

CWSP SYSTEM HARDENING FIELD SCOPING DOCUMENT

PM: ██████████	Project Name: SH - BUCKS CREEK 1101 CB	
Notification: ██████████	Region: Northern	City: Rock Creek
Project Manager: ██████████	Division: North Valley	County: Plumas

Proposed Project Scope¹:

	Desktop Meeting Results			ADE Fielding Results		
	Miles	Unit Cost (\$M)	Total Cost (\$M)	Miles	Unit Cost (\$M)	Total Cost (\$M)
Harden in Place (OH only)	0.01	██████████	██████████	0.01	██████████	██████████
Convert OH to UG	4.03	██████████	██████████	4.03	██████████	██████████
Relocation (OH to OH location)	0.00	██████████	██████████	0.00	██████████	██████████
Reconfigure	Remove	0.00	██████████	0.00	██████████	██████████
	Add	0.00	██████████	0.00	██████████	██████████
Totals	4.04	██████████	██████████	4.04	██████████	██████████

1. This table is to be filled out by Project Manager detailing the change in units and costs before and after the Field Scoping Process is completed.

A) Field Scoping Team - Desktop Meeting Notes

Internal

The following are required outputs to be discussed in the meeting:

- Main Route(s) of Egress
- Land and Environmental Risk(s)
- Vegetation density and risk assessment
- Construction review (area(s) of concern)

Additional Option(s) or Comment(s):

BIO CONSTRAINTS

1. There is California red-legged frog and Foothill yellow-legged frog MRHCP modeled habitat within the project area, no constraints as long as species-specific AMMs are implemented. Could require work during the dry season (May 15 - Oct 15) and/or biomonitoring.

2. There are two spotted owl activity centers within the vicinity. They are outside of visual/auditory harassment zone. Potential Heli restrictions Feb 2- July 15

3. There are multiple water crossings. Potential Permitting*

CULTURAL CONSTRAINTS

Entire Project:

Project activities within the Caltrans ROW will require a Caltrans Encroachment Permit. Upon review by Caltrans, additional cultural resource protection measures may be required.

Native American consultation will be required and possible tribal monitoring/archaeological monitoring. Added cost and 30 Days to ERTC timeline.

Alternative 2:

The UG portion passes through an ESA and would require monitoring, testing, and/or mitigation. It is strongly recommended that this alternative be avoided.

EFS CONSTRAINTS

No Constraints

PSS REVIEW

Location, Fuel Types and Population Density:

Location, Fuel Types, and Population Density

- The Bucks Creek 1101 project is in Plumas County. The project originates near the community of Storrie and continues westerly along Highway 70 and the North Fork of the Feather River down to the Cresta Powerhouse.
- Fuel types are consistent with moderate to heavy brush and mixed conifer, however the general area has been heavily fire scared and the fire scar areas are intermixed with a significant amount of standing and down dead fuel.
- The community of Storrie is at the eastern end of the project has only a few residents. The Feather River Canyon area is sparsely populated. Larger communities exist much farther to the east in Quincy, Plumas County and west in Concow, Butte County.

Fire History:

Internal

- This area has significant fire history directly impacting the project area. A 20 year look back at area fire history includes, the 56,000 acre Storrie fire (2000), 8,000 acre Poe fire (2001), 1700 acre Highway 70 fire (2001), 50,000 acre Butte Lightning Complex (2008), Canyon Complex (2008), 30,000 acre Chips Fire (2012), 154,000 acre Camp fire (2018) and the 320,000 acre North Complex 2020 all burned within the Feather River Canyon.
- Not all the fires were directly in the project footprint area; however, they show that this area is prone to significant, large fire history due in large part to steep, rugged, inaccessible terrain and periods of strong wind.
- The Feather River drainage is prone to daily diurnal winds and strong north/Diablo wind events at various times of the year, but most notably during the fall period when fuels are at their driest. These conditions have resulted in the area being affected routinely by PSPS events and has also resulted in many large, devastating fires originating in the Feather River drainage.

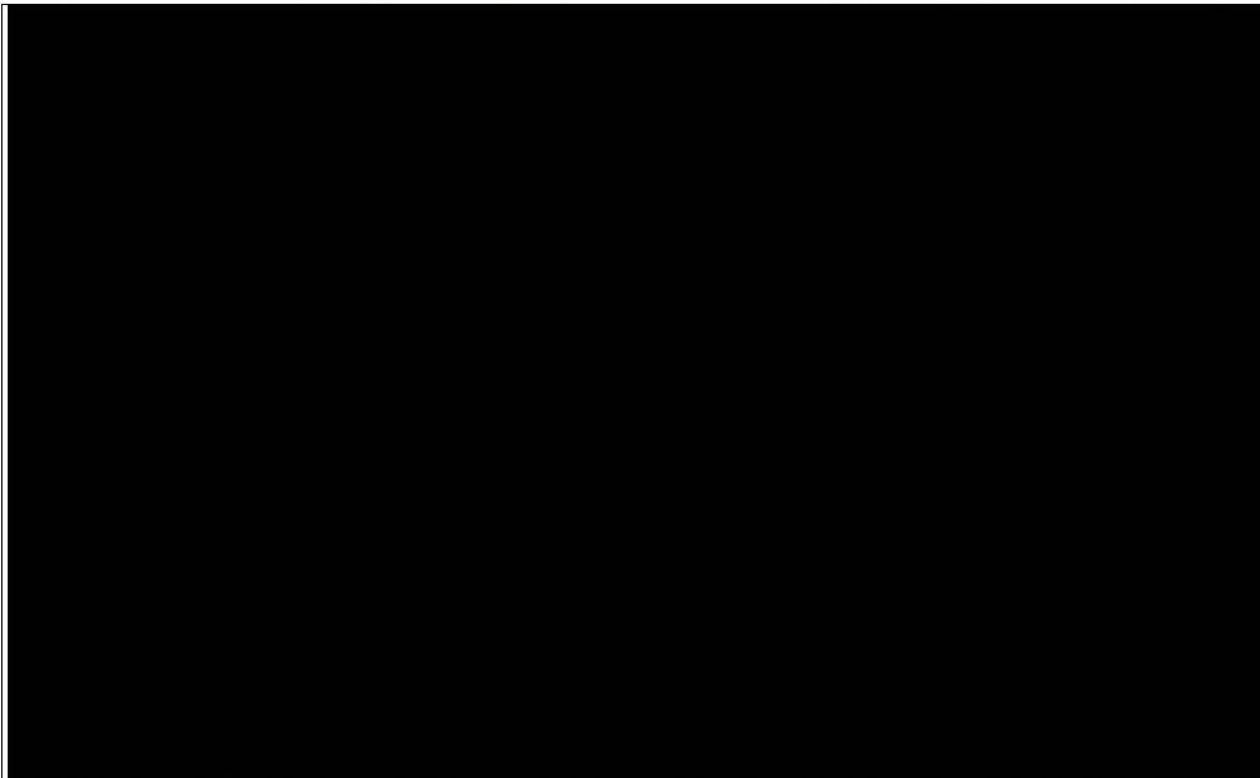
Routes of travel for first responders and evacuees if a fire happens:

- This project crosses Highway 70 near the Bucks Creek Powerhouse and then parallels the highway for a roughly 2-mile stretch, and then runs along Storrie Rd. paralleling the Feather River on the canyon opposite side of Highway 70. Highway 70 is a main thoroughfare for ingress/egress for emergency responders and to the few residents who live in that direct area; it is also a major route for commerce both by vehicle and railroad.
- If Highway 70 was closed in this area it would make ingress and egress difficult if not impossible for responders and citizens; and, economically be a substantial hit to commerce. There are no alternative routes within the Feather River Canyon.

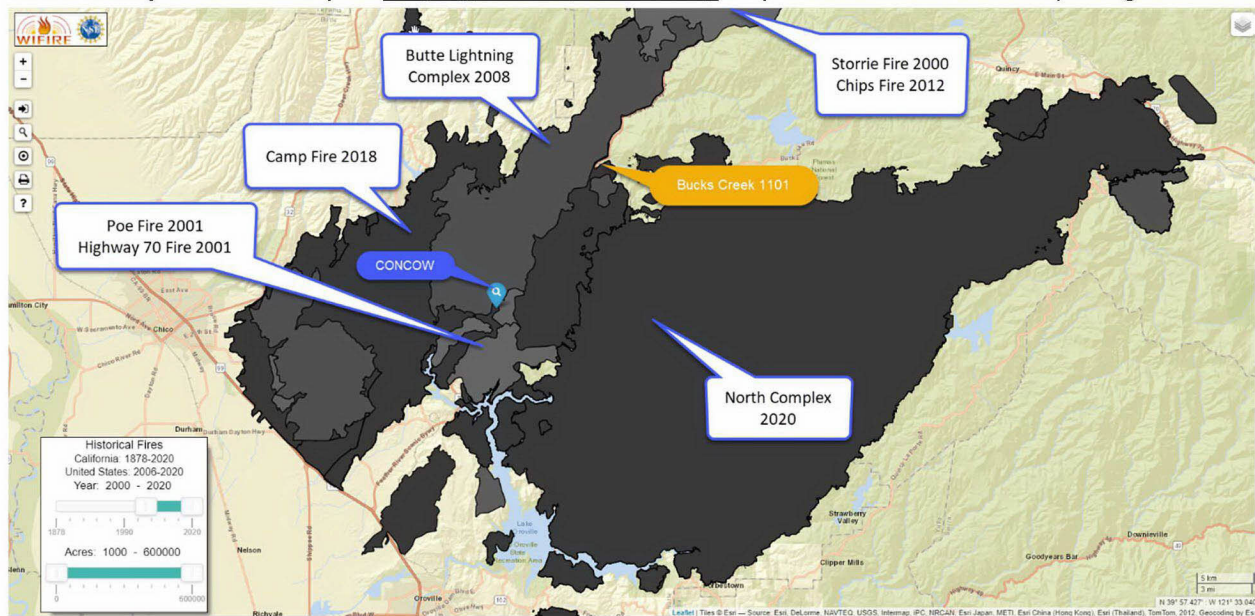
Attachments/Images:

- A) **Project Area** – Google Earth Image with Circuit and HFTD Tier 2 &3 Overlay

Internal



B) Fire History – WIFire Map at <https://firemap.sdsc.edu/> to produce the fire history image.



ESTIMATING

Will need base map if OH or UG within Caltrans ROW

If guard rail is installed, can we install within Caltrans ROW? Any exceptions?

***Review 4 Tx to determine if they can be relocated North of the bridge

Desk-Top Review Results

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Purpose: This checklist is to be used to methodically analyze the project to determine final scope to eliminate/mitigate the fire risk to the maximum extent.

Overhead Line Elimination:

Yes No **DER alternatives to consider** (these location(s) to be sent to [REDACTED])

Yes No **Idle facilities to remove** (These location(s) to be sent to [REDACTED])

Yes No **Redundant ties to remove** (These location(s) should be run through Distribution Reliability Planning)

SAP Equip. ID (Start)	SAP Equip. ID (Finish)	OH Elimination Type (DER, Idle, Tie Rem.)	Additional Notes:
[REDACTED]	[REDACTED]	DER	Relocating line to opposite side of river. [REDACTED] – Possibly relocate to closer to our proposed lines. Check with [REDACTED] for [REDACTED] Contact
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		

Overhead to Underground Conversion:

Yes No **Lines to be considered for UG** (These location(s) to be sent to [REDACTED])

SAP Equip. ID (Start)	SAP Equip. ID (Finish)	Trench, Bore, or Plow-in	Additional Notes:
[REDACTED]	[REDACTED]	Trench / Bore	1.82 Miles - Riser up .12 miles south of SAP ID [REDACTED] before the bridge.
[REDACTED]	[REDACTED]	Trench / Bore	1.72 Miles – Determine if attach to bridge. Determine if 4 Tx are idle or in use. Cultural mitigation will be required.
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		
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1*****	1*****		
1*****	1*****		

There are several factors that should be considered in identifying these potential overhead to underground conversions:

Is there a viable route available?

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Is there a dedicated street/easement available?

What is the feasibility of new land rights? What is the soil condition?

Are there a significant number of service drops, tap-lines, or other overhead equipment?

Relocation of Facilities:

Yes No **Lines to be considered for relocation** (These location(s) to be sent to [REDACTED])

SAP Equip. ID (Start)	SAP Equip. ID (Finish)	OH, Trench, Bore, or Plow-in	Additional Notes:
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		
1*****	1*****		

There are numerous other strategies that may be employed or prepared for in scoping a CWSP project. The following examples should be considered, and teams should be invited to participate:

- Rapid Earth Fault Current-Limiter (REFCL) – This system can detect phase-to-earth faults. They then cancel the voltage on the fault within milliseconds of detecting it and limit the voltage of the fault to below the point where it can start a fire. This is only applicable on 3 wire systems and it requires significant modifications to the circuits.
 - Yes No **Circuit being considered for REFCL?** (Please include [REDACTED])
 - If Yes, then System Automation will need to provide Planning support in adjusting necessary scope to support a future REFCL protection scheme.
- Resiliency Zones (RZ)- These are areas deemed critical in nature to support life and health in an area during significant outages and PSPS events. If in Tier 2/3 areas, underground is required. This needs to be considered when designing these zones.
 - Yes No **Circuit being considered for an RZ?** (Please include [REDACTED])
 - If Yes, additional UG and SCADA equipment may be required to support. Microgrid Strategy Implementation will need to provide Planning support in adjusting necessary scope to allow for future RZ's in the area.

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Post Field Check Results

The following section will allow for brief notes from the field inspection and/or engineering analysis conducted to determine final scope recommendations.

Overhead Line Elimination:

Copy each location from the Desk-top review notes from the Overhead line Elimination recommendations and provide an affirmative response to each proposed location. The notes should be clear as to the post-field check recommended actions so that Distribution Planning can update the scoping documents.

SAP Equip. ID (Start)	SAP Equip. ID (Finish)	OH Elimination Type (DER, Idle, Tie Rem.)	OK to Proceed (Y,N, N/A)	Field or Engineering Notes*
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	

*Please begin notes with LAN-ID of Estimator or Engineer who completed in analysis

Overhead to Underground Conversion:

Copy each location from the Desk-top review notes from the Overhead to Underground Conversion recommendations and provide an affirmative response to each proposed location. The notes should be clear as to the post-field check recommended actions so that Distribution Planning can update the scoping documents. Also, clear note the recommended Underground construction method Trench, Bore, or Plow-in.

SAP Equip. ID (Start)	SAP Equip. ID (Finish)	Trench, Bore, or Plow-in	OK to Proceed (Y,N, N/A)	Field Notes*
████████	████████	Trench / Bore	YES	SECTION 3: TRENCH ALONG HWY 70, 3' INSIDE FOGLINE
████████	████████	Trench / Bore	YES	SECTION 2: TRENCH ALONG HWY 70, 3' INSIDE FOGLINE
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	
1*****	1*****		N/A	

*Please begin notes with LAN-ID of Estimator or Engineer who completed in analysis

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Relocation of Facilities:

Copy each location from the Desk-top review notes from the Relocation of Facilities recommendations and provide an affirmative response to each proposed location. The notes should be clear as to the post-field check recommended actions so that Distribution Planning can update the scoping documents.

SAP Equip. ID (Start)	SAP Equip. ID (Finish)	OH, Trench, Bore, Plow-in	OK to Proceed (Y,N, N/A)	Field or Engineering Notes*
				██████

*Please begin notes with LAN-ID of Estimator or Engineer who completed in analysis

Additional Notes and attachment descriptions:

██████

OVERALL, THE PROJECT AS SCOPED FROM DESKTOP IS GOOD. PROBABLY WILL NEED TO LEAVE THE FIRST 5 SPANS UP FROM THE SUBSTATION AS IT CROSSES THE RIVER UNTIL IT GETS TO THE ROAD LEVEL DUE TO ELEVATIONS, SPACE, AND INADEQUATE ANCHORING. THESE WILL NEED TO BE HARDENED WITH COVERED CONDUCTOR AND ALL POLES REPLACED DUE TO AGE. DIFFICULT TERRAIN, ROCK, HAND DIG, FLY IN STEEL OR COMPOSITE POLES.

THE TRENCH FOR THE MOST PART WILL BE A SINGLE LIFT WITH A LOADED DUCT AND A SPARE; BOX PLACEMENT SHOULD RANGE FROM 600' TO 900'; THERE WILL BE MINIMAL PM EQUIPMENT AND WHERE IT IS NEEDED, SHOULD BE ABLE TO PLACE IN A SAFE LOCATION.

THE ROAD IS TYPICALLY MODERATELY TRAVELLED AND HAS BEEN UNDER CONTINUOUS IMPROVEMENTS SINCE BEFORE THE CAMP FIRE. TRAFFIC CONTROL COSTS WILL BE SIGNIFICANT. A SIMILAR PROJECT IS IN CONSTRUCTION NOW 3 MILES SOUTH OF CRESTA DAM AND WOULD BE A GOOD COMPARISON FOR COSTS AND CONSTRUCTABILITY. THE SOIL IN THE AREA IS LARGELY GRANITE ROCK WITH PORTIONS OF THE ROADBED BEING FILL. CIVIL CONSTRUCTION SHOULD BE ABLE TO OPEN TRENCH, BORE, OR A COMBINATION OF BOTH.

INSTALLING STEEL DUCT ON THE RIVER BRIDGE WILL BE A CHALLENGE GIVEN THAT THE BRIDGE IS NOT CONTINUOUS AS A SINGLE DESIGN AND HAS STRUCTURAL COMPONENTS THAT PREVENT A GOOD ROUTE. WE WILL LIKELY NEED TO SPAN THE RIVER OVERHEAD AT THIS LOCATION.

THE SIDING SERVICE TO THE ████████ ON THE OPPOSITE SIDE OF RIVER SHOULD BE ABLE TO BE RE-ARRANGED TO SERVE FROM CRESTA DAM. ████████ THINKS THE ██████ WOULD BE WILLING TO CONSIDER IT GIVEN THE SUCCESS IN PAST WORK.

SECTION 1: ████████ to ████████ to remain OH EXISTING SPANS OVER RIVER @ SUBSTATION; 5 SPANS TO HARDEN DUE TO DIFFICULT TERRAIN

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Approval(s):

Project Manager -	<u>██████████, Project Manager</u>	Date:
Estimating -	<u>██████████, Manager, Internal Estimating & Design</u>	Date: EDRS
Asset Strategy -	<u>██████████, Manager, Grid Design</u>	Date: EDRS

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