

CV-SALTS Subcommittee Meeting

Central Valley Management Practice Subcommittee

When: Monday, September 12th 2011 from 11:00 AM to 12:30 PM

Location: Conference Call only

Conference #: (218) 339-4600 Participant Code: 927571#



Agenda

1. Welcome and Introductions
2. Discuss Subcommittee Chair/Co-Chairs
3. Review Changes to Version 9 and Screening Tool 2
4. Review "Test Run" screening results
 - a. Presentation WWTP- Linda or Debbie
 - b. Questions and lessons learned/screening tool changes
5. Prioritize Management Practices to Evaluate for Pilot
 - a. Simple/Complete
 - b. Complex/Developing
 - c. Collections of practices or others
6. Next Meeting/Call September _____ at _____

CV-SALTS Management Practice Subcommittee

Management Practices Evaluation for Salt and Nitrate

Version - 9 9-5-11

(Draft 9 changes from John Dickey, + Jim Martin, Debbie Webster, Jeanne Chilcott, Linda Dorn & others)

The Management Practice Subcommittee's (Subcommittee) charter is to assist CV-SALTS to improve salt and nitrate management through industry and community management practices, identifying and screening the management practices to improve implementation and monitoring of results. This document is part of the Management Practice Document Review developed in 2010 and 2011. This approach and process draw from others used to review stormwater¹ and water conservation practice and criteria.²

1 Management Practice Review Approach

At the recommendation of the CV-SALTS Committees or in accordance with the sector schedule below the Subcommittee will evaluate a management practices in accordance with the following process and standards. These standards will be used to screen management practices for inclusion in a "toolbox" of Management Practices (MPs) which have been vetted in the CV-SALTS process to assist others in reducing salinity and nitrate. This "toolbox" would provide a range of new and existing management and practice options, their documented effectiveness, expected reductions, current status of implementation and cost when available. The listed practices provide early implementation opportunities and the basis to recommend reasonable implementation requirements for the Basin Plan Amendment. In addition, the "toolbox" identifies new technology and innovative practices that may provide further improvement and flexibility.

1.1 Products

A brief description of the products of the Subcommittee's efforts are described in the following sections.

1.1.1 Screening Tool

The Subcommittee uses the enclosed procedure and standards along with a related checklist to evaluate the presence of adequate evidence and information to characterize the utility and efficacy of MP's to reduce or manage salt components and nitrates. The purpose of the screening tool and standards is to assist in the review of the scientific and monitoring documentation, not to perform that assessment or certify a practice for purposes other than those evaluated. The use of the screening tool requires that the Subcommittee (or help available to it) be able to understand the information provided not

¹ International Stormwater BMP Database Performance evaluation <http://www.bmpdatabase.org/MonitoringEval.htm#PerformanceEval>

² California Urban Water Conservation Example BMP Development <http://cuwcc.org/resource-center/technical-resources/bmp3-resources.aspx> EPA WaterSense Program Criteria http://www.epa.gov/watersense/about_us/watersense_label.html

necessarily be experts in the scientific area or the region it is being applied. The screening tool checklist will result in practices added to the “toolbox”. The screening process will rely on groups, industries, and practice proponents to nominate and complete the nomination form and supporting information for evaluation. This process will be described in the sections below.

1.1.2 Toolbox of Practices

The Management Practice Subcommittee will utilize volunteers and technical support available to it to review and evaluate management practices that reduce salt constituents and nitrates of relevance to the Central Valley. Initially the “toolbox” may be a reviewed set of electronic documents for each practice with supporting materials. Later, as the number and diversity of practices increase, the “toolbox” format will likely need to become more sophisticated to facilitate its use. The “toolbox” and the practices were extensively discussed among the Subcommittee members.

The Subcommittee identified the best use of the “toolbox” as a source of documented and validated practices that regulated entities could use to develop their management plans for salinity and nitrate for both voluntary action and Regional Board consideration as part of the permittees plan or other regulatory programs.

A factsheet or summary technical document should be prepared for practices accepted into the “toolbox” so that potential users can easily evaluate the practices for their own use. Other examples of “toolbox” development include the Stormwater BMP Manual³ and the Salinity Guideline⁴. The Subcommittee however wants to ensure that users of the “toolbox” understand the need to evaluate any practice for their own application. Additionally, regulatory programs and permits should not inappropriately default to the “toolbox” as a requirement for any specific facility or location. Dischargers will be able to take advantage of the information developed on the treatment and control options provided in the “toolbox”, but the “toolbox” will not limit their options. Any discharger that wants to use an alternative approach to manage salt or nitrate will be able to submit information that will be evaluated by the same process the committee followed when creating the “toolbox”. This consistency will provide the discharger and Regional Board a clear understanding of how proposed practices perform relative to practices documented in the “toolbox”.

2 Process

The process for documenting new or developing practices and validated practices differ. The new and developing and validated practices are described in section 3 of this document. The process for each is summarized below (additional details or modifications may be made by the Subcommittee). After a call for and nomination of practices by an industry, the practices will be evaluated for acceptance in the “toolbox” with the screening tool, or further information and study may be requested and developed, as needed. . The Subcommittee may then recommend to the Executive Committee that the practice be included (or not) in the toolbox.

³ Stormwater Best Management Practice Handbooks, California Stormwater Quality Association, 2003, on the web at <http://www.cabmphandbooks.com/>

⁴ Salinity Management Guide, National Water Resources Institute, 2008 on the web at <http://www.salinitymanagement.org/>

Figure 1 Process Diagram



The Subcommittee will likely request support from the Technical Project Manager or contract for support or consulting entities where their support is needed to develop documentation. The Subcommittee will also propose projects for grant support or coordination with other efforts where this is consistent with MP development goals.

2.1 Sector Review Schedule

The Pilot Salt and Nitrate Source Implementation Study⁵ identified sources of salt. Each significant source of salt shown in the report will be scheduled for review. Review priority will be based on salt and nitrate loading that was reported in the pilot implementation study. This initial list and prioritization is intended as a guideline, and should not result in exclusion of unlisted sources. The list will be reviewed and revised as needed by the Subcommittee. Industries or communities which have prepared

⁵ Salt and Nitrate Source Identification Pilot Implementation Study, 2010 Central Valley Salinity Coalition and Larry Walker Associates on the web at <http://cvsalinity.org/index.php/component/content/article/18-events/60-admin>

Management Practice documents may request to be reviewed ahead of schedule, subject to Subcommittee approval. The Subcommittee will establish the final schedule for review of practices and technologies in each sector, at a pace that is manageable but that reviews BMPs from all significant source before implementation plan development. As processes are reviewed, the common BMPs will be reviewed for consistent assumptions and completeness. . When a practice’s effectiveness is obvious based on readily-available information, it may be recommended for approval by the Executive Committee with less rigorous review or scientific study.

Source	Preliminary Date
1. Pilot Implementation candidates-Significant sources	August 2011
2. Surface Drinking and Irrigation Water	October 2011
3. Groundwater Drinking and Irrigation Water	October 2011
4. Irrigated agriculture/Fertilizer	January 2012
5. Non-point source/stormwater	January 2012
6. Wetlands	January 2012
7. Wastewater/Industrial dischargers	May 2012
8. Food processing industries	May 2012
9. Wastewater/Residential dischargers	May 2012
10. Dairy and CAFO	October 2012
11. Water treatment and softening	October 2012
12. Septic tank discharges	October 2012
13. Other point sources and discharges to land	January 2013
14. Atmospheric deposition and other sources	January 2013

2.2 Conflicts

Because the Subcommittee has an active role in the review recommendation for approval of practices, members of the Subcommittee proposing practices will disclose any conflicts and recuse themselves from decisions where they have a material financial or business interest.

2.3 Committee Test Run

Subcommittee members has performed a “test run” of the screening tool and checklist to identify gaps in the tool and to better understand the level of effort that will be required to complete the review. This review took place in summer 2011. Parry Klassen, Linda Dorn and Debbie Webster provided 2 to 3 practices to screen from Ag and waste water treatment industries. The test run had a limited variety of practices to make the effort manageable.

2.4 Committee Pilot Testing

As the Subcommittee continues developing the screening tool and toolbox the Subcommittee may prepare a technical scope of work for pilot implementation of the screening tool on several practices. This testing will expand on the reviews completed by the committee in the “test run” and help improve the screening tool and “toolbox” as well as help to determine the cost of the review process. The Pilot Test was encouraged to include a broader variety of practices, including physical change projects and outreach or management projects, in order to better explore diverse practices.

2.5 Consultant Scope of Work

After pilot testing, the committee may recommend broader application through a scope of work for larger scale review of practices for the “toolbox”.

3 Practice Types

To simplify review and inclusion in the “toolbox” the management practices have been separated into three types: validated practices, new or developing practices, and indirect or policy practices. All types of practices may be included in the “toolbox” if they meet the standards provided in section 4.0 as screened in the tool. Each type of practice represents a different stage or expectation for the documentation and analysis. Additionally, practice types may characterize single practices or sets of practices that address salt, nitrate, or both. Additional types of practices, or practice variants, may be developed in the future. Validated practices are intended to be a “high bar” for completely validated practices. Most other practices will fall into the developing category. Developing practices require additional evaluation and monitoring before they can be validated.

3.1 Validated Practices

Management practices for which information shown in Attachment 1 (to be developed by the Subcommittee) is available should be submitted under the validated practices category. The standards (described in Section 4) for effectiveness and field implementation should be met by documentation including scientific studies (university research, trade research publications, other technical literature), by monitoring results, or by some other verifiable evidence. These practices will allow the greatest implementation flexibility and lowest monitoring requirements. Attachment 1 will provide the information and evaluation framework and formats for information to be submitted. The result will be a compendium of information concerning the practice or action that makes it amenable to implementation (inclusion in the “toolbox”).

Management Practices that have been evaluated by other Best Management Practice programs acceptable to the Subcommittee may be submitted in their existing formats provided they contain equivalent information.

3.2 New or Developing Practices

Many management practices to address salt and nitrate are new or documentation is still being developed, demonstrated or validated. The identification of a practice as new or developing should not detract from its perceived effectiveness or value, but only indicates its status of implementation and review. New or developing practices will not have all documentation under the standards section and will not generally have monitoring necessary for full validation. When practices characterized as new or developing it may be anticipated that additional monitoring or information may need to be provided by implementing industries or communities for it to be considered a fully validated practice.

3.3 Indirect or Policy Practices

Another grouping of practices includes practices that are deemed appropriate or necessary, that may not directly impact salt or nitrates in the environment, and for which the only possible quantification of impact may be a broad estimate. For these practices, inclusion in the “toolbox” will be based on industry recommendations or regulatory requirements or where they are a clear adjunct to other

practices. Examples of such practices may include public outreach to improve awareness of urban and rural water users, or economic incentives (e.g., rate structures and fees) to reduce salt and nitrate releases. When salt and nitrate load reductions cannot be reliably estimated, cost effectiveness of the practice may be impossible to determine.

4 Standards

Screening of practices requires review of their effectiveness in reducing salt and nitrate in the system. If a practice is demonstrated as superior to general current practices for salt and nitrate management, and meets other (e.g., cost, feasibility) criteria, then it warrants consideration for the “toolbox”. General practice is defined as the unregulated or unimproved baseline. Industries that previously or voluntarily reduced salt or nitrate discharges will not be penalized for such leadership. The demonstration of Best Practices may be highly situational or impossible to determine before practices are implemented and monitored in several locations. The Subcommittee will further develop screening standards to provide additional detail on standards as needed. The Screening tool implies the following standards, requesting the proposer of the practice to provide readily available documentation of the practice relative to each. The standards discussion in this section includes the directions to reviewers in reviewing the evaluating a nomination.

4.1 Technical Effectiveness – does it work?

Demonstrating technical effectiveness is critical for a management practice to be implemented and accepted by industry or communities. Reviewers will look for evidence of technical effectiveness as demonstrated by lab, pilot and evaluated demonstration studies. The documentation should indicate the practice removes, destroys, manages or otherwise reduces negative impacts to beneficial uses from salt and nutrient constituents or otherwise assists with compliance or improvement of the waters of the valley for these constituents.

4.2 Implementability – can it be used broadly?

Implementability includes both feasibility as well as well as broad applicability. In most cases, satisfactory implmentability is demonstrated by documentation of the use of the management practice by a significant portion of the sector and considers other issues related to cost and efficiency covered in other sections.

4.3 Benefits and Impacts

In evaluating the implmentability of management practices the Subcommittee should consider the benefits and impacts of the management practice. Have the benefits and impacts been acceptably quantified? Do the benefits appear to outweigh identified negative impacts of its implementation?

Additionally, the Subcommittee should consider cross-media impacts, such as impacts to air quality, water supply, energy consumption and other water quality constituents. The ideal practices are effective on salt and nutrient constituents and have few or minimal impacts to other areas.

Reviewers should look for management practices that reduce any detrimental effect to other media while achieving the goals of the management practice. These should be identified and any impact quantified if possible.

4.4 Cost effectiveness – is it economic to implement today?

Cost effectiveness is critical to being an effective best practice. Low efficiency costly practices are not likely to be broadly implemented. High value practices will likely be implemented with minimal regulatory encouragement. Reviewers assessment of effectiveness related to cost is not always a simple as dollars per ton of salt or pound of nitrate, often costs include a technically trained workforce to implement, operate and maintain the practices. Additionally, this may vary across industry and across regions. The cost effectiveness should strive to take into account all benefits to the entity implementing the practice as well as direct and indirect cost of implementation. In other words not just the technology but the impacts on quality of the product or preparation or disposal of wastes and other potential cross media impacts. These costs should evaluate life cycle benefits and costs of implementations and societal and environmental benefits and costs, when possible.

The ideal practice nomination will provide information on the practices costs on an industry appropriate unit bas per acre, per acre foot, per million gallons, per ton or etc.

4.5 Monitoring – proving it works?

Reviewers should evaluate both the ability to monitor as well as the length and breadth of the monitoring history as a part of screening. Monitoring during the implementation stage may be greater in developing practices than fully validated practices that have already identified critical monitoring parameters for implementation and operations.

4.6 Other Regulatory or Non-Regulatory Approvals

CV-SALTS may be able to defer to prior decisions made by Regional Water Quality Control Boards (Regional Water Board) and State Water Resources Control Board (State Water Board) collectively Waterboards, Department of Public Health, building codes or other accreditation groups for validation. Where appropriate this should be done to reduce the cost and delays associated with duplication of validation.

Additionally, in cases where a practice is obvious broadly implemented and effective it may be recommended with less rigorous review or scientific study for approval by the Executive Committee.

5 Management Practice Toolbox

The Subcommittee will establish and update a list of management practices for each sector in the form of a “toolbox”. The “toolbox” will change as more information is reviewed and may also be used to track management practices, alternatives and technologies. The list will be maintained by the Subcommittee and Central Valley Salinity Coalition (CVSC). The “toolbox” will be available on the cvsalinity.org website and facilitate tracking the status of evaluation, verification, and monitoring. The Preliminary list of practices is shown as Attachment 2; this list will be updated or replaced as the “toolbox” is developed by the Subcommittee.

6 CV-SALTS Management Practice or Technology Presentations

Management Practices and Technologies that warrant recommendation for approval by the CV-SALTS Technical Committee and Executive Committee will have been reviewed according to the processes described previously. Recommended items will have been found to merit wider application to CV-SALTS stakeholders. Recommendations will be possible at meeting times, and may thus need to await accommodation on meeting agendas. Technologies warranting recommendation should have been monitored during several pilot deployments to demonstrate effectiveness. Exceptions may be granted by the Subcommittee for practices that show special promise or at the request of the Executive Committee. Executive or Technical Committee members may recommend practices for Subcommittee consideration at the next regularly scheduled meeting.

Vendors or technology proponents who wish to have specific practices evaluated for inclusion in the “toolbox” should contact the Central Valley Salinity Coalition or the Subcommittee Chair.

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Attachment 1

This attachment provides information on the review of Management Practices for inclusion in the CV-SALTS “toolbox” for reductions in salt and nitrate that are significant to the Central Valley.

Screening Tool Checklist Process

The Subcommittee will use the evaluation framework process in Section 2 and standards in Section 4 to review management practice documentation.

1. Industry nomination or source section request
2. Formatting for screening tool by nominator or tech support
3. Assessment of submitted data by Subcommittee and additional info/expert review, if needed
4. MP Subcommittee and Technical Committee recommend practices
5. Executive Committee Approves and Toolbox is updated
6. Practice Implementation, Operations and Maintenance, Monitoring, Reporting
7. Revision, if needed and review

This is also shown in Figure 1 in Section 2.

Draft Screening Tool Nomination Form: The nomination of the practice will require some standardization of information on the Management Practices.

1. Title
2. Description
3. Constituent Salts or Nutrients Managed
4. Applicability
5. Practice Benefits and Impacts
6. Effectiveness Documentation
7. Supporting studies, Research and Source Documents
8. Implementation
 - 8.1 Costs
 - 8.2 Status and Potential
 - 8.3 Monitoring Documentation
9. Other Regulatory Approvals or Requirements

The Subcommittee developed the Screening Tool Nomination Form with brief instructions for users shown in Attachment 3 to ensure proposed practices meet the standards presented in section 4.0.

Attachment 2

A preliminary list of potential management practices to manage salt and nitrate as suggested by the subcommittee is listed below: **THIS LIST IS TO BE PROVIDED BY THE COMMITTEE AS HOMEWORK FOR THE 9/12/11 MEETING.**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.
- 17.
- 18.
- 19.
- 20.

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Potential Practices (listed to promote discussion, not as nominations to prioritize)

1. Irrigation efficiency/reduce irrigation – Reduce salts in imported water or evapotranspiration of groundwater
2. Tailwater reuse/drainage recirculation – reduced discharged of salt
3. Growing salt tolerant crops – reduced imported water while maintaining production
4. Evaporation ponds, solar evaporators – isolates the salt to allow management
5. Salt separation and utilization – fractionate and create products for reuse or sale
6. Drain water and brackish water desalination- Isolates salt for management
7. Detergent reformulation - source control
8. Industrial biomass and brine management – isolates salts and potentially reuses salts
9. Reduce imported feed for CAFO's – reduces salt import from feed sources
10. Reduce seepage from brine conveyance - reduces dissolution of salt from soils
11. Industrial salt source reduction/reuse – reduces salts for production
12. Increase export of salt containing products - exports salt unless salt is brought in to produce products
13. Increase salt export in surface waters leaving the region
14. Increase outdoor landscape irrigation efficiency – reduces imported water/groundwater use
15. Increase indoor water use efficiency – reduces imported water and groundwater use
16. Reduce water softening need or shift to ocean disposal of brine – reduces salt from residential indoor plumbing
17. Local salt collection and disposal – Disposal and removal from basins
18. Increase salt discharge at EBMUD – ocean discharge and removal from basins
19. Salt collection and treatment (ocean qualified brine) for ocean discharge – ocean discharge and removal from basins
20. Deep well injection for storage and recovery of salts – Removal of salt from basins, with recovery when economic

Attachment 3

Screening Tool Nomination Form

Att. 3 is currently a separate document and will be incorporated when complete

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