

# Project Status Update PRESENTATION



## Feasibility Study for Dry Creek Bypass Pipeline Project

**Sonoma County Water Agency**

**HDR**

In collaboration with

**Kennedy Jenks**

PROJECT  
LOCATION MAP

May 2010

# Agenda

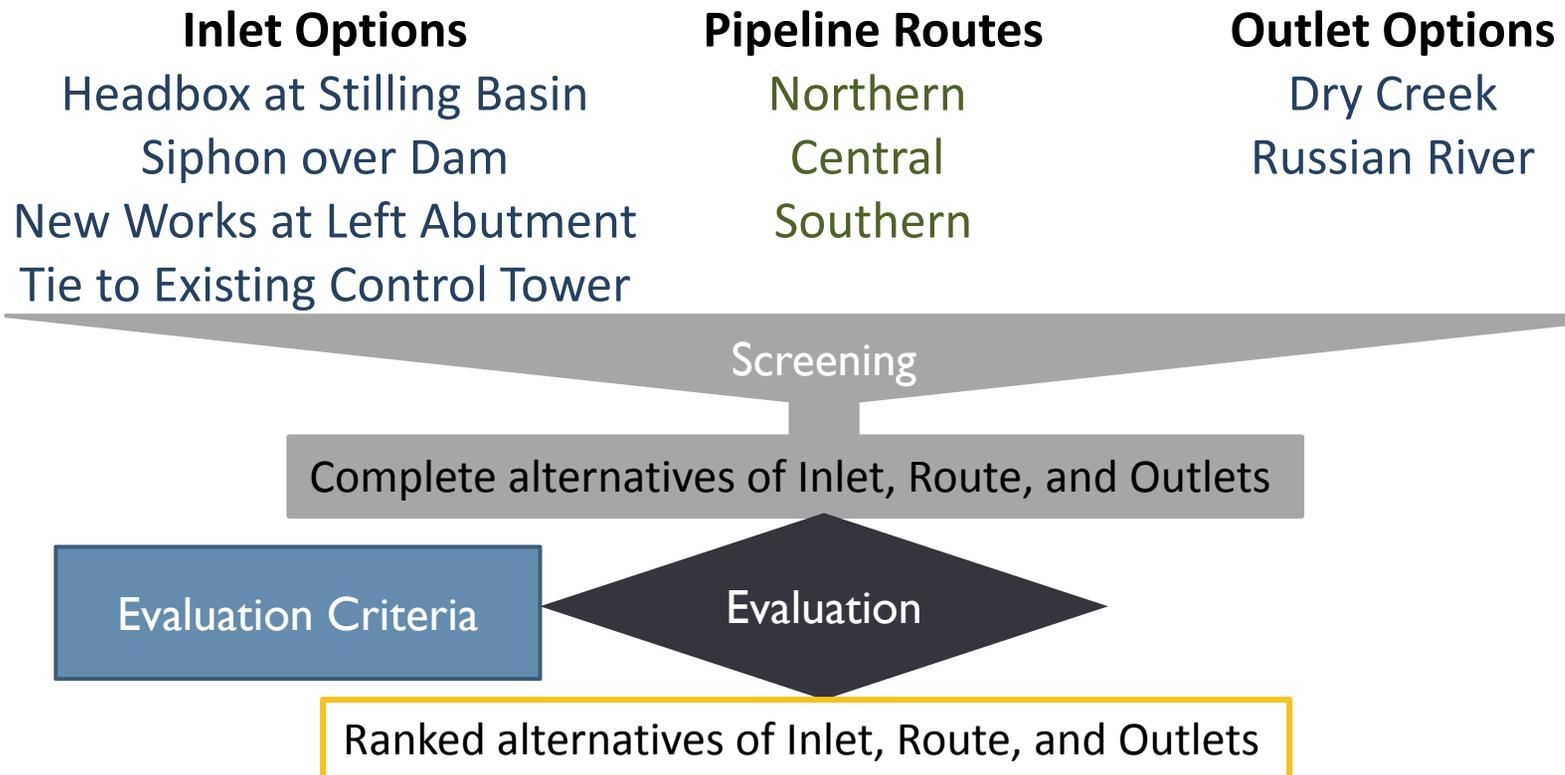
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- ▶ **Project Status Overview**
- ▶ **Results of Screening Analysis**
  - ▶ Inlet Options
  - ▶ Outlet Options
  - ▶ Route Options
- ▶ **Alternatives for Evaluation**
  - ▶ Evaluation Criteria

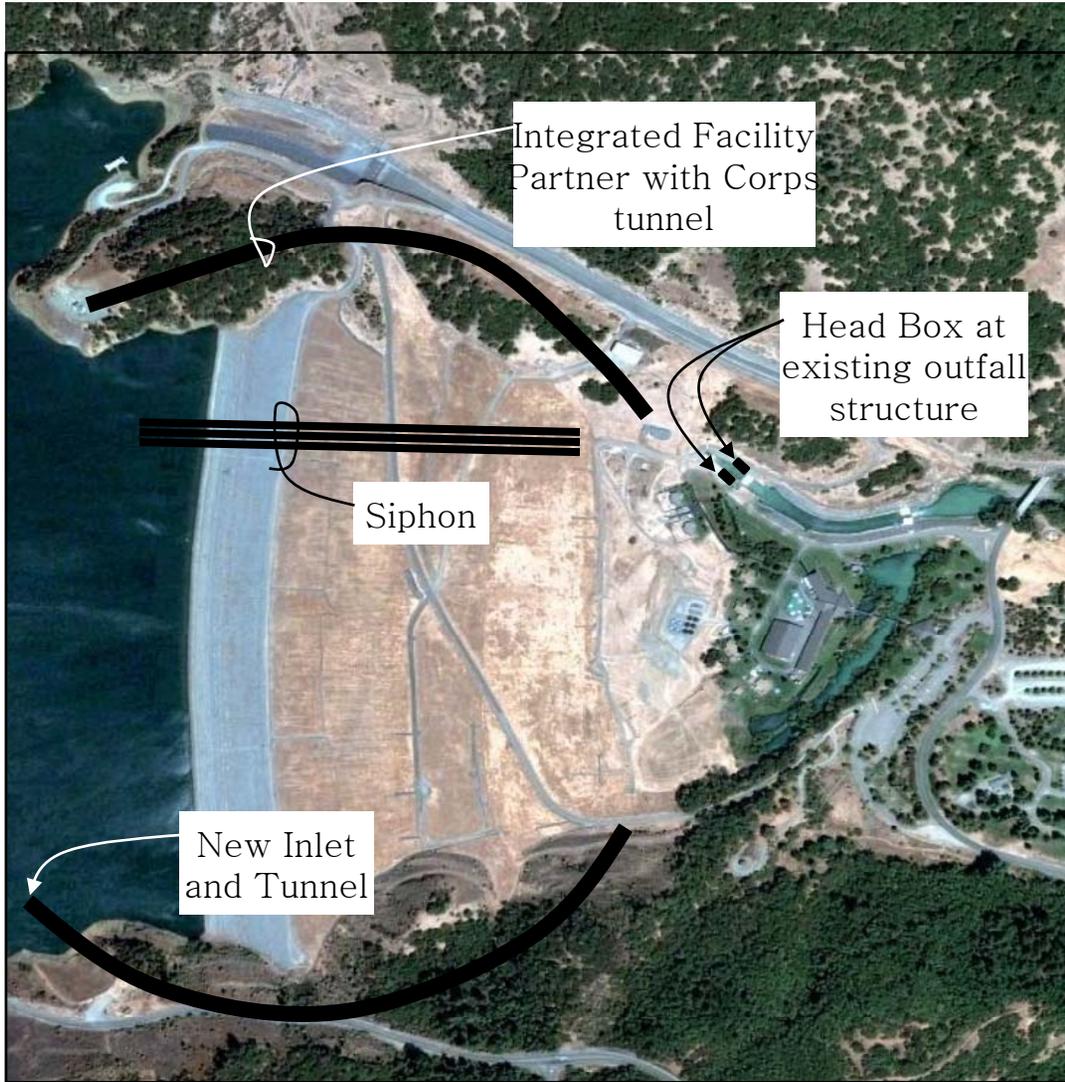


# Screening and Evaluation Process

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# Inlet Options



## Stand Alone Facilities

- New Outlet Works Facility Through Left Abutment
- New Head Bay Adjacent to Existing Stilling Basin
- Siphon System over Existing Dam

## Integrated Facilities

- New Tunnel/Pipeline Tapping into Existing Wet Well

# Inlet Screening

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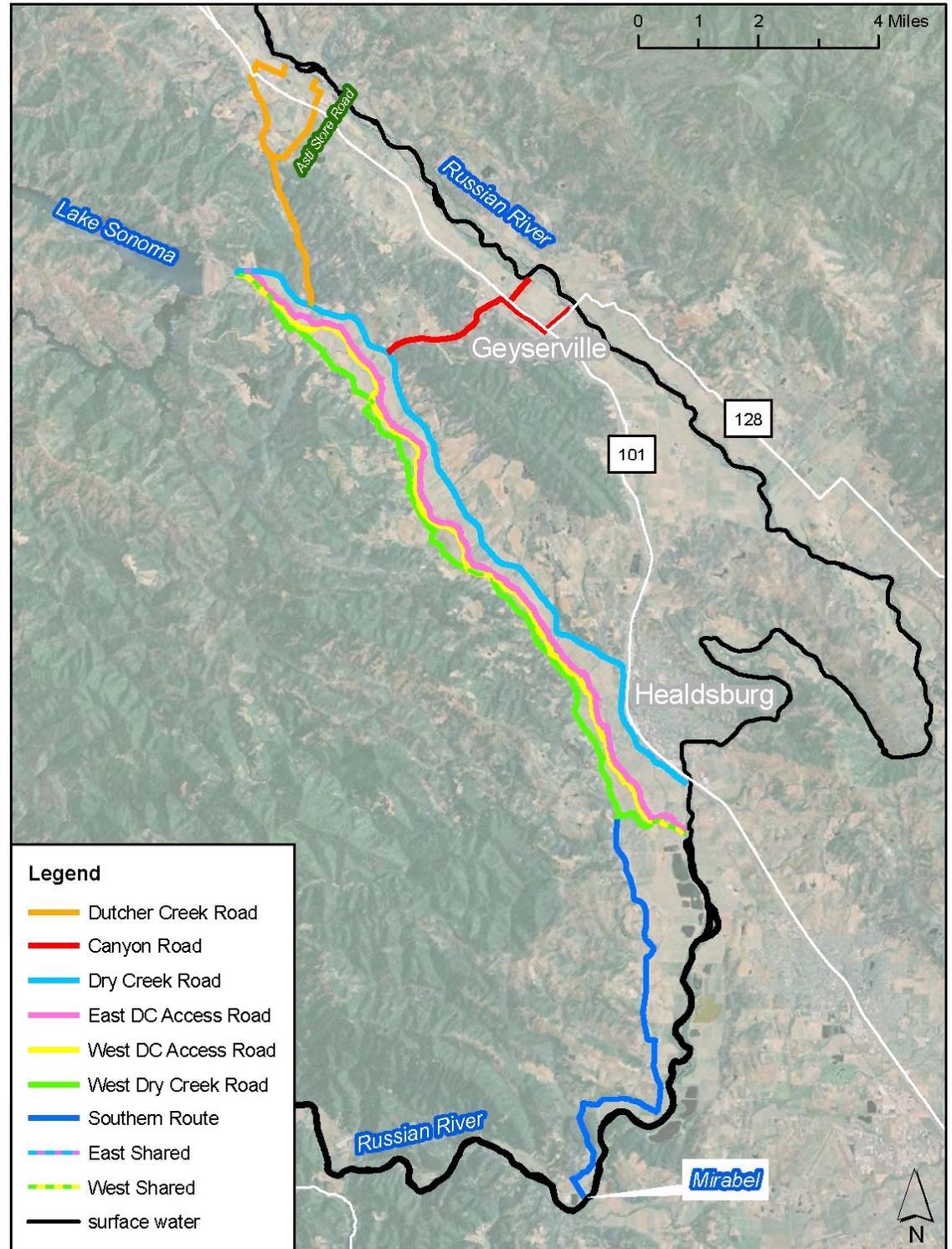
Option	Design & Construction	Facility Operability
Head Box Adjacent to Stilling basin	Satisfactory	Satisfactory
Siphon Over Existing Dam	Unacceptable	Unacceptable
New Tunnel Through Left Abutment	Conditionally Unacceptable	Satisfactory
Integrated Facility	Satisfactory	Satisfactory



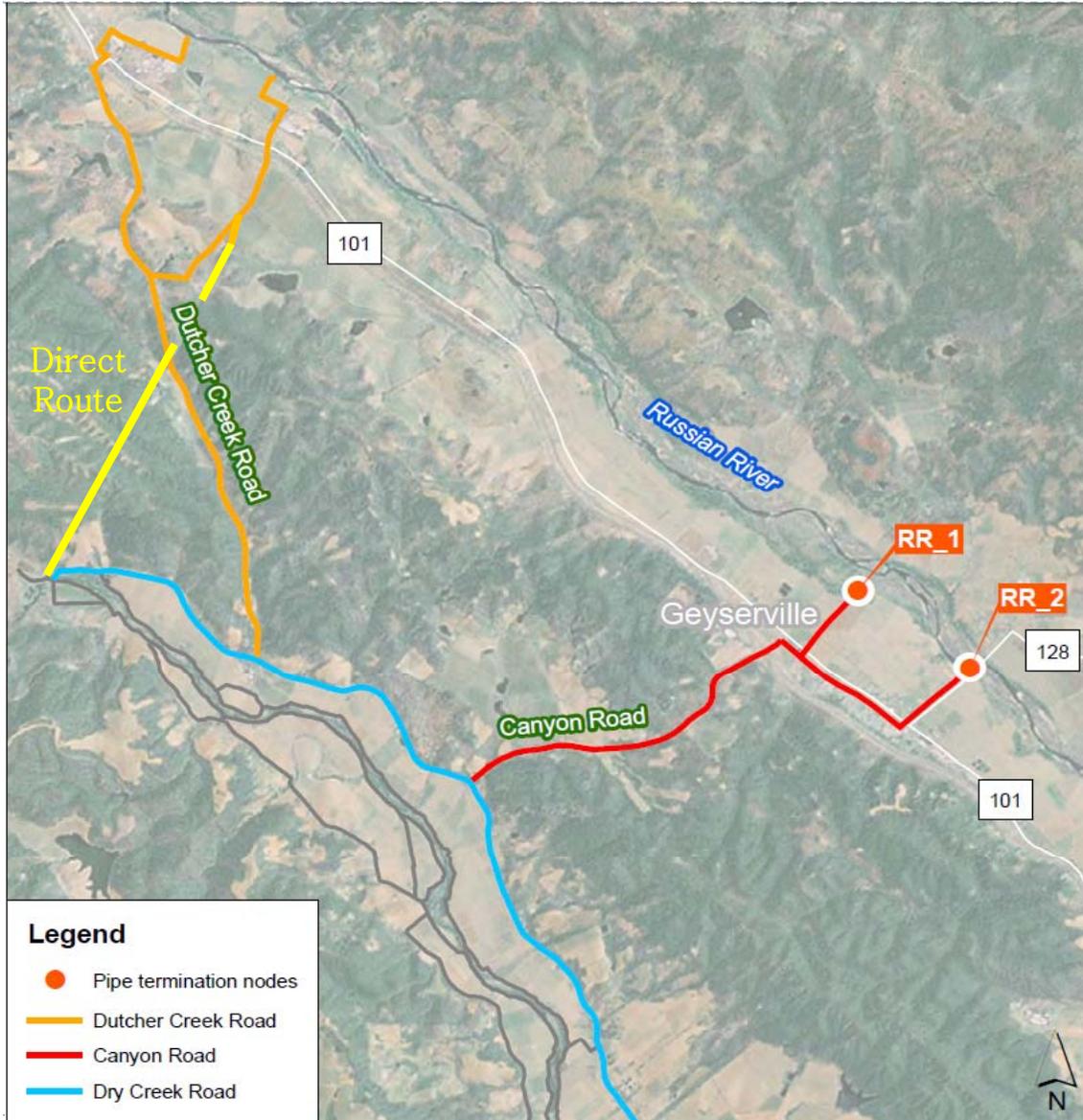
# Head Box Structure



# Route Options



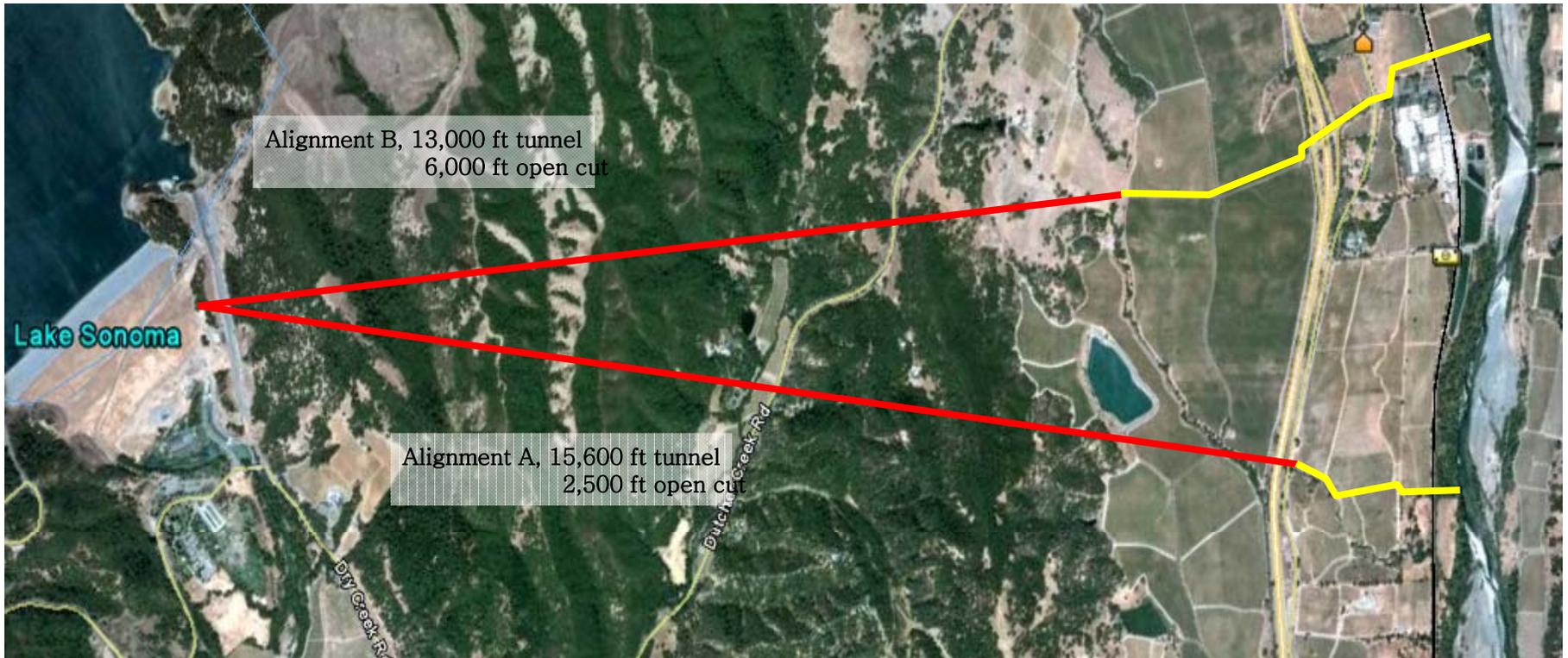
# Northern Alignments



# Direct Alignment to Russian River

## Shortest Pipeline

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Legend  
Tunnel  
Open Cut

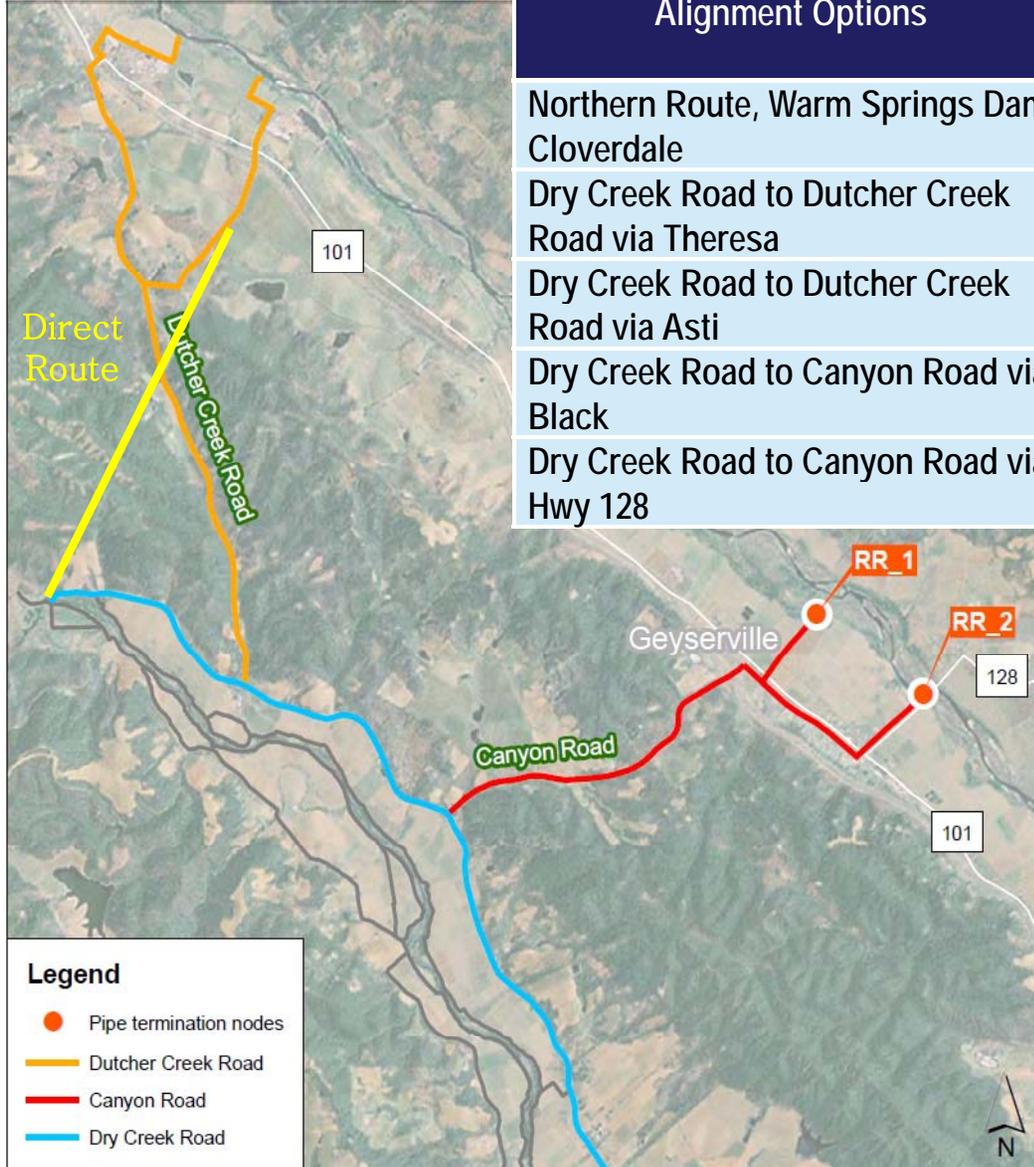


Not Recommended

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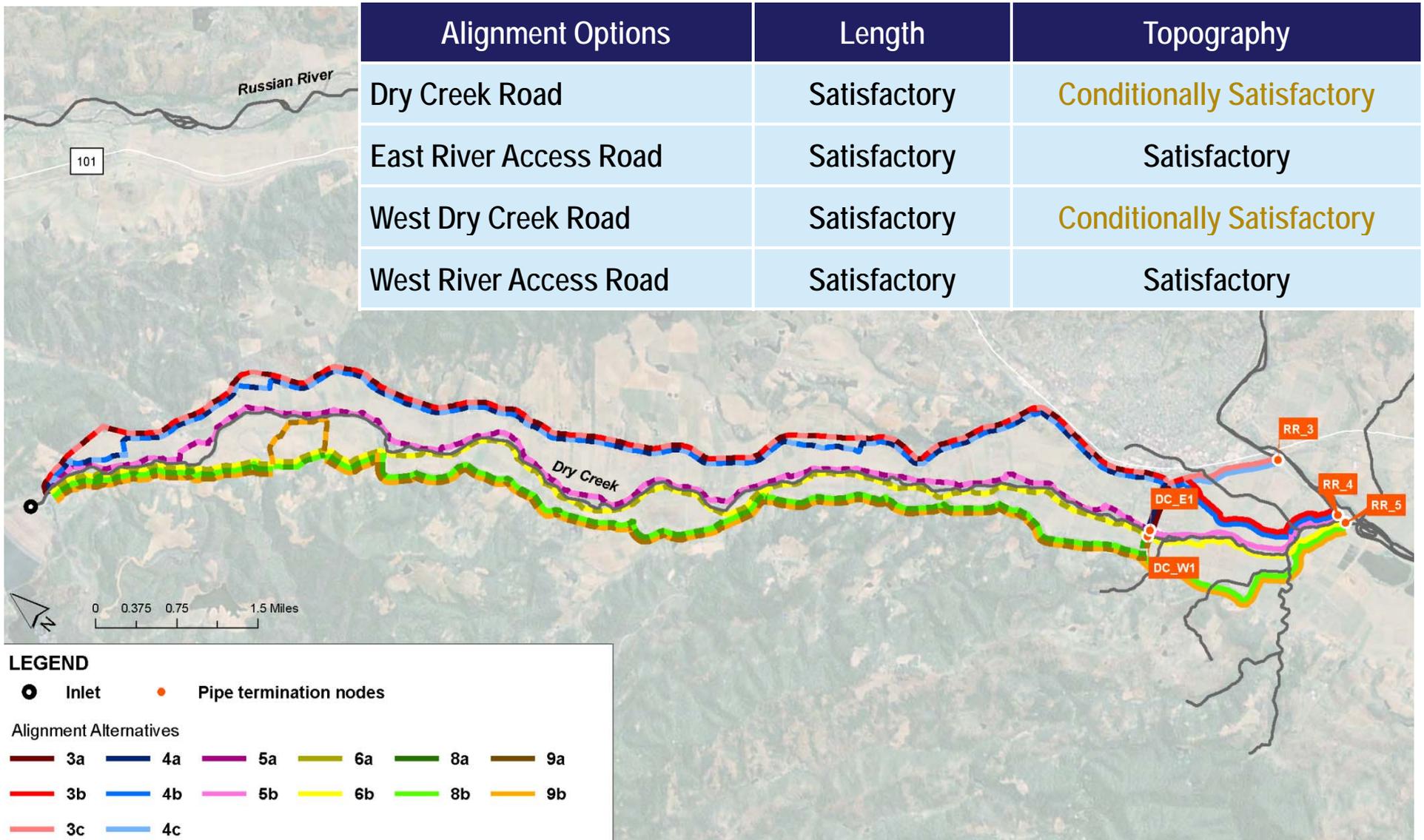
# Northern Route Screening



Alignment Options	Length	Topography	
		Head Box Inlet	Integrated Facility Inlet
Northern Route, Warm Springs Dam to the Russian River near Geyserville and Cloverdale			
Dry Creek Road to Dutcher Creek Road via Theresa	Unacceptable	Unacceptable	Unacceptable
Dry Creek Road to Dutcher Creek Road via Asti	Satisfactory	Unacceptable	Unacceptable
Dry Creek Road to Canyon Road via Black	Satisfactory	Unacceptable	Satisfactory
Dry Creek Road to Canyon Road via Hwy 128	Satisfactory	Unacceptable	Satisfactory

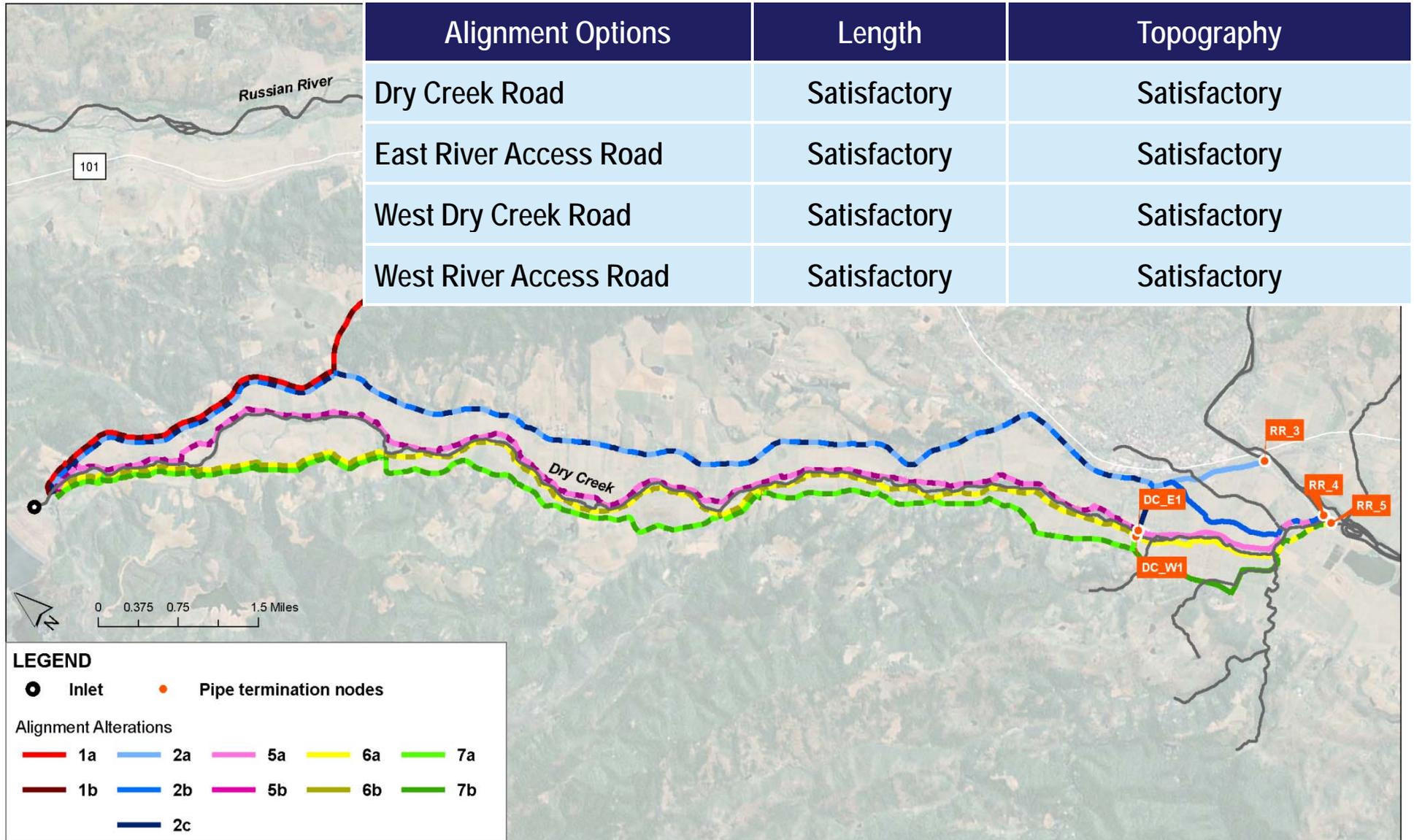
# Central Routes

## Alignments with Headbox Inlet



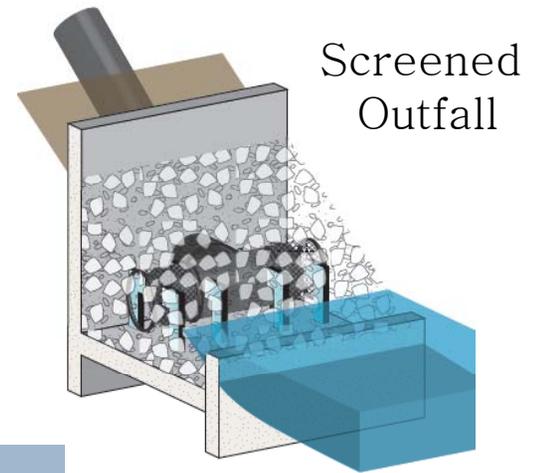
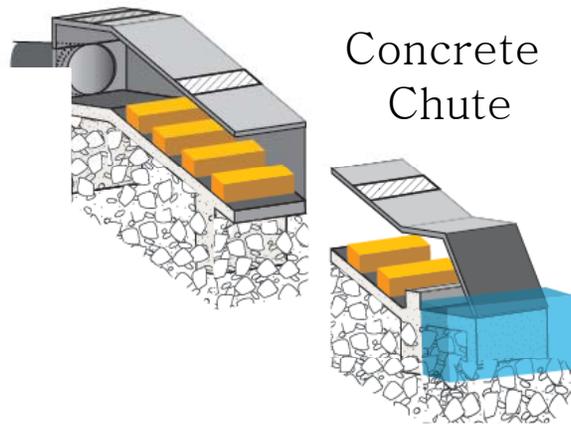
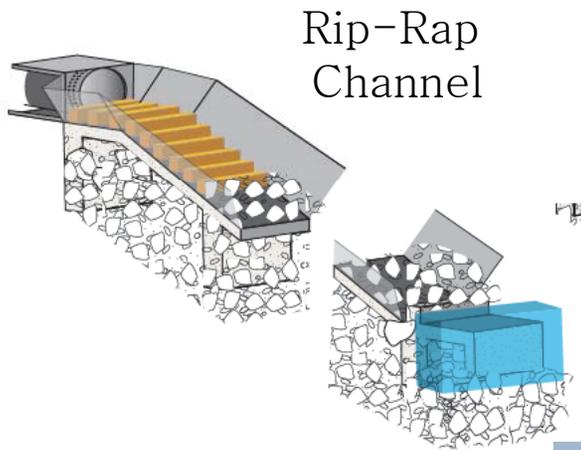
# Central Route

## Alignments with Integrated Facility

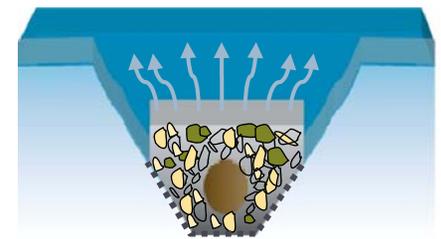
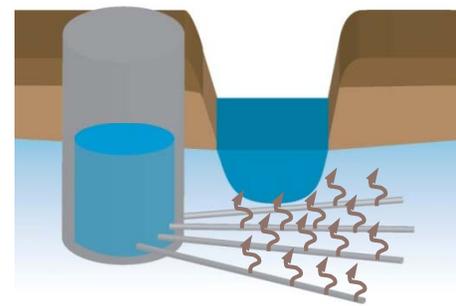
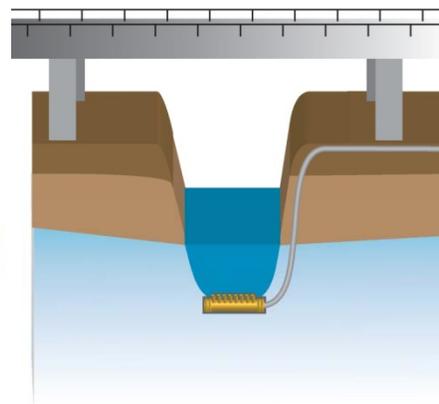
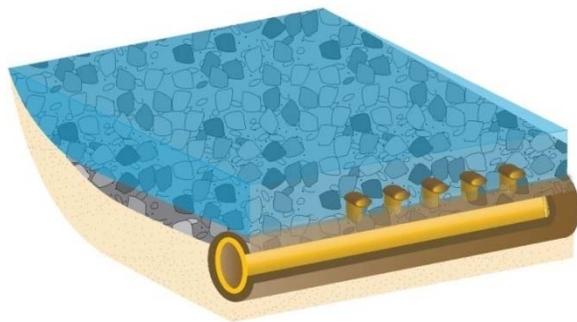


# Outlet Facility Types

## Riverbank Outfalls



## Diffusers



In-River Diffuser

Bridge Pier

Radial Injection Well

In-Bed or In-Bank

# Outfall Type Screening

Outlet Facility	Engineering Criteria	Fisheries Criteria
<b><i>Riverbank Outfalls</i></b>		
Riprap Channel Riverbank Outfall	Excellent	Satisfactory
Concrete Chute Riverbank Outfall	Excellent	Poor
Screened	Excellent	Excellent
<b><i>In-River Diffusers</i></b>		
Typical In-River Diffuser Installation	Satisfactory	Poor
Microtunnel In-River Diffuser Installation	Satisfactory	Satisfactory
Bridge Pier In-River Diffuser Installation	Satisfactory	Poor
<b><i>In-Bed Diffusers</i></b>		
Without Engineered Backfill	Poor	Excellent
With Engineered Backfill	Poor	Excellent
<b><i>In-Bank Diffusers</i></b>		
Typical In-Bank Diffusers Installation	Poor	Excellent

## Engineering Criteria:

- Relative Cost
- Ease of Operation
- Timing and Reliability
- Ease of Construction
- Capacity
- Water Quality Impact
- Visual Impact

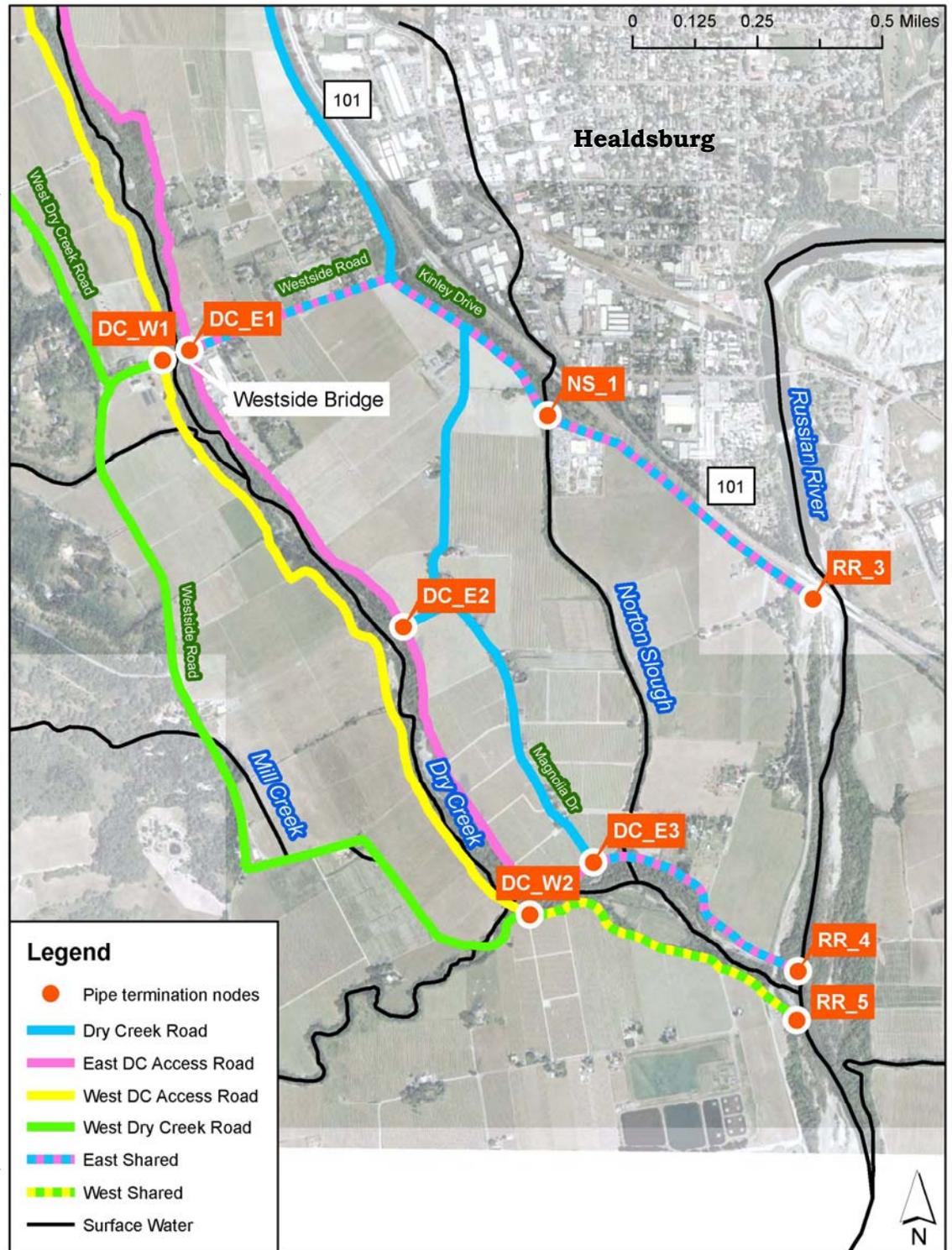
## Fish Criteria:

- Dissolved Oxygen
- Temperature
- Erosion
- Predator Habitat
- Bank Habitat
- Channel Dynamics
- Construction



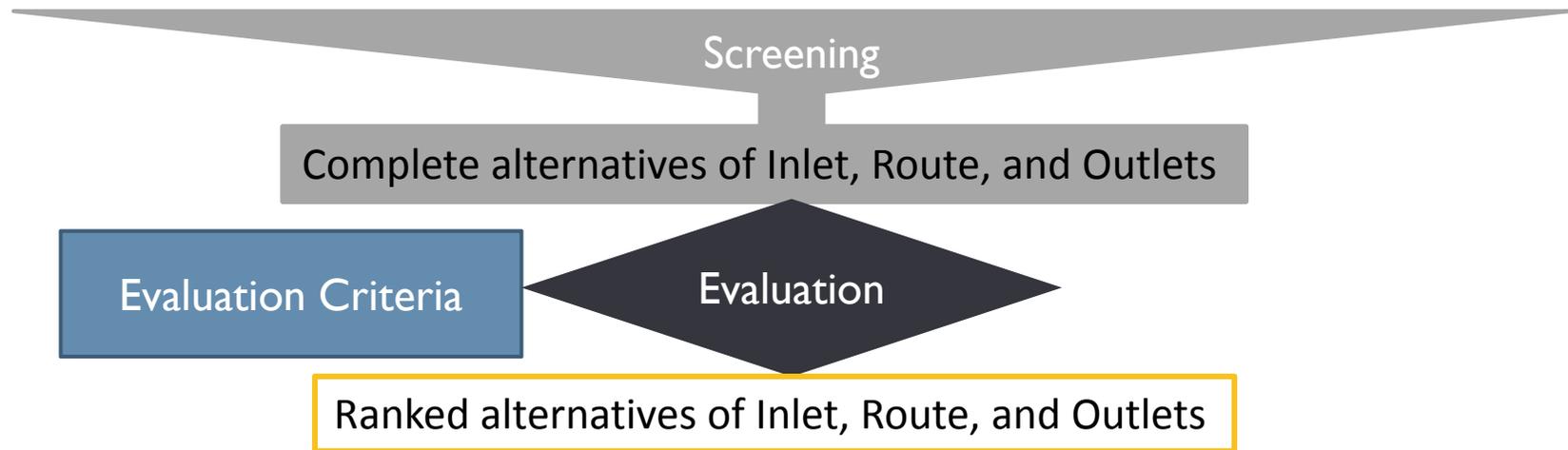
# Outlet Locations\*

\*2 other locations on Russian River near Geyserville



# Screening and Evaluation Process

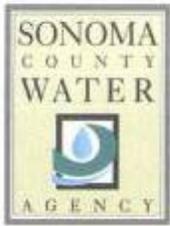
Inlet Options	Pipeline Routes	Outlet Options
Headbox at Stilling Basin	Northern	Dry Creek
Tie to Existing Control Structure	Central	Russian River



# Evaluation Criteria

Inlet Facility	Pipeline Route	Outlet Facility
<b>Engineering</b>		
Reliability	Reliability	Reliability
Constructability	Constructability	Constructability
Permitting	Permitting	Permitting
Operations	Operations	Operations
Right of Way Acquisition	Right of Way Acquisition	Right of Way Acquisition
Liquefaction and Hazard Potential	Liquefaction and Hazard Potential	Liquefaction and Hazard Potential
	Hydropower Potential	River Channel Stability
	Special Crossings	Accessibility
<b>Environmental</b>		
Wetlands	Wetlands	Wetlands
Habitats and Sensitive Species	Habitats and Sensitive Species	Habitats and Sensitive Species
Hazardous materials	Hazardous materials	Hazardous materials
Cultural Resources	Cultural Resources	Cultural Resources
	Impact to trees (roots)	Water Quality/Fisheries





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