NOTICE OF PREPARATION

MAY 7, 2012

TO:        ALL INTERESTED PARTIES

SUBJECT:  NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR SRCSD ADVANCED WASTEWATER TREATMENT PLANT (AWTP) PROJECT

The Sacramento Regional County Sanitation District (SRCSD or District) will be the CEQA Lead Agency for preparation of an Environmental Impact Report (EIR) for the project identified below. This Notice of Preparation (NOP) has been sent to responsible and trustee agencies and involved federal agencies pursuant to Section 15082 of the CEQA Guidelines. Agencies should comment on the scope and content of the environmental information that is germane to the agencies’ statutory responsibilities in connection with the proposed project. Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice.

The project description, location, and the probable environmental effects are contained in the attached materials and may also be viewed online at: http://www.DERA.SacCounty.net and http://www.srcsd.com.

Please send your Agency’s response to this Notice to:

Maggie Kido, CEQA Project Manager
Sacramento Regional Wastewater Treatment Plant
8521 Laguna Station Road
Elk Grove, CA 95758
or via e-mail at: kidom@sacsewer.com

Your response should include the name of a contact person in your Agency.

Agencies with specific questions about the project should contact Maggie Kido, CEQA Project Manager, at (916) 875-9439 or kidom@sacsewer.com for further information.

PROJECT TITLE:

SRCSD ADVANCED WASTEWATER TREATMENT PLANT (AWTP)
CONTROL NUMBER:

2012-70044

PROJECT PROPONENT(S):

Sacramento Regional County Sanitation District
8521 Laguna Station Road
Elk Grove, CA 95758

PROJECT DESCRIPTION AND LOCATION:

Project Background

The Sacramento Regional Wastewater Treatment Plant (SRWTP) facilities are located at 8521 Laguna Station Road (Exhibit 1). The SRWTP provides wastewater treatment to the Sacramento area and surrounding cities, serving approximately 1.3 million customers. The SRWTP is owned and operated by the SRCSD, a county sanitation district created under and operating pursuant to the California Health & Safety Code. The SRWTP currently uses a secondary treatment process consisting of bar screens, primary tanks, carbonaceous oxidation (CO) tanks using pure oxygen, secondary sedimentation tanks, disinfection using gaseous chlorine and dechlorination using sulfur dioxide gas (Exhibit 2). The treated effluent discharges into the Sacramento River near the town of Freeport. The treatment process has a permitted capacity of 181 million gallons per day (MGD) average dry weather flow (ADWF). A simplified treatment process flow schematic is shown in Exhibit 3.

The Central Valley Regional Water Quality Control Board (RWQCB) adopted new waste discharge requirements for the SRWTP on December 9, 2010. These new discharge requirements are included in Order No. R5-2010-0114-01, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0077682 (as amended by Order R5-2011-0083). The new permit does not increase SRWTP capacity, and incorporates stricter discharge requirements that the existing process is not capable of meeting. The more significant effluent discharge requirements of the new permit include:

- Ammonia-N (1.8 mg/l monthly average, 2.2 mg/l daily max)
- Nitrate-N (10 mg/l monthly average)
- Turbidity (<2 NTU daily average)
- Total Coliform (2.2 MPN/100 ml, 7-day rolling median)
- Total Residual Chlorine (0.019 mg/l, 1-hour average)
- The permit also specifies Title 22 reclaimed water treatment standards or equal.
Exhibit 3 Existing Plant Configuration at SRWTP
The RWQCB implemented a maximum 10-year schedule for the SRWTP to comply with the new discharge requirement imposed by the new permit. Final compliance is required by December 2020 with an extension to complete the filters and disinfection facilities by June 2021.

The SRCSD is conducting pilot tests of different technologies in treatment trains to demonstrate their ability to comply with the new NPDES permit requirements.

Prior to initiating the pilot test project, a technology screening effort was conducted. The purpose of that effort was to narrow down technologies to be pilot tested. A result of that effort was a decision to abandon the current pure oxygen activated sludge process and use an air activated sludge process to reliably meet the new permit requirements. The technology screening also identified granular media filtration (GMF) or membrane filtration (MF), and chlorine, ultraviolet light (UV), or ozone as disinfection processes to pilot.

Pilot test systems are operational. The systems will be operated for at least 10 months and a final report recommending technologies and design criteria for full-scale implementation will be completed by April 2013.

A District-led management team comprised of District and consultant staff will prepare an AWTP facilities plan to comply with the new NPDES permit requirements. The AWTP facilities plan will describe the major elements of the AWTP and how they fit together with the existing parts of the SRWTP that will remain in service. The plan is currently in draft form and is under review by the District.

**AWTP FACILITIES**

The proposed AWTP facilities are anticipated to result in improved treated effluent water quality with no increase in treatment capacity. Approximately 200 acres will be disturbed, and a majority of the disturbance is limited to within the existing facility footprint.

**Primary Treatment**

**Existing Influent and Primary Treatment Facilities.** Influent junction structure, influent bar screens, influent pumps, grit removal system, and primary sedimentation tanks will remain in operation with no upgrades.

**Secondary Treatment (ST)**

Two secondary treatment (ST) alternatives have been prepared for consideration as shown in Table 1. Both options include the same hydraulic process volume for the BNR basins but differ in the reuse of existing CO tankage.
Table 1 – Summary Descriptions of Secondary Treatment Options

<table>
<thead>
<tr>
<th>Stage</th>
<th>Alternative ST1</th>
<th>Alternative ST2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>New Tankage</td>
<td>Reuse CO tanks 1-4</td>
</tr>
<tr>
<td>2</td>
<td>New Tankage</td>
<td>New Tankage</td>
</tr>
<tr>
<td>3</td>
<td>Reuse all CO tanks 1-13</td>
<td>New Tankage</td>
</tr>
<tr>
<td>4</td>
<td>Reuse Existing</td>
<td>Reuse Existing</td>
</tr>
</tbody>
</table>

**Alternative ST1.** The key features of Alternative ST1 are as follows:

- Construction of new return activated sludge (RAS) re-aeration tanks and with increased RAS pumping;
- Construction of new Modified Ludzack-Ettinger (MLE) biological nutrient removal (BNR) tanks and new primary effluent pump station;
- Repurpose the existing CO tanks for nitrogen polishing (post anoxic and re-aeration);
- Re-use of existing secondary clarifiers; and
- Construction of a new blower building, and new electrical building.

**Alternative ST2.** The key features of Alternative ST2 are as follows:

- Construction of new RAS re-aeration tanks and with increased RAS pumping;
- Construction of new 4-stage Bardenpho BNR tanks and new primary effluent pump station;
- Repurpose of existing CO tank for flow equalization. Pumps will be installed for returning the equalized contents during the low flow periods;
- Re-use of existing secondary clarifiers; and
- Construction of a new blower building and new electrical building.

**Common Features of the Two Alternatives**

**RAS Pump Station and RAS Re-Aeration Tanks.** Increased RAS pumping capacity is required to lift the RAS to the new RAS re-aeration tanks.

RAS from secondary clarifiers will be combined with returns from the solids storage basins (SSBs) and centrate return from the biosolids recycling facility (BRF) and aerated in two new tanks supplied with compressed air from a common aeration blower building. The tanks will be constructed adjacent to the new BNR tanks north of the existing CO tanks. The combined RAS and return flows will be equally split between the two basins, and a bypass channel will be installed to divert combined flows to the air activated sludge...
tanks. The purpose of the RAS re-aeration zone is to oxidize nitrogen-laden solids processing return streams separately from plant influent flow, and condition ammonia oxidizing bacteria prior to the BNR tanks.

**BNR Tanks.** The air activated sludge plant will provide nitrogen removal as well as carbon and solids removal; therefore, these tanks will be known as BNR tanks. An estimated 8 new BNR tanks will be constructed.

**Nitrogen Polishing Tanks.** In Alternative ST1, the existing CO Tanks will be used to provide nitrogen removal polishing. In Alternative ST2, additional tank volume will be provided in the BNR tanks. In Alternative ST1, new blowers will be installed in the existing compressor buildings to provide aeration to the oxic zones in the nitrogen polishing tanks. In Alternative ST2, slightly larger blowers will be installed to provide the additional aeration required.

**Aeration Blowers, Diffusers and Mixer Systems.** The existing oxygen generation system will be decommissioned. The oxygen storage tanks may be re-purposed for storage of liquid oxygen for the ozone generation units in the tertiary process train, if ozone is selected as the disinfection process.

New aeration blowers will be installed to provide diffused air to the aerated zones of the BNR tanks. The aeration blowers are a critical component of the BNR system and a large consumer of electrical power. These units also generate heat and can produce elevated noise levels. However, they will be housed in a well-insulated building to reduce noise levels.

Oxygen will be dissolved into wastewater using fine bubble aeration technology.

The concept of the anoxic zone is to provide favorable conditions for denitrification and the preferential growth of floc-forming bacteria in lieu of filamentous bacteria. The anoxic zones will be separated with baffle walls and will use submersible or platform type mixers (single speed) to keep solids in suspension and prevent permanent scum and foam formation on the surface.

Anoxic zones will be provided:

- Upstream of the aeration zones in each BNR tank;
- At the end of the RAS reaeration zone to reduce DO carryover into the BNR tank and start the denitrification process; and
- In the nitrogen polishing tank to further denitrify effluent. The anoxic selectors in some tanks may be a swing zone during high flows and loads or maintenance periods, during which time the anoxic selector will be operated as an aerobic zone to enable full aerobic treatment of wastewater.
**Secondary Clarification**

No capital improvements are anticipated at the secondary clarifiers.

**Filter Influent Pump Station**

A new filter influent pump station will be constructed to lift the water into the filtration complex. The pump station will be sized to match the maximum day flow projection and will not exceed the existing effluent pump station pump capacity.

**Tertiary Treatment**

These filtration processes were identified for evaluation at the AWTP. All three alternatives are being tested at the Advance Treatment Technology pilot plant and are described below.

**Alternative F1: Tertiary Membrane (MF).** MF may be required to reduce the suspended solids present in the secondary effluent to essentially zero turbidity, significantly less than the Title 22 turbidity requirements (2 NTU). Four filter batteries are planned. Each filter battery will require a building for protection of the membranes and auxiliary systems (blowers, chemical batch tanks and feed equipment). A backwash storage tank per battery will be installed and topped up with filtered effluent as required by the filter permeate pump delivery system. For the purposes of illustration, each filter battery has overall dimensions of about 120 ft x 170 ft. The total footprint for the membrane filtration system is conceptually sized at 270 ft x 370 ft.

**Alternative F2: Granular Media Filtration (GMF) (also used in Alternative 3).** Two filter batteries will be constructed. For the purposes of illustration, each filter battery has overall dimensions of 150 ft x 250 ft. Filters are designed to accommodate up to 6 feet of filter media depth + 4 inches of support gravel.

**Alternative F3: Pre-Ozonation and Granular Media Filtration (GMF).** Ozone will be generated from oxygen and both ozone and oxygen are generated on site at the point of use. Ozone will be injected into the process prior to the GMF. Three multi-pass serpentine ozone disinfection contact basins will be constructed to the south of the proposed filtration complex. Each ozone contact tank holds approximately 0.25 million gallons, and will have overall dimensions of 4 pass x 12 ft = 48 wide x 50 ft long x 15 ft deep. An ozone generation building will be required of overall dimensions 200 ft x 200 ft.

**Disinfection**

These disinfection processes were identified for evaluation at the AWTP. All three alternatives are being tested at the Advance Treatment Technology pilot plant and are described below.

**Alternative D1: Chlorine.** Chlorine is the current disinfection technology used at the SRWTP. Two multi-pass serpentine chlorine disinfection contact tanks will be constructed adjacent to the proposed filtration complex. Each chlorine contact tank holds approximately 4 million gallons, and will have overall dimensions of 4 pass x 60 ft wide x 225 ft long x 15 ft deep. These tanks
may be reduced in size if the existing outfall conduits can be used for contract time. The existing chlorine rail car system will be maintained, but new chlorine injectors and chlorine solution pumps will be installed.

**Alternative D2: Ozone.** Ozone is a strong oxidant that is formed by an electrical discharge occurring in an oxygen-rich gas to form an unstable gas. Three multi-pass serpentine ozone disinfection contact basins (DCB) will be constructed adjacent to the south of the proposed filtration complex. Each ozone contact tank will have overall dimensions of 4 pass x 20 ft =80 wide x 60 ft long x 15 ft deep. An ozone generation building will be required of overall dimensions 200 ft x 200 ft. (Note: If ozone is selected for both pre-filtration and disinfection, the building size will be approximately 250 x 250 ft.)

**Alternative D3: Ultraviolet Light (UV).** UV irradiation is a widely used disinfection method that is used at several wastewater facilities. As a physical process, UV forms minimal disinfection by-products compared to chemical disinfectants. Two configurations of UV disinfection may be considered: Open Channel Systems and UV Reactor systems. For the purposes of the Facility Plan disinfection alternative, the conceptual design will be based on the open channel system. The overall footprint of the UV system is 125 ft x 350 ft. In addition, a large electrical building of 100 ft x 200 ft will be required to supply switchgear and electrical equipment.

**Effluent Observation Structure (EOS)**

At the southeast corner of the secondary clarifiers, two channels reduce in width and combine so that two conduits enter the Effluent Observation Structure (EOS). There are open sections of each channel from which an Operator may physically observe the final effluent. The EOS also performs a variety of other functions:

- Supply of secondary effluent prior to chlorination to other processes both on and off site.
- Disinfection by chlorination.
- After chlorination, sampling equipment located at the EOS monitors the final effluent before dechlorination and discharge.

The existing effluent disinfection technology may be repurposed or removed from service if an alternative disinfection method is selected. Provisions for the use of secondary effluent for on- and off-site needs will be retained in the new facilities.

**Secondary Effluent Pump Station**

The existing effluent pump station is adequate for the present needs and will not be upgraded except for improved control.

**Water Reclamation Facility**

No capital improvements are anticipated at the water reclamation facility.
Emergency Storage Basins (ESBs)

The effluent discharge system can be diverted into five existing Emergency Storage Basins (ESBs) for several operational conditions: peak wet weather storage for flow equalization; low river flows or effluent quality prevents sending treated wastewater to the river; or (3) whenever plant maintenance has a need. This may require an increase in the basin volume and additional basin lining.

Outfall Facility

No capital improvements are anticipated to the outfall equipment, unless the preferred disinfection technology makes the existing dechlorination equipment obsolete and subject to being decommissioned. In addition, the final effluent sampling location may be relocated from the outfall facility to immediately downstream of the new disinfection technology.

Solids Stream Treatment Facilities

The treatment volumes of biosolids for the upgraded facility will be calculated during the facility planning process, but volume changes are anticipated to be minor. Therefore, no expansion in capacity or other major capital improvements to the solids stream equipment are anticipated. However, the supernatant return flows from the SSBs will be controlled to limit the recycle of nitrogen to the influent during wet weather events.

Support Facilities

Substation and other support facilities may be upgraded or expanded to provide additional power to support the AWTP. Paved and unpaved interior roadways will be upgraded to provide improved circulation for use by SRWTP operations and maintenance staff and for construction traffic.

In order to attenuate noise associated with the AWTP, aeration basin blowers will be contained within a building and all ventilation openings for air intake and exhaust will be baffled to reduce exterior noise generation.

There will be an increase of employees to staff the upgraded plant. The number of employees will gradually increase as new operators, maintenance workers, electricians and other support staff are hired and new plant equipment commissioned and handed over for operations control.

A general layout that shows the location of major construction and potential contractor laydown areas is provided in Exhibit 4.

Project Phasing

Construction on the upgrade of the treatment facility is anticipated to begin in early 2015 and conclude in late 2020. The proposed project does not include phasing. A preliminary schedule has been provided in Exhibit 5. This schedule is being further refined and may include different durations in the future.
**ENVIRONMENTAL/LAND USE SETTING**

The existing SRWTP facilities occupy about 900 acres and are located near the center of an approximate 3,500-acre site owned by the District. The remaining 2,600 acres comprise open space land and provide a buffer zone (referred to as the Bufferlands) between the facilities and surrounding land uses. Nearby land uses include residential development to the north, east and south, industrial development to the south, and Interstate 5 and the Sacramento River to the west. A 1,000-foot-wide restricted development area is located to the south of the plant and provides buffering benefits as the Bufferlands. The nearest residential development is located approximately 4,000 feet east of plant facilities and borders the property on Franklin Boulevard.

**PROBABLE ENVIRONMENTAL EFFECTS/EIR FOCUS**

The EIR for the proposed Project is a project EIR as defined by State CEQA Guidelines. To the degree possible, this EIR is intended to be used for consideration of construction and operation of all necessary project elements within the project description.

Review of the draft Project description, including treatment alternatives, and the environmental resources in the study area has resulted in the identification of probable environmental effects which will be addressed in detail in the Draft EIR. The EIR will be full scope, and will consider a full range of issues. Among the topics to be evaluated for potential adverse environmental effects are:

- Surface water hydrology and flooding;
- Surface and groundwater quality;
- Aquatic resources, including fish;
- Terrestrial vegetation and wildlife;
- Land use and growth inducement;
- Aesthetics;
- Cultural resources;
- Geology, soils and seismicity;
- Air quality;
- Noise;
- Hazardous materials and Public health;
- Traffic and circulation; and
- Public services and facilities.
Exhibit 4 General Location of Major Construction Activity, and Potential Areas for Contractor Laydown/Parking
Exhibit 5 Current Schedule for Planning, Design and Construction Efforts