UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF
ENVIRONMENTAL REVIEW
AND ASSESSMENT

May 31, 2016

Colonel Michael Brooks, Alaska District Engineer
U.S. Army Corps of Engineers – Alaska District
P.O. Box 6898
JBER, Alaska 99506-0898

Dear Colonel Brooks:

The U.S. Environmental Protection Agency has reviewed Public Notice POA-1995-120 Crooked Creek, dated November 25, 2015 (PN). The PN describes Donlin Gold, LLC's proposal to profitably produce gold from ore reserves owned by Calista Corporation 10 miles north of the middle Kuskokwim River village of Crooked Creek, Alaska. According to the PN and concurrently released Draft Environmental Impact Statement (DEIS), the proposed project would discharge over 984 million cubic yards of fill material into approximately 9,758 acres of jurisdictional waters of the United States, including into 56 linear miles of streams. An additional 1,096 acres of jurisdictional waters would be impacted by land clearing, and over 5,000 acres would experience secondary impacts due to groundwater drawdown and fugitive dust from the proposed mine components.

The proposed gold mine includes numerous components and would have a surface disturbance footprint of approximately 14 square miles. The ore would be mined from an open pit approximately 1,462 acres in size with a maximum depth of 1,850 feet. The mine pit would convert to a pit lake requiring perpetual water treatment. The proposed tailings storage facility (TSF) would be approximately 2,351 acres in size and have an associated dam with a final height of 464 feet. The proposed waste rock facility (WRF) would be approximately 2,240 acres in size. The proposed project would also include: a 315-mile long natural gas pipeline; a 30-mile long mine access road; a Kuskokwim River port facility; an airstrip; and permanent camp facilities with accommodations for up to 638 people.

Adequacy of Information for CWA Section 404(b)(1) Guidelines Compliance Evaluation

EPA has actively participated as a cooperating agency in the National Environmental Policy Act (NEPA) process to develop the EIS for the proposed mine. We have participated in agency work groups, provided comment on project documents including the wetland functional assessment report, and provided extensive comments on the Preliminary DEIS.

We believe the NEPA and permit review processes should be sequenced; and that the analysis in the EIS should inform and support the District's CWA Section 404 and River and Harbors Act permit decisions. The District's treatment of aquatic resources in the DEIS, however, creates a fundamental disconnect between its NEPA and permit analyses. The DEIS indicates that some information is insufficient to meet the District's permit review needs and will be revised later. This substantially reduces the value of the EIS for both the District as regulatory decision-maker and the public. The applicant is in the process of addressing these data gaps, and if the information had been available during the review period for the

PN and the DEIS, the cooperating agencies and the public would have been able to participate in a more meaningful review of the project, based on complete information.

The EPA believes that accurate information about the acreage of direct and secondary wetland impacts associated with the alternatives is necessary to compare alternatives in the EIS, and to help inform a determination on compliance with the CWA Section 404(b)(1) Guidelines. In particular, this information is necessary to identify the least environmentally damaging practicable alternative (LEDPA), the only alternative which may be permitted under Section 404. In spite of the importance of this information, the preliminary jurisdictional determination (PJD) for the project has not yet been approved. Furthermore, information in the DEIS indicates that the proposed project may not represent the LEDPA. For example, alternatives such as 3B, construction of a diesel pipeline, may be practicable and would reduce impacts to aquatic resources.

The District recognizes the importance of this information, and is requiring Donlin to conduct additional field work to verify the PJD acreage. Donlin intends to submit an updated PJD during the fourth quarter of 2016. Rather than wait for the updated information, however, the DEIS and PN were issued to solicit public comment with "placeholder" acreage information which may misrepresent the project impacts by as much as 40 percent. Bold text in the PN notifies reviewers that the 9,758.1 acre value is not accurate, but no indication is given that the updated information will be subject to public review.

In addition to information about the number of wetland acres potentially affected, information about the functional impacts of the different alternatives is also necessary to compare them. Here again, the DEIS and PN were released with information the District has determined is insufficient and/or inaccurate.

Chapter 3.11 of the DEIS relies heavily on the Donlin Gold Wetland Functional Assessment Report to characterize the potentially affected environment and compare the environmental consequences of project alternatives. Nonetheless, the District states: *"The Corps has determined that the Corps will complete a functional assessment for the proposed project at or after the FEIS stage or the NEPA process."* [DEIS 3.11-7] This language suggests the wetland functional assessment upon which the District's NEPA analysis relies is insufficient for its permit process. Similar to the wetland acreage, the District intends to revise the information underlying its NEPA analysis during the "permit process" at some point after "the NEPA process."

The District's proposed approach would provide no opportunity for public review or comment on the revised information. The public review process is fundamental to fully understanding the potential impacts of the project. Soliciting comments from the public on information in the DEIS and in the PN, while simultaneously disclosing that the information will be substantially revised prior to agency decision-making, appears to defeat the intent of the public review process.

The DEIS and PN also indicate that the District is deferring the evaluation of compensatory mitigation for the proposed discharges. The DEIS discloses that Donlin Gold developed a conceptual Compensatory Mitigation Plan (CMP). The CMP is included in the DEIS as Appendix M, but the information is not used to compare alternatives or evaluate impacts.

The DEIS states that: *"Specific compensatory mitigation for the proposed Donlin Gold Project would be determined by the Corps during its review of the Section 10/404 permit applications and included in the ROD and approved permit."* [DEIS 5-33]. Given the scale of the proposed aquatic resource impacts, the

EPA believes analysis of how those impacts might be offset should have been discussed and disclosed prior to or contemporaneous with the issuance of the PN.

Similarly, the PN states only that Donlin Gold has submitted a conceptual mitigation plan. It does not identify that the CMP is Appendix M of the DEIS, or directly solicit comment on the CMP. Rather, it indicates that review of the CMP, at least by the District, will not occur *"until the jurisdictional determination has been completed."* As detailed in the enclosure, information on compensatory mitigation is required for the PN and should be consistent with information in the EIS.

The impact analyses in the DEIS do not include specific thresholds to measure the significance of impacts. Neither does the DEIS explicitly evaluate whether project impacts would cause or contribute to significant degradation of the waters of the United States. The 404(b)(1) Guidelines require that specific factual determinations be made to evaluate the potential for significant degradation. In 2012, the District requested that Donlin provide information specific to the potential for significant degradation and the factual determinations. This information should be incorporated into the analyses of environmental consequences in the EIS.

In a related matter, the applicant is proposing to create a waste treatment facility (i.e., the TSF) in waters of the United States, the construction of which requires a CWA Section 404 permit. Impacts associated with the discharge of tailings to the TSF would be secondary impacts and must be considered by the District as part of the Section 404 evaluation. Potential secondary impacts include the contamination of downstream surface waters by leachate from the TSF. Any such contamination would raise water quality concerns and potential Clean Water Act compliance issues. EPA therefore requests that the District coordinate with us regarding TSF leachate, both for the purposes of determining compliance with the 404(b)(1) Guidelines, and for identifying necessary permit requirements to protect water quality.

The issues highlighted herein complicate both the evaluation of project impacts, and the demonstration of compliance with the Guidelines. The updated PJD and new functional assessment information should be released for public review and comment, and the information should be incorporated into the EIS.

The current PN states that the application "is expected to see additional changes, in ways as yet undetermined." This uncertainty creates challenges for stakeholders trying to understand the project and provide input. A revised/corrected PN should be issued to afford the public a more effective opportunity to provide substantive comments specific to the Section 404 and Sections 9 and 10 permits. We recommend that the revised PN be issued concurrent with the FEIS. The revised PN could also be issued at a later date when the application is considered final.

Aquatic Resources of National Importance

Pursuant to Part IV, paragraph 3(a) of the 1992 Clean Water Act (CWA) Section 404(q) Memorandum of Agreement between the EPA and Department of the Army, in order to continue discussion with the Corps of Engineers and resolution of our concerns with the proposed project, the EPA must identify that the project may result in substantial and unacceptable impacts to Aquatic Resources of National Importance (ARNI).

The EPA is identifying Crooked Creek, its adjacent wetlands and tributaries, American and Anaconda creeks, as aquatic resources of national importance. We are also identifying the Kuskokwim River as an aquatic resource of national importance. A majority of the project's direct and secondary impacts would occur in the Crooked Creek watershed. Development of the mine would result in the permanent loss of

thousands of acres of wetlands and tens of miles of Crooked Creek tributary streams, including American and Anaconda creeks. The WRF and TSF would bury the upper reaches of American and Anaconda creeks, respectively, while the mine pit would eliminate the lower reach of American Creek. Both creeks are anadromous and support coho salmon in their lower reaches.

Crooked Creek supports multiple populations of anadromous fish species for many miles above the confluence of American Creek. Chinook salmon are found up to the confluence, with coho salmon found upstream. Below the mine site, Crooked Creek also supports pink, sockeye, and chum salmon. Development of the mine pit, WRF, and TSF would permanently alter the existing landscape. These changes, coupled with the loss of wetland acreage and surfaces streams, would permanently alter the quality and quantity of surface flow to Crooked Creek and to the Kuskokwim River. Dewatering of the mine pit would also alter groundwater flow to Crooked Creek, with potential to capture the flow of the Creek itself.

Crooked Creek is a tributary of the Kuskokwim River. The Kuskokwim River is the second largest river in Alaska, measured both by length and discharge. Numerous Alaska native communities located along the River rely on it for domestic water, subsistence fishing, cultural uses, recreation, and transportation. The Kuskokwim River provides essential fish habitat for all five species of Pacific salmon. The River supports one of the largest subsistence fisheries in Alaska as well as a substantial commercial salmon fishery.

The scale of the proposed project is substantial, as are the potential aquatic resource impacts. Development of the mine site, including the TSF and WRF, but not including the pipeline or transportation infrastructure, would result in: the permanent loss of over five thousand acres of wetlands and over 13 miles of streams; the permanent alteration of surface and groundwater flow paths; and the permanent modification of the hydrology, chemistry, and aquatic habitat of Crooked Creek. These impacts, and those associated with other project components are discussed in greater detail in the following enclosure.

Based on our review of currently available information, the concerns articulated above and in the detailed enclosure, and pursuant to Part IV, paragraph 3(a) of the 1992 Clean Water Act Section 404(q) Memorandum of Agreement between the EPA and Department of the Army, the EPA is hereby notifying the Alaska District that the proposed discharges may result in substantial and unacceptable impacts to aquatic resources of national importance. We understand that we may provide further comments on this matter and will provide the District with any further comments by June 27, 2016.

I appreciate the attention that you and your staff have provided to this project, and Region 10 looks forward to discussing our concerns. Should you have any questions about this letter, please do not hesitate to contact me or have your staff contact Matthew LaCroix in our Alaska Operations Office at (907) 271-1480, or by email at lacroix.matthew@epa.gov.

Sincerely,

R. David Allnutt, Director
Office of Environmental Review and Assessment

Enclosure

Enclosure to EPA's Comment Letter on Public Notice POA-1995-120

The project may result in substantial and unacceptable adverse impacts. Proposed fill discharges for project components would occur in multiple watersheds from Cook Inlet (natural gas pipeline initiation) to Dutch Harbor (fuel and cargo transfer site) to the Middle Kuskokwim River (barge transport, road, and mine site). The cumulative nature of project impacts to aquatic resources in multiple watersheds is an important consideration in evaluating those impacts. The EPA is identifying the Kuskokwim River as an aquatic resource of national importance. We are also identifying Crooked Creek, along with its adjacent wetlands, and its tributaries American and Anaconda creeks, as an aquatic resource of national importance.

The Kuskokwim River is the second largest river in Alaska, measured both by length (702 miles) and discharge. The River's discharge of 67,000 cubic feet per second is approximately the same as that of the Missouri River in the continental United States. The numerous Alaska native communities located along the River rely on it for domestic water, subsistence fishing and cultural uses, recreation, and transportation. The Kuskokwim River provides essential fish habitat for all five species of Pacific salmon. The River supports one of the largest subsistence fisheries in Alaska as well as a substantial commercial salmon fishery.

The DEIS indicates the project would have the potential to interfere with travel and subsistence activities along the River. The increase in diesel and cargo barge traffic during the mine life would result in additional boat wakes, induced shoreline erosion and bed scour, impacts to fish habitat, and the potential for barge groundings and accidental spills.

The mine itself would be located near Crooked Creek, a tributary of the Kuskokwim River. A majority of the project's direct and secondary impacts would occur in the Crooked Creek watershed. Development of the mine would result in the permanent loss of thousands of acres of wetlands and 42 miles of Crooked Creek tributary streams, including American and Anaconda creeks. The waste rock facility (WRF) and tailings storage facility (TSF) would bury the upper reaches of American and Anaconda creeks, respectively, while the mine pit would eliminate the lower reach of American Creek. Both creeks are anadromous and support coho salmon in their lower reaches.

Crooked Creek itself supports multiple populations of anadromous fish species for many miles above the confluence of American Creek. Chinook salmon are found up to the confluence, with coho salmon found upstream. Below the mine site, Crooked Creek also supports pink, sockeye, and chum salmon.

Development of the mine pit, WRF, and TSF would permanently alter the contours of the landscape. These changes, coupled with the loss of wetland acreage and surface streams, would permanently alter the surface flow of water from the watershed to Crooked Creek. The

development of a freshwater reservoir in Snow Gulch would further reduce tributary flows to Crooked Creek.

Dewatering of the mine pit would also alter groundwater flow to the Creek, with potential for these changes to be permanent. Dewatering wells are proposed to be used to keep the mine pit from filling up with surface and groundwater by creating a cone of depression that would lower the water table by at least 1,500 feet near the center of the pit. This cone of depression would extend outward for several miles beyond the pit itself, extending underneath and to the western side of Crooked Creek.

The cone of depression would capture groundwater and prevent it from flowing to the Creek. Stream reaches that currently gain flow from groundwater inputs could switch to losing flow to the pit. The cone of depression would also capture surface water, draining an estimated 541 acres of wetlands within its area of influence, with the potential to capture the flow of the Creek itself.

During the four-year period of mine construction, all of the pit dewatering water would be treated and discharged back to Crooked Creek below Omega Gulch. The discharge of this water would increase flow in the Creek downstream from the mine. Once mine operations begin, however, ore processing would use virtually all of the surface and groundwater from the vicinity of the mine that currently makes its way to Crooked Creek. In fact, the DEIS states that even in years of average precipitation, the capture of surface runoff and pit dewatering *"would not be able to meet process plant water requirements."* [DEIS 2-27] The necessary additional process water would be obtained from the Snow Gulch reservoir.

A variety of scenarios were modeled to predict the possible reductions in Crooked Creek flow. The greatest modeled flow reductions occur adjacent to the mine at Year 20, when the depth and extent of the pit are at their maximum. The maximum modeled flow reductions reflect both a high hydraulic conductivity, and the maximum hydraulic gradient between the Creek and the pit at Year 20. Under these conditions, the model predicts an average flow reduction for the year of 46% and a maximum monthly flow reduction during the winter months of 100%.

The winter flow reductions could result in more than two miles of the Creek channel going completely dry, with impacts to incubating fish eggs in the gravel, as well as rearing, migration, and spawning habitat. The DEIS states that *"Under these conditions, flow reductions in the vicinity of the mine site during winter months could result in Crooked Creek freezing to the bottom between American Creek and Omega Gulch, with much of the flow restored below Crevice Creek (28 to 40 percent reductions) due to tributary inflows. Potential impacts to fish and aquatic habitat resulting from reduced flow during winter conditions are described in Section 3.13, Fish and Aquatic Resources."*[DEIS 3.5-83]

The DEIS states that the magnitude or intensity of flow reductions at this scale would be high. Under more optimistic model assumptions, flow reductions are predicted to be 15-20%. Reductions of this scale would still substantially alter the hydrograph of Crooked Creek. This

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would change the water chemistry and temperature, alter sediment transport processes and the amount and availability of instream habitat, and interfere with fish passage.

The range of stream flows would be shifted downward, with fewer high flow and overbank events. This would affect the riparian disturbance regime and floodplain connectivity, the latter of which is an important requirement for salmon. Reduced flow in the reach adjacent to the mine could result in bed aggradation and debris stranding, with concomitant degradation of fish habitat. Over time, the channel could shift from single-thread to braided, with the potential for channel avulsions.

At the end of the mine life, the de-watering pumping would cease, and the pit would be allowed to fill with groundwater and surface water. The DEIS estimates it would take more than 50 years for the pit lake to fill, during which time the pit would still intercept surface and groundwater flows that otherwise would contribute to Crooked Creek flows.

Donlin proposes to maintain the pit lake level at an elevation 10-m below that of Crooked Creek in perpetuity by withdrawing water that will be treated and discharged downstream. For this reason, the pit lake would continue to be a destination for regional groundwater flow as well as surface flow from the adjacent reaches of Crooked Creek itself.

The Corps' permitting regulations and the CWA 404(b)(1) Guidelines should provide the context for identifying relevant issues and evaluating alternatives in the EIS. The 404(b)(1) Guidelines at 40 CFR 230 establish the conditions under which the discharge of dredged or fill materials may be authorized by a Section 404 permit. The Guidelines contain four fundamental restrictions on discharge, and no Section 404 permit may be issued unless compliance with the Guidelines has been demonstrated.

A proposed discharge does not comply with the Guidelines if: 1) there is a practicable alternative to the proposed discharge that would result in less impact to the aquatic environment; 2) the proposed discharge will cause or contribute to the violation of water quality or toxic effluent standards, jeopardizes a threatened or endangered species, or impacts a marine sanctuary; 3) the proposed discharge will result in significant degradation of the aquatic ecosystem; or 4) the proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem. In addition, a proposed discharge will be considered non-compliant with the Guidelines if there is not sufficient information to make a reasonable judgment as to whether the proposed discharge will comply.

Clearly demonstrating compliance with the Guidelines is the responsibility of the applicant, but the District's administrative record must nonetheless be sufficient to support its permit decision. The EIS is a significant component of the administrative record, which we believe can and should provide sufficient information to address compliance with the 404(b)(1) Guidelines and the Corps' public interest review.

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CEQ's regulations at 40 CFR § 1505.1(e) require agency procedures to ensure that the EIS includes the full range of alternatives considered by the agency. The regulations also require the information in the EIS be considered by the agency decision maker. The Guidelines at 40 CFR § 230.10(a)(4) also speak to this issue. They state that where the Corps is the lead federal agency, its analysis of alternatives required for NEPA environmental documents will in most cases provide the information for the evaluation of alternatives under the 404(b)(1) Guidelines.

Notably, this subsection of the Guidelines also states that, on occasion, the NEPA documents *"may not have considered the alternatives in sufficient detail to respond to the requirements of these Guidelines. In the latter case, it may be necessary to supplement these NEPA documents with this additional information."*

At a minimum, the EIS should include information about the areal extent and type of aquatic resources that may be affected by project components, the functional impacts of proposed fill discharges, and how those impacts might be offset. The DEIS does not contain accurate information about aquatic resource impacts, and creates a fundamental disconnect between the NEPA and permit analyses. The District has indicated that some information in the DEIS is insufficient to meet its permit review needs and will be revised later. This substantially reduces the value of the EIS for the District as regulatory decision-maker and the public.

Accurate information about the acreage of direct and indirect impacts to aquatic resources is necessary to compare alternatives under NEPA and identify the LEDPA. The Guideline's first restriction involves the identification of practicable alternatives to the proposed discharge. Subsection 230.10(a) of the Guidelines provides that *"no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic environment."* This restriction allows only the least environmentally damaging practicable alternative (LEDPA) to be authorized.

Practicable alternatives that do not involve the discharge of fill to wetlands and other special aquatic sites are presumed to exist for activities that are not water dependent (40 CFR § 230.10(a)(3)). The WRF, TSF, natural gas pipeline, and numerous other project components are not water dependent. Information about the presence of waters of the U.S., and the degree to which various project alternatives avoid and minimize impacts to aquatic resources is critical to comparing those alternatives.

Accurate information about the wetland impacts of the various project alternatives is not yet available. The preliminary jurisdictional determination (PJD) for the Project has not been approved; and the DEIS and PN state that the amount of wetland impact has intentionally been inflated by considering all potentially affected wetland and upland mosaics to be entirely wetland.

The wetland mapping and PJD submitted with Donlin's 2014 permit application estimated discharges to 7,024 acres of jurisdictional waters. The District required Donlin to conduct additional field work to confirm the data for wetland and upland mosaics. Donlin anticipates submission of an updated PJD towards the 4th quarter of 2016.

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Rather than wait to release the DEIS and PN until the wetland impact acreage numbers were verified, the District required Donlin to revise the acreage by treating wetland and upland mosaics as 100% wetland. The result is that the wetland impact acreage disclosed in the DEIS and PN was inflated to 9,758.1 acres, a 39% increase over Donlin's original estimate.

The 9,758.1 acre value in the DEIS and PN is simply a "placeholder" which the District emphasizes does not accurately reflect the project impacts. The PN cautions the public not to consider the numbers accurate with a bold-text "Note To Reader." This "Note" states that the District was *"required to assume some areas potentially affected by the proposed project are jurisdictional Waters of the US that are not expected to be jurisdictional after further delineation work is done."*

The DEIS addresses this issue by stating that the wetland information *"would be revised during the Corps permit process."* [DEIS 3.11-4] The text in the DEIS suggests that the District considers information about the wetland impacts of the project alternatives to be meaningful for its permit process; but does not indicate whether the revised information will be subject to public review or even included in the Final EIS.

The EPA agrees that this information is needed for the District's permit decision. We also believe this information is essential to allow a reasoned choice among the alternatives under NEPA. CEQ's NEPA regulations at 40 CFR § 1502.22(a) require that information essential to a reasoned choice among alternatives be included in the EIS, unless the overall cost of obtaining it is exorbitant.

CEQ's NEPA regulations require that the information presented to the public in an EIS be as complete and accurate as possible. This issue is addressed several times within the regulations. For example, 40 CFR § 1500.1(b) states: *"NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA."* 40 CFR § 1506.5 also says: *"The agency shall independently evaluate the information submitted and shall be responsible for its accuracy."*

In this case, the District required Donlin to prepare and submit an updated PJD. We believe it would have been prudent to delay the issuance of the DEIS until the updated, more accurate wetland information was available.

As stated in the DEIS, the map polygons identified as wetland and upland mosaic ranged from more than 99% wetland to more than 99% upland. The District's assumption that all mosaics were entirely wetland had almost no effect in the first case, and a significant effect in the latter. The result is that the wetland acreage of different mosaics was inflated by different degrees.

The direct and indirect impacts to wetlands vary between alternatives. The percentage of wetlands impacted by the different alternatives which are wetland and upland mosaics, and therefore subject to over-estimation, also varies between alternatives. This means that the acreage of wetland impacts for different alternatives was biased by different degrees. The DEIS

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does not present information about the percent inflation by alternative, so there is no meaningful way to directly compare wetland impacts between alternatives.

The difference between the inflated acreage figure of 9,758.1 and the original estimate of 7,024 certainly has relevance to evaluation of the proposed action and its impacts. Revising the wetland acreages could necessitate revising the related analyses throughout the EIS document. The EIS should present the corrected acreage values, disclose the process Donlin used to verify the percent wetlands within each mosaic, and include any revised analyses. Cooperating agencies should be provided the opportunity to review and comment on the information in the EIS prior to its public release.

In a related matter, the applicant is proposing to create a waste treatment facility (i.e., the TSF) in waters of the United States, the construction of which requires a CWA Section 404 permit. Impacts associated with the discharge of tailings to the TSF would be secondary impacts and must be considered by the District as part of the Section 404 evaluation. Potential secondary impacts include the contamination of groundwater and downstream surface waters by leachate from the TSF. Any such contamination would raise water quality concerns and potential Clean Water Act compliance issues. EPA therefore requests that the District coordinate with us regarding TSF leachate, both for the purposes of determining compliance with the 404(b)(1) Guidelines, and for identifying necessary permit requirements to protect water quality.

Information about the functional impacts of the proposed fill discharges is necessary to compare alternatives under NEPA, identify the LEDPA, and evaluate the potential for significant degradation. In addition to information about the number of wetland acres potentially affected, information about the functional impacts of the different alternatives is also necessary to compare them. Information about the severity of aquatic resource impacts associated with the different alternatives is also critical to evaluating compliance with the 404(b)(1) Guidelines. Here again, the DEIS was released with information the District has determined is insufficient and/or inaccurate.

The Guidelines at 40 CFR § 230.10(c) prohibit discharges of dredged or fill material that will cause or contribute to significant degradation of the waters of the United States. The potential for significant degradation is evaluated through multiple factual determinations that assess the severity of direct, secondary, and cumulative impacts. Information about the functional losses anticipated from the proposed fill discharges is critical to these evaluations.

The DEIS indicates that the functions of wetlands within the study areas were assessed over a period of several years using a variation of a Hydrogeomorphic (HGM) rapid functional assessment method. Functional capacity indices (FCIs) for rating the functional performance and value for each of the five HGM classes were evaluated. The variables, assumptions, and calculations used to develop FCIs for each function and HGM class were described in the Donlin Gold Wetland Functional Assessment Report.

The District and cooperating agencies were aware of the assessment approach used by Donlin. The cooperating agencies reviewed and provided comments on the June 2014 Wetland Functional Assessment Report. EPA's comments provided recommendations for improving the

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assessment. We were prepared to work with the District and applicant to adopt these improvements. We appreciate the effort involved in developing the Report, and generally support the use of the approach for evaluating HGM wetland classes and functions, and the FCIs for rating the functional performance and value for each wetland class in the study areas. We recommended that the FCIs be adopted to evaluate debits and credits for compensatory mitigation for the Donlin Gold Project.

Rather than revise the existing methodology and analyses, the District decided that the wetland functional assessment work needed to be redone. However, development of the new functional assessment did not occur prior to release of the DEIS and PN.

Chapter 3.11 of the DEIS relies heavily on the Donlin Gold Wetland Functional Assessment Report to characterize the potentially affected environment and compare the environmental consequences of project alternatives. Nonetheless, it also states: *"The Corps has determined that the Corps will complete a functional assessment for the proposed project at or after the FEIS stage or the NEPA process."* [DEIS 3.11-7] In other words, the District has determined that the wetland functional assessment upon which its NEPA analysis relies is insufficient for its permit process.

No specific information is provided in the DEIS or PN about the weaknesses of the approach used by Donlin, what approach the District would use to conduct its own functional assessment, or how that approach might affect the evaluation of project impacts and comparison of alternatives. It is not clear whether the District considers information from the functional assessment report to be substantially accurate, or merely another "placeholder." Based on discussions with the District in 2014, we understand that two concerns about Donlin's approach are that it too heavily relied on air photo interpretation and did not include a sufficient set of reference sites. Remedies to these weaknesses would require at least one season of field data collection, but no information is provided on the District's plans.

The timing of the District's efforts is also unknown, other than the statement about work to revise the functional assessment occurring during their "permit process" at some point after "the NEPA process." This is similar to the proposal to update the wetland acreage information. This proposed approach would provide no opportunity for public review or comment on the District's revisions, including any revised analyses.

As discussed above, CEQ's NEPA regulations require an EIS to contain complete and accurate information, the same information that will be used by agency decision makers. We believe soliciting comments from the public on information in the DEIS and the PN, while simultaneously disclosing that the information will not be used in agency decision-making, runs counter to the purposes of NEPA and defeats the intent of the comment period.

The EPA believes information about aquatic resource function is necessary to identify the LEDPA and evaluate the potential for significant degradation under the 404(b)(1) Guidelines. We likewise consider it essential to a reasoned choice among the alternatives under NEPA. We believe it would have been prudent to revise the functional assessment prior to releasing the

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DEIS and PN. We believe the replacement functional assessment and the revised analyses should be released for public comment and the information should be included in the EIS.

An independent issue is that no functional assessment has been undertaken for the other types of potentially impacted waters that fall under Corps' jurisdiction. We recommend that the EIS include information and analyses of the loss of function from project alternatives to rivers, streams, lakes and ponds.

Our hope is that the District will work not only with the cooperating agencies, but with other interested agencies to develop a functional assessment approach that may be consistently applied to projects in the future. We recommend that this functional assessment methodology be compatible with a debit and credit calculation method to determine the requirements for compensatory mitigation.

Information about compensatory mitigation proposed to offset specific impacts is necessary to compare alternatives under NEPA and evaluate compliance with the 404(b)(1) Guidelines. CEQ's regulations at 40 CFR § 1508.20 define mitigation to include five categories of actions to address impacts. Briefly stated, these are: avoiding, minimizing, rectifying, reducing, and compensating. The regulations at 40 CFR § 1502.14(f), 1502.16(h), and 1508.25 indicate that appropriate mitigation measures should be addressed in the EIS both as part of action alternatives and in discussions of the affected environment.

CEQ provided additional guidance on the consideration of mitigation alternatives in its January 14, 2011 MEMORANDUM FOR HEADS OF FEDERAL DEPARTMENTS AND AGENCIES on the *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact*. This memorandum cites CEQ's regulations to emphasize that:

> *"When an agency prepares an EIS, it must include mitigation measures (not already included in the proposed action or alternatives) among the alternatives compared in the EIS. Each EIS must contain a section analyzing the environmental consequences of the proposed action and its alternatives, including "[m]eans to mitigate adverse environmental impacts."* [2011 Memo page 6]

Mitigation is also relevant to evaluating compliance with the 404(b)(1) Guidelines, specifically the restrictions on discharge at 40 CFR § 230.10(c) and 230.10(d). These subsections of the Guidelines prohibit discharges of dredged or fill material that will cause or contribute to significant degradation of the waters of the United States; and prohibit all discharges *"unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem."*

The Guidelines identify forty types of actions to minimize potential adverse impacts. These actions fall into three categories (versus the five under NEPA), and include measures to avoid, minimize, and compensate for impacts. Avoidance, minimization, and compensation form a "mitigation sequence" that must be followed in order to comply with the requirement to

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minimize impacts to aquatic resources. All three steps of the sequence are mandatory, and no one step may substitute for any other.

The first step in the sequence requires impacts to the aquatic ecosystem be avoided wherever practicable. As discussed above, the identification and evaluation of practicable alternatives should support identification of the LEDPA, and help demonstrate that the discharge of fill material cannot practicably be avoided.

The second step in the mitigation sequence is the minimization of adverse impacts associated with the unavoidable discharges. Minimization measures can affect where, when and how the material is discharged, the type of material, and how it is controlled or managed after discharge. The DEIS does discuss a suite of minimization measures proposed by the applicant.

The third step in the mitigation sequence is to provide compensation for unavoidable impacts that remain after avoidance and minimization. The DEIS and PN disclose that Donlin Gold developed a conceptual Compensatory Mitigation Plan (CMP). The CMP is included in the DEIS as Appendix M, but it appears that this information was not used to compare alternatives, evaluate impacts, or evaluate compliance with the Guidelines.

Compensatory mitigation is relevant to comparing the alternatives under NEPA because compensation projects are connected actions [as defined at 40 CFR § 1508.25(a)(1)] that differ by alternative and would not occur absent project approval. It may be practicable to compensate for impacts caused by some alternatives but not others, so the net impact between alternatives is affected by the compensation. Corps regulations at 33 CFR § 332 allow authorized project impacts to be offset through a variety of means and methods, so compensatory mitigation options themselves represent a subset of project alternatives.

As referenced above, 40 CFR § 1502.14(f) states that the section of an EIS describing alternatives *"shall include appropriate mitigation measures not already included in the proposed action or alternatives."* This requirement is repeated at § 1508.25(b)(3), which states that the consideration of alternatives in an EIS include *"mitigation measures (not in the proposed action)."*

The selection of compensatory mitigation actions also has a bearing on the environmental consequences. The location, timing, and type of compensation projects is relevant for the analysis of where aquatic resource function is gained and where it is lost. As also referenced above, 40 CFR § 1502.16(h) requires the section of an EIS describing environmental consequences to *"include discussions of means to mitigate adverse environmental impacts (if not fully covered under §1502.14(f))."*

In addition, some project alternatives may cause or contribute to significant degradation, which leads to a different analysis concerning compensation. Where there is potential for significant degradation, the issue is not whether the compensation can mathematically "offset" the impacts, but whether it will actually reduce the significance of those impacts such that a permit may be issued.

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Given the scale of the proposed aquatic resource impacts, analysis of how those impacts might be offset should have been discussed before issuance of the PN. We believe compensatory mitigation should have been addressed in the DEIS, that the PN should have referenced the information in the DEIS, and that public comment on compensation should have been solicited through both venues.

Instead of a robust analysis, the DEIS simply states that: *"Specific compensatory mitigation for the proposed Donlin Gold Project would be determined by the Corps during its review of the Section 10/404 permit applications and included in the ROD and approved permit."*[DEIS 5-33] The District is proposing to deal with the issue of compensatory mitigation in the same way as jurisdiction and functional assessment, i.e., after the public processes of NEPA and its permit PN have concluded. Once again, it is expressing that its NEPA document and process are disconnected from its ultimate permit decision.

The issue of compensatory mitigation is relevant to the District's Section 10/404 permit review. Per 33 CFR § 325.1(d)(7), applications for activities involving discharges of dredged or fill material must include a statement describing how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be required.

The information provided by the applicant is not just for the District's use in its role as decision-maker. The public is to be provided the opportunity to comment on the compensation proposal. The Corps regulations at 33 CFR § 332.4(b)(1) clearly state:

> *"...the public notice for the proposed activity must contain a statement explaining how impacts associated with the proposed activity are to be avoided, minimized, and compensated for. This explanation shall address...the amount, type, and location of any proposed compensatory mitigation, including any out-of-kind compensation, or indicate an intention to use an approved mitigation bank or in-lieu fee program. The level of detail provided in the public notice must be commensurate with the scope and scale of the impacts...the notice must provide enough information to enable the public to provide meaningful comment on the proposed mitigation."*

This did not occur.

The District's PN states only that Donlin Gold has submitted a conceptual mitigation plan. It does not identify that the CMP is Appendix M of the DEIS, or directly solicit comment on the CMP. Rather, it indicates that review of the CMP, at least by the District, will not occur *"until the jurisdictional determination has been completed."*

As stated above, we believe the completed jurisdictional determination should be included in the EIS. We likewise believe that the EIS should contain a robust analysis of how the project impacts will be offset.

The public should have the opportunity to comment on the actual information the District will use to evaluate the proposed discharges. As discussed above, CEQ's regulations state that an EIS should include the information that will be used by agency decision makers. The District

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has determined that the jurisdictional determination and wetland functional assessment information currently in the DEIS are insufficient for its permit review. Donlin Gold will conduct additional field work in 2016 and submit a revised PJD, while the District intends to revise the functional assessment itself. The changes to the functional assessment methodology and estimates of wetland impacts will generate substantial new information that the District intends to use for its permit decision.

The lack of complete, accurate information about aquatic resource impacts precludes an accurate evaluation of project impacts, and the demonstration of compliance with the 404(b)(1) Guidelines. As discussed above, we believe the revised information, and the analyses derived from it, should be made available to the public for comment and the information incorporated into the EIS.

We believe the new and revised information and analyses also warrant the issuance of a revised PN. A revised/corrected PN would enable the public to provide meaningful comments specific to the Section 404 and Sections 9 and 10 permits. The Corps' permitting regulations at 33 CFR § 325.3(a) require that the public notice provide *"sufficient information to give a clear understanding of the nature and magnitude of the activity to generate meaningful comment."* The regulations also include a related requirement that the Corps must *"issue a supplemental, revised, or corrected public notice ... if there is a change in the application data that would affect the public's review of the proposal."* 33 CFR § 325.2(a)(2).

We recommend that the revised PN be issued concurrently with the FEIS. This would allow the revised PN to include any changes made to the project in response to comments on the new information released for public comment. The revised PN could also be issued at a later date when the application is considered final. The current PN states that the application *"is expected to see additional changes, in ways as yet undetermined."* This uncertainty creates challenges for stakeholders trying to understand the project and provide meaningful comments.

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