Cachuma Project Water Rights Hearing

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Panel I

Presenter:

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The Santa Ynez River supports the South Coast and Santa Ynez Valley

- River is 90 miles in length
- Drains SY Watershed to Pacific Ocean
- Watershed is about 900 square miles in area
- River is the essential water supply for the South Coast and an important water supply for a portion of the SY Valley-a total population of about 280,000
- Imported water from the State Water Project, local groundwater and recycled water meet remaining water demands

Exhibit showing the SY River Watershed and urban areas and So Coast urban areas

Three Reservoirs were constructed from 1920-1953 to capture and store River water

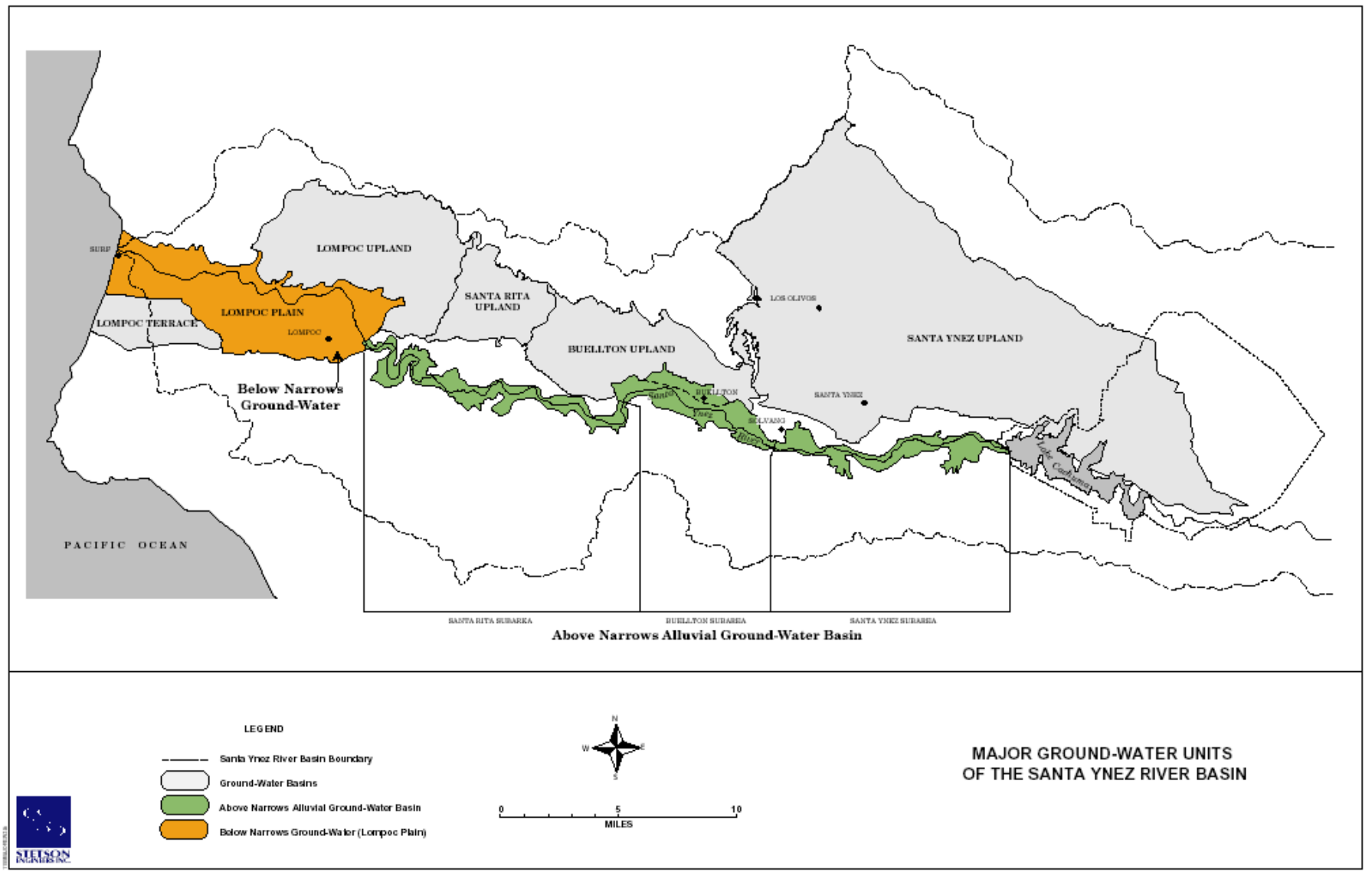
- 1920-Gibraltar, owned by City of Santa Barbara
- 1930-Jameson, owned by Montecito WD
- 1953-Cachuma, owned by USBR
- Combined storage capacity of about 200,000 AF
- None are operated on a Safe Yield basis; must rely on imported supplies or groundwater during dry periods
- Combined draft on all reservoirs is about 32,700 AFY
- Tunnel infiltration augments reservoir yield
- Cloud seeding augments the yield of Cachuma by about 10%

Exhibit showing the SY River Watershed and the three reservoirs

The Santa Ynez Valley and its' Water Supply

- The Valley population was about 80,000 in 2000
- The communities of Santa Ynez, Los Olivos, Ballard and City of Solvang are delivered Cachuma water by the Santa Ynez River Water Conservation District, ID#1
- The Cities of Buellton, Solvang and Lompoc and community of Santa Ynez also derive water from subsurface River flow or River recharge
- About 1/3 of the total demand in the Valley is meet by the River and by Cachuma water
- Remaining demand is satisfied by groundwater and imported water.

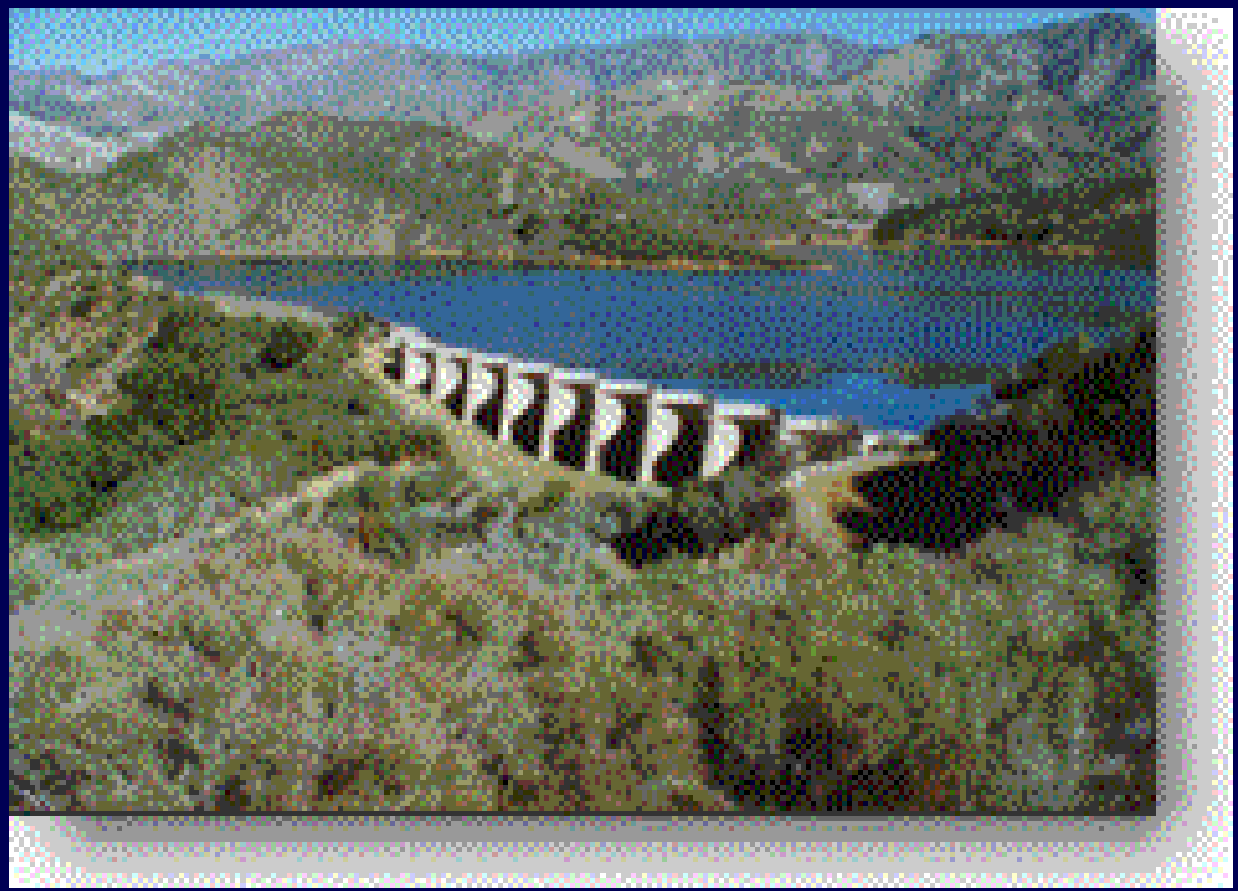
Exhibit showing the groundwater basins in the SY River watershed



South Coast Area and its' Water Supply

- Situated south of the Santa Ynez Mountains
- Population of about 200,000 (2000)
- Four major water purveyors serve water to:
  - Santa Barbara City by the City
  - Goleta by Goleta WD
  - Carpinteria by Carpinteria Valley WD
  - Montecito and Summerland by Montecito WD
- All major purveyors have Santa Ynez River water (Cachuma), groundwater and State Water Project supplies available
- Cachuma Reservoir supplies about 45% of the total water demands

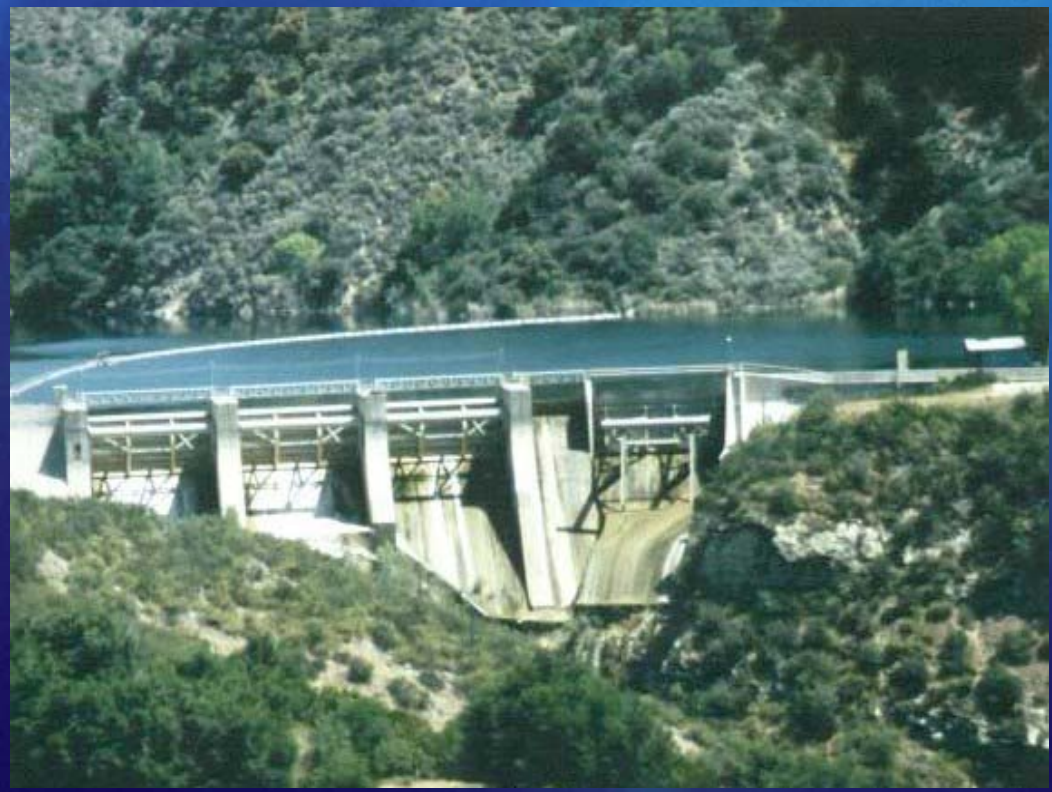
Jameson Reservoir is located about 88 River miles from the Ocean



Jameson was formed by Juncal Dam

- Concrete arch, 160 feet high – no provision for fish passage
- 14 square mile tributary area
- Alder Creek, at times, diverted into reservoir
- Storage capacity of about 5,300 AF (1998)
- Diversion to So. Coast through Doulton Tunnel (2+mile)
- A portion of Fox Creek is diverted into the Tunnel
- At current draft level of 2,000 AFY, long-term yield is about 1,800 AFY
- Tunnel infiltration yield is about 500 AFY
- Safe yield is about 1,150 AFY

Gibraltar Reservoir is located 73 River miles from the Ocean



Gibraltar Reservoir was constructed in 1920 by the City of Santa Barbara

- A concrete arch dam 180 feet high with no fish passage facility
- 216 square mile tributary area, including the 14 sq mi area above Jameson
- Diversions to So Coast through Mission Tunnel (3.7 mi)
- Devils Canyon Ck is diverted into Tunnel
- Tunnel infiltration and creek inflow add about 1,100 AFY
- Siltation a major problem:
  - Initial Capacity of 14,500 AF reduced to 7,600 AF in 1947
  - Capacity increased to 14,777 AF by raising dam 23 feet in 1948
  - By 2001, capacity was about 7,100 AF
- At a draft of 5,000 AFY, long-term yield is about 4,600 AFY
- Safe Yield of the reservoir is about 2,000 AFY

Cachuma Reservoir is located about 49 miles from the Ocean

Cachuma is formed by Bradbury Dam

- Bradbury Dam was constructed in 1953 by the Bureau to deliver water to Project Member Units of:
  - City of Santa Barbara, Goleta WD, Montecito WD, City of Carpinteria Valley WD and SY River WC Dist., ID#1
- An earth fill dam 279 feet high with no provisions for fish passage
- Tributary area is 417 sq mi, including 216 above Gibraltar
- Initial storage capacity at elev. 750.0 was about 204,900 AF – by 2000, reduced to about 188,000 AF- due to siltation.
- Deliveries to So Coast are made through the 6.4 mile Tecolote Tunnel- infiltration averages about 2,000 AFY
- Deliveries to ID#1 are via an exchange with So Coast SWP water entitlement
- Original contractual yield (safe yield) was 33,000 AFY, but due to storage reduction, operational changes and hydrology modifications has been significantly reduced
- Current draft of 25,700 AFY provides a long term yield of about 24,900 AFY, with shortages taken when storage is below 100,000 AF
- Since 1997, State Project Water has been delivered into the outlet works of the dam

Releases from Cachuma

- Downstream releases are controlled by Board Orders
- State Project Water deliveries are, at times, commingled with Cachuma downstream releases
- Fish studies and habitat maintenance releases have been made since 1993, resulting from MOU, BO and Management Plan
  - Into Hilton Ck and into stilling basin below dam
  - Capacity of 10 cfs, with pumping station
- To partially off-set the impacts of fish releases, the reservoir is surcharged to elev. 750.75

Summary of surface water resources

Reservoir	Draft AFY	Yield Avg AFY	Avg Overdraft AFY
Jameson	2,000	1,800	200
Gibraltar	5,000	4,600	400
Cachuma	23,700	22,900	800
Total	30,700	29,300	1,400

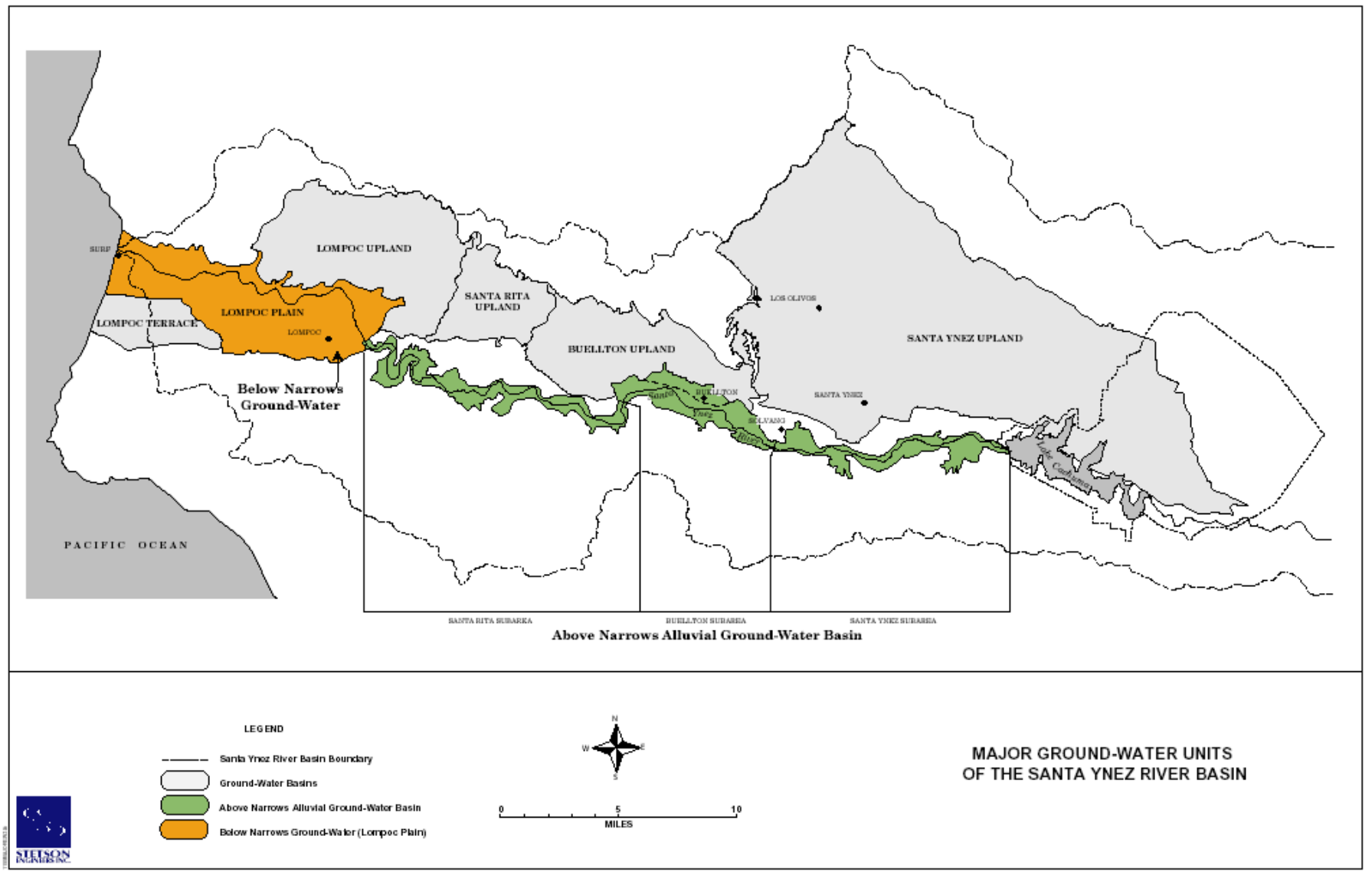
The River provides water to two groundwater systems

- Groundwater systems are divided at the Lompoc Narrows
- East of the Narrows and below Bradbury Dam system is considered as subsurface flow of the River – Above Narrows
- West of the Narrows system is the Below Narrows system

Above Narrows Alluvial Groundwater Basin

- Approximately 35 miles in length, from Bradbury to the Narrows
- Composed of river channel and younger alluvium deposits
- Variable width from 0.2 to 1.5 miles
- Depth of sediments varies between 50-150 feet
- System is divided into 4 sub areas:
  - Santa Ynez
  - Buellton
  - Santa Rita East
  - Santa Rita West

Exhibit showing the groundwater basins in the SY River watershed



Below Narrows Groundwater Basin

- The River recharges the eastern portion or Forebay of the Lompoc Basin
- The reach from Robinson Bridge to Floradale Bridge, about 6 miles in length, is the primary percolation reach
- Percolation west of City of Lompoc is limited due to underlying clays and silts

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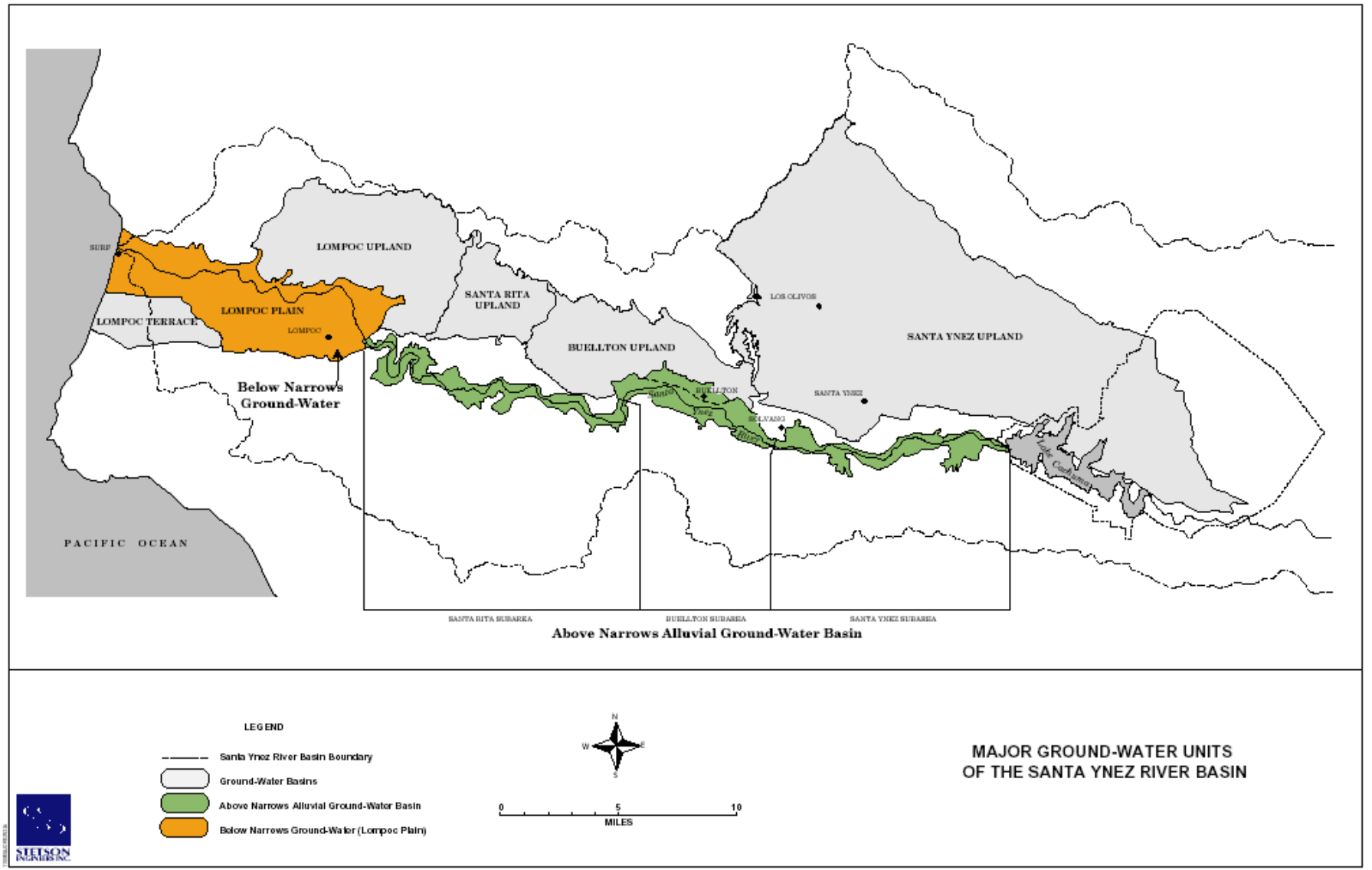

Conclusions

- River is highly regulated
- Subject to diminishing yields due to siltation
- Important supply to a growing population of the SY Valley and the So Coast
- State Water Project system is also subject to regulatory and climatic limitations
- Demand in So Coast has ‘hardened’ – water conservation measures most progressive
- Any additional regulatory requirements on Cachuma would impact beneficial uses


End
Exhibit 234
Cachuma Project Water Rights Hearing
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