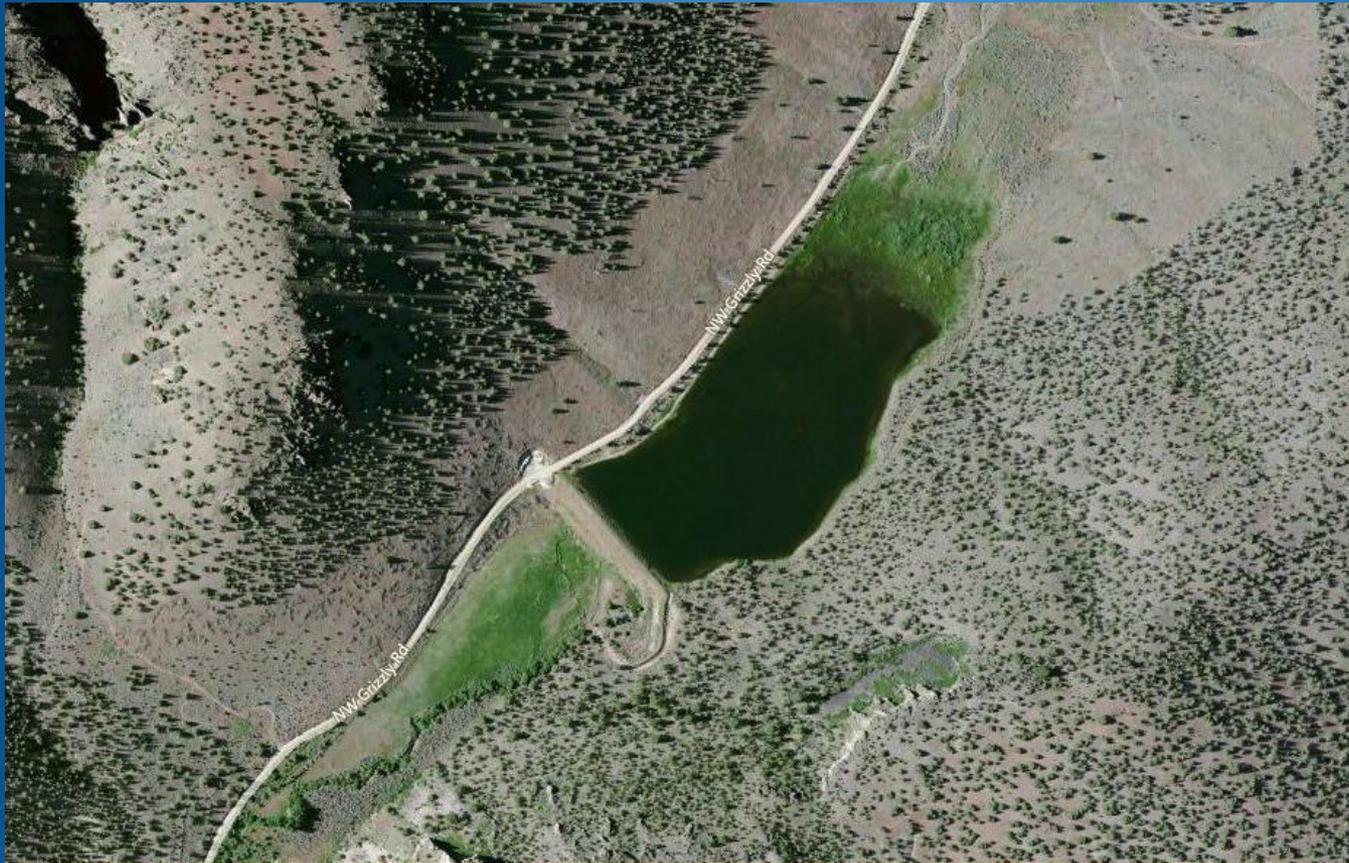


High Hazard Dam Spillway Modification



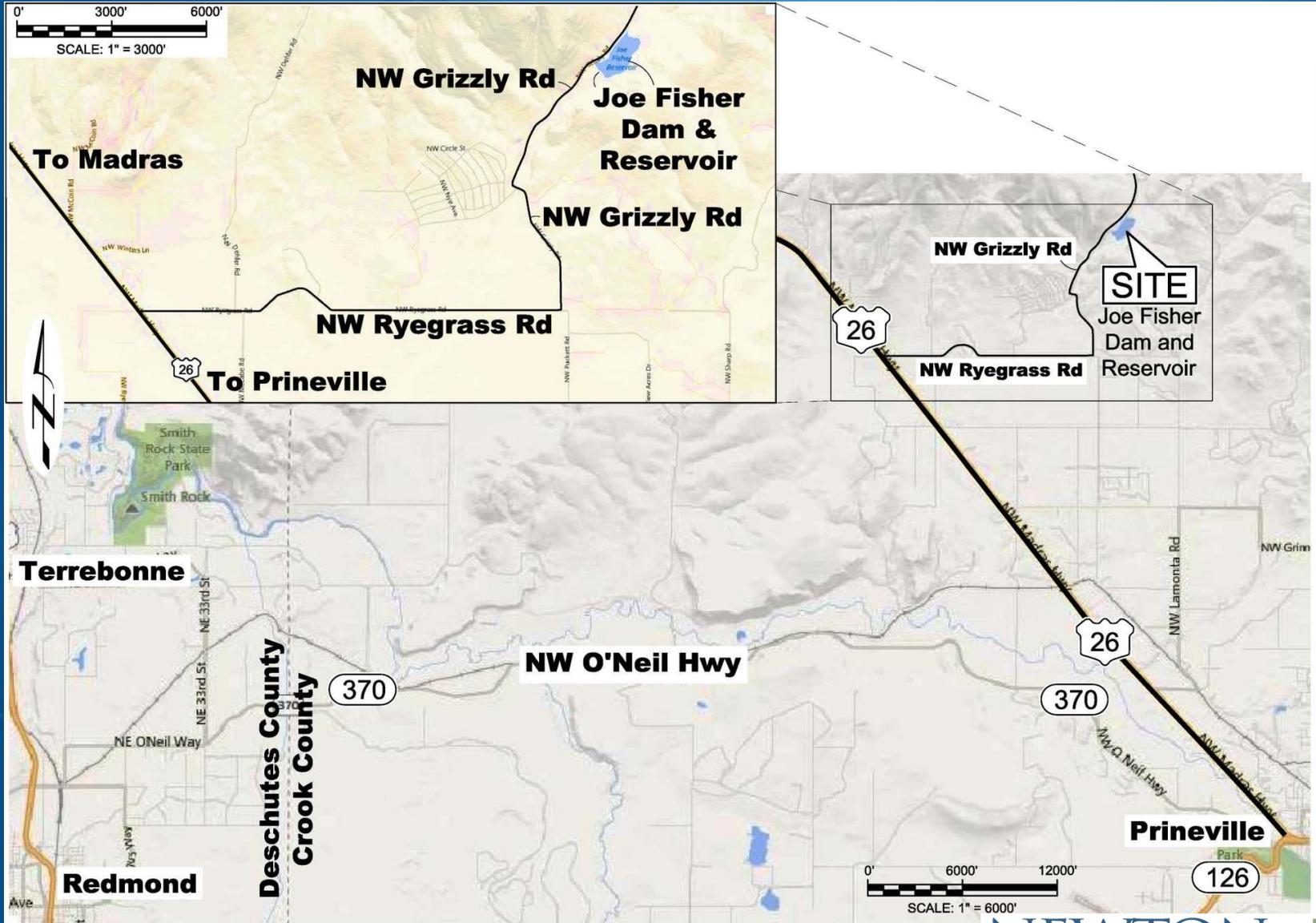
Joe Fisher Dam
Ochoco West Water & Sanitation Authority
Prineville, Oregon

David J. Newton, P.E., C.E.G, C.W.R.E.
James B. Newton, R.G., EIT, C.W.R.E.

NEWTON
CONSULTANTS INC.
Earth, Water and Rock Specialists



Vicinity / Location Map



Joe Fisher Dam



Constructed in 1950 & Raised in 1952-53
Reservoir is Approx. 30 Acres in Size & 30' Deep
Dam is Approx. 50 Feet high & 660 Feet Long



Joe Fisher Dam Owner Description

- Ochoco West Water and Sanitation Authority
- Operated as a Recreational Reservoir



Concerns by OWRD Dam Safety

- Concerns from Dam raise in 1952-53 of appropriate fill and placement of earth materials.
- Concerns from 1986 to authorize full reservoir storage.
 - Regulated storage to 6' below crest of emergency spillway.
- Incomplete reparations/modifications to the Dam in 1992-1994.
- Lack of cooperation from dam owners over High Hazard requirements.
- Dam Owner contention with OWRD.



OWRD Issues 'Administrative Action' to Drain Reservoir and Remove Dam

- Spillway in disrepair and required to pass PMF local storm (6 hour)
- Emergency Action Plan required by High Hazard Designation.

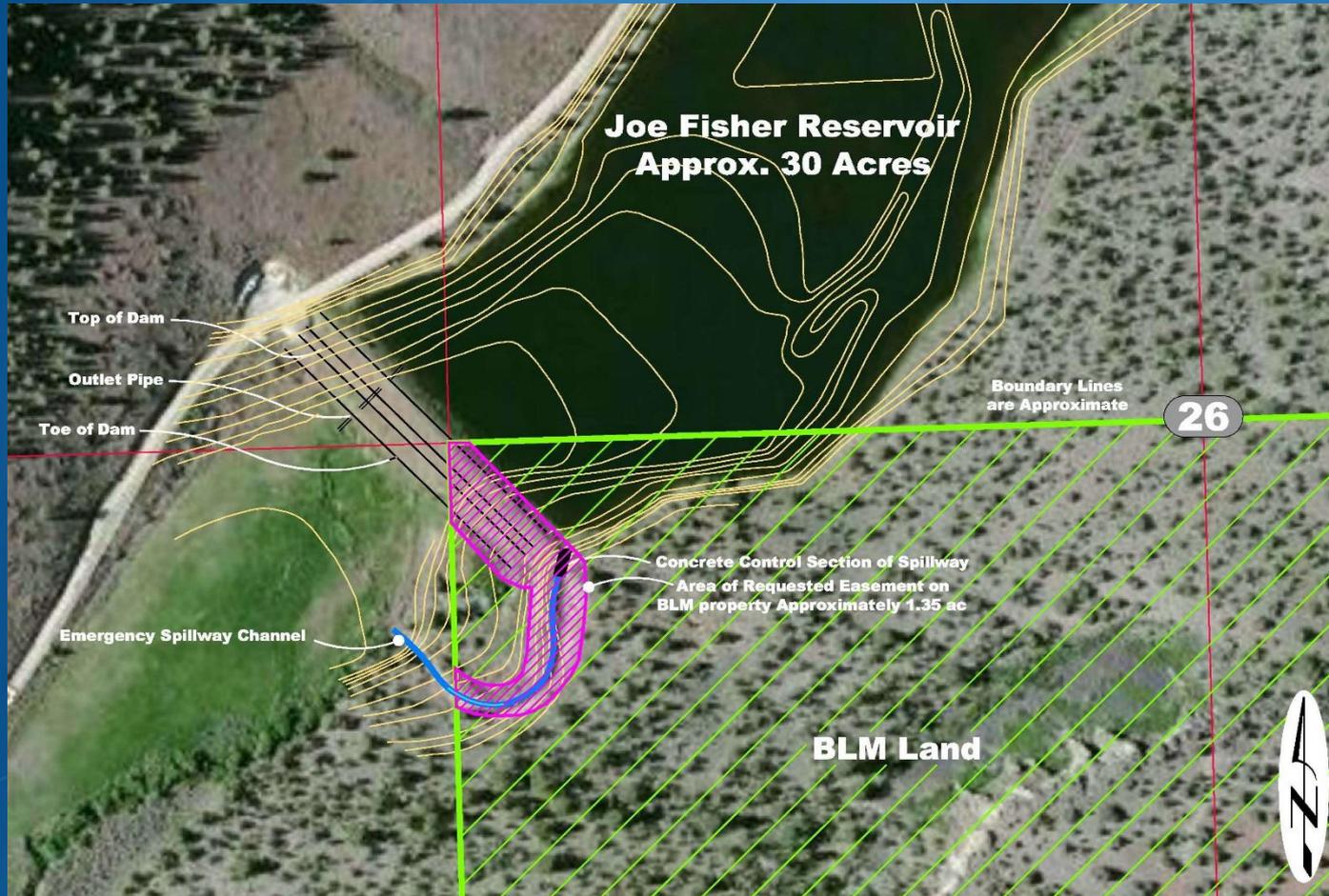


Problem Resolution

- Buy-In by OWWSA
- Limited financial resources.
- South abutment on BLM property.
- History of Dam build incomplete
- Solution costs.
- OWRD Dam Safety concerns.



Joe Fisher Dam



South Abutment on BLM Property



Existing Spillway Inlet



Concrete Spillway Inlet Control



Existing Spillway Channel



13 foot headcut in spillway channel



Solution Development Approach

- Reduce Reservoir Storage to allow retention of 5,000 year storm event.
- Spillway Alternatives Approach.
 - Correct Existing Spillway
 - New Spillway
- Solution within OWWSA means.



Design of Preferred Alternative

- Detention of PMF without Flow in Existing Spillway Channel.
- Pipeline Spillway on North Abutment.



Dam Cut for Pipeline



Construction of Pipeline Spillway



Pipeline Spillway Inlet



Completed Dam and Spillway Inlet



Pipeline Spillway Outlet



DAM COMPLETION

Joe Fisher Dam Spillway Modifications

- Buy-off on Spillway Approach by OWWSA
- Approval of Completion by OWRD Dam Safety
- BLM Approval of Easement for South Dam Abutment
- Construction Completion October 2014

