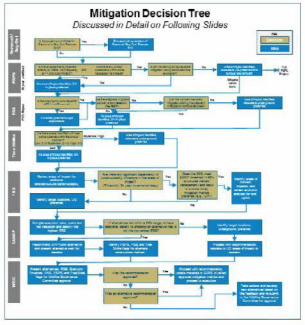
Wildfire Risk Governance Committee

System Hardening Project Approvals

January 29, 2021

Decision Tree and Guiding Principles



Guiding Principles

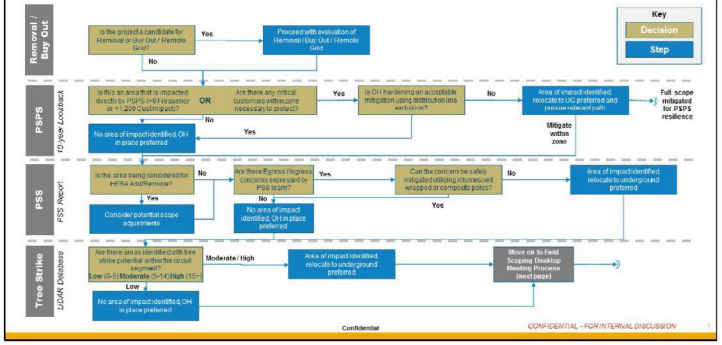
The **primary purpose** of the system hardening program is to **reduce wildfire risk.**

Where relevant, **other risks may impact the preferred mitigation** (e.g., PSPS, EC tags).

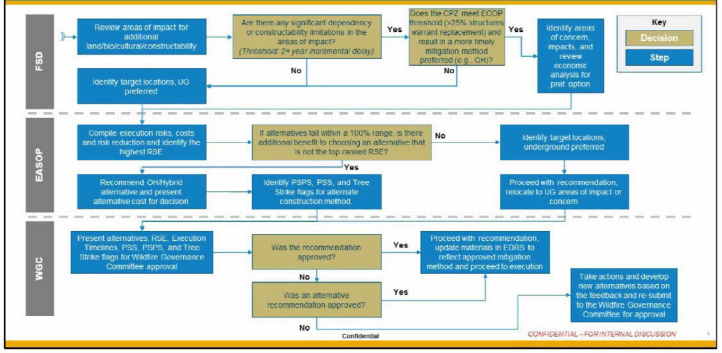
Decision Tree in Action:

- ❑ System Hardening Team will leverage the decision tree in all mitigation scoping discussions
- ❑ Any jobs clearly defined by the decision tree logic will come to the committee as an inform
- ❑ All jobs which are "on the edge" or require exceptions to the decision tree will be brought to the committee for approval

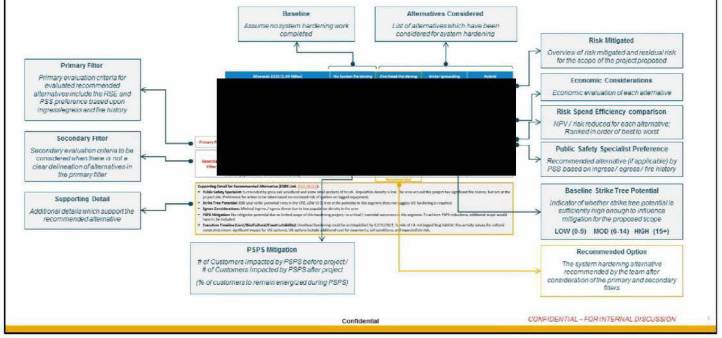
System Harding Decision Tree (1 of 2)



System Harding Decision Tree (2 of 2)



System Hardening Decision Framework Overview



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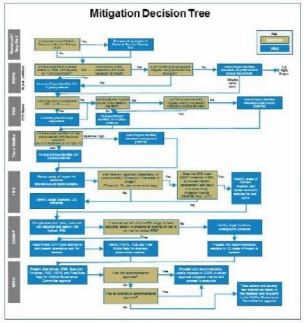
Today's discussion will include mitigation recommendations, as well as additional remote grid projects to be scoped for 2021

The following 3 projects have recommended mitigations:

	Order No.	CPZ	Work Bucket	Total MAVF Core Risk Value	Mean MAVF Core Risk Rank	Recommendation	WGC Request
WGC Inform							
1	[redacted]	CLAYTON [redacted]	ECOP	32.63	377	Hybrid (OH/UG)	**Inform**
2		Bucks Creek 1101CB	CWSP - Top 50	9.55	11	Hybrid (OH/UG)	**Inform**
3		Volta [redacted]	CWSP - Top 250	13	39	OH	**Inform**

INFORM: ECOP Top 20% - PM [redacted] – Clayton [redacted] H01

Mitigation Decision Tree



	Key Questions			Outcome
PSPS	Is this an area that is impacted directly by PSPS (>8 Frequency or >1,200 Cust Impact)?	Y	N	1 event, OH preferred
	Are there any critical customers within zone necessary to protect?	Y	N	
	Is OH hardening an acceptable mitigation using distribution line exclusion?	Y	N	N/A
PSS	Is the area being considered for HFRA Add/Remove?	Y	N	
	Ingress/Egress concerns identified by PSS professionals cannot be mitigated by utilizing intumescent wrapped or composite poles.	Y	N	Ingress / Egress concerns
Tree Strike	Moderate (6-14) or high (15+) strike tree potential areas in the segment	Y	N	
FSD	Are there any significant dependency or constructability limitations in the areas of impact? *(Threshold: 2+ year incremental delay)*	Y	N	
	Does the CPZ meet ECOP threshold (>25% structures warrant replacement) and result in a more timely mitigation method preferred (e.g., OH)?	Y	N	
EASOP	If alternatives fall within a 100% range, is there additional benefit to choosing an alternative that is not the top ranked RSE?	Y	N	Hybrid and UG within 100%
				Hybrid Preferred

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INFORM: ECOP Top 20% - PM [redacted] – Clayton [redacted] H01

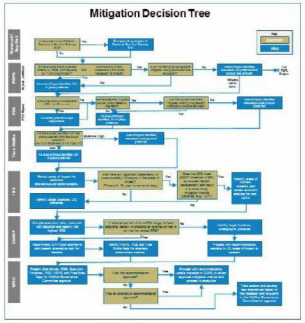
Clayton 2212 (1.42 Miles)	No System Hardening	Overhead Hardening	Under-grounding	Hybrid
Primary Filter	[redacted]			
Secondary Filter				
				Recommended

Supporting Detail for Recommended Alternative (EDRS Routing 2021-SEPM):

- **Public Safety Specialist:** Surrounded by grass oak. Population density is low. The area around this project has some fire history. Preference for action to be taken based on increased risk of ignition on tagged equipment.
- **Strike Tree Potential:** 616 total strike potential trees in the CPZ, LOW (0-5) tree strike potential in this segment does not suggest UG hardening is required.
- **Egress Considerations:** This road is not a main thoroughfare on a daily basis but is a route of egress for citizens from the Clayton Valley area when fire impacts the Clayton Valley area. The road is used for ingress for fire and emergency services from the south.
- **PSPS Mitigation:** No mitigation potential due to limited scope of this hardening project; no critical / essential customers in this segment. To achieve PSPS reductions, additional scope would have to be included.
- **Execution Timeline (Land/Bio/Cultural/Constructability):** OH hardening could be accomplished by 12/31/2021; 1.2 miles of CA red-legged frog habitat, CA tiger salamander, and Alameda Whipsnake; Pre-activity survey for cultural constraints (more significant impact for UG options); UG options include additional cost for easements, soil conditions, & expected bio risk.

INFORM: CWSP Top 50 - PM [redacted] – Bucks Creek 1101 CB

Mitigation Decision Tree



	Key Questions			Outcome
PSPS	Is this an area that is impacted directly by PSPS (>8 Frequency or >1,200 Cust Impact)?	Y	N	9 events, UG Preferred
	Are there any critical customers within zone necessary to protect?	Y	N	
	Is OH hardening an acceptable mitigation using distribution line exclusion?	Y	N	N/A
PSS	Is the area being considered for HFRA Add/Remove?	Y	N	
	Ingress/Egress concerns identified by PSS professionals cannot be mitigated by utilizing intumescent wrapped or composite poles.	Y	N	HWY 70, UG preferred
Tree Strike	Moderate (6-14) or high (15+) strike tree potential areas in the segment	Y	N	
FSD	Are there any significant dependency or constructability limitations in the areas of impact? *(Threshold: 2+ year incremental delay)*	Y	N	
	Does the CPZ meet ECOP threshold (>25% structures warrant replacement) and result in a more timely mitigation method preferred (e.g., OH)?	Y	N	
EASOP	If alternatives fall within a 100% range, is there additional benefit to choosing an alternative that is not the top ranked RSE?	Y	N	PSPS and Ingress/Egress
				Hybrid 1 Preferred

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INFORM: CWSP TOP 50 – PM# [redacted] Bucks Creek 1101 CB

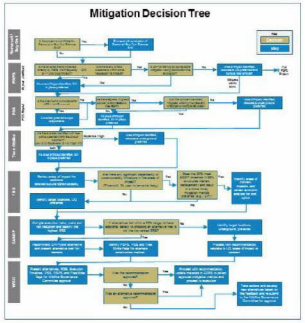
Bucks Creek 1101 (4.73 miles)	No System Hardening	Overhead Hardening	Hybrid 1	Hybrid 2
Primary Filter	[redacted]			
Secondary Filter				
			Recommended	

Supporting Detail for Recommended Alternative (FDRS Link 2021-0376a):

- **Public Safety Specialist:** Fuel types are consistent with moderate to heavy brush and mixed conifer, however the general area has been heavily fire scarred and the fire scar areas are interrlaced with a significant amount of standing and down dead fuel.
- **Strike Tree Potential:** 103 total strike potential trees in the CPZ, Moderate (6-15) tree strike potential.
- **Egress Considerations:** This project crosses HWY 70 near the Bucks Creek Powerhouse and then parallels the highway for a roughly 2-mile stretch, and then runs along Storrie Rd. parelleling the Feather River on the canyon opposite side of Highway 70. HWY 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.
- **PSPS Mitigation:** No mitigation potential due to limited scope of this hardening project; no critical / essential customers in this segment. Cannot achieve PSPS reduction due to required overhead conductor over the water crossing near the substation.
- **Execution Timeline (Land/Bio/Cultural/Constructability):** Work required during the dry season (May 15 – Oct 15) and/or biomonitoring, and potential Heli restrictions (Feb 2 – July 15) due to owl activity centers. CALTRANS ROW, easement restrictions, and 1 culturally sensitive areas in Hybrid 1. Butte work further down HWY 70 is undergrounding line consistent with the Hybrid 1 alternative.

INFORM: CWSP TOP 250 – PM# [redacted] Volta 1101 LR 49742

Mitigation Decision Tree



	Key Questions	Outcome		
PSPS	Is this an area that is impacted directly by PSPS (>8 Frequency or >1,200 Cust Impact)?	Y	N	
	Are there any critical customers within zone necessary to protect?	Y	N	
	Is OH hardening an acceptable mitigation using distribution line exclusion?	Y	N	N/A
PSS	Is the area being considered for HFRA Add/Remove?	Y	N	
	Ingress/Egress concerns identified by PSS professionals cannot be mitigated by utilizing intumescent wrapped or composite poles.	Y	N	
Tree Strike	Moderate (6-14) or high (15+) strike tree potential areas in the segment	Y	N	
FSD	Are there any significant dependency or constructability limitations in the areas of impact? *(Threshold: 2+ year incremental delay)*	Y	N	
	Does the CPZ meet ECOP threshold (>25% structures warrant replacement) and result in a more timely mitigation method preferred (e.g., OH)?	Y	N	
EASOP	If alternatives fall within a 100% range, is there additional benefit to choosing an alternative that is not the top ranked RSE?	Y	N	
				OH Preferred

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INFORM: CWSP TOP 250 – PM# [redacted] Volta 1101 LR 49742

Volta 1101 (3.55 miles)	No System Hardening	Overhead Hardening	Under-grounding	Hybrid
Project Scope Risk Reduced After Mitigation	-	8.06	12.87	10.79

[redacted]

Primary Filter

Secondary Filter

Recommended

Supporting Detail for Recommended Alternative (EDRS Link 2021-03779):

- **Public Safety Specialist:** Fuel types are consistent with mainly grass/oak woodland, brush, and intermixed patches of conifers/Gray Pints. Area has a significant fire history but not directly in the project footprint but shows the ability of the area fuels to resist containment and become a major fire.
- **Strike Tree Potential:** 2 total strike potential trees in the CPZ, LOW (0-5) tree strike potential in this segment does not suggest UG hardening is required. Tx under-build for most of job.
- **Egress Considerations:** Evacuees have multiple ways out of the area, depending on the location of the fire. 1st responders will have 2 access roads.
- **PSPS Mitigation:** No mitigation potential due to limited scope of this hardening project; no critical / essential customers in this segment. To achieve PSPS reductions, additional scope would have to be included. 2 PSPS operations in 10-year lookback.
- **Execution Timeline (Land/Bio/Cultural/Constructability):** Work required during the dry season (May 15 – Oct 15) and/or biomonitoring. Mitigation expenses should be considered for ground disturbance. Potential permitting for multiple waterways. Tribal monitoring may be required. Cultural resources work and reporting may need be required, 1-2 days of SME time.