Generation Interconnection Transition Cluster Study

Phase One Review Meetings

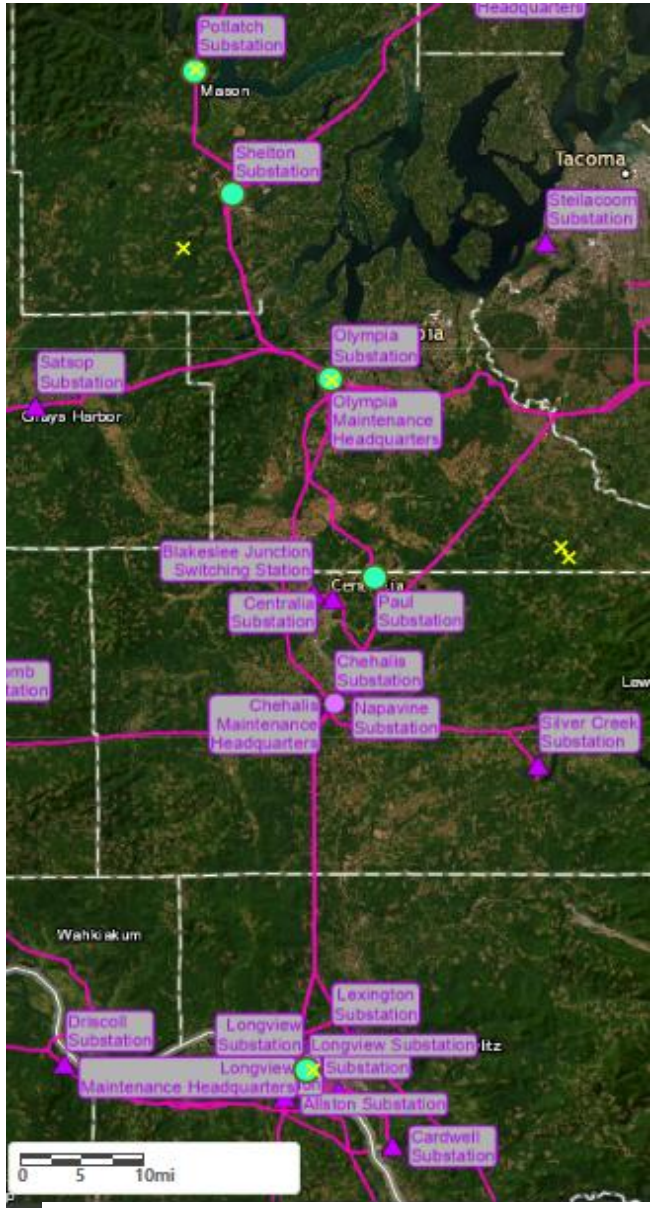
February 9 -12, 2026

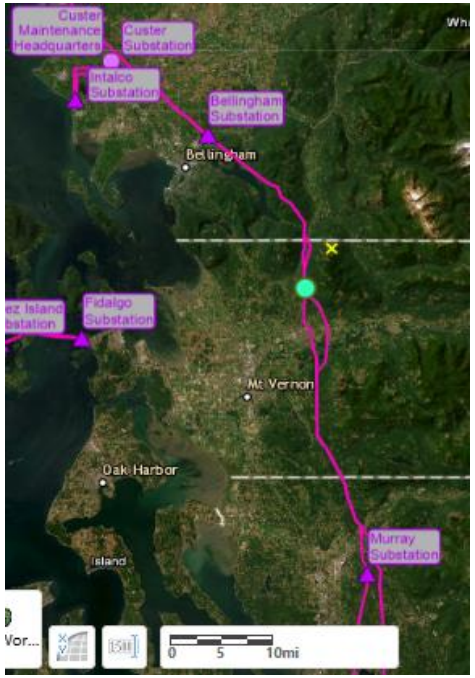
Session	Cluster Area
Day 1 (Feb. 9)	West #1 (Western WA)
Day 1 (Feb. 9)	West #2 (Western OR)
Day 2 (Feb. 10)	North (Central WA)
Day 2 (Feb. 10)	Tri-Cities / Umatilla #1
Day 2 (Feb. 10)	Tri-Cities / Umatilla #2
Day 3 (Feb. 11)	South #1 (Southern OR)
Day 3 (Feb. 11)	South #2 (Southern OR)
Day 3 (Feb. 11)	Tri-Cities / Umatilla #3
Day 4 (Feb. 12)	Lower Columbia #1
Day 4 (Feb. 12)	Lower Columbia #2
Day 4 (Feb. 12)	Southeast ID

Review Meeting Schedule

West #1 (Western Washington) Cluster Area

Day 1



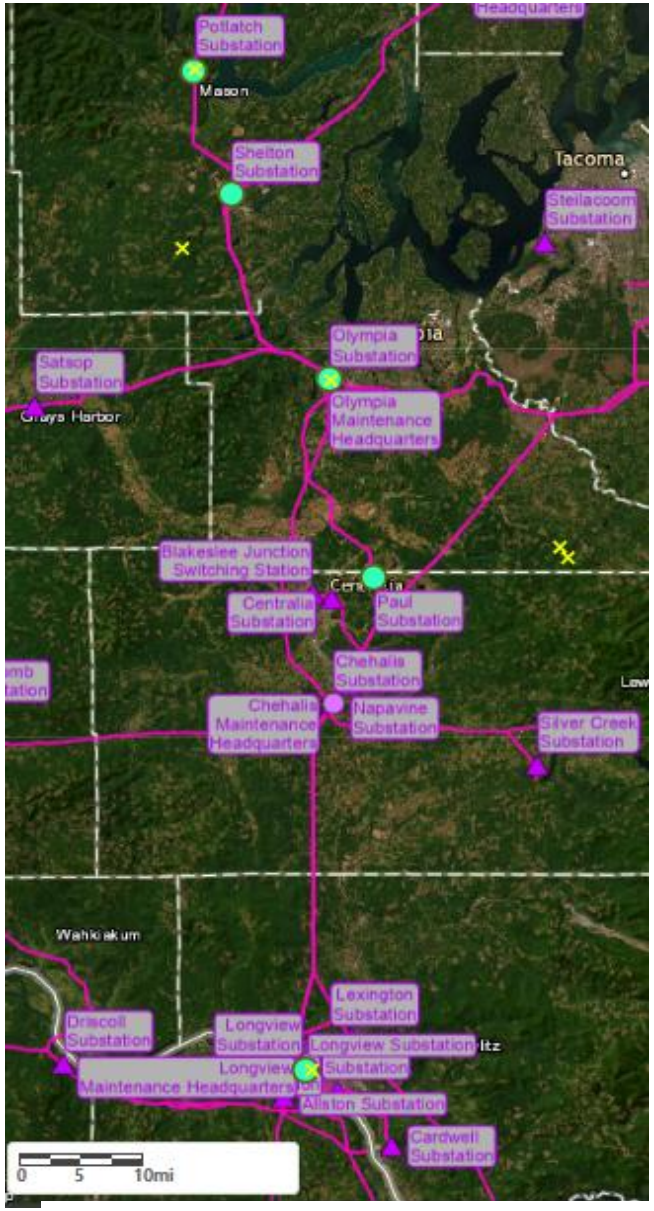


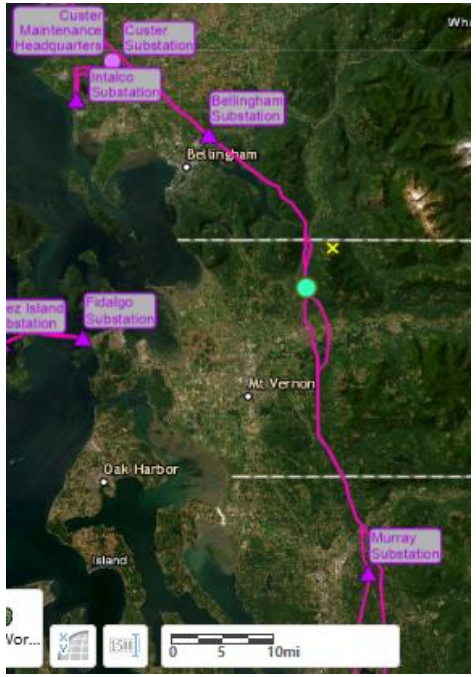
West #1 (Western WA)

GI #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G0921	Wind, BESS	300	-361
G0922	BESS	100	-100
G0973	Wind	300	0
G0992	Wind	131	0
G1007	Wind, BESS	300	-300
G1014	BESS	250	-250
G1048	Solar, BESS	200	-100

Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

West #1 (Western WA)





IR #	Studied POI	Total IR Scope	Cost Share
G0921, G1007	**Paul 500 kV**	New 500 kV BAAH Bay at Paul, 1x shared gen-tie line, BPA WS-RAS Participation	$42M
G0922	**Longview 230 kV**	New 230 kV main-Aux Bay at Longview Annex, BPA WS-RAS Participation	$22M
G0973	**Shelton 230 kV**	New 230 kV BAAH Bay at Shelton, BPA WS-RAS Participation	$30M
G0992	**Midline Monroe-Custer 500kV**	New 500 kV BAAH 2-Bay Substation looped in on the Monroe-Custer #1 500 kV line, BPA WS-RAS Participation	$180M
G1014	**Olympia 230 kV**	New 230 kV main-Aux Bay at Olympia, BPA WS-RAS Participation	$22M
G1048	**Midline Shelton-Fairmount #4 230kV**	New 230 kV BAAH 2-Bay Substation looped in on the Shelton-Fairmount #4 230 kV line, BPA WS-RAS Participation	$83M

Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

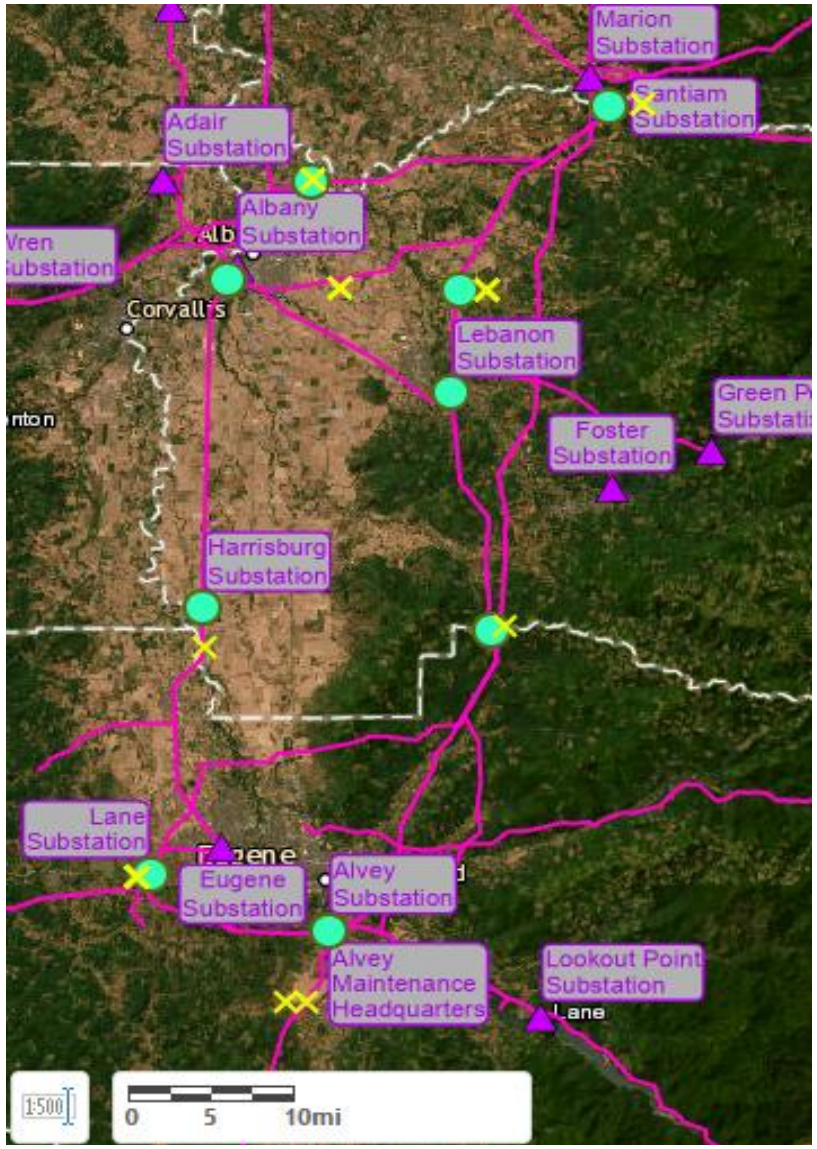
West #1 Contingent Facilities

- Grand-Coulee-Olympia 230 kV line rebuild, Schultz-Olympia 500 kV segment (TSEP)

West #2 (Western Oregon) Cluster Area

Day 1

West #2 (Western OR)

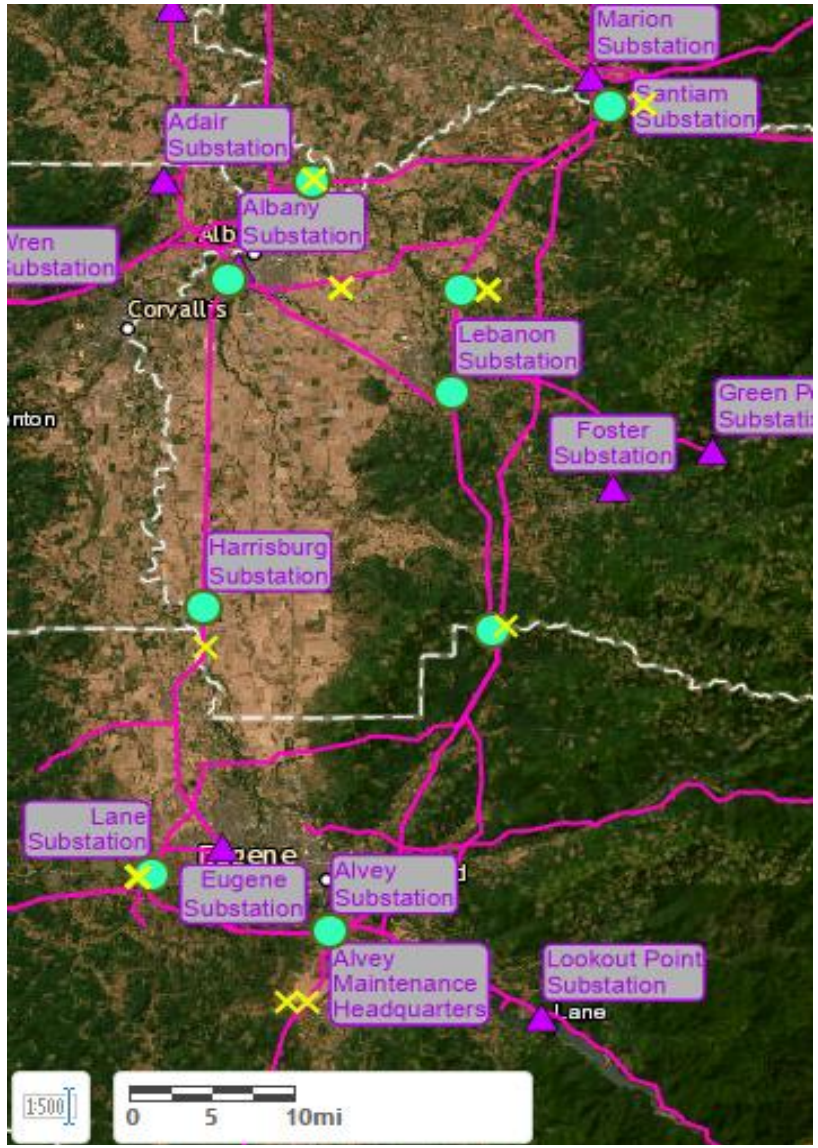


Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

GI #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G0793	Biofuel, BESS	80	-80
G0794	Biofuel, BESS	80	-80
G0801	BESS	200	-200
G0803	BESS	200	-200
G0806	Biofuel	600	0
G0807	Pump Storage Hydro	600	0
G0808	BESS	600	-600
G0811	Biofuel	600	0
G0812	BESS	600	-600
G0877	Biofuel	80	0
G0879	Solar	80	0
G0880	BESS	80	-80
G0883	Biofuel	80	0
G0884	BESS	80	-80
G0885	Biofuel	80	0
G0886	BESS	80	-80

GI #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G0889	BESS	200	-200
G0892	Biofuel, BESS	200	-200
G0893	Biofuel, BESS	200	-200
G0894	Biofuel, BESS	200	-200
G0895	Biofuel, BESS	200	-200
G0899	Biofuel, BESS	200	-200
G0902	Biofuel, BESS	200	-200
G0904	Biofuel, BESS	200	-200
G0905	Biofuel, BESS	200	-200
G0918	Wind	300	0
G0969	Biofuel, BESS	80	-80
G0970	Biofuel, BESS	80	-80
G0971	Biofuel, BESS	80	-80

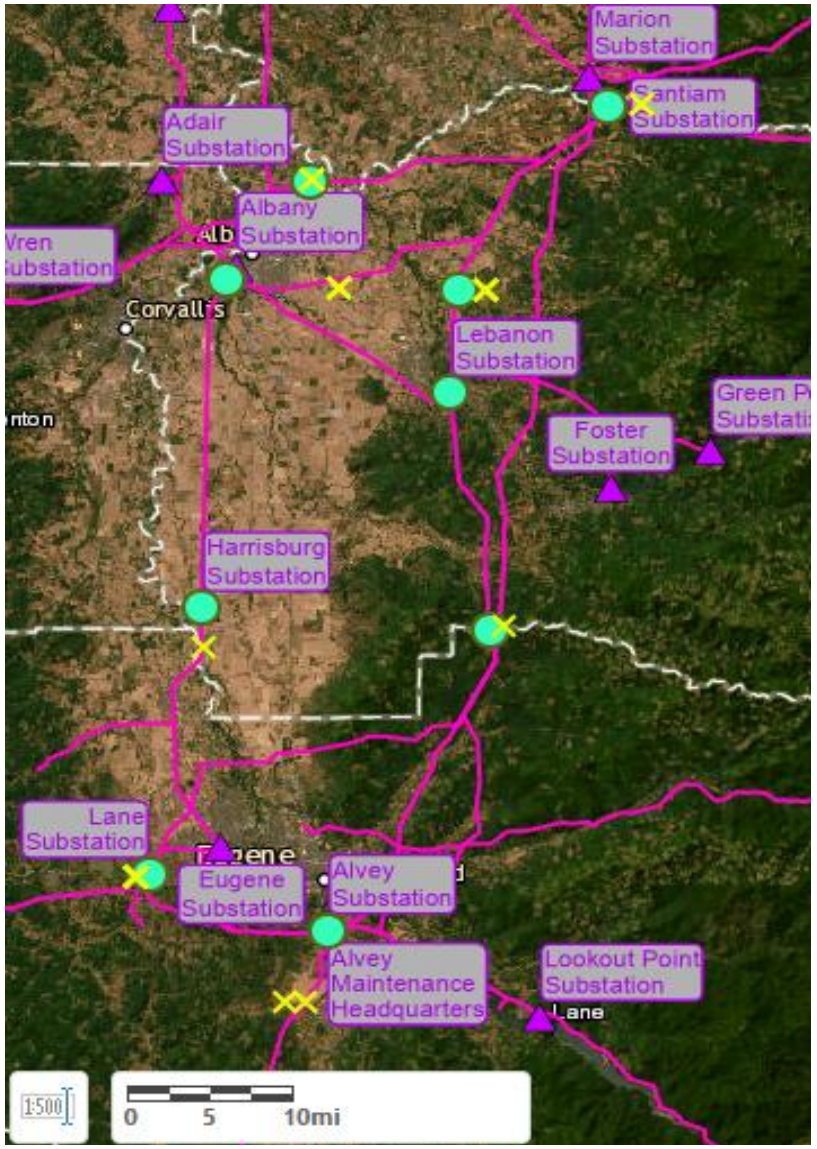
West #2 (Western OR)



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

IR #	Studied POI	Total IR Scope	Cost Share
G0793	Midline Albany-Eugene 115 kV Line (North)	New 115 kV substation on the Albany-Eugene #1 115 kV line (Albany Side), 1x 115 kV gen-tie terminal	$72M
G0971	Midline Albany-Eugene 115 kV line (South)	New 115 kV Substation looped in on the Albany-Eugene #1 115 kV line (Eugene Side)	$72M
G0879, G0880	Alvey 115 kV	1x 115 kV gen-tie terminal	$37M
G0877	Lebanon 115 kV	1x 115 kV gen-tie terminal	$22M
G0801, G0803 (partial)	Lane 115 kV	1x 115 kV shared gen-tie terminal	$44M
G0803 (partial), G0806, G0807	Lane 500 kV	New Lane 500 kV Substation, 1x 500 kV shared gen-tie terminal, New Alvey-Lane 500 kV #2	$204M
G0808, G0811	Lane 500 kV	New Lane 500 kV Substation, 500 kV gen-tie terminals (2x), New Alvey-Lane 500 kV #2	$477M
G0812, G0884, G0889		SPB1: New Alvey-Lane 500 kV #3, Rebuild Marion-Lane #1 500 kV and Reconductor Alvey-Lane 230 #1 230 kV	$509M

West #2 (Western OR)



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

IR #	Studied POI	Total IR Scope	Cost Share
G0883, G0892, G0893, G0894, G0895	Santiam 230 kV	1x 230 kV shared gen-tie terminal (west bus)	$58M
G0886		1x 230kV shared gen-tie (East bus, Shared with G0904 & G0905)	$22M
G0904, G0905		1x 230kV shared gen-tie (East bus, Shared with G0886) SPB: New Santiam 500/230 kV transformer and New Marion-Santiam 500 kV line	$86M
G0885 G0899	Midline Santiam-Alvey #1 & #2 230 kV (north)	New 230 kV Substation looped in on the Santiam-Alvey #1 & #2 230 kV lines, 1x Shared gen-tie (with G0902 and G0970)	$162M
G0902, G0970		1x Shared gen-tie (with G0902 and G0970), SPB: New Santiam 500/230 kV transformer and New Marion-Santiam 500 kV line	$80M
G0918	Midline Santiam-Alvey #1 230 kV (south)	New 230 kV Substation looped in on the Santiam-Alvey #1 230 kV line, SPB: New Santiam 500/230 kV transformer and New Marion-Santiam 500 kV line	$196M
G0794	Midline Santiam-Toledo 230 kV Line	New 230 kV Substation on Santiam-Toledo #1 230 kV line, 1x 230 kV gen-tie terminal (shared with G0969)	$121M
G0969		New 230 kV Substation on Santiam-Toledo #1 230 kV line, (Shared with G0794) SPB: New Santiam 500/230 kV transformer and New Marion-Santiam 500 kV line	$23M

West #2: Notable New Lines (SPB)

- New Alvey-Lane #2 and #3 500 kV circuits
- Reconductor Alvey-Lane #1 230 kV
- New Santiam-Marion #3 500 kV
  - Enables new SANT 500/230 bank
  - Stations approx. 1mi apart
- Reconductor Marion-Lane 500 kV
- Routes and Terminals not final, placeholders presume new structures and conductors fit within existing ROWs

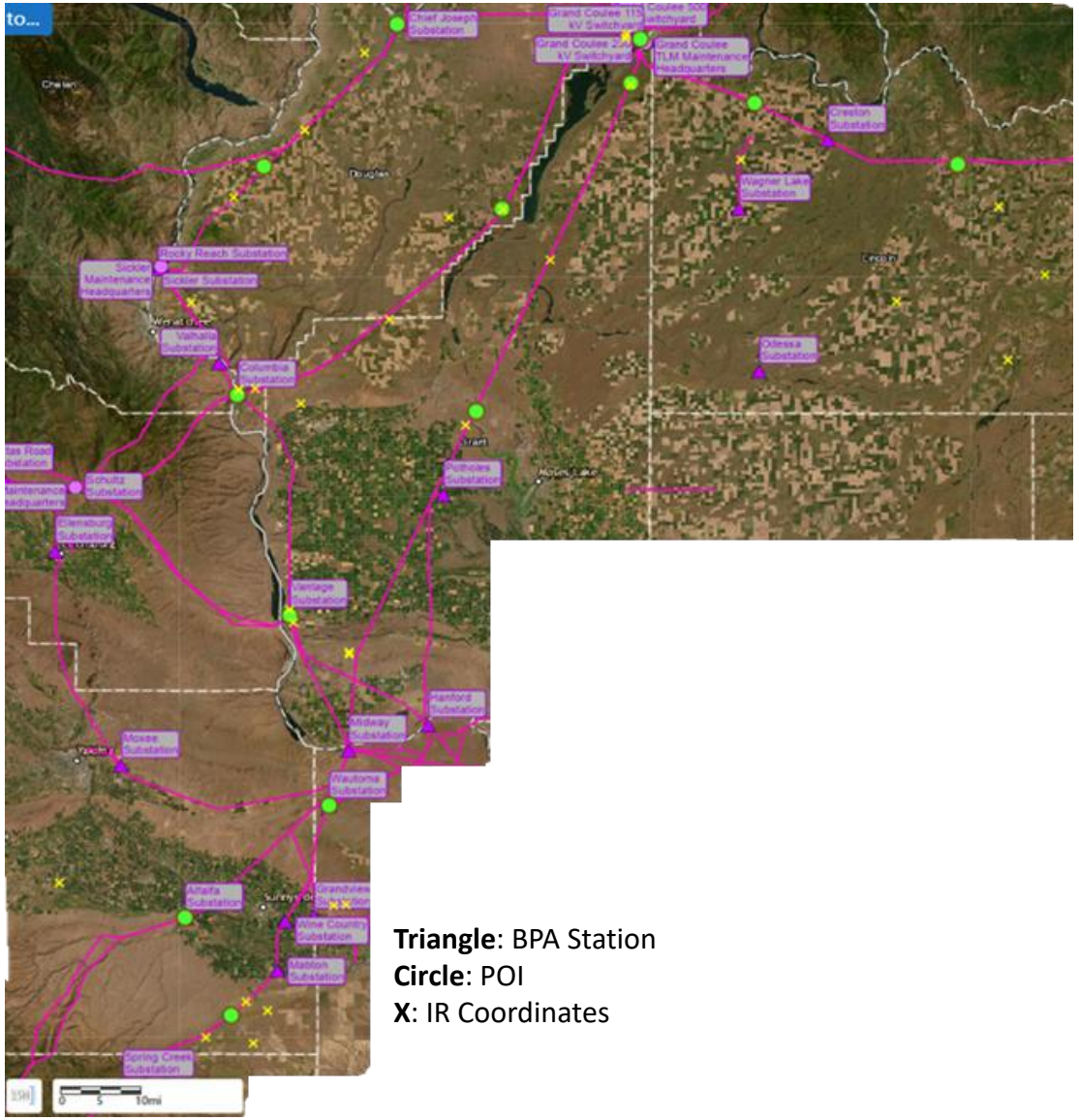
West #2: Contingent Facilities

- North of Marion #1 500 kV project (TSEP)
- North of Marion #2 500 kV project (TSEP)
- Albany 230/115 kV bank upgrade
- Alvey-Dillard Tap 115 kV upgrade
- Chemawa 230/115 kV bank replacement
- Lebanon 230/115 kV bank replacement
- Santiam 230 kV breaker additions
- Santiam 500/230 kV transformer upgrade

North (Central Washington) Cluster Area

Day 2

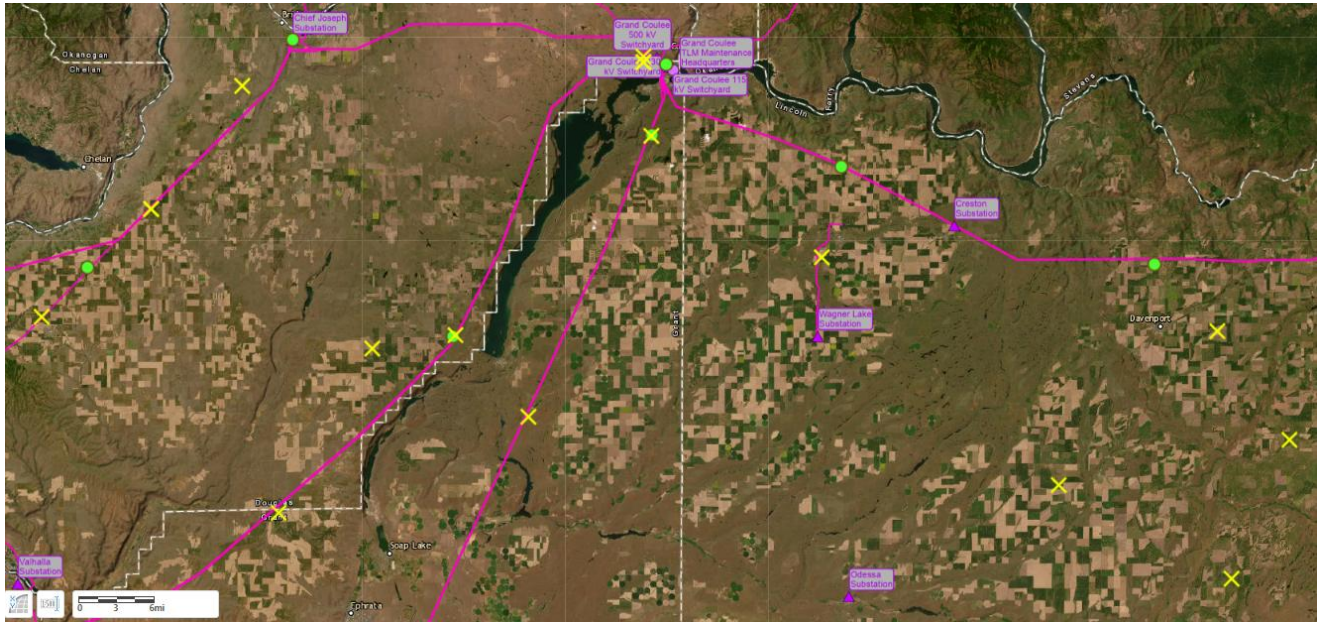
North (Central WA)



Triangle: BPA Station
Circle: POI
X: IR Coordinates

IR #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G0639	Solar, BESS	200	-100
G0688	Solar, BESS	500	-500
G0732	Solar, BESS	200	-200
G0744	Solar, BESS	200	-200
G0753	Solar, BESS	300	-300
G0760	Natural Gas, BESS	590	-590
G0761	Wind	290	0
G0817	Solar, BESS	215	-110
G0819	Wind	200	0
G0820	Solar, BESS	200	-200
G0828	BESS	100	-100
G0829	BESS	20	-20
G0840	Solar, BESS	300	-300
G0853	Solar, BESS	300	-300
G0858	BESS	130	-130
G0914	BESS	1000	-1000
G0915	BESS	500	-500
G0916	BESS	500	-500
G0953	Wind	600	0
G0954	Wind	350	0
G0955	Wind	350	0

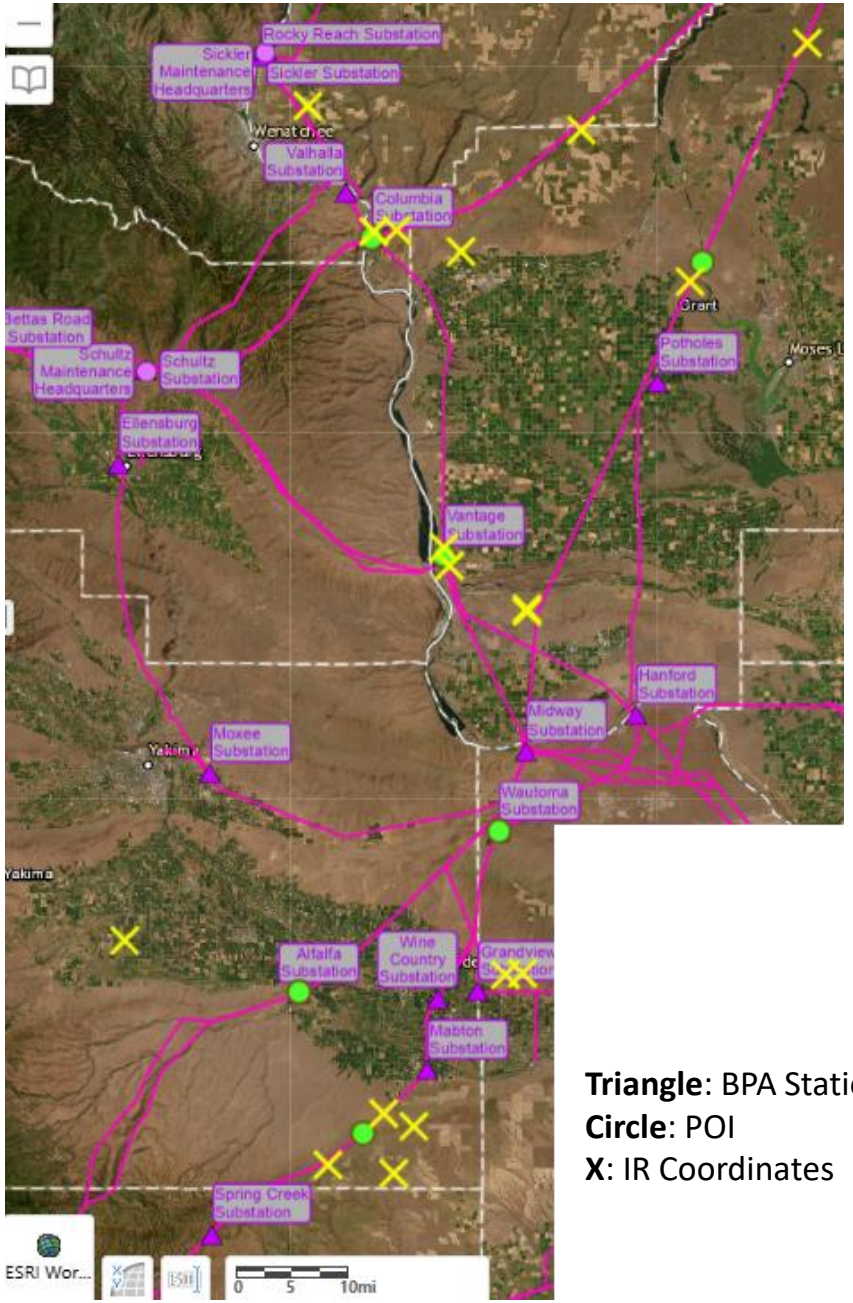
North (Central WA)



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

IR #	Studied POI	Total Scope	Cost Share
G1035	Chief Joseph 500 kV	Develop a new bay in the Chief Joseph 500 kV yard Participate in new North of Schultz RAS	$35M
G0840 G0853	Chief Joseph-Sickler 500kV New POI Substation	New 500/230 kV substation on the Chief Joseph-Sickler 500 kV line. Participate in new North of Schultz RAS	$204M
G1016	Chief Joseph-Sickler 500kV New POI Substation	New 500/230 kV substation on the Chief Joseph-Sickler 500 kV line Participate in new North of Schultz RAS	$172M
G0819	Grand Coulee-Columbia #3 230 kV New POI Substation	New 230 kV substation on the Grand Coulee-Columbia #3 230 kV line Participate in new North of Schultz RAS New COUL 500/230 kV transformer (SPB)	$58M
G0820			$58M
G0914	Grand Coulee 500 kV	New 500 kV yard New COUL 500/230 kV transformer (SPB) New 500 kV substation tie-line (2x) new North of Schultz RAS & new Local RAS	$142M
G0915 G0916			$151M
G0953 G0954 G0955	Grand Coulee-Bell 500 kV New POI Substation	New 500 kV substation on the Grand Coulee-Bell 500 kV line, new North of Schultz RAS, New COUL 500/230 kV transformer (SPB)	$160M
G0956			$114M
G0985	Grand Coulee-Creston 115 kV New Substation (Wilbur Tap)	New 115 kV substation on the Grand Coulee-Creston 115 kV line Participate in new North of Schultz RAS	$87M

North (Central WA)



Triangle: BPA Station
Circle: POI
X: IR Coordinates

IR #	Studied POI	Total Scope	Cost Share
G1010	Alfalfa 230 kV	New 230 kV yard at Alfalfa on the Midway-North Bonneville 230 kV line.	$115M
G0639	Columbia 230 kV	New Columbia 500 kV yard, Loop-in Grand Coulee-Schultz #1 500 kV	$88M
G0753			$99M
G0829, G0858		New Columbia 230 kV yard, New Columbia 500/230 kV transformer	$91M
G1025		New Columbia substation 230 kV gen tie lines (5x)	$94M
G1047		Retire Grand Coulee-Schultz #1 and #2 series capacitors New North of Schultz RAS	$83M
G1001	New Rocky Ford 500/230 kV Station (COUL-HANF500)	230kV gen tie lines (2x)	$24M
G1043		New North of Schultz RAS	$24M
G0688 G0732	Wautoma 500 kV	New 230 kV yard New VANT 500/230 kV transformer (SPB)	$222M
G0817	Wautoma-Rock Creek 500 kV New POI Substation	New 500 kV substation, 500kV gen tie lines (2x)	$116M
G1037, G1038, G1040			$134M
G0744	Vantage 500 kV	500 kV yard conversion from ring to BAAH, New 230 kV yard, New VANT 500/230 kV transformer (SPB), New 230 kV substation tie line New 500 kV gen-tie lines (2x)	$87M
G0760			$146M
G0761			$53M
G0828	Vantage 230 kV	500 kV yard conversion from ring to BAAH, New 230 kV yard, New VANT 500/230 kV transformer (SPB), New 230 kV substation tie line New 230 kV gen-tie lines (2x)	$24M

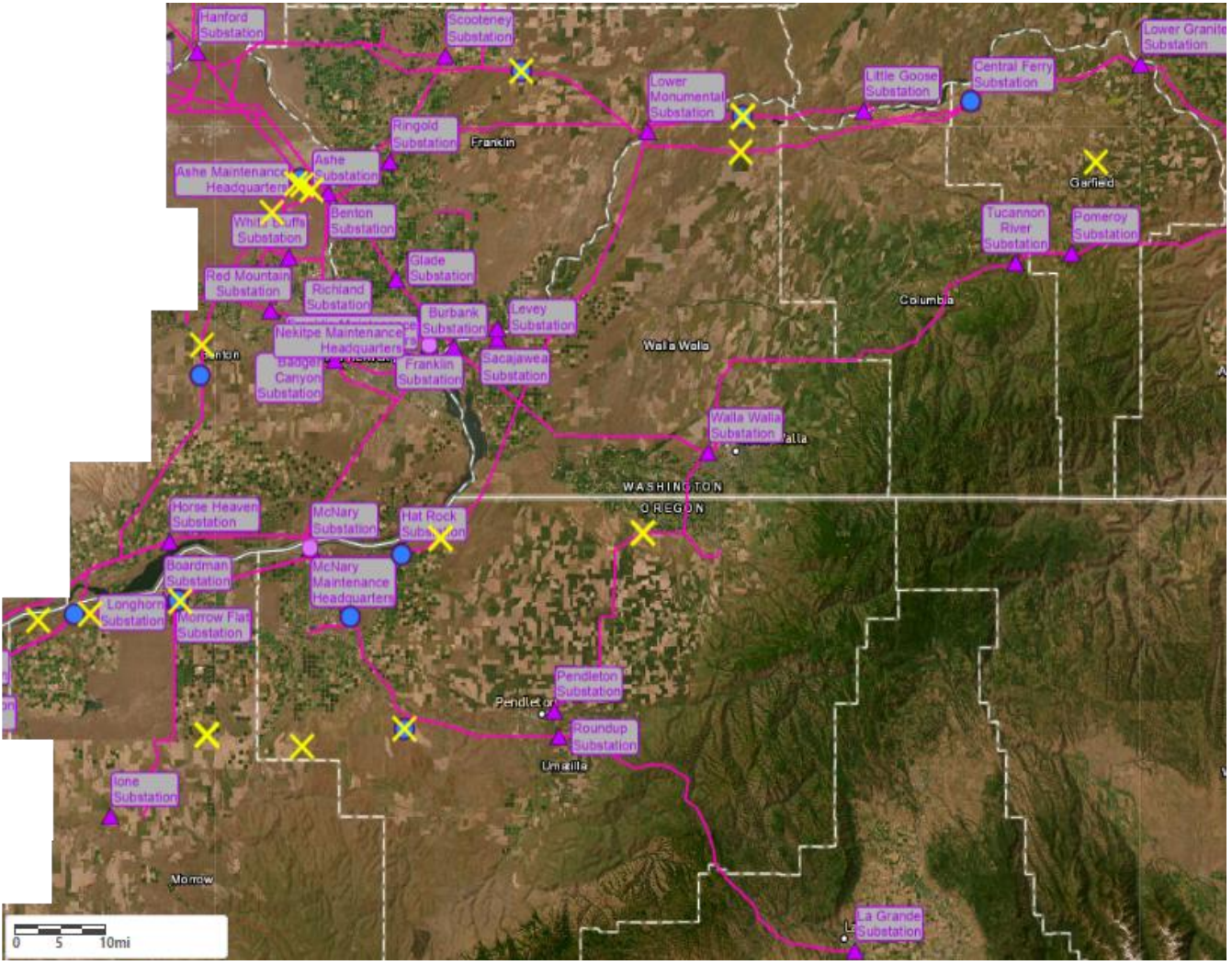
Notable Contingent Facilities

- Schultz-Raver #3 & #4 500 kV Line rebuild/reconductor and series cap additions (TSEP)
- Grand-Coulee-Olympia 230 kV line rebuild (SHUL-OLYM 500kV segment, TSEP)
- Rock Creek-John Day 500 kV line rebuild (TSEP)
- Rocky Ford 500/230 kV station, midline COUL-HANF 500 kV (BPA LLIRs)

Tri-Cities / Umatilla #1 Cluster Area

Day 2

Tri-Cities / Umatilla #1

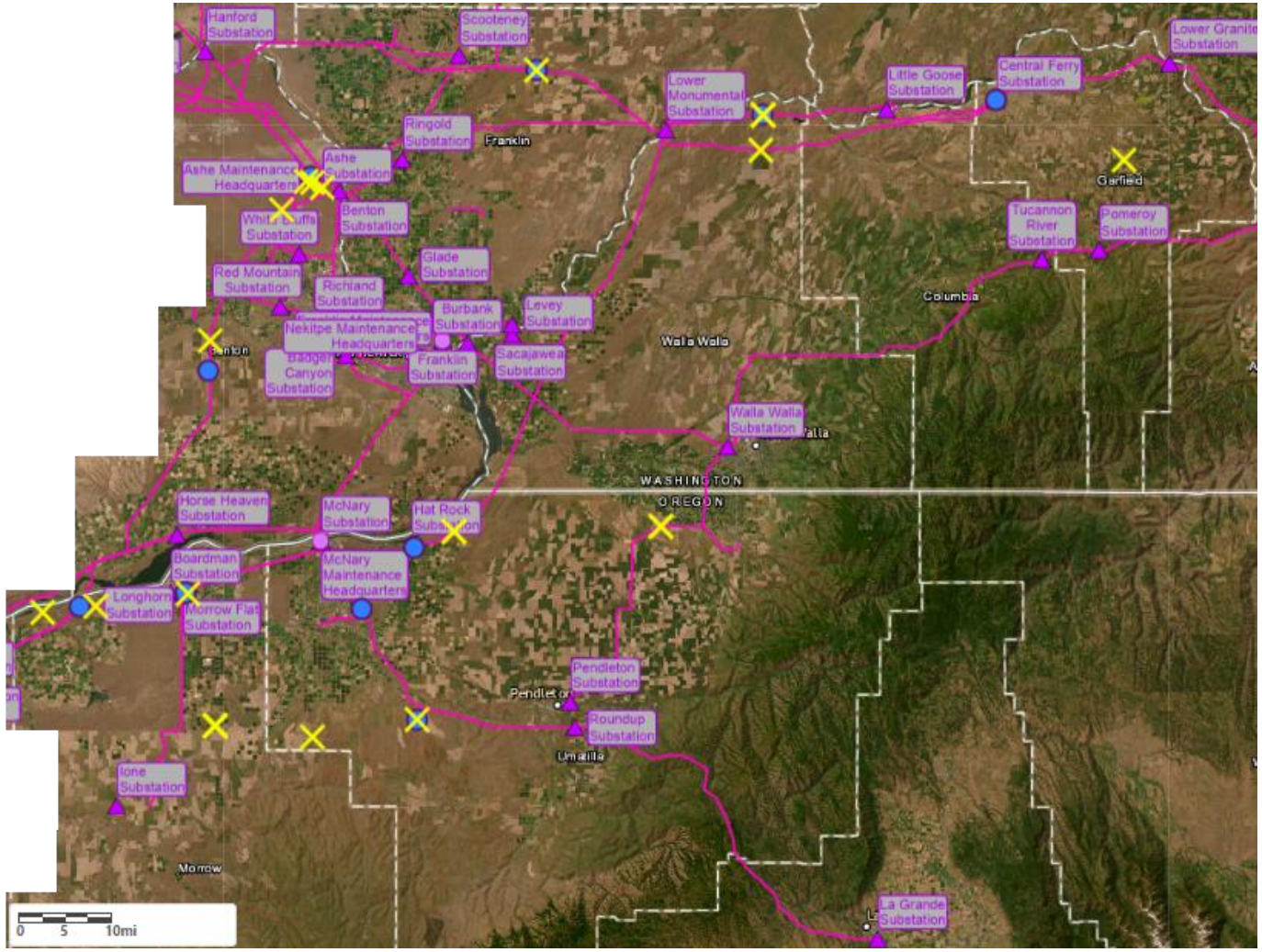


Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

GI #	Gen Type	MW Requested (Gen)	MW Requested (Charge)
G0708	BESS	60	-60
G0752	Solar/BESS/ Gas	340	-330
G0777	Solar	650	-650
G0778	BESS	650	-650
G0822	Solar/BESS	2000	-2000
G0834	Wind	450	-100
G0854	Wind/Solar	600	0
G0855	Solar/Wind/ BESS	450	-100
G0872	Wind	300	0
G0908	Solar/BESS	0	-200
G0919	Steam/ Nuclear	270	0
G0920	Solar/BESS	500	-300

GI #	Gen Type	MW Requested (Gen)	MW Requested (Charge)
G0923	BESS	100	-100
G0924	Solar	100	-100
G0925	Wind	100	-100
G0935	Solar	225	0
G0944	Solar	261	0
G0963	BESS	650	-650
G0965	BESS	650	-650
G0998	Steam/ Nuclear	1120	0
G1012	Wind	67	0
G1013	Wind	250	0
G1015	Solar	500	0
G1039	Solar/BESS	400	-400

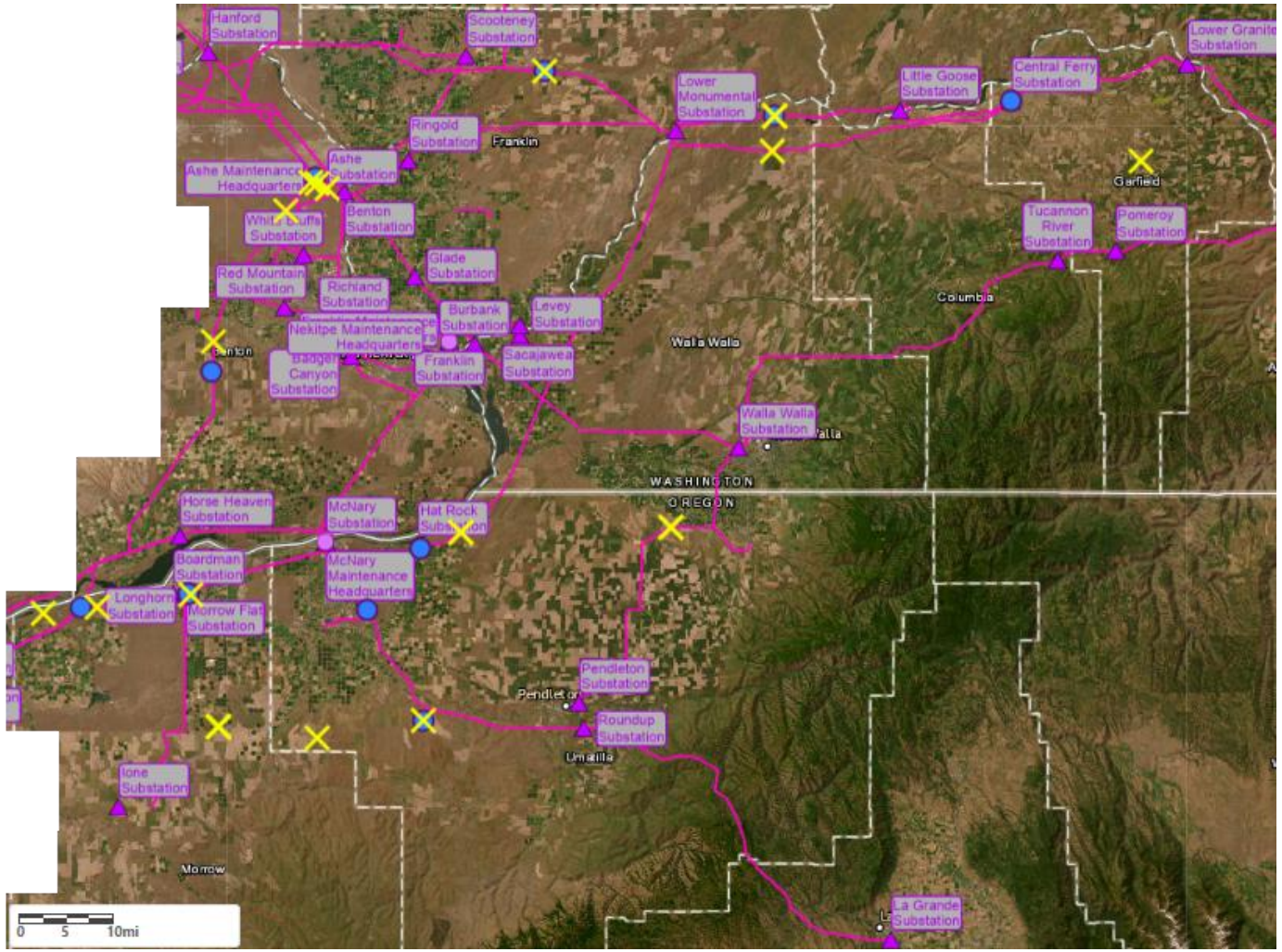
Tri-Cities/Umatilla #1



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

GI #	Studied POI	Total GI Scope	Cost Share
G0822	Ashe 500 kV	2x Ashe 500 kV Terminals SPB: Lower Monumental – Stanfield 500 kV line	$184M
G0919	Ashe 500 kV	SPB: Lower Monumental – Stanfield 500 kV line	$24M
G0998	Ashe 500 kV	1x Ashe 500 kV Terminal SPB: Lower Monumental – Stanfield 500 kV line	$129M
G1039	Ashe 500 kV	1x Ashe 500 kV Terminal SPB: Lower Monumental – Stanfield 500 kV line	$65M
G0872	Central Ferry 230 kV	1x Central Ferry 500 kV Terminal Central Ferry 500/230 kV Bank #2 Central Ferry 230 kV Ring Bus SPB: Lower Monumental – Stanfield 500 kV line	$199M
G0908	UEC Blueridge 230 kV	BPA Longhorn Local RAS	$15M
G0752	Longhorn 500 kV	1x Longhorn 500 kV Terminal SPB: Lower Monumental – Stanfield 500 kV line	$82M
G0778 G0965	New CALP-MCNY 500 kV (Stanfield)	Stanfield 500/230 kV Bank #2 2x Stanfield 230 kV Terminals SPB: Lower Monumental – Stanfield 500 kV line SPB: Stanfield – Sixmile Canyon 500 kV line	$480M

Tri-Cities/Umatilla #1



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

GI #	Studied POI	Total GI Scope	Cost Share
G0923 G0924 G0925 G0935	New LIGO-LOMO #2 500 kV station	New 500 kV POI Ring Bus SPB: Lower Monumental – Stanfield 500 kV line	$216M
G1015	New LOMO-HANF 500 kV station	New 500 kV POI Ring Bus SPB: Lower Monumental – Stanfield 500 kV line	$191M
G0834 G0855	New LOMO-MCNY 500 kV station (Hat Rock)	New 500 kV Ring Bus, New 230 kV POI Ring Bus 500-230 kV Bank #1, 230kV gen-tie lines (2x) SPB: Lower Monumental – Stanfield 500 kV line	$306M
G1012 G1013		SPB: Stanfield – Sixmile Canyon 500 kV line	$215M
G0854	UEC Ordnance 230 kV	BPA Main Grid RAS	$15M
G0708 G0944	Sixmile Canyon 230 kV	1x Sixmile Canyon 230 kV Terminal	$45M
G0777 G0963	Sixmile Canyon 500 kV	1x Sixmile Canyon 500 kV Terminal	$59M
G0920	Webber Canyon 500 kV	Participation in Webber Canyon RAS	$35M

TRIC/UMAT #1: Notable New Lines (SPBs)

- SPB1: Lower Monumental-Stanfield 500 kV
  - Route and Terminals not final, placeholder presumes new ROW parallel to LOMO-MCNY 500 kV
- SPB2: Stanfield-Sixmile Canyon 500 kV
  - Route and Terminals not final, placeholder presumes:
    - new ROW parallel to McNary-Calpine 500 kV
    - new and existing ROW parallel to McNary-Coyote-Slatt 500 kV

TRIC/UMAT #1: Contingent Facilities

- Stanfield 500/230 kV station on McNary Calpine 500 kV (senior queued LLIRs)
- Sixmile Canyon 500/230 kV station on Ashe-Slatt 500 kV (senior queued LLIRs)
- Webber Canyon 500 kV station midline on Ashe-Marion 500 kV (senior queued IRs)
- Ice Harbor-Sacajawea-Franklin 115 kV upgrade (BPA internal project)

Tri-Cities / Umatilla #2 Cluster Area

Day 2

Tri-Cities / Umatilla #2

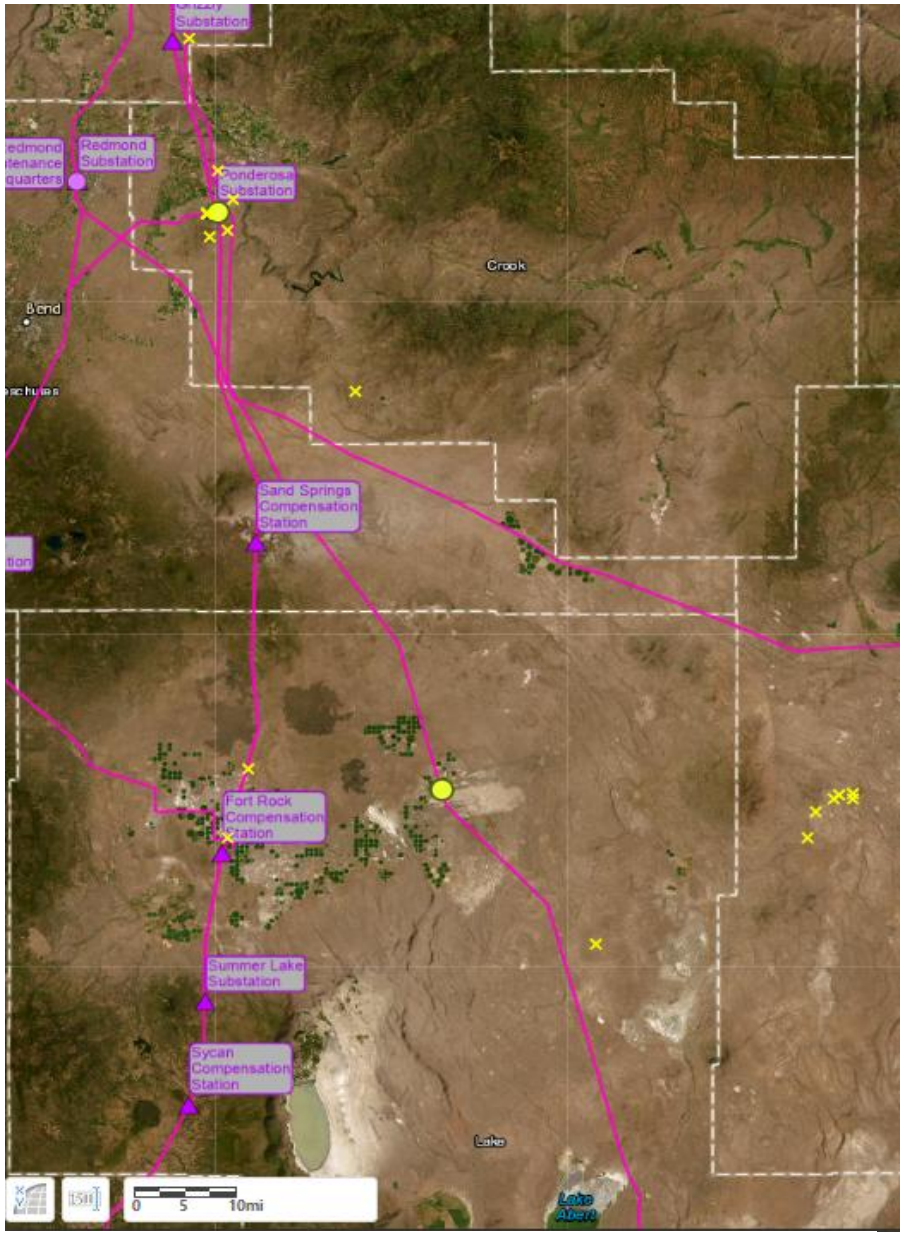
Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

IR #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G0745	Solar, BESS	200	-100

IR #	Studied POI	Total IR Scope	Total Cost
G0745	Hatton Tap of Connell tap, on Benton-Scooteney 115 kV	Expand Scooteney 115 station (new breakers), add tap at Hatton to Gen-Site	$107M

South #1 (Southern Oregon) Cluster Area

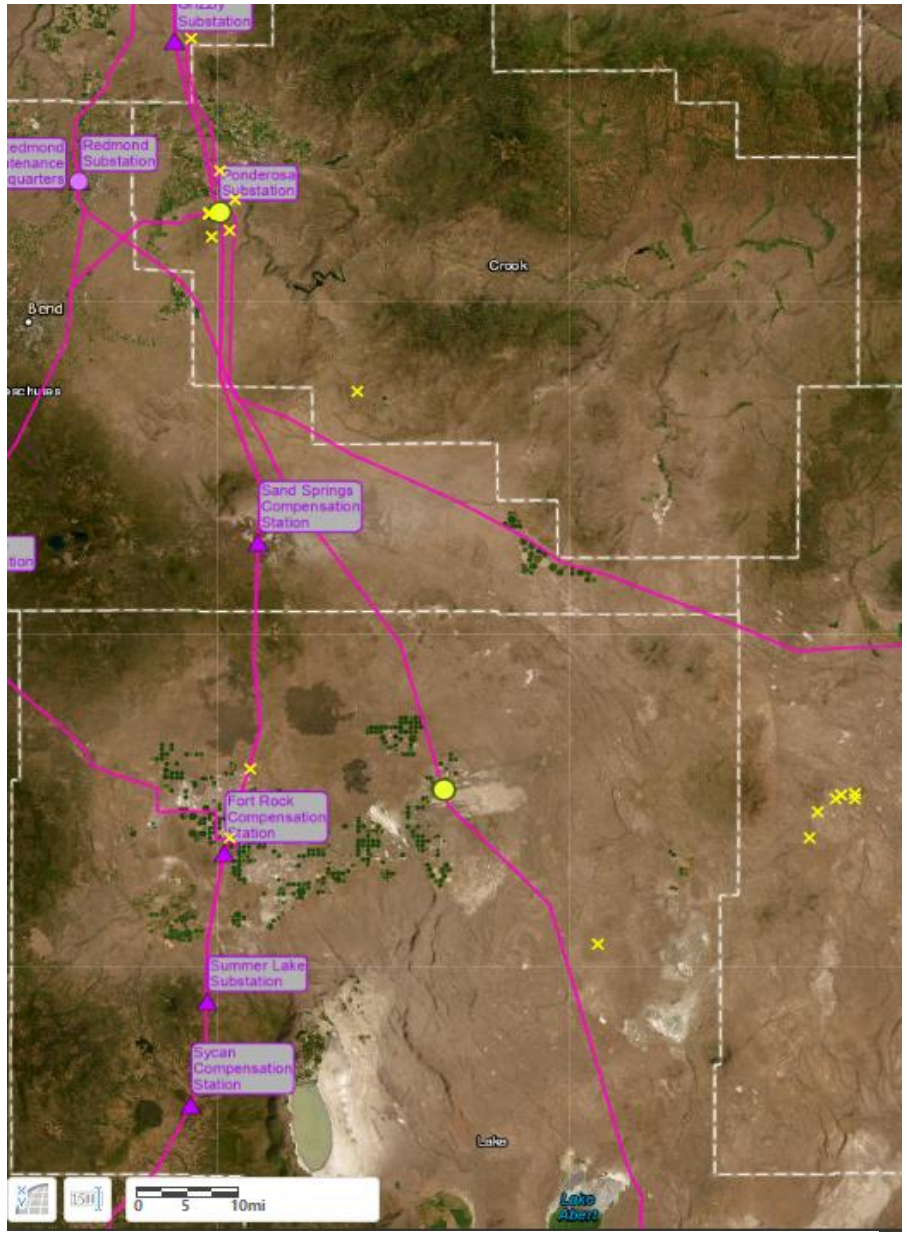
Day 3



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

South #1

IR #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G0673	Solar	600	0
G0675	Pumped Hydro Storage, Biofuel, BESS	600	-600
G0693	Pumped Hydro Storage, Biofuel, BESS	100	-100
G0694	Solar, BESS	100	-100
G0702	Solar, BESS	600	-600
G0758	Solar, BESS	600	-600
G0861	Wind Turbine	500	0
G0695	Pumped Hydro Storage, BESS, Biofuel	1200	-1200
G0887	Solar, BESS	200	-200
G0888	Solar, BESS	200	-200
G0900	Solar, BESS	200	-200
G0901	Solar, BESS	200	-200
G0826	Solar, BESS	280	-280
G0841	Solar, BESS	400	-200
G1050	Solar, BESS	650	0
G1051	Solar, BESS	1300	-1300
G1052	Solar, BESS	1300	-1300
G1053	BESS	1300	-1300

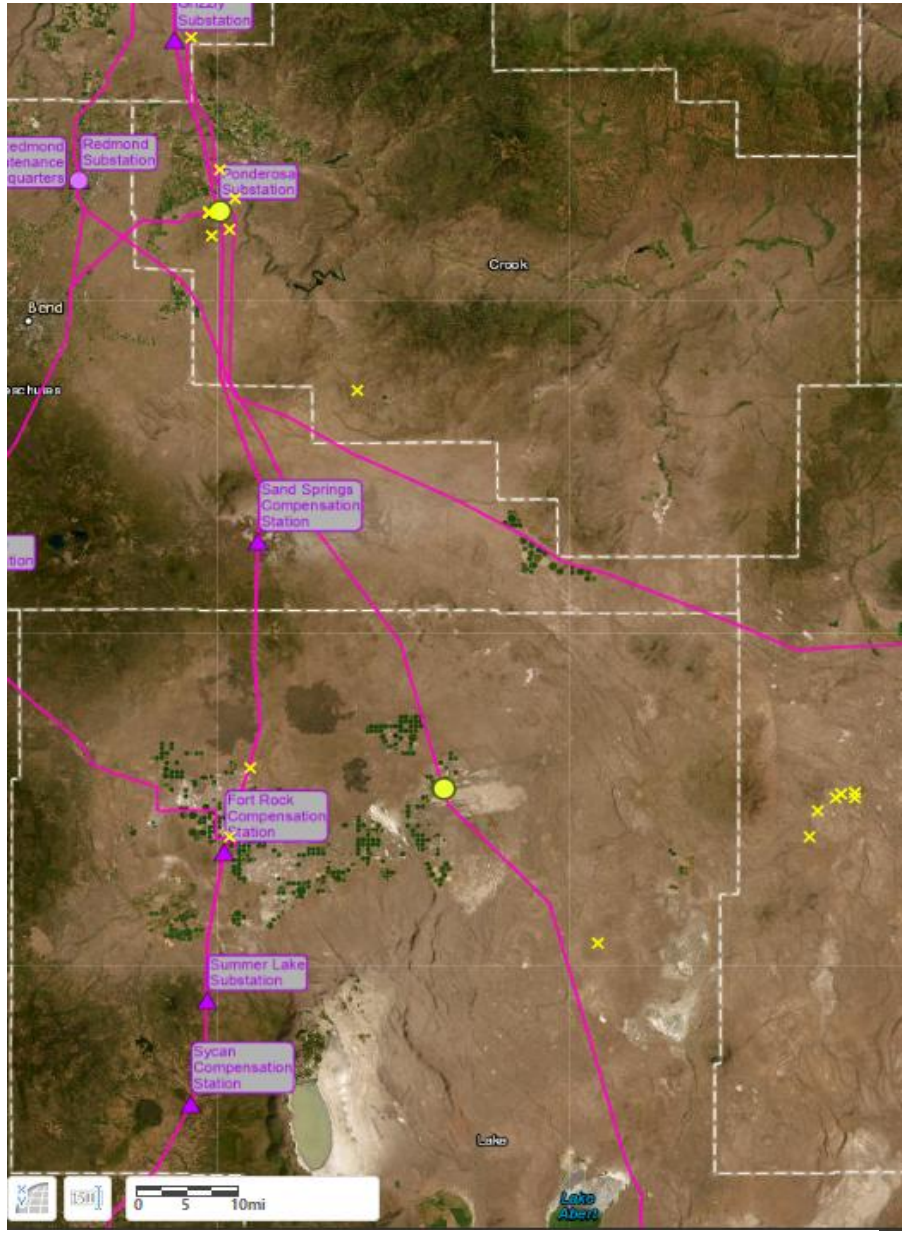


Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

South #1

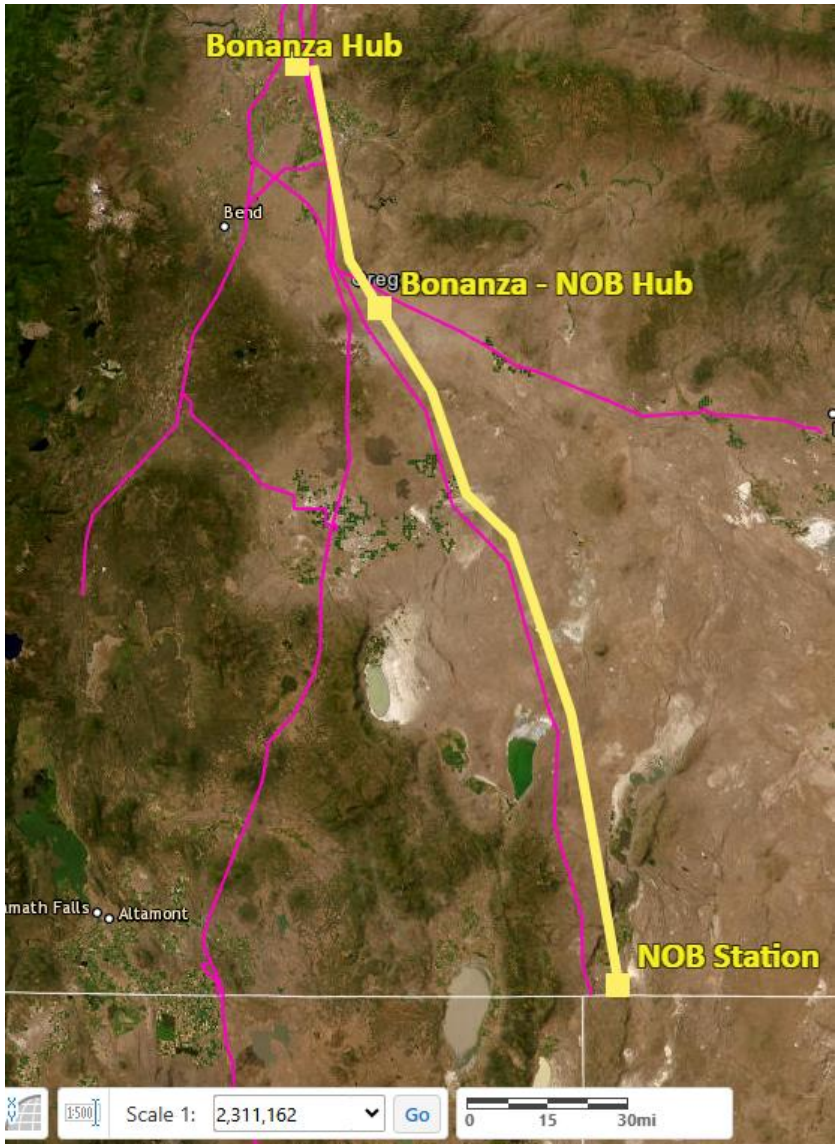
IR #	Studied POI	Total Scope	Cost Share
G0673, G0693, G0694	BNZA 230 kV	1. 1x 230 kV shared gen-tie terminal (shared with senior G0643/G0669)	$27M
G0675	BNZA 230 kV	1. 1x 230 kV gen-tie terminal (shared with G702)	$14M
G0702		1. 1x 230 kV gen-tie terminal (shared with G675) 2. SPB1: New G0657 POI-Captain Jack Annex 500 kV line	$65M
G0758	BNZA 230 kV	1. 230 kV gen-tie terminals (3x) 2. SPB1: New G0657 POI-Captain Jack Annex 500 kV line	$70M
G0861			$61M
G0695			$99M
G0887 G0888 G0900 G0901	BNZA 500 kV	1. 1x 500 kV shared gen-tie terminal 2. SPB1: New G0657 POI-Captain Jack Annex 500 kV line	$112M

South #1



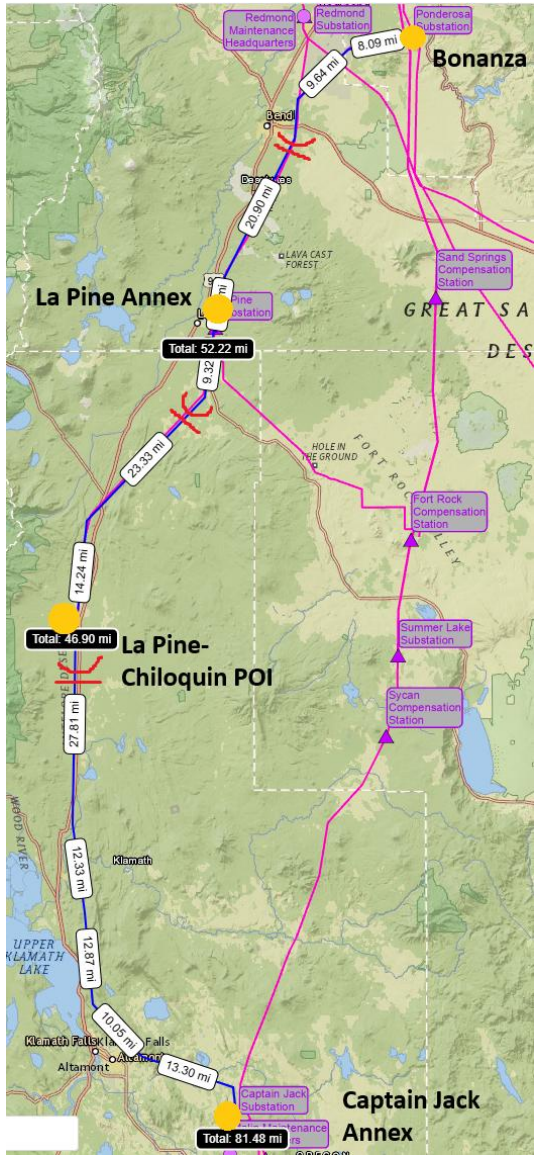
Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

IR #	Studied POI	Total Scope	Cost Share
G0826	BNZA-NOB 500 kV	1. New 500 kV substation, 1x 500 kV gen-tie terminal 2. Single circuit BNZA-POI-NOB 500 kV line	$845M
G0841	BNZA-NOB 500 kV	1. New 500 kV substation, 500 kV gen-tie terminals (3x) 2. Double circuit BNZA-POI-NOB 500 kV	$833M
G1050			$624M
G1051			$649M
G1052	BNZA-NOB 500 kV	1. New 500 kV substation, 500 kV gen-tie terminals (4x) 2. Double circuit BNZA -NOB 500 kV 3. BNZA -POI #3 500 kV 4. SPB1: New G0657 POI-Captain Jack Annex 500 kV line	$182M
G1053			$154M
G1054			$318M
G1055			$266M



South #1: Notable New Lines

- Multiple New 500kV lines connecting new POI to BNZA station and to proposed NV/OR Border (NOB) stations required due to total MW amounts
  - Includes multiple series compensation sites
- Route and Terminals not final, placeholder presumes ROW parallel to the Pacific HVDC Intertie (PDCI) corridor



South #1: Notable New Lines

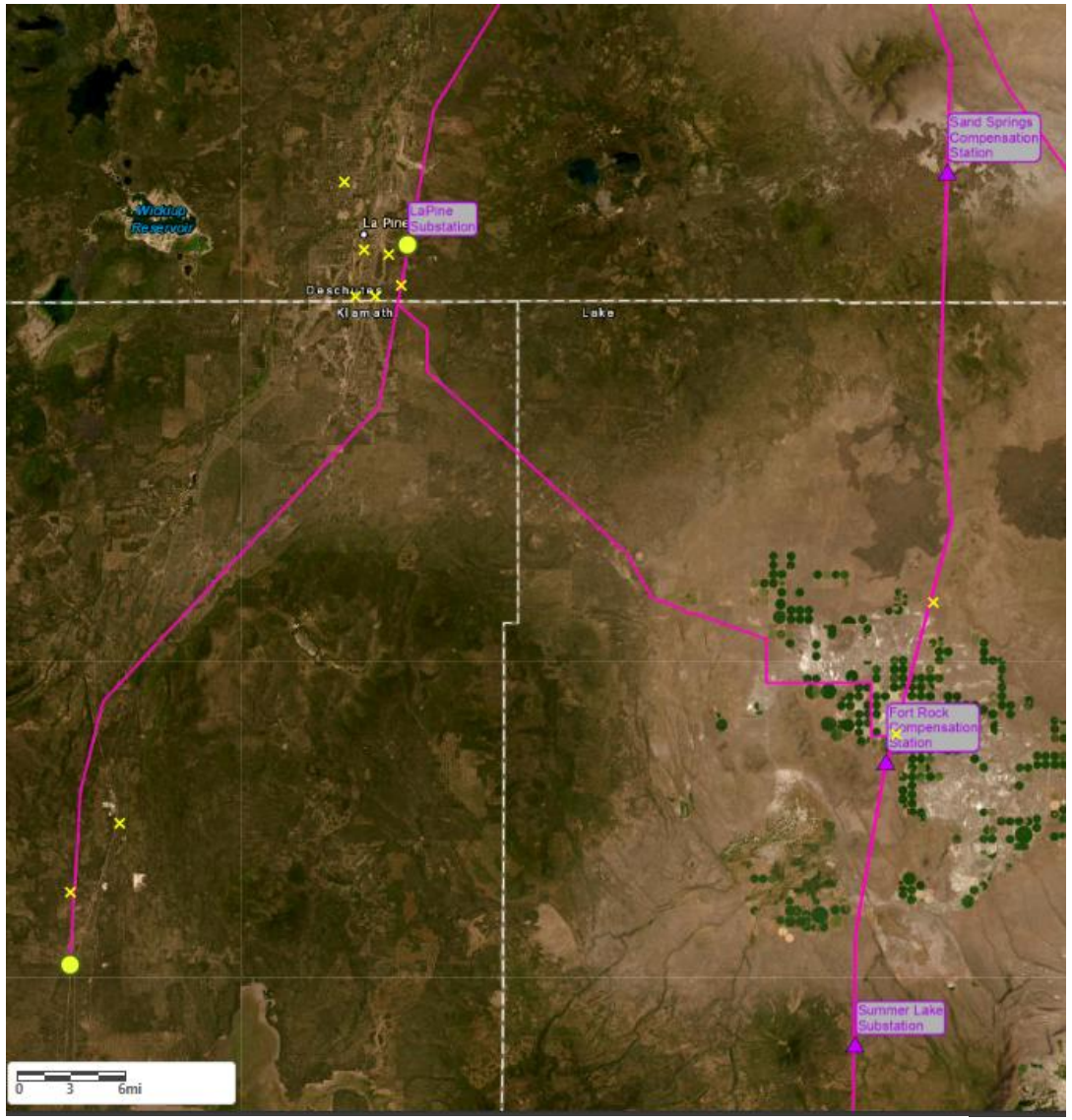
- New 500 kV line connecting G0657(Chiloquin)-Captain Jack Annex required due to total MW amounts
  - Continues connection from BNZA-LAPI-G0657 (senior Queue IR)
  - Includes multiple series compensation stations
- Route and Terminals not final, placeholder presumes ROW parallel to LAPI-CHIL-CAPJ 230 KV

South #1 Contingent Facilities

- Bonanza 500/230 kV substation
- Bonanza-LaPine 500 kV line rebuild
- LaPine Long Range plan additions (230/115 kV bank replacements, new breakers, new shunt capacitors)
- LaPine-G0657 #2 230 kV line upgrade (Senior queue IRs)
- Pilot Butte-LaPine #1 230 kV line rebuild (Senior queue IRs)

South #2 (Southern Oregon) Cluster Area

Day 3

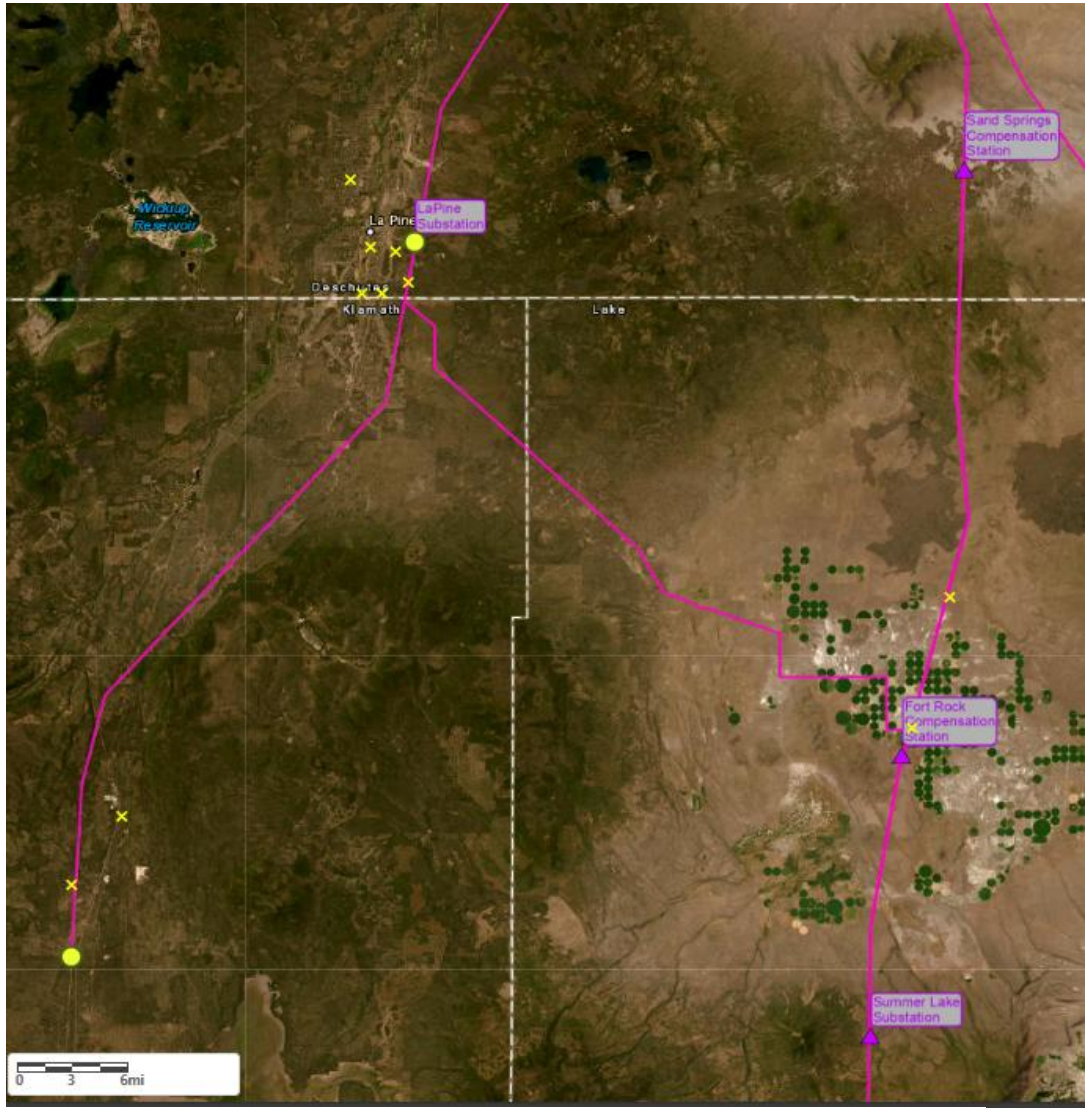


Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

South #2

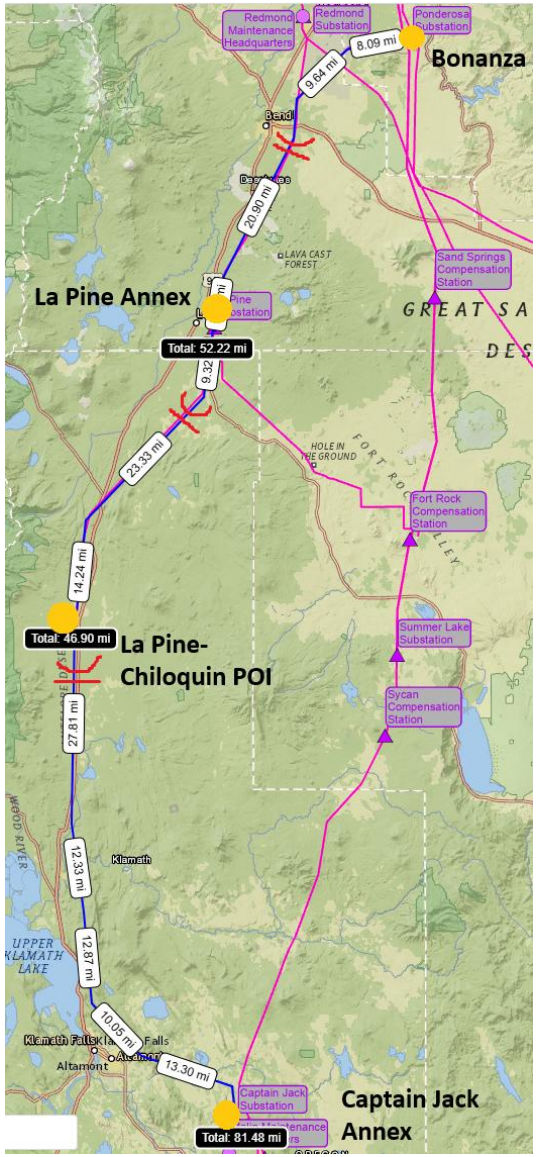
GI #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G0747	Solar, BESS	200	-200
G0870	Wind	500	0
G0871	Wind	500	0
G0909	Solar, BESS	200	-200
G0910	Solar, BESS	200	-200
G0912	Solar, BESS	200	-200
G1017	Solar, BESS	250	-250
G1056	BESS	650	-650

South #2



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

IR #	Studied POI	Total IR Scope	Cost Share
G0870 G0871	Lapine Annex 500 kV	500 kV gen-tie terminals (3x), New Lapine Annex 500 kV station, 1x LaPine 500/230 kV transformer, New G0657 POI-Captain Jack Annex 500 kV line	$266M
G0909 G0910 G0912			$215M
G1056			$205M
G0747	G0657 230 kV station	230 kV gen-tie terminals (2), New POI 500 kV station, 1x new 500/230 kV transformer, New G0657 POI-Captain Jack Annex 500 kV line	$180M
G1017			$197M



South #2: Notable New Lines

- New 500 kV line connecting G0657(Chiloquin)-Captain Jack Annex required due to total MW amounts
  - Continues connection from BNZA-LAPI-G0657 (senior Queue IR)
  - Includes multiple series compensation stations
- Route and Terminals not final, placeholder presumes ROW parallel to LAPI-CHIL-CAPJ 230 KV

South #2 Contingent Facilities

- Bonanza 500/230 kV substation
- Bonanza-LaPine 500 kV line rebuild
- LaPine Long Range plan additions (230/115 kV bank replacements, new breakers, new shunt capacitors)
- LaPine-G0657 #2 230 kV line upgrade (Senior queue IRs)
- LaPine-Chiloquin #1 230 kV line upgrade (Senior queue IRs)
- Pilot Butte-LaPine #1 230 kV line rebuild (Senior queue IRs)

Tri-Cities / Umatilla #3 Cluster Area

Day 3

Tri-Cities / Umatilla #3

Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

IR #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G1029	Solar, BESS	125	-62.5

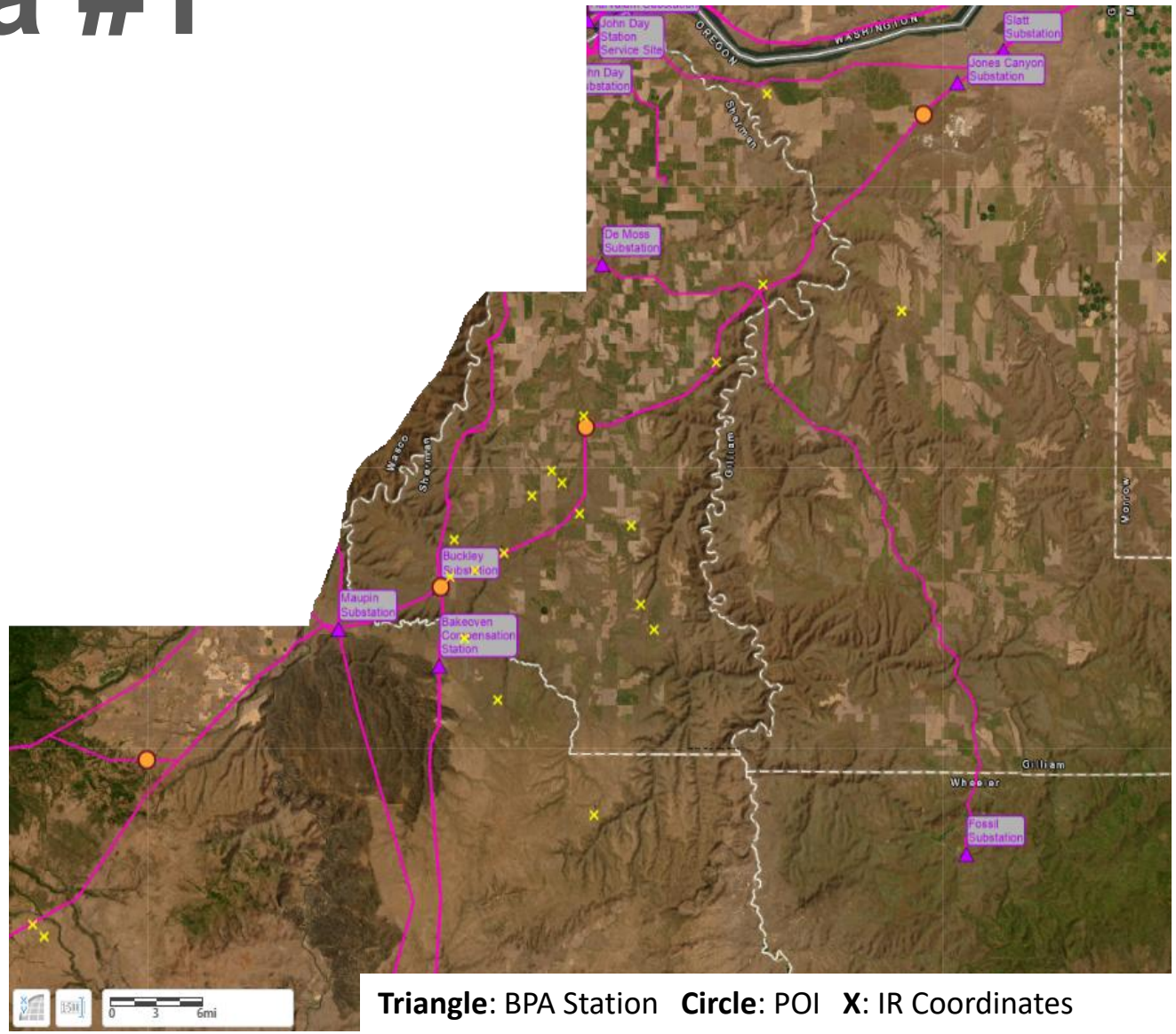
IR #	Studied POI	Total IR Scope	Total Cost
G1029	Midline Grandview – Red Mountain 115 kV	New 115kV ring bus POI station, reconductor Grandview – Red Mountain 115 kV	$141M

Lower Columbia #1 (ASHE-MARN) Cluster Area

Day 4

Lower Columbia #1

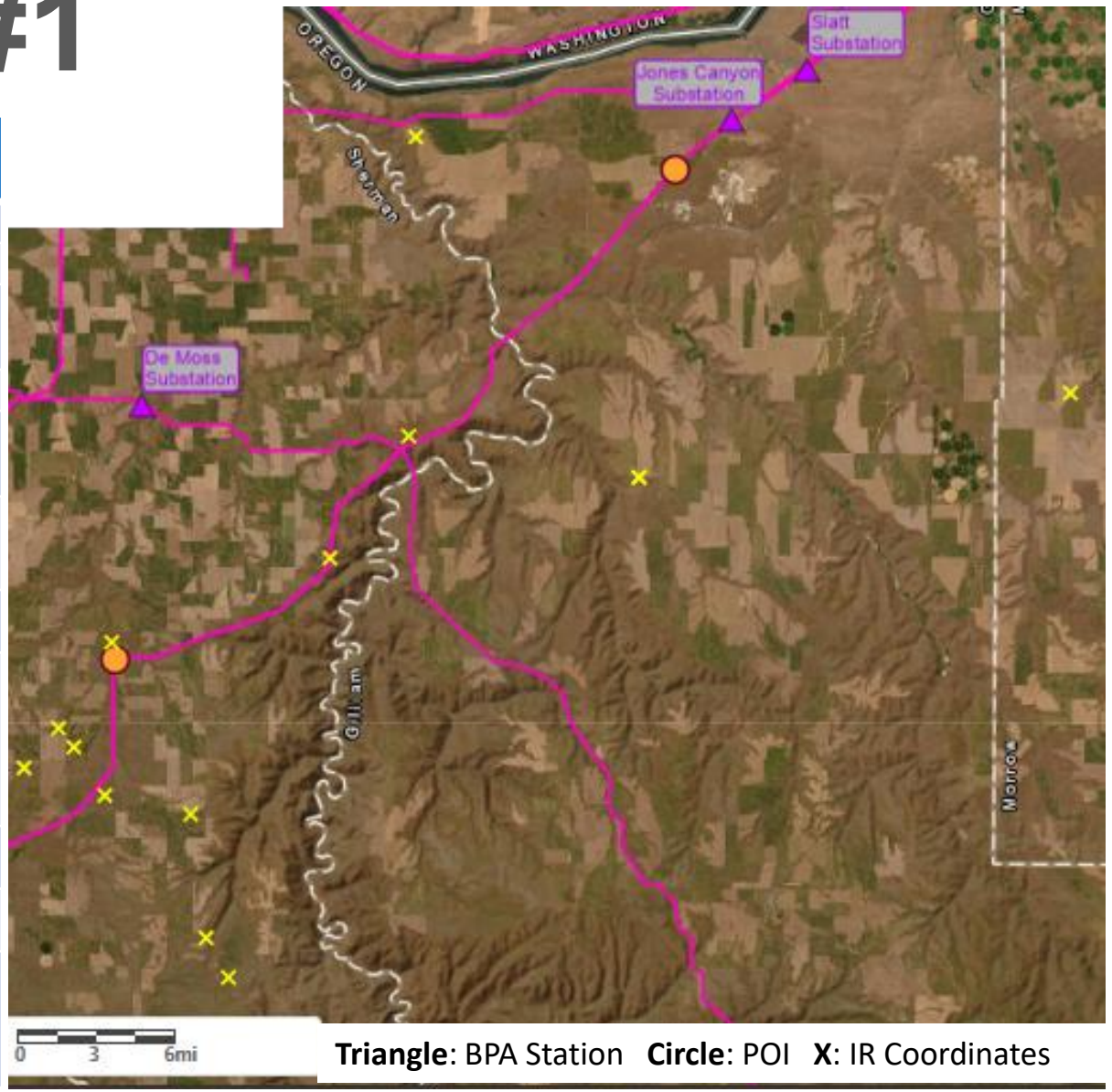
GI #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G0699	Solar, BESS	600	-600
G0728	Wind, BESS	210	-210
G0768	Wind, BESS	300	-100
G0787	Pump Hydro BESS	600	-600
G0791	Solar, BESS	650	-650
G0795	Solar, BESS	650	-650
G0797	Solar, BESS	650	-650
G0825	Solar, BESS	400	-400
G0838	Solar, BESS	150	-80
G0839	Solar, BESS	150	-80
G0849	Solar, BESS	400	-400
G0850	Solar, BESS	400	-400
G0864	BESS	500	-500
G0865	Solar, BESS	200	-100
G0866	Solar	300	0
G0867	Wind	100	0
G0941	BESS	0	-488
G0946	BESS	650	-650
G0972	Wind	300	0
G0974	Wind	250	0
G0989	Solar, BESS	275	-275
G0994	Wind	277	0
G1002	Solar	200	0
G1041	Wind, BESS	500	-250



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

Lower Columbia #1

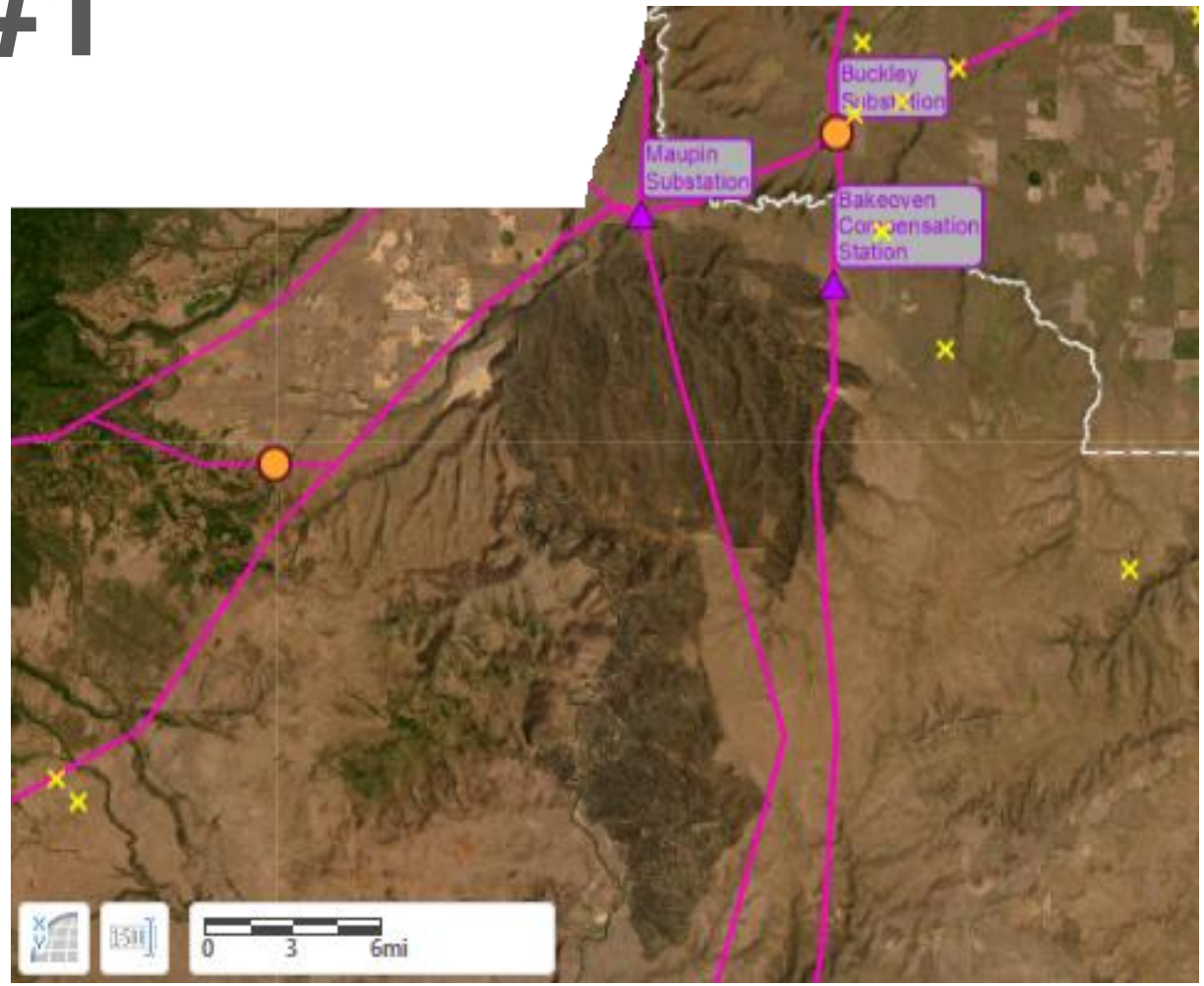
IR #	POI	Total IR Scope	Cost SHARE
G0768	Diamond Butte 500 kV	500kV gen-tie terminals (4x), ASHE-MARN #2 500 kV and SLAT-BUCK 500 kV Loop-ins, SPB1: JCYN-SANT500 #1 (SLAT-BUCK #2 segment) New BPA P7 RAS Algorithms	$91M
G0941			$9M
G0972 G0974			$139M
G1041			$122M
G0787 G0791	Rosebush 500 kV	500 kV gen-tie terminals (3x), ASHE-MARN #2 500 kV and SLAT-BUCK 500 kV Loop-ins, SPB1: JCYN-SANT500 #1 (SLAT-BUCK #2 segment) SPB2: JCYN-SANT500 #2 (BUCK-MARN #2 segment) New BPA P7 RAS Algorithms	$172M
G0795 G0797			$223M
G0864			$103M
G0728	Rosebush 230 kV	New 230 kV substation, new 500/230 kV transformer, 230 kV gen-tie terminal (x1), ASHE-MARN #2 500 kV and SLAT-BUCK 500 kV Loop-ins, New BPA P7 RAS Algorithms	$66M
G0989		New 230 kV substation, new 500/230 kV transformer, 230 kV gen-tie terminal (x3), ASHE-MARN #2 500 kV and SLAT-BUCK 500 kV Loop-ins, SPB1: JCYN-SANT500 #1 (SLAT-BUCK #2 segment) SPB2: JCYN-SANT500 #2 (BUCK-MARN #2 segment) New BPA P7 RAS Algorithms	$108M
G0994			$108M
G1002			$87M



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

Lower Columbia #1

IR #	POI	Total IR Scope	Cost SHARE
G0699 G0946	Buckley 500 kV	500 kV gen-tie terminal (3x), ASHE-MARN #2 500 kV and SLAT-BUCK 500 kV Loop-ins, SPB1: JCYN-SANT500 #1 (SLAT-BUCK #2 segment) SPB2: JCYN-SANT500 #2 (BUCK-MARN #2 segment) New BPA P7 RAS Algorithms	$411M
G0825 G0849 G0850			$406M
G0865 G0866 G0867			$231M
G0838 G0839	Pinegrove 500 kV	1x 500 kV gen-tie terminal (shared) New BPA P7 RAS Algorithms	$65M



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

LowerC #1: Notable New Lines (SPB)

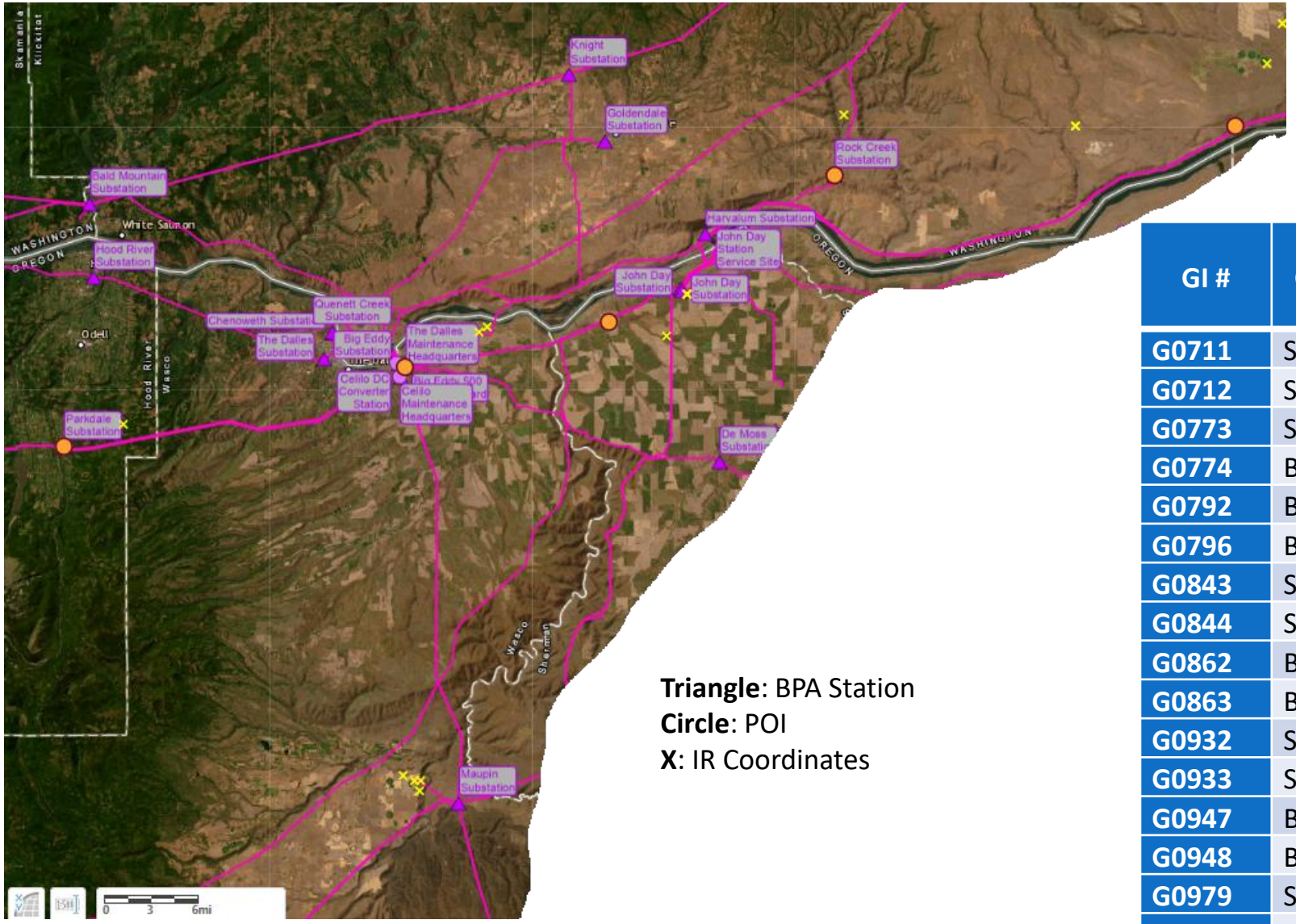
- Rebuild JCYN-SANT 230 kV to 500 kV
  - Same ROW as ASHE-MARN 500 & SLAT-BUCK500
  - SANT ~1mi from MARN
- SPB1: Slatt-Buckley 500 #2 segment
  - loops into GI POI stations (DBUTE, ROSE)
- SPB2: Buckley-Marion 500 #2 segment
  - loops into GI POI stations (BUCK)
- Route and Terminals not final, placeholder presumes new structures and conductor fit within existing ROW

LowerC #1 Contingent Facilities

- Rosebush substation (senior queued IRs)
- Diamond Butte substation (senior queued IRs)
- Pinegrove substation (senior queued IRs)

Lower Columbia #2 (BIGE, WOJ) Cluster Area

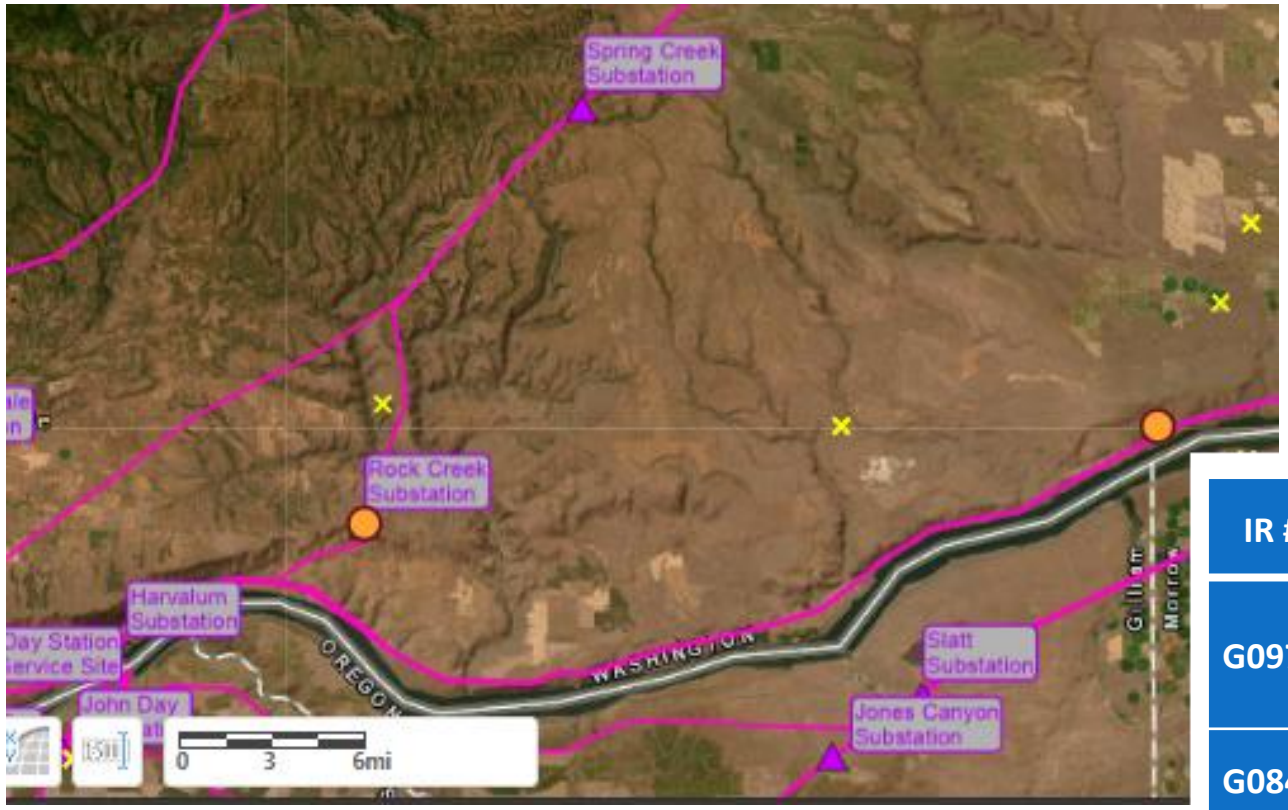
Day 4



Triangle: BPA Station
Circle: POI
X: IR Coordinates

Lower Columbia #2

GI #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G0711	Solar	300	0
G0712	Solar	448	0
G0773	Solar, BESS	650	-650
G0774	BESS	650	-650
G0792	BESS	650	-650
G0796	BESS	650	-650
G0843	Solar, BESS	120	-60
G0844	Solar, BESS	280	0
G0862	BESS	0	-400
G0863	BESS	0	-500
G0932	Solar, BESS	400	-400
G0933	Solar, BESS	400	-400
G0947	BESS	650	-650
G0948	BESS	650	-650
G0979	Solar, BESS	200	-200
G0980	Wind	191	0
G1031	Solar	250	0
G1036	Wind	234	0

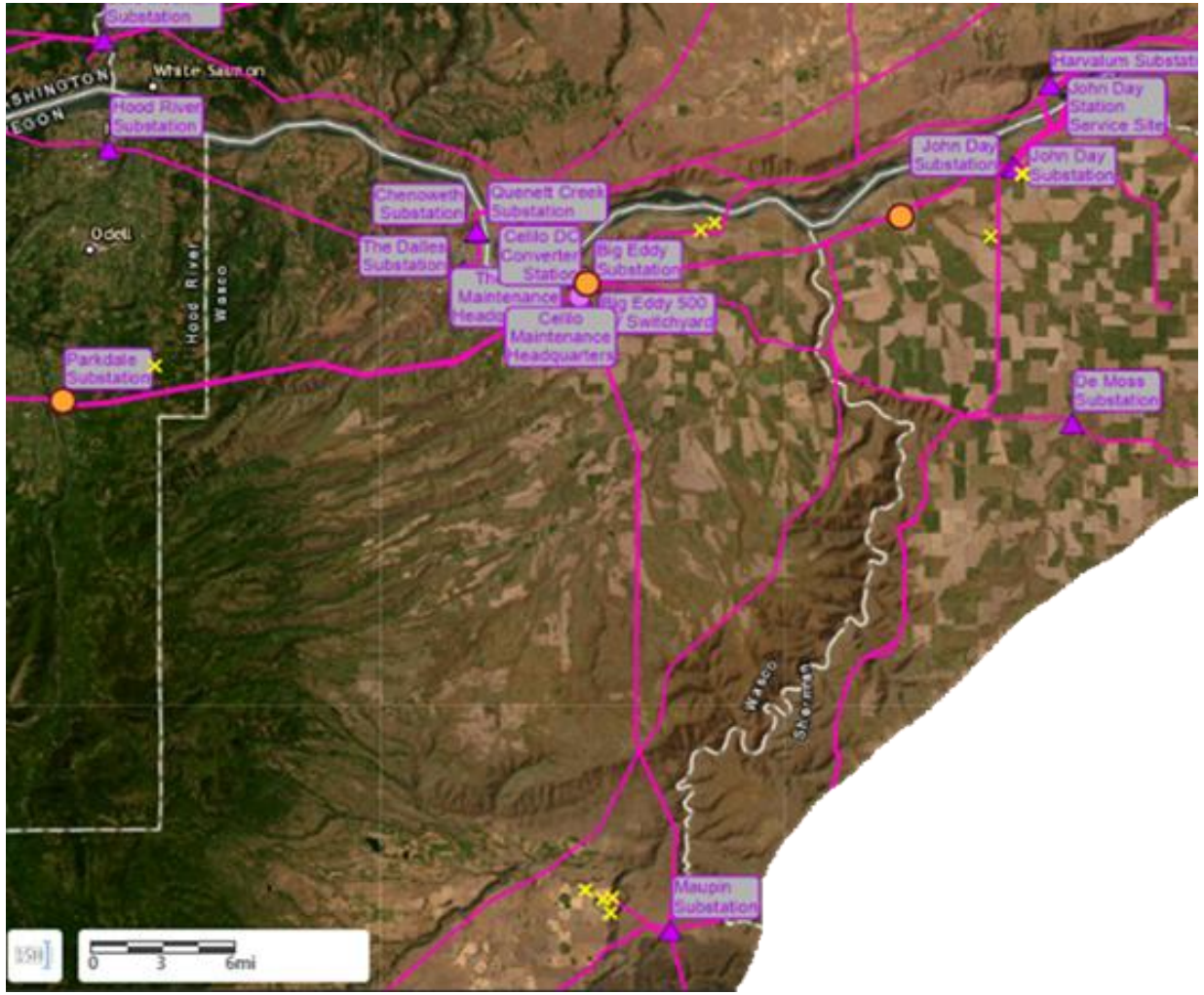


Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

Lower Columbia #2

IR #	POI	Total IR Scope	Cost Share
G0979	Rock Creek 230	1x 230 kV gen-tie terminal Participation in WOJ, RCCK RAS algorithms	$30M
G0843 G0844	Crider Valley 500 (MCNY-JDAY)	1x 500 kV gen-tie terminal (shared) Participation in WOJ, WOM RAS algorithms	$50M
G0932 G0933		1x 500 kV gen-tie terminal (shared) Participation in WOJ, WOM RAS algorithms	$50M
G1031		1x 500 kV gen-tie terminal (shared) Participation in WOJ, WOM RAS algorithms	$41M

Lower Columbia #2



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

IR #	POI	Total IR Scope	Cost Share
G1036	Parkdale 230	Construct 230 kV ring bus, 4 230 kV breakers and associated disconnects, Participation in Big Eddy RAS	$90M
G0773 G0774	Big Eddy 500	500 kV gen-tie terminals (3x) Participation in WOJ RAS algorithms	$47M
G0792 G0796			$47M
G0947 G0948			$47M
G0711 G0863	John Day Annex 500,230	New 500 kV and 230 kV substation, 1x new 500/230 transformer, 230 kV gen-tie terminals (3x) Participation in WOJ RAS algorithms	$148M
G0712 G0862			$168M
G0980			$124M

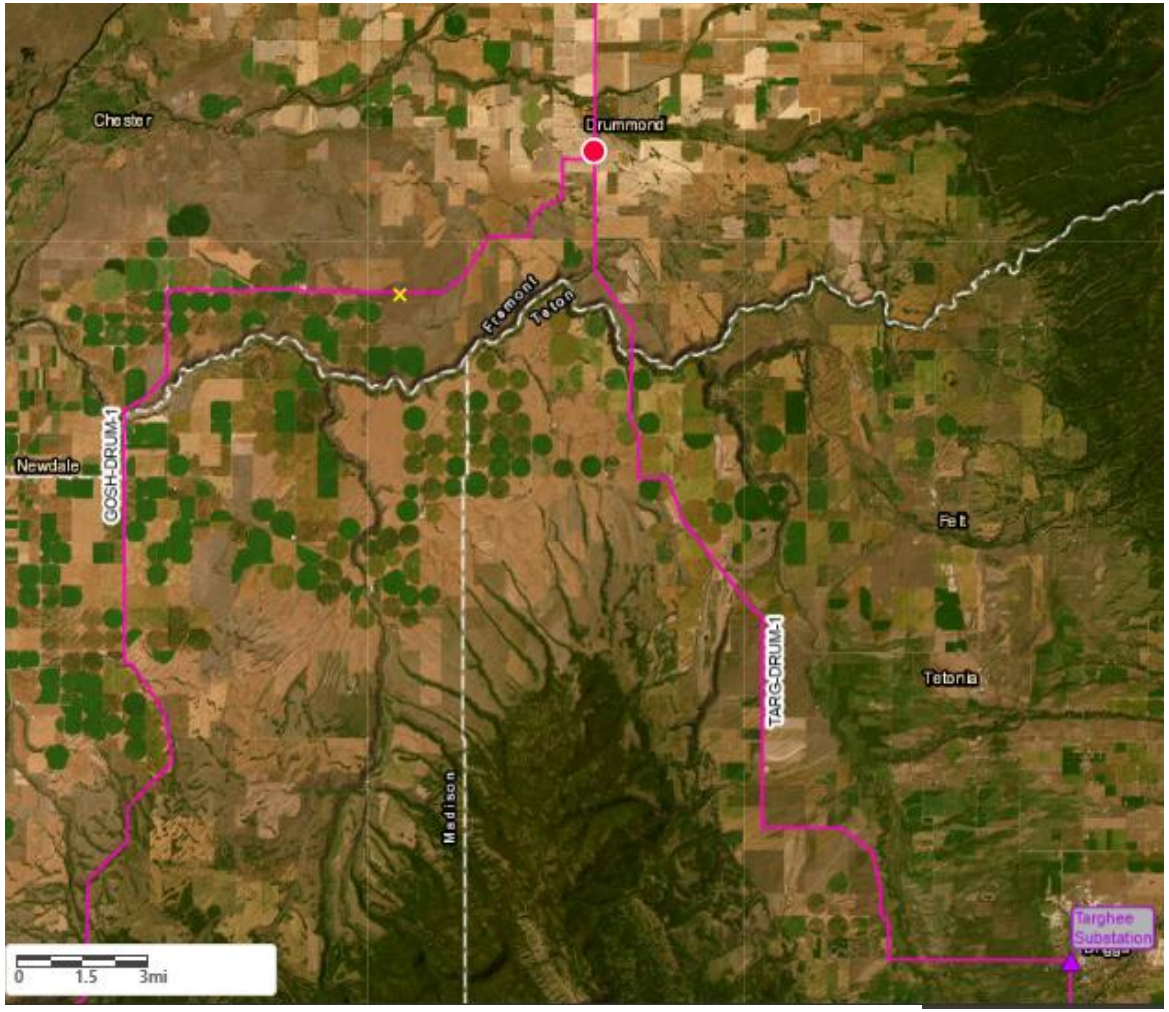
LowerC #2 Contingent Facilities

- Crider Valley 500 kV station, midline MCNY-JDAY (senior queued IRs)
- Big Eddy-Quenett Creek 230 kV line upgrade (internal BPA project)
- Big Eddy-Chemawa 500 kV rebuild (TSEP)
- John Day 500 kV station upgrades (Senior queued IRs)
- North of Grizzly 500 kV project (TSEP)
  - New Big Eddy-Bonanza 500 kV line
- Rock Creek-John Day 500 kV Rebuild (TSEP)

SE Idaho Cluster Area

Day 4

SE Idaho



Triangle: BPA Station **Circle**: POI **X**: IR Coordinates

IR #	Gen Type	MW Requested (Generating)	MW Requested (Charging)
G0945	Solar, BESS	150	-52

IR #	Studied POI	Total IR Scope	Total Cost
G0945	Drummond 115 kV	Drummond 115kV Substation Expansion, Goshen-Drummond 161kV line rebuild	$145M

Questions?

Technical questions and POI comments should be directed to the GI Cluster Studies mailbox with your Account Executive cc'd on the message

- Email Address – **GI_ClusterStudies@bpa.gov**
- Email Subject Line - **Include GI#s and Cluster Area Name**

Appendix

Appendix: Acronyms

BESS	Battery Energy Storage System
EMT	Electromagnetic Transient
GW	Gigawatt
IR	Interconnection Requests
IS	Interconnection Service
kV	Kilovolts
LGI	Large Generator Interconnection
LLIR	Line and Load Interconnection Request

MW	Megawatt
OATT	Open Access Transmission Tariff
OEM	Original Equipment Manufacturer
POI	Point of Interconnection
PSLF	Positive Sequence Load Flow
TCS	Transition Cluster Study
TSEP	TSR Study and Expansion Process
TSR	Transmission Services Request