WATER PLANNING AREA #10 -- NACIMIENTO

WPA 10 consists of that portion of the County that drains into Lake Nacimiento. Purveyors include Heritage Ranch CSD and the Nacimiento Water Co.

DEMAND

The development of demands for the San Luis Obispo (SLO) MWP Update involved collection and analysis of four types of existing data: 1) urban demand; 2) agricultural demand; 3) rural demand; and 4) environmental demand. Following the review of existing plans and data, existing demands for each of the four categories were prepared for each of the 12 WPAs. Next, data regarding growth and future water use was analyzed to develop a preferred approach for the development of future water demands. These future demands were then prepared and projected by the same four demand categories for each of the WPAs.

The total existing and future demands for WPA 10 are listed in Table 1. A discussion of demands by each category follows.

Table 1
WPA 10 Demand totals by Category[a]

Category of Demand	Existing Demand (ac-ft/yr)	Projected Demand (ac-ft/yr)
Urban	0	0
Agricultural	0	0
Rural	1,570	3,020
Environmental	NA	NA
Subtotal	**1,570**	**3,020**

a. All figures have been rounded to the nearest 10's.

Urban Demand

There is no urban water demand in WPA 10 for the purposes of this study.

Agricultural Demand

There is no agricultural demand in WPA 10 for the purposes of this study.

Rural Demand

Rural water demands in the Nacimiento WPA include dwelling units scattered throughout the hills and valleys surrounding the lake. The commercial areas are not included in Tables 2 and 3 below. Water is produced in private wells from the groundwater basin in the area.

Table 2
Current Demand – 1995

Population	Pop/Du	Houses	Duty (ac-ft/ac)	Demand[a] (ac-ft/yr)
2,700	2.92	925	1.7	1,570

a. Demand figure has been rounded to the nearest 10's.

Table 3
Projected Demand – 2020

Population	Pop/Du	Houses	Duty (ac-ft/ac)	Demand[a] (ac-ft/yr)
5,179	2.92	1,774	1.7	3,020

a. Demand figure has been rounded to the nearest 10's.

Data Deficiencies

The following additional data would improve the accuracy of this study:

- **Commercial**. A few commercial activities exist in the rural areas that were not accounted for in the urban demand, most notably near Nacimiento Lake. It represents a very small percentage of the total water used.

- **Dwelling Units**. The study was based upon population numbers, with an estimate of dwelling units derived from population figures divided by persons per household. Demand should be based upon a count of dwelling units by WPA. This information would be derived from assessor data.

- **Certificate Lots**. Many parcels of land in the area may be buildable. It is difficult to ascertain how many will be built upon.

Environmental Demand

Current Demands

Information on current environmental water demands is available from two sources: 1) conditions on water rights permits and licenses and associated orders on file with the State Water Resources Control Board, and 2) agreements between the California Department of Fish and Game and other entities. There are no current environmental demands, as reflected in water rights and regulating agreements, for WPA 10.

Future Demands

The CDFG is currently developing a protocol for determining stream flow needs to protect environmental values (Waithman, CDFG, Yountville, personal communication, February 1998). This protocol is under development and has not been formally accepted or even formally proposed. It is presented here to indicate one estimate of possible future demand. This protocol has not been adopted by CDFG and if it were, other groups or agencies may not accept it. Key provisions may include the following:

- Reservation of 60% of the average annual unimpaired wet-season flow for instream habitat.
- Bypass of all natural flow during dry season (June to September).
- No diversions until stream flows to the ocean (sandbar breached).

WPA 10 contains the Nacimiento River drainage upstream of Nacimiento Dam. Streams in this area contain populations of resident rainbow trout that are probably derived from steelhead. Steelhead can no longer enter this area due to the presence of Nacimiento Dam. Much of the upper Nacimiento watershed is relatively undeveloped military reservation lands. Future environmental water demand for minimum instream uses was estimated to range from 10% of unimpaired average annual runoff during drought years to 100% of unimpaired average annual runoff in wet years.

Data Deficiencies

There has been no organized complete effort to quantify instream flow needs in streams of San Luis Obispo County. Studies have been conducted on some streams and restrictions have been placed on certain water rights permit holders to protect instream uses but these have generally focused on the needs of one or a few key species and have not resulted in clear, objective assessments of instream flow needs.

There is not sufficient data to complete a detailed analysis of environmental water demands for all streams in the County. There is no known data for unimpaired runoff for any stream though it is possible estimates could be developed from available rainfall data. The only readily available (electronic) data is from USGS and County maintained streamflow gaging stations. The USGS data presents average runoff estimates as well as minimum and maximum runoff for each station but this data reflects existing water use and water project operations and in most cases does not reflect unimpaired conditions. Average runoff estimates could also be developed for the SLO gage data and discontinued USGS gages but the information would need to be in an accessible database.

A generic approach to instream flow needs assessment may be useful and data for such an assessment may be available. The County should consider a Tennant type approach using unimpaired runoff estimates generated from rainfall data. Given the wide annual variability in rainfall and runoff, an instream flow needs assessment should account for differences in normal, wet, and dry year flow needs. The County should also have all streamflow data entered in a computer database to facilitate its use.

Uncertainties

In many cases permit or license conditions do not specify a reservation of stream flow for environmental benefit. Rather, they are restrictions on use by individual rights holders. These restrictions are intended to provide benefits to fish and wildlife. However, it is not usually clear how restrictions on an individual water right interact with other water rights and effect streamflows. In addition, it is not always clear how permit conditions are interpreted in terms of an environmental demand. For example, many of the permit conditions call for a "visible surface flow" in a given stream but it is not clear how much water this represents.

Future environmental water demand is subject to great uncertainty due to lack of knowledge of instream flow needed to protect the aquatic resources, lack of information on existing runoff conditions and diversions, and the inherent annual variability in rainfall and runoff. For planning purposes, one could assume that the upper range of future demand will be defined by a percentage of the average annual unimpaired runoff (UAAR) during the wet season and no diversion during the dry season. This task is complicated since many streams are not gaged streams and unimpaired flow must be estimated using hydrologic modeling. This information is not presently available.

References

Stalnaker, C., B.L.Lamb, J. Henriksen, K. Bovee, and J. Bartholow. 1995. The Instream Flow Incremental Methodology: A primer for IFIM. Biological Report 29. U.S.D.I., National Biological Survey, Washington, D.C.

SWRCB, 1997. Staff Report Russian River Watershed. Proposed Actions to be taken by the Division of Water Rights on Pending Water Right Applications within the Russian River Watershed. Division of Water Rights. Sacramento, California

SUPPLY

Heritage Ranch Community Services District and Nacimiemto Water Company serve development around Lake Nacimiento. These two water systems are approximately eight miles apart. There currently are no facilities to interconnect WPA 10 with other WPAs.

Groundwater Supply

No source of ground water supply in WPA 10 has been identified.

Surface Water Supply

1,200 AF/yr of San Luis Obispo County Flood Control and Water Conservation District's entitlement at Lake Nacimiento benefits users in WPA 10.

DEFICIENCIES

Nacimiento Lake is important to water supplies in both San Luis Obispo and Monterey counties. The area is the watershed of the reservoir and has continuing quality problems, largely from mine tailing of the franciscan melange.

Table 4
Existing (ac-ft/yr)

Demand	Grndwater Supply	NonGrndwater Supply	Total Supplies	Balance (Deficiency)
1,570	?	1,200	1,200	(-370)

a. Balance (Deficiency) figure has been rounded to the nearest 10's.

Table 5
Projected (ac-ft/yr)

Demand	Grndwater Supply	NonGrndwater Supply	Total Supplies	Balance (Deficiency)
3,020	?	1,200	1,200	(-1,820)

a. Balance (Deficiency) figure has been rounded to the nearest 10's.

ALTERNATIVES

This section is an evaluation of future water supply for WPA 10. The criteria previously selected by the WRAC are:

- Cost
- Risk
- Reliability
- Water Rights
- Local Control
- Water Quality
- Timing
- Environmental Impacts
- Agricultural Impacts
- Institutional Constraints
- Recreation
- Hydroelectric Potential

Each water supply option summary includes a comparative ranking of the criteria listed above. The rankings are based on the following:

Comparative Rankings

Features of water supply options are ranked 1 to 5, with 5 being the best. A "0" implies a fatal flaw which may render the supply option infeasible. The basis of comparison, in general, is:

Cost: The lower the unit cost ($/AFY), the higher the ranking.

Risk: Primarily a subjective comparison of the potential for project cost escalation.

Reliability: Primarily a comparison of project yield, AFY, during years of below-average rainfall.

Water Rights: A favorable 5 ranking indicates no known problems; a 3 indicates potential challenges; and a 1 indicates known opposition which may stop the project.

Local Control: A favorable 5 indicates physically located in and administered by an agency within the County; a 3 indicates some involvement of outside agencies; and a 1 indicates control from outside the County.

Water Quality: A favorable 5 indicates projects which enhance water quality; a 3 indicates no change; and a 1 indicates a negative impact on water quality.

Timing: A favorable 5 indicates projects with designs complete; a 3 indicates projects for which predesign at least is underway; and a 1 indicates projects for which design is 5 years or more away.

Environmental: A favorable 5 indicates certified EIR in place; a 3 indicates environmental review underway and no significant unmitigable issues identified; and a 1 indicates significant impacts foreseen. A "0" in this category indicates a potential environmental fatal flaw.

Agricultural Impacts: A favorable 5 indicates projects which help agricultural, particularly by reducing competition for ground water and by other means.

Institutional Constraints: Reflects the degree of organizational support. A low ranking is indicative of the need for complex agreements.

Recreation: Reflects the degree to which the project may enhance recreational opportunities. A 3 indicates no direct impact.

Hydroelectric Potential: Indicates the degree to which the project may provide opportunities for hydroelectric power generation. Little information is available regarding hydroelectric power generation opportunities for the supply options examined. In general, options with little or no opportunity for power generation were ranked "1". Options that may expand existing power generation facilities were ranked "3".

Potential water supply projects that may benefit this WPA (and for which information exists), include the Nacimiento Water Supply Project. This is not to say that these are the only supplemental water sources available. Rather, published data are currently available for only this potential source.

Nacimiento

The Nacimiento Water Supply Project described herein is described in the August 1997 Draft EIR. It involves construction of over 60 miles of pipelines ranging in size from 33- to 8-inches in diameter, plus pump stations, storage tanks, and outlet works. The project is planned to supply 17,500 AFY to 18 water purveyors from Paso Robles to Coastal San Luis Obispo County.

Category	Remarks	Comparative Ranking
Cost[i]	▪ $120 million project cost. *WPA 2*: $625 - $1,097 per AFY *WPA 3*: $1,167 - $2,198 per AFY *WPA 4*: $669 - $1,135 per AFY (SLO City) *WPA 4*: $2,488 - $3,783 per AFY (Others) *WPA 9a*: $368 - $1,000 per AFY *WPA 10*: < $200 per AFY (opinion; cursory estimate).	4
Risk[ii,iii]	▪ Long distance conveyance - risk of delivery interruption ▪ EIR seismic evaluation - "Insignificant after mitigation". ▪ Cost sensitive to participation level. ▪ Moderate risk of construction cost escalation. ▪ Forecasted deliveries can be maintained even with a planned 1-month annual maintenance outage.	4
Reliability[ii,iii]	▪ 17,500 AF yield even through 1987-1991 drought. ▪ Complements groundwater supply in planning areas 3, 4, and 9a.	5
Water Rights[iii]	▪ Strong contractual position with Monterey County. ▪ Pending legal challenge originating in Monterey County.	3
Local Control[iv]	▪ Watershed and dam within SLO County, operated by Monterey County Water Resources Agency. ▪ Potential Monterey County and Division of Safety of Dams issues.	4
Water Quality[iv]	▪ Limited data indicates favorable quality.	3
Timing[iv]	▪ High participation needed to advance. ▪ Minimum 3 years for delivery. ▪ Little opportunity for staging (matching supply with demand).	2

Nacimiento (cont'd)

Category	Remarks	Comparative Ranking
Environmental Impacts[ii]	▪ Long term significant residual impacts to recreation and growth inducement. ▪ Cumulative impacts in areas of water resources and fisheries. ▪ Short-term impacts on traffic, air quality and biological resources. ▪ Helps minimize potential overdrafts in regions 9a, 3, and 4.	2
Agricultural Impacts[ii]	▪ No short- or long-term significant residual impacts. ▪ Reduces competition between urban and agricultural groundwater users.	4
Institutional Constraints[v]	▪ Usual permitting process for similar pipeline projects. ▪ High project participation required.	3
Recreation[ii]	▪ Associated lake-level impacts may negatively affect recreation.	2
Hydroelectric Potential[iv]	▪ Reduce power generation capability at the dam by < 10 percent. ▪ No new hydro potential identified along pipeline.	1

References

[i] "Lake Nacimiento Water Supply Project Financing Analysis" by Leifer Capital for San Luis Obispo County Flood Control Water Conservation District, December 1997.

[ii] "Draft EIR Nacimiento Water Project" by Ogden Environmental and Energy Services for County of San Luis Obispo, August 1997.

[iii] "Preliminary Evaluation for the Nacimiento Water Supply Project, Reliability Evaluation" by Boyle Engineering Corporation for San Luis Obispo County Flood Control Water Conservation District, 1992.

[iv] "Nacimiento Water Supply Project EIR preparation Phase Engineering Draft Report" by Carollo Engineers for County of San Luis Obispo, July 1996.

[v] "Nacimiento Water Supply Project Permit Outline" by Boyle Engineering Corporation for San Luis Obispo County, 1997.