

Regional Engagement Committee Meeting

September 17th, 2026

Agenda

- » Opening Remarks
- » WATT Updates
- » Next Steps & Upcoming Meetings
- » Public comment

WATT Update

Agenda

- » Reference portfolio update
 - » Very minor changes since All-Committees meeting
- » Draft Core portfolio
 - » SRA/IDA complete; will review Tx portfolio today
- » Flux scenario/SRA update
 - » Cases under construction; review to come ahead of Oct WATT meeting
- » Counterfactual portfolio
 - » Re-assessed piecemeal upgrades & are re-running cases
- » Benefits & Extreme Events update
 - » Proceeding with “persistent upgrades” used in benefits assessment

Assessment	Model	Reference	Core	Flux
Congestion	PCM			
SRA	Heavy Summer			
SRA	Heavy Winter			
SRA	High Wind			
SRA	High Solar			
IDA	MT-PNW			
IDA	NM-CO			
IDA	CA N to PNW			
IDA	CA OOS			
Benefits	Counterfact'l		N/A	
Benefits	Extreme Event		N/A	

Not started
 Under construction
 Draft/review
 Complete



Timeline

	8/24 - 8/28	8/31 - 9/4	9/7 - 9/11	9/14 - 9/18	9/21 - 9/25	9/28 - 10/2	10/5 - 10/9	10/12 - 10/16	10/19 - 10/23
ES Technical Work									
ES Draft Report									
Committee Meetings	All-Committees			WATT - 9/15 REC - 9/17			WATT - 10/6 REC - 10/8		

	10/26 - 10/30	11/2 - 11/6	11/9 - 11/13	11/16 - 11/20	11/23 - 11/27	11/30 - 12/4	12/7 - 12/11	12/14 - 12/18	12/21 - 12/31
ES Draft Report									
Committee Review			WATT/REC Review				Steering Review		
Committee Meetings	All-Committees - Oct 28			WATT - 11/17 REC - 11/19			Steering Vote 12/9		
Report Finalization									



Upcoming Project Milestones & Review

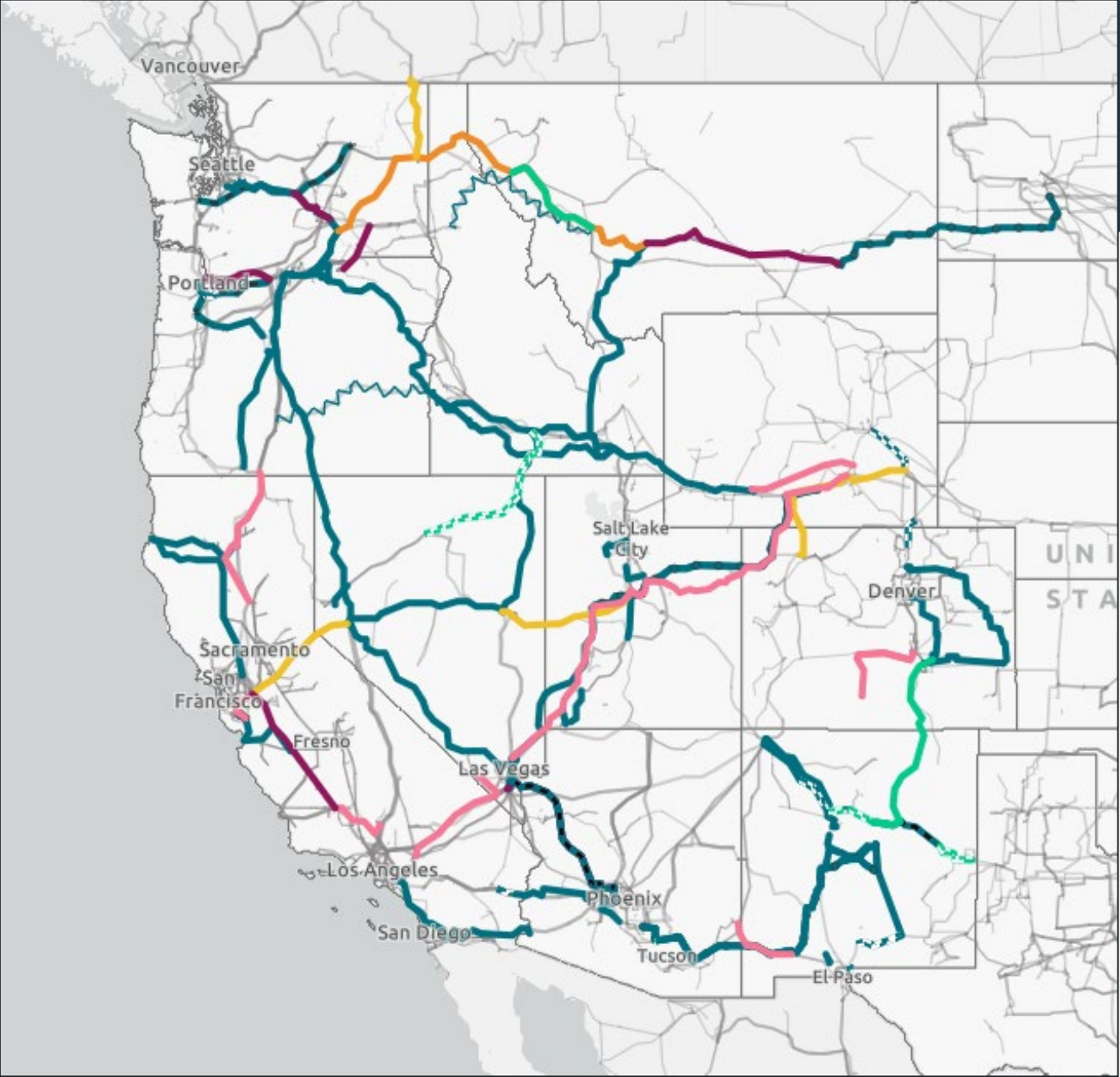
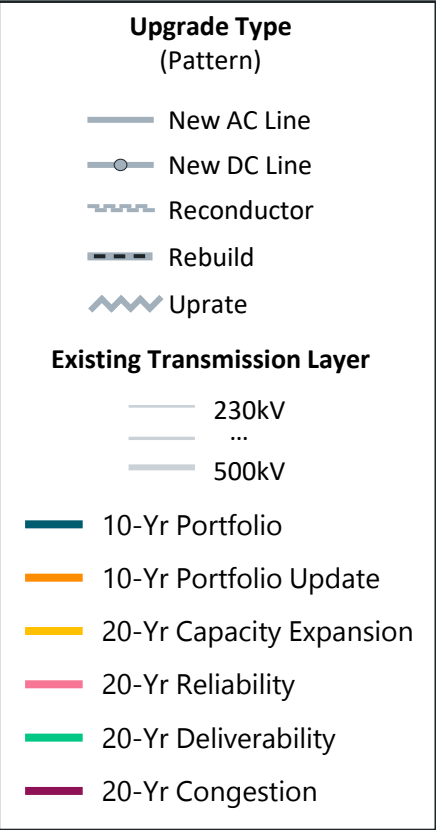
Tasks	Week 1 8/31 – 9/4	Week 2 9/7 – 9/11	Week 3 9/14 – 9/18	Week 4 9/21 – 9/25	Week 5 9/28 – 10/2	Week 6 10/5 – 10/9	Week 7 10/12 – 10/16	Week 8 10/19 – 10/23	Week 9 10/26 – 10/30	Week 10 11/2 – 11/6	Week 11 11/9 – 11/13	Week 12 11/16 – 11/20	Week 13 11/23 – 11/30
Project Milestones			WATT/REC			WATT/REC			All-Committee		Review Draft Report		
Core IDA			Review										
Flux SRA					Review?	Review	Review						
Flux IDA						Review?	Review						
CF: Replace Piecemeal w/ Portfolio Projects													
Ref/CF Benefits						Review							
Core Routing & Costing						Review							
Flux Routing & Costing									Review				
Portfolio Synthesis									Review				
Final Benefits Calc w/ Persistent Tx									Review?		Review		
PCM Multi-Weather Years									Review				
Extreme Event Modeling									Review?		Review		

Reference Portfolio

- » **Final 2045 Reference Power Cases with 20-year transmission upgrades posted on the [WECC](#) website**
- » **Final Production Cost Model will be posted in the next week**
- » **Review of routes/costs largely final**
 - » **Please review the appendix of today's slides and help us get more accurate cost numbers where possible!**

2045 Reference Case Upgrades Map

See project list
and cost/distance
estimates in the
appendix.



2045 Reference Case Map (Working Draft & Subject to Change)

- » Preliminary reference portfolio cost estimate ~\$30B
 - » Approximately 1/2 the cost of the 10-year portfolio
- » Average portfolio cost per mile is ~\$6.4M/mile

20-Year Reference Portfolio Summary

Upgrade Category	Total Line Miles	Total Cost Estimate
Capacity Expansion	1,535	10,856
System Reliability Assessment	1,793	12,139
Interarea Deliverability Assessment*	722	3,163
Congestion Assessment	666	4,199
Total	4,716	30,357

Scenarios Update

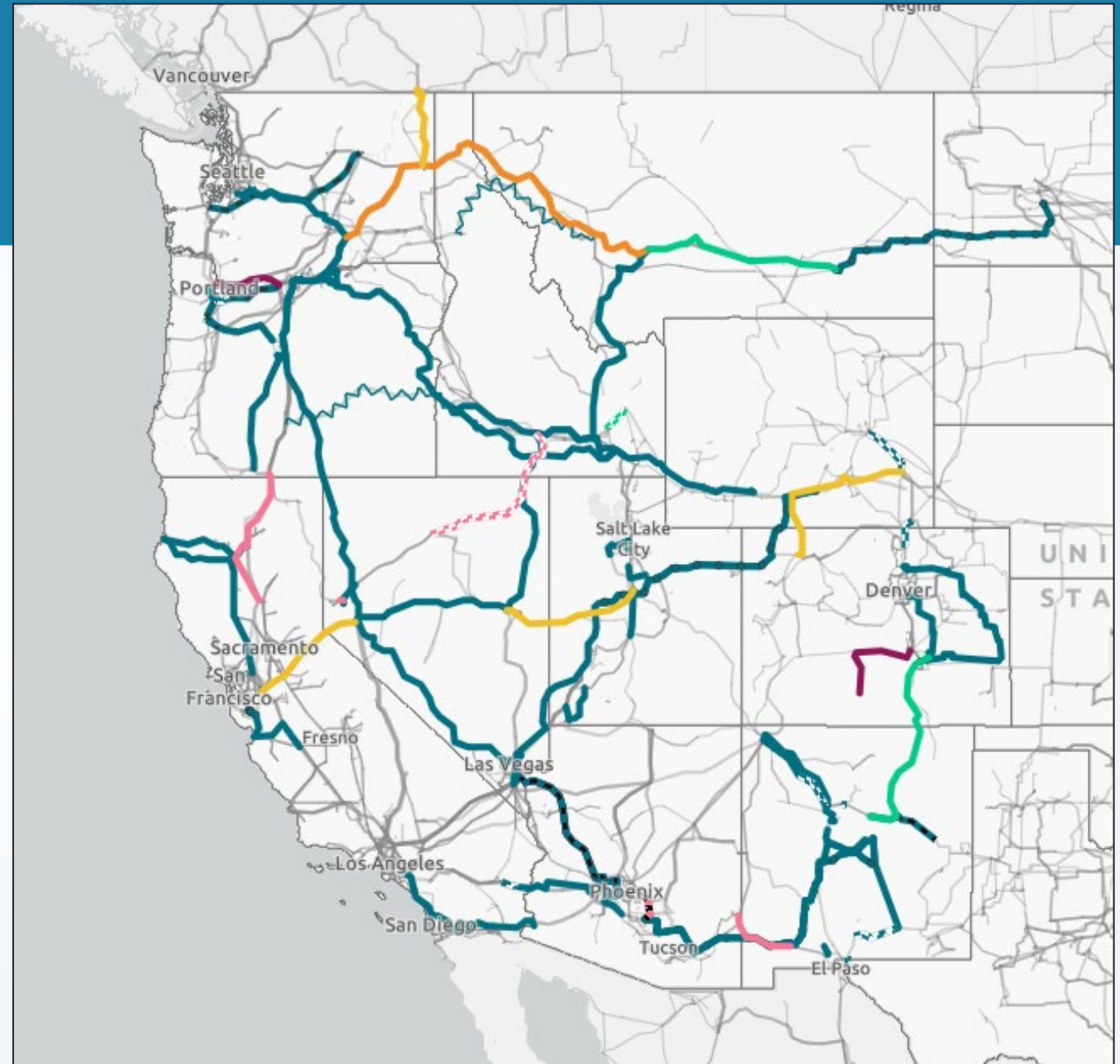
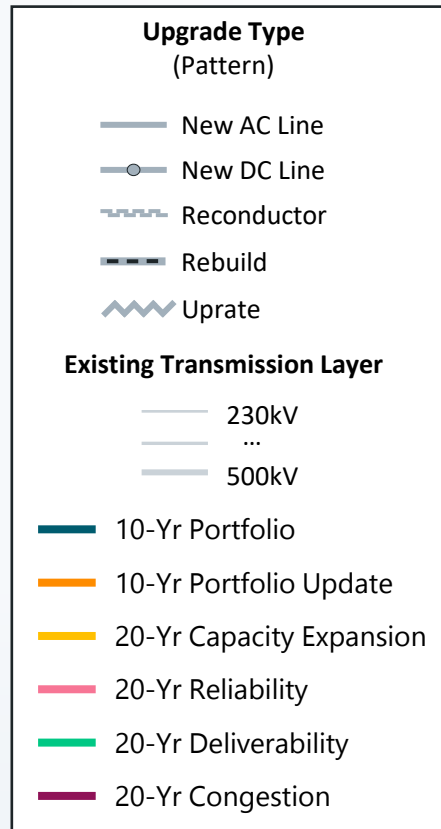
» Core Scenario

- » SRA and IDA Analysis for the Core Scenario are complete with a complete set of Network Upgrades identified.
- » 6 of the 43 Core Scenario network upgrades were not previously identified in the Reference Case portfolio.

» Flux Scenario

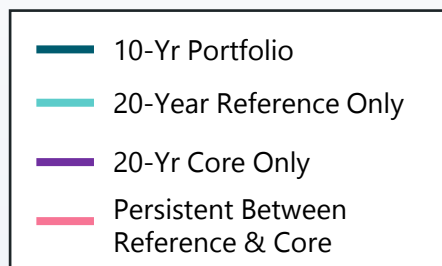
- » Energy Strategies is currently updating SRA Power Flow cases.
- » SRA Evaluation expected to be completed the week of **September 28.**
- » IDA Evaluation expected to be completed the week of **October 12.**

2045 Core Case Upgrades Map



2045 Portfolio Synthesis Map

Transmission need identification not complete across all three scenarios; **this map will continue to change as we complete remaining Flux transmission solutioning assessments (SRA, IDA, congestion)**

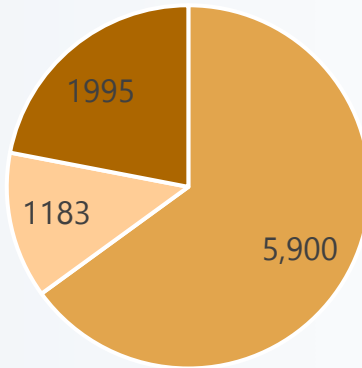


Counterfactual Case Update

- » Presented a preliminary counterfactual transmission portfolio at the August All-Committees meeting
- » Our team has continued to review the list of projects and updated the counterfactual piecemeal lines with projects from the 20-year reference case, where appropriate.
 - » Seeking to represent realistic transmission projects to mitigate the identified issues, where appropriate
- » This counterfactual case is still under development and testing
 - » Need to finalize Flux scenario modeling to identify “persistent upgrades” before performing final benefit calculation, but will be using Reference + Core results in the interim

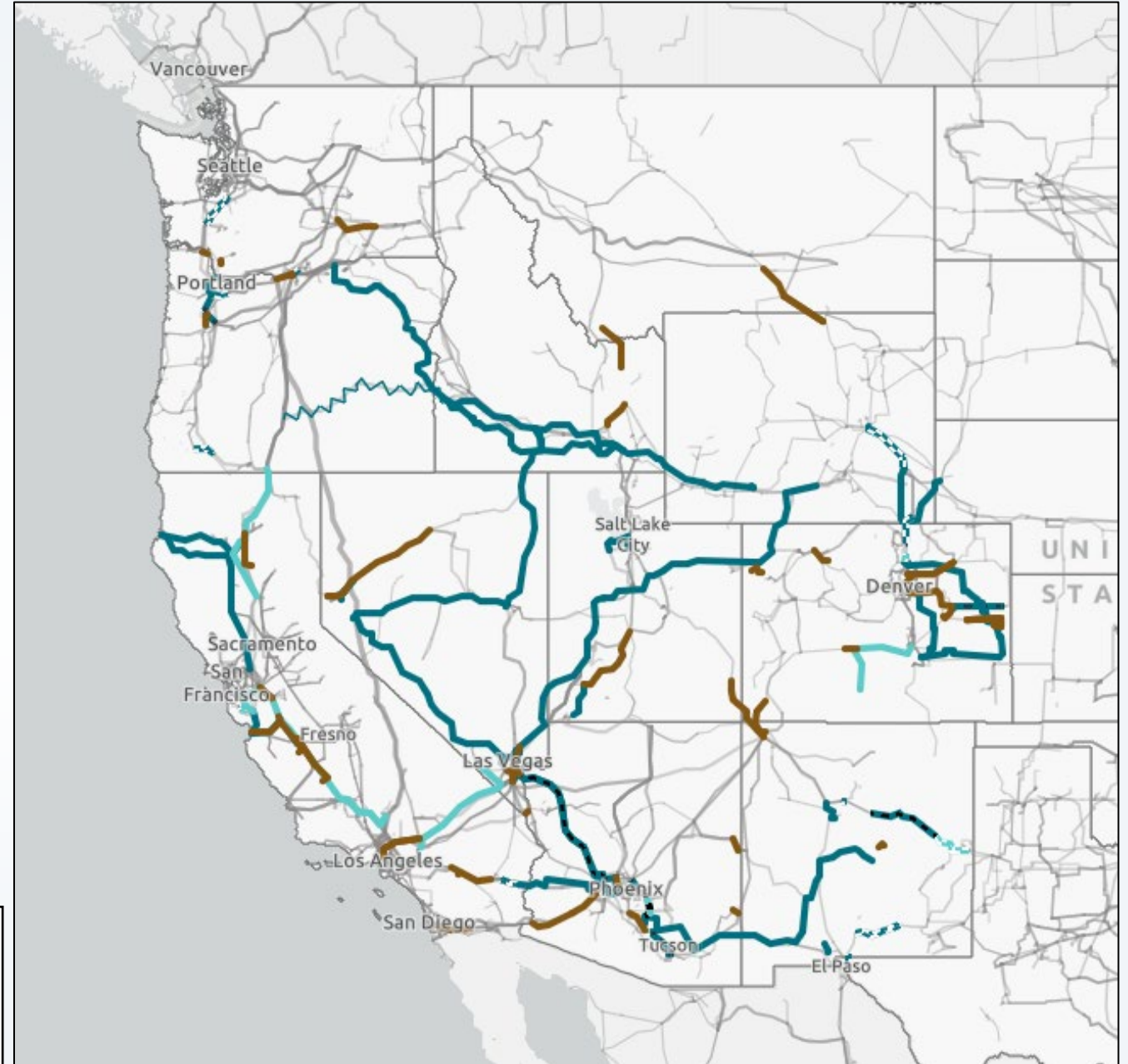
2045 Counterfactual Map

Line Miles



10yr Retained 20yr Retained 20yr Piecemeal

10-Year Retained
20-Year Retained
Counterfactual



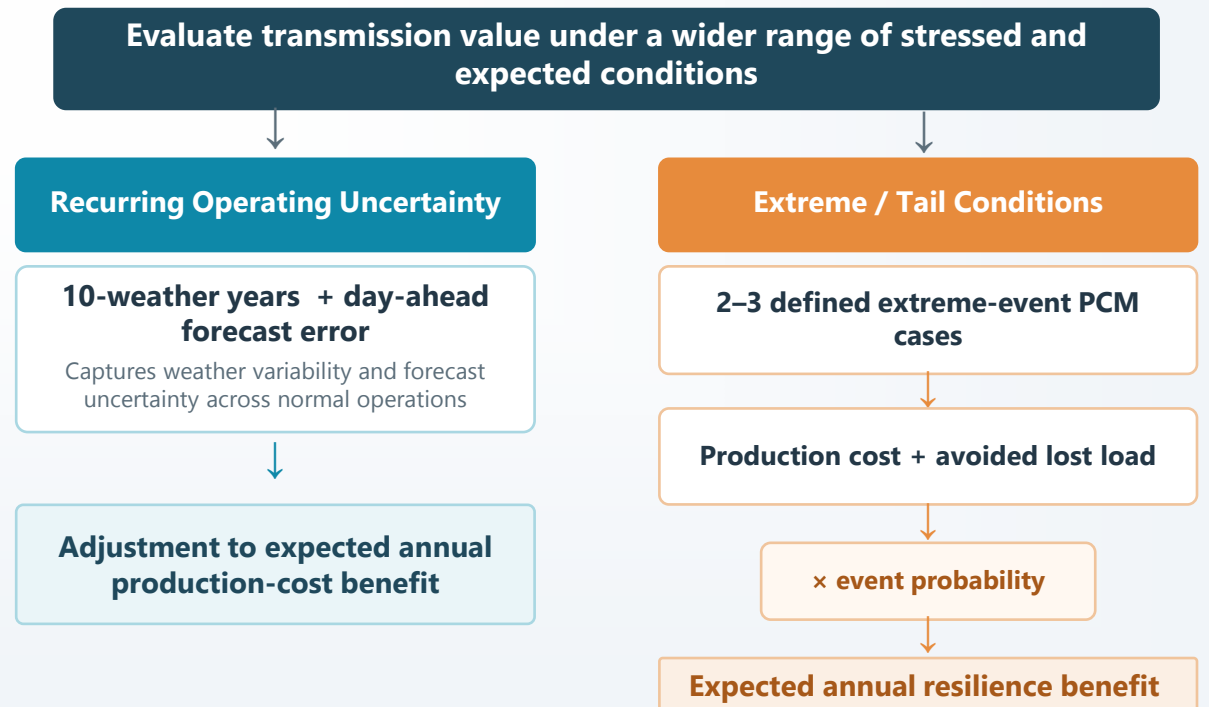
Background: Extreme Event Benefits for WestTEC

» What the Study Plan contemplated

- » WestTEC identified Extreme Event Mitigation as one of the seven transmission benefits.
- » Test the transmission portfolio under a broader range of stressed system conditions, including extreme heat/cold, changes in load and renewable/hydro output, generation availability, imports, and outages.
- » Benefit intended to capture both incremental production-cost savings and avoided lost load attributable to the transmission portfolio

» What we propose to implement

- » As the study progressed, we see two distinct ways to evaluate conditions *outside our standard PCM* case that offer additional transmission value:



Benefits Subgroup

- » Energy Strategies would like to propose 3-4 more Benefits subgroup meetings in October to solicit feedback on the following topics:
 - » Cross-Scenario Transmission Portfolio Synthesis
 - » Counterfactual and Benefits Modeling
 - » Extreme Event Assessments
- » Propose to book subgroup meetings during October.

Next Steps

- » Next REC meeting on 10/8
- » Next All-Committee meeting will be in Oct 28 2026
- » **Draft 20-Year Report will be provided to REC on November 9th**
 - REC 20-Year report review meeting will be held during 20-year report drafting on Nov 19th
 - Review/Feedback period will go through 11/20
- » Any feedback or questions, please email GDS:
 - » gillian.mccullough@gdsassociates.com
 - » kyra.green@gdsassociates.com
 - » annie.capper@gdsassociates.com

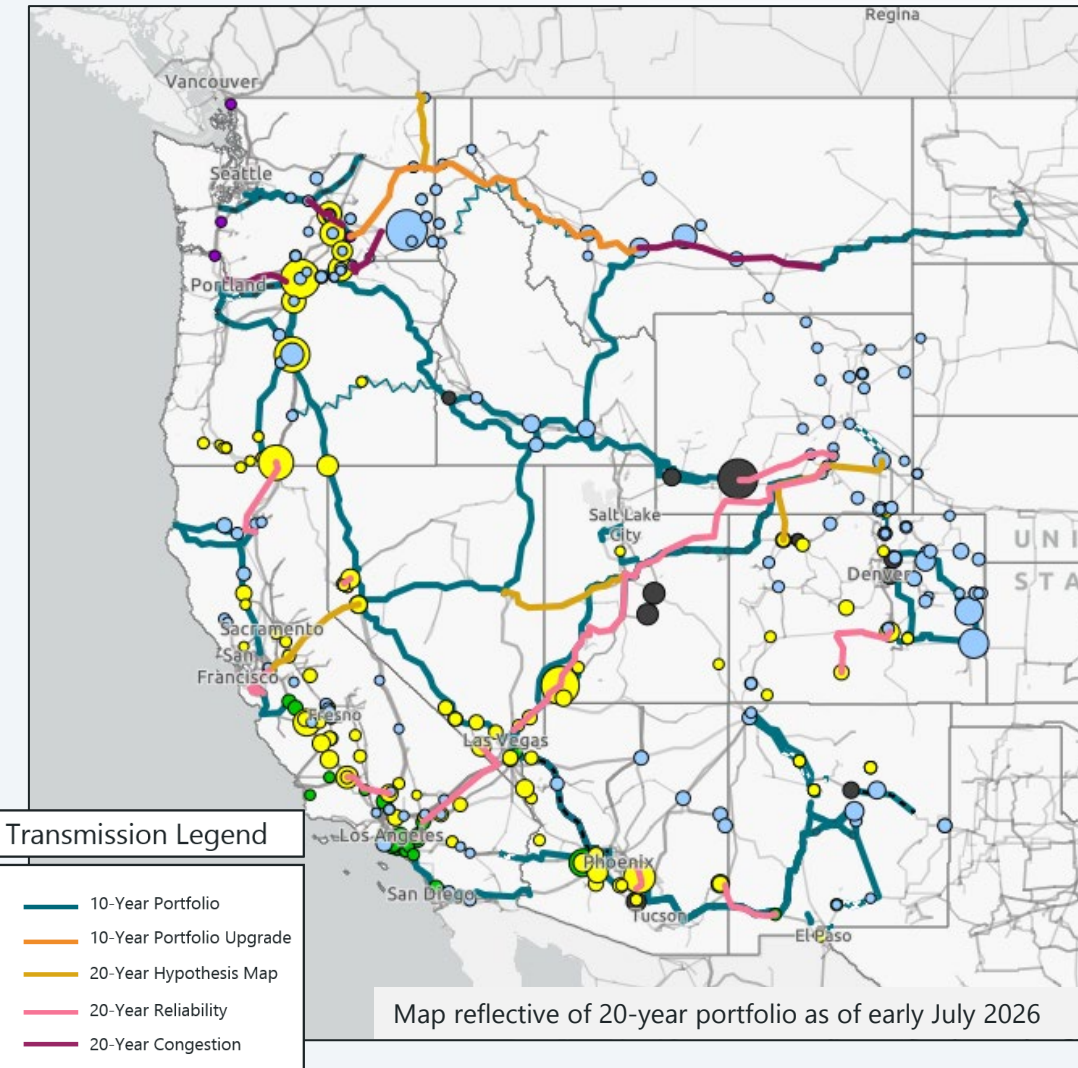
Public Comment

Appendix

5 minutes

2045 Reference Case Map

(Working Draft & Subject to Change)



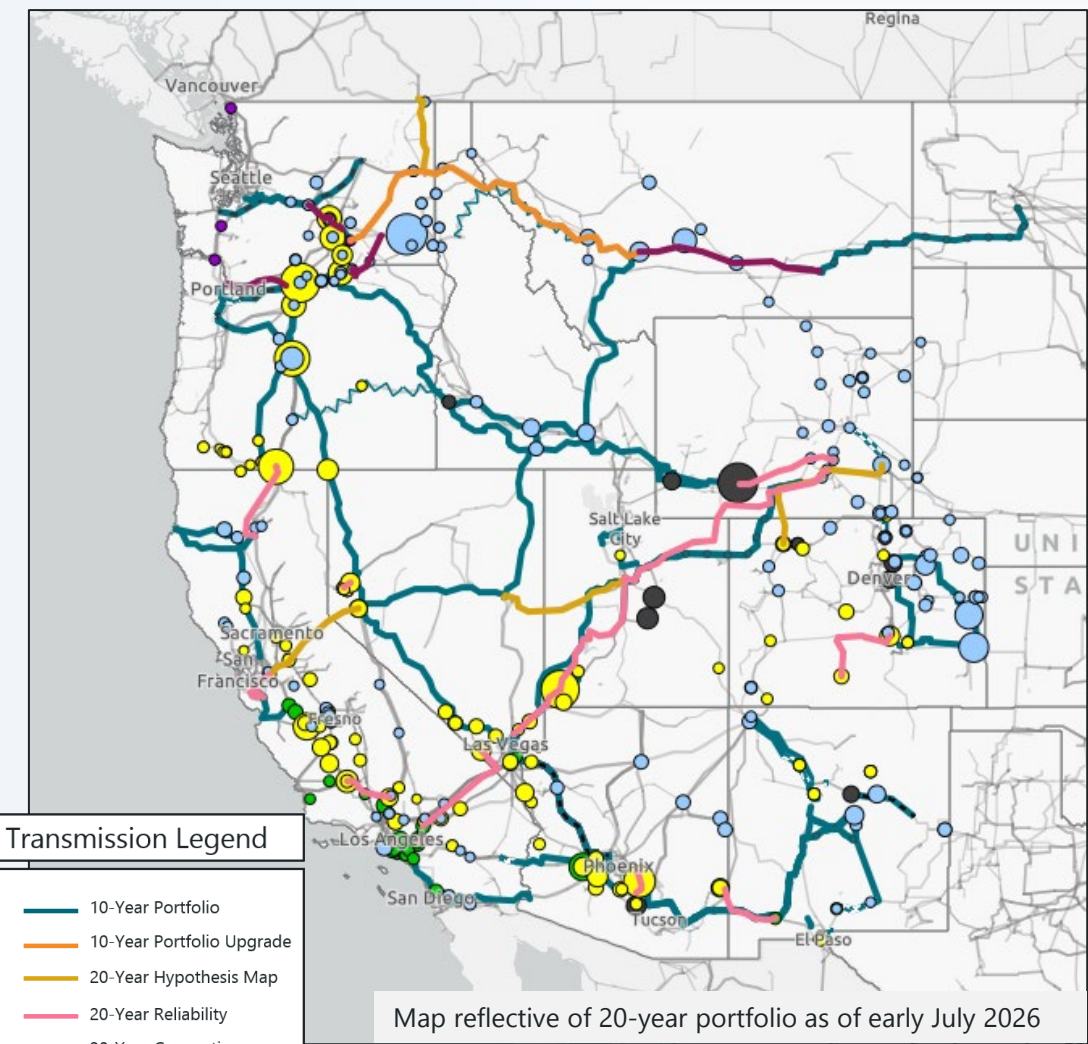
20-Year Capacity Expansion Upgrades

Portfolio Item	Location	Line Miles*	Total Cost*	Driver
Cross Tie Transmission	UT/NV	50	306	E3 Capacity Expansion
Walker River – Tesla 500kV	NV/CA	235	1,316	E3 Capacity Expansion
Path 3 Upgrades	WA/BC	189	1,224	10-Yr Congestion & E3 Capacity Expansion
Aeolus – Craig 500kV	CO/WY	170	928	10-Yr Congestion & E3 Capacity Expansion
Aeolus – LRS 500kV	WY	89	529	10-Yr Congestion & E3 Capacity Expansion

*Low bookend; subject to change

2045 Reference Case Map

(Working Draft & Subject to Change)



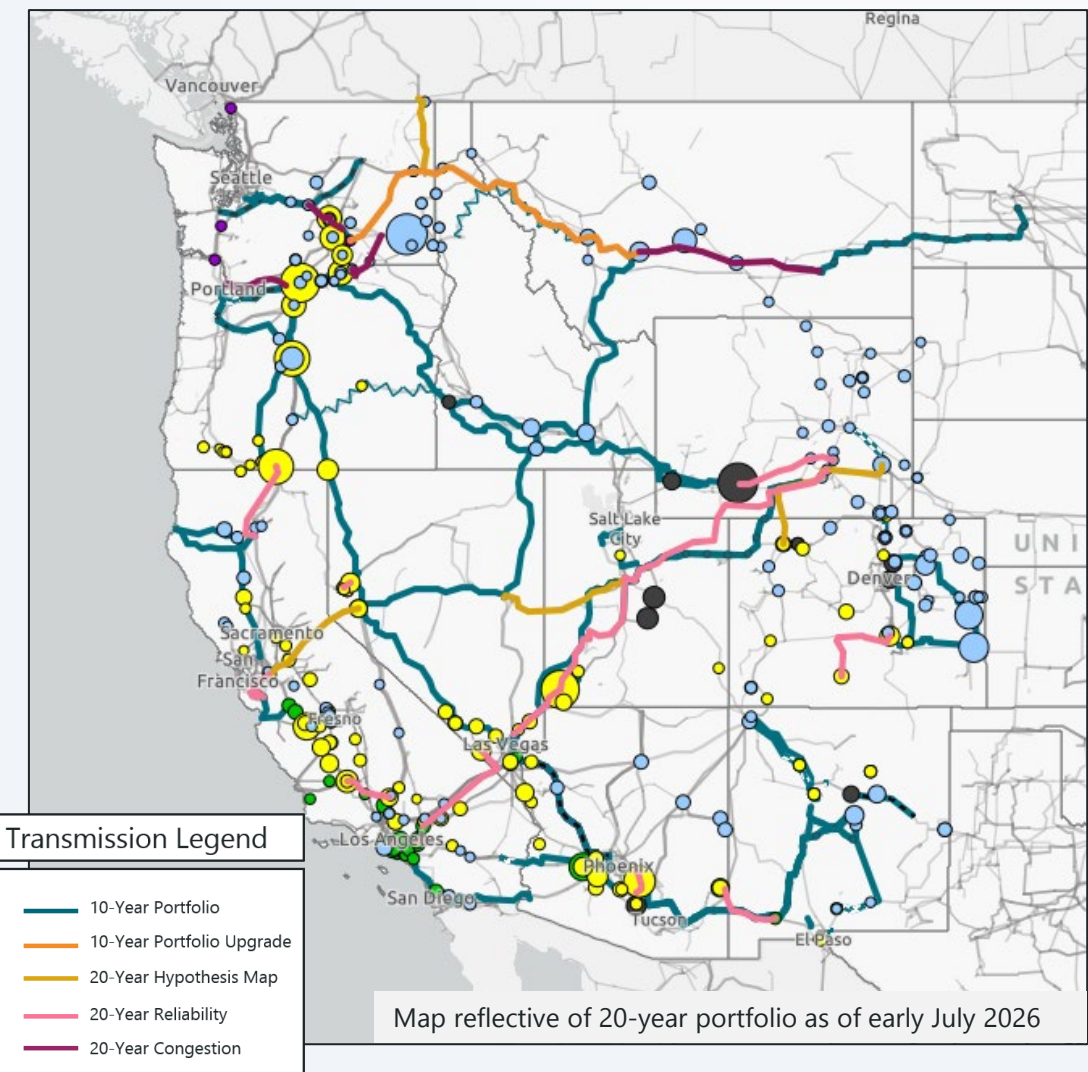
10-Year Portfolio Update

Portfolio Item	Location	Line Miles*	Total Cost*	Driver
New Bell BPA – Ashe 500 kV line ckt 1 and ckt 2	WA	300	1575	Additional Path 3 Expansion Needs Beyond the 10-Year Timeframe
New BPA Garrison – GASH - Bell BPA - GASH 500 kV line	MT/WA	276	1,457	
New Townsend - Garrison 500 kV line	MT	88	450	

*Low bookend; subject to change

2045 Reference Case Map

(Working Draft & Subject to Change)



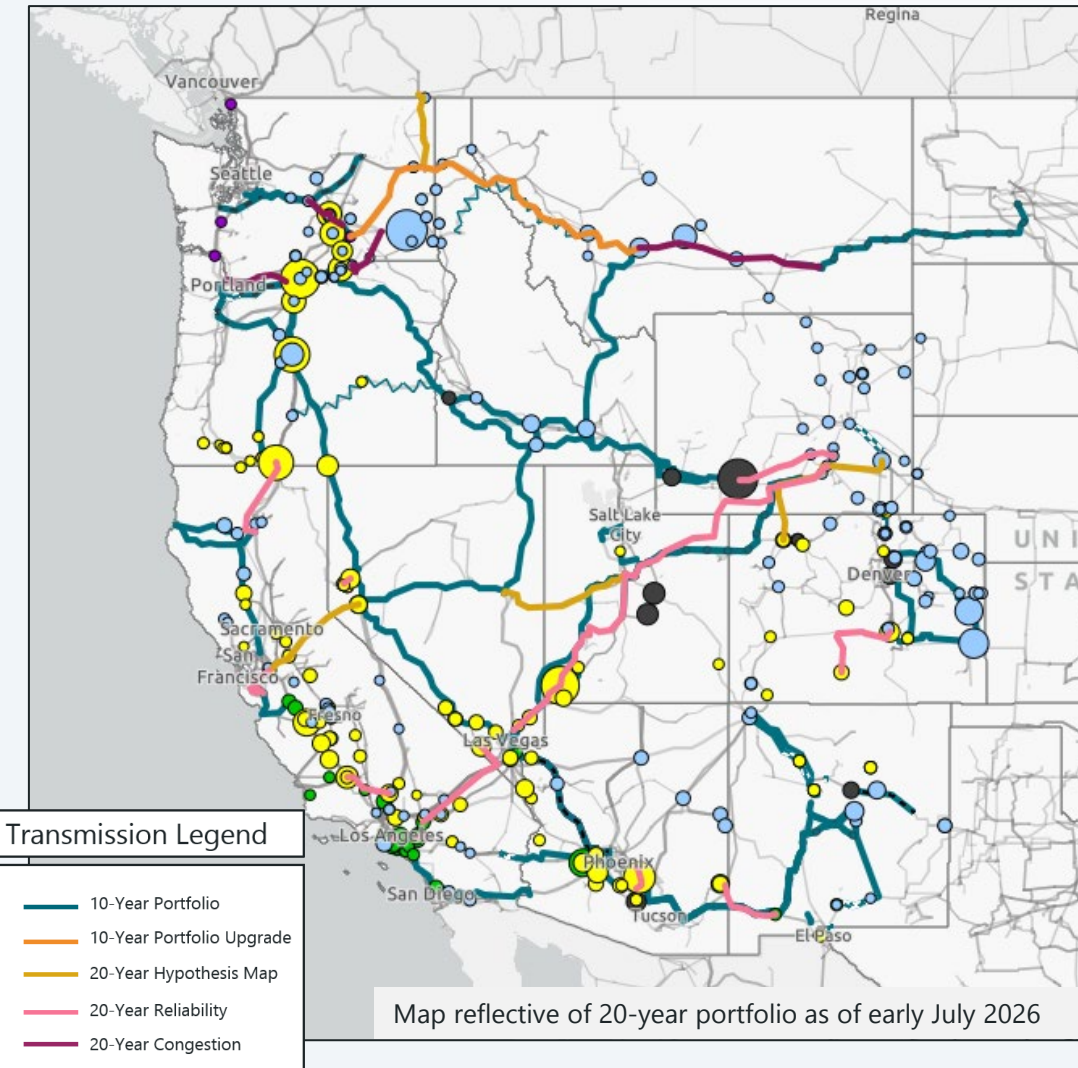
20-Year SRA Upgrades (Table 1 of 3)

Portfolio Item	Location	Line Miles*	Total Cost*	Driver
Captain Jack – Fern Road 500kV line	OR/CA	120	609	Minor N-0 (103%) and more severe N-1 (175%) overloads on COI (N-S) and 500 kV lines in northern CA during Heavy Summer conditions
Fern Road - Table Mt 500kV line	CA	80	411	
Clover – Red Butte – Harry Allen 500kV line	UT/NV	369	1,833	N-0 Overloads up to 175% and voltage violations in Southwest Utah during High Solar conditions
Greenlee – Luna 345kV line	NM/AZ	114	454	N-1 Overloads up to 123% from resources added in EPE and southern NM during High Solar conditions
Midway – Poncha – San Luis Valley 345	CO	147	595	N-0 and N-1 Overloads from San Luis Valley resources under High Solar

*Low bookend; subject to change

2045 Reference Case Map

(Working Draft & Subject to Change)



20-Year SRA Upgrades (Table 2 of 3)

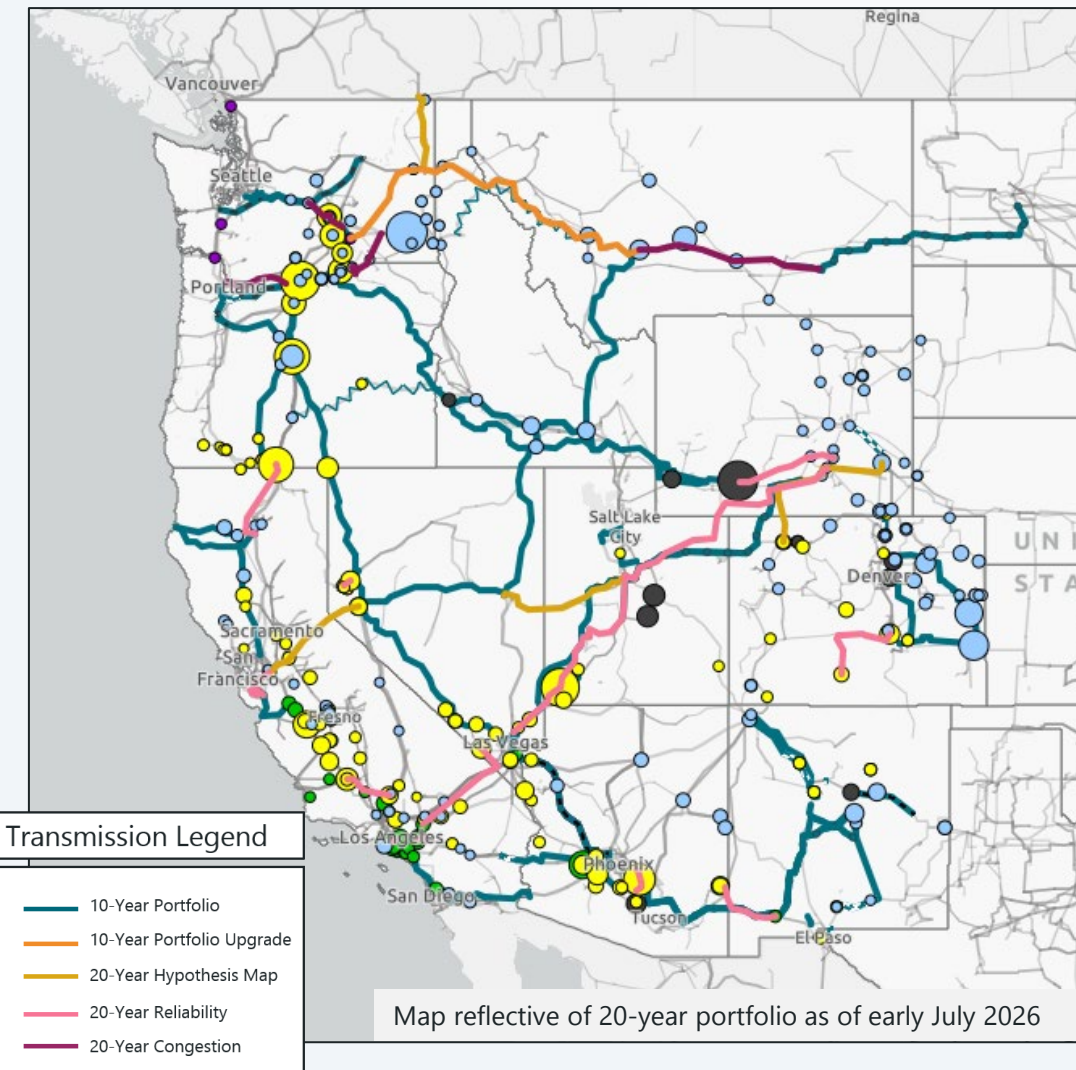
Portfolio Item	Location	Line Miles*	Total Cost*	Driver
25-26 CAISO TPP Projects in SCE	CA	188	2,089	N-0 Overloads up to 110% during High Solar conditions; CAISO imports
Upgrades to 230kV system around Trimble	CA	95	1,424	High 20-year loads in the Greater Bay Area
Midway - Windhub 500kV†	CA	87	443	Increased Transfers from southern CA to Northern CA
Rebuild Pinal Central – Q76 – Browning 500kV to Double Circuit†	AZ	49	280	High flows from Pinal Central towards Phoenix

Items marked with † have not been widely vetted by the WATT committee

*Low bookend; subject to change

2045 Reference Case Map

(Working Draft & Subject to Change)



20-Year SRA Upgrades (Table 3 of 3)

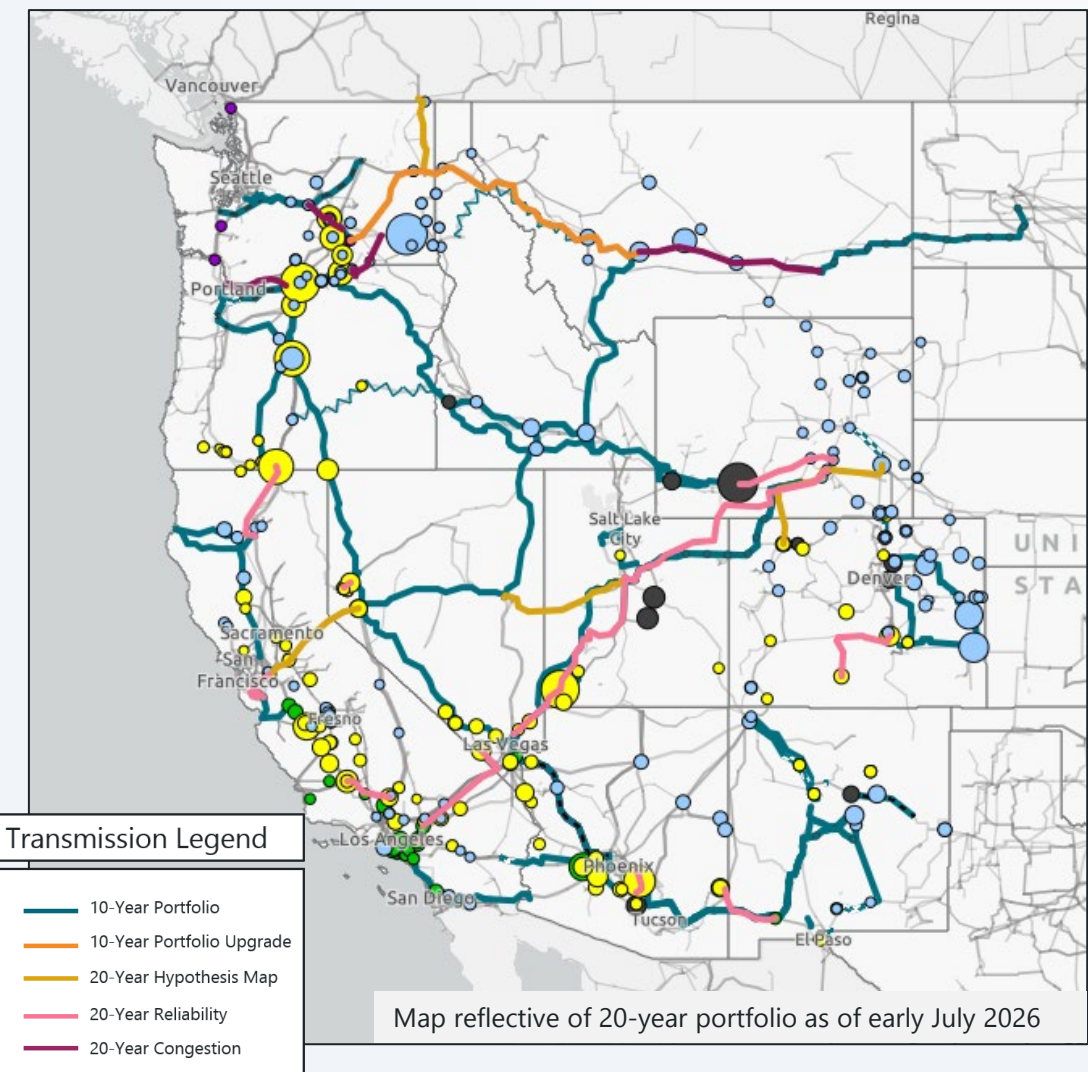
Portfolio Item	Location	Line Miles*	Total Cost*	Driver
Rebuild Tracy - Olinghouse 345kV to Double Ckt ACCC†	NV	12	53	Large 20-year resources on the 345 kV system between Valmy and Tracy
Tracy E - Tracy W breaker upgrade†	NV	-	6	
Second Aeolus - Clover 500 kV line†	WY/UT	424	2,154	Significant 20-year wind generation added in Wyoming
Shirley Basin – Anticline 500 kV	WY	138	737	
19 Transformer Upgrades	System-wide	-	149	Overload under contingency conditions

Items marked with † have not been widely vetted by the WATT committee

*Low bookend; subject to change

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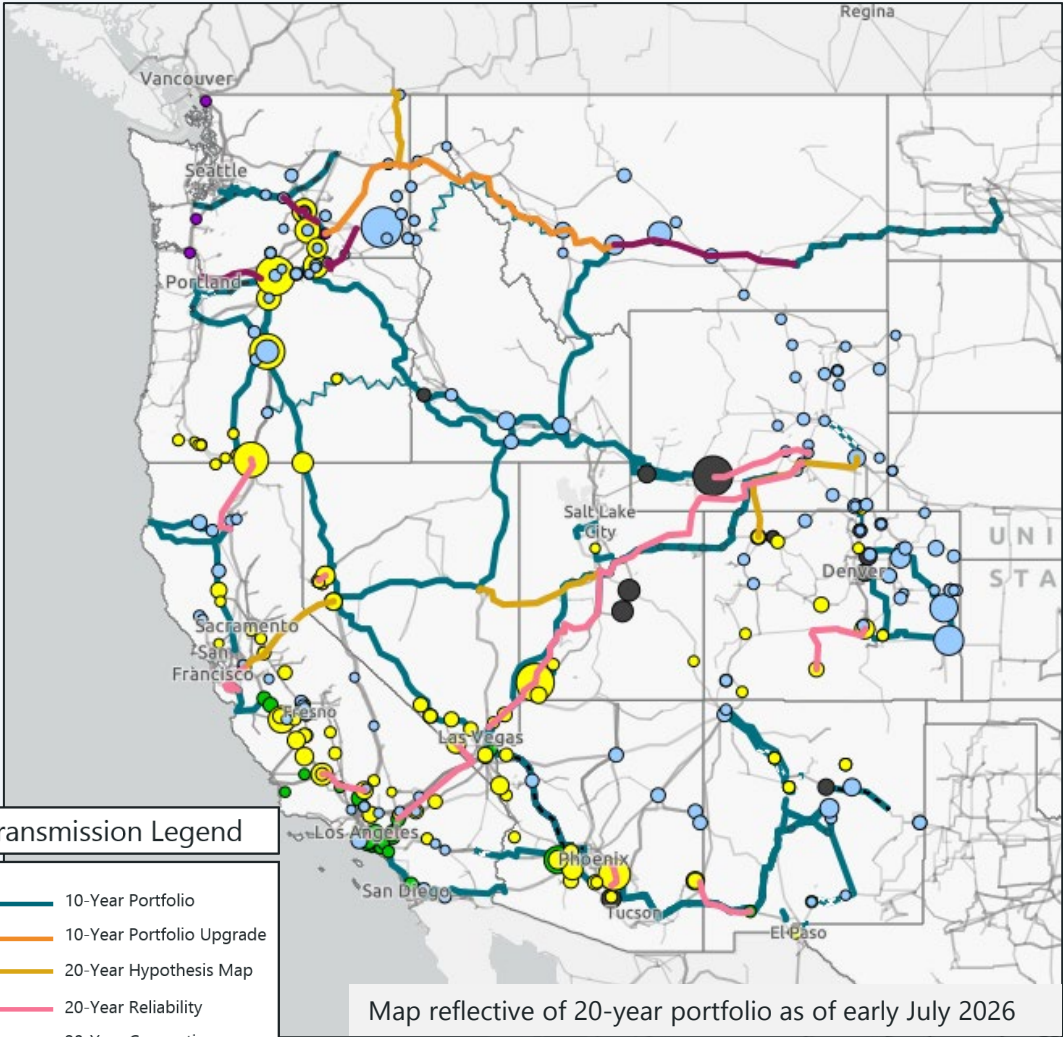
20-Year Congestion Upgrades

Portfolio Item	Location	Line Miles*	Total Cost*	Driver
Cascade Renewable Transmission Project	WA	80	274	Congestion Measure Threshold Met
New Colstrip - Broadview – Loco Mtn – Townsend 500 kV	MT	245	1,291	
New Lower Monumental - Stanfield 500 kV line, which includes a new Stanfield substation looping in the existing McNary – Calpine HPP 500 kV line	WA/OR	73	414	
New Vantage – Schultz #2 500 kV line	WA	35	171	
New Hanford – Vantage #2 500 kV line	WA	24	134	

*Low bookend; subject to change

2045 Reference Case Map

(Working Draft & Subject to Change)



20-Year IDA Upgrades

Portfolio Item	Location	Line Miles*	Total Cost*	Driver
New Garrison – GASH #2	MT	120	608	MT -> NW Exports
Reconductor Midpoint to Valmy 345kV circuit	ID and NV	248.5	195.5	ID CAISO OOS Wind Deliverability

*Low bookend; subject to change
 Does not reflect changes to IDA upgrades based on WATT feedback received on 8/7