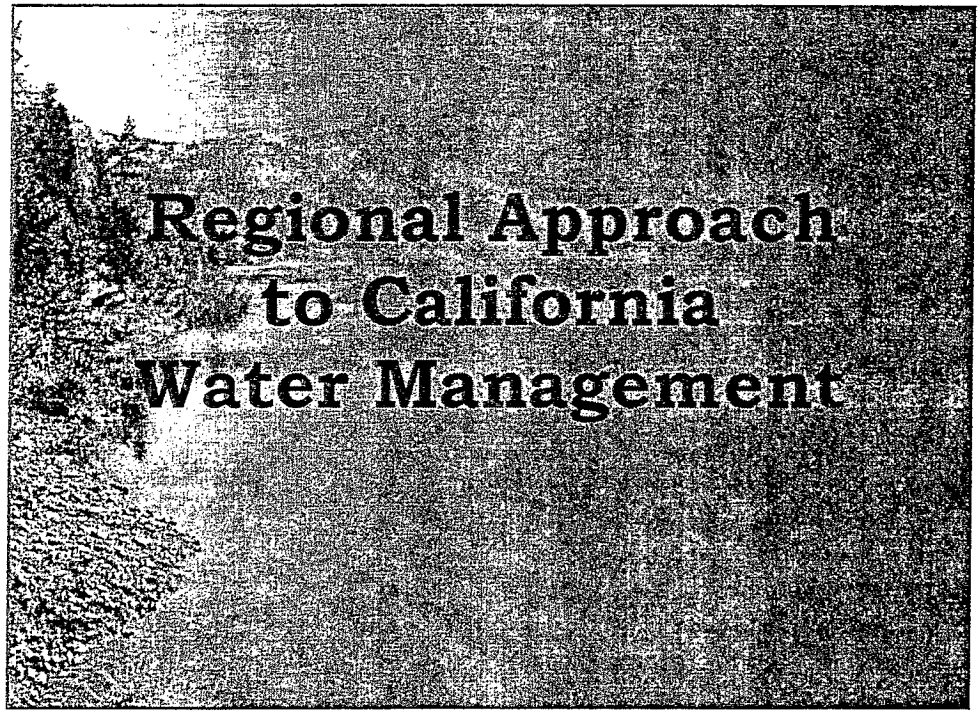
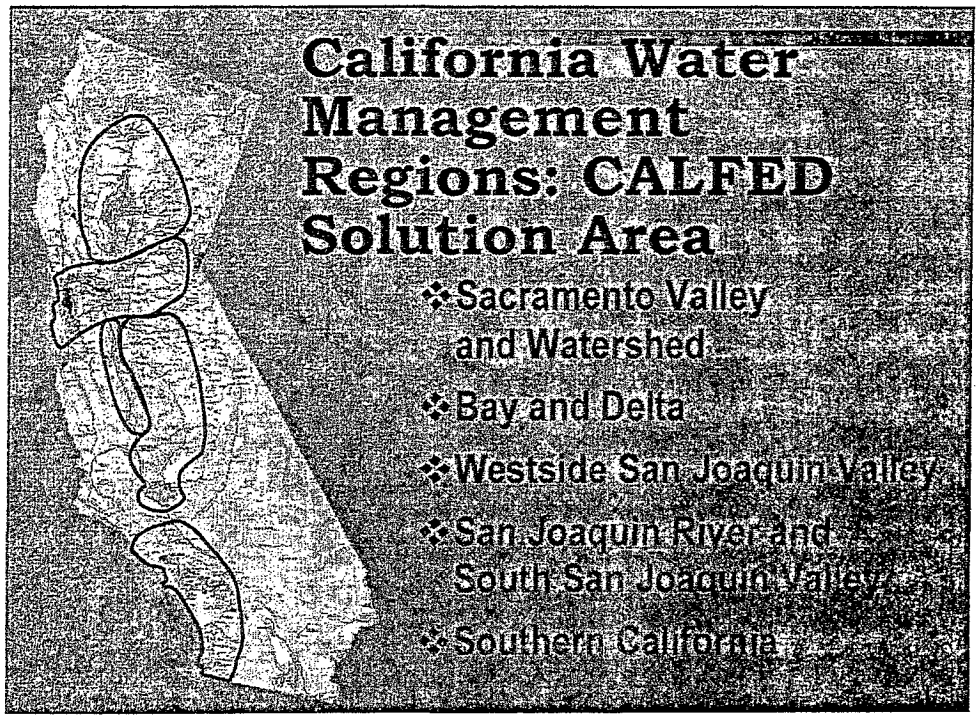
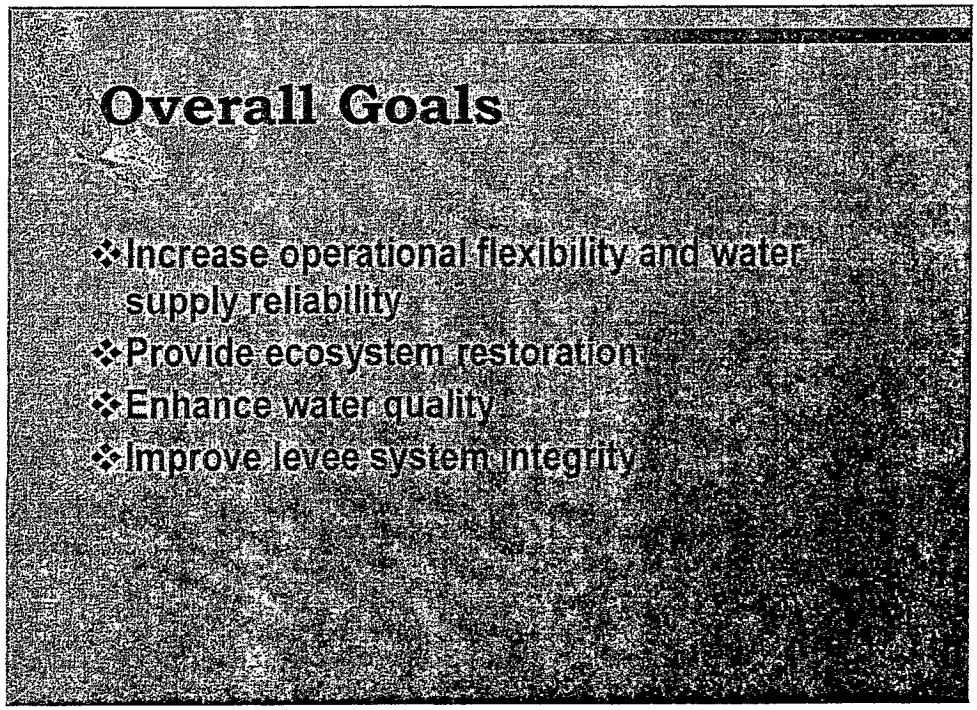

Regional Approach
to California
Water Management

Continuing State Federal
Negotiations

G-004244

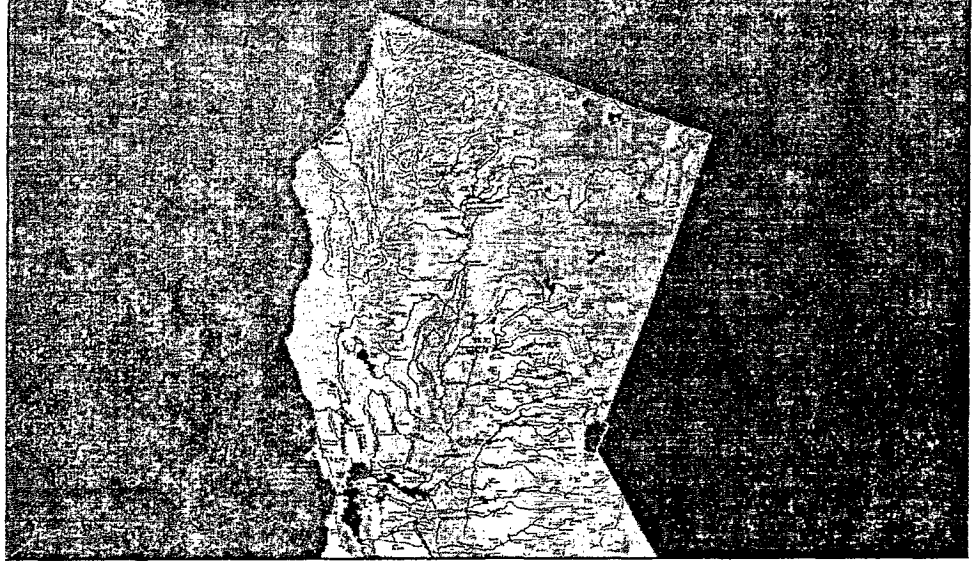

California Water Management Regions: CALFED Solution Area
Sacramento Valley and Watershed
Bay and Delta
Westside San Joaquin Valley
San Joaquin River and South San Joaquin Valley
Southern California


Overall Goals
Increase operational flexibility and water supply reliability
Provide ecosystem restoration
Enhance water quality
Improve levee system integrity

Solution Principles

- Reduce conflicts in the system
- Be equitable
- Be affordable
- Be durable
- Be implementable
- Have no significant redirected impacts

Sacramento Valley and Watershed



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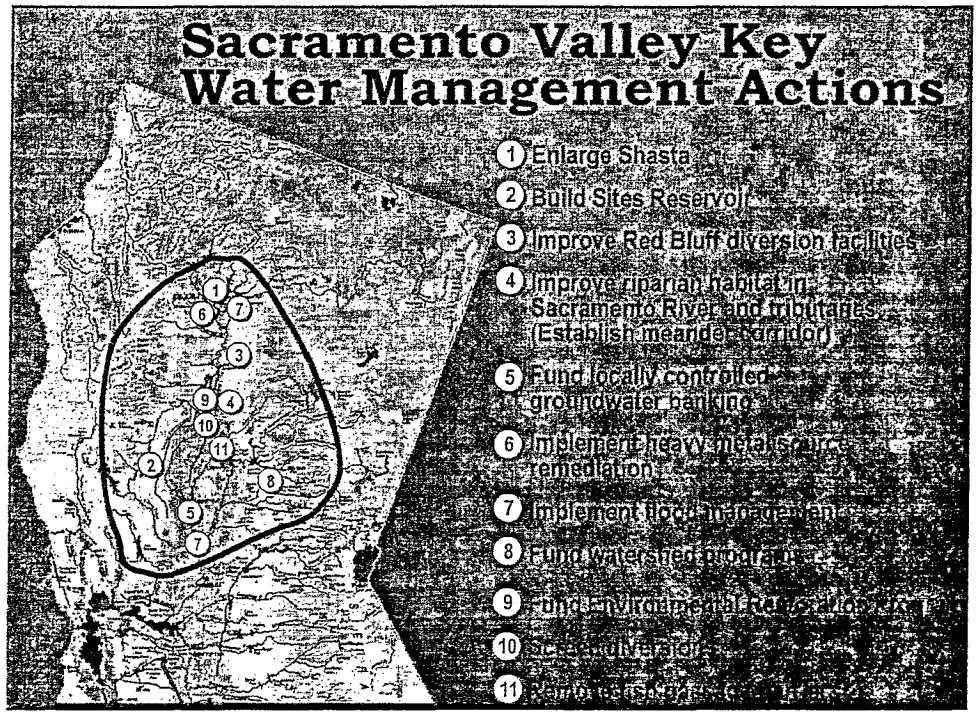
Sacramento Valley and Watershed Water Management Goals

- Restore habitat
- Improve water quality and temperature in the Sacramento River
- Improve water supply reliability for agriculture and urban users

Sacramento Valley Key Water Management Actions



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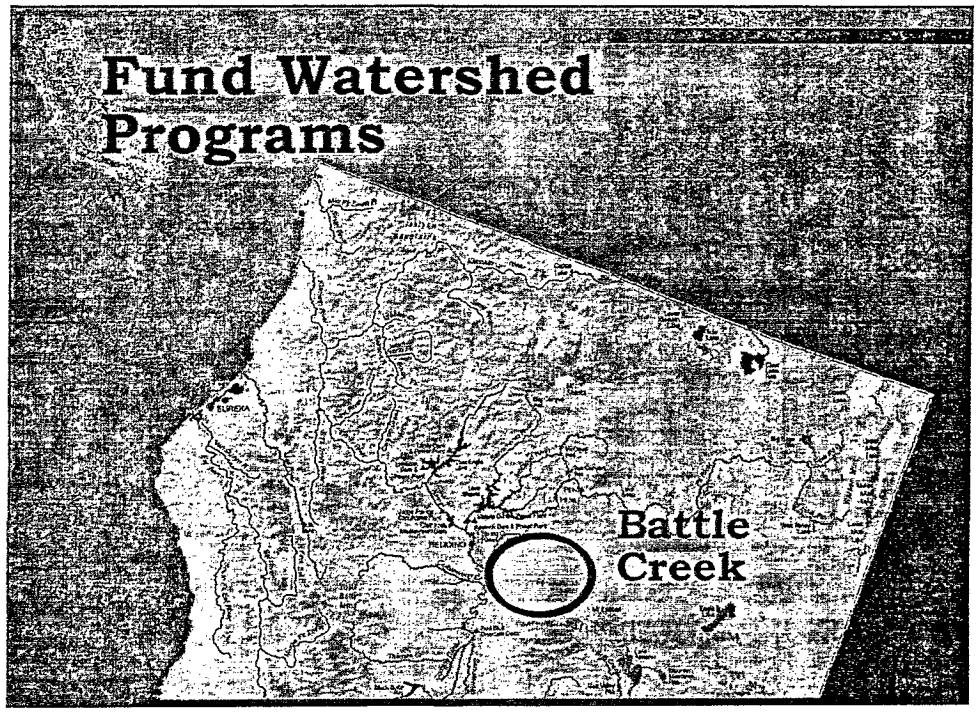
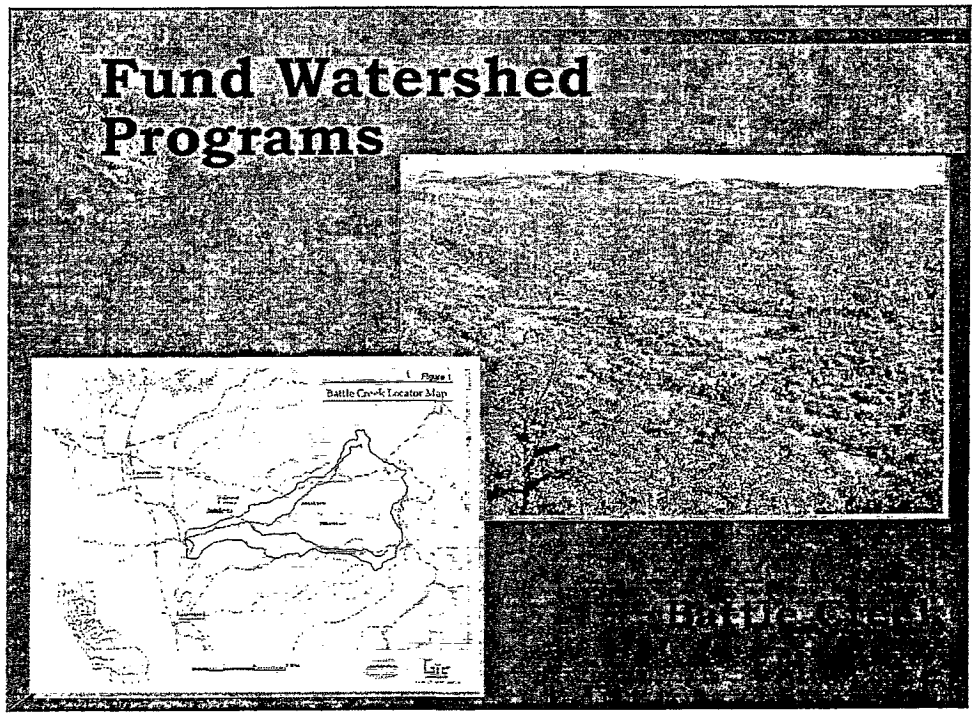
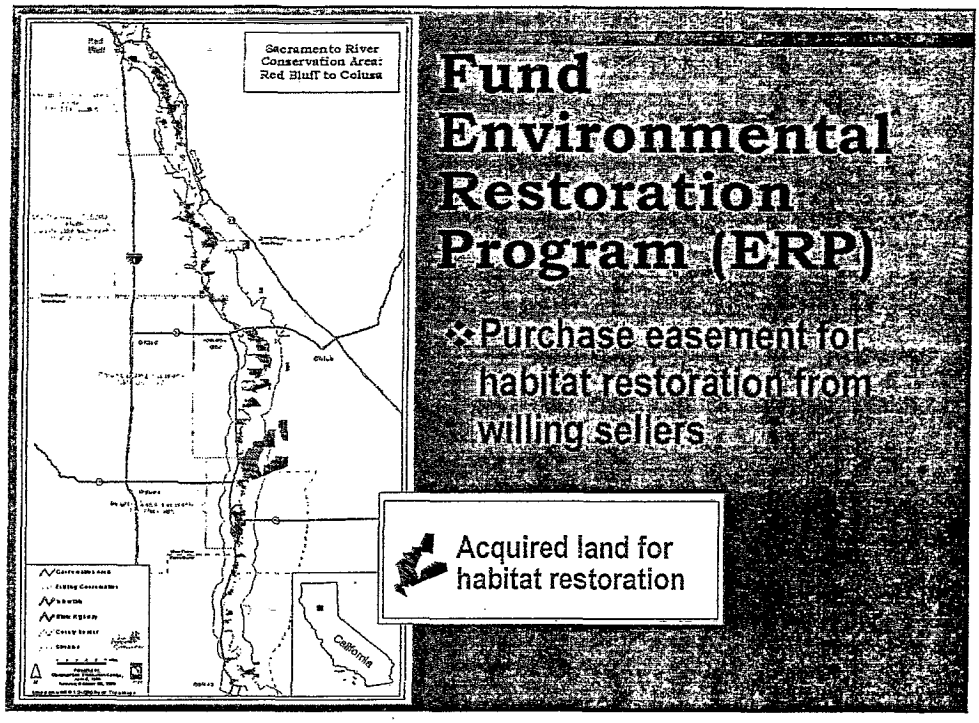
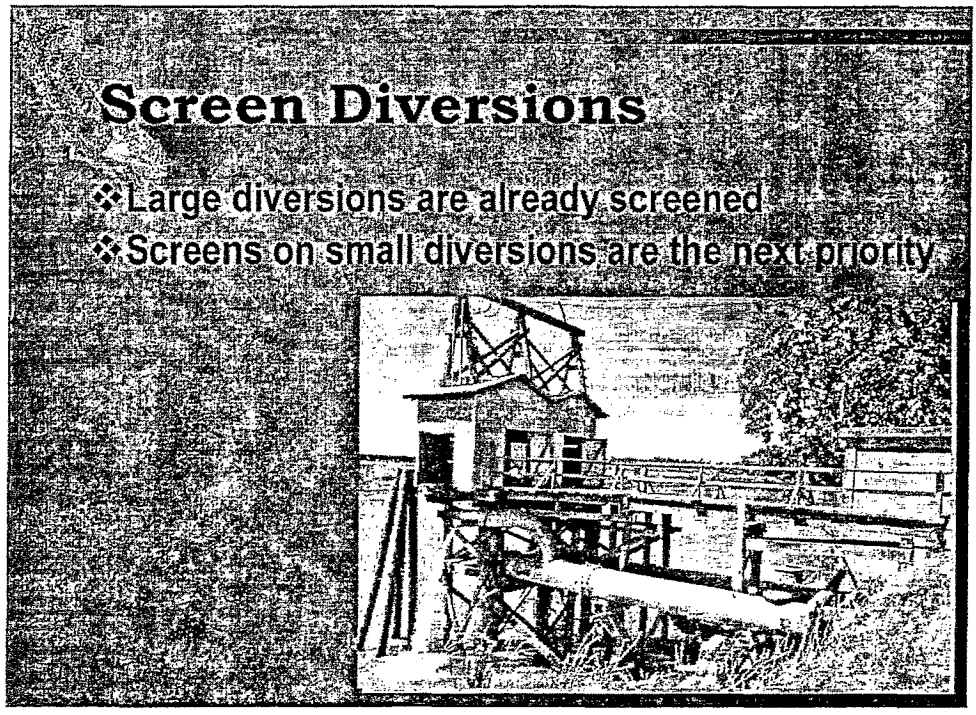
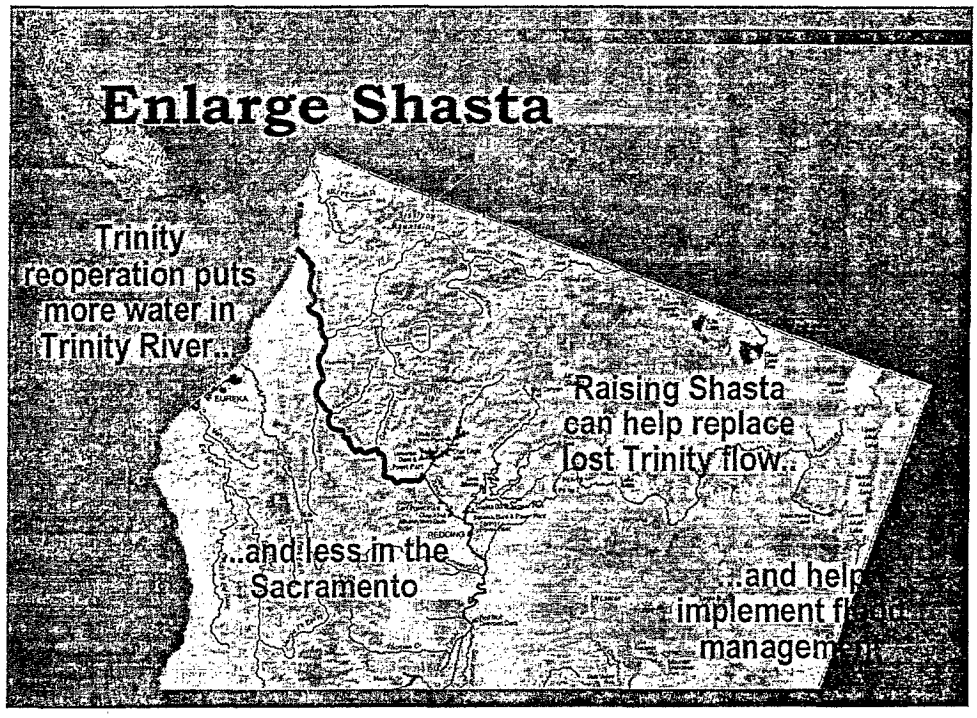

Fund Watershed Programs
Battle Creek

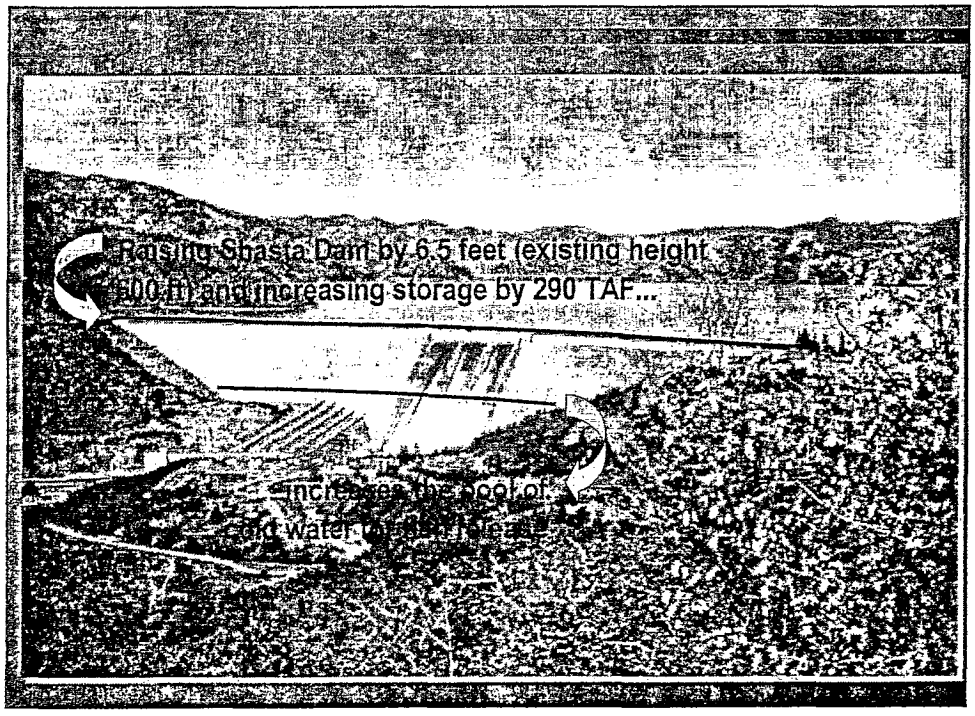

Fund Watershed Programs
Figure 1
Battle Creek Locator Map

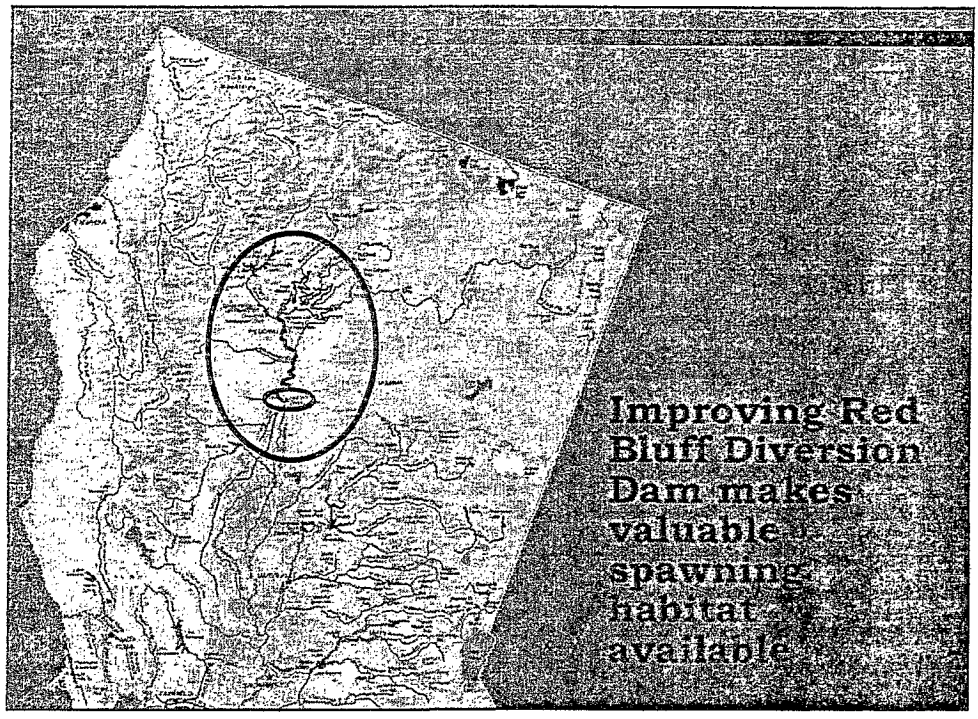

Sacramento River Conservation Area: Red Bluff to Colusa
Fund Environmental Restoration Program (ERP)
Purchase easement for habitat restoration from willing sellers
Acquired land for habitat restoration
California

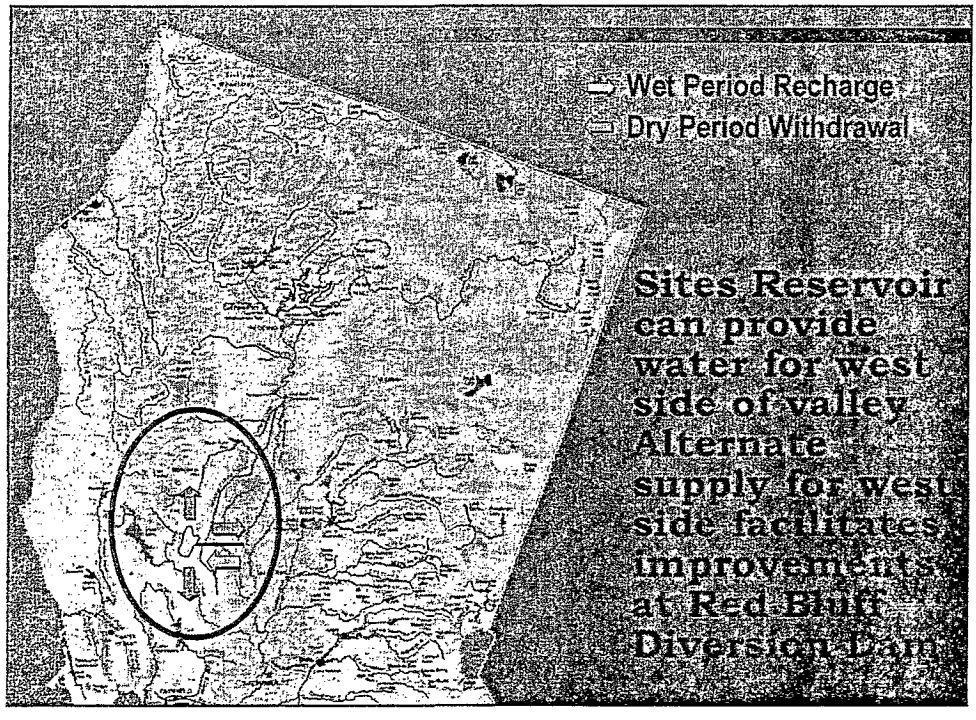

Screen Diversions
Large diversions are already screened
Screens on small diversions are the next priority

G-004249


Enlarge Shasta
Trinity reoperation puts more water in Trinity River..
Raising Shasta can help replace lost Trinity flow..
..and less in the Sacramento
..and help implement flexible management


Raising Shasta Dam by 6.5 feet (existing height 600 ft) and increasing storage by 290 TAF...
...increases the pool of cold water





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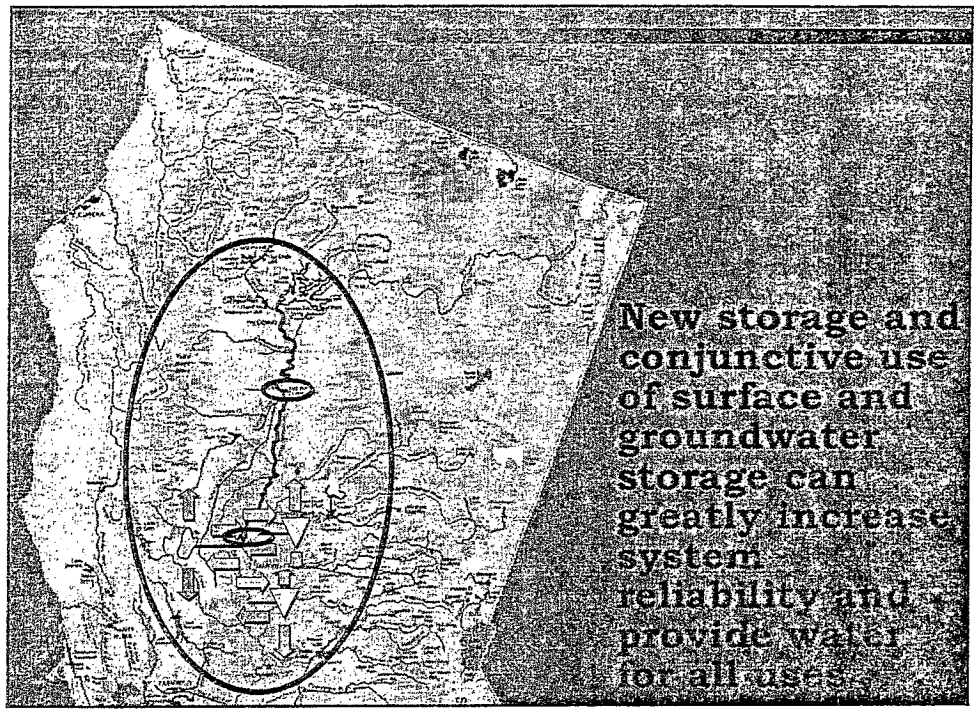
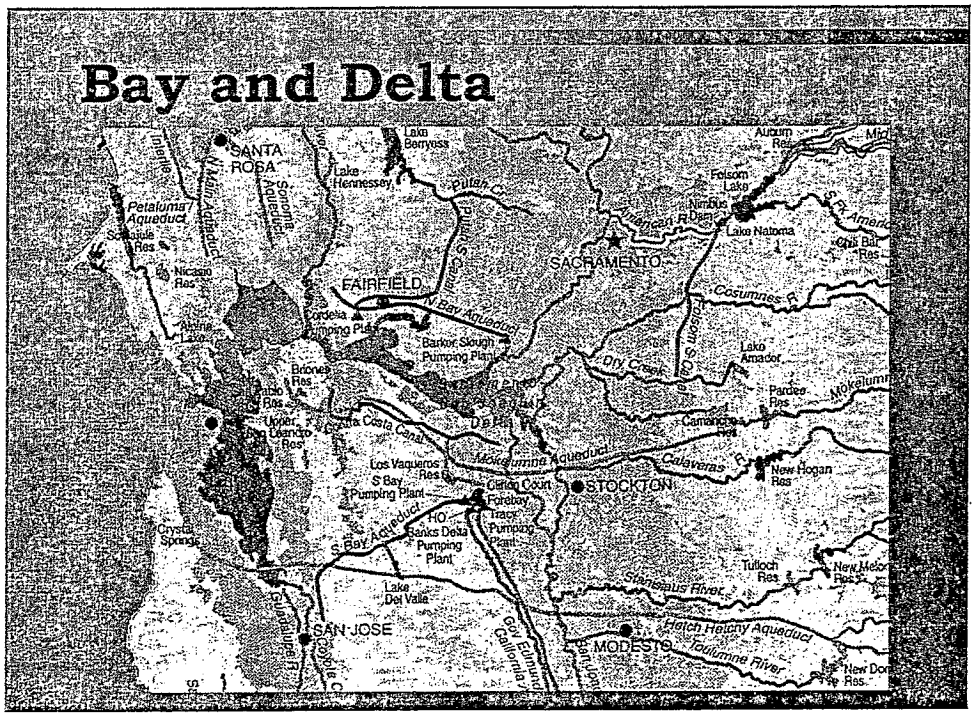

New storage and conjunctive use of surface and groundwater storage can greatly increase system reliability and provide water for all uses.

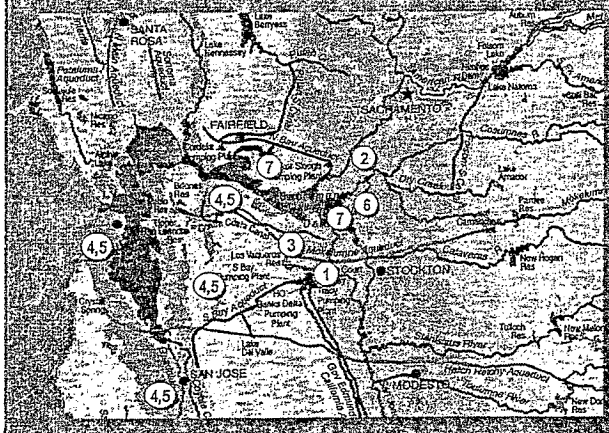

Bay and Delta

G-004252

Bay and Delta Water Management Goals

- Preserve Delta agricultural water supply
- Habitat restoration
- Improve in-Delta water quality
- Increase export flexibility
- Enhance Bay Area urban water quality and reliability
- Maintain levee stability

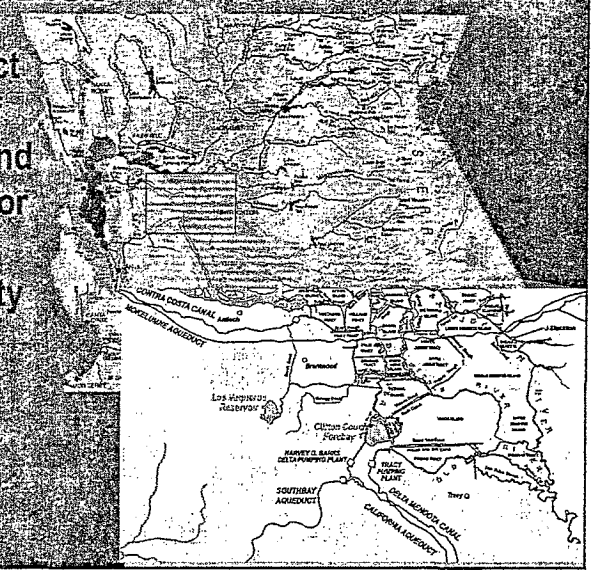
Bay and Delta Key Water Management Actions



1. Implement South Delta improvements
2. Implement North Delta improvements
3. Implement In- or Near-Delta Storage
4. Implement Bay Area blending/exchange proje
5. Fund water recycling progra
6. Fund flood management
7. Fund habitat restoration
8. Fund environmental water account

Implement South Delta Improvements

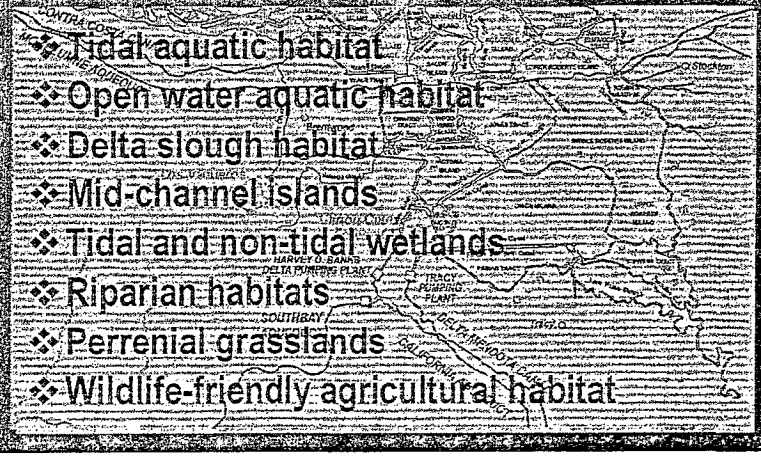
- Reduce Delta conflict
- Ensure that water of adequate quantity and quality is available for in-Delta water users
- Improve the reliability of existing export facilities
- Restore health of aquatic resources in South Delta



Implement South Delta Improvements

Fund Habitat Restoration in the South Delta

- Tidal aquatic habitat
- Open water aquatic habitat
- Delta slough habitat
- Mid-channel islands
- Tidal and non-tidal wetlands
- Riparian habitats
- Perrenial grasslands
- Wildlife-friendly agricultural habitat



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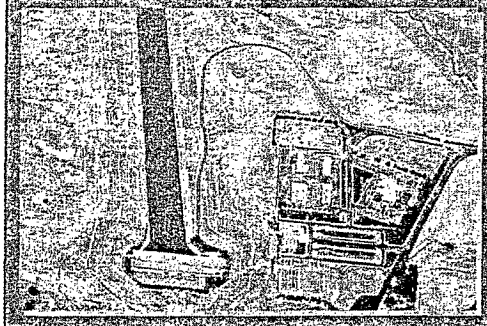
G-004254

Implement South Delta Improvements

❖New intakes and improved fish screens allow the full pumping capacity of Banks to be used



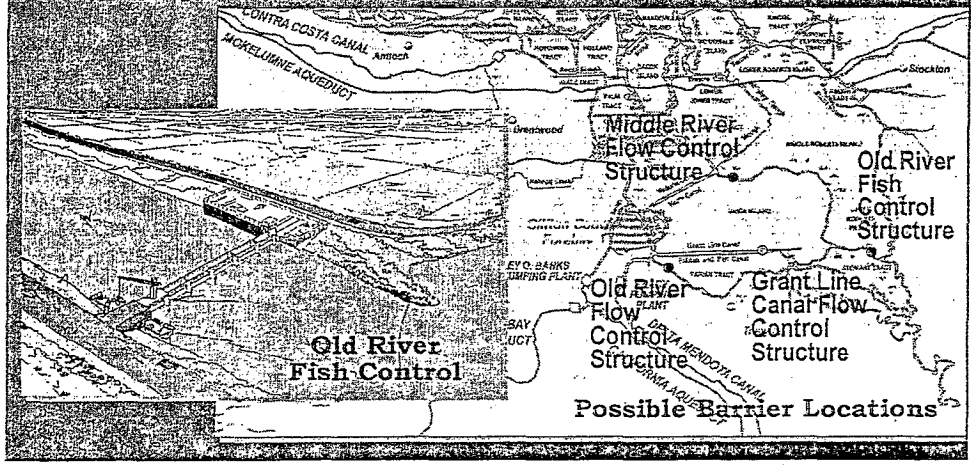
SWP (Banks) 6.6Kcfs → 10.3 Kcfs
CVP (Tracy) 4.6 Kcfs

14.9 Kcfs

SWP and CVP would share increased capacity

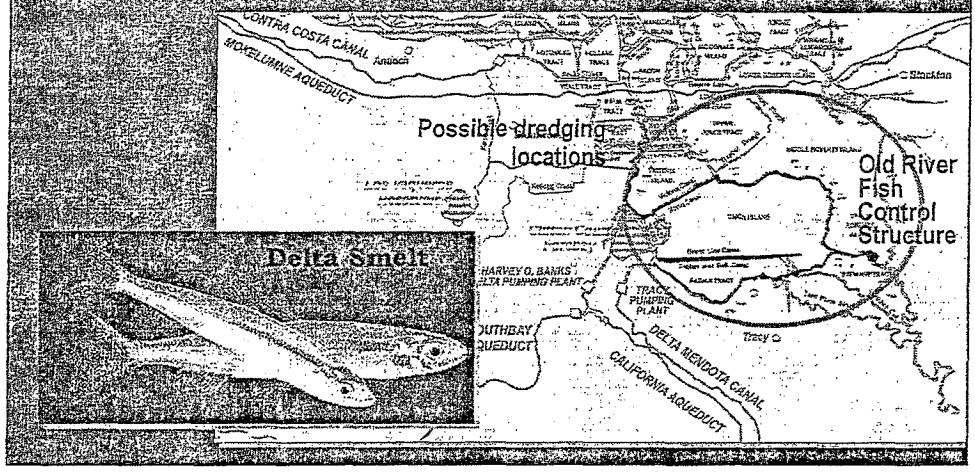
Implement South Delta Improvements

❖Install barriers to protect water diversion, water quality, and fish migration



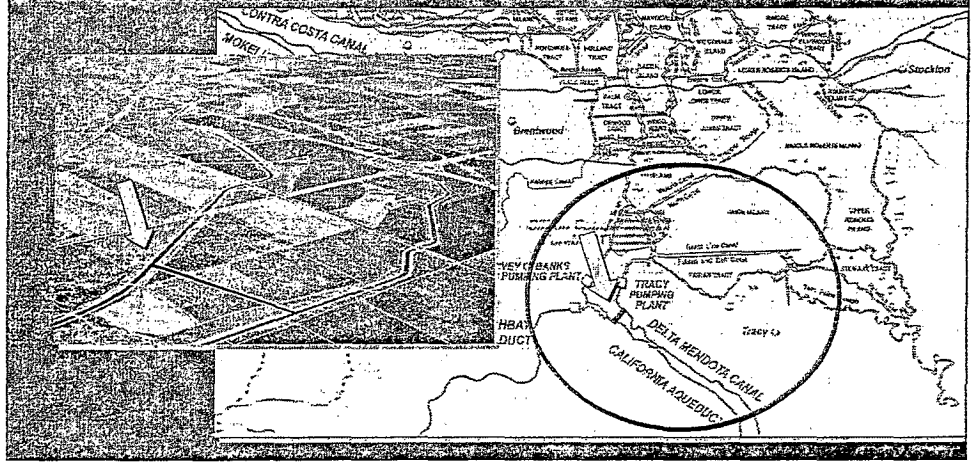
Implement South Delta Improvements

- Flow control barriers may impact Delta Smelt. An alternative to barriers is dredging.



Implement South Delta Improvements

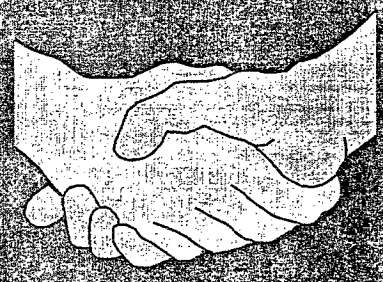
- Construct intertie between State and Federal Facilities



G-004256

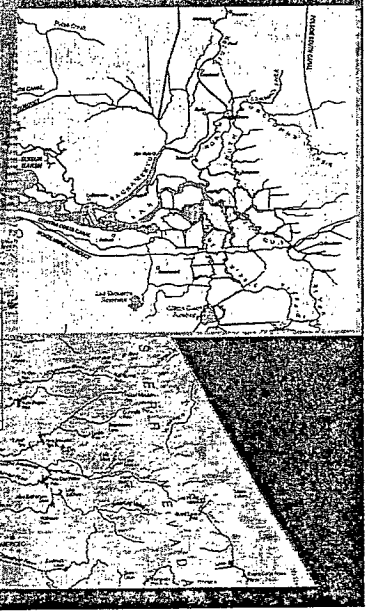
Implement South Delta Improvements

- Improve State and Federal cooperation
  - Permanent Joint Point of Diversion
  - Amend Coordinated Operation Agreement



Implement North Delta Improvements

- Reduce Delta conflict
- Ensure that water of adequate quality and quantity is available for in-Delta and export water users
- Improve flood management in conjunction with habitat restoration
- Restore health of aquatic resources in North Delta



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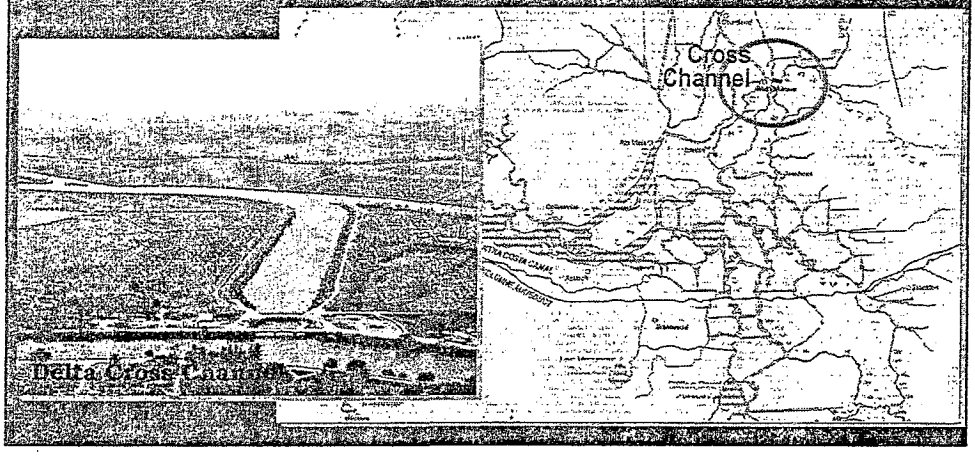
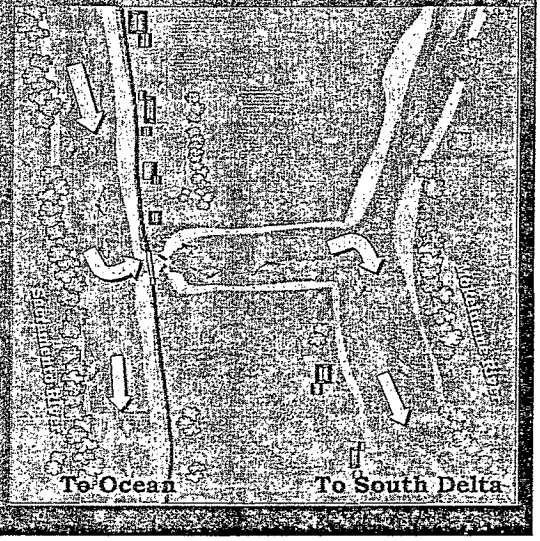
Implement North Delta Improvements

- Improve Delta Cross Channel operating criteria



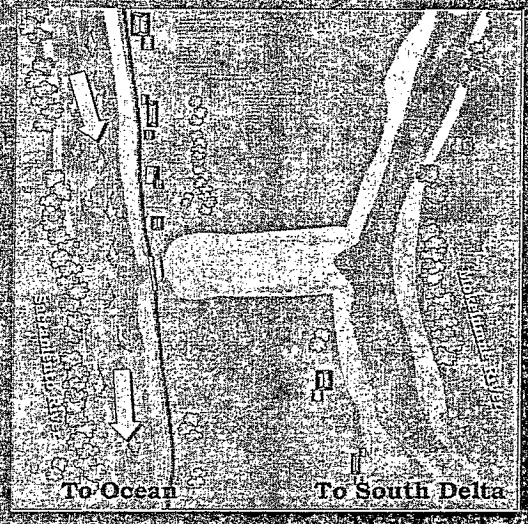
Implement North Delta Improvements

- When the DCC gates are open to improve South Delta water quality and quantity, there is a negative impact on out-migrating Sacramento River salmon



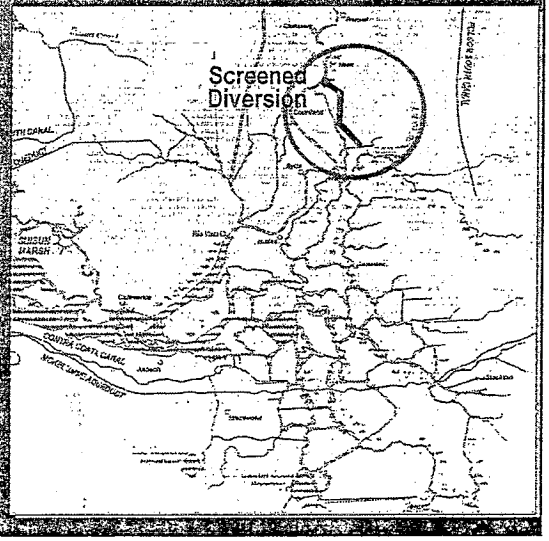
Implement North Delta Improvements

- When the DCC gates are closed to protect out-migrating salmon, there is a reduction in through-delta flow and a reduction in water quality and quantity at the South Delta diversions and export pumps



Implement North Delta Improvements

- A new screened Sacramento diversion at Hood would be evaluated if the combination of improved Delta Cross Channel operating criteria and other water quality and quantity actions in the Delta does not produce adequate South Delta diversions and export water quality



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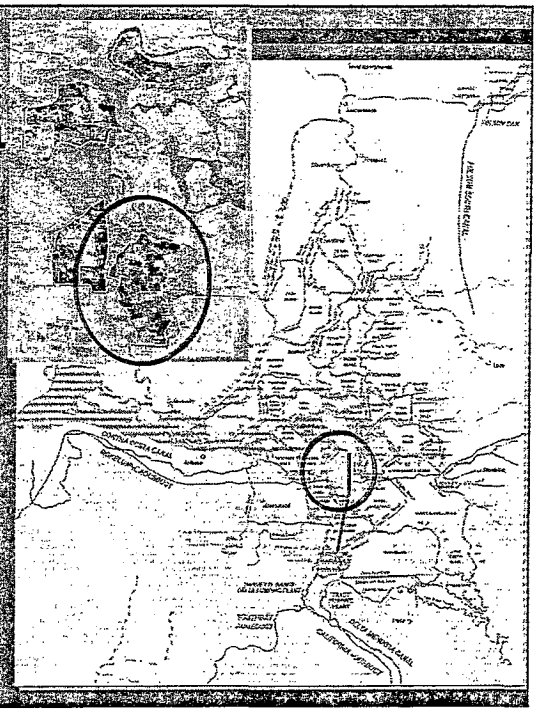
Increase In- or Near-Delta Storage

Delta Island storage

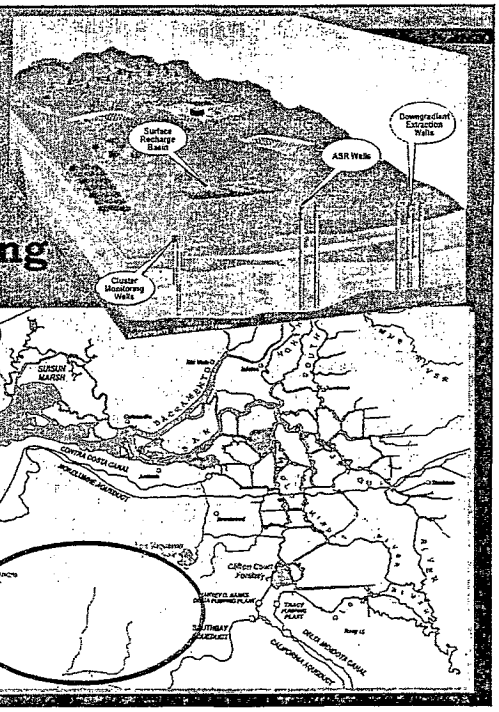
- The advantage of in-Delta storage is its proximity to export pumps
- Monitoring may show that a connection between Delta island storage and export facilities is advantageous



Increase In- or Near-Delta Storage

Groundwater Banking

- Many locations in the central East Bay Area have overdrawn groundwater basins and are prime candidates for groundwater banking



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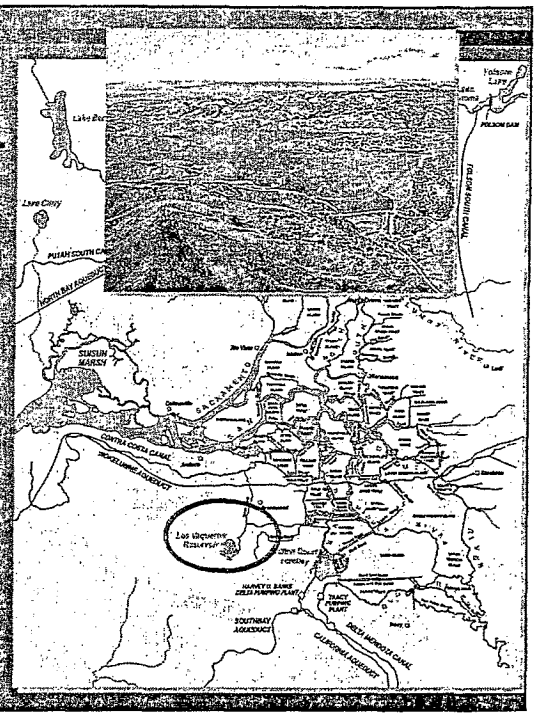
Increase In- or Near-Delta Storage

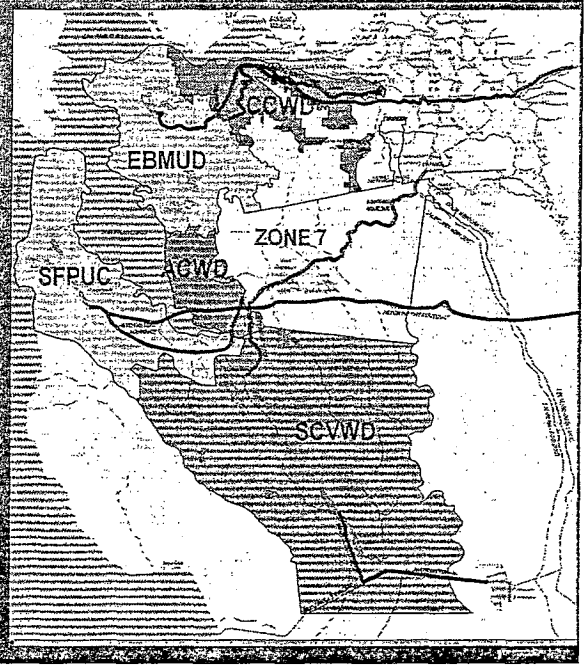
Expand Los Vaqueros or equivalent

- Improves performance of Bay Area blending/ exchange project
- Improves water supply reliability



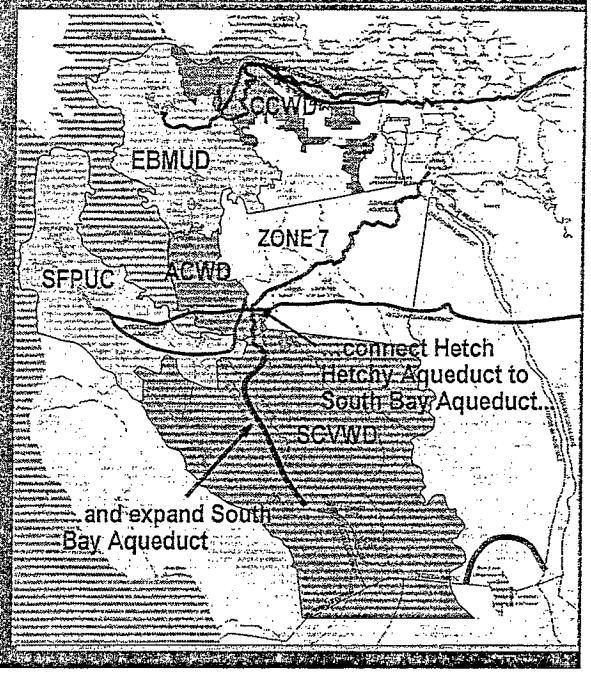
Implement Bay Area Blending/ Exchange Project

- Improves water quality
- Improves water supply reliability



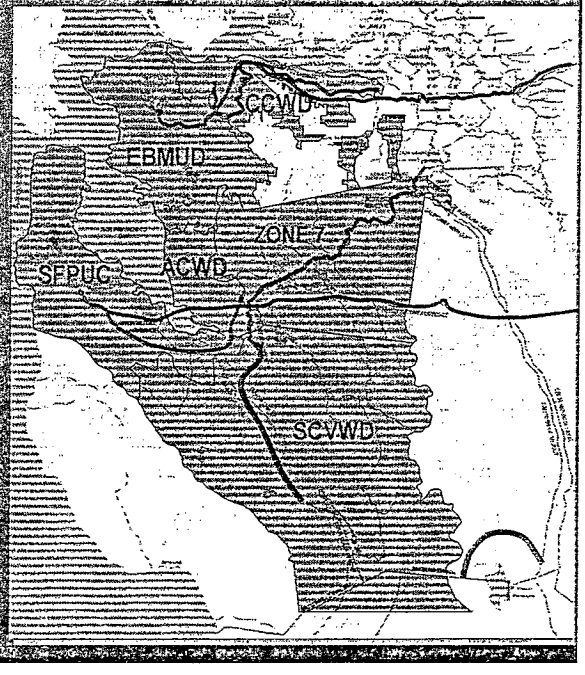
Implement Bay Area Blending/ Exchange Project

- Improves water quality
- Improves water supply reliability
- Reduces reliance on San Luis Reservoir



Implement Bay Area Blending/ Exchange Project

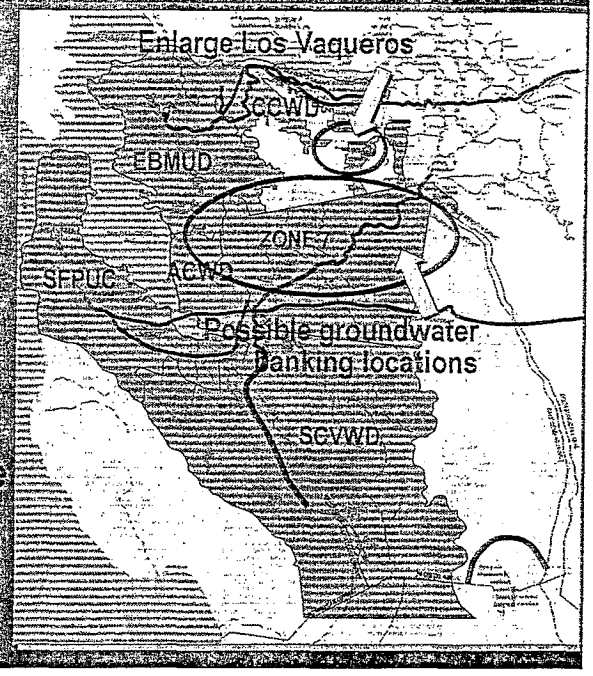
- The project allows cooperation among Bay Area water districts



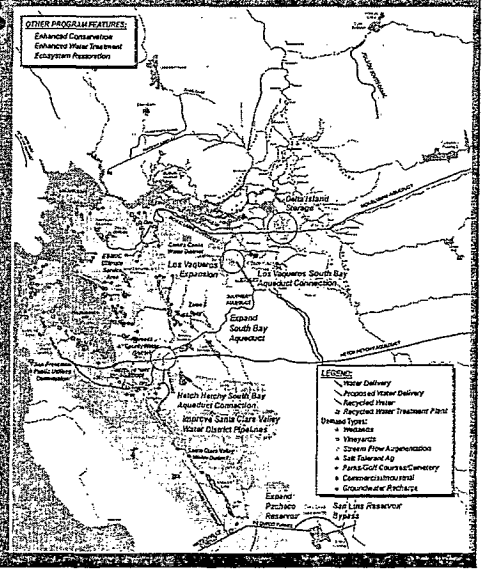
G-004262

Implement Bay Area Blending/ Exchange Project

- Blending and exchange could be improved with near-Delta storage connected to SBA



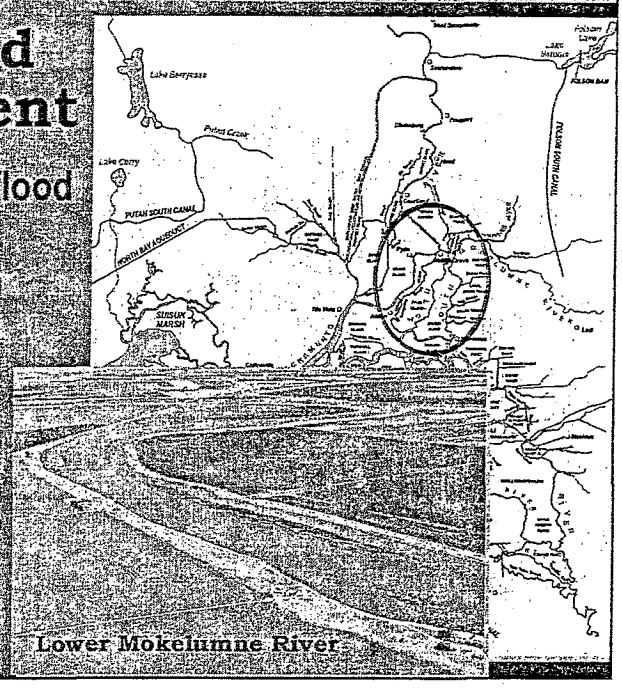
Blending/Exchange and Water Recycling Work Together to Improve Supply Reliability



G-004263

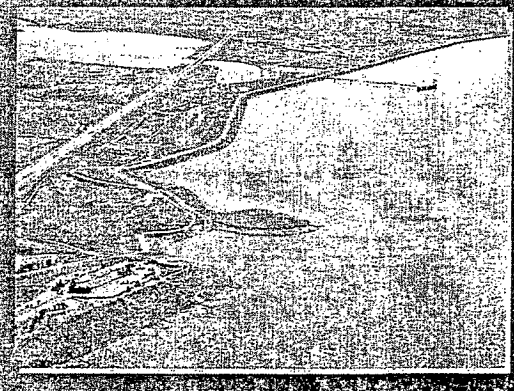
Fund Flood Management

- Complete Delta flood conveyance improvements in conjunction with habitat restoration

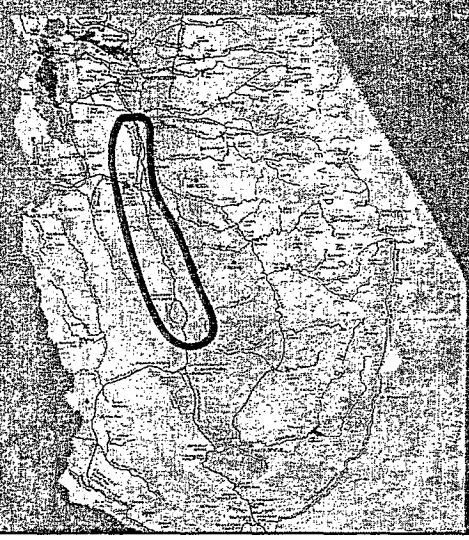


Fund Environmental Water Account

- Reduces Delta conflict and improves water supply now
- Reduces effects of exposure of fish to State and Federal diversion pumps
- Encourages more efficient use of environmental water



Westside San Joaquin Valley



Westside San Joaquin Valley Water Management Goals

- Improve water supply reliability to agriculture/refuges
- Improve groundwater recharge
- Improve water quality

G—004265

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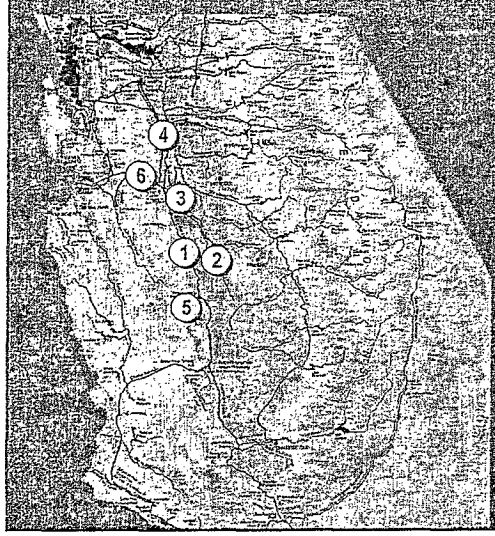
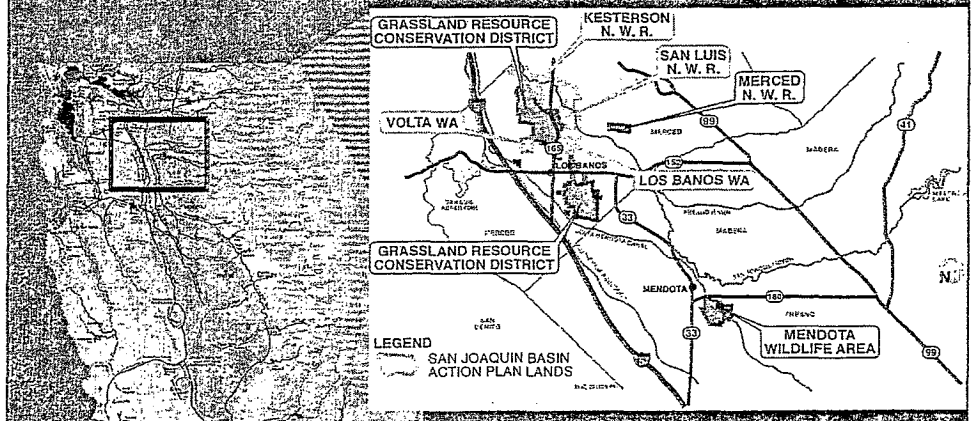
Westside San Joaquin Valley Key Water Management Actions



1. Fund locally controlled groundwater banking
2. Fund agricultural water use efficiency
3. Implement San Joaquin Valley Drainage Program
4. Develop full water supply for refuges and managed wetlands
5. Implement control of runoff
6. San Luis Bypass

Develop Full Water Supply for Refuges and Managed Wetlands



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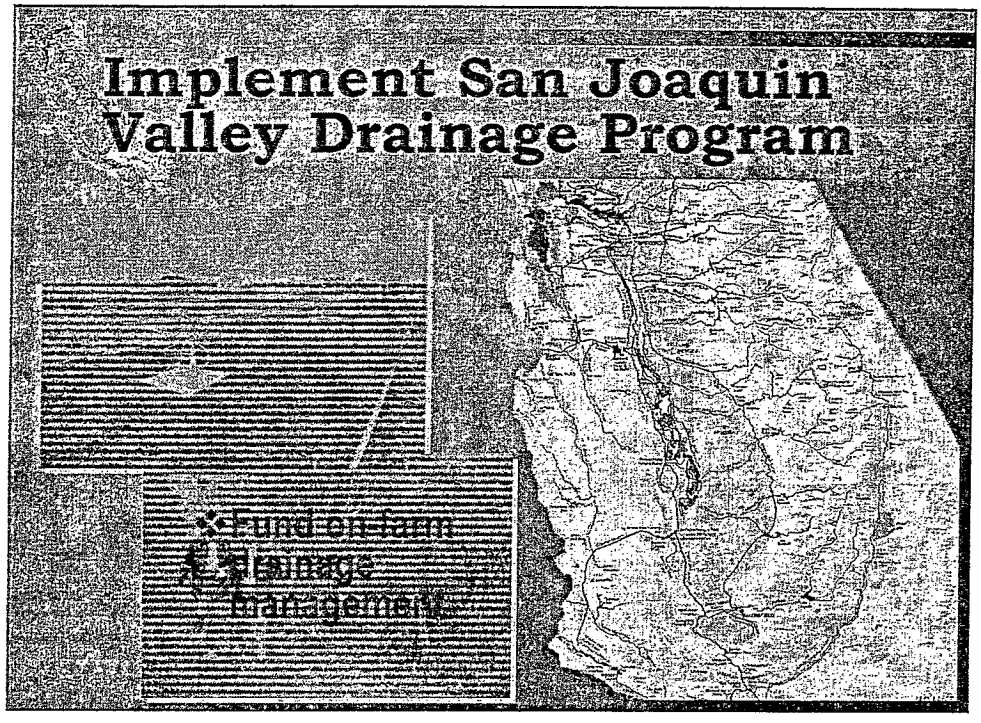
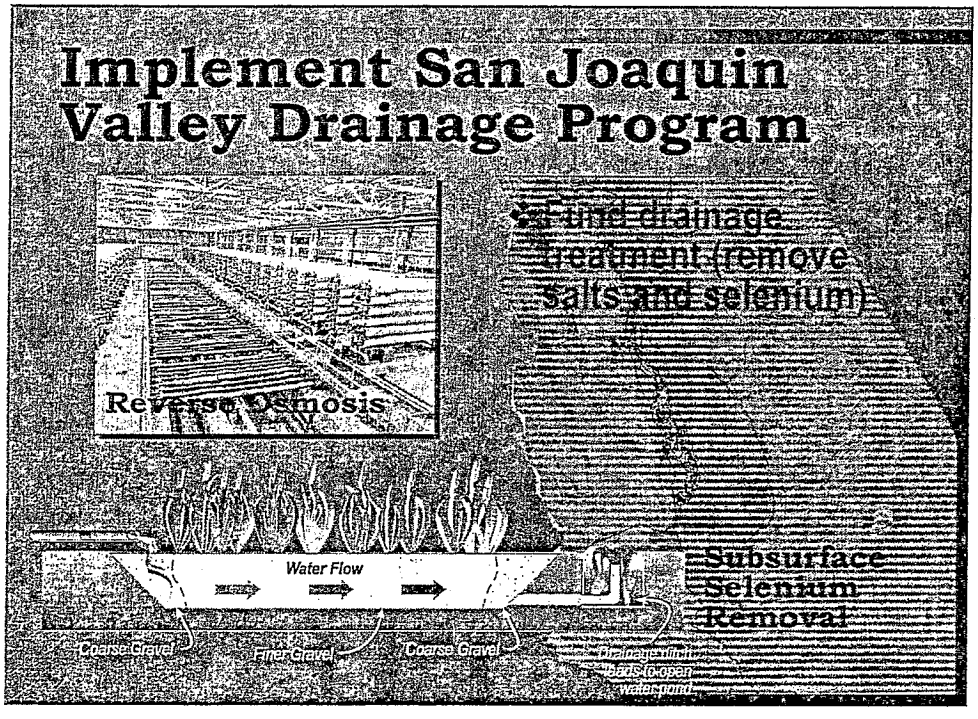
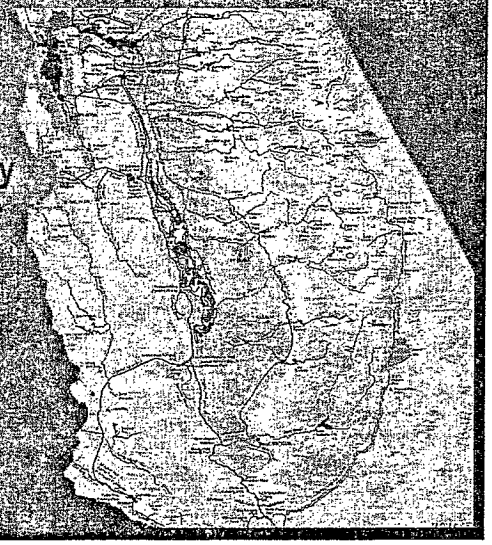

Implement San Joaquin Valley Drainage Program
Fund on-farm drainage management


Implement San Joaquin Valley Drainage Program
Fund drainage treatment (remove salts and selenium)
Reverse Osmosis
Water Flow
Subsurface Selenium Removal
Coarse Gravel
Fine Gravel
Coarse Gravel

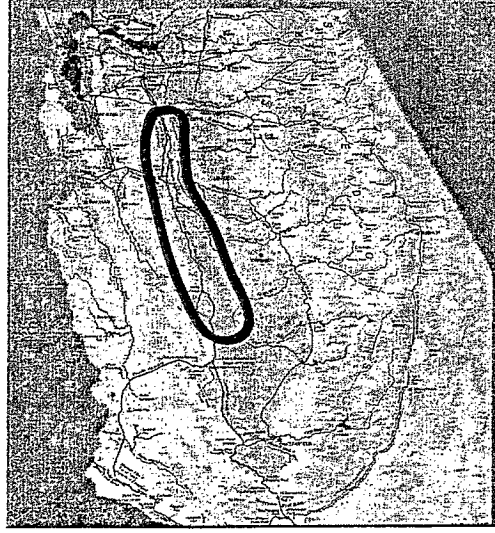
G-004267

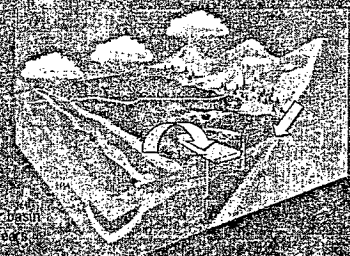
Implement San Joaquin Valley Drainage Program

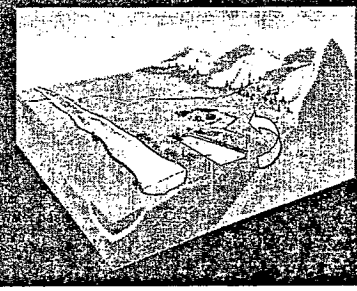
- Fund land retirement
  - Land retirement also improves water supply reliability because the water can stay within the district



Fund Locally Controlled Groundwater Storage

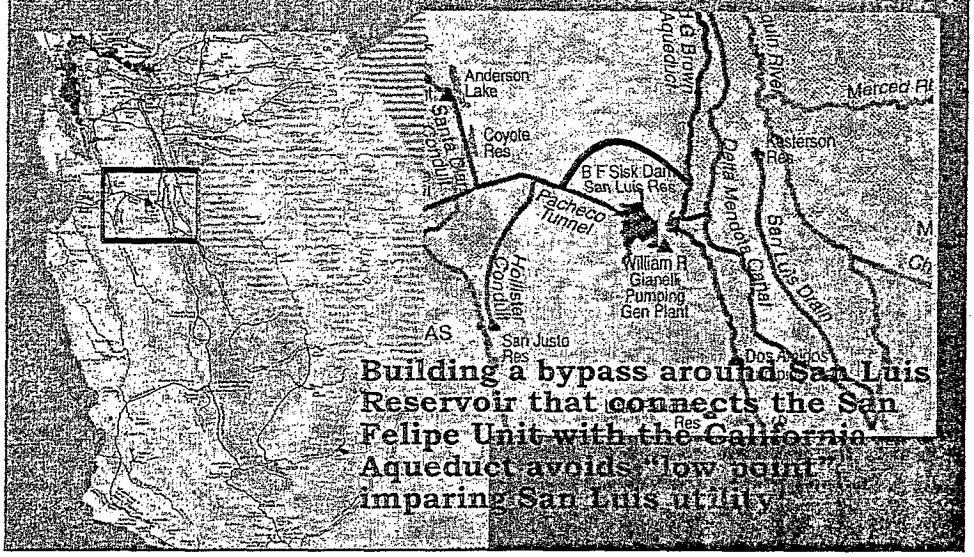






G-004268

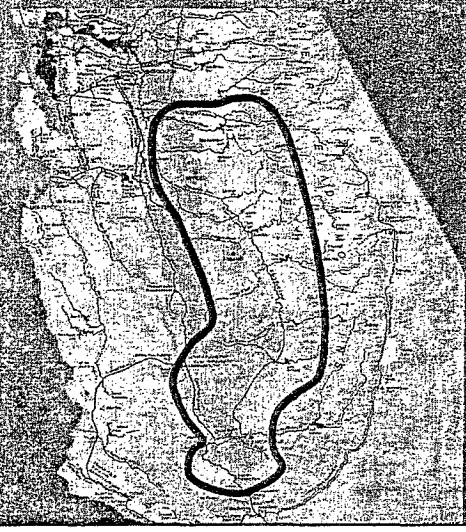
Implement San Luis Bypass



Fund Agricultural Water Use Efficiency

- Existing technology (relatively small potential)
  - Seasonal application efficiency
  - Flexible water delivery
  - Canal lining and piping
  - Tail water recovery
- Emerging technology (big potential)
  - Subsurface drip irrigation

San Joaquin River and South San Joaquin Valley



San Joaquin River and South San Joaquin Valley Water Management Goals

- Improve in-stream flows, water quality, and habitat in the San Joaquin River and its tributaries
- Improve groundwater recharge, and reliability of water supply to agriculture and refuges
- Improve flood management
- Provide exchanges and transfers that promote water quality and drought management

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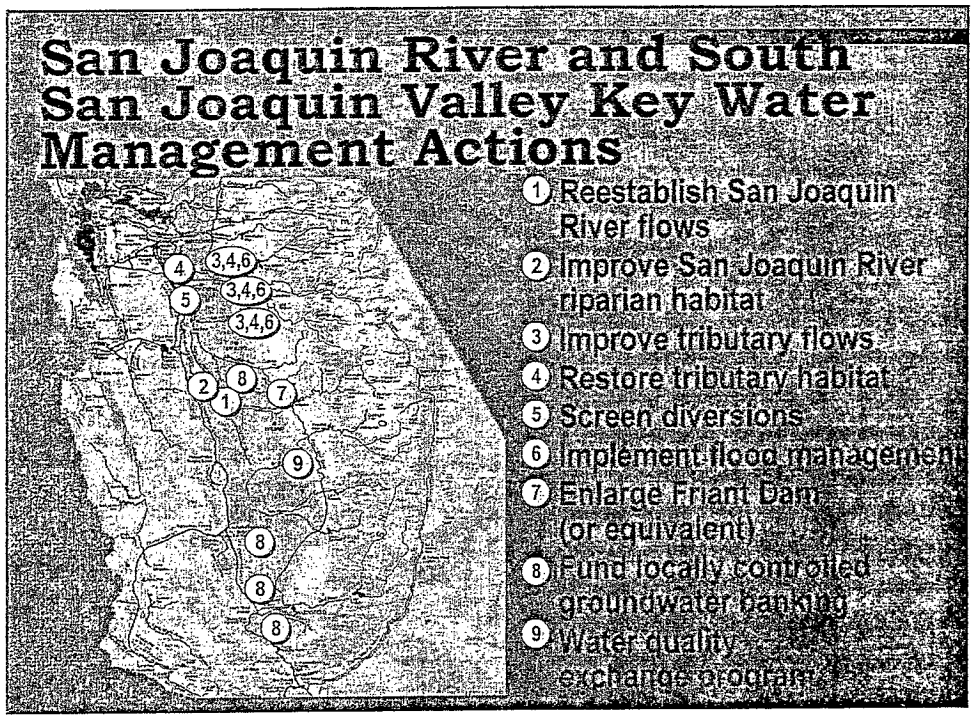
San Joaquin River and South San Joaquin Valley Key Water Management Actions
1 Reestablish San Joaquin River flows
2 Improve San Joaquin River riparian habitat
3 Improve tributary flows
4 Restore tributary habitat
5 Screen diversions
6 Implement flood management
7 Enlarge Friant Dam (or equivalent)
8 Fund locally controlled groundwater banking
9 Water quality exchange program
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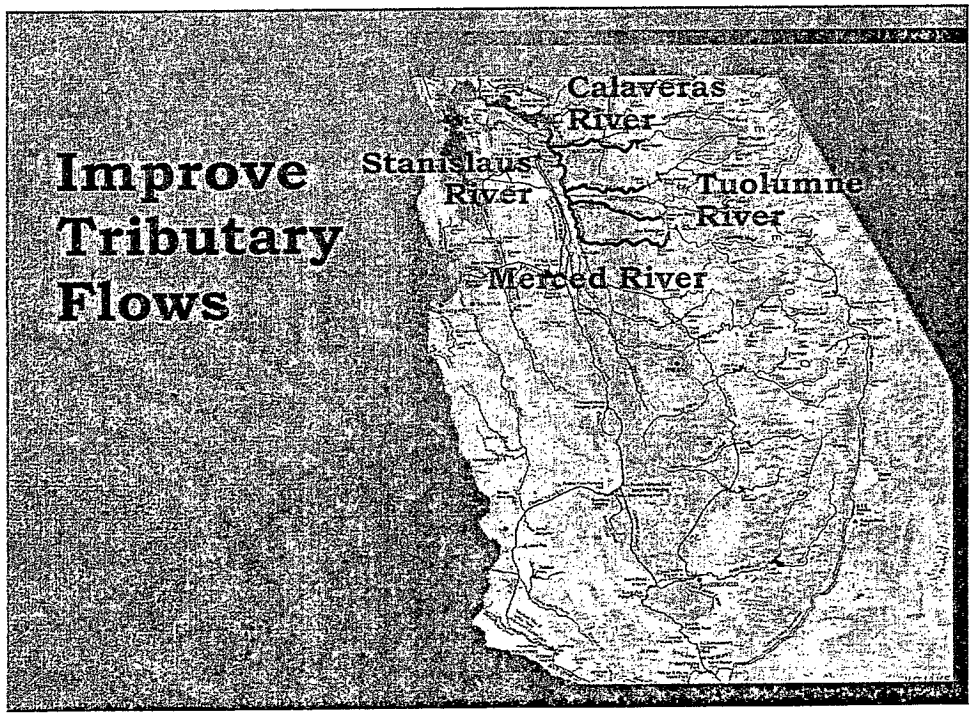
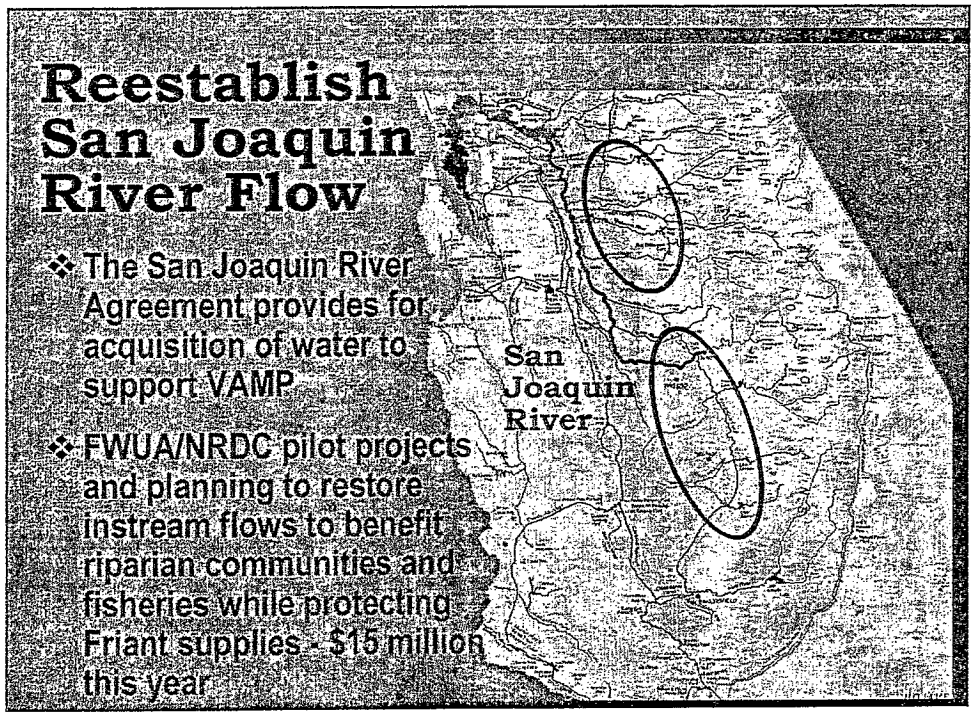
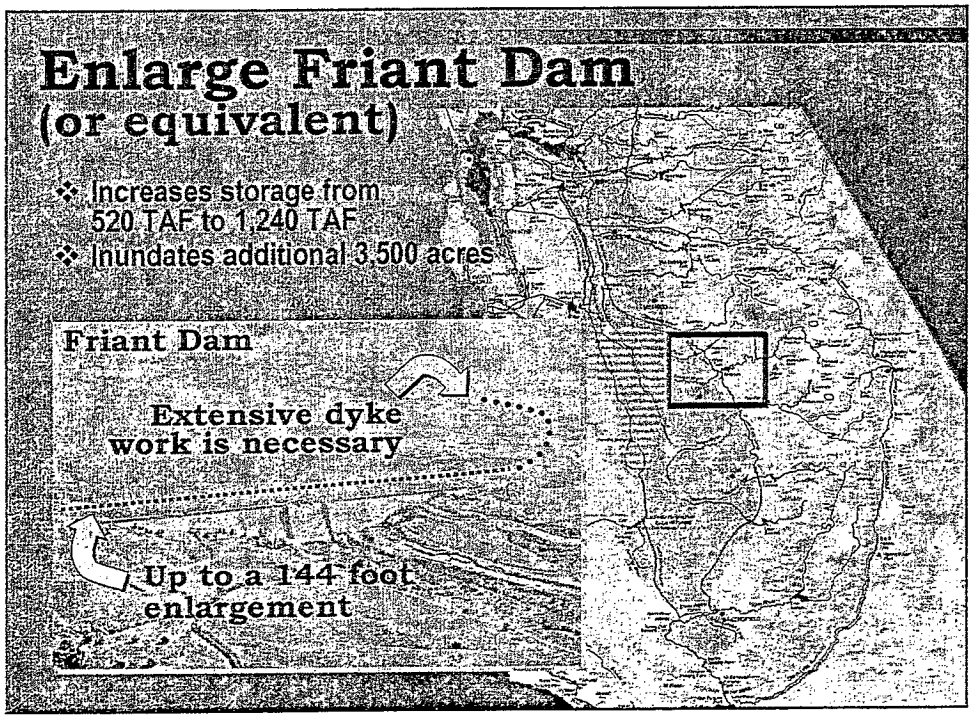
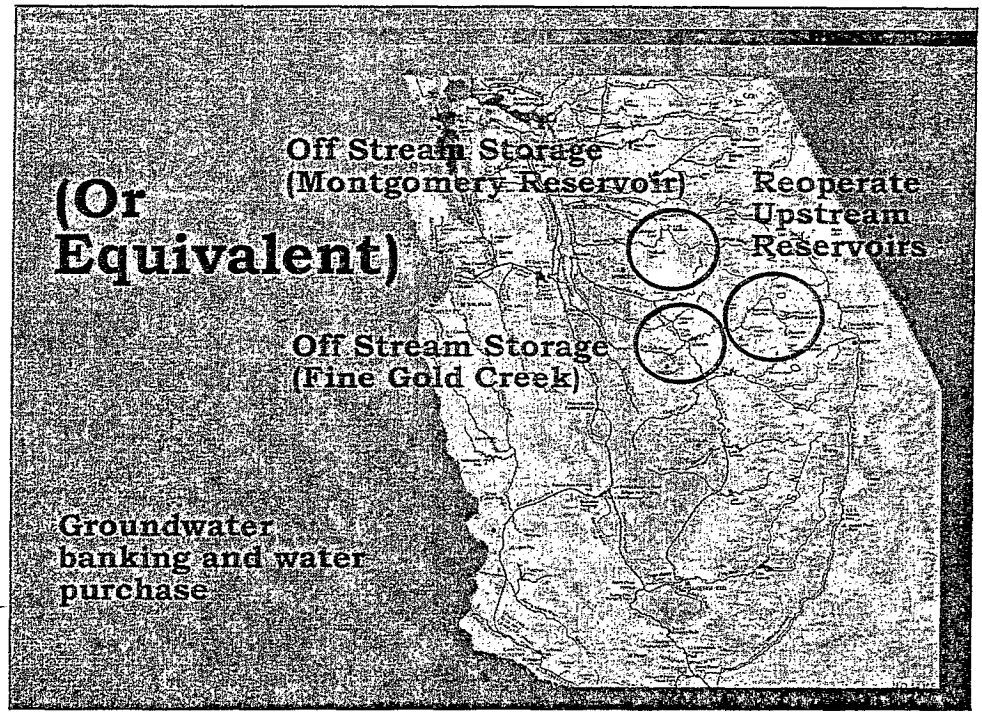
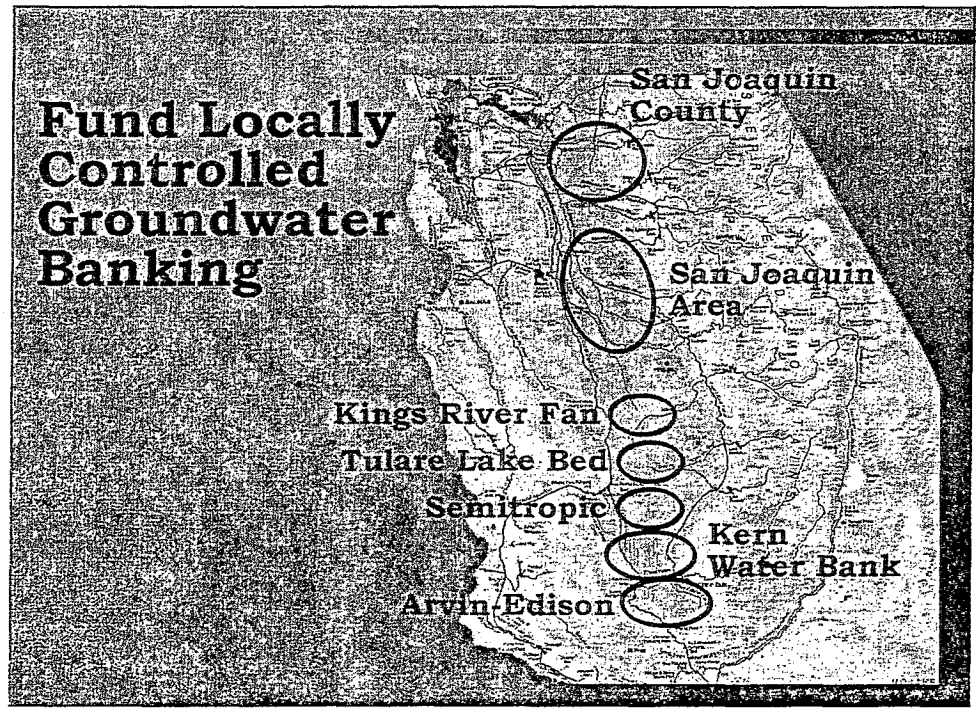

Improve Tributary Flows
Calaveras River
Stanislaus River
Tuolumne River
Merced River


Reestablish San Joaquin River Flow
The San Joaquin River Agreement provides for acquisition of water to support VAMP
FWUA/NRDC pilot projects and planning to restore instream flows to benefit riparian communities and fisheries while protecting Friant supplies - $15 million this year
San Joaquin River

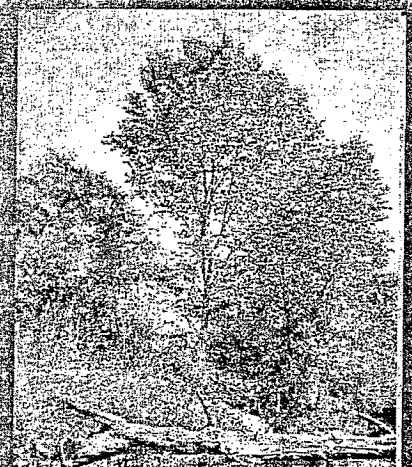

Enlarge Friant Dam (or equivalent)
Increases storage from 520 TAF to 1,240 TAF
Inundates additional 3,500 acres
Friant Dam
Extensive dyke work is necessary
Up to a 144 foot enlargement


(Or
Equivalent)
Off Stream Storage
(Montgomery Reservoir)
Reoperate
Upstream
Reservoirs
Off Stream Storage
(Fine Gold Creek)
Groundwater
banking and water
purchase


Fund Locally
Controlled
Groundwater
Banking
San Joaquin
County
San Joaquin
Area
Kings River Fan
Tulare Lake Bed
Semitropic
Kern
Water Bank
Arvin-Edison

Restore Tributary Habitat

- Fund Tuolumne River Restoration Plan developed by local group of diverse stakeholders
- Support planning to create local working groups and restoration plans for the Merced, Stanislaus, and Calaveras Rivers
- Habitat restoration projects will benefit fisheries, riparian communities, and improve flood management by expanding floodway corridors



Stanislaus River above Caswell State Park

Improve San Joaquin River Riparian Habitat

- Fund the completion of the San Joaquin River National Wildlife Refuge at the confluence of the Tuolumne and San Joaquin Rivers
- Support the Friant Water Users Authority/Natural Resources Defense Council Riparian Restoration Program
- Provide State matching funds to USDA Natural Resources Conservation Service programs which establish conservation easements to restore riparian habitats and protect private landowners from flooding

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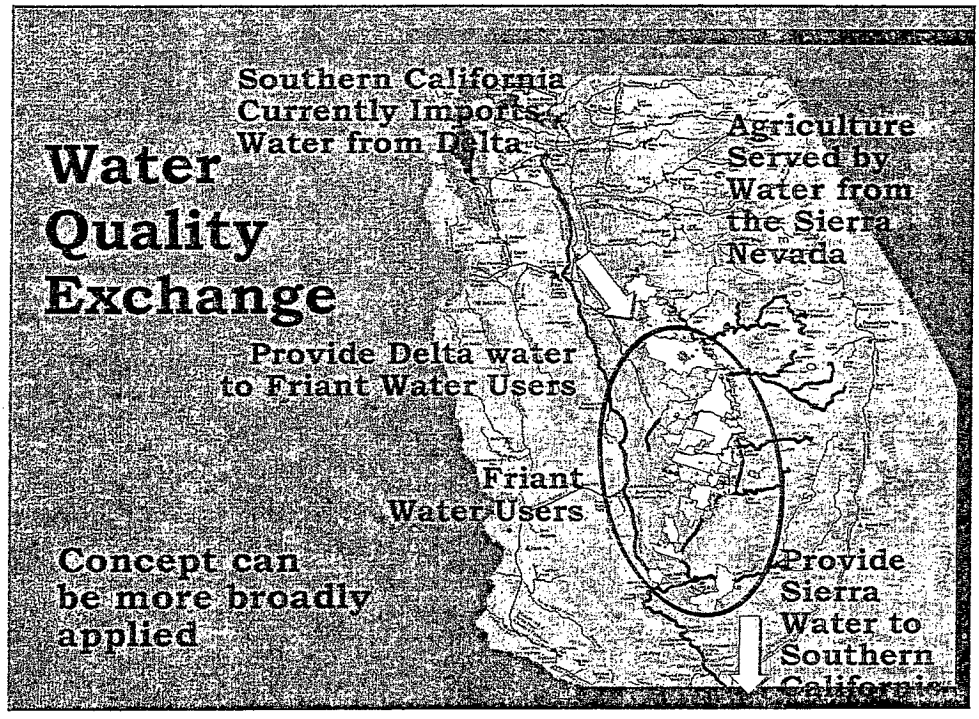
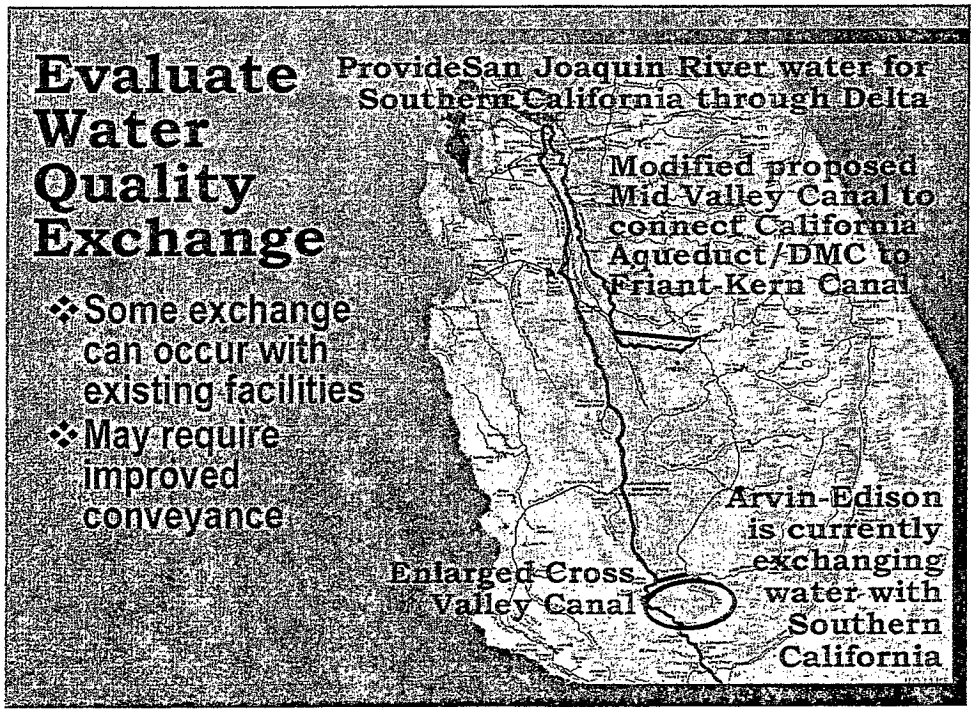

Water Quality Exchange
Southern California Currently Imports Water from Delta
Agriculture Served by Water from the Sierra Nevada
Provide Delta water to Friant Water Users
Friant Water Users
Concept can be more broadly applied
Provide Sierra Water to Southern California


Evaluate Water Quality Exchange
Some exchange can occur with existing facilities
May require improved conveyance
Provide San Joaquin River water for Southern California through Delta
Modified proposed Mid Valley Canal to connect California Aqueduct/DMC to Friant-Kern Canal
Arvin-Edison is currently exchanging water with Southern California
Enlarged Cross Valley Canal

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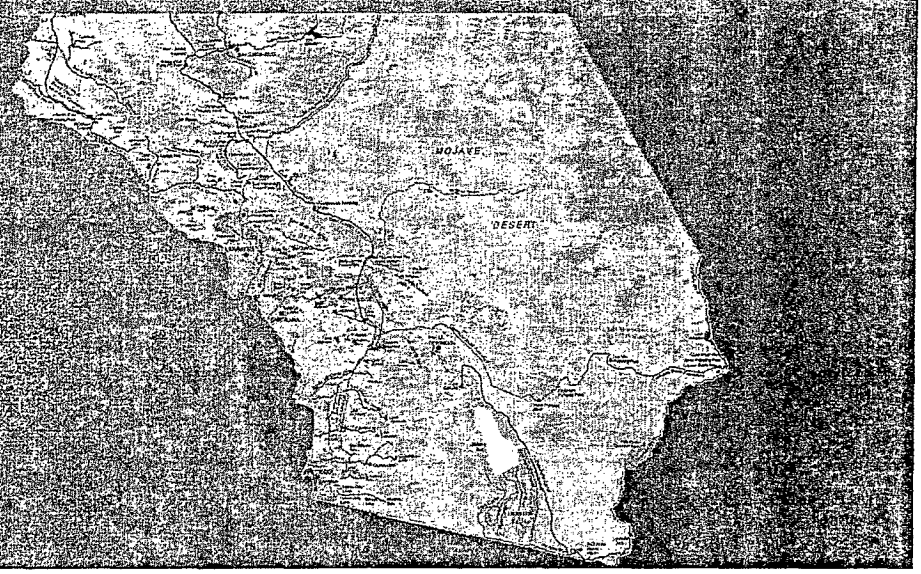
Southern California



Southern California Water Management Goals

- Improve the quality of imported water supplies
- Develop water treatment technologies
- Increase water supply reliability

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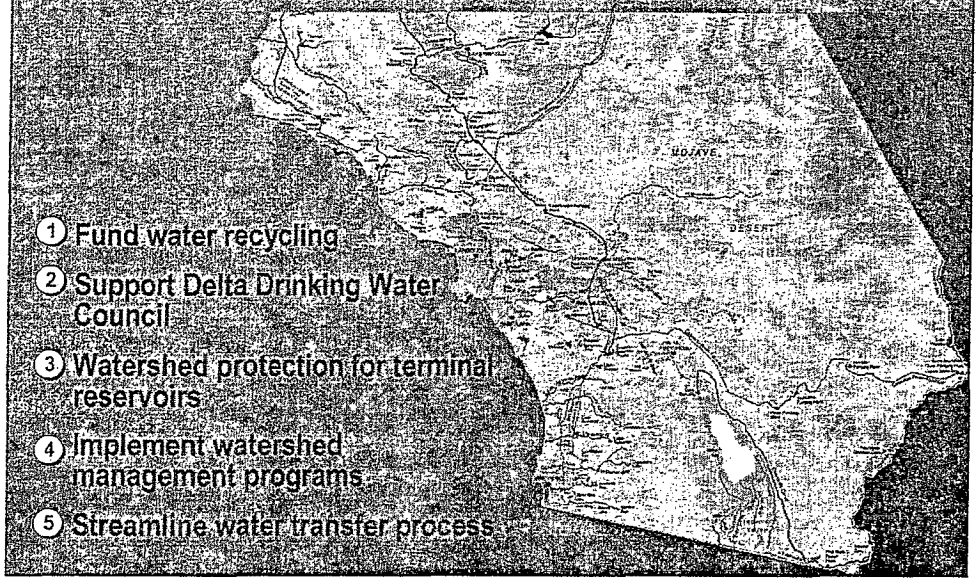
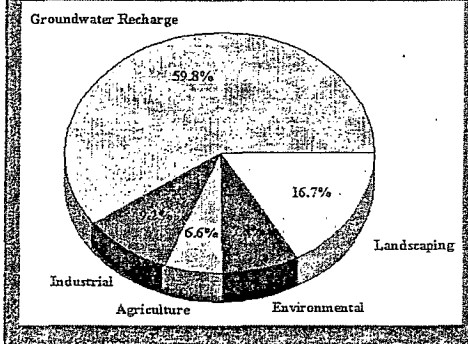
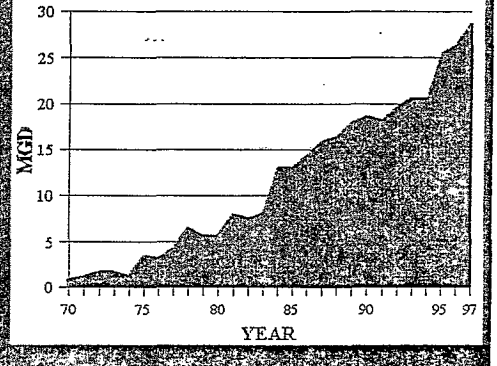
Southern California Key Water Management Actions



1. Fund water recycling
2. Support Delta Drinking Water Council
3. Watershed protection for terminal reservoirs
4. Implement watershed management programs
5. Streamline water transfer process

Fund Water Recycling





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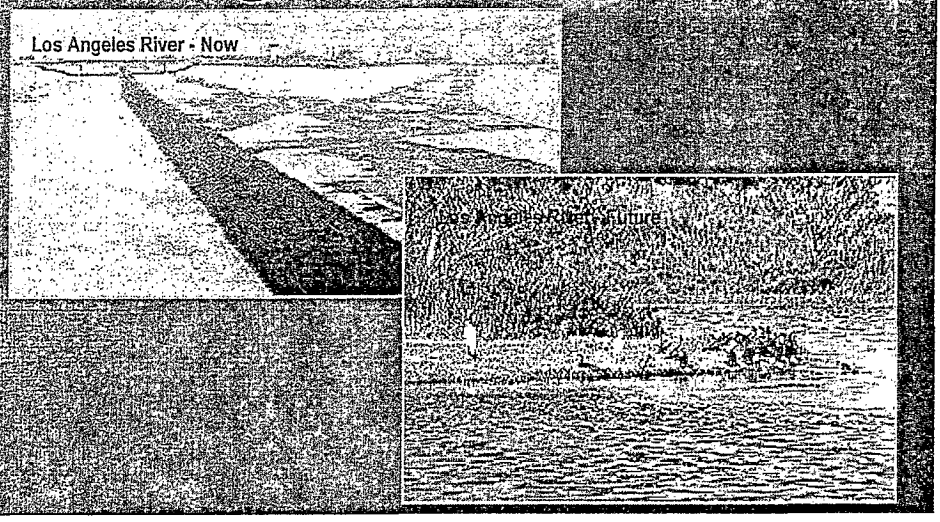
Implement Watershed Management Programs



Streamline Water Transfer Process

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CALIFORNIA WATER MARKET INFORMATION

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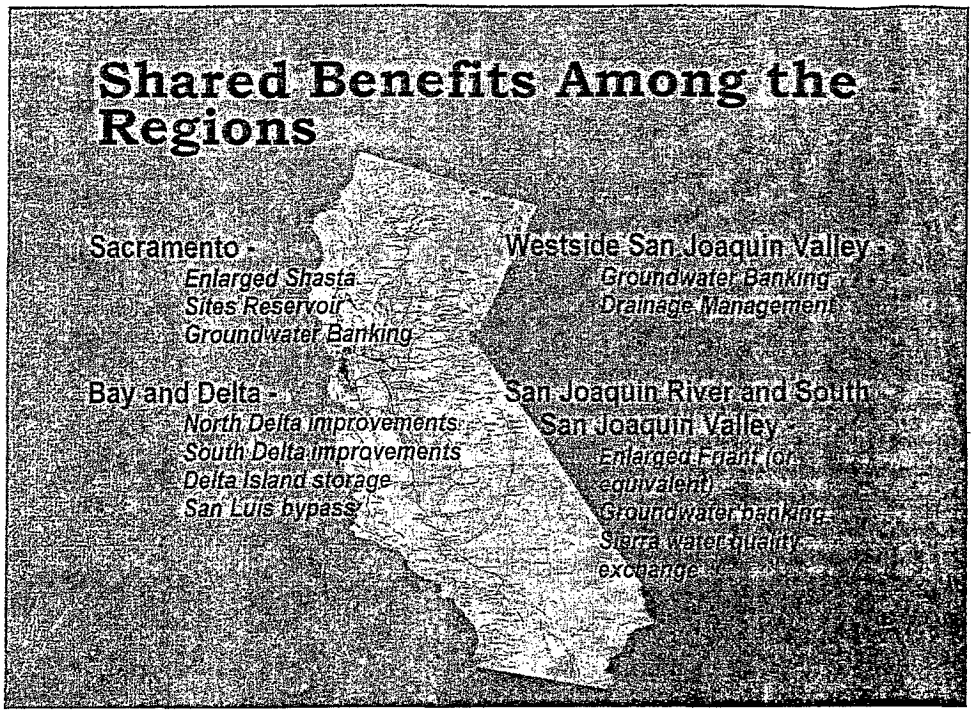
Shared Benefits Among the Regions
Sacramento -
Enlarged Shasta
Sites Reservoir
Groundwater Banking
Bay and Delta -
North Delta improvements
South Delta improvements
Delta Island storage
San Luis bypass
Westside San Joaquin Valley -
Groundwater Banking
Drainage Management
San Joaquin River and South San Joaquin Valley -
Enlarged Friant (or equivalent)
Groundwater banking
Sierra water (trade) / exchange

Continuing State Federal Negotiations