

Donner Summit Public Utility District

P.O. Box 610 53823 Sherritt Lane – Soda Springs California –95728
Phone (530) 426-3456 – Fax (530) 426-3460
www.dspud.com

JOINT WASTEWATER FACILITIES COMMITTEE MEETING AGENDA FRIDAY, APRIL 10, 2009 10AM

1. Introductions - All
2. Appointment of Committee Chair and Co-Chair- Committee
3. Staff Report- T. Skjelstad
4. ECO:LOGIC Participation – J. Hauser, C. Bunker
 - a. Overview of Project Development Steps
 - b. Proposed White Paper on Wastewater Treatment and Disposal Options
 - c. Determination of Project Capacity and Who Will Pay
 - d. Project Schedule
 - e. Construction Costs
5. Authorization for DSPUD General Manager to execute letter for commencement of White Paper work by ECO:LOGIC Engineering. – Committee
6. Future Agenda Items
7. Next Meeting
8. Public Participation*
9. Adjourn

* Per California Government Code section 54954.3(a)...the public shall have the opportunity to speak on a specific item of business before or during the Committee's consideration of the item.

BOARD MEMBERS: ~Cathy A. Preis, President ~Rachel Tolmachoff, Vice President ~Bob Sherwood, Secretary
~ Philip Gamick ~ Dave Oneto

DISTRICT STAFF: Thomas G. Skjelstad, General Manager ~ Jim King, Chief Plant Operator ~
Julie Bartolini, Office Manager

DSPUD Wastewater Treatment and Disposal Project

Overview of Steps in Project Development with Emphasis on Facility Planning

April 1, 2009

Engineering and Construction

1. Facility Planning
 - a. Criteria and Constraints
 - i. Population
 - ii. Flows and Loads
 - iii. Environmental Setting
 - iv. Regulatory Constraints
 - b. Alternative Development and Analysis
 - i. Development of Alternatives (Large List)
 1. Disposal Alternatives
 2. Treatment Alternatives
 - ii. Screening of Alternatives
 - iii. Detailed Alternative Analysis (Select Few, Specific Flows and Loads)
 1. Special Studies if Required
 - a. Geotechnical
 - b. Environmental
 - c. Other
 2. Process Analysis and Component Sizing
 3. Location and Layout
 4. Costs
 - a. Capital
 - b. Operation and Maintenance
 5. Nonmonetary Factors
 6. Apparent Best Alternative
 - c. Recommended Project
2. Preliminary Design
3. Design
4. Construction

The proposed White Paper is a part of the development and screening of alternatives.

Environmental Evaluation

Environmental evaluations are completed concurrently with Facility Planning. Environmental impacts are considered in the screening and detailed evaluation of alternatives. If needed to assess the viability of specific alternatives, special environmental studies may be required. Formal California Environmental Quality Act (CEQA) studies and evaluations are completed after the apparent best alternative is identified and before determination of the recommended project. It is possible that the environmental review could result in the need to reconsider alternatives in an iterative process.

Project Funding

Alternatives for project funding should be considered concurrently with Facility Planning. Before a recommended project can be approved by the District, the District will want to have a specific funding plan developed and preliminary user fees determined in order to assure project affordability and public acceptability. Final project financing must be in place before proceeding with construction.

Permitting

The NPDES permit for the District's existing direct discharge to the South Yuba River is currently being renewed. A tentative permit has been issued and comments received by the California Regional Water Quality Control Board (Regional Board). A final permit is expected in late April. This permit will establish the treatment requirements that will govern the analysis of alternatives for direct discharge into the South Yuba River.

In the Facility Planning process, various options for effluent disposal will be considered, in addition to the current seasonal direct discharge to the South Yuba River. For each option, probable regulatory requirements will be assessed as needed to evaluate the alternatives. If the apparent best alternative involves a means of disposal that is not covered in the District's adopted NPDES permit, the District will have to obtain a new permit for the proposed project.

In addition to the NPDES permit or waste discharge requirements (for land disposal) issued by the Regional Board, various other permits will be required prior to construction. These could include permits from the California Department of Fish and Game, the Corps of Engineers, Caltrans, the County, and the United States Forest Service.

Legal and Administrative Issues

Various legal and administrative issues must be addressed during the planning and design phases of project development. In particular, an agreement that defines the participation of DSPUD and SLCWD in the project must be developed and approved by both Districts. As needed, both Districts will have to secure any required financing and will have to establish new user fees.

DSPUD Wastewater Improvement / Expansion Project Proposed White Paper on Wastewater Management Options

ECO:LOGIC Engineering

April 2, 2009

Introduction

By letter dated March 17, 2009, ECO:LOGIC Engineering proposed to prepare a white paper to identify key permit issues and wastewater management alternatives that could potentially be considered by the District to come into compliance with regulatory requirements. The purpose of this document is to set forth in bullet form examples of what would be included in the white paper. This should not be considered an outline or a complete listing of the scope of the final white paper. The content of the final white paper will depend on the adopted NPDES permit, direction from the Joint Wastewater Facilities Committee, as well as on information developed during preparation of the white paper.

White Paper Content

Key Permit Issues and Implications

- Ammonia
- Nitrate
- Aluminum
- Copper
- Cyanide
- Dichlorobromomethane
- Zinc
- Title 22 Treatment
- Required Effluent Diffuser in River
- Required River Flow Gaging Station
- Unresolved Issues to be Studied and Implications for Future
 - Biostimulation
 - South Yuba River Flows and Dilution Credits
- Possible Future Permit Requirements

Wastewater Management Alternatives (Briefly Identify for Each: Key Concerns/Issues, Possible Cost Implications, Studies Needed)

- Regionalization (Pipe to TTSA)
 - Example Issues
 - Pumping and piping costs
 - Capacity availability and buy-in costs

- User fees
- Year-Round Land Containment (Huge Reservoirs and Disposal Areas)
 - Example Issues
 - The size of reservoirs and disposal areas (rough ballpark sizes to be determined) and difficulty in coming up with suitable sites.
 - Pipelines all over
 - District taking land by condemnation
 - Environmental impacts
 - Costs
- Seasonal River Discharge and Land Disposal Without Seasonal Storage
 - This is like the current practice. Will need to address all issues in the current permit, as well as possible treatment to mitigate biostimulation concerns.
 - Even though some dilution credits initially given, these may go away.
 - Example Issues
 - Probably impossible to avoid contributing to biostimulation, regardless of level of treatment
 - Treatment options, if considered would be upgraded versions of those listed below.
- Seasonal River Discharge and Land Disposal With Seasonal Storage
 - This is like the current practice, except that storage would be used to eliminate river discharge for key biostimulation periods in the spring and fall. This would eliminate the higher levels of treatment required for discharge during biostimulation periods.
 - Example issues
 - Need to determine how long storage is required
 - Large storage reservoir needed, lack of sites.
 - Handling water after storage in the fall
 - Management of the storage reservoir during the winter
 - Additional disposal area required for water stored in the spring
 - Facilities costs and environmental impacts
 - Even though some dilution credits initially given, these may go away.
 - Example Treatment Options (key issues/concerns to be indicated for each)
 - Upgrade existing IFAS
 - Convert to a Different IFAS or MBBR
 - Conventional biological nitrogen removal
 - MBR with biological nitrogen removal
 - Activated sludge coupled with physical/chemical methods to remove ammonia and/or nitrate
 - Completely avoid nitrification
 - No nitrate formed, no nitrate treatment required
 - Example issues: difficult to completely avoid nitrification, difficult to operate and consistently meet turbidity limit

- Nitrification possible
 - Easier to operate and consistently meet turbidity
 - Example issues: difficult disinfection above/below breakpoint, separate treatment for variable nitrate required
- P-Chem Methods
 - Ammonia
 - Breakpoint chlorination (example issues: huge chlorine use and chlorine facilities, safety issues, disinfection byproducts)
 - Ion exchange (example issues: facilities costs, ion exchange media regeneration and byproducts)
 - Stripping towers (example issues: air pollution, stripping tower icing, pH adjustments up and down, chemical use, scaling)
 - Nitrate
 - Ion exchange (example issues: facilities costs, ion exchange media regeneration and byproducts)
- Year-Round River Discharge
 - Example Issues
 - Extremely high treatment requirements and costs, if allowed at all
 - Probably politically unacceptable, regardless of level of treatment
 - Cannot avoid contributing to biostimulation

To: Tom Skjelstad

From: Jeff Hauser

Date: April 2, 2009

RE: Capacity and Funding for WWTP Improvements

Tom:

As we will soon be embarking on the detailed analysis of alternatives for improvement and possible expansion of the DSPUD WWTP, it is essential for DSPUD and SLCWD to determine how much capacity is to be provided. This is ultimately a question of how much growth is to be accommodated and who will pay for the capacity to accommodate that growth. Although we can do some initial development and screening of alternatives (the proposed white paper) without having a specific capacity established, the subsequent step of detailed analysis of the most desirable alternatives must be based on a specific capacity. Without first establishing a capacity, it is impossible to determine the size and cost of facilities.

We realize that this is a very difficult issue. Ideally, those people who will ultimately use the capacity should pay for the studies, design, and construction needed to make the capacity available. Unfortunately, that is unlikely to occur. Even if those people could be identified, they probably would not be willing to make major funding commitments when there are currently so many unknowns and when the capacity cannot be made available for several years. At the same time, existing users are generally unwilling to fund capacity for future growth.

One option is to prepare the facilities plan based on a moderate growth allowance. After the facilities plan is completed and there is a better understanding of possible project costs, the District could attempt to obtain funding commitments from those who would use the added capacity before proceeding with design and construction. We have recent experience on a project for another District where that approach was followed. After more than a year of trying to obtain funding commitments for the growth, the District was forced to pare down the project to one just large enough for existing users, plus a very small increment. The delay in proceeding with design and construction made it impossible to meet key compliance dates in their discharge permit.

Another approach would be to develop a facilities plan based on a very small growth increment. Then, after preliminary costs are known, if there is a higher than expected demand for capacity, including willing funding participants, the plan could be revised to a higher capacity before proceeding with design and construction. However, the funding commitments would have to be firm to avoid undesirable delay.

We respectfully request that the two Districts give these matters careful consideration and advise us as to the capacity upon which facilities planning should be based.

DSPUD WWTP Improvement / Expansion Project

Possible Schedule

As of April 3, 2009

Action	Estimated Completion Date or Range of Dates
Adoption of NPDES Permit	April 2009
Facilities Planning, Environmental, Special Studies, Financial Planning	December 2009 to December 2010 (a)
Planning, Design, and Construction of River Diffuser and Flow Gauging Station (b)	September 2010 to September 2011 (c)
Preliminary Design and Design of Main Project	December 2010 to December 2011 (a)
Construction of Main Project	November 2012 to November 2013 (a)
Required Full Compliance with Final Effluent Limitations for Parameters in Cease and Desist Order (d)	April 2014 (e)

(a) Depends on size and nature of project.

(b) If the District is to continue river discharge and dilution credits are allowed.

(c) Compliance date for the diffuser established in tentative permit is 3 years after permit adoption, which is estimated to be April 2012.

(d) Ammonia, nitrate, copper, cyanide, aldrin, alpha BHC, silver, and zinc. Note: since the new nitrate limit is not more stringent than the limit in the previous permit, the District is not protected from mandatory fines for exceeding the nitrate limit.

(e) Five years after permit adoption.

Project Cost Issues Relative to Current Economic Environment

Current Project Planning Circumstances

- Project capital cost for dependable and reliable approaches to upgrade treatment to meet expected permit standards *at existing capacity* likely to be in \$15 million to \$20 million range; annual operation and maintenance costs likely to be higher than current levels.
- Regionalization or complete land containment may be viable options but are *not* expected to offer meaningful reduction in capital costs.
- Current construction environment experiencing bid costs 20% to 30% *below* previous levels, which could mean significant savings on a \$20 million project if ready to bid now.
- Current federal and State economic stimulus funds are geared to shovel-ready infrastructure projects over next 1 to 2 years, which will likely involve many contractors in the water/wastewater field.
- While industry expectations are that the current aggressive bidding environment may last for another 6 to 12 months, or so, it cannot be forecast out further into the future due to numerous factors.
- Given understood permit mandates, the DSPUD project will take a *minimum* of 2 to 3 years to plan, achieve environmental review, develop financing, and design.
- Accelerating design and construction of minimum basic improvements, beyond perhaps the outfall diffuser and stream gauge (if the District continues river discharge and dilution credits are allowed), to capture the *current* bidding environment risks spending money on facilities that may not be necessary.

Suggested Rational Approach

- Proceed diligently with project facilities planning and only consider accelerating through design and construction *after* details of most cost effective plan of improvements are known. Based on bidding environment 2 to 3 years in future, costs might still be somewhat discounted.
- If the District is to continue river discharge and dilution credits are allowed, consider accelerating design and construction of outfall diffuser and stream gauge in the South Yuba River.

March 17, 2009

Mr. Tom Skjelstad, District Manager
Donner Summit PUD
53823 Sherritt Lane
Soda Springs, CA 95728

Re: White Paper – DSPUD Wastewater Treatment and Disposal Options

Dear Mr. Skjelstad: *Tom*

As we discussed, ECO:LOGIC proposes to prepare a technical report, or white paper, to identify key permit issues and wastewater management alternatives that could potentially be considered by the District to come into compliance with regulatory requirements. The document would present information at the conceptual level only, without quantities or costs, and would be used as a tool for the District to decide which alternatives should be evaluated in more detail as part of a subsequent facility planning effort. For each wastewater management alternative identified, key issues, concerns and/or implications would be indicated.

Permit issues identified in the white paper would be based on the latest version of the permit, currently being developed by the Regional Board, as well as consideration of possible future permitting issues. Problematic numerical effluent limitations, such as those for ammonia, nitrate, and various metals would be addressed, and associated treatment/management implications would be indicated. Additionally, areas where permitting uncertainty exists and/or studies are required and could lead to more stringent requirements in the future (such as dilution credits and biostimulation) would be discussed.

The wastewater management alternatives identified would encompass a broad range of disposal options, including:

- Export of raw sewage to TTSA for treatment and disposal (i.e., regionalization).
- Wet season river discharge and dry season land disposal (such as the current practice).
- Wet season river discharge with provisions for effluent storage at times when algae might be a problem in the South Yuba River, combined with dry season land disposal.
- Year-round containment on land.
- Year-round river discharge.

Mr. Tom Skjelstad
Donner Summit PUD
March 17, 2009
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For each of the disposal alternatives indicated, various treatment alternatives would be identified. These would range from no treatment at all (no treatment at DSPUD in the case of export to TTSA) to continued use of the existing facilities and to construction of new facilities for biological and/or physical/chemical treatment. As mentioned above, for each alternative, anticipated key issues, concerns and/or implications would be identified.

We estimate the cost to prepare the white paper to be \$15,000. We propose to bill for our services on a time and expense basis, in accordance with our Hourly Rate Fee Schedule, copy attached, with a total cost not to exceed \$15,000, unless approved in advance by the District.

For your convenience, we include a signatory block at the bottom of the letter for your execution to authorize ECO:LOGIC to commence with this work.

Please do not hesitate to call if you have any questions or wish to discuss this proposal in more detail.

Sincerely,

ECO:LOGIC ENGINEERING



Charles G. Bunker, P.E.
Principal

Tom Skjelstad, District Manager

Enclosure -- 2009 Rate Schedule

cc: Dave Price, ECO:LOGIC Engineering

