

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

Order No.	CPZ	Work Bucket	Total MAVF Core Risk Value	Mean MAVF Core Risk Rank	Recommendation	WGC Request
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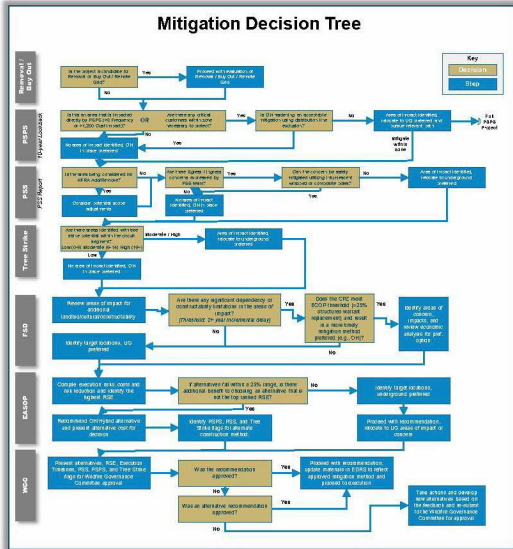
WGC Inform

1	[REDACTED]	Shingle Springs 21099372	CWSP Top 20%	19.55	227	Hybrid (8.29 mi)	Inform
2		Shingle Springs 21099372	CWSP Top 20%	23.78	227	Hybrid (9.48 mi)	Inform
3		Shingle Springs 210935598	CWSP Top 20%	33.98	159	Overhead (11.02 mi)	Inform

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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	4 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	Ingress / Egress concerns
Tree Strike	Moderate (6-14) or high (15+) strike tree potential areas in the segment.	Y	N	Low
	Are there any significant dependency or constructability limitations in the areas of impact? (Threshold: 2+ year incremental delay)	Y	N	
FSD	Does the CPZ meet ECOP threshold (>25% structures warrant replacement) and result in a more timely mitigation method preferred (e.g., OH)?	Y	N	
	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 within 100%
				Hybrid Preferred

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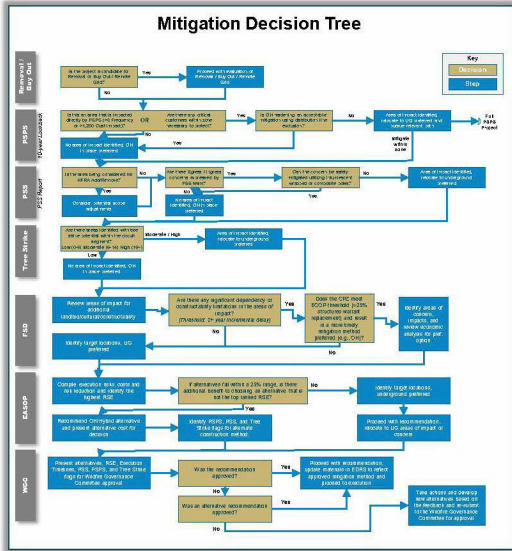
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Shingle Springs 2109 (7.57 Miles)		No System Hardening	Overhead Hardening	Under-grounding	Hybrid
Project Scope Risk Reduced After Mitigation		-	12.12	19.35	13.46
Project Scope Residual Risk Value		19.55	7.43	0.20	6.09
Overall Miles Installed		7.57 Existing OH	7.57	12.25	8.29
OH System Hardening Cost	[REDACTED] /risk-mile	-	[REDACTED]	[REDACTED]	[REDACTED]
UG System Hardening Cost	[REDACTED] /risk-mile	-	[REDACTED]	[REDACTED]	[REDACTED]
Line Removal Cost		-	[REDACTED]	[REDACTED]	[REDACTED]
Total Capital Cost (AACE Class 5)		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Average O&M Cost (per year)		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
NPV @ 6.8% discount rate		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Primary Filter	\$ NPV per unit of risk (RSE)	-			
	PSS Preference (Ingress/egress/fire history)	-	Not Preferred	Preferred	Preferred
Secondary Filter	Strike Tree Potential	LOW (0-5)	Low Fall-In Risk	N/A	Low Fall-In Risk
	Ingress / Egress	LOW	Not preferred	Preferred	Preferred
	PSPS Mitigation (108 customers)	432 / 432 (0%)	432 / 432 (0%)	216 / 432 (50%)	432 / 432 (0%)
	Execution timeline (2021, 2022, 2022+)	-	2021	2022+	2022
	Other (Operational Considerations, etc.)	-	-	-	-

Recommended

Supporting Detail for Recommended Alternative (EDRS Link [2021-04171](#)):

- Public Safety Specialist: Predominantly grass-oak woodland, brush and grey pines. Population density is low to medium in immediate project area but a large area of medium population density to the south and southwest. The area around this project does not have significant fires history.
- Strike Tree Potential: 287 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: Lotus Road is the main evacuation route for civilians and main route for first responders.
- 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): Work required during the dry season (May 15 – Oct 15) and/or biomonitoring. Air permit may be required due to naturally occurring asbestos. Minimal mitigation expenses expected as long as work is within the road ROW.



	Key Questions	Outcome		
PPSPS	Is this an area that is impacted directly by PPSPS (>8 Frequency or >1,200 Cust Impact)?	Y	N	4 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	Ingress / Egress concerns
	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	Low
	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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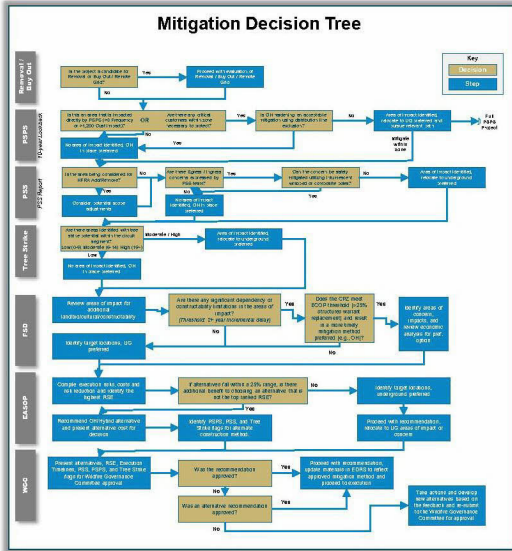
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Shingle Springs 2109 (9.21 Miles)		No System Hardening	Overhead Hardening	Under-grounding	Hybrid
Project Scope Risk Reduced After Mitigation		-	14.74	23.54	17.68
Project Scope Residual Risk Value		23.78	9.04	0.24	6.10
Overall Miles Installed		9.21 Existing OH	9.21	11.52	9.48
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 risk (RSE)	-	-	-	-
	PSS Preference (Ingress/egress/fire history)	-	Not Preferred	Preferred	Preferred
Secondary Filter	Strike Tree Potential	LOW (0-5)	Low Fall-In Risk	N/A	Low Fall-In Risk
	Ingress / Egress	LOW	Not preferred	Preferred	Preferred
	PSPS Mitigation (113 customers)	452 / 452 (0%)	452 / 452 (0%)	226 / 452 (50%)	452 / 452 (0%)
	Execution timeline (2021, 2022, 2022+)	-	2021	2022+	2022
	Other (Operational Considerations, etc.)	-	-	-	-

Recommended

Supporting Detail for Recommended Alternative (EDRS Link [2021-04169](#)):

- Public Safety Specialist: Predominantly grass-oak woodland, brush and grey pines. Population density is low to medium in immediate project area but a large area of medium population density to the south and southwest. The area around this project does not have significant fires history.
- Strike Tree Potential: 287 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: Lotus Road is the main evacuation route for civilians and main route for first responders.
- 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): Work required during the dry season (May 15 – Oct 15) and/or biomonitoring. Air permit may be required due to naturally occurring asbestos. Minimal mitigation expenses expected as long as work is within the road ROW.



Key Questions		Outcome		
PPSPS	Is this an area that is impacted directly by PPS (>8 Frequency or >1,200 Cust Impact)?	Y	N	4 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	
PSS	Is the area being considered for HFRA Add/Remove?	Y	N	Ingress / Egress concerns
	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
	Are there any significant dependency or constructability limitations in the areas of impact? (Threshold: 2+ year incremental delay)	Y	N	
FSD	Does the CPZ meet ECOP threshold (>25% structures warrant replacement) and result in a more timely mitigation method preferred (e.g., OH)?	Y	N	Hybrid Preferred
	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 Preferred		

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Shingle Springs 2109 (10.75 Miles)		No System Hardening	Overhead Hardening	Under-grounding	Hybrid
Project Scope Risk Reduced After Mitigation		-	21.07	33.64	24.27
Project Scope Residual Risk Value		33.98	12.91	0.34	9.71
Overall Miles Installed		10.75 Existing OH	10.75	13.29	11.02
OH System Hardening Cost	[REDACTED] /risk-mile	-	[REDACTED]	[REDACTED]	[REDACTED]
UG System Hardening Cost	[REDACTED] /risk-mile	-	[REDACTED]	[REDACTED]	[REDACTED]
Line Removal Cost		-	[REDACTED]	[REDACTED]	[REDACTED]
Total Capital Cost (AACE Class 5)		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Average O&M Cost (per year)		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
NPV @ 6.8% discount rate		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Primary Filter	\$ NPV per unit of risk (RSE)	-			
	PSS Preference (Ingress/egress/fire history)	-	Satisfactory	Preferred	Preferred
Secondary Filter	Strike Tree Potential	LOW (0-5)	Low Fall-In Risk	N/A	Low Fall-In Risk
	Ingress / Egress	LOW	Satisfactory	Preferred	Preferred
	PSPS Mitigation (159 customers)	636 / 636 (0%)	636 / 636 (0%)	636 / 636 (0%)	636 / 636 (0%)
	Execution timeline (2021, 2022, 2022+)	-	2021	2022+	2022
	Other (Operational Considerations, etc.)	-	-	-	-
Recommended					

Supporting Detail for Recommended Alternative (EDRS Link [2021-05102](#)):

- Public Safety Specialist: Predominantly grass-oak woodland, brush and grey pines. Population density is low to medium in immediate project area but a large area of medium population density to the south and southwest. The area around this project does not have significant fires history.
- Strike Tree Potential: 287 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: Lotus Road is the main evacuation route for civilians and main route for first responders.
- 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. PSPS was called 4 times for source side devices. 0 events for LR 35598.
- Execution Timeline (Land/Bio/Cultural/Constructability): Work required during the dry season (May 15 – Oct 15) and/or biomonitoring. Air permit may be required due to naturally occurring asbestos. Minimal mitigation expenses expected as long as work is within the road ROW.