

SACRAMENTO WATER RECYCLING COALITION

Stakeholder Meeting No. 7 (Revised)

October 25, 2011 from 9-11 am

Location: 10060 Goethe Road, Sacramento CA 95827 Sunset Maple Room

Coffee and light refreshments will be provided

Agenda Items	Time
I. Introductions & Purpose of Today's Meeting (Goals and Objectives)	5 min
II. Review of last stakeholder meeting <ul style="list-style-type: none">• Review highlights from last meeting, and provide update for topics on "wish list"	5 min
III. Guest Speaker Presentation – Lodi Recycled Water Program Mike Schafer	20 min
IV. Guest Speaker Presentation – SRWTP NPDES Pilot Project Kurt Ohlinger	20 min
V. South County Agriculture Update	10 min
VI. SRCSD Water Recycling Program <ul style="list-style-type: none">• Update on political support• Funding and New Projects / Partners	15 min
VII. SRCSD Water Asset Management Vision http://srcsd.com/swrc-info.php	5 min
VIII. Statement of Principles Document	5 min
IX. Review Website for the Sacramento Water Recycling Coalition	5 min
X. Other Stakeholder Items of Interest	5 min
XI. Discuss Future Meeting Agenda Topics, Next Steps, Action Items	5 min

SACRAMENTO WATER RECYCLING COALITION

Water Recycling Stakeholder Meeting No. 6 May 4, 2011 from 9-11 am

Agenda Items	Time
I. Introductions & Purpose of Today's Meeting (Goals and Objectives)	5 min
II. Review of Last Stakeholder Meeting	10 min
III. Discuss Use of Letter of Support and Finalize the Statement of Principles	15 min
IV. SRCSD Water Recycling Program Progress	20 min
V. Review Website for the Sacramento Water Recycling Coalition	15 min
VI. Guest Speaker – Presentation from Central Valley Salinity Alternatives for Long-Term Sustainability (CV-Salts) by Linda Dorn, SRCSD	30 min
VII. State Water Resources Control Board – Municipal Wastewater Recycling Survey Results	15 min
VIII. Next Steps and Action Items	10 min

Items Suggested from Previous Stakeholder Meetings for Discussion at Future Meetings:

Contaminants & Water Quality Issues

- ~~What is secondary effluent? Provide assessments provided CA Title 22 definition~~
- ~~Crops grown may be an issue, like rice. Need ecotoxicologist review provided CA Title 22 list of designated uses for crops~~
- ~~Illegal to use recycled water on human food products. Is tertiary effluent ok for some food crops? Get details provided CA Title 22 list of designated uses for crops~~
- ~~Coordinate with Santa Rosa to get data for next meeting? Dan Carlson presented~~
- ~~Get information from southern California about what type of treated water is used (Great information can be found on the following websites:)~~
http://www.lacsd.org/info/water_reuse/default.asp
http://www.sdcounty.ca.gov/deh/water/lu_recycled_water.html
- Provide education from recycled water recipients of water with similar water quality (Santa Rosa, dairies and vineyards irrigated with tertiary water) **Today – Lodi Recycled Water Program**
- Investigate difficulties with (~~secondary~~ N/A) and tertiary irrigated food products / Ag / irrigation issues.
- Investigate marketability of crops that use recycled water, especially bacteria, metals, pharmaceuticals
- Biosolids use and future crop growth. Requirements on recycled water land use.
- Recycled water impacts to Swanson's Hawk – specifically related to using secondary effluent and use of recycled water on lands dedicated to Hawks
- Identify constituents of recycled water that would be a soil buildup problem

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- Untreated surface water agriculture diversions – compare these to secondary and tertiary treated water
- Are there impacts to groundwater?

Costs / Energy Savings

- ~~Tertiary costs vs secondary effluent costs~~ N/A
- ~~Get information from southern California on costs of treated water used there~~ (*Great information can be found on the following websites:*)
http://www.lacsd.org/info/water_reuse/default.asp
http://www.sdcountry.ca.gov/deh/water/lu_recycled_water.html
- ~~What types of compounds are monitored for contaminants of emerging concern in recycled water?~~ (*See handout for groundwater recharge and landscape irrigation from Meeting No. 5*)
- Is there energy savings from recycled water for i.e. Gravity flow versus pumping? Discussed that water has to be pumped but there is a green house gas benefit
- Is there Asset-Revenue recovery for costs
- Are there costs to the users for “receiving” recycled water?
- Find out what funding entities want or are looking for on-going efforts
- Address issues before we focus on funding

General Information Requested by Stakeholders

- ~~Would SRCSD split water recycling with part tertiary and part secondary?~~ *Maybe, would need to construct separate distribution pipelines.*
- ~~Cosumnes River – RD 800 or RD 200 jurisdiction?~~ *Reclamation District 800, Sacramento County (Cosumnes)* <http://www.saclafco.org/ServiceProviders/Maps/default.htm> (Click on Flood Control/Reclamation District)
- ~~How much water can be recycled (how much must be returned to the river)?~~ *100% can be recycled – 0% can be returned to the river. The amount varies based on type(s) of end users.*
- ~~Would increasing recycled water impact other SRWTP NPDES requirements?~~ *No, not under new NPDES permit.*
- Agriculture concerns with how water will affect their liability or regulatory requirements to land owners
- Conservation easements – do these require no degradation of water quality?
- What are market limitations of recycled water
- Landowner concerns or restrictions
- Public / Market acceptance

Other Discussion Points, Suggestions or Information

- ~~Sacramento Regional could send project brochure out early without endorsements~~ (*discussing today*)
- ~~Could use Sacramento River for conveyance “pipe”~~ (*feasibility study – see Meeting No. 5 Agenda Item IV*)
- **Discuss other regional projects besides So. Co. Ag, like SMUD’s Co-Gen, etc. Today**

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- Discuss how SRCSD is re-evaluating our recycling opportunities and costs. Today – Feasibility Study.
- Opportunities may exist at Stone Lakes – explore this. Actively exploring this through meetings/presentations with Stone Lakes and USBR.
- Future contacts: ~~Dept of Fish and Game~~, USFWS, Endangered Species Coalition, Sacramento/Amador WQ Coalition, USGS, RD800, ~~Stone Lakes Refuge~~, ~~Sacramento Central Groundwater Authority~~, UC Davis (Research and Studies), Health Advocacy Groups, Physicians for Social Responsibility Sacramento Chapter, Health Advocacy Groups, NOAA, National Marine Fishery Service, ~~USBR~~ (ie Water for America), Ca Dept of Conservation. Explore what level of benefit needs to be provided
- Start somewhere with small demonstration project OR start with 5-mile pipeline vs 10mi
- Elk Grove LOI goes to Eschinger Rd
- Could evaluate areas of existing recycled water use from SRCSD to Elk Grove
- Create a comfortable working level of commitment
- Need a regional coalition to be successful
- Go through this meeting's information with South County farmers. There is more northern grazing land to look at. Need to have a broad group meeting with farmers
- The Mayor has a Regional Green Initiative – is the County participating? Mayor is promoting as a regional program.
- Jude Lamare will draft a MOU and contact mayor's group. Terrie and Lysa will help with MOU.
- City of Folsom – where/when is our source of recycled water? (Separate future meeting with SRCSD & City of Folsom) Folsom is putting in WR infrastructure to meet “20-20” requirement.
- Discuss Delta Shores use of recycled water
- Discuss the So Co Ag project's distribution to end users and system operation responsibilities (note: green bullets from the May 4, 2011 Stakeholder meeting)

White Slough Water Pollution Control Facility

Since 1923, the City of Lodi has been providing wastewater collection and treatment services to the community. The cornerstone of the City's program, the White Slough Water Pollution Control Facility (White Slough) was originally constructed in 1966. This facility replaced one of the oldest secondary treatment facilities in the Western United States. White Slough provides the City of Lodi with a means to achieve water quality standards required for the protection of the environmentally sensitive Sacramento-San Joaquin Delta.

Through the years, White Slough has been expanded and improved to meet the increasingly stringent environmental protection standards in an economically sound manner. The most recent project, completed in 1992, expanded White Slough to a capacity of 8.5 million gallons per day.



RECYCLING AND REUSE

Adjacent to this facility, the City owns in excess of 1000 acres of land and leases over 900 acres to local farmers for the cultivation and harvesting of feed and fodder crops not intended for human consumption.. The facility has the flexibility to irrigate with domestic flow and cannery process water. In recent years, the City has also supplied recycled water to produce steam for a 49-megawatt power generator, and to replenish mosquito fish-rearing ponds. If a process upset should occur, the domestic flow can be stored in holding ponds and further treated before discharging water to the Delta.



The City utilizes a process called anaerobic digestion to convert the solids removed from the wastewater into a useful byproduct known as biosolids. This material meets federal regulations for safe use.

White Slough Water Pollution Control Facility
http://www.lodi.gov/public_works/body_white_slough_waterpollution_cont.htm
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Sacramento Regional County
Sanitation District

NPDES Permit-Required Advanced Treatment Technology Pilot Project (ATTP)

October 25, 2011

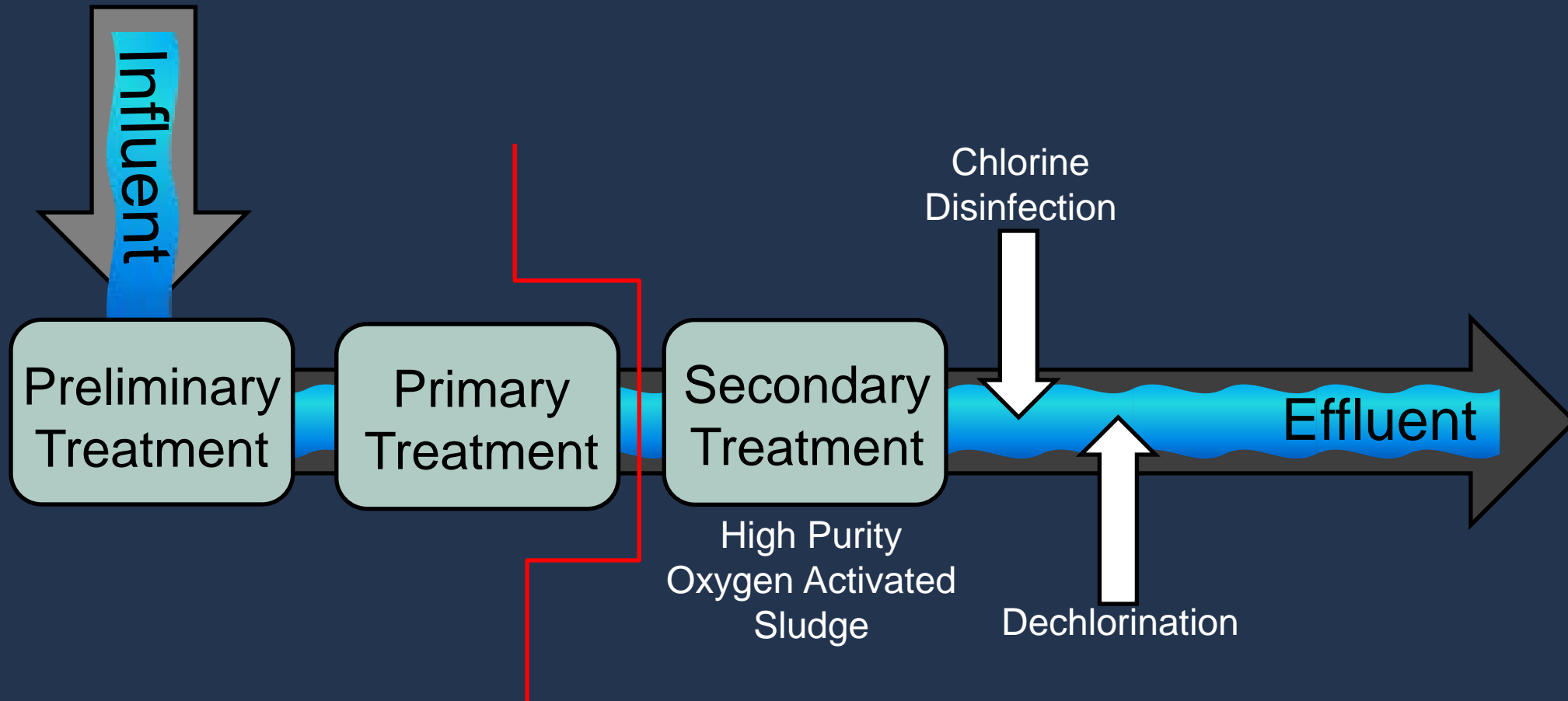
NPDES Permit Treatment Requirements



- NPDES Permit issued on December 9, 2010
- New Treatment Processes:
 - Nitrification
 - Denitrification
 - Filtration
 - Disinfection
- Estimated \$2 billion in construction costs & \$77 million in annual O & M.

Treatment Technology Screening

Current Process



Treatment Technology Screening

Objectives



Identify treatment technologies to meet new and potential future permit requirements in the most cost effective manner. Considerations include:

- Demonstrated performance and reliability
- Constructability
- Life cycle cost
- Ease of operation

Treatment Technology Screening Approach



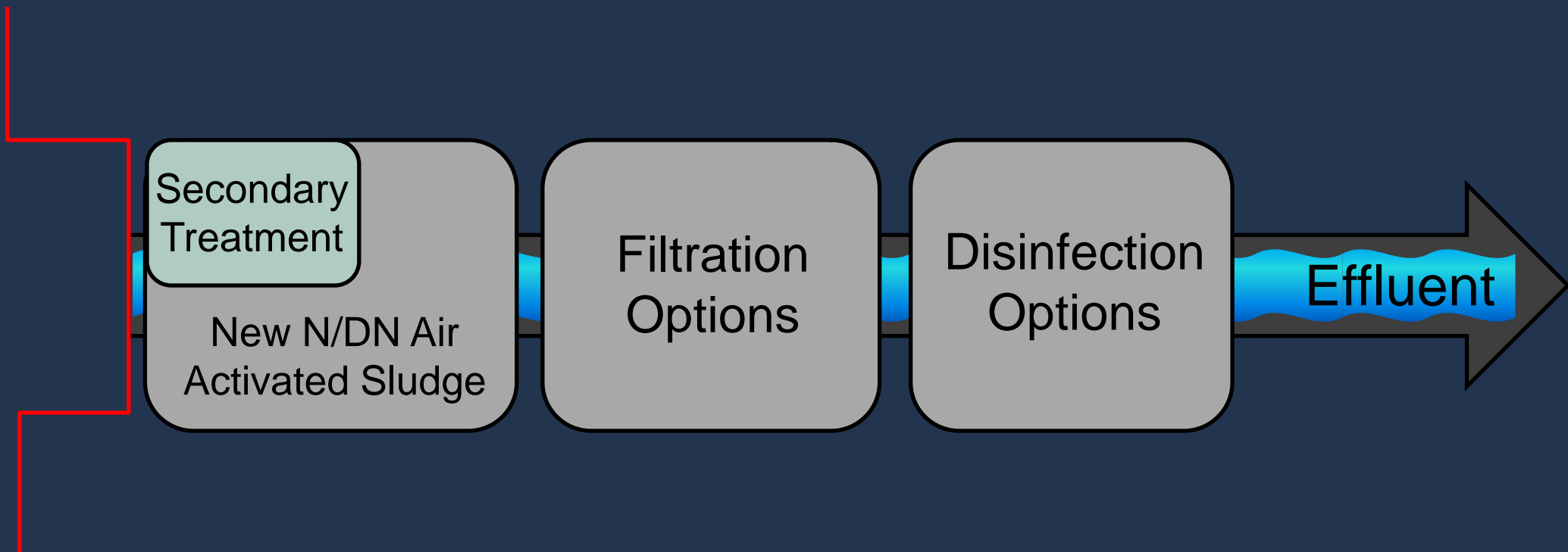
- Form a team – key staff and design experts
- Formulate an approach – workshops format with sequential approach
- Workshop #1: Brainstorm and screen technologies based on performance
- Workshop #2: Further screen alternatives based on life-cycle cost comparisons
- Workshop #3: Identify pilot study needs and scope pilot studies

Major Outcomes of Technology Screening



- Convert the high purity oxygen secondary treatment process to air activated sludge process
 - Most reliable and cost effective method to meet ammonia and nitrate permit limits
- Conventional filtration appears to be a viable filtration alternative
 - Pilot studies are needed
- Pre-filtration ozone treatment appears promising
 - Potential for reducing costs and treating trace organics

Technology Selected to Meet 2010 NPDES Permit

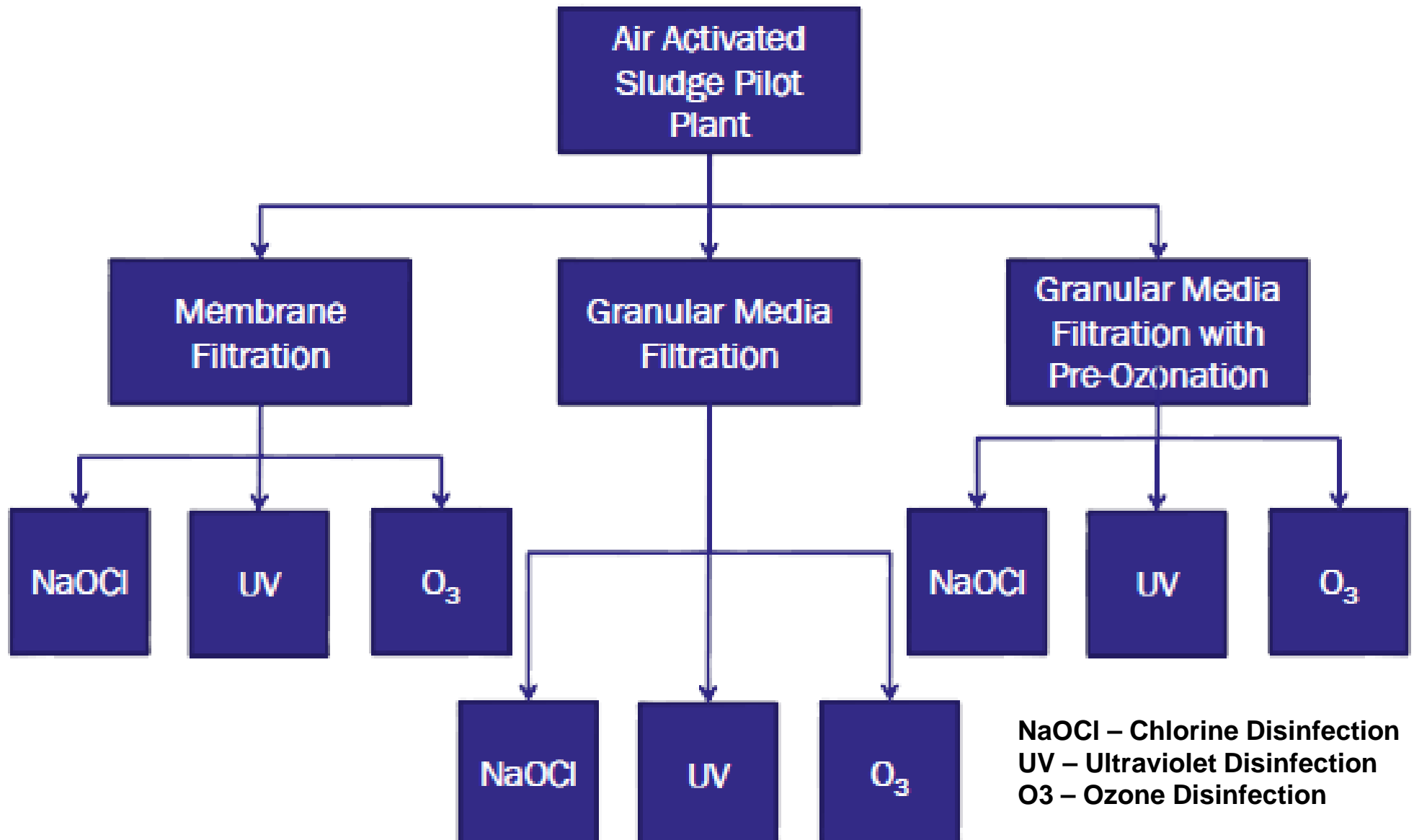


Legend

Existing Treatment

New Treatment

ATTP Treatment Trains





Pilot Study Implementation

Team of Brown & Caldwell and Auburn
Constructors selected to Provide Engineering,
Construction, and Operational Services for
ATTP

Advanced Treatment Technology Pilot (ATTP) Project Goals



- Demonstrate ability of treatment trains to reliably meet NPDES requirements
- Obtain design parameters for full scale design
- Gain operational experience with selected process
- Technology selection based on:
 - performance
 - reliability
 - economic evaluation
 - non-economic factors

Pilot Project: Scope of Work Highlights



- Project Work Plan
- Pilot Project Design
 - 10% Design Submittal
 - 50% Design Submittal
 - (negotiate pilot installation and equipment procurement)
 - Final Design
- Install Pilot Project Systems
- Operation
- Data Collection and Laboratory Testing
- Performance Evaluation and Recommendations

Pilot Project Budget



Engr. & Construction Services Agreement: ~\$17 million

- Design Phase
- Construction of facilities
- Operation Phase
- Optional Services
 - Process Optimization (Up to three years additional operation)
 - Vendor Qualification (Filtration, UV, Ozone)
- Lab work

Funding Sources

- District's Capital Outlay Fund
- Reallocated CALFED Grant (\$3.24 M)

Pilot Project Schedule



June 8, 2011: Request SRCSD Board
Contract Approval

March 2012: Design/construction
complete (10 months)

April 2012 - January 2013: Operational Testing (10 months)

March 2013: Final Report Due

Interpretation of Title 22 Equivalent



- 2010 NPDES permit requires all effluent discharged to Sac River to be Title 22 “Equivalent”
- Met with RWQCB staff to request interpretation
- Demonstrate 5-log virus reduction using site-specific pilot testing
- Comply with permit requirements for turbidity and coliform

Study of Trace Organics Treatability



- Trace organic limits are not included in the 2010 NPDES permit
- There is increasing awareness and interest in trace organics
- It is prudent to consider trace organics removal potential of treatment technology alternatives under consideration
- Pilot study will include trace organics

Trace Organics Approach



- Over 80,000 chemicals are currently in use
- Which ones to measure?
- Approach: Surrogates and Indicators
- Indicator: trace organic chemical regularly found in wastewater in measurable concentration that can be used to indicate treatment response of a family of compounds
- Surrogate: measured parameter that indicates treatment effectiveness of classes of constituents

Surrogates and Indicators



- 11 Indicator compounds
 - Atenolol
 - DEET
 - Ibuprofen
 - Meprobomate
 - Sulfamethoxazole
 - Triclosan
 - Carbamazepine
 - Gemfibrozil
 - Iopromide
 - Sucralose
 - TCPP
- Surrogates
 - UV Transmittance
 - Fluorescence



Questions ?

Screening Results



Process Alternative	2010 Project Cost (\$ Billion)	2018 Project Cost (\$ Billion)
N/DN – MF – Chlorine	2.09	2.64
N/DN – MF – Ozone	2.18	2.77
N/DN – MF – UV	2.17	2.75
N/DN – Ozone – GMF – Chlorine	1.58	2.00
N/DN – Ozone – GMF – Ozone	1.73	2.19
N/DN – Ozone – GMF – UV	1.63	2.06
N/DN –GMF – Chlorine	1.45	1.83
N/DN –GMF – Ozone	1.54	1.96
N/DN –GMF – UV	1.56	1.97

Assembly Bill No. 134

CHAPTER 212

An act to add Section 1486 to the Water Code, relating to water resources.

[Approved by Governor September 6, 2011. Filed with
Secretary of State September 6, 2011.]

LEGISLATIVE COUNSEL'S DIGEST

AB 134, Dickinson. Appropriation of water: Sacramento Regional County Sanitation District.

Under existing law, the State Water Resources Control Board administers a water rights program pursuant to which the state board grants permits and licenses to appropriate water.

Existing law requires the owner of a wastewater treatment plant to obtain the approval of the state board prior to making any changes in the point of discharge, place of use, or purpose of use of treated wastewater, and requires the state board to review the proposed changes in accordance with prescribed procedures.

This bill would authorize the Sacramento Regional County Sanitation District to file an application for a permit to appropriate a specified amount of water that is based on the volume of treated wastewater that the district discharges into the Sacramento River, as specified. The bill would authorize the state board to grant a permit to appropriate that treated wastewater upon terms and conditions determined by the state board. The bill would require the board, prior to granting a permit pursuant to these provisions, to comply with permit, approval, and review requirements and other laws applicable to the appropriation of water.

This bill would make legislative findings and declarations as to the necessity of a special statute for the Sacramento Regional County Sanitation District.

The people of the State of California do enact as follows:

SECTION 1. Section 1486 is added to the Water Code, to read:

1486. (a) The Sacramento Regional County Sanitation District, and any successor thereto, with respect to treated wastewater produced by the sanitation district that meets the requirements of the California Regional Water Quality Control Board, Central Valley, as may be amended or modified, and that is discharged into the Sacramento River, may file an application for a permit to appropriate an amount of water up to the amount of treated wastewater that is discharged into the Sacramento River, less diminution by seepage, evaporation, transportation, or other natural causes

between the point of discharge from the wastewater treatment plant and the point of diversion out of the Sacramento River or the Sacramento-San Joaquin Delta.

(b) Upon application for a permit to appropriate water pursuant to subdivision (a), the board may grant the permit subject to the terms and conditions as in the board's judgment are necessary for the protection of the rights of any legal user of the water.

(c) Prior to the board granting a permit under subdivision (b), the board shall comply with the provisions of Part 2 (commencing with Section 1200) of Division 2, and other applicable law, and may impose terms and conditions authorized thereunder.

(d) Water appropriated in accordance with this section may be sold or utilized for any beneficial purpose.

SEC. 2. The Legislature finds and declares that a special law is necessary and that a general law cannot be made applicable within the meaning of Section 16 of Article IV of the California Constitution because of the unique problems applicable to the full utilization of the waters of the Sacramento River and the Sacramento-San Joaquin Delta, into which treated wastewater discharged by the Sacramento Regional County Sanitation District flows.

SRCSD Water Asset Management Vision



The Water Asset Management Vision presents a picture of a desirable future for how SRCSD manages its existing and future water assets.

SRCSD Water Asset Management Vision

SRCSD will manage its water assets to sustain regional water supplies, benefit current and future ratepayers of the region, and safeguard and enhance the environment.

Portfolio Approach

SRCSD's water assets will be used in multiple ways with multiple benefits. Some uses will occur within the Sacramento region, and some uses may occur outside the region. The portfolio of all uses in aggregate will provide a balance among the policy objectives.

Water Asset Policy Objectives



Sustain Regional Water Supplies

SRCSD will assist in meeting regional water supply needs by improving the reliability of existing supplies, applying water for new uses, and helping to meet water conservation and reuse goals.



Benefit Current and Future Ratepayers

SRCSD will market or use some of its water to ease financial burden on the current and future ratepayers in the region. The ratepayers may benefit directly from lower SRCSD rates, or the benefits may indirectly be derived through cost-savings on potable water utility rates or regional economic development.



Safeguard and Enhance the Environment

SRCSD's water assets will be used in an environmentally responsible manner. SRCSD may provide water for species preservation or habitat rehabilitation locally or in a manner that supports broader environmental activities of regional or statewide interest. Broad benefits may include improving river flows at critical times, and enhancing environmental conditions in the Sacramento-San Joaquin Delta.

SRCSD'S MISSION:

SRCSD serves its customers by protecting public health and the environment through the reliable and safe conveyance, treatment and disposal of wastewater in the most cost-effective manner possible now and in the future.

Statement of Principles Sacramento Water Recycling Coalition

We, the undersigned organizations, have come together to form a Coalition to advance the use of recycled water in the Sacramento region. This Statement of Principles outlines our purpose in forming this Coalition and what we intend to achieve together.

Mission / Vision Statement

Water recycling has many benefits including the potential for providing a sustainable source of water for many uses as described in the Sacramento Regional County Sanitation District (SRCSD) Water Recycling Opportunities Study and other regional planning documents. Some of these uses include agriculture and landscape irrigation, water supply for wildlife habitat and mitigation lands, industrial uses, and as a source to supplement limited state and regional water resources. The objective of our Coalition is to work collaboratively to identify, develop, and promote opportunities for the use of recycled water within the Sacramento region, and to seek political support and funding for those opportunities.

Preamble

The State of California has established goals for recycling water to move toward sustainable management of surface waters and groundwater, enhanced water conservation and water reuse. Recycled water is currently used in the Sacramento region on a small scale and on a larger scale in several other regions within our state. Water recycling is included in the 2009 California Water Plan within Objective #2 titled “Use and Reuse Water More Efficiently” which states “*Use water more efficiently with significantly greater water conservation, recycling, and reuse to help meet future water demands and adapt to climate change.*”

The Water Code distinguishes between effluent disposal and water recycling, and defines recycled water as “water which, as a result of treatment of waste, *is suitable for a direct beneficial use* or a controlled use that would not otherwise occur and is therefore *considered a valuable resource.*” Recycled water use must comply with Title 22 water recycling criteria (Water. Code, §§ 13520, 13521) that specify levels of treatment, land use and operational requirements for permissible recycled water uses, including the irrigation of food crops and fodder and fiber crops.

There are some state and federal programs that have been identified as sources of funding for recycled water projects including US Bureau of Reclamation Title XVI, CALFED funding, Integrated Regional Water Management Plan (IRWMP), Proposition 84, Proposition 50, and the Clean Water State Revolving Fund. In addition, the Comprehensive Water Package / Safe, Clean, and Reliable Drinking Water Supply Act of 2011/12 may include a provision for funding recycled water, if approved by voters.

The existing SRCSD Water Reclamation Facility was designed to produce up to 5 million gallons per day (mgd) of tertiary recycled water. This recycled water is currently used at a localized level by the Sacramento County Water Agency for landscape irrigation in south Sacramento County, and by the Sacramento Regional Wastewater Treatment Plant. The facility is permitted for up to 10 mgd.

Statement of Principles Sacramento Water Recycling Coalition

Statement of Principles

We support expansion of the existing local recycled water program into a regional program whenever feasible as a means to provide a sustainable water supply and an opportunity for water quality benefits. However, in order to expand the use of recycled water on a regional scale, state and federal funding will be needed to help offset project costs and to guide the future direction for water recycling in the Sacramento region.

Coalition Efforts

Members of this Coalition pledge to collaborate to identify and support recycled water projects in the Sacramento area that have regional benefits and will seek to build consensus to support a comprehensive water reuse program.

The Coalition members will evaluate opportunities to provide input and comment regarding proposed legislation and regulation related to recycled water use in the state and in the Sacramento region. The members will investigate and seek funding opportunities for recycled water studies, planning, construction of pilot projects, treatment systems, transmission and distribution systems, associated monitoring and testing programs for these projects and other identified similar projects. The Coalition will seek projects that have multiple benefits and potentially multiple funding sources and opportunities.

As Stakeholders, we commit to the development of policies that promote mutually beneficial projects that meet state health standards, support agricultural, wildlife habitat and ecological needs, water supply needs and other needs as identified by the Coalition.

Recycled water treatment standards will be addressed on an individual project basis. The Coalition is committed to maintaining compliance with regulatory requirements and remaining actively engaged in current and evolving research and scientific studies related to recycled water use. Coalition members pledge to actively search for and provide current technical and educational materials related to regulatory requirements, legal issues, health and safety issues, water quality data, environmental issues, and recycled water use experiences and opportunities in other regions. This information will be shared with the Coalition members and other affected parties so that they may make informed decisions related to recycled water use.

Participation in the Coalition or support of these principles does not place a specific obligation on any individual Coalition member related to a specific recycled water project or Coalition efforts.

Date

<INSERT STAKEHOLDER SIGNATURES & LOGOS AT BOTTOM>