

**Wildfire Risk Governance Committee**  
**System Hardening Project Approvals**

February 2, 2021

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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
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**WGC Decision**

1						Decision
2						Decision
3						Decision

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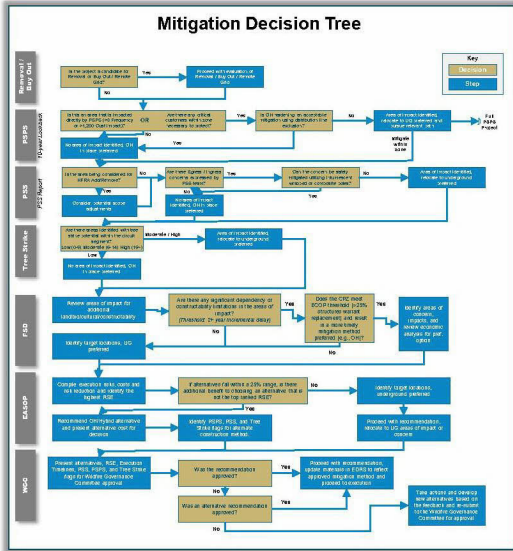
**WGC Inform**

1	[REDACTED]	Middletown 1101118494	CWSP Top 250	6.97	23	Overhead (1.15 mi)	Inform
2		Middletown 1101481876	CWSP Top 250	6.55	38	Overhead (0.85 mi)	Inform
3		Potter Valley PH 1105 LR 64118	CWSP Top 250	44.7	43	Hybrid: OH - 1.68 mi UG - 0.15 mi	Inform

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2



Key Questions		Outcome		
PPSPS	Is this an area that is impacted directly by PPS (>8 Frequency or >1,200 Cust Impact)?	Y	N	2 events, 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	
Tree Strike	Moderate (6-14) or high (15+) strike tree potential areas in the segment.	Y	N	Moderate
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	Overhead Preferred

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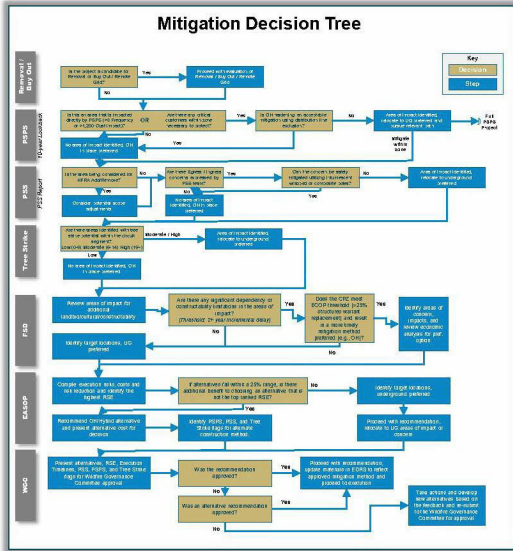
Middletown 1101 (1.15 miles)		No System Hardening	Overhead Hardening	Under-Grounding	Hybrid
Project Scope Risk Reduced After Mitigation		-	4.32	6.90	5.50
Project Scope Residual Risk Value		6.97	2.65	0.07	1.47
Overall Miles Installed		1.15 Existing OH	1.15	1.60	1.33
OH System Hardening Cost [REDACTED] /risk-mile		-	[REDACTED]		
UG System Hardening Cost [REDACTED] /risk-mile		-			
Line Removal Cost		-			
Total Capital Cost (AAEC Class 5)		-			
Average O&M Cost (per year)		-	[REDACTED]		
NPV @ 6.8% discount rate		-	[REDACTED]		
<b>Primary Filter</b>	\$ NPV per unit of rise (RSE)				
	PSS Preference (Ingress/egress/fire history)		Satisfactory	Satisfactory	Satisfactory
<b>Secondary Filter</b>	Strike Tree Potential	High Fall-In Risk	Moderate Fall-In Risk	No Fall-In Risk	Low Fall-In Risk
	Ingress / Egress	Satisfactory	Satisfactory	Satisfactory	Satisfactory
	PSPS Mitigation (15 custs * 2 events)	0/30 (0%)	0/30 (0%)	30/30 (100%)	0/30 (0%)
	Execution timeline (2021, 2022, 2022+)		2021	2022+	2022+
	Other (Operational Considerations, etc.)		Preferred	Not Preferred	Not Preferred
			Recommended		

**Supporting Detail for Recommended Alternative (EDRS Link [2021-04412](#)):**

- Public Safety Specialist:** The fuel type in this project area is mostly grass oak woodland with some brush and grey pine near the substation and around a couple residences nearby. Overall fuel loading for this area range from light to medium. This project area resides in a burn scar from the Valley fire in 2015 and dead/decadent fuel remains in some areas. Population density around Middletown proper is considered to be in the medium range (1200) however the actual project location is just East of Middletown about .2 miles.
- Strike Tree Potential:** Moderate (5-15) tree strike potential in this segment does not suggest UG hardening is required.
- Egress Considerations:** No major egress concern
- PSPS Mitigation:** No mitigation potential because currently only underground eliminates need for PSPS.
- Execution Timeline (Land/Bio/Cultural/Constructability):** Work required during the dry season (May 15 – Oct 15) and/or biomonitoring. No mitigation expenses expected as long as work is within the road ROW.
- Other (Operational Considerations, etc.):** Hybrid & UG alternatives will require numerous boxes and sub-structures due to narrow roadway. Hybrid & UG alternatives also not preferred due to history of difficulty working with customer who owns property in much of job boundaries.

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	Key Questions	Outcome		
PPSPS	Is this an area that is impacted directly by PPS (>8 Frequency or >1,200 Cust Impact)?	Y	N	2 events, OH preferred
	Are there any critical customers within zone necessary to protect?	Y	N	
PSS	Is OH hardening an acceptable mitigation using distribution line exclusion?	Y	N	N/A
	Is the area being considered for HFRA Add/Remove?	Y	N	
Tree Strike	Ingress/Egress concerns identified by PSS professionals cannot be mitigated by utilizing intumescent wrapped or composite poles.	Y	N	Moderate
	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	Overhead Preferred

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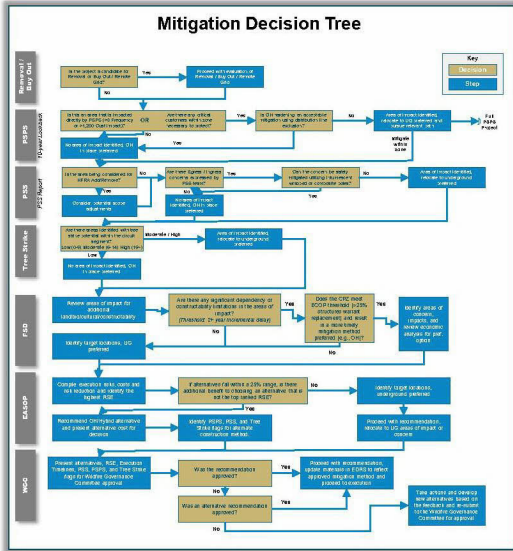
Middletown 1101 (0.85 miles)		No System Hardening	Overhead Hardening	Under-Grounding	Hybrid
Project Scope Risk Reduced After Mitigation		-	4.06	6.48	5.19
Project Scope Residual Risk Value		6.55	2.49	0.07	1.36
Overall Miles Installed		0.85 Existing OH	0.85	0.95	0.93
OH System Hardening Cost	[REDACTED] /risk-mile	-	[REDACTED]		
UG System Hardening Cost	[REDACTED] /risk-mile	-			
Line Removal Cost	-	-			
Total Capital Cost (AACE Class 5)	-	-			
Average O&M Cost (per year)		-	-	-	-
NPV @ 6.8% discount rate		-	-	-	-
<b>Primary Filter</b>	\$ NPV per unit of rise (RSE)	-	-	-	-
	PSS Preference (Ingress/egress/fire history)	-	Satisfactory	Satisfactory	Satisfactory
<b>Secondary Filter</b>	Strike Tree Potential	Moderate Fall-In Risk	Low Fall-In Risk	No Fall-In Risk	Low Fall-In Risk
	Ingress / Egress	Satisfactory	Satisfactory	Satisfactory	Satisfactory
	PSPS Mitigation (9 custs * 2 events)	0/18 (0%)	0/18 (0%)	18/18 (100%)	0/18 (0%)
	Execution timeline (2021, 2022, 2022+)	-	2021	2022+	2022
	Other (Operational Considerations, etc.)	-	-	-	-
<b>Recommended</b>					

**Supporting Detail for Recommended Alternative (EDRS Link 2021-04297):**

- **Public Safety Specialist:** The fuel type in this project area is mostly grass oak woodland. Overall fuel loading for this area is light. This project area resides in a burn scar from the Valley fire in 2015 and dead/decadent fuel remains in some areas. Population density around Middletown proper is considered to be in the medium range (1200) however this project location is approximately .5 miles to the North where population density is low.
- **Strike Tree Potential:** LOW (0-5) tree strike potential in this segment does not suggest UG hardening is required.
- **Egress Considerations:** No major egress concern
- **PSPS Mitigation:** No mitigation potential because currently only underground eliminates need for PSPS.
- **Execution Timeline (Land/Bio/Cultural/Constructability):** Work required during the dry season (May 15 – Oct 15) and/or biomonitoring. No mitigation expenses expected as long as work is within the road ROW.

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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, Hybrid 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	
PSS	Is the area being considered for HFRA Add/Remove?	Y	N	UG portion
	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	Low
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 Savings
				Hybrid Preferred

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Potter Valley PH 1105 (1.8 miles)		No System Hardening	Overhead Hardening	Under-Grounding	Hybrid
Project Scope Risk Reduced After Mitigation		-	27.72	44.26	29.08
Project Scope Residual Risk Value		44.70	16.99	0.45	15.62
Overall Miles Installed		1.80 Existing OH	1.80	1.90	1.83
OH System Hardening Cost	[REDACTED] /risk-mile	-	[REDACTED]		
UG System Hardening Cost	[REDACTED] /risk-mile	-			
Line Removal Cost	-	-			
Total Capital Cost (AACE Class 5)	-	-			
Average O&M Cost (per year)		-	-	-	-
NPV @ 6.8% discount rate		-	-	-	-
Primary Filter	NPV per unit of rise (RSE)	-	-	-	-
	PSS Preference (Ingress/egress/fire history)	Satisfactory	Satisfactory	Satisfactory	Satisfactory
Secondary Filter	Strike Tree Potential	Low Fall-In Risk	Low Fall-In Risk	No Fall-In Risk	Low Fall-In Risk
	Ingress / Egress	Satisfactory	Satisfactory	Satisfactory	Satisfactory
	PSPS Mitigation (679 custs * 1 event)	0/679 (0%)	0/679 (0%)	679/679 (100%)	664/679 (98%)
	Execution timeline (2021, 2022, 2022+)		2021	2022+	2022
	Other (Operational Considerations, etc.)				

Recommended

**Supporting Detail for Recommended Alternative (EDRS Link 2021-03822):**

- **Public Safety Specialist:** The fuel type in the project area is predominantly grass/oak woodland with some pockets of brush and scattered conifer that border agricultural land in the Valley. Population Density around the community of Potter Valley is considered to be moderate at 650.
- **Strike Tree Potential:** 59 potential strike trees. LOW (0-5) tree strike potential in this segment does not suggest UG hardening is required.
- **Egress Considerations:** No major egress concern
- **PSPS Mitigation:** No mitigation potential due to limited scope of this hardening project, no critical / essential customers in this segment.
- **Execution Timeline (Land/Bio/Cultural/Constructability):** Stock ponds with potential suitable habitat for tricolored blackbird are found within the project vicinity. Recommend July - March. Also Northern Spotted Owl habitat is located in the northernmost portion of the project alignment. If work is to occur during the March 1 to July 15, a Bio led survey should be expected. Also multiple waterways potentially needing permitting. Two cultural ESAs have been identified within project footprint. Archaeological monitoring and other RPMs will be necessary. Extensive ground disturbance is not recommended within the Cultural ESAs. The Project EFS shall be contacted 60 days prior to excavation to coordinate mitigating measures including soil sampling, analysis, and disposal activities.