To: CN=Tonya Fish/OU=R8/O=USEPA/C=US@EPA[]
Cc: []
From: CN=Tina Laidlaw/OU=MO/OU=R8/O=USEPA/C=US
Sent: Mon 6/29/2009 8:32:27 PM
Subject: Fw: Talking points for conversation with Tim
Fig_1.ppt
Fig_2.doc
Figs_3456.doc
Table_1.doc
Table_2.doc
WHY1.doc

Tina Laidlaw
USEPA Montana Office
10 West 15th Street, Suite 3200
Helena, MT 59626
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----- Forwarded by Tina Laidlaw/MO/R8/USEPA/US on 06/29/2009 02:32 PM -----

"Suplee, Mike" <msuplee@mt.gov>
06/26/2009 06:38 PM
To Tina Laidlaw/MO/R8/USEPA/US@EPA
cc
Subject Talking points for conversation with Tim

Hi Tina;

Since you and Tonya are going to be listening in anyway, here are my talking points for Tim Conner and the associated handful of figures and tables to support my points.

-Mike

Figure 1

Cause of Impairment	Cause of Impairment Group	Miles Threatened or Impaired
Alteration in Stream-Side or Littoral Vegetative Covers	Habitat Alterations	7,683.9
Sedimentation/Siltation	Sediment	6,368.4
Phosphorus, Total	Nutrients	4,590.1
Low Flow Alterations	Flow Alteration(s)	4,251.4
Physical Substrate Habitat Alterations	Habitat Alterations	3,271.3
Lead	Metals (other than Mercury)	3,027.1
Copper	Metals (other than Mercury)	2,809.8
Total Kjehldahl Nitrogen (TKN)	Nutrients	2,729.2
Temperature, Water	Temperature	2,393.1
Nitrate/Nitrite (Nitrite + Nitrate as N)	Nutrients	2,065.4
Mercury	Mercury	1,761.4
Iron	Metals (other than Mercury)	1,713.9
Nitrogen, Total	Nutrients	1,713.6
Zinc	Metals (other than Mercury)	1,582.6
Cadmium	Metals (other than Mercury)	1,517.7
Chlorophyll-A	Algal Growth	1,475.0
Arsenic	Metals (other than Mercury)	1,391.2
Other Flow Regime Alterations	Flow Alteration(s)	1,272.4
Total Dissolved Solids (TDS)	Salinity/Total Dissolved Solids/Chlorides/Sulfates	1,177.0
Solids (Suspended/Bedload)	Sediment	983.2
Salinity	Salinity/Total Dissolved Solids/Chlorides/Sulfates	766.1
Sulfates	Salinity/Total Dissolved	595.1

0011676

Figure 2

Montana Water Quality Assessment Report | WATERS | US EPA - Microsoft Internet Explorer

Address http://iaspub.epa.gov/waters10/attains_index.control?p_area=MT

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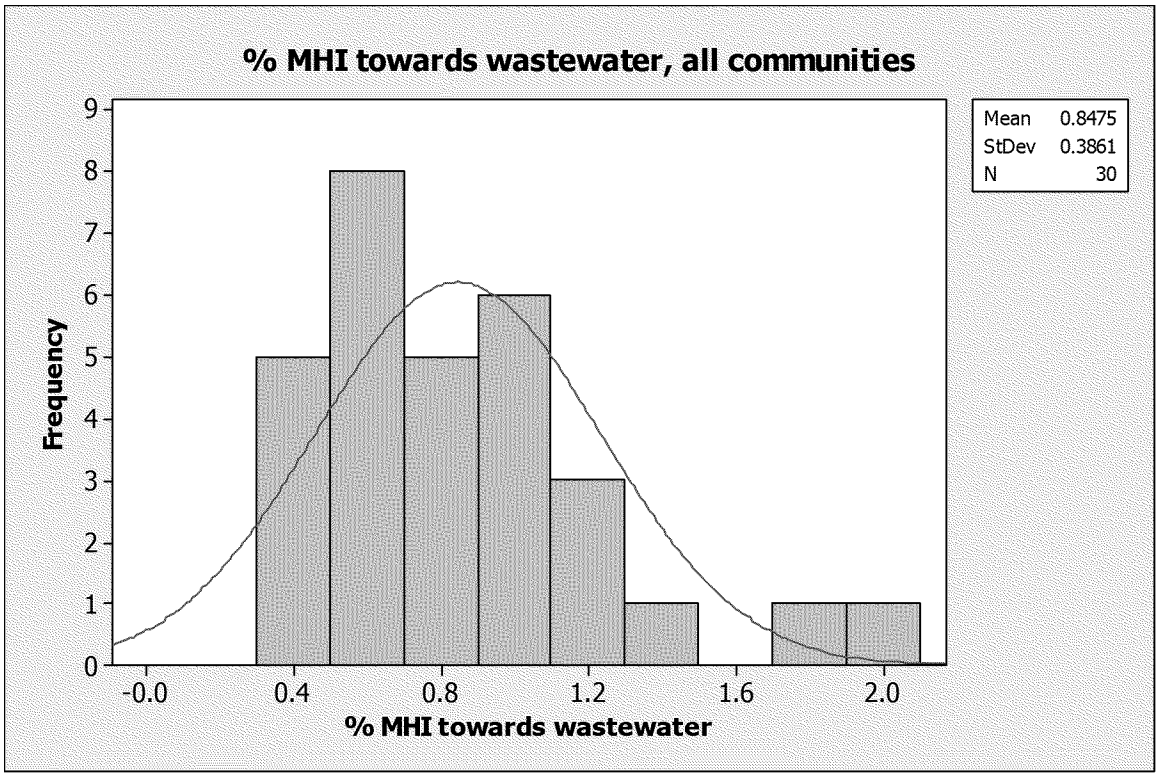
Montana Probable Sources of Impairments for Threatened and Impaired Rivers and Streams Reporting Year 2006

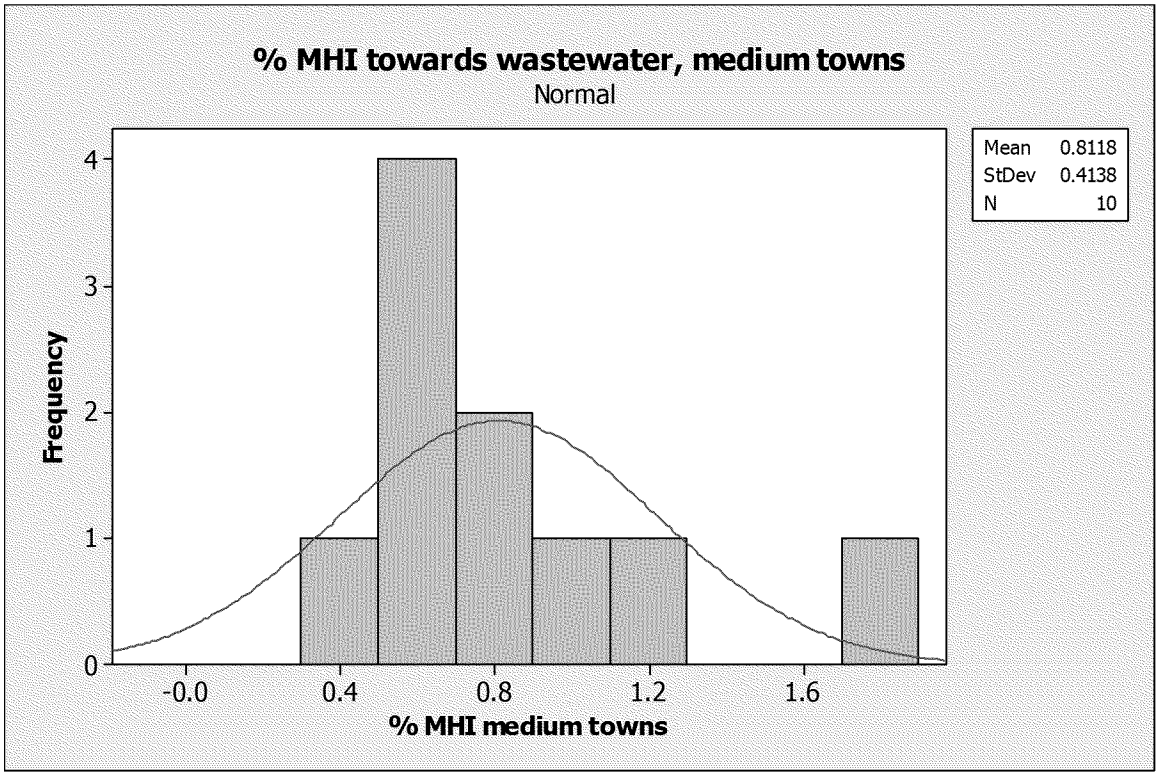
Description of this table

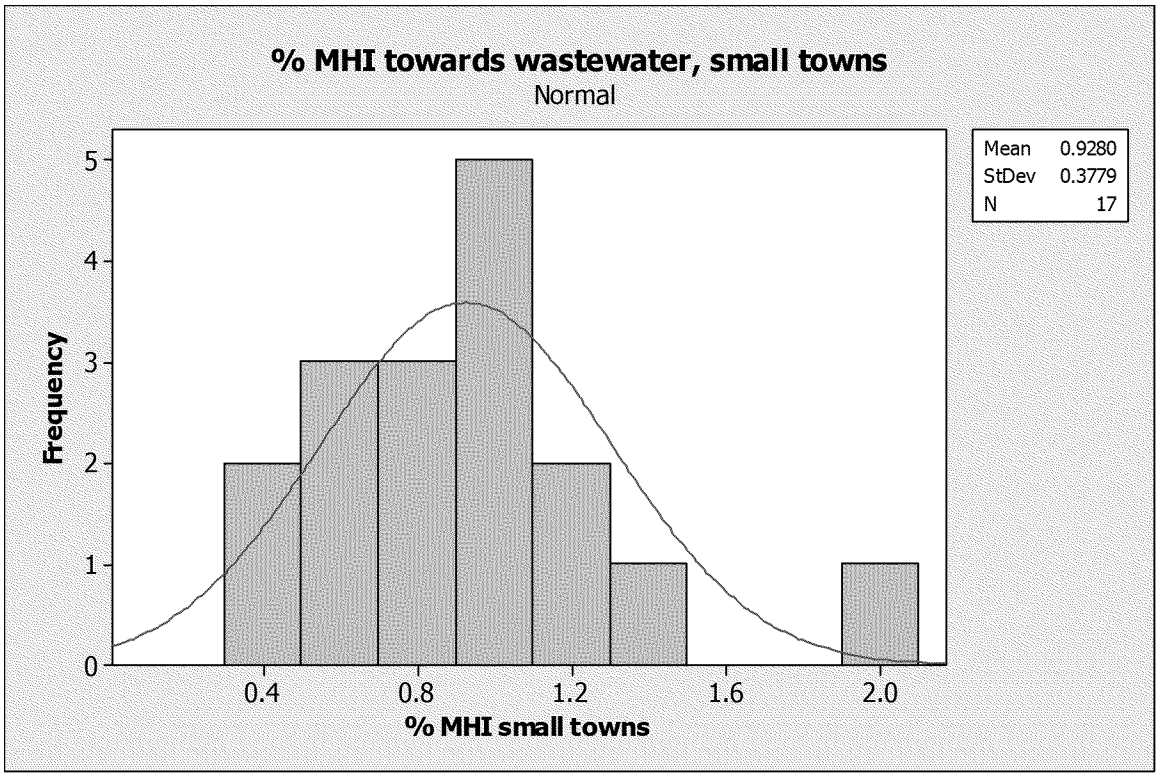
Probable Source	Probable Source Group	Miles Threatened or Impaired
Agriculture	Agriculture	5,203.6
Grazing In Riparian Or Shoreline Zones	Agriculture	5,125.0
Source Unknown	Unknown	4,017.1
Irrigated Crop Production	Agriculture	3,831.8
Natural Sources	Natural/Wildlife	3,278.5
Streambank Modifications/Destablization	Hydromodification	2,307.8
Rangeland Grazing	Agriculture	2,085.8
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	2,058.0
Impacts From Abandoned Mine Lands (Inactive)	Resource Extraction	1,867.2
Channelization	Hydromodification	1,798.8
Loss Of Riparian Habitat	Habitat Alterations (Not Directly Related To Hydromodification)	1,713.2
Flow Alterations From Water Diversions	Hydromodification	1,374.1
Dam Or Impoundment	Hydromodification	1,282.5
Highways, Roads, Bridges, Infrasturcture (New Construction)	Construction	1,049.8
Forest Roads (Road Construction And Use)	Silviculture (Forestry)	958.6
Silviculture Activities	Silviculture (Forestry)	877.8
Municipal Point Source Discharges	Municipal Dishcarges/Sewage	735.3
Highway/Road/Bridge Runoff (Non-Construction Related)	Urban-Related Runoff/Stormwater	663.4
Acid Mine Drainage	Resource Extraction	648.6
Non-Irrigated Crop Production	Agriculture	642.2
Crop Production (Crop Land Or Dry Land)	Agriculture	579.1
Dam Construction (Other Than Upstream Flood Control Projects)	Hydromodification	556.8
[illegible]	Urban-Related	[illegible]

Applet com.objectplanet.chart.PieChartApplet started

Figures 3, 4, 5, 6






% MHI towards wastewater, small towns
Normal
Mean 0.9280
StDev 0.3779
N 17
Frequency
0
1
2
3
4
5
0.4
0.8
1.2
1.6
2.0
% MHI small towns

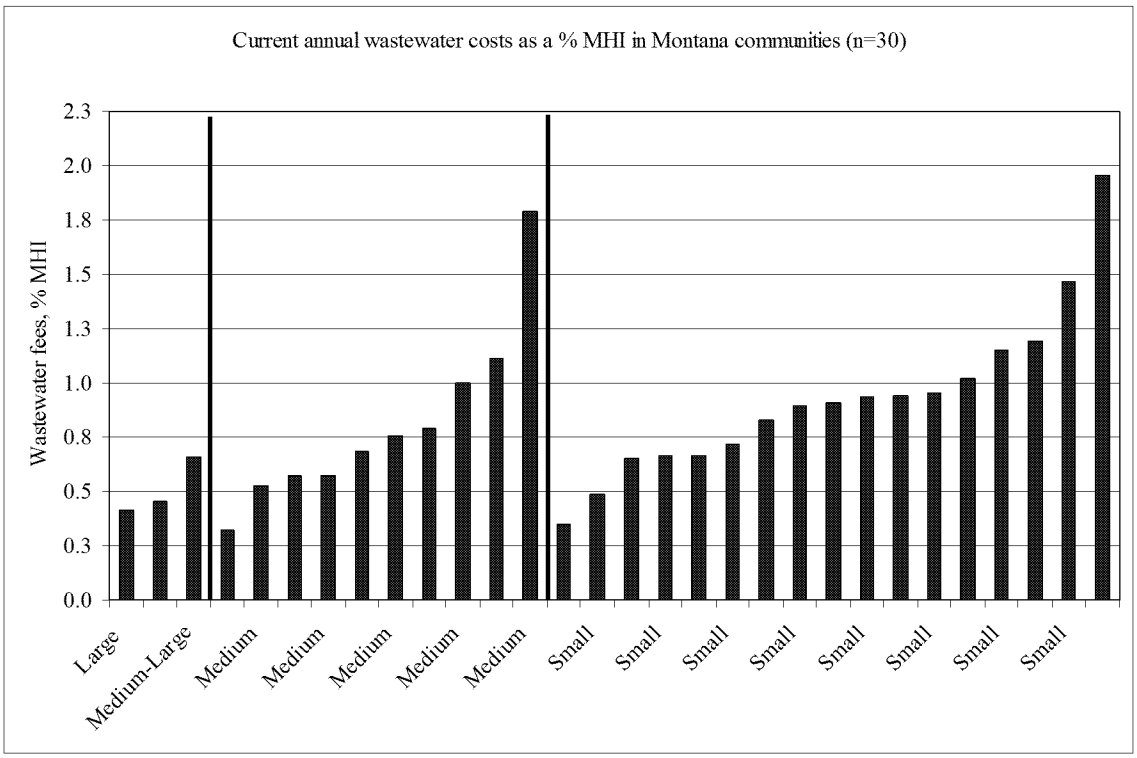

Current annual wastewater costs as a % MHI in Montana communities (n=30)
Wastewater fees, % MHI
0.0
0.3
0.5
0.8
1.0
1.3
1.5
1.8
2.0
2.3
Large
Medium-Large
Medium
Medium
Medium
Medium
Medium
Small
Small
Small
Small
Small
Small
Small
Small

Table 1. Current %MHI paid towards wastewater in Montana's 7 largest communites.

Community	Population ('08)	Current % MHI towards wastewater	Notes
Billings	91,195	?	
Great Falls	57,758	0.45	
Missoula	51,204	0.5	Approximate
Butte	34,051	0.42	
Bozeman	28,522	?	
Helena	27,982	0.52	
Kalispell	15,678	?	
Total:	306,390		
% of Montana population:	**32**		

TABLE 2

Standard Septic System	Cost per unit	Life Expectancy or Frequency in years	Annual Cost	Monthly Cost	Approximate Cost to Operate Per Month
Septic Tank and Installation (1)	$3,500.00	60	$58	$5	
Drainfield Installation	$3,500.00	20	$175	$15	
Pumpout & Filter Maintenance (every 3 yrs)	$200.00	3	$67	$6	
Electricity to pump water to move sewage from house (3)			$12	$1	
Initial installation cost	$7,000.00	**Total**	**$312**	**$26**	<<<<
This represents the estimated cost to properly operate a standard (gravity) septic system. Electricity cost is included because around 37% of water pumped from your well is used to transport sewage inside the home and to the septic tank. Wastewater recharging groundwater contains elevated nitrate.					

Standard Septic System w/Maintance District	Cost per unit	Life Expectancy or Frequency in years	Annual Cost	Monthly Cost	
Septic Tank and Installation (1)	$3,500.00	60	$58	$5	
Drainfield Installation	$3,500.00	20	$175	$15	
Pumpout & Filter Maintenance (every 3 yrs)	$200.00	3	$67	$6	
Annual Operating Permit (6)	$25.00	1	$25	$2	
Electricity to pump water to move sewage from house (3)			$12	$1	
Initial installation cost	$7,000.00	**Total**	**$337**	**$28**	<<<<
This represents the estimated cost to properly operate a standard (gravity) septic system. Electricity cost is included because around 37% of water pumped from your well is used to transport sewage inside the home and to the septic tank. Wastewater recharging groundwater contains elevated nitrate.					

Unmaintained Septic System	Cost per unit	Life Expectancy or Frequency in years	Annual Cost	Monthly Cost	
Septic Tank and Installation	$3,500.00	60	$58	$5	
Drainfield Installation	$3,500.00	10	$350	$29	
Pumpout and Filter Maintenance	$200.00	10	$20	$2	
Electricity to pump water to move sewage from house (3)			$12	$1	
Initial installation cost	$7,000.00	**Total**	**$440**	**$37**	<<<<
This represents the estimated cost to operate a standard (gravity) septic system without maintenance. Drainfield life expectancy is reduced to 10 years and one pumpout is expected when the drainfield fails. Wastewater recharging GW has elevated nitrate and possibly pathogenic organisms; sewage effluent may be exposed at ground surface.					

Level 2 Wastewater System	Cost per unit	Life Expectancy or Frequency in years	Annual Cost	Monthly Cost	
Tank/Treatment System w/Installation (2)	$15,200.00	60	$253	$21	
Drainfield Installation	$1,800.00	40	$45	$4	
Annual Contract for Maintenance (4)	$650.00	1	$650	$54	
Electricity for recirc pumps (3)			$12	$1	
Electricity to pump water to move sewage from house (3)			$12	$1	
Initial installation cost (4)	$17,000.00	**Total**	**$972**	**$81**	<<<<
This represents the estimated cost to operate a Level 2 on-site system. Drainfield life expectancy is extended due to reduced organic loading. Pumpout costs are included in annual maintenance fee. Electricity costs are increased because liquid is pumped from the tank to the filter media and again to the drainfield. Wastewater recharging GW is better than standard septic but lower than municipal.		*monthly cost during first 2 yrs while maintenance contract is covered by initial purchase price*		*$27*	
		May allow higher density development or installations where background nitrate already elevated. Drainfield area may be reduced.			

WHY 1% OF MHI IS A REASONABLE COST CAP FOR MONTANA COMMUNITIES SEEKING A VARIANCE FROM NUMERIC NUTRIENT STANDARDS

1. Montana Facts
    a. 4th largest state in U.S., by area
    b. Ranked 44th in population (967,440 –July 2008)
    c. Ranked 43rd in per-capita income (2006) ($30,790.00)
    d. Traditional Economic Base
        i. Agriculture, tourism & recreation, forest products, mining
    e. Economic Base, Recent Years
        i. Urban and suburban development
        ii. Small business

2. Distribution of Pollution in Montana
    a. Nonpoint source pollution is *THE* leading cause of surface water impairment in Montana (DEQ 2007)
        i. 90% of documented problems in streams
        ii. 70% of documented problems in lakes
    b. Nutrients (nitrogen, phosphorus) rank as the 3rd, 8th, and 10th most important pollutants in terms of miles of streams affected (Fig. 1)
    c. Agriculture, grazing, and irrigated crop production rank as the 1st, 2nd, and 4th most important causes of stream impairment (Fig. 2)

3. Permitted Municipal Systems in Montana, Current Expenditure Towards Waste Water
    a. About 100 permitted municipal facilities in the state
    b. Largest 7 communities range in size from 91,195 to 15,390 people
        i. The "big 7" communities represent 32% of the population
            1. Now paying about 0.5% of MHI for wastewater (Table 1)
        ii. Remaining communities pay varying amounts of MHI towards wastewater (Figs 3, 4, 5, 6).
        iii. About 60% of the population is not currently hooked up to a permitted municipal system (they are rural, have septic)

POINT: Montana is a large state with a small population and low per-capita income, and a largely rural-based economy. Nonpoint sources are documented to be the cause of the vast majority of the stream and lake impairment in the state, and nutrients are among the most important of the pollutants causing these impairments. Montana can clearly make its biggest nutrient pollution control gains by working to control nonpoint sources.

4. Making Municipal Treatment Too Expensive Will Work Counter to the Goal of Clean Surface Water
    a. Suburban areas growing rapidly-most currently end up using individual septic systems
    b. Although highly variable spatially, groundwater nutrients do end in streams – and in summer, when nutrients are a problem, most of the flow IS groundwater
    c. "Hooking Up" for new subdivision often comes down to cost
        i. At 1% MHI, cost to hook up is equal to or better than individual septic (Table 2)
        ii. At 2% MHI, cost to hook up will be too high - goal of getting better treatment via the WWTP will be stalled, as new subdivisions will prefer individual septic systems

5. EPA's 1995 Guidance Does Not Specify a Cost Threshold
    a. Figure 1.1., EPA (1995)
    b. EPA's Substantial & Widespread matrix (Table 2.2, EPA 1995) suggests that 1-2% is the "range of consideration" for a variance
    c. If the point of a variance to prevent hardship, then logically the cost threshold should be set much closer to the "non-hardship" end of the spectrum (1%) than to the "hardship" end of the spectrum (2%).

POINT: Montana DEQ (per Director's direction) would like to see more suburban developments hooked up to the municipal systems. Making hooking up too expensive has the potential to work counter to the goals of improved surface water quality (not to mention groundwater quality). EPA's 1995 guidance does not specify a remedy a state should implement if substantial & widespread economic impacts are demonstrated, but does suggest an MHI range where a reasonable cost cap for a variance could be identified. Montana DEQ believes that because the purpose of a variance is to prevent hardship, the cost cap should be set closer to the "non-hardship" end of the spectrum.