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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SAN BERNARDINO

CHINO BASIN MUNICIPAL WATER DISTRICT, Plaintiff, v. CITY OF CHINO, et al., Defendants.	CASE NO. RCV 51010 NOTICE OF MOTION AND MOTION BY CHINO BASIN WATERMASTER TO APPROVE SCOPE AND LEVEL OF DETAIL PLAN FOR THE OPTIMAL BASIN MANAGEMENT PLAN, MEMORANDUM OF POINTS AND AUTHORITIES, AND DECLARATION OF TRACI STEWART Hearing date: 9/9/98 Time: 8:30 a.m. Dept.: RC-H Specially assigned to the Honorable Judge J. Michael Gunn

PLEASE TAKE NOTICE on September 9, 1998, at 8:30 a.m., or as soon thereafter as the matter may be heard, in Department RC-H of the San Bernardino County Municipal Court, West Region, located at 8303 North Haven Avenue, Rancho Cucamonga, California 91730-3862, Judge J. Michael Gunn, Special Assigned Judge presiding, Chino Basin Watermaster ("Watermaster") will move the Court to approve the Scope and Level Plan for the Optimal Basin Management Plan.

This motion is pursuant to the court's February 19, 1998

orders. This motion is based on the notice, memorandum of points and authorities, declarations and such other evidence the court deems appropriate.

Dated: June 29, 1998

Respectfully submitted,

LEMIEUX & O'NEILL

By: _____
Wayne K. Lemieux

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MEMORANDUM OF POINTS AND AUTHORITIES

The "Order Concerning Development of Optimum Basin Management Plan" requires the Watermaster to file a written Recommendation in a duly-noticed motion concerning the "scope and level of detail plan" for the Optimal Basin Management Plan. (Order dated February 19,1998, page 9, lines 22-28.) The February order requires the Watermaster to first provide the Recommendation to the Advisory Committee for review and action. The Recommendation has been reviewed and approved by the Advisory Committee. The February order also requires the recommendation to be transmitted to the Special Referee for review. The Recommendation is forwarded to the Special Referee. A copy of the Recommendation is enclosed as Exhibit "A".

The Watermaster respectfully requests the court to approve the proposed Scope and Level of Detail plan for the Optimal Basin Management Plan.

Dated: June 29, 1998

Respectfully submitted,

LEMIEUX & O'NEILL

By: _____
Wayne K. Lemieux

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DECLARATION OF TRACI STEWART

I, TRACI STEWART, declare under penalty of perjury as follows:

1. I am the Chief of Watermaster Services for the Chino Basin Water Master and have served in such capacity at all times relevant herein.

2. On June 25, 1998, the Chino Basin Watermaster Advisory Committee approved the scope and level of detail plan for the Optimal Basin Management Plan as set forth on Exhibit "A" attached to this motion.

3. A copy of this Motion, including the scope and detail plan, has been concurrently served on the Special Referee.

I declare under penalty of perjury under the laws of the State of California the foregoing is true and correct.

Executed on June 29, 1998, at Rancho Cucamonga, California.

Traci Stewart

CHINO BASIN MUNICIPAL WATER DISTRICT V. CITY OF CHINO et al.
CASE NO. RCV 51010

PROOF OF SERVICE

I, Michelle Lauffer, declare:

1. I am over the age of 18 and not a party to this action. My business address is Chino Basin Watermaster, 8632 Archibald Avenue, Suite 109, Rancho Cucamonga, California 91730.

2. On today's date, I served the document identified below by placing a true and correct copy of same in sealed envelopes addressed to each of the addresses shown on the attached mailing lists.

1) NOTICE OF MOTION AND MOTION BY CHINO BASIN WATERMASTER TO APPROVE SCOPE AND LEVEL OF DETAIL PLAN FOR THE OPTIMUM BASIN MANAGEMENT PROGRAM, MEMORANDUM OF POINTS AND AUTHORITIES, AND DECLARATION OF TRACI STEWART

3. I then placed said envelopes for collection, processing and mailing by Chino Basin Watermaster personnel with the United States Postal Service on today's date, following Chino Basin Watermaster's ordinary business practices. Pursuant to these practices, with which I am familiar, such sealed, addressed envelopes are deposited in the ordinary course of business with the United States Postal Service on the same date they are collected and processed, with postage thereon fully prepaid.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on June 30, 1998, at Rancho Cucamonga, California.

Michelle Lauffer

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EXHIBIT A

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TRACI STEWART
Chief of Watermaster Services

June 29, 1998

Honorable Judge J. Michael Gunn
Superior Court of the State of California
For the County of San Bernardino – West District
8303 Haven Avenue
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Ms. Anne J. Schneider, Esq.
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Subject: Recommended Scope of Work for the Development of an Optimum Basin Management Program for the Chino Basin.

Transmitted herewith is Watermaster's recommended scope of work (scope) for the development of an Optimum Basin Management Program (OBMP) for the Chino Basin as required by the February 19, 1998 Court ruling. There are three phases involved in the Optimum Basin Management Program – scoping, program development, and implementation. The enclosed document is the culmination of the scoping phase. It was developed by the Committees and the Watermaster Board through an intense process which included bi-weekly meetings of all interested parties.

During the scoping phase, the needs and interests of all interested parties, including producers, the Watermaster Board, and the Regional Water Quality Control Board were solicited, presented orally and/or in writing, and discussed at length to help develop the scope of work necessary to complete the OBMP. Responses regarding the needs and interests are included in Attachment A. A final summary of responses along with the background information upon which it is based, will be included in the institutional appendix of the OBMP document. All of these responses are an integral part to be addressed in the development of the OBMP process. During development of the scope, the producers and Watermaster Board also developed the following mission statement for the Optimum Basin Management Program:

> *The purpose of the Optimum Basin Management Program is to develop a groundwater management program within the provisions of the Judgment that enhances the safe yield and the water quality of the basin, enabling all groundwater users to produce water from the basin in a cost-effective manner.*

Additionally, they adopted the following core values:

> Water Quality - All producers desire to produce water of a quality that is safe and suitable for the intended beneficial use.
>
> Long View - All producers desire a long term, stable planning environment to develop local water resources management projects. The producers, independently and through

Watermaster, will strive to take the long view in their planning assumptions and decisions to ensure a stable and robust management program.

Increased Local Supplies - All producers will, for an undetermined time into the future, be dependent on high quality imported water for direct uses and for groundwater replenishment. Because high quality imported supplies may not be available, the producers will strive to minimize their dependency on imported water and to increase their dependency on local supplies when economically justified.

Groundwater Storage - Unused groundwater storage capacity in the Chino Basin is a precious natural resource. The producers will manage the unused storage capacity to maximize water quality and reliability and minimize the cost of water supply for all producers. The program will encourage the development of regional conjunctive use programs.

Storm Water Recharge - The producers will strive to increase storm water recharge and thereby maintain and enhance the safe yield and water quality.

Reclaimed Water Recharge - The safe yield of the Chino Basin will be enhanced through the recharge of reclaimed water. The producers will strive to maximize the recharge of reclaimed water to enhance the safe yield and water quality.

Cost Of Groundwater Supplies - The producers are committed to finding ways to subsidize the cost of using poor quality groundwater in a cost effective and efficient manner.

To complete the program development phase of the Optimum Basin Management Program, three parallel processes are required: institutional, engineering and financial. The institutional process defines the management agenda, directs the engineering and financial processes and builds an institutional consensus for Optimum Basin Management Program implementation. The engineering process develops planning data, evaluates the technical and economic performance of the Optimum Basin Management Program proposals. The financial process will develop alternative financing plans for the Optimum Basin Management Program as it evolves. These processes will provide feedback to each other as the Optimum Basin Management Program is developed. Watermaster anticipates completion of the scoping and program development phases to cost over $500,000 to complete.

The institutional process is well underway. The enclosed document contains the outline of the Optimum Basin Management Program report and the recommended scope of work and schedule to complete the report. Tasks 1, 2 and 3 of the engineering process are also well underway. It is anticipated a financial consultant will be retained in the near future and the financial process will begin. Several action items have been identified and approved as early implementation items as follows:

Early implementation items planned or already in progress for the OBMP:

1. Monitoring (as described in 205j Grant application).
2. CIGSM Data & Program Update (as described in 319h application).
3. Staff Gage Installation Project (from recommendation regarding Recharge Master Plan High Priority Projects).
4. TIN/TDS Study - Continue Participation.
5. RAM Tool – Complete Development.
6. State of the Basin Report, Watershed Management Initiative of the Regional Water Quality Control Board – Coordinate & Integrate to Extent Possible.
7. Urban Water Quality & Quantity – Continue Monitoring & Development.

Additionally, an interest and general support has been expressed for the Santa Ana River Work Group. Further consideration will be given to financial participation in this effort when several questions have been answered and the benefit of participation is better identified.

During June, the producers and the Watermaster Board began submitting management program concepts or proposals for review and discussion. The management concepts or proposals are an integral part to be addressed in the development of the OBMP process. The levels of interest and creativity are very encouraging and the atmosphere is both collegial and synergistic. Attachment B contains copies of the submittals that were received for the June 11 and 25, 1998 meetings.

It should be noted at this time that the recommended scope contains only a tentative scope of work for the financial portion of the OBMP. This is due to the fact that the financial scope cannot be finalized until the process progresses to the point that at least some components of the OBMP have been defined and the financial consultant can assist with its development.

In summary, Watermaster has high expectations that this schedule and scope of work will result in the successful development of an Optimum Basin Management Program for the Chino Basin.

Respectfully Submitted,

Robert Neufeld, Chairman
Chino Basin Watermaster

RECOMMENDED SCOPE OF WORK
for the Development of the
Chino Basin
Optimum Basin Management Program

Prepared by

Chino Basin Watermaster

June 25, 1998

RECOMMENDED SCOPE OF WORK
for the Development of the
Chino Basin
OPTIMUM BASIN MANAGEMENT PROGRAM

Development of the Optimum Basin Management Program (OBMP) requires three parallel processes: institutional, engineering and financial. The institutional process defines the management agenda, directs the engineering and financial processes and builds an institutional consensus for Optimum Basin Management Program implementation. The engineering process develops planning data and evaluates the technical and economic performance of the Optimum Basin Management Program proposals. The financial process will develop alternative financing plans for the Optimum Basin Management Program as it evolves. These processes will provide feedback to each other as the Optimum Basin Management Program is developed.

Institutional Process

The institutional process includes the following tasks:

Task 1 Identify needs and interests of interested parties.
Task 2 Establish meeting schedule necessary to complete OBMP within time-frame allocated.
Task 3 Develop and refine recommended scope of work based on needs identified.
Task 4 Identify early implementation actions and develop list of potential components of the OBMP to balance needs and interests expressed.
Task 5 Evaluate components and develop recommended management program and implementation plan.

The first three tasks are completed with the submission of the recommended scope of work to the Special Referee and the Court. The meeting schedule has been set for the second and fourth Thursdays of each month, unless more meetings (e.g. subgroups or working committees) are suggested on an as needed basis. New needs and interests may be identified as progress to complete the OBMP is made and they will be addressed during development of the final OBMP document.

Task 4 work has begun with several early implementation action items having already been approved and with initial management concepts submitted to begin the list of potential components of the OBMP. The management concepts being submitted represent concepts or implementation plans that describe the party's vision of the Optimum Basin Management Program. Submission of management concepts will continue into July and August and should reflect the needs and interests that were previously identified for the Optimum Basin Management Program. These proposals will be presented to the group for discussion, and the discussion will center on identifying

components of the proposals that best balance the competing needs and interests for basin utilization. All proposals submitted will be discussed and listed.

For Task 5, those proposals that appear the most promising will be forwarded to the engineering and financial consultants for reconnaissance-level, technical, economic and financial analyses. The results of the engineering and financial analyses will be submitted back to the producers and Watermaster for review. It is anticipated this will be a lengthy and iterative process that should continue as long as necessary within the time constraints described in the Judge's ruling.

Working together, the producers and the Watermaster Board will by the conclusion of Task 5, recommend an Optimum Basin Management Program. The recommendation will include a proposed implementation plan. The engineering and financial consultants will prepare the final Optimum Basin Management Program documents for Watermaster to submit to the Special Referee and the Court.

Engineering Process

The engineering process is fairly well defined and is included in a subsequent section of this document. The tasks include:

Task 1 Develop Optimum Basin Management Program Criteria
Task 2 Assess Current State of the Basin
Task 3 Describe Water Demands and Water Supply Plans
Task 4 Develop the Components of the Optimum Basin Management Program
Task 5 Develop Implementation Plan
Task 6 Finalize Optimum Basin Management Program Document

The first three tasks define the planning environment that forms the basis for the Optimum Basin Management Program. Tasks 4 and 5 respond directly to the institutional process and include evaluation of Optimum Basin Management Program proposals and the preparation of an implementation plan. The Optimum Basin Management Program document will be developed in Task 6.

Financial Process

The financial process will review the Optimum Basin Management Program proposals that have been through the institutional and engineering processes. It tentatively includes the following tasks:

Review the economic analyses of the components of the Optimum Basin Management Program
List the available funding sources that may be appropriate
Describe the terms and conditions for these sources
Describe the requirements and procedures for obtaining funding from these sources

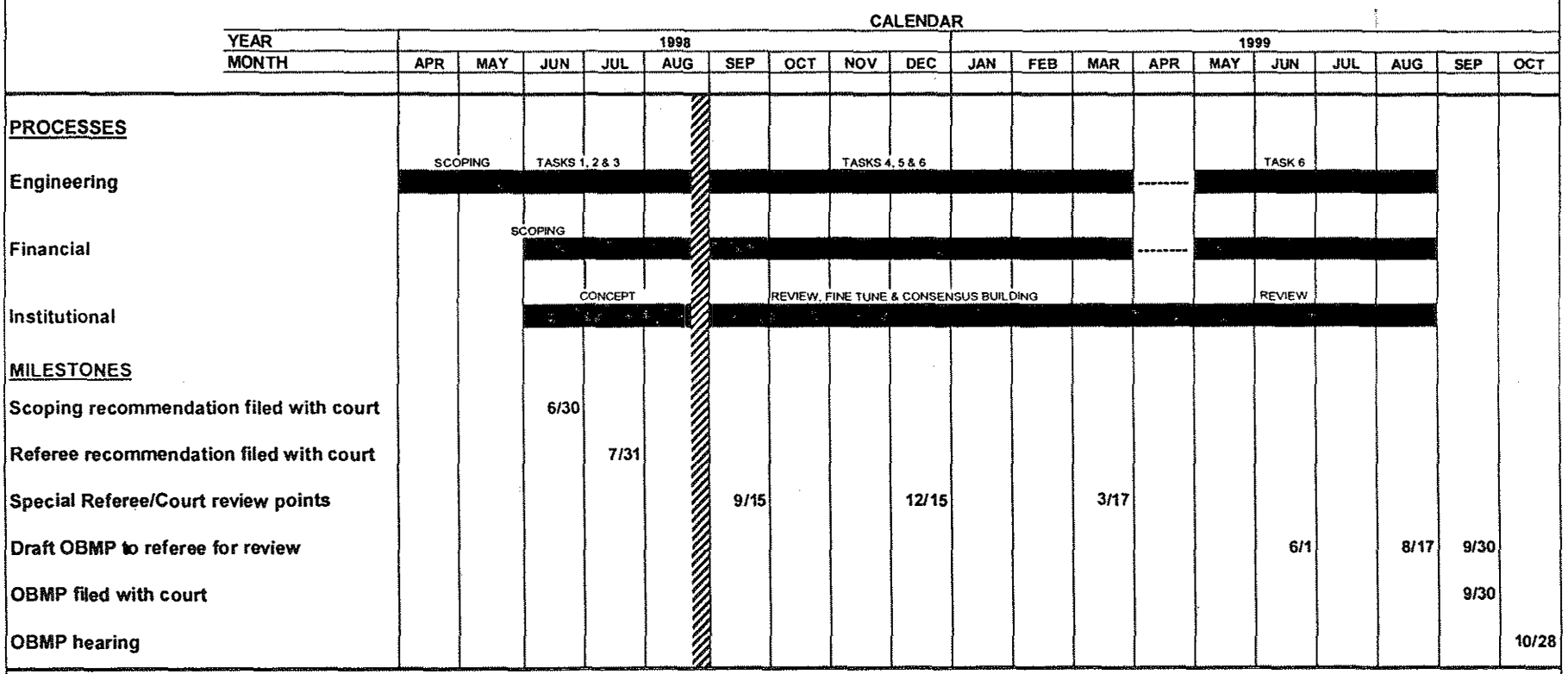
Describe the timeline for obtaining funding from these sources
Develop a robust financial plan for the final Optimum Basin Management Program including:
Palette of funding sources
Administrative activities
Institutional activities (lobbying, partnering, etc.)

A very tentative, draft scope of work for the financial process is included in the final section of this document. It was developed without the review of a financial consultant, and without the benefit of feedback through the institutional process. Therefore, it will change as the program develops.

SCHEDULE

Figure 1 shows the phasing of the tasks and the parallel processes for the development of the Optimum Basin Management Program. The timing of specific milestones has been tailored to fit the schedule in the Judge's ruling. It includes review points for the Special Referee and the Court during the development of the Optimum Basin Management Program.

FIGURE 1
OPTIMUM BASIN MANAGEMENT PROGRAM
DEVELOPMENT SCHEDULE



OUTLINE OF OPTIMUM BASIN MANAGEMENT PROGRAM DOCUMENT

The outline presented below demonstrates what the Optimum Basin Management Program development process will produce for approval by the court and implementation by Watermaster. By *starting with the end in mind,* it demonstrates the timeline and process necessary to develop the program content and implementation plan. The Optimum Basin Management Program document will at a minimum contain five sections:

Section 1	Optimum Basin Management Program Criteria
Section 2	Current State of the Basin
Section 3	Water Demands and Water Supply Plans
Section 4	Components of the Optimum Basin Management Program
Section 5	Implementation Plan

Section 1 defines the Optimum Basin Management Program criteria and thereby the scope of the Optimum Basin Management Program. Section 2 describes the historical change in storage, current groundwater quality and recent changes in groundwater quality. Section 3 describes the need for groundwater in the Chino Basin and how the producers would likely act without the Optimum Basin Management Program. Section 4 describes the components of the Optimum Basin Management Program that are necessary to accomplish the mission of the Optimum Basin Management Program and to satisfy the demands described in Section 3 with the resources described in Section 2. Section 5 describes the implementation plan for the Optimum Basin Management Program including timing and financial aspects.

Section 1 Optimum Basin Management Program Criteria

The purpose of this section is to define the physical limits of the Basin, interests within the Basin, objectives, mission statement, and key definitions and assumptions of the Optimum Basin Management Program.

Description of the Basin. The description will include the Basin's boundaries (legal and physical), area, volume, geology, climate and hydrology in a manner written for basin managers (as opposed to geologist and engineers). The hydrologic description will include historical inflows and outflows. This information is readily available from the CBWRMS and other studies.

Mission Statement. The producers and Watermaster developed the following mission statement. *The purpose of the Optimum Basin Management Program is to develop a groundwater management program within the provisions of the Judgment that enhances the safe yield and the water quality of the basin, enabling all groundwater users to produce water from the basin in a cost-effective manner.*

Core Values. The producers and Watermaster have adopted the following core values:

Water Quality - All producers desire to produce water of a quality that is safe and suitable for the intended beneficial use.

Long View - All producers desire a long term, stable planning environment to develop local water resources management projects. The producers, independently and through Watermaster, will strive to take the long view in their planning assumptions and decisions to ensure a stable and robust management program.

Increased Local Supplies - All producers will, for an undetermined time into the future, be dependent on high quality imported water for direct uses and for groundwater replenishment. Because high quality imported supplies may not be available, the producers will strive to minimize their dependency on imported water and to increase their dependency on local supplies when economically justified.

Groundwater Storage - Unused groundwater storage capacity in the Chino Basin is a precious natural resource. The producers will manage the unused storage capacity to maximize the water quality and reliability and minimize the cost of water supply for all producers. The plan will encourage the development of regional conjunctive use programs.

Storm Water Recharge - The producers will strive to increase storm water recharge and thereby maintain and enhance the safe yield and water quality.

Reclaimed Water Recharge - The safe yield of the Chino Basin will be enhanced through the recharge of reclaimed water. The producers will strive to maximize the recharge of reclaimed water to enhance the safe yield and water quality.

Cost Of Groundwater Supplies - The producers are committed to finding ways to subsidize the cost of using poor quality groundwater in a cost effective and efficient manner.

Interests within the Basin. An inventory of the interests within the basin will be described in the Optimum Basin Management Program.

Program Goals. Based on consensus, a clear statement of the program goals will be developed for the interests described in the Optimum Basin Management Program.

Definitions and Planning Assumptions. The definition of some terms used in the Optimum Basin Management Program will be stated. For example, the term *optimal* will be defined so that we will know if the Optimum Basin Management Program satisfies the definition. An example of a key planning assumption to be decided is what will be assumed for Metropolitan Water District of Southern California's (Metropolitan)

imported water cost, and whether or not we will allow these costs (or Metropolitan programs) to influence the Optimum Basin Management Program. Economic evaluation methods and criteria are another example of key definitions and assumptions that need to be described herein.

State and Federal Regulations. State and Federal regulations regarding drinking water and reclaimed water will be described including numerical criteria and the relationship between source water quality and reclaimed water quality discharged to the environment. The numerical criteria include drinking water quality standards, receiving-water quality standards, waste discharge requirements, and waste increments. The proposed *drinking water source water assessment and protection* regulations and *regulations for planned recharge projects that use reclaimed water* will be summarized and their relevancy to the Optimum Basin Management Program will be discussed.

Section 2 Current State of the Basin

Estimates of the historical groundwater storage and water quality will be prepared to show how the availability and quality of groundwater have changed in response to climate, land use and basin management practices. These estimates will be based on the groundwater monitoring work done by Watermaster, the state of the watershed work being done by the Regional Water Quality Control Board, the CBWRMS, and other sources. Historical groundwater production patterns will be illustrated with maps and tables. Pollution sources and their strengths will be identified. The purpose of this section is to develop as complete an assessment of the state of the basin as possible. This section will have the following subsections and content:

Groundwater Storage Time History

Methodology for Estimating Groundwater Storage

Time History of Groundwater Storage for the Basin

- Five to ten maps showing groundwater levels throughout the basin
- Table showing the time history of groundwater storage in the basin
- Time history plot of groundwater storage over time

Localized Time Histories of Groundwater Storage

- Table showing the time histories of groundwater storage for each subarea
- Time history plots of groundwater storage over time for the subarea (grouped)

Factors that Change Groundwater Storage

- Table comparing groundwater storage to time histories of climate, groundwater pumping, volume in storage accounts and artificial recharge
- Time history plot comparing groundwater storage to time histories of climate, groundwater pumping, volume in storage accounts and artificial recharge

Groundwater Production Time History

Sources of Groundwater Production Data

Historical Groundwater Production

- Tables showing groundwater production by type (pool), and by subarea
- Time history plots of groundwater production by type (pool) and by subarea
- Five to ten maps showing spatial distribution of groundwater production

Factors that Impact Groundwater Production

- Table comparing groundwater production to time histories of climate, water quality, and land use.
- Time history plot comparing groundwater storage to time histories of climate, groundwater pumping, volume in storage accounts and artificial recharge

Historical and Current Groundwater Quality

Sources of Groundwater Quality Data

Sources of Water Quality Degradation

Non-point Sources

- Series of TDS, nitrate, herbicide and pesticide maps spanning the period 1960 to 1997
- Series of land use maps for the period 1933 through 1993
- Series of representative TDS, nitrate herbicide and pesticide time histories spanning the period 1960 to for subareas
- Tables showing the current concentration and mass of TDS and nitrate for the basin as a whole and the subareas

Point Sources

- Map showing the location of known and suspected point sources and associated water quality anomalies

Role of the Vadose Zone

Section 3 Water Demands and Water Supply Plans

The purpose of this section is to describe current production patterns and how production patterns could change in the future. Estimates of historical, current and future water demands and the cost of production from the Chino Basin will be developed for all municipal and industrial producers and agricultural producers in the aggregate. The water supply plans of municipal and industrial producers will be described. A change in future production patterns could result in a loss of yield if groundwater production is shifted north to find better water quality or better production capability. The criteria to develop groundwater treatment facilities in the southern part of the basin as the land converts from agricultural to urban uses will be developed. Costs associated with production will be estimated. The work done in the CBWRMS will be used as a starting point for this section. This section will have the following subsections:

Methodology for Estimating Demands

Sources of Demand Data

Historical and Current Water Demands

- Tables listing the time history of water demand by entity
- Time history plots grouped by type and total

Current Water Supply Plans and Costs

- Tables showing water supply plans and cost for each appropriator, overlying non-agricultural producer and the overlying agricultural pool in aggregate

Future Water Demands, Supply Plans and Costs

- Tables showing future (stepped and ultimate, depending on availability) water supply plans and cost for each appropriator, overlying non-agricultural producer and the overlying agricultural pool in aggregate
- Map(s) (one to two) showing the showing spatial distribution of future groundwater production

Source Water Supply

- Tables showing the current and future TDS and nitrate concentrations in the water supply for each appropriator, overlying non-agricultural producer and the overlying agricultural pool in aggregate

Future Water Demands, Supply Plans and Costs

- Tables showing future (stepped and ultimate, depending on availability) water supply plans and cost for each appropriator, overlying non-agricultural producer and the overlying agricultural pool in aggregate
- Map(s) (one to two) showing the showing spatial distribution of future groundwater production

Source Water Supply

- Tables showing the current and future TDS and nitrate concentrations in the water supply for each appropriator, overlying non-agricultural producer and the overlying agricultural pool in aggregate

Reclaimed Water Flows

- Tables showing the current and future reclaimed water discharges and associated TDS and nitrate concentrations in reclaimed water for each POTW

Section 4 Components of the Optimum Basin Management Program

This section will contain descriptions of components of the Optimum Basin Management Program. These components will be described in enough detail to allow Watermaster to design appropriate projects and to develop agreements regarding the operation of the Basin. The components described below are based on several years of study by Watermaster. Other components may be necessary and added through the current process. The Optimum Basin Management Program will be modified over time and the components described in the first Optimum Basin Management Program can be modified, deleted and/or new components can be added in subsequent revisions to the Optimum Basin Management Program.

Groundwater Storage Management. This component consists of the establishment of implementation criteria that encourage best use of the available groundwater storage volume for individual producers and the producers in aggregate. Individual producers want to store water temporarily in the groundwater basin to better manage their water supply systems. Some of this water is lost to the Santa Ana River and how these losses are accounted for will be determined. The same is true when water is temporarily stored as either cyclic storage or in a conjunctive use program. This section will have the following subsections:

Losses to River from Storage

Cyclic Storage and Conjunctive Use

- Maps showing the location of cyclic storage and conjunctive use features
- Tables and figures that describe cyclic storage and conjunctive use operations and losses from storage

Limits on Local Storage Accounts, Cyclic Storage and Conjunctive Use

- Tables and figures that show the volume of water in local storage accounts, proposed storage limits, and accounting for losses
- Tables and figures that show the volume of water in cyclic storage and other storage accounts, their proposed storage limits, and accounting for losses

The technical work to support this component for the first Optimum Basin Management Program has mostly been done by Watermaster.

Safe Yield Management. This component includes a description of how production and recharge effect safe yield. The tradeoffs between moving future municipal groundwater production north to avoid the construction of expensive groundwater treatment facilities in the south will be described. Areas of localized overdraft will be delineated. The study of production patterns will be done early in the development of the Optimum Basin Management Program.

The optimization of the recharge of local water including runoff and reclaimed water will increase safe yield. A significant part of this work has been done and was reported in the Phase 1 Recharge Master Plan. The Phase 1 findings are being considered in the Optimum Basin Management Program and the subsequent phases of the Recharge Master Plan efforts may be implemented as part of the Optimum Basin Management Program. This section will have the following subsections:

Methodology for Analyzing Production Patterns

Optimizing Production Patterns

- Tables, figures and Maps illustrating the relationship of the spatial distribution of production on safe yield

Optimizing Recharge of Local Water

Runoff

- Revised tables, figures and maps from the *Recharge Master Plan showing* the recommended storm water, reclaimed water and imported water recharge plan

Costs

- Revised tables and figures that show cost and the phasing of facilities and associated costs over time

Water Quality Management. Water quality is one of the primary motivators of the Optimum Basin Management Program. Water quality management will vary by constituent. Mineral constituents such as nitrate or TDS are expensive to treat, regional in extent, and are usually the results of non-point sources such as agriculture. Organics are relatively inexpensive to treat, travel in distinguishable plumes and are usually associated with point sources. Other constituents of concern include radionuclides, some metals and perchlorate. Watermaster and the Regional Board have developed a comprehensive database for water quality up through the middle of 1997. A summary of water quality interests by constituent and point of discharge (if known) will be prepared. A series of groundwater treatment projects will be described to provide water of suitable quality for use by producers in the basin. This section will have the following subsections:

Groundwater Quality Challenge

- Maps and tables that describe the groundwater quality for each appropriator, overlying non-agricultural producer and the overlying agricultural pool in aggregate

Groundwater Supply Quality Improvement Projects

Alternatives

- Maps, tables and figures illustrating facilities layouts and descriptions, operating plans, beneficiaries and costs

Phasing of Promising Alternatives and Cost

- Maps, tables and figures illustrating facilities layouts and descriptions, operating plans, beneficiaries and costs

Groundwater Exchange with Outside of the Basin Interests

Alternatives

- Maps, tables and figures illustrating facilities layouts and descriptions, operating plans, beneficiaries and costs

Phasing of Promising Alternatives and Cost

- Maps, tables and figures illustrating facilities layouts and descriptions, operating plans, beneficiaries and costs

Integrating the Plan Components. The components described above need to be integrated in the Optimum Basin Management Program. This part of the document describes: the interrelationship of the components and the optimum range of

implementation for each component based on the definition of optimality described in Section 1; institutional framework; and principles of agreement that are necessary to implement the components. This section will have the following subsections.

Range of Implementation Levels and Associated Costs for each Component for the Optimum Basin Management Program

Synergies and Tensions Among the Components

Recommended Range in Implementation Levels for each Component

- Maps, tables and figures illustrating facilities layouts and descriptions, operating plans, beneficiaries and costs

Institutional Framework

Principles of Agreement

Section 5 Implementation Plan

This section describes how the components of the Optimum Basin Management Program described in Section 4 will be mated with the temporal need for these components and how the components will be implemented. One premise of the program to be determined is how the components will be implemented, as they are actually needed or on a fixed time schedule. The implementation plan will identify a specific list of actions, the entities responsible for implementation and the basis for implementation. Alternatives for financing the program including the use of outside sources of capital will be described. Equitable repayment schemes developed from consensus based criteria will be described and a repayment scheme will be recommended. This Section will have the following subsections:

Action Items to Implement the Optimum Basin Management Program

Timeline for Component Implementation

- Maps, tables and figures illustrating component location and phasing

Detailed Action Item List – including: narrative/quantitative description of the action; dependencies on other actions/components; parties involved in the action; institutional arrangements that need to be completed to launch the action; and cost.

Financing the Optimum Basin Management Program

Capital Requirements

- Tables and figures that show the capital requirements over time

Funding Programs and Sources

Local State and Federal Government Sources – including descriptions of the programs, terms and conditions for these sources, requirements and procedures for obtaining funding from these sources, and a timeline for obtaining funding from these sources.

Institutional Sources – same as above as appropriate.

Revenue Generation and Repayment Plans

Recommended Financial Plan

Technical Appendices – Contains Task Memorandums for Engineering Work

Financial Appendices – Contains Task Memorandums for Financial Work

Institutional Appendices – Contains Needs and Interests Responses Received; Summary of Needs and Interests Responses Received; and Initial Management Concepts Submitted

SCOPE OF WORK FOR THE ENGINEERING PROCESS

This scope of work has been prepared to describe the tasks necessary to complete the Optimum Basin Management Program report as described in the proposed outline. The scope of work and its deliverables (presentations, technical memorandums, workshops and draft section reports) are structured to provide constant information flow to Watermaster and feedback from Watermaster to guide the development of the program.

Some of the tasks described below will be done jointly with the financial consultants or completely by the financial consultant. These Tasks are indicated by the inclusion of either *(to be done jointly by the engineering and financial consultants* or *(to be done by the financial consultants)* at the end of the task description. The engineering consultants will do all other tasks.

Task 1 Develop Optimum Basin Management Program Criteria

The purpose of Task 1 is to define the physical limits of the Basin, interests within the Basin, goals and objectives, and key definitions and assumptions of the Optimum Basin Management Program. The task deliverable is a draft of Section 1 of the Optimum Basin Management Program. This task consists of five subtasks as described below:

1.1 Develop Simple Physical and Hydrologic Description of Basin

A simple physical description of the basin will be prepared that will include the Basin's boundaries (legal and physical), area, volume, geology, climate and hydrology in a manner written for basin managers (as opposed to geologists and engineers). The hydrologic description will include historical inflows and outflows. This information is readily available from the CBWRMS and other available reports.

1.2 Describe Interests Within the Basin

An inventory of interests within the basin will be described, and those interests to be addressed by the Optimum Basin Management Program will be identified. Some of these interests have recently been submitted to Watermaster by some of the stakeholders during the Optimum Basin Management Plan scoping process. Other interest submittals will be solicited from stakeholders that have not commented. All interests will be categorized and summarized in tables and text.

1.3 Develop Optimum Basin Management Program Goals

Given the interests that can be addressed by the Optimum Basin Management Program and the mission statement developed by Watermaster, a set of draft program goals will be developed. These goals along with the results of Tasks 1.1 and 1.2 will be submitted to Watermaster in a memorandum format. Watermaster will review the program goals memorandum and provide written and oral comments at regularly scheduled meetings. The program goals memorandum will be revised based on these comments. It is anticipated that the memorandum will be revised two to three times. The program goals memorandum will consist of about 20 to 25 pages of text with an unknown number of tables, figures and maps.

1.4 Develop Key Definitions and Planning Assumptions

The definition of terms used in the Optimum Basin Management Program will be stated. For example the term *optimal* will be defined so that we will know if the Optimum Basin Management Program satisfies the definition. An example of a key planning assumption to be decided is what will be assumed for Metropolitan Water District of Southern California's (Metropolitan) imported water cost, and whether or not we will allow these costs (or Metropolitan programs) to influence the Optimum Basin Management Program. Assumptions regarding economic evaluation methods and criteria will also be made. If necessary, these assumptions can change during the study. State and Federal regulations regarding drinking water and reclaimed water will be described including numerical criteria and the relationship between source water quality and reclaimed water quality discharged to the environment. The numerical criteria include drinking water quality standards, receiving-water quality standards, waste discharge requirements, and waste increments. The proposed *drinking water source water assessment and protection* regulations and *regulations for planned recharge projects that use reclaimed water* will be summarized and its relevancy to the Optimum Basin Management Program will be discussed. A short memorandum will be prepared in draft form for review by Watermaster. Watermaster will review the program definitions and assumptions memorandum and provide written and oral comments at regularly scheduled meetings. The definitions and assumptions memorandum will be revised based on these comments. It is anticipated that the memorandum will be revised two to three times. The definitions and assumptions memorandum will consist of about 20 to 25 pages of text with unknown number of tables, figures and maps.

1.5 Prepare *Section 1 Optimum Basin Management Program Criteria*

A draft Section 1 will be prepared using products of Tasks 1.1 through 1.4 and the comments received on the task memorandums. Copies of draft Section 1 will be prepared and submitted to Watermaster for review and comment. The draft Section 1 will contain approximately 20 to 35 pages of text with numerous tables, figures and maps.

Task 2 Assess Current State of the Basin

The objective of this task is to prepare a concise description of the recent changes in groundwater storage and water quality of the Basin. The task deliverable is a draft Section 2 of the Optimum Basin Management Program.

Estimates of the historical groundwater storage, groundwater production, and water quality will be prepared to show how the availability and quality of groundwater have changed in response to climate, land use and basin management practices. These estimates will be based on the groundwater monitoring work done by Watermaster, the *State of the Watershed* work done by the Regional Water Quality Control Board (in preparation), the CBWRMS, and other sources. Pollution sources and their strengths will be identified. Maps and time history plots will be prepared to illustrate the findings. This task consists of four subtasks as described below:

2.1 Describe Time Histories of Groundwater Storage for the Basin and Subareas within the Basin

Groundwater level maps will be developed for 5 to 10 different years for the period 1960 through 1998. The selection of the years to be mapped will be based in part on extremes in the

precipitation record, annual pumping volumes and available data. The groundwater in storage in the basin will be estimated for each of the years that groundwater levels are mapped. Groundwater level time history plots will be developed for a set of representative wells (20 to 30) distributed throughout the Basin. The change in storage in the Basin as a whole and in several (up to 10) subareas of the Basin will be estimated and correlated to climate, production, production in nearby areas, volume of storage accounts, and artificial recharge.

2.2 Describe Temporal and Spatial Distribution of Groundwater Production

The groundwater production histories for the Chino Basin will be compiled for all known producing wells in the Chino Basin. A production time history will be developed with maps to show the changes in the spatial pattern and magnitude of groundwater production in the Basin. Groundwater production information is readily available from Watermaster. The change in groundwater production in the Basin as a whole and in several (up to 10) subareas of the Basin will be estimated and correlated to climate, water quality and land use changes. The safe yield estimates developed for the Judgment and more recent estimates presented in the Phase 1 Report for the *Recharge Master Plan Report* will be described. The impact of past and future activities that could affect safe yield will be described.

2.3 Describe Temporal and Spatial Distribution of Groundwater Quality

A time series of maps showing the change in concentration of TDS, nitrate, and selected metal and organic constituents will be developed to show the spatial and temporal patterns of groundwater quality. Chemical time histories for a set of representative wells (20 to 30) distributed throughout the Basin will be developed and graphically compared to climatic indices, drinking water standards and Basin Plan objectives. Water quality trends in the Basin as a whole and in several (up to 10) subareas of the Basin will be described and correlated to land use, historical waste discharge, climate, and artificial recharge. Water quality anomalies from known point sources (such as industrial sites and landfills) and unknown sources will be described based on readily available information.

The vadose zone contamination interest described in past Basin Planning documents, the Metropolitan Storage Program Environmental Impact Report, and the CBWRMS will be characterized in the context of current and future water quality.

2.4 Prepare *Section 2 Current State of the Basin*

A draft Section 2 will be prepared using products of Tasks 2.1 through 2.3. Copies of draft Section 2 will be prepared and submitted to Watermaster for review and comment. The draft Section 2 will contain approximately 30 to 35 pages of text with numerous tables, figures and maps.

Task 3 Describe Water Demands and Water Supply Plans

The objectives of this task are to develop estimates of current and future water demands for all Chino Basin groundwater producers, and to describe water supply plans with and without the Optimum Basin Management Program. This work was done in the early 1990's for the CBWRMS. The work proposed herein will update and expansion of this earlier work. The deliverable for this task is a draft Section 3 of the Optimum Basin Management Program.

Estimates of historical, current and future water demands and the cost of production from the Chino Basin will be developed for all municipal and industrial producers and agricultural producers in aggregate. The water supply plans of municipal and industrial producers will be described. The need for groundwater treatment facilities in the southern part of the basin will be projected. Costs associated with current and future production will be estimated using the criteria, assumptions and methods developed in Task 1. The work done in the CBWRMS will be used as a starting point for this section. This Task consists of four subtasks as described below:

3.1 Estimate Current and Future Water Demands for Each Member of the Appropriative and Overlying non-Agricultural pools and the Overlying Agricultural Pool in Aggregate

Task 3.1.1 Obtain information from producers. Each member of the appropriative and overlying non-agricultural pools will review the data and assumptions used to develop water demand projections from the CBWRMS and provide comments and revisions, as necessary, to update the information for their entity. The types of data used for demand forecasts are land use (or other units of water use), assumed temporal change in land use, and associated unit water duties. Water supply plan information includes the identification of each source, seasonal capacity and demand on each source. Each member of the overlying non-agricultural pool and appropriative pool will be contacted and requested to review the CBWRMS for their water supply plans, current and projected demands; and to provide comments and suggested changes. One presentation at a meeting will be made to review the CBWRMS methodology and to provide direction to the members.

Task 3.1.2 Compile changes into a memorandum for agency review. The suggested changes will be compiled in a letter report and distributed back to the members for review and comments. The letter report will consist of about five to seven pages of text and 20 to 30 tables.

3.2 Update Demand Estimates and Water Supply Plans for Each Member of the Appropriative and Overlying non-Agricultural pools and the Overlying Agricultural Pool in Aggregate

Task 3.2.1 Revise CBWRMS water demand forecasts. Using the updated data developed in Task 3.1, new water demand forecasts will be prepared and described in tabular and graphical formats.

Task 3.2.2 Revise the CBWRMS water supply plans. The water supply plans associated with the demands will be described in tabular and map formats. The water supply plans will be developed on an annual basis considering seasonal and climatic extremes. A task memorandum that summarizes these results will be prepared and submitted to Watermaster for review and comment. The water demand and supply plan information will be revised based on comments received on the task memorandum. The task memorandum will consist of about 10 to 15 pages of text and about 20 to 30 tables.

3.3 Estimate the Cost of Groundwater Production for Each Member of the Appropriative and Overlying non-Agricultural pools and the Overlying Agricultural Pool in Aggregate

Task 3.3.1 Obtain groundwater production costs information from the appropriative and overlying non-agricultural pools. A uniform information request form will be developed and provided to the producers in the appropriative and overlying non-agricultural pools. The form will itemize capital and operations and maintenance costs (fixed and variable), so that production costs can be compared among producers in a consistent manner. The request form will be explained to the members at a meeting. Each member of the appropriative and overlying non-agricultural pools will respond to this information request in a timely manner.

Task 3.3.2 Estimate cost of groundwater production. Using the data collected in Task 3.3.1 and the water supply plan forecasts in Task 3.2, the current and projected costs of groundwater production will be estimated. A task memorandum that summarizes these results will be prepared and submitted to Watermaster for review and comment. The groundwater production costs information will be revised based on comments received on the task memorandum. The task memorandum will consist of about five to ten pages of text and about 20 to 30 tables.

3.4 **Estimate the Composite TDS and Nitrate Concentrations of the Water Supplies for Each Member of the Appropriative and Overlying non-Agricultural pools and the Overlying Agricultural Pool in Aggregate**

Task 3.4.1 Estimate trends in water supply system composite TDS and nitrate concentrations from observed source data and compare to estimates prepared by purveyor. The trend in TDS and nitrate concentration for each well used by the producers in the appropriative and overlying non-agricultural pools will be estimated from TDS and nitrate concentration data from each well. The trend in TDS and nitrate concentration for non-well sources will be estimated based on available data and engineering judgment. The composite supply TDS and nitrate concentration will be based on these results and the water supply plans developed in Task 3.2. TDS and nitrogen interests related to water supply will be characterized from the water supply system composites. A brief task memorandum will be prepared and distributed to members for review and comment. The task memorandum will consist of about five to ten pages of text and an unknown number of tables, figures and maps.

Task 3.4.2 Estimate the waste increments and waste discharge concentrations to groundwater and the Santa Ana River. CBMWD, Upland, JCSD and the WRRWTP-JPA will provide their current and recent past estimates of the TDS waste increments from municipal and industrial use, and waste discharge TDS and nitrogen concentrations from reclamation plants. Estimates of the TDS and nitrate waste increments and waste discharge concentrations to groundwater will be obtained from the CBWRMS and the TIN/TDS study. An estimate of the projected TDS in reclaimed water will be prepared.

Task 3.4.3 Demonstrate the sensitivity of reclaimed water quality to source water quality. The sensitivity of TDS in reclaimed water produced by reclamation plants to TDS in supply sources will be assessed by looking at the trends in TDS in groundwater and other sources, individually and in combination with other sources. A task memorandum will be prepared and distributed to members for review and comment. The task memorandum will consist of about five to ten pages of text and an unknown number of tables, figures and maps.

3.5 **Prepare *Section 3 Water Demands and Water Supply Plans***

A draft Section 3 will be prepared using products of Tasks 3.1 through 3.4 and the comments received on the task memorandums. Copies of draft Section 3 will be prepared and submitted to Watermaster for review and comment. The draft Section 3 will contain approximately 30 to 35 pages of text with numerous tables, figures and maps.

Task 4 Develop the Components of the Optimum Basin Management Program

The purpose of this task is to develop Program components that, when implemented, will meet the Program objectives developed in Task 1. These components will be developed in enough detail to allow Watermaster to design appropriate projects and to develop agreements regarding the operation of the Basin. The deliverable for this task will be a

draft of Section 4 of the Optimum Basin Management Program. This task consists of seven subtasks as described below:

4.1 Develop Groundwater Storage Management Plan Component

Task 4.1.1 Describe processes for losses from storage, and obtain consensus on methodology and current thinking on storage limits. The previous letter report developed by *Mark J. Wildermuth, Water Resources Engineers,* and the most current proposal developed by Watermaster staff will be distributed to the members for review. A memorandum summarizing the current status of storage limits will be prepared and transmitted with the above.

Task 4.1.2 Develop technical and administrative procedures to set storage limits and to account for losses for water stored in local storage accounts, cyclic storage accounts, and supplemental water storage accounts. This subtask will be an iterative process. Proposals for these procedures will be developed and submitted to Watermaster prior to a regularly scheduled meeting. A presentation on the proposal will be made at the meeting. Comments received will be incorporated and the process will be repeated two to three times. Each proposal will be written in memorandum format and consist of about five to ten pages of text with associated tables and figures.

4.2 Develop Safe Yield Management Plan Component

Task 4.2.1 Describe process for loss of yield if production shifts from the south to the north. A presentation will be made at a regularly scheduled meeting to describe the underlying physical processes that control the relationship between production location and safe yield.

Task 4.2.2 Reconnaissance-level evaluation of the loss of yield that will occur if production is shifted north. The Rapid Assessment Model will be used to evaluate the loss of yield if production in the southern part of the basin is moved northward. A baseline groundwater production plan will be developed that maintains groundwater production in the south, and an alternative plan will be developed where groundwater production is moved northward to areas of potable groundwater quality. These plans will be simulated with the RAM tool. The annual increase in groundwater outflow from the basin that will occur when production is moved north is equivalent to the change in yield. Sensitivity studies will be done to characterize the change in yield as a range.

Task 4.2.3 Review Phase 1 Recharge Master Plan, revise findings and adopt key findings. A memorandum will be prepared that describes and updates the key findings of the Phase 1 Recharge Master Plan.

Task 4.2.4 Estimate costs and benefits of the safe yield management component. The costs and benefits associated with changing groundwater production patterns (Task 4.2.2) and artificial recharge will be described using the format and criteria described in Task 1.5. The cost and benefits due to changing (or not changing) groundwater production patterns will be primarily based on avoided replenishment costs. The costs and benefits for artificial recharge will be primarily an update of the cost and benefit analysis done in the Phase 1 Recharge Master Plan Report.

Task 4.2.5 Prepare Task 4.2 Memorandum. A task memorandum will be prepared to document the findings of Task 4.2. The memorandum will consist of about 15 to 20 pages of text and contain numerous tables, figures and maps.

4.3 Develop Water Quality Management Plan Component

Task 4.3.1 Describe the historical, current and anticipated challenges to produce water of suitable quality for each member of the appropriative and overlying non-agricultural pools, and the overlying agricultural pool in the aggregate. This task is an expansion of Task 3.4.1 and will include other contaminants that have been found or threaten groundwater use in the Chino Basin.

Task 4.3.2 Develop list of local and/or regional projects to ensure that groundwater quality will improve or can be treated and put to beneficial use. A list of projects will be developed to produce groundwater of suitable quality for beneficial use. These projects could include in situ and well head treatment, well field relocation (dodge and drill), and dilution. For each project the following will be developed:

- An operating plan
- Facilities layout and description
- Direct beneficiaries
- Costs

The cost analysis will be based on the criteria and format developed in Task 1.5, the groundwater quality conditions described in Tasks 3.4.1 and 4.3.1. The project list and descriptions developed in the CBWRMS will be used as a starting point.

Task 4.3.3 Evaluate potential for groundwater exchange with outside basin interests. Another way to provide potable water to the southern part of the Chino Basin would be to provide treated imported water (or other potable imported supplies) to the cities of Chino, Chino Hills, Norco and Ontario, and JCSD, in lieu of treated groundwater. The additional cost of pipelines and treatment plants necessary to provide treated state project water to these areas would be offset by allowing water agencies outside of the basin to purchase un-pumped groundwater yield. In theory, the maximum cost of water developed by this project should be less than the cost of treated imported water. This alternative will be evaluated in this task. Up to three alternative plans to accomplish the exchange will be evaluated. Each exchange plan will be evaluated in an identical manner as the water quality projects are in Task 4.3.2.

Task 4.3.4 Prepare Task 4.3 Memorandum. A task memorandum will be prepared to document the findings of Task 4.3. The memorandum will consist of about 25 to 30 pages of text and contain numerous tables, figures and maps.

4.4 Describe a Range of Implementation Levels and Associated Costs for each Component for the Optimum Basin Management Program

Task 4.4.1 Describe the synergies and tensions among the components. The components described in Tasks 4.1, 4.2 and 4.3 are not mutually independent. In some cases the components are complementary and in others they are in conflict. For example, the relocation of groundwater production to avoid groundwater quality problems may reduce the yield of the basin. Artificial recharge can augment safe yield and sometimes improve or degrade groundwater quality.

Task 4.4.2 Recommend a range in implementation levels and costs for each component. Based on the results of Tasks 4.1 through 4.3 and Task 1, a range of implementation levels for each component will be recommended. The range will be based on technical feasibility, water demands and cost.

Task 4.4.3 Prepare Task 4.4 Memorandum. A task memorandum will be prepared to document the findings of Task 4.4. The memorandum will consist of about 10 to 15 pages of text and contain numerous tables, figures and maps.

4.5 Describe Consistency of Optimum Basin Management Program Components with Responsibilities and Authorities of Watermaster Pursuant to the Judgment and Other Agencies

Task 4.5.1 Describe institutional framework. List and describe entities that can participate in the implementation of the Optimum Basin Management Program, and for each entity describe its:

- Geographic jurisdiction
- Responsibilities and powers
- Other attributes
- Ability to implement components of the Optimum Basin Management Program

The need for a new entity (such as a Joint Powers Agency) will be assessed based on the responsibilities and powers of existing entities and the responsibilities and powers needed to implement the Optimum Basin Management Program components.

Task 4.5.2 Prepare Task 4.5 Memorandum. A task memorandum will be prepared to document the findings of Task 4.5. The memorandum will consist of about 15 to 20 pages of text and contain an unknown number of tables, figures and maps.

4.6 Develop Principles of Agreement

Task 4.6.1 Develop initial set of principles of agreement. Agreements and other types of legal documents will need to be developed to implement the Optimum Basin Management Program components. In this task, the principles of these agreements will be described for each component and the entities that would participate in those agreements will be identified. A draft Task memorandum will be prepared and submitted to members for review and comment.

Task 4.6.2 Conduct meetings and workshops to forge consensus. Meetings with individual entities and a workshop will be done to obtain comments and suggestions, and to help move Watermaster to consensus. The task memorandum will be revised as necessary during the course of this task.

4.7 Prepare *Section 4 Components of the Optimum Basin Management Program*

A draft Section 4 will be prepared using products of Tasks 4.1 through 4.6 and the comments received on the task memorandums. Copies of draft Section 4 will be prepared and submitted to Watermaster for review and comment. The draft Section 4 will contain approximately 50 to 75 pages of text with numerous tables, figures and maps.

4.8 Review Economic Analyses of the Components of the Optimum Basin Management Program

The financial consultant will perform an independent review the economic analyses done in Tasks 4.1 through 4.4 and provide comments and suggestions. *(to be done by the financial consultants)*

Task 5 Develop Implementation Plan

This section describes how the components of the Optimum Basin Management Program described in Section 4 will be mated with the temporal need for these components and how the components will be implemented. The deliverable for this task is a draft Section 5 of the Optimum Basin Management Program. This task consists of four subtasks as described below:

5.1 Define the Actions to Implement the Optimum Basin Management Program

Task 5.1.1 Develop approximate criteria for phasing of components. An initial timeline will be developed that will show the approximate phasing and staging of the Optimum Basin Management Program components based on projected water demands and other factors. Other factors include the availability of supplemental supplies, regulatory compliance (mandated groundwater cleanup, etc.) and economics. Potential variations in the timeline due to climatic and regional economic factors will be developed.

Task 5.1.2 Develop list of action items. Develop a list of actions necessary to implement the components of the Optimum Basin Management Program that for each component include:

- Narrative/quantitative description of the action
- Dependencies on other actions/components
- Parties involved in the action
- Institutional arrangements that need to be completed to launch the action
- Cost

The time line developed in Task 5.1.1 will be expanded to show the timing and schedule dependencies of individual actions.

Task 5.1.3 Prepare Task 5.1 Memorandum. A task memorandum will be prepared to document the findings of Task 5.1. The memorandum will consist of about 10 to 15 pages of text and contain an unknown number of tables, figures and maps.

5.2 Financing the Optimum Basin Management Program

Task 5.2.1 Estimate the capital needs over time for the components of the Optimum Basin Management Program. Using the costs developed in Task 4 and the time line from Task 5.1, a future projection of the capital needs to implement the Optimum Basin Management Program will be developed. *(to be done jointly by the engineering and financial consultants)*

Task 5.2.2 Describe funding sources. Funding sources available for the components of the Optimum Basin Management Plan will be listed and described. The description will include the applicability to various components or sub-components, and terms and conditions. *(to be done by the financial consultants)*

Task 5.2.3 Describe revenue and repayment schemes. Describe revenue generation and repayment mechanisms within Watermaster or other assessment schemes that can be used to pay for the components in the Optimum Basin Management Plan. *(to be done by the financial consultants)*

Tasks 5.2.4 Develop Robust Financial Plan. Based on the results of Task 5.1 and the previous subtasks in Task 5.2, a robust financial plan will be developed to fund the implementation of the

OBMP. The financial plan will include a palette of funding sources for each component of the OBMP, description of the administrative processes within Watermaster for generating revenues and repayment of OBMP related costs and institutional and advocacy activities such as partnering and legislative lobbying. *(to be done by the financial consultants)*

Task 5.2.5 Prepare Task 5.2 Memorandum. A task memorandum will be prepared to document the findings of Task 5.2. The memorandum will consist of about 5 to 10 pages of text and contain an unknown number of tables, figures and maps. *(to be done jointly by the engineering and financial consultants)*

5.3 Conduct meetings and workshops to forge consensus.

Meetings with individual entities and a workshop will be held to obtain comments, suggestions and help move Watermaster to consensus. The task memorandums developed in Tasks 5.1 and 5.2 will be revised as necessary during the course of this task. *(to be done jointly by the engineering and financial consultants)*

5.4 Prepare *Section 5 Implementation Plan*

A draft Section 5 will be prepared using products of Tasks 5.1 through 5.3 and the comments received on the task memorandums. Copies of draft Section 5 will be prepared and submitted to Watermaster for review and comment. The draft Section 5 will contain approximately 35 to 40 pages of text with numerous tables, figures and maps.

Task 6 Finalize Optimum Basin Management Program Document

The purpose of this task is to combine the draft sections of the Optimum Basin Management Program into one complete draft report for review by Watermaster and a final report for the Special Referee and the court. The deliverables will be a draft report and a final report. This task consists of two subtasks as described below:

6.1 Compile Task Reports and Associated Comments into a Draft Report

A draft report will be compiled from draft Sections 1 through 5. The task memoranda and supporting technical work will be included as technical appendices. The draft report will be submitted to Watermaster for review and comment. Comments will be received in writing and at regularly scheduled meetings

6.2 Prepare Final Report

Comments on the draft report will be incorporated and included in a final report. The final report will be submitted to Watermaster. Watermaster will submit the final report to the Special Referee and the court.

TENTATIVE SCOPE OF WORK FOR THE FINANCIAL PROCESS

This scope of work has been prepared without input from a financial consultant and without significant discussion in the institutional process. The intent is to describe possible tasks necessary to complete the financial portion of the Optimum Basin Management Program report as described in the proposed outline. The scope of work and its deliverables (presentations, technical memorandums, workshops and draft section reports) are structured to provide constant information flow to Watermaster and feedback from Watermaster to guide the development of the program.

Some of the tasks described below will be done jointly with the engineering consultants These Tasks are indicated by the inclusion of *(to be done jointly by the engineering and financial consultants)*. The financial consultants will do all other tasks. The financial process will review the Optimum Basin Management Program proposals that have been through the institutional and engineering processes. It includes the following tasks:

Task 4 Develop the Components of the Optimum Basin Management Program

4.9 Review Economic Analyses of the Components of the Optimum Basin Management Program

The financial consultant will perform an independent review of the economic analyses done in Tasks 4.1 through 4.4 and provide comments and suggestions.

Task 5 Develop Implementation Plan

The tasks that are part of the financial process include:

5.2 Financing the Optimum Basin Management Program

Task 5.2.1 Estimate the capital needs over time for the components of the Optimum Basin Management Program. Using the costs developed in Task 4 and the time line from Task 5.1, a future projection of the capital needs to implement the Optimum Basin Management Program will be developed. *(to be done jointly by the engineering and financial consultants)*

Task 5.2.2 Describe funding sources. Funding sources available for the components of the Optimum Basin Management Plan will be listed and described. The description will include the applicability to various components or sub-components, terms and conditions, and the procedures for obtaining funding from these sources. The timeline for obtaining funding from these sources will be described.

Task 5.2.3 Describe revenue and repayment schemes. Describe revenue generation and repayment mechanisms within Watermaster or other schemes that can be used to pay for the components in the Optimum Basin Management Plan.

Tasks 5.2.4 Develop Robust Financial Plan. Based on the results of Task 5.1 and the previous subtasks in Task 5.2, a robust financial plan will be developed to fund the implementation of the OBMP. The financial plan will include a palette of funding sources for each component of the OBMP, description of the administrative processes within Watermaster for generating revenues and repayment of OBMP related costs and institutional and advocacy activities such as partnering and legislative lobbying.

Task 5.2.5 Prepare Task 5.2 Memorandum. A task memorandum will be prepared to document the findings of Task 5.2. The memorandum will consist of about 5 to 10 pages of text and contain an unknown number of tables, figures and maps. *(to be done jointly by the engineering and financial consultants)*

5.3 Conduct meetings and workshops to forge consensus.

Meetings with individual entities and a workshop will be held to obtain comments, suggestions and help move Watermaster to consensus. The task memorandums developed in Tasks 5.1 and 5.2 will be revised as necessary during the course of this task. *(to be done jointly by the engineering and financial consultants)*

SCOPE OF WORK

DEVELOPMENT OF AN
OPTIMUM BASIN MANAGEMENT PROGRAM

ATTACHMENT A

NEEDS & INTERESTS

Suggested Components of
Basin Management Program Scope
February 26, 1998

- **Mission Statement**
  - Description of the Basin
  - Problems with the Basin
  - Objectives of the Program
- **Water Demands**
  - Historical
  - Current
    - Demands
    - Costs
  - Future
    - Demands
    - Costs
- **Groundwater Storage Management**
  - Losses to River from Storage
  - Cyclic Storage and Conjunctive Use
  - Limits on Local Storage
  - Cost
- **Safe Yield Management**
  - Optimizing Production Patterns
  - Rising Water Capture
  - Optimizing Recharge of Local Water
    - Runoff Capture
    - Reclaimed Water Use
  - Cost
- **Water Quality Management**
  - Mineral Constituents
  - Organic Constituents
  - Other Constituents
  - Cost
- **Administration of the Judgment**
  - Institutional Framework
    - Watermaster, Producers, Other Entities
  - Monitoring
  - Replenishment
    - Direct Recharge of Imported Water
    - Direct Recharge of Reclaimed Water
    - In-Lieu
  - Socio-Economic Issues (85/15 rule & others)
  - Facilities Equities Assessment
  - Other Components
  - Cost
- **Integrated Implementation Plan**
  - Influence of Future Water Demands and the Economy on Schedule
  - Actions to Implement Basin Management Program
    - List of Actions
    - Responsible Entities
    - Activity Dependencies
    - Performance Milestones
    - Critical Path of Milestones
  - Financing the Program
    - Administration & Management
    - Capital Development
    - Grants
    - Low Interest Loans
  - Revision/Update Schedule for Basin Management Program

BB&K Presentation 3/5/98

CHINO BASIN WATERMASTER

MARCH 5, 1998

ITEM #9 : SCOPE OF IMPLEMENTATION OF OPTIMUM BASIN PLAN

PRESENTED BY ANNE T. THOMAS, ESQ.

BEST BEST & KRIEGER LLP

I am here to speak on behalf of Kaiser Ventures, Inc., a member of the overlying non-agricultural pool. Kaiser requests that you include transferability of stored overlying non-ag pool water as one of the issues to be addressed in the scope of implementation of the optimum basin plan.

The overlying non-ag pool is the smallest pool under the judgment. Its share of the safe yield is only 7,366 afa a year, compared to the initial ag pool share of 82,800 and the initial appropriative pool share of 49,834. So we are not talking about major producers in the basin.

Overlying non-ag pool members have storage contracts with the Watermaster to store water not used in previous years. These storage contracts are not part of the safe yield of the basin. While the judgment describes the safe yield portion of overlying non-ag pool water rights as appurtenant to the land, it is silent with respect to the appurtenancy of stored water. The Watermaster can appropriately adopt rules and regulations regarding the use of such stored water.

Kaiser proposes that such stored water be transferable among members of the overlying non-ag pool, and to the Watermaster. Such limited transferability would allow that water to be put to beneficial purposes within the basin and reduce the dependency on imported water. It has been done before. In 1993, the Watermaster and the court approved the transfer of 25,000 acre-feet of Kaiser's stored water to the Watermaster as replenishment water for the Chino desalter. The method used was an election to abandon the stored water, pursuant to paragraph 61 of the judgment, together with a resolution of the Watermaster to apply the abandoned water for desalter replenishment purposes. This transfer advanced the purposes of the physical solution without affecting safe yield or water levels in the basin. Kaiser was not compensated for the transfer, since it was satisfying an obligation to the regional board.

The need for additional economically feasible replenishment water for the desalter still exists, and stored overlying non-ag pool water is one potential source. If the stored water could be transferred, at least among the members of the overlying non-ag pool and to the Watermaster, the pool members would have a strong incentive to make it available for immediate beneficial purposes at less than the MWD rates. This would be a valuable tool in the optimum basin management plan.

As storage caps are adopted for stored water accounts, the inability to transfer or assign the stored water to other pool members or to the Watermaster means that a portion of the stored water will forfeit to the basin once the caps are reached. Some

appropriators might feel that they will benefit by allowing that to happen. However, allowing small amounts to be involuntarily forfeited to the basin each year, compared to the loss of the management opportunity to put the larger stored water accounts to immediate use in the basin does not represent optimum basin planning. Therefore, Kaiser requests that you consider the transferability of such water as one issue to be addressed in scoping the optimum management plan.

CRWQCB 8

Watershed Management Initiative

1996 Regional Board Decision

Water Quality Control Board Presentation [illegible] 3/4/98

State of the Watershed Report

- Two RB Staff Full-Time
- Current Snapshot of the State of the Watershed for Both Surface and Groundwater
- Identify All Known Water Quality Issues for Chino Basin

Issues for State of Watershed Report

- Historic Agriculture
- Dairies
- Solvent Plumes
- Historic POTW Discharges
- Current POTW Discharges
- Leaking Underground Tanks
- Industrial Site Pollution
- Basin Cleanup Strategies
- Chino Basin Adjudication

Current Basin Water Quality Studies

- WMI
- Nitrogen/TDS Task Force
- Watermaster Optimum Basin Management Plan

Integration of Chino Basin Studies

- Three Studies Should Be Fully Integrated
- Best Utilization of Public and Private Resources
- Assures Consistency

Regional Board Staff Perspectives

- Solution to Basin WQ Problems Should be Locally Derived -- Not State Mandated
- Effort Must be Cooperative and Basin-Wide
- Existing WQ Problems in Basin Caused by Many Diverse Sources (Urban, Ag, and Industrial Sources)

Perspectives (Cont'd)

- Historic Management of Basin on Basis of Quantity, Without Adequate Consideration of Quality, Slows Water Quality Improvement
- Common Goal and Commitment of All Watermaster Entities Should be Long-Term Basin Quality Improvement

Even More Perspectives

- Time Allowed in Recent Decision for Optimum Basin Management Plan is Inadequate
  - Complicated Hydrogeologic Regime
  - Watermaster Membership Not United
  - Integration with Other Ongoing Planning Activities More Important Than Schedule

Watermaster Challenges

- Allocate Resources and Personnel for High Level of Commitment to Ongoing Basin Planning Efforts
- **Eliminate Disincentive for Basin Cleanup Activities !**
  - Reward Removal and Cleanup of Brines or Other Contaminated Groundwater By Eliminating Replenishment Obligation for Cleanup Projects By Parties Not Responsible for Pollution

OPTIMUM BASIN MANAGEMENT PLAN

A. Must be consistent with Regional Board's Basin Plan
   1. Nitrogen/TDS Study

B. Must be consistent with Regional Board's Watershed Management Plan now being developed.

C. Therefore: The OBMP must address <u>water quality</u> as well as water quantity.

D. Management of salts will be a major concern
   1. CBMWD's NRW System
   2. CBMWD's Co-Composting of manure and sludge
   3. Colorado River water not used as a water supply

CBMWD Presentation to Inland 7/31/

WATER DEMAND IN CHINO BASIN EXCEEDS THE LOCAL SUPPLY

Other Water Supply Sources:

A. Increase stormwater recharge.
   1. Optimize operation of existing basins for recharge.
   2. Construct more percolation basins.

B. Import water – CBMWD is the supplemental water supplier
   1. Direct use
   2. Recharge

C. Water Reclamation – CBMWD is the reclaimed water supplier
   1. Recycle
   2. Recharge and desalt

ELEMENTS OF THE OPTIMUM BASIN MANAGEMENT PLAN

A. Technical Water Quantity/Quantity Plan
   1. What needs to be done

B. Implementation Plan
   1. How it gets done
   2. Who does it
   3. When do they do it

C. Financial Plan
   1. How to fund
   2. Who to pay

OPTIMUM BASIN MANAGEMENT PLAN'S TECHNICAL PLAN

A. Increase Local Supplies
   1. Keep as much rain falling into the Basin from going to the ocean
   2. Store and percolate into ground as high up as possible.

B. During wet seasons/years import supplemental water and store in groundwater basin.

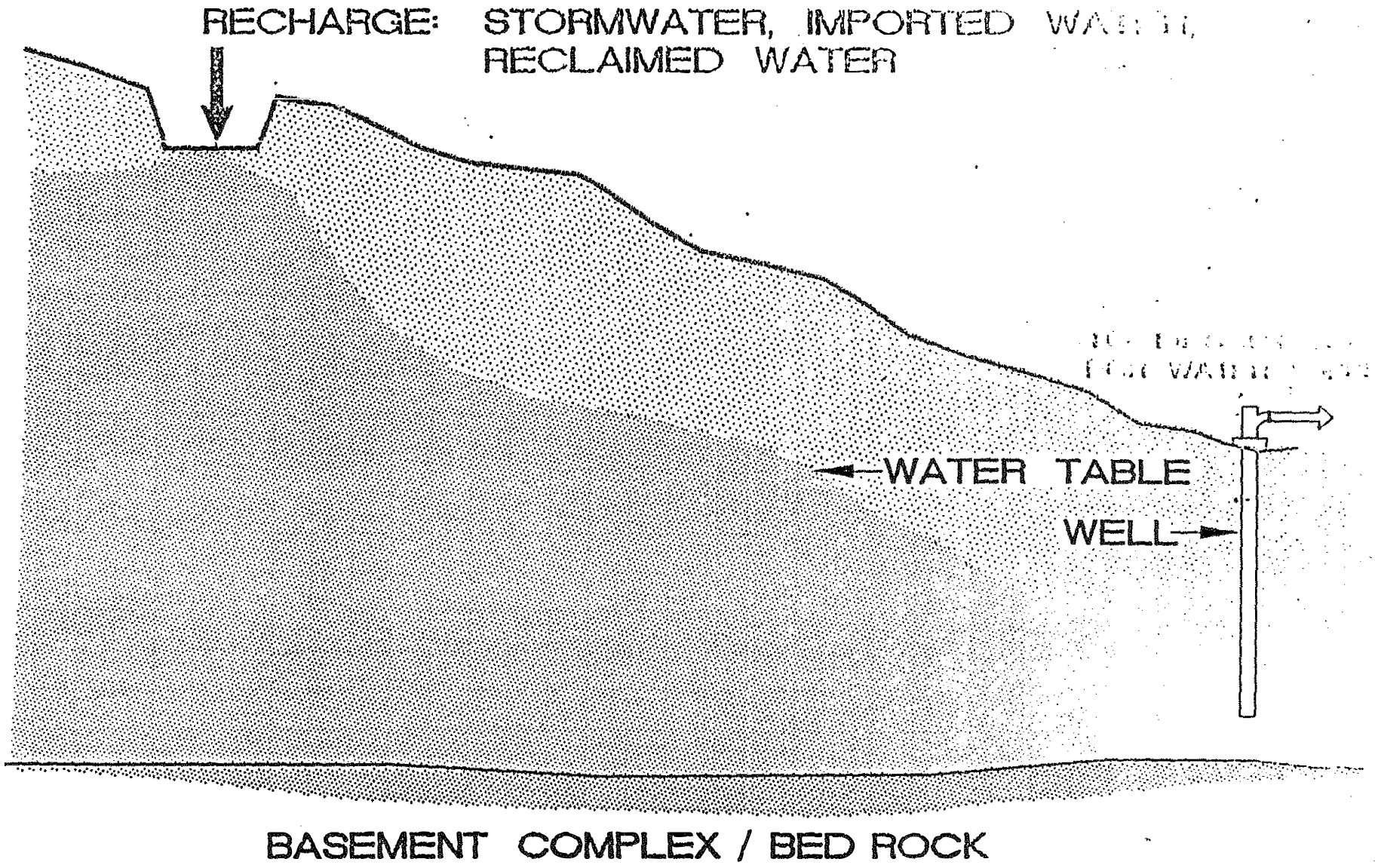
C. Recycle/reuse wastewater
   1. Direct reuse for industry and landscape irrigation.
   2. Percolate into ground as high up as possible.

D. A line of Desalters past and present along southern boundary of basin.
   1. Remove salts from past and present agricultural
   2. Remove salts from future population growth
   3. Maximizes yield of basin

E. Waters leaving basin
   1. Sewage effluent
   2. Uncaptured storm water

CHINO BASIN

OPTIMUM BASIN MANAGEMENT PLAN



City of Ontario / Recreation
3/5/98

OPTIMUM BASIN MANAGEMENT PLAN ISSUES

PRESENTATION BY MICHAEL L. TEAL, CITY OF ONTARIO

- **Strict Adherence to the Original Adjudication Regarding Safe Yield and Production:** In 1978 producers agreed to prescription in order to resolve the problems of overproduction. They did so on the condition of guaranteed water rights and the ability to overproduce the basin to meet demands. They also envisioned the area urbanizing in the future, and thus were willing to accept lower safe yield with the stipulation that as agricultural production declined, both overlying and under produced safe yield would be transferred to appropriators. These stipulations must be protected in any basin management plan.

- **Recharge Master Plan/Safe Yield and Reallocation of Safe Yield:** Ontario is supportive of any program that would increase Watermaster ability to increase basin recharge potential to include the potential to increase the safe yield of the basin by capturing additional rainwater runoff. Any increase in safe yield should be accounted for and included in a program of reallocation of safe yield. This could potentially provide benefits both in the area of improved water quality and by decreasing the dependence on imported water sources. A decrease in the dependence on imported water sources for replenishment could have significant economic benefits to producers.

- **Pumping:** As part of the requirement to protect original water rights stipulations, any producer's right to pump and overproduce the basin, as long as replenishment water is available, must be protected. This includes the ability to plan for and develop production facilities without interference from Watermaster.

- **Storage:** While storage was treated as a fundamental right under the adjudication, it is recognized by Ontario that limits must be placed upon storage if the basin is to be managed properly. The Ontario City Council has approved the concept of storage limits and the City has been working cooperatively with other Advisory Committee members to establish a fair and equitable program of storage limits. The last proposal has received broad support. It provides for equitable limits without losses and storage with losses. It preserves the cyclic storage program which is the next area of concern.

- **Cyclic Storage:** Ontario considers the cyclic storage program a safety net. It not only guarantees the availability of replenishment water during drought years, or high demand years when MWD does not have sufficient replenishment water available, it provides a secondary benefit in terms of using water exchange as a mechanism for putting water into cyclic storage.

- **Water Quality:** Water quality is of paramount importance to the City of Ontario. The City has abandoned numerous wells in the past due to water quality problems associated with industrial and agricultural practices. As Ontario annexes to the south, it will eventually produce in an area known to have water quality problems. Therefore, mitigation of the water quality problems in the southern portion of the basin is of major concern. There should be emphasis included on determination of responsibility for mitigation and cost allocation.

- **Conjunctive Use:** Assuming water quality impacts can be mitigated, and water quality and/or economic benefits can be achieved, providing for the development of conjunctive use programs should be included in any basin management plan.

- **Administration of the Plan:** The stipulated adjudication defines how the judgement is to be administered. It is of paramount importance that the original adjudication be adhered to when administering the judgement, including the optimum basin management plan development and implementation.

- **Basis for the Development of an Optimum Basin Management Plan:** The Chino Basin Water Resources Management Task Force Study Final Summary Report was submitted in September, 1995. The study was completed at a cost of $1.4 million. It was originally commissioned in response to the Court's recommendation that a basin management plan be developed. It provides for various alternative plans and a preferred plan for implementation. Given the time and expense that has been devoted to this study, it is important that all parties responsible for development of a final plan utilize the task force study as the primary resource or basis for final plan development and implementation. While the preferred plan may be lacking, it does provide a basis for development of a final plan, including serving as the basis for developing a scope or components of a final basin management plan.

CCWD 3/5/98

CHINO BASIN ISSUES

- Preparation of the Optimum Basin Management Plan
- Historical Pumping Practices
- Basin Clean-up and the Allocation of Costs for Clean-up

1. THE PLAN

From my perspective, while there is still a lot of work to be completed to produce a final plan, much of what needs to be performed has already been done. We need to now assimilate the pieces and gain a new consensus and agreement. In the past, our efforts have broken down when we've approached the issues of assigning costs or responsibility and quite frankly, in some cases it was done so by assigning "blame." I'm encouraged that I believe there is now a new perspective with this board to bring equitable and lasting resolution.

2. HISTORICAL PUMPING PRACTICES WITHIN THE BASIN

I believe this problem has been unfairly characterized as a simple issue of the "haves vs. the have-nots" and a general envy of agencies who pump from the "sweet" part of the basin as one attorney in this matter describes it. Believe me, the millions of dollars we at C.C.W.D. along with all of the others along the north and western side of the basin have invested in cleaning up our local groundwater – was required and at great sacrifice so we could enjoy what we have today.

(All men are created equal in the sight of God, but not all basins!) The truth is, as I see it, is that while it is honorable to strive for absolute equality in most things in life—this basin by virtue of its physical and hydrological characteristics cannot function under that premise. It never has and that's our challenge – not necessarily equal responsibility, but equitable responsibility.

However, with that being said, I believe that there is indisputable evidence to conclude that the basin itself has changed over time because of land use decisions. I also believe the original intent of the judgement attempted to take that into consideration through such concepts as land-use conversions and the like. Over time, agricultural use which was the dominant industry in this valley in years past has been virtually phased out along the northern half of the basin (with some minor exceptions), while the southern half of the basin remains in most ways virtually unchanged. Although pressure to move to urbanization is greater today than in the past, there is an obvious distinction between the impacts of urban and agriculture use on groundwater, and our basin has changed reflecting these changes in land use along with the natural physical characteristics of the basin.

Our legacy is that we are left with groundwater quality, quantity, and management problems of our past, present, and future land use decisions. Along the northern end, we continue to deal with

TDS, nitrates, and PCE residual from previous ag use. We have literally invested millions to build treatment facilities, or blending facilities, or in some cases completely shut off wells and now depend on more expensive imported water.

Along the southern end of the basin, pure economics have dictated a slower conversion to urban use. The dairy interests that remain today continue to be among the highest concentrations in the nation if not the world, and are a vital element to our local, state, and national economy. We all have a stake in their future viability.

3. BASIN CLEAN-UP AND ALLOCATION OF COSTS

Historically, when appropriators encountered water quantity or quality problems – you dealt with it the best you could. If you had insufficient quantities of water you purchased costly imported water and added this incremental cost to your rates. If you had water quality problems that could be handled by treatment, you invested in treatment facilities–and then you added the incremental cost to your rates. The rate payer absorbed the cost of our efforts to provide them with a safe and reliable source of drinking water. Our customers have come to expect that they only pay for what they get, and as an appropriator, we have had to work very hard and must continue to work hard at maintaining the public's trust. THAT'S THE WATER BUSINESS MOST OF US ARE USED TO. As stated previously, many of us in this room represent agencies that have invested literally millions to provide quality drinking water to our customers and have done so without

financial assistance from anyone. We believed that was the only way to conduct our business. As an example, why would a homeowner in south Ontario have to--much less want to--pay for my efforts to pump, treat, and deliver drinking water to residents in north Fontana or Rancho Cucamonga?

What is unique about our situation from my perspective is the uniqueness of how increased costs of operations affect agricultural use as opposed to more typical urban use. It is much easier to absorb or "pass-through" added cost of operating in an urban scenario than an ag scenario. Because my family has been in the farming business for the past 35 years, I understand and appreciate first hand that in many cases it is not always possible to pass on incremental increases in operational costs as a part of selling our commodity—milk, or in my family's business, hay for cattle feed. This is especially true when there are Federal and State regulatory programs involved with agri-business and the price restrictions that accompany these programs.

But, the way we "historically" have conducted business in this basin is and has been changing, and change is often difficult. Which is why we are here today. What is different today is that from a water quality perspective, we have a basin that over time has worsened in some respects-- particularly in the southern end. The integrity of the basin as a whole is in all of our best interests.

The issue now is what is or how do we quantify an equitable nexus to basin clean up and the associated costs to all the parties to the judgment. Studies have been completed that do draw some conclusions to the application of clean-up responsibility and how land use decisions throughout all of the basin contributed to the problems along the southern end.

I believe most of our work will be spent on equitably applying responsibility and financing the programs.

Our situation is perhaps not unique, but I personally believe the political influences in this basin are a major contributing factor in our present situation. There is an unfortunate trail of bodies and a few survivors from the last 2—3 years. Our inattention to our mutual responsibility for basin management has resulted in a polarization of interests and realignment along lines of political influence. Our management of the basin had regressed to a "static style" for reasons of self-preservation. (Keep things the way they are for as long as we can). This basin requires that we develop a "dynamic style" that recognizes the physical characteristics of the basin and how they change over time and an honest "look yourself in the mirror" approach to accepting responsibility for its present condition. Above all, it requires and demands maximum collaboration and cooperation from all parties to the judgment, along all similar or dissimilar points of view. The appointment of this 9-member board is the first step in this process and something many of us have sought and looked forward to for some time. It's now time to get down to work.

On behalf of the Board of Directors of Cucamonga County Water District and myself, we look forward to contributing to the solution.

SAWPA

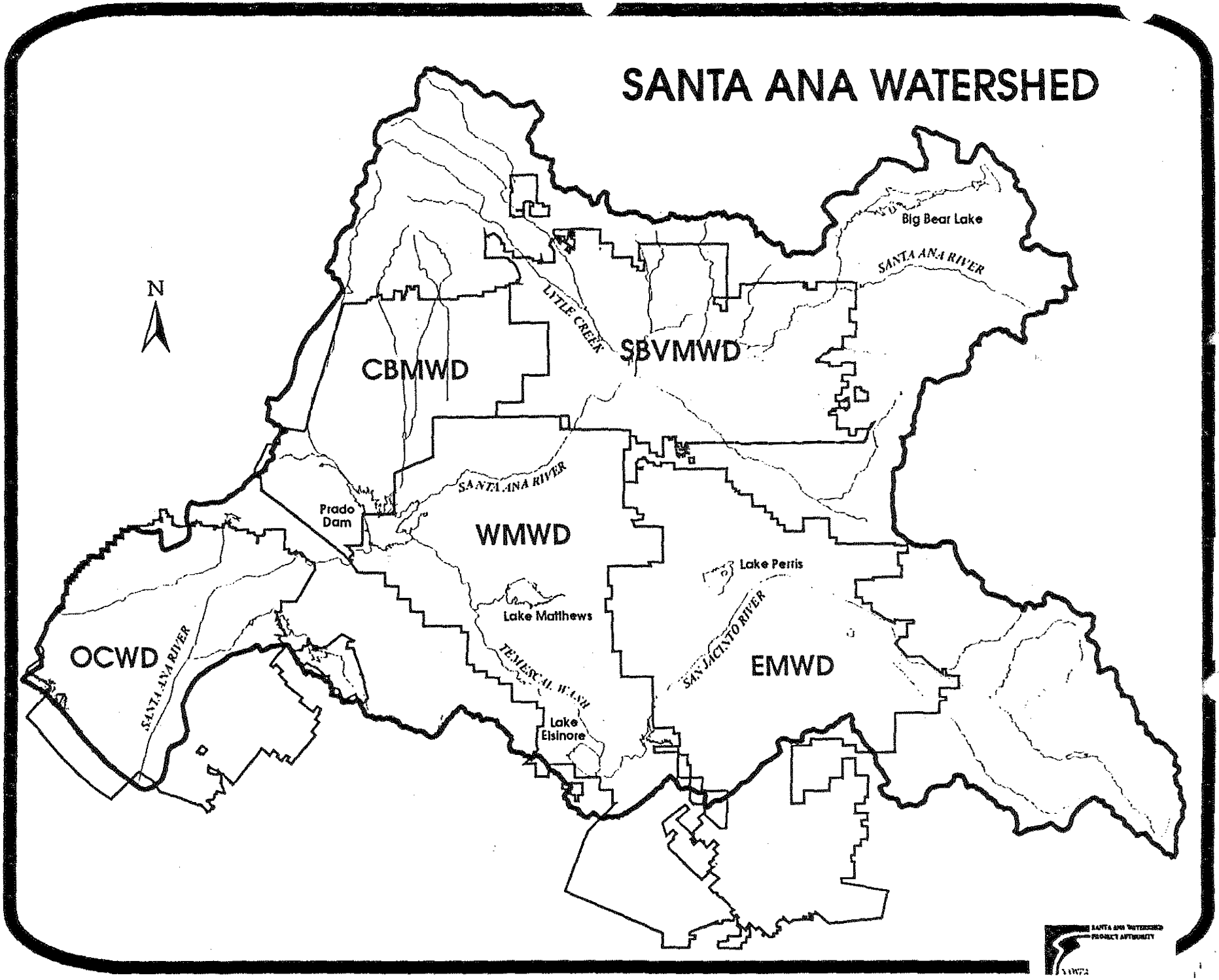
SAWPA Projects since 1972

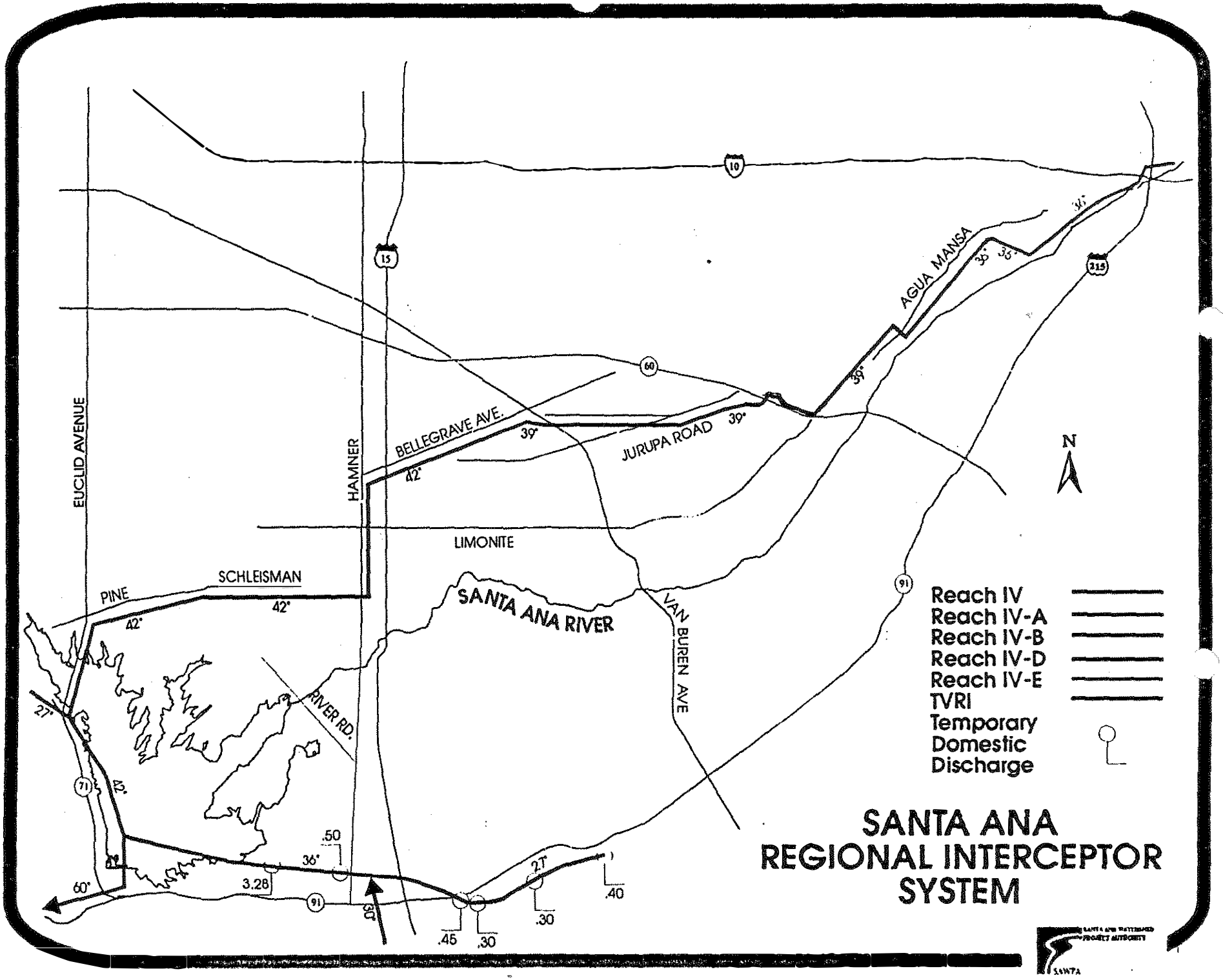
- The Santa Ana Regional Interceptor
- Stringfellow Treatment Plant
- Arlington Desalter
- Woodcrest Pipeline
- Lake Elsinore Management Project
- Rapid Infiltration / Extraction Wastewater Treatment Project
- Chino Basin Desalting Facility No. 1 **(Under Construction)**
- Western Riverside County Regional Wastewater Treatment Facility
- **(Under Construction)**

SAWPA

Recent SAWPA Watershed Planning Activities

- Chino Basin Water Resources Management Study
- Southern California Comprehensive Water Reclamation and Reuse
- Study
- Nitrogen and TDS Evaluation
- Colton - Riverside Conjunctive Use Program
- Water Resources Plan for the Santa Ana Watershed
- Use Attainability Analysis for the Santa Ana River


SANTA ANA WATERSHED
N
CBMWD
SBVMWD
WMWD
EMWD
OCWD
Big Bear Lake
SANTA ANA RIVER
LITTLE CREEK
Prado Dam
Lake Perris
Lake Matthews
Lake Elsinore
TEMESCAL WASH
SAN JACINTO RIVER


EUCLID AVENUE
HAMNER
BELLEGRAVE AVE.
JURUPA ROAD
AGUA MANSA
LIMONITE
SCHLEISMAN
PINE
SANTA ANA RIVER
VAN BUREN AVE
RIVER RD.
10
15
60
71
91
215
N
Reach IV
Reach IV-A
Reach IV-B
Reach IV-D
Reach IV-E
TVRI
Temporary
Domestic
Discharge
SANTA ANA
REGIONAL INTERCEPTOR
SYSTEM

SAWPA GIS and Data Management Activities

- SAWPA activities supporting CBWM
  - Well GPS locating support
    - GPS system upgrade
  - GIS services and management
  - Well data and information sharing
  - GIS application implementation to join well database to spatial information
  - Mapping and data management assistance
  - UNIX systems administration

SAWPA has many activities ongoing with Chino Basin Watermaster

Supporting CBWM with GPS equipment and support

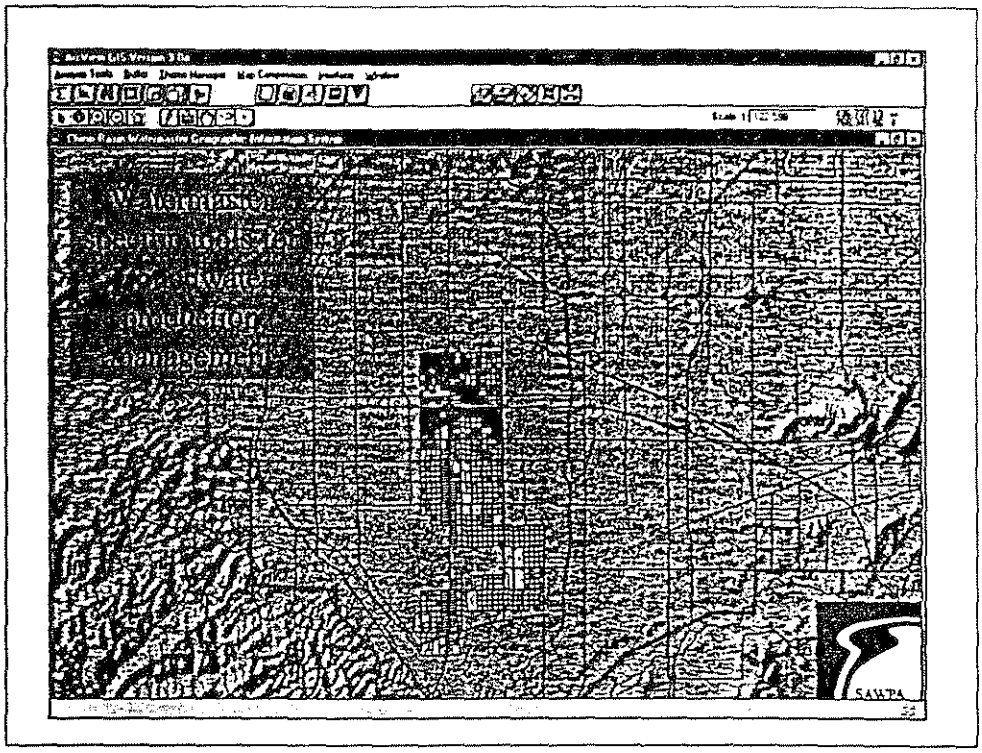
Converting that data into usable spatial information for staff's use

Assisting CBWM with GIS and data management expertise

Custom and specialty maps and presentations

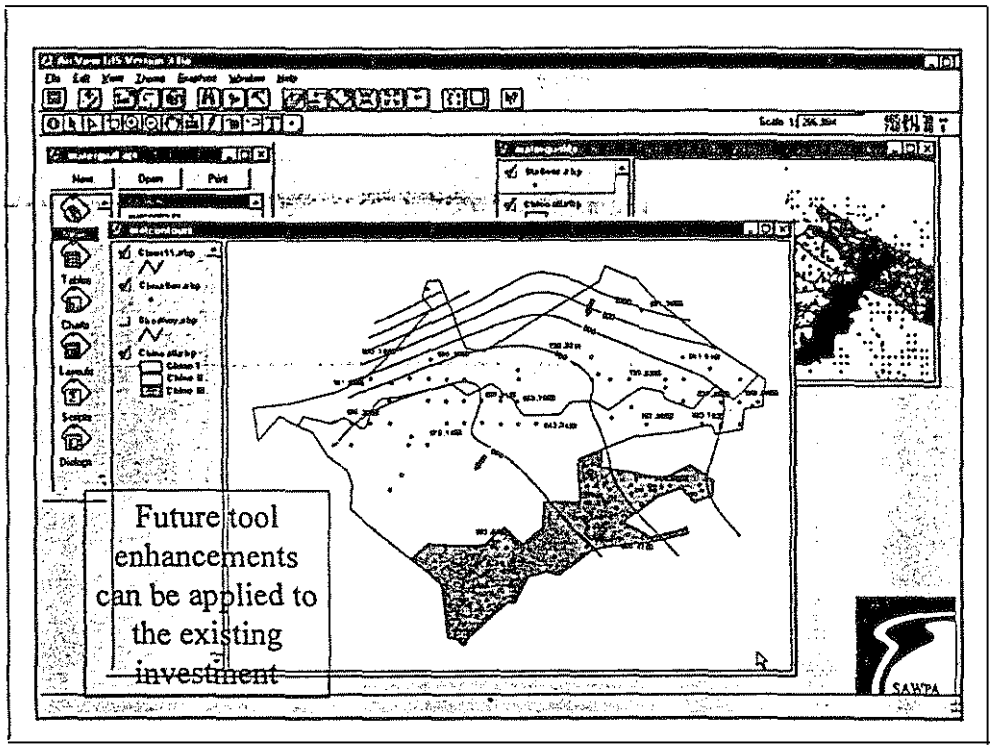
Administration of UNIX system in Watermaster office

Generally acting as a low cost high value added consultant for the watermaster



Shown here is a view of parcel information in the Watermaster's area in relation to well locations that have been located using the GPS system, corrected and placed in the application by SAWPA.

This application will be modified later this year to work with Watermaster's new database changes and upgrades to the Calbash software.



SAWPA is currently building new more powerful tool which the Watermaster will be able to use to demonstrate water use, changes from year to year and contaminant information.

The map above shows water level contours based on an automated query of data for the Chino Basins

SAWPA

Chino Basin Water Resources Management Study - Phase I

July 1989 – Dec. 1990

Phase I Expenses

Montgomery Watson

Develop Work Plan	$20,000
Mgmt. obj./constraints	$60,000
Potential Benefits	$10,000
	$90,000

SAWPA Administration	$35,000

Phase I Revenue

CBWM	$25,000
CBMWD	$25,000
MWD	$25,000
SAWPA	$25,000
WMWD	$25,000
	$125,000

SAWPA

Chino Basin Water Resources Management Task Force

Phase II Revenue

CBWM	$721,250	50%
CBMWD	$274,833	19%
MWD	$125,000	9%
SAWPA/RWQCB	$184,000	13%
WMWD	$137,417	9%
Total	$1,442,500	100%

SAWPA

Chino Basin Water Resources Management Study – Phase II

Aug. 1991 – April 1995

Contractor	Contract Amount	Amount Paid
Montgomery Watson Subconsultants: Mark Wildermuth Diba Consulting	$897,240	$945,992
Camp Dresser & McKee	$268,928	$270,728
CH2M Hill	$ 94,109	$ 94,109
SAWPA	$150,000	$160,861
	$1,410,277	$1,471,690
Contingency	$ 32,223	
Subtotal	$1,442,500	
Interest	$29,190	
Total	$1,471,690	

SAWPA

Chino Basin Water Resources Management Study

Phase III

Tasks to be completed:

- Financial plan
- Detailed implementation plan and elements thereof
- Identification of an agency or group of agencies to implement the operating plan and elements thereof
- Details of how the recommended plan will be implemented in light of financial, legal, regulatory, and institutional constraints

Final deliverable of Phase III: A detailed implementation and financial plan which describes necessary steps to be taken prior to formalized agreements for action.

SAWPA

Phase 3 - Implementation Plan

Quarterly Workshop Meetings of the Chino Basin Water Resources Task Force to discuss implementation issues and develop new policies. Suggested workshop discussion items to include:

- Priority Setting
- Ownership Issues
- Selection of Lead Agencies
- Formation/Coordination of Implementation Working Groups

Implementation Working Groups / Subcommittees, meeting on a bi-monthly basis, will coordinate and report to other subcommittees at quarterly workshop meetings. Suggested working groups include:

- Watermaster Issues Subcommittee
- Water Reclamation Program Subcommittee
- Groundwater Treatment Program Subcommittee
- Conjunctive Use Program Subcommittee

Documents to be produced:

- Reports of working group meeting progress
- Reports of workshop discussion
- Final implementation plan summarizing results

Consultant, familiar with the study, would be used to review the minutes and issue papers prepared by the working groups to sort out and resolve specific issues for discussion at the workshop meetings. In addition, the consultant would prepare the final implementation plan defining the agreements and actions necessary for implementation.

A facilitator, possibly SAWPA, would monitor issues for resolution, provide administrative services for the workshops and subcommittees, prepare meeting minutes, make financial reports, and manage consultant contract.

SAWPA

PHASE 3 - IMPLEMENTATION PLAN
COST ESTIMATE

Expenses

Item		Cost
Consultant Issue Resolution -		$35,000
SAWPA Facilitation -		$40,000
	Total	$75,000

Revenue

Contributing Agency		Amount
Chino Basin Watermaster		$37,500
Metropolitan Water District		$12,500
Chino Basin MWD		$12,500
Western MWD		$12,500
	Total	$75,000

SAWPA

Nitrogen TDS Study

Purpose:
To reevaluate the impact of total inorganic nitrogen and total dissolved solids on water resources in the Santa Ana River Watershed.

Task Force Participants:

San Bernardino Valley Municipal Water District
Eastern Municipal Water District
Chino Basin Municipal Water District
Orange County Water District
Western Municipal Water District
City of Corona
Elsinore Valley Municipal Water District
City of Redlands
City of Rialto
City of Riverside
City of San Bernardino
City of Colton
Yucaipa Valley Water District
Western Riverside County Regional Wastewater Authority
Chino Basin Water Conservation District
Chino Basin Watermaster
County Sanitation District of Orange County
West San Bernardino County Water District
San Bernardino Valley Water Conservation District
Riverside Highland Water Company
U.S. Geological Survey

Consultants:
Wildermuth Environmental Inc.
Risk Sciences

Facilitator and Administrator:
SAWPA

SAWPA

Santa Ana River Watershed Dialogue Project

- a collaborative planning dialogue facilitated by the Growth Management Institute focusing on concerns, issues and opportunities regarding the Santa Ana Watershed

Invited Participants:

Lindell Marsh, Growth Management Institute
Blake Anderson, Asst. General Manager, County Sanitation Districts of Orange County, Chairman
Dr. Robb Quincey, CBMWD
Bob Feenstra, Chino Basin Milk Producers Council
Geoffrey VandenHeuval, Milk Producers Council
Bill Geyer, William Geyer & Associates
Jim Van Haun, Orange County Water District
Layne Baroldi, County Sanitation Districts of Orange County
Jim Colston, County Sanitation Districts of Orange County
Leslie Higgins, EPA, Region IX
Clarice Gaylord, EPA, Region IX
Al Rubin, EPA Headquarters
Robert Holub, State Water Quality Control Board, Santa Ana
Gerard Thibeault, State Water Quality Control Board, Santa Ana
Jim Bartel, United States Fish & Wildlife Service
Mark Norton, Santa Ana Watershed Project Authority

Purpose of recent meetings:

To bring together dairy operators with the sanitation organizations, the Environmental Protection Agency and the Regional Water Quality Control Board to explore partnering approaches to address dairy manure management and issues in connection with the transition of the dairies to other urban uses.

SAWPA

Potential Funding to Support Development of the Chino Basin Optimum Basin Management Plan

State Water Resources Control Board Water Quality Planning 205(j) Grant Program

Available funding: $125,000

Requires matching funding share of at least 25% of total project costs

Application deadline: April 17, 1998

Funding availability: July 1, 1999

SAWPA has successfully obtained previous 205(j) grants and the RWQCB would likely support the grant application since Chino Basin is targeted under their Watershed Management Initiative and has provided previous financial support for the Chino Basin Water Resources Management Study

CHINO BASIN GROUNDWATER TASK FORCE RESPONSE SUMMARY

Date Revised: 3/19/98

ADDRESS THE FOLLOWING	5	4	13	18	9	7	11	3	8	12	6	2	1	14	17	16	15	TOT
Assure High Quality for All Users		X		X		X							X	X				5
Additional Hydrogeological Investigation	X										X			X				3
Monitoring Quantity/Quality							X							X				2
Impacts of Recharge/Pumping	X	X		X	X	X	X	X						X	X			9
Assess Safe Yield/Quantity	X	X			X		X	X				X	X	X	X	X	X	11
Conjunctive Use		X	X					X				X		X	X		X	7
WQ Protection (TDS, NO3 & Toxic)		X	X	X	X		X		X	X	X		X	X	X	X		12
Source Control (Point & Non-Point)		X										X	X	X			X	5
Expand Reclamation	X	X			X		X				X		X	X				7
Potential Market for Effluent	X													X				2
Minimize Rising Water		X												X				2
Capturing Surface Runoff											X			X				2
Basin Clean Up					X									X				2
Develop Model							X							X				2
Develop Alternative Management Plans				X								X		X			X	4
TDS & Nitrate Remediation		X	X							X	X	X	X	X	X		X	9
Optimize Use of All Water Sources												X	X	X			X	4
Impacts to Adjudicated Parties				X								X		X			X	4
Socio-Economic Impact/Equity				X	X							X		X			X	5
Implementation Plan				X										X				2
Financing Plan		X												X				2
Institutional Agreements		X												X				2
Agree with SAWPA/JKM White Paper						X												1
Limit Scope to Adjudication							X											1

DO NOT ADDRESS THE FOLLOWING

Assure High Quality for All Users	X						X				X				X			4
Clean Up of Contaminated Areas							X				X							2
Minimizing Rising Water															X			1
Socio-Economic Impact/Equity															X			1

LIST OF AGENCIES RESPONDED

1) Chino Basin MWD
2) Western MWD
3) Chino Basin WM
4) Metropolitan WD
5) Cucamonga CWD
6) Fontana Union WC
7) San Bernardino CWWD#8
8) City of Pomona
9) City of Norco
10) City of Chino
11) City of Ontario
12) Dept. of Youth Auth.
13) Dept. of Corrections
14) SAWPA
15) Jurupa CSD
16) Monte Vista WD
17) City of Upland

NEEDS / INTERESTS	IDEAS
1. INCREASE NATURAL AND ARTIFICIAL RECHARGE OPPORTUNITIES THROUGHOUT THE BASIN, PARTICULARLY ALONG THE WEST SIDE	*CCWD supports cooperative efforts with the Conservation District and Chino Basin MWD to develop additional facilities.*
2. MAXIMIZE USE OF RECLAIMED RESOURCES	*Provide financial assistance to develop additional reclaimed opportunities for re-use and recharge.*
3. ASSESSMENT EQUITY AND ECONOMIC EQUITY	*All assessments for administrative and special projects must be borne by all parties within the Judgement. This includes recognition of and assignment of financial responsibilities for basin clean-up. Additionally, CCWD would support a move to total "net" production and outlined in the 1992 socio-economic study.*
4. WATER QUALITY	*Studies and effort have been put to use determining cause of water quality problems, particularly in the southern half of the basin and means to mitigate water quality concerns. CCWD supports development of anion exchange, reverse osmosis, and desalter applications for TDS/nitrate mitigation. CCWD also supports recognition of past efforts to mitigate groundwater clean-up.*
5. AGRICULTURAL TRANSFERS OF UNPRODUCED SAFE-YIELD	*As Judgement stipulates and as agricultural production declines, overlying and under-produced yield must continue to transfer to appropriators on an annual basis rather than every five years.*

NEEDS / INTERESTS	IDEAS
6. RETAIN PRODUCTION PATTERNS IN LOWER END OF THE BASIN TO THE MAXIMUM EXTENT POSSIBLE	*Pursuant to original water rights stipulation, producers must be able to continue current production practices and maintain the right to overproduce if replenishment water is available. Watermaster as an entity should not dictate pumping.*
7. STORAGE MANAGEMENT PROGRAM	*CCWD supports the concept of storage management wherein storage and under-production in the northern half of the basin may aide in "flushing" poor quality water out at the southern end. Management program will also need to assess negative impacts of losses (if any) based on sound engineering and hydrological analysis.*
8. CONJUNCTIVE USE	*CCWD supports conjunctive use programs if water quality issues currently present in the basin are mitigated and the program is economically feasible.*
9. WATER TRANSFER AND EXPORT OPPORTUNITIES	*CCWD supports the concept of allowing and promoting transfers between pool members. Watermaster should encourage such activity to put water to beneficial use. CCWD also supports the concept of developing means to allow export of stored water in narrowly defined conditions to reduce storage and accounts. Transfers or export may be developed as an integral part of conjunctive use program development.*
10. MAXIMIZE PRODUCTION AND TREATMENT IN SOUTHERN END	*To combat high groundwater in southern parts of the basin, CCWD supports the production and treatment of poor quality water for use without full replenishment obligation.*

FONTANA UNION WATER COMPANY
16779 SPRING STREET
FONTANA, CALIFORNIA 92335
MAIL ADDRESS: P. O. BOX 309
FONTANA, CALIFORNIA 92334
PHONE (714) 822-9199

March 10, 1998

Ms. Traci Stewart
Chief of Watermaster Services
CHINO BASIN WATERMASTER
8632 Archibald Ave., Suite 109
Rancho Cucamonga, CA 91730

Subject: Optimum Basin Management Plan Interests/Ideas

Dear Traci:

Attached please find Fontana Union Water Company's list of Optimum Basin Management Plan Interests and Ideas as a part of the pre-scoping process.

While it is possible to interpret any ideas or interests as a "position" of this company, I respectfully submit these for consideration and reserve the right to add to the list if necessary.

Respectfully submitted,

Robert A. DeLoach
President

(1) Enclosure

1. INCREASE NATURAL AND ARTIFICIAL RECHARGE OPPORTUNITIES THROUGHOUT THE BASIN, PARTICULARLY ALONG THE WEST SIDE	*Fontana Union supports cooperative efforts with the Conservation District and Chino Basin MWD to develop additional facilities.*
2. MAXIMIZE USE OF RECLAIMED RESOURCES	*Provide financial assistance to develop additional reclaimed opportunities for re-use and recharge.*
3. ASSESSMENT EQUITY AND ECONOMIC EQUITY	*All assessments for administrative and special projects must be borne by all parties to the Judgement. This includes recognition of and assignment of financial responsibilities for basin clean-up. Additionally, Fontana Union would support a move to total "net" production as outlined in the 1992 socio-economic study.*
4. WATER QUALITY	*Studies and effort have been put to use determining cause of water quality problems, particularly in the southern half of the basin and means to mitigate water quality concerns. Fontana Union supports development of anion exchange, reverse osmosis, and desalter applications for TDS/nitrate mitigation. Fontana Union also supports recognition of past efforts to mitigate groundwater clean-up.*
5. AGRICULTURAL TRANSFERS OF UNPRODUCED SAFE-YIELD	*As Judgement stipulates and as agricultural production declines, overlying and under-produced safe yield must continue to transfer to appropriators on an annual basis rather than every five years.*

OPTIMUM BASIN MANAGEMENT PLAN INTERESTS / IDEAS

6. RETAIN PRODUCTION PATTERNS IN LOWER END OF THE BASIN TO THE MAXIMUM EXTENT POSSIBLE	*Pursuant to original water rights stipulation, producers must be able to continue current production practices and maintain the right to overproduce if replenishment water is available. Watermaster as an entity should not dictate pumping.*
7. STORAGE MANAGEMENT PROGRAM	*Fontana Union supports the concept of storage management wherein storage and under-production in the northern half of the basin may aide in "flushing" poor quality water out at the southern end. Management program will also need to assess negative impacts of losses (if any) based on sound engineering and hydrological analysis.*
8. CONJUNCTIVE USE	*Fontana Union supports conjunctive use programs if water quality issues currently present in the basin are mitigated and the program is economically feasible.*
9. WATER TRANSFER AND EXPORT OPPORTUNITIES	*Fontana Union supports the concept of allowing and promoting transfers between pool members. Watermaster should encourage such activity to put water to beneficial use. Fontana Union also supports the concept of developing means to allow export of stored water in narrowly defined conditions to reduce storage accounts. Transfers or export may be developed as an integral part of conjunctive use program development.*
10. MAXIMIZE PRODUCTION AND TREATMENT IN SOUTHERN END	*To combat high groundwater in southern parts of the basin, Fontana Union supports the production and treatment of poor quality groundwater for use without full replenishment obligation.*

FONTANA WATER COMPANY

Needs/Interests	Ideas
QUANTITY **Safe Yield 1.**	1. Increase, based on engineering studies. 1. Maximize reclaimed water use, either through recharge or direct use 1. Maximize storm water capture. 1. Investigate possibility of additional imported supplies (SBVM).
QUALITY 2.	2. Accelerate cleanup efforts in basin. Identify responsible parties. Ag. Users to pay fair share of cleanup for pumping & treatment. Grants? 2. Provide economical incentive (i.e. reduced per AF replenishment rate for producers that provide pump and treat systems at their own expense).
COST 3.	3. Explore other import opportunities which are possibly less expensive than MWD (SBVM). 3. Credit to producers that import into basin that reduces demand on Chino Basin supply

JURUPA COMMUNITY SERVICES DISTRICT

Needs/Interests	Ideas
QUANTITY To promote water production in the southern portion of the basin which will protect and possibly enhance the safe yield of the basin. **QUALITY** **COST**	Problem – Due to water quality concerns any water produced in the southern portion of the basin will require well head treatment before the water can be used for domestic purposes which is very expensive. Ideas – Waive the pump tax on those agencies that produce in the southern portion of the basin. a. Water used for irrigation purposes would be considered and agricultural use and production would be assessed against the Agricultural Pool. b. Any increase in the safe yield would be dedicated to those agencies that produce water in the southern portion of the basin.

Monte Vista Water District
Needs or Interests in the Chino Groundwater Basin and Ideas about solutions

Needs and Interests	Ideas
Reliability – Knowledge that the District can always rely on the basin to produce water, even if replenishment is necessary in the future	1) Manage the groundwater level to assure that the aquifer is at a level where water can always be pulled out. Manage to prevent the groundwater table from dropping excessively 2) Allow storage programs
Cost – Maintain the safe yield, including agricultural pool transfers and increase it so that costs in the basin are controlled Losses from the basin that imperil future safe yield need to be mitigated and accounted for Minimize administrative costs Obtain outside financial aid Minimize the time spent unproductively at meetings	1) Make sure south end of basin is pumped in a way that enhances, but does not degrade safe yield. For example produce water at the south end for export year round, on the condition that water be replenished on the north end. 2) Develop natural recharge to increase safe yield, where financially feasible 3) Account for losses 4) Synthesize key issues to reduce some of the paper and administrative burden 5) Contract data management. 6) Obtain grants for studies and construction using local agencies, for example under the Water Resources Development Act, use Sections 203, 503 and 1135, or use Title XVI or use the Agricultural Drainage Loan Programs to get financial assistance using Chino Basin MWD and potentially others as the lead agencies 7) Develop a conjunctive use type "water insurance" right that allows the basin to overdraft and replenish in a drought and sell that right to others
Quality – Basin should have water that the District can use to meet the highest water quality standards our customers demand – or be able to meet that requirement at a reasonable cost Potential and actual contamination, involving nitrates, salts, organics and other constituents, needs to be identified so that no one is caught unaware of the problem and then the problems need to be resolved.	1) Make large graphical images of the basin showing areas where water quality does not meet current drinking water standards and showing where those areas are projected to be in 10 years and put those up on the wall 2) Assign responsible parties or committees to each problem, hold them accountable 3) Use the agencies and resource conservation district to implement a better watershed management program for recharge quality 4) Map areas where discharges such as septic tanks still exist and if they are a problem see if they can be eliminated 5) Insist that manure and other contaminants not used in appropriate amounts be removed from the basin (assist in getting money for that if necessary) old manure should be removed to, not just fresh stuff. 6) Allow appropriators to export water from the basin in a way that flushes the basin 7) Use the basin "water insurance" program to export poorer quality groundwater and replenish with higher quality water

Management Information and Responsibility – An ongoing database should be maintained that is up to date with all known data allowing basin entities to make better decisions A model of the basin should be maintained that can use the data base and should be updated every couple years so that managers can see projected trends Need to know who is responsible for every water quality or quantity issue identified in the basin and who can be held accountable for managing that problem	1) Select one responsible party to maintain all information and develop a plan for backup of the information 2) Update the IGSM Model on a regular schedule, every 7? Years 3) Update RAM Tool type models for each plume at least every 5 years. 4) Make model data and results available for anyone 5) Develop a standard database and update it annually 6) Integrate this data with data available from other sources such as the Regional Board and develop a specific data exchange process
Equity – There needs to be equity and the perception of equity in the basin such that there are no parties seen to be winning at the expense of others	1) Develop a process (it will not be perfect) to attempt to see that financial arrangements are fair. some examples of issues they might address are (a) Make sure that some residents are not paying for work that benefits others on a regular basis. For example San Bernardino County residents that live in the Chino Basin Water Conservation District service area should not have to pay consistently more than their fair share of the cost for managing the basin. (b) The agricultural pool should be required to pay for things that benefit them and some part of the process (c) The non-agricultural pool should not be able to make a profit at the expense of the other overlying users or appropriators in their area (d) Agencies should not be allowed to win taking subsidies for projects that benefit them (e) Attempt to allocate costs for basin clean up
Independence – Allow parties to continue to use the basin in their best interest as long as they accurately report what they are doing and mitigate any harm adequately.	1) Allow parties to act without developing a bureaucracy that stifles creativity and takes years to get through. The Watermaster is currently operating this way most of the time and this should not be lost in our rush to improve what we do.

OPTIMUM BASIN MANAGEMENT PLAN WORKSHOP

NEEDS/IDEAS FOR DISCUSSION

CITY OF ONTARIO

- **Generic Need:** Stable and economic sources of water to meet current and future demands and foster water rate stability.

- **Need for city to continue to rely on stable safe yield, including reallocation of safe yield in accordance with the original adjudication.**

  Ideas: Do not include original safe yield and current methods of reallocation of safe yield as provided for in the judgment in an Optimum Basin Management Plan. However, it is possible to creatively provide for minimizing or eliminating replenishment obligations for water production in Chino Groundwater Basin III designed for basin cleanup if that water would be unusable or lost. It may be possible to reallocate water that would be lost in storage to projects designed for basin cleanup.

- **Need to develop additional recharge capabilities, both natural and artificial, to meet future water demands.**

  Ideas: Develop partnerships and programs with the Chino Basin Water Conservation District to improve and/or develop recharge basins to both capture additional rainwater runoff or improve the ability to recharge imported replenishment sources.

- **Need to develop increase in use of reclaimed water, both for irrigation and basin recharge, to stabilize water costs, minimize reliance on imported water and serve as major additional source of water to meet future demands.**

  Ideas: Develop regional transmission systems for reclaimed water for use in irrigation; conduct studies to develop ways to mitigate water quality problems for use of reclaimed water for recharge.

- **Need to decrease reliance on imported water due to expected future shortages and expected reestablishment of new demand charges in the future.**

  Ideas: Develop rules and incentives to increase intra-basin water transfers/purchases for replenishment and/or avoidance of replenishment.

- **Need to retain cyclic storage program as a safety net to avoid possible water shortages in drought years or when replenishment water is not available.**

- **Need to safeguard safe yield pumping and overproduction rights in accordance with the Adjudication, including safeguarding ability to overproduce basin.**

- **Need to protect existing water quality.**
- **Need to develop equitable and fair program for groundwater basin cleanup.**
- **Need to develop fair and equitable storage limits to provide for future water availability while limiting groundwater losses.**
- **Need to establish production assessment equity to ensure fair method of funding of Optimum Basin Management Plan, including financing cleanup projects.**

CITY OF UPLAND

Needs/Interests	Ideas
QUANTITY Stability and Predictability 1. Reliable annual water allocations. 2. Flexibility to produce, store or exchange. 3. Water quality remediation programs and costs: fully institutionalized.	Make rules and stick to them. Grant allocation "bonuses" to parties who actually produce, treat and use poor quality water: the higher the cost to treat the greater the bonus. If resulting higher production causes a need for additional replenishment (based on actual changes in storage) spread the cost on all production. No increased "rights" due to bonus water production.
4. Elimination of the 85/15 Rule	Continue the gradual phasing out of the 85/15 Rule as discussed at the February 13, 1997 Advisory Committee meeting. No change 1997/98 90/10 1998/99 95/5 1999/00 100/0 2000/01
Storage Limits and Losses	Evaluate Storage limit losses by using actual water level data to determine if losses are actually occurring in the basin.

Needs/Interests	Ideas
1. There will not be enough supplemental water available to supply the future needs of the people in Chino Basin.	I. Increase Safe-Yield of Basin a. Install desalters 1. increase production in lower portion of basin to capture rising groundwater 2. to increase basin recharge from Santa Ana River 3. increase groundwater surface gradient or slope b. Increase capture of stormwater flows from mountains and urban areas 1. redirect runoff to existing recharge sites 2. increase number of recharge sites 3. work with flood control agencies to operate facilities for recharge purposes II. Increase Use of Recycled Water Supplies a. Develop recycled water distribution systems in maximize use of recycled water supplies for landscape irrigation and industrial process purposes. b. Modify basin water quality objectives to permit increased levels of water recycling. c. Develop future basin recharge facilities for recharge of both potable/recycled supply sources. d. Coordinate basin water quality plans to permit increased levels of water recycling. III. Develop Other Sources of Imported Water Supplies other than State Project water from MWD. IV. Expand water conservation programming a. Programs are available for essentially all land use categories. Programs are currently available through CBMWD/MWD. V. Increase the ability to store water in groundwater basin during wet years.

2. Manage/Improve water quality of groundwater basin.	I. Desalters to remove historic contamination. II. Increase removal/control of sources of salt/nitrate contamination to basin III. Use recycled water supplies to "Flush" salt contamination from lower basin. IV. Use SWP deliveries to improve/maintain water quality in basin.
3. As the TDS in the water supply increases it will be necessary to desalt the effluent from the District wastewater treatment facilities to meet permit discharge standards and quality limits established in the 1969 Orange County Settlement.	I. Manage basin to maintain/improve water quality of water supply sources to meet discharge standards. II. Desalt at the wellhead because it is cheaper.

THREE VALLEYS
MUNICIPAL WATER DISTRICT

March 12, 1998

Ms. Traci Stewart
Chino Basin Watermaster
8632 Archibald Avenue, Suite 109
Rancho Cucamonga, CA 91730

Re: Optimum Basin Management Plan Interests/Ideas

Dear Ms. Stewart:

Per your request dated March 6, 1998 regarding the development of an Optimum Basin Management Plan (OMBP), we submit the following thoughts on issues that should be addressed in the development of the OMBP.

1. Spreading of imported water.
2. Conjunctive use potential.
3. Export of basin water.
4. Wastewater reclamation project potential.
5. Groundwater cleanup project potential.
6. Minimization of loss of water from the basin as a result of rising water.

Based upon the limited time in which to prepare this brief list, we may have overlooked some areas of interest for the District. We would like to reserve the opportunity to raise these additional issues/interests during the development of the OMBP. As we learn more about the institutional complexities of the basin we will be prepared to provide more detail on these issues.

Thank you, for the opportunity to provide these comments on behalf of TVMWD. If you have any questions regarding this matter, please contact me at (909) 621-5568.

Sincerely,

Three Valleys Municipal Water District

Richard W. Hansen
General Manager/Chief Engineer

1021 Miramar Avenue • P.O. Box 1300 • Claremont, California 91711-1300
Telephone (909) 621-5568 • Fax (909) 625-5470 • e-mail: tvmwd@earthlink.net

CHINO BASIN WATERMASTER PRE-SCOPING INPUT

PROBLEMS:

* There is more demand for water in the Chino Basin than there is safe yield.

* The poor quality of much of the ground water in the Chino Basin prevents its full utilization

IDEAS/SOLUTIONS:

* Actively seek to partner with all parties who are interested in solving our problems.

* Coordinate in every way possible with the on going efforts of the Regional Water Quality Control Board and SAWPA.

* Expedite the Nitrogen/TDS study to determine what the true assimilative capacity is of the Chino Basin. Based on these results work to maximize the use of reclaimed water.

* Use an increase in the Safe Yield of the Basin to create a water account to offset replenishment obligations of pumping activities that "clean up" the basin.

* Put a water quality price differential in the replenishment charge to create a price incentive to replenish with high quality imported water.

* Actively support new recharge basins to capture all available storm flows and create a mechanism to pledge the value of the increase in safe yield from these "new water" sources to help pay for the construction of these facilities.

* Evaluate the impact to water quality and quantity of increased pumping in the northern portion of the basin combined with decreased pumping in the southern basin. Based on the impacts of this evaluation create pricing incentives to encourage corrective activities.

* Actively explore the use of wetlands to denitrify dairy waste water.

Geoffrey Vanden Heuvel

Geoffrey & Darlene Vanden Heuvel
J & D Star Dairy
7551 Kimball Ave.
Chino, CA 91710
Phone: (909) 597-1128 Fax: (909) 597-0481

OPTIMUM BASIN MANAGEMENT PROGRAM – PRE-SCOPING

Task: Develop list of interests and ideas for inclusion in OBMP discussions. Categorize as Quantity, Quality or Administration.

QUANTITY: The inclusion of *needs*/interests in this category artificially segregates ideas and does not recognize the fact that Quantity, Quality, and Administration categories are inextricably linked. For example, production and recharge activities exert great influence on degradation of water quality.

Interests	Ideas
Eliminate subsidence	Increase/maintain level of groundwater in basin
	Coordinate/reduce production
	Increase recharge (surface or injection)
Satisfy demands	Allocate storage capacity based on technical data and develop conservative programs/policies for optimizing economic benefits
	Retention of production rights
	Acquisition of additional production rights
	Acceleration of land-use conversion
	Allocation of unproduced overlying Non-Ag and Ag pool rights
	Increase of OSY and reallocation of production rights
	Increased conservation
	Development of new sources
	New "imported" supplies (e.g., Bunker Hill)
	Recycled water
	Remediate poor quality water to useable quality

Allocate storage capacity	Establish losses from storage based on technical data
Enhance knowledge base describing basin	Develop logical system of monitoring wells and data collection program

QUALITY: The inclusion of needs/interests in this category artificially segregates ideas and does not recognize the fact that Quantity, Quality, and Administration categories are inextricably linked. For example, production and recharge activities exert great influence on degradation of water quality.

Interests	Ideas
Reduce nitrates and other contaminants (e.g., TDS, IOC's, VOC'c, etc.)	Eliminate at source
	Discontinue use of fertilizers
	Prohibit waste discharges
	Legislate regulation/prohibition of contaminant precursor use
	Treatment to remove from groundwater
	Individual well-head
	Regional/Centralized
	In situ technologies
	Dilution
	Conjunctive use programs/Interception of plumes
Re-examine basin limits	Establish naturally-occurring baselines
Identification of contamination-point sources	Implement focused studies/investigations and data collection efforts

ADMINISTRATION: The inclusion of needs/interests in this category artificially segregates ideas and does not recognize the fact that Quantity, Quality, and Administration categories are inextricably linked. For example, production and recharge activities exert great influence on degradation of water quality.

Interests	Ideas
Ensure regional prosperity and good relations	Facilitate agency programs (e.g., DOHS, RWQCB, SAWPA, CBWCD, CBMWD, MWD, and others)

Develop rules intended to prevent agency to agency impacts, and avoid litigious situations

Create revenue for past, present and future projects to improve water quality

Special assessments/taxes

- Create fund; disbursements based on priority of need
- Consider historic and current production as basis for assessment
- Consider assessment applied to all parcels
- Consider historic and current land use practices as basis for assessment

Develop ability to market water (quantified) lost to Santa Ana River

Reduce costs

Eliminate 85/15 Rule

Response to the Suggested Components of Basin Management Program

Mission Statement

Long term goals need to be identified. Goals need to be realistic and economic feasible. Short term economic savings should not outweigh long term goals. This basin is to valuable to use a bandage approach.

Groundwater Storage Management

A more accurate maximum amount of water storage capacity of the basin needs to be agreed to by all parties in the adjudication. All water in storage should be accessed losses annually.

Safe Yield Management

Production patterns have changed. Programs need to be implemented that will increase the amount of water pumped in the southern part of the basin. This will reduce the amount of water lost to the river, protect safe yield, and over a long period of time improve water quality.

Watermaster needs to increase the number of recharge basins and improve as much as possible existing basins to retain more runoff for recharge.

Watermaster needs to establish an agreement with the Regional Water Quality Control Board on mitigation credits for additional water pumped in the southern part of the basin. This will allow increased use of reclaimed water for recharge.

Water Quality Management

Improving the water quality of the basin should be looked at as a long term goal. Making southern basin water potable should be the short term goal. The incremental cost of cleaning pumped water should be a general assessment on all water pumped in the basin.

Establishing sewer connections should be encouraged for dairies. Constituents removed in this manner could be used as mitigation for increased reclaimed water recharge.

Financing The Program

The presence of agriculture in the basin can and should be utilized to pursue both grant and low interest monies for the improvement of the basin.

March 13, 1998

STATE OF CALIFORNIA
DEPARTMENT OF CORRECTIONS

OPTIMUM BASIN MANAGEMENT PLAN
PRESCOPING DOCUMENT*

NEEDS/INTERESTS	IDEAS
Monitoring for Water Quality	Provide resources necessary to perform the ongoing monitoring of the quality of water throughout the basin so that those areas that have the most acute quality (nitrates/solvents) problems can get assistance.
Complete and Accurate Reporting of Water Use by All Parties to The Judgment	Provide resources necessary to assure the complete and accurate reporting of water use by all parties and to adopt methods to assure compliance.
Safe Yield Protection And Management	Provide additional resources and studies that would monitor the fluctuations in the basin during periods of heavy rains, drought and changes in pumping patterns. Explore the impact on the basin of industrial and residential construction and ground subsidence activity to determine whether the basin is losing storage each year causing losses to the river and the ultimate overdrafting of of the basin. Protect the present level of safe yield in the basin to prevent further problems.

*This prescoping document represents the Needs/Interests of the Department of Corrections. It does not preclude the list prepared by Watermaster Staff of suggested components of the OBMP dated February 26, 1998.

NEEDS	IDEAS
Agricultural Pool Water Quality Issue	Sell surplus agricultural pool water to fund clean-up or alternative water treatment of sources.
Conservation/Expand Reclaimed Water Use/Capturing and Holding Run Off	Provide resources to the Watermaster and Conservation Districts to identify methods for use of reclaimed water for prison dairy crops and lawn irrigation to minimize pumping from basin. Expansion of the prison facilities Waste Water Treatment Plant and possible tertiary treatment to allow the facility to spray irrigate crops and lawns further reducing basin pumping and more efficient use of the resource. Require in the Plan the conservation of basin water including expansion of reclaimed water use.
Storage For Agricultural Pool.	

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E-mail mark.wildermuth@InternetMCI.com

March 18, 1998

Chino Basin Water Conservation District
Attention: Barrett Kehl
Post Office Box 31
Montclair, CA 91763

Chino Basin Watermaster
Attention: Traci Stewart
8632 Archibald Avenue, Suite 109
Rancho Cucamonga, CA 91730

Subject: List of High Priority Recharge Projects

Dear Barry and Traci:

Per your request we have prepared our opinion of the highest priority recharge projects that should be either implemented or studied for possible implementation. These projects, their benefits and associated action items are listed below. These projects are described in the Final Phase 1 Recharge Master Plan report.

San Antonio Creek System. The following improvements should be considered for the San Antonio Creek System to improve groundwater quality, supply reliability and help mitigate local overdraft conditions:

- Increase the turnout capacity from the Metropolitan Water District of Southern California (Metropolitan) Foothill Feeder so that imported water can be discharged to San Antonio Creek and subsequently recharged in the Upland Basin and Brooks Street Basin.

- Construct inlets from San Antonio Creek to the Upland Basin and the Brooks Street Basin so that imported water discharged to San Antonio Creek can be diverted and recharged. This may also allow some storm flow to be recharged from San Antonio Creek in these basins.

The action items required to recharge imported water in these basins are:

- Obtain the necessary agreements with the City of Upland to use the Upland Basin for imported water recharge or simply buy the basin.

- Determine the necessary turnout capacity and negotiate with Metropolitan and CBMWD for construction of the turnout. Metropolitan will construct the turnout.

- Plan and design the inlets from San Antonio Creek to the Upland and Brooks Street Basins. Plan and design outlets from these basins.

- Obtain the easements and agreements for construction of inlets and outlets, and operations of the basins for imported water recharge.

- Complete the CEQA Process.

- Obtain financing and build.

West Cucamonga Creek System. The following improvements should be considered for the West Cucamonga Creek System to improve water quality, water supply reliability and help mitigate loss of recharge from the closure of the 15th Street Basin:

- Add conservation storage through deepening and/or addition of outlet controls to the Ely, 7th and 8th Street Basins.

- Recharge reclaimed water in the Ely Basins

The action items required for these basins are:

- Obtain the necessary agreements with the Flood Control District and the City of Upland to allow the 7th and 8th Street basins to be excavated to create conservation storage and modify outlet operations.

- Plan and design conservation improvements at the 7th and 8th Street basins.

- Complete a new planing and design plan for the planned recharge of reclaimed water at the Ely Basins for 2,000 to 4,000 acre-ft/yr project. Obtain Department of health Services and Regional Board approvals.

- Complete the CEQA processes.

- Obtain financing and build projects.

Deer Creek System. The following improvements should be considered for the Deer Creek System to improve water quality and water supply reliability:

- Preserve and expand the existing Turner basins for conservation storage.

- Modify the inaintenance practice of these basins to improve recharge.

The action items required to improve recharge in these basins are:

- Obtain the necessary agreements with the Flood Control District to preserve these basins and to improve maintenance.
- Install percolation monitoring equipment comparable to that installed in the Conservation District facilities.

Day Creek System. The following improvements should be considered for the Day Creek System to improve water quality and water supply reliability:

- Add conservation storage to Wineville and Riverside basins through deepening and/or the addition of gates to the existing outlets.
- Modify existing and proposed CBMWD reclaimed water distribution systems to allow the discharge of reclaimed water into Day Creek channel and subsequent recharge in the Wineville and Riverside Basins
- Modify the existing CBMWD turnout in the Foothill feeder to allow discharge of imported water into Day Creek Channel for subsequent recharge in the Wineville and Riverside Basins.

The action items required to recharge imported water in these basins are:

- Obtain the necessary agreements with the Flood Control District to allow the Wineville and Riverside Basins to be excavated to create conservation storage and modify outlet works.
- Determine the necessary turnout capacity and negotiate with Metropolitan and CBMWD for activation/modification of the existing turnout near upper Day Creek Basin. Metropolitan will modify the turnout.
- Plan and design conservation improvements at the Wineville and Riverside Basins.
- Complete an engineering report for the planned recharge of reclaimed water at the Wineville and Riverside Basins. The size of the reclaimed water recharge project will be determined based on the ability to recover the recharged water and to obtain regulatory and producer approvals.
- Complete the CEQA processes.
- Obtain financing and build projects.

San Sevaine Creek System. The following improvements should be considered for the San Sevaine Creek System to improve flood control, water quality and water supply reliability:

- Add conservation storage to the Declez basin through deepening and/or the addition of gates to the existing outlets.

The action items required to improve flood control and recharge in this basin are:

- Obtain the necessary agreements with the Flood Control District to allow the Declez basin to be excavated to create conservation storage and modify outlet operations.
- Plan and design conservation improvements at the Declez basin.
- Complete the CEQA process.
- Obtain financing and build project.

Other Important Studies. Conservation District and Watermaster should do the following as funds permit:

- Begin a systematic installation of percolation rate sensors in the major spreading/detention basins located in the Chino Basin. Table 1 lists these basins, the status of percolation monitoring and an installation priority based on the estimated annual average recharge volumes for each basin. The data collected from these sensors can be used to estimate annual recharge and to schedule maintenance.

- Develop maintenance practices that remove fine-grain materials deposited by storms instead of discing or ripping the basins. Discing or ripping the basins incorporates fine grain material into the basin floors.

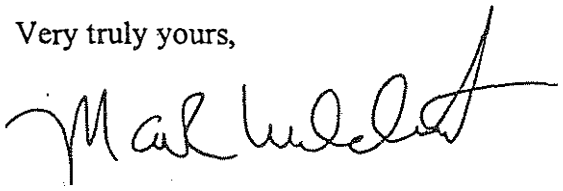
- Continue the existing surface water quality monitoring program into the foreseeable future. Conservation District and Watermaster should approach the Flood Control District and others to coordinate surface water discharge and quality monitoring. The objective of this coordination is to improve data collection and to save money.

- Prepare an annual or biannual report to document the volume of storm water recharge, reclaimed water recharge, and imported water recharge in the basin. The maintenance practices and recharge water quality should also be documented in this report. As an alternative to a stand-alone report, this information could be summarized and included as an appendix in the Watermaster Annual Report.

- Conduct a groundwater modeling study to determine if the artificial recharge of storm water, imported water, and reclaimed water in the Jurupa, Wineville and Riverside Basins can be recovered from wells in the Chino Basin; or conversely, to determine where production should be (and how much production should occur) to ensure that water recharged in these facilities is recovered.

We appreciate the opportunity to serve the District and Watermaster on this very interesting and important work and look forward to working with you in the future.

Very truly yours,



Mark J. Wildermuth, P.E.
Water Resources Engineers

TABLE 1
PRIORITY OF INSTALLATION OF PERCOLATION RATE SENSORS

Facility	Average Annual Recharge (acre-ft/yr)	Percolation Monitoring Status	Priority for New Installation
San Antonio Creek System			
Upland Basin	893		High
Montclair 1	902	Operating	
Montclair 2	262	Operating	
Montclair 3	413	Operating	
Montclair 4	486	Operating	
Brooks	1,182	Operating	
System	4,138		
West Cucamonga Creek System			
15 th Street	845		-1
8th Street	0		Low
7th Street	368		Low
Ely Basins	3,182		High
System	4,395		
Cucamonga Creek			
Lower Cucamonga West	2,524	Operating	
Lower Cucamonga East plus Chris Basin	835	Operating	
System	3,358		
Deer Creek System			
Church	1,435		High
Turner No. 9	356		Medium
Turner No. 8	464		Medium
Turner No. 5	72		Medium
Turner No.'s 3 and 4	113		Medium
System	2,440		
Day Creek System			
Lower Day	0		
Wineville	2,132		High
Riverside	1,293		High
System	3,425		
Etiwanda Creek System			
Etiwanda Basin	2,550		Low
San Sevaine Creek System			
San Sevaine No. 1	2,476		High
San Sevaine No. 2	315		Low
Rich Basin	1,120		High
San Sevaine No. 3	353		Low
San Sevaine No. 4	72		Low
San Sevaine No. 5	4		High
Victoria Basin	244		Medium
Hickory Basin	663		Low
Jurupa Basin	2,622		Low
System	7,870		
Declez	0		Low
Total All Existing Basins	28,176		

** Included in Etiwanda Basin

(1) – basin is being closed

Mark J. Wildermuth
Water Resources Engineers

San Antonio Water Company
Incorporated October 25, 1882
Serving the original Ontario Colony Lands
(Communities of Ontario - San Antonio Heights - Upland)

March 19, 1998

Members of the Watermaster Board, and
Tracy Stewart
Chief of Watermaster Services
Chino Basin Watermaster

Fax (909) 484-3890

Re: **Optimum Basin Management Program**

Item # 7 on tomorrow's agenda for the Watermaster Board meeting contains various inputs and comments directed toward establishing a scope for the Optimum Basin Management Program (OBMP). After reviewing this item's materials and those related handouts from a previous meeting, I felt as though I had just revisited the past ten-years of discussions, perspectives and interests without much change. Although my opinion my seem a little harsh, I am very concerned about the decisive and timely actions needed to develop a meaningful scope and then get it to the referee and the court for approval.

Therefore, I am submitting the following suggestions for accomplishing that which we all need to be fully committed to doing:

A. Set forth a schedule of all necessary actions & meetings between now and June 30th.

B. Divide the scoping activities into addressable units and form *representative teams* to work on each of the unit areas concurrently. Each team is to be accountable to the others for properly addressing the issues and meeting the time schedule.

C. These teams are then brought together for a collective and cooperative work-session to compile the complete OBMP work scope. The resulting scope is then sent to the referee for review, adjusted as may be necessary and then filed with the court.

D. If this process would benefit from the hiring of a facilitator(s) to help develop the needed consensus, then let's get them on-board quickly. Two months is a short time frame!

In addition to the above comments, I've also taken some time to layout an initial OBMP outline that appears to contain the crucial elements. As such is further developed and refined, it is hoped that it would be easy to buy-into and to administer without being expanded into a document that is trying to be everything to every body. The outline is on the attached page.

139 North Euclid Avenue • Upland, California 91786 • (909) 982-4107 • FAX (909) 920-3047

Possible Outline for the OBMP

I. Purpose
   Description of the Basin and Plan
   Definitions (especially of what constitutes *optimum*)
   Statement of assumptions included

II. Historical Information
   Water production, demands, recharge, import, export and safe yield
   Water quality and contaminates
   Water storage, losses and recharge areas
   Water reuse

III. Future Trends & Options
   Same items as included under area II.

IV. Components of the OBMP (with flexibility to accommodate change when new information is available)
   A. Issues identified and prioritized
   B. Actions to optimize safe yield
   C. Actions to optimize quality
   D. Actions to optimize storage
   E. Costs, schedule and funding to implement the prioritized actions

V. Administration of the OBMP within the Judgement

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March 12, 1998

Chino Basin Water Conservation District
Attention: Barrett Kehl
Post Office Box 31
Montclair, CA 91763

Chino Basin Watermaster
Attention: Traci Stewart
8632 Archibald Avenue, Suite 109
Rancho Cucamonga, CA 91730

Subject: Improvements in San Bernardino County Flood Control District (SBCFCD) operations that could increase conservation.

Dear Barry and Traci:

At the March 2, 1998, workshop for the Recharge Master Plan, I suggested that there were some improvements that could be made in SBCFCD operations that would increase storm water recharge in the Chino Basin. Some of these improvements would increase the cost of operating the flood retention facilities and would probably require financial participation from Conservation District and Watermaster. These improvements are described below.

Ely Basins. Keep outlet valves closed except when draining the basins for maintenance or for emergencies. The Ely Basins have no flood protection benefits so there is no reason for the outlet valves to be open. The valves are always open. Simulation studies have shown that keeping the valves closed results in significantly more conservation than when the valves are open. This is a no-cost change in operations. The Regional Water Quality Control Board has ordered the 15th Street Basin to be closed which in turn will increase the storm water inflow to the Ely Basins. The loss in recharge at the 15th Street basin will effect Chino Basin safe yield. Some of the lost recharge could be made up in the Ely Basins.

Lower Cucamonga West. Keep outlet valve closed and inlet valve from Cucamonga Creek open, except when draining for maintenance or for emergencies. The Lower Cucamonga West Basins have no flood protection benefits so there is no reason for this basin to be dry as it is currently. The inlet is currently closed because effluent from RP1 is not being adequately controlled by CBMWD. CBMWD needs to repair their discharge training berm in the Cucamonga Creek channel. Simulation studies have shown that even with low

percolation rates that keeping the inlet valve open and the outlet valve closed results in significantly conservation of storm flows and base flow. This is a no-cost change in operations.

Turner Basins. SBCFCD is currently filling in some of the Turner basins under the assumption that these basins do not percolate. The Turner basins were identified in the Chino Basin Water Resources Management Study as recharge site for imported water. The tributary area to these basins will soon be completely urbanized. Our surface water monitoring data suggests that the water quality of this recharge should be excellent. The Conservation District and Watermaster should work with SBCFCD to retain these basins and maximize recharge of local water and potentially imported water and reclaimed water. The specific action item would be for Conservation District, Watermaster and SBCFCD to discuss that fate of these basins and to develop plans to optimize the use of the Turner Basins.

Maintenance of Basins. SBCFCD currently maintains the flood retention/spreading basins on ad hoc schedule. Maintenance is done when time and funds are available. Maintenance of these basins is typically disking or ripping the basin floors. This results in a temporary increase in recharge capacity. There are two action items here. First, maintenance should be done when recharge noticeably becomes diminished which will be different for each basin. Second, the type of maintenance may need to be changed to either a combination of frequent ripping and periodic removal of bottom and side slope materials, or just periodic removal of bottom and side slope materials. Again this is a basin-specific issue.

There are facilities improvements that, when incorporated with operational improvements, will significantly increase storm water recharge with little or no risk to flood control. These are generally discussed in the Phase 1 Recharge Master Plan Report. The Conservation District Board asked us to develop a *short list* of projects that appear to have obvious and significant conservation benefits. We have deferred submitting the short list to the Conservation District pending the analysis of imported water recharge benefits from recharge at Brooks Street Basin. This analysis has hit snag and so we are going to issue our short list in the next few days.

We appreciate the opportunity to serve the Conservation District and Watermaster. Please call me if you have any questions or need further assistance.

Very truly yours,

Mark J. Wildermuth, PE
Water Resources Engineers

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Office of the General Manager

Ms. Traci Strewart
Chief of Watermaster Services
Chino Basin Watermaster
8632 Archibald Avenue
Suite 109
Rancho Cucamonga, California 91730

Dear Ms. Stewart:

Optimum Basin Management Plan Interests/Ideas

Per your request dated March 6, 1998 regarding the development of an Optimum Basin Management Plan (OMBP), attached are Metropolitan Water District's interests and ideas for consideration.

We apologize for the lateness of our comments. Thank you for the opportunity to provide comments. If you have any questions, please call me at (213) 217-6440 or Nina Jazmadarian at (213) 217-6583.

Very truly yours,

Michael B. Young
Assistant Chief of Operations

MBY/NJ:jcj
(o:\opsexec\contradm\conjuse\obmplnt.doc)

cc: Mark Kinsey

OPTIMUM BASIN MANAGEMENT PLAN PRE-SCOPING

Needs/ Interests:
Optimize the use of the basin to more effectively combine the use of groundwater and Metropolitan water at the lowest cost possible.

Ideas:
Use Metropolitan's replenishment program to maximize the yield from the basin and take Metropolitan water at the long-term replenishment rates. This would be accomplished by overproducing the basin and replenishing with Metropolitan water. The cyclic storage program would augment the replenishment needs of the basin by storing water when available for use when replenishment water through surface deliveries is unavailable. In addition, water stored through the cyclic storage program helps offset pumping costs of the producers since water would be pumped from a higher elevation.

Needs/Interests:
Optimize the use of the basin to maximize the yield during supply shortages, shutdowns, and to help offset peaking.

Ideas:
Develop a conjunctive use program, whereby Metropolitan would pay for the construction of facilities which would be used to shift demands from Metropolitan during supply shortages, shutdowns, and offset peaking where system capacity is limited. The program would be structured so that facilities would provide a long-term cost-effective benefit to the Metropolitan service area including the basin area. Metropolitan's exposure to future potential risks and benefits would be similar to that of future basin users.

Chino Basin Water Conservation District

April 8, 1998

Ms. Traci Stewart, Chief of Watermaster Services
Chino Basin Watermaster
8632 Archibald Avenue, Suite 109
Rancho Cucamonga, CA 91730

Re: Optimum Basin Management Plan Recommendations

Dear Ms. Stewart:

At the meeting of the Board of Directors for this District, held on April 8, 1998, the following items were determined as being important issues which should be considered by Watermaster as it develops an "Optimum Basin Management Plan" for the Chino Basin:

- Monitor water quality and level fluctuations within the basin and changes in production patterns to better identify basin issues.
- Evaluate the potential impacts upon the basin's safe yield and water quality resulting from the operation of desalters.
- Evaluate the impacts from increased northern production and develop a program which either provides credits for increased southern production or imposes water quality mitigation obligations upon the increased northern production as a means to protect the basin's safe yield and enhance southern basin water quality.
- Increase development of water conservation programs within the basin.
- Evaluate the existing water supply, in-basin transfer program, and over-production methodology currently used by Watermaster agencies.
- Assist in the evaluation and promotion of cooperative efforts to develop additional economically feasible recharge facilities for natural, imported, and reclaimed water supplies, while ensuring that the recharge potential of existing recharge basins are maintained.
- Consider the feasibility of developing a "credit" type program or other appropriate encouragement's for those agencies who develop and implement mechanisms to enhance water quality and water conservation within the basin.
- Develop graphic displays depicting current and projected basin water quality (TIN/TDS) and depth to groundwater conditions.
- Develop an inter-agency network to maximize efforts necessary to obtain grant and low interest loans to facilitate the early development of basin water quality and recharge projects identified within the OBMP and to assist in ascertaining the extent of water quality problems within the basin ("various elements of data development").

Sincerely yours,

Barrett Kehl

Barrett Kehl,
General Manager/Secretary

4594 SAN BERNARDINO STREET
P.O. BOX 2400
MONTCLAIR, CA 91763-0900
(909) 626-2711
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MONTE VISTA IRRIGATION COMPANY
A MUTUAL IRRIGATION WATER COMPANY
915 S. OAKS
ONTARIO, CALIFORNIA 91762 (909) 988-4443

Traci Stewart
Chief of Watermaster Services
Chino Basin Watermaster
8632 Archibald Avenue
Rancho Cucamonga, CA 91730

Dear Traci:

I am in the Appropriative Pool of the Chino Basin Watermaster. Each year, due to the operating expenses we incur, I lease water to other producers or to the Watermaster for replenishment. Since the Watermaster is encouraging only the spreading of imported water. I am being adversely impacted financially. My understanding is that the Judgment anticipated and encourages the use of basin water in lieu of importing water and that economic considerations are of equal importance with both water quantity and quality. I request that Watermaster keep this in mind when developing the Optimum Basin Management Program and make sure that any program balances the needs of all producers from the basin.

Sincerely,

Harold Anderson

Harold Anderson

SCOPE OF WORK

DEVELOPMENT OF AN
OPTIMUM BASIN MANAGEMENT PROGRAM

ATTACHMENT B

MANAGEMENT PROGRAM CONCEPTS

CITY of CHINO

June 1, 1998

Chino Basin Watermaster Board
8632 Archibald Avenue, Suite 109
Rancho Cucamonga, California 91730

RE: Recommendation on Optimum Basin Management Program

Dear Watermaster Board:

Pursuant to Judge Gunn's Ruling, the City of Chino is pleased to submit its recommendations regarding the scope and level of detail of the Optimum Basin Management Program (OBMP).

While the City of Chino has participated in the many meetings on the scope and level of detail of the OBMP, the City would like to formally request the inclusion of the following scope and level of detail of the OBMP:

1. Stabilization of Land Subsidence

The OBMP should address the need to stabilize the subsidence of land occurring in the City of Chino and surrounding areas. The OBMP should include consideration of the activities, past and present, responsible for the subsidence conditions and identify measures designed to eliminate the subsidence phenomenon from continuing. Evaluation of the means necessary to increase or maintain the level of groundwater in the basin would logically be part of the OBMP consideration of this matter. Necessary means may include coordination and/or reduction of production of local groundwater, and increasing recharge of the basin by percolation or injection methods. The OBMP should describe the data needed to acquire an enhanced knowledge of the lower portion of the Chino Basin, and provide for the development of a logical system of well monitoring and data collection throughout the entire basin.

2. Satisfy Current and Future Demands for Groundwater

The OBMP should address the need, and identify the means available, to satisfy the water demands of a rapidly increasing urban customer base. It is envisioned that OBMP coverage of this subject area will be extensive, and include a focused evaluation of the lower portion of the basin where agricultural land use is expected to convert to urban use.

12616 Central Avenue, Chino, California 91710
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This should include evaluation of safe yield, allocation of capacity, and assignment of appropriate losses for all parties, based on technical data that describes past, present and projected future conditions. The ability to store water in the Chino Basin must be clearly established. OBMP measures should evaluate the needs of purveyors to retain groundwater production rights, and explore the possible means of acquiring additional production "rights". Additional production may be realized through accelerated conversion of agricultural land use to non-agricultural land use, allocation of under-produced Overlying Non-agricultural and Agricultural Pool rights, and the reallocation of production rights based on increased operating safe yield.

The OBMP should consider the possible benefits of increased water conservation activities, as well as the development of possible new sources of water. An evaluation of new sources of water should include both imported supplies (e.g. Bunker Hill) and local supplies such as recycled water. In addition to evaluating possible new sources of water, the OBMP should thoroughly evaluate re-mediation of existing poor water quality to useable quality.

3. Establish Water Storage Rights

The issue of water storage rights has been debated for considerable time. Fortunately, Joe Grindstaff and Ed James have made a presentation to the Watermaster Advisory Committee regarding a conceptual plan to address the issue of water storage. It is recommended that that conceptual model be included in the OBMP. In particular, the City of Chino recommends that water losses be recognized to reflect the actual losses experienced by the basin. Further, those losses should be charged against existing, accumulated storage rights retroactive to a sensible date such as the date of the study which determined the existence of such losses.

4. Water Quality Issues

The OBMP must address basin water quality issues, including identification of sources of contamination, reduction of contaminants, and examination of basin limits. An evaluation of the various means to eliminate contamination at the source should consider issues related to legislative regulation and/or prohibition of contaminants and contaminant precursors, as well as locally imposed restrictions on use and/or discharge of materials that may enter the groundwater basin.

The OBMP must identify the temporal and spatial relationships that impact water quality. An evaluation of these relationships should provide for an understanding of naturally occurring flow patterns, the potential for water migration to be influenced, and the possible groundwater quality impacts that may result from alteration of naturally occurring water flow. For example, Chino currently produces groundwater that is high in nitrate. The

OBMP must consider what positive and/or negative impacts, if any, that proposed projects throughout the basin (e.g. Brooks Street Basin Recharge) may have on the quality of groundwater produced by the City of Chino and other water producers. Similarly, the production practices of upstream water producers should be evaluated for impacts on downstream water producers, both in terms of water quality and quantity as it may relate to replenishment of the basin by naturally occurring surface and subsurface flow.

The OBMP should address the feasibility of various treatment methods for the removal of contaminates from groundwater. Consideration should be given to individual well-head treatment, regional or centralized treatment strategies, and in situ technologies. Conjunctive use programs which may serve to flush or dilute poor water quality conditions and/or intercept contaminant plumes should be considered, and described in detail. In addition, the OBMP should specifically address the need to improve water quality through replenishment activities, and include identification of the most effective physical means of, and establish incentives for, introducing good quality water into the basin.

An extensive detailed list of projects intended to re-mediate poor water quality conditions must be an objective of the OBMP. It is envisioned that the OBMP will recognize existing, as well as future projects, include estimates of project cost, assign project priority, and identify implementation responsibilities. In the case of existing projects (e.g. Pomona's ion exchange treatment facility and the Chino desalter), sponsoring agencies should have an ability to realize a type of credit for past efforts geared toward attaining OBMP goals.

5. Regional Issues

The OBMP should be clear in its characterization of regional issues, and describe a cooperative framework for the attainment of objective. Rules and procedures designed to facilitate regional programs and prevent agency to agency impact should be developed.

As part of this regional approach, the 85/15 Rule should be eliminated.

6. Financial Implementation Plan

The OBMP should include a financial implementation plan. The purpose of the Financial Implementation Plan is to provide options to the Watermaster Board for funding the implementation of the OBMP. Further, the funding options should become available to the Watermaster Board at the same time that the OBMP is completed. In this way, the Watermaster Board can readily transition from planning to actual implementation. In order to achieve this goal, a financial consultant should be retained to prepare funding options on a parallel track with the preparation of the OBMP.

The following principles are the foundation of the Financial Implementation Plan:

A. The primary source of revenue to finance the implementation of the OBMP are the consumers of the Chino Basin groundwater. For this reason, the focus should be placed upon the end result of the OBMP to the consumers. The focus should not be on the cost to the producers as they will pass it through to their customers.

B. The consumers in the Chino Basin must be treated equally by passing the cost of the OBMP on an acre foot basis. Since the acre foot is the basis of the current formula for assessing Watermaster costs to the consumers, this concept is well understood and easily acceptable.

C. Financial incentives must be established for and financial disincentives should be removed from the producers in order to assure that existing groundwater is pumped out of the basin and a higher quality of water is used to replenish the basin.

D. Opportunities for creativity must be provided to the producers so that they are motivated to use their assets and abilities in the implementation of the OBMP.

Based upon the foregoing principles, the Financial Implementation Plan should contain the following elements:

1. Project annual revenues over each of the next twenty (20) to thirty (30) years that can be realized by imposing acre foot charges at three different rates per acre foot.

2. Project total revenues that can be raised by issuing bonds which would be financed by the annual revenues projected under item one.

3. Identify sources of grants to finance the OBMP which includes the types of projects for which the grants are awarded and the criteria for awarding them.

4. Identify sources of loans to finance the OBMP which should include the types of projects for which the loans may be obtained and the criteria for obtaining them.

5. Identify consultants and lobbyists experienced in obtaining such grants and loans.

6. Establish criteria and mechanisms permitting a producer or producers to construct capital projects or initiate programs that implement aspects of the OBMP for which the producer or producers would receive reimbursement from Watermaster revenues designated to implement the OBMP.

7. Establish funding formulas to recognize existing capital projects that implement the OBMP including the criteria for the selection of such projects.

8. Identify revenue sources from the sale or lease of Chino Basin ground water assets such as unutilized storage capacity of the Chino Basin, unutilized stormwater that is used to recharge the basin, the sale of over flow water to agencies south of the basin such as Orange County, etc.

These recommendations have considerable overlap as they are inextricably linked. Further, we recognize that some of these recommendations are redundant. Nevertheless, the City of Chino believes that these recommendations are essential for inclusion in the OBMP; and the City of Chino requests that they be included in the scope and level of detail in the OBMP as contemplated by Judge Gunn's Ruling.

Respectfully submitted,

JIMMY L. GUTIERREZ
City Attorney

Jimmy L. Gutierrez

JLG/em

cc: Mayor and Members of the City Council
Glen Rojas, City Manager
Robert Beardsley
Dave Crosley

5/22/98

TO: TRAC

FROM: RAD, CCWD

RE: OBMP MGT. CONCEPTS" - FOR JUNE MTGS.

REVIEW PERSPECTIVE OF UTILIZING 'IN-BASIN' SOURCES FOR REPLENISHMENT &/OR CONJUNCTIVE USE PRIOR TO IMPORTING DELIVERYS

- AGENCIES W/ STORAGE MAY OR MAY NOT CHOOSE TO PARTICIPATE.

- DEVELOP A JOINT USE 'POOL' OF WATER TO OFFSET OVERPRODUCTION; OR, DEDICATE TO SPECIAL PROJECTS: I.E. DESALTER.

Chino Basin Watermaster
Basin Water Management Concept
Water Quality/Salt Balance

OBJECTIVE

In order to fully utilize the available water resources of the Chino Basin a salt balance must be achieved; therefore all water utilized in the Chino Groundwater Basin should carry a water quality/salt balance burden.

PRODUCED WATER

Produced water which has a TDS content higher than the basin objective in the zone it is produced should receive a monetary credit, because it is removing salts from the basin.

Produced water which has a TDS content lower than the basin objective in the zone it is produced should be assessed a debit, because its removal increases the salt concentration of the basin.

The credit or debit should be based on the alternative cost to remove salt. The Ely Basin salt mitigation cost is $0.75 per ml.

IMPORTED WATER

Imported water which is lower in TDS than the basin objective in the zone it is either used or spread should carry a credit or subsidy based on the alternative cost to remove salt.

Imported water which is higher in TDS than the basin objective in the zone it is used or spread should carry a debit or charge based on the alternative cost to remove salt.

If this strategy is successful in improving the salt balance of the Basin there will be more credits than debits and a financial cost will be incurred. This net salt balance cost could be financed as a general budgeted watermaster expense.

CHINO BASIN WATERMASTER
BASIN WATER MANAGEMENT CONCEPT
REPLENISHMENT COMPONENT OF
CHINO BASIN OPTIMUM BASIN MANAGEMENT PROGRAM

OBJECTIVE

In order to fully utilize the available water resources of the Chino Basin and to provide adequate supplies at a reasonable cost, alternatives for intra-basin replenishment purchases as well as supplemental replenishment purchases should carry a water quality/salt balance incentive.

INCENTIVE TO PURCHASE BASIN WATER

If the quality of the supplemental water is WORSE than the water quality objective for the recharge zone where the spreading basins are located, then a debit will apply which will be reflected in the actual price that is charged for the water. The formula would be based on the current cost of replenishment water plus 75 cents per mg/l (based on the difference between the recharge zone water quality objective and the quality of supplemental water available). An example follows:

Basin objective	220 mg/l
Supplemental water quality	320 mg/l
Difference	100 mg/l

Price = Cost of replenishment water plus $75 if water is to be spread.

Funds collected over the actual Watermaster costs to purchase spreading replenishment water will be placed into a Watermaster trust account to offset future desalter costs.

INCENTIVE TO PURCHASE IMPORTED WATER

If the quality of the supplemental water is BETTER than the basin water quality objective then a credit will apply that will be reflected in the actual price that is charged for the water. The formula would be based on the current cost of replenishment water plus a credit of 75 cents per mg/l (based on the difference between the supplemental water quality and the basin water quality objectives). An example of this formula is provided:

Basin objective	220 mg/l
Supplemental water quality	120 mg/l
Difference	100 mg/l

Price = Cost of replenishment water less $75.

To pay for the credits, Watermaster will include the costs in the following year assessment package under general administration. Agencies that purchased replenishment water will receive the credit in the following year assessment package.

Water placed into the Cyclic Account through the spreading basin will be exempt from being assessed a credit or charge due to the water quality. Watermaster will establish a goal to attempt to place as much water as possible into the Cyclic Account, by means of spreading, when the water quality is better than the basin water quality objectives.

This management objective can be used to improve the salt balance of the Basin while also providing producers with pricing alternatives in years when there is a surplus of available supply.

Traci Stewart
From: Geoffrey Vanden Heuvel [gvandenheuvel@eee.org]
Sent: Friday, June 05, 1998 8:22 AM
To: Traci Stewart
Cc: geoffreyvh@juno.com
Subject: Water Management Concept

Chino Basin Watermaster
Water Management Concept

Objective:

To manage dairy wash water, reclamation water and possibly poor quality ground water in Chino sub-basin III in such a way as to make this water usable.

Water available:

Dairy Wash Water: A rough estimates reveals that about 16,000 acre feet per year of dairy wash water is generated in the lower Chino Basin area. Some sampling has shown that this water has a TDS level of between 1500 and 2000 parts/ml. Currently all of this water is designed to leach into the ground water basin which greatly increases the salt load of the basin.

Reclamation Water: Waste treatment plants operating in the Chino Basin generate about 50,000 acre feet of reclamation water per year of which a very small amount is being reused through existing reclamation projects. This water currently has a TDS level of about 400 parts/ml.

Poor Quality Groundwater in Chino Sub-Basin III: There is a virtually unlimited supply of high nitrate, high TDS groundwater in Sub-Basin III which underlie existing agriculture wells.

Problems to be overcome:

The dairy wash water is high in nitrates and TDS. The reclamation water is high in nitrate, TDS and has an identity problem. The sub-basin III groundwater is high in nitrate and TDS. Cleaning up these waters would allow them to be beneficially used as well as stopping the further degradation of the basin that currently occurs because the dairy wash water is leaching into the basin.

Method to clean up:

This water should be channeled to one or preferably more than one constructed wetland areas where the natural processes will both denitrify and blend these three waters to produce a usable flow that meets the Prado Dam TDS standard of 600 parts/ml.

Beneficial User of the Water:

Chino Basin Appropriators located in the southern portion of the basin could divert the flow of the Cucamonga Creek into a mini reservoir system which could be used for agriculture irrigation purposes, thereby allowing an agriculture conversion transfer of safe yield to the overlying appropriator.

Orange County is also a logical purchaser of this water. Enough money would need to be raised from this effort to cover the cost of the wetland blending operation and any replenishment obligation that would be incurred.

What is Needed:

This idea needs to be pursued at a number of levels. First, more needs to be learned about how to specifically manage dairy wash water in a wetlands. Obviously, much of the solids in the dairy wash water need to be separated out prior to the water leaving the dairy facility. Separation

ponds on the dairy are proven way to remove much of the solid material. To learn more about this a pilot project should be started.

The Chino Basin

Water Conservation District is in the process of putting together a pilot project proposal which would utilize the Lower Cucamonga Basins, which do not perk very well, as a site for a wetlands project. This site has the advantage of being close to the reclamation water, close to dairy wash water and close to the creek which can convey the cleaned up water downstream. This project should be supported.

Two, a reconnaissance study needs to be done of the entire Agriculture Preserve area with the eye to looking at potential wetlands sites and how the dairy wash water could be channeled to reach these sites. These wetlands sites would be managed to de-nitrify the dairy wash water, the reclamation water and high nitrate ground water to produce a water that would meet drinking water nitrate standards and the 600 TDS Prado objective. The raising of Prado Dam increases the footprint of the flood plain behind the dam. This increased flood plain acreage could be utilized for these wetlands which would have wildlife habitat as well as water quality and supply benefits.

Congress should be approached immediately and asked to include this reconnaissance project in the 1998 Water Resources Development Act.

CCWD

Cucamonga County Water District
9641 San Bernardino Road
Rancho Cucamonga, CA 91729-0638
P.O. BOX 638 • (909) 987-2591 • FAX (909) 941-8069

ROBERT A. DeLOACH
Secretary / General Manager

June 18, 1998

Ms. Tracy Stewart
Chief of Watemaster Services
8632 Archibald Av. Suite 109
Rancho Cucamonga, Ca. 91730

Subject: Optimum Basin Management Program - Management Concepts

Dear Tracy:

As requested the Cucamonga County Water District herein submits management concepts to be considered with the preparation of the OBMP. This listing also includes those previously submitted. It is my understanding that all concepts or objectives submitted by any party to process will be given consideration through this process.

Groundwater Storage & Safe Yield Management. As stated in Section 4 of the OBMP Scope of Work, "Components of the OBMP", individual producers may elect to store water in the groundwater basin to manage their future water supply and at some precisely determined point water is lost to the Santa Ana River. Losses should be determined for by sound engineering and hydrological methods and agencies storing water above a determined threshold should be assessed losses from their storage account.

The plan should encourage storage programs such as cyclic and conjunctive use to take advantage of low cost seasonal supplies. However, these programs will be put in place in addition to the water already in storage through a local storage account and if losses occur as a result, then these programs should be assessed losses first. The Watermaster should give consideration and priority to maximizing "in-basin" water supplies for both replenishment purposes as well as

To encourage maximization of in-basin supply, a "pool" or "account" should be established to allow agencies to transfer and dedicate water prior to losses to special projects such as the desalters or to meet overproduction. The OBMP must include a process whereby water in storage can be converted to the "supplemental" classification which pursuant to the judgement can then be exported. (This process could be expanded to imported additional waters for purposes of export as a means to market the basins storage potential and generate revenue.)

Financial Implementation. The financial planning portion of the OBMP should develop a menu or list of options to assess cost effective and equitable methods to finance the develop of capital facilities and related infrastructure as well as on-going cleanup operations into the future. Any and all funding obtained through State and Federal sources will reduce the actual impact to the consumer and our efforts should concentrate on these potential sources.

The eventual clean-up or continued degradation of the Basin effects <u>all</u> property, both developed and undeveloped in the Chino Basin area. As property develops or redevelops there will be an increased demand on a reliable, high quality water supply. Local supplies will continue to offer the most efficient means of meeting future demands. We would recommend that the plan consider the development of a 'parcel related fee' that takes into account undeveloped properties as well as developed. The actual revenue generated should <u>only</u> represent an amount equal to a generalized benefit derived by all property that would depend on the Chino Basin Acquifer for present and future water deliveries. This method <u>should not</u> be used to underwrite the entire OBMP financial plan. Undeveloped properties including publicly owned properties will benefit through the efforts of the Watermaster and the OBMP process to ensure adequate supplies of clean water when developed. This will have the effect of lowering the impact to the consumer by spreading a "base" amount for generalized benefit over a wider base.

The development and use grants, loans or property assessment funding will undoubtedly fall short of the total needed revenue for full implementation of the OBMP. A methodology of establishing a "pump or production fee" on an acre foot basis should be considered that takes into account fluctuating revenue demands from year to year. While the aforementioned charge on property effects all customers equally, consideration should be given to allocating the pump fee based on past, present and future land use practices that have impacted water quality both in the north end and south end of the Basin. Allocating cost in this manner must be sensitive to not creating a disincentive to produce water in the south end and shift production to the north.

In addition to land use practices that have had a negative impact on groundwater quality, many producers have installed facilities or implemented production

practices that at considerable expense have improved water quality to meet DHS standards for potable water. The plan must take into consideration these financial efforts in assessing costs to those agencies.

We have been appreciative of the opportunity to participate in the creation of management concepts and have benefited from hearing from other interests. CCWD anticipates that the concepts mentioned herein will be included in the process of finalizing the OBMP.

Respectfully submitted;

Robert A. DeLoach,
General Manager

Cc: President and Members of the Board of Directors
Gerald Black

Traci Stewart
From: Joseph Grindstaff [Joe_Grindstaff@compuserve.com]
Sent: Thursday, June 18, 1998 3:40 PM
To: Traci Stewart
Subject: Management Concepts

Traci Stewart
Chief of Watermaster Services
Chino Basin Watermaster

Subject: Basin Management Concepts

Traci,

Many people have suggested concepts for managing the basin. I just want to reiterate a few in writing that I have suggested before.

1. I believe it is critical that the data upon which decisions are based be accurate and up to date. One component of that is requiring that each user furnish accurate information about their use and the water quality they find. This may mean that actual meters are needed in the AG Pool if accurate estimates of use can not be made. It does mean that each party should be responsible for furnishing information about each source on a regular basis in some kind of electronic format that is easy to compile. Data entry over the internet comes to mind.
2. Conjunctive Use should be used as a strategy not to lower cost, but to encourage flushing water through the basin. I earlier suggested a concept that became known as water insurance. I believe this concept combined with actual pumping of high TDS water could make significant progress in cleaning up the basin, without any cost to the parties.
3. Responsibility is key. Each plume of contaminants should have associated with it some party to monitor and ultimately see that it is cleaned up. If there is a plume of nitrate in Montclair, Monte Vista Water District should be given the responsibility to see that it is cleaned up. Cost issues become much clearer when someone is given the responsibility to make sure something happens. They then find out how much it might cost and seek to minimize it. Subsidies then could be applied based on hardship.
4. Groundwater is only part of the water supply. It can not be addressed in isolation. Should the cost of groundwater increase by $50 per AF, many agencies might choose to take surface water deliveries and thereby frustrate plans to clean up the basin. The surface agencies Chino Basin, Western, and Three Valleys might need to be asked to put surcharges on surface water deliveries that would go to subisidize basin cleanup. This might seem harsh at first, but if surcharges at watermaster go too high, the impacts might change how agencies behave over the short term, and cost everyone more over the long-term.
5. Ultimately it is critical that everyone know the basin must be managed properly and there is no way around that. Special surcharges based on water pumped or on safe yeild may be necessary. Whatever plan ultimately arises must require every user, farmer, industry or water supplier to manage the resource better. No one individual or group can be made to bear the burden for everyone.

California Regional Water Quality Control Board
Santa Ana Region

Peter M. Rooney
Secretary for
Environmental
Protection

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3737 Main Street, Suite 500, Riverside, California 92501-3339
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Pete Wilson
Governor

June 29, 1998

Ms. Traci Stewart
Chino Basin Chief of Watermaster Services
8632 Archibald Avene, Suite 109
Rancho Cucamonga, CA 91730

CHINO BASIN OPTIMUM BASIN MANAGEMENT PLAN

Dear Ms. Stewart,

At the Joint Pool and Watermaster Board meetings held on June 25, 1998, Regional Board staff member William Rice presented comments regarding development of the Watermaster's Optimum Basin Management Plan (OBMP). These comments were based upon our review of the Scope of Work for the OBMP. We found that the Scope of Work does not clearly identify the development of certain critical elements relating to water quality management. It is our position that these elements should be included in the OBMP. In response to your request for written comments, our descriptions of these elements are provided below.

1. Specific, measurable short-term, mid-term, and long-term water quality goals for the basin should be developed during the OBMP process. The Regional Board has established Basin Plan Objectives for the Chino Basin and it is understood that these objectives may be modified by the results of the TIN/TDS Task Force. Watermaster should clearly state those goals that it will commit to achieving regarding the improvement of water quality either in relationship to the Regional Board's objectives or some other measurable target.

2. A timeline, with milestone dates, for achieving water quality goals should also be developed. Without a timeline, water quality improvement can always be deferred to the future.

3. An acceptable monitoring program should be developed for evaluating progress towards achieving water quality goals. Clear improvement in the water quality of Chino Basin should be demonstrated.

We appreciate the opportunity to comment and participate in the development of your OBMP. We plan to continue our participation in the various activities affecting water quality and water resource management in Chino Basin, and hope to develop strategies for improving water quality while at the same time watershed.

If you have any questions regarding our comments, please contact me at (909)782-3284.

Sincerely,

for Gerard J. Thibeault
Executive Officer
Santa Ana Regional Water Quality Control Board

WBR/scopeltr

Wildermuth Environmental, Inc.
415 North El Camino Real, Suite A
San Clemente, California 92672
949.498.9294 Voice
949.498.1712 Fax
mjw@wildh2o.com

WE, INC.

MEMORANDUM

TO: Traci Stewart

DATE: 12/4/96
Rev: 6/26/98

FROM: Mark Wildermuth
Jim Burror

FILE: TO 2 OBMP

SUBJECT: Conceptual Description of Alternatives 5 and 6, CBWRMS. For Discussion of Concepts Only – This Is Not a Recommendation

Per your request we put together a conceptual description of plans that would manage groundwater levels in the west side of Chino basin and minimize outflow to the Santa Ana River. For discussion purposes, we refer to these plans collectively as Alternative 5. Alternative 5 is a variant of Alternative 3 of the *Chino Basin Water Resources Management Study* (CBWRMS). Alternative 5 is identical to Alternative 3 except for the redistribution of groundwater production by mid-basin producers and concentration of groundwater production near the Santa Ana River. Tables 1 and 2 show the water supply plans for Alternatives 3 and 5, respectively. Coincidentally, this alternative contains features that are similar to that recommended by the city of Chino.

We also describe Alternative 6, which would provide treated imported water to the cities of Chino, Chino Hills, Norco and Ontario, and the JCSD, in lieu of treated groundwater from the southern end of the basin. Unproduced groundwater in the southern end of the basin would be sold to downstream water users and the revenue would be used to pay for water distribution system improvements needed to move treated imported water to the cities of Chino, Chino Hills, Norco and Ontario, and the JCSD.

ALTERNATIVE 5

Redistribution of Groundwater Production by Mid-basin Producers

Management of groundwater production on the west side of the basin is necessary to maintain groundwater levels on the west side to avoid subsidence and to allow sustainable levels of groundwater production. To date, a *safe* level of production has not been established on the west side. For planning purposes, we assumed that a safe level of production on the west side could be achieved if extraction for some producers were limited to the following:

Producer	Annual Production (acre-ft)
Chino	3,000
Chino Hills	3,000
Ontario	23,000

Ontario's production would be reduced on the west side so that total production from all Ontario wells would be about 23,000 acre-ft/yr – Ontario's estimated year 2000 production (from the CBWRMS). Groundwater would be supplied to these agencies by new wells located in the central part of the basin. Groundwater from these new wells would be conveyed to these agencies by a regional pipeline. Figure 1 shows a conceptual plan of the pipeline. As shown in Figure 1, this pipeline would start in northeast Ontario and run south through the eastern quarter of Ontario, then west across the south Ontario through to Chino and then south to Chino Hills (hereafter the Ontario-Chino Pipeline). The number of wells and capacity of the pipeline are based on planning data developed in the CBWRMS and the following assumptions:

- The annual water demands and sources of supply for Chino, Chino Hills and Ontario are listed in Table 1 (Alternative 3 of the CBWRMS). Table 2 lists the same demands satisfied in part by the Ontario-Chino Pipeline project.
- Water from desalters, WFA, and reclamation sources are assumed to be supplied uniformly through the year.
- Groundwater is assumed to be used to meet demands after all other sources and thus varies seasonally.

Major economic assumptions include:

- amortization at 7 percent over 20 years
- power costs at $0.07 per kwh starting in the year 2000
- pipeline costs based on recent construction costs in the Chino Basin
- wells were estimated to produce 2,000 gpm and cost $600,000 per well

A total of 30 new wells would be constructed on the eastern end of the pipeline. The number of wells would be constructed in phases to meet increasing demands over the period 2000 to 2040. Some of these wells would have to be constructed anyway, whether the new pipeline was built or not, and thus are sunk costs. Groundwater replenishment costs, if any, would be incurred anyway and are also sunk costs. New costs include the regional pipeline, new wells, and additional pumping costs that would occur to move water from the central part of the basin to the west. Table 3 contains a reconnaissance-level opinion of estimated total annual costs and the unit cost of water produced by this project

This concept could be extended by incentivizing Pomona and Monte Vista to reduce pumping and increasing imported water deliveries (e.g., cyclic exchange). Other variations of interest would be to extend the Ontario-Chino Pipeline north to enable access to treated imported water from Metropolitan or east to access groundwater from the Bunker Hill Basin.

Finally Alternative 5 does not address the reduction of nitrate concentrations by pumping and treating high-nitrate groundwater in this area. In this proposal, the high nitrate groundwater would be allowed to move through the Chino Basin and be removed by desalters located in the lower end of the basin.

CONCENTRATION OF GROUNDWATER PRODUCTION NEAR THE SANTA ANA RIVER

Concentration of production near the Santa Ana River will do two things: reduce outflow to the River, and increase recharge in the River. River flow will decrease slightly. The yield of the Chino Basin will be increased over the other alternatives discussed in the CBWRMS. The plan described herein assumes that the combined well head treatment capacity for seven independent facilities in Alternative 3 of the CBWRMS is distributed to three independent facilities with well fields located along the River. Table 3 shows the allocation in Alternative 3 and the new desalter plan described herein. Total desalter capacity will be about 38 mgd (product water). Cost opinions for the proposed desalters were based on cost estimates for Chino Desalter No.1 (circa 1996). Groundwater replenishment obligations should be about half of the obligation associated with over-production from mid-basin production due to increased yield caused by the proposed project. Table 4 contains a reconnaissance-level opinion of estimated total annual costs and the unit cost of water produced by this project.

We made an attempt to determine a regional allocation of cost or subsidy that would be provided to the direct beneficiaries of Alternative 5. We assumed that the direct beneficiaries would be willing to pay the Metropolitan treated imported rate of $431 per acre-ft plus $100 per acre-ft to cover new demand and readiness-to-serve charges, and CBMWD administrative charges (total cost of $531 per acre-ft). Alternative 5 related costs in excess to $531 per acre-ft would be paid by the other producers in the basin based on their pro rata share of the operating safe yield. Tables 5 and 6 summarize the subsidy computation for the Ontario-Chino pipeline and desalter components individually for the $531 per acre-ft which corresponds to the current Metropolitan rate or $636 per acre-ft which is an estimate of the same rate in 2010. The subsidy would change over time in response to Metropolitan rates. Table 7 illustrates how the subsidy would be distributed among the Chino Basin producers. If constructed and in operation today, the subsidy provided by the non-beneficiaries would be about $42 per acre-ft, and could drop substantially by the year 2010 if Metropolitan rates were to increase as suggested above.

ALTERNATIVE 6

Another way to provide potable water to the southern part of the Chino Basin would be to provide treated imported water (or other potable imported supplies) to the cities of Chino, Chino Hills, Norco and Ontario, and JCSD, in lieu of treated groundwater from the southern end of the basin. Groundwater production in the southern end of the basin would be reduced without an increase in production in the north. That is, total groundwater production in the basin would be reduced to below safe yield levels. This would result in an increase in flow in the Santa Ana River approximately equal to the decrease in groundwater production. The increased flow in the Santa Ana River would be sold to Orange County Water District, Municipal Water District of Orange County, or Orange County producers that are Metropolitan member agencies. The purchase price for the un-produced groundwater would be set to pay for the cost of pipelines and treatment plants necessary to provide treated imported water to cities of Chino, Chino Hills, Norco and Ontario, and JCSD. The maximum cost of water to the cities of Chino, Chino Hills, Norco and Ontario, and JCSD from this project should be no more than the cost of treated imported water from Metropolitan – a subsidy from non-beneficiaries may be required.

The treatment plant or plants would be located in the north end of the Basin near the Foothill feeder. Pipelines would be constructed to convey the treated imported water south to Ontario, JCSD, and Norco; and west to Chino and Chino Hills. Wells would be constructed along these pipelines for peaking purposes and supply and peaking purposes during periods of supply shortage from Metropolitan. The treatment plant, pipelines and wells could be integrated with a large-scale conjunctive use program where Metropolitan and/or other entities could pre-deliver water to the basin for withdrawal during periods of supply shortage from Metropolitan.

TABLE 1
ALTERNATIVE 3 WATER DEMANDS AND SUPPLY PLAN

Year	Chino Basin	Imported Water			Desalters								Other Local Sources	Totals by Sources					
														Chino Basin		Imported Water		Reclaimed	Total
		WFA	Ontario WTP	Total	CB#1	CB#2	CB#3	CH#1	Norco#1	JCSD#1	SARWC#1	Total		Direct	Desalters	SWP	Other	Water	
City of Chino																			
2000	5,505	4,285		4,285	3,000							3,000		5,505	3,000	4,285	0	1,280	14,070
2010	4,685	4,233		4,233	3,818	4,197						8,015		4,685	8,015	4,233	0	2,280	19,213
2020	10,554	4,400		4,400	3,818	6,149						9,967		10,554	9,967	4,400	0	3,280	28,201
2030	10,529	4,400		4,400	3,818	6,150						9,968		10,529	9,968	4,400	0	3,280	28,177
2040	10,554	4,400		4,400	3,818	6,173						9,991		10,554	9,991	4,400	0	3,280	28,225
City of Chino Hills																			
2000	6,142	6,499		6,499	2,000							2,000		6,142	2,000	6,499	0	2,480	17,121
2010	3,600	8,828		8,828	2,545			2,600				5,145		3,600	5,145	8,828	0	3,880	21,453
2020	3,481	6,566		6,566	2,545			2,600				5,145		3,481	5,145	6,566	0	4,880	20,072
2030	3,674	6,935		6,935	2,545			2,600				5,145		3,674	5,145	6,935	0	4,880	20,634
2040	3,644	6,718		6,718	2,545			2,600				5,145		3,644	5,145	6,718	0	4,880	20,387
City of Norco																			
2000				0					2,753			2,753	3,400	0	2,753	0	3,400	0	6,153
2010				0					2,753			2,753	3,400	0	2,753	0	3,400	0	6,153
2020				0					3,140			3,140	3,400	0	3,140	0	3,400	0	6,540
2030				0					3,389			3,389	3,400	0	3,389	0	3,400	0	6,789
2040				0					3,267			3,267	3,400	0	3,267	0	3,400	0	6,667
City of Ontario																			
2000	29,698	14,276	0	14,276								0	1,089	29,698	0	14,276	1,089	4,100	49,163
2010	33,870	18,574	0	18,574			2,000					2,000	1,089	33,870	2,000	18,574	1,089	7,550	63,083
2020	39,150	19,937	0	19,937			2,000					2,000	1,089	39,150	2,000	19,937	1,089	11,000	73,176
2030	40,706	19,371	0	19,371			2,000					2,000	1,089	40,706	2,000	19,371	1,089	11,000	74,166
2040	40,973	19,807	0	19,807			2,000					2,000	1,089	40,973	2,000	19,807	1,089	11,000	74,869
Jurupa Community Services District																			
2000	5,867			0	3,000					917		3,917	2,927	5,867	3,917	0	2,927	700	13,411
2010	5,843			0	7,458					2,238		9,696	2,500	5,843	9,696	0	2,500	1,350	19,389
2020	9,999			0	7,636					6,985		14,621	3,000	9,999	14,621	0	3,000	2,000	29,620
2030	11,676			0	7,636					7,721		15,357	3,000	11,676	15,357	0	3,000	2,000	32,033
2040	13,233			0	7,636					7,964		15,600	3,000	13,233	15,600	0	3,000	2,000	33,833
Santa Ana River Water Company																			
2000				0							2,009	2,009		0	2,009	0	0	0	2,009
2010				0							1,931	1,931		0	1,931	0	0	0	1,931
2020				0							1,979	1,979		0	1,979	0	0	0	1,979
2030				0							2,073	2,073		0	2,073	0	0	0	2,073
2040				0							2,167	2,167		0	2,167	0	0	0	2,167
Totals																			
2000	47,212	25,060	0	25,060	8,000	0	0	0	2,753	917	2,009	13,679	7,416	47,212	13,679	25,060	7,416	8,560	101,927
2010	47,998	31,635	0	31,635	13,821	4,197	2,000	2,600	2,753	2,238	1,931	29,540	6,989	47,998	29,540	31,635	6,989	15,060	131,222
2020	63,184	30,903	0	30,903	13,999	6,149	2,000	2,600	3,140	6,985	1,979	36,852	7,489	63,184	36,852	30,903	7,489	21,160	159,588
2030	66,585	30,706	0	30,706	13,999	6,150	2,000	2,600	3,389	7,721	2,073	37,932	7,489	66,585	37,932	30,706	7,489	21,160	163,872
2040	68,404	30,925	0	30,925	13,999	6,173	2,000	2,600	3,267	7,964	2,167	38,170	7,489	68,404	38,170	30,925	7,489	21,160	166,148

(1) Based on the Chino Basin Water Resources Management Study, Appendix A

TABLE 2
ALTERNATIVE 5 WATER DEMANDS AND SUPPLY

Year	Chino Basin		Imported Water			Desalters				Other Local Sources	Totals by Sources					
											Chino Basin		Imported Water		Reclaimed	Total
	City	Regional	WFA	Ontario WTP	Total	CB#1	CB#2	CB#3	Total		Direct	Desalters	SWP	Other	Water	
City of Chino																
2000	3,000	2,505	4,285		4,285	3,000			3,000		5,505	3,000	4,285	0	1,280	14,070
2010	3,000	1,685	4,233		4,233	7,215		800	8,015		4,685	8,015	4,233	0	2,280	19,213
2020	3,000	7,554	4,400		4,400	7,167		2,800	9,967		10,554	9,967	4,400	0	3,280	28,201
2030	3,000	7,529	4,400		4,400	7,167		2,800	9,967		10,529	9,967	4,400	0	3,280	28,176
2040	3,000	7,554	4,400		4,400	7,191		2,800	9,991		10,554	9,991	4,400	0	3,280	28,225
City of Chino Hills																
2000	3,000	3,142	6,499		6,499	2,000			2,000		6,142	2,000	6,499	0	2,480	17,121
2010	3,000	600	8,828		8,828	4,745		400	5,145		3,600	5,145	8,828	0	3,880	21,453
2020	3,000	481	6,566		6,566	4,745		400	5,145		3,481	5,145	6,566	0	4,880	20,072
2030	3,000	674	6,935		6,935	4,745		400	5,145		3,674	5,145	6,935	0	4,880	20,634
2040	3,000	644	6,718		6,718	4,745		400	5,145		3,644	5,145	6,718	0	4,880	20,387
City of Norco																
2000					0				0	6,153	0	0	0	6,153	0	6,153
2010					0		2,753	0	2,753	3,400	0	2,753	0	3,400	0	6,153
2020					0		1,350	1,790	3,140	3,400	0	3,140	0	3,400	0	6,540
2030					0		500	2,889	3,389	3,400	0	3,389	0	3,400	0	6,789
2040					0		400	2,867	3,267	3,400	0	3,267	0	3,400	0	6,667
City of Ontario																
2000	23,198	6,500	14,276	0	14,276				0	1,089	29,698	0	14,276	1,089	4,100	49,163
2010	23,198	10,672	18,574	0	18,574	2,000			2,000	1,089	33,870	2,000	18,574	1,089	7,550	63,083
2020	23,198	15,952	19,937	0	19,937	2,000			2,000	1,089	39,150	2,000	19,937	1,089	11,000	73,176
2030	23,198	17,508	19,371	0	19,371	2,000			2,000	1,089	40,706	2,000	19,371	1,089	11,000	74,166
2040	23,198	17,775	19,807	0	19,807	2,000			2,000	1,089	40,973	2,000	19,807	1,089	11,000	74,869
Jurupa Community Services District																
2000	6,784				0	3,000			3,000	2,927	6,784	3,000	0	2,927	700	13,411
2010	5,843				0	0	9,696		9,696	2,500	5,843	9,696	0	2,500	1,350	19,389
2020	9,999				0	0	14,621		14,621	3,000	9,999	14,621	0	3,000	2,000	29,620
2030	11,676				0	0	15,357		15,357	3,000	11,676	15,357	0	3,000	2,000	32,033
2040	13,233				0	0	15,600		15,600	3,000	13,233	15,600	0	3,000	2,000	33,833
Santa Ana River Water Company																
2000					0				0	2,009	0	0	0	2,009	0	2,009
2010					0			1,931	1,931		0	1,931	0	0	0	1,931
2020					0			1,979	1,979		0	1,979	0	0	0	1,979
2030					0			2,073	2,073		0	2,073	0	0	0	2,073
2040					0			2,167	2,167		0	2,167	0	0	0	2,167
Totals																
2000	35,982		25,060	0	25,060	8,000	0	0	8,000	12,178	48,129	8,000	25,060	12,178	8,560	101,927
2010	35,041		31,635	0	31,635	13,960	12,449	3,131	29,540	6,989	47,998	29,540	31,635	6,989	15,060	131,222
2020	39,197		30,903	0	30,903	13,912	15,971	6,969	36,852	7,489	63,184	36,852	30,903	7,489	21,160	159,588
2030	40,874		30,706	0	30,706	13,912	15,857	8,162	37,931	7,489	66,585	37,931	30,706	7,489	21,160	163,871
2040	42,431		30,925	0	30,925	13,936	16,000	8,234	38,170	7,489	68,404	38,170	30,925	7,489	21,160	166,148

(1) Based on the Chino Basin Water Resources Management Study, Appendix A

TABLE 3
ANNUAL COSTS FOR THE ONTARIO-CHINO PIPELINE PROJECT

Project Element		Year 2000	2010	2020	2030	2040
Capital Costs						
Pipeline		$38,120,113				
Wells		$16,281,632	$7,658,403	$13,232,898	$1,975,990	$0
Annualized Capital Costs						
Pipeline		$3,598,157	$3,598,157			
Wells	to 40,000 gpm	$1,536,823	$1,536,823			
	to 54,000 gpm		$722,877	$722,877		
	to 72,000 gpm			$1,249,053	$1,249,053	
	to 74,000 gpm				$186,514	$186,514
Subtotal		$5,134,981	$5,857,857	$1,971,930	$1,435,567	$186,514
Annual Project Costs						
Fixed O&M						
	Pipeline	$176,757	$176,757	$176,757	$176,757	$176,757
	Wells	$325,633	$478,801	$743,459	$782,978	$782,978
Power		$1,373,131	$1,894,886	$2,514,204	$2,584,344	$2,600,823
Total		$7,010,502	$8,408,302	$5,406,350	$4,979,647	$3,747,072
Acre-feet delivered		12,147	12,957	23,987	25,711	25,973
Cost/acre-foot		$577	$649	$225	$194	$144

TABLE 4
ANNUAL COSTS FOR AN EXPANDED REGIONAL DESALTER PROGRAM, CONCENTRATING PRODUCTION ALONG THE RIVER

Project Element			Year 2000	2005	2010	2015	2020	2025	2030	2035	2040
Capital Costs											
Pipelines											
	CB#2			$17,715,601							
	CB#3				$26,790,087						
Desalters											
	CB#2	to 12 MGD		$49,368,690							
		to 16 MGD				$22,115,797					
	CB#3	to 3 MGD			$14,307,961						
		to 6 MGD					$38,457,405				
		to 9 MGD							$77,525,306		
Total			$0	$67,084,292	$41,098,048	$22,115,797	$38,457,405	$0	$77,525,306	$0	$0
Amortized Capital Costs											
Pipelines											
				$1,320,031	$1,320,031	$1,320,031					
					$1,721,933	$1,721,933	$1,721,933				
Desalters											
	CB#2	to 12 MGD		$4,659,911	$4,659,911	$4,659,911					
		to 16 MGD				$1,800,705	$1,800,705	$1,800,705			
	CB#3	to 3 MGD			$1,350,528	$1,350,528	$1,350,528				
		to 6 MGD					$3,629,994	$3,629,994	$3,629,994		
		to 9 MGD							$7,317,614	$7,317,614	$7,317,614
Subtotal			$0	$5,979,942	$9,052,403	$10,853,107	$8,503,160	$5,430,699	$10,947,608	$7,317,614	$7,317,614
Annual Project Costs											
Fixed O&M/Power											
	Pipeline		$0	$64,050	$147,813	$147,813	$147,813	$147,813	$147,813	$147,813	$147,813
	Desalters/Wells		$0	$3,894,527	$4,806,371	$5,416,581	$7,146,730	$7,146,730	$7,489,834	$7,489,834	$7,489,834
Subtotal			$0	$3,958,577	$4,954,184	$5,564,394	$7,294,543	$7,294,543	$7,637,647	$7,637,647	$7,637,647
Project Total			$0	$9,938,519	$14,006,587	$16,417,502	$15,797,703	$12,725,242	$18,585,255	$14,955,261	$14,955,261
Acre-feet delivered			0	12,449	15,580	19,499	22,940	22,940	24,019	24,019	24,234
$/Acre-foot			$0	$798	$899	$842	$689	$555	$774	$623	$617
FY 2000 Value $ per Acre-foot			$0	$569	$457	$305	$178	$102	$102	$58	$41

TABLE 5
ESTIMATED 2010 SUBSIDIES FOR THE ONTARIO-CHINO PIPELINE PROJECT

Project Element		Annual Costs
Project includes Wells, Pipe, Power, and O&M		
Total System Costs		$8,408,302
Total System Costs/acre-foot	(A)	$649
Est. Effective MWD Non-interruptible Treated Rate (est. 1998)(1)	(B)	$531
Est. Effective MWD Non-interruptible Treated Rate (est. 2010)(2)	(C)	$636
1998 Project Subsidy per acre-foot	(A) - (B)	$118
2010 Project Subsidy per acre-foot	(A) - (C)	$13
Project Subsidy for 1998		$1,528,135
Project Subsidy for 2010		$169,019

(1) $431 + $100
(2) $431 at 2% to 2010 +$100

TABLE 6
ESTIMATED 2010 SUBSIDIES FOR THE REGIONAL DESALTER PROJECT

Project Element		Annual Costs
Project includes Wells, Desalters, Power, and O&M		
Total System Costs		$14,006,587
Total System Costs/acre-foot	(A)	$899
Est. Effective MWD Non-interruptible Treated Rate (est. 1998)(1)	(B)	$531
Est. Effective MWD Non-interruptible Treated Rate (est. 2010)(2)	(C)	$636
1998 Est. MWD Treatment Subsidy	upto $250 (D)	$250
2010 Est. MWD Treatment Subsidy	upto $250 (E)	$250
1998 Project Subsidy per acre-foot	(A) - (B) - (D)	$118
2010 Project Subsidy per acre-foot	(A) - (C) - (D)	$13
Project Subsidy for 1998		$1,838,607
Project Subsidy for 2010		$204,353

(1) $431 + $100
(2) $431 at 2% to 2010 +$100

TABLE 7
REGIONAL PROJECTS ASSESSMENT SUMMARY

Agency	Estimated 2010 Operating Yield (acre-feet)	O-C Pipeline Deliveries (acre-feet)	Desalter 1, 2 & 3 Deliverie (acre-feet)	Regional Program Deliveries (acre-feet)	Operating Yld less Reg. Deliveries (acre-feet)	Subsidy Contribution 1998	Agency Unit Subsidy 1998	Subsidy Contribution 2010	Agency Unit Subsidy 2010
Chino Basin MWD	0	0	0	0	0	$0	$0	$0	$0
City of Chino	14,147	1,685	8,015	9,700	4,447	$186,649	$42	$20,699	$5
City of Chino Hills	5,110	600	5,145	5,745	0	$0	$0	$0	$0
City of Norco	358	0	2,753	2,753	0	$0	$0	$0	$0
City of Ontario	25,868	10,672	2,000	12,672	13,196	$553,831	$42	$61,420	$5
City of Pomona	19,875	0	0	0	19,875	$834,114	$42	$92,503	$5
City of Upland	5,054	0	0	0	5,054	$212,098	$42	$23,522	$5
Cucamonga County Water District	6,941	0	0	0	6,941	$291,289	$42	$32,304	$5
Fontana Union Water Company	11,336	0	0	0	11,336	$475,733	$42	$52,759	$5
Fontana Water Company	542	0	0	0	542	$22,751	$42	$2,523	$5
Jurupa Community Services District	10,183	0	9,696	9,696	487	$20,456	$42	$2,269	$5
Marygold Mutual Water Company	1,161	0	0	0	1,161	$48,711	$42	$5,402	$5
Monte Vista Irrigation Company	1,200	0	0	0	1,200	$50,347	$42	$5,584	$5
Monte Vista Water District	8,605	0	0	0	8,605	$361,153	$42	$40,052	$5
Mutual Water Co. of Glen Avon Heights	829	0	0	0	829	$34,804	$42	$3,860	$5
San Antonio Water Company	2,670	0	0	0	2,670	$112,073	$42	$12,429	$5
San Bernardino County Prado Parks	0	0	0	0	0	$0	$0	$0	$0
Santa Ana River Water Company	2,305	0	1,979	1,979	326	$13,698	$42	$1,519	$5
Southern California Water Company	730	0	0	0	730	$30,640	$42	$3,398	$5
West End Consolidated Water Company	1,680	0	0	0	1,680	$70,501	$42	$7,819	$5
West San Bernardino County Water Dist	1,141	0	0	0	1,141	$47,893	$42	$5,311	$5
Appropriative Pool Subtotal	119,736	12,957	29,588	42,545	80,221	$3,366,741		$373,372	
Agricultural Pool (Production Only)	17,899	0	0	0	17,899	$0	$0	$0	$0
Overlying Non-Agricultural Pool	7,366	0	0	0	7,366	$0	$0	$0	$0
Total All Pools	145,000	12,957	29,588	42,545	105,485	$3,366,741		$373,372	