

Preliminary Alternatives

May 2002

Introduction

As an early activity in the Feature Re-evaluation process, Reclamation developed preliminary alternatives for providing drainage service. These preliminary alternatives are combinations of drainage service options organized into a range of complete drainage service solutions. Reclamation will evaluate and refine these preliminary alternatives to identify the preferred alternative. This fact sheet introduces the preliminary drainage service alternatives identified by Reclamation. The Drainage Need fact sheet and the Options fact sheet provide additional information about the range of drainage needs and the options included in each alternative.

The preliminary alternatives are organized initially as broad conceptual processes organized around the disposal method: **Ocean Outfall, Delta Outfall, Landfill/In-Valley Disposition, and Deep Well Injection**. Reclamation composed sub-alternatives under each conceptual disposal method. The sub-alternatives were developed from the various options identified. Ultimately, Reclamation developed a range of complete drainage service alternatives.

Within each alternative, there are limitations on options that Reclamation will evaluate. For example, regulations and restrictions must be considered on each

Joaquin River. Along the way to the outfall, drainage water would likely receive treatment to remove selenium or other constituents that are harmful to the environment.

Currently, the pipeline route that Reclamation is considering for a Delta Outfall includes utilizing the previously proposed route of the San Luis Drain to transport drainage water to Chipps Island. This potential route could additionally involve an extension to place an outfall as far west as the Carquinez Straits.

Reclamation will review the possibility of utilizing existing outfall locations used by local municipalities. Partnerships possibilities with cities, local municipalities and local agencies will be considered.

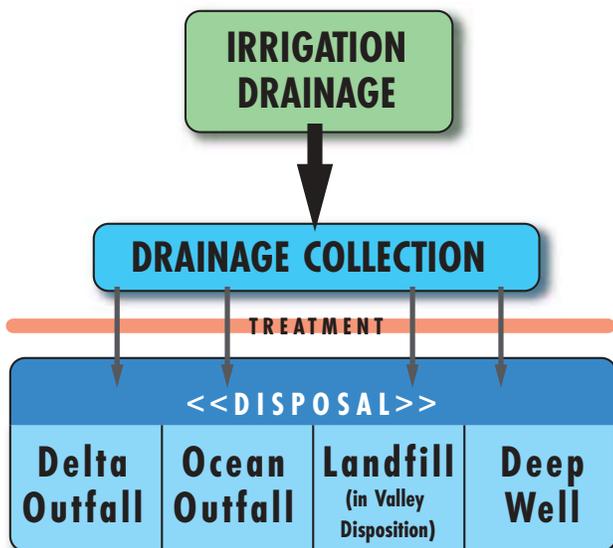
Concerns involved in utilizing a Delta Outfall revolve primarily around the salt and selenium loads that could be released into the Bay-Delta system. Reclamation is evaluating the use of regulating ponds and other methods to regulate the release of drainage water to the Delta.

Ocean Outfall

Ocean Outfall alternatives include the transport of drainage water to the Pacific Ocean, possibly with treatment to remove selenium or other constituents.

Reclamation is evaluating at least four potential outfall locations in the Pacific

This diagram demonstrates the required components of a complete drainage solution



step. Reclamation will evaluate those applicable regulations and restrictions for components of each alternative.

Delta Outfall

Delta Outfall alternatives consist of the transport of collected drain water to the Delta or San



Ocean. These sites were narrowed from previously completed studies (e.g. Brown & Caldwell Report, 1987).

Reclamation is evaluating the corresponding potential routes to the outfall sites based on topography and environmental and other concerns. Routes will include a combination of pipeline and tunneled sections depending upon the existing terrain and the estimated flow rate. Total distance, elevations, materials, and other factors will influence the overall cost of the Ocean Outfall route.

The final outfall to the ocean can be laid at various depths and distances from the shore. Reclamation will determine the most appropriate facility based on the surrounding environment, regulations, and other influencing factors.

In-Valley Disposition

The Landfill or In-Valley Disposition alternatives include the disposal of salts or brine in or near the drainage-affected area, possibly with treatment to remove selenium or other constituents prior to disposal.

Following the collection of drainage, materials will be sent through a process to reduce the volume of drainage and prepare for disposal. Volume reduction systems that Reclamation will

evaluate include a reverse osmosis system and evaporation ponds.

Beneficial uses of by-products will also be considered. Reuse of water for agricultural practices or other uses could present a benefit to those in need. Additionally, research into the potential reuse of salts and other constituents separated out from drainage water may show another reuse benefit.

Deep Well Injection

Deep well injection is an alternative that includes the disposal of drain water or brine in or near the drainage-affected area, possibly with prior treatment to remove selenium or other constituents. Currently, this technology has not been demonstrated in the San Luis Unit area. Reclamation is working to complete studies to determine whether this is a viable alternative to provide prompt drainage service.

Alternatives Evaluation Process

Reclamation will apply an evaluation process to all of the identified alternatives. By late Summer 2002, the alternatives will be narrowed to approximately four potential alternatives. Reclamation will base the evaluation criteria on previous studies, current information, and comments received from study participants. By the close of 2002, a preferred alternative will be identified.

Reclamation welcomes comments and suggestions from all interested parties. Please refer to the "Contact us!" box for contact information.

Contact us!

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