

# COUNTY OF NEVADA

NEVADA COUNTY

SANITATION DISTRICT NO. 1

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## **Cascade Shores Wastewater Treatment Plant Update**

### **Background Information**

Cascade Shores is a small, unincorporated subdivision east of Nevada City in Nevada County. The subdivision is comprised of 375 parcels and is currently about 80 percent built-out. It was determined that 104 parcels had soils that were unsuitable for individual septic systems. These were required to connect to a centralized sewer system for wastewater collection, treatment and disposal.

In 1996, the current wastewater treatment plant (WWTP) was constructed to replace the old pond system and to serve the 104 connections within Cascade Shores. Much of the wastewater collection system was also replaced at that time. Nevada County Sanitation District No. 1 operates the system on behalf of the residents of the Cascade Shores, Zone 8, Service Area. There are 80 homes, a fire station, and a local market currently connected to the system.

The Cascade Shores WWTP currently discharges treated and disinfected wastewater into Gas Canyon, a tributary to Greenhorn Creek and Rollins Reservoir. The WWTP is permitted to operate under National Pollutant Discharge Elimination System Waste Discharge Requirements Order No. 5-01-177 (Permit) adopted by the Central Valley Regional Water Quality Control Board (RWQCB) on June 14, 2001. The 2001 Permit included a compliance milestone of June 14, 2006, to comply with new effluent limitations which the existing WWTP was not designed to meet. The WWTP must also provide continuous monitoring for several constituents, as well as composite sampling of several other constituents. The RWQCB has promulgated similar discharge requirements for other Central Valley WWTP's discharging to effluent dominated water bodies. The RWQCB has also required the discharger to characterize effluent compliance with the California Toxics Rule (CTR). It is expected that the permit renewed in 2006 will contain numerical limitations for CTR pollutants detected in the effluent. Compliance with the CTR will be required by 2010.

Landslide occurring in May 2005 adjacent to the existing WWTP created a safety hazard at the plant. The District's geotechnical engineer, confirmed in a report issued in that the "instability of the cliff and potential for continued landslides and location of the WWTP, pose a significant threat of the continued ability of the WWTP to treat wastes." Therefore, it is necessary to replace and upgrade the treatment processes needed to provide wastewater services to the residents of the service area in a manner that complies with the State and Federal regulations.

### **Work Completed Since May 2005**

- Work for interim compliance measures based on the geotechnical engineering report has been completed including surface water drainage improvements, regrading of access road bench, retaining walls, installation of rock fall netting, erosion control, and removal of potentially loose rock. Contracts are in place with to provide ongoing maintenance of the interim compliance measures and construction engineering oversight and inspection of said maintenance work.

- Completed installation of culverts and erosion protection on access road to temporary pump station. Also installed a pump tank adjacent to manhole that was being used as the pump station. The new tank was plumbed with controls, duplex pumping system, autodialer alarm, and standby generator.
- Contract was awarded for directional bore of two lines for permanent replacement of temporary sewer main and pump station. Temporary sewer main and pump station were constructed immediately after the landslide last May 2005, but were not considered to be adequate for long term use. It was the intent of the District to construct a permanent sewer main during the winter of 2006 to replace the temporary main and pump station.
- The temporary sewer main and pump station; interim compliance measures, ongoing maintenance, and oversight; and directional bore permanent replacement of the temporary sewer main and pump station project costs are estimated at \$873,000. \$848,000 will be funded with insurance proceeds from the Sanitation District insurance carrier with the \$25,000 deductible provided by the Sanitation District.

### **Emergency Plan**

District prepared and submitted an emergency plan to comply with RWQCB Cleanup and Abatement Order. This plan identified what will be implemented for a number of different emergencies, including failure of interim compliance measures prior to completing the long-term measures identified in the Facilities Plan. This includes a truck parked on a rental basis at the wastewater collection system on Mountain View Drive so that hauling can be quickly implemented if needed. Other trucks would be used as needed. Some spare pipe is available at the plant site for repair, if needed, of the temporary pipeline that was installed last May 2005. Costs associated with the emergency plan, if implemented, will be funded by the District's insurance carrier.

### **Treatment Plant Improvement Project**

Cascade Shores Wastewater Treatment Plant Facilities Plan Update, as prepared by ECO:LOGIC, consulting wastewater engineer, has been completed and submitted to RWQCB and funding agencies. This Plan identifies the long-term compliance measures that need to be implemented and defines the alternatives available for replacing and upgrading the treatment facilities needed to provide compliance with State and Federal regulations. The recommended alternative is continued discharge into Gas Canyon with advanced treatment. Projected completion of the project construction will occur on August 31, 2007, with a month needed for compliance testing. A copy of this plan is located at project website [www.mynevadacounty.com/cstreatmentplant](http://www.mynevadacounty.com/cstreatmentplant).

The major portions of the proposed project include:

#### **-Interim Improvements Required in Existing Collection System and at Existing WWTP-**

- Repair of 2 collection system manholes and replacement of 3 collection system manholes
- Installation of larger soda ash tank
- Improvement of existing filter performance
- Installation of continuous chlorine, pH, and turbidity analyzers with recorders and alarms
- Automatic pH adjustment

#### **-Improvements Required for New WWTP-**

- Excavation and site grading
- Influent flow metering manhole
- Influent and effluent composite sampler
- Coarse mechanical screen
- Flow equalization basin

- Membrane bioreactor (MBR) package filtration system with fine screens and anoxic zone
- Ultraviolet (UV) disinfection system
- Sludge storage tank
- Effluent reaeration tank
- New effluent pipeline to Gas Canyon
- Building housing a small laboratory, electrical room, and chemical systems
- Pipes, valves, and fittings required to connect all treatment processes
- Electrical equipment, instrumentation, and control systems
- Demolition of existing WWTP

All of the following have been completed or are in progress:

- The Mitigated Negative Declaration for project adopted by the District Board. Additional environmental documents are being prepared to satisfy Federal funding requirements.
- Report of Waste Discharge was submitted to RWQCB for renewal of Cascade Shores Permit.
- Awarded design of the Cascade Shores Wastewater Treatment Plant Improvement Project to ECO:LOGIC.
- Completed the installation of soda ash tank improvements for better control of effluent pH adjustment during high flows. Old tank will be modified providing automatic influent pH adjustment for better process control.
- Completed repairs at two collection system manholes earlier this month to reduce infiltration and inflow into the collection system. These repairs appear to have reduced peak flow to plant by approximately 25%.
- District and ECO:LOGIC evaluated existing filters and implemented a plan to improve their performance.
- District just received tentative Cease and Desist Order (CDO) for Cascade Shores Wastewater Treatment Plant and will provide comments by February 13, 2006, prior to the March 16 and 17, 2006, RWQCB hearing on the CDO.

**Financial Planning**

The District and its consultants have been working with the County and State developing a financial plan to fund the estimated project cost and related expenses of \$3,194,000. Results of those efforts is summarized below:

\$ 9,000	Work Force Housing Reward Program Grant	Awarded
\$ 30,000	Community Development Block Tech. Assist. Grant for Planning	Awarded
\$ 55,000	Small Community Wastewater Grant for Planning	Awarded
\$ 407,000	Community Development Block Grant for Construction	Awarded
\$1,945,000	Small Community Wastewater Grant for Design & Construction	Expect Award by Feb. 06
<u>\$ 748,000</u>	Loans for Design & Construction from State Revolving Fund & California Infrastructure Bank or Insurance Settlement	Loan Applications Submitted Negotiating with Insurance
\$3,194,000		

The County has provided short-term loans to District to maintain cash flow for the project until long term financing is received. The amount of the fine from RWQCB for permit violations and the sewer spill caused by landslide will be reduced from \$574,000 down to \$496,000 with \$453,000 able to be applied against the cost of the project. The reminding fine of \$43,000 will need to be paid to RWQCB for the sewer spill. The final cost of the project will be determined based on actual construction costs and final financing. District is currently negotiating with its insurance carrier for funding the WWTP project. \$10,000 is being spent by the District for a second geotechnical opinion to strengthen the District's position in the negotiation. Final financing needs to be secured by June 2006 to start project construction in August 2006 with completion by August 2007.

Proposed sewer charge increases will be developed to submit to the Cascade Shores customers by March 2006. These increased charges will cover the local share of the new project debt service, increased operating cost of the new plant, and previous debt service incurred for the existing treatment facility. These proposed increases need to be done in accordance with Proposition 218 that requires the District provide a 45-day notice prior to a public hearing by the Sanitation District

Board to adopt the proposed rates. Proposition 218 allows the customers to protest the proposed increases. If there is majority protest, the Board cannot increase the sewer charges.

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