and transportation in the area during construction. In particular, concentrated air quality effects from the huge number of diesel-powered truck trips could create hotspots of toxic air contaminants that would not exist with other potential alternatives. This concept would also take substantially longer to construct, again given the huge number of truck

ED_000733_DD_NSF_00006982-00048

trips associated with importing 120 million cubic yards of materials.

- **Conveyance Concept C3 -** Through Delta Conveyance with West Delta Salinity Barrier- This concept was eliminated from further evaluation because this concept would result in the Delta becoming a freshwater lake that would not support the estuarine habitat required by the BDCP covered species and would reduce the ability of fish passage for anadromous fish. This concept would not support project objectives and aspects of the project purpose and need that focus on creating ecological improvements in the Delta ecosystem and contributing to recovery of declining listed species. Nor would the concept meet the coequal goal under the 2009 Delta Reform Act of "protecting, restoring, and enhancing the Delta ecosystem."
- **Conveyance Concept C4 -** Through Delta Conveyance with Fish Screens at Clifton Court Forebay - This concept was eliminated from further evaluation because initial results of recent studies, including information included in recent NMFS biological opinions, supported a phased approach that would emphasize improvements to operations of fish handling facilities and reduced predator potential within Clifton Court Forebay prior to further analysis of installation of fish screens. Clifton Court Forebay is surrounded by levees with the present gated intake located in the southeast corner near the confluence of West Canal and Old River. The forebay is surrounded by West Canal on the east, subsided Eucalyptus and King Island and sloughs on the north, and Italian Slough on the west. The forebay is surrounded by upland areas on the southwest and south sides. Water enters Clifton Court and then is conveyed by gravity to the Skinner Fish Facility, which is located upstream of the Banks Pumping Plant. Fish that enter Clifton Court Forebay are affected by predation and operations of the fish facilities. Over 60 studies have been completed by DWR in the past 20 years to evaluate the feasibility of providing fish screens along the intakes to Clifton Court Forebay. These studies have indicated that it is difficult to find a location at the Clifton Court Forebay site for a single location that would provide appropriate sweeping velocities to reduce the entrainment of fish in accordance with USFWS and NMFS fish screen operations criteria or guidance. The screen would have to be more than a mile in length, which could expose fish to excessive times in front of the screen. Because the screens are located in short sloughs with limited cross-waterways, the fish could accumulate in-front of the screens and be subject to predation, poor habitat quality, or increased potential of entrainment at the Clifton Court Forebay screens and other intakes in the adjacent portions of the south Delta.

In 2002, the South Delta Fish Facilities Forum (Forum) was created by CALFED to address fish screen issues in the south Delta. The CALFED Record of Decision directed that fish screens would be installed on the south Delta intakes for the SWP and CVP Pumping Plants. The Forum was charged with making recommendations to the California Bay-Delta Authority and state and federal agencies regarding future investments in south Delta fish screens. In April 2005, the Forum published a "Co-Chair's Report: Some Policy Conclusions" (DWR 2005). This report recommended that the best strategy included immediate actions to remedy facility deficiencies, completing ongoing investigations, and developing a long-term strategy to achieve functionally equivalent estuary and fish benefits. The co-chairs did not eliminate the possibility of future actions to implement modular screening, but stated that modular screening strategies not be pursued if cost-effective alternatives provide for increased abundance in fish populations and supporting habitat. The co-chairs recommended that following initial steps be completed first:

1. Focused investigations (including South Delta Hydrodynamic and Fisheries Investigations; and Collection, Handling, Transportation, and Release (CHTR) studies).

2. Investigation of functionally equivalent actions and assurances by the involved agencies with adequate funding.

3. Immediate actions

a. Reduction of predation losses in Clifton Court Forebay.

b. Improved debris handling operations at SWP and CVP south Delta intake facilities.

c. Completion of CHTR and south Delta hydrodynamic, water quality, and fish movement studies.

ED_000733_DD_NSF_00006982-00049

d. Improved fish handling facilities.

e. Improved water weed control measures in Clifton Court Forebay.

f. Modification of staffing, equipment, and fish handling operations procedures.

In 2009, a report was prepared for DWR to evaluate the potential for development of a low-flow screen that would be used only for diversion of part of the flow into Clifton Court Forebay (DWR 2009c). The report analyzed alternative fish screens for diversions up to 2,000 cfs that would allow limited diversions when delta smelt are present in the south Delta between April and June. Fish would continue to enter Clifton Court Forebay through the existing intake, and the fish would continue to be subject to predation and fish handling facilities losses between July and March. A low-flow diversion would provide for a portion of the SWP and CVP exports, especially for users that do not have adequate storage to continue operations when south Delta diversions are restricted. The analysis considered the feasibility of fish screens on low-flow intakes, but did not consider specific operational criteria to be developed by USFWS and NMFS or the potential that a concept would reduce predation in Clifton Court Forebay or population risks of species due to all SWP diversions. The evaluation considered the following intakes and identified some potential issues to be evaluated in future studies.

1. Intake Along Italian Slough –The screened water would be diverted around Clifton Court Forebay to the west into Italian Slough in order to avoid predation potential for any fish remaining in the Forebay. This proposal requires a long screen with multiple pumps at several elevations, creating its own predation problems. According to DWR, "this alternative would require a very long pumped fish bypass system including multiple pump lifts. A long bypass would increase risk of injury and losses and predation at the outfall." Thus, [a]dditional predator management strategies in Italian Slough would also need to be developed for periods during [low-flow intake] diversion."

2. Intake along Kings, Eucalyptus, and Widdows islands or the eastern boundary of Byron Tract – Screens could be located along levees with adequate sweeping velocities, and could require a pumped bypass to provide fish passage away from the screens. The screened water would be diverted around Clifton Court Forebay to avoid predation potential in the Forebay of any remaining fish.

3. Intake along West Canal at locations in the northern, central, or southern portions of the existing Clifton Court Forebay levee – Screens would be located along the existing levee. Fish could be bypassed from the screens, depending upon the design, into Old River at one location, which could contribute to predation losses. The screened water would be diverted into Clifton Court Forebay and any remaining fish would be subject to predation.

4. Intake along Old River upstream of West Canal – This screen may not be able to provide 2,000 cfs of capacity due to limited sweeping velocities in this location. The screened water would be diverted around Clifton Court Forebay to avoid predation potential in the Forebay of any remaining fish.

No specific recommendations were presented in the 2009 report for a preferred concept. The report identified issues that would require further evaluation prior to completing a feasibility study, including additional hydrologic and hydraulic modeling, geotechnical analysis, bathymetry data, specific operating criteria, topographic data, environmental analysis, and predation control analysis.

The 2008 USFWS Biological Opinion analyzing the effects of the coordinated long-term operation of the SWP and CVP on delta smelt and its critical habitat and the 2009 NMFS Biological Opinion analyzing the effects of the coordinated long-term operation of the SWP and CVP on the listed species of salmonids, green sturgeon, and southern resident killer whale addressed several aspects of the proposed SWP and CVP operations of the south Delta intakes, but did not include specific recommendations in the proposed Reasonable and Prudent alternatives related to fish screens at the south Delta intakes. The NMFS Biological Opinion (Action IV.4) recommended

ED_000733_DD_NSF_00006982-00050

changes in operations and infrastructure of the CVP and SWP fish collection facilities to increase fish salvage efficiency, reduce pre-screen losses, and improve screening efficiencies. Prior to the issuance of the Biological Opinions, DWR has conducted a study (published in March 2009) to identify methods that would reduce predation in Clifton Court Forebay (DWR 2009d). In response to the recommendations of the March 2009 study and recommendations of the NMFS Biological Opinion, DWR initiated actions to reduce predation in Clifton Court Forebay, including:

1. Submitted a letter on March 24, 2011, to the California Fish and Game Commission requesting a bag limit exemption and size limit modification for striped bass to reduce the striped bass population in Clifton Court Forebay. This petition was not approved by the Fish and Game Commission.

2. Initiated design of facilities to improve fishing access in Clifton Court Forebay

3. Completed two reports in 2010 that summarized the results of focused investigations on the release phase of the CHTR process (DWR 2010a, DWR 2010b). The reports contained recommendations for release site design criteria and recommended modifications to the existing release sites including predatory bird deterrents, larger pipe flushing systems, and site debris removal to reduce predator habitat.

4. Initiated design for improving conditions to reduce predation at locations where salvaged fish are released into the Delta, including refurbishing and modifying the existing release sites to incorporate the recommendations from the CHTR release site investigations, and evaluating the use of additional release locations to reduce the frequency of releases at each site.

Based upon these efforts, in May 2011, DWR requested an extension of the schedule to comply with the suggested schedules for most provisions of the NMFS Biological Opinion Action IV.4.2 (DWR 2011). The extension was granted in July 2012 with a concurrence that NMFS agreed with DWR's proposal for this provision (NMFS 2012)

The remaining conveyance concepts were renumbered and presented below.

- **Dual Conveyance Concept A-** *Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes* (Conveyance Concept A1).
- **Dual Conveyance Concept B -** *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes* (Conveyance Concept A2).
- **Dual Conveyance Concept C -** *Dual Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes* (Conveyance Concept A3).
- **Isolated Conveyance Concept A -** *Isolated Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes* (Conveyance Concept B1).
- **Isolated Conveyance Concept B -** *Isolated Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes* (Conveyance Concept B2).
- **Isolated Conveyance Concept C -** *Isolated Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes* (Conveyance Concept B3).
- **Through Delta Conveyance Concept -** *Separate Corridors with new fish screens along the Sacramento River at the Delta Cross Channel and Georgiana Slough to convey water through the lower Mokelumne River system and across the San Joaquin River to Middle River and Victoria Canal;*

ED_000733_DD_NSF_00006982-00051

a siphon under Old River for continued conveyance to the existing SWP and CVP pumping plants; operable barriers on Snodgrass Slough, Head of Old River, Three Mile Slough or Seven Mile Slough, and at between Old River and Middle River (at Woodward Canal, Railroad Cut, and Connection Slough); dredging and setback levees along portions of Middle River; and continued use of the existing SWP and CVP South Delta intakes would occur during flood periods (Conveyance Concept C1).

The general approaches to conveyance could be implemented with facilities of different diversion and conveyance capacities (e.g., 3,000, 6,000, 9,000, or 15,000 cfs). The ultimate decisions regarding what capacities should be addressed in particular EIR/EIS alternatives would turn in large part on how differing capacities would affect overall SWP/CVP systems operations. Operational issues are discussed below.

ED_000733_DD_NSF_00006982-00052

X.8 Development of Conveyance Operations Concept by BDCP Steering Committee in 2010

This section describes the processes conducted by the BDCP Steering Committee to develop and evaluate a range of Delta water operations and integration of those operations with various habitat restoration elements. These processes included specific evaluations by the Conveyance Workgroup and the Habitat and Operations Technical Team, an independent review by scientists using an approach developed for the Delta Regional Ecosystem Restoration Implementation Plan, and the BDCP Steering Committee.

X.8.1 BDCP Steering Committee Conveyance Workgroup and Habitat and Operations Technical Team Development of Operations Concepts

In October 2007, the BDCP Steering Committee formed the Conveyance Workgroup and the Habitat and Operations Technical Team (HOTT) to develop and consider screening-level evaluations for the operations of conveyance facilities and restoration programs in the north, west, and South Delta. Working groups and technical teams met periodically to develop technical information or recommendations about aspects of the Conservation Plan elements for consideration by the Steering Committee. The following operational issues related to the Dual Conveyance and/or Isolated Conveyance concepts were evaluated.

- Diversion criteria for the new North Delta intakes along the Sacramento River for use with a Dual or Isolated Conveyance concepts, including limitations on timing and quantities of water to be diverted from the Sacramento River between the City of Sacramento and Walnut Grove.
- Diversion criteria for the new North Delta intakes along the Sacramento River for use with a Dual or Isolated Conveyance concepts, including river bypass flows, effects on Delta Cross Channel and Threemile Slough flows, and Rio Vista flows.
- West Delta outflow criteria.
- Summer-fall flow criteria on the San Joaquin River at Vernalis.
- Two alternative spring X2 operating assumptions:
    - (1) operations where salinity is maintained roughly to the requirements of State Water Resources Control Board Decision 1641 (D1641) but implemented as a function of Eight River Index and over the 5-month period between February and June, and
    - (2) a proposal by the environmental stakeholders where outflow is increased in many years and implemented as a function of the Eight River Index (which includes four more rivers in addition to the four Sacramento River basin rivers used in the more traditional Four-River Index that is used by DWR to define water year types).

These groups also addressed operational issues that were more related to North Delta diversion intake design criteria and habitat restoration conservation measures, including inundation of Yolo Bypass; establishment of new floodplain bypasses to be located to the east of the existing Sacramento Deep Water Ship Channel and between Sacramento River and Stone Lakes; hydraulic connections between the Sacramento River and upper reaches of Sutter and Steamboat sloughs; tidal habitat in the west Delta, South Delta, and Suisun Marsh; and effects of conveyance along Old

ED_000733_DD_NSF_00006982-00053

River. As described in Subsection X.1, separate appendices have been prepared to describe the development of intake design criteria and habitat restoration conservation measures.

Throughout 2008, the work products and findings of several BDCP Steering Committee workgroups and technical teams were presented to the BDCP Steering Committee. The work products can be accessed on the BDCP website (baydeltaconservationplan.com/BDCPPlanningProcess/ BackgroundDocuments/SteeringCommittee/SteeringCommitteeAgendasandHandouts.aspx). The results were considered and incorporated into the following interactive screening evaluations by the Conveyance Workgroup, Habitat and Operations Technical Team, and Integration Team.

- **Fluctuating Delta Salinity.** Relaxations in the net Delta outflow requirements were investigated for summer and fall (4000 cfs in wet years, 3000 cfs in above normal years, 2000 cfs in below normal years, 1000 cfs in dry years, and 0 cfs in critical dry years) to explore a range of salinity and X2 effects (X2 is the location in the Delta that represents the location of 2 parts per thousand salinity contour, or isohaline contour, measured one meter above the bottom of the estuary, and reported in kilometers upstream of the Golden Gate Bridge [State Water Board 2000].)Rio Vista, salinity and Delta Export/Inflow (EI) ratio standards were also relaxed during this period. The goal was to evaluate the range of variable salinity conditions (increasing salinity in summer and fall of dry years) to be achieved and believed to provide a competitive advantage to native species. Preliminary results of the analyses are summarized below.
    - Higher fall and/or summer salinity could be managed with a rather rapid return to fresher water quality conditions in the western Delta in early winter, as long as salinity intrusion in the South Delta was not substantial.
    - South Delta water quality could be severely degraded during times without increased San Joaquin River flows or discharge of water from the Isolated Conveyance into the Lower San Joaquin River.
    - Upstream storage in the Sacramento River watershed is significantly enhanced and coldwater pools improved with fluctuating Delta salinity throughout the year, but Sacramento River flows would be reduced when Delta salinity is allowed to increase. Increased flow requirements at Rio Vista would increase Sacramento River flows.
    - Available water for SWP and CVP is increased under fluctuating salinity criteria, particularly if western Delta salinity is allowed to increase in the summer.
    - Fluctuating salinity scenarios with increased Rio Vista flow criteria did not have a significant impact on upstream or Delta conditions.
- **Flooded Western Island.** Based on the DWR Delta Risk Management Study (DRMS) analyses, scenarios related to salinity intrusion due to levee failures and Sherman Island flooding were conducted. The workgroup and technical teams determined that the DRMS work suggested that such a flooding event could result in an eastward shift in X2 of approximately 6 kilometers (km). The conditions were evaluated to determine if flooding of large tracts of western islands may create large areas of low salinity habitat and allow X2 to be managed more at a more easterly location than under existing conditions. Preliminary results of the analyses are summarized below.
    - Significant salt water intrusion would occur if Sherman Island were flooded, and X2 would move eastward by almost 6 km if there were no changes in Delta outflow criteria.
    - Under the same X2 compliance conditions as prescribed in D1641, Delta outflow requirements would cause significant loss of water supply availability and largely eliminate the ability for coldwater pool management in upstream Sacramento River reservoirs due to the need to release water to maintain X2.
- **Preferential Diversion on the Sacramento River at Hood as Compared to South Delta Diversions.** All D1641 standards were removed from a basic Dual Conveyance simulation to

ED_000733_DD_NSF_00006982-00054

evaluate system operations effects and incremental tradeoffs of potential regulatory actions. Preliminary results of the analyses are summarized below.

- North Delta Bypass criteria (also known as Hood Bypass Rules), Delta outflow criteria, and Old and Middle Rivers (OMR) reverse flow criteria in the South Delta could be used to modify Delta conditions in accordance with biological goals and objectives.
- Use of North Delta Bypass criteria without additional Delta outflow and OMR criteria did not substantially change water supply availability for SWP and CVP.
- Changing the location of the diversions from the North Delta to the existing South Delta intakes resulted in changes in salinity that were similar to those of the fluctuating salinity scenario.

- **Increased Spring River Flows.** Reservoir releases to increase peak flows in the Sacramento and San Joaquin rivers in March and April and achieve Yolo Bypass inundation of approximately 5,000 cfs were evaluated to determine the effects of substantially restoring spring hydrographs on the Sacramento and San Joaquin rivers. Preliminary results of the analyses are summarized below.
  - Spring releases both increased the extent of flooding with higher flows and re-shaped the hydrograph along the Sacramento River from Keswick Reservoir to Rio Vista.
  - Reductions in available water supplies for SWP and CVP due to spring reservoir release actions were potentially as high as 250,000 to 300,000 acre-feet/year without consideration of additional releases of San Joaquin River flows.
  - Increased San Joaquin River flows generally had a positive effect on spring time QWEST (net flow of the Lower San Joaquin River) and OMR flows, potentially decreasing entrainment effects and improving water quality at the existing South Delta SWP and CVP intakes.
  - Changing the flow targets to increase river flows in December through January could achieve some biological benefits for winter run salmon and improve water supply availability as compared to increase spring releases.
- **Increased Spring Delta Outflow.** The Eight-River Index approach to defining release patterns from upstream reservoirs to meet X2 criteria between February and June was evaluated except for critical dry years when the index was less than 5 million acre-feet. The objective was to evaluate the potential for achieving substantially higher Delta outflow without creating adverse coldwater pool management concerns in upstream reservoirs on the Sacramento River. Preliminary results of the analyses are summarized below.
  - Spring X2 was moved towards the west; however, water supply availability for SWP and CVP and Sacramento Valley water rights and CVP water users was reduced.
  - High Delta outflow requirements in the spring reduced upstream reservoir storage, especially during sequential drier years with some system recovery occurs during wetter periods.
  - Provision of "off-ramps," or adjustments (e.g., provisions to allow additional diversions from the Sacramento River if water storage in upstream reservoirs exceeded agreed upon values), based on upstream storage conditions reduced the impact, but failed to protect declining storage during extended drought periods.
- **Increased Fall X2 Delta Outflow.** Implementation of Fall X2 targets between September and November were explored based on water year types under the Eight River Index. Storage criteria were included to limit reductions in upstream storage, including maintaining Shasta Lake storage greater than 2.8 million acre-feet and Oroville Reservoir storage greater than 1.0 million acre-feet. The goal was to evaluate the potential for achieving higher fall Delta outflow targets without creating adverse coldwater pool management conditions in upstream reservoirs. Initial assessments indicated that the Fall X2 targets using a sliding scale based on the prior water year

ED_000733_DD_NSF_00006982-00055

types under the Eight River Index appeared achievable with some reductions in SWP and CVP water supply availability.

- **Preferred South Delta Diversion.** Continued use of the existing South Delta intakes at an increased diversion rate resulted in limited reduction of entrainment effects as compared to existing conditions while reducing the need for higher diversion in the North Delta. Preliminary results of the analyses are summarized below.
  - Dual Conveyance operations with a preference for South Delta diversions could be configured to result in SWP and CVP water supply availability similar to what occurs under existing conditions.
  - Reducing flow conditions at the SWP and CVP South Delta intakes that may lead to entrainment could be accomplished through modification of OMR or managing South Delta intake diversions as a function of San Joaquin River flows.
  - Greater flexibility in opening of the Delta Cross Channel gates after August would reduce the potential for central and South Delta water quality degradation and could increase SWP and CVP water supply availability under a South Delta preferred point of diversion.
- **Fully Isolated Hood Diversion.** A set of scenarios were explored to evaluate the potential of a fully Isolated Conveyance from a North Delta diversion only and with more restrictive North Delta bypass flow operations. Preliminary results of the analyses are summarized below.
  - Project operations under a fully Isolated Conveyance with high flow North Delta bypass rules possibly could result in substantial reductions in SWP and CVP water supply availability in dry or critical dry years.
  - Increasing North Delta bypass flows would not necessarily result in a more natural hydrograph in the Sacramento River unless there were increased upstream reservoir releases.
  - Limitations on SWP and CVP water supply availability are often controlled by the North Delta Bypass requirements and Rio Vista flow requirements.

X.8.2 Delta Regional Ecosystem Restoration Implementation Plan (DRERIP) Assessment of Core Elements

At the end of 2008, the BDCP Steering Committee approved a draft set of Core Elements of a Conservation Strategy for preliminary evaluation (BDCP 2008). The preliminary evaluation was principally designed to provide information for the conceptual ecosystem and species evaluation process known as the Delta Regional Ecosystem Restoration Implementation Plan (DRERIP). The goal of this evaluation was to refine existing and develop new Delta specific restoration actions as well as to provide Delta specific implementation guidance, program tracking, performance evaluation and adaptive management feedback. The Core Elements consisted of the following items.

- Move primary point of diversion to new North Delta diversion facilities with state-of-the-art fish screens with up to 15,000 cfs capacity subject to North Delta Bypass criteria, upstream river flows, downstream flow requirements, and conveyance limitations.
- Establishment of North Delta Bypass flow criteria (two scenarios) at North Delta diversion to limit diversions during low Sacramento River flows and during periods of concern for covered species, including 11,000 cfs and 5,000 cfs bypass flow scenarios in winter and spring.
- Manage diversions at existing South Delta intakes to reduce entrainment of fish and food resources, including limiting diversions when OMR is greater than -3,500 cfs in December through June, and greater than -5000 cfs in July through November.
- Closure of the Delta Cross Channel except during July, August, half of September, and October to

ED_000733_DD_NSF_00006982-00056

protect central and South Delta water quality.

- Modification of Fremont Weir and Yolo Bypass to provide more frequent and greater duration of inundation, up to 4,000 cfs during December 1 through May 15.
- Large-scale tidal marsh restoration in the Cache Slough area of 5,000 - 15,000 acres; strategic tidal marsh restoration in the west Delta, and large-scale tidal marsh restoration in the Suisun Marsh area.

The results of modeling studies of these elements under two scenarios (Scenario 1 with high North Delta Bypass flow criteria, and Scenario 2 with low North Delta Bypass flow criteria) were presented to the DRERIP panel in early 2009 (BDCP 2009c).

The BDCP Steering Committee and the BDCP HOTT team considered the results of the DRERIP Course Evaluation in early 2009. The DRERIP analysis evaluated individual portions of the BDCP and synthesis of all portions of the BDCP (assuming a Dual Conveyance operations). The results related to conveyance indicated that joint operations of the North Delta diversions, Yolo Bypass, and South Delta intakes appeared to provide benefits for several covered fish species, but that more information would be needed to more fully understand potential outcomes (BDCP 2009d).

X.8.3 BDCP Steering Committee Project Description for Preliminary Effects Analysis

Based on the results of the DRERIP analysis, the following additional analyses were completed for the BDCP Steering Committee during 2009 to further evaluate water conveyance and operations.

- **Climate Change "Early-Look".** In order to include changes in hydrology in the Delta watershed due to climate change and increased sea level rise over the next fifty to sixty years, regional climate change scenarios were developed based on the climate scenarios developed by DWR, Reclamation, USFWS, and NMFS. Results from a preliminary set of model simulations indicated that climate change could have a substantial effect on the timing of watershed runoff with earlier runoff patterns due to more rain and less snow and earlier snowmelt due to higher temperatures. These changes resulted in significant reductions in late spring and summer streamflows. Upstream reservoir and coldwater pool management were found to be severely challenged under climate change and the ability to divert water from the Delta became less dependent upon upstream SWP and CVP storage operations. Salinity increased in the western and central Delta and X2 occurred at locations east of existing conditions. This required release of more Delta outflow to maintain the X2 location which resulted in less water availability for SWP and CVP.
- **North Delta Bypass Flows and Operations.** Operational criteria for North Delta diversion facilities were developed to refine tidal operations under low flow conditions.
- **Tidal Marsh and Delta Simulation.** Corroborative simulations with a two dimensional model were conducted to improve simulation of Suisun Marsh restoration components, other tidal marsh restoration actions, Cache Slough, and current inundation of Liberty Island.
- **Daily Operations.** Other modeling improvements were completed to incorporate daily operations of the Fremont weir operations and North Delta Bypass criteria and diversions.
- **Delta Island Consumptive Use Estimates.** The Delta island consumptive use and drainage assumptions were reviewed to better represent the local land uses and estimated water uses.

In December 2009, a "mini- effects analysis" was performed. The objective of this analysis was to prepare a final set of conservation measures for the hydrologic and water quality modeling of the Preliminary Proposed Project to be defined in January 2010. The results of the mini-effects analysis

ED_000733_DD_NSF_00006982-00057

were considered with other information presented to the BDCP Steering Committee as part of the effort to define the long-term water operations criteria for evaluation in the Effects Analysis (BDCP 2010a). The results of this analysis were used to complete a preliminary Effects Analysis that was completed in 2010 and presented in the BDCP Steering Committee Progress Report published in November 2010 (BDCP 2010b). The description of the operational criteria as presented to the BDCP Steering Committee in February 2010, is presented in Table X-4 (located at the end of this appendix).

The operations, presented in Table X-4, were defined as the "January 2010 BDCP Operations" for Dual Conveyance. Initial modeling analysis completed for BDCP indicate that January 2010 BDCP Operations would increase SWP and CVP water supply availability as compared to existing conditions and would not adversely affect water deliveries to water rights holders and SWP and CVP water users located in the Sacramento Valley as compared to existing conditions.

Use of January 2010 BDCP Operations for Isolated Conveyance would be slightly different because the South Delta intakes would be abandoned, and therefore, there would not be any operations criteria for those intakes, as presented in Table X-5.

ED_000733_DD_NSF_00006982-00058

X.9 Conveyance Operations Concepts Identified in 2011

Following the completion of the BDCP Steering Committee November 2010 Project Status Report, several additional conveyance concepts were identified or more fully defined by the following agencies or groups.

- Following collaborative efforts a series of model runs, Federal and State Agencies developed an operations proposal that became known as "Scenario 6," based on the fact that the final version was the product of six sets of model runs. Working together, the agencies used the "January 2010 BDCP Operations" as a starting point, but made several changes, including the addition of the "Fall X2" requirement from the USFWS 2008 Biological Opinion (USFWS 2008), modifications of Old and Middle River(OMR) criteria, modifications of the Head of Old River Barrier operations, and implementation of South Delta temporary agricultural barriers, as under existing conditions.[8]
- Federal and State Agencies proposed an "Enhanced Ecosystem Conveyance Operations Concept" - similar to "January 2010 BDCP Operations" with Fall X2 as under the USFWS 2008 Biological Opinion (USFWS 2008), reduced ability to divert water at the North Delta intakes through more stringent North Delta intake bypass criteria and Sacramento River flow requirements at Rio Vista, changes to OMR criteria, and reduced ability to divert water at the South Delta intakes.
- State Water Resources Control Board provided additional information related to the scoping comments submitted in 2008 and 2009 (State Water Board 2011a, State Water Board 2011b, and State Water Board 2011c). The proposal, "Enhanced Spring Delta Outflow," would provide additional spring Delta outflow in all water year types to promote abundance and productivity of longfin smelt and other estuarine species, and Delta inflows be modified to promote a more natural hydrograph.
- Several environmental organizations proposed three concepts (American Rivers et al 2011):
    - A concept to (i) achieve Fall X2, protections in the South Delta, (ii) re-establish a more natural hydrograph during winter and spring months, and (iii) conduct reservoir operations to prevent unintended drawdowns with a range of potential conveyance capacities. The operations would be similar to Scenario 6 with (i) Fall X2 as under the USFWS 2008 Biological Opinion (USFWS 2008), (ii) modifications to OMR flow criteria, (iii) proportional inflow bypasses from Shasta Lake, Folsom Lake, and Oroville Reservoir into the Sacramento River, and (iv) additional pulse flows in the late winter and through the spring to protect out-migrating fall run and spring run Chinook salmon.
    - Operations to provide Delta outflow as described in the State Water Resources Control Board Flow Recommendations for the Sacramento-San Joaquin Delta Ecosystem published in 2010 (State Water Board 2010b).
    - Operations as described above under Scenario 6 with a conveyance capacity of 9,000 cfs.
- Contra Costa Water District and other commenters proposed a Limited Dual Conveyance Facility - similar to "January 2010 BDCP Operations" with only 3,000 cfs capacity for the North Delta intakes, addition of Fall X2as under the USFWS 2008 Biological Opinion (USFWS 2008), and modifications to the San Joaquin River Inflow/Export ratio.
- The Water Advisory Committee of Orange County proposed an Isolated Conveyance facility previously described as Conveyance Concept B6. This concept included an isolated conveyance

[8] See "Rationale for Five Agency Proposed Alternative BDCP Initial Project Operations Criteria," May 18, 2011 Working Draft.

ED_000733_DD_NSF_00006982-00059

with a tunnel between the Sacramento River near Fremont Weir and the SWP and CVP Pumping Plants, isolated conveyance with a tunnel between the Sacramento River near Decker Island to Clifton Court Forebay and Bethany Reservoir, and continued use of the south Delta intakes. This concept was similar to concepts suggested during the scoping process, and was evaluated above.

This section discusses considerations for the concepts not previously evaluated under the initial screening process.

X.9.1 Federal and State Agencies Concept: Scenario 6 Concept

Following the completion of the 2010 Project Status Report, which included a preliminary draft Effects Analysis, DWR, DFG, Reclamation, USFWS, and NMFS (Five Agencies) developed a series of critical issues to be addressed by a Five Agency Alternative for BDCP Initial Project Operations Criteria (DWR, DFG, Reclamation, USFWS, and NMFS 2011). The alternative operating criteria are based on the BDCP Steering Committee 2010 Project Operations with modifications as briefly described in section X.9 above and as more fully described below.

The issues of concern to DFG, USFWS, and NFMS can be characterized as follows (the references to "the PP" are intended to refer to the "Preliminary Proposal" based on the 2010 Project Operations):.

- **Reduced Sacramento River flows downstream of the intakes**. "New North Delta diversions will reduce net Sacramento River flows near Rio Vista…although the CALSIM II modeling showed the agreed upon North Delta diversion bypass criteria [in the PP] has generally been met, identified reductions in flow remain a concern…" (California Department of Water Resources et al. 2011).
- **San Joaquin River migratory fish survival.** "[The PP] proposed a 'non-physical barrier' and habitat restoration in the south Delta. The latter was not scheduled to come online until the late long-term time frame. This was not considered adequately protective of San Joaquin River basin salmonid fishes. There was also concern over Old and Middle River (OMR) flow levels during certain months"(California Department of Water Resources et al. 2011).
- **April–May OMR flows.** "The original 'Big 6' version of this issue was that April–May OMR flows in the January 2010 Project Operations modeling were more negative than the flows modeled for the Existing Baseline Condition scenarios. The issue expanded to include OMR flow criteria during other months to take advantage of operational flexibility the CALSIM II modeling indicated would be afforded by dual conveyance. The goal was to increase San Joaquin River flow variability (improving OMR flows in the Delta and flows in the San Joaquin River below the Head of Old River), and maximize improvements to south Delta hydrodynamics…" (California Department of Water Resources et al. 2011).
- **Spring Delta outflow issues related to longfin smelt.** "Changes in winter-spring Delta outflows correlate positively with changes in abundance of longfin smelt. A review of CALSIM II model output shows that the combination of new operating rules and increased conveyance capacity [in the PP] results in reduced net Delta outflows in the winter-spring period of wetter water years…instances of reduced Spring flows, food web productivity and other stressors remain a concern…"(California Department of Water Resources et al. 2011).
- **Fall X2**. "The existing U.S. Fish and Wildlife Service (UFWS) Biological Opinion (BiOp) includes a Reasonable and Prudent Alternative (RPA) element that specifies X2 location in September–October of above-normal and wet water year types. The January 2010 Project

ED_000733_DD_NSF_00006982-00060

Operations did not include any action to meet or mimic the Fall X2 RPA component, raising concerns from USFWS and others whether the project operations would meet permit issuance criteria" (California Department of Water Resources et al. 2011).

"Scenario 6," proposed by the agencies as an alternative to the 2010 Operating criteria for evaluation in the Effects Analysis, includes modified criteria intended to address three of the five operational issues identified above: San Joaquin River migratory fish survival, April–May OMR flows, and Fall X2. Scenario 6 also includes an operable barrier at the head of Old River. Scenario 6 does not include modifications to address reduced Sacramento River flows downstream of the new intakes, or the winter-spring outflow issues related to longfin smelt (or the location of the north Delta intakes). The agencies' intent was to address these two issues in the development of adaptive ranges subsequent to completion of the Effects Analysis.

The operational criteria for Scenario 6 are presented in Table X-6. Initial modeling analysis completed for BDCP indicate that Scenario 6 operations would reduce SWP and CVP water supply availability as compared to the January 2010 BDCP Operations, increase SWP and CVP water supply availability as compared to Existing Conditions, and would not adversely affect water deliveries to water rights holders and SWP and CVP water users located in the Sacramento Valley as compared to existing conditions.

X.9.2 Federal and State Agencies Concept: Enhanced Ecosystem Conveyance Operations Concept

The Enhanced Ecosystem conveyance operations concept was developed by DFG, USFWS, and NMFS to be considered in the EIR/EIS. The operations were based upon the January 2010 BDCP Operations with Fall X2 as under the USFWS 2008 Biological Opinion (USFWS 2008). This concept increased the Sacramento River flow requirement at Rio Vista and constrained the ability to divert water at the North Delta intakes through more stringent North Delta intake bypass criteria than under the January 2010 BDCP Operations. This concept also reduced the potential for reverse flow in the South Delta with (i) changes to OMR criteria; (ii) changes to San Joaquin River inflow/export ratio criteria; and (iii) not allowing use of the South Delta SWP and CVP intakes in April, May, October, and November to protect migrating fish. The operational criteria for the Enhanced Ecosystem concept are presented in Table X-7.

It was determined that this concept would include a tunnel conveyance alignment concept to minimize surface disturbance to the ecosystem during construction and operations.

X.9.3 State Water Resources Control Board Enhanced Spring Delta Outflow Concept

Following development of the Enhanced Ecosystem Conveyance Operations Concept, preliminary modeling results were considered to determine if this concept also could be responsive to the scoping comments submitted by the State Water Board because this agency is a responsible agency with jurisdiction by law and special expertise. It was determined that based upon scoping comments and other information provided by the State Water Board, an additional concept would be required to be responsive to the agency's scoping comments. The State Water Board provided comments to the DWR 2008 and 2009 NOPs regarding the scope and content of the environmental analyses for the BDCP in letters dated May 30, 2008 (State Water Board 2008) and May 15, 2009

ED_000733_DD_NSF_00006982-00061

(State Water Board 2009). Additional information was provided from the Executive Director of the State Water Board to the Deputy Secretary of the Natural Resources Agency, in three letters dated April 19, 2011, August 24, 2011, and December 19, 2011 (State Water Board 2011a, State Water Board 2011b, and State Water Board 2011c).

The State Water Board's May 30, 2008 NOP scoping comments cited, among other things, the need for the BDCP EIR/EIS to "analyze a broad range of alternate water quality objectives and operational strategies, including reduction in exports, that may be more protective of fish and wildlife beneficial uses." The State Water Board's May 15, 2009 scoping comment letter referred specifically to the value of analyzing increased Delta outflow, as a percent of unimpaired flows (unimpaired flow is roughly defined as the flow that would occur without upstream reservoirs or diversions):

> "Combined with analyzing potential reductions in exports, an alternative for changes to Delta outflows (and potentially inflow requirements) should also be analyzed that reflects a more natural hydrograph. Current outflows and operations have tended to flatten the natural hydrograph and produce more static flow conditions in the Delta. Outflows and export regimes that support a more natural variable hydrograph should be analyzed, including both the naturally high outflow and naturally low outflow ends of the hydrograph for both the interim and long-term. One way to conduct this analysis would be to analyze the effects of providing various percentages of the unimpaired Delta inflow and outflow, and managing storage releases and exports to attempt to parallel this pattern."

Pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009, the State Water Board prepared a report with flow criteria for the Sacramento-San Joaquin Delta Ecosystem that can be used to aid in the development of potential alternatives for Delta outflows (State Water Board 2010b), including the reduced export concept referenced in the State Water Board's previous NOP comments. On April 19, 2011, the Executive Director of the State Water Board sent a letter to the Deputy Secretary of the Natural Resources Agency stating (State Water Board 2011a):

> "The State Water Board's Delta Flow Criteria Report includes determinations of flow criteria for the Delta ecosystem to protect public trust resources. The report makes clear that the flow criteria do not consider the balancing of public trust resource protection with public interest needs for water. The flow criteria also did not consider other public trust resource needs such as the need to manage cold-water resources in reservoirs tributary to the Delta. Nonetheless, the flow determinations contained in the Delta Flow Criteria Report, together with recent scientific conclusions of other State and federal agencies, including the Department of Fish and Game, National Marine Fisheries Service, and the Interagency Ecological Program provide a useful guide to establish one side of a reasonable range of alternatives. State Water Board staff suggests that a reasonable range of alternatives may be established by making changes to the operational criteria already being evaluated in one or several of the alternatives considered by the BDCP per the September 1, 2010 Table 1: Modified Array of Alternatives. The changes should be made to address two of the summary determinations in the Delta Flow Criteria Report: 1) provide additional spring Delta outflow in all years to promote increased abundance and improved productivity for longfin smelt and other estuarine species; and 2) provide flows that promote a more natural hydrograph at all times."

The Delta Flow Criteria Report summary determination was presented as 75 percent of unimpaired net Delta outflow for January through June. As described in the letter, this determination did not consider the competing needs for water or other public trust resource needs such as the need to manage cold-water resources in tributaries to the Delta. Implementing such a flow would also likely affect water users beyond just CVP and SWP south of Delta deliveries. The letter therefore described an approach that could be used to develop a BDCP alternative concept that increased Spring Delta outflow:

ED_000733_DD_NSF_00006982-00062

> "Model runs for these revised alternatives should be made in an iterative fashion to ascertain the maximum additional fixed quantity of additional Delta outflow that would provide useful information to evaluate balancing of the beneficial uses of water and achieving the coequal goals. As a starting point, staff suggests adding 1.5 million acre-feet per year to Delta outflow."

The letter also suggested that State Water Board and DWR could refine this modeling approach. Staff met several times in the following months and identified a general approach that could be used to model an increased Spring Delta outflow concept.

As described in the August 24, 2011 letter from the Executive Director of the State Water Board to the Deputy Secretary of the Natural Resources Agency (State Water Board 2011b), the goal of this general approach was to increase Spring Delta outflow above that achieved in the Enhanced Ecosystem Conveyance Operations Concept (described in Subsection X.9.2) and increase Spring Delta outflow by approximately 1.5 million acre-feet, on average, above the NEPA baseline assumptions (No Action Alternative without the effects of sea level rise or climate change). The State Water Board anticipated that this would result in:

- No negative effects on cold water pool storage;
- Not drawing down Sacramento Valley groundwater levels;
- No decreased water supplies other than south-of-Delta Central Valley Project and State Water Project deliveries;
- No failure to deliver San Joaquin River exchange water rights; and
- No failure to deliver refuge water.

The specific goal for this concept was to increase Spring Delta outflow by approximately 1.5 million acre-feet per year, on average. It was expected that this potential alternative would also result in an approximate average annual reduction in south of Delta deliveries of 1.5 million acre-feet per year. To achieve these goals, and to avoid the effects listed above, the concept includes a requirement of 55% of unimpaired flow, as estimated for the Sacramento River at Freeport, to become Delta outflow. No Sacramento River inflow-specific objective is intended; however, the goal of the concept is to achieve an increase in net Delta outflow of about 1.5 million acre-feet per year, on average. The State Water Board included modifications to minimum storage requirements for upstream reservoirs on the Sacramento River system in an attempt to achieve cold water pool storage goals of the State Water Board and the USFWS and NMFS biological opinions that affect operations of the SWP and CVP.

On December 19, 2011, the Executive Director of the State Water Board sent a letter to the Deputy Secretary of the Natural Resources Agency that summarized the results of the preliminary modeling of the proposed enhanced ecosystem alternative:

> "The State Water Board has been working with DWR to analyze an enhanced ecosystem protection alternative for the BDCP that results in reduced south of Delta diversions. Preliminary model results show that this alternative would result in increases to mean annual Delta outflow of approximately 1.6 million acre-feet per year for the February through June period at a cost of approximately 1.5 million acre-feet per year on average reduction in south of Delta diversions relative to the no action alternative. This alternative will allow DWR and other lead agencies, and the State Water Board to evaluate a sufficiently broad range of alternatives to inform their respective processes. As this enhanced ecosystem alternative results in a large negative water supply effect, it provides an alternative to the BDCP's preferred alternative that will assist in analyzing the project's effects. It is therefore useful to evaluate the tradeoffs that need be considered to achieve the two coequal goals required by the Delta Reform Act. Similar

ED_000733_DD_NSF_00006982-00063

to what the State Water Board is doing for the evaluation of San Joaquin River flow objectives, an evaluation of the water supply and economic effects of the enhanced ecosystem BDCP alternative would be useful for the Board's decision-making. Ideally this evaluation of the water supply and economic effects of the enhanced ecosystem alternative could be performed in conjunction with an analysis of the costs and effects of obtaining alternative water supplies."

The operational criteria for the Enhanced Spring Delta Outflow concept are presented in Table X-8.

X.9.4 Environmental Organizations Conveyance Operations Concepts

Following the completion of the 2010 Project Status Report, a consortium of environmental organizations (American River et al 2011) proposed three concepts (American Rivers et al 2011):

- A concept to (i) achieve Fall X2, protections in the South Delta, (ii) re-establish a more natural hydrograph during winter and spring months, and (iii) conduct reservoir operations to prevent unintended draw downs with a range of potential conveyance capacities. The operations would be similar to Scenario 6 with (i) Fall X2 as under the USFWS 2008 Biological Opinion (USFWS 2008), (ii) modifications to OMR flow criteria, (iii) proportional inflow bypasses from Shasta Lake, Folsom Lake, and Oroville Reservoir into the Sacramento River, and (iv)additional pulse flows in the late winter and through the spring to protect outmigrating fall run and spring run Chinook salmon. For the purposes of this document, this concept is referred to as the "Proportional North Delta Inflow Bypass Concept."
- Operations to provide Delta outflow as described in the State Water Resources Control Board Flow Recommendations for the Sacramento-San Joaquin Delta Ecosystem published in 2010 (State Water Board 2010b).
- Operations as described above under Scenario 6 with a conveyance capacity of 9,000 cfs.

X.9.4.1 Proportional North Delta Inflow Bypass Concept

This potential alternative was proposed in a letter from American Rivers and other environmental organizations (American Rivers et al 2011). The letter stated:

> "The first alternative includes criteria to achieve the fall X2 requirement, additional protections in the South Delta, reservoir bypass criteria to reestablish a more natural hydrograph during winter and spring months, and reservoir release off ramps to prevent unintended draw downs. Criteria for the North Delta diversion are similar to scenario 6, but will require additional pulse protection in the late winter and through the spring (e.g. an extension of the protections for winter run juveniles that were incorporated in previous operational alternatives) in order to protect outmigrating fall run and spring run Chinook salmon. Partial details for these criteria are provided in tables 1, 2 and 3..., but the North Delta diversion rules will need to be more fully described. These criteria should be modeled with a broad range of canal sizes ... to identify the optimal canal size for this operating regime."

The operational criteria included in "tables 1, 2, and 3" and other criteria are presented in Table X-9.

X.9.4.2 Conveyance Operations Concept based on the State Water Resources Control Board Flow Recommendations for the Sacramento-San Joaquin Delta Ecosystem

Another conveyance operations concept proposed by the consortium of environmental organizations (American River et al 2011) was based on the 2010 State Water Resources Control

ED_000733_DD_NSF_00006982-00064

Board flow recommendations for the Sacramento-San Joaquin Delta Ecosystem (State Water Board 2010).

In 2009, the State adopted SBX7 1, which requires the State Water Board to develop new flow criteria for the Delta ecosystem to protect public trust resources and a prioritized schedule to complete instream flow studies for the Delta and high priority streams in the Delta watershed as identified by DFG. In August 2010, the State Water Board completed the Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem (State Water Board 2010a and State Water Board 2010b). The final report presented flow criteria to protect the Delta and its ecological resources. This report provided an assessment of the flows needed to protect the Delta and its ecological resources, but does not address other public trust considerations. More specifically, as explained on page 3 of the final report,

> "[n]one of the determinations in this report have regulatory or adjudicatory effect. Any process with regulatory or adjudicative effect must take place through the State Water Board's water quality control planning, water rights processes, or public trust proceedings in conformance with applicable law. In the State Water Board's development of Delta flow objectives with regulatory effect, it must ensure the reasonable protection of beneficial uses, which may entail balancing of competing beneficial uses of water, including municipal and industrial uses, agricultural uses, and other environmental uses. The State Water Board's evaluation will include an analysis of the effect of any changed flow objectives on the environment in the watersheds in which Delta flows originate, the Delta, and the areas in which Delta water is used. It will also include an analysis of the economic impacts that result from changed flow objectives.
>
> Nothing in either the Delta Reform Act or in this report amends or otherwise affects the water rights of any person. In carrying out its water right responsibilities, the State Water Board may impose any conditions that in its judgment will best develop, conserve, and utilize in the public interest the water to be appropriated. In making this determination, the State Water Board considers the relative benefit to be derived from all beneficial uses of the water concerned and balances competing interests.
>
> The State Water Board has continuing authority over water right permits and licenses it issues. In the exercise of that authority and duty, the State Water Board may, if appropriate, amend terms and conditions of water right permits and licenses to impose further limitations on the diversion and use of water by the water right holder to protect public trust uses or to meet water quality and flow objectives in Water Quality Control Plans it has adopted. The State Water Board must provide notice to the water permit or license holder and an opportunity for hearing before it may amend a water right permit or license."

While informing the broader flow-standard-setting process, the report also underscores the importance to California of resolving future flow regime needs. SBX7 1 also stated that this report should be used to inform DWR in its preparation of environmental documentation for the BDCP. The flow criteria do not have regulatory effect but rather provide information to the State Water Resources Control Board that may be used in the development of future flow and water quality objectives and water rights decisions, including the ongoing Bay-Delta Plan Update and consideration for future BDCP permits and approvals. Although by statute State Water Board must consider its August 2010 flow recommendations at the point in time at which DWR and Reclamation seek to amend their existing water rights permits to include new authorized points of diversion, State Water Board's final August 2010 report makes it clear (on pages 3 and 4) that State Water Board's ultimate determinations regarding what Delta flow criteria to impose as part of such permit amendment must take into account a variety of factors, including ramifications for "all beneficial uses of water":

> "If the DWR and/or the USBR in the future request the State Water Board to amend the water

ED_000733_DD_NSF_00006982-00065

> right permits for the State Water Project (SWP) and/or the Central Valley Project (CVP) to move the authorized points of diversion for the projects from the southern Delta to the Sacramento River, Water Code section 85086 directs the State Water Board to include in any order approving a change in the point of the diversion of the projects appropriate Delta flow criteria.
>
> At that time, the State Water Board will determine appropriate permit terms and conditions. That decision will be informed by the analysis in this report, but will also take many other factors into consideration, including any newly developed scientific information, habitat conditions at the time, and other policies of the State, including the relative benefit to be derived from all beneficial uses of water. The flow criteria in this report are not pre-decisional in regard to any State Water Board action. (See, e.g., Wat. Code, § 85086, subd. (c)(1).)"

The phrase, "other policies of the state," as used above, presumably includes the coequal objective of "providing a more reliable water supply for California," as well as the codified water rights priority system that has been place in some form since not much after statehood. Elsewhere in its August 2010 final report, State Water Board emphasized ongoing parallel processes – beyond the scope of the BDCP – in which the water rights of entities other than DWR and Reclamation might be affected. On pages 14 and 15, State Water Board explained that it

> " has a number of ongoing proceedings that may be informed by the development of flow criteria. Some of these proceedings will result in regulatory requirements that affect flow, or otherwise affect the volume, quality, or timing of flows into, within, or out of the Delta. In July 2008, the State Water Board adopted a strategic work plan for actions to protect beneficial uses of the San Francisco Bay/Delta (Bay-Delta). In accordance with the work plan, the State Water Board recently completed a periodic review of the 2006 Water Quality Control Plan for the Bay-Delta Estuary (Bay-Delta Plan) that recommended the Delta Outflow objectives, as well as other flow objectives, for further review in the water quality control planning process. Currently, the State Water Board is in the process of reviewing the southern Delta salinity and the San Joaquin River flow objectives contained in the Bay-Delta Plan."

On page 17, the final report notes that the *water quality control planning* process will provide another regulatory venue independent of the BDCP in which the August 2010 Delta flow recommendation can be revisited with far more players than just DWR and Reclamation "at the table," so to speak:

> "SB 1 requires any order approving a change in the point of diversion of the State Water Project (SWP) or the Central Valley Project (CVP) from the southern Delta to a point on the Sacramento River to include appropriate flow criteria and to be informed by the analysis in this report. (Wat. Code, § 85086, subd. (c)(2).) The statute also specifies, however, that the criteria shall not be considered predecisional with respect to the State Water Board's subsequent consideration of a permit. (*Id.*, § 85086, subd. (c)(1).) Thus, any process with regulatory or adjudicative effect must take place through the State Water Board's *water quality control planning* or water rights processes in conformance with applicable law. Any person who wishes to introduce information produced during this informational proceeding, or the State Water Board's ultimate determinations in this report, into a later rulemaking or adjudicative proceeding must comply with the rules for submission of information or evidence applicable to that proceeding."

, Some initial modeling was conducted for the State Water Board in order to understand the impacts of the 2010 recommended flows. The Draft report published in July 2010 (State Water Board 2010a) included results of preliminary model runs. Due to the inability to consider a balanced approach for implementation of the recommended flows, though, the final report did not include the model results (State Water Board 2010b). Even so, however, the preliminary results could be informative to determine general approaches to achieve increased Delta outflows. The two modeled scenarios provided for net Delta outflow of 75 percent of a 14-day average unimpaired flow for January

ED_000733_DD_NSF_00006982-00066

through June and Fall X2 for September through November for wet and above normal years. One of the modeled scenarios also included estimated operations criteria for BDCP. Results of model runs indicated reductions in SWP and CVP water supplies and "end of September" reservoir storage in Trinity Lake, Shasta Lake, Oroville Reservoir and Folsom Lake in more years with the 2010 flow recommendations than under the baseline conditions (pages 178 - 191, State Water Board 2011a). The reduction in reservoir storage also resulted in an increased frequency of non-compliance with cold water storage in accordance with NMFS biological opinion requirements. It should be noted that these reductions would have become more severe if the model assumptions had not reduced agricultural water demands in the Sacramento Valley, including water demands of pre-1914 water rights holders, to reduce surface water diversions. Since these water rights holders are not applicants for the BDCP, these modeling assumptions do not represent a reasonable component of a BDCP action alternative. Reduced water diversions from these water rights holders cannot be feasibly accomplished through approval of the BDCP. The Lead Agencies therefore concluded that, absent reduced diversions by pre-1914 water rights holders, the adverse effects of cold water storage under a scenario based on the State Water Board's 2010 flow recommendation would be even worse than was predicted by the above-described modeling.

X.9.4.3 Scenario 6 Conveyance Operations Concept with Limited Dual Conveyance Facility Capacity of North Delta Intakes

Another conveyance operations concept proposed by the consortium of environmental organizations (American River et al 2011) was based on Scenario 6, as described in Subsection X.9.1 with a capacity of 9,000 cfs.

X.9.5 Contra Costa Water District Conveyance Operations Concept with Limited Dual Conveyance Facility Capacity

On February 2, 2011, Contra Costa Water District (CCWD 2011) submitted a letter to the Deputy Secretary of Natural Resources Agency identifying three key objectives towards resolving technical and policy issues the Delta ecosystem, water quality, and water supply reliability. The objectives included (i) providing assurances to in-Delta water users that water quality impacts will be mitigated; (ii) incorporating immediate and interim projects that address critical issues now, and will continue to provide benefits in the long-term; and (iii) reassessing the configuration of new facilities in the current draft BDCP. The new configuration addressed in the third objective was described in the following manner in the letter.

> "The 2009 legislative policy called for a reduction in reliance on the Delta in meeting California's future water supply needs (SBX7-1 85021). Nonetheless, some contractors have indicated they would not move forward with the project unless they can increase their water supply. Other BDCP participants oppose increasing water exports from the Delta. This disagreement must be addressed head-on before more money is wasted planning a project that either the contractors will not fund or the fishery agencies will not permit.
>
> A smaller conveyance facility (3 ,000 cfs instead of the 15,000 cfs now under consideration) appears to be the optimum solution based on the BDCP analysis and CCWD's own analysis, providing nearly the same water supply yield at half the cost of the larger facilities, and it allows the option to expand capacity later if necessary. The current BDCP studies show that 62% of the time, any capacity over 3,000 cfs is unused and unnecessary, and the full 15,000 cfs capacity is used only 1 % of the time ... The studies also make clear that the most pressing problem is extended droughts: there is more than a 30% chance of any year being dry or critically dry, and

ED_000733_DD_NSF_00006982-00067

> an isolated facility does nothing to change that or the water supply situation that results. Resolution of water supplies in dry years for fish and human activities is where the real focus should be: currently up to 80% of the water is removed from the system in dry years, and we still face severe shortages. It appears that incorporating storage is necessary to meet co-equal goals and would allow more water supplies to be captured in wet years, taking the stress off the ecosystem in dry years."

Subsequently, DWR staff consulted with the Contra Costa Water District staff and also determined that this operations concept also should include Fall X2 and modifications to the San Joaquin River Inflow/Export ratio in order to improve water quality and to reduce impacts to fish in the South Delta, in accordance with the first objective in their letter. The letter was commenting on results of preliminary model runs for the "January 2010 Operations" and, therefore, it was assumed that this concept would be based upon those operations criteria. Operations criteria for Limited Dual Conveyance Facility Concept is presented in Table X-10.

X.9.6 Range of Capacities for Conveyance Concepts

In addition to a range of conveyance alignments and operations, the State and federal agencies also addressed the need to consider a range of North Delta intake capacities. Initial modeling results indicated that there was limited difference between SWP and CVP water supply availability for Dual Conveyance concepts between 15,000 cfs and 12,000 cfs capacity at the North Delta intakes based upon the January 2010 BDCP Operations (BDCP 2010c). These results occurred because the reduction in diversion capacity in the North Delta could be replaced with increased diversions at the existing South Delta intakes. The differences between 15,000 cfs capacity at the North Delta intakes and 9,000 cfs and 6,000 cfs capacities also was minimal but greater than the difference with 12,000 cfs.

Therefore, the EIR/EIS lead agencies determined that a range of capacities should be considered for Dual Conveyance concepts that included North Delta intake capacities of 3,000 cfs, 6,000 cfs, 9,000 cfs, and 15,000 cfs. Based upon the preliminary modeling results for the January 2010 BDCP Operations (BDCP 2010c), it appeared that results for capacities of 6,000 cfs, 9,000 cfs, and 15,000 cfs would be similar for Dual Conveyance concepts because in general when diversions were limited at the North Delta intakes water could be diverted at the South Delta intakes. Therefore, based upon the preliminary information, it was determined that the range of concepts to be considered in the second screening should include the following Dual Conveyance concepts to provide a range of flow criteria.

- Dual Conveyance with 15,000 cfs capacity at the North Delta intakes with January 2010 BDCP Operations Concept
- Dual Conveyance with 15,000 cfs capacity at the North Delta intakes with Scenario 6 Concept
- Dual Conveyance with 6,000 cfs capacity at the North Delta intakes with January 2010 BDCP Operations Concept
- Dual Conveyance with 9,000 cfs capacity at the North Delta intakes with Scenario 6 Concept

The Enhanced Ecosystem Conveyance Operations Concept also could be evaluated at a range of capacities. It was determined that a middle range value of 9,000 cfs for the North Delta intakes would be considered for the second screening process for the Enhanced Ecosystem Operations, Modified Enhanced Ecosystem Operations, Scenario 7a, and State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem Operations. Taken together, this range of capacity options was determined to be sufficient to meet the directive in the Delta Reform Act that

ED_000733_DD_NSF_00006982-00068

the BDCP EIR, in order for the BDCP to be considered for automatic inclusion in the Delta Plan, include a "reasonable range of . . . rates of diversion." (Cal. Water Code Section 85320[b][2][A].)

Based upon the preliminary modeling results for the January 2010 BDCP Operations of the Isolated Conveyance Concept (BDCP 2010c), it appeared that the long-term average Delta exports for an Isolated Conveyance facility with capacities of 3,000 to 15,000 cfs would be less than for the No Action Alternative, as summarized below; and therefore would not necessarily meet the project objectives of the voluntary BDCP process.

- No Action Alternative (no Isolated Conveyance, continued use of Through Delta Conveyance) - 4.9 million acre-feet/year long-term average Delta exports
- 15,000 cfs Isolated Conveyance (no Through Delta Conveyance) - 4.5 million acre-feet/year long-term average Delta exports
- 12,000 cfs Isolated Conveyance (no Through Delta Conveyance) - 4.4 million acre-feet/year long-term average Delta exports
- 9,000 cfs Isolated Conveyance (no Through Delta Conveyance) - 3.8 million acre-feet/year long-term average Delta exports
- 6,000 cfs Isolated Conveyance (no Through Delta Conveyance) - 2.9 million acre-feet/year long-term average Delta exports
- 3,000 cfs Isolated Conveyance (no Through Delta Conveyance) - 1.7 million acre-feet/year long-term average Delta exports

Based upon this preliminary information, it was determined that it was not necessary to evaluate a range of North Delta intake capacities for the Isolated Conveyance concept for a reasonable range of alternatives.

The Through Delta Conveyance - Separate Corridors concept does not include facilities to reduce the amount of water to be conveyed from the Sacramento River to the South Delta intakes. Water would flow from the Sacramento River through Delta Cross Channel and Georgiana Slough by gravity through existing channels. Improvements to the channels and the diversion structures would be sized based upon existing channel capacity and not necessarily upon conveyance capacity, with the exception of improvements near Clifton Court. It was determined that maintaining the Through Delta Conveyance - Separate Corridors concept at the existing Through Delta capacity of 15,000 cfs would be more appropriate than construction of facilities to restrict the capacity of existing channels. Operational criteria for the Separate Corridors concept are presented in Table X-11.

ED_000733_DD_NSF_00006982-00069

X.10 Results of the Second Screening of Conveyance Concepts

As described in Subsection X.7, the EIR/EIS process considered the results of the initial screening of conveyance concept alignments. Subsequently, as described in Subsections X.8 and X.9, operational concepts were identified to be considered in the second screening process. The conveyance concepts identified in Subsection X.10 were compared to the First, Second, and Third Level Screening Criteria, consideration of the Delta Reform Act, and the responsiveness to comments related to conveyance concepts from responsible and cooperating agencies, as described in Subsection X.3.The results of this process are summarized in this subsection.

X.10.1 Range of Conveyance Alignment Concepts Identified through the Initial Screening Process

The EIR/EIS process considered the following conveyance alignment concepts identified through the initial screening process.

- **Dual Conveyance Alignment Concept A-** *Dual Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*
- **Dual Conveyance Alignment Concept B -** *Dual Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*
- **Dual Conveyance Alignment Concept C -** *Dual Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Continued Use of Existing South Delta Intakes*
- **Isolated Conveyance Alignment Concept A -** *Isolated Conveyance with a Tunnel between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*
- **Isolated Conveyance Alignment Concept B -** *Isolated Conveyance with a Lined or Unlined East Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*
- **Isolated Conveyance Alignment Concept C -** *Isolated Conveyance with a Lined or Unlined West Canal between North Delta Intakes and the SWP and CVP Pumping Plants, and Abandonment of Existing South Delta Intakes*
- **Through Delta Conveyance Alignment Concept -** *Separate Corridors*

X.10.2 Range of Conveyance Operations Concepts Combined with the Conveyance Alignment Concepts

As described in Subsections X.8 and X.9, the following range of conveyance operations concepts were identified for the conveyance alignment concepts. The concepts were combined to develop the following Delta Conveyance Concepts to be compared to the screening criteria and identify the final range of conveyance alternatives to be evaluated in detail in the EIR/EIS.

- **Dual Conveyance Concept 1A-** *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*

ED_000733_DD_NSF_00006982-00070

- **Dual Conveyance Concept 1B -** *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 1C -** *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 2A-** *Dual Conveyance with a Tunnel - Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 2B -** *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 2C -** *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 3A-** *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 3B -** *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 3C -** *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 4A-** *Dual Conveyance with a Tunnel - Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 4B -** *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 4C -** *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 5A-** *Dual Conveyance with a Tunnel - Limited Conveyance Operations Concept - January 2010 BDCP Operations and Fall X2 - 3,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 6A-** *Dual Conveyance with a Tunnel - Enhanced Ecosystem Concept - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 7A-** *Dual Conveyance with a Tunnel - Enhanced Spring Delta Outflow Concept - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 8A-** *Dual Conveyance with a Tunnel - Proportional North Delta Inflow Bypass Concept - 15,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 9A-** *Dual Conveyance with a Tunnel - State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem - 9,000 cfs North Delta Intake Capacity*
- **Isolated Conveyance Concept 1A -** *Isolated Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfsNorth Delta Intake Capacity*
- **Isolated Conveyance Concept 1B -** *Isolated Conveyance with a Lined or Unlined East Cana - January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Isolated Conveyance Concept 1C -** *Isolated Conveyance with a Lined or Unlined West Canal - January 2010 BDCP Operations - 15,000 cfsNorth Delta Intake Capacity*
- **Through Delta Conveyance Concept 1 -** *Separate Corridors Operations - 15,000 cfsNorth Delta Intake Capacity*

These concepts were compared to the screening criteria in a second screening process. The results of that process are described in the following subsection.

ED_000733_DD_NSF_00006982-00071

X.10.3 Results of the Second Screening of Conveyance Concepts

The results of that comparison are summarized in Tables X.12 through X.17 (located at the end of this appendix).

Based upon the results of the comparison of the Conveyance Concepts to the screening criteria, Dual Conveyance Concept 9A - *Dual Conveyance with a Tunnel - State Water Resources Control Board 2010 Flow Recommendations for Delta Ecosystem - 9,000 cfs North Delta Intake Capacity* - was eliminated from further analysis. This concept was eliminated because of the preliminary modeling results presented in a draft report by the State Water Board (State Water Board 2010a) that indicated the possibility of reductions in cold water pool storage in Trinity Lake, Shasta Lake, Oroville Reservoir, and Folsom Lake that would lead to increased levels of non-compliance with the NMFS Biological Opinion and adverse impacts to salmonids in the Sacramento and Feather rivers as compared to Existing Conditions or No Action Alternative. It is also noted that the preliminary model runs resulted in the possibility of these adverse impacts following the reduction of water available to pre-1914 water rights holders in the Sacramento River basin. This would have the potential to require changes in the legal Sacramento River water rights or water entitlements of third parties other than BDCP permit applicants that are beyond the scope of the regulatory authority of the agencies charged with considering approval of the proposed BDCP (including DFG that approves the NCCP and USFWS and NMFS that approve the HCP). In addition, the State Water Board specifically stated in the 2010 report (State Water Board 2010b) that the report provided an assessment of the flows needed to protect the Delta and its ecological resources, but does not address other public trust considerations. More specifically, the final report describes that "Any process with regulatory or adjudicative effect must take place through the State Water Board's water quality control planning, water rights processes, or public trust proceedings in conformance with applicable law." For these reasons, it was determined that, in addition to failing to meet the purpose and need for the BDCP, this alternative concept was likely to violate federal and state statutes or regulations and was not considered in a detail analysis in the EIR/EIS.

X.10.4 Identification of Conveyance Concepts with Similar Conveyance Facilities

As described in Subsections X.3.1.1 and X.3.1.2, the range of reasonable alternatives need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. The DOI NEPA regulations are more specific and provide that "when there are potentially a very large number of alternatives then a reasonable number of *examples* covering the full spectrum of reasonable alternatives" will suffice.

Based upon a review of the range of conveyance concepts, it was determined that the Conveyance Facilities for Dual Conveyance Concepts 1A through 1C and Dual Conveyance Concepts 2A through 2C would be identical to Conveyance Facilities for Dual Conveyance Concepts 3A through 3C and Dual Conveyance Concepts 4A through 4C except for the number of North Delta intakes. The footprint of disturbance for construction of a tunnel would be assumed to be the same for a range of North Delta intake capacities between 6,000 and 15,000 cfs. Similarly, the footprint of disturbance

ED_000733_DD_NSF_00006982-00072

for construction of a canal would be assumed to be the same for a range of North Delta intake capacities between 6,000 and 15,000 cfs. In addition, the North Delta intakes are anticipated to be identical between concepts with conveyance concepts using a tunnel, eastern canal, or western canal. Therefore, it was determined that results of detailed analyses of construction of conveyance facilities with an eastern canal or western canal for Dual Conveyance Concepts 1B through 1C and 2B through 2C would be adequate to disclose potential adverse impacts and benefits that could occur for Dual Conveyance Concepts 3B and 3C and 4B and 4C. Therefore, the following conveyance concepts were eliminated from further detailed analyses in the EIR/EIS.

- **Dual Conveyance Concept 3B -** *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
  - Potential impacts due to construction and operations of the North Delta and South Delta intakes will be the same as under Dual Conveyance Concept 3A
  - Potential impacts due to construction of the eastern canal will be the same as under Dual Conveyance Concept 1B
- **Dual Conveyance Concept 3C -** *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
  - Potential impacts due to construction and operations of the North Delta and South Delta intakes will be the same as under Dual Conveyance Concept 3A
  - Potential impacts due to construction of the western canal will be the same as under Dual Conveyance Concept 1C
- **Dual Conveyance Concept 4B -** *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
  - Potential impacts due to construction and operations of the North Delta and South Delta intakes will be the same as under Dual Conveyance Concept 4A
  - Potential impacts due to construction of the eastern canal will be the same as under Dual Conveyance Concept 1B
- **Dual Conveyance Concept 4C -** *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
  - Potential impacts due to construction and operations of the North Delta and South Delta intakes will be the same as under Dual Conveyance Concept 4A
  - Potential impacts due to construction of the western canal will be the same as under Dual Conveyance Concept 1C

X.10.5 Identification of Conveyance Concepts with Similar Conveyance Operations

In a similar manner as described in Subsection X.10.4, operations under the following conveyance concepts appear to be similar.

- **Dual Conveyance Concept 7A-** *Dual Conveyance with a Tunnel - Enhanced Spring Delta Outflow Concept - 9,000 cfs North Delta Intake Capacity*
- **Dual Conveyance Concept 8A** - *Dual Conveyance with a Tunnel - Proportional North Delta Inflow Bypass Concept - 15,000 cfs North Delta Intake Capacity*

Both of these concepts include methods to achieve Fall X2, provide additional protections for the South Delta as compared to the January 2010 Operations or Scenario 6, include reservoir releases to

ED_000733_DD_NSF_00006982-00073

achieve a more natural hydrograph as compared to Existing Conditions or No Action Alternative, include provisions to minimize reductions in cold water storage, and provide for additional Delta outflow as compared to Existing Conditions or No Action Alternative. Because the Proportional North Delta Inflow Bypass Concept (proposed, as noted above, by the consortium of environmental organizations) maybe more protective of the cold water pool due to the restrictions provided to reduce reservoir bypasses during periods of low storage, it is anticipated that the Enhanced Spring Delta Outflow Concept (proposed by the State Board) may result in lower Delta exports and more severe cold water pool storage reductions. Therefore, the Enhanced Spring Delta Outflow Concept will be evaluated in detail in the EIR/EIS as the "bookend" alternative with the most severe potential adverse impacts and less Delta exports of these two concepts.

Notably, the Proportional North Delta Inflow Bypass Concept is very similar to the Enhanced Spring Delta Outflow Concept, and would also function as either a low-end bookend or as an option close to the low end of the spectrum of potential alternatives.

X.10.6 Range of Conveyance Alternatives to be Evaluated in Detail in the EIR/EIS

Based upon the results of the screening analysis and consideration of similar conveyance concepts, as summarized in Tables X-18 and X-19, the final range of conveyance alternatives to be evaluated in the EIR/EIS is presented below. The conveyance alternatives have been renumbered to be consistent with information presented in the BDCP process.

- **Alternative 1A -** *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative 1B -** *Dual Conveyance with a Lined or Unlined East Canal January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative1C -** *Dual Conveyance with a Lined or Unlined West Canal January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative2A-** *Dual Conveyance with a Tunnel - Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative2B -** *Dual Conveyance with a Lined or Unlined East Canal Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative 2C -** *Dual Conveyance with a Lined or Unlined West Canal Scenario 6 Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative 3-** *Dual Conveyance with a Tunnel - January 2010 BDCP Operations - 6,000 cfs North Delta Intake Capacity*
- **Alternative4-** *Dual Conveyance with a Tunnel - Scenario 6 Operations - 9,000 cfs North Delta Intake Capacity*
- **Alternative 5-** *Dual Conveyance with a Tunnel - January 2010 BDCP Operations and Fall X2 - 3,000 cfs North Delta Intake Capacity*
- **Alternative 6A -** *Isolated Conveyance with a Tunnel - January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative 6B -** *Isolated Conveyance with a Lined or Unlined East Canal- January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*
- **Alternative 6C -** *Isolated Conveyance with a Lined or Unlined West Canal - January 2010 BDCP Operations - 15,000 cfs North Delta Intake Capacity*

ED_000733_DD_NSF_00006982-00074

- **Alternative 7 -** *Dual Conveyance with a Tunnel - Enhanced Ecosystem Operations - 9,000 cfs North Delta Intake Capacity*
- **Alternative 8 -** *Dual Conveyance with a Tunnel - Modified Enhanced Ecosystem Operations to Increase Delta Outflow per Scoping Comments from State Water Resources Control Board - 9,000 cfs North Delta Intake Capacity*
- **Alternative 9 -** *Through Delta Conveyance - Separate Corridors Operations - 15,000 cfs North Delta Intake Capacity*

X.11 References

American River et al 2011. American Rivers, The Bay Institute, Defenders of Wildlife, The Endangered Species Coalition, Environmental Defense Fund, Natural Resources Defense Council, The Nature Conservancy, and Planning and Conservation League, letter to Jerry Meral and David Nawi, 2011, August 23.

ASWPA 1976. Association of State Water Project Agencies, Sacramento-San Joaquin Delta - A Summary of Facts, 1976.

Bay Area Regional Desalination Project, Pilot Testing at Mallard Slough, Pilot Plan Engineering Report, Appendix F – Entrainment and Source Water Study Report, March 8, 2007.

BDCP 2007a. Bay Delta Conservation Plan Steering Committee, Conservation Strategy Options Evaluation Report, 2007, September 17.

BDCP 2007b. Bay Delta Conservation Plan Steering Committee, Preliminary Conceptual Conservation Strategy Alternatives and BDCP Conservation Strategy Workgroup Presentation, 2007, February 26.

BDCP 2007c. Bay Delta Conservation Plan Steering Committee, Descriptions - Conservation Strategy Alternatives, 2007, March 5.

BDCP 2007d. Bay Delta Conservation Plan Steering Committee, Handout 2, 2007, April 9.

BDCP 2007e. Bay Delta Conservation Plan Steering Committee, Handout 1, 2007, April 24.

BDCP 2007f. Bay Delta Conservation Plan Steering Committee, BDCP Points of Agreement for Continuing into the Planning Process, 2007, November 16.

BDCP 2007g. Bay Delta Conservation Plan Steering Committee, Draft Bay Delta Conservation Plan Framework (October 29, 2007), Intro & Descriptions Sections Only_102907 Handout, 2007, November 2.

BDCP 2008. Bay Delta Conservation Plan Steering Committee, Draft An Overview of the Conservation Strategy for the Bay Delta Conservation Plan, 2008, December 12.

BDCP 2009a. Bay Delta Conservation Plan Steering Committee, Sacramento River Deep Water Ship Channel Conveyance, 2009, January 14.

BDCP 2009b. Bay Delta Conservation Plan Steering Committee,Sacramento River Deep Water Ship Channel Conveyance, 2009, April 15.

BDCP 2009c. Bay Delta Conservation Plan Steering Committee, Overview of the Draft Conservation

ED_000733_DD_NSF_00006982-00075

Strategy for the Bay Delta Conservation Plan, 2009, January 12.

BDCP 2009d. Bay Delta Conservation Plan Steering Committee, DRERIP Evaluation of BDCP Draft Conservation Measures, 2009, May 8.

BDCP 2010a. Bay Delta Conservation Plan Steering Committee, Changes in BDCP Conservation Measures from July 2009 Draft Chapter 3 Conservation Strategy as agreed to by Steering Committee at January 29, 2010, 2010, February 9.

BDCP 2010b. Bay Delta Conservation Plan Steering Committee, Progress Report on the Bay Delta Conservation Plan, April 28, 2006 - November 18, 2010, 2010.

BDCP 2010c. Bay Delta Conservation Plan Steering Committee, New Delta Conveyance Analysis of Tunnel Sizing Informational Briefing Only, 2010, July 1.

CALFED 1997a. CALFED Bay-Delta Program, Phase II Alternative Descriptions, 1997.

CALFED 1997b. CALFED Bay-Delta Program, Alternative Narrowing Process, Alternative 3G, 1997, July 28.

CALFED 1997c. CALFED Bay-Delta Program, Review of the Decision Process, 1997, October 16.

CALFED 2000a. CALFED Bay-Delta Program, Programmatic Record of Decision, 2000, August 28.

CCWD 2011. Contra Costa Water District, Letter to Gerald H. Meral from Gregory Gartrell, 2011, February 2.

CSIA 1919. California State Irrigation Association, Irrigation of Twelve Million Acres in the Valley of California - California's Greatest Opportunity - Reclaiming an Empire the Valley of California, Colonel Robert Bradford Marshall, 1919.

DWR, DFG, Reclamation, USFWS, and NMFS 2011. California Department of Water Resources, California Department of Fish and Game, federal Bureau of Reclamation, U.S. Fish and Wildlife Service, and National Marine Fisheries Service, Rationale for Five Agency Proposed Alternative BDCP Initial Project Operations Criteria, 2011, May 18.

DPW 1930. California Department of Public Works, Bulletin No. 25, Report to Legislature of 1931 on State Water Plan, 1930.

DWR 1957a. California Department of Water Resources, Bulletin No. 3 California Water Plan, 1957.

DWR 1957b. California Department of Water Resources, Bulletin No. 60, Interim Report to the California State Legislature on the Salinity Control Barrier Investigation, 1957.

DWR 1960. California Department of Water Resources, Preliminary Edition of Bulletin 76, Delta Water Facilities, 1960.

DWR 1965. California Department of Water Resources, Peripheral Canal, Geologic Investigation, 1965.

DWR 1970. California Department of Water Resources, Peripheral Canal Summary of Geologic Investigation, 1970.

DWR 1974. California Department of Water Resources, Summary of the Draft Environmental Impact Report, Peripheral Canal Project, 1974.

ED_000733_DD_NSF_00006982-00076

DWR 1978. California Department of Water Resources, Delta Water Facilities, Program for: Delta Protection and Water Transfer, Water Conservation, Water Recycling, and Surface and Ground Water Storage, Bulletin 76-78, 1978, July.

DWR 1983. California Department of Water Resources, Alternatives for Delta Water Transfer, 1983, November.

DWR 1990, California Department of Water Resources, Draft Environmental Impact Report, Environmental Impact Statement, South Delta Water Management Program, Phase I of the Water Banking Program, Executive Summary, 1990, June.

DWR 2000, California Department of Water Resources, Proposed Mitigated Negative Declaration and Initial Study, Temporary Barriers Project 2001-2007, 2000, December.

DWR 2001. California Department of Water Resources, Sacramento Deep Water Ship Channel Locks Fish Passage Study, 2001, March 27.

DWR 2005, California Department of Water Resources, South-Delta Fish Facilities Forum Co-Chair's Report: Some Policy Conclusions, 2005, April 5.

DWR 2007. California Department of Water Resources, Delta Risk Management Strategy (DRMS) Phase 1, Technical Memorandum: Topical Area – Seismology, 2007.

DWR 2008. California Department of Water Resources, Environmental Impact Report and Environmental Impact Statement for the Bay Delta Conservation Plan, 2008, March 17.

DWR 2009a. California Department of Water Resources, Revised Notice of Preparation of Environmental Impact Report and Environmental Impact Statement for the Bay Delta Conservation Plan, State Clearinghouse Number 2008032062, 2009, February 13.

DWR 2009b. California Department of Water Resources, Sacramento River Deep Water Ship Channel Conveyance Presentation to BDCP Steering Committee January 14, 2009, 2009.

DWR 2009c. California Department of Water Resources, Low-Flow Intake Technical Analysis, 2009, December.

DWR 2009d, California Department of Water Resources, Quantification of Pre-Screen Loss of Juvenile Steelhead in Clifton Court Forebay, 2009, March.

DWR 2009e. California Department of Water Resources, Conceptual Engineering Report, Through Delta Facility Conveyance Option, 2009, November 30.

DWR 2009f. California Department of Water Resources, Conceptual Engineering Report, Isolated Conveyance Facility East Option, 2009, November 18.

DWR 2009g. California Department of Water Resources, Conceptual Engineering Report, Isolated Conveyance Facility West Option, 2009, November 25.

DWR 2009h. California Department of Water Resources, Conceptual Engineering Report, Isolated Conveyance Facility All Tunnel Option, 2009, November 9.

DWR 2009f. California Department of Water Resources, Conceptual Engineering Report, Dual Conveyance Facility with Isolated Conveyance Facility East Component and Through Delta Facility Component, 2009, November 25.

ED_000733_DD_NSF_00006982-00077

DWR 2010a. California Department of Water Resources, Release Site Predation Study, 2010, May.

DWR 2010b. California Department of Water Resources, Evaluation of Mortality and Injury in a Fish Release Pipe, July 2010.

DWR 2011. California Department of Water Resources, correspondence to National Marine Fisheries Service, 2011, May 1.

DWR, USFWS, NMFS, Reclamation 2010. California Department of Water Resources, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and federal Bureau of Reclamation, Scoping Report, Bay Delta Conservation Plan Environmental Impact Report/Environmental Impact Statement, 2010, March.

EBMUD 2010. East Bay Municipal Utility District, Memorandum from David Fee to Hasan Abudullah, Bay Area Regional Desalination Project, Existing Facilities Evaluation Task 3 Submittal: Facility Scenarios FINAL, 2010, March 24.

IDC 1963. Interagency Delta Committee, Coordination of Delta Planning, 1963.

MWD 2007. Metropolitan Water District of Southern California, CALFED Science Program Workshops, Science Issues Relating to Delta Conveyance Infrastructure, Design and Operations Issues, 2007.

NMFS 2009. National Marine Fisheries Service, Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project, 2009, June 4.

NMFS 2012, National Marine Fisheries Service, correspondence to California Department of Water Resources, 2012, July 2.

SDWA 2007. South Delta Water Agency, Submittal to Delta Vision Blue Ribbon Task Force, 2007, November 9.

SDWA 2009. South Delta Water Agency, The Delta Corridors Plan and Its Potential Benefits, 2009.

State Water Board 2000. State Water Resources Control Board, Revised Water Right Decision 1641, 2000, March 15.

State Water Board 2008. State Water Resources Control Board, Letter to Delores Brown from Dorothy Rice, 2008, May 30.

State Water Board 2009. State Water Resources Control Board, Letter to Delores Brown from Dorothy Rice, 2009, May 15.

State Water Board 2010a. State Water Resources Control Board, DRAFT- Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem, 2010, July 20.

State Water Board 2010b. State Water Resources Control Board, Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem, 2010, August 3.

State Water Board 2011a. State Water Resources Control Board, Letter to Gerald H. Meral from Thomas Howard, 2011, April 19.

State Water Board 2011b. State Water Resources Control Board, Letter to Gerald H. Meral from Thomas Howard, 2011, April 19.

ED_000733_DD_NSF_00006982-00078

State Water Board 2011c. State Water Resources Control Board, Letter to Gerald H. Meral from Thomas Howard, 2011, December 19.

USFWS 2008. U.S. Fish and Wildlife Service, Formal Endangered Species Act Consultation on the Proposed Coordinated Operations of the Central Valley Project and State Water Project, 2008, December 15.

USFWS, NMFS, Reclamation 2008. U.S. Fish and Wildlife Service, National Marine Fisheries Service, and federal Bureau of Reclamation, Notice of Intent to prepare an Environmental Impact Statement/Environmental Impact Report and notice of public scoping meetings, Bay Delta Conservation Plan for the Sacramento-San Joaquin Delta, 2008, April 15.

USFWS, NMFS, Reclamation 2009. U.S. Fish and Wildlife Service, National Marine Fisheries Service, and federal Bureau of Reclamation, Notice of Intent to prepare an Environmental Impact Statement/Environmental Impact Report and notice of public scoping meetings, Bay Delta Conservation Plan for the Sacramento-San Joaquin Delta, 2009, February 13.

WACO 2012. Water Advisory Committee of Orange County letter to California Department of Water Resources, 2012, May 22.

ED_000733_DD_NSF_00006982-00079

X.12 Attachments

Bay Delta Conservation Plan Steering Committee, Conservation Strategy Options Evaluation Report, 2007.

Bay Delta Conservation Plan Steering Committee, BDCP Points of Agreement for Continuing into the Planning Process, 2007.

Bay Delta Conservation Plan Steering Committee, Evaluation of North Delta Intake Locations, July 29, 2010

Bay Delta Conservation Plan Steering Committee, Progress Report on the Bay Delta Conservation Plan, April 28, 2006 - November 18, 2010, 2010.

California Department of Water Resources, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and U.S. Bureau of Reclamation, Scoping Report, Bay Delta Conservation Plan Environmental Impact Report/Environmental Impact Statement, 2010.

California Department of Water Resources, California Department of Fish and Game, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and U.S. Bureau of Reclamation See Rationale for Five Agency Proposed Alternative BDCP Initial Project Operations Criteria, May 18, 2011 Working Draft.

ED_000733_DD_NSF_00006982-00080

To: CN=Tim Vendlinski/OU=R9/O=USEPA/C=US@EPA;CN=Sam Ziegler/OU=R9/O=USEPA/C=US@EPA;CN=Stephanie Skophammer/OU=R9/O=USEPA/C=US@EPA;CN=Erin Foresman/OU=R9/O=USEPA/C=US@EPA[]; N=Sam Ziegler/OU=R9/O=USEPA/C=US@EPA;CN=Stephanie Skophammer/OU=R9/O=USEPA/C=US@EPA;CN=Erin Foresman/OU=R9/O=USEPA/C=US@EPA[]; N=Stephanie Skophammer/OU=R9/O=USEPA/C=US@EPA;CN=Erin Foresman/OU=R9/O=USEPA/C=US@EPA[]; N=Erin Foresman/OU=R9/O=USEPA/C=US@EPA[]
Cc: []
Bcc: []
From: CN=Tom Hagler/OU=R9/O=USEPA/C=US
Sent: Tue 2/5/2013 10:17:55 PM
Subject: Exchange of Corps and DOI over Corps Briefing Paper Discussion of BDCP Purpose

----- Forwarded by Tom Hagler/R9/USEPA/US on 02/05/2013 02:16 PM -----

From: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
To: David Nawi <david_nawi@ios.doi.gov>,
Cc: Erin Foresman/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA, "Clark, Susan S SPK" <Susan.S.Clark@usace.army.mil>, "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>, Lori Rinek <lori_rinek@fws.gov>, Patricia Idlof <pidlof@usbr.gov>, Maria Rea <Maria.Rea@noaa.gov>, Michael Tucker <Michael.Tucker@noaa.gov>
Date: 01/30/2013 02:34 PM
Subject: RE: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Actually, I'd say it's not significant. The briefing paper was to convey schedule information, and the background was intended to be short, and intended to jog the memory of what the BDCP was. The statement in the DEIS is part of the purpose statement which is used as a screening criteria of alternatives. The nuances of water contracts and analysis of alternatives was not a subject of the briefing memo.

I will highlight that paragraph to make sure not to use it in a subsequent briefing memo. Thanks

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
(916) 557-7262
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: David Nawi [mailto:david_nawi@ios.doi.gov]
Sent: Wednesday, January 30, 2013 2:16 PM
To: Nepstad, Michael G SPK
Cc: Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Clark, Susan S SPK; Jewell, Michael S SPK; Lori Rinek; Patricia Idlof; Maria Rea; Michael Tucker
Subject: RE: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Mike - Some of the language regarding the purpose of the BDCP in the briefing paper you forwarded seems inconsistent with the language that was agreed to by the lead agencies for the DEIS/R. The language is significant and was the subject of much back and forth among the agencies. The Corps briefing paper states:

The Bay Delta Conservation Plan (BDCP) is a Habitat Conservation Plan (HCP) being developed to promote the recovery of endangered, threatened and sensitive fish and wildlife species and their habitats in the Sacramento-San Joaquin Delta in a way that will also restore water exports to amounts at or above those prior to the collapse of Delta fisheries.

The language in the DEIS reads:

3. Restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority, and other existing applicable agreements.

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento-San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase-restore and protect the ability of the SWP and CVP to deliver up to full contract amounts-is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the use of "up to full contract amounts," alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

This is something that merits discussion when we meet tomorrow.

David

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Tuesday, January 29, 2013 3:14 PM
To: Nawi, David
Cc: Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Clark, Susan S SPK
Subject: FW: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Sir, attached is a simple status briefing paper on the BDCP and three related projects as an FYI,

Thanks

Michael G. Nepstad

Deputy Chief, Regulatory Division

US Army Corps of Engineers, Sacramento District

1325 J Street, Room 1350

Sacramento, California 95814-2922

(916) 557-7262

michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:

http://per2.nwp.usace.army.mil/survey.html

ED_000733_DD_NSF_00008523-00003

* Need information on the Regulatory Program? Visit our website:

http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----

From: Nepstad, Michael G SPK

Sent: Tuesday, January 29, 2013 3:09 PM

To: Leady, William J COL SPK; Smith, Charles R CIV (US); Berresford, Karen G SPD; Townsley, Edwin S SPD

Cc: Olsen, Randy P SPK; Nagy, Meegan G SPK; Riley, Adam A SPK; Clark, Susan S SPK; Jewell, Michael S SPK; Dadey, Kathleen A SPK; Toland, Tanis J SPK

Subject: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Sirs,

Attached is a status briefing of SPK-RDs involvement in the BDCP.

SPK staff continues to maintain a continuing and ongoing involvement in the BDCP process at all levels.

SPK cannot say for certain that we do or do not have permitting issues with the BDCP due to lack of site specific information.

SPK anticipates receiving the Administrative Draft EIS for the BDCP in early February 2013.

Michael G. Nepstad

Deputy Chief, Regulatory Division

US Army Corps of Engineers, Sacramento District

1325 J Street, Room 1350

Sacramento, California 95814-2922

(916) 557-7262

michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:

http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:

http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

ED_000733_DD_NSF_00008523-00005

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

To: CN=Tom Hagler/OU=R9/O=USEPA/C=US@EPA[]
Cc: []
From: CN=Tim Vendlinski/OU=R9/O=USEPA/C=US
Sent: Wed 2/6/2013 10:29:22 PM
Subject: Re: Exchange of Corps and DOI over Corps Briefing Paper Discussion of BDCP Purpose

Thanks, Tom.
It's disturbing to read both the purpose statements and the disfunctional dialogue b/w the Corps and DOI.

From: Tom Hagler/R9/USEPA/US
To: Tim Vendlinski/R9/USEPA/US@EPA, Sam Ziegler/R9/USEPA/US@EPA, Stephanie Skophammer/R9/USEPA/US@EPA, Erin Foresman/R9/USEPA/US@EPA,
Date: 02/05/2013 02:17 PM
Subject: Exchange of Corps and DOI over Corps Briefing Paper Discussion of BDCP Purpose

----- Forwarded by Tom Hagler/R9/USEPA/US on 02/05/2013 02:16 PM -----

From: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
To: David Nawi <david_nawi@ios.doi.gov>,
Cc: Erin Foresman/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA, "Clark, Susan S SPK" <Susan.S.Clark@usace.army.mil>, "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>, Lori Rinek <lori_rinek@fws.gov>, Patricia Idlof <pidlof@usbr.gov>, Maria Rea <Maria.Rea@noaa.gov>, Michael Tucker <Michael.Tucker@noaa.gov>
Date: 01/30/2013 02:34 PM
Subject: RE: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Actually, I'd say it's not significant. The briefing paper was to convey schedule information, and the background was intended to be short, and intended to jog the memory of what the BDCP was. The statement in the DEIS is part of the purpose statement which is used as a screening criteria of alternatives. The nuances of water contracts and analysis of alternatives was not a subject of the briefing memo.

I will highlight that paragraph to make sure not to use it in a subsequent briefing memo. Thanks

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
(916) 557-7262
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:

http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: David Nawi [mailto:david_nawi@ios.doi.gov]
Sent: Wednesday, January 30, 2013 2:16 PM
To: Nepstad, Michael G SPK
Cc: Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Clark, Susan S SPK; Jewell, Michael S SPK; Lori Rinek; Patricia Idlof; Maria Rea; Michael Tucker
Subject: RE: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Mike - Some of the language regarding the purpose of the BDCP in the briefing paper you forwarded seems inconsistent with the language that was agreed to by the lead agencies for the DEIS/R. The language is significant and was the subject of much back and forth among the agencies. The Corps briefing paper states:

The Bay Delta Conservation Plan (BDCP) is a Habitat Conservation Plan (HCP) being developed to promote the recovery of endangered, threatened and sensitive fish and wildlife species and their habitats in the Sacramento-San Joaquin Delta in a way that will also restore water exports to amounts at or above those prior to the collapse of Delta fisheries.

The language in the DEIS reads:

3. Restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority, and other existing applicable agreements.

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento-San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase-restore and protect the ability of the SWP and CVP to deliver up to full contract amounts-is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the use of "up to full contract amounts," alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

This is something that merits discussion when we meet tomorrow.

David

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Tuesday, January 29, 2013 3:14 PM
To: Nawi, David
Cc: Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Clark, Susan S SPK
Subject: FW: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Sir, attached is a simple status briefing paper on the BDCP and three related projects as an FYI,

Thanks

Michael G. Nepstad

Deputy Chief, Regulatory Division

US Army Corps of Engineers, Sacramento District

1325 J Street, Room 1350

Sacramento, California 95814-2922

(916) 557-7262

michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:

ED_000733_DD_NSF_00008532-00003

http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:

http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----

From: Nepstad, Michael G SPK

Sent: Tuesday, January 29, 2013 3:09 PM

To: Leady, William J COL SPK; Smith, Charles R CIV (US); Berresford, Karen G SPD; Townsley, Edwin S SPD

Cc: Olsen, Randy P SPK; Nagy, Meegan G SPK; Riley, Adam A SPK; Clark, Susan S SPK; Jewell, Michael S SPK; Dadey, Kathleen A SPK; Toland, Tanis J SPK

Subject: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Sirs,

Attached is a status briefing of SPK-RDs involvement in the BDCP.

SPK staff continues to maintain a continuing and ongoing involvement in the BDCP process at all levels.

SPK cannot say for certain that we do or do not have permitting issues with the BDCP due to lack of site specific information.

SPK anticipates receiving the Administrative Draft EIS for the BDCP in early February 2013.

Michael G. Nepstad

Deputy Chief, Regulatory Division

US Army Corps of Engineers, Sacramento District

1325 J Street, Room 1350

Sacramento, California 95814-2922

(916) 557-7262

michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:

http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:

http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

ED_000733_DD_NSF_00008532-00005

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

To: CN=Tim Vendlinski/OU=R9/O=USEPA/C=US@EPA[]
Cc: []
Bcc: []
From: CN=Tom Hagler/OU=R9/O=USEPA/C=US
Sent: Wed 2/6/2013 10:40:40 PM
Subject: Re: Exchange of Corps and DOI over Corps Briefing Paper Discussion of BDCP Purpose

Luckily, this is only Corps and DOI. When you add Mark to the mix, you can see why we are 7 years into this process and still arguing about project purpose.

****
****

Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415) 972-3945
Email: hagler.tom@epamail.epa.gov

From: Tim Vendlinski/R9/USEPA/US
To: Tom Hagler/R9/USEPA/US@EPA,
Date: 02/06/2013 02:29 PM
Subject: Re: Exchange of Corps and DOI over Corps Briefing Paper Discussion of BDCP Purpose

Thanks, Tom.
It's disturbing to read both the purpose statements and the disfunctional dialogue b/w the Corps and DOI.

From: Tom Hagler/R9/USEPA/US
To: Tim Vendlinski/R9/USEPA/US@EPA, Sam Ziegler/R9/USEPA/US@EPA, Stephanie Skophammer/R9/USEPA/US@EPA, Erin Foresman/R9/USEPA/US@EPA,
Date: 02/05/2013 02:17 PM
Subject: Exchange of Corps and DOI over Corps Briefing Paper Discussion of BDCP Purpose

----- Forwarded by Tom Hagler/R9/USEPA/US on 02/05/2013 02:16 PM -----

From: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
To: David Nawi <david_nawi@ios.doi.gov>,
Cc: Erin Foresman/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA, "Clark, Susan S SPK" <Susan.S.Clark@usace.army.mil>, "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>, Lori Rinek <lori_rinek@fws.gov>, Patricia Idlof <pidlof@usbr.gov>, Maria Rea <Maria.Rea@noaa.gov>, Michael Tucker <Michael.Tucker@noaa.gov>

ED_000733_DD_NSF_00008535-00001

Date: 01/30/2013 02:34 PM
Subject: RE: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Actually, I'd say it's not significant. The briefing paper was to convey schedule information, and the background was intended to be short, and intended to jog the memory of what the BDCP was. The statement in the DEIS is part of the purpose statement which is used as a screening criteria of alternatives. The nuances of water contracts and analysis of alternatives was not a subject of the briefing memo.

I will highlight that paragraph to make sure not to use it in a subsequent briefing memo. Thanks

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
(916) 557-7262
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: David Nawi [mailto:david_nawi@ios.doi.gov]
Sent: Wednesday, January 30, 2013 2:16 PM
To: Nepstad, Michael G SPK
Cc: Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Clark, Susan S SPK; Jewell, Michael S SPK; Lori Rinek; Patricia Idlof; Maria Rea; Michael Tucker
Subject: RE: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Mike - Some of the language regarding the purpose of the BDCP in the briefing paper you forwarded seems inconsistent with the language that was agreed to by the lead agencies for the DEIS/R. The language is significant and was the subject of much back and forth among the agencies. The Corps briefing paper states:

The Bay Delta Conservation Plan (BDCP) is a Habitat Conservation Plan (HCP) being developed to promote the recovery of endangered, threatened and sensitive fish and wildlife species and their habitats in the Sacramento-San Joaquin Delta in a way that will also restore water exports to amounts at or above those prior to the collapse

of Delta fisheries.

The language in the DEIS reads:

3. Restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority, and other existing applicable agreements.

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento-San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase-restore and protect the ability of the SWP and CVP to deliver up to full contract amounts-is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the use of "up to full contract amounts," alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

This is something that merits discussion when we meet tomorrow.

David

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Tuesday, January 29, 2013 3:14 PM
To: Nawi, David
Cc: Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Clark, Susan S SPK
Subject: FW: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Sir, attached is a simple status briefing paper on the BDCP and three related projects as an FYI,

Thanks

Michael G. Nepstad

Deputy Chief, Regulatory Division

US Army Corps of Engineers, Sacramento District

1325 J Street, Room 1350

Sacramento, California 95814-2922

(916) 557-7262

michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:

http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:

http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----

From: Nepstad, Michael G SPK

ED_000733_DD_NSF_00008535-00004

Sent: Tuesday, January 29, 2013 3:09 PM

To: Leady, William J COL SPK; Smith, Charles R CIV (US); Berresford, Karen G SPD; Townsley, Edwin S SPD

Cc: Olsen, Randy P SPK; Nagy, Meegan G SPK; Riley, Adam A SPK; Clark, Susan S SPK; Jewell, Michael S SPK; Dadey, Kathleen A SPK; Toland, Tanis J SPK

Subject: Attached is a status briefing of SPK-RDs involvement in the BDCP. (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Sirs,

Attached is a status briefing of SPK-RDs involvement in the BDCP.

SPK staff continues to maintain a continuing and ongoing involvement in the BDCP process at all levels.

SPK cannot say for certain that we do or do not have permitting issues with the BDCP due to lack of site specific information.

SPK anticipates receiving the Administrative Draft EIS for the BDCP in early February 2013.

Michael G. Nepstad

Deputy Chief, Regulatory Division

US Army Corps of Engineers, Sacramento District

1325 J Street, Room 1350

Sacramento, California 95814-2922

(916) 557-7262

michael.g.nepstad@usace.army.mil

ED_000733_DD_NSF_00008535-00005

* We want your feedback! Take the survey:

http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:

http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00008535-00006

To: hagler.tom@epa.gov[]
Cc: []
Bcc: []
From: CN=Tom Hagler/OU=R9/O=USEPA/C=US
Sent: Wed 10/29/2014 5:04:49 PM
Subject: Fw: Section 404 Meeting (UNCLASSIFIED)

****
****

Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415) 972-3945
Email: hagler.tom@epamail.epa.gov
----- Forwarded by Tom Hagler/R9/USEPA/US on 10/29/2014 10:04 AM -----

From: Karen Schwinn/R9/USEPA/US
To: "Nawi, David" <David_Nawi@ios.doi.gov>,
Cc: "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>
Date: 03/16/2012 04:27 PM
Subject: RE: Section 404 Meeting (UNCLASSIFIED)

I think David states the status accurately. I noted my understanding on each of David's questions below (in red).

I think we could have a more substantive conversation after we'd all had a chance to review the relevant pierces of the draft DEIS. But I'm happy to talk in the interim as well. Thanks. - Karen

~~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~~

From: "Nawi, David" <David_Nawi@ios.doi.gov>

To: "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>
Cc: Karen Schwinn/R9/USEPA/US@EPA
Date: 03/16/2012 08:55 AM
Subject: RE: Section 404 Meeting (UNCLASSIFIED)

Paul - Waiting for Mike Jewelll seems wise. Let's see what we can do for the following week.

Based on what I know - and as you know I have not been intimately involved - I believe we need a clear common understanding on the federal side that we can then discuss with DWR of how section 404 permitting fits into the BDCP EIS/EIR. I believe that the BDCP EIS is intended to serve as the project specific NEPA document for USACE permitting of the conveyance facility. If there is agreement on that fundamental point, we then need to address

- the process and timing to accomplish this - when will a project description for the conveyance for Corps purposes under NEPA be needed/ available; the applicant can submit a 404 permit application to the Corps whenever they want. Seems like the sooner they do, the sooner the Corps can determine "the basic and overall project purpose".

- what if any added elements will be required for the NEPA analysis to meet Corps needs (e.g., LEDPA analysis); We defer to the Corps on determining what they need for their NEPA compliance, and note that they will have broader information needs.

- role of lead agencies working with USACE and DWR to bring this all together; not our issue

- permitting MOU - are we going to proceed without one, and if so what will the process and timing be for moving forward; I'm assuming no MOU.....But as we review the draft EIR/S, I hope to provide feedback on where we believe additional information/detail will be needed for 404 permitting, and where we are ok. This would encompass those milestones that were originally in the draft NEPA/404 MOU. We plan to coordinate these comments with the Corps, same as we would've if we were operating under an MOU.

- and last, perhaps an understanding of how section 408 permitting will be addressed. no EPA role here

I am taking the liberty of copying Karen, who can likely correct or add to the above.

I hope this helps, and I would be glad to discuss with you at your convenience.

David

From: Robershotte, Paul J SPD [Paul.J.Robershotte@usace.army.mil]
Sent: Friday, March 16, 2012 6:43 AM
To: Nawi, David
Subject: Re: Section 404 Meeting (UNCLASSIFIED)

David
Yes, it would be good to wait for Jewell. What would also help is understanding what the issue is. I may not see the situation the same way as my Federal brethren and if you could share their take on the situation, it would help a lot.
Thanks
Paul

----- Original Message -----

From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, March 15, 2012 03:34 PM
To: Robershotte, Paul J SPD
Cc: Karen Schwinn <Schwinn.Karen@epamail.epa.gov>
Subject: FW: Section 404 Meeting (UNCLASSIFIED)

Paul - Do you prefer to await Mike Jewell's return to have this meeting? I understand that it is not time critical, so that moving the meeting until the following week would be OK.

Please let me know - it's your call.

Thanks.

David
-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Thursday, March 15, 2012 2:54 PM
To: Nawi, David; Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Robershotte, Paul J SPD; Jewell, Michael S SPK; Monroe, Jim; Foresman.Erin@epamail.epa.gov
Subject: RE: Section 404 Meeting (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Either time works for me. Michael Jewell is out for that entire week

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
(916) 557-7262 Fax:(916) 930-9506
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, March 15, 2012 1:29 PM
To: Nawi, David; Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov;

Robershotte, Paul J SPD; Jewell, Michael S SPK; Nepstad, Michael G SPK;
Monroe, Jim; Foresman.Erin@epamail.epa.gov
Subject: RE: Section 404 Meeting

Based on Paul's schedule, can we do this call/meeting at 1:30 p.m. on Tuesday
march 20?

From: Nawi, David
Sent: Thursday, March 15, 2012 12:17 PM
To: Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Robershotte,
Paul J SPD; michael.s.jewell@usace.army.mil; Nepstad, Michael G SPK; Monroe,
Jim
Subject: Section 404 Meeting

Based on the discussion at the federal coordination meeting this morning, it
appears that we would benefit from a meeting/conference call to clarify
where we are in terms of 404 permitting and the BDCP NEPA document. Once we
come to a common understanding, I believe the next step would be to engage
DWR to see if we can all be on the same page. Would next Tuesday, March 20
at 10:00 a.m. work?

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00009195-00004

To:
Dan_Castleberry@fws.gov;Russ.Strach@noaa.gov;Melanie.Rowland@noaa.gov;Mary_Grim@fws.gov[]; uss.Strach@noaa.gov;Melanie.Rowland@noaa.gov;Mary_Grim@fws.gov[]; elanie.Rowland@noaa.gov;Mary_Grim@fws.gov[]; ary_Grim@fws.gov[]
Cc: Tom Hagler/R9/USEPA/US@EPA;Lisa.H.Clay@usace.army.mil[]; isa.H.Clay@usace.army.mil[]
From: JAMES.MONROE@sol.doi.gov
Sent: Mon 6/29/2009 11:16:08 PM
Subject: Fw: BDCP Confidential: COE Draft Purpose Statement
BDCP Purpose Statement 06_29_09.doc
richard.hunn@aecom.com
www.edaw.com
www.aecom.com
Learn more

All,

(b) (5) [redacted]

Jim

James A. "Jim" Monroe, P.E.
Office of the Solicitor, Pacific Southwest Region
U.S. Department of the Interior
Ph 916-978-5674
Fax 916-978-5694
email: james.monroe@sol.doi.gov

"Transparency and the rule of law will be the touchstones of this Presidency."
- Barack Obama

This e-mail (including attachments) is intended for the use of the individual or entity to which it is addressed. It may contain information that is privileged, confidential, or otherwise protected by applicable law. If you are not the intended recipient or the employee or agent responsible for delivery of this e-mail to the intended recipient, you are hereby notified that any dissemination, distribution, copying, or use of this e-mail or its contents is strictly prohibited. If you received this e-mail in error, please notify the sender immediately and destroy all copies.
----- Forwarded by JAMES MONROE/SAC/SOL/DOI on 06/29/2009 03:53 PM -----

"Hunn, Richard" <Richard.Hunn@aecom.com>

ED_000733_DD_NSF_00009474-00001

06/29/2009 03:26 PM To "Becky Victorine" <rvictorine@mp.usbr.gov>, <Betty.Dehoney@hdrinc.com>, <delores@water.ca.gov>, <Gwendolyn.Buchholz@ch2m.com>, "Hunn, Richard" <Richard.Hunn@aecom.com>, JAMES MONROE/SAC/SOL/DOI@SOL, KAYLEE ALLEN/SAC/SOL/DOI@SOL, "Marc Ebbin" <mebbin@emsllp.com>, "Marshall, Paul" <marshall@water.ca.gov>, "Michelle Morrow" <mmmorrow@water.ca.gov>, "Shelby L Mendez" <Shelby.L.Mendez@noaa.gov>
cc <david.olson@hdrinc.com>, <pkroen@pacbell.net>
Subject BDCP Confidential: COE Draft Purpose Statement

All, Based on our recent discussion with Corps of Engineers staff, we need to take the next step in our consultation by providing a purpose statement for Corps concurrence. I prepared the attached draft statement for your review as a member of the BECT COE 404 Workgroup.

I would appreciate your comments returned by July 7th. At that time, I will compile and distribute a final version for discussion at the following BECT meeting (7/14). With this schedule, we should be able to deliver the statement to the Corps by about July 20th.

Let me know if you have any questions. Thanks,

Richard Hunn
Senior Water Resources Planner
D 1+ 916.266.4936 M 1+ 916.420.4793
New email: richard.hunn@aecom.com

EDAW AECOM
2022 J Street
Sacramento, CA 95811 USA
T 1+ 916.414.5800 F 1+ 916.414.5850
www.edaw.com www.aecom.com

EDAW is evolving.
Beginning October 2009, EDAW will become Design + Planning at AECOM
as we continue to create exemplary environments.
Learn more

ED_000733_DD_NSF_00009474-00002

BAY DELTA CONSERVATION PLAN PURPOSE STATEMENT

(This statement is intended to be submitted to the US Corps of Engineers in support of an application of a Section 404/10 permit and Section 408 permission to modify Project Levees.)

BASIC PURPOSE

The basic purpose of the Bay Delta Conservation Plan (BDCP) is twofold: Protect, restore and enhance certain aquatic, riparian, and associated terrestrial natural communities and ecosystems to reduce the adverse effects associated with historic operations of the State Water Project (SWP) and Central Valley Project (CVP) to certain listed species found in the Delta, and delivery water consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis & Delta Mendota Water Authority (SLDMWA).

OVERALL PURPOSE

DRAFT

The overall purpose of the BDCP is to restore and enhance ecological conditions in the Delta to benefit certain listed aquatic and terrestrial species, designated in accordance with the federal Endangered Species Act and California State Endangered Species Act. Restoration and enhancement of ecological conditions would be achieved by re-establishing tidal inundation of reclaimed lands, increasing the frequency and duration of flooded lands, modifying land use and habitat management practices to enhance habitat value, installing new water conveyance facilities to augment and/or replace existing SWP and CVP water delivery features in the Delta, and implementing other actions to relieve other stressors that may contribute to the decline of these listed species. The BDCP would improve the delivery of SWP and CVP water supplies to users south of the Delta by ameliorating adverse conditions in Delta that have reduced the number and distribution of listed species, including enhancing the amount of available suitable aquatic habitat, reducing the loss of listed fish at existing pumping facilities, and restoring a more natural water circulation pattern to the Delta.

ED_000733_DD_NSF_00009475-00001

To: Dan Castleberry [dan_castleberry@fws.gov]; Glaser, Donald R" [DGlaser@usbr.gov]; en Lohoefener [Ren_Lohoefener@fws.gov]; Milligan, Ronald E" [RMilligan@usbr.gov]; ary Grim [Mary_Grim@fws.gov]; 'maria.rea@noaa.gov'" [maria.rea@noaa.gov]; od Mcinnis [Rod.Mcinnis@noaa.gov]; Idlof, Patricia S" [PIdlof@usbr.gov]; Barajas, Federico" [FBarajas@usbr.gov]
Cc: "Michael.s.jewell@usace.army.mil" [Michael.s.jewell@usace.army.mil]; aren Schwinn/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA[]; om Hagler/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Fri 2/12/2010 7:34:14 PM
Subject: Schedule Document; Meeting Topics
BDCP-EISschedule2-11-10-noon.doc

All – Attached is a draft document reflecting schedule for BDCP and EIR/S, contemplated for inclusion in the (elusive?) state-federal work plan. I gave this to Lester Thursday afternoon, and he reacted positively. He is going to discuss it with Karen Scarborough and provide his response next week – probably Tuesday or Wednesday.

Also, at our BDCP meeting Tuesday at 9:00 a.m., I would like to discuss the EIR/EIS project manager, and to go over the issues list we were unable to get to at this week's meeting.

David

CONFIDENTIAL PRELIMINARY DRAFT – DO NOT RELEASE

1. Bay Delta Conservation Plan

The BDCP is critical to achieving a long-term solution for the Bay-Delta that addresses the co-equal goals of Bay-Delta ecosystem restoration and water supply reliability. The BDCP is being developed as a habitat conservation plan (HCP) under the Federal Endangered Species Act (ESA) and as a Natural Community Conservation Plan (NCCP) under the California Natural Community Conservation Planning Act (NCCPA) to restore habitat for Delta fisheries and improve the overall ecological health of the Delta. As part of its conservation strategy, the BDCP includes construction of a new facility that would convey water under, around, and/or through the Delta to the Federal and State pumping plants in the southern Delta.

Significant progress has been made over the last three years among numerous stakeholders towards development of the BDCP, and extensive public outreach efforts have been made. However, many of the most difficult decisions about the BDCP have yet to be made – for example, the specifics of the proposed project, the permit applicants, ownership and governance of the conveyance facility, and the nature of assurances available to the water contractors all have yet to be determined. In addition, the importance of the BDCP to the public in general, water users north and south of the Delta, Delta residents, and the unique Delta ecosystem warrants a continued and reinvigorated public outreach process over the next several months as the public review draft of the BDCP is completed.

In recognition of the critical and pressing need for a long-term solution, the Federal and State agencies will move forward expeditiously to develop and release to the public a complete draft BDCP by mid-December of 2010. A final draft of the BDCP will be released at a later date for public review and comment, concurrent with the release of the Draft EIR/EIS. In order to meet a mid-December 2010 completion date for the draft BDCP, the following actions will need to be completed by the Lead Agencies on or before the dates shown on the schedule below.

A. Action: Develop Draft Bay Delta Conservation Plan -- proposed milestones

- Identify a specific, detailed timeline for developing the draft BDCP consistent with the dates in this schedule, including a commitment to adjust the timeline and completion dates if significant intermediate deadlines are missed. Timeline will include a process and schedule for public involvement, comment, and review of the BDCP including potential bi-monthly public meetings to provide updates (end of February).

- Identify threshold assumptions to be incorporated in BDCP analysis, including: (1) pertinent requirements in the recently-enacted State water legislation and the results of other relevant scientific reviews, including: NAS review; SWRCB public trust Delta flow analysis (required by State legislation); DFG biological performance

standards (required by State legislation); and any EPA analysis or review of flow requirements; and (2) proposed conveyance or conveyance options, including conceptual approach regarding the size, location and timing of construction of the conveyance facility, and the ownership, operation and governance of the conveyance facility (end of March).

- Identify the process and timeline to integrate independent scientific input and review of BDCP, including Delta Science Program review of the BDCP effects analysis, and NAS review of the adequacy of the use of adaptive management in the BDCP (end of March).

- Identify parties responsible for BDCP implementation, the identity of the HCP/NCCP permit applicants, and the nature and extent of Section 7 and/or Section 10 (e.g., "no surprises" assurances/incidental take protection) actions under the ESA (end of March).

- Identify the logic chain and quantified biological objectives to be included in the Draft BDCP (end of April).

- Complete the effects analysis on operations and flows for the Draft BDCP and identify the structure and implementation of adaptive management program (end of May).

- Identify implementation plan for the habitat restoration component of the Draft BDCP (end of July).

- Identify required elements of a joint Federal-State refugium/science center (end of July).

- Complete draft of BDCP, including Implementing Agreement: identify timeline for release of the public review Draft BDCP to coincide with release of the Draft EIR/EIS and for completion of permitting process for BDCP HCP (mid-December).

B. Action: Develop Draft EIR/EIS for the Bay Delta Conservation Plan -- proposed milestones

Federal and State agency action to approve the BDCP requires compliance with Federal and State environmental review requirements. Under the National Environmental Policy Act (NEPA), an Environmental Impact Statement (EIS) is required to analyze the impacts of permitting and implementing the BDCP as an HCP. Similarly, under the California Environmental Quality Act (CEQA), an Environmental Impact Report (EIR) is required to analyze the impacts of permitting and implementing the BDCP as an NCCP. The Federal and State lead agencies have made considerable progress toward the development of a joint EIR/EIS, but because of the complexity of

the BDCP itself, much work remains to complete the draft EIR/EIS prior to its release for public review and comment. The Federal and State lead agencies will pursue the development of the Draft EIR/EIS to be released for public comment as expeditiously as practicable, and will take the necessary actions to complete the Administrative Draft EIS in accordance with or before the dates identified below.

- Execute Third-Party Agreement among the Departments of the Interior and Commerce, DWR, and the EIR/EIS contractor; complete framework document for screening criteria (mid-February).

- Accept of Draft Scoping Report as final; agreement on a specific, detailed timeline consistent with the dates in this schedule for development of the Draft EIR/EIS, including a commitment to adjust the timeline and completion dates if significant intermediate deadlines are missed (end of February).

- Agree on Cooperating Agency roles and responsibilities in the development of the EIR/EIS and completion of Cooperating Agency MOUs (mid-March).

- Agree on key elements of the EIR/EIS, including purpose and need statement, screening criteria, baseline conditions, and analytical approaches to cumulative effects and climate change analyses (end of March).

- Agree on alternatives to be fully analyzed in the EIR/EIS (mid-May).

- Review schedule in light of the alternatives selected for analysis to be included in the EIR/EIS and if necessary, make adjustments to the timing of the subsequent actions in the schedule (mid-June).

[The timing of the following items is contingent on the results of the review described in the preceding action].

- Complete key portions of the EIR/EIS that are not dependent on the effects analysis (e.g., Chapter 2 - Purpose and Need/Project Objectives, Chapter 3 - Proposed Project and Alternatives, Chapter 4 - Affected Environment) (mid-July)

- Complete agency technical review of completed portions of the Draft EIR/EIS; and complete consultant preparation of remaining portions of the Draft EIR/EIS that are contingent upon completion of the effects analysis (mid-October).

- Complete agency technical review of remaining portions of Draft EIR/EIS (mid-November).

- Complete Administrative Draft EIR/EIS (ADEIR/EIS) (end of December).

To: "Jewell, Michael S SPK" [Michael.S.Jewell@usace.army.mil]
Cc: "Barajas, Federico" [FBarajas@usbr.gov]; om Hagler/R9/USEPA/US@EPA;"Castleberry, Dan" [dan_castleberry@fws.gov]; Castleberry, Dan" [dan_castleberry@fws.gov]; aria Rea [Maria.Rea@noaa.gov]; aren Schwinn/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Wed 3/3/2010 10:24:07 PM
Subject: Marc Ebbin

Mike – I just spoke to Marc Ebbin. He thinks that the BDCP EIS and the Corps 404(b)(1) analysis should be two separate documents and that the EIS P+N statement should be crafted to meet just NEPA requirements, not CWA as well. I gather that he has not spoken with you about his view, which is very different from yours as you set it out this morning. You should anticipate a call from Marc. He indicated that he may raise this with Rock Salt next week,

Please let me or the others on this message know what we can do to help.

David

To: "Nawi, David" [David_Nawi@ios.doi.gov]
Cc: "Barajas, Federico" [FBarajas@usbr.gov]; om Hagler/R9/USEPA/US@EPA;"Castleberry, Dan" [dan_castleberry@fws.gov]; Castleberry, Dan" [dan_castleberry@fws.gov]; Maria Rea" [Maria.Rea@noaa.gov]; aren Schwinn/R9/USEPA/US@EPA;"Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]
From: "Jewell, Michael S SPK"
Sent: Thur 3/4/2010 5:04:11 PM
Subject: RE: Marc Ebbin

Thanks, David. From the Corps' perspective, we'd prefer to see one purpose statement now rather than deal with it as a separate matter sometime in the future. It can make things messy later especially if, for 404(b)(1) requirements, we need to explore more/different alternatives than those presented as the reasonable range in the EIS. It also delays resolving concerns raised by EPA.

We'll contact Mark Ebbin today to explore the issue further. Ultimately the lead districts will need to make the decision how to handle purpose.

Michael S Jewell
Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1480
Sacramento, California 95814
O:(916) 557-6605 F:(916) 557-6877
michael.s.jewell@usace.army.mil

Want to let us know how we're doing?
http://per2.nwp.usace.army.mil/survey.html

Need information on the Regulatory Program?
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Wednesday, March 03, 2010 2:24 PM
To: Jewell, Michael S SPK
Cc: Barajas, Federico; Hagler.Tom@epamail.epa.gov; Castleberry, Dan; Maria Rea; Schwinn.Karen@epamail.epa.gov
Subject: Marc Ebbin

Mike - I just spoke to Marc Ebbin. He thinks that the BDCP EIS and the Corps 404(b)(1) analysis should be two separate documents and that the EIS P+N statement should be crafted to meet just NEPA requirements, not CWA as well. I gather that he has not spoken with you about his view, which is very different from yours as you set it out this morning. You should anticipate a call from Marc. He indicated that he may raise this with Rock Salt next week,

Please let me or the others on this message know what we can do to help.

David

To: Tom Hagler/R9/USEPA/US@EPA;Karen Schwinn/R9/USEPA/US@EPA;"Castleberry, Dan" [dan_castleberry@fws.gov]; aren Schwinn/R9/USEPA/US@EPA;"Castleberry, Dan" [dan_castleberry@fws.gov]; Castleberry, Dan" [dan_castleberry@fws.gov]; Barajas, Federico" [FBarajas@usbr.gov]; Idlof, Patricia S" [PIdlof@usbr.gov]; aria Rea [Maria.Rea@noaa.gov]; Melanie.Rowland@noaa.gov" [Melanie.Rowland@noaa.gov]; Allen, Kaylee" [Kaylee.Allen@sol.doi.gov]
From: "Nawi, David"
Sent: Thur 3/4/2010 11:26:57 PM
Subject: FW: legal framework for alternative screening criteria for BDCP EIS

-----Original Message-----
From: Jewell, Michael S SPK [mailto:Michael.S.Jewell@usace.army.mil]
Sent: Thursday, March 04, 2010 6:20 PM
To: Nawi, David
Cc: Grim, Mary; Nepstad, Michael G SPK
Subject: RE: legal framework for alternative screening criteria for BDCP EIS

Thanks. Just talked with Mark E. As you indicated, Mark suggested that the 404(b)(1) evaluation be handled in a separate document for specific elements (projects) of the Plan. There are some pros/cons to his idea but worth looking into. (BTW, in one year, we've gone full circle with Mark on this!)

Mike N and I will bring Mark's concept to the meeting next week to discuss with other Fed agencies. If lead agencies decide that's preferred route, we aren't going to protest.

Michael S Jewell
Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, March 04, 2010 2:21 PM
To: Jewell, Michael S SPK
Cc: Grim, Mary
Subject: FW: legal framework for alternative screening criteria for BDCP EIS

Mike - I just received and have quickly looked over the attached screening criteria document. I don't know if you have seen it or had any input into it. It appears that those who prepared the document clearly thought that the EIS would serve as your 404(b)(1) document as well (see pp.13-14). You might find this helpful when you speak with Marc.

David

-----Original Message-----
From: Mary_Grim@fws.gov [mailto:Mary_Grim@fws.gov]
Sent: Wednesday, March 03, 2010 3:37 PM
To: Nawi, David

Subject: legal framework for alternative screening criteria for BDCP EIS

as promised...

(See attached file: ScreeningLegalGuidelines2-10-10[1].doc)

Mary Grim
Deputy Field Supervisor
Bay Delta Fish and Wildlife Office
916-930-5634
cell: 916-335-5792
mary_grim@fws.gov

ED_000733_DD_NSF_00011591-00002

To: Karen Schwinn/R9/USEPA/US@EPA;Erin Foresman/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA[]; rin Foresman/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA[]; om Hagler/R9/USEPA/US@EPA[]
From: "Nepstad, Michael G SPK"
Sent: Mon 4/4/2011 5:17:52 PM
Subject: FW: BDCP EIS (UNCLASSIFIED)
BDCP_NEPA_404_Permitting_Integration_4-4-11.doc

Classification: UNCLASSIFIED
Caveats: NONE

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
650 Capitol Mall, Suite 5-200
Sacramento, California 95814
(916) 557-7262 Fax:(916) 557-6877
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Idlof, Patricia S [mailto:PIdlof@usbr.gov]
Sent: Monday, April 04, 2011 9:57 AM
To: Nawi, David
Cc: Barajas, Federico; Schwinn.Karen@epamail.epa.gov; Nepstad, Michael G SPK; Maria Rea; Chotkowski, Michael A; Michael Tucker; Fry, Susan M; Victorine, Rebecca A
Subject: RE: BDCP EIS

David,
Per your request, attached is a write-up regarding Reclamation's understanding of the integration of BDCP NEPA and Clean Water Act Section 404 permitting issues. Perhaps we can take some time to discuss these issues at our Federal coordination meeting on Thursday or we could schedule a separate meeting or conference call at your convenience. Please let me know if you have any immediate questions or concerns.

Patti Idlof
Bureau of Reclamation

Mid-Pacific Region, MP-152
916-992-3566 (c)
pidlof@usbr.gov

From: Nawi, David
Sent: Friday, March 25, 2011 11:42 AM
To: Idlof, Patricia S
Cc: Barajas, Federico; Schwinn.Karen@epamail.epa.gov; Nepstad, Michael G SPK; Maria Rea; Chotkowski, Michael A; Michael Tucker
Subject: BDCP EIS

Patti - Would you please put together a short write-up - either email or attachment - outlining your view (no doubt the enlightened and correct view) of the extent to which there will be a need for further NEPA review by the Corps in connection with its permitting actions? It would be helpful if you would address:

Since the BDCP EIS is project specific for the conveyance and water operations, will USACE have to conduct further review for those actions?

What is the relation between the EIS Purpose and Need Statement, and the 404 Purpose Statement, and which actions does each apply to?

Please include anything else that you think germane. I paste in below a sentence from an email that Jerry Meral sent to EPA. The federal agencies need to have a clear and uniform understanding of all this and communicate that understanding to the state and others.

From Jerry's email: I would like to confirm our desire to avoid Clean Water Act sequential permitting. I want to be absolutely sure that our environmental document serves the needs of all our state and federal partners, including USEPA, COE, and SWRCB.

Please feel free to discuss for clarification or any other reason.

Thanks.

David

ED_000733_DD_NSF_00014376-00002

Classification: UNCLASSIFIED
Caveats: NONE

BDCP NEPA/CWA Section 404 Integration Issues
April 4, 2011

The following is intended to address the extent to which there will be a need for further NEPA review by the Corps in connection with its permitting actions related to implementation of the BDCP. Two questions have been posed:

1. Since the BDCP EIR/EIS is project specific for the conveyance and water operations, will the Corps have to conduct further review for those actions?
2. What is the relation between the EIS Purpose and Need Statement and the 404 Purpose Statement, and which actions does each apply to?

Question #1 – Reclamation's short answer to this is no. The analysis provided in the BDCP EIR/EIS will be conducted on a project-specific level of detail for all actions related to construction and operation of the proposed conveyance facilities (i.e., the North Delta intakes, pipelines, tunnels, canals, forebays, etc.). The EIR/EIS currently under preparation is intended to provide all the needed detailed analyses to support the Corps permitting processes for the facilities. The following information will be included in the EIR/EIS to support Corps permitting needs:

- Alternatives Analysis - As required by NEPA, the alternatives included for detailed analysis described in Chapter 3 of the EIR/EIS will be evaluated at an equal level of detail. This chapter will also include a summary of the alternatives that were evaluated, but were not carried forward for detailed analysis. The screening criteria process and documentation of the conclusions of the alternatives screening process will also be included in Chapter 3. An Alternatives Development appendix will provide detailed background information for each alternative considered as part of the process.
- Wetlands Analysis - A preliminary waters/wetlands analysis will be included in the technical appendices and a summary incorporated into Chapter 12 (Terrestrial Biological Resources). An overview of the function and services will be provided. General information on jurisdictional boundaries will be provided subject to property access restrictions. This information will be used to support the recommendation for the Least Environmentally Damaging Practicable Alternative (LEDPA).
- Mitigation- Mitigation for footprint of disturbance will be defined at a site-specific level in the EIR/EIS. This will include performance standards to replace the functions and services associated with the unavoidable loss of waters or wetlands. Chapters 11 (Fisheries) and 12 (Terrestrial) will identify any mitigation measures required above and beyond the conservation measures included in the BDCP. Conservation measures are intended to avoid and minimize impacts associated with the covered activities as well as contribute to recovery of covered species.

The BDCP also includes habitat restoration elements in its conservation strategy; however, these elements of the conservation plan are less advanced in the planning process than the conveyance and operations elements. Therefore, analysis of these actions will be at a programmatic level of detail in the EIR/EIS. The EIS/EIR will analyze the anticipated potential impacts of habitat restoration to the extent possible given the current level of planning, and will have to make firm commitments that site-specific restoration projects will have their own supplemental environmental compliance documentation

ED_000733_DD_NSF_00014377-00001

(including NEPA and 404(b)(1) analyses) as needed for project impacts beyond what is analyzed and disclosed in the BDCP EIR/EIS.

Question #2 – The BDCP Purpose and Need Statement included in the BDCP EIR/EIS addresses all elements of the proposed plan, including conveyance facilities, associated water operations, and habitat restoration activities. It has been prepared to support USFWS, NMFS, and DFG decisions on issuance of future ESA and NCCPA permits, therefore it broadly encompasses the whole of the BDCP program. In contrast, the purpose statement for the Corps permits will apply to those elements of the overall plan for which the Corps permit application is being submitted. As discussed and agreed to at a meeting with Reclamation, Corps, and EPA representatives in March 2010, the purpose statement associated with the CWA Section 404 permit application for construction and operation of the proposed conveyance facilities will be a subset of the more broad BDCP EIR/EIS Purpose and Need Statement. Similarly, the purpose statements for the subsequent environmental analyses for CWA Section 404 permit application for habitat restoration actions will be a subset of the BDCP EIR/EIS Purpose and Need Statement as appropriate for the specific project and permitting needs proposed at that time.

Corps regulatory staff has expressed their desire for separate analyses in the BDCP EIR/EIS related to the upcoming Corps permit actions because they need to consider the impacts of the portion of the program for which a permit is being applied for (most likely the new conveyance facilities and water operations). This would mean that the document would need to have essentially two sets of analysis for each category of impact; one which has just the actions proposed for the Corps permits and one for the entire BDCP program (which is proposed for the NCCPA/ESA permits). This proposal to split the EIR/EIS analyses is not feasible, as conveyance facilities and water operations actions alone (without habitat restoration) would most likely not be permitted by the regulatory agencies. Also, having two sets of analyses for each resource category in the EIR/EIS would make the document all the more unreadable and confusing to the public.

Corps staff has stated that 404 permits cannot be issued on actions that are at a programmatic level, therefore, the 404 permit would need to be issued for the conveyance and operations actions only. However, there are examples of programmatic 404 (b)(1) analyses (i.e., Everglades) and programmatic coordination with the Corps (i.e., High Speed Rail MOU), which contain broad level analysis appropriate to the level of planning, and commit to future site specific 404(b)(1) analysis as projects are further developed. While the Everglades example is a Corps 404(b)(1) analysis, and not an applicant driven analysis (no permit issued), perhaps the case could be made that a similar approach could be used for the BDCP, where the BDCP 404(b)(1) analysis is project-specific for conveyance elements and programmatic for habitat restoration, with the commitment that future 404(b)(1) analyses will be done as restoration projects are further developed by the action agencies, and the understanding that the permit would only be for the project-specific conveyance and operations at this time.

ED_000733_DD_NSF_00014377-00002

To: Erin Foresman/R9/USEPA/US@EPA;Karen Schwinn/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA[]; aren Schwinn/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA[]; om Hagler/R9/USEPA/US@EPA[]
From: "Nepstad, Michael G SPK"
Sent: Mon 4/4/2011 8:47:18 PM
Subject: RE: FW: BDCP EIS (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Project=just the new conveyance facility and operations.

I believe what she means is that for all categories of review except footprint features, the Corps would be basing its permit decision on a cumulative effects analysis only. For example: while we would know that the project specific footprint impacts to wetlands are, we would only know the cumulative impacts of the entire BDCP on fisheries, water levels, and water quality. So our permit on the new conveyance and operations would be based on analyses which included their habitat restoration actions, but the permit would allow them to build and operate their new conveyance facilities prior to the habitat restoration actions being permitted, created and functioning. Because of the modeling and complexity, no reader, including us, would be able to look at those cumulative effects analyses and figure out the effects of just the project proposed for permitting.

I should also add that the Corps never told anyone that the applicants would not be able to get a permit for the Operations and Conveyance alone.

Since I haven't seen what is in the draft EIS, or the scope of work for the development of the EIS, I can't judge whether there's an issue with Reclamation's answer for Question #1.

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
650 Capitol Mall, Suite 5-200
Sacramento, California 95814
(916) 557-7262 Fax:(916) 557-6877
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

ED_000733_DD_NSF_00014379-00001

-----Original Message-----
From: Foresman.Erin@epamail.epa.gov [mailto:Foresman.Erin@epamail.epa.gov]
Sent: Monday, April 04, 2011 10:43 AM
To: Nepstad, Michael G SPK
Cc: Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Subject: Re: FW: BDCP EIS (UNCLASSIFIED)

Michael,
I'm confused about the two analyses Patti discusses in the second to last paragraph.

****
Erin Foresman
Environmental Scientist & Policy Coordinator, US EPA Region 9 C/O Army Corps of Engineers
1325 J Street, 14th floor Sacramento, CA 95814-2922
Phone: (916) 557 5253; Fax: (916) 557 6877

http://www.epa.gov/region9/water/watershed/sfbay-delta/index.html
<http://www.epa.gov/region9/water/watershed/sfbay-delta/index.html>

From: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
To: Karen Schwinn/R9/USEPA/US@EPA, Erin Foresman/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA
Date: 04/04/2011 10:17 AM
Subject: FW: BDCP EIS (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District 650 Capitol Mall, Suite 5-200
Sacramento, California 95814
(916) 557-7262 Fax:(916) 557-6877
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html
<http://per2.nwp.usace.army.mil/survey.html>

* Need information on the Regulatory Program? Visit our website:

http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html
<http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html>

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Idlof, Patricia S [mailto:PIdlof@usbr.gov <mailto:PIdlof@usbr.gov>]
Sent: Monday, April 04, 2011 9:57 AM
To: Nawi, David
Cc: Barajas, Federico; Schwinn.Karen@epamail.epa.gov; Nepstad, Michael G SPK; Maria Rea; Chotkowski, Michael A; Michael Tucker; Fry, Susan M; Victorine, Rebecca A
Subject: RE: BDCP EIS

David,
Per your request, attached is a write-up regarding Reclamation's understanding of the integration of BDCP NEPA and Clean Water Act Section 404 permitting issues. Perhaps we can take some time to discuss these issues at our Federal coordination meeting on Thursday or we could schedule a separate meeting or conference call at your convenience. Please let me know if you have any immediate questions or concerns.

Patti Idlof
Bureau of Reclamation
Mid-Pacific Region, MP-152
916-992-3566 (c)
pidlof@usbr.gov

From: Nawi, David
Sent: Friday, March 25, 2011 11:42 AM
To: Idlof, Patricia S
Cc: Barajas, Federico; Schwinn.Karen@epamail.epa.gov; Nepstad, Michael G SPK; Maria Rea; Chotkowski, Michael A; Michael Tucker
Subject: BDCP EIS

Patti - Would you please put together a short write-up - either email or attachment - outlining your view (no doubt the enlightened and correct view) of the extent to which there will be a need for further NEPA review by the Corps in connection with its permitting actions? It would be helpful if you would address:

Since the BDCP EIS is project specific for the conveyance and water operations, will USACE have to conduct further review for those actions?

ED_000733_DD_NSF_00014379-00003

What is the relation between the EIS Purpose and Need Statement, and the 404 Purpose Statement, and which actions does each apply to?

Please include anything else that you think germane. I paste in below a sentence from an email that Jerry Meral sent to EPA. The federal agencies need to have a clear and uniform understanding of all this and communicate that understanding to the state and others.

From Jerry's email: I would like to confirm our desire to avoid Clean Water Act sequential permitting. I want to be absolutely sure that our environmental document serves the needs of all our state and federal partners, including USEPA, COE, and SWRCB.

Please feel free to discuss for clarification or any other reason.

Thanks.

David

Classification: UNCLASSIFIED
Caveats: NONE

[attachment "BDCP_NEPA_404_Permitting_Integration_4-4-11.doc" deleted by Erin Foresman/R9/USEPA/US]

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00014379-00004

To: Tom Hagler/R9/USEPA/US@EPA;Lisa H Clay [Lisa.H.Clay@usace.army.mil]; isa H Clay [Lisa.H.Clay@usace.army.mil]
From: "Monroe, James"
Sent: Wed 4/6/2011 12:23:13 AM
Subject: FW: Permittee Issue
Reasons the SFCWA should be a Permitees (final).docx
Possible revised governance structure.docx
NGOPermittee.doc

You might be interested in these. I'll try and remember to let you know if/when I hear something about Ebbin putting a process together seeking resolution to this issue.

Jim

"Whoever invented the term 'foolproof' underestimated the ingenuity of fools." - Anonymous (Business Week, 3/28/11 Article on the nuclear power industry.)

-----Original Message-----
From: Nawi, David
Sent: Wednesday, March 30, 2011 6:44 PM
To: Belin, Letty; Monroe, James; Allen, Kaylee; Melanie.Rowland@noaa.gov; 'Deanna Harwood'
Cc: Nawi, David
Subject: Permittee Issue

Attached are contrasting memos from NGOs and contractors on the permittee issue, as well as a brief governance document from Jerry Meral. Jerry wants Marc Ebbin to put together a process for trying to resolve the permittee issue. Feel free to distribute the attachments as you desire.

ED_000733_DD_NSF_00014382-00001

Reasons the Federal and State Contractors should be Permittees

At the September 16, 2010 BDCP Principals Meeting the water contractors were tasked with providing a detailed discussion explaining why it is important and necessary for the CVP and SWP water contractors (Contractors) to be permittees under Section 10 of the ESA and under the NCCPA. The specific task was to summarize the practical and technical advantages of having the Contractors as permittees. The following is a summary of the lengthy discussions that the Contractors have had on the "permittee issue".

Practical

1. Local Agency Accountability

The CVP and SWP contractors will be asked to invest between $8 and $12 Billion in the BDCP. It would be irresponsible for those local public agencies to commit to spending such large sums of public money without retaining the ability to participate in decisions about how it is spent. To adequately fulfill the fiduciary responsibilities of Contractors to their boards of directors and the public they serve they must participate in those decisions on equal footing with DWR and Reclamation.

2. Minority investors should not be the sole decision-makers

The overall cost of the BDCP is estimated at $19 billion. The minimum share of that total that is likely to be paid by the Contactors is $12 Billion, or 63% of the total projected costs. The combined state and federal share would be approximately 37% of the total costs. The BDCP decision-making structure should not allow the minority investor to be the sole decision-maker. The Contractors are not seeking to have a decision-making role that is proportional to their investment, but rather only a role that is equal to the decision-making role of the state and federal governments.

3. The Contractors can provide greater "investor confidence"

The ratepayers to whom the Contractors deliver water are the only certain source of funding for any BDCP conservation measure, and particularly for the construction of a new conveyance facility. It will require a significant increase in the confidence of those ratepayers that the BDCP will be implemented in a cost efficient manner, conscious of schedules and the costs of missing them, and employing personnel in whom they have confidence can plan, execute and complete the job. Neither the state nor federal governments have implemented a project of the BDCP's size and scope in decades, and both agencies have lost some of their institutional capabilities. Those losses, which are likely to continue, are compounded by actual or perceived missteps in recent years, create caution and reluctance in the minds of the ratepayers that will ultimately decide whether or not to fund the BDCP.

Having the Contractors included as permittees will create a greater sense of confidence with ratepayers that the BDCP can be implemented more effectively and efficiently than is possible under the sole leadership of state and federal governments. It is very unlikely that sufficient confidence can be generated to motivate investment by ratepayers if only the state and federal governments are in control

of BDCP implementation.

4. The Contractors can carry out actions needed to ensure local agency cooperation with BDCP implementation.

As a permittee working on Delta habitat actions, the Contractors would have the ability to more effectively work with other local agencies, such as the Delta area counties, to ensure local cooperation. The state and federal governments have a long history with many of the local public agencies in the Delta and much of that history is viewed by those local agencies as unfavorable. Interestingly, the Contractors do not have long histories with the local public agencies and those local Delta agencies have shown a remarkable interest in recent months to deal directly with the Contractors.

The State and federal governments do not have the luxury of a clean slate with the local public agencies in the Delta, and while the Contractors also have some history, it is significantly less antagonistic than the relationship between the state and federal agencies and local Delta agencies.

5. The Contractors represents the water user community that is most directly and adversely impacted if the BDCP is not successful.

The Contractors will be either directly or indirectly responsible for funding billions of dollars in costs needed to implement the BDCP. Further, it will be their ratepayers and local communities, not State or federal government agencies that will be impacted if the environmental restoration and water supply goals of the BDCP are not achieved. For policy and equity reasons, it is acceptable within large multi-faceted HCPs/NCCPs for permit status to recognize the contributions and needs of multiple entities that fund implementation.

Both the state and federal governments work diligently to ensure the CVP and SWP function as well as possible. However, the consequences of failure and the benefits of success are not fully felt by either the state or federal agencies. As a result the acute risk and reward that motivates decisions is missing from the state and federal governments. The Contractors are the public agencies that benefit most directly from good decisions and suffer most significantly from poor decisions. The BDCP will include many decisions of varying importance and each of them should be made with the inclusion of the entities that largely pay for, benefit and suffer from them.

6. Making the Contractors permittees would not give them control over water operations.

The Contractors can be a permittee without limiting or affecting DWR's or Reclamation's authority with regard to water operations and without giving the Contractors a direct role in decisions regarding water operations. It is not uncommon within large multi-faceted HCPs/NCCPs for permit authorities to vary between permittees.

7. Making the Contractors permittees will not change the PREs role in preparing the BDCP.

Permittee status for the Contractors would define its role during implementation of the BDCP, but it would not change the Contractors role or the role of the PREs during preparation of the BDCP.

8. Federal Contractors cannot review Section 10 guarantees through the Bureau.

The CVP contractors are not afforded Section 10 assurances though Reclamation or DWR. Rather, they must be an equal participant as a permittee to receive those assurances. The CVP contractors will realize no benefit beyond the Section 7 standards unless they are also a permittee under Section 10.

Technical

1. The Contractors will likely be responsible for implementing significant elements of the BDCP.

If the Contractors are permittees, the fishery agencies will have direct access to and enforcement authority over the entity carrying out the habitat or other stressor actions to ensure its proper implementation. Permit status for the Contractors would mean that they would share a direct legal obligation to ensure compliance with the incidental take permits. The Contractors' commitment to fund or implement specific actions included in the BDCP would be directly enforceable terms or conditions of the incidental take permits.

While we understand that this objective could be accomplished through a contractual arrangement with DWR or Reclamation as the permit holders, we believe that a contractual arrangement would be of less legal weight and therefore inadequate when compared to the scope of the Contractors' involvement, which will include payment for and construction and operation of the new facility, very large scale habitat restoration projects, and implementation of other stressors measures that will impact parties who are not BDCP participants.

2. The Contractors are not subject to the vagaries of the state or federal budgeting processes.

Both the state and federal governments must pass annual budgets in order to pay employees. Both have shown an inability to do so with the kind of reliability that is needed for a project of this scope and magnitude.

The federal government has been unable to pass budgets and commonly relies on continuing resolutions as a stop-gap measure when its budgets are late. Impacts to funding can depend more on the mood of Congress than the needs of the project. While federal funding will be necessary to fully implement the BDCP, the federal government is an unreliable way to fund the core needs of staffing at the Implementation Office.

The state government has also shown an inability to fund its workforce. Recent years have seen late budgets and political gamesmanship with state worker payrolls that are unacceptable for a project that will require certainty to meet its payroll. The Legislature's recent efforts to change SWP priorities though the budget process coupled with the Administration's willingness to impose furloughs, require overtime reductions and threaten pay reductions to federal minimum wage levels demonstrate the deteriorating ability of the state to carry out large complex projects over extended periods.

The Contractors have the ability to fund their own staff and the staff of the Implementing Office. IO staff funded by the Contractors would not be limited by state or federal budgetary concerns, pay scales, hiring processes, or the uncertainty of meeting payroll.

3. The Contractors are able to make payments that the state and federal governments cannot.

The BDCP is expected to impact some local jurisdictions as it constructs new facilities and habitat restoration projects. Those impacts are likely to require payment of taxes and other local agencies' fees from which the state and federal governments have traditionally exempted themselves or are simply unable to generate through their budget processes. The common example is payment-in-lieu-of-taxes payments (PILT). In many, many cases these payments are far in arrears and are unlikely to ever get paid.

The Contractors have the ability to make these payments and others like them on a regular and expectable schedule. The BDCP is a controversial project. It cannot afford to damage relationships with local governmental agencies and their citizens by delaying or refusing to make expected payments for local fees or taxes.

4. The Contractors can attract and hire staff that would be unavailable to the state or federal governments.

The size and scope of the BDCP is too large to be run under the constraints of the state and federal hiring practices and salary structure. The BDCP will be the largest ecosystem restoration project and the largest water supply construction project in the nation. Implementing a project of the size and scope of the BDCP has never been done before by DWR or the Bureau in their modern age. It will be essential to hire project managers and staff that are capable of successfully implementing very, very large scale construction and restoration projects. Attracting managers with prior experience working on this scale and performing at that level will necessitate salaries outside the range of state or federal pay scales. The Contractors are able to hire exceptional staff and to pay competitive salaries for those unique personnel.

Accountability of the Program Manager and his or her deputies is an associated concern. Under state and federal labor rules it can be difficult or impossible to fire state or federal employees. The Contractors are able to hire "at will" employees that can be directly accountable to the program manager. The ability to hold the BDCP's high level managers accountable through standard "at will" employment rules significantly improves the accountability of project managers to the BDCP implementing entities.

The very high level of accountability necessary to motivate aggressive implementation of the BDCP is not available under the state and federal labor rules.

5. In addition to the technical reasons above, the Contractors can also provide several other services, and expertise in implementing the BDCP.

The ability to buy and hold property
The interest and ability to defend the BDCP against legal challenges
The ability to contract for services in a timely manner
Expertise in management of large complex projects and programs
Expertise in management of large ecological preserves
Expertise in management of HCPs NCCPs and CESA permits
Expertise in land acquisition and permitting
Expertise in financial management of large projects and programs
Expertise in public outreach

Possible revised governance structure

Program Implementation Office and manager remains the same.

The permittees will be the implementation board, and hire the program manager. The board will be subject to the Bagley Keene Act, to assure transparency. To assure accountability, only permittees will serve on the implementation board.

The program manager will post on the internet the following

1. The plan for daily, weekly, and monthly diversions from the north and south Delta for the water year will be posted by October 15, and revisions will be posted immediately. Planned vs. actual water diversions will be posted day by day. Any change from the plan in expected or actual water diversions will be explained in easy to understand terms.
2. The history of daily, weekly, monthly, and yearly north and south delta diversions. A full history of monthly CVP and SWP diversions will also be posted.

An advisory committee made up of representatives of the regulatory agencies, (including at least COE, SWRCB, NMFS, FWS, DSC, and CVFB), NGOs with knowledge of habitat and water management, habitat managers in and immediately adjacent to the Delta, local counties and other agencies within the Delta, the Delta Stewardship Council, Delta landowners, and the Delta Protection Commission will advise the program manager and implementation board. Participation in the implementation board shall not interfere with the regulatory authority of any agency. The advisory committee will meet quarterly, and be given sufficient time to review the draft update of the five year management plan.

A subcommittee of the advisory committee will act as a technical facilitation subcommittee, helping the program manager with technical, non-policy implementation issues.

The program manager will hire the science manager.

Every year the program manager will present an updated draft five year water diversion and habitat acquisition and management plan to the advisory board,. After revisions, the plan will be presented in draft to the implementation board. The implementation board shall present the final plan to the appropriate regulatory agencies. (Coordinate with section 7.4)

DWR will operate any water transport facility constructed according to permit terms and conditions, and in conformance with the five year management plan. DWR may contract with any entity qualified under state law to operate the facility.

The Delta Conservancy the Department of Fish and Game, or the Fish and Wildlife Service shall

own and manage any lands purchased through BDCP for habitat purposes. Any agency or organization which purchases lands to benefit the BDCP program may also turn these lands over to the Delta Conservancy for management, if the Conservancy agrees to accept them..

Issues which must be resolved:

Who are the authorized entities (permittees). Is SFCWA a general permittee, a permittee for purposes of acquiring habitat lands to assist the BDCP, or should it be a permittee at all?

RRC comments. This is a permit provision. DWR/USBR run hiring of permit manager by the permitting agencies.

Permitting agencies want to be on implementation board, resist just having the regulatory function. Talk to Carl Wilcox about why they want this. They should be allowed to talk any time, and not in public. Decisions on non-routine changes must be public. Stakeholder committee must be able to review this in advance. Need to have clear appeal procedure to review proposed changes. Put implementation board duties into stakeholder committee. Must write procedures in a way which allows frivolous appeals can be dismissed.

MEMORANDUM

From: Cynthia Koehler, Environmental Defense Fund
Kim Delfino, Defenders of Wildlife
Doug Obegi, Natural Resources Defense Council
To: Jerry Meral, California Natural Resources Agency
David Nawi, U.S. Department of the Interior
Re: PERMITTEE STATUS FOR WATER CONTRACTORS IN BDCP

This memorandum addresses issues associated with granting permittee status in the Bay Delta Conservation Plan (BDCP) process to the state and federal water contractors who divert water south of the Delta from the Central Valley Project (CVP) and State Water Project (SWP), and/or to the joint power authority, State and Federal Contractors Water Agency (SFCWA), which is controlled by those entities.

The question is whether granting the contractors status as holders of the Natural Community Conservation Plan/Habitat Conservation Plan permit – in addition to DWR – would impair the independent ability of the state and federal agencies to administer the BDCP and protect public trust resources.

In our view, the answer is that it clearly would. Granting permittee status to the contractors would critically impair the state and federal governments' independent ability, over the next fifty years, to administer the BDCP for the benefit of public trust resources by allowing entities located outside the Delta to directly and indirectly control administration, adaptive management and operations of a Delta-based plan through funding control, decision-making authority, contractual claims and litigation. Granting permittee status to the contractors is likely to violate provisions of state and federal law, jeopardizing the entire BDCP project. It could also undermine confidence in the BDCP process by other stakeholders and the public at large.

We respectfully recommend against this course of action.

I BACKGROUND: CESA, NCCPA and ESA

State Law: The California Endangered Species Act (CESA)(Fish & G. Code §§ 2050 et seq.) prohibits the taking of any species listed as endangered or threatened with extinction (collectively referenced hereinafter as "endangered species") without authorization from the California Department of Fish and Game (DFG).[1] With respect to state agencies, boards and commissions, CESA requires a higher duty of care than for non-state entities stating:

> [I]t is the policy of this state that all state agencies, boards, and commissions shall seek to conserve endangered species and threatened species and shall utilize their authority in furtherance of the purposes of this chapter. (§ 2055.)

CESA defines "conserve" broadly as using:

[1] All statutory references are to Fish and Game Code unless otherwise indicated.

ED_000733_DD_NSF_00014385-00001

> [A]ll methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary. These methods and procedures include, but are not limited to, all activities associated with scientific resources management, such as research, census, law enforcement, habitat acquisition, restoration and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Although the State Water Project operated by the Department of Water Resources (DWR) and the Central Valley Project, operated by the U.S. Department of the Interior, Bureau of Reclamation (Reclamation or Bureau) are operated in tandem under the *Coordinated Operations Agreement,* the Bureau of Reclamation asserts it is not subject to state law.[2] This means that, at present, DWR is the only clear BDCP permittee and the SWP are the only facilities which will be permitted under the Natural Community Conservation Planning Act (NCCPA) (§§ 2800 et seq.). Note that the California legislature declared that for the BDCP to be eligible for state funding, it *must* be a Natural Community Conservation Plan (NCCP).[3] This settled the issue of whether the BDCP would seek a CESA permit under § 2081 or instead proceed under the State's Natural Community Conservation Planning Act.

The NCCPA provides that at the time an NCCP is approved CDFG "may authorize by permit the taking of any covered species whose conservation and management is provided for in the [plan]." (§ 2835.) As noted above, "conservation" is a recovery standard. This is a higher standard than the avoidance and mitigation required under CESA § 2081 permits, and it is the reason public funds are contributed to NCCPs.

In California, water is a public trust resource belonging to all of the people of the State. Cal. Water Code § 102. Because of this, water rights are "usufructory," meaning the right to use something you do not own. Similarly, DWR is an agency for all of the people of the state. Its mission is to "manage the water resources in cooperation with other agencies, to benefit the State's people and to protect, restore, and enhance the natural and human environments." As an agency of the Executive Branch, DWR can also be held responsible to all of the people of the state through the checks and balances of legislative oversight by a representative government.

Federal Law: The federal Endangered Species Act is similar to CESA in many respects. Overall, the statute prohibits "any person" from taking or harming any listed species.[4] Section 7(a)(2) of the ESA applies to federal agencies and requires that they "insure that any action

---

2 This is an untested theory and we do not concede its legal validity. The Reclamation Law of 1902 (43 USC § 383) states, "Nothing in this Act shall be construed as affecting or intended to affect or in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation…and the Secretary of the Interior, in carrying out the provisions of this Act, shall proceed in conformity with such laws…" One can assume, *arguendo,* that CESA, as applied to CVP impacts on aquatic species, relates primarily to the control, appropriation, use, or distribution of water used in irrigation. *See, e.g., NRDC v. Patterson,* 333 F.Supp.2d 906, 913-914 (E.D. Cal. 2004) (holding that section 5937 of the Fish and Game Code was not preempted by Section 8 of the Reclamation Act of 1902, and holding that this provision of state law applied to Bureau of Reclamation's operations at Friant Dam).

3 Delta Reform Act of 2009 (SB 1 (Simitian) 2009-10 Seventh Extraordinary Session); Water Code § 85320(b)(1).

4 ESA, Sec. 9.

ED_000733_DD_NSF_00014385-00002

authorized, funded or carried out ... is not likely to jeopardize the continued existence" of any listed species or otherwise "result in the destruction or adverse modification of" critical habitat.[5] Section 7(a)(1) of the ESA requires that, "All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 1533 of this title." In this sense, like CESA, the federal statute imposes a higher standard on federal agencies than private or other non-federal parties.

Federal agencies, in this case Reclamation, whose actions may result in such damage must "consult" with the Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS), as appropriate. Those agencies must issue Biological Opinions identifying alternative approaches to be taken by the agency in implementing the agency action, in this case, operation of the CVP.

Section 10 of the ESA applies to non-Federal parties and allows the incidental taking of listed species by states, local governments and private parties pursuant to an incidental take permit. In order to receive such a permit, an applicant must submit a Habitat Conservation Plan (HCP) that meets certain criteria.[6] An approved HCP gives rise to "regulatory assurances" under the federal No Surprises policy.[7]

Critically, 50 CFR Sec. 17.22(b)(5), which codifies HCP regulation, states expressly that No Surprises assurances **"cannot be provided to Federal agencies."** (Emphasis added.) When promulgated, the federal government stated that it was issuing the revised rules in part to clarify that No Surprises assurances "do not apply to Federal agencies who have a continuing obligation to contribute to the conservation of threatened and endangered species under section 7(a)(1) of the ESA." 63 Fed. Reg. 8867 (Feb. 23, 1998). In addition, the notion that the FWS and/or NMFS would be precluded from imposing on a federal agency additional terms and conditions designed to minimize or mitigate excessive take conflicts with the obligation to reinitiate consultation under Section 7(a). Thus, the law expressly prohibits Reclamation and federal water contractors from obtaining Section 10 "No Surprises" assurances and prohibits the FWS/NMFS from approving permits that are structured to undermine the agencies' Section 7 obligations.

The legal consequences of permittee status under the ESA and NCCPA:

In the simplest terms, the permittee has primary responsibility for implementation of the HCP/NCCP, authority to regulate the activities covered by the permit, and standing to challenge a finding of noncompliance by the permitting agencies. In the case of BDCP, this could include operations of the isolated conveyance facility, but also all decisions about funding, priorities, how to proceed with implementation, monitoring, staffing etc. As all parties acknowledge, the permit holder would have tremendous sway and influence over virtually every aspect of BDCP

[5] 16 USF 1531, et seq.
[6] See, 50 CFR parts 17 and 222
[7] The Services codified the ''No Surprises'' policy into a final rule, 50CFR 17.22(b)(5), 17.32(b)(5) and 222.307(g), on February 23, 1998 (63 FR8859).

ED_000733_DD_NSF_00014385-00003

implementation. Permittees occupy an entirely different legal relationship to the program than non-permittees.

As discussed further in this memorandum, granting permittee status to the contractors may result in the following consequences:

- Provide the contractors with the authority to amend the terms of the BDCP NCCP, which may restrict the authority of DWR to amend its terms;
- Provide CVP contractors with regulatory assurances, in violation of federal law; and
- Provide the contractors with additional influence and authority over implementation of BDCP, which may limit the ability and authority of DWR and Reclamation with regard to implementation.

Inconsistency with State and Federal Laws:

At bottom, the problem with granting the contractors permittee status is that this ignores the fact that BDCP implementation – which will be run by the permittees -- involves fundamental state and federal governmental functions that cannot, and should not, be delegated to the water contractors. Numerous state and federal laws, such as the Central Valley Project Improvement Act (CVPIA), require that the SWP and CVP be operated by the state and federal governments, respectively.[8] Federal law prohibits delegating the Secretary's policymaking role and authority. *See National Park and Conservation Association v. Stanton*, 54 F. Supp. 2d 7 (D.D.C. 1999).

State and federal laws also mandate that the agencies oversee and implement programs to manage and restore the Bay-Delta estuary.[9] Similarly, the Delta Reform Act of 2009 (ch. 5, stats. 2009) reinforces the obligation that the State and Federal agencies are to establish policy for and management of the Bay-Delta estuary. That Act explicitly finds that the Bay-Delta estuary is a "critically important natural resource for California and the nation." Water Code § 85002. It establishes numerous state policies for management of the Bay-Delta, including the co-equal goals, protection of the historic and cultural values of the Delta, and establishing a new governance structure "with the authority, responsibility, accountability, scientific support, and

[8] *See, e.g.*, CVPIA, P.L. 102-575, Title 34, § 3406(b) ("The Secretary, immediately upon the enactment of this title, shall operate the Central Valley Project to meet all obligations under state and federal law, including but not limited to the federal Endangered Species Act, 16 U.S.C. s 1531, et seq., and all decisions of the California State Water Resources Control Board establishing conditions on applicable licenses and permits for the project."); Cal. Water Code §§ 12931, 11451, 12895; *see* Cal. Water Code § 85321 ("The BDCP shall include a transparent, real-time operational decision-making process in which fishery agencies ensure that applicable biological performance measures are achieved in a timely manner with respect to water system operations.").

[9] *See, e.g.*, CalFed Bay-Delta Authorization Act, P.L. 108-361, § 102(1) ("The terms "Calfed Bay- Delta Program" and "Program" mean the programs, projects, complementary actions, and activities undertaken through coordinated planning, implementation, and assessment *activities of the State agencies and Federal agencies as set forth in the Record of Decision*.") (emphasis added); Cal. Water Code § 78536.5 (requiring that the Secretary of the Resources Agency shall carry out the CALFED Bay-Delta program).

ED_000733_DD_NSF_00014385-00004

adequate and secure funding to achieve these objectives." Water Code § 85020. Elevating the exporters to permittee status and giving them significant influence over BDCP management decisions would necessarily lead to a bias in implementation, as Delta, fishing and environmental interests would not be granted equal status. The CVPIA also established "mitigation, protection, and restoration of fish and wildlife" as a project purpose of the CVP, along with other purposes, such as water supply (P.L. 102-575, Title 34, § 3406(a)). Thus, both state and federal law establish environmental protection and restoration as co-equal project purposes for the CVP and SWP. Granting water users broad control over the BDCP is inconsistent with state and federal requirements regarding co-equal goals.[10]

In addition, under the Endangered Species Act and its implementing regulations, the water contractors lack the authority to be a permittee. For instance, page 3-2 of the HCP handbook states that, "The permittee must therefore be capable of overseeing HCP implementation and have the authority to regulate the activities covered by the permit." The water contractors lack the authority to change water operations of the CVP and SWP, they lack rights to the water that would be diverted under BDCP, and they lack the authority to seek a permit to change the point of diversion, which are key activities proposed in BDCP. Therefore, they lack the legal authority to be permittees under BDCP. The only appropriate, legal permittees in the BDCP process are state and federal agencies that own and operate the relevant facilities and hold the relevant water rights.

Finally, as indicated above, federal agencies cannot obtain "No Surprises" assurances under section 10 of the Endangered Species Act. 50 C.F.R. § 17.22(b)(5). Authorizing the CVP contractors to be permittees appears intended to circumvent this prohibition and give Reclamation's contractors assurances that would not be available to the agency itself. As noted above, the Bureau is the only proper and legal operator of the CVP, and the Bureau holds the water rights for the CVP. To the extent that the assurances provided to CVP contractors could reduce or eliminate the ability of the CVP to change operations and/or reduce diversions so as to avoid jeopardy to listed species or protect the environment in the future, such assurances violate the ESA and its implementing regulations. See, *Sierra Club v. Marsh*, 816 F. 2d 1376 (9th Circuit 1987).

II APPROPRIATE ROLES FOR THE PARTIES IN BDCP

The BDCP will involve federal incidental take permits (and Biological Opinions) and state incidental take permits. The SWP and CVP are massive water facilities owned and operated by the state and federal government for a variety of public uses including but not limited to the benefit of the water contractors. Given the analysis above, it is our view that DWR is the appropriate permit applicant under both state and federal endangered species schemes.

[10] The Delta Reform Act also implies that the Department of Water Resources, with the Department of Fish and Game, are the appropriate agencies charged with BDCP implementation. *See* Water Code §§ 85320(c), (f). Indeed, the Legislature Council digest states that, "The bill would impose requirements on the Department of Water Resources in connection with the preparation of a specified Bay Delta Conservation Plan (BDCP)." SB 1 as amended November 3, 2009, Legislative Counsel's Digest, at 3.

ED_000733_DD_NSF_00014385-00005

At the same time, we concur that the focused involvement of the water contractors in implementation is not only desirable but essential to the success of the BDCP. That role, like that of the NGOs, the local communities and other keenly interested parties, can be fully addressed without the extraordinary step of extending permittee status to parties that neither own nor operate the facilities at issue. These roles include participation on the proposed steering and management committees, and potentially direct implementation of a number of conservation plan actions.

III PERMITTEE STATUS FOR THE CONTRACTORS IS NOT APPROPRIATE AND PRESENTS SUBSTANTIAL RISKS TO BDCP IMPLEMENTATION AND SUCCESS.

A. Conflicts of Interest.

Permittee status for the contractors is inappropriate in light of the substantial conflicts of interest involved. As all parties recognize, the BDCP permittees will control a wide range of decisions, including most critically the adaptive management program at the heart of the BDCP. In smaller HCPs or NCCPs much of the decision-making is embodied in the conservation plan, with implementation requiring limited determinations – the plan is either being implemented or it's not. The BDCP does not involve a shopping center with a few acres of associated wetland mitigation; it involves instead a massive five-decade ecosystem restoration and water delivery effort that is premised on the concept of a constantly evolving plan driven by an untested adaptive management approach. It will be an ongoing exercise in science and professional judgment that will affect future ranges for water project operations and water exports.

These decisions must remain squarely within the purview of the state and federal agencies responsible for the CVP and SWP. To use just one example, effective monitoring and research are necessary for adaptive management to work, but if BDCP's research and monitoring priorities are structured to avoid answering some of the tough questions, these programs will fail to achieve their mandates. The credibility of BDCP's scientific research and monitoring depends upon its independence from the contractors.

Moreover, as all parties agree, the decisions involved in BDCP's implementation go well beyond operations and include the hiring of staff, establishing and managing budgets, priority setting, selection of consultants, determination of consultant scopes of work, review and approval of consultant work products, integration of the results of scientific reviews, negotiating permit amendments, making adaptive management decisions, managing day-to-day operations, addressing the concerns of non-permitee stakeholders and more. Granting the exporters substantial control and influence over these issues would create additional potential conflicts and jeopardize restoration efforts.

ED_000733_DD_NSF_00014385-00006

B. Increased Risk of Conflict in Plan Implementation and Reduced Ability of State and Federal Agencies to Implement a Cohesive Program.

While there will be many voices engaged in implementation, the permittee will be in charge of a cohesive plan of implementation. This will necessarily involve substantial negotiation between different stakeholder and agency views and priorities as well as the differing professional judgment of various experts. But it is the permittee(s) who will decide, for example, to subcontract with those entities it determines will most effectively carry out various aspects of the Plan -- including the SFCWA, any individual water contractor, the Delta Conservancy, or non-governmental entities.

If DWR is the permittee, these decisions will ultimately be made by the State. However, if the contractors are also permittees, they will have their own coverage and could claim that actions that they wish to implement are part of the plan because those actions fall under "their permit." They can also fund their actions independently, regardless of DWR's priorities and reduce, or attempt to reduce, funding to the program by an equivalent amount by claiming those actions contribute to the program whether or not DWR agrees. This could leave key portions of the program underfunded and compromise the ability of DWR (and the Executive branch) to administer the program on behalf of all of the people of the state.

This potential bifurcation of funding is already evident in the existing relationship between DWR and the water contractors. In regard to the existing contractor-influenced "off-budget" funding for DWR, the Legislative Analyst's Office remarked that the SWP is "integrally linked to other programs, but its operation has created significant liabilities for other programs and funding sources, including the General Fund, without any legislative oversight...There is also growing recognition of SWP's role in contributing both to the causes of, and the potential solutions to, water–related problems in the Delta. This has major policy and fiscal implications for a number of state programs."[11]

Moreover, as permittees, the SFCWA and the contractors could go beyond their own relationship with DWR and insist that their names be included on all contracts between DWR and other entities to implement the program by claiming a need to ensure that "their" permit remains valid. This would both dilute DWR's authority and could place other contracts at risk for leveraging or termination if the SFCWA disagrees with a decision of DWR regarding implementation of the project.

As indicated above, as a state agency, DWR is under a higher duty of care for the ecological resources at issue than the water contractors. The BDCP is certain to be extremely complex and contentious to implement; the chances of different views with regard to ecological priorities, operations, funding and professional determinations regarding science are reasonably foreseeable. Providing the contractors with permit status on par with DWR runs counter to its ability to satisfy its legal mandate in myriad ways.

---

[11] LAO: http://www.lao.ca.gov/analysis_2009/resources/res_anl09004005.aspx.

ED_000733_DD_NSF_00014385-00007

C. Creating Problems in Related Agency Efforts .

The BDCP may have substantial implications for many related agency processes (e.g. upstream ESA requirements for the CVP and SWP, State Board requirements for the CVP and SWP, State Board requirements for other water users, and CVPIA requirements for the CVP.) Establishing the water users as permittees could give them far greater influence these related processes for years to come. In each of these forums, the exporters might assert that, unless their position prevails, terms of the BDCP would need to be renegotiated. In our view, this position would be incorrect, because, as discussed above, the exporters lack the characteristics of a permittee under state and federal law. Nevertheless, elevating the exporters to permittee status could create confusion and delay in the implementation of the BDCP.

D. Standing of Contractors to Claim Certain Sovereign Powers Related to the SWP or to Modify Permit Terms.

Elevating the SFCWA and its members from subcontractor status to permit holders would fundamentally impair DWR's ability to administer the Plan for the benefit of all Californians. As permittees, the water users would be signatories to the Implementation Agreement, a legally binding contract to which they would then be direct parties, unlike any of the other stakeholders. They would thus have elevated legal standing with regard to any governmental effort to change that Agreement, or even an effective veto power in this regard.

DWR is the sole entity responsible for the State Water Project's compliance with state and federal endangered species laws today. If the Department of Fish and Game had concerns about implementation of the BDCP and/or the effect of project operations on covered species, it would provide notice to DWR under the legal process to address and cure whatever defects are at issue.[12] *Permittees* may file objections to a proposed action, and it is the *permittee* who negotiates with DFG as to how a potential or actual failure to meet permit terms must be cured. Allowing the contractors to be permittees interposes the contractors between two state agencies under the Natural Resources Agency.

The legal problem stems from the complexity of the plan and the high stakes involved. For example, imagine DFG approaches DWR with new science which indicates export pumping should be curtailed because impacts to the fisheries are greater than anticipated. If DWR holds the permit, DWR can agree and make a change. The contractors could have input into this discussion via their representation on a "BDCP Implementation Board." But ultimately, DWR, as the sole agency holding the permit, would make the decision. If the contractors disagree with that decision, they would have legal remedies in court to assert that the decision is "arbitrary and capricious," etc. However, if the contractors are the co-holders of the permit, they could choose to independently disagree and attempt to preclude the State from proceeding. It would be their permit too.

[12] California Code of Regulations, Title 14, Section 783.7 sets out the criteria for permit suspension and revocation which includes notice *to the permittee* and an opportunity to cure.

ED_000733_DD_NSF_00014385-00008

Indeed, the same contractors who seek to be permit holders in BDCP have gone to court making the extraordinary claim that the Department of Water Resources is not subject to the California Endangered Species Act because this statute "infringes" on DWR's "sovereign function of operating the State Water Project." *Kern County Water Agency v Watershed Enforcers,* -- (2010). The California Court of Appeal rejected that challenge noting, among other reasons, that the contractors lacked standing to "assert the protection of DWR's sovereign powers." *Id.* Granting the contractors permittee status for an NCCP/ESA take permit for the SWP potentially opens the door to that argument once again. As permittees, the contractors could be empowered to challenge permit conditions, fight adaptive management measures, or refuse any action with which they disagree, and do so while standing essentially in the same (legal) shoes as DWR. Again, given the history of disagreements among the parties regarding protections for the Delta in court and elsewhere, elevating the water contractors to permittee status could risk institutionalizing conflict and gridlock.

E. Changed Relationship with DWR and Lack of Legislative Oversight.

While the members of SFCWA are public agencies, their missions are narrowly tailored to preserving and increasing export water supplies in their own service areas. For example MWD's mission "is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs."[13] Likewise KCWA's mission is "to preserve and enhance Kern County's water supply, the main ingredient for the well-being of the economy."[14] Neither MWD nor KCWA is located in the Delta.

If the contractors are co-permittees, they do not need to invest in DWR's program through a fixed charge. They can argue that as BDCP permittees they can manage their portion of the program. They can pay their own employees and "loan" them to DWR (the current proposal), they can underwrite an office that is not under the physical jurisdiction of DWR (also the current proposal), they can fund the portions of the program that meet their own objectives -- other stressors, certain restoration actions, specific science (what has occurred during the planning of the BDCP), and then they can threaten to pull all of that support if they do not agree with management decisions (also what has occurred during BDCP planning). In other words, if the funding for the program is not integrated through the contracts managed by DWR as the permittee, it could become tied to specific outcomes desired by the contractors as permittees. This damages the independence and ultimately the success of the program.

The response that this scenario is unlikely because it would threaten the continuity of the program and DFG would "pull the NCCP permit" (thus cutting off at least part of the domestic water supply for 25 million Californian's and 3 million acres of irrigated agriculture) is politically unpalatable and legally questionable. We are not aware of any situation in which the fishery agencies have been willing to take such a controversial step.

IV GRANTING THE CONTRACTORS PERMITTEE STATUS IS UNNECESSARY.

[13] http://www.mwdh2o.com/mwdh2o/pages/about/about01.html
[14] http://www.kcwa.com/about_kcwa/about.shtml

ED_000733_DD_NSF_00014385-00009

The contractors maintain that they should be permittees for a variety of reasons that boil down to the following assertions: (1) they are better placed to run a program of this magnitude than the state and federal agencies; (2) they are paying for the facility and therefore should have an elevated role in decision making; and (3) as permittees they would share a direct legal obligation to ensure compliance. These arguments are not compelling and do not overcome the weight of the objections set forth above.

First, as indicated above, everyone fully expects the water contractors to play a large and substantial role in BDCP implementation as they have throughout the process. Permittee status is not necessary to ensure a meaningful level of input and participation. The governance proposals envision various boards, committees and direct implementation opportunities. There is little question that the water contractors views, priorities and demands will be heard throughout the implementation process without elevating their participation to permittee status.

Nor is the financial role the contractors may play relevant to permittee status in this situation. Large public water projects are intended to be paid for by the contractors who benefit primarily from them. Indeed, the anticipated financing for a Delta facility under the BDCP is a continuation of current and past policies. SWP contractors have largely financed the costs of current State Water Project, without being awarded permittee status or direct control over key SWP decisions. State law already requires that the contractors pay the full costs of planning, construction, environmental analysis, and mitigation for any new facilities. That financial obligation does not confer ownership or operator status on those contractors.

Moreover, DWR has already signed agreements with the water contractors assuring them that if new conveyance "is approved to proceed with construction, DWR intends to issue Revenue Bonds to pay for such construction. DWR shall include in the first issue of Revenue Bonds...an amount sufficient to reimburse the Contractor and all other Participating SWP Contractors for all planning costs paid."[15] These revenue bonds are to be repaid through the contracts for water and power over the next fifty years. Much could change in fifty years. This means that the current contractors who are advancing funds will be made whole and leaves the state the flexibility to contract with whom it wishes. The existing entities do not need to be locked in by virtue of also holding the permits. In addition, nothing in the BDCP has established who will pay for what other aspects of the project to date.

Finally, there are many vehicles to ensure that the water contractors comply with their legal obligations well short of becoming permittees. Implementation agreements or other contractual arrangements that include third party rights of enforcement, state and federal agencies – and other stakeholders – can play this role as well as other legal assurances beyond the scope of this memorandum.

CONCLUSION

[15] *State of California Natural Resources Agency, Department of Water Resources, Agreement for Funding Between the Department of Water Resources and Metropolitan Water District of Southern California for the Costs of Environmental Analysis, Planning and Design of Delta Conservation Measures, Including Delta Conveyance Options (SWPAO #09900)(March 12, 2009)*

ED_000733_DD_NSF_00014385-00010

There is broad opposition among non-export water users, fishing interests, environmental organizations, local governments, Delta agriculture and others to taking the unusual step of granting permittee status to the water contractors. Many perceive that the export contractors have had a disproportionate influence within the BDCP process, and granting them permittee status could exacerbate concerns and increase the obstacles facing BDCP, thus jeopardizing the success of this program.

In our view, the issue of permittee status has become an unnecessary distraction from the important work that needs to be done in the BDCP. As established above, there is no need for the contractors to be elevated to the status of the federal and state agencies that own and operate the State and Federal Water Projects that are the subject of the HCP/NCCP. Moreover, moving in this direction is more likely to destabilize rather than promote the success of this vital program. The conservation caucus, both organizations that have been part of the BDCP planning and those with an important interest in that process, are continuing to work together on this important issue.

Thank you for your consideration of our views.

ED_000733_DD_NSF_00014385-00011

To: Tom Hagler/R9/USEPA/US@EPA;Karen Schwinn/R9/USEPA/US@EPA;"Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]; aren Schwinn/R9/USEPA/US@EPA;"Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]; Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]; ock Salt [rock.salt@us.army.mil]
Cc: "Nawi, David" [David_Nawi@ios.doi.gov]; Feller, Erika" [Erika_M._Feller@ceq.eop.gov]; Connor, Michael L" [MLConnor@usbr.gov]
From: "Belin, Letty"
Sent: Wed 6/15/2011 9:05:05 PM
Subject: purpose and need
fed p & n issue paper.pdf

Thank you all for the very helpful discussion today about BDCP purpose and need. In reviewing my files I found the attached undated 2-pager. Is this by any chance what was referred to in our call as the "March-April federal agreement?" Or is there some other document reflecting that agreement? The attached document appears to me to be totally consistent with the October 2010 letter that the three lead Federal agencies sent to EPA re: BDCP purpose and need. Anything you can provide me to clarify what the agreement was and/or what the Corps' concerns are would be most helpful. Thanks a lot,

Letty

Letty Belin

Counselor to the Deputy Secretary

U.S. Department of the Interior

202-208-6291

ED_000733_DD_NSF_00015208-00001

ISSUE PAPER
BDCP EIR/EIS Purpose Statement

ISSUE: Are the co-equal goals of ecosystem restoration and water supply reliability accurately and adequately described in the current version of the purpose statement in the Notice of Intent?

RECOMMENDED FEDERAL POSITION: We recommend that federal agencies confirm in writing their intent that projects need not be capable of delivering full contract amounts of water in order to be consistent with the purposes of BDCP.

BACKGROUND: On February 13, 2009, the NEPA Lead Agencies published a Notice of Intent (NOI) in the Federal Register to prepare an EIS for the Bay Delta Conservation Plan (BDCP). The NOI stated that the intent of the BDCP is "to secure authorizations that would allow projects that restore and protect water supplies, water quality, and ecosystem health to proceed within a stable regulatory framework." In addition, the NOI included the following language describing the water supply aspects of the purpose of BDCP:

> Restore and protect the ability of the SWP and CVP (State Water Project and Central Valley Project) to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts..... .

This language was developed in discussions among the Fish and Wildlife Service, Bureau of Reclamation, and the National Marine Fisheries Service, California Department of Fish and Game, California Department of Water Resources, and state and federal water contractors.

ANALYSIS: The addition of the reference to "full contract amounts" in the most recent NOI has raised the questions of 1) whether it is a purpose of the BDCP to provide for delivery of full contract amounts of water, and consequently, 2) whether project alternatives must have the capability of delivering full contract amounts in order to be considered and/or adopted as a preferred alternative under NEPA, an RPA under the ESA, or a LEDPA under Section 404 of the Clean Water Act. "Full contract amounts" would be considerably more than the average historic CVP/SWP water deliveries, and even significantly higher than the maximum water deliveries ever made under the two projects combined.

The EIS purpose statement is the key component of the document that drives the development of alternatives to the proposed action. All alternatives considered must be consistent with the purposes of the action. In addition, any "reasonable and prudent alternatives" proposed under the ESA must be consistent with the purposes of the project as stated in the BDCP and the EIR/EIS. During the development of alternatives, the meaning of "up to full contract amounts" has been a frequent issue of debate, particularly as it relates to the concept of water supply reliability. The debate is whether the wording means that an alternative must allow for the delivery of full contract amounts, or that no alternative should allow for deliveries in excess of full contract amounts --i.e., does the language establish a water supply cap, or a target? The current suite of alternatives was developed based on the belief that the language sets a cap, not a target.

The federal lead agencies should clarify in the EIR/EIS that the NOI's statement of purpose and need does not require that project alternatives be capable of delivering full contract amounts in order to be consistent with the project purposes. The agencies did not intend that all action alternatives be required to be capable of delivering full contract amounts of water – that is, amounts of water substantially greater than the amounts of water that have historically been delivered through the Delta. Nor did the agencies intend the NOI to impose such a requirement. To the contrary, the agencies believe that a reasonable

range of alternatives for the BDCP is one that meets the co-equal goals of 1) providing a more **reliable** water supply for California – in whatever amount is consistent with hydrologic conditions, laws and regulations, and the terms of water delivery contracts -- and 2) protecting, restoring, and enhancing the Delta ecosystem., The goal of providing a more reliable water supply can be met by decreasing the risk of major water supply disruption from widespread levy failure, sea level rise, and other current serious risks, whether or not the amount of water supplied from the Delta increases. Any proposal that increases water supply must also meet the other requirements articulated in the statement of purpose and need.

As stated in the NOI, it is imperative that alternatives must be consistent with federal and state law. They must comply, inter alia, with the federal ESA, NEPA, and Clean Water Act, and the California ESA, Natural Community Conservation Act, and the recently-enacted Delta Reform Act. The Delta Reform Act, Cal. Water Code Div. 35 (commencing with Section 85000) states that the policy of the State is to **reduce** reliance on the Delta in meeting California's future water supply needs. See Cal. Water Code sec. 85021. Since delivering full contract amounts would **increase reliance on the Delta** in meeting California's water needs, it is difficult to discern how an alternative that is capable of delivering full contract amounts would be consistent with this State policy embodied in the State's Water Code.

Furthermore, the agencies chose language for the NOI that explicitly does not require than an alternative be capable of delivering full contract amounts. The phrase "up to full contract amounts" indicates that both alternatives that could deliver full contract amounts and those that are not capable of delivering full contract amounts are consistent with this stated purpose.

The federal NEPA lead agencies, and all federal agencies that comprise the Federal Bay-Delta Leadership Committee, should confirm that the purpose and intent of BDCP does not require that it be capable of delivering full contract amounts of water. Alternatives to be considered should further the co-equal goals, should comply with federal and state laws, and should otherwise carry out the purposes set forth in the February 13, 2009, NOI, whether or not they are capable of delivering full contract amounts of water. The alternatives contemplated to date do not result in delivery of full contract amounts. In fact, several preliminary alternatives are anticipated to result in less south of Delta (SOD) exports than the currently defined BDCP proposed project. One or more alternatives will likely result in less SOD exports than under existing conditions and future no action modeling scenarios.

To: Karen Schwinn/R9/USEPA/US@EPA;"Belin, Letty" [Letty_Belin@ios.doi.gov]; Belin, Letty" [Letty_Belin@ios.doi.gov]
Cc: "Erika M. Feller" [Erika_M._Feller@ceq.eop.gov]; Connor, Michael L" [MLConnor@usbr.gov]; Paul.J.Robershotte@usace.army.mil" [Paul.J.Robershotte@usace.army.mil]; rock.salt@us.army.mil" [rock.salt@us.army.mil]; om Hagler/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Wed 6/15/2011 11:55:34 PM
Subject: RE: purpose and need

I think that the issue paper was prepared by Mary Grim in response to a request from Letty.

Also, I had a chance to speak with Paul and Mike Nepstadt about the issue today. Paul thinks that it is appropriate to keep it out here with Corps regulatory on an expedited track. He and I will both attend the meeting that has been scheduled for next week that will address both the permitting MOU and the P+N, leading to a discussion of alternatives.

Paul – Please feel free to correct or add.

From: Schwinn.Karen@epamail.epa.gov [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Wednesday, June 15, 2011 2:19 PM
To: Belin, Letty
Cc: Nawi, David; Erika M. Feller; Connor, Michael L; Paul.J.Robershotte@usace.army.mil; rock.salt@us.army.mil; Hagler.Tom@epamail.epa.gov
Subject: Re: purpose and need

I don't recall ever seeing that paper - might it have been an internal DOI paper?

For what its worth, I will separately send you the statement that the 5 federal agency staff and attorneys recommended.

~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

ED_000733_DD_NSF_00015212-00001

-----"Belin, Letty" <Letty_Belin@ios.doi.gov> wrote: -----

To: Tom Hagler/R9/USEPA/US@EPA, Karen Schwinn/R9/USEPA/US@EPA, "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>, Rock Salt <rock.salt@us.army.mil>
From: "Belin, Letty" <Letty_Belin@ios.doi.gov>
Date: 06/15/2011 02:05PM
Cc: "Nawi, David" <David_Nawi@ios.doi.gov>, "Feller, Erika" <Erika_M._Feller@ceq.eop.gov>, "Connor, Michael L" <MLConnor@usbr.gov>
Subject: purpose and need
(See attached file: fed p & n issue paper.pdf)

Thank you all for the very helpful discussion today about BDCP purpose and need. In reviewing my files I found the attached undated 2-pager. Is this by any chance what was referred to in our call as the "March-April federal agreement?" Or is there some other document reflecting that agreement? The attached document appears to me to be totally consistent with the October 2010 letter that the three lead Federal agencies sent to EPA re: BDCP purpose and need. Anything you can provide me to clarify what the agreement was and/or what the Corps' concerns are would be most helpful. Thanks a lot,

Letty

Letty Belin

Counselor to the Deputy Secretary

U.S. Department of the Interior

202-208-6291

To: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
Cc: "Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; aren Schwinn/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA[]; om Hagler/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Fri 6/17/2011 6:23:42 PM
Subject: RE: draft BDCP MOU 3 June 2011 (UNCLASSIFIED)

Paul - I appreciate your thoughts and the impulse to move the MOU to completion in a very short time. The only thing I would add is the need to involve DWR. I just spoke with Mark Cowin and told him that we intend to provide a draft to DWR following the meeting on Wednesday. I hope and expect that we will have a complete draft agreeable to all the federal agencies at t end of that meeting. I will do all I can to encourage prompt and effective agency participation.

David

-----Original Message-----
From: Robershotte, Paul J SPD [mailto:Paul.J.Robershotte@usace.army.mil]
Sent: Friday, June 17, 2011 10:16 AM
To: Nawi, David
Cc: Nepstad, Michael G SPK
Subject: draft BDCP MOU 3 June 2011 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

David
I have been surprised by the lack of familiarity and the confusion (e.g. Letty, Federico, others) over the Clean Water Act process, in particular, but also the required 408 & Section 10 processes. There has been so much attention to the Section 7 Consultation process, this (404/408/10) has not gotten appropriate attention. This MOU need not take but days to be finalized and signed. This is not a contract for negotiation and counter negotiation, this is a recognition, or an acknowledgement that these processes are required by law and the Lead Agencies acknowledge such. Period. It is up to the Corps to get this to the Leads and to respond to questions and suggested edits. The three Lead Agencies are welcome to ask questions and suggest edits, but any delay on the part of the Lead Agencies in signing this can be interpreted as a continuing lack or interest and/or recognition. All we need is Reclamation, FWS & NMFS to read, comment and sign. It could be done this week.
Can you assist by encouraging their participation? I will attend this next week's MOU meeting.
Thanks
Paul

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, June 16, 2011 2:43 PM
To: Robershotte, Paul J SPD
Subject: FW: Attached is draft BDCP MOU 3 June 2011

ED_000733_DD_NSF_00015218-00001

Paul - June 3 draft of the permitting MOU is attached. I have just looked it over. My sense is that completing a final draft of this document and getting it through the needed levels of state (DWR) and federal management and legal review will take a good bit of time and effort. It may not be the most effective use of either. Do you have any thoughts?

David

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Monday, June 06, 2011 11:19 AM
To: Beggs, Barbara; Deanna.Harwood@noaa.gov; Monroe, James; Allen, Kaylee; Clay, Lisa H SPK; melanie.rowland@noaa.gov; Jewell, Michael S SPK; Idlof, Patricia S; Michael.Tucker@NOAA.GOV; Victorine, Rebecca A; Hagler.Tom@epamail.epa.gov; Redler, Yvette; Foresman.Erin@epamail.epa.gov
Subject: Attached is draft BDCP MOU 3 June 2011

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District 650 Capitol Mall, Suite 5-200
Sacramento, California 95814
(916) 557-7262 Fax:(916) 557-6877
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00015218-00002

To: "Nawi, David" [David_Nawi@ios.doi.gov]
Cc: "Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; aren Schwinn/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA[]; om Hagler/R9/USEPA/US@EPA[]
From: "Robershotte, Paul J SPD"
Sent: Fri 6/17/2011 7:03:42 PM
Subject: RE: draft BDCP MOU 3 June 2011 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

David
Thanks. I have discussed this MOU with Mark, Jerry, and Dale, at least twice, discussing its objective, it length, the tables and figures. Dale, Mark & Jerry have indicated they want DWR to be a signatory. Dale has committed to have a "permitting POC" hired within DWR and consultants on board with 404/10/408 expertise in the next 2 to 3 weeks. This should dovetail well with the MOU.
Best,
Paul

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Friday, June 17, 2011 11:24 AM
To: Robershotte, Paul J SPD
Cc: Nepstad, Michael G SPK; Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Subject: RE: draft BDCP MOU 3 June 2011 (UNCLASSIFIED)

Paul - I appreciate your thoughts and the impulse to move the MOU to completion in a very short time. The only thing I would add is the need to involve DWR. I just spoke with Mark Cowin and told him that we intend to provide a draft to DWR following the meeting on Wednesday. I hope and expect that we will have a complete draft agreeable to all the federal agencies at t end of that meeting. I will do all I can to encourage prompt and effective agency participation.

David

-----Original Message-----
From: Robershotte, Paul J SPD [mailto:Paul.J.Robershotte@usace.army.mil]
Sent: Friday, June 17, 2011 10:16 AM
To: Nawi, David
Cc: Nepstad, Michael G SPK
Subject: draft BDCP MOU 3 June 2011 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

David
I have been surprised by the lack of familiarity and the confusion (e.g. Letty, Federico, others) over the Clean Water Act process, in particular, but also the required 408 & Section 10 processes. There has been so much

attention to the Section 7 Consultation process, this (404/408/10) has not gotten appropriate attention. This MOU need not take but days to be finalized and signed. This is not a contract for negotiation and counter negotiation, this is a recognition, or an acknowledgement that these processes are required by law and the Lead Agencies acknowledge such. Period.

It is up to the Corps to get this to the Leads and to respond to questions and suggested edits. The three Lead Agencies are welcome to ask questions and suggest edits, but any delay on the part of the Lead Agencies in signing this can be interpreted as a continuing lack or interest and/or recognition. All we need is Reclamation, FWS & NMFS to read, comment and sign. It could be done this week.
Can you assist by encouraging their participation? I will attend this next week's MOU meeting.
Thanks
Paul

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, June 16, 2011 2:43 PM
To: Robershotte, Paul J SPD
Subject: FW: Attached is draft BDCP MOU 3 June 2011

Paul - June 3 draft of the permitting MOU is attached. I have just looked it over. My sense is that completing a final draft of this document and getting it through the needed levels of state (DWR) and federal management and legal review will take a good bit of time and effort. It may not be the most effective use of either. Do you have any thoughts?

David

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Monday, June 06, 2011 11:19 AM
To: Beggs, Barbara; Deanna.Harwood@noaa.gov; Monroe, James; Allen, Kaylee; Clay, Lisa H SPK; melanie.rowland@noaa.gov; Jewell, Michael S SPK; Idlof, Patricia S; Michael.Tucker@NOAA.GOV; Victorine, Rebecca A; Hagler.Tom@epamail.epa.gov; Redler, Yvette; Foresman.Erin@epamail.epa.gov
Subject: Attached is draft BDCP MOU 3 June 2011

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District 650 Capitol Mall, Suite 5-200
Sacramento, California 95814
(916) 557-7262 Fax:(916) 557-6877
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

ED_000733_DD_NSF_00015219-00002

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00015219-00003

To: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]; om Hagler/R9/USEPA/US@EPA[]
Cc: Karen Schwinn/R9/USEPA/US@EPA;"Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]
From: "Nawi, David"
Sent: Fri 6/24/2011 10:54:55 PM
Subject: RE: Sharing Draft 404 NEPA MOU with Contractors? (UNCLASSIFIED)

I just spoke with Mark Cowin. He does not want his staff to send the MOU to the contractors yet. I believe he wants to put the document in the right context rather than hitting them with it cold. Would someone reply to DWR attorneys to the effect that we suggest that they check with Mark, and if he is OK sending it out, we are too, taking into account Paul's caveat about delay.

I think that moving ahead with the P+N and related issues and alternatives is more important than rushing the MOU. If we can do both together, so much the better.

David

-----Original Message-----
From: Robershotte, Paul J SPD [mailto:Paul.J.Robershotte@usace.army.mil]
Sent: Friday, June 24, 2011 3:48 PM
To: Hagler.Tom@epamail.epa.gov
Cc: Schwinn.Karen@epamail.epa.gov; Nepstad, Michael G SPK; Nawi, David
Subject: RE: Sharing Draft 404 NEPA MOU with Contractors? (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I don't have a problem with DWR sharing this with the contractors unless it delays it signing (and possibly other things) by some significant period. To me, this is a commitment from the State (and Fed Leads) that they acknowledge CWA is part of the BDCP process that we all believe should be best addressed at the same time. Do you know what the Contractors concern would be? If it is schedule delays, then they and I share the concern. In a call I had with Jerry Meral today about two upcoming Corps meetings, he asked about the MOU. I mentioned we had had a call this morning with DWR. His desire was to get this reviewed and signed soon, also, so we could get into the substance rather than take too long on the MOU. The process Tom employed so well this past Wednesday (assume you have read it, now let's walk through it one time to receive ALL your suggestions and questions) would be great to do soon with DWR and get it done!
Thoughts?
Paul

-----Original Message-----
From: Hagler.Tom@epamail.epa.gov [mailto:Hagler.Tom@epamail.epa.gov]
Sent: Friday, June 24, 2011 3:33 PM
To: Robershotte, Paul J SPD; Nawi, David
Cc: Smith, Chip R Mr CIV USA ASA CW; Foresman.Erin@epamail.epa.gov; Schwinn.Karen@epamail.epa.gov; Nepstad, Michael G SPK; Jewell, Michael S SPK; Salt, Rock

Subject: Sharing Draft 404 NEPA MOU with Contractors?

I just had a talk with Michelle Morrow and Cathy Crothers, DWR legal, and they asked if they could share the draft 404 NEPA MOU with the contractors. I'm assuming once it goes to the state contractors it will also go to the federal contractors.

I told them that given the dynamics of all of this, I was not going to give her permission absent getting agreement from the DOI and Corps program leads. (I'm hoping that Karen wouldn't mind, since we tend to do things openly here at EPA).

What do you guys think?

****
****

Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415)972-3945

From: "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>
To: Karen Schwinn/R9/USEPA/US@EPA, "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
Cc: "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>, "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>, "Salt, Rock" <rock.salt@us.army.mil>, Erin Foresman/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA
Date: 06/24/2011 11:27 AM
Subject: RE: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Karen
Yes, it was Dale H-F that specifically asked the status of the Purpose & Need. I shared that we had hoped that we might include the P & N in the MOU, and that the Purpose was pretty close (needed to capture the original 2009 NOI Plus, EPA concern, plus the Oct 2010 Lead Agency response). David Nawi

ED_000733_DD_NSF_00015249-00002

was sending Dale the Oct 2010 letter. Further, that the Bureau was to revisit Chapter 2 and propose the changes they wanted to make to "Need" and get that submitted. I think that is where we are. DWR is supportive in getting involved and getting this advanced.

Paul

-----Original Message-----
From: Schwinn.Karen@epamail.epa.gov [mailto:Schwinn.Karen@epamail.epa.gov <mailto:Schwinn.Karen@epamail.epa.gov>]
Sent: Friday, June 24, 2011 11:15 AM
To: Robershotte, Paul J SPD; Nepstad, Michael G SPK
Cc: Jewell, Michael S SPK; Smith, Chip R Mr CIV USA ASA CW; Salt, Rock; Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Subject: Re: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Thanks Paul! I agree with point #5. Wouldn't next step on that be a submittal from the Lead Agencies, followed by a response from Corps and us? Did David or Mark agree to move forward on that? - Karen

---

From: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
Sent: 06/24/2011 11:07 AM MST
To: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
Cc: "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>; "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>; "Salt, Rock" <rock.salt@us.army.mil>; Erin Foresman; Tom Hagler; Karen Schwinn
Subject: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Mike, with cc to Mr Salt, Chip, Mike, Karen, Tom & Erin:

David Nawi & I had a constructive discussion with Mark Cowin, Dale Hoffman-Floerke, and Cathy Caruthers from DWR this morning. The summary of Mark's comments would include:

1. DWR sees the advantages and benefits of addressing NEPA and CWA both at this time;

2. Thus, DWR will pursue being a signatory on the proposed MOU;

3. Recognizing, however, this does not require "pressing reset" on our targeted schedules (and recognizing everyone's process fatigue associated with BDCP);

4. The version we received Wednesday looks quite good, but we will need

some time to digest, ask questions, and suggest edits;

5. We see no reason to wait on advancing to Checkpoints identified in the MOU such as agreement on Propose & Need, but do this in parallel with finalizing and signing the MOU.

So, I think we made progress this morning.

Best,

Paul

Paul J Robershotte

Special Advisor

Integrated Water Resource Planning

US Army Corps of Engineers, South Pacific Div

415-503-6639 (office)

415-602-3806 (blackberry)

415-503-6640 (fax)

Building Strong on the Cornerstone of the Southwest!

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00015249-00004

To: Carolyn Yale/R9/USEPA/US@EPA;CN=Erin Foresman/OU=R9/O=USEPA/C=US@EPA;CN=Bruce Herbold/OU=R9/O=USEPA/C=US@EPA;sam ziegler;CN=Tom Hagler/OU=R9/O=USEPA/C=US@EPA;"Tim Vendlinski" [vendlinski.tim@epa.gov]; N=Erin Foresman/OU=R9/O=USEPA/C=US@EPA;CN=Bruce Herbold/OU=R9/O=USEPA/C=US@EPA;sam ziegler;CN=Tom Hagler/OU=R9/O=USEPA/C=US@EPA;"Tim Vendlinski" [vendlinski.tim@epa.gov]; N=Bruce Herbold/OU=R9/O=USEPA/C=US@EPA;sam ziegler;CN=Tom Hagler/OU=R9/O=USEPA/C=US@EPA;"Tim Vendlinski" [vendlinski.tim@epa.gov]; am ziegler;CN=Tom Hagler/OU=R9/O=USEPA/C=US@EPA;"Tim Vendlinski" [vendlinski.tim@epa.gov]; N=Tom Hagler/OU=R9/O=USEPA/C=US@EPA;"Tim Vendlinski" [vendlinski.tim@epa.gov]; Tim Vendlinski" [vendlinski.tim@epa.gov]
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Thur 6/30/2011 3:17:33 PM
Subject: Fw: California water
Hotspot
Hotspot
Hotspot
david_hayes@ios.doi.gov

From: "Nawi, David" [David_Nawi@ios.doi.gov]
Sent: 06/30/2011 09:41 AM AST
To: Karen Schwinn; "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>
Subject: FW: California water

FYI

From: Hayes, David
Sent: Tuesday, June 28, 2011 7:43 PM
To: Lohoefener, Ren; Glaser, Donald R; Shulters, Michael V; Nawi, David; Rod Mcinnis; will.stelle@noaa.gov
Cc: Sobeck, Eileen; D M Ashe; Castle, Anne; Ms. Medina Monica; Connor, Michael L; Sutley Nancy; Boots Michael; McNutt, Marcia K; erika_m._feller@ceq.eop.gov; Belin, Letty; eric.schwaab@noaa.gov; Jacobson, Rachel - Deputy Solicitor; Hildebrandt, Betsy
Subject: California water

Based on the events of the past several weeks, I believe that our collective efforts in moving the BDCP process forward would be benefitted by a more visible and frequent "front office" involvement in the matter. All of you have been doing a terrific job in addressing the many issues that are coming at us, but I think that we can provide you with more support by having a high ranking leader of the effort from Washington who is visible in Sacramento (via frequent visits and on-going, hands-on involvement) and who can make sure that the various strands of work that need to progress are, in fact, moving forward, and that we are proactively addressing obstacles as they arise.

I am delighted to report that Mike Connor has agreed to take on this role. Mike will have on-going and

frequent interactions with all of the regional leadership in California, with the State, and with key outside stakeholders. He will ensure coordination among the Regional Federal leadership who are responsible for advancing the BDCP to a successful and expeditious conclusion; he will oversee a focused federal effort to resolve any issues that could, if left unaddressed, delay the BDCP schedule; and Mike will ensure that Secretary Salazar and I, and other key Administration officials -- including, in particular, our colleagues at NOAA (with Will's active help) and at CEQ -- and Members of Congress are kept apprised of progress and issues associated with the BDCP effort.

In undertaking these tasks, Mike will work closely with all of the regional leadership and with David Nawi, who will continue to play the indispensable role of helping to coordinate BDCP efforts from Sacramento.

I will remain fully committed to these matters, and Letty and I anticipate working very closely with Mike as he takes on his expanded role. Also, to ensure full engagement by our Washington leadership team, and given the high priority that we must (continue to) give to this matter, Mike and I will be scheduling frequent calls with our FWS, USGS, CEQ, NOAA, EPA and Corps leadership here in Washington so that there is visibility throughout our organizations of the steps that we are taking to move forward with the BDCP effort.

Mike will be in Sacramento on Wednesday and he has scheduled a series of meetings to kick off his new role. I anticipate that we will make a public announcement about Mike's role in the near future – perhaps in connection with the expected exchange of letters with the State regarding the BDCP schedule.

Thanks for all of the great work that you are continuing to do on this important matter. Feel free to give me a call if you would like to discuss this --- or any other California water matter.

--David

David J. Hayes

Deputy Secretary

U.S. Department of the Interior

david_hayes@ios.doi.gov

202-208-6291

ED_000733_DD_NSF_00015264-00002

To: "Nawi, David" [David_Nawi@ios.doi.gov]; aren Schwinn/R9/USEPA/US@EPA;"Jewell, Michael S SPK" [Michael.S.Jewell@usace.army.mil]; Jewell, Michael S SPK" [Michael.S.Jewell@usace.army.mil]; om Hagler/R9/USEPA/US@EPA[]
Cc: chip smith1 [chip.smith1@us.army.mil]; rin Foresman/R9/USEPA/US@EPA;"Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; Salt, Rock" [rock.salt@us.army.mil]
From: "Robershotte, Paul J SPD"
Sent: Thur 6/30/2011 9:23:02 PM
Subject: RE: Sharing Draft 404 NEPA MOU with Contractors? (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I will shoot a message to Mark.
Paul

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, June 30, 2011 2:17 PM
To: Karen Schwinn; Robershotte, Paul J SPD; Jewell, Michael S SPK; Tom Hagler
Cc: chip smith1; Erin Foresman; Nepstad, Michael G SPK; Salt, Rock
Subject: RE: Sharing Draft 404 NEPA MOU with Contractors? (UNCLASSIFIED)

I agree as well, but I think we should confrm with Mark, just to be on the safe side. Paul - Can you so so, or should I?

And csan someone bring us up to date on the status of comments from DWR?

From: Karen Schwinn [Schwinn.Karen@epamail.epa.gov]
Sent: Thursday, June 30, 2011 2:16 PM
To: Paul Robershotte; Nawi, David; Mike Jewell; Tom Hagler
Cc: chip smith1; Erin Foresman; Michael G SPK Nepstad; Salt, Rock
Subject: Re: Sharing Draft 404 NEPA MOU with Contractors? (UNCLASSIFIED)

Ditto

----- Original Message -----
From: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
Sent: 06/30/2011 02:11 PM MST
To: "Nawi, David" <David_Nawi@ios.doi.gov>; "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>; Karen Schwinn; Tom Hagler
Cc: <chip.smith1@us.army.mil>; Erin Foresman; "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>; "Salt, Rock" <rock.salt@us.army.mil>
Subject: RE: Sharing Draft 404 NEPA MOU with Contractors? (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

All

I believe Mike Jewell is just now checking back in from last week (June 24).
I believe we (Mark Cowin, David, USACE, EPA (Karen & Tom)) are ok with and on a course where we are not sending any MOU to the State Water Contractors until we get it signed, or until Mark requests it go to them.

Does anyone know of any new inputs?
Best
Paul

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, June 30, 2011 1:59 PM
To: Jewell, Michael S SPK; Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Cc: chip.smith1@us.army.mil; Foresman.Erin@epamail.epa.gov; Nepstad, Michael G SPK; Robershotte, Paul J SPD; Salt, Rock
Subject: RE: Sharing Draft 404 NEPA MOU with Contractors?

Paul - Do you want to coordinate with Mark Cowin on how and when to communicate with the contractors? I think, as Mike suggests, that sharing a draft with them that we are still working on is likely to be counterproductive, and that we should hold off until we get something in the nature of a final draft.

David

From: Jewell, Michael S SPK [Michael.S.Jewell@usace.army.mil]
Sent: Thursday, June 30, 2011 1:56 PM
To: Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Cc: chip.smith1@us.army.mil; Foresman.Erin@epamail.epa.gov; Nawi, David; Nepstad, Michael G SPK; Robershotte, Paul J SPD; Salt, Rock
Subject: RE: Sharing Draft 404 NEPA MOU with Contractors?

I know this is a bit late (and may be OBE) but I would strongly suggest we not share the draft MOU with others not signatory to the MOU until we have a document we are all satisfied with (final draft). I understand DWR is still looking it over...

Michael S Jewell

Chief, Regulatory Division

US Army Corps of Engineers, Sacramento District

From: Schwinn.Karen@epamail.epa.gov [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Friday, June 24, 2011 3:36 PM

To: Hagler.Tom@epamail.epa.gov
Cc: chip.smith1@us.army.mil; Foresman.Erin@epamail.epa.gov; David Nawi; Nepstad, Michael G SPK; Jewell, Michael S SPK; Robershotte, Paul J SPD; Salt, Rock
Subject: Re: Sharing Draft 404 NEPA MOU with Contractors?

just confirming that I'm ok with it, but defer to David and Paul.

~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

-----Tom Hagler/R9/USEPA/US wrote: -----

To: "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>, "Nawi, David" <David_Nawi@ios.doi.gov>
From: Tom Hagler/R9/USEPA/US
Date: 06/24/2011 03:33PM
Cc: "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>, Erin Foresman/R9/USEPA/US@EPA, Karen Schwinn/R9/USEPA/US@EPA, "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>, "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>, "Salt, Rock" <rock.salt@us.army.mil>
Subject: Sharing Draft 404 NEPA MOU with Contractors?

I just had a talk with Michelle Morrow and Cathy Crothers, DWR legal, and they asked if they could share the draft 404 NEPA MOU with the contractors. I'm assuming once it goes to the state contractors it will also go to the federal contractors.

I told them that given the dynamics of all of this, I was not going to give her permission absent getting agreement from the DOI and Corps program leads. (I'm hoping that Karen wouldn't mind, since we tend to do things openly here at EPA).

What do you guys think?

****
****
Tom Hagler

ED_000733_DD_NSF_00015278-00003

Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415)972-3945

Image removed by sender. Inactive hide details for "Robershotte, Paul J SPD" ---06/24/2011 11:27:03 AM---Classification: UNCLASSIFIED Caveats: NONE"Robershotte, Paul J SPD" ---06/24/2011 11:27:03 AM---Classification: UNCLASSIFIED Caveats: NONE

Image removed by sender.

From:

Image removed by sender.
"Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>

Image removed by sender.

To:

Image removed by sender.
Karen Schwinn/R9/USEPA/US@EPA, "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>

Image removed by sender.

Cc:

Image removed by sender.
"Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>, "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>, "Salt, Rock" <rock.salt@us.army.mil>, Erin Foresman/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA

Image removed by sender.

Date:

Image removed by sender.
06/24/2011 11:27 AM

Image removed by sender.

Subject:

Image removed by sender.
RE: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Karen
Yes, it was Dale H-F that specifically asked the status of the Purpose & Need. I shared that we had hoped that we might include the P & N in the MOU, and that the Purpose was pretty close (needed to capture the original 2009 NOI Plus, EPA concern, plus the Oct 2010 Lead Agency response). David Nawi was sending Dale the Oct 2010 letter. Further, that the Bureau was to revisit Chapter 2 and propose the changes they wanted to make to "Need" and get that submitted. I think that is where we are. DWR is supportive in getting involved and getting this advanced.

Paul

-----Original Message-----
From: Schwinn.Karen@epamail.epa.gov
[mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Friday, June 24, 2011 11:15 AM
To: Robershotte, Paul J SPD; Nepstad, Michael G SPK
Cc: Jewell, Michael S SPK; Smith, Chip R Mr CIV USA ASA CW; Salt, Rock; Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Subject: Re: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Thanks Paul! I agree with point #5. Wouldn't next step on that be a submittal from the Lead Agencies, followed by a response from Corps and us?
Did David or Mark agree to move forward on that? - Karen

From: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
Sent: 06/24/2011 11:07 AM MST
To: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
Cc: "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>; "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>; "Salt, Rock" <rock.salt@us.army.mil>; Erin Foresman; Tom Hagler; Karen Schwinn
Subject: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Mike, with cc to Mr Salt, Chip, Mike, Karen, Tom & Erin:

David Nawi & I had a constructive discussion with Mark Cowin, Dale Hoffman-Floerke, and Cathy Caruthers from DWR this morning. The summary of
Mark's comments would include:

1. DWR sees the advantages and benefits of addressing NEPA and CWA both
at this time;

2. Thus, DWR will pursue being a signatory on the proposed MOU;

3. Recognizing, however, this does not require "pressing reset" on our
targeted schedules (and recognizing everyone's process fatigue associated
with BDCP);

4. The version we received Wednesday looks quite good, but we will need
some time to digest, ask questions, and suggest edits;

5. We see no reason to wait on advancing to Checkpoints identified in
the MOU such as agreement on Propose & Need, but do this in parallel with
finalizing and signing the MOU.

So, I think we made progress this morning.

Best,

Paul

Paul J Robershotte

Special Advisor

Integrated Water Resource Planning

US Army Corps of Engineers, South Pacific Div

415-503-6639 (office)

415-602-3806 (blackberry)

ED_000733_DD_NSF_00015278-00006

415-503-6640 (fax)

Building Strong on the Cornerstone of the Southwest!

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00015278-00007

To: David_Nawi@ios.doi.gov[David_Nawi@ios.doi.gov]; Jewell, Michael S SPK" [Michael.S.Jewell@usace.army.mil]; aren Schwinn/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA[]; om Hagler/R9/USEPA/US@EPA[]
Cc: chip.smith1@us.army.mil[chip.smith1@us.army.mil]; rin Foresman/R9/USEPA/US@EPA;"Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]
From: "Robershotte, Paul J SPD"
Sent: Fri 7/1/2011 12:35:11 AM
Subject: Re: Sharing Draft 404 NEPA MOU with Contractors?
mailto:Schwinn.Karen@epamail.epa.gov
image002.jpg
image003.jpg

I heard back from Mark. He has directed his staff not to share MOU w Water Contractors at this time. He has told them this is underway and has not yet gotten any challenges. He may shoot to them after editing and before signing. So, I think we are on the same wavelength.
Best
Paul

Message sent via my BlackBerry Wireless Device

From: Nawi, David <David_Nawi@ios.doi.gov>
To: Jewell, Michael S SPK; Schwinn.Karen@epamail.epa.gov <Schwinn.Karen@epamail.epa.gov>; Hagler.Tom@epamail.epa.gov <Hagler.Tom@epamail.epa.gov>
Cc: chip.smith1@us.army.mil <chip.smith1@us.army.mil>; Foresman.Erin@epamail.epa.gov <Foresman.Erin@epamail.epa.gov>; Nepstad, Michael G SPK; Robershotte, Paul J SPD; Salt, Rock
Sent: Thu Jun 30 13:59:10 2011
Subject: RE: Sharing Draft 404 NEPA MOU with Contractors?

Paul - Do you want to coordinate with Mark Cowin on how and when to communicate with the contractors? I think, as Mike suggests, that sharing a draft with them that we are still working on is likely to be counterproductive, and that we should hold off until we get something in the nature of a final draft.

David

From: Jewell, Michael S SPK [Michael.S.Jewell@usace.army.mil]
Sent: Thursday, June 30, 2011 1:56 PM
To: Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Cc: chip.smith1@us.army.mil; Foresman.Erin@epamail.epa.gov; Nawi, David; Nepstad, Michael G SPK; Robershotte, Paul J SPD; Salt, Rock
Subject: RE: Sharing Draft 404 NEPA MOU with Contractors?

I know this is a bit late (and may be OBE) but I would strongly suggest we not share the draft MOU with others not signatory to the MOU until we have a document we are all satisfied with (final draft). I understand DWR is still looking it over...

Michael S Jewell

Chief, Regulatory Division

US Army Corps of Engineers, Sacramento District

From: Schwinn.Karen@epamail.epa.gov [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Friday, June 24, 2011 3:36 PM
To: Hagler.Tom@epamail.epa.gov
Cc: chip.smith1@us.army.mil; Foresman.Erin@epamail.epa.gov; David Nawi; Nepstad, Michael G SPK; Jewell, Michael S SPK; Robershotte, Paul J SPD; Salt, Rock
Subject: Re: Sharing Draft 404 NEPA MOU with Contractors?

just confirming that I'm ok with it, but defer to David and Paul.

~~~~~~~~~~~~~~~~~~~~~~~~
KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

-----Tom Hagler/R9/USEPA/US wrote: -----

To: "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>, "Nawi, David" <David_Nawi@ios.doi.gov>
From: Tom Hagler/R9/USEPA/US
Date: 06/24/2011 03:33PM
Cc: "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>, Erin Foresman/R9/USEPA/US@EPA, Karen Schwinn/R9/USEPA/US@EPA, "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>, "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>, "Salt, Rock" <rock.salt@us.army.mil>
Subject: Sharing Draft 404 NEPA MOU with Contractors?

I just had a talk with Michelle Morrow and Cathy Crothers, DWR legal, and they asked if they could share the draft 404 NEPA MOU with the contractors. I'm assuming once it goes to the state contractors it will also go to the federal contractors.

I told them that given the dynamics of all of this, I was not going to give her permission absent getting agreement from the DOI and Corps program leads. (I'm hoping that Karen wouldn't mind, since we tend to do things openly here at EPA).

What do you guys think?

ED_000733_DD_NSF_00015279-00002

****
****

Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415)972-3945

Image removed by sender. Inactive hide details for "Robershotte, Paul J SPD" ---06/24/2011 11:27:03 AM---Classification: UNCLASSIFIED Caveats: NONE"Robershotte, Paul J SPD" ---06/24/2011 11:27:03 AM---Classification: UNCLASSIFIED Caveats: NONE

From:

"Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>

To:

Karen Schwinn/R9/USEPA/US@EPA, "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>

Cc:

"Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>, "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>, "Salt, Rock" <rock.salt@us.army.mil>, Erin Foresman/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA

Date:

06/24/2011 11:27 AM

Subject:

RE: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Karen
Yes, it was Dale H-F that specifically asked the status of the Purpose & Need. I shared that we had hoped that we might include the P & N in the MOU, and that the Purpose was pretty close (needed to capture the original 2009 NOI Plus, EPA concern, plus the Oct 2010 Lead Agency response). David Nawi was sending Dale the Oct 2010 letter. Further, that the Bureau was to revisit Chapter 2 and propose the changes they wanted to make to "Need" and get that submitted. I think that is where we are. DWR is supportive in getting involved and getting this advanced.

Paul

-----Original Message-----
From: Schwinn.Karen@epamail.epa.gov [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Friday, June 24, 2011 11:15 AM
To: Robershotte, Paul J SPD; Nepstad, Michael G SPK
Cc: Jewell, Michael S SPK; Smith, Chip R Mr CIV USA ASA CW; Salt, Rock; Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Subject: Re: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Thanks Paul! I agree with point #5. Wouldn't next step on that be a submittal from the Lead Agencies, followed by a response from Corps and us? Did David or Mark agree to move forward on that? - Karen

---

From: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
Sent: 06/24/2011 11:07 AM MST
To: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
Cc: "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>; "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>; "Salt, Rock" <rock.salt@us.army.mil>; Erin Foresman; Tom Hagler; Karen Schwinn
Subject: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Mike, with cc to Mr Salt, Chip, Mike, Karen, Tom & Erin:

David Nawi & I had a constructive discussion with Mark Cowin, Dale Hoffman-Floerke, and Cathy Caruthers from DWR this morning. The summary of Mark's comments would include:

1. DWR sees the advantages and benefits of addressing NEPA and CWA both at this time;

2. Thus, DWR will pursue being a signatory on the proposed MOU;

3. Recognizing, however, this does not require "pressing reset" on our targeted schedules (and recognizing everyone's process fatigue associated with BDCP);

4. The version we received Wednesday looks quite good, but we will need some time to digest, ask questions, and suggest edits;

5. We see no reason to wait on advancing to Checkpoints identified in the MOU such as agreement on Propose & Need, but do this in parallel with finalizing and signing the MOU.

So, I think we made progress this morning.

Best,

Paul

Paul J Robershotte

Special Advisor

Integrated Water Resource Planning

US Army Corps of Engineers, South Pacific Div

415-503-6639 (office)

415-602-3806 (blackberry)

415-503-6640 (fax)

Building Strong on the Cornerstone of the Southwest!

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

ED_000733_DD_NSF_00015279-00005

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

ED_000733_DD_NSF_00015279-00006

To: "Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; Idlof, Patricia S" [PIdlof@usbr.gov]
Cc: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]; Jewell, Michael S SPK" [Michael.S.Jewell@usace.army.mil]; om Hagler/R9/USEPA/US@EPA;Erin Foresman/R9/USEPA/US@EPA;Karen Schwinn/R9/USEPA/US@EPA;"Fry, Susan M" [SFry@usbr.gov]; rin Foresman/R9/USEPA/US@EPA;Karen Schwinn/R9/USEPA/US@EPA;"Fry, Susan M" [SFry@usbr.gov]; aren Schwinn/R9/USEPA/US@EPA;"Fry, Susan M" [SFry@usbr.gov]; Fry, Susan M" [SFry@usbr.gov]
From: "Nawi, David"
Sent: Fri 7/15/2011 4:44:24 PM
Subject: RE: MOU Checkpoint A - NEPA Purpose and Need Statement (UNCLASSIFIED)

Mike - Thanks for the fast review.

Patti - I think the next step is for you to transmit the MOU to DWR, which you can do now, correct?

David

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Friday, July 15, 2011 9:02 AM
To: Idlof, Patricia S
Cc: Nawi, David; Robershotte, Paul J SPD; Jewell, Michael S SPK; Hagler.Tom@epamail.epa.gov; Foresman.Erin@epamail.epa.gov; Schwinn.Karen@epamail.epa.gov
Subject: MOU Checkpoint A - NEPA Purpose and Need Statement (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

The Corps has reviewed the attached MOU Checkpoint A - NEPA Purpose and Need Statement, and hereby AGREES, in accordance with the draft Memorandum of Understanding on the Integration Process for the Bay Delta Conservation Plan, that it meets the minimum requirements for compliance with the National Environmental Policy Act (42 U.S.C. 4321 et seq).

Classification: UNCLASSIFIED
Caveats: NONE

To: Karen Schwinn/R9/USEPA/US@EPA;"Barajas, Federico" [FBarajas@usbr.gov]; Barajas, Federico" [FBarajas@usbr.gov]
Cc: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
From: "Nawi, David"
Sent: Wed 1/18/2012 6:34:05 PM
Subject: RE: Effects Analysis
Schedule-workload-process Issues 1-10-2011_Compiled_CLEAN.DOCX

Here you are.

From: Karen Schwinn [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Wednesday, January 18, 2012 10:05 AM
To: Nawi, David; Barajas, Federico
Subject: Effects Analysis

Can you please send us the document that David mentioned at the Principal's meeting today - "Federal issues re: Effects Analysis". Thanks. - ks

~~~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~~~

Federal Agency BDCP Issues/ Concerns

January 10, 2011

The Federal agencies have identified several issues/concerns pertaining to the ongoing BDCP process that potentially threaten the BDCP schedule and might adversely affect the quality of the product. We continue to raise these issues in the hope that solutions can be found that will not imperil either the quality of BDCP or its schedule.

BDCP Schedule

Alternative 1A Analysis. There continues to be a lack of analysis for Alternative 1A (Scenario 6 with fall X2) in any product the Federal agencies have received thus far, including the Entrainment, Flow and Fish Population technical appendices. The State and ICF have made it clear that the BDCP Effects Analysis will provide detailed analyses of both Alternative 1 and 1A. However, the modeling for Alternative 1A has apparently not been completed, and only Alternative 1A CALSIM data has been provided to date. DWR has scheduled a one-hour meeting on 1/12/12 to discuss the "analytical approach" for this analysis, but it is not clear what work has actually been done. The situation presents two potential problems for meeting the current schedule: (1) ICF will need to add the Alternative 1A analysis to all products produced thus far and re-submit them either in-part or in-total; and (2) the Federal agencies will need to go through the entire review/comment process on applicable documents. This will need to be added to the schedule.

WORKING DRAFT

Analysis of EIS/EIR Biological Effects. ICF has not provided lead agencies with sufficient detail on their proposed methods or analytical framework for how they intend to compare the biological effects of the EIS/EIR alternatives in their "Batch C" chapters (including lack of issuance of the EIR/EIS Alternatives Screening Analysis report). Much attention has been given to the framework and methods for the effects analysis of the 2 BDCP alternatives (1 &1A), but there has been limited information on the architecture of the "lower level" analysis (Alternatives 1-9) that will be conducted for the NEPA/CEQA process. For NEPA/CEQA it will be necessary for ICF to have a robust, quality analysis that allows for distinction of biological effects among the various alternatives. This is related to the schedule issues above in that we feel lead agencies must receive, review, and comment on a description of the proposed EIS/EIR analytical methodologies before that analysis occurs. This review is not accounted for in the current schedule.

Incomplete Contractor Products. Many of the products the agencies are receiving from BDCP consultants are incomplete or have significant sections that are "under development", stating completed information will follow. As an example, several critical appendices are missing from the EIR/EIS Chapters. In those situations, to provide a complete review, Federal agency staff will need to review the completed documents when they become available before release of the public draft. This will require an additional review not accounted for in the schedule.

Contractor Product Rescheduling. There are instances where document release dates have been or are being modified by BDCP consultants, including additional unexpected information and documentation. While this may be necessary to better insure a more complete and thorough

ED_000733_DD_NSF_00041188-00001

product, it impacts the ability of Federal agencies to plan reviews, could reduce their thoroughness, and potentially hampers inclusion of agency recommendations and comments into BDCP documents given schedule mismatches. Considering no change is being proposed to the BDCP schedule, modification of release dates should be avoided if possible as they may adversely impact the timeliness and adequacy of Federal agency reviews.

Alternative BDCP Intake Analysis. A technical team was created to review and provide recommendations on the 2010 Steering Committee Proposed Project intake placement and operation. The team created a report regarding intake placement, size and operations related to river depth, screen height, varying diversion capacities amongst the intakes, sweeping and approach velocity minimums and phasing. To date, the analysis of phasing, intake sites below Sutter and Steamboat sloughs, and operational criteria have not been provided. Including these analyses and agency review of analytical documents will require additional time in the schedule.

Addressing Cooperative Agency Comments. As of December 2011, the BDCP Environmental Coordination Team (BECT) is meeting again. This team includes lead and cooperating/responsible agencies as allowed under NEPA and CEQA, respectively. Associated with this participation and the provision of their technical expertise, these groups will provide recommendations and comments on the EIR/EIS. There is no time allotted in the current BDCP schedule for considering comments from cooperating/responsible agencies in the NEPA/CEQA process.

WORKING DRAFT

Product Quality

Need for Agency Review of Revised Drafts. Federal agency staffs have not been provided revised draft versions of revised documents to check for comment inclusion or addition of new information. The absence of this "close-the-loop" step is problematic, as evident in management of the Entrainment Technical Appendix. A revised version of this document was released to the Delta Science Program for scientific review without Federal agency review. The document included new language and did not address all agency comments, resulting in several extremely problematic statements. One example of the serious problems in the revised document is found on Table A-2, including a "*BDCP Conservation Measure: Increase total amount of water exports (relative to currently constrained export levels)*". Another example is in section A.3.4.4, which states that EBC2 (existing biological conditions baseline #2) "*captures the requirements of the ESA Section 7... baseline*". This is not true and the Federal agencies have stated this fact on many occasions.

Submittal of provisional materials for independent science review, such as unrevised appendices or an un-reviewed roll-up strategy, has set an unfortunate precedent for the conduct of the more substantial review planned for early 2012. The schedule already calls for the Federal agencies to get the first view of the critical "roll up" document at the same time it is being sent for independent science review. Having other products still in an unrevised, not agreed-upon status at the time of that review could be counterproductive and will undermine the quality, value, and acceptability of the review. The Federal lead agencies staffs believe schedules should reflect the necessity of "closing-the-loop" on the review and revision of all products, including those where independent science review will occur after agency reviews. The development of complex

scientific products like the BDCP effects analysis is inherently an iterative process, as the Federal lead agencies have argued repeatedly, and as the BDCP independent review panel also clearly stated in its October report.

Inclusion of Scientific Review Recommendations. Inter-agency agreement has existed for some time on the need for scientific review as a continuing part of the BDCP process. However, the process to ensure inclusion of recommendations from scientific review needs to be clear and include the Federal agencies. A plan for responding to these comments is in the works, but has not yet been released for our review. Moreover, the evaluation and inclusion of these recommendations is not currently reflected in the BDCP schedule. Agencies should work to better identify and appropriately include these review recommendations. Example reviews that have occurred include:

- Anderson, J., R. Kneib, D. Reed and K. Rose. 2011. *Bay-Delta Conservation Plan Science Advisors Draft Report on BDCP Goals and Objectives for Covered Fish Species.* Reprinted in Appendix G.

- National Research Council. 2010. *A Scientific Assessment of Alternatives for Reducing Water Management Effects on Threatened and Endangered Fishes in California's Bay Delta.* Washington, DC: National Academies Press. 104 pp.

- National Research Council. 2011. *A Review of the Use of Science and Adaptive Management in California's Draft Bay Delta Conservation Plan.* Washington, DC: National Academies Press. 93 pp.

- Review Panel Summary Report. 2011, *Bay Delta Conservation Plan (BDCP) Effects Analysis Conceptual Foundation and Analytical Framework and Entrainment Appendix. Sacramento, CA: Delta Science Program.*

WORKING DRAFT

Biological Goals and Objectives. Federal and state resource agencies have provided new information to help complete BDCP terrestrial and aquatic goals and objectives, however they are not finalized. As a result, much of the existing analysis and documentation lacks sufficient "direction" to allow comment on whether the actions might address biological needs. At this time, more refined goals and objectives are being formed for aquatic and terrestrial species and habitats. A synergistic effects discussion seems essential to identify necessary changes to aquatic targets as a result of changed terrestrial targets and vice versa. If new goals and objectives require a reevaluation of BDCP Conservation Measures, the alternatives and analyses may need to be modified, possibly impacting the schedule.

Timely Data Access. The Federal agencies continue to seek access to existing data used for BDCP analyses, including that for hydrologic, hydrodynamic and GIS analysis. This information is essential for Federal agencies to evaluate methods, assumptions and results of potential BDCP alternatives. Currently, we are evaluating BDCP documentation about these analyses without fully understanding the validity of the analysis and what the results might mean. Including review of appropriate data will require additional time and may affect the schedule.

ED_000733_DD_NSF_00041188-00003

Resolution Process

The Federal lead agencies would like to propose that these issues (and any similar issues that may be suggested by the State) be designated as the primary topics for discussion at upcoming 5-Agency meetings. At those meetings the agencies need to come to agreement on the appropriate steps necessary to resolve each of these urgent issues.

WORKING DRAFT

To: "Nawi, David" [David_Nawi@ios.doi.gov]; Barajas, Federico" [FBarajas@usbr.gov]; Milligan, Ronald E" [RMilligan@usbr.gov]; Castleberry, Dan" [dan_castleberry@fws.gov]; aren Schwinn/R9/USEPA/US@EPA;"Grim, Mary" [Mary_Grim@fws.gov]; Grim, Mary" [Mary_Grim@fws.gov]; Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; michael.s.jewell@usace.army.mil" [michael.s.jewell@usace.army.mil]; Idlof, Patricia S (Patti)" [PIdlof@usbr.gov]; Norris, Jennifer" [jennifer_norris@fws.gov]; Michael Tucker' [Michael.Tucker@NOAA.GOV]; om Hagler/R9/USEPA/US@EPA;"Kiger, Luana - Davis, CA" [Luana.Kiger@ca.usda.gov]; Kiger, Luana - Davis, CA" [Luana.Kiger@ca.usda.gov]; Fujii, Roger" [rfujii@usgs.gov]; Arroyave, Pablo R" [PArroyave@usbr.gov]; oward Brown [Howard.Brown@noaa.gov]; Lohoefener, Ren" [Ren_Lohoefener@fws.gov]; Belin, Letty" [Letty_Belin@ios.doi.gov]; Glaser, Donald R" [DGlaser@usbr.gov]; Deanna Harwood' [Deanna.Harwood@noaa.gov]; Rinek, Lori" [lori_rinek@fws.gov]; rod.mcinnis@noaa.gov" [rod.mcinnis@noaa.gov]; Shouse, Michelle K." [mkshouse@usgs.gov]; Keay, Jeffrey A." [jkeay@usgs.gov]; Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]; Case, Harvey L." [hlcase@usgs.gov]; Fry, Susan M" [SFry@usbr.gov]; aria Rea [Maria.Rea@noaa.gov]; Chotkowski, Michael" [michael_chotkowski@fws.gov]; Hoover, Michael" [michael_hoover@fws.gov]; Chrisney, Ann C" [achrisney@usbr.gov]
Cc: "Allen, Kaylee" [Kaylee.Allen@sol.doi.gov]; Monroe, Jim" [James.Monroe@sol.doi.gov]; 'Chris.Yates@noaa.gov'" [Chris.Yates@noaa.gov]; Will.Stelle@noaa.gov" [Will.Stelle@noaa.gov]; jeff.McLain@noaa.gov" [jeff.McLain@noaa.gov]; Morales, Francia S" [FMorales@usbr.gov]; Pennell, Becky" [Becky_Pennell@fws.gov]; rin Foresman/R9/USEPA/US@EPA;Tim Vendlinski/R9/USEPA/US@EPA[]; im Vendlinski/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Wed 3/14/2012 9:09:47 PM
Subject: Federal Coordination Meeting March 15 Agenda
AgendaMarch152012 (2).doc
FY 2011 CALIFORNIA BAY_initiatives_condensed format update.doc
FY 2012 CALIFORNIA BAY_initiatives_template.doc
(b) (6) [redacted]

Agenda for March 15 Regional Coordination meeting is attached. Call-in number is on the agenda.

From: "Nawi, David" <David_Nawi@ios.doi.gov>
To: "Rinek, Lori" <lori_rinek@fws.gov>, Tom Hagler <Hagler.Tom@epamail.epa.gov>, Karen Schwinn <Schwinn.Karen@epamail.epa.gov>, "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>, "Allen, Kaylee" <Kaylee.Allen@sol.doi.gov>, Deanna Harwood <deanna.harwood@noaa.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, Michael Tucker <Michael.Tucker@NOAA.GOV>, "Barajas, Federico" <FBarajas@usbr.gov>
CC: "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Sobeck, Eileen"<Eileen_Sobeck@ios.doi.gov>
Date: Wed, 14 Mar 2012 16:55:43 -0400
Subject: Purpose and Need - Again
Message-ID: <A70EDF6BA89B89428874B16C6BF8F1E0076C2A725E@IIAMIBEXCHANGE.ia.doi.net>
Content-Type: multipart/mixed;
boundary="_004_A70EDF6BA89B89428874B16C6BF8F1E0076C2A725EIIAMIBEXCHANG_"
Thread-Topic: Purpose and Need - Again
Thread-Index: Ac0CJNIKopLsowLmTrWeI+6hjL1s6g==
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator:
MIME-Version: 1.0

(b) (5)

David

Received: from itrabqexedge01.local (161.217.6.73) by IIAMIBEXCH02.ia.doi.net (161.217.233.186) with Microsoft SMTP Server (TLS) id 8.3.213.0; Thu, 23 Feb 2012 15:11:20 -0500
Received: from itfalbasg01-prv.bia.gov (10.1.1.10) by ITRABQEXEDGE01.LOCAL (10.1.1.13) with Microsoft SMTP Server id 8.1.393.1; Thu, 23 Feb 2012 13:09:56 -0700
Received: from mrsbmapp20303.water.ca.gov (HELO dwrhost.water.ca.gov) ([136.200.247.11]) by maila.bia.gov with ESMTP; 23 Feb 2012 12:08:37 -0700
Received: from mrsbmapp20307.ad.water.ca.gov ([10.3.132.11]) by mrsbmapp20303.ad.water.ca.gov ([10.3.132.7]) with mapi; Thu, 23 Feb 2012 12:10:15 -0800
From: "Cowin, Mark" <mcowin@water.ca.gov>

To: "Nawi, David" <David_Nawi@ios.doi.gov>
CC: "Crothers, Cathy" <crothers@water.ca.gov>
Date: Thu, 23 Feb 2012 15:10:14 -0500
Subject: RE: Purpose Statement
Message-ID: <B33306B77E0C964499C414BBCE53D71E0A166D5233@mrsbmapp20307.ad.water.ca.gov>
In-Reply-To: <67BC36F6966AB848A6EB2422BADC8602078B3D55EC@IIAMIBEXCHANGE.ia.doi.net>
Content-Type: multipart/alternative;
boundary="_000_B33306B77E0C964499C414BBCE53D71E0A166D5233mrsbmapp20307_"
Content-Language: en-US
Thread-Topic: Purpose Statement
Thread-Index: AczxpqUdKRr4uCpRHOi3FCYILZ2WAAqNAVAAAXkWYA=
References: <67BC36F6966AB848A6EB2422BADC8602078B3D55EC@IIAMIBEXCHANGE.ia.doi.net>
Accept-Language: en-US
X-MS-Exchange-Organization-AuthAs: Anonymous
X-MS-Exchange-Organization-AuthSource: IIAMIBEXCH02.ia.doi.net
X-MS-Has-Attach:
X-MS-TNEF-Correlator:
acceptlanguage: en-US
x-sender-reputation: 5.3
x-sender-ip: 136.200.247.11
x-ironport-av: E=Sophos;i="4.73,470,1325487600"; d="scan'208,217";a="6708597"
MIME-Version: 1.0

Yes, I am OK with this language for the draft.

From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, February 23, 2012 9:22 AM
To: Cowin, Mark
Subject: FW: Purpose Statement

Mark – Confirming that we are good to go with the language below, and that it will be reflected without further change in the draft DEIS/EIR.

Thanks.

David

From: Nawi, David
Sent: Wednesday, February 22, 2012 1:12 PM
To: mark.cowin@water.ca.gov

Subject: Purpose Statement

Mark – Would you please give me a call re the Purpose Statement language we discussed last week – set out below.

David

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

Received: from IIAABQEXCH01.ia.doi.net (161.217.188.101) by IIAHEREXCH02.ia.doi.net (161.217.233.189) with Microsoft SMTP Server (TLS) id 8.3.213.0; Wed, 14 Mar 2012 16:48:45 -0400
Received: from itrherexedge01.local (161.217.6.13) by IIAABQEXCH01.ia.doi.net (161.217.188.101) with Microsoft SMTP Server (TLS) id 8.3.213.0; Wed, 14 Mar 2012 14:48:30 -0600
Received: from itfherasg01-prv.bia.gov (10.1.1.10) by itrherexedge01.local (10.1.1.13) with Microsoft SMTP Server id 8.1.393.1; Wed, 14 Mar 2012 16:49:03 -0400
Received: from mblast03.pyd.epa.gov ([161.80.134.170]) by mailh.bia.gov with ESMTP; 14 Mar 2012 16:47:56 -0400
Received: from mblast03.pyd.epa.gov (localhost.localdomain [127.0.0.1]) by localhost (Postfix) with SMTP id E5FDDD7CA59 for <david_nawi@ios.doi.gov>; Wed, 14 Mar 2012 16:47:55 -0400 (EDT)
Received: from mintra03.pyd.epa.gov (mintra03.pyd.epa.gov [161.80.134.169]) by mblast03.pyd.epa.gov (Postfix) with ESMTP id CADE5D7C9E5 for <david_nawi@ios.doi.gov>; Wed, 14 Mar 2012 16:47:55 -0400 (EDT)
Received: from mintra03.pyd.epa.gov (localhost.localdomain [127.0.0.1]) by localhost (Postfix) with SMTP id B78B37A8256 for <david_nawi@ios.doi.gov>; Wed, 14 Mar 2012 16:47:55 -0400 (EDT)
Received: from w1818tdcgu113.aa.ad.epa.gov (w1818tdcgu113.aa.ad.epa.gov [161.80.134.171]) by mintra03.pyd.epa.gov (Postfix) with ESMTP id 965F77A822F for <david_nawi@ios.doi.gov>; Wed, 14 Mar 2012 16:47:55 -0400 (EDT)
From: Karen Schwinn <Schwinn.Karen@epamail.epa.gov>
To: "Nawi, David" <David_Nawi@ios.doi.gov>
Date: Wed, 14 Mar 2012 16:47:52 -0400
Subject: Fw: California Bay-Delta FY 2012 Initiatives
Message-ID: <OFE3DD19B9.CFD83B2F-ON882579C1.00722DE1-882579C1.0072358A@epamail.epa.gov>
Content-Type: multipart/mixed;
boundary="_005_OFE3DD19B9CFD83B2FON882579C100722DE1882579C10072358Aepa_"
Thread-Topic: California Bay-Delta FY 2012 Initiatives
Thread-Index: Ac0CI9I9Jax9dCi1R7G8IeokWxCirQ==
X-MS-Exchange-Organization-AuthAs: Anonymous

X-MS-Exchange-Organization-AuthSource: IIAABQEXCH01.ia.doi.net
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator:
x-sender-reputation: 5.3
x-sender-ip: 161.80.134.170
x-ironport-av: E=Sophos;i="4.73,586,1325480400"; d="doc'32?scan'32,208,32";a="27021797"
x-mimetrack: Serialize by Router on EPAHUB13/USEPA/US(Release 8.5.2FP2|March 22, 2011) at 03/14/2012 04:47:55 PM
x-keepsent: E3DD19B9:CFD83B2F-882579C1:00722DE1; type=4; name=$KeepSent
MIME-Version: 1.0

~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

----- Forwarded by Karen Schwinn/R9/USEPA/US on 03/14/2012 01:47 PM -----

From: "Brodsky, Jason (Intern)" (b) (6) [redacted] >
To: "'Rock Salt (Rock.Salt@us.army.mil)'" <Rock.Salt@us.army.mil>, Nancy Stoner/DC/USEPA/US@EPA, 'Cindy Tejeda' <cindy.l.tejeda@usace.army.mil>, 'Dan Castleberry' <dan_castleberry@fws.gov>, 'Don Glaser' <dglaser@usbr.gov>, 'Ed Burton' <ed.burton@ca.usda.gov>, Tom Hagler/R9/USEPA/US@EPA, "'Leady, William J Col SPK'" <William.J.Leady@usace.army.mil>, 'Luana Kiger' <luana.kiger@ca.usda.gov>, 'Maria Rea' <maria.rea@noaa.gov>, 'Pablo Arroyave' <parroyave@usbr.gov>, 'Ren Lohoefener' <Ren_Lohoefener@fws.gov>, "'Robershotte, Paul J SPD'" <Paul.J.Robershotte@usace.army.mil>, 'Rod McInnis' <Rod.Mcinnis@noaa.gov>, 'Susan Fry' <sfry@usbr.gov>, "'Toland, Tanis J SPK'" <Tanis.J.Toland@usace.army.mil>, Tim Vendlinski/R9/USEPA/US@EPA, "'Will Stelle (will.stelle@noaa.gov)'" <will.stelle@noaa.gov>, 'Ada Benavides' <ada.benavides@usace.army.mil>, "Hettinger, Alex" <(b) (6) [redacted] >, 'Andy Hagelin' <andrew.hagelin@conus.army.mil>, 'Arnab Raychaudhuri' <arnab.raychaudhuri@us.army.mil>, 'Barbara Diehl' <barbara_diehl@ios.doi.gov>, "Chieco, Gena" <(b) (6) [redacted] >, 'Chip Smith' <chip.smith1@us.army.mil>, "Comisky, Nicole E." <Comisky_N@omb.eop.gov>, 'David Murillo' <dmurillo@usbr.gov>, 'David Nawi' <david_nawi@ios.doi.gov>, 'Eileen Sobeck' <eileen_sobeck@ios.doi.gov>, 'Joan Langhans' <Joan.R.Langhans@noaa.gov>, Karen Schwinn/R9/USEPA/US@EPA, 'Kira Finkler' <kfinkler@usbr.gov>, 'Kris Sarri' <ksarri@doc.gov>, 'Letty Belin' <letty_belin@ios.doi.gov>, "Mertens, Richard A." <Richard_A._Mertens@omb.eop.gov>, 'Mike Connor' <mlconnor@usbr.gov>, 'Paul Houser' <phouser@usbr.gov>, Roger Gorke/DC/USEPA/US@EPA, 'Ryan Wulff' <ryan.wulff@noaa.gov>, "Siegel, Matthew J." <(b) (6) [redacted] >, 'Steve Stockton' <Steven.L.Stockton@usace.army.mil>, 'Tanya Dobrzynski' <tanya.dobrzynski@noaa.gov>, 'Tanya Trujillo' <Tanya_Trujillo@ios.doi.gov>, "'mmaucieri@usbr.gov'" <mmaucieri@usbr.gov>, Karen Schwinn/R9/USEPA/US@EPA, "'Smith, Charles R CIV (US)'" <charles.r.smith567.civ@mail.mil>, "'Schwichtenberg, Bradd R HQ02'" <Bradd.R.Schwichtenberg@usace.army.mil>, "Raychaudhuri, Arnab CIV (US) (arnab.raychaudhuri.civ@mail.mil)" <arnab.raychaudhuri.civ@mail.mil>, "'Zeitzmann, Nellie'" <NZeitzmann@usbr.gov>
Cc: '(b) (6) [redacted] >, "Hunter-Pirtle, Ann" <(b) (6) [redacted] >, "Ohlhaver, Jayme (Intern)" <(b) (6) [redacted] >
Date: 03/06/2012 01:59 PM
Subject: California Bay-Delta FY 2012 Initiatives

All,

At our last California Bay-Delta interagency check-in meeting on Tuesday, February 21, we discussed whether the federal agencies should publish a federal update on the ongoing restoration efforts for the Bay-Delta. The last federal update was released to the public in December 2010. We agreed at the February 21 meeting that if the federal family is to release such a document, it would make the most sense to aim for a summer release after there is more clarity as to the BDCP.

You will recall that in the past, CEQ has asked the federal agencies who have equities in the Bay-Delta to update an internal tracking matrix, so that this interagency group can get broad overview of the ongoing work by the federal family as it relates to the 2009 Interim Federal Action Plan. It has been some time since our existing tracking tables have been updated and CEQ would like to ask that the Corps, NOAA, Reclamation, Fish & Wildlife Service, USGS, USDA, and EPA update the document for FY 2012. You will see that the first attached document tracked progress for FY 2011. Each agency should complete the attached FY 2012 template with completed projects since FY 2009, projects slated for completion in FY 2012, and projects which will be worked on throughout FY 2012 (all under the auspices of the 2009 Interim Federal Action Plan).

Please submit all entries to CEQ by COB, Tuesday, March 20. Feel free to e-mail or call with any questions.

Thank you.

-Jason Brodsky

--
Jason M. Brodsky
Acting Deputy Associate Director and Policy Fellow
Executive Office of the President
The White House Council on Environmental Quality
730 Jackson Place, N.W., Third Floor
Washington, D.C. 20503
(b) (6) [redacted]

ED_000733_DD_NSF_00041526-00006

REGIONAL FEDERAL COORDINATION MEETING
650 Capitol Mall, Suite 8-300 Conference Room B
March 15, 2012 9:00 a.m.

Call-in Number: (b) (6) [redacted]

AGENDA

Section 404 Integration
- Status of Permitting MOU
- Other Issues

BDCP – Status; path forward;
- Schedule, process for agency comments

BDCP EIS –
- Purpose and Need Statement – DWR suggested change (see attached email)
- Alternatives

EPA Estuarine Habitat Workshop

CEQ Request for Update of Internal Tracking Matrix (Email attached)

Water Quality Monitoring

FY 2011 CALIFORNIA BAY-DELTA INITIATIVES

THE WHITE HOUSE COUNCIL ON ENVIRONMENTAL QUALITY

In order to track agency initiatives under each of the federal priorities identified in the *Interim Federal Action Plan*, below is an outline of the federal family initiatives that have been completed to date and those that will be undertaken in FY 2011, listed according to the specific federal priority identified in the *Interim Federal Action Plan*.

I. For the federal government to work in concert with the state

Agency	*Past Initiatives/Projects*	*FY 2011 Initiatives/Projects*
Bureau of Reclamation		*FY 2011 Completion*: None *FY 2011 Ongoing*: - Reclamation is working with several California agencies to develop both short-term actions and a long-term strategy for providing a more reliable water supply and ecosystem restoration
U.S. Fish and Wildlife Service		*FY 2011 Completion*: - Continue to provide technical assistance to the Delta Stewardship Council during development of its Delta Plan in FY 2011 *FY 2011 Ongoing*: - Continue to provide technical assistance to (1) the development of the Bay-Delta Conservation Plan (BDCP) and will continue to do so beyond FY 2011; (2) the Delta Stewardship Council in the implementation of its Delta Plan and will do so beyond FY 2011; and (3) the CALFED Ecosystem Restoration Program in FY 2011 and will continue to do so beyond FY 2011 (also participating in its administration) - Continue partnering with state and federal agencies on Anadromous Fish Restoration Program projects (CVPIA)[1]
National Oceanographic and Atmospheric Administration	- BDCP project description development (co-lead)	*FY 2011 Completion*: - BDCP draft effects analysis, goals and objectives; selection of alternatives for NEPA[2] *FY 2011 Ongoing*: - Completion of BDCP project description and NEPA document (co-lead); ESA consultation

U.S. Army Corps of Engineers **U.S. Army Corps of Engineers (cont'd …)**	- Drafted outline and began writing case studies for the Climate Change Handbook[3]	*FY 2011 Completion*: - A Handbook on Integrating Climate Change into IRWM (Integrated Regional Water Management) Programs (with CDWR (CA Dep.) and COE (?)) *FY 2011 Ongoing*: - USACE continues to participate in key state-led ecosystem, flood risk management, and integrated water resources projects and programs[4] - USACE continues to participate in Federal agency IFAP coordination meetings at the field and Washington, D.C. levels - Ongoing Coordination with CALFED
Environmental Protection Agency		*FY 2011 Completion*: - A Handbook on Integrating Climate Change into IRWM Programs (with CDWR and COE) *FY 2011 Ongoing*: - Cooperating agency on Bay-Delta Conservation Plan EIS - Regional Water Quality Monitoring Program

II. For the federal government to encourage the smarter supply and use of Bay-Delta water

Agency	*Past Initiatives/Projects*	*FY 2011 Initiatives/Projects*
Bureau of Reclamation	- Signed Record of Decision, awarded construction contracts (?) - Funded numerous CALFED Water Use Efficiency Projects - Held federal/state Water Conservation Roundtable - Orange County Regional Water Reclamation Project	*FY 2011 Completion:* - Pending final appropriations, legislation will fund numerous CALFED Water Use Efficiency Projects - Signed the Los Vaqueros Expansion Record of Decision - Order granting petition to allow for a merging of the combined Central Valley Project and State Water Project places of use through Sept. 2011 *FY 2011 Ongoing:* - Construction of Delta-Mendota Canal and the

	Two-year Water Transfer Program for 2010 and 2011	California Aqueduct Intertie. Expected to be operable in 2012 - Issued joint WaterSMART funding announcement for water conservation projects with NRCS - Ongoing projects, including projects on water reclamation, recycling, and basin storage feasibility[5]
U.S. Geological Survey	- Accelerated Field Study of Potential delta-smelt-turbidity relationship: installation of 14 real-time turbidity sensors[6]	*FY 2011 Completion:* None *FY 2011 Ongoing:* - Coordinate and oversee a pilot smelt sampling project before, during, and after major turbidity events[7]
U.S. Fish and Wildlife Service		*FY 2011 Completion:* - Worked with the Delta Science Program and provided technical and financial support for the National Academy of Sciences expert panel on Sustainable Water and Environmental Management in the California Bay-Delta[8] - Completed a study of fish predation at Clifton Court Forebay[9] - Will continue to work with other State and Federal agencies to allow for the use of enhanced water transfers in California's Central Valley and coast areas *FY 2011 Ongoing:* - Will continue to work with state and other federal agencies conducting focused scientific studies that will help guide implementation of actions that encourage smarter supply and use of Bay-Delta water[10]
U.S. Department of Agriculture (NRCS)	- FY 2010 $55.7M for water conservation and water quality on 915,205 ac	*FY 2011 Completion:* - Some AWEPs (Agricultural Water Enhancement Program) and CCPI (Coop. Cons. Part. Initiative) will be completed *FY 2011 Ongoing:* - Accelerate Farm Bill funding: AWEP, CCPI, EQIP (Environmental Quality Incentives Program) and increase CTA (Cons. Tech. Ass.)
U.S. Army Corps of Engineers	- Work on the (1) WC/WR Roundtable;[11] (2) Harbor South Bay Water Recycling;[12] (3) Contra Costa Water District	*FY 2011 Completion:* None *FY 2011 Ongoing:*

	Environmental Infrastructure;[13] and (4) San Ramon Valley Recycled Water[14]	Work on (1) San Ramon Valley Recycled Water;[15] (2) Farmington Recharge CA Sec 219;[16] and (3) Los Angeles County Drainage Area (LACDA) Whittier Narrows Water Conservation Study - Complete construction and award contracts for various sites for Harbor South Bay Water Recycling;[17] make progress on technical analyses and models for the Foothill Communities Water Supply Reliability Study;[18] and issue final report and work on phase I of the Santa Ana River Mainstem (Seven Oaks Dam Water Conservation Study)[19]

III. For the federal government to ensure healthy Bay-Delta ecosystems and to improve water quality

Agency	*Past Initiatives/Projects*	*FY 2011 Initiatives/Projects*
Bureau of Reclamation	- Anadromous Fish Screen Program: (1) Meridian Farms Phase I (Family Water Alliance: Sutter Mutual-State Ranch; Sycamore Mutual River Garden Farms #2); (2) Lake California (?)	*FY 2011 Completion:* - Record of Decision (?) - Anadromous Fish Screen Program: (1) Patterson Fish Screen (Family Water Alliance: Oji Brothers Farms; RD 108/South Steiner; Windswept Farms #3; Sutter Mutual/ Portuguese Bend); (2) Pleasant Grove Canal (South Sutter Water District); (3) Bella Vista Water District (?) *FY 2011 Ongoing:* - Ongoing projects on fish restoration projects, pumping plants and mitigation programs, and ecological studies[20] - Working with federal and state agencies to develop a proposal for a Rio Vista Collaborative Science Center and Native Fish Restoration Facility. - Reclamation is a member of a stakeholder led Habitat Conservation Committee that is developing near-term BDCP restoration projects. - Further work on portions of Anadromous Fish Screen Program[21]
U.S. Geological Survey		*FY 2011 Completion:* None *FY 2011 Ongoing:* - Carbon Sequestration and Delta Subsidence Reversal Project[22]
U.S. Fish and Wildlife Service		*FY 2011 Completion:* - Worked with the Delta Science Program and provided technical and financial support for the National Academy of Sciences expert panel on Sustainable Water and Environmental Management in the California Bay-Delta[23] - The FWS developed a striped bass bioenergetics

U.S. Fish and Wildlife Service (cont'd …)		model for use in the effects analysis for the Bay-Delta Conservation Plan *FY 2011 Ongoing:* - Continue to provide technical assistance to (1) the Delta Stewardship Council in the implementation of its Delta Plan beyond FY 2011; (2) the development of the Bay-Delta Conservation Plan and will continue to do so beyond FY 2011; (3) the CALFED Ecosystem Restoration Program in FY 2011 and will continue to do so beyond FY 2011 (also participating in its administration); (4) state agencies, federal agencies, and the City of Sacramento related to the issuance of the NDPDES permit for the Sacramento Regional Wastewater Treatment Facility with specific emphasis on delta smelt; (5) maintain a backup interim delta-smelt refugium operated by UC Davis;[24] (6) assess the effectiveness of the current regulatory mechanisms designed to protect water quality in the Bay-Delta and its tributaries (providing assistance to EPA on ANPR) - Continuing work on other initiatives (e.g. (1) conducting focused scientific studies to help ensure healthy ecosystems; (2) continuing planning for a fish technology center; (3) participating in (the FWS Contaminant Program) TMDL development and CERCLA activities; (4) continuing development of life history model for delta-smelt; (5) partnering with various state and federal agencies on Anadromous Fish Restoration Program projects; (6) continuing to work in California Landscape Conservation Cooperatives)[25]
National Oceanographic and Atmospheric Administration	- Long-term Fish Passage and Reintroductions in Central Valley, Science Task Force Commitments	*FY 2011 Completion:* - Pilot reintroduction plans in Shasta and Folsom rivers, pilot assessments and gravel augmentation for Yuba River (with USACE), completion of acoustic tag studies[26] *FY 2011 Ongoing:* - (1) Implement fish passage and reintroduction programs in the Central Valley and Yuba gravel augmentation; and development of life-cycle models[27]
U.S. Department of Agriculture (NRCS)	- FY 2010 $21.3M WRP (Wetlands Res. Prog.) and $3.8M FPE for 7,466 wetland and riparian ac	*FY 2011 Completion:* - Some WRP easements in Bay-Delta *FY 2011 Ongoing:* - Accelerate Farm Bill funding: WRP/ WHIP Double participation rates for WRP/WHIP

U.S. Army Corps of Engineers **U.S. Army Corps of Engineers (cont'd …)**	- Invasive Species: USACE California developed an invasive species module for "Environmental Considerations in Planning" core course (taught August 2010) - Corps Regulatory Permits issued for the (1) Battle Creek Salmon and Steelhead Restoration Project; (2) construction of a fish screen at the intake of the Contra Costa Canal on Rock Slough; (3) Georgiana Slough Bio-Acoustical Fish Barrier; (4) Red Bluff Diversion Dam Fish Passage Improvement Project; (5) Sacramento River Ranch Mitigation Bank; and (6) Liberty Island Conservation Bank	*FY 2011 Completion:* - Napa Salt Marsh Executed Project Partnership Agreement (?) - Hamilton City Complete Design Phase (?) - Complete limited reevaluation study and award first construction contract Sacramento River Deep Water Ship Channel *FY 2011 Ongoing:* - Corps regulatory is coordinating on the San Joaquin River Restoration Program, with some minor permit actions completed and numerous additional permit actions anticipated in near future - Negotiate Project Partnership Agreement (?) (Hamilton City complete design phase) - Initiate construction of Pond 7 and 7a for Napa Salt Marsh - BDCP: USACE is a cooperating agency under NEPA. CALFED LSP (Levee Stability Program) – Individual Projects: - McCormack: Williamson Tract draft PMP[28] and draft FCSA ready to circulate for signature (Sept. 30, 2011) Delta Study: (?) - Second agency meeting to solicit input on project team work to date (done Jan. 12, 2011); Draft revised PMP; Preliminary conceptual alternatives (Dec. 30, 2011)
Environmental Protection Agency	- ANPR on water quality issues affecting the Bay-Delta, solicited comment from interested parties	*FY 2011 Completion:* - Ongoing work on ANPR *FY 2011 Ongoing:* - Regional Water Quality Monitoring Program - Ongoing work on ANPR

IV. For the federal government to help deliver drought relief services and ensure integrated flood risk management

Agency	*Past Initiatives/Projects*	*FY 2011 Projects*
U.S. Fish and Wildlife Service		*FY 2011 Completion:* None *FY 2011 Ongoing:* - FWS continues to work with State and Federal agencies to address integration of flood risk management in California's Central Valley, including efforts associated with Corps of Engineers and DWR levee management and floodplain restoration.
U.S. Department of Agriculture (NRCS)	- FY 2010 $10M On-Farm Drought Initiative	
U.S. Army Corps of Engineers	- Throughout FY 2010, USACE engaged in strategic discussions with a wide spectrum of federal, state, and local agencies discussions resulted in much clearer understanding of the federal, state, and local infrastructure and the opportunities and threats associated with that infrastructure[29] - USACE regulatory Permit SPK-1999-00715	*FY 2011 Completion:* - Complete Dam Safety Modification Report for Success Dam Remediation (Dec 2011) (?) - Corps Regulatory processing a permit application from Contra Costa Water District for the expansion of the Los Vaqueros Reservoir for an additional 60,000 acre feet of drought year water supply reliability Lower San Joaquin River Feasibility Study: - Complete preliminary geotechnical report and economic valuation of the Stockton metropolitan area *FY 2011 Ongoing:*

U.S. Army Corps of Engineers (cont'd …)	Modified to allow increased diversion of the State Water Project's Clifton Court Forebay by 500 cubic feet per second through calendar year 2012 - Made progress on: (1) Delta Islands and Levees Feasibility Study;[30] (2) Sacramento River Bank Protection Project (SRBPP);[31] (3) Lower San Joaquin River Feasibility Study;[32] (4) CALFED LSP-Individual Projects;[33] (5) CALFED LSP - Delta Emergency Response Plan;[34] and (6) Central Valley Integrated Flood Management Study (CVIFMS)[35]	USACE (and other federal agencies, as appropriate) continue to participate in, and support, the state's integrated water resources management efforts, including: Water Plan 2013, Central Valley Flood Protection Plan (2012), Delta Stewardship Council's Delta Plan, Conservancy's Strategic Plan, and state and local integrated regional water resources planning and management - $78M ongoing construction at American River Watershed (Joint Federal Project) Folsom Dam Modifications - Continued Operations and Maintenance of Water Management Infrastructure (e.g. reservoirs and levees) - USACE Regulatory processing wetland delineation and jurisdictional determination for Delta Wetlands, the In-Delta water storage project proposed by California Department of Water Resources - Corps Regulatory processing wetland delineation and jurisdictional determination for Sites Reservoir (also called NODOS), a new 1.2 to 1.8 million acre feet reservoir proposed by California Department of Water Resources. Corps would be a cooperating agency on the EIS - Progress to be made on: (1) Pinole Shoal Management Study;[36] (2) Delta Islands and Levees Feasibility Study;[37] (3) Sacramento River Bank Protection Project (SRBPP);[38] (4) Lower San Joaquin River Feasibility Study;[39] (5) CALFED LSP-Individual Projects (e.g., Bethel Island, Bacon Islands. McCormack Williamson Tract);[40] (6) CALFED LSP - Delta Emergency Response Plan;[41] and (7) CVIFMS[42]

Endnotes

**For brevity purposes, please note that these endnotes refer to either (1) additional projects/initiatives in the federal priorities charts or (2) a continuation of the projects/initiatives listed in the federal priorities charts.

---

[1]This includes numerous fish passage projects in the Sacramento River basin

[2] NEPA document (co-lead)

[3] In FY 2010, USACE contributed $40K to combine with EPA's $75K and DWR's $100K. EPA's contractor, CDM, has completed a literature search, established an e-library for project partners, drafted a detailed outline of the Climate Change Handbook, begun to write case studies, and conducted a webinar with IRWM practitioners to seek input on how to make the Handbook most useful to them [STATUS UPDATE FROM 9/24/10]

[4] These programs include the BDCP Habitat Coordination Committee, Water Plan Update 2013, Central Valley Flood Protection Plan 2012, Delta Stewardship Council's Delta Planning effort, and the Delta Conservancy

[5] Ongoing projects include: (1) San Jose Area Water Reclamation and Reuse Program; (2) San Diego Area Water Reclamation Program; (3) Calleguas Municipal Water District Recycling Project; (4) Long Beach Desalination Research and Development Project; (5) Long Beach Area Recycling Project; (6) Los Vaqueros Expansion Feasibility Study, specifically consideration of additional storage beyond FY 2011 Record of Decision; (7) Upper San Joaquin River Basin Storage Investigation; (8) North-of-Delta Offstream Storage Feasibility StudY; (9) Shasta Lake Water Resources Investigation; (10) San Luis Reservoir Lowpoint Feasibility Study; (11) Ten-year Programmatic North to South Water Transfer Program; and (12) Two-gates Fish Protection Demonstration Project Studies

[6] This is under the Interim Federal Action Plan's "Implement the scientific evaluation called for in the 2-Gates Project on an expedited basis." Funding for installation of 14 turbidity sensors was approved in December 2009. Interagency agreement awarded 2/23/10. All new stations are operational and data are available in near-real time via web at http://cdec.water.ca.gov and http://waterdata.usgs.gov/ca/nwis/uv

[7] This is under the Interim Federal Action Plan's "Implement the scientific evaluation called for in the 2-Gates Project on an expedited basis." This will help provide information on the location of delta smelt, the relationship between smelt and turbidity, and other factors relevant to smelt location, behavior, and movement. Specifically, the Interim Federal Action Plan called for an Accelerated Field Study of Potential Smelt-Turbidity Relationship and called for the coordination of a pilot smelt sampling project before, during, and after major turbidity events that will help provide information on the location of delta smelt, the relationship between smelt and turbidity, and other factors relevant to smelt location, behavior, and movement. The Pilot study was completed in January 2010. Proposal for full study in January 2011 has been finalized and approved by the Interagency Ecological Program Project Work Team. Funding has recently been approved for the full study by the Federal Task Force

[8] This is to conduct an 18 month review of key biological and environmental issues affecting the management of the Bay-Delta ecosystems. The review received financial support through FWS in FY 2010 and FY 2011

[9] This is an element of the State Water Project that is expected to assist in efficient and environmentally sound water delivery

[10] Most of these studies are being carried out under supervision of the Interagency Ecological Program and include investigations of the Pelagic Organism Decline, the effects of Delta outflow on ESA-listed (threatened) delta smelt, and studies supporting efficient real-time management of Central Valley Project and State Water Project operations

[13] (Section 219): Signed Project Partnership Agreement (Sept. 30, 2010)

[14] All construction contracts awarded in FY 2010

[15] Physical completion of Phase 1 Pump station and over 1 mile of recycled water pipeline; turn over to Sponsor (DERWA) (Sept. 30, 2011)

[16] Construct 35 acre NW site [for] groundwater recharge basins.

[17] Specifically: (1) Complete construction of Carson Mall Lateral (June 6, 2011); (2) Complete construction of Torrance Booster Pump station (July 11, 2011); (3) Complete construction of Dominguez Booster Pump Station (August 30, 2011); (4) Award contract for Gardena Lateral design (Sept. 30, 2011)

[18] Specifically: Groundwater Recharge Technical Analysis (GRTA) for Storm Water Capture Program Raymond Basin Study: Baseline model and report (Jan. 2011); With-project condition model and report (June 2011)

[19]Specifically: Final report to HQ for review (Sept. 30, 2011); *Public review (Nov. 30, 2011); *Finalize Phase I

(Dec. 30, 2011)

[20] Ongoing projects include: (1) Battle Creek Salmon and Steelhead Restoration Project; (2) Suisun Marsh Preservation Agreement; (3) Refuge Water Acquisition; (4) Clear Creek Restoration Program; (5) Spawning Gravel/ Riparian Habitat Program; (6) Red Bluff Fish Screen and Pumping Plant construction (expected to be operable by

May 2012); (7) San Joaquin River Restoration Program; (8) Jones Pumping Plant Mitigation Program; (9) Frank's Tract Feasibility Study; (10) South Delta Improvements Program; (11) Interagency Ecological Program; (12) Pelagic Organism Decline Studies; (13) Federal Science Task Force Studies; (14) San Luis Unit Drainage Management Program; (15) San Joaquin River Salinity Management; and (16) Program to Meet Standards

[21] This work includes: (1) Rock Slough Fish Screen; (2) Natomas Fish Screen Phase I; (3) RD 2035; (4) Meridian Farms Phase II; (5) West Stanislaus ID; (6) Pleasant Grove Verona; (7) Family Water Alliance: (Feather Water District #1 (north); Feather Water District #2 (south))

[22] The Interim Federal Action Plan called for the augmentation of analysis of projected climate change-related fish-water Supply interactions. This project is underway pending future funding.

[24] A secondary refuge facility is operated by FWS Region 8 at Livingston Stone National Fish Hatchery and serves as a backup to the UC-Davis facility

[25] For more specificity as to these activities: (1) FWS is will continue to work with state and other federal agencies conducting focused scientific studies that will help guide implementation of actions that ensure healthy Bay-Delta ecosystems and improved water quality. Most of these studies are being carried out under supervision of the Interagency Ecological Program and include investigations of the Pelagic Organism Decline, the effects of Delta outflow on ESA-listed (threatened) delta smelt, and studies supporting efficient real-time management of Central Valley Project and State Water Project operations; (2) FWS is continuing planning for a fish technology center, incorporating a long-term delta smelt refugium and other functions, in the Delta. FWS is working with State and Federal agency partners and the City of Rio Vista on development of the center and an associated estuarine research facility. Funding has yet to be identified; (3) FWS Contaminants Program will continue to participate in processes associated with Clean Water Act TMDL development and CERCLA activities including NRDA for new and ongoing sites; (4) FWS will continue in its efforts to develop a delta smelt life history model to aid in responsible and effective management of the Bay-Delta ecosystems; (5) FWS will continue its partnering with various State and Federal agencies on Anadromous Fish Restoration Program projects (CVPIA), including numerous fish passage projects in the Sacramento River basin; and (6) FWS will continue to work in California Landscape Conservation Cooperatives, providing scientific and technical support for landscape-scale conservation in an adaptive management framework to address challenges such as climate change, in an integrated fashion

[26] Another initiative is the integrated annual review of BiOp

[27] Additionally, completion of acoustic tag studies and integrated annual review of BiOp

[28] PMPs are Project Management Plans

[30] Hydraulic and hydrologic data development and modeling: Hydrologic Engineering Management Plan (HEMP) Phase I (Develop the management plan) completed in FY 2010

[31] Phase II Post-Authorization Change (PAC) Report and SEIS/SEIR for newly authorized 80,000 linear feet: Public scoping in FY 2009/FY 2010

[32] FY 2010, State of California signed the Feasibility Cost Share Agreement (FCSA) as a co-sponsor in partnership with San Joaquin Area Flood Control Agency and USACE. Technical work continued in FY 2010

[33] Bethel Island - FCSA signed by the Bethel Island Municipal Improvement District and USACE (7/13/10)

[34] MOU between USACE and DWR was signed, allowing USACE-DWR to initiate Phase 1 of GIS Flood Contingency Mapping and Emergency Response Planning for the Delta (FY 2010)

[35] USACE and state signed the Feasibility Cost Share Agreement (FCSA); *Project team established; *USACE awarded a contract to facilitate development of the complex PMP for the watershed study (FY 2010)

[36] Specifically, Delta Dredging and Sediment Reuse Management Team (DDRMT): Continue interagency meetings and coordination with the focus to develop charter documents for the DDRMT. Also, possible Methyl Mercury and Dredge Effluence studies and draft Biological Assessment pending CR funding resolution

[37] USACE will continue study. HEMP Phase II (Course-level 3D and WQ modeling) was completed in September 2010; Phase III (fine tune the model and improve the source data) was initiated in FY 2011.

[38] Phase II: Post-Authorization Change (PAC) Report and SEIS/SEIR for newly authorized 80,000 linear feet: Complete Economic Reevaluation Report (May 2011); Draft SEIS/SEIR released for public review (April 2012); Public meetings (April/May 2012). Construct 7,000 linear Feet of Setback and Bank protection

[39] Continue technical studies and coordination with the state (Sept. 30, 2011); Feasibility Scoping Meeting (Feb. 2014)

[40] Bethel Island Alternative Formulation Briefing (AFB) (Dec. 15, 2011). Draft Project Management Plans are complete for 4 LSP projects (McCormack-Williamson Tract, Bacon Islands, Walnut Grove, and River Junction). Final review and certification of PMPs and negotiation of FCSA's with non-Federal sponsors is on-going

[41] Meet with counties to review 35% product (Done Nov. 2010); Complete Phase I (products include standardized GIS database of Emergency Management data; Flood Contingency Map Books and large scale wall maps of the Delta region; and an accompanying report documenting the existing framework, existing data, and any potential data gaps) (Sept. 30, 2011)

[42] Complete updated Project Management Plan (PMP) and draft updated FCSA (Sept. 30, 2011); Complete draft watershed assessment document for CVIFMS (Dec. 30, 2011); Ongoing collaboration with state of CA with FLOODSafe and other outreach programs

Appendix A: Bureau of Reclamation Project Descriptions

(1) **San Jose Area Water Reclamation and Reuse Program** (the Secretary of the Interior, in cooperation with the city of San Jose, California, and the Santa Clara Valley Water District, and local water suppliers, shall participate in the planning, design and construction of demonstration and permanent facilities to reclaim and reuse water in the San Jose metropolitan service area);

(2) **San Diego Area Water Reclamation Program** (the Secretary of the Interior is authorized to participate with the city and county of Los Angeles, State of California, West Basin Municipal Water District, and other appropriate authorities, in the design, planning, and construction of water reclamation and reuse projects to treat approximately one hundred and twenty thousand acre-feet per year of effluent from the city and county of Los Angeles, in order to provide new water supplies for industrial, environmental, and other beneficial purposes, to reduce the demand for imported water, and to reduce sewage effluent discharged into Santa Monica Bay);

(3) **Calleguas Municipal Water District Recycling Project** (the Secretary of the Interior, in cooperation with the appropriate State and local authorities, is authorized to participate in the design, planning, and construction of the Calleguas Municipal Water District Recycling Project to reclaim and reuse water in the service area of the Calleguas Municipal Water District in Ventura County, California);

(4) **Long Beach Desalination Research and Development Project** (the Secretary of the Interior, in cooperation with the city of Long Beach, the Central Basin Municipal Water District, and the Metropolitan Water District of Southern California may participate in the design, planning, and construction of the Long Beach Desalination Research and Development Project in Los Angeles County, California);

(5) **Long Beach Area Recycling Project** (this project is located in Los Angeles County, California, and consists of two units: (a) The Alamitos Barrier Reclaimed Water Project will ultimately recycle about 8,000 acre-feet per year in lieu of imported water. Facilities will be constructed so that tertiary treated water from the existing Long Beach Water Reclamation Plant can be treated to advanced levels so that it can be used for groundwater injection into seawater intrusion barriers. Phase 1 was completed in 2005, and Phase 2 is scheduled to begin construction in 2012; and (b) The City of Long Beach Recycled Water System Expansion Project will construct an expansion of an existing distribution system that allows the use of recycled water throughout the city. The expansion consists of pumps, pipes, storage facilities, and control systems that would increase use of recycled water from 4,585 acre-feet per year to 16,677 acre-feet per year (including the Alamitos Barrier Project));

(6) **Los Vaqueros Expansion Feasibility Study**; (NEED PROJECT DESCRIPTION)

(7) **Upper San Joaquin River Basin Storage Investigation** (the Upper San Joaquin River Basin Storage Investigation is a feasibility study being performed by the U.S. Department of the Interior, Bureau of Reclamation and the California Department of Water Resources. The purpose of the Investigation is to determine the type and extent of Federal, State, and regional interests in a potential project in the upper San Joaquin River watershed to expand water storage capacity; improve water supply reliability and flexibility for agricultural, urban, and environmental uses; and enhance San Joaquin River water temperature and flow conditions to support anadromous fish restoration efforts. This investigation is one of five surface water storage studies recommended in the CALFED Bay-Delta Program Programmatic Environmental Impact Statement/Report Record of Decision of August 2000);

(8) **North-of-Delta Offstream Storage Feasibility Study** (the North-of-the-Delta Off Stream Storage (NODOS) Investigation is a Feasibility Study being performed by the California Department of Water Resources and the Bureau of Reclamation, in partnership with local interests and pursuant to the CALFED Bay-Delta Program Programmatic Environmental Impact Statement/Report Record of Decision. The NODOS Investigation is

evaluating potential offstream surface water storage projects in the upper Sacramento River Basin that could improve water supply and reliability, enhance anadromous fish survival, and provide high-quality water for agricultural, municipal and industrial, and environmental uses. The NODOS Investigation is one of five surface water storage studies recommended in the CALFED PEIS/EIR Record of Decision);

(9) **Shasta Lake Water Resources Investigation** (to develop an implementable plan primarily involving the enlargement of Shasta Dam and Reservoir to promote increased survival of anadromous fish populations in the upper Sacramento River; increased water supply reliability; and to the extent possible through meeting these objectives, include features to benefit other identified ecosystem, flood control, and water resources needs);

(10) **San Luis Reservoir Lowpoint Feasibility Study** (the San Luis Reservoir Lowpoint Feasibility Study will increase the operational flexibility of water storage in San Luis Reservoir. It is a valuable use of taxpayer funds because currently, state and federal water projects cannot fully utilize water stored in San Luis Reservoir without impacting the reliability of water deliveries to all south-of-Delta Central Valley Project contractors);

(11) **Ten-year Programmatic North to South Water Transfer Program (**is intended to improve the environmental review associated with potential transfers in order to expedite the ability of the water market to meet outstanding needs in future years);

(12) **Two-gates Fish Protection Demonstration Project Studies** (the proposed 2-Gates Fish Protection Demonstration Project would install and operate removable gate structures at two key Delta locations to test the ability of the structures to improve protection for delta smelt and other sensitive aquatic species. In a five-year pilot study, the gates would control flows in selected interior Delta channels to evaluate whether these changes reduce entrainment of fish into pumps and improve water supplies to the California's State Water Project (SWP) and the Federal Central Valley Project (CVP));

(13) **Battle Creek Salmon and Steelhead Restoration Project** (the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), and the California State Water Resources Control Board (State Water Board) are proposing the Battle Creek Salmon and Steelhead Restoration Project (Restoration Project) near the town of Manton, California. The Restoration Project spans Tehama and Shasta Counties and would reestablish approximately 42 miles of prime salmon and steelhead habitat on Battle Creek, plus an additional 6 miles on its tributaries. The species include the Central Valley spring-run Chinook salmon (state- and federally listed as threatened), the Sacramento River winter-run Chinook salmon (state- and federally listed as endangered), and the Central Valley steelhead (federally listed as threatened));

(14) **Suisun Marsh Preservation Agreement** (the Agreement is a contractual agreement between DWR, USBR, DFG and SRCD. It contains provision for DWR and USBR to mitigate the effects on Suisun Marsh channel water salinity from the State Water Project and Central Valley Project operations and other upstream diversions. The Suisun Marsh Preservation Agreement requires DWR and USBR to meet salinity standards, sets a timeline for implementing the Plan of Protection, and delineates monitoring and mitigation requirements. The Suisun Marsh Monitoring Agreement and the Suisun Marsh Mitigation Agreement were also signed at this time. The Suisun Marsh Mitigation Agreement defined habitat requirements to mitigate effects of facilities and operations and the Suisun Marsh Monitoring Agreement defines requirements for monitoring salinity and species in the Marsh);

(15) **Refuge Water Acquisition** (NEED PROJECT DESCRIPTION);

(16) **Clear Creek Restoration Program** (the purpose of the Clear Creek Restoration Program is to: (a) restore stream channel form and function necessary to optimize habitat for salmon and steelhead and the aquatic and terrestrial communities on which they depend; (b) determine long-term flow needs for spawning, incubation and rearing by conducting an Instream Flow Incremental Methodology study as mandated in Section 3406 (b)(12); (c) provide flows of adequate quality and quantity to meet the requirements of all life stages of Chinook salmon and steelhead trout known to use Clear Creek; (d) provide spawning gravel to replace supply blocked by Whiskeytown Dam; and (e) monitor project results);

(17) **Spawning Gravel/ Riparian Habitat Program** (the purpose of the Spawning Gravel/Riparian Habitat Program is to increase the availability of spawning gravel and rearing habitat, and subsequently monitor the results of these actions, for: (a) Sacramento River Basin Chinook salmon and steelhead trout in the reach of the mainstem Upper Sacramento River from Keswick Dam downriver to Red Bluff Diversion Dam; (b) American River Basin Chinook salmon and steelhead trout in the reach of the American River downriver from Nimbus Dam; and (c) Stanislaus River Chinook salmon and steelhead trout in the reach of the Stanislaus River downriver from Goodwin Dam);

(18) **Red Bluff Fish Screen and Pumping Plant construction** (the Red Bluff Diversion Dam is in the Sacramento River Division of the CVP. It has been identified as an impediment to upstream and downstream passage of salmonid species, as well as the green sturgeon (listed as threatened in April, 2006). In December 2006, Reclamation released a draft EIS/EIR, listing the preferred alternative as the construction of a screened pumping plant on the mainstem Sacramento River. The pumping plant would be capable of diverting the full capacity of the Tehama Colusa Canal with a build out capacity of 2,500 cfs to maintain irrigation diversions without lowering the Diversion Dam. The ROD was executed on July 16, 2008);

(19) **San Joaquin River Restoration Program** (in 1988, a coalition of environmental groups, led by Natural Resources Defense Council ("NRDC"), filed a lawsuit challenging the renewal of the long-term water service contracts between the United States and the Central Valley Project, Friant Division contractors. After more than 18 years of litigation of this lawsuit, known as *NRDC et al. v. Kirk Rodgers, et al.*, a Settlement was reached. On September 13, 2006, the Settling Parties agreed on the terms and conditions of the Settlement, which was subsequently approved by the U.S. Eastern District Court of California on October 23, 2006. The Settlement establishes two primary goals: (a) To restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish (Restoration Goal); and (b) To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement (Water Management Goal). The Settlement calls for a variety of physical improvements within and near the San Joaquin River, within the Friant-Kern and Madera canals, and within the service areas of the Friant Division long-term contractors to achieve the Restoration and Water Management goals. The San Joaquin River Restoration Settlement Act (Act), included in the Omnibus Public Land Management Act of 2009, was signed by the President on March 30, 2009 and became Public Law 111-11. The Act authorizes and directs the Secretary of the Interior to fully implement the Settlement. The San Joaquin River Restoration Program (SJRRP) will implement the Settlement consistent with the Act);

(20) **Jones Pumping Plant Mitigation Program** (this activity identifies and implements physical improvements and operational changes assessing fishery conditions, and assessing salvage operations at the Tracy Fish Collecting Facility (TFCF) per the Central Valley Project Improvement Act and CVP OCAP Biological Opinions);

(21) **Frank's Tract Feasibility Study** (project objectives are to reduce salinity concentrations, improve water quality, and to improve fish movement to favorable habitats in the south Delta, including ancillary benefits at the CVP/SWP pumping facilities);

(22) **South Delta Improvements Program** (Reclamation and California DWR completed environmental studies for the South Delta Improvement Program (SDIP) for Stage 1 activities to construct a fish control barrier and 3 agricultural control barriers and dredging and agricultural intake extensions in the south Delta. The SDIP major components are increasing the allowable diversion capacity at the State Water Project's Clifton Court Forebay to 8,500 cfs; construction of permanent operable flow control barriers to improve water level and water quality available for agricultural diversions in the south Delta; dredging portions of Middle River, Old River, and West, Grantline, Victoria, and North Canals to improve flows in south Delta channels; and constructing a permanent operable fish control barrier at the head of Old River to reduce fish movement into south Delta channels);

(23) **Interagency Ecological Program** (continues to support the IEP for the Sacramento-San Joaquin estuary to conduct physical, chemical, and biological monitoring required as a condition of the joint federal-state water export permit (D-1641) and by biological opinions issued by the FWS and the NMFS under the Endangered Species Act of 1973);

(24) **Pelagic Organism Decline Studies** (continues investigation of the causes and consequences of the recent declines in the relative abundance of pelagic organisms in the Bay-Delta, including the delta-smelt, a species listed as threatened under the Endangered Species Act. Also continues expert evaluations and scientific assessments and assistance in CALFED agencies efforts to establish performance measures and to monitor and evaluate the performance of all CALFED Program elements);

(25) **Federal Science Task Force Studies** (continues investigations by Reclamation, in coordination with other local, state, and federal agencies, to test alternative ways of protecting delta smelt and other sensitive aquatic species from entrainment by the Delta export pumps. The Demonstration Project is a five year experiment to evaluate the effectiveness of placing operable gates on Old River and Connection Slough to modify flows and turbidity in the Delta);

(26) **San Luis Unit Drainage Management Program** (in 2012, Reclamation will continue to implement actions submitted to the Court during the November 19th hearing with Judge Wanger. Using its existing authorities, Reclamation will continue the implementation of the 2007 Record of Decision, San Luis Drainage Feature Re-Evaluation (SLDFR-ROD) in a part of Westlands Water District, where it can construct a fully functional drainage system within current appropriations ceilings. The Grassland Bypass Project results in annual reductions in discharge of salts, selenium, and other constituents to the San Joaquin River);

(27) **San Joaquin River Salinity Management** (the San Joaquin River Salinity Management Project is an action that contributes to the Program to Meet Standards (PTMS), mandated in Section 103(d) (2)(D) of P.L. 108-361. The project implements the stakeholder developed "Westside Regional Drainage Plan" (WRDP). The WRDP includes activities to assist the Grassland Bypass area's program to eliminate drainage to the San Luis Drain, and the plan itself is a key element of Reclamation's Action Plan to Address the Lower San Joaquin River Salinity total maximum daily load (TMDL) and contributes to resolution of San Luis Unit drainage provision responsibilities. The Plan's key management components for the Grassland Drainage Area are: (a) Source Control (b) Groundwater Management; (c) Drainage Reuse Projects; and (d) Drain Water Treatment and/or Salt Disposal);

(28) **Program to Meet Standards** (the Program to Meet Standards (PTMS) was initiated pursuant to P.L. 108-361, Section 103(d)(2)(D), which directs the Secretary of the Interior, in consultation with the Governor of California, to meet all existing water quality standards and objectives for which CVP has responsibility prior to increasing export limits from the Sacramento-San Joaquin Delta (Delta) for the purposes of conveying water to CVP contractors south of the Delta or increasing deliveries through an intertie between the California Aqueduct and Delta Mendota Canal. The PTMS may provide greater flexibility in meeting the existing water quality standards and objectives for which the CVP has responsibility and reduce the demand on water from New Melones Reservoir used for that purpose, and to assist the Secretary in meeting any obligations to CVP contractors from the New Melones Project. Reclamation is coordinating implementation with key stakeholders in the San Joaquin Valley. Funding for the PTMS is primarily provided to ensure that the actions identified in the program, many of which are funded under individual authorities, move in concert to achieve the overall program objectives);

(29) **Orange County Regional Water Reclamation Project** (the Secretary, in cooperation with the appropriate State and local authorities, is authorized to participate in the design, planning, and construction of the Orange County Regional Water Reclamation Project, to reclaim and reuse water within the service area of the Orange County Water District in California); and

(30) **Anadromous Fish Screen Program** (the purpose of this program is to protect juvenile chinook salmon (all runs), steelhead trout, green and white sturgeon, striped bass and American shad from entrainment at priority diversions throughout the Central Valley. This CPPIS record is intended only to present program-wide descriptive information and funding. Details related to individual AFSP projects are found in separate database records).

Appendix B: U.S. Army Corps of Engineers Project Descriptions

(1) **Water Conservation/Water Recycling Roundtable** (in April 2010, the Department of the Interior, Department of Commerce, Department of Agriculture, Department of the Army, Environmental Protection Agency, Council on Environmental Quality, California State Water Resources Control Board, California Department of Water Resources, and California Department of Public Health co-hosted a kickoff event, the Water Conservation and Recycling Roundtable. The Roundtable was a key step towards the agencies' common goal of finding long-term solutions to meet California's water supply and environmental challenges. The partner agencies developed seven proposed demonstration projects);

(2) **Harbor South Bay Water Recycling** (in an effort to reduce the region's dependence on imported water, West Basin has partnered with the U.S. Army Corps of Engineers to expand the use of recycled water through the Harbor/South Bay Water Recycling Project. Through this partnership, the Harbor/South Bay Project will greatly increase the amount of recycled water available in the South Bay area. The overall Project consists of multiple lateral and capital facility projects with nearly 60 miles of combined pipelines);

(3) **Contra Costa Water District Environmental Infrastructure** (NEED PROJECT DESCRIPTION);

(4) **San Ramon Valley Recycled Water** ((SRVRWP) the U.S. Army Corps of Engineers, San Francisco District, is a federal partner in this project and assists in constructing various facilities, including installation of miles of pipeline in the San Ramon, Danville and Blackhawk Areas. Federal stimulus funding was appropriated in 2009 directly to USACE through the American Recovery & Reinvestment Act for this pipeline construction, which accelerated the installation schedule. USACE provides construction management for those SRVRWP facilities funded by USACE);

(5) **Farmington Recharge CA Sec 219** (NEED PROJECT DESCRIPTION);

(6) **LACDA Whittier Narrows Water Conservation Study** (the study identifies projects that will increase water conservation at Whittier Narrows Dam and Reservoir an additional 2,900 to 5,500 acre-feet);

(7) **Foothill Communities Water Supply Reliability Program** (this project is located in Southern California, San Gabriel Valley, CA. WSRP aims to improve groundwater quality, optimize storage and distribution of water during recurrent drought and develop back up supplies to mitigate for major seismic or wildfire events and reallocate water for ecosystem restoration. This will be accomplished through modernizing water supply systems by storing water underground for future use, making local systems more reliable by diversifying water sources, improving water quality by adding higher quality water to each foothill basin, and enhancing the efficiency and reliability of regional water delivery. The IFAP will serve as the catalyst for multiple agencies to coordinate water conservation and recycling efforts in this watershed to achieve optimal results);

(8) **Santa Ana Mainstem: Seven Oaks Dam Water Conservation Study** (the winter rains of 2005 demonstrated beyond question that water conservation at Seven Oaks Dam can provide a major supplemental source of water for an increasingly water starved region. Allowing most of the runoff water to flow into the Pacific Ocean is squandering a precious local resource. Funding would be used to complete the much needed studies that will allow the USACE to amend the water control plan to be used for water conservation);

(9) **Steelhead Restoration Project** (the Restoration Project has been developed in collaboration with various resource agencies, including the U.S. Fish and Wildlife Service, National Marine Fisheries Service (NOAA Fisheries), the California Department of Fish and Game, and the California Bay Delta Authority, and in conjunction with valuable participation from the public, including the Greater Battle Creek Watershed Working Group and the Battle Creek Watershed Conservancy. This partnership provides the framework for restoring one of the most important anadromous fish spawning streams in the Sacramento Valley, while maintaining a renewable energy resource for electric customers in California);

(10) **Georgiana Slough Bio-Acoustic Fish Barrier** (NEED PROJECT DESCRIPTION);

(11) **Red Bluff Diversion Dam Fish Passage Improvement Project** (the Project consists of the construction of a positive barrier fish screen and a pumping plant, resulting in the achievement of the dual goals of the Project: Fixing the fish passage issues associated with the operation of the RBDD; while simultaneously providing a long term solution for water conveyance reliability to the TCCA service area. The completion of the Project will reduce or eliminate reliance on the RBDD, thereby avoiding the ESA and regulatory issues associated with its operation);

(12) **Sacramento River Ranch Mitigation Bank** (NEED PROJECT DESCRIPTION);

(13) **Liberty Island Conservation Bank** (NEED PROJECT DESCRIPTION);

(14) **Napa Salt Marsh** (the Napa Salt Marsh wetlands are located approximately 45 miles north of San Francisco, California, along the northern portion of San Francisco Bay. These wetlands originally encompassed 25,000 acres, but agriculture and development have reduced them to 36% of their former extent. In 1994 the Cargill Salt Company ceased production of salt and sold over 9,800 acres of lands in the study area to the State of California. The land is now managed by the California Department of Fish and Game. The non-Federal sponsor for Feasibility and Design was the California Coastal Conservancy. The non-Federal sponsor for Construction is the California Department of Fish and Game. The California Coastal Conservancy will continue to be involved as a project partner);

(15) **Sacramento River Deep Water Ship Channel** (deepening of the Sacramento River Deep Water Ship Channel (SRDWSC) to its Congressionally authorized depth of 35 feet);

(16) **CALFED Levee Stability Program** (CALFED's Levee System Integrity Program provides long-term protection for vast resources in the Delta by maintaining and improving the integrity of the estuary's extensive levee system. These resources include not only the quality of the Delta's water and the health of its ecosystem, but the 500,000 people who call the Delta home, the many towns and villages in the Delta, infrastructure such as utilities and transportation corridors, and economic assets of thriving agriculture and recreational industries);

(17) **USACE regulatory Permit SPK-1999-00715 Modified to allow increased diversion of the State Water Project's Clifton Court Forebay by 500 cubic feet per second through calendar year 2012** (NEED PROJECT DESCRIPTION);

(18) **Delta Islands Levees and Feasibility Studies** (this feasibility study is USACE's mechanism to participate in a cost - shared solution to a variety of water resources needs for which we have the authority. Results of state planning efforts will be used to help define problems, opportunities, and specific planning objectives. The feasibility study will address flood risk management, ecosystem restoration, water quality, water supply, and a variety of other issues. USACE and DWR signed a Feasibility Cost Sharing Agreement (FCSA) in May 2006);

(19) **Sacramento River Bank Protection Project** (the project is located in north-central California, along the Sacramento River and its principal tributaries from Sacramento River RM 0.0 at Collinsville to Chico Landing at RM 194. It is within the limits of the existing Sacramento River Flood Control Project levees and includes Butte Basin, Cache Slough, and a portion of the Sacramento-San Joaquin Delta slough. The project meanders through eight counties including Tehama, Glenn, Butte, Colusa, Sutter, Yolo, Solano, and Sacramento. The project provides a long-range program of bank protection to protect the levees within the limits of the Sacramento River Flood Control Project from erosion. It prevents undermining of levee sections and includes fish and wildlife mitigation features. Some recreational facilities have been provided along the river);

(20) **Lower San Joaquin River Feasibility Study** (the Lower San Joaquin River Feasibility Study is a multi-year, $10 million study that will reach to the southern part of San Joaquin County along the San Joaquin River up to and through Stockton, including the Lodi waste water treatment plant. In addition, the study includes the watersheds

east of Stockton, and covers nearly 140 miles of levees. The results of this study will help determine needed improvements for future flood protection systems in an effort to reach or exceed the future 200-year level of flood protection);

(21) **Sacramento-San Joaquin River Basins Comprehensive Study, Central Valley Integrated Flood Management Study ("CVIFMS")** (the study area includes the entire Sacramento River Basin, San Joaquin River and the Delta Basin in central California. The central valley represents 1% of the nation's agricultural land and about 10% of the nation's gross agricultural production. The project also includes the only river system in the nation where all five species of salmon can be found. The study area is home for over 35 endangered species and is part of international flyways for migratory birds (Pacific Flyway). Water from the central valley is a key resource for 2/3 of the residences throughout all of California (including San Francisco and Los Angeles), about 25,000,000 people. The study will develop a comprehensive long term strategy for the central valley, focused primarily on flood management but also on environmental stability/restoration and long term water supply. The study will build off of the Comprehensive Study which completed an interim report in 2003. The study will require an extensive public outreach program and coordination with federal, state, local and tribal agencies to develop a plan that supported by interest groups in the central valley);

(22) **Pinole Shoal Management Study** (the project area includes the northern San Francisco Bay area and extends throughout the Sacramento – San Joaquin River Deltas. This project will create a Long Term Management Strategy (LTMS) for the management and re-use of dredge material in support of the Corps' deep draft navigation mission, levee repair and maintenance, wetland restoration, and other beneficial uses); and

(23) **$78M ongoing construction at American River Watershed (Joint Federal Project) Folsom Dam Modifications** (NEED PROJECT DESCRIPTION).

FY 2012 CALIFORNIA BAY-DELTA INITIATIVES

THE WHITE HOUSE COUNCIL ON ENVIRONMENTAL QUALITY

In order to track agency initiatives under each of the federal priorities identified in the *Interim Federal Action Plan*, below is an outline of the federal family initiatives that have been completed to date and those that will be undertaken in FY 2012, listed according to the specific federal priority identified in the *Interim Federal Action Plan*.

I. For the federal government to work in concert with the state

Agency	*Past Completed Initiatives/Projects*	*Initiatives/Projects Slated for Completion in FY 2012*	*Ongoing Initiatives/Projects to be Worked on in FY 2012*
Bureau of Reclamation			
U.S. Geological Survey			
U.S. Fish & Wildlife Service			
National Oceanographic and Atmospheric Administration			
U.S. Army Corps of Engineers			
U.S. Department of Agriculture (NRCS)			
Environmental Protection Agency			

ED_000733_DD_NSF_00041529-00001

II. For the federal government to encourage the smarter supply and use of Bay-Delta water

Agency	*Past Completed Initiatives/Projects*	*Initiatives/Projects Slated for Completion in FY 2012*	*Ongoing Initiatives/Projects to be Worked on in FY 2012*
Bureau of Reclamation			
U.S. Geological Survey			
U.S. Fish & Wildlife Service			
National Oceanographic and Atmospheric Administration			
U.S. Army Corps of Engineers			
U.S. Department of Agriculture (NRCS)			
Environmental Protection Agency			

III. For the federal government to ensure healthy Bay-Delta ecosystems and to improve water quality

Agency	*Past Completed Initiatives/Projects*	*Initiatives/Projects Slated for Completion in FY 2012*	*Ongoing Initiatives/Projects to be Worked on in FY 2012*
Bureau of Reclamation			
U.S. Geological Survey			
U.S. Fish & Wildlife Service			
National Oceanographic			

and Atmospheric Administration			
U.S. Army Corps of Engineers			
U.S. Department of Agriculture (NRCS)			
Environmental Protection Agency			

IV. For the federal government to help deliver drought relief services and ensure integrated flood risk management

Agency	*Past Completed Initiatives/Projects*	*Initiatives/Projects Slated for Completion in FY 2012*	*Ongoing Initiatives/Projects to be Worked on in FY 2012*
Bureau of Reclamation			
U.S. Geological Survey			
U.S. Fish & Wildlife Service			
National Oceanographic and Atmospheric Administration			
U.S. Army Corps of Engineers			
U.S. Department of Agriculture (NRCS)			
Environmental Protection Agency			

To: "Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]
Cc: Karen Schwinn/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Thur 6/14/2012 4:28:58 PM
Subject: RE: BDCP: Environmental, Fishing, etc. Coalition letter to DOI (UNCLASSIFIED)

Mike - Redflag comments are on the BDCP website. Here are relevant links to Reclamation and fish agency comments:

http://baydeltaconservationplan.com/Files/Effects%20Analysis%20-%20Bureau%20of%20Reclamation%20Red%20Flag%20Comments%20and%20Responses%205-31-12.pdf

http://baydeltaconservationplan.com/Files/Effects_Analysis_-_Fish_Agency_Red_Flag_Comments_and_Responses_4-25-12.pdf

EPA also submitted comments, which Karen can provide to you.

David

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Thursday, June 14, 2012 8:19 AM
To: Nawi, David
Subject: FW: BDCP: Environmental, Fishing, etc. Coalition letter to DOI (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Mr. Nawi,

The letter (link below) mentions numerous red flag memos from fishery agencies. Are those official record memo, and if so could the Corps have a copy of them. Besides informing regulatory, our civil works, operations and Sacramento Deepwater ship channel dredging groups would all be interested to know fishery agencies current views of status of fish species and value of the various proposed restoration projects. Thanks

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
(916) 557-7262 Fax:(916) 930-9506
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

ED_000733_DD_NSF_00041591-00001

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Toland, Tanis J SPK
Sent: Wednesday, June 13, 2012 3:44 PM
To: Axt, Josephine R SPL; Brostoff, William N SPN; Clark, Dennis G SPK; Conner, Craig S SPN; Cowan, Mark E SPK; Dadey, Kathleen A SPK; Dietl, Michael L SPK; Doak, David V SPN; Edwards, Douglas M SPK; Evoy-Mount, Matilda L SPK; Fowler, Cynthia J SPN (First Responders); Hedgecock, Neil SPN; Kendall, Thomas R SPN; Kidd, Robert D SPK; Koenigs, Robert L SPK; McAllister, Victoria L SPD; Mulvey, Brian M SPK; Nepstad, Michael G SPK; O'Halloran, Jaime L SPN; Paniccia, Al SPN; Robershotte, Paul J SPD; Schlenker, Brooke E SPK; Smith, Wayne S SPK; Tabatabai, Fari SPN; Takata, Eileen; Tejeda, Cindy L SPD; Toland, Tanis J SPK; Turner, Claire Marie SPK; Olsen, Randy P SPK
Subject: BDCP: Environmental, Fishing, etc. Coalition letter to DOI

In a June 12, 2012, letter to Secretary Salazar, 38 environmental, consumer, fishing, etc. groups expressed concern over the BDCP. The full letter is available at: http://www.restorethedelta.org/wp-content/uploads/2012/06/Ken-Salazar-LTR-RE-Cal-BDCP-Plus-Proposal.pdf

The letter begins,

"The State of California is poised to make an enormous mistake, and potentially drag the Department of Interior and the American people along with it. California Secretary for

Natural Resources, John Laird, recently informed us in a May 24, 2012, briefing that the

State intends to proceed with construction of a world-record-size tunnel or pipes capable

of diverting 15,000 cubic feet per second from the Sacramento River - nearly all of its

average freshwater flow. Diversion of this water, which is the most pristine source of

water to the San Francisco Bay Delta Estuary, would have devastating ecological impacts.

Scientists within the Department of Interior have been pivotal in assessing these impacts

and have raised "red-flag" warnings. This $20 to $50 billion dollar, highly controversial

project will primarily serve to deliver Sacramento River water, through State and Federal

pumps, to provide subsidized irrigation water to corporate agricultural operations of the

western San Joaquin Valley."

The letter:

ED_000733_DD_NSF_00041591-00002

* references a May 24th briefing that "has stirred urgent concerns among fishing communities, farming communities, and conservation organization throughout the West Coast."

* references a "red flag memo" detailing the concerns of State and Federal fishery and wildlife agencies that the project would hasten the extinction of Central Valley salmon, Delta smelt, longfin smelt and other fish species.

* states that : "Two-thirds of existing Delta Estuary water exports serve corporate irrigators of the western San Joaquin Valley, which accounts for less than .5 percent of California's economy and population. Less than a third of the water goes to the urban areas that make up half of the state's population and economy."

* Urges the Secretary to:

o "work to dissuade the State from pursuing this misguided policy;"

o "uphold the Obama Administration's promise to ensure the Department of Interior's scientific integrity and not bow to political pressure;"

o "not put the interests of South-of-Delta water contractors before the public and San Francisco Bay-Delta dependent farmers, fishermen, and local communities;" and

o "reject these unsustainable water demands and their high public costs, and instead invest in more efficient use of our scare water resources through cost-effective water conservation and recycling."

Letter Signed by:

Environmental Water Caucus

Sierra Club California

Friends of the River

Restore the Delta

California Water Impact Network

California Sportfishing Protection Alliance

Southern California Watershed Alliance

ED_000733_DD_NSF_00041591-00003

Winnemem Wintu Tribe

Center for Biological Diversity

Food and Water Watch

Salmon Water Now

AquAlliance

Pacific Coast Federation of Fisherman's Assoc.

Crab Boat Owners Association

Planning and Conservation League

Environmental Justice Coalition for Water

Others listed as supporting the letter:

Revive the San Joaquin

Sacramento Chapter, California Striped Bass Association

Fish Sniffer

Golden West Women Flyfishers

California Save Our Streams Council

Clean Water Action

California Striped Bass Assoc.

Butte Environmental Council

North Coast Rivers Alliance

Golden Gate Salmon Association

Resource Renewal Institute

Save The Bay

Federation of Fly Fishers

Lower Sherman Island Duck Hunters Association

Water4Fish

ED_000733_DD_NSF_00041591-00004

Berkeley Conservation Institute, Pure Fishing

California Outdoors

Institute for Fishery Resources

Southwest Council, Federation of Fly Fishers

The Golden Gate Fishermen's Association

Tanis

Tanis J. Toland, REM
Delta Programs Integration
U.S. Army Corps of Engineers
South Pacific Region
916-557-6717

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00041591-00005

To: CN=Jared Blumenfeld/OU=R9/O=USEPA/C=US@EPA[]
Cc: ryerson.epa@epa.gov;CN=Alexis Strauss/OU=R9/O=USEPA/C=US@EPA;CN=Kelly Zito/OU=R9/O=USEPA/C=US@EPA;CN=Nancy Woo/OU=R9/O=USEPA/C=US@EPA[]; N=Alexis Strauss/OU=R9/O=USEPA/C=US@EPA;CN=Kelly Zito/OU=R9/O=USEPA/C=US@EPA;CN=Nancy Woo/OU=R9/O=USEPA/C=US@EPA[]; N=Kelly Zito/OU=R9/O=USEPA/C=US@EPA;CN=Nancy Woo/OU=R9/O=USEPA/C=US@EPA[]; N=Nancy Woo/OU=R9/O=USEPA/C=US@EPA[]
Bcc: []
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Fri 7/13/2012 9:10:08 PM
Subject: Fw: Administration announcement on California Bay Delta -- Need your Help
EPA Action Plan talking Points.docx

Something like this? If you want more detail, I prepared this short background piece for CEQ which they were going to use to in developing their background material.

David -

Thanks for the message. I think announcing EPA's Action Plan along with the BDCP preferred project on July 25th is a smart approach. Much in EPA's plan complements the BDCP, and in fact, it explicitly supports BDCP development. Please let us know how we can best work with you on this. - Jared

~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

----- Forwarded by Karen Schwinn/R9/USEPA/US on 07/13/2012 01:45 PM -----

From: "Hayes, David" <David_Hayes@ios.doi.gov>
To: Robert Bonnie <Robert.Bonnie@OSEC.USDA.gov>, Kathleen Merrigan <kamerri@osec.usda.gov>, Jared Blumenfeld/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA, Jo Darcy <joellen.darcy@us.army.mil>, "Dave.White@wdc.usda.gov" <Dave.White@wdc.usda.gov>, Terrance Salt <rock.salt@us.army.mil>, Karen Schwinn/R9/USEPA/US@EPA, "Connor, Michael L" <MLConnor@usbr.gov>
Cc: "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Boots, Michael J." (b) (6) [redacted] >, "Jensen, Jay" (b) (6) [redacted] v>, "Nawi, David" <David_Nawi@ios.doi.gov>
Date: 07/13/2012 12:47 PM
Subject: Administration announcement on California Bay Delta -- Need your Help

Secretary Salazar, Administrator Lubchenco and Governor Brown expect to make an announcement involving the California water situation in Sacramento on July 25th. Although most of the attention in the lead-up to this announcement has focused on the expected fed/state announcement of a preferred alternative that will be evaluated (along with other alternatives) to address the Delta infrastructure/pumps issue, Ken and I believe that we must include some parallel announcements which demonstrate that the federal government (and the state government) are taking a wide lens when looking at water management needs in California, including the promotion of water conservation, investments in science, and taking action to improve water quality.

Under the MOU that our agencies signed in late 2010, we committed to bring coordinated resources to bear to address these other issues, and we have done so. My question is what announcements we can make on July 25 with regard to these other areas of commitment. I don't think that we should blurt out a laundry list, but instead should focus on two or three major investments that illustrate the non-Delta-centric investments that we are making in sound water management throughout California. So the question is what we can come up with that fits that bill.

For example:

For USDA, we had a great announcement a few weeks ago regarding additional commitments of NRCS funds to help irrigators use their water more efficiently. (You guys have been great on this!) Is there anything more that we could pull into a meaningful announcement?

For EPA, can we help trumpet your new water quality announcement? What can we say about it?

For the Corps, are you funding any armoring of any of the Delta levees/islands or otherwise in making important investments in the Delta?

For DOI agencies, is there any sort of new announcement that we can make regarding a Science Center in the Delta, given previously-announced commitments? (BOR). Or recommitments to Title XVI funding or another "WaterSMART" initiative? (BOR). Or any impending habitat improvement investment(s)? Or an investment in south-of-the Delta storage to enhance flexibility in the Delta (e.g., proposed SLR rise)? Etc.

Please shoot your thoughts this way. This is a very important exercise.

Thanks.

--David

David J. Hayes
Deputy Secretary
U.S. Department of the Interior
1849 C Street, N.W.
Washington, D.C. 20240
(202) 208-6291

ED_000733_DD_NSF_00041946-00002

To: "Nawi, David" [David_Nawi@ios.doi.gov]; 'Michael.G.Nepstad@usace.army.mil'" [Michael.G.Nepstad@usace.army.mil]; aren Schwinn/R9/USEPA/US@EPA;Tom Hagler/R9/USEPA/US@EPA[]; om Hagler/R9/USEPA/US@EPA[]
Cc: "Barajas, Federico" [FBarajas@usbr.gov]
From: "Idlof, Patricia S (Patti)"
Sent: Wed 9/7/2011 9:31:59 PM
Subject: Re: Attached is the final MOU. (UNCLASSIFIED)

To my knowledge the lead agencies and the Corps and EPA were going to meet with the consultant and modelers to review the proposed operations for each alternative in detail. We postponed that meeting until DWR works thru developing the 3,000 cfs and Increased Delta Outflow alternatives. Based on recent correspondence from CCWD, not sure if they're ready for a meeting yet.

Patti Idlof
Sent via Blackberry

----- Original Message -----
From: Nawi, David
Sent: Wednesday, September 07, 2011 03:21 PM
To: Nepstad, Michael G SPK <Michael.G.Nepstad@usace.army.mil>; Schwinn.Karen@epamail.epa.gov <Schwinn.Karen@epamail.epa.gov>; Hagler.Tom@epamail.epa.gov <Hagler.Tom@epamail.epa.gov>; Idlof, Patricia S (Patti)
Subject: RE: Attached is the final MOU. (UNCLASSIFIED)

Good news on the MOU. Can someone tell me where we are on getting USACE the information they need to provide input on alternatives?

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Wednesday, September 07, 2011 1:57 PM
To: Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Hoffman-Floerke, Dale; Nawi, David; Idlof, Patricia S (Patti)
Subject: Attached is the final MOU. (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Attached is the final MOU. ONLY COMMENT IF THEY SEE SOMETHING THAT WOULD PREVENT THEIR AGENCY FROM SIGNING

On 9 September I will send it through the review chain for signature by Col.
Leady.

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District 650 Capitol Mall, Suite 5-200 Sacramento, California 95814
(916) 557-7262 Fax:(916) 930-9506
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00042343-00002

To: "Nawi, David" [David_Nawi@ios.doi.gov]
Cc: 'Deanna Harwood' [Deanna.Harwood@noaa.gov]; Barajas, Federico" [FBarajas@usbr.gov]; om Hagler/R9/USEPA/US@EPA;"Monroe, Jim" [James.Monroe@sol.doi.gov]; Monroe, Jim" [James.Monroe@sol.doi.gov]; Belin, Letty" [Letty_Belin@ios.doi.gov]; Michael Tucker" [Michael.Tucker@NOAA.GOV]; Chotkowski, Michael" [michael_chotkowski@fws.gov]; Idlof, Patricia S (Patti)" [PIdlof@usbr.gov]; aren Schwinn/R9/USEPA/US@EPA[]
From: Lori_Rinek@fws.gov
Sent: Wed 2/22/2012 7:36:28 PM
Subject: RE: Purpose Statement

David,

FWS is also agreeable to adding the proposed hi-lighted sentence (in the e:mail trail below) to the P&N statement contained in Chapter 2 of the BDCP EIS/EIR.

Lori Rinek
USFWS Biologist (Sec 10) Coordinator
lori_rinek@fws.gov
916-930-5652

Bay-Delta Fish and Wildlife Office
650 Capitol Mall, 5th Floor
Sacramento, CA 95814

"Nawi, David" <David_Nawi@ios.doi.gov>

02/21/2012 04:16 PM To "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>, Karen Schwinn <Schwinn.Karen@epamail.epa.gov>, "hagler.tom@epamail.epa.gov" <hagler.tom@epamail.epa.gov>, "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Barajas, Federico" <FBarajas@usbr.gov>, 'Deanna Harwood' <Deanna.Harwood@noaa.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, "Michael Tucker" <Michael.Tucker@NOAA.GOV>, "Chotkowski, Michael" <michael_chotkowski@fws.gov>, "Rinek, Lori" <lori_rinek@fws.gov>
cc
Subject RE: Purpose Statement

From past conversations, I believe all three lead agencies are OK with the sentence. Correct?

From: Idlof, Patricia S (Patti)
Sent: Tuesday, February 21, 2012 4:15 PM
To: Nawi, David; Karen Schwinn; hagler.tom@epamail.epa.gov; Belin, Letty; Barajas, Federico; 'Deanna Harwood'; Monroe, Jim; Michael Tucker; Chotkowski, Michael

Subject: RE: Purpose Statement

David,
Reclamation is agreeable to adding the proposed hi-lighted sentence below to the Purpose and Need Statement contained in Chapter 2 of the BDCP EIR/EIS.

Patti Idlof
Office: (916) 414-2404
pidlof@usbr.gov

From: Nawi, David
Sent: Monday, February 13, 2012 4:27 PM
To: Karen Schwinn; hagler.tom@epamail.epa.gov; Belin, Letty; Idlof, Patricia S (Patti); Barajas, Federico; 'Deanna Harwood'; Monroe, Jim; Michael Tucker; Chotkowski, Michael
Subject: Purpose Statement

Mark Cowin would like to add the highlighted language to the purpose statement in the current version of the DEIS/EIR, set out below. The language is a direct quote from the October 26, 2010 letter from the three federal lead agency RDs to EPA (letter attached for you reference, as well as Chapter 2 of draft BDCP, see p. 5 for relevant language). As I understand it, the intent in proposing the inclusion of the added language is to make clear that the language is focused on average amounts.

Please provide a reaction to the proposed additional language, and include anyone else who should review this.

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

ED_000733_DD_NSF_00042357-00002

To: Karen Schwinn/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Thur 4/7/2011 3:57:58 PM
Subject: FW: Federal Coordination Meeting April 7 (UNCLASSIFIED)

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Thursday, April 07, 2011 8:45 AM
To: Nawi, David
Subject: RE: Federal Coordination Meeting April 7 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi David,

I'm not feeling well and will be going home.

Patti's NEPA/404 document missed the mark and isn't something the Corps agrees with. It's not too surprising that Reclamation would have a fundamental misunderstandings of our regulatory program as all our permit discussions concerning the BDCP have been with DWR (the now disbanded DHCCP Group led by Paul Marshall). The document is a good illustration of the wide distance we need to get Reclamation and DWR to move across in order to get this process to work, and why the Corps and EPA have very grave concerns over the chances of success for the BDCP.

I still am waiting solicitor review, as is EPA. We'd like to limit the discussion of the document today to 1) The Corps and EPA does not concur with it, and 2) we'll have follow up meetings in the near future. I'd also suggest you limit its distribution and mark it as draft. Probably the best next step would be for the Corps and EPA to give you a regulatory 101 meeting, and then focus efforts on an MOU rather than work on edits to Patti's paper.

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
650 Capitol Mall, Suite 5-200
Sacramento, California 95814
(916) 557-7262 Fax:(916) 557-6877
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey: http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

ED_000733_DD_NSF_00042875-00001

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Wednesday, April 06, 2011 5:45 PM
To: Schwinn.Karen@epamail.epa.gov; Melanie Rowlan; Barajas, Federico; Milligan, Ronald E; Castleberry, Dan; Grim, Mary; Nepstad, Michael G SPK; Jewell, Michael S SPK; Idlof, Patricia S; Norris, Jennifer; 'Michael Tucker'; Hagler.Tom@epamail.epa.gov; Luana Kiger; Fujii, Roger; Arroyave, Pablo R; Howard Brown; Lohoefener, Ren; Belin, Letty; Glaser, Donald R; 'Deanna Harwood'; Schlueter, Rosalyn A (Rose); Rod McGinnis; Shouse, Michelle K; Keay, Jeffrey A
Cc: Allen, Kaylee; Monroe, James; Chris Yates; Will Stelle; jeff.McLain@noaa.gov; Morales, Francia S; Pennell, Becky; Foresman.Erin@epamail.epa.gov; Tim Vendlinski
Subject: RE: Federal Coordination Meeting April 7

Consider the item added. We will have to start on time and be efficient, as I am supposed to be on an renewable energy panel a bit after 10:00.

From: Schwinn.Karen@epamail.epa.gov [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Wednesday, April 06, 2011 5:40 PM
To: Nawi, David; Melanie Rowlan; Barajas, Federico; Milligan, Ronald E; Castleberry, Dan; Grim, Mary; Michael G SPK Nepstad; Mike Jewell; Idlof, Patricia S; Norris, Jennifer; 'Michael Tucker'; Hagler.Tom@epamail.epa.gov; Luana Kiger; Fujii, Roger; Arroyave, Pablo R; Howard Brown; Lohoefener, Ren; Belin, Letty; Glaser, Donald R; 'Deanna Harwood'; Schlueter, Rosalyn A (Rose); Rod McGinnis; Shouse, Michelle K; Keay, Jeffrey A
Cc: Allen, Kaylee; Monroe, James; Chris Yates; Will Stelle; jeff.McLain@noaa.gov; Morales, Francia S; Pennell, Becky; Foresman.Erin@epamail.epa.gov; Tim Vendlinski
Subject: Re: Federal Coordination Meeting April 7

David -

Could I add to this nice long agenda? I'd like to touch on the Corps DEIS under review for the Sac Ship Channel. As we've been preparing our comments, we've been communicating with the Corps, but since our comments will include impacts to smelt habitat and potential effect on operations, I'd like to summarize this for the other agencies. - Karen

---

From: "Nawi, David" [David_Nawi@ios.doi.gov]
Sent: 04/06/2011 08:29 PM AST
To: "Nawi, David" <David_Nawi@ios.doi.gov>; "melanie.rowland@noaa.gov" <melanie.rowland@noaa.gov>; "Barajas, Federico" <FBarajas@usbr.gov>; "Milligan, Ronald E" <RMilligan@usbr.gov>; "Castleberry, Dan" <dan_castleberry@fws.gov>; Karen Schwinn; "Grim, Mary" <Mary_Grim@fws.gov>; "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>; "michael.s.jewell@usace.army.mil" <michael.s.jewell@usace.army.mil>; "Idlof, Patricia S" <PIdlof@usbr.gov>; "Norris, Jennifer" <jennifer_norris@fws.gov>; 'Michael Tucker' <Michael.Tucker@NOAA.GOV>; Tom Hagler; "Norris, Jennifer" <jennifer_norris@fws.gov>; "Kiger, Luana - Davis, CA" <Luana.Kiger@ca.usda.gov>; "Fujii, Roger" <rfujii@usgs.gov>; "Arroyave, Pablo R" <PArroyave@usbr.gov>; Howard Brown <Howard.Brown@noaa.gov>; Howard Brown <Howard.Brown@NOAA.GOV>; "Lohoefener, Ren" <Ren_Lohoefener@fws.gov>; "Belin, Letty" <Letty_Belin@ios.doi.gov>; "Glaser, Donald R" <DGlaser@usbr.gov>; 'Deanna Harwood' <Deanna.Harwood@noaa.gov>; "Schlueter, Rosalyn A (Rose)" <RSchlueter@usbr.gov>; "rod.mcinnis@noaa.gov" <rod.mcinnis@noaa.gov>; "Shouse, Michelle K" <mkshouse@usgs.gov>; "Keay, Jeffrey A"

<jkeay@usgs.gov>
Cc: "Allen, Kaylee" <Kaylee.Allen@sol.doi.gov>; "Monroe, James" <James.Monroe@sol.doi.gov>; "'Chris.Yates@noaa.gov'" <Chris.Yates@noaa.gov>; "Will.Stelle@noaa.gov" <Will.Stelle@noaa.gov>; "jeff.McLain@noaa.gov" <jeff.McLain@noaa.gov>; "Morales, Francia S" <FMorales@usbr.gov>; "Pennell, Becky" <Becky_Pennell@fws.gov>; Erin Foresman
Subject: Federal Coordination Meeting April 7

We are scheduled to meet Thursday April 7 at 9:00 a.m. at 650 Capitol Mall, 8th floor, conference room B. Call-in number: (b) (6) [redacted]

Topics for discussion:

Delta Stewardship Council, Review of Delta Plan Drafts – Status of review, next steps

EIS Issues

Status

USACE permitting (memo attached)

BDCP Process

Structure, timing (graphic attached)

April 28 event

Long-term Operations Criteria ("Big 6" Issues) – OMR, Fall X2

Effects Analysis - Status

EPA ANPR – Coordination with other agencies

USACE, EPA Meetings with the State, Permitting MOU

Rio Vista Science Center

Litigation Update

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00042875-00003

BDCP NEPA/CWA Section 404 Integration Issues
April 4, 2011

The following is intended to address the extent to which there will be a need for further NEPA review by the Corps in connection with its permitting actions related to implementation of the BDCP. Two questions have been posed:

1. Since the BDCP EIR/EIS is project specific for the conveyance and water operations, will the Corps have to conduct further review for those actions?
2. What is the relation between the EIS Purpose and Need Statement and the 404 Purpose Statement, and which actions does each apply to?

Question #1 – Reclamation's short answer to this is no. The analysis provided in the BDCP EIR/EIS will be conducted on a project-specific level of detail for all actions related to construction and operation of the proposed conveyance facilities (i.e., the North Delta intakes, pipelines, tunnels, canals, forebays, etc.). The EIR/EIS currently under preparation is intended to provide all the needed detailed analyses to support the Corps permitting processes for the facilities. The following information will be included in the EIR/EIS to support Corps permitting needs:

- Alternatives Analysis - As required by NEPA, the alternatives included for detailed analysis described in Chapter 3 of the EIR/EIS will be evaluated at an equal level of detail. This chapter will also include a summary of the alternatives that were evaluated, but were not carried forward for detailed analysis. The screening criteria process and documentation of the conclusions of the alternatives screening process will also be included in Chapter 3. An Alternatives Development appendix will provide detailed background information for each alternative considered as part of the process.
- Wetlands Analysis - A preliminary waters/wetlands analysis will be included in the technical appendices and a summary incorporated into Chapter 12 (Terrestrial Biological Resources). An overview of the function and services will be provided. General information on jurisdictional boundaries will be provided subject to property access restrictions. This information will be used to support the recommendation for the Least Environmentally Damaging Practicable Alternative (LEDPA).
- Mitigation- Mitigation for footprint of disturbance will be defined at a site-specific level in the EIR/EIS. This will include performance standards to replace the functions and services associated with the unavoidable loss of waters or wetlands. Chapters 11 (Fisheries) and 12 (Terrestrial) will identify any mitigation measures required above and beyond the conservation measures included in the BDCP. Conservation measures are intended to avoid and minimize impacts associated with the covered activities as well as contribute to recovery of covered species.

The BDCP also includes habitat restoration elements in its conservation strategy; however, these elements of the conservation plan are less advanced in the planning process than the conveyance and operations elements. Therefore, analysis of these actions will be at a programmatic level of detail in the EIR/EIS. The EIS/EIR will analyze the anticipated potential impacts of habitat restoration to the extent possible given the current level of planning, and will have to make firm commitments that site-specific restoration projects will have their own supplemental environmental compliance documentation

ED_000733_DD_NSF_00042878-00001

(including NEPA and 404(b)(1) analyses) as needed for project impacts beyond what is analyzed and disclosed in the BDCP EIR/EIS.

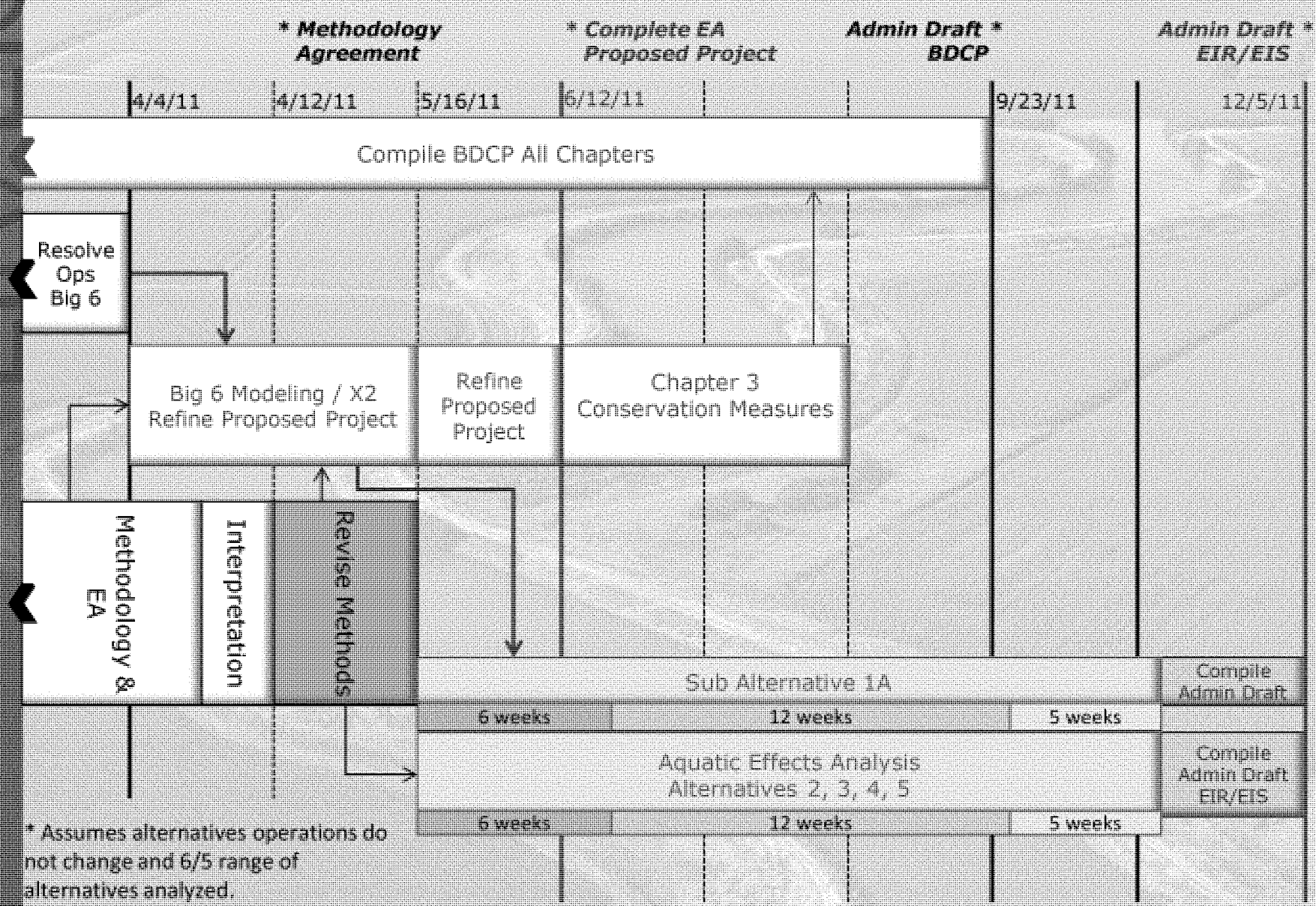
Question #2 – The BDCP Purpose and Need Statement included in the BDCP EIR/EIS addresses all elements of the proposed plan, including conveyance facilities, associated water operations, and habitat restoration activities. It has been prepared to support USFWS, NMFS, and DFG decisions on issuance of future ESA and NCCPA permits, therefore it broadly encompasses the whole of the BDCP program. In contrast, the purpose statement for the Corps permits will apply to those elements of the overall plan for which the Corps permit application is being submitted. As discussed and agreed to at a meeting with Reclamation, Corps, and EPA representatives in March 2010, the purpose statement associated with the CWA Section 404 permit application for construction and operation of the proposed conveyance facilities will be a subset of the more broad BDCP EIR/EIS Purpose and Need Statement. Similarly, the purpose statements for the subsequent environmental analyses for CWA Section 404 permit application for habitat restoration actions will be a subset of the BDCP EIR/EIS Purpose and Need Statement as appropriate for the specific project and permitting needs proposed at that time.

Corps regulatory staff has expressed their desire for separate analyses in the BDCP EIR/EIS related to the upcoming Corps permit actions because they need to consider the impacts of the portion of the program for which a permit is being applied for (most likely the new conveyance facilities and water operations). This would mean that the document would need to have essentially two sets of analysis for each category of impact; one which has just the actions proposed for the Corps permits and one for the entire BDCP program (which is proposed for the NCCPA/ESA permits). This proposal to split the EIR/EIS analyses is not feasible, as conveyance facilities and water operations actions alone (without habitat restoration) would most likely not be permitted by the regulatory agencies. Also, having two sets of analyses for each resource category in the EIR/EIS would make the document all the more unreadable and confusing to the public.

Corps staff has stated that 404 permits cannot be issued on actions that are at a programmatic level, therefore, the 404 permit would need to be issued for the conveyance and operations actions only. However, there are examples of programmatic 404 (b)(1) analyses (i.e., Everglades) and programmatic coordination with the Corps (i.e., High Speed Rail MOU), which contain broad level analysis appropriate to the level of planning, and commit to future site specific 404(b)(1) analysis as projects are further developed. While the Everglades example is a Corps 404(b)(1) analysis, and not an applicant driven analysis (no permit issued), perhaps the case could be made that a similar approach could be used for the BDCP, where the BDCP 404(b)(1) analysis is project-specific for conveyance elements and programmatic for habitat restoration, with the commitment that future 404(b)(1) analyses will be done as restoration projects are further developed by the action agencies, and the understanding that the permit would only be for the project-specific conveyance and operations at this time.

ED_000733_DD_NSF_00042878-00002

Current Working Schedule – Updated April 5, 2011



Delta Habitat Conservation and Conveyance Program

Advancing the Bay Delta Conservation Plan

Legend:
- Run Bio Models
- Analyze Results
- Roll-up

Legend:
- BDCP (SAIC)
- EIR/EIS (HDR)
- DWR/USBR/FWS/NMFS

To: Karen Schwinn/R9/USEPA/US@EPA;Erin Foresman/R9/USEPA/US@EPA[]; rin Foresman/R9/USEPA/US@EPA[]
From: "Nepstad, Michael G SPK"
Sent: Fri 5/6/2011 4:04:23 PM
Subject: FW: BDCP EIS Alternatives
smime.p7s

Here's my thoughts:

State and Lead federal Agencies want to finalize the alternatives in the BDCP EIS on May 19th.

This means the following:

1) The NEPA/404 integration MOU which I haven't even drafted yet is now totally moot. The purpose of such a MOU is to ensure the NEPA document has the alternatives analysis needed to provide NEPA coverage for the Corps permitting action. In our High Speed Train MOU, the only steps left after the alternatives have been selected is to process our permit application; all corps involvement in the EIS is done at that point.

2) Any additional alternatives I would be likely to ask be in the NEPA document would be those which appeared likely to reduce impacts of the proposed alternative, which seemed likely to be a potential LEDPA, which were outside the range of alternatives (operationally or footprint) of the current alternatives, and/or were unique enough that it merited its own description in the NEPA document. Since they haven't provided a description of the proposed project for permitting, any level of description or analysis of impacts (operationally or footprint), and a description of the present range of alternatives, it's really not possible to know if additional alternatives or sub-alternatives need to be in the EIS or not.

3) I have no idea who is on the executive committee (agencies and individuals) and I do not know what gives them their authority. I do know that the Corps is not on the executive committee and the Corps has not delegated any of its regulatory responsibilities to any other agency, party or person.

4) I don't want the Corps to agree to anything for May 19th. If the State and Lead federal Agencies decide on things which work for them, and those decisions are later shown not to work for the Corps, then there's going to be delays and re-do's, because it has to meet the Corps needs for us to be able to use the EIS.

I now am also concerned that the State and Lead federal Agencies are really saying that they are done with their range of analysis for any purpose and are going to expect that all Corps permit decisions will be based solely on their analysis with no additional considerations of changes or new alternatives for LEDPA, etc.

Should we write a joint letter that "We have not been provided the time and the level of detail to determine, under NEPA and the Clean Water Act, the adequacy of alternatives finalized by the 'executive committee' consisting

ED_000733_DD_NSF_00043283-00001

of State and Lead federal Agencies." Or perhaps we should just tell Nawi? I really don't see a point to a briefing by Reclamation since they have no detail to provide.

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
650 Capitol Mall, Suite 5-200
Sacramento, California 95814
(916) 557-7262 Fax:(916) 557-6877
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, May 05, 2011 5:38 PM
To: Nepstad, Michael G SPK; Schwinn.Karen@epamail.epa.gov
Cc: Idlof, Patricia S; Michael Tucker; Castleberry, Dan; Barajas, Federico; Fry, Susan M
Subject: BDCP EIS Alternatives

Karen, Mike - I was just at a BDCP meeting (Executive Committee) at which there was considerable discussion of the alternatives to include in the EIS/EIR. The lead agencies are scheduled to meet Tuesday of next week to try to come to closure on the alternatives, and the Executive Committee expects to hear about a "final decision" on alternatives when they next meet on May 19. (They think the decision is theirs - not the case even though they are paying for it.)

By this email, I am requesting that Patti brief you on where things stand and where they appear to be going. If you have any questions or concerns or want to add to or modify the alternatives in the DEIS, this is the time to bring those forward.

David

ED_000733_DD_NSF_00043283-00002

To: CN=Erin Foresman/OU=R9/O=USEPA/C=US@EPA;"Michael G SPK Nepstad" [Michael.G.Nepstad@usace.army.mil]; Michael G SPK Nepstad" [Michael.G.Nepstad@usace.army.mil]
Cc: CN=Tom Hagler/OU=R9/O=USEPA/C=US@EPA[]
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Fri 5/6/2011 5:50:58 PM
Subject: Re: BDCP EIS Alternatives

I'm good with that approach. Its some of our scoping comments repeated. I'd also like to support State Board's stated needs. Thanks Erin!

----- Original Message -----
From: Erin Foresman
Sent: 05/06/2011 10:44 AM PDT
To: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
Cc: Karen Schwinn; Tom Hagler
Subject: RE: BDCP EIS Alternatives

how do you all feel about this letter following a NEPA/404-style format? obviously it won't contain language about an mou but it could contain language about the importance of integrating nepa and cwa 404, the verbal endorsement by state and federal leaders, and then follow with our advice for creating a robust nepa document.

if that sounds okay to you, i can draft it and hand it off to you three by cob monday. tim would be another good person to get input from on this. he's been here before.

****

Erin Foresman
Environmental Scientist & Policy Coordinator,
US EPA Region 9 C/O Army Corps of Engineers
650 Capitol Mall Suite 5-200, Sacramento, CA 95814
Phone: (916) 557 5253, Fax: (916) 557 6877

http://www.epa.gov/region9/water/watershed/sfbay-delta/index.html

From: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
To: Karen Schwinn/R9/USEPA/US@EPA, Erin Foresman/R9/USEPA/US@EPA
Cc: Tom Hagler/R9/USEPA/US@EPA
Date: 05/06/2011 09:22 AM
Subject: RE: BDCP EIS Alternatives

I'm out mom, tues and fri but I've got a blackberry. If someone other than me could cut a draft Mon or tues, I'd get comments back right away and I'd like us to have letter signed and out Wednesday.

Michael G. Nepstad
Deputy Chief, Regulatory Division

ED_000733_DD_NSF_00043285-00001

US Army Corps of Engineers, Sacramento District
650 Capitol Mall, Suite 5-200
Sacramento, California 95814
(916) 557-7262 Fax:(916) 557-6877
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Schwinn.Karen@epamail.epa.gov [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Friday, May 06, 2011 9:15 AM
To: Nepstad, Michael G SPK; Foresman.Erin@epamail.epa.gov
Cc: Hagler.Tom@epamail.epa.gov
Subject: Re: BDCP EIS Alternatives

I agree Mike. Though I am willing to accept their offer of a briefing (because we've been asking forever what they have to share with us) and then writing to document our reaction, which I was assuming would not be concurrence - can't imagine that we'd get the level of information we'd need, particularly on operations. I see this as an opportunity to clarify a lot of what we've been saying. A joint letter would be ideal. I understand you are out next week? Do you have time to start it? Then we could work with MJ to finalize next week?

I'm working at home if you guys want to discuss 415/297-5509.

----- Original Message -----
From: Karen Schwinn
Sent: 05/06/2011 12:14 PM EDT
To: "Michael G SPK Nepstad" <Michael.G.Nepstad@usace.army.mil>; Erin Foresman
Cc: Tom Hagler
Subject: Re: BDCP EIS Alternatives

Here's my thoughts:

State and Lead federal Agencies want to finalize the alternatives in the BDCP EIS on May 19th.

This means the following:

1) The NEPA/404 integration MOU which I haven't even drafted yet is now totally moot. The purpose of such a MOU is to ensure the NEPA document has the alternatives analysis needed to provide NEPA coverage for the Corps permitting action. In our High Speed Train MOU, the only steps left after the alternatives have been selected is to process our permit application; all corps involvement in the EIS is done at that point.

2) Any additional alternatives I would be likely to ask be in the NEPA document would be those which appeared likely to reduce impacts of the proposed alternative, which seemed likely to be a potential LEDPA, which were outside the range of alternatives (operationally or footprint) of the current alternatives, and/or were unique enough that it merited its own description in the NEPA document. Since they haven't provided a description of the proposed project for permitting, any level of description or analysis of impacts (operationally or footprint), and a description of the present range of alternatives, it's really not possible to know if additional alternatives or sub-alternatives need to be in the EIS or not.

3) I have no idea who is on the executive committee (agencies and individuals) and I do not know what gives them their authority. I do know that the Corps is not on the executive committee and the Corps has not delegated any of its regulatory responsibilities to any other agency, party or person.

4) I don't want the Corps to agree to anything for May 19th. If the State and Lead federal Agencies decide on things which work for them, and those decisions are later shown not to work for the Corps, then there's going to be delays and re-do's, because it has to meet the Corps needs for us to be able to use the EIS.

I now am also concerned that the State and Lead federal Agencies are really saying that they are done with their range of analysis for any purpose and are going to expect that all Corps permit decisions will be based solely on their analysis with no additional considerations of changes or new alternatives for LEDPA, etc.

Should we write a joint letter that "We have not been provided the time and the level of detail to determine, under NEPA and the Clean Water Act, the adequacy of alternatives finalized by the 'executive committee' consisting of State and Lead federal Agencies." Or perhaps we should just tell Nawi?
I really don't see a point to a briefing by Reclamation since they have no detail to provide.

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District 650 Capitol Mall, Suite 5-200
Sacramento, California 95814
(916) 557-7262 Fax:(916) 557-6877
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:

ED_000733_DD_NSF_00043285-00003

http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, May 05, 2011 5:38 PM
To: Nepstad, Michael G SPK; Schwinn.Karen@epamail.epa.gov
Cc: Idlof, Patricia S; Michael Tucker; Castleberry, Dan; Barajas, Federico;
Fry, Susan M
Subject: BDCP EIS Alternatives

Karen, Mike - I was just at a BDCP meeting (Executive Committee) at which there was considerable discussion of the alternatives to include in the EIS/EIR. The lead agencies are scheduled to meet Tuesday of next week to try to come to closure on the alternatives, and the Executive Committee expects to hear about a "final decision" on alternatives when they next meet on May 19. (They think the decision is theirs - not the case even though they are paying for it.)

By this email, I am requesting that Patti brief you on where things stand and where they appear to be going. If you have any questions or concerns or want to add to or modify the alternatives in the DEIS, this is the time to bring those forward.

David

ED_000733_DD_NSF_00043285-00004

To: "Roger Gorke" [gorke.roger@epa.gov]
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Fri 5/6/2011 6:00:10 PM
Subject: Fw: BDCP EIS Alternatives
image002.gif

I don't need you to do anything on this at the moment - just read below to be aware of the flaws in this process. DOI (Nawi) isn't quite asking for concurrence but is suggesting speak now or...yet they can't give us a written document!

We and the Corps are planning a joint letter next week to Nawi/lead agencies, somewhat restating past scoping comments and the value of integrating NEPA and 404 and explaining why we can't speak definitively now. Partly cya but also to be clear, if somewhat repetitive, about where we see issues and/or what type of analysis we need to see (including echoing recent State Board ltr on need to analyze reduced export alternative that reflects their Flow Criteria).

From: "Idlof, Patricia S" [PIdlof@usbr.gov]
Sent: 05/06/2011 11:23 AM CST
To: Karen Schwinn; "Nawi, David" <David_Nawi@ios.doi.gov>; Michael G SPK Nepstad <Michael.G.Nepstad@usace.army.mil>; Erin Foresman; Tom Hagler
Cc: Michael Tucker <Michael.Tucker@NOAA.GOV>; "Castleberry, Dan" <dan_castleberry@fws.gov>; "Barajas, Federico" <FBarajas@usbr.gov>; "Fry, Susan M" <SFry@usbr.gov>; "Norris, Jennifer" <jennifer_norris@fws.gov>
Subject: RE: BDCP EIS Alternatives

It looks like the Corps is not available within the next couple of days and suggested that EPA give them an update. Since Karen, Erin, and I (and hopefully Jen) are available, let's schedule a conference call at 1:30pm today. I don't think it will take very long. We don't have anything in writing to forward; just wanted to quickly relay to you yesterday's discussions. Following is the conference call details –

866-618-5350

Passcode: 2295361#

Patti Idlof

916-992-3566 (c)

pidlof@usbr.gov

ED_000733_DD_NSF_00043287-00001

Reclamation BCLogo Bluesm

From: Schwinn.Karen@epamail.epa.gov [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Friday, May 06, 2011 9:40 AM
To: Idlof, Patricia S; Nawi, David; Michael G SPK Nepstad; Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Cc: Michael Tucker; Castleberry, Dan; Barajas, Federico; Fry, Susan M; Norris, Jennifer
Subject: Re: BDCP EIS Alternatives

Thanks Patti. I very much want to hear more about the BDCP alternatives under consideration though it may be difficult to pull EPA and Corps staff together in the next 2 work days - I'm pretty flexible during those 8 or so hours you offered (except today between 2 and 3) and will await others availability. We would appreciate receiving the written material in advance.
We'll do our best to offer immediate informal feedback though I do not see us being able to concur on anything by the Executive Committee's May 19 decision date . Given the complexity and importance of this project, it deserves our more careful consideration. (As you know, the Corps is drafting an MOU to clarify the process for Corps and EPA formal concurrence.) Thank you. - Karen

From: "Idlof, Patricia S" [PIdlof@usbr.gov]
Sent: 05/06/2011 10:18 AM CST
To: "Nawi, David" <David_Nawi@ios.doi.gov>; "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>; Karen Schwinn; Erin Foresman; Tom Hagler
Cc: Michael Tucker <Michael.Tucker@NOAA.GOV>; "Castleberry, Dan" <dan_castleberry@fws.gov>; "Barajas, Federico" <FBarajas@usbr.gov>; "Fry, Susan M" <SFry@usbr.gov>; "Norris, Jennifer" <jennifer_norris@fws.gov>
Subject: RE: BDCP EIS Alternatives

If possible, I'd like to arrange a conference call either today or Monday regarding yesterday's discussion of alternatives at the Executive Committee meeting. Please let me know your availability today prior to 11:30am or after 1pm; and Monday between 12-2pm. Thanks!

Patti Idlof

916-992-3566 (c)

pidlof@usbr.gov

Reclamation BCLogo Bluesm

ED_000733_DD_NSF_00043287-00002

From: Nawi, David
Sent: Thursday, May 05, 2011 5:38 PM
To: Nepstad, Michael G SPK; Schwinn.Karen@epamail.epa.gov
Cc: Idlof, Patricia S; Michael Tucker; Castleberry, Dan; Barajas, Federico; Fry, Susan M
Subject: BDCP EIS Alternatives

Karen, Mike - I was just at a BDCP meeting (Executive Committee) at which there was considerable discussion of the alternatives to include in the EIS/EIR. The lead agencies are scheduled to meet Tuesday of next week to try to come to closure on the alternatives, and the Executive Committee expects to hear about a "final decision" on alternatives when they next meet on May 19. (They think the decision is theirs – not the case even though they are paying for it.)

By this email, I am requesting that Patti brief you on where things stand and where they appear to be going. If you have any questions or concerns or want to add to or modify the alternatives in the DEIS, this is the time to bring those forward.

David

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could
contain a computer virus which could cause harm to EPA's computers,
network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced
into the EPA network. EPA is deleting all computer program attachments
sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you
should contact the sender and request that they rename the file name
extension and resend the Email with the renamed attachment. After
receiving the revised Email, containing the renamed attachment, you can
rename the file extension to its correct name.

For further information, please contact the EPA Call Center at
(866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

ED_000733_DD_NSF_00043287-00003

To: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
Cc: "Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; Jewell, Michael S SPK" [Michael.S.Jewell@usace.army.mil]
Bcc: []
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Fri 6/17/2011 6:55:07 PM
Subject: Re: FW: draft BDCP MOU 3 June 2011 (UNCLASSIFIED)

not at all - thanks.

~~~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~~~

From: "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>
To: Karen Schwinn/R9/USEPA/US@EPA
Cc: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>, "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>
Date: 06/17/2011 10:32 AM
Subject: FW: draft BDCP MOU 3 June 2011 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Karen
Please let me know if my message to Nawi causes you or EPA any heartburn.
Best
Paul

-----Original Message-----
From: Robershotte, Paul J SPD
Sent: Friday, June 17, 2011 10:16 AM
To: 'Nawi, David'
Cc: Nepstad, Michael G SPK
Subject: draft BDCP MOU 3 June 2011 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

David

ED_000733_DD_NSF_00044055-00001

I have been surprised by the lack of familiarity and the confusion (e.g. Letty, Federico, others) over the Clean Water Act process, in particular, but also the required 408 & Section 10 processes. There has been so much attention to the Section 7 Consultation process, this (404/408/10) has not gotten appropriate attention. This MOU need not take but days to be finalized and signed. This is not a contract for negotiation and counter negotiation, this is a recognition, or an acknowledgement that these processes are required by law and the Lead Agencies acknowledge such. Period. It is up to the Corps to get this to the Leads and to respond to questions and suggested edits. The three Lead Agencies are welcome to ask questions and suggest edits, but any delay on the part of the Lead Agencies in signing this can be interpreted as a continuing lack of interest and/or recognition. All we need is Reclamation, FWS & NMFS to read, comment and sign. It could be done this week.
Can you assist by encouraging their participation? I will attend this next week's MOU meeting.
Thanks
Paul

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, June 16, 2011 2:43 PM
To: Robershotte, Paul J SPD
Subject: FW: Attached is draft BDCP MOU 3 June 2011

Paul - June 3 draft of the permitting MOU is attached. I have just looked it over. My sense is that completing a final draft of this document and getting it through the needed levels of state (DWR) and federal management and legal review will take a good bit of time and effort. It may not be the most effective use of either. Do you have any thoughts?

David

-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Monday, June 06, 2011 11:19 AM
To: Beggs, Barbara; Deanna.Harwood@noaa.gov; Monroe, James; Allen, Kaylee; Clay, Lisa H SPK; melanie.rowland@noaa.gov; Jewell, Michael S SPK; Idlof, Patricia S; Michael.Tucker@NOAA.GOV; Victorine, Rebecca A; Hagler.Tom@epamail.epa.gov; Redler, Yvette; Foresman.Erin@epamail.epa.gov
Subject: Attached is draft BDCP MOU 3 June 2011

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District 650 Capitol Mall, Suite 5-200
Sacramento, California 95814
(916) 557-7262 Fax:(916) 557-6877
michael.g.nepstad@usace.army.mil

ED_000733_DD_NSF_00044055-00002

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00044055-00003

To: Karen Schwinn/R9/USEPA/US@EPA;"Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]; Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
From: "Nawi, David"
Sent: Thur 6/30/2011 1:41:04 PM
Subject: FW: California water
Hotspot
Hotspot
Hotspot
david_hayes@ios.doi.gov

FYI

From: Hayes, David
Sent: Tuesday, June 28, 2011 7:43 PM
To: Lohoefener, Ren; Glaser, Donald R; Shulters, Michael V; Nawi, David; Rod Mcinnis; will.stelle@noaa.gov
Cc: Sobeck, Eileen; D M Ashe; Castle, Anne; Ms. Medina Monica; Connor, Michael L; Sutley Nancy; Boots Michael; McNutt, Marcia K; erika_m._[redacted]; Belin, Letty; eric.schwaab@noaa.gov; Jacobson, Rachel - Deputy Solicitor; Hildebrandt, Betsy
Subject: California water

Based on the events of the past several weeks, I believe that our collective efforts in moving the BDCP process forward would be benefitted by a more visible and frequent "front office" involvement in the matter. All of you have been doing a terrific job in addressing the many issues that are coming at us, but I think that we can provide you with more support by having a high ranking leader of the effort from Washington who is visible in Sacramento (via frequent visits and on-going, hands-on involvement) and who can make sure that the various strands of work that need to progress are, in fact, moving forward, and that we are proactively addressing obstacles as they arise.

I am delighted to report that Mike Connor has agreed to take on this role. Mike will have on-going and frequent interactions with all of the regional leadership in California, with the State, and with key outside stakeholders. He will ensure coordination among the Regional Federal leadership who are responsible for advancing the BDCP to a successful and expeditious conclusion; he will oversee a focused federal effort to resolve any issues that could, if left unaddressed, delay the BDCP schedule; and Mike will ensure that Secretary Salazar and I, and other key Administration officials -- including, in particular, our colleagues at NOAA (with Will's active help) and at CEQ -- and Members of Congress are kept apprised of progress and issues associated with the BDCP effort.

In undertaking these tasks, Mike will work closely with all of the regional leadership and with David Nawi, who will continue to play the indispensable role of helping to coordinate BDCP efforts from Sacramento.

I will remain fully committed to these matters, and Letty and I anticipate working very closely with Mike as he takes on his expanded role. Also, to ensure full engagement by our Washington leadership team, and given the high priority that we must (continue to) give to this matter, Mike and I will be scheduling frequent calls with our FWS, USGS, CEQ, NOAA, EPA and Corps leadership here in Washington so that there is visibility throughout our organizations of the steps that we are taking to move forward with the BDCP effort.

Mike will be in Sacramento on Wednesday and he has scheduled a series of meetings to kick off his new role. I anticipate that we will make a public announcement about Mike's role in the near future – perhaps in connection with the expected exchange of letters with the State regarding the BDCP schedule.

Thanks for all of the great work that you are continuing to do on this important matter. Feel free to give me a call if you would like to discuss this --- or any other California water matter.

--David

David J. Hayes

Deputy Secretary

U.S. Department of the Interior

david_hayes@ios.doi.gov

202-208-6291

ED_000733_DD_NSF_00044225-00002

To: "Roger Gorke" [gorke.roger@epa.gov]; Macara Lousberg" [Lousberg.Macara@epamail.epa.gov]
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Thur 6/30/2011 8:34:11 PM
Subject: California water
Hotspot
Hotspot
Hotspot
david_hayes@ios.doi.gov

I'll let you guys decide whether Nancy needs to see this David Hayes memo re: Mike Connor's increased involvement in BDCP. From our standpoint, I think Mike will have a positive impact on resolving BDCP issues as they come up (which will be mostly but maybe not entirely ESA). We already saw this in yesterday's interagency meetings here. But it may also mean he'll want to talk to Nancy occasionally.

From: "Nawi, David" [David_Nawi@ios.doi.gov]
Sent: 06/30/2011 09:41 AM AST
To: Karen Schwinn; "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>
Subject: FW: California water

FYI

From: Hayes, David
Sent: Tuesday, June 28, 2011 7:43 PM
To: Lohoefener, Ren; Glaser, Donald R; Shulters, Michael V; Nawi, David; Rod Mcinnis; will.stelle@noaa.gov
Cc: Sobeck, Eileen; D M Ashe; Castle, Anne; Ms. Medina Monica; Connor, Michael L; Sutley Nancy; Boots Michael; McNutt, Marcia K; erika_m._felle[redacted] Belin, Letty; eric.schwaab@noaa.gov; Jacobson, Rachel - Deputy Solicitor; Hildebrandt, Betsy
Subject: California water

Based on the events of the past several weeks, I believe that our collective efforts in moving the BDCP process forward would be benefitted by a more visible and frequent "front office" involvement in the matter. All of you have been doing a terrific job in addressing the many issues that are coming at us, but I think that we can provide you with more support by having a high ranking leader of the effort from Washington who is visible in Sacramento (via frequent visits and on-going, hands-on involvement) and who can make sure that the various strands of work that need to progress are, in fact, moving forward, and that we are proactively addressing obstacles as they arise.

I am delighted to report that Mike Connor has agreed to take on this role. Mike will have on-going and frequent interactions with all of the regional leadership in California, with the State, and with key outside stakeholders. He will ensure coordination among the Regional Federal leadership who are responsible for advancing the BDCP to a successful and expeditious conclusion; he will oversee a focused federal effort to resolve any issues that could, if left unaddressed, delay the BDCP schedule; and Mike will ensure that Secretary Salazar and I, and other key Administration officials -- including, in particular, our colleagues at NOAA (with Will's active help) and at CEQ -- and Members of Congress are kept apprised of

progress and issues associated with the BDCP effort.

In undertaking these tasks, Mike will work closely with all of the regional leadership and with David Nawi, who will continue to play the indispensable role of helping to coordinate BDCP efforts from Sacramento.

I will remain fully committed to these matters, and Letty and I anticipate working very closely with Mike as he takes on his expanded role. Also, to ensure full engagement by our Washington leadership team, and given the high priority that we must (continue to) give to this matter, Mike and I will be scheduling frequent calls with our FWS, USGS, CEQ, NOAA, EPA and Corps leadership here in Washington so that there is visibility throughout our organizations of the steps that we are taking to move forward with the BDCP effort.

Mike will be in Sacramento on Wednesday and he has scheduled a series of meetings to kick off his new role. I anticipate that we will make a public announcement about Mike's role in the near future – perhaps in connection with the expected exchange of letters with the State regarding the BDCP schedule.

Thanks for all of the great work that you are continuing to do on this important matter. Feel free to give me a call if you would like to discuss this --- or any other California water matter.

--David

David J. Hayes

Deputy Secretary

U.S. Department of the Interior

david_hayes@ios.doi.gov

202-208-6291

ED_000733_DD_NSF_00044226-00002

To: "Paul Robershotte" [Paul.j.robershotte@usace.army.mil]
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Fri 7/1/2011 4:30:31 AM
Subject: Re: Sharing Draft 404 NEPA MOU with Contractors?
mailto:Schwinn.Karen@epamail.epa.gov
image002.jpg
image003.jpg

Great - thanks Paul.

From: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
Sent: 06/30/2011 05:35 PM MST
To: <David_Nawi@ios.doi.gov>; "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>; Karen Schwinn; Tom Hagler
Cc: <chip.smith1@us.army.mil>; Erin Foresman; "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
Subject: Re: Sharing Draft 404 NEPA MOU with Contractors?

I heard back from Mark. He has directed his staff not to share MOU w Water Contractors at this time. He has told them this is underway and has not yet gotten any challenges. He may shoot to them after editing and before signing. So, I think we are on the same wavelength.
Best
Paul

Message sent via my BlackBerry Wireless Device

From: Nawi, David <David_Nawi@ios.doi.gov>
To: Jewell, Michael S SPK; Schwinn.Karen@epamail.epa.gov <Schwinn.Karen@epamail.epa.gov>; Hagler.Tom@epamail.epa.gov <Hagler.Tom@epamail.epa.gov>
Cc: chip.smith1@us.army.mil <chip.smith1@us.army.mil>; Foresman.Erin@epamail.epa.gov <Foresman.Erin@epamail.epa.gov>; Nepstad, Michael G SPK; Robershotte, Paul J SPD; Salt, Rock
Sent: Thu Jun 30 13:59:10 2011
Subject: RE: Sharing Draft 404 NEPA MOU with Contractors?

Paul - Do you want to coordinate with Mark Cowin on how and when to communicate with the contractors? I think, as Mike suggests, that sharing a draft with them that we are still working on is likely to be counterproductive, and that we should hold off until we get something in the nature of a final draft.

David

From: Jewell, Michael S SPK [Michael.S.Jewell@usace.army.mil]
Sent: Thursday, June 30, 2011 1:56 PM
To: Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Cc: chip.smith1@us.army.mil; Foresman.Erin@epamail.epa.gov; Nawi, David; Nepstad, Michael G SPK; Robershotte, Paul J SPD; Salt, Rock

Subject: RE: Sharing Draft 404 NEPA MOU with Contractors?

I know this is a bit late (and may be OBE) but I would strongly suggest we not share the draft MOU with others not signatory to the MOU until we have a document we are all satisfied with (final draft). I understand DWR is still looking it over...

Michael S Jewell

Chief, Regulatory Division

US Army Corps of Engineers, Sacramento District

From: Schwinn.Karen@epamail.epa.gov [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Friday, June 24, 2011 3:36 PM
To: Hagler.Tom@epamail.epa.gov
Cc: chip.smith1@us.army.mil; Foresman.Erin@epamail.epa.gov; David Nawi; Nepstad, Michael G SPK; Jewell, Michael S SPK; Robershotte, Paul J SPD; Salt, Rock
Subject: Re: Sharing Draft 404 NEPA MOU with Contractors?

just confirming that I'm ok with it, but defer to David and Paul.

~~~~~~~~~~~~~~~~~~~~~~~~
KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

-----Tom Hagler/R9/USEPA/US wrote: -----

To: "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>, "Nawi, David" <David_Nawi@ios.doi.gov>
From: Tom Hagler/R9/USEPA/US
Date: 06/24/2011 03:33PM
Cc: "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>, Erin Foresman/R9/USEPA/US@EPA, Karen Schwinn/R9/USEPA/US@EPA, "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>, "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>, "Salt, Rock" <rock.salt@us.army.mil>
Subject: Sharing Draft 404 NEPA MOU with Contractors?

I just had a talk with Michelle Morrow and Cathy Crothers, DWR legal, and they asked if they could share the draft 404 NEPA MOU with the contractors. I'm assuming once it goes to the state contractors it will also go to the federal contractors.

ED_000733_DD_NSF_00044228-00002

I told them that given the dynamics of all of this, I was not going to give her permission absent getting agreement from the DOI and Corps program leads. (I'm hoping that Karen wouldn't mind, since we tend to do things openly here at EPA).

What do you guys think?

****
****

Tom Hagler
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, RC-2
San Francisco, California 94105-3901
Phone: (415)972-3945

Image removed by sender. Inactive hide details for "Robershotte, Paul J SPD" ---06/24/2011 11:27:03 AM---Classification: UNCLASSIFIED Caveats: NONE"Robershotte, Paul J SPD" ---06/24/2011 11:27:03 AM---Classification: UNCLASSIFIED Caveats: NONE

From:

"Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>

To:

Karen Schwinn/R9/USEPA/US@EPA, "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>

Cc:

"Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>, "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>, "Salt, Rock" <rock.salt@us.army.mil>, Erin Foresman/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA

Date:

06/24/2011 11:27 AM

Subject:

RE: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Karen
Yes, it was Dale H-F that specifically asked the status of the Purpose & Need. I shared that we had hoped that we might include the P & N in the MOU, and that the Purpose was pretty close (needed to capture the original 2009 NOI Plus, EPA concern, plus the Oct 2010 Lead Agency response). David Nawi was sending Dale the Oct 2010 letter. Further, that the Bureau was to revisit Chapter 2 and propose the changes they wanted to make to "Need" and get that submitted. I think that is where we are. DWR is supportive in getting involved and getting this advanced.

Paul

-----Original Message-----
From: Schwinn.Karen@epamail.epa.gov [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Friday, June 24, 2011 11:15 AM
To: Robershotte, Paul J SPD; Nepstad, Michael G SPK
Cc: Jewell, Michael S SPK; Smith, Chip R Mr CIV USA ASA CW; Salt, Rock; Foresman.Erin@epamail.epa.gov; Hagler.Tom@epamail.epa.gov
Subject: Re: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Thanks Paul! I agree with point #5. Wouldn't next step on that be a submittal from the Lead Agencies, followed by a response from Corps and us? Did David or Mark agree to move forward on that? - Karen

---

From: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
Sent: 06/24/2011 11:07 AM MST
To: "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>
Cc: "Jewell, Michael S SPK" <Michael.S.Jewell@usace.army.mil>; "Smith, Chip R Mr CIV USA ASA CW" <chip.smith1@us.army.mil>; "Salt, Rock" <rock.salt@us.army.mil>; Erin Foresman; Tom Hagler; Karen Schwinn
Subject: BDCP CWA/408/10 MOU (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

ED_000733_DD_NSF_00044228-00004

Mike, with cc to Mr Salt, Chip, Mike, Karen, Tom & Erin:

David Nawi & I had a constructive discussion with Mark Cowin, Dale Hoffman-Floerke, and Cathy Caruthers from DWR this morning. The summary of Mark's comments would include:

1. DWR sees the advantages and benefits of addressing NEPA and CWA both at this time;

2. Thus, DWR will pursue being a signatory on the proposed MOU;

3. Recognizing, however, this does not require "pressing reset" on our targeted schedules (and recognizing everyone's process fatigue associated with BDCP);

4. The version we received Wednesday looks quite good, but we will need some time to digest, ask questions, and suggest edits;

5. We see no reason to wait on advancing to Checkpoints identified in the MOU such as agreement on Propose & Need, but do this in parallel with finalizing and signing the MOU.

So, I think we made progress this morning.

Best,

Paul

Paul J Robershotte

Special Advisor

Integrated Water Resource Planning

US Army Corps of Engineers, South Pacific Div

415-503-6639 (office)

415-602-3806 (blackberry)

415-503-6640 (fax)

Building Strong on the Cornerstone of the Southwest!

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

ED_000733_DD_NSF_00044228-00005

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at
(866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

To: "Nawi, David" [David_Nawi@ios.doi.gov]; melanie.rowland@noaa.gov" [melanie.rowland@noaa.gov]; Barajas, Federico" [FBarajas@usbr.gov]; Milligan, Ronald E" [RMilligan@usbr.gov]; Castleberry, Dan" [dan_castleberry@fws.gov]; aren Schwinn/R9/USEPA/US@EPA;"Grim, Mary" [Mary_Grim@fws.gov]; Grim, Mary" [Mary_Grim@fws.gov]; Nepstad, Michael G SPK" [Michael.G.Nepstad@usace.army.mil]; michael.s.jewell@usace.army.mil" [michael.s.jewell@usace.army.mil]; ldlof, Patricia S (Patti)" [Pldlof@usbr.gov]; Norris, Jennifer" [jennifer_norris@fws.gov]; Michael Tucker' [Michael.Tucker@NOAA.GOV]; om Hagler/R9/USEPA/US@EPA;"Kiger, Luana - Davis, CA" [Luana.Kiger@ca.usda.gov]; Kiger, Luana - Davis, CA" [Luana.Kiger@ca.usda.gov]; Fujii, Roger" [rfujii@usgs.gov]; Arroyave, Pablo R" [PArroyave@usbr.gov]; oward Brown [Howard.Brown@noaa.gov]; Lohoefener, Ren" [Ren_Lohoefener@fws.gov]; Belin, Letty" [Letty_Belin@ios.doi.gov]; Glaser, Donald R" [DGlaser@usbr.gov]; Deanna Harwood' [Deanna.Harwood@noaa.gov]; Schlueter, Rosalyn A (Rose)" [RSchlueter@usbr.gov]; rod.mcinnis@noaa.gov" [rod.mcinnis@noaa.gov]; Shouse, Michelle K" [mkshouse@usgs.gov]; Keay, Jeffrey A" [jkeay@usgs.gov]; Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]; Case, Harvey L" [hlcase@usgs.gov]; Fry, Susan M" [SFry@usbr.gov]
Cc: "Allen, Kaylee" [Kaylee.Allen@sol.doi.gov]; Monroe, Jim" [James.Monroe@sol.doi.gov]; 'Chris.Yates@noaa.gov'" [Chris.Yates@noaa.gov]; Will.Stelle@noaa.gov" [Will.Stelle@noaa.gov]; jeff.McLain@noaa.gov" [jeff.McLain@noaa.gov]; Morales, Francia S" [FMorales@usbr.gov]; Pennell, Becky" [Becky_Pennell@fws.gov]; rin Foresman/R9/USEPA/US@EPA;Tim Vendlinski/R9/USEPA/US@EPA[]; im Vendlinski/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Wed 9/7/2011 11:00:24 PM
Subject: Federal Coordination Meeting Agenda - September 8
AgendaSeptember 82011.doc
First Amend MOA Collabor BDCP 8-26-11.pdf
BDCP EIR-S EA Schedule Exhibit 1.pdf
BDCP MOA SWPCA Member Exhibit 2.pdf

Agenda for September 8 meeting is attached, with call-in number.

REGIONAL FEDERAL COORDINATION MEETING
650 Capitol Mall, 8th Floor Conference Room B
September 8, 2011 9:00 a.m.

Call-in Number: 877.686.1020; Code: 655850#

AGENDA

BDCP EIS –
- Permitting MOU
- Purpose and Need/Purpose Statement
- Alternatives

BDCP – Status, Schedule, Issues (MOA attached)

Interagency Budget Planning – Status report

Delta Stewardship Council – Status of Plan

EPA ANPR – Status Update

Rio Vista Science Center- Status Update

Litigation Update

FIRST AMENDMENT TO THE MEMORANDUM OF AGREEMENT REGARDING COLLABORATION ON THE PLANNING, PRELIMINARY DESIGN AND ENVIRONMENTAL COMPLIANCE FOR THE DELTA HABITAT CONSERVATION AND CONVEYANCE PROGRAM IN CONNECTION WITH THE DEVELOPMENT OF THE BAY DELTA CONSERVATION PLAN

This First Amendment to the Memorandum of Agreement ("MOA") Regarding Collaboration On the Planning, Preliminary Design And Environmental Compliance For The Delta Habitat Conservation And Conveyance Program In Connection with the Development of the Bay Delta Conservation Plan ("First Amended MOA") is entered into as of the last date of execution of the signatories hereto. This First Amended MOA replaces in its entirety the MOA executed by the Parties in March 2009.

The MOA, as amended, establishes a joint process among the California Department of Water Resources ("DWR"); the U.S. Department of the Interior's Bureau of Reclamation ("Reclamation"); the State and Federal Contractors Water Agency ("SFCWA"), Metropolitan Water District of Southern California, Kern County Water Agency, State Water Project Contractors Authority, San Luis & Delta-Mendota Water Authority, Westlands Water District, and Santa Clara Valley Water District ("Public Water Agencies").

The purpose of this First Amended MOA is to enable timely analysis of conservation measures and water supply measures, including Delta conveyance options that are developed in the Bay Delta Conservation Planning process. This First Amended MOA also addresses certain financial matters related to budgeting, cost sharing, funding sources, and the use of these funds to accomplish the purposes of this First Amended MOA.

RECITALS

A. The Parties initiated the Bay Delta Conservation Plan ("BDCP") process in 2005-2006, and the Delta Habitat Conservation and Conveyance Program ("DHCCP") in 2008.

B. The BDCP is a voluntary effort to obtain long-term, incidental take permits for: 1) the operations of the State Water Project ("SWP") through development of a comprehensive Habitat Conservation Plan ("HCP") under the federal Endangered Species Act ("ESA"), and a Natural Community Conservation Plan ("NCCP") under the California Natural Community Conservation Planning Act ("NCCPA") and; 2) support for incidental take authorization for the operations of the Central Valley Project ("CVP") under section 7 of the ESA. The BDCP is being developed in an open and inclusive process.

C. One or more of the CVP water contractors may also seek long term incidental take permits for certain actions undertaken by them based on the BDCP under ESA section 10

ED_000733_DD_NSF_00045337-00001

and the NCCPA, including implementation of conservation measures and conveyance of water through new or improved facilities.

D. The DHCCP is the program that is providing funding for the necessary engineering and investigation programs and preparation of the BDCP Environmental Impact Statement and Environmental Impact Report ("EIS/EIR") pursuant to the federal National Environmental Policy Act ("NEPA") and the California Environmental Quality Act ("CEQA").

E. On June 1, 2010, DWR, Reclamation, U.S. Fish and Wildlife Service ("USFWS"), National Marine Fisheries Service ("NMFS"), and consultant HDR, Inc., executed the "Agreement Regarding Preparation of a Joint Environmental Impact Report/Environmental Impact Statement for the Bay Delta Conservation Plan" ("Lead Agency Agreement") to define the roles and responsibilities of the agencies with respect to preparing the EIR and EIS for the BDCP. DWR is the lead agency under CEQA and is responsible for producing an EIR that satisfies CEQA requirements, including certifying that the EIR satisfies CEQA, publishing a draft EIR for public comment, and filing a Notice of Determination ("NOD") when the project is approved. Reclamation, USFWS, and NMFS are co-lead agencies under NEPA ("NEPA Co-lead Agencies") and are responsible for producing an EIS that satisfies NEPA's requirements and carrying out the procedural steps leading to the issuance of a Record of Decision ("ROD"). The Public Water Agencies are responsible agencies that will rely on the EIS/EIR to implement certain actions of the BDCP-DHCCP. The Lead Agency Agreement remains in effect and is not modified by this First Amended MOA. Reclamation's role as set out in this agreement specifically, including Section II.E, is intended to be consistent with and to clarify implementation of the Lead Agency Agreement.

F. In May 2010, the NEPA Co-lead Agencies and the state and federal water contractors, through SFCWA, executed an MOU that defines the roles of the Public Water Agencies and NEPA Co-lead Agencies in the preparation of the EIS that complies with NEPA.

G. The Parties have executed several agreements memorializing their ongoing commitment to the BDCP and DHCCP including: Memorandum of Agreement for Supplemental Funding for Certain Ecosystem Actions and Support for Implementation of Near-Term Water Supply, Water Quality, Ecosystem, and Levee Actions (July 2006); Statement of Principles (Dec. 2005); Planning Agreement Regarding the Bay Delta Conservation Plan (October 2006, amended January 2010); Cooperation Agreement Among Potentially Regulated Entities for Preparation of the Bay Delta Conservation Plan (November 2006, as amended November 2009); Memorandum of Agreement Regarding Collaboration on the Planning, Preliminary Design and Environmental Compliance for the Delta Habitat Conservation and Conveyance Program in Connection with the Development of the Bay Delta Conservation Plan (March 2009); the Agreement for Funding Between the Department of Water Resources and the San Luis & Delta-Mendota Water Authority for the Costs of Environmental Analysis, Planning and Design of Delta Conservation Measures, Including Delta Conveyance Options (March 2009, amended June 2010); and the Agreement for Funding Between the Department of Water Resources and [member of

ED_000733_DD_NSF_00045337-00002

the State Water Project Contractors Authority] for Costs of Environmental Analysis, Planning and Design of Delta Conservation Measures Including Delta Conveyance Options (March 2009).

H. The Planning Agreement Regarding the Bay Delta Conservation Plan was adopted in October 2006 and remains in effect and will continue to guide this planning process in furtherance of the BDCP planning goals, as follows:
   - Provide for the conservation and management of BDCP Covered Species within the Planning Area;
   - Preserve, restore, and enhance aquatic, riparian and associated terrestrial natural communities and ecosystems that support BDCP Covered Species within the Planning Area through conservation partnerships;
   - Allow for projects to proceed that restore and protect water supply, water quality, and ecosystem health within a stable regulatory framework;
   - Provide a means to implement BDCP Covered Activities in a manner that complies with applicable State and federal fish and wildlife protection laws, including the California Endangered Species Act and federal ESA, and other environmental laws, including CEQA;
   - Provide a basis for permits necessary to lawfully take BDCP Covered Species;
   - Provide a comprehensive means to coordinate and standardize mitigation and compensation requirements for BDCP Covered Activities within the Planning Area;
   - Provide a less costly, more efficient project review process which results in greater conservation values than project-by-project, species-by-species review; and
   - Provide clear expectations and regulatory assurances regarding BDCP Covered Activities occurring within the Planning Area.

I. The Memorandum of Agreement for Supplemental Funding for Certain Ecosystem Actions and Support for Implementation of Near-Term Water Supply, Water Quality, Ecosystem and Levee Actions expired in 2007, and the Cooperation Agreement Among Potentially Regulated Entities for Preparation of the Bay Delta Conservation Plan expired in or about January 2011.

J. In November 2007, the BDCP Steering Committee described in a memorandum entitled "Points of Agreement for Continuing into the Planning Process," that "...the most promising approach for achieving the BDCP conservation and water supply goals involves a conveyance system with new points of diversion," and therefore the BDCP Steering Committee agreed that the DHCCP will evaluate a full range of potential facility design and operational parameters for Delta water conveyance options to achieve the BDCP conservation and planning objectives over the near and long term.

K. In a February 28, 2008, letter to State Senators Perata, Machado, and Steinberg, Governor Schwarzenegger stated his intention to direct DWR to proceed under CEQA to evaluate at least four alternative Delta conveyance strategies in coordination with the BDCP.

L. The Sacramento-San Joaquin Delta Reform Act was passed by the California Legislature in 2009, and sets out, among other things, that DWR shall consult with the Delta Stewardship Council and the Delta Independent Science Board during the development of the BDCP, and that if the BDCP complies with specified requirements, the Council shall incorporate the BDCP into the Council's Delta Plan and the public benefits associated with the BDCP shall be eligible for state funding.

M. In November 2010, the Natural Resources Agency made a working draft of the BDCP HCP/NCCP available to the public.

N. In December 2010, the Natural Resources Agency released its "Highlights of the BDCP" as a summary of the BDCP HCP/NCCP.

O. In December 2010, the federal government released its "Interim Federal Action Plan Status Update for the California Bay-Delta: 2011 and Beyond" ("Interim Action Plan Update"), thereby reaffirming its commitment to the BDCP. In the Interim Action Plan, the federal government noted that "the USFWS and NMFS, together, with Reclamation, are working to lay the technical, policy and regulatory foundation necessary to develop an integrated biological opinion that could be issued jointly by both the agencies for the BDCP and continued operation of the CVP." (Interim Action Plan Update, p. 19.)

P. DWR issued a Notice of Preparation on February 13, 2009, under the CEQA, and the USFWS, NMFS, and Reclamation issued a Notice of Intent on February 13, 2009, under NEPA to commence an environmental review process for the BDCP, which will include measures that incorporate options for improving the Delta water conveyance system.

Q. DWR is primarily responsible for the development of the BDCP developed under ESA section 10 and the NCCPA. The federal and state lead agencies are responsible for the development of the EIS/EIR necessary for analyzing the potential environmental effects of the BDCP and the incidental take permits pursuant to the BDCP. The Parties intend that the effects analysis for the BDCP and the EIS/EIR will be coordinated, and, so far as practicable, consistent.

R. The BDCP and DHCCP planning processes have progressed to a point where the most efficient use of resources can be achieved by closely coordinating the development of elements of the BDCP and NEPA/CEQA processes, which will facilitate a more efficient and cost effective process that:

(a) analyzes potential responses to multiple threats to the State's economic well being posed by the current conveyance system's vulnerability to seismic risk, climate change, and regulation;

(b) analyzes the conservation measures intended to address threats to the Bay-Delta ecosystem and the species in the ecosystem;

(c) facilitates the assessment, planning and environmental analysis of likely conservation measures or elements of the BDCP, particularly the Delta water conveyance options;

(d) provides for the coordination and exchange of information among the Parties as preparation of the BDCP and draft EIS/EIR continue;

(e) supports a plan that can adapt to the evolving Delta environmental conditions;

(f) considers prudent funding of species conservation and improved Delta water conveyance facilities in order to achieve improvements to water supply, water supply reliability, and ecosystem health and resiliency.

S. The Parties will refer to this effort as the "BDCP-DHCCP Planning Phase" or "Program." DWR, Reclamation, and one or more of the Public Water Agencies intend to enter into separate agreements related to funding work and/or providing mechanisms to transfer funds needed for the BDCP-DHCCP Planning Phase.

T. To date, the Public Water Agencies and Reclamation have dedicated significant funding, equaling more than $150 million, toward the BDCP-DHCCP Planning Phase. This includes direct assistance and in-kind contributions from Reclamation. The Public Water Agencies anticipate dedicating significant additional funds to support its completion.

U. It is anticipated that the Public Water Agencies will fund and implement portions of the BDCP, which will require the Public Water Agencies to make certain decisions regarding funding of aspects of plan implementation.

AGREEMENT

NOW THEREFORE, it is mutually agreed by the Parties as follows:

I. Definitions

A. "**BDCP-DHCCP Planning Phase**" or "**Program**" means the development and completion of the BDCP Habitat Conservation Plan and Natural Communities Conservation Plan ("HCP-NCCP"), the DHCCP environmental impact statement/ environmental impact report ("EIS/EIR") and certain preliminary engineering.

B. "**BDCP-DHCCP Planning Phase funding agreements**" means each Agreement for Funding Between the Department of Water Resources and [a member of the State Water Project Contractors Authority] for Costs of Environmental Analysis, Planning and Design of Delta Conservation Measures, Including Delta Conveyance Options; the Agreement for Funding Between the Department of Water Resources and the San Luis & Delta-Mendota Water Authority for the Costs of Environmental Analysis, Planning and Design of Delta Conservation Measures, Including Delta Conveyance

Options, as amended; and future agreements between DWR and/or Reclamation and some or all of the Public Water Agencies that will allow for funding needed to complete the BDCP-DHCCP Planning Phase.

C. "**Public Water Agency**" or "**Public Water Agencies**" means SFCWA; Metropolitan Water District of Southern California; Kern County Water Agency; State Water Project Contractors Authority, and its member agencies as identified in Exhibit 2; San Luis & Delta-Mendota Water Authority; Westlands Water District; and Santa Clara Valley Water District.

D. "**Party**" or "**Parties**" means DWR, Reclamation and the Public Water Agencies.

E. "**Water Supply Contracts**" means the long-term water supply contracts, as amended, between the Department of Water Resources and the water agencies that receive water from the State Water Project.

II. Roles and Responsibilities of the Parties

A. The Parties shall work jointly to meet the objectives of this First Amended MOA and the planning goals of the BDCP, as presented in the Planning Agreement Regarding the Bay Delta Conservation Plan.

B. DWR, in collaboration with the other Parties, has retained environmental consultants to complete the BDCP-DHCCP Planning Phase, which includes environmental documents required under CEQA and NEPA ("EIR/EIS"). DWR is the lead agency under the CEQA, and Reclamation, the USFWS and the NMFS are co-lead agencies under NEPA. Reclamation shall represent the NEPA Co-lead Agencies in working with DWR and in providing information regarding material to be included in the EIS/EIR for purposes of satisfying NEPA. The NEPA Co-lead Agencies shall make the final determination on publication of the draft EIS for satisfying NEPA requirements.

C. Exhibit 1 to this First Amended MOA is a schedule, incorporated herein by this reference, which describes the tasks to be performed and a schedule for performance of the identified tasks to complete the BDCP-DHCCP Planning Phase. The Parties recognize refinement of Exhibit 1 may be necessary to conform to developing information, permitting and other requirements. Therefore, Exhibit 1 may be revised from time to time, without constituting an amendment to this First Amended MOA, but only after the Director of DWR consults with and provides written notice to the Parties. (Hereinafter reference to "Exhibit 1" includes any revisions as provided by this subsection.)

D. The Parties are committed to completing tasks pursuant to the schedule described in Exhibit 1, which will result in a ROD by February 15, 2013. Furthermore, the Parties

shall work cooperatively and use best efforts to release the public draft of the EIS/EIR in May 2012.

E. DWR is taking the lead role in preparing and, after consultation with the Parties, shall direct the consultants regarding the content of the BDCP, including those elements of the BDCP intended to be incorporated in the EIS/EIR. DWR has also contracted with the consultants preparing the EIS/EIR and shall continue to administer the contract. DWR shall solicit, in a timely manner, from the Department of Fish and Game ("DFG"), the Public Water Agencies, and the NEPA Co-lead Agencies, comments on the draft work products in support of the completion of tasks, as required by the schedule in Exhibit 1. As set forth in Paragraph B above, Reclamation shall be responsible for coordinating with the NEPA Co-lead Agencies and coordinating with DWR on the NEPA Co-lead Agencies' comments that DWR shall submit to the Consultants in accordance with the schedule in Exhibit 1. In the event comments are not received consistent with the schedule in Exhibit 1, DWR may proceed with preparation of the BDCP and DWR and Reclamation may proceed with the preparation of the EIS/EIR. DWR shall direct the Program Manager on preparation of the BDCP and EIS/EIR as necessary to maintain the schedule. The DWR Director shall concurrently advise the Parties of the direction provided to the Program Manager. Nothing in this section or elsewhere in this First Amended MOA modifies the federal responsibilities for the content of the draft and final EIS and preparation of the ROD.

F. DWR has retained a consultant with extensive project management experience to be the BDCP-DHCCP Program Manager. The Program Manager shall report to and be directed by the Director of DWR. The Director of DWR shall implement the responsibilities of DWR as set forth in Subsection II.E above. The Director of DWR may fulfill this responsibility through the Program Manager, who is delegated to carry out the day-to-day management activities of the BDCP and to closely coordinate with Reclamation regarding preparation of the EIS/EIR. Work performed by DWR consultants or staff shall not be charged to the BDCP Planning Phase unless approved by the Director of DWR, or his delegatee pursuant to DWR Delegation Orders, after discussion with the Program Manager.

G. At its discretion and after coordination with Reclamation, DWR may designate SFCWA as a consultant contract administrator, with all or some of the consultants contracting directly with SFCWA to complete all or part of the BDCP. In the event DWR designates SFCWA as a consultant contract administrator, the Program Manager shall continue to report to the Director of DWR and carry out his responsibilities under Subsection II.F, including management of the consultants under contract with SFCWA, as described in Subsection II.F.

H. The Parties shall support listing the Public Water Agencies, including but not limited to the member agencies identified in Exhibit 2, as "applicants" and "permittees" along with DWR pursuant to Section 10 of the federal ESA, and "plan participants" and "permittees" under the NCCPA, California Fish and Game Code, section 2800 *et.*

seq. Ultimate decision making authority, however, on the granting of any Section 10 permit application rests with the USFWS and NMFS, and on the granting of any permit under NCCPA rests with DFG. The Parties acknowledge that the Public Water Agencies status as permittees would not provide them any new authority over water project operational decisions or result in the delegation of authority from any state or federal agency.

I. The Parties acknowledge that the Public Water Agencies are responsible agencies pursuant to CEQA.

J. The Parties agree that an essential element of a successful BDCP is to provide the greatest measure of certainty for the CVP contractors, to the extent allowed by law, that is the equivalent of the assurances that are provided under ESA section 10. In recognition of the importance of this issue to CVP contractors, the Parties will give priority to identifying an expeditious process to address the issue. Therefore, the Parties will meet within 30 days of the effective date of this MOA to begin evaluating the availability of measures equivalent to section 10 assurances, with a goal of developing such measures within the timeframes set forth in Exhibit 1.

K. The Public Water Agencies shall be provided all draft consultant work product in accordance with the agency review schedule in Exhibit 1. DWR, Reclamation, and the Public Water Agencies shall work cooperatively to address all comments received during the BDCP-DHCCP Planning Phase, including comments received during development of the BDCP and EIR/EIS.

L. The Parties shall meet at least once monthly to discuss BDCP-DHCCP Planning Phase management, including the status of the BDCP and EIS/EIR, consultant scope, direction and work product; sources of funds; commitments; obligations; encumbrances; expenditures; projected expenditures to completion; and a comparison of actual budgeted expenditures. If it appears to the Program Manager or any of the Parties that a task included in the schedule in Exhibit 1 will not be completed in a timely manner, the Director of DWR shall consult with Reclamation and the Public Water Agencies on actions necessary to maintain the schedule or potential revisions to the schedule. If an agreement cannot be reached, any Party may invoke the provisions of this First Amended MOA, Section IV, for withdrawal, substitution, or termination.

M. In the event that DWR has not provided direction to the Program Manager and/or consultant when required to maintain the schedule presented in Exhibit 1, the Director of DWR shall consult with Reclamation and the Public Water Agencies, which shall recommend to the Director the decision and/or direction needed to maintain the schedule as described in subsection II.E.

N. The Parties shall coordinate all activities related to fulfillment of the purpose of this First Amended MOA. The Parties shall cooperate with one another and work as efficiently, expeditiously, and effectively as possible in the pursuit of all activities and

decisions described in this First Amended MOA and those that are not particularly described but which are related to or arise out of the activities that are described.

O. As requested by the Director of DWR, each of the Parties shall provide expertise, guidance, and data on those matters for which it has specific expertise or authority, as needed to carry out the work and meet the purpose of this First Amended MOA and the then current Planning Agreement Regarding the Bay Delta Conservation Plan.

P. Consistent with Subsection II. F, above, the Director of DWR shall ensure that appropriate staffing is available to complete the BDCP-DHCCP Planning Phase, including the BDCP and EIS/EIR.

Q. The Parties may retain consulting services as necessary to complete the BDCP-DHCCP Planning Phase, including the BDCP and EIS/EIR. Consistent with Section II. F, above, the Director of DWR shall manage the retained consultants to carry out the BDCP and EIS/EIR.

R. Concurrent with the release of the public draft of the BDCP HCP-NCCP and EIS/EIR the Public Water Agencies shall release a financing plan, developed in coordination with DWR and Reclamation, for the design, construction, operation, and maintenance of any conveyance facilities that will be constructed as part of the BDCP.

III. Program Funding

A. Funding pursuant to this First Amended MOA addresses only the BDCP-DHCCP Planning Phase. If the Parties determine to proceed with actions beyond the BDCP-DHCCP Planning Phase, the Parties may enter into amended or supplemental agreements.

B. The Program Manager has developed a budget for the remainder of the BDCP-DHCCP Planning Phase, and shall work cooperatively with the Parties to develop revisions to the budget, if necessary. Supplemental or amended funding agreements are contemplated by one or more of the Public Water Agencies that shall commit additional funds to complete the BDCP-DHCCP Planning Phase.

C. DWR shall provide Reclamation and the Public Water Agencies with copies of all draft task work orders for any work performed during the BDCP-DHCCP Planning Phase, including on the BDCP HCP-NCCP, EIS/EIR and preliminary engineering for review by the Public Water Agencies prior to approval by DWR. DWR shall also provide to the Public Water Agencies draft Notice-To-Proceed ("NTP") agreements for review and comment for those task work orders that have been approved by

DWR, but for which an NTP is required to authorize all or a portion of the work specified in the task order.

D. Participating Public Water Agencies have agreed among themselves that the costs of the BDCP-DHCCP Planning Phase should be shared equally: 50% by Public Water Agencies that receive water from the SWP and 50% by Public Water Agencies that receive water from the CVP. Additionally the Public Water Agencies have agreed that in-kind services or any funds provided to DWR via a financial assistance agreement with Reclamation shall also be credited towards the portion of the BDCP-DHCCP Planning Phase costs assigned to Public Water Agencies that receive water from the CVP.

E. DWR has signed a separate funding agreement with the San Luis & Delta-Mendota Water Authority, as amended June 2010, and anticipates signing an amendment thereto to conform that agreement to this First Amended MOA. DWR will also sign separate supplemental funding agreements with participating Public Water Agencies, including but not limited to those member agencies identified in Exhibit 2 that receive water from the SWP and are willing to advance funds for BDCP-DHCCP Planning Phase costs through billing procedures based upon the Water Supply Contracts. The separate funding agreements for both the Public Water Agencies that receive water from the SWP and the Public Water Agencies that receive water from the CVP shall allow a Public Water Agency to withdraw from this First Amended MOA and the separate funding agreement under specified conditions, without impeding continuing participation of the remaining Public Water Agencies.

F. Reclamation may sign a separate agreement(s) with certain Public Water Agencies that receive water from the CVP to facilitate Reclamation's funding of the BDCP-DHCCP Planning Phase.

G. The BDCP-DHCCP Planning Phase shall be completed in three parts referred to as milestones. The planning milestones are the following:

1. Administrative review draft of the BDCP and EIS/EIR;
2. Public review draft of the BDCP and EIS/EIR; and
3. Final BDCP and EIS/EIR.

In addition, preliminary engineering may proceed as a concurrent activity during or subsequent activity to any part of the Planning Phase. Reclamation requires specific authorization before any Reclamation funds may be used for preliminary engineering tasks not required for the EIS/EIR.

a. The Public Water Agencies agree to fund the first milestone identified above pursuant to their BDCP-DHCCP Planning Phase funding agreements.

b. The Public Water Agencies will consider funding the additional milestones, identified above as milestones 2 and 3, and preliminary engineering. DWR may not commence work on milestones identified above as 2 and 3 or on preliminary engineering using funds provided by the Public Water Agencies until the Public Water Agencies provide the Director of DWR with written authorization to proceed. In determining whether to proceed, the Public Water Agencies shall consider, but are not limited to, the following: (1) adherence to the schedule in Exhibit 1; (2) adherence to the agreed upon program budget, and; (3) adherence to the project management and planning principles set forth in the Planning Agreement Regarding the Bay-Delta Conservation Plan, this First Amended MOA, and BDCP-DHCCP Planning Phase funding agreements with the Public Water Agencies.

H. Upon completion of the Planning Phase, and if the BDCP proceeds to implementation, a mechanism shall be established between the Public Water Agencies, including but not limited to those member agencies identified in Exhibit 2, and DWR for reapportionment of BDCP-DHCCP Planning Phase costs based on calculated benefits conferred from the implementation of the BDCP. Any funds or in-kind services provided by Reclamation during the BDCP-DHCCP Planning Phase are considered sunk costs and are not available for reapportionment as described above, but shall continue to be credited toward the obligation of the Public Water Agencies that receive water from the CVP as described in Subsection III(D), above.

I. In the event DWR designates SFCWA as a consultant contract administrator, DWR shall continue collecting funds from the Public Water Agencies, including but not limited to those member agencies identified in Exhibit 2, pursuant to the BDCP-DHCCP Planning Phase funding agreements, and DWR shall distribute those funds to SFCWA to fund the consultants that are contracting directly with SFCWA for the completion of the BDCP-DHCCP Planning Phase.

J. In the event an individual Public Water Agency, including but not limited to those member agencies identified in Exhibit 2, withdraws from this First Amended MOA pursuant to Section IV, that Public Water Agency shall not be responsible for the cost of any BDCP-DHCCP Planning Phase task orders, or portions of task order specified in an NTP, that were approved less than 60 days prior to the date the notice of withdrawal was transmitted to DWR pursuant to Section IV. The withdrawal of one or more Public Water Agencies, including but not limited to those member agencies

identified in Exhibit 2, shall not impair the authority of the remaining Public Water Agencies to continue with the implementation of this MOA. However, the withdrawn Public Water Agency shall remain responsible for the costs of completing any BDCP-DHCCP Planning Phase task order, or portions of task orders specified in an NTP, approved prior to the dates set forth above. Any funding agreement entered into in conjunction with this MOA shall include such terms and conditions necessary to effectuate the intent of this provision.

K. If additional funds from non-Parties become available and are appropriated for any action in furtherance of the BDCP-DHCCP Planning Phase, the Parties shall determine how the additional money shall affect the shared cost allocations and/or contributions by the Parties in the separate funding agreements.

IV. Withdrawal, Substitution and Termination.

A. Subject to any restrictions established by any BDCP-DHCCP Planning Phase funding agreements, any Party may withdraw from this MOA upon 30 days written notice to the other Parties. If a Party intends to withdraw it shall, coincident with providing notice to the other Parties, provide a detailed written explanation to the other Parties explaining why the Party intends to withdraw. A party providing notice may rescind that notice or extend the date on which withdrawal is effective.

B. If DWR and/or all of the Public Water Agencies withdraw from this First Amended MOA, it shall terminate. If Reclamation or any individual Public Water Agency withdraws from this First Amended MOA, the remaining Parties shall notify DWR within seven days of the effective date of the withdrawal as to whether they intend to continue operating under this First Amended MOA. Failure to provide such notice shall be deemed an agreement to continue as a Party to this First Amended MOA. In the event of termination, the Parties' liability for reasonable termination costs shall be set forth in separate funding agreements.

C. In the event of termination of this First Amended MOA prior to any of the following, certification of the EIS/EIR, issuance of a ROD for federal actions associated with the BDCP, or issuance of a NOD for the BDCP; (1) unless prohibited by law, DWR shall provide to the Public Water Agencies and Reclamation copies of the draft BDCP, draft EIS/EIR, and all documents that comprise the work product for the draft BDCP and for the draft EIS/EIR, including preliminary engineering, and (2) the Parties agree that the Public Water Agencies and Reclamation shall have the right to use the documents, in whole or in part, unless prohibited by law. For purposes of this subsection, copies of the "draft BDCP", "draft EIS/EIR and all documents that comprise the work product" includes, but is not limited to, technical tools, work

products and data such as computer models and results of modeling, geotechnical and other survey data, and preliminary engineering plans. If the Parties determine there are documents that may not be legally disclosed, DWR, Reclamation, and the Public Water Agencies shall meet to negotiate to develop an appropriate process to provide them such documents to the extent permitted by law. The intent of this provision is to enable the Public Water agencies to use documents as part of the BDCP-DHCCP, or for a projects or projects with similar purposes and planning goals.

D. If the First Amended MOA terminates prior to completion of the BDCP-DHCCP Planning Phase, and there are unspent funds that have been previously collected from the Public Water Agencies by DWR to fund the BDCP-DHCCP Planning Phase, DWR shall return the unspent funds to the appropriate Public Water Agencies. If DWR is precluded by law from returning the unspent funds, DWR shall provide each appropriate Public Water Agency a credit that can be applied to any charges levied by DWR against the Public Water Agency. Reclamation's unspent funds should be handled in a manner consistent with the appropriate assistance agreement with DWR.

V. Miscellaneous Provisions

A. Within 45 days of this First Amended MOA becoming effective, DWR shall review its existing contracts with the environmental consultant(s) retained to complete the BDCP-DHCCP Planning Phase to determine if any terms of this First Amended MOA may be inconsistent with these contracts such that the parties shall consider amending these contracts. If any Party believes that these contracts may need amending, the Parties shall meet to discuss how best to proceed.

B. Unless otherwise stated specifically, this First Amended MOA may only be modified by written agreement of all of the Parties.

C. No Delegation of Authorities.

1. Nothing in this First Amended MOA constitutes a delegation by any Party of its existing authority to make any decision it is mandated by law to make.

2. Nothing in the First Amended MOA shall amend, abridge, or modify any provisions of the Water Supply Contracts between DWR and any SWP contractor or the water supply or water service contracts between Reclamation and any CVP contractor.

ED_000733_DD_NSF_00045337-00013

3. Nothing in the First Amended MOA shall limit DWR's, DFG's, Reclamation's, FWS' or NMFS' final decision-making authority at the time of project approval or issuance of a ROD or NOD.

4. All provisions of this First Amended MOA are intended and shall be interpreted to be consistent with all applicable provisions of State and Federal law. The undersigned recognize that public agencies signatories to this First Amended MOA have specific statutory responsibilities, and that actions of these public agencies must be consistent with applicable procedural and substantive requirements of State and Federal law. Nothing in this First Amended MOA is intended to, nor shall have the effect of, constraining or limiting any public entity in carrying out its statutory responsibilities. Nothing in this First Amended MOA constitutes an admission by any Party as to the proper interpretation of any provision of law, nor shall it have the effect of, waiving or limiting any public entity's rights and remedies under any applicable law.

5. Execution of this First Amended MOA does not constitute a waiver by any signatory of any right or remedy it may have, nor does execution constitute pre-approval or any project or preferred project alternative, or waive or otherwise abridge responsible trustee duties required, or discretion authorized, under State and Federal law.

D. The expenditure of any money or the performance of any obligation of the United States under this First Amended MOA shall be contingent upon appropriation or allotment of funds. No liability shall accrue to the United States for failure to perform any obligation under this First Amended MOA in the event that funds are not appropriated or allotted.

E. This First Amended MOA shall become effective upon the last date of signature of the Parties listed below.

F. The Parties may execute this First Amended MOA in multiple originals each of which shall be deemed to be an original office copy, or counterpart.

ED_000733_DD_NSF_00045337-00014

This First Amended MOA is signed and dated:

DWR:

Approved as to legal form
and sufficiency

_____

Chief Counsel

Date:_____

State of California
Department of Water Resources

_____

Director

Date:_____

Reclamation:

Approved as to legal form
and sufficiency

_____

Counsel, U.S. Department of Interior
Solicitor's Office

Date:_____

U.S. Department of the Interior,
Bureau of Reclamation

_____

Regional Director

Date:_____

SFCWA:

Approved as to legal form
and sufficiency

_____

Counsel

Date:_____

State and Federal Contractors
Water Agency

_____

Executive Director

Date:_____

ED_000733_DD_NSF_00045337-00015

SWPCA:

Approved as to legal form
and sufficiency

_____

Counsel

Date:_____

State Water Project Contractors
Authority

_____

General Manager

Date:_____

MWDSC:

Approved as to legal form
and sufficiency

_____

General Counsel

Date:_____

Metropolitan Water District of
Southern California

_____

General Manager

Date:_____

KCWA:

Approved as to legal form
and sufficiency

_____

Counsel

Date:_____

Kern County Water Agency

_____

General Manager

Date:_____

SLDMWA:

Approved as to legal form
and sufficiency

San Luis & Delta-Mendota
Water Authority

_____ _____

Counsel Executive Director

Date:_____ Date:_____

WWD:

Approved as to legal form
and sufficiency

Westlands Water District

_____ _____

Counsel General Manager

Date:_____ Date:_____

SCVWD:

Approved as to legal form
and sufficiency

Santa Clara Valley Water District

_____ _____

Counsel Chief Executive Officer

Date:_____ Date:_____

Attachments: Exhibit 1 - BDCP EIR/EIS, EA Schedule 8-9-11

Exhibit 2 – List of SWPCA Member Agencies

EXHIBIT 1

BDCP EIR/EIS Schedule
8/9/11

Task	Date to Agencies	Review Complete
BDCP: EIR/EIS Work Plan and Section Review		
Prepare Work Plan and Schedule	12-Aug-11	26-Aug-11
BDCP: Alternatives Descriptions		
Prepare Alternatives Description	2-Sep-11	16-Sep-11
BDCP: Admin Draft EIR/EIS		
Prepare Batch A Chapters (e.g., Social Environment)	11-Nov-11	9-Dec-11
Prepare Batch B Chapters (e.g., Physical Environment)	7-Dec-11	4-Jan-12
Prepare Batch C Chapters (e.g., Aquatics, Terrestrial, Surface Water, Water Quality, and Supply)	27-Feb-12	27-Mar-12
1st Admin Draft and Review (Includes comments on batches A & B)	27-Feb-12	26-Apr-12
2nd Admin Draft and Review	9-May-12	4-Jun-12
Check Copy	11-Jun-12	17-Jun-12
File Public Draft EIR/EIS with EPA	22-Jun-12	28-Jun-12
EPA Publishes Draft EIS	29-Jun-12	
BDCP: Draft Public Review Period		
Public Review and Conduct Hearings (90 days)	29-Jun-12	26-Sep-12
BDCP: Response to Comments on Draft EIR/EIS		
Prepare Responses to Comments	12-Oct-12	26-Oct-12
Initiate Formal Consultation	2-Oct-12	
BDCP: Prepare Final EIR/EIS		
Prepare Admin Draft Final EIR/EIS	15-Nov-12	29-Nov-12
Prepare Final EIR/EIS	20-Dec-12	20-Dec-12
BDCP: Final EIR/EIS Review		
Public Review and Conduct Hearings (30 days)	20-Dec-12	18-Jan-13
Prepare Responses to Comments	4-Feb-13	15-Feb-13
Prepare ROD (Final EIR/EIS Complete)	15-Feb-13	

EXHIBIT 1

BDCP Chapter 5 (Effects Analysis) Schedule
8/9/11

Task	Date to Agencies	Review Complete
BDCP: Chapter 5: Conceptual Foundation & Analytical Framework		
Technical Appendix (Conceptual Foundation)	8-Aug-11	24-Aug-11
Technical Appendix (Analytical Framework)	8-Aug-11	24-Aug-11
BDCP: Chapter 5: Entrainment		
Technical Appendix (Entrainment)	24-Aug-11	14-Sep-11
Delta Science Review (C. Foundation, A. Framework, Entrainment)	15-Sep-11	14-Oct-11
BDCP: Chapter 5: Flow, Passage, & Salinity		
Technical Appendix (Flow, Passage & Salinity)	30-Sep-11	21-Oct-11
BDCP: Chapter 5: Water Quality		
Technical Appendix (Water Quality)	14-Oct-11	4-Nov-11
BDCP: Chapter 5: Fish Population Analysis		
Technical Appendix (Fish Population Analysis)	25-Nov-11	16-Dec-11
BDCP: Chapter 5: Habitat Restoration		
Technical Appendix (Habitat Restoration)	16-Dec-11	6-Jan-12
BDCP: Chapter 5: Ecological Effects		
Technical Appendix (Ecological Effects)	16-Dec-11	20-Jan-12
BDCP: Chapter 5: Appendix - Analysis Not Used		
Technical Appendix (Analysis Not Used)	16-Dec-11	6-Jan-12
BDCP: Chapter 5: Terrestrial Species Analysis		
Technical Appendix (Terrestrial Species Analysis)	16-Nov-11	16-Jan-12
BDCP Chapter 5 (Roll-up)		
Agency and Delta Science Review	27-Feb-12	27-Mar-12
BDCP Chapter 5 (Effects Analysis)		
Chapter 5 Complete	9-Apr-12	

EXHIBIT 2
STATE WATER PROJECT CONTRACTORS AUTHORITY ("SWPCA") MEMBERS

ALAMEDA CO FC&WCD - ZONE 7

ALAMEDA COUNTY WD

ANTELOPE VALLEY-EAST KERN WA

CASTAIC LAKE WA

COACHELLA VALLEY WD

COUNTY OF KINGS

CRESTLINE-LAKE ARROWHEAD WA

DESERT WATER AGENCY

DUDLEY RIDGE WD

KERN COUNTY WATER AGENCY

METROPOLITAN WD OF SC

MOJAVE WATER AGENCY

NAPA COUNTY FC&WCD

PALMDALE WD

PLUMAS COUNTY FC&WCD

SAN BERNARDINO VALLEY MWD

SAN GABRIEL VALLEY MWD

SAN GORGONIO PASS WA

CENTRAL COAST WATER AUTH.

SANTA CLARA VALLEY WD

SOLANO COUNTY WA

TULARE LAKE WSD

To: "Nawi, David" [David_Nawi@ios.doi.gov]
Cc: CN=Tom Hagler/OU=R9/O=USEPA/C=US@EPA[]
Bcc: []
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Wed 2/15/2012 8:38:25 PM
Subject: RE: NEPA Purpose Statement
David_Nawi@ios.doi.gov

I like her suggestion but I defer to you lead agencies on whether or how to incorporate.

~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~~~

From: "Nawi, David" <David_Nawi@ios.doi.gov>
To: Karen Schwinn/R9/USEPA/US@EPA
Cc: Tom Hagler/R9/USEPA/US@EPA
Date: 02/15/2012 11:05 AM
Subject: RE: NEPA Purpose Statement

Karen – Do you think we need the language Deanna suggests?

David

From: Karen Schwinn [mailto:Schwinn.Karen@epamail.epa.gov]
Sent: Wednesday, February 15, 2012 10:41 AM
To: Nawi, David
Cc: Barajas, Federico; Monroe, Jim; Belin, Letty; Michael Tucker; Chotkowski, Michael; Idlof, Patricia S (Patti); Tom Hagler; Deanna Harwood; Paul.j.robershotte@usace.army.mil; Michael.G.Nepstad@usace.army.mil; Erin Foresman
Subject: Re: NEPA Purpose Statement

We are ok with both Mark and Deanna's suggestions. If you like, we can concur more formally if the lead agencies submit a revision.

~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
~~~~~~~~~~~~~~~~~~~~~~~~

75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

From: Deanna Harwood <deanna.harwood@noaa.gov>
To: "Nawi, David" <David_Nawi@ios.doi.gov>
Cc: Karen Schwinn/R9/USEPA/US@EPA, Tom Hagler/R9/USEPA/US@EPA, "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>, "Barajas, Federico" <FBarajas@usbr.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, Michael Tucker <Michael.Tucker@noaa.gov>, "Chotkowski, Michael" <michael_chotkowski@fws.gov>
Date: 02/13/2012 05:25 PM
Subject: Re: Purpose Statement

Although the following sentence (also from the 10-26-10 letter) is not related to achieving the project purposes, it gives some context to the mention of "average" deliveries - perhaps put into in a footnote.

Average annual south of Delta CVP and SWP deliveries over the past 30 years have been well below full contract amounts.

-Deanna

On Mon, Feb 13, 2012 at 4:27 PM, Nawi, David <David_Nawi@ios.doi.gov> wrote:
Mark Cowin would like to add the highlighted language to the purpose statement in the current version of the DEIS/EIR, set out below. The language is a direct quote from the October 26, 2010 letter from the three federal lead agency RDs to EPA (letter attached for you reference, as well as Chapter 2 of draft BDCP, see p. 5 for relevant language). As I understand it, the intent in proposing the inclusion of the added language is to make clear that the language is focused on average amounts.

Please provide a reaction to the proposed additional language, and include anyone else who should review this.

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

ED_000733_DD_NSF_00047334-00002
~~~~~~~~~~~~~~~~~~~~~~~~

To: "Nawi, David" [David_Nawi@ios.doi.gov]
Cc: "Robershotte, Paul J SPD" [Paul.J.Robershotte@usace.army.mil]
Bcc: CN=Tom Hagler/OU=R9/O=USEPA/C=US@EPA;CN=Erin Foresman/OU=R9/O=USEPA/C=US@EPA[]; N=Erin Foresman/OU=R9/O=USEPA/C=US@EPA[]
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Fri 3/16/2012 11:27:03 PM
Subject: RE: Section 404 Meeting (UNCLASSIFIED)

I think David states the status accurately. I noted my understanding on each of David's questions below (in red).

I think we could have a more substantive conversation after we'd all had a chance to review the relevant pierces of the draft DEIS. But I'm happy to talk in the interim as well. Thanks. - Karen

~~~~~~~~~~~~~~~~~~~~~~~~~
KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~~

From: "Nawi, David" <David_Nawi@ios.doi.gov>
To: "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>
Cc: Karen Schwinn/R9/USEPA/US@EPA
Date: 03/16/2012 08:55 AM
Subject: RE: Section 404 Meeting (UNCLASSIFIED)

Paul - Waiting for Mike Jewelll seems wise. Let's see what we can do for the following week.

Based on what I know - and as you know I have not been intimately involved - I believe we need a clear common understanding on the federal side that we can then discuss with DWR of how section 404 permitting fits into the BDCP EIS/EIR. I believe that the BDCP EIS is intended to serve as the project specific NEPA document for USACE permitting of the conveyance facility. If there is agreement on that fundamental point, we then need to address

- the process and timing to accomplish this - when will a project description for the conveyance for Corps purposes under NEPA be needed/ available; the applicant can submit a 404 permit application to the Corps whenever they want. Seems like the sooner they do, the sooner the Corps can determine "the basic and overall project purpose".

- what if any added elements will be required for the NEPA analysis to meet Corps needs (e.g., LEDPA analysis); We defer to the Corps on determining what they need for their NEPA compliance, and note that they will have broader information needs.

ED_000733_DD_NSF_00047719-00001

- role of lead agencies working with USACE and DWR to bring this all together; not our issue

- permitting MOU - are we going to proceed without one, and if so what will the process and timing be for moving forward; I'm assuming no MOU.....But as we review the draft EIR/S, I hope to provide feedback on where we believe additional information/detail will be needed for 404 permitting, and where we are ok. This would encompass those milestones that were originally in the draft NEPA/404 MOU. We plan to coordinate these comments with the Corps, same as we would've if we were operating under an MOU.

- and last, perhaps an understanding of how section 408 permitting will be addressed. no EPA role here

I am taking the liberty of copying Karen, who can likely correct or add to the above.

I hope this helps, and I would be glad to discuss with you at your convenience.

David

From: Robershotte, Paul J SPD [Paul.J.Robershotte@usace.army.mil]
Sent: Friday, March 16, 2012 6:43 AM
To: Nawi, David
Subject: Re: Section 404 Meeting (UNCLASSIFIED)

David
Yes, it would be good to wait for Jewell. What would also help is understanding what the issue is. I may not see the situation the same way as my Federal brethren and if you could share their take on the situation, it would help a lot.
Thanks
Paul

----- Original Message -----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, March 15, 2012 03:34 PM
To: Robershotte, Paul J SPD
Cc: Karen Schwinn <Schwinn.Karen@epamail.epa.gov>
Subject: FW: Section 404 Meeting (UNCLASSIFIED)

Paul - Do you prefer to await Mike Jewell's return to have this meeting? I understand that it is not time critical, so that moving the meeting until the following week would be OK.

Please let me know - it's your call.

Thanks.

David
-----Original Message-----
From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Thursday, March 15, 2012 2:54 PM
To: Nawi, David; Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Robershotte, Paul J SPD; Jewell, Michael S SPK; Monroe, Jim; Foresman.Erin@epamail.epa.gov

Subject: RE: Section 404 Meeting (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Either time works for me. Michael Jewell is out for that entire week

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
(916) 557-7262 Fax:(916) 930-9506
michael.g.nepstad@usace.army.mil

* We want your feedback! Take the survey:
http://per2.nwp.usace.army.mil/survey.html

* Need information on the Regulatory Program? Visit our website:
http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html

* Facebook: www.facebook.com/sacramentodistrict

* YouTube: www.youtube.com/sacramentodistrict

* Twitter: www.twitter.com/USACESacramento

-----Original Message-----
From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, March 15, 2012 1:29 PM
To: Nawi, David; Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Robershotte, Paul J SPD; Jewell, Michael S SPK; Nepstad, Michael G SPK; Monroe, Jim; Foresman.Erin@epamail.epa.gov
Subject: RE: Section 404 Meeting

Based on Paul's schedule, can we do this call/meeting at 1:30 p.m. on Tuesday march 20?

From: Nawi, David
Sent: Thursday, March 15, 2012 12:17 PM
To: Schwinn.Karen@epamail.epa.gov; Hagler.Tom@epamail.epa.gov; Robershotte, Paul J SPD; michael.s.jewell@usace.army.mil; Nepstad, Michael G SPK; Monroe, Jim
Subject: Section 404 Meeting

Based on the discussion at the federal coordination meeting this morning, it

appears that we would benefit from a meeting/conference call to clarify where we are in terms of 404 permitting and the BDCP NEPA document. Once we come to a common understanding, I believe the next step would be to engage DWR to see if we can all be on the same page. Would next Tuesday, March 20 at 10:00 a.m. work?

Classification: UNCLASSIFIED
Caveats: NONE

To: CN=Erin Foresman/OU=R9/O=USEPA/C=US@EPA[]
Cc: []
Bcc: []
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Wed 5/2/2012 6:40:07 PM
Subject: Fw: BDCP Admin Draft EIR/EIS Section 2.4 Purpose Statement

~~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~~

----- Forwarded by Karen Schwinn/R9/USEPA/US on 05/02/2012 11:39 AM -----

From: "Nawi, David" <David_Nawi@ios.doi.gov>
To: "Monroe, Jim" <James.Monroe@sol.doi.gov>, "Allen, Kaylee" <Kaylee.Allen@sol.doi.gov>, 'Deanna Harwood' <Deanna.Harwood@noaa.gov>, Tom Hagler/R9/USEPA/US@EPA, Karen Schwinn/R9/USEPA/US@EPA
Date: 05/01/2012 12:58 PM
Subject: FW: BDCP Admin Draft EIR/EIS Section 2.4 Purpose Statement

FYI

From: Idlof, Patricia S (Patti)
Sent: Tuesday, May 01, 2012 12:45 PM
To: Stein, Russell
Cc: Nawi, David; Barajas, Federico; Fry, Susan M; Chrisney, Ann C; Maria.Rea@noaa.gov; Michael Tucker; Chotkowski, Michael; Rinek, Lori
Subject: BDCP Admin Draft EIR/EIS Section 2.4 Purpose Statement

Russ,
The version of Section 2.4 posted on the BDCP website and dated 2/29/12 does not contain the text agreed to by David Nawi and Mark Cowin on 2/23/12 (see attached email). The paragraph on page 2-4, lines 15-25, contains 5 sentences. In the posted (2/29/12) version, the 3rd and 4th sentences have been transposed and need to be corrected. As demonstrated in the attached email, the 3rd sentence should be the one starting with "It is not intended to imply..." The 4th sentence should be the one starting with "As indicated by the ..." With this correction, no further changes to Section 2.4 are anticipated. Please confirm your understanding and direction to ICF to make this correction. Hopefully this will put this issue to rest. Thanks!

Patti Idlof
Chief, Conservation and Conveyance Division
Bay-Delta Office
801 I Street, Suite 140
Sacramento, CA 95814

ED_000733_DD_NSF_00048401-00001

Office: (916) 414-2404
Cell: (916) 992-3566
pidlof@usbr.gov

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

----- Message from "Nawi, David" <David_Nawi@ios.doi.gov> on Tue, 1 May 2012 12:51:53 -0400 -----
To: "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>
Subject: FW: Purpose Statement

From: Cowin, Mark [mailto:mcowin@water.ca.gov]
Sent: Thursday, February 23, 2012 12:10 PM
To: Nawi, David
Cc: Crothers, Cathy
Subject: RE: Purpose Statement

Yes, I am OK with this language for the draft.

From: Nawi, David [mailto:David_Nawi@ios.doi.gov]
Sent: Thursday, February 23, 2012 9:22 AM
To: Cowin, Mark
Subject: FW: Purpose Statement

Mark – Confirming that we are good to go with the language below, and that it will be reflected without further change in the draft DEIS/EIR.

Thanks.

David

From: Nawi, David
Sent: Wednesday, February 22, 2012 1:12 PM
To: mark.cowin@water.ca.gov
Subject: Purpose Statement

Mark – Would you please give me a call re the Purpose Statement language we discussed last week – set out below.

David

The above Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—restore and protect the ability of the SWP and CVP to deliver up to full contract amounts— is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

ED_000733_DD_NSF_00048401-00003

To: CN=Tom Hagler/OU=R9/O=USEPA/C=US@EPA[]
Cc: []
Bcc: []
From: CN=Karen Schwinn/OU=R9/O=USEPA/C=US
Sent: Mon 7/16/2012 5:56:25 PM
Subject: Fw: cal water
20120714 BDCP Other Elements_Preliminary Outline_version2 (for review by fed-state) minor edits-1-lb.docx

dont share

~~~~~~~~~~~~~~~~~~~~~~~~

KAREN SCHWINN
Associate Director
Water Division
U.S. EPA Region 9
75 Hawthorne Street (Wtr-1)
San Francisco, CA 94105
415/972-3472
415/297-5509 (mobile)
415/947-3537 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~

----- Forwarded by Karen Schwinn/R9/USEPA/US on 07/16/2012 10:55 AM -----

From: Roger Gorke/DC/USEPA/US
To: Karen Schwinn/R9/USEPA/US@EPA
Date: 07/16/2012 10:41 AM
Subject: Fw: cal water

Roger Gorke
Senior Policy Advisor
Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Ave NW, MC 4101 M
Washington, DC 20460
Phone: 202-564-0470
Fax: 202-564-0500

----- Forwarded by Roger Gorke/DC/USEPA/US on 07/16/2012 01:41 PM -----

From: "Belin, Letty" <Letty_Belin@ios.doi.gov>
To: Roger Gorke/DC/USEPA/US@EPA
Date: 07/16/2012 01:36 PM
Subject: cal water

Thanks for the call, Roger. Here is the draft summary of the elements other than BDCP that we will be

highlighting. Basically programmatic stuff that would fit very well in with your water quality report. I'm sure we'll catch up soon.
Letty

Letty Belin
Counselor to the Deputy Secretary
U.S. Department of the Interior
202-208-6291

ED_000733_DD_NSF_00049074-00002

Other Elements Contributing to Achieving the Co-Equal Goals and Protecting the Delta Preliminary Outline

Successful management of water resources to achieve the co-equal goals and overall Delta sustainability will require continued improvement in managing California's finite water resources. The urgent need for a comprehensive strategy to reduce reliance on the Delta for meeting California's growing water demand was a fundamental conclusion of the Delta Vision process, and was reiterated in a recent National Research Council Report (*Sustainable Water and Environmental Management in the California Bay-Delta*, 2012). There is much to gain in both water supply reliability and ecosystem protection and restoration, from improved water management throughout California.

The following elements, while not part of the BDCP itself, will clearly help enhance its success by promoting more flexibility and better management of water to satisfy current and future demands. The elements include a strong State and Federal commitment to using the Integrated Water Management approach to achieve: (1) Reductions in Water Demand; (2) Increases in Water Supply; and (3) Improvements in Efficiency of Operations.

The state and federal governments recognize the importance of continuing the substantial investments being made in improved water management in California through existing programs (e.g. WaterSMART, EQIP, IRWM). Accordingly, the state and federal governments will consider opportunities to ensure those investments continue, potentially through dedicated revenue sources, although any such proposals would likely require State and/or Federal legislation.

WORKING DRAFT

Overall, these additional elements are intended to be implemented in the manner they have been historically applied – through voluntary agreements that are cost-shared in recognition of the benefits to both the public at large and the entities involved. These programs represent opportunities, not mandates. Moreover, environmental review, with public input, will be necessary before binding commitments can be made to any of these elements. It is anticipated that they can be implemented by the state and federal governments as part of their broader responsibilities for California water planning, separate from but complementary to the BDCP.

Integrated Water Management

This element embraces an Integrated Water Management (IWM) approach within the upstream areas to the Delta, within the Delta proper, and within the Central Valley Project (CVP) and the State Water Project (SWP) service areas. Within the IWM context, all water management programs and projects are integral and interconnected—it is through this interconnectivity that IWM programs and projects maximize their value. The value of IWM is to integrate water management, flood management, and ecosystem programs to maximize limited resources and yield multiple benefits—life safety and reduction of flood risk, water supply reliability and economic stability, and environmental enhancements. IWM also provides value in integrating regional water supply reliability solutions with system wide solutions. Most California water management actions affect the Delta;

ED_000733_DD_NSF_00049075-00001

therefore, sustainable integrated flood and water management should include considerations of the Delta ecosystem, water supply and conveyance roles, and comprehensive flood risk management. The opportunity exists to build upon the numerous state and federal programs and projects currently underway in the Delta and throughout California. They include:

- Delta conveyance,
- Delta flood emergency response,
- flood management (special projects and subvention programs),
- fish passage improvements,
- tributary habitat restoration,
- long term management of dredge materials, and
- Integrated Regional Water Management Plans.

An IWM approach promotes system flexibility to adapt to changing conditions (such as climate change, policies and regulations, etc.) and enhances the natural environment. This element will enhance solution opportunities by partnering across all levels of government and interest groups to align water planning, policies, and regulations.

Reduce water demand

The state and federal governments will invest in measures that have the potential to help reduce water demand or increase supply reliability to make more efficient use of existing supplies. Water management actions under this element may utilize behavioral and technological improvements to use water more efficiently while still meeting existing and future beneficial needs. These actions may include:

- water conservation: The California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (Reclamation) will partner with districts that have potential for water saving by implementing water conservation practices such as regulation reservoirs, canal lining, system automation, modernization projects and efficient irrigation practices.
- agricultural water use efficiency: State and federal agencies will partner with water districts to encourage the use of drip and micro irrigation systems, irrigation scheduling, crop shifting, deficit irrigation, and other efficient water management practices. They will also provide assistance to enable implementation of SB7x7which requires certain agricultural water suppliers to measure water delivered to their customers and bill based at least in part on volume delivered.
- urban water use efficiency: State and federal agencies will assist with implementation of SB7x7, which requires California urban water suppliers to reduce urban per capita water use by 20% by the year 2020.

Increase Water Supply

This water management element involves finding or creating additional sources of water as well as improving management of existing water supplies to more efficiently store and provide water for California, even in drought years. The types of water management

ED_000733_DD_NSF_00049075-00002

actions that could be implemented to meet the goals of this element include:

- conjunctive management and groundwater storage: There is considerable interest and opportunity for additional ground water storage south of the Delta. Generally these projects need a state or federal partner to assist in permitting, aid in public acceptability, and contribute to cost effectiveness for the local partners. This is an area where commitment of funding and support could expand the quantity and efficiency of water supply particularly in the San Joaquin valley.
- desalination: Potential options regarding desalination should be explored as part of this element.
- recycled municipal water: To date, Reclamation has invested over $500 million in Title XVI recycle and reuse projects in California resulting in about 250,000 acre feet of new water annually. With an increase in the availability of state or federal (principally federal) funding, there is an opportunity to expand the usable water supply south of the Delta in both the SWP and CVP service areas. Accelerated completion of projects underway could yield up to an additional 400,000 acre feet of water annually. This illustrates the significant potential for adding to the available water supply for CVP and SWP contractors. Although this can be expensive water, it is becoming more competitive and has considerable political and public support.
- surface storage: It is believed that most potentially viable dam and reservoir sites have been identified and assessed as part of previous water resources studies at one time or another. However, the need to determine and pursue the most viable options merits consideration as part of this element. Also there may be opportunities to modify existing surface storage structures (e.g. modification to spillways and/or spillway gate structures or raising existing dams) in ways that can increase storage capacity or offer operational opportunities that can enhance water supplies without causing undue adverse environmental or other impacts. Hence, an interagency team drawn from state and federal agencies will be established to focus on the storage projects that offer the most potential and will provide information to be considered as part of additional sources of water. Once identified, those with the most potential for completion and the greatest cost effectiveness will be aggressively pursued.

FOR DISCUSSION DRAFT

Improve Operational Efficiency and Transfers/Exchanges

Operational improvements of the two major water projects in California could lead to improved efficiencies to water supply, and improvements to [?]the biological resources. The CVP generally has more storage and less conveyance flexibility than the SWP. The opposite is true for the SWP. The SWP and CVP are operated by DWR and Reclamation, respectively. The operations of the two projects are coordinated through the 1986 Coordinated Operating Agreement. Even through coordinated operations, the SWP and CVP are not operating as one unit. They each have different contractual obligations and operating constraints. Operational improvements proposed under this element take advantage of the strengths of both projects. This water management element involves

ED_000733_DD_NSF_00049075-00003

changing the mode of transportation of water and the way water is used and stored to better meet current and future demand. In addition, there is considerable opportunity for increases in water transfers and exchanges throughout the Central Valley including SWP, CVP, and non-project interests. The types of water management actions that could be implemented to meet the goals of this element include:

- conveyance: The movement of water south of the Delta in order to facilitate efficient use of currently available supplies is significantly limited by the absence of east/west conveyance. There are many proposed projects for improving the movement of water from east to west and west to east that have good general support but lack funding to support local interest. State and federal support in the permitting process can also enhance their success.
- system reoperation: Reclamation and DWR will establish a joint team to evaluate CVP/SWP system reoperations and identify specific measures with quantifiable efficiencies.
- transfers/exchanges: There is considerable opportunity for increases in water transfers and exchanges throughout the Central Valley including SWP, CVP, and non-project interests. There is an opportunity to accelerate or expand on ongoing activities with additional funding from the federal or state agencies to support local interest in these historically private transactions. Examples include the 25 year Exchange Contractor transfer program and the North/South transfer program currently being evaluated under NEPA. There is also interest from certain San Joaquin River and tributary interests in a "Yuba Accord" type of arrangement. Exchange opportunities also offer flexibility in timing of deliveries so as to better take advantage of existing water supplies to meet demands at certain times of the year.

Working Draft

ED_000733_DD_NSF_00049075-00004

To: Karen Schwinn/R9/USEPA/US@EPA[]
From: "Nawi, David"
Sent: Tue 11/27/2012 9:52:59 PM
Subject: FW: Meeting with federal managers re Delta projects
Final Delta Coalition Items 10 17 12.pdf

Karen -

Please see the attached suggestion below from Jonas Minton for a meeting to discuss widely supported Delta projects. I think a meeting with EPA as Jonas suggests is a good idea, as the progress made on gaining support for the projects has been impressive, and the projects have the potential to provide substantial near term benefits. Notably the six "original inviters" referred to by Jonas represent a broad spectrum of stakeholders (Jonas is the sixth) – Jason Peltier, Roger Patterson, Tom Zuckerman, Greg Gartrell, Douglas Brown (Delta Counties). The full list of projects and the full list of supporters are set out in the attachment. Per Jonas's request, I have forwarded his suggestion for a meeting to NMFS, FWS, Reclamation and USACE.

Please let me know if you think EPA is interested in the meeting Jonas suggests, and who would be the best person(s) from EPA to attend (Jared, you?)

We should also connect on some other issues when we have the time.

David

From: Jonas Minton [mailto:jminton@pcl.org]
Sent: Monday, November 19, 2012 3:31 PM
To: Nawi, David
Cc: ssherry@ccp.csus.edu; Evon Willhoff
Subject: Meeting with federal managers re Delta projects

Mr. Nawi, attached is the letter signed by 37 leading California water stakeholders supporting moving forward in the process 43 near term projects in the Delta that will contribute to the co-equal goals of improving water supply reliability and restoring the Delta ecosystem within the context of preserving the Delta as an evolving place. Participants in the Coalition to Support Delta Water Projects found that each of these projects is worthwhile, no matter the outcome of longer term processes including the Delta Stewardship Plan and the Bay Delta Conservation Plan. These projects are also fully consistent with the federal administration's priorities of creating jobs and improving infrastructure.

ED_000733_DD_NSF_00049926-00001

Signatories recognize the important interests and roles of the federal agencies in these projects. Therefore we look forward to meeting with managers of the pertinent federal agencies to discuss these projects, how they were identified and what is required to implement them. To be efficient I propose that the six original inviters for the Coalition and Susan Sherry, the Executive Director of the Center for Collaborative Policy who mediated the Coalition effort, meet with you and your colleagues.

I will be happy to serve as the point of contact for arranging meeting times. If you have any questions please contact me at (b) (6) [redacted].

Jonas Minton

Water Policy Advisor

Planning and Conservation League

ED_000733_DD_NSF_00049926-00002

October 17, 2012

Governor Edmund G Brown Jr.,
c/o State Capitol, Suite 1173
Sacramento, CA 95814

Dear Governor Brown,

Near-Term Delta Projects We Support To Move Forward in the Process(es)

The Sacramento-San Joaquin Delta is the focus of several planning and regulatory processes that are often characterized by conflict and tension among agencies and stakeholders. Parties have recognized there are good and worthy near-term projects that seem to get lost in the tensions surrounding these processes. This year a very diverse group of stakeholders came together as an ad hoc group of individuals in six meetings. The goal was to identify near-term Delta projects that should move forward through the regulatory and other processes.

We, the undersigned, are writing to urge you to provide leadership to achieve implementation of a significant number of near-term projects.

Criteria used to identify projects for this list were:

A. Projects that have wide support

B. Projects that can be on line within 5 to 10 years

C. Projects that are "no risk or low risk for any regrets" and do not prejudice the outcome of BDCP or the Delta Plan

D. Projects that can be funded

E. Projects supported by local landowners

F. Projects we could learn from

G. Projects that are designed or refined/redesigned to avoid impacts and provide multiple benefits

H. Projects supported by science, and that come with specific monitoring or performance criteria, but absolute certainty of outcome not possible or required

I. Projects that could foster cooperation

J. No "red flagged" projects

The list of projects we support to move forward in the process(es) is attached as Table 1. Table II provides more information on project costs and timing.

Some of these projects are already underway while others require detailed engineering or design work to confirm feasibility. In some cases the proposals are still in the conceptual stage.

These are projects that should receive timely and complete environmental and permit review. We recognize that in the environmental or permit review for specific projects some fatal flaws might emerge.

In many cases these projects could be eligible for funding from existing sources. This process is not intended to cause reallocation or reprioritization of existing funding sources. We also recognize that the total cost of these projects exceeds currently available funding. Therefore we anticipate cooperating in the advocacy for additional funding from a variety of sources.

Several permitting or funding agencies participated in our meetings. Their comments and questions helped the group understand potential issues. However, they are unable to express support in any way that could be considered "pre-decisional."

The last scheduled meeting of the Coalition to Support Delta Projects was September 26, 2012. Participants are currently discussing how to continue this consensus process. Future activities are likely to include review of additional projects as they are brought forward and determining the best ways to help get worthwhile near-term projects implemented.

Signatories

(Affiliations for identification purposes only)

Jonas Minton,
Planning and Conservation League

Jason Peltier,
Westlands Water District

Thomas Zuckerman,
Central Delta Water Agency

Doug Brown,
Delta Counties Coalition

Roger Patterson,
The Metropolitan Water District of Southern California

Greg Gartell,
Contra Costa Water District

Kurt A. Arends
Zone 7 Water Agency

Brett Baker,
Delta Farmer Reclamation District 349

Barbara Barrigan- Parrilla,
Restore the Delta

Ron Bernal,
City of Antioch Water Rights

Linda Best,
Contra Costa Council

Gary Bobker,
The Bay Institute

Kelly Catlett,
Defenders of Wildlife

Jennifer Clary,
Clean Water Action

Gilbert Cosio, Jr.,
Delta Reclamation Districts

Stan Dean,
Sacramento Regional County Sanitation District

Jim Giottonini,
San Joaquin Area Flood Control Agency

John Greitzer, Contra Costa
County Department of
Conservation and Development

TM Hardesty,
Reclamation District 2068

John Herrick,
South Delta Water Agency

David Katz,
Cal Marsh/Farm Ventures, LLC

Robin Kulakow
Yolo Basin Foundation

Michael Machado,
Delta Protection Commission

Karen Medders,
North Delta Residents

Jim Metropulos,
Sierra Club California

Barry Nelson,
Natural Resources Defense Council

Dan Nelson,
San Luis & Delta-Mendota Water Authority

Don Nottoli,
Supervisor, Sacramento County

Michael Regan,
Supervisor, Solano County District 5

Erik Ringelberg,
Local Agencies of the North Delta

Larry Ruhstaller,
Supervisor, San Joaquin County

Melinda Terry,
North Delta Water Agency

Jim Verboon,
Families Protecting the Valley

Doug Wallace,
East Bay Municipal Utility District

Tim Washburn,
Sacramento Area Flood Control Agency

Leo Winternitz,
The Nature Conservancy

Jim Wunderman,
Bay Area Council

Attachments

Table 1: Near-Term Delta Projects Supported to Move Forward in the Process(es): Summary Information

Table 2: Near-Term Delta Projects Supported to Move Forward in the Process(es): Cost and Timing Information

cc's: John Laird, Secretary for Natural Resources

Matt Rodriquez, Secretary for Environmental Protection

Brian P. Kelly, Acting Secretary Business, Transportation and Housing Agency

TABLE 1 Near-Term Delta Projects Supported to Move Forward in the Process(es): Summary Information 10.11.12

Project numbers are for identification purpose only and indicate order of submittal

	Proposed Project	Proponent	Estimated Cost	Project Description	Readiness
Levee / Flood Mgmt. Emergency Response Projects					
13	RD 2038-Lower Jones Tract	Dante Nomellini, Sr., RD 2038	$2-5 million	Strengthen levee on Lower Jones Tract (Reclamation District 2038) by adding fill to crown, landside slopes and toe berms.	1
14	RD 2039-Upper Jones Tract	Dante Nomellini, Sr., RD 2039	$2-5 million	Strengthen levee on Upper Jones Tract (Reclamation District 2039) by adding fill to crown, landside slopes and toe berms.	1
16	RD 2072-Woodward Island	Dante Nomellini, Sr., RD 2072	$2-5 million	Strengthen levee on Woodward Island (Reclamation District 2072) by adding fill to crown, landside slopes and toe berms.	1
19	RD 684-Lower Roberts	Dante Nomellini, Sr., 684	$2-5 million	Strengthen levee on Lower Roberts Island (Reclamation District 684) by adding crown, landside slopes and toe berms.	1
21	RD 2024-Orwood Palm Tracts	Dante Nomellini, Sr., RD 2024	$2-5 million	Strengthen levee on Orwood Palm Tract (Reclamation District 2024) by adding fill to crown, landside slopes and toe berms.	1
47	Contra Costa Canal Levee Elimination and Flood Control Project	Leah Orloff, Contra Costa Water District (CCWD)	$ 50 million	Replace the unlined portion of the Canal with reinforced concrete pipeline.	1
1	RD 756 Bouldin Island	David Forkel, Delta Wetlands	$20 million	Rehabilitation of 2.3 miles of the east levee along Little Potato Slough, 4.5 miles of the west levee along the Mokelumne and San Joaquin Rivers and 4.3 miles of the north levee along the South Mokelumne River.	2
07	RD 2068 Yolo Bypass Levee Slope Modification	Mike Hardesty, RD 2068	$500,000 (engineering/ design only)	This levee protection and habitat development project envisions a new environmentally friendly approach that benefits the ongoing aquatic species habitat development being proposed by the Yolo Bypass/Cache Slough region and the adjacent federal project levees.	2

45	Bacon Island Levee Rehabilitation Project	Gilbert Cosio/Nate Hershey, RD 2028	$30-60 million	Levee improvements on Bacon Island (Reclamation District 2028).	2
12	RD 2027-Mandeville Island	Dante Nomellini, Sr., RD 2027	$2-5 million	Strengthen levee on Mandeville Island (Reclamation District 2027) by adding fill to crown, landside slopes and to berms.	3
15	RD 2040-Victoria Island	Dante Nomellini, Sr., RD 2040	$2-5 million	Strengthen levee on Victoria Island (Reclamation District 2040) by adding fill to brown, landside slopes and toe berms.	3
17	RD 2117-Coney Island	Dante Nomellini, Sr., RD 2117	$2-5 million	Strengthen levee on Coney Island (Reclamation District 2117) by adding crown, landside slopes and toe berms.	3
18	RD 2119-Wright Elmwood	Dante Nomellini, Sr., RD 2119	$2-5 million	Strengthen levee on Wright Elmwood (Reclamation District 2119) by adding fill to crown, landside slopes and toe berms.	3
20	RD 2023-Venice Island	Dante Nomellini, Sr., RD 2023	$2-5 million	Strengthen levee on Venice Island (Reclamation District 2023) by adding fill to crown, landside slopes and toe berms.	3
22	RD 548-Terminous Tract	Dante Nomellini, Sr., 548	$2-5 million	Strengthen levee on Terminous Tract (Reclamation District 584) by adding fill to crown, landside slopes and toe berms.	3
25	RD 2037-Rindge Tract	Dante Nomellini, Sr., RD 2037	$2-5 million	Strengthen levee on Ringe Tract (Reclamation District 2037) by adding fill to crown, landside slopes and toe berms.	3
26	RD 2041-Medford Island	Dante Nomellini, Sr., RD 2041	$2-5 million	Strengthen levee on Medford Island (Reclamation District 2041) by adding fill to crown, landside slopes and toe berms.	3
27	RD 2065-Veale Tract	Dante Nomellini, Sr., RD 2065	$2-5 million	Strengthen levee on Veale Tract (Reclamation District 2065) by adding fill to crown, landside slopes and toe berms.	3
33	Smith Canal Gate	Roger Churchwell, SJAFCA, RD 1614 and 828	$30 million	The Smith Canal Gate would provide flood protection for 7,500 homes and be operated as needed to prevent high tidal flows from entering the residential area.	3

40	Emerg. Preparedness & Flood Response Program in the Delta	Michael Machado, Delta Protection Commission	$250,000	Improve emergency preparedness in the Delta for dealing with levee failures after they occur and the need to treat the Delta as a coordinated area of operation emergency planning and response.	3
43	Sierra Northern Rail Line Acquisition	Tim Washburn, SAFCA (Sacramento Area Flood Control Agency)	$21.7 million	Acquire, demolish and possibly relocate approximately nine miles of the Sierra Northern rail line between Yolo County Road102 west of the Cache Creek Settling Basin and the Union Pacific rail line in the City of West Sacramento	3
48	Mormon Channel Ecosystem Restoration & Central Stockton Flood Bypass Project	Roger Churchwell, San Joaquin Area Flood Control Agency (SJAFCA)	$ 50 million	Reestablish the flow connection from Mormon Slough to Lower Mormon Channel and use Mormon Channel as a flood bypass during flood events. Reestablishing perennial flows would also allow for ecosystem restoration of Mormon Channel.	3
49	Paradise Cut Flood Bypass Expansion	John Herrick, Esq., South Delta Water Agency	$ 80 million	Increase the capacity of Paradise Cut and add an additional weir upstream of the current one to allow for a greater amount of flow to enter the Cut during high flow times, including necessary dredging and levee work downstream of the Cut to safely pass the additional flow into the deeper Delta channels at acceptable or no additional risk to lands of that area. Project will include overflow and tidal habitat where feasible in coordination with fishery agencies.	3
06	Knightsen Biofilter	Mitch Avalon, Contra Costa County Public Works Dept.	$12.1 million	Combined flood protection, habitat restoration, and storm water/drinking water quality improvements. Unique nature of project site also provides the opportunity to develop a "Delta Shoreline" habitat area.	3

Ecosystem Projects

02	McCormack-Williamson Tract	Leo Winternitz, The Nature Conservancy	$20 million	Implement integrated flood control improvements that benefit flood management, aquatic and terrestrial habitats, and species and ecological processes.	1
28	Elk Slough Flood Control and Habitat Improvement Project	Erik Ringelberg, RD 999 and 150	$5.2 million	Reconstruct the head gate structure to allow fish passage and construct an operable downstream flood control gate to establish a flood protection corridor by removing 18 miles of levees from primary flood control. This project would also improve aquatic and riparian habitat along the corridor.	3

11	Dutch Slough Tidal Marsh Restoration	Patty Finfrock, DWR	$35 million, ($30.7 million already committed)	Restore tidal, riparian, and upland habitats, thereby providing critically needed habitat for native fish and wildlife in the Delta, while providing an opportunity for research on tidal restoration.	1
08	The Nigiri Project Yolo Bypass Floodplain Enhancement	David Katz, Cal Marsh and Farm Ventures, Knaggs Ranch	$67,000,000	Seasonal creation of floodplain habitat for endangered native fishes and water flow during winter and spring on fields that remain in agricultural production in summer and fall.	3
37	Lower Putah Creek Restoration	Robin Kulakow, Yolo Basin Foundation	$1 million	Enhance and restore 300-700 acres of tidal freshwater wetlands and create 5 miles of new creek channel, entirely within the Yolo Bypass Wildlife Area.	3

Water Supply/Water quality Projects

05	Mt. Diablo Mercury Mine	Mitch Avalon, Contra Costa County Flood Control & Water Conservation District	$4.1 million	Point source cleanup of the mine site and cleanup of deposited mercury washed downstream to the Marsh Creek Reservoir. Improves public health and safety by reducing mercury contaminations in fish and sediments in Marsh Creek and the Delta.	3
42	South Sacramento County Agriculture & Habitat Lands Water Recycling Project Phase 1	Lysa Voight, Sacramento Regional County Sanitation District (SRCSD)	$106 million	Design and construct Phase I of a multi-phased project that will provide up to 65,000 acre feet per year of recycled water and irrigate up to 16,000 acres of agriculture, habitat mitigation and conservation lands in South Sacramento County.	3

Research, Investigation, and Education Projects

34	Delta Subsidence Reversal/Carbon Sequestration	Bryan Brock, DWR	$12.25 million (funding approved)	Convert significant acreage on Sherman and Twitchell Islands from conventional agriculture to practices that promote subsidence reversal, while quantifying carbon sequestration rates to aid in protocol development and lessen flood risks.	1
52	Sacramento-San Joaquin Delta Watershed Models for Water Supply /Water Quality	Lysa Voight, The Central Valley Drinking Water Policy Workgroup	$300,000	Complete the combined WAMF, DSM2 and CalSim II Sacramento - San Joaquin Delta Watershed Models for water supply / water quality. This model was developed to evaluate flow, nutrients and salinity, but can be expanded for other uses.	2

38	Yolo Bypass Wildlife Area Public Use	Robin Kulakow, Yolo Basin Foundation	$1 million	Increase existing and provide new long-term opportunities for appropriate wildlife dependent public use.	2
50	Methylmercury Impacts Analyses for the Yolo Bypass	Philip Pogledich, Yolo County	$100,000	Collect data and analyze changes in methylmercury production and bioaccumulation that could result from (1) a proposed project to enhance fisheries habitat in the Yolo Bypass; and (2) a Central Valley Flood Protection Plan Proposal to expand the Yolo Bypass to improve flood capacity and help identify and describe management practices that could minimize methylmercury production and loads from the proposed projects.	3
35	Delta Methylmercury TMDL	Dr. Stephen McCord, Delta TMDL Nonpoint Sources Workgroup	$198,000	Provide a clearinghouse for information and facilitate a regional study management program for the control of methylmercury from wetlands and irrigated agriculture in the Sacramento - San Joaquin Delta.	3
51	Clarksburg Flood Protection Feasibility Study	Philip Pogledich, Yolo County	$200,000	Feasibility study of alternatives to provide a 100-year level of protection to the Clarksburg region.	3
04	Rio Vista Estuarine Research Station	Ted Sommer, DWR	$80 million	Consolidate over 160 agency employees into a single location and provide modern facilities for science and research efforts.	3
09	Planning for Delta Narratives Project	Jane Wagner-Tyack, Restore the Delta	$107,795 (funding under review by NEH)	A plan for multi-location exhibits, which situates the Delta's narratives in regional and national history, links sites of cultural significance, outlines the responsibilities of each exhibition partner, and delineates how various audiences will be able to access the information provided.	3
24	Delta Working Landscapes	Michael Machado, Delta Protection Commission	$1 million	Planting vegetative buffers along irrigation canals and hedgerow plantings to improve water quality by reducing runoff of pesticides and sediment and farming approaches which can benefit wildlife and other environmental aspects.	3
36	Pacific Flyway Center Delta Gateway	Robin Kulakow, Yolo Basin Foundation	$13 million	Proposed educational facility and site to serve the general public, Central Valley area school districts, various public sector agencies, and special environmentally focused events and activities.	3

53	Delta Branding Project	Susan Roberts Shakoora Azimi -Gaylon, Sacramento - San Joaquin Delta Conservancy (Conservancy)	$500,000	Develop a Delta Brand, including branding collateral, and a 2-5 year marketing plan to promote the Delta as a destination and the Delta's significance to Californians.	3
10	Reclamation Districts Archive	Jane Wagner-Tyack, Restore the Delta	$40,000 (starting cost)	The project would expand on an effort currently underway in San Joaquin County to preserve and make more widely available historical records related to Delta levee construction and maintenance and other reclamation district activities.	4

Project Number*	PROPOSED PROJECTS	Levees/ Flood Management/ Emergency Mgmt.**	Ecosystem	Water Supply/Water Quality	Other (Research, Investigation, Education)	Readiness	Construction/Implementation Start	Cost for Next Step/Phase***	Total Cost (remaining for projects underway)****
	Number with the resource as "Primary" focus: (numbers do not add to 43 projects - some projects have two primary purposes/benefits)	24	6	3	12	43			
	Levee / Flood Mgmt. Emergency Reponse Projects								
13	RD 2038 - Lower Jones Tract	P				1	2014	$5,000,000	$10,000,000
14	RD 2039 - Upper Jones Tract	P				1	2014	$5,000,000	$10,000,000
16	RD 2072 - Woodward Island	P				1	2014	$5,000,000	$10,000,000
19	RD 684 - Lower Roberts	P				1	2014	$5,000,000	$10,000,000
21	RD 2024 - Orwood Palm Tracts	P				1	2014	$5,000,000	$10,000,000
47	Contra Costa Canal Levee Elimination and Flood Control Project	P	X	P		1	2013	$50,000,000	$50,000,000
1	RD 756 Bouldin Island	P				2	2013	$20,000,000	$20,000,000
7	RD 2068 Yolo Bypass Levee Slope Modification	P	X			2	2013	$500,000	$7,700,000
45	RD 2028 Bacon Island Levee Rehabilitation Project	P				2	2013	$30,000,000	$60,000,000
12	Reclamation District No. 2027 (Mandeville Island)	P				3	2014	$5,000,000	$10,000,000
15	RD 2040 - Victoria Island	P				3	2014	$5,000,000	$10,000,000
17	RD 2117 - Coney Island	P				3	2014	$5,000,000	$10,000,000
18	RD 2119 - Wright Elmwood	P				3	2014	$5,000,000	$10,000,000
20	RD 2023 - Venice Island	P				3	2014	$5,000,000	$10,000,000
22	RD 548 - Terminus Tract	P				3	2014	$5,000,000	$10,000,000
25	RD 2037 - Rindge Tract	P				3	2014	$5,000,000	$10,000,000
26	RD 2041 - Medford Island	P				3	2014	$5,000,000	$10,000,000
27	RD 2065 - Veale Tract	P				3	2014	$5,000,000	$10,000,000
33	Smith Canal Gate	P				3	2015	$30,000,000	$30,000,000
40	Emergency Preparedness and Flood Response Program in the Delta	P				3	2013	$250,000	$250,000
43	Sierra Northern Rail Line Acquisition	P				3	2014	$2,300,000	$21,700,000
48	Mormon Channel Ecosystem Restoration & Central Stockton Flood Bypass Project	P	X			3	2017	$5,600,000	$50,000,000
49	Paradise Cut Flood Bypass Expansion Project	P	X	X		3	2016	$500,000	$80,000,000
6	Knightsen Biofilter	P	P	X	X	3	2015	$6,000,000	$12,100,000

ED_000733_DD_NSF_00049927-00012

Project Number*	PROPOSED PROJECTS	Levees/ Flood Management/ Emergency Mgmt.**	Ecosystem	Water Supply/Water Quality	Other (Research, Investigation, Education)	Readiness	Construction/Implementation Start	Cost for Next Step/Phase***	Total Cost (remaining for projects underway)****
	Ecosystem Projects (see also Knightsen Biofilter project above)								
2	McCormack-Williamson Tract	X	P		X	2	2014	$20,000,000	$20,000,000
28	Elk Slough Flood and Habitat Improvements Project	X	P			3	2013	$1,400,000	$5,200,000
11	Dutch Slough Tidal Marsh Restoration		P		X	1	2013	$7,400,000	$35,000,000
8	The Nigiri Project Yolo Bypass Floodplain Enhancement		P		X	3	2016	$7,000,000	$66,935,000
37	Lower Putah Creek Restoration		P			3	2016	$1,000,000	$10,000,000
	Water Supply/Water quality Projects (see also Contra Costa Canal project above)								
5	Mt Diablo Mercury Mine		X	P		3	2015	$500,000	$4,100,000
42	The South Sacramento County Agriculture & Habitat Lands Water Recycling Project (South County Ag Project) Phase 1		X	P		3	2017	$12,000,000	$106,300,000
	Research, Investigation, and Education Projects								
34	Carbon Sequestration	X	X		P	1	2013	$2,350,000	$12,250,000
52	Sacramento-San Joaquin Delta Watershed Models for Water Supply /Water Quality			X	P	2	2013	$300,000	$300,000
38	Yolo Bypass Wildlife Area Public Use				P	2	2013	$1,000,000	$1,000,000
50	Methylmercury Impacts Analyses for the Yolo Bypass		X	X	P	3	2013	$100,000	$100,000
35	Delta Methylmercury TMDL			X	P	3	2013	$198,000	$198,000
51	Clarksburg Flood Protection Feasibility Study	X			P	3	2013	$200,000	$200,000
4	Rio Vista Estuarine Research Station				P	3	2015	$12,000,000	$80,000,000
9	Planning for Delta Narratives Project				P	3	2014	$107,795	$1,000,000
24	Coalition to Support Delta Projects Working Landscapes				P	3	2013	$250,000	$1,000,000
36	Pacific Flyway Center Delta Gateway				P	3	2017	$1,000,000	$13,000,000
53	Delta Branding Project				P	3	2013	$200,000	$500,000
10	Reclamation Districts Archive Proposal				P	4	2012	$40,000	TBD
Total number of projects that address the resource		**28**	**14**	**8**	**16**				
Total Costs for Next Step/Phase		**$187,150,000**	**$39,800,000**	**$37,500,000**	**$17,745,795**			**$282,195,795**	
Total Remaining Cost for Full Implementation		**$440,700,000**	**$143,185,000**	**$135,400,000**	**$109,548,000**				**$828,833,000**

Key:

Category: P = Primary purpose/benefit X = Additional purpose/benefit

Count	Readiness Scoring:
8	1 = **Underway** - Significant funding and permits secured
6	2 = **Ready to Move Forward** - Design complete, partners committed, CEQ/NEPA compliance, ready to apply for permit and funding
28	3 = **Concept Fleshed Out** - Project concept clearly articulated; at least initial discussion with potential partners; potential sources of funding identified
1	4 = **Idea Stage** - A potential promising idea; no details at this time

Notes

* Project numbers are for identification purposes only and simply indicate order of submittal.

** The total cost for levee improvements along the Middle River conveyance corridor to improve seismic resiliency is estimated at $60 million.

*** Costs for next step/phase include all remaining costs to complete the next phase or step (likely completed in less than 5 years).

**** Total Costs includes all remaining costs to complete the project (possibly over the next 10 to 20 years). Where there were ranges identified, the high end of the range is listed here.

ED_000733_DD_NSF_00049927-00013

To: CN=Richard Sumner/OU=COR/O=USEPA/C=US@EPA[]
Cc: CN=Erin Foresman/OU=R9/O=USEPA/C=US@EPA@EPA;CN=Jason Brush/OU=R9/O=USEPA/C=US@EPA[]; N=Jason Brush/OU=R9/O=USEPA/C=US@EPA[]
From: CN=Tim Vendlinski/OU=R9/O=USEPA/C=US
Sent: Thur 2/2/2012 8:15:10 PM
Subject: current status of the BDCP MOU and other 404 activities (Delta Conveyance)
BDCP Panetta letter (1 31 2012).docx
BDC_Email series_Concurrence on 404 Purpose statements_FEB 2012.pdf
http://www.epa.gov/region9/water/watershed/sfbay-delta/index.html
mailto:Michael.G.Nepstad@usace.army.mil
(embedded image)

Hi Rich:

Please find attached e-mail records and attachments that characterize the current status of the BDCP MOU and other 404 activities.
All this provides a context for the training curriculum you're proposing for 404 impact assessment and compensatory mitigation.
I'm 1/2 way through your paper, and I think you've done a nice job framing the approach.

The key question is whether the Sacramento Corps District would be receptive to incorporating your approach into their regulatory review and permitting process.
I don't think you'd have trouble selling the approach to Region 9, but as you can see from the attached documents, the Corps and the State DWR don't seem to be on the same page when it comes to integrated permitting, and the State Water Resources Control Board is not engaged at all (i.e., your proposed link with 401 compliance).

Erin is the perfect person to have on our call as she serves as our essential liaison with the Sacramento Corps District.
She'll have a sense about whether your proposed curriculum will resonate with the Corps.

Thanks, Tim

><((((º>·´¯`·.¸¸.·><((((º>·´¯`·.¸¸.·><((((º>

Tim Vendlinski
Senior Policy Advisor
Office of the Director (WTR-1)
EPA Pacific Southwest Region
75 Hawthorne Street
San Francisco, CA 94105-3901
http://www.epa.gov/region9/water/watershed/sfbay-delta/index.html
>vendlinski.tim@epa.gov<
phone: 415.972.3469
fax: 415.947.3537

----- Forwarded by Tim Vendlinski/R9/USEPA/US on 02/02/2012 11:50 AM -----

From: "Monroe, Jim" <James.Monroe@sol.doi.gov>
To: "Nawi, David" <David_Nawi@ios.doi.gov>, "Barajas, Federico" <FBarajas@usbr.gov>, "Milligan, Ronald E" <RMilligan@usbr.gov>, "Castleberry, Dan" <dan_castleberry@fws.gov>, Karen Schwinn/R9/USEPA/US@EPA, "Grim, Mary" <Mary_Grim@fws.gov>, "Nepstad, Michael G SPK" <Michael.G.Nepstad@usace.army.mil>, "michael.s.jewell@usace.army.mil"

ED_000733_DD_NSF_00061806-00001

<michael.s.jewell@usace.army.mil>, "Idlof, Patricia S (Patti)" <PIdlof@usbr.gov>, "Norris, Jennifer" <jennifer_norris@fws.gov>, 'Michael Tucker' <Michael.Tucker@NOAA.GOV>, Tom Hagler/R9/USEPA/US@EPA, "Kiger, Luana - Davis, CA" <Luana.Kiger@ca.usda.gov>, "Fujii, Roger" <rfujii@usgs.gov>, "Arroyave, Pablo R" <PArroyave@usbr.gov>, Howard Brown <Howard.Brown@noaa.gov>, "Lohoefener, Ren" <Ren_Lohoefener@fws.gov>, "Belin, Letty" <Letty_Belin@ios.doi.gov>, "Glaser, Donald R" <DGlaser@usbr.gov>, 'Deanna Harwood' <Deanna.Harwood@noaa.gov>, "Rinek, Lori" <lori_rinek@fws.gov>, "rod.mcinnis@noaa.gov" <rod.mcinnis@noaa.gov>, "Shouse, Michelle K." <mkshouse@usgs.gov>, "Keay, Jeffrey A." <jkeay@usgs.gov>, "Robershotte, Paul J SPD" <Paul.J.Robershotte@usace.army.mil>, "Case, Harvey L." <hlcase@usgs.gov>, "Fry, Susan M" <SFry@usbr.gov>, Maria Rea <Maria.Rea@noaa.gov>, "Chotkowski, Michael" <michael_chotkowski@fws.gov>, "Hoover, Michael" <michael_hoover@fws.gov>, "Chrisney, Ann C" <achrisney@usbr.gov>
Cc: "Allen, Kaylee" <Kaylee.Allen@sol.doi.gov>, "Monroe, Jim" <James.Monroe@sol.doi.gov>, "'Chris.Yates@noaa.gov'" <Chris.Yates@noaa.gov>, "Will.Stelle@noaa.gov" <Will.Stelle@noaa.gov>, "jeff.McLain@noaa.gov" <jeff.McLain@noaa.gov>, "Morales, Francia S" <FMorales@usbr.gov>, "Pennell, Becky" <Becky_Pennell@fws.gov>, Erin Foresman/R9/USEPA/US@EPA, Tim Vendlinski/R9/USEPA/US@EPA
Date: 02/02/2012 09:13 AM
Subject: FW: Federal Coordination Meeting - February 2 (UNCLASSIFIED)

Per request from David Nawi; Attachment is email from Sacramento District Corps Regulatory re: current status of BDCP MOU and other 404 activities.

----- Message from "Nawi, David" <David_Nawi@ios.doi.gov> on Thu, 2 Feb 2012 12:08:54 -0500 -----

To: "Monroe, Jim" <James.Monroe@sol.doi.gov>
Subject: Fw: Federal Coordination Meeting - February 2 (UNCLASSIFIED)

----- Original Message -----

From: Nepstad, Michael G SPK [mailto:Michael.G.Nepstad@usace.army.mil]
Sent: Wednesday, February 01, 2012 04:10 PM
To: Nawi, David
Subject: RE: Federal Coordination Meeting - February 2 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Not sure yet if I can make the call, but in case I can't, here is an update on Corps matters.

Attached is a first draft of a possible letter the Governor may send/give to Defense Secretary in combination with his visit to DC (and possible meeting with the Secretary this month). Corps is evaluating the letter and considering next step(s).

On 27 Jan 2012, DWR staff has told Paul and I that the NEPA-404 integration MOU was dead, by which they mean DWR will issue a statement or letter terminating the effort. We have been waiting for confirmation that DWR does indeed not want to pursue this MOU. MOU is still in our HQ undergoing review.

On 27 Jan 2012, DWR staff has told Paul and I that the idea of the State providing the Corps with some funding to assist in the expediting Corps permit review was a good one and they want to start the process of an MOA between DWR and the Corps under section 214 of the Water Resources Development Act of 2000 (Public Law 106-541) to provide up to $100,000 for the expedition of SPK reviews. We have been waiting for confirmation that DWR does indeed want pursue this MOA.

Corps and EPA will have monthly section 404 coordination meetings to better coordinate on section 404 matters.

Michael G. Nepstad
Deputy Chief, Regulatory Division
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
(916) 557-7262 Fax:(916) 930-9506
michael.g.nepstad@usace.army.mil

----Original Message-----

ED_000733_DD_NSF_00061806-00003

Date

To: Honorable Leon Panetta, Secretary of the Army

I am writing to request your assistance in meeting the State of California's commitment to the timely implementation of the Bay Delta Conservation Plan (BDCP). An essential step toward meeting this commitment is obtaining permits and other authorizations from the U.S. Army Corps of Engineers (USACE) that authorize the construction of critical new water conveyance infrastructure which may affect waters of the United States and USACE levees.

The California Department of Water Resources (DWR) is working collaboratively with federal resource agencies, conservation organizations, water agencies, local agencies and others to develop a plan to improve the Sacramento-San Joaquin Delta ecosystem and California's water supplies. The BDCP proposes the development of water conveyance infrastructure that will help secure drinking water supplies for over 25 million Californians, and agricultural supplies that support the production of nearly half of the nation's domestically grown fresh produce. Concomitantly, the BDCP provides for actions that will contribute to the restoration and recovery of the Delta ecosystem.

The State of California is committed to an aggressive implementation schedule, which is the only way to forestall and reverse the decline of the Delta ecosystem and protect water supplies against seismic risk and levee failure. Under this schedule, the construction of new water conveyance infrastructure and ecological restoration projects will begin in 2015.

Before certain construction and ecological restoration actions can begin, DWR must secure permits and other authorizations under the federal Clean Water Act and the Rivers and Harbors Act. DWR is committed to working with the USACE to ensure its full compliance with these laws, and is currently in the process of developing the information and documentation that the USACE needs to issue the necessary permits and authorizations. DWR has been working closely with the USACE, Sacramento District, to develop creative and efficient approaches to ensure to securing the necessary USACE permits and authorizations. However, securing the necessary approvals will be a complicated and time-consuming process, and committed, creative collaboration with USACE staff during the development and design of the conveyance infrastructure will be essential to meet this challenging schedule. Additionally, it is imperative that throughout project development there is an appreciation of the unique aspects of this project

and the need for a resourceful approach to the permitting process.

To accomplish the State's goal of meeting an aggressive implementation schedule, DWR requests the following assistance from USACE, (1) that applications under the Rivers and Harbor Act ("408 authorizations") be processed by the USACE with a flexible approach to the level of design that is required; and (2) that Clean Water Act permits ("404 permits") are issued for specific actions that *do not* require Section 408 authorization independently of the actions that require *both* 404 and 408 authorizations. DWR believes this approach will allow for a more efficient USACE review and allow DWR to secure the necessary approvals in time to begin the construction of vital water conveyance facilities by 2015.

We appreciate your support in helping California meet its water supply needs and protect its valuable natural resources now and into the future.

Thank you,

Governor Jerry Brown.

To: CN=Laura Yoshii/OU=R9/O=USEPA/C=US@EPA[]
Cc: []
From: CN=Lori Keyton/OU=DC/O=USEPA/C=US
Sent: Wed 9/9/2009 4:23:16 PM
Subject: Fw: Next Bay-Delta meeting 9/15 -- 1-2 pm at CEQ
mou-090909.doc

FYI.

LORI KEYTON

----- Forwarded by Lori Keyton/DC/USEPA/US on 09/09/2009 12:22 PM -----

From: Letty_Belin@ios.doi.gov
To: "Klasen, Matthew N." <Matthew_N._Klasen@ceq.eop.gov>
Cc: "Kelly.denit@noaa.gov" <'Kelly.denit@noaa.gov'>, "Hight, Courtney" <Courtney_Hight@ceq.eop.gov>, DarcyJE@conus.army.mil, "Hurley, John S LTC MIL USA ASA CW" <John.Hurley@us.army.mil>, "Boots, Michael J." <Michael_J._Boots@ceq.eop.gov>, mlconnor@usbr.gov, Monica.medina@noaa.gov, Robert.Bonnie@osec.usda.gov, "Nuzum, Robert S." <Robert_S._Nuzum@ceq.eop.gov>, rock.salt@us.army.mil, Peter Silva/DC/USEPA/US@EPA, Robert Wood/DC/USEPA/US@EPA
Date: 09/09/2009 12:10 PM
Subject: Re: Next Bay-Delta meeting 9/15 -- 1-2 pm at CEQ

Here is a draft MOU for your review. Please review and if you have any suggested changes feel free to send them around before the 9/15 meeting, at which time we will discuss. Thanks.
Letty

Letty Belin
Counselor to the Deputy Secretary
letty_belin@ios.doi.gov
202-208-6291

From: "Klasen, Matthew N." <Matthew_N._Klasen@ceq.eop.gov>
To: <rock.salt@us.army.mil>, <DarcyJE@conus.army.mil>, <wood.robert@epa.gov>, <Monica.medina@noaa.gov>, <Letty_belin@ios.doi.gov>, <Robert.Bonnie@osec.usda.gov>, <mlconnor@usbr.gov>, <silva.peter@epa.gov>
Cc: "Kelly.denit@noaa.gov" <'Kelly.denit@noaa.gov'>, "Boots, Michael J." <Michael_J._Boots@ceq.eop.gov>, "Nuzum, Robert S." <Robert_S._Nuzum@ceq.eop.gov>, "Hight, Courtney" <Courtney_Hight@ceq.eop.gov>, "Hurley, John S LTC MIL USA ASA CW" <John.Hurley@us.army.mil>
Date: 09/08/2009 05:24 PM
Subject: Next Bay-Delta meeting 9/15 -- 1-2 pm at CEQ

ED_000733_DD_NSF_00083176-00001

Hi everyone,

Thanks for your attendance and participation at last Friday's Bay-Delta meeting here at CEQ. We hope you've had a chance to gather feedback from your regional offices that will help us to identify appropriate and specific interagency next steps.

To that end, Mike and Letty have compared schedules and want to propose re-convening the group next Tuesday, September 15 from 1-2 pm in 730 Jackson Place. (This seems to be the earliest convenient time given scheduling constraints and a shortened week.)

On a related note, attached is the interagency Everglades MOU that Rock discussed at last week's meeting as a potential precedent for our efforts, which he asked us to forward along to the full group.

Please let us know if you have any questions – and looking forward to the discussion next week.

Best,
Matt

Matt Klasen
White House Council on Environmental Quality
734 Jackson Place NW
Washington DC 20503
(202) 456-5116
mobile (202) 380-7290[attachment "interagency_agreement_1993.pdf" deleted by Letty Belin/SIO/OS/DOI]

ED_000733_DD_NSF_00083176-00002

Draft 09/09/09

CALIFORNIA BAY-DELTA MEMORANDUM OF UNDERSTANDING AMONG FEDERAL AGENCIES

I. RECITALS

(a) The Sacramento/San Joaquin River Delta-San Francisco Bay estuary (Bay-Delta) is among the most important estuary ecosystems in the nation. The Bay-Delta is a source of drinking water for more than 22 million people; it supports a $28 billion agricultural industry; and, until recently, it has supported a thriving commercial and recreational fishing industry that has contributed hundreds of millions of dollars to the California economy.

(b) The Bay-Delta is in crisis. Decades of environmental degradation have led to severe declines in Delta fisheries. California is in the third year of drought. Both the Bay-Delta ecosystem and the economy dependent on its water and fish are on the precipice of collapse. Furthermore, climate change and seismic risks present additional, serious threats to the Bay-Delta environment and the water supplies that travel through it.

(c) Given the national significance of the Bay-Delta ecosystem and its importance to the millions of people who depend on it for water supplies and for environmental benefits, it is imperative that the federal government reestablish its leadership role in Bay-Delta matters, working in partnership with the State of California and interested stakeholders.

II. PURPOSE

(a) The purpose of this Memorandum of Understanding (MOU) is to confirm the federal commitment to work in partnership with the State of California and interested stakeholders to protect a reliable and sustainable long-term water supply for California while also restoring the environmental integrity and sustainability of the Bay-Delta ecosystem.

(b) This MOU establishes a structure for coordinating and streamlining the actions of the federal agencies with primary responsibilities and authority over key aspects of the Bay-Delta to facilitate coordination and cooperation among these agencies in advancing the federal commitment to the Bay-Delta

III. PARTIES

The parties to this MOU are:

(a) The United States Department of the Interior (DOI), which has jurisdiction pursuant to the Central Valley Project Improvement Act (title XXXIV of Public Law 102–575; 106 Stat. 4706), the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), and other applicable law;

ED_000733_DD_NSF_00083177-00001

(b) The United States Environmental Protection Agency (USEPA), which has jurisdiction pursuant to the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.)(Clean Water Act), the Safe Drinking Water Act (42 U.S.C. 300f et seq.), and other applicable law;

(c) The United States Department of Commerce (Commerce), which has jurisdiction pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), and other applicable law;

(d) The United States Army Corps of Engineers (Corps), which has jurisdiction pursuant to flood control and water resource development statutes, the Clean Water Act and other applicable law.

(e) The United States Department of Agriculture (USDA), which has jurisdiction pursuant to title XII of the Food Security Act of 1985 (16 U.S.C. 3801 et seq.), the Farm Security and Rural Investment Act of 2002 (Public Law 107–171; 116 Stat. 134) (including amendments made by that Act), and other applicable law.

(f) The Council on Environmental Quality (CEQ), which is authorized under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) and other applicable law.

IV. FEDERAL BAY-DELTA LEADERSHIP COMMITTEE

(a) The Secretary of the Interior and/or his designee will represent the Administration as the lead for implementing federal policy and commitments in Bay-Delta matters.

(b) The Chair of the CEQ, will work with the Secretary of the Interior in coordinating the development and implementation of federal policy and commitments in Bay-Delta matters.

(c) Coordination among the federal agencies will be facilitated through the formation of a Federal Bay-Delta Leadership Committee, which will be co-chaired by the Secretary of the Interior and the Chair of CEQ, or their designees. The Federal Bay-Delta Leadership Committee will include a single senior designee from each of the following agencies: the Commerce Department, the U.S. Army Corps of Engineers, the Environmental Protection Agency, the Department of Agriculture, and the Department of Justice.

(d) The Federal Bay-Delta Leadership Committee will meet on a periodic basis to develop and coordinate federal participation in Bay-Delta matters. Activities coordinated through the Committee shall include drought relief efforts, review of projects and operations intended to address short and medium term issues, and the development of the Bay Delta Conservation Plan and other longer-term mechanisms to improve the ecological health of the Bay-Delta and address water supply needs.

(e) Participating agencies shall use the budget crosscut authority provided to them by Pub. L. 108-361 to the extent feasible in furtherance of the purposes of this MOU.

V. FEDERAL WORK PLAN

ED_000733_DD_NSF_00083177-00002

The parties commit to develop, by December 15, 2009, a coordinated federal workplan outlining near term actions that will be taken on Bay-Delta issues. This workplan may include, but is not limited to, actions on the following issues:

(a) developing a coordinated process for undertaking regulatory actions by federal agencies in the Bay-Delta including, but not limited to, the potential consolidation of U.S. Fish & Wildlife Service and the National Marine Fisheries Service personnel and regulatory activities in the Bay-Delta;

(b) Expediting habitat restoration projects in the Suisun Marsh and other biologically critical sites;

(c) Expanding current pilot projects aimed at ameliorating effects of climate change on Delta stability;

(d) Expediting review of toxics impacts on biological resources in the Delta;

(e) Encouraging conservation, recycling, and efficiencies in water use; and

(f) Accelerating Recovery Act and other projects in the Bay-Delta.

VI. MISCELLANEOUS PROVISIONS

A. Nothing in this MOU is intended to restrict the authority of any party to act as provided by law, statute or regulation.

B. This MOU does not create any right or benefit, substantive or procedural, enforceable by law or equity, by persons who are not party to this agreement, against the parties, their officers or employees, or any other person. This MOU does not direct or apply to any person other than the parties.

C. This MOU is to take effect upon the signature of the parties and remain in effect for a period of five years. This MOU may be extended or modified at any time upon the mutual written consent of the parties. Additionally, a party may terminate its participation in this MOU at any time by providing written notice to the other parties at least thirty days in advance of the desired termination date.

D. As required by the Antideficiency Act, 31 U.S.C. Sections 1341 and 1342, all commitments in this MOU are subject to the availability of appropriated funds. Nothing in this MOU, in and of itself, obligates any signatory agency to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations that would be inconsistent with agency budget priorities. Any transaction involving reimbursement or contribution of funds between the parties to this MOU will be handled in accordance with applicable laws, regulations, and procedures under separate written agreements.

ED_000733_DD_NSF_00083177-00003

VI. SIGNATURES

[ ]

To: CN=Roger Gorke/OU=DC/O=USEPA/C=US@EPA[]
Cc: CN=Alexis Strauss/OU=R9/O=USEPA/C=US@EPA;CN=Gregory
Peck/OU=DC/O=USEPA/C=US@EPA;CN=Karen
Schwinn/OU=R9/O=USEPA/C=US@EPA;CN=Laura
Yoshii/OU=R9/O=USEPA/C=US@EPA;CN=Lee
Schroer/OU=DC/O=USEPA/C=US@EPA;Letty_Belin@ios.doi.gov;CN=Lori
Keyton/OU=DC/O=USEPA/C=US@EPA;CN=Lynn
Zipf/OU=DC/O=USEPA/C=US@EPA;CN=Macara
Lousberg/OU=DC/O=USEPA/C=US@EPA;CN=Peter
Silva/OU=DC/O=USEPA/C=US@EPA;CN=Suzanne
Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim
Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[];
N=Gregory Peck/OU=DC/O=USEPA/C=US@EPA;CN=Karen
Schwinn/OU=R9/O=USEPA/C=US@EPA;CN=Laura
Yoshii/OU=R9/O=USEPA/C=US@EPA;CN=Lee
Schroer/OU=DC/O=USEPA/C=US@EPA;Letty_Belin@ios.doi.gov;CN=Lori
Keyton/OU=DC/O=USEPA/C=US@EPA;CN=Lynn
Zipf/OU=DC/O=USEPA/C=US@EPA;CN=Macara
Lousberg/OU=DC/O=USEPA/C=US@EPA;CN=Peter
Silva/OU=DC/O=USEPA/C=US@EPA;CN=Suzanne
Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim
Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[];
N=Karen Schwinn/OU=R9/O=USEPA/C=US@EPA;CN=Laura
Yoshii/OU=R9/O=USEPA/C=US@EPA;CN=Lee
Schroer/OU=DC/O=USEPA/C=US@EPA;Letty_Belin@ios.doi.gov;CN=Lori
Keyton/OU=DC/O=USEPA/C=US@EPA;CN=Lynn
Zipf/OU=DC/O=USEPA/C=US@EPA;CN=Macara
Lousberg/OU=DC/O=USEPA/C=US@EPA;CN=Peter
Silva/OU=DC/O=USEPA/C=US@EPA;CN=Suzanne
Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim
Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[];
N=Laura Yoshii/OU=R9/O=USEPA/C=US@EPA;CN=Lee
Schroer/OU=DC/O=USEPA/C=US@EPA;Letty_Belin@ios.doi.gov;CN=Lori
Keyton/OU=DC/O=USEPA/C=US@EPA;CN=Lynn
Zipf/OU=DC/O=USEPA/C=US@EPA;CN=Macara
Lousberg/OU=DC/O=USEPA/C=US@EPA;CN=Peter
Silva/OU=DC/O=USEPA/C=US@EPA;CN=Suzanne
Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim
Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[];
N=Lee Schroer/OU=DC/O=USEPA/C=US@EPA;Letty_Belin@ios.doi.gov;CN=Lori
Keyton/OU=DC/O=USEPA/C=US@EPA;CN=Lynn
Zipf/OU=DC/O=USEPA/C=US@EPA;CN=Macara
Lousberg/OU=DC/O=USEPA/C=US@EPA;CN=Peter
Silva/OU=DC/O=USEPA/C=US@EPA;CN=Suzanne
Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim
Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[];
etty_Belin@ios.doi.gov;CN=Lori Keyton/OU=DC/O=USEPA/C=US@EPA;CN=Lynn
Zipf/OU=DC/O=USEPA/C=US@EPA;CN=Macara
Lousberg/OU=DC/O=USEPA/C=US@EPA;CN=Peter
Silva/OU=DC/O=USEPA/C=US@EPA;CN=Suzanne
Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim
Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[];
N=Lori Keyton/OU=DC/O=USEPA/C=US@EPA;CN=Lynn
Zipf/OU=DC/O=USEPA/C=US@EPA;CN=Macara
Lousberg/OU=DC/O=USEPA/C=US@EPA;CN=Peter
Silva/OU=DC/O=USEPA/C=US@EPA;CN=Suzanne

Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[]; N=Lynn Zipf/OU=DC/O=USEPA/C=US@EPA;CN=Macara Lousberg/OU=DC/O=USEPA/C=US@EPA;CN=Peter Silva/OU=DC/O=USEPA/C=US@EPA;CN=Suzanne Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[]; N=Macara Lousberg/OU=DC/O=USEPA/C=US@EPA;CN=Peter Silva/OU=DC/O=USEPA/C=US@EPA;CN=Suzanne Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[]; N=Peter Silva/OU=DC/O=USEPA/C=US@EPA;CN=Suzanne Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[]; N=Suzanne Schwartz/OU=DC/O=USEPA/C=US@EPA;CN=Tim Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[]; N=Tim Jones/OU=DC/O=USEPA/C=US@EPA;CN=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[]; N=Virginia Kibler/OU=DC/O=USEPA/C=US@EPA[]
From: CN=Robert Wood/OU=DC/O=USEPA/C=US
Sent: Fri 9/18/2009 8:26:02 PM
Subject: Re: Fw: Bay-Delta MOU and Sept. 30th public meeting

Good additions, Roger. Thanks

Acting Deputy Director
Office of Wetlands Oceans and Watersheds
Room 7130A EPA West
202-566-1822

From: Roger Gorke/DC/USEPA/US
To: Robert Wood/DC/USEPA/US@EPA, Letty_Belin@ios.doi.gov
Cc: Alexis Strauss/R9/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Karen Schwinn/R9/USEPA/US@EPA, Laura Yoshii/R9/USEPA/US@EPA, Lee Schroer/DC/USEPA/US@EPA, Lori Keyton/DC/USEPA/US@EPA, Lynn Zipf/DC/USEPA/US@EPA, Macara Lousberg/DC/USEPA/US@EPA, Peter Silva/DC/USEPA/US@EPA, Suzanne Schwartz/DC/USEPA/US@EPA, Tim Jones/DC/USEPA/US@EPA, Virginia Kibler/DC/USEPA/US@EPA
Date: 09/18/2009 04:13 PM
Subject: Re: Fw: Bay-Delta MOU and Sept. 30th public meeting

Letty,

Here are a couple of minor, yet important comments (in bold) on the MOU.

II. PURPOSE

(a) The purpose of this Memorandum of Understanding (MOU) is to confirm the federal commitment to work in partnership with the State of California and interested stakeholders to protect a high quality, reliable and sustainable long-term water supply for California while also restoring the

environmental integrity and sustainability of the Bay-Delta ecosystem.

IV. FEDERAL BAY-DELTA LEADERSHIP COMMITTEE

(d) The Federal Bay-Delta Leadership Committee will meet on a periodic basis to develop and coordinate federal participation in Bay-Delta matters. Activities coordinated through the Committee shall include drought relief efforts, review of projects and operations intended to address short and medium term issues, and the development of the Bay Delta Conservation Plan and other longer-term mechanisms to improve the ecological health of the Bay-Delta and address water supply and quality needs.

Thanks

Roger

Roger Gorke
Senior Policy Advisor
Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Ave NW, MC 4101 M
Washington, DC 20460
Phone: 202-564-0470
Fax: 202-564-0500

From: Robert Wood/DC/USEPA/US
To: Peter Silva/DC/USEPA/US@EPA, Laura Yoshii/R9/USEPA/US@EPA, Alexis Strauss/R9/USEPA/US@EPA, Karen Schwinn/R9/USEPA/US@EPA
Cc: Suzanne Schwartz/DC/USEPA/US@EPA, Lee Schroer/DC/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Roger Gorke/DC/USEPA/US@EPA, Macara Lousberg/DC/USEPA/US@EPA, Virginia Kibler/DC/USEPA/US@EPA, Tim Jones/DC/USEPA/US@EPA, Lynn Zipf/DC/USEPA/US@EPA, Lori Keyton/DC/USEPA/US@EPA
Date: 09/18/2009 10:27 AM
Subject: Fw: Bay-Delta MOU and Sept. 30th public meeting

All:

Wanted to be sure you saw this morning's message from Letty Belin at Interior. With respect to additional comments on the first draft of the MOU, we already provided the comments prepared by Region 9 and I expect they will be reflected in the next draft. If you have any additional comments, please send them to me. In the interest of time, you can also send them directly to Letty Belin.

With respect to the public meeting on September 30, Pete (and Lori), it looks like Pete would need to be there at 8:45 for about an hour. Formal invitation should be coming next week.
Thanks,

Rob

Acting Deputy Director
Office of Wetlands Oceans and Watersheds

ED_000733_DD_NSF_00083184-00003

Room 7130A EPA West
202-566-1822

----- Forwarded by Robert Wood/DC/USEPA/US on 09/18/2009 10:16 AM -----

From: Letty_Belin@ios.doi.gov
To: "Klasen, Matthew N." <Matthew_N._Klasen@ceq.eop.gov>, "David Nawi" <david@dnmediation.com>
Cc: "Hagelin, Andrew Mr CIV USA ASA CW" <andrew.hagelin@conus.army.mil>, "Hight, Courtney" <Courtney_Hight@ceq.eop.gov>, joellen.darcy@us.army.mil, JReich@doc.gov, "Kelly Denit" <Kelly.Denit@noaa.gov>, "Boots, Michael J." <Michael_J._Boots@ceq.eop.gov>, mlconnor@usbr.gov, Monica.medina@noaa.gov, Robert.Bonnie@osec.usda.gov, "Nuzum, Robert S." <Robert_S._Nuzum@ceq.eop.gov>, rock.salt@us.army.mil, Peter Silva/DC/USEPA/US@EPA, tanya.dobrzynski@noaa.gov, theodore.a.brown@usace.army.mil, Robert Wood/DC/USEPA/US@EPA, Laura Yoshii/R9/USEPA/US@EPA
Date: 09/18/2009 10:10 AM
Subject: Re: Bay-Delta MOU and Sept. 30th public meeting

Two things:

1. Please get me your revisions to the MOU asap. I have follow-up comments from NOAA but no one else at this point. That is fine if you have nothing further beyond the items that you brought up at our meeting this week.

2. Secretary Salazar will be inviting each of your principals to come to the September 30th meeting here at the Interior South auditorium on California water/Bay-Delta issues where hopefully we will be announcing the MOU and the general outlines of our joint plan for action on the Bay-Delta. Presentations will start at 8:00; Secretary Salazar will be there at 9:00 and announce the MOU at that time. It would be great if your respective heads could join him for at least that part of the meeting -- I would appreciate it if you passed the invitation along now since it won't be till Monday or Tuesday that we get the written invitations out. We are expecting much of the time from 9:00-10:00 at the 9/30 meeting to be taken with comments/dialogue with members of the California congressional delegation who will be present. There will be public comments/questions from approximately 10-12. If you have questions, please call or email me. Thanks a lot.
Letty

Letty Belin
Counselor to the Deputy Secretary
letty_belin@ios.doi.gov
202-208-6291

From: "Klasen, Matthew N." <Matthew_N._Klasen@ceq.eop.gov>
To: <Monica.medina@noaa.gov>, "Kelly Denit" <Kelly.Denit@noaa.gov>, <tanya.dobrzynski@noaa.gov>, <yoshii.laura@epa.gov>, <Robert.Bonnie@osec.usda.gov>, "Hagelin, Andrew Mr CIV USA ASA CW" <andrew.hagelin@conus.army.mil>, <mlconnor@usbr.gov>, <Letty_belin@ios.doi.gov>, <rock.salt@us.army.mil>, <joellen.darcy@us.army.mil>, <theodore.a.brown@usace.army.mil>, <JReich@doc.gov>, <wood.robert@epa.gov>, <silva.peter@epa.gov>
Cc: "Boots, Michael J." <Michael_J._Boots@ceq.eop.gov>, "Nuzum, Robert S." <Robert_S._Nuzum@ceq.eop.gov>, "Hight, Courtney" <Courtney_Hight@ceq.eop.gov>, "Ericsson, Sally C." <Sally_C._Ericsson@omb.eop.gov>
Date: 09/16/2009 07:07 PM

ED_000733_DD_NSF_00083184-00004

Subject: Next Bay-Delta meeting: Next Wed 9/23, 11:30-12:30 EDT

Hi everyone,

After coordinating with DOI, we'd like to schedule our next Bay-Delta meeting for next Wednesday 9/23 from 11:30-12:30 EDT. We'll be in the White House Conference Center's Eisenhower Room, which is on the second floor and is between CEQ's offices at 722 and 730 Jackson Place. I'll follow up early next week to confirm exact in-person attendees for this discussion (and gather phone numbers just in case).

For those calling in, the bridge number is 202-395-6392 and code is 504-8729.

As a reminder, please send Letty your comments on the MOU draft by COB tomorrow (Thursday). We look forward to discussing an updated draft on Wednesday.

Thanks,
Matt

Matt Klasen
White House Council on Environmental Quality
734 Jackson Place NW
Washington DC 20503
(202) 456-5116
mobile (202) 380-7290

From: Klasen, Matthew N.
Sent: Tuesday, September 15, 2009 5:06 PM
To: 'Monica.medina@noaa.gov'; 'Kelly Denit'; 'tanya.dobrzynski@noaa.gov'; 'yoshii.laura@epa.gov'; 'Robert.Bonnie@osec.usda.gov'; 'Hagelin, Andrew Mr CIV USA ASA CW'; 'mlconnor@usbr.gov'; 'Letty_belin@ios.doi.gov'; 'rock.salt@us.army.mil'; 'joellen.darcy@us.army.mil'; 'theodore.a.brown@usace.army.mil'; 'JReich@doc.gov'; 'wood.robert@epa.gov'; 'silva.peter@epa.gov'
Cc: Boots, Michael J.; Nuzum, Robert S.; Hight, Courtney
Subject: Bay-Delta follow-up: Comments to Letty by COB Thur, CA bill summaries

Hi everyone,

Thanks for joining today's meeting on Bay-Delta, and sorry for the early technical difficulties.

As a reminder, please send any additional comments to Letty by COB Thursday in preparation for developing an updated draft by next week. We'll work with DOI to find a convenient time next week to get feedback on an updated draft MOU and will get back to you shortly with a time.

Also, see attached for summaries of some of the key water bills introduced in the CA legislature, the content of which may reemerge if the legislature returns for a special session.

Please let me know if you have any questions – and looking forward to continuing the discussion next week.

Best,
Matt

Matt Klasen
White House Council on Environmental Quality
734 Jackson Place NW
Washington DC 20503
(202) 456-5116
mobile (202) 380-7290

ED_000733_DD_NSF_00083184-00006

To: "Boling, Edward A." [Edward_A._Boling@ceq.eop.gov]; aura Yoshii/R9/USEPA/US@EPA;[tanya.dobrzynski@noaa.gov]; tanya.dobrzynski@noaa.gov>[]
From: "Boots, Michael J."
Sent: Wed 9/23/2009 4:02:17 PM
Subject: Fw: 11:30 meeting today
MOUsept22dnredline.doc

From: Letty_Belin@ios.doi.gov
To: Boots, Michael J.
Sent: Wed Sep 23 09:58:16 2009
Subject: 11:30 meeting today

Hi Mike:

For our 11:30 meeting today, obviously MOU review is the main item but here is a draft agenda for you to add to:

* brief update (appropriations rider, USDA drought declaration, California legislative update, anything else?)
* reminder about coordinating our public communications/actions relating to Bay Delta (e.g., we had no idea that USDA was going to do a drought declaration)
* update on Sept. 30th meeting
* review and edit MOU

David Nawi just sent me a few more redlines, including some language on consolidation -- attached. Any problem if I send this around? Thanks.
LEtty

Letty Belin
Counselor to the Deputy Secretary
letty_belin@ios.doi.gov
202-208-6291

ED_000733_DD_NSF_00083185-00001

Draft 09/22/09 DNREDLINE

CALIFORNIA BAY-DELTA MEMORANDUM OF UNDERSTANDING AMONG FEDERAL AGENCIES

I. RECITALS

(a) The Sacramento/San Joaquin River Delta-San Francisco Bay estuary (Bay-Delta) is among the most important estuary ecosystems in the nation. The Bay-Delta is a source of drinking water for more than 22 million people; it supports a $28 billion agricultural industry; and, until recently, the Delta has supported a thriving commercial and recreational fishing industry that has contributed hundreds of millions of dollars to the California economy. The Bay-Delta is also the heart and a critical crossroads of the delivery system that transports water from Northern California to agricultural and urban water users south of the Delta.

(b) The Bay-Delta is in crisis. Decades of environmental degradation have led to severe declines in Delta fisheries. California is in the third year of drought. Both the Bay-Delta ecosystem and the economy dependent on its water and fish are on the precipice of collapse. The condition of the Bay-Delta has resulted in significant curtailments of deliveries to water users south of the Delta. Furthermore, climate change and seismic risks present additional, serious threats to the Bay-Delta environment, the levees and the Delta communities that depend on them, as well as the water supplies that travel through the Bay-Delta.

(c) Given the national significance of the Bay-Delta ecosystem and its importance to the millions of people who depend on it for water supplies and for environmental benefits, it is imperative that the federal government reestablish its leadership role in Bay-Delta matters, working in partnership with the State of California and interested stakeholders. Much has been done over the years to address problems in the Bay-Delta, and this Memorandum of Understanding (MOU) is intended to build upon and complement the collaborative work already being done by the federal government and other key stakeholders.

II. PURPOSE

(a) The purpose of this MOU is to confirm the federal commitment to work in partnership with the State of California and diverse stakeholders to exercise their full authorities and apply sound science to provide for a high quality, reliable and sustainable long-term water supply for California, and restore the environmental integrity and sustainability of the Bay-Delta ecosystem.

(b) This MOU establishes a structure for coordinating and streamlining the actions of the federal agencies with primary responsibilities and authority over key aspects of the

ED_000733_DD_NSF_00083186-00001

Bay-Delta and its tributaries to facilitate advancing the federal commitment to this critical ecosystem.

III. PARTIES

The parties to this MOU are:

(a) The United States Department of the Interior (DOI), which has jurisdiction pursuant to the Central Valley Project Improvement Act (title XXXIV of Public Law 102–575; 106 Stat. 4706), the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), and other applicable law;

(b) The United States Environmental Protection Agency (USEPA), which has jurisdiction pursuant to the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.)(Clean Water Act), the Safe Drinking Water Act (42 U.S.C. 300f et seq.), and other applicable law;

(c) The United States Department of Commerce (Commerce), which has jurisdiction pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) (ESA), the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.) and other applicable law;

(d) The United States Army Corps of Engineers (Corps), which has jurisdiction pursuant to flood control, water supply, flood risk reduction, aquatic ecosystem restoration authorities, the Clean Water Act, and other applicable law.

(e) The United States Department of Agriculture (USDA), which has jurisdiction pursuant to title XII of the Food Security Act of 1985 (16 U.S.C. 3801 et seq.), the Farm Security and Rural Investment Act of 2002 (Public Law 107–171; 116 Stat. 134) (including amendments made by that Act), and other applicable law.

(f) The Council on Environmental Quality (CEQ), which has jurisdiction pursuant to the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) and other applicable law.

IV. FEDERAL BAY-DELTA LEADERSHIP COMMITTEE

(a) The Secretary of the Interior (Secretary) and/or his designee will represent the Administration as the lead for developing and coordinating federal policy and commitments in Bay-Delta matters.

(b) The Chair of the CEQ (Chair) will work with the Secretary of the Interior in coordinating the development and implementation of federal policy and commitments in Bay-Delta matters.

ED_000733_DD_NSF_00083186-00002

(c) Coordination among the federal agencies will be facilitated through the formation of a Federal Bay-Delta Leadership Committee, which will be co-chaired by the Secretary of the Interior and the Chair of CEQ, or their designees. The Federal Bay-Delta Leadership Committee will include a single senior designee from each of the following agencies: the Department of Commerce, the U.S. Army Corps of Engineers, the Environmental Protection Agency, the Department of Agriculture, and such other agencies as the Secretary and the Chair deem necessary .

(d) The Federal Bay-Delta Leadership Committee will meet on a periodic basis to develop and coordinate federal participation in Bay-Delta matters. Activities coordinated through the Committee shall include efforts addressing drought, review of projects and operations intended to address short and medium term issues, implementation of measures developed pursuant to the ESA-related requirements, and the development of the Bay Delta Conservation Plan and other longer-term mechanisms to improve the ecological health of the Bay-Delta and address water supply and quality needs in a sustainable manner.

(e) Participating agencies shall use budget crosscut authority to the extent feasible in furtherance of the purposes of this MOU.

(f) Regional offices of the participating agencies will establish a structure that provides for the close and effective coordination of their actions and participation in matters affecting the Bay-Delta.

V. FEDERAL WORK PLAN

(a) The parties commit to develop, by December 15, 2009, a coordinated federal workplan outlining near term actions that will be taken on Bay-Delta issues. The workplan will be developed in furtherance of the purposes set forth in this MOU by the Federal Bay-Delta Leadership Committee in close coordination with the parties' regional offices having authority over the Bay-Delta region and in consultation with the State of California and other interested stakeholders. In developing the workplan, the parties will set near term goals and will review and prioritize actions to achieve those goals.

(b) This workplan may include, but is not limited to, actions on the following issues:

(i) Expanding an interagency science program to provide a common scientific basis for agency efforts and to address key uncertainties in scientific information with potential to inform management decisions in the near-term and long-term;

(ii) Identifying and expediting habitat restoration projects in the Suisun Marsh and other biologically critical sites;

(iii) Addressing water quality threats to the Delta through expedited development and implementation of a water quality monitoring and assessment program, and integrating agency regulatory efforts with such actions;

ED_000733_DD_NSF_00083186-00003

(iv) Integrating flood risk and levee stabilization efforts with water supply and species recovery;

(v) Developing and expanding projects aimed at mitigating and adapting to the effects of climate change on Delta stability;

(vi) Developing a coordinated process for undertaking regulatory actions by federal agencies in the Bay-Delta including, but not limited to, consolidation of scientific review by and the potential co-location of U.S. Fish & Wildlife Service and the National Marine Fisheries Service personnel, and a review of current agreements and regulatory activities in the Bay-Delta;

(vii) Accelerating Recovery Act and other projects in the Bay-Delta and areas affected by the Bay-Delta ecosystem and water supplies passing through the Delta; and

(viii) Encouraging conservation, recycling, and efficiencies in water use.

(c) As this workplan is developed and implementation begins, the parties and their regional offices will coordinate closely with the State of California and diverse stakeholders, and ensure that there is open and ongoing communication throughout.

VI. MISCELLANEOUS PROVISIONS

(a) Nothing in this MOU is intended to restrict the authority of any party to act as provided by law, statute or regulation.

(b) This MOU does not create any right or benefit, substantive or procedural, enforceable by law or equity, by persons who are not party to this agreement, against the parties, their officers or employees, or any other person. This MOU does not direct or apply to any person other than the parties.

(c) This MOU is to take effect upon the signature of the parties and remain in effect for a period of five years. This MOU may be extended or modified at any time upon the mutual written consent of the parties. Additionally, a party may terminate its participation in this MOU at any time by providing written notice to the other parties at least thirty days in advance of the desired termination date.

(d) As required by the Antideficiency Act, 31 U.S.C. Sections 1341 and 1342, all commitments in this MOU are subject to the availability of appropriated funds. Nothing in this MOU, in and of itself, obligates any signatory agency to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations that would be inconsistent with agency budget priorities. Any transaction involving reimbursement or contribution of funds between the parties to this MOU will be handled in accordance with applicable laws, regulations, and procedures under separate written agreements.

ED_000733_DD_NSF_00083186-00004

VI. SIGNATURES

[ ]

ED_000733_DD_NSF_00083186-00005

To: CN=Karen Schwinn/OU=R9/O=USEPA/C=US@EPA;CN=Laura Yoshii/OU=R9/O=USEPA/C=US@EPA[]; N=Laura Yoshii/OU=R9/O=USEPA/C=US@EPA[]
Cc: CN=Lynn Zipf/OU=DC/O=USEPA/C=US@EPA;CN=Gregory Peck/OU=DC/O=USEPA/C=US@EPA;CN=Tanya Code/OU=DC/O=USEPA/C=US@EPA[]; N=Gregory Peck/OU=DC/O=USEPA/C=US@EPA;CN=Tanya Code/OU=DC/O=USEPA/C=US@EPA[]; N=Tanya Code/OU=DC/O=USEPA/C=US@EPA[]
From: CN=Robert Wood/OU=DC/O=USEPA/C=US
Sent: Fri 9/25/2009 7:37:24 PM
Subject: Fw: new version of MOU
mou-092509.docx
mailto:Letty_Belin@ios.doi.gov

These changes look good to me. Less top down on the workplan process than before. OGC is reviewing and I should hear from them before the end of the day. Will keep you posted.

Rob

Acting Deputy Director
Office of Wetlands Oceans and Watersheds
Room 7130A EPA West
202-566-1822

----- Forwarded by Robert Wood/DC/USEPA/US on 09/25/2009 03:35 PM -----

From: Letty_Belin@ios.doi.gov
To: "Klasen, Matthew N." <Matthew_N._Klasen@ceq.eop.gov>
Cc: "Hagelin, Andrew Mr CIV USA ASA CW" <andrew.hagelin@conus.army.mil>, "Hight, Courtney" <Courtney_Hight@ceq.eop.gov>, "David Nawi" <david@dnmediation.com>, Eileen_Sobeck@ios.doi.gov, Roger Gorke/DC/USEPA/US@EPA, joellen.darcy@us.army.mil, JReich@doc.gov, "Kelly Denit" <Kelly.Denit@noaa.gov>, "Boots, Michael J." <Michael_J._Boots@ceq.eop.gov>, mlconnor@usbr.gov, Monica.medina@noaa.gov, Robert.Bonnie@osec.usda.gov, "Nuzum, Robert S." <Robert_S._Nuzum@ceq.eop.gov>, rock.salt@us.army.mil, "Ericsson, Sally C." <Sally_C._Ericsson@omb.eop.gov>, Peter Silva/DC/USEPA/US@EPA, tanya.dobrzynski@noaa.gov, theodore.a.brown@usace.army.mil, Robert Wood/DC/USEPA/US@EPA, wood.robert@epamial.epa.gov, Laura Yoshii/R9/USEPA/US@EPA
Date: 09/25/2009 03:20 PM
Subject: new version of MOU

sorry to be so late in sending this latest version of the MOU around.

Letty Belin
Counselor to the Deputy Secretary
letty_belin@ios.doi.gov
202-208-6291

From: "Klasen, Matthew N." <Matthew_N._Klasen@ceq.eop.gov>
To: <Letty_Belin@ios.doi.gov>, <wood.robert@epamial.epa.gov>, <gorke.roger@epamail.epa.gov>, "Hagelin, Andrew Mr CIV USA ASA CW" <andrew.hagelin@conus.army.mil>, "Hight, Courtney"

ED_000733_DD_NSF_00083195-00001

<Courtney_Hight@ceq.eop.gov>, <joellen.darcy@us.army.mil>, <JReich@doc.gov>, "Kelly Denit" <Kelly.Denit@noaa.gov>, "Boots, Michael J." <Michael_J._Boots@ceq.eop.gov>, <mlconnor@usbr.gov>, <Monica.medina@noaa.gov>, <Robert.Bonnie@osec.usda.gov>, "Nuzum, Robert S." <Robert_S._Nuzum@ceq.eop.gov>, <rock.salt@us.army.mil>, "Ericsson, Sally C." <Sally_C._Ericsson@omb.eop.gov>, <silva.peter@epa.gov>, <tanya.dobrzynski@noaa.gov>, <theodore.a.brown@usace.army.mil>, <wood.robert@epa.gov>, <yoshii.laura@epa.gov>, <Eileen_Sobeck@ios.doi.gov>
Cc: "David Nawi" <david@dnmediation.com>
Date: 09/22/2009 03:07 PM
Subject: RE: Next Bay-Delta meeting: Next Wed 9/23, 11:30-12:30 EDT -- attendee list requested

Thanks Letty, looking forward to discussing the updated draft tomorrow.

As a reminder, tomorrow's meeting will be from 11:30-12:30 EDT in the Eisenhower Room (second floor) of the White House Conference Center, located at 726 Jackson Place NW (between CEQ's townhouses on Jackson Place.) The call-in number for tomorrow is 202-395-6392 and code is 504-8729. (Hopefully we're more successful with the conference line than last time.)

Also, please send a list of in-person attendees from your agency to us by 9 am tomorrow morning so we're aware for our records.

Thanks, and let me know if you have any questions.

Best,
Matt

Matt Klasen
White House Council on Environmental Quality
734 Jackson Place NW
Washington DC 20503
(202) 456-5116
mobile (202) 380-7290

From: Letty_Belin@ios.doi.gov [mailto:Letty_Belin@ios.doi.gov]
Sent: Tuesday, September 22, 2009 12:42 PM
To: Klasen, Matthew N.; wood.robert@epamial.epa.gov; gorke.roger@epamail.epa.gov; Hagelin, Andrew Mr CIV USA ASA CW; Hight, Courtney; joellen.darcy@us.army.mil; JReich@doc.gov; Kelly Denit; Boots, Michael J.; mlconnor@usbr.gov; Monica.medina@noaa.gov; Robert.Bonnie@osec.usda.gov; Nuzum, Robert S.; rock.salt@us.army.mil; Ericsson, Sally C.; silva.peter@epa.gov; tanya.dobrzynski@noaa.gov; theodore.a.brown@usace.army.mil; wood.robert@epa.gov; yoshii.laura@epa.gov; Eileen_Sobeck@ios.doi.gov
Cc: David Nawi
Subject: Re: Next Bay-Delta meeting: Next Wed 9/23, 11:30-12:30 EDT

Hi all: I attach a new clean draft of the MOU for your review. We tried to incorporate either your comments or the concepts of the comments as best we could. We look forward to discussing this tomorrow -- sorry to be so late in sending this around. Thanks a lot,
Letty

Letty Belin
Counselor to the Deputy Secretary
letty_belin@ios.doi.gov
202-208-6291

ED_000733_DD_NSF_00083195-00003

CALIFORNIA BAY-DELTA MEMORANDUM OF UNDERSTANDING AMONG FEDERAL AGENCIES

I. RECITALS

(a) The Sacramento/San Joaquin River Delta-San Francisco Bay estuary (Bay-Delta) is among the most important estuary ecosystems in the nation. The Bay-Delta is a source of drinking water for more than 22 million people; it supports a $28 billion agricultural industry; and the Delta and its watershed have supported a thriving commercial and recreational fishing industry that has contributed hundreds of millions of dollars to the California economy. The Bay-Delta is also the heart and a critical crossroads of the delivery system that transports water from Northern California to agricultural and urban water users south of the Delta.

(b) The Bay-Delta is in crisis. Decades of environmental degradation have led to severe declines in Delta fisheries and have contributed to the collapse of the State of California's (State) salmon fishing industry. The State is in the third year of drought with the consequent decreased water supplies contributing further to the problems. Both the Bay-Delta ecosystem and the economy dependent on its water and fish are on the precipice of collapse. Furthermore, climate change and seismic risks present additional, serious threats to the Bay-Delta environment, the levees and the Delta communities that depend on them, as well as the water supplies that travel through the Bay-Delta.

(c) Given the national significance of the Bay-Delta ecosystem and its importance to the millions of people who depend on it for water supplies and for environmental benefits, it is imperative that the federal government reestablish a leadership role in Bay-Delta matters, working in partnership with the State and interested stakeholders. This Memorandum of Understanding (MOU) is intended to build upon and complement the collaborative work already being done by the federal government, the State, and other key stakeholders.

II. VISION AND PURPOSE

(a) The federal parties envision a healthy and sustainable Bay-Delta ecosystem that provides for a high-quality, reliable and sustainable long-term water supply for California, and restores the environmental integrity and sustainability of the system.

(b) This MOU confirms the commitment of the federal parties to work in partnership with the State and diverse stakeholders to use their authorities and apply sound science in achieving the purpose of the MOU.

(c) This MOU establishes a structure for coordinating and streamlining the actions of the federal agencies with primary federal responsibilities and authority over key aspects of the Bay-Delta and its tributaries to advance the federal role in this critical ecosystem.

III. PARTIES

The parties to this MOU are:

(a) The United States Department of the Interior, which has jurisdiction pursuant to the Central Valley Project Improvement Act (title XXXIV of Public Law 102–575; 106 Stat. 4706), the Fish and Wildlife Coordination Act (16 U.S.C. Section 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. Section 1531 et seq.), and other applicable law;

(b) The United States Environmental Protection Agency, which has jurisdiction pursuant to the Federal Water Pollution Control Act (33 U.S.C. Section 1251 et seq.)(Clean Water Act), the Safe Drinking Water Act (42 U.S.C. Section 300f et seq.), and other applicable law;

(c) The United States Department of Commerce, which has jurisdiction pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. Section 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. Section 1531 et seq.) (ESA), the Magnuson-Stevens Act (16 U.S.C. Section 1801 et seq.) and other applicable law;

(d) The United States Army Corps of Engineers, which has jurisdiction pursuant to flood control, and water resource development statutes, section 10 of the Rivers and Harbors Act of 1899, section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. Section 408) and section 404 of the Clean Water Act (33 U.S.C. Section 1344), and other applicable law.

(e) The United States Department of Agriculture, which has jurisdiction pursuant to title XII of the Food Security Act of 1985 (16 U.S.C. Section 3801 et seq.), the Farm Security and Rural Investment Act of 2002 (Public Law 107–171; 116 Stat. 134) (including amendments made by that Act), and other applicable law.

(f) The Council on Environmental Quality (CEQ), which has jurisdiction pursuant to the National Environmental Policy Act of 1969 (42 U.S.C. Section 4321 et seq.) and other applicable law.

IV. FEDERAL BAY-DELTA LEADERSHIP COMMITTEE

(a) The Secretary of the Interior (Secretary) and/or his designee will serve as the lead for developing and coordinating federal policy and initiatives in Bay-Delta matters.

(b) The Chair of the CEQ (Chair) will work with the Secretary of the Interior in coordinating the development and implementation of federal policy and commitments in

Bay-Delta matters.

(c) Coordination among the federal parties will be facilitated through the formation of a Federal Bay-Delta Leadership Committee, which will be co-chaired by the Secretary of the Interior and the Chair of CEQ, or their designees. The Federal Bay-Delta Leadership Committee will include a single senior designee from each of the following agencies: the Department of Commerce, the U.S. Army Corps of Engineers, the Environmental Protection Agency, the Department of Agriculture, and such other agencies as the Secretary and the Chair deem necessary.

(d) The Federal Bay-Delta Leadership Committee will meet on a regular basis to develop and coordinate federal participation in Bay-Delta matters. Activities coordinated through the Committee shall include efforts addressing drought, encouragement of land stewardship and water conservation activities, review of projects and operations intended to address short- and medium- term issues, implementation of measures developed pursuant to the ESA-related requirements, and the development of the Bay Delta Conservation Plan and other longer-term mechanisms to improve the ecological health of the Bay-Delta and address water supply and quality needs in a sustainable manner.

(e) Regional offices of the participating agencies will provide for the close and effective coordination of their actions and participation in matters affecting the Bay-Delta.

V. FEDERAL WORK PLAN

(a) By December 15, 2009, the Federal Bay-Delta Leadership Committee will develop, in consultation with the State and other interested stakeholders, a coordinated federal work plan outlining near-term federal actions that will be taken in furtherance of the purposes set forth in this MOU. In developing the work plan, the Leadership Committee, in close coordination with the parties' regional offices,s will set near-term, performance-based goals and will review and prioritize actions across agencies to achieve those goals.

(b) This work plan may include, but is not limited to, actions on the following issues:

(i) An interagency science program to provide a common scientific basis for agency efforts and to address key uncertainties in scientific information with potential to inform management decisions in the near-term and long-term;

(ii) Habitat restoration projects in the Suisun Marsh and other biologically critical sites;

(iii) Water quality threats to the Delta (through expedited development and implementation of a water quality monitoring and assessment program, and integrating agency actions with such a program);

(iv) Flood risk and levee stabilization efforts balanced with water supply and species recovery;

(v) Projects aimed at mitigating and adapting to the effects of climate change on Delta stability;

(vi) A coordinated process for undertaking regulatory actions by federal agencies in the Bay-Delta including, but not limited to, consolidation of scientific review by and the potential co-location of U.S. Fish & Wildlife Service and the National Marine Fisheries Service personnel, and a review of current agreements and regulatory activities in the Bay-Delta;

(vii) Recovery Act and other projects in the Bay-Delta and areas affected by the Bay-Delta ecosystem and water supplies passing through the Delta; and

(viii) Conservation, recycling, and efficiencies in water use, and land stewardship activities that benefit the Bay-Delta ecosystem..

(c) As this work plan is developed and implementation begins, the parties and their regional offices will coordinate the parties' actions closely with the State and diverse stakeholders, and ensure that there is open and ongoing communication throughout.

(d) This work plan will be modified as deemed necessary by the parties in order to adapt to new circumstances and events.

(e) As the Leadership Committee develops the near-term work plan, it will begin to identify and prioritize key longer-term Federal actions and resources to achieve the purpose of this MOU and incorporate such actions within a longer term plan.

VI. MISCELLANEOUS PROVISIONS

(a) This MOU is not intended to, and does not, restrict the authority of any party to act as provided by law, statute or regulation.

(b) This MOU addresses the activities of the parties, and as such does not address (and thus does not restrict) the activities and authorities of any other federal agency or office.

(c) This MOU is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity, by any person against the United States, its departments, agencies, or entities, its officers, employees, or agents, any other person.

(d) This MOU will take effect upon the signature of all of the parties, and it will remain in effect for a period of five years from the date on which it takes effect. This MOU may be extended or modified at any time upon the mutual written consent of the parties. Additionally, a party may terminate its participation in this MOU at any time by

providing written notice to the other parties at least thirty days in advance of the desired termination date.

(e) As required by the Antideficiency Act, 31 U.S.C. Sections 1341, 1342, and 1517, all activities of the parties in implementing this MOU are subject to the availability of appropriated funds. Nothing in this MOU obligates any of the parties to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations. Any transaction involving reimbursement or contribution of funds between the parties to this MOU will be handled in accordance with applicable laws, regulations, and procedures under separate written agreements.

VI. SIGNATURES

Ken Salazar
Secretary
Department of the Interior

Nancy Sutley
Chair
Council on Environmental Quality

Gary Locke
Secretary
Department of Commerce

Tom Vilsack
Secretary
Department of Agriculture

Lisa P. Jackson
Administrator
Environmental Protection Agency

Jo-Ellen Darcy
Assistant Secretary of the Army (Civil Works)
Department of the Army