Upper Valley Transmission Update

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Why we're here

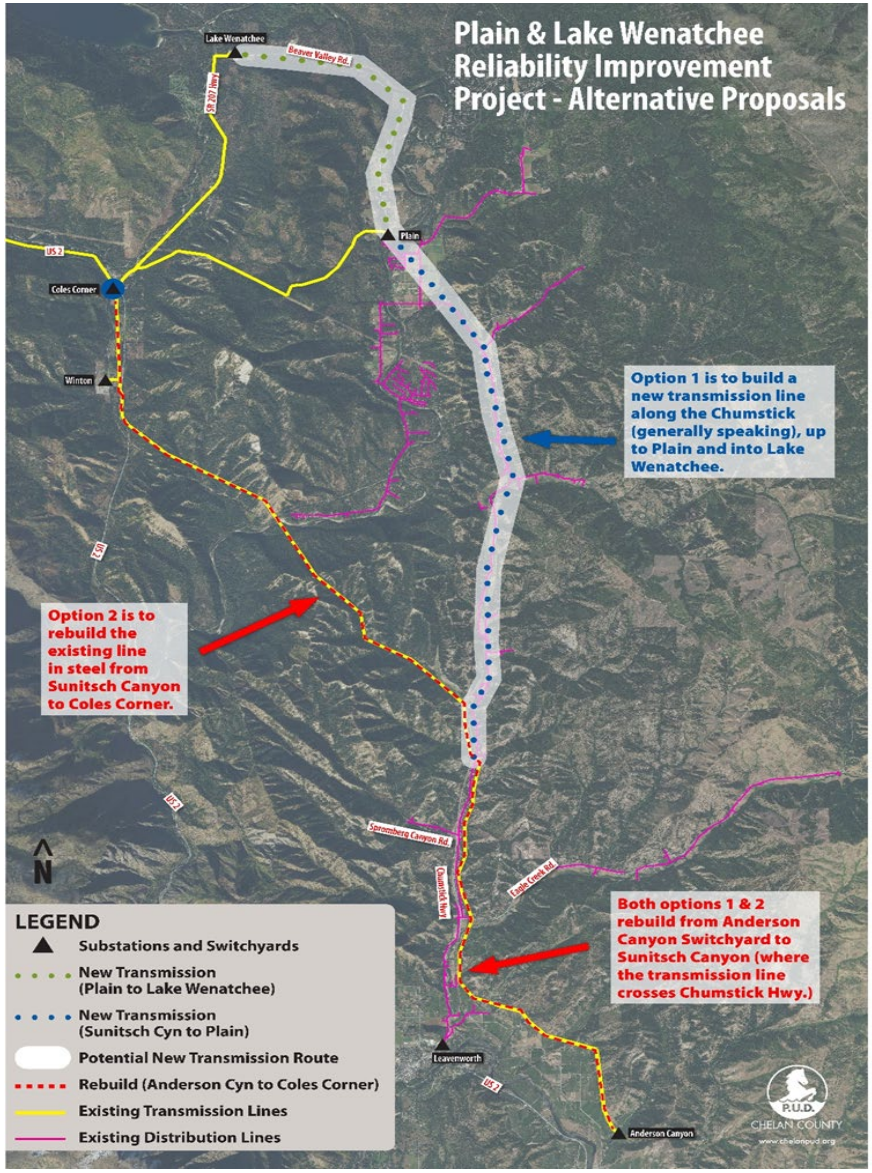
- History & drivers for project
- Review alternatives presented to the community in 2019
- Review hybrid alternative presented to the board in 2022
- What we have learned through our design analysis to date
- Comparison of options
- Seeking Board concurrence of recommended alternative

Project History & Drivers

- Mid 1990s District plans to construct a second 115kV line from Fox Rd
- 2017 District assesses wildfire risk to transmission line infrastructure
- 2019 design alternatives presented to the community
- Drivers for project:
  - fire hardening
  - aging infrastructure – poles & conductor
  - system resiliency

2019 Public Outreach

Alternatives developed to address project drivers for public comment



Alt. 1 – Chumstick

- Rebuild/harden existing line from Anderson Canyon to Chumstick Hwy.
- Relocate transmission line out of Sunitsch and Deadhorse canyons, proposed option along Chumstick Hwy.
- Build new transmission line between Plain and Lake Wenatchee subs, creating loop

Estimated Cost: $40-$60M

Alt. 2 – Existing alignment

- Rebuild/harden existing line from Anderson Canyon to Chumstick Hwy.
- Rebuild transmission line in its existing alignment through Sunitsch and Deadhorse canyons
- Rebuild existing Plain tap
- Build a ring-bus at Coles Corner

Estimated Cost: $40-$60M

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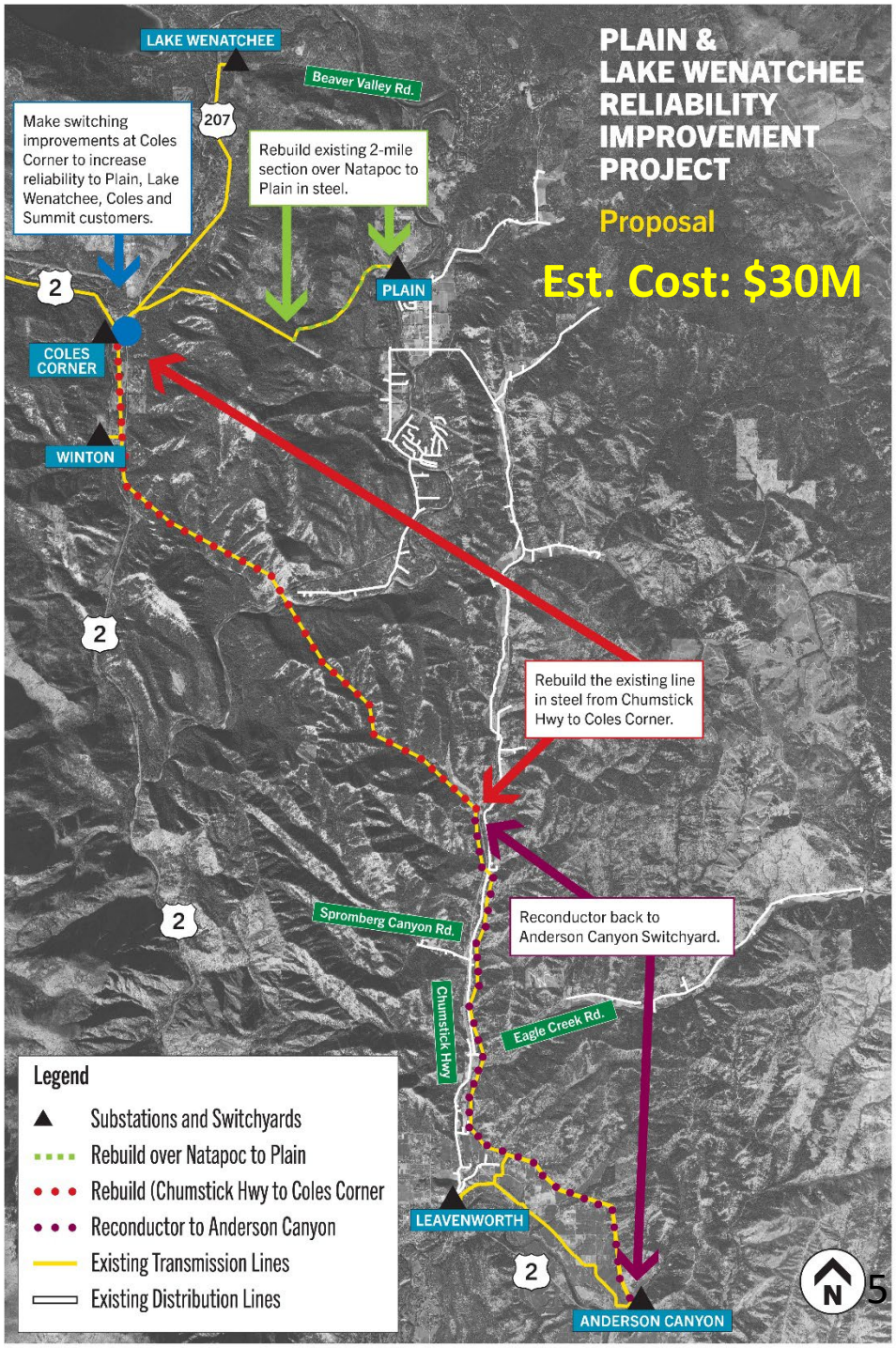

Hybrid Alternative

Developed based on public feedback

- (Purple) Reconductor existing line from Anderson Canyon to Chumstick Highway.
  - Some poles will be replaced with steel as needed
  - Achieves increased capacity
- (Red) Rebuild transmission line using steel poles in its existing alignment through Sunitsch and Deadhorse canyons to Coles Corner
  - Achieves fire resilience
- (Blue) Make switching improvements to Coles Corner
  - Achieves improved reliability
- (Green) Rebuild approximately 2 miles of the Plain Tap with steel poles
  - Achieves fire resilience

All improvements are within existing utility easements

Estimated Cost: $30M

Remaining Option: Do nothing

- Continue existing maintenance regiment

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Proposed Modifications to Alternative

Based on Progressing Design – Anderson Canyon to Chumstick

What We Learned

Stringing new conductor requires every structure to be "worked," regardless of whether or not replacement is required.

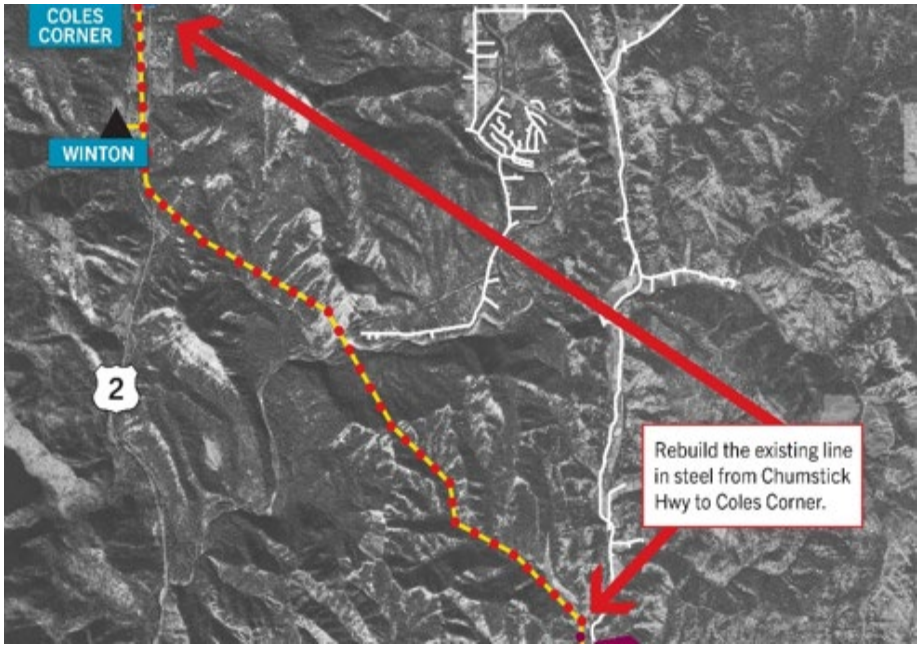
- 70 total structures from Anderson Canyon to Sunitsch Canyon (the reconductor section).
- Of the 33 wood structures that will remain, 18 are over 40 years old.
- Moving to steel as standard.
- Remaining wood structure locations are sporadic (see appendix).

Recommendation

- Replace all wood structures with steel and new conductor.

Proposed Modifications to Alternative

Based on Progressing Design – Chumstick to Coles Corner



What we Learned –

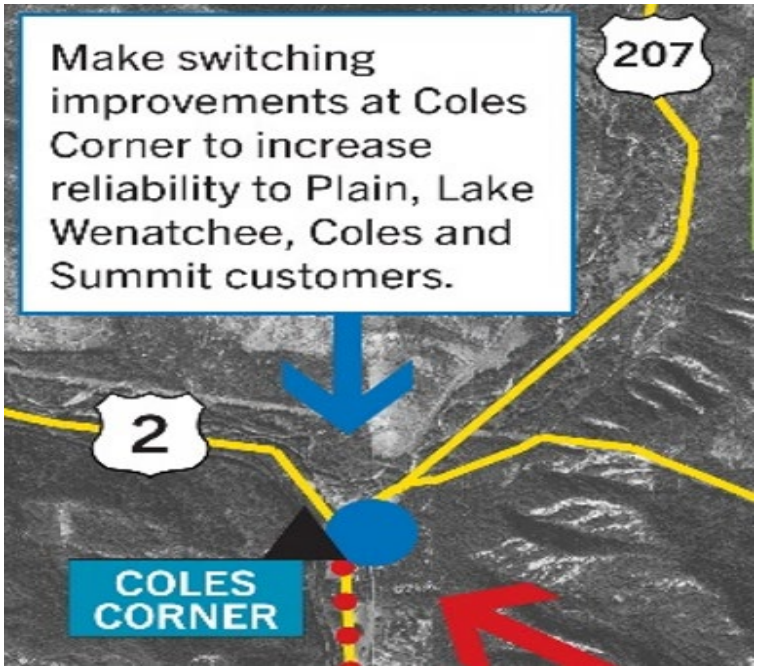
- Mono pole configuration reduces the likelihood of tree strikes.
- Mono poles configuration is less expensive than H frame.
- Optical Ground Wire (OPGW) (Fiber Communication) from Sunitsch to Coles Corner

Recommendation

- Utilize mono-pole configuration with OPGW (fiber)

Proposed Modifications to Alternative

Based on Progressing Design – Coles Corner Switchyard



What we Learned –

- Circuit Switcher solution costs more than originally estimated - $8.3 Million
- Ring Bus configuration - $9.5 Million

Recommendation

- Install ring bus

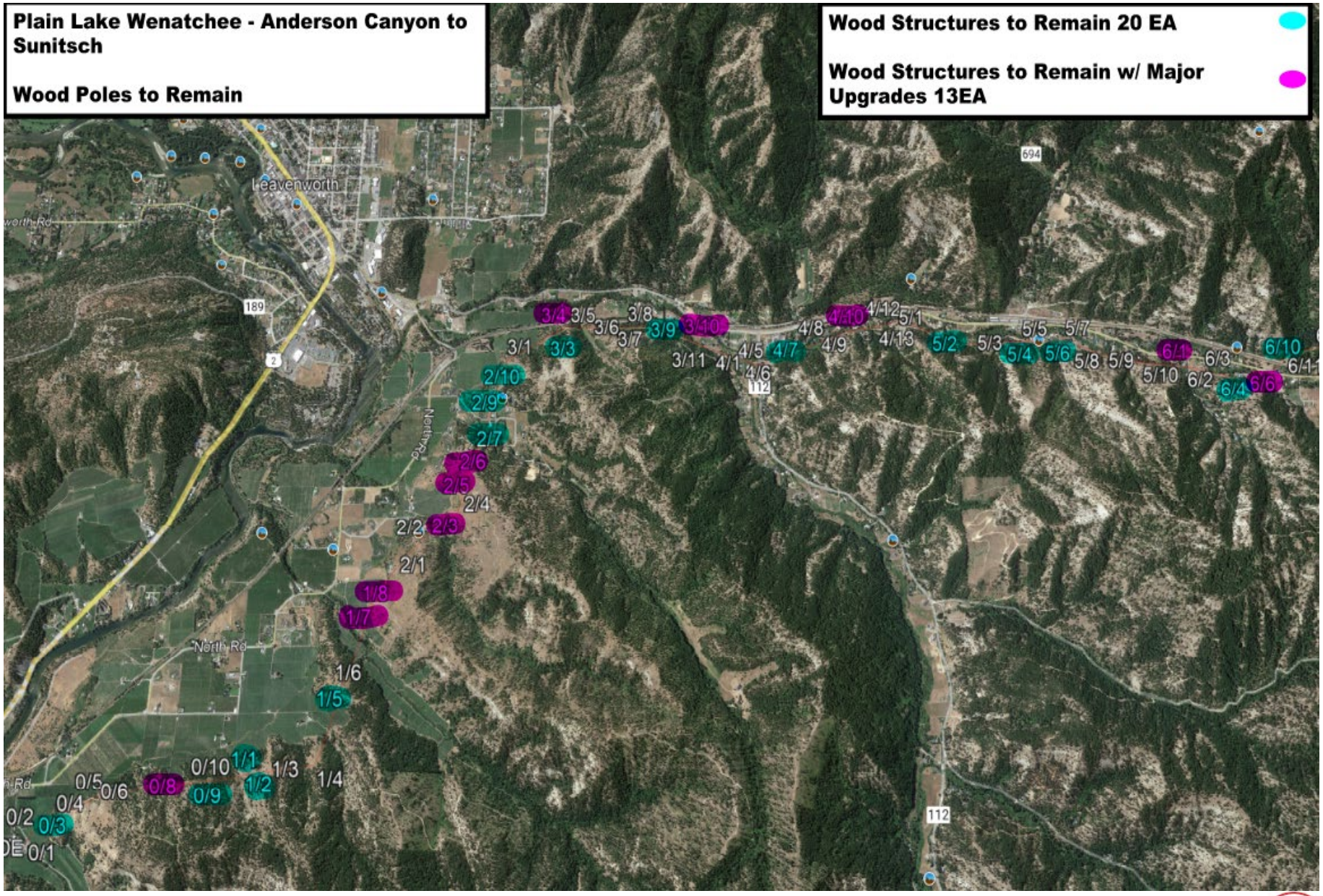
Project Costs Summary

• 2019 public outreach alternatives 1 & 2	$40 – $60 Million
• 2022 hybrid alternative developed from feedback	$30 Million
• 2022 hybrid alternative adjusted for current market conditions	$51 Million
• 2024 proposed alternative considering design progression and current market conditions	$57 Million

Next steps

- Board concurrence of recommendation
- 2025 budget increase, during normal business planning cycle
- Return with Request To Advertise Progressive Design this summer

Appendix



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2022 Hybrid Alternative

2022 Hybrid Alternative Current Market Conditions

Line Section	Cost Rough Order of Magnitude (ROM)	Line Section	Cost Rough Order of Magnitude (ROM)
Anderson Canyon to Sunitsch Canyon Hybrid Wood/Steel & Reconductor	$4,000,000	Anderson Canyon to Sunitsch Canyon Hybrid Wood/Steel & Reconductor	$4,726,000
Sunitsch to Coles Corner Steel H Frame No OPGW	$9,000,000	Sunitsch to Coles Corner Steel H Frame No OPGW	$13,896,600
Coles Corner Reliability improvements	$5,000,000	Coles Corner Reliability improvements	$8,300,000
Plain Substation Tap	$3,000,000	Plain Substation Tap	$3,120,900
Logging ROW Clearing	$250,000.00	Logging ROW Clearing	$567,594
Total Hard Costs	**$21,250,000**	**Total Hard Costs**	**$30,611,094**
Contingency	$8,750,000	Soft Costs	$20,937,988
Grand Total	**$30,000,000**	**Grand Total**	**$51,549,082**

2019 Alternative Number 2 With Design Progression 15% & Market Cost Adjustments

Line Section	Cost	Added Value
Anderson Canyon to Sunitsch Canyon All Steel H Frame & Reconductor	$7,909,600 (adds $3.2M)	Full fire resiliency (all wood poles replaced), aging infrastructure replaced.
Sunitsch Canyon to Coles Corner Mono Pole Steel w/ OPGW	$13,281,300 (less by $600k)	Reduction in tree strikes with single pole configuration. Fiber connectivity to new switchyard with (OPGW).
Full Ring Bus Transmission Switchyard Coles Corner	$9,500,000 (adds $1.2M)	Fast fault detection and clearing (reducing potential for fire ignition), network connectivity & enhanced security.
Plain Tap Mono Pole w/ OPGW	$2,936,900 (less by $200k)	Reduction in tree strike with single pole configuration.
Logging Cost Estimate USFS Property	$567,594	Right of way corridor increased, reduced tree strikes, permitted width.
Total Hard Costs	**$34,195,394**	
Soft Costs (Tax 8.3%, Contingency 40% Design 10% and Internal Labor 10%)	$23,389,649	
Grand Total	**$57,585,043**	