Water Resource Management in the Ukiah Valley

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Ukiah Valley Setting
Agriculture dominates the landscape and the valley’s rural lifestyle is evident.
MCRRFC&WCID

• Formed in 1956 to manage and pay the bonds for Mendocino County’s share of the dam debt ($633,000.00)
• A wholesaler: sharing a water right with Sonoma County Water Agency for the water supply behind Coyote Valley Dam in Lake Mendocino (8,000 AF)
• 63 contract customers receive District water
  • 46 agricultural
  • 7 miscellaneous
  • 10 water districts
• Working with 4 county water districts to consolidate into a single regional water district in unincorporated area
  • Close to 5,000 connections over an 85 mi² area
  • Multiple recommendations in the community to consolidate

Lake Mendocino & Coyote Dam

• Lake
  • 3 mi long; 1,920 acres
  • 122,500 AF storage
  • 2 supply sources
    • 105 mi² watershed
    • Eel River via PVID

• Dam
  • Compacted earth
  • 3,500’ wide, 160’ tall
  • Built to Raise Later
What the Lake/Dam Project Provides

• Originally Designed for Flood Control only

Beneficial Uses Now:
• Russian River Flows
• Drinking Water Supply
• Agricultural Irrigation
• Fish Habitat
• Recreation
• Power Generation

Flood Control Duty

• US Army Corps of Engineers responsibility since inception (initiated after 1954 flood)
• Elevations and releases determined by a manual difficult to modify and without flexibility
USACE Rule Curve & Channelization

Russian River Flows

• The Russian River historically flooded in winter
  • Flood control (protection) only approach by USACE
  • USACE channelization changed floodplain characteristics
Russian River Flows

- The Russian River historically went dry – no summer flows
- Inflows to the lake from the Potter Valley Project create flows all year
- Flows help maintain drinking water supplies, irrigation, recreation and habitat

Water Supply Responsibility

- Sonoma County Water Agency Controls Daily Flows and Releases from the Dam
- Flows are determined by a state decision (D1610), which is also difficult to modify with little flexibility.
Drinking Water Supplies

• Over 5,000 drinking water service connections in the unincorporated areas of the Ukiah Valley

• Co-Equal Goals and Drinking Water Priority

Agriculture Water Use

• Irrigation and Frost/Heat Protection for Vineyards and Orchards
  • Crop conversion and on-site best management practices over the last twenty years have lessened agricultural water demand

• Hundreds of Millions of Dollars from the Local Economy

• Protection of Rural Lifestyle
Fish Habitat

- Fish flow requirements come from the *Biological Opinion for Water Supply, Flood Control Operations and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed* (The B.O.)
- The Russian River supports approximately 32 species of freshwater and anadromous fish species. There are three federally-listed salmonid species:
  - Chinook salmon (threatened)
  - Coho salmon (endangered)
  - Steelhead trout (threatened)
- Buffer flows are added to B.O. releases to compensate for time and distance down the river

Fish Breeding & Species Protection

- Coyote Dam Fish Egg Collection Facility
- Bill Townsend Fish Hatchery
Recreation & Hydropower

• City of Ukiah’s (1986)
• Two power output units
  • 1000 kw & 2500 kw
  • Power for over 8,000 homes

• Camping (300 sites)
• Boating
• Fishing
• Hiking

2013-14 Water Year (Drought)
2014-15 Water Year (Drought)

2016-17 Water Year (so far)
Best Case Scenarios: Water Supply Improvements

- Update Flood Control Manual Rule Curve (1959)
- Improve Dam Procedures using Forecast Informed Reservoir Operations (FIRO)
- Raise Coyote Valley Dam
- Revise D1610 (1986) without Injury to Mendocino Water Users
- Develop Groundwater
- Consolidate Water Districts to Stabilize Supply Uncertainties

Supply Improvements

- Forecast Informed Reservoir Operations (FIRO)
  - Forecast Act (Huffman) – Congressional approval required to change USACE Rule Curve methodology
  - Improve Operations using Modern Weather Forecasting
  - Capitalize on Storage from Atmospheric River Events
  - Eliminate Unnecessary Releases from Flood Control Pool
  - Increase Reliability of Water Supply Later into the Year
Supply Improvements

- Raise Coyote Valley Dam
  - Designed in 3 phases
    - Coyote Valley Dam
    - Warm Springs Dam
    - Raise CV Dam 36 feet
  - Increase Capacity
- Benefit from Dependable Yield
- Improve Reliability

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<th>Dependable Yield (AF)</th>
<th>Critical Year</th>
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March 2016 Memo to USACE from UC Davis

Supply Improvements

- Revise D1610 Without Harm to Mendocino Water Users
  - Reduced flows proposed to protect fish from current high flows
  - Water rights developed and perfected under current flow scenarios
  - Lower flows under a revised D1610 could threaten drinking water suppliers and agricultural production
Supply Improvements

• Develop Additional Groundwater Supplies
  • Groundwater Wells = New Supply Sources
  • Ukiah Valley Groundwater Basin and Interconnectivity between Surface and Groundwater
  • SGMA & GSA Oversight

Supply Improvements

• Dissolution & Consolidation of Water Districts in Unincorporated Areas – LAFCo Reorganization
  • Plan for Services
    • Zones of Benefit
    • Regional Capital Improvement Plan
    • Rate Study and Model
  • Service Improvements between Zones
  • Eliminate Unnecessary Redundancies
  • Capitalize on Efficiencies
  • Increase Availability of Water Supply Over Service Area
    • Petition for Change to Water Rights
Water Resource Management in the Ukiah Valley is only possible through the consideration of many factors that must be analyzed and prioritized to ensure a water supply for all users and land use types.

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