



COUNTY OF EL DORADO COMMUNITY DEVELOPMENT AGENCY
TRANSPORTATION DIVISION

Mt. Murphy Road Bridge

At the South Fork of the American River



PROJECT UPDATE



Public Meeting – Project Update

September 5, 2018

Mt. Murphy Road Bridge – Project Update



AGENDA

→ Welcome / Introductions

WHERE WE WERE

→ Purpose and Need

→ Alternatives

WHERE WE ARE

→ Environmental Studies

→ Technical Studies

WHERE WE'RE GOING

→ Project "Look Ahead"

→ Open Discussion



Mt. Murphy Road Bridge – Project Update



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Mt. Murphy Road Bridge – Project Update



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Purpose & Need

- ↳ Current bridge built in 1915
- ↳ 10.5 ft wide one-lane truss structure
- ↳ 160 ft long span
- ↳ 360 Vehicles/Day (2015 Traffic Count)
- ↳ **Sufficiency Rating (SR) = 0.00 (2011), 13.5 (2014), 2.0 (2016), one of the Lowest Rating of ALL County Maintained Bridges)**
- ↳ Structurally Deficient (has Fracture Critical Members, FC inspections by Caltrans annually)



Courtesy of Vickie Longo



Purpose & Need

- ↳ **Maintenance & Repairs**
 - ↳ Emergency Repair (Sept. 2007)
 - ↳ Maintenance Considerations




Sept. 2007




July 2018

Mt. Murphy Road Bridge Project




Purpose & Need

- ↳ To provide safe and reliable passage to the traveling public across Mt. Murphy Bridge
- ↳ Structural Analysis and Rehabilitation Feasibility Study
 - ↳ Concluded infeasible
- ↳ Alternatives Report
- ↳ Alternatives Feasibility Study
- ↳ Preferred On-Alignment Alternative

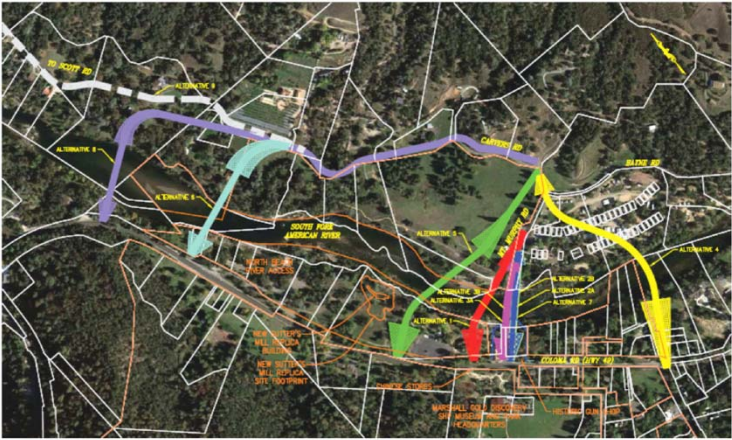


Mt. Murphy Road Bridge – Project Update



Overview of Alternatives

- ↳ 9 Alternatives Considered




LEGEND:

ALTERNATIVE 1	ALTERNATIVE 5
ALTERNATIVE 2A	ALTERNATIVE 6
ALTERNATIVE 2B	ALTERNATIVE 7
ALTERNATIVE 3A	ALTERNATIVE 8
ALTERNATIVE 3B	ALTERNATIVE 9
ALTERNATIVE 4	

INDICATES DISBURMENT FILL (TOP)
INDICATES SMP BOUNDARY

FOR REDUCED PLANS: [Scale Bar] ORIGINAL SCALE IS IN PARENTS

MT. MURPHY ROAD BRIDGE ALTERNATIVES EXHIBIT





Alternative Considerations

Overview



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Mt. Murphy Road Bridge – Project Update



Alternative(s) Study Updates

- Results from Environmental & Technical Studies have continued to confirm:
- Corridor 1 (on-alignment) is preferred environmentally** (i.e. least environmental impacts, *Alternatives Study, Feasibility Study, etc.*)

Mt. Murphy Road Bridge Project




“The Approach”

- Cultural & Historic Resources
 - Combined Built Environment and Archeology Historical Resources
- Technical Evaluations of Bridge
 - APS (Bridge Type(s))
 - APE
 - Other(s)
- Environmental Schedule:
 - Field Studies - 2017/ 2018
 - Report(s) - 2018


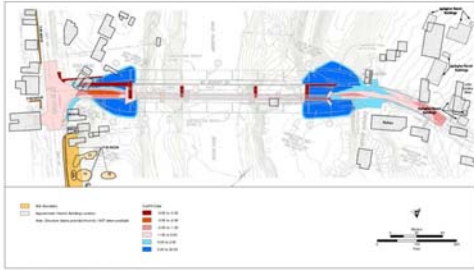
PRELIMINARY

Mt. Murphy Road Bridge Project




ENVIRONMENTAL STUDIES UPDATE

- Archeological Survey Report (ASR)
 - Includes both archeological investigation and Native American Consultation
 - Prior Disturbances (i.e. mining, etc.)
 - Minimize Proposed Impacts
 - No intact prehistoric features or deposits identified

PRELIMINARY


Mt. Murphy Road Bridge Project



ENVIRONMENTAL STUDIES UPDATE


- Historic Resource Evaluation Report (HRER)
 - Inventories and evaluates built environment of MGDSPH

Map No.	Property Name	Location	NHP Eligibility	CHRI
1	Coloma Historic District	Highway 49 at So. Fork American River	Listed (Criteria A, C)	Listed
2	Belknap Gun Shop	329 Highway 49	Contributor to NHP-Listed District	Listed
3	Gold Trail Grange Hall	319 Highway 49	Contributor to NHP-Listed District	Listed
4	Mt. Murphy Road Bridge	Mt. Murphy Road at So. Fork American River	Individually eligible for listing in the NHP (Criterion C); eligible as part of Coloma Historic District	Listed
5	Coloma Resort	6921 Mt. Murphy Rd	Not eligible	Not eligible
6	Five historic archaeological areas	Mt. Murphy Road, Highway 49	Assumed eligible	Assumed to be eligible



PRELIMINARY

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ENVIRONMENTAL STUDIES UPDATE


↳ **Visual Impact Assessment (VIA)**

- ↳ Identified Key Observation Points (KOP)
- ↳ Compared Existing vs. Proposed KOP
- ↳ **No reduction in visual quality**

EXISTING




VISUAL SIMULATION



PRELIMINARY CONCEPT


Mt. Murphy Road Bridge Project




ENVIRONMENTAL STUDIES UPDATE

↳ **Visual Impact Assessment (VIA)**

EXISTING




VISUAL SIMULATION



PRELIMINARY CONCEPT


Mt. Murphy Road Bridge Project

ENVIRONMENTAL STUDIES UPDATE




↳ **Visual Impact Assessment (VIA)**

EXISTING




VISUAL SIMULATION



PRELIMINARY CONCEPT

Mt. Murphy Road Bridge Project

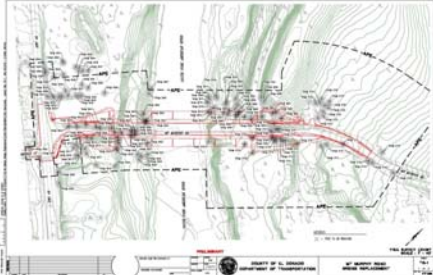
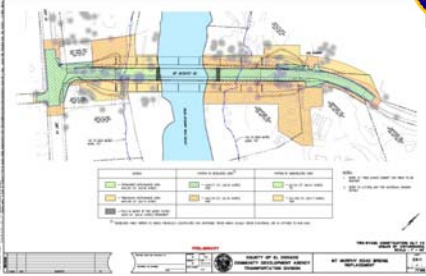
ENVIRONMENTAL STUDIES UPDATE



↳ **Environmental Resources**

- ↳ Natural Environmental Study (NES)
- ↳ Tree Removals
- ↳ Wetland Study

↳ **Minimal Disturbances (especially to Undeveloped Areas)**



PRELIMINARY

Mt. Murphy Road Bridge Project



TECHNICAL STUDIES UPDATE

Technical Studies

- ↳ Geotechnical Studies (including Vibration)
- ↳ Traffic Studies (incl. Pedestrians, etc.)
- ↳ Noise Studies
- ↳ Hydraulic Study
- ↳ Air Quality Studies
- ↳ Hazardous Waste
- ↳ Other(s)



PRELIMINARY CONCEPT

Mt. Murphy Road Bridge Project



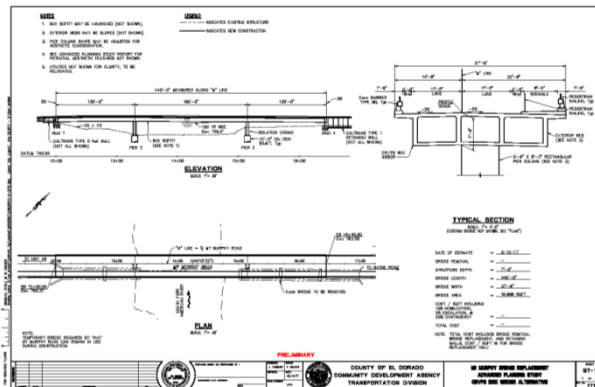
TECHNICAL STUDIES UPDATE

Advanced Planning Studies (APS)


Bridge Type Analysis



PRELIMINARY



Mt. Murphy Road Bridge Project



TECHNICAL STUDIES UPDATE

Advanced Planning Studies (APS)


- Structure Types: Box (CIP), Girders, Steel Truss
- 1-Stage (Temp Bridge), 2-Stage Construction
- Considerations: Aesthetics, Schedule, Impacts, Costs, etc.

Table 1: Comparison Matrix for Structure Types Considered

Consideration	Structure Type										
	OP Box	OP Segment	Box	Pre-Cast Segment	Steel Box	Precast Concrete Girder	Steel Girder	Steel Truss	Steel Truss	Steel Truss Arch	
Construction Stage	Single Stage - Requires low water line relocations - Requires low water line relocations	Single Stage - Requires low water line relocations - Requires low water line relocations	Single Stage - Requires low water line relocations - Requires low water line relocations	Single Stage - Requires low water line relocations - Requires low water line relocations	Single Stage - Requires low water line relocations - Requires low water line relocations	Single Stage - Requires low water line relocations - Requires low water line relocations	Single Stage - Requires low water line relocations - Requires low water line relocations	Single Stage - Requires low water line relocations - Requires low water line relocations	Single Stage - Requires low water line relocations - Requires low water line relocations	Single Stage - Requires low water line relocations - Requires low water line relocations	
Construction Duration	Single Stage - One season possible (see note 1) - One season possible (see note 1)	Single Stage - One season possible (see note 1) - One season possible (see note 1)	Single Stage - One season possible (see note 1) - One season possible (see note 1)	Single Stage - One season possible (see note 1) - One season possible (see note 1)	Single Stage - One season possible (see note 1) - One season possible (see note 1)	Single Stage - One season possible (see note 1) - One season possible (see note 1)	Single Stage - One season possible (see note 1) - One season possible (see note 1)	Single Stage - One season possible (see note 1) - One season possible (see note 1)	Single Stage - One season possible (see note 1) - One season possible (see note 1)	Single Stage - One season possible (see note 1) - One season possible (see note 1)	
Availability	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	
Construction Truss	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation	Truss height limited - One season to erect side of pier - Construction equip on existing bridge - 20' or less truss height required - No construction equip on existing bridge with installation
Aesthetics	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	
Maintenance	Low Maintenance - Minimal inspection - Occasional joint replacement - Check bridge deck	Low Maintenance - Minimal inspection - Occasional joint replacement - Check bridge deck	Low Maintenance - Minimal inspection - Occasional joint replacement - Check bridge deck	Low Maintenance - Minimal inspection - Occasional joint replacement - Check bridge deck	Low Maintenance - Minimal inspection - Occasional joint replacement - Check bridge deck	Low Maintenance - Minimal inspection - Occasional joint replacement - Check bridge deck	Low Maintenance - Minimal inspection - Occasional joint replacement - Check bridge deck	Low Maintenance - Minimal inspection - Occasional joint replacement - Check bridge deck	Low Maintenance - Minimal inspection - Occasional joint replacement - Check bridge deck	Low Maintenance - Minimal inspection - Occasional joint replacement - Check bridge deck	
Utility Reliability	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	
Spill Containment	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	

PRELIMINARY



Mt. Murphy Road Bridge Project





TECHNICAL STUDIES UPDATE

Advanced Planning Studies (APS)

- Cast-In-Place (2-stage)
- Truss (1-stage)
- Temp Bridge

PRELIMINARY CONCEPT

Mt. Murphy Road Bridge Project



TECHNICAL STUDIES UPDATE

↳ **Advanced Planning Study (Bridge Type)**

↳ **FINDINGS:**

- ↳ Cast-In-Place (2-stage) <- Preferred Environmentally
 - ↳ Least Impacts
 - ↳ Maintains Access
 - ↳ Best Meets Purpose and Need
 - ↳ Flexibility

- ↳ Truss (1-stage)
 - ↳ Greater Impacts
 - ↳ Environment (i.e. access, viewshed, etc.)
 - ↳ Higher Costs (and risks)



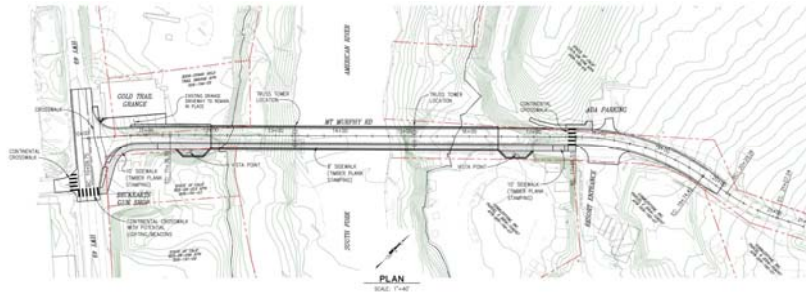
PRELIMINARY CONCEPT

Mt. Murphy Road Bridge – Project Update



TECHNICAL STUDIES UPDATE

↳ **Alternative 1 (Corridor 1) – “On Alignment”**



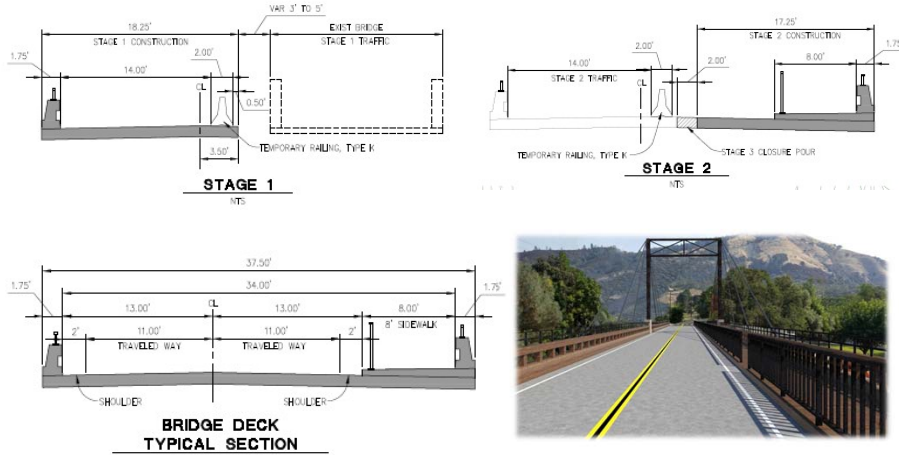
PRELIMINARY CONCEPT

Mt. Murphy Road Bridge – Project Update



TECHNICAL STUDIES UPDATE

↳ **Alternative 1 (Corridor 1) – “On Alignment”**



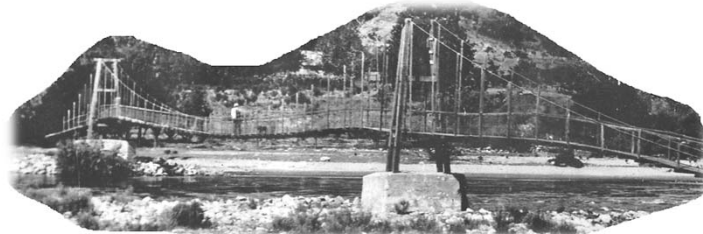
PRELIMINARY CONCEPT

Mt. Murphy Road Bridge – Project Update



TECHNICAL STUDIES UPDATE



- ↳ Integrating the Past
- ↳ Continuity
- ↳ Minimize Impacts



PRELIMINARY CONCEPT

Mt. Murphy Road Bridge – Project Update

TECHNICAL STUDIES UPDATE





PRELIMINARY CONCEPT

Mt. Murphy Road Bridge – Project Update

TECHNICAL STUDIES UPDATE

↳ **“Truss Tower Portals” with Cables**



PRELIMINARY CONCEPT

Mt. Murphy Road Bridge Project



TECHNICAL STUDIES UPDATE


↳ Pier Details



PRELIMINARY CONCEPT



This slide shows two images related to bridge pier details. On the left is a photograph of an existing bridge pier, which is a concrete structure supporting a truss bridge. On the right is a 3D architectural rendering of a similar pier, but with a different truss structure above it. The rendering shows the pier in a river setting with water and trees in the background.

Mt. Murphy Road Bridge Project



TECHNICAL STUDIES UPDATE

↳ Girder Details





PRELIMINARY CONCEPT

This slide shows two images related to girder details. The top image is a photograph of a concrete girder bridge with a single pier, set in a wooded area. The bottom image is a 3D architectural rendering of a similar girder bridge, but with a different pier design and a more modern aesthetic. The rendering shows the bridge in a river setting with water and trees in the background.


Mt. Murphy Road Bridge – Project Update

TECHNICAL STUDIES UPDATE



PRELIMINARY CONCEPT

Mt. Murphy Road Bridge – Project Update



AGENDA

- Welcome / Introductions

WHERE WE'VE BEEN



- Basis of Project Development
- Overview of Alternatives

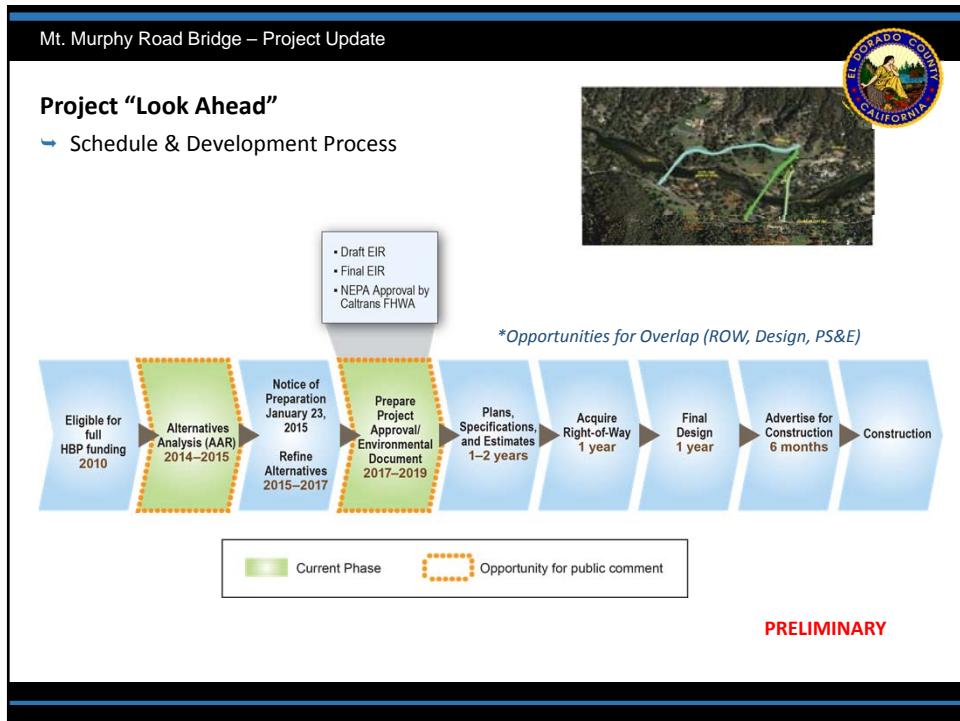
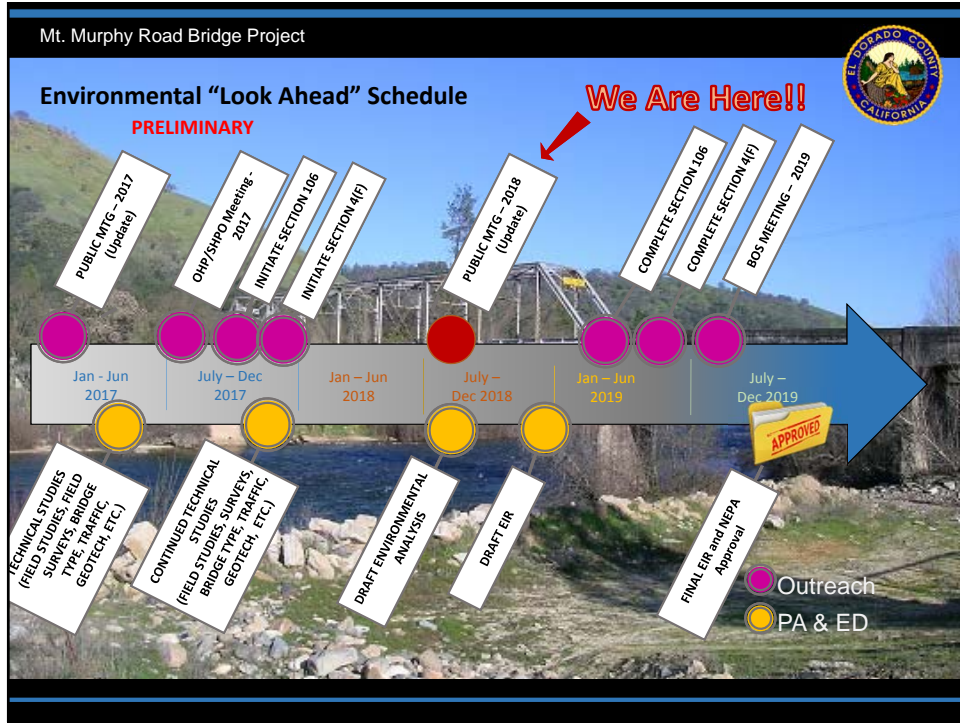
WHERE WE ARE

- Alternative Considerations

WHERE WE'RE GOING






- Environmental "Look Ahead"
- Questions





Mt. Murphy Road Bridge – Project Update

CONCLUDING REMARKS


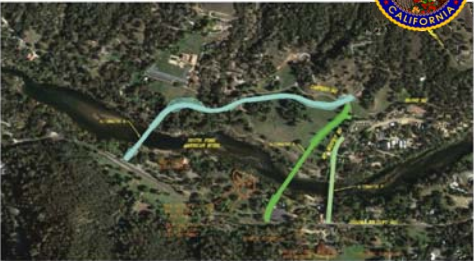



PRELIMINARY CONCEPT

Mt. Murphy Road Bridge – Project Update

OPEN DISCUSSION

Questions



<http://www.edcgov.us/MtMurphyBridge/>

