

Chelan & Leavenworth Substation Property Planning

Board of Commission
Update

March 6, 2017

Today's Agenda

- Provide update on Chelan and Leavenworth property evaluations and analysis findings
- Customer and Stakeholder Feedback
- Engineering and Cost Analysis
- Next Steps & Timeline
- No decisions required today
- Seeking guidance

Public Outreach

- Identified three potential available sites for Chelan and Leavenworth
- Performed engineering and cost analysis for top sites
- Recently held community meetings in both areas to share results
 - Feb 13, 2017 Leavenworth
 - Feb 22, 2017 Chelan
 - Similar attendance at both locations
- Received public comment
- Communities recognize the need to act now





Stakeholder List



- City staff, public works, planning officials
- City Councils
- County officials
- Chelan PUD Board of Commission
- Focus Group members
- Development community
- Property owners, owning potential sites
- Property owners adjacent to potential sites
- Representatives from HOAs
- Individual community members

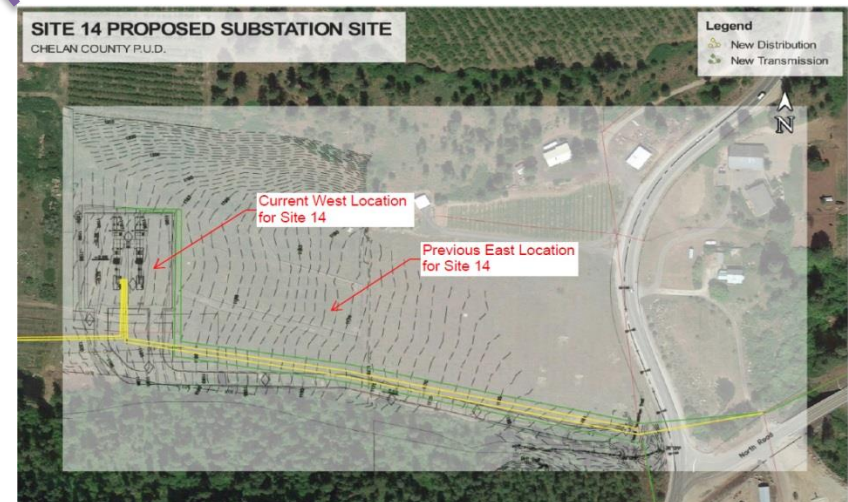
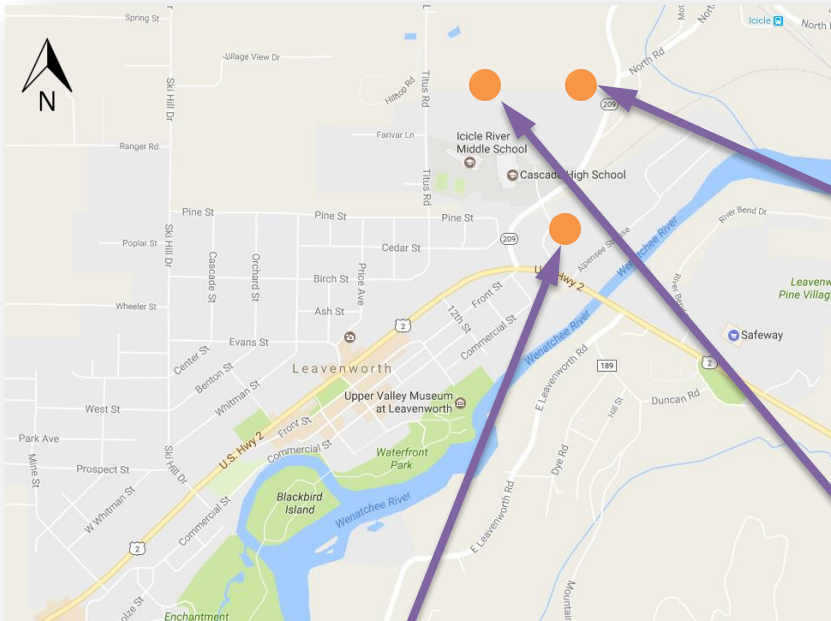
Recent Public Outreach

(Leavenworth)

- February 13, 2017 - Leavenworth community meeting
 - Provided update on focus group action items
 - Reviewed consultants engineering and cost analysis
 - Provided overview of three sites Pros/Cons
 - Received feedback from community members on sites



Site Selection Results -Leavenworth



Bavarian (Leavenworth) Substation – Site Comparison

	Site 8a	Site 14	Site 9
Earthwork Costs	1,660,000	709,000	458,000
Substation Costs	3,403,000	3,403,000	4,906,000
Distribution Costs	842,000	774,000	1,680,000
Transmission Costs	2,472,000	2,862,000	868,000
Total Costs	8,377,000	7,748,000	7,912,000

	Pro	Con	Neutral	
Site 8a		X		Earthwork Risk is high
		X		Site is sloped at 3.1 %
		X		Site has room for expansion to double bank
		X		Dual Transmission Source - Separate Route
			X	Land Use - Neutral
			X	Site Visibility - Chumstick Hwy/ Future Residential Area
Site 14			X	Distribution underbuild to Chumstick
			X	Transmission to south of yard would require larger yard
		X		Site has room for expansion to double bank
		X		Dual Transmission Source - Separate Route
			X	Land Use - Displaces future housing development
		X	Site Visibility - Future Residential Development	
Site 9		X		Breaker-and-a-half required - complex constr. & operation
		X		Distribution cost has high uncertainty
		X		Site does not have room for expansion to double bank
			X	Dual Transmission Source - Same Route
		X		Land Use - Same land use
		X	Site Visibility - Adjacent to Existing Residential Area	

Contingency:

All work element contingency is 20%; except Transmission Construction, which is 30%

Proposed Site 8a Distribution

Chelan County P.U.D.

Legend

- Existing Distribution OH
- Existing Distribution UG
- Existing Transmission
- New Distribution
- New Transmission

Circuit #1
Circuit #2

DBL UG

Circuit #3
Circuit #4

Site 8a

SGL TRANS
W/ SGL UB
(BOARD 2)

SGL TRANS
W/ SGL UB
(BOARD 1)

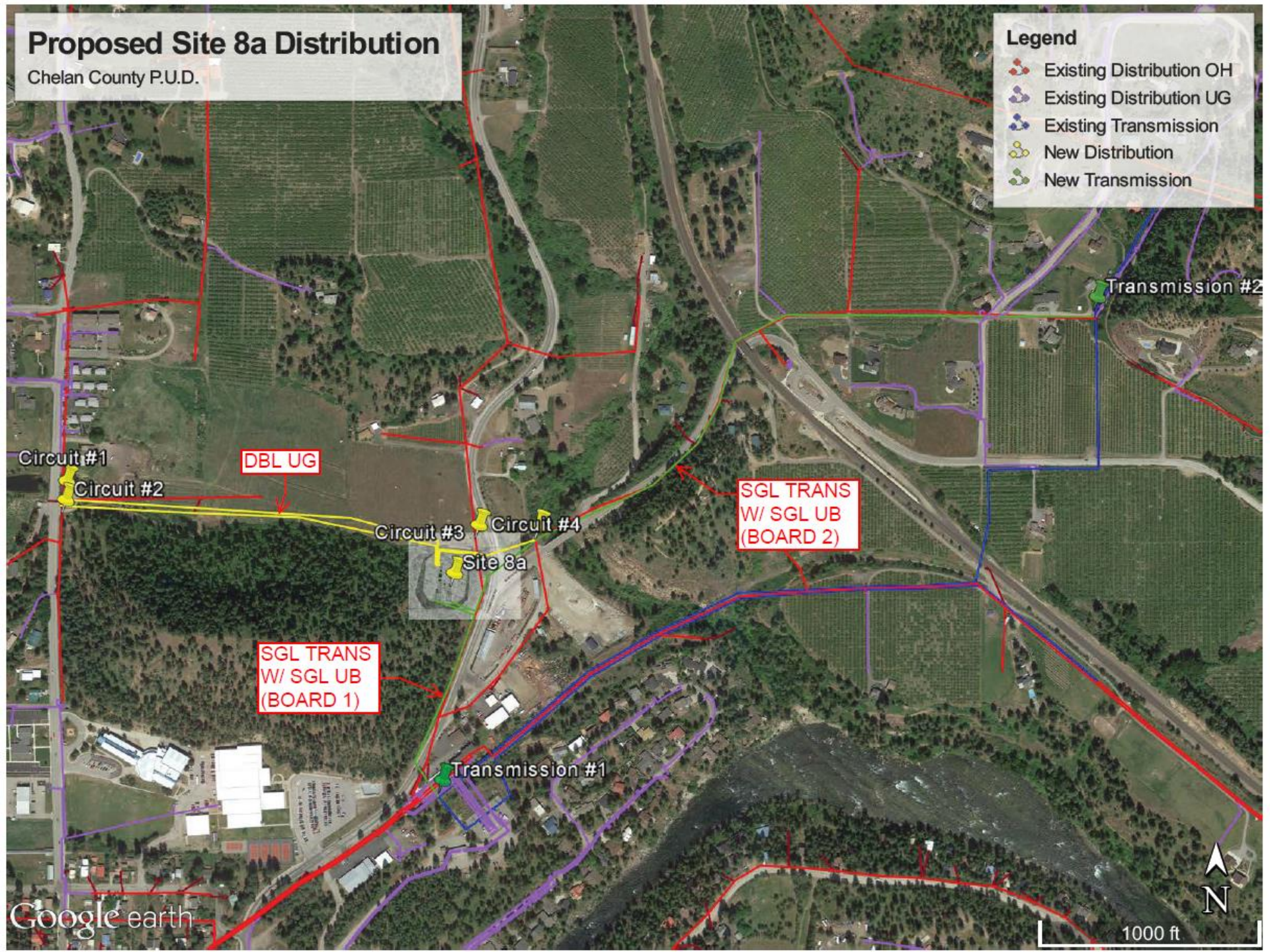
Transmission #1

Transmission #2

Google earth

N

1000 ft

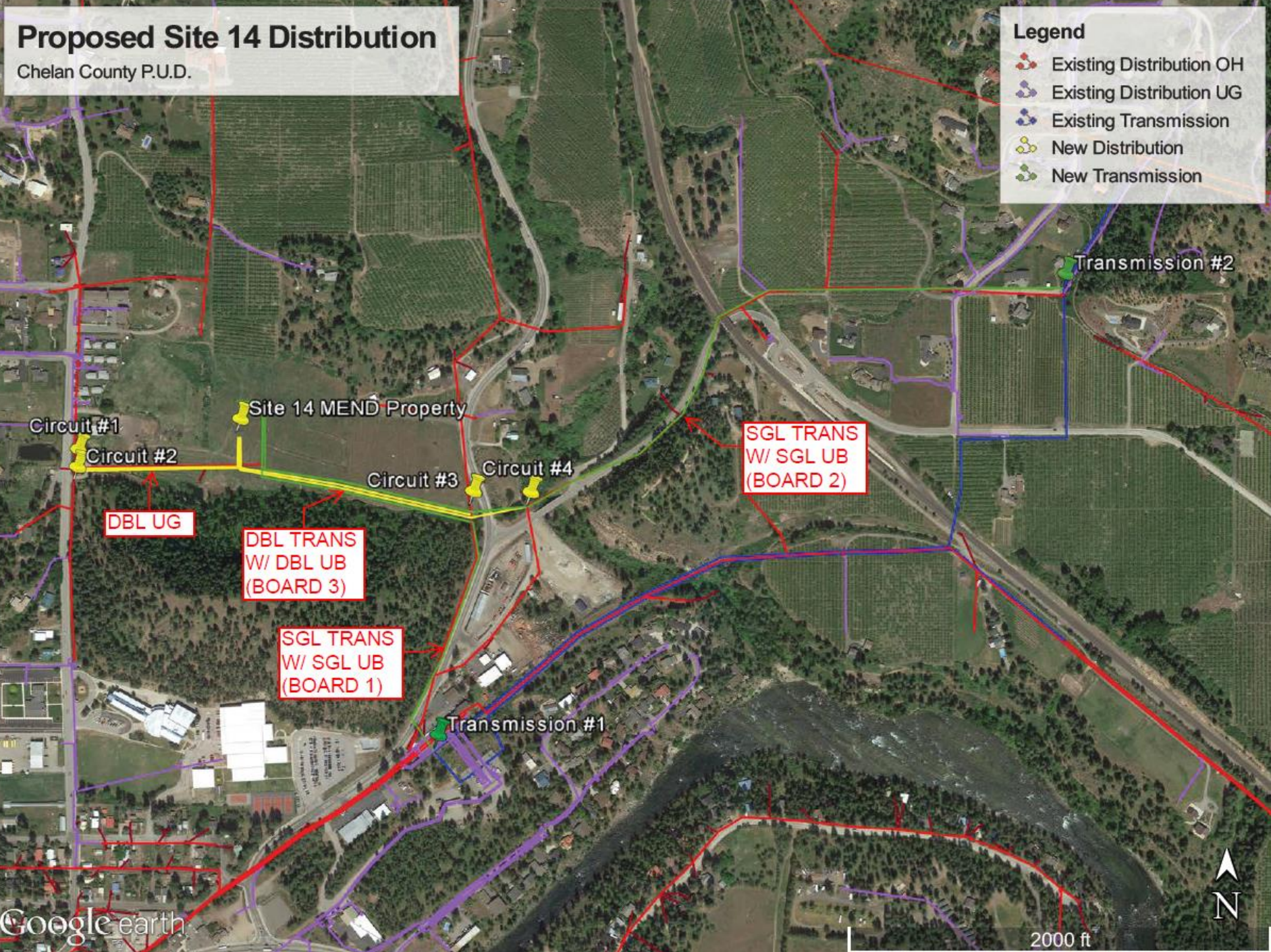


Proposed Site 14 Distribution

Chelan County P.U.D.

Legend

- Existing Distribution OH
- Existing Distribution UG
- Existing Transmission
- New Distribution
- New Transmission



Transmission #2

Site 14 MEND Property

Circuit #1

Circuit #2

Circuit #3

Circuit #4

SGL TRANS
W/ SGL UB
(BOARD 2)

DBL UG

DBL TRANS
W/ DBL UB
(BOARD 3)

SGL TRANS
W/ SGL UB
(BOARD 1)






Transmission #1

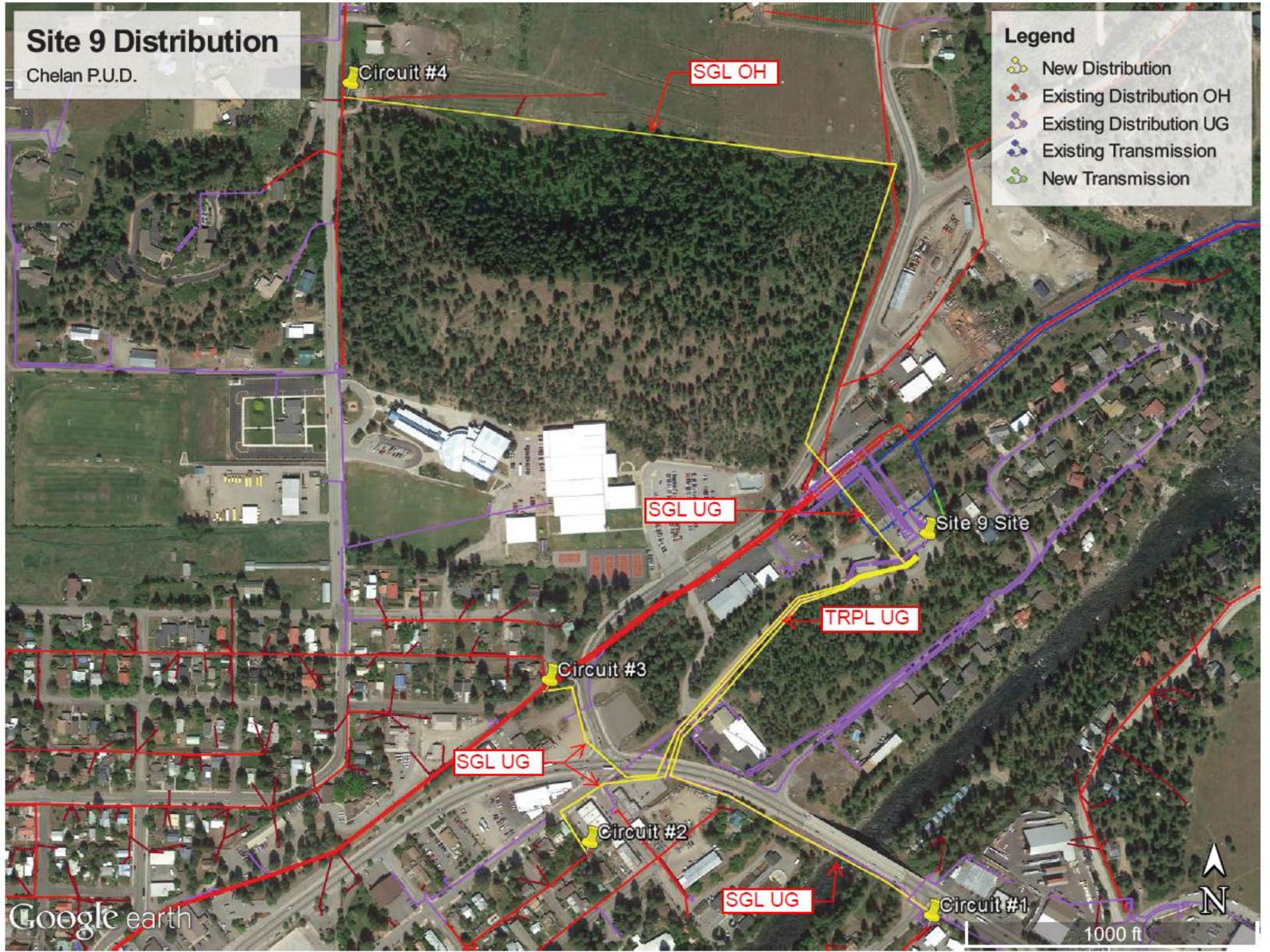


Site 9 Distribution

Chelan P.U.D.

Legend

-  New Distribution
-  Existing Distribution OH
-  Existing Distribution UG
-  Existing Transmission
-  New Transmission



Summary Public Comment Leavenworth

(2/2-3/3/17)

Site 9:

- Concerns from neighbors about placing an additional substation on site 9
- Neighbors near Site 9 have already done “their share” of sacrifice for PUD infrastructure - don’t need additional light, noise, health impacts and/or property value impacts
- Site 9 does not provide adequate space for growth
- Site 9 should not be considered because the community wants expandability and reliability – no new transmission is a disadvantage. If more energy is consumed in the future it would be beneficial to have additional real estate. Sites 8a and 14 are set up to serve additional residents.
- In favor of site 9 because infrastructure already exists in that location
- More options around the PUD office (site 9) should have been considered

Sites 8a & 14:

- Sites 8a and 14 provide additional substation away from already existing one – better supports future development
- In favor of site 8a because of duplicate transmission, sufficient area for expansion, higher ground, ability to screen with trees
- Concerns about aesthetic impacts to housing near site 8a , visual mitigation would be important
- In favor of site 14 because of willing seller, less earthwork required, electrical redundancy
- If a substation is located on site 14, it should be set on the corner of the land
- Site 14 is potential for development and should not be used for a substation which could impact housing values
- Concern about high water table at site 14

Other:

- Site 10 should be included on the shortlist of sites

Questions?

Recent Public Outreach (Chelan)

- February 22, 2017 Chelan City Hall open public meeting
 - Provided update on focus group action items
 - Reviewed consultants engineering and cost analysis
 - Provided overview of three sites Pros/Cons
 - Received feedback from attendees on sites



Site Selection Initial Review -Chelan



North Shore Chelan Substation – Site Comparison

	Chelan Heights	Uhrich Orchard	Washington Federal
Earthwork Costs	442,000	424,000	703,000
Substation Costs	3,403,000	3,403,000	3,403,000
Distribution Costs*	5,010,000	8,021,000	7,629,000
Transmission Costs	253,000	456,000	592,000
Total Costs	9,108,000	12,304,000	12,327,000

* Assumed change of Transmission Structures for Distribution under-build is required

	Pro	Con	Variable		
Chelan Heights	X			Proximity to Existing Housing	
		X		T&D Visual Impacts	
	X			Site Access - 4,800 ft of orchard access road	
	X			Underground Distribution	0.9 miles
	X			Overhead Distribution	4.3 miles
	X			Total Distribution	5.3 miles
Uhrich Orchard	X			Proximity to Existing Housing	
		X		T&D Visual Impacts	
	X			Site Access - Adjacent to County Road	
	X			Underground Distribution	1.4 miles
	X			Overhead Distribution	6.9 miles
	X			Total Distribution	8.3 miles
Washington Federal	X			Proximity to Existing Housing	
		X		T&D Visual Impacts	
	X			Site Access - Developed roadway access	
	X			Underground Distribution	3.2 miles
	X			Overhead Distribution	1.7 miles
	X			Total Distribution	4.9 miles

Contingency:

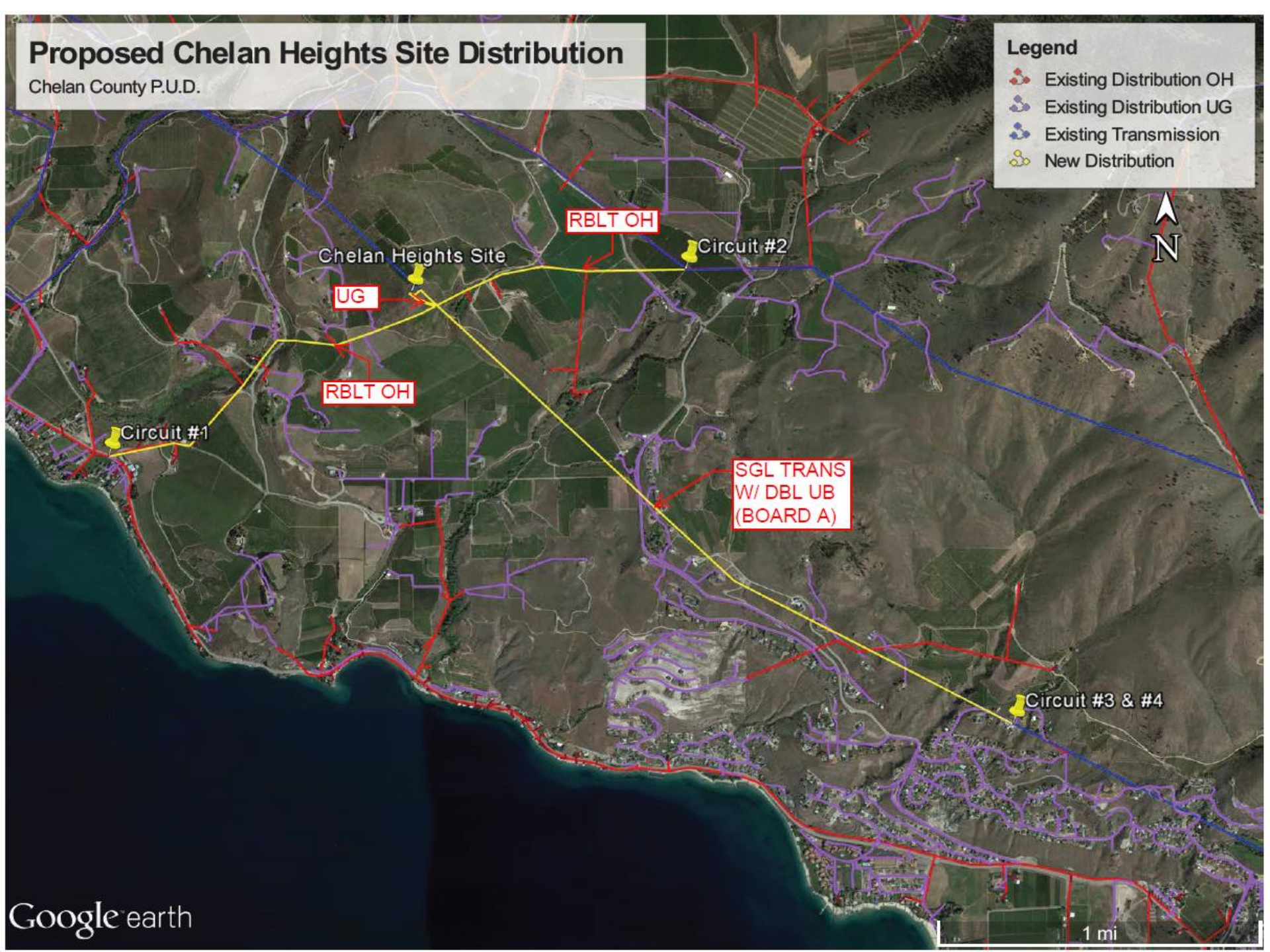
All work element contingency is 20%; except Transmission Construction, which is 30%

Proposed Chelan Heights Site Distribution

Chelan County P.U.D.

Legend

- Existing Distribution OH
- Existing Distribution UG
- Existing Transmission
- New Distribution



Proposed Uhrich Orchard Distribution

Chelan County P.U.D.

Legend

- Existing Distribution OH
- Existing Distribution UG
- Existing Transmission
- New Distribution

SGL TRANS W/
DBL UB/ SGL UG
(BOARD B)

Uhrich Orchard Site

SGL TRANS
W/ DBL UB
(BOARD A)

SGL TRANS
W/ DBL UB
(BOARD C)

OH

Circuit #1

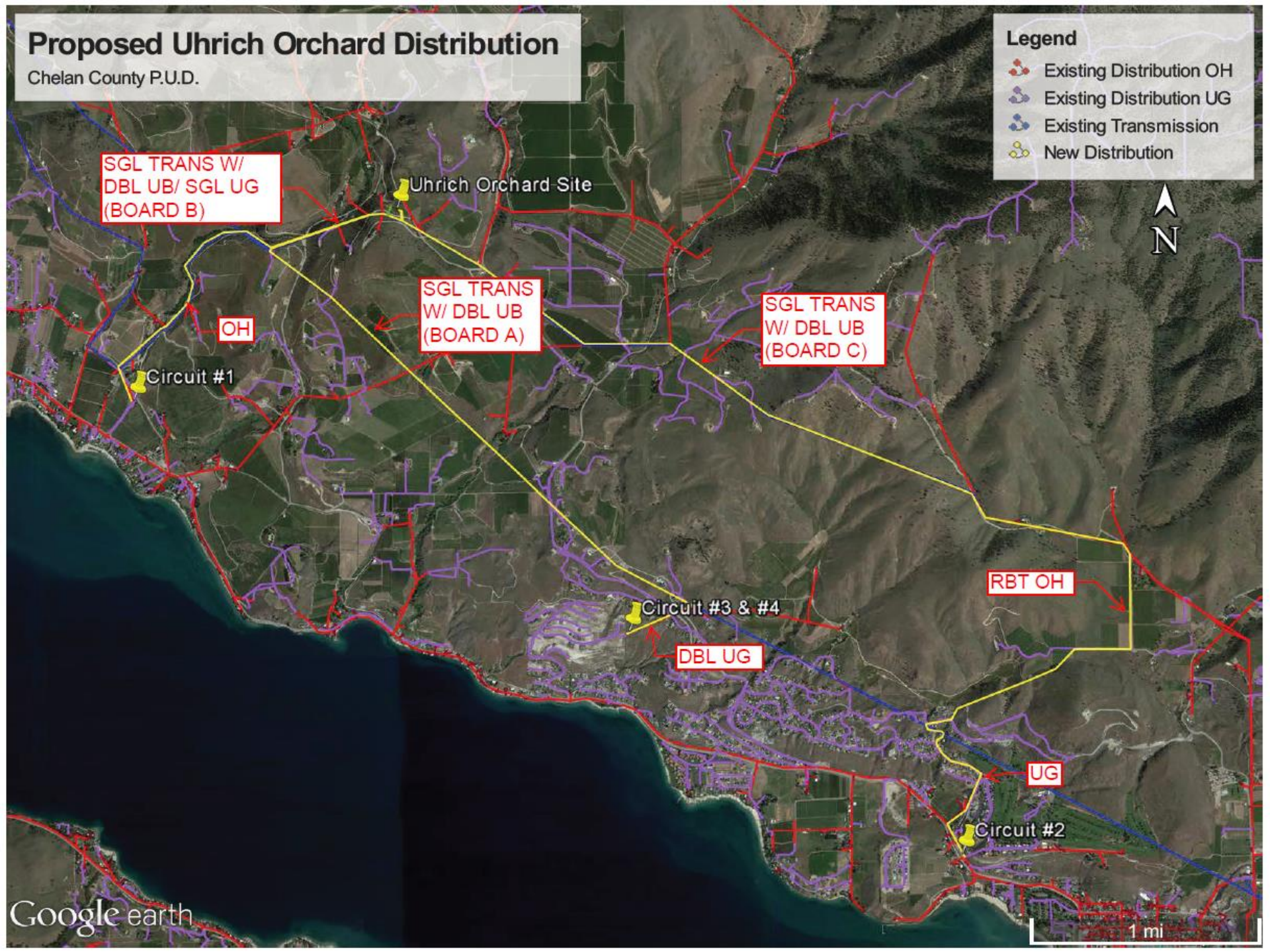
RBT OH

Circuit #3 & #4

DBL UG

UG

Circuit #2

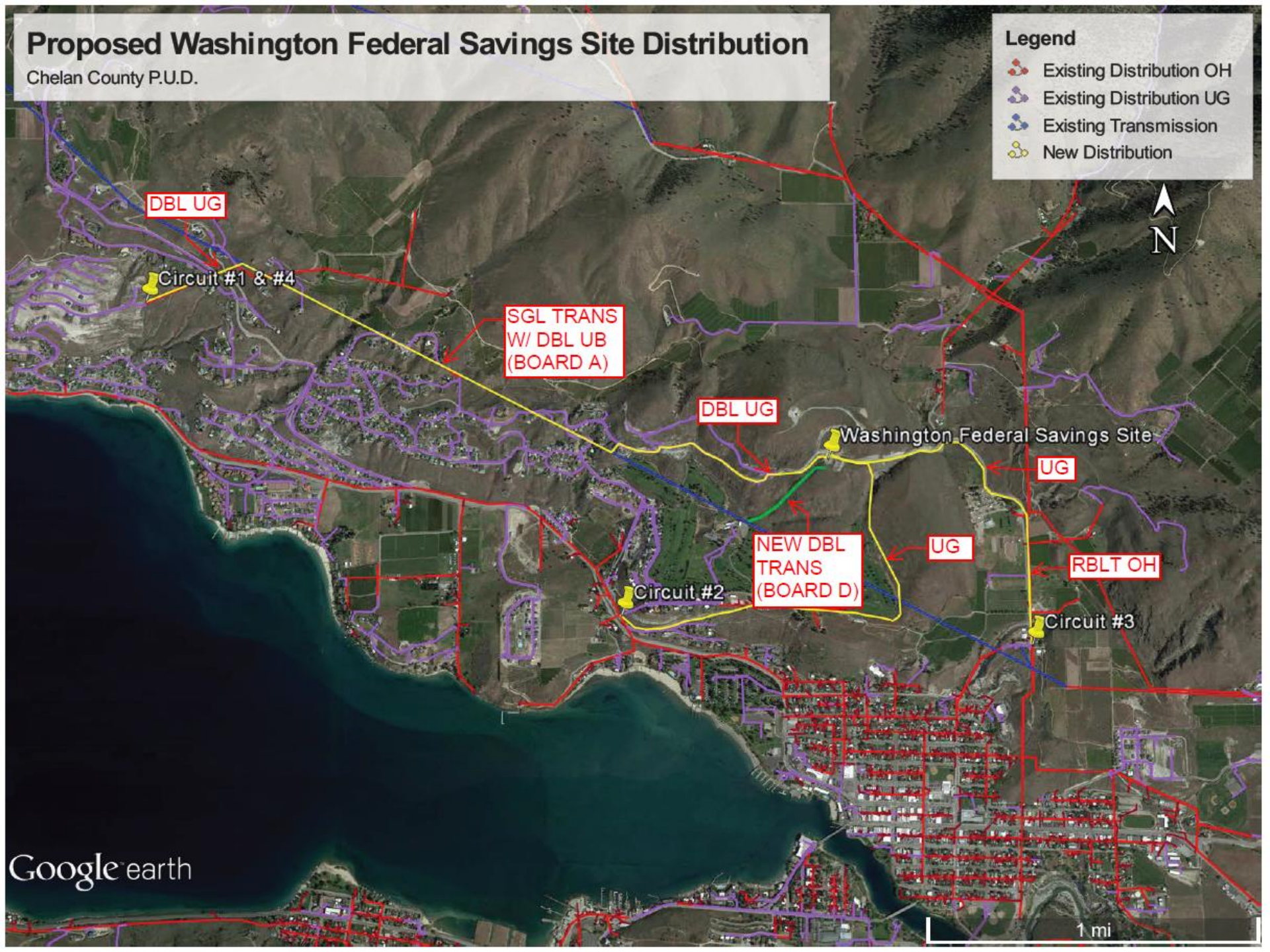


Proposed Washington Federal Savings Site Distribution

Chelan County P.U.D.

Legend

- Existing Distribution OH
- Existing Distribution UG
- Existing Transmission
- New Distribution



Summary Public Comment Chelan

(2/2-3/3/17)

- Most comments in favor of Wash. Fed. and Uhrich sites
 - Better access, excavation obstacles and aesthetics
- Suggestion to purchase **both** Wash. Fed. And Uhrich sites
- In favor of any of the sites because the three locations are out of the sight-line of many residents
- Concern about aesthetics (lake views) of additional overhead distribution lines needed for any of the sites – prefer undergrounding
- Would like to know the cost of undergrounding the additional distribution lines that impact views
- Suggestion to increase the engineering cost estimates for distribution lines
- Concern that the cost to improve aesthetics is high when compared to recent substation costs
- Feeling that the PUD should plan further ahead and purchase property before the development happens
- Suggestion for PUD to work with county and municipal governments/planning groups to require developers to be involved upfront – provide land, funding and ROW
- Feeling that the substation should be located on property within the newer residential developments

Chelan Heights

- Concern about aesthetic impacts to neighbors of Chelan Heights property due to visible location – on top of a hill, in direct sight-line of lake view
- Concern that existing dirt access road was only designed for access to four adjoining lots
- Suggestion to move proposed Chelan Heights site to the west to improve aesthetics for neighbors
- In favor of Chelan Heights property because of lesser costs, willing seller, minimal visual impact

Uhrich

- If Uhrich is chosen, suggest to move access road

Wash. Fed.

- Wash. Fed. property has negative impacts on neighboring property owners because of the needed additional overhead transmission
- Property adjacent to Wash. Fed. is planned for recreation development property (Tourist Accommodation) and the additional transmission line that would run past this planned development property would negatively impact its value and render it undevelopable causing economic damage
- Wash. Fed. property should not be chosen because it is the most expensive of the three proposed sites and the least number of Pros
- In favor of Wash. Fed. because it is closest to the theoretical load center
- In favor of Wash. Fed. because it is not currently developed as a residential area and future development would be built around an already existing substation – rather than placing one in an already existing residential area
- In favor of Wash. Fed. because an access road already exists
- In favor of Wash. Fed. because additional distribution lines would not be needed west of the approximate intersection of Boyd Rd. and Highpoint Ln.
- If Wash. Fed. is chosen, suggest to underground distribution in sections where views would be negatively impacted – look into funding extra cost through an LID

Questions?

Next Steps

- Return to the Board of Commissioners on March 20 for decision
 - Begin property acquisition
 - Permitting and engineering
 - Update budgeting
 - Procurement
 - Construction
 - Energize