



— BUREAU OF —
RECLAMATION

Sedimentation Management

Putah Diversion Dam and Putah South Canal Headworks

Western Dredging Association
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Solano Project

- Construction Completed in 1956.
- Major Facilities included Monticello Dam (Lake Berryessa), Putah Diversion Dam (Lake Solano), Putah South Canal and Terminal Reservoir
- Original project purposes limited to Irrigation and Municipal & Industrial (M&I) Water with incidental Flood Control
- Putah Creek is also known as the Green River due to the buildup of algae and vascular plants in the late summer.

Certainly a song like "Green River" – which you may think would fit seamlessly into the Bayou vibe, but it's actually about the Green River, as I named it – it was actually called Putah Creek by Winters, California. John Fogerty



Solano Project

Monticello
Dam

City of Winters

Putah Diversion
Dam

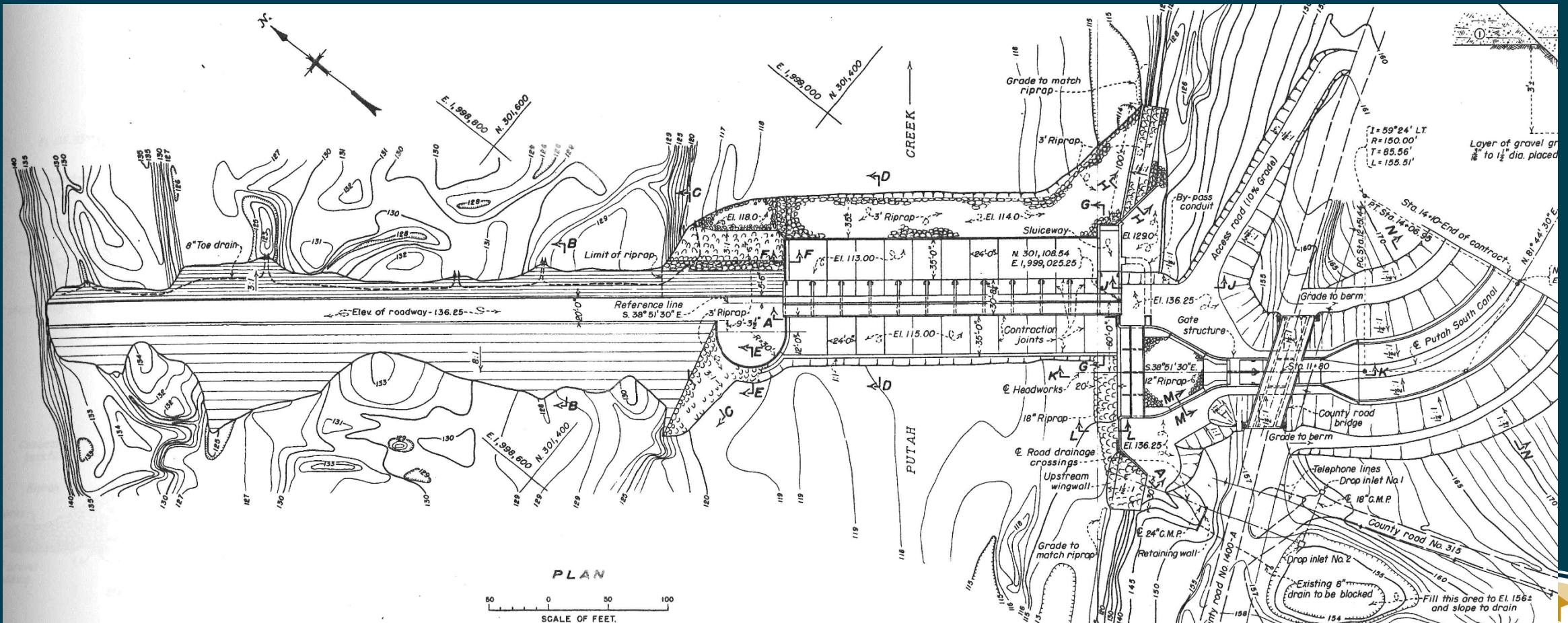
Putah South
Canal

Layers



Putah Diversion Dam

- Located on Putah Creek.



Putah Diversion Dam - Sedimentation

- Sedimentation was studied on Putah Creek, specifically upstream of Putah Diversion Dam in 1973, 1998, 2012 and 2019.
- Flushing Flows are assumed when $Q > 4,000$ cfs.
- In very wet years scouring does occur throughout most of Lake Solano.
- Lake Solano original capacity of approximately 890 acre-feet.
- When comparing only the surveyed reach of Lake Solano over the 1973 – 2019 time period, this same section of Lake Solano decreased in volume from 626 to 373 acre-feet, a 40% reduction.



Lake Solano Sedimentation



Putah Diversion Dam - Sedimentation

Conclusions

- In more moderate time periods, consisting of both wet and dry years, sediment deposition is occurring in Lake Solano.
- The lake appears to be in a state of net deposition rather than “dynamic equilibrium”.
- Most of the Sediment comes from side flows between Monticelo Dam and Putah Diversion Dam



Putah Diversion Dam - Operations

- As a regulating reservoir the sediment has not had a major impact.
- Deliveries of water to customers through the Putah South Canal is concern if condition worsen
- Sedimentation of headworks trashrack could limit flow rate to canal
- Annual dewatering of canal to remove sediment takes the canal out-of-service for several weeks annually for sediment removal



Putah Diversion Dam and Canal Trashrack



Putah Diversion Dam - Operations

- High nutrient sediment from Putah South Canal is disposed of in several different ways.
- It is virtually impossible to transport the material until it is dried due to the consistency.
- Once dried it turns into a powder substance.



Putah Diversion Dam - Operations

- Some disposal options for this sediment from the canal are as follows:
 - Transport and dispose at local county dump. (Based on tonnage, this requires the sediment to be tested to ensure it remains free of contaminants.)
 - Transport and dispose at a local asphalt company. (Needs sediment to be tested to ensure it remains free of contaminants.)
 - Disposal along the canal in areas with wide staging areas, known as pits.
 - Most recently the sediment has been used for test plots along farmlands to determine growth success of fertilizer mixtures with the high nutrient soil. The studies have been proven to be successful.
- Solano County Water Agency has not done any sediment removal work within Lake Solano due to the expense of dredging and permitting.



- Questions?

