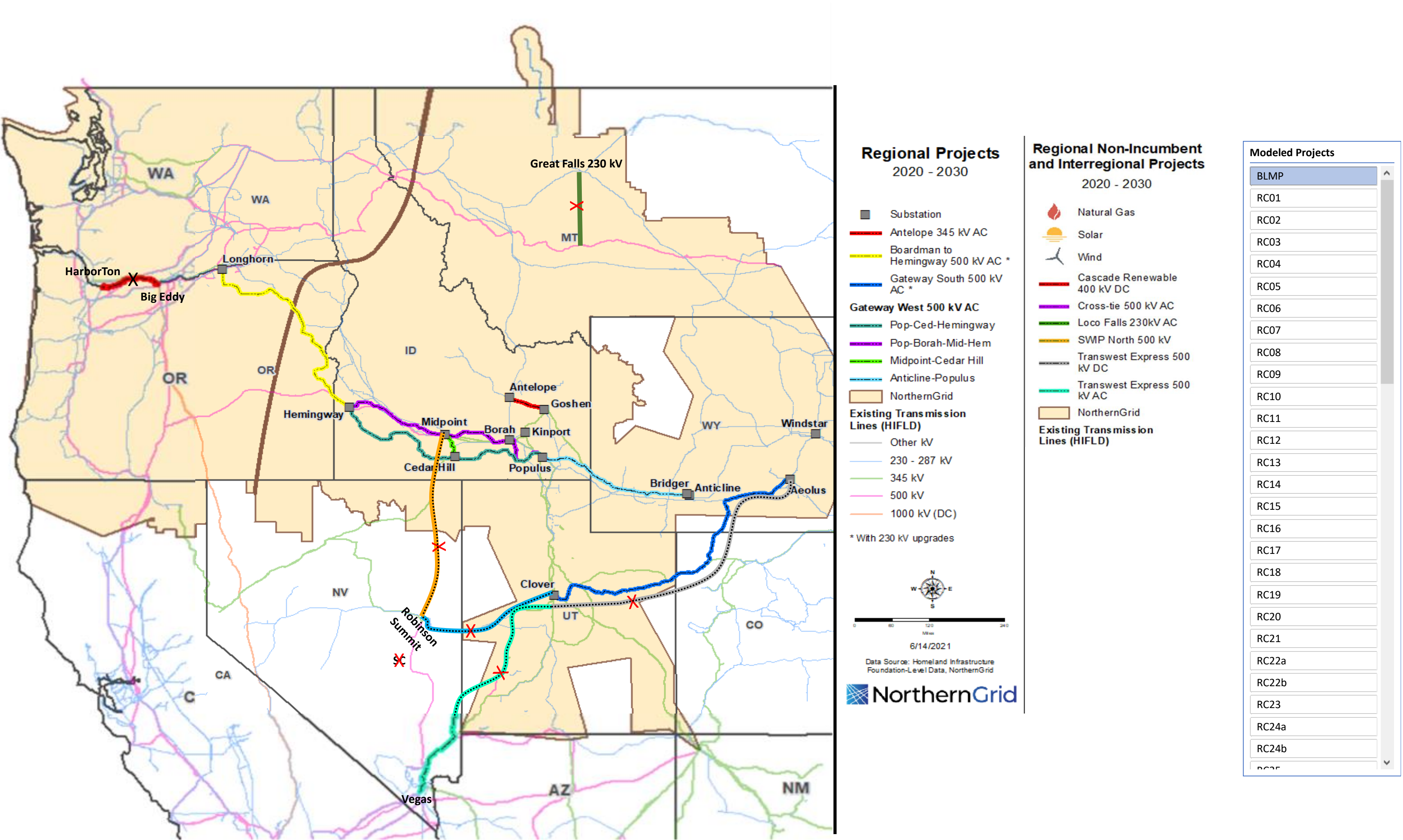
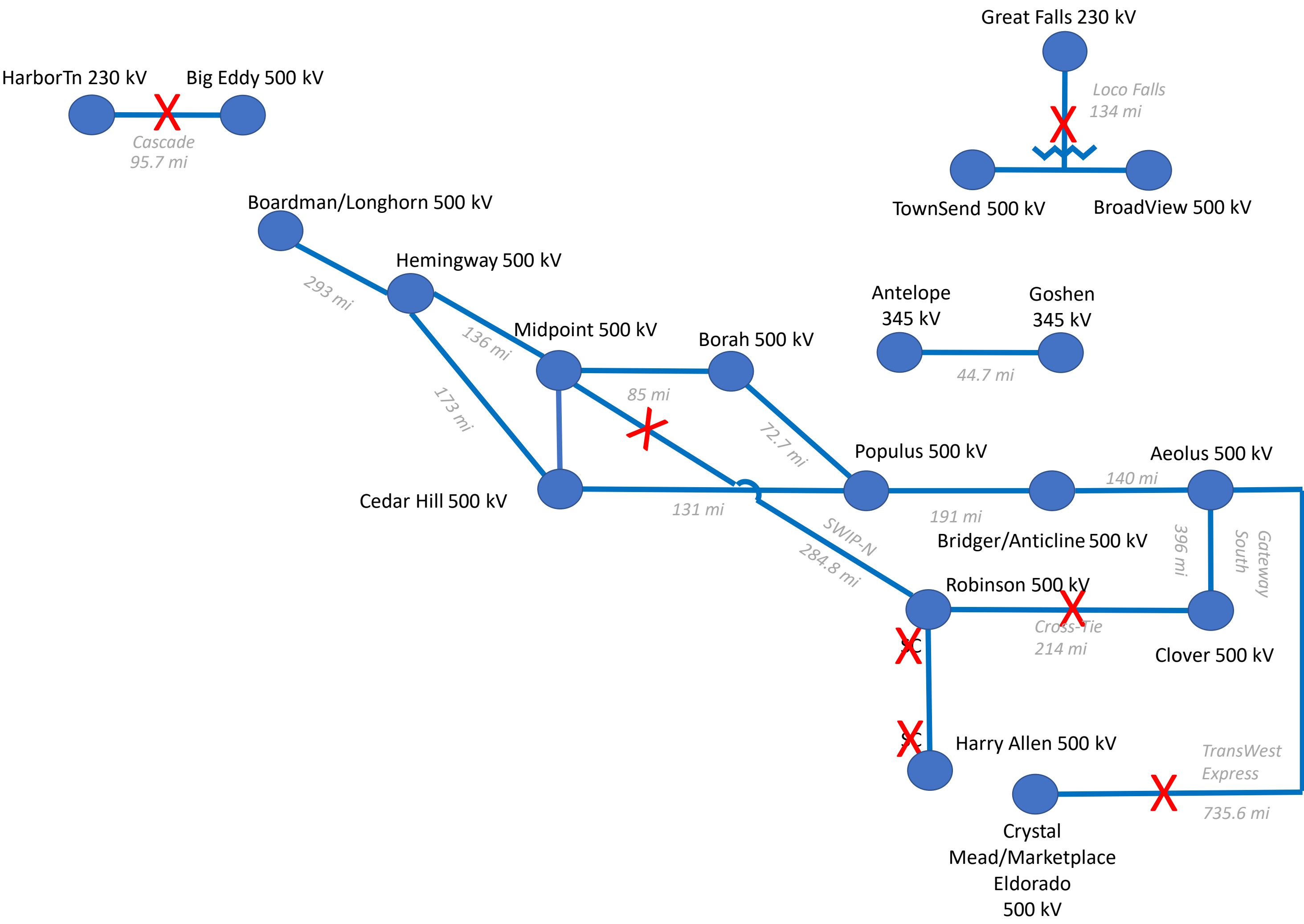


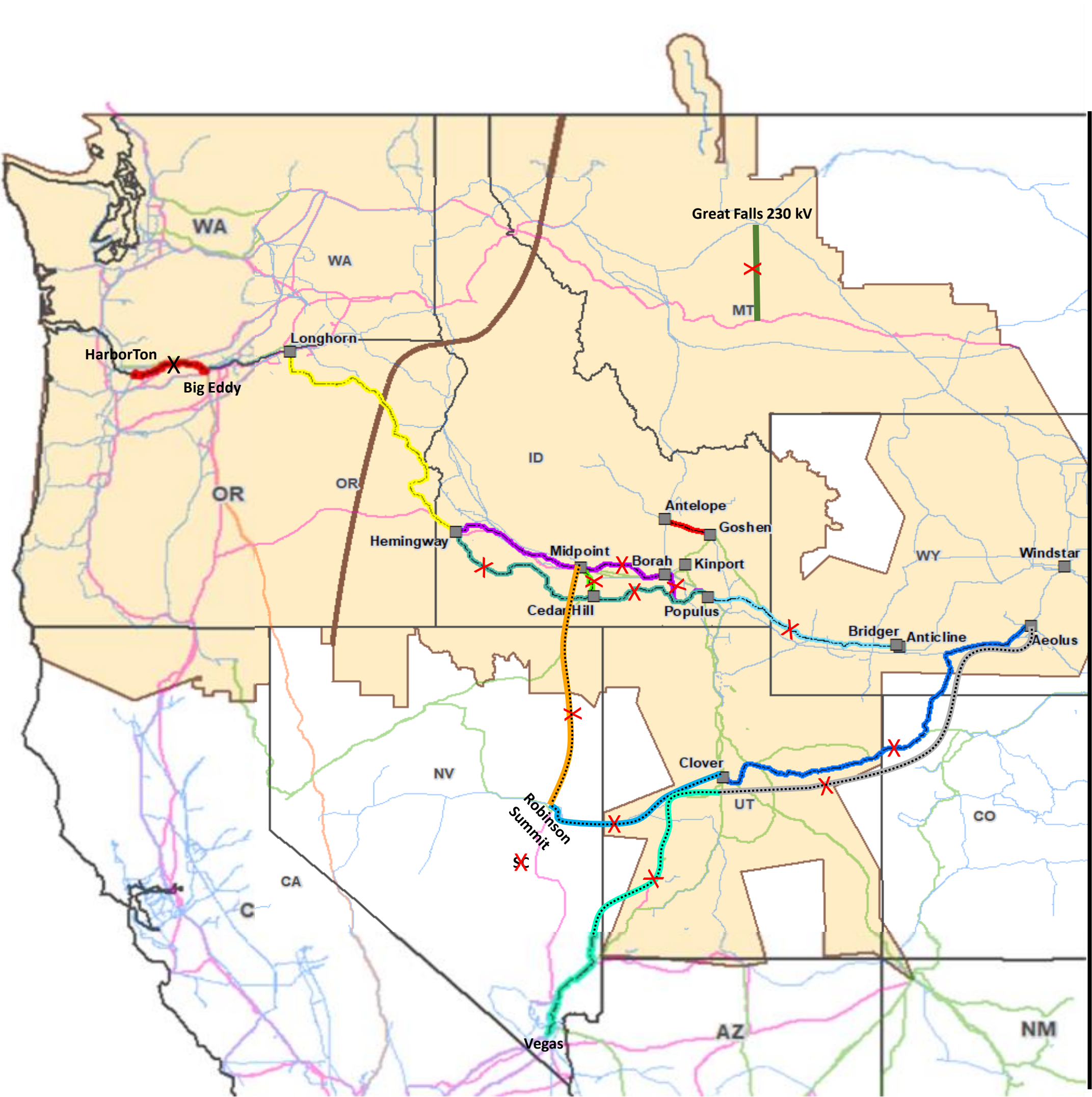
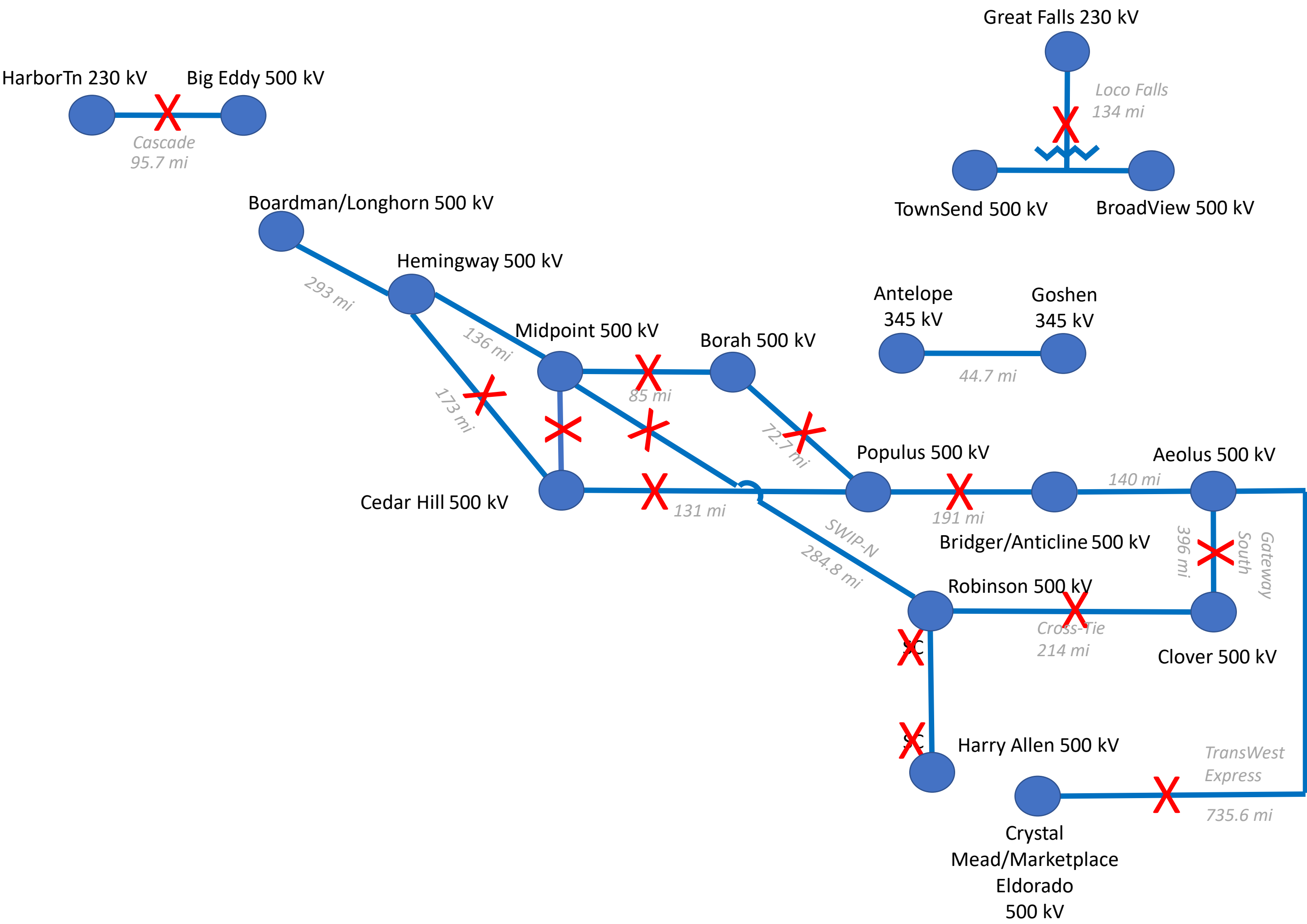
B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
							X	X	X	X	X

BLMP



B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X	X	X	X		X	X	X	X	X	X

RC01



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

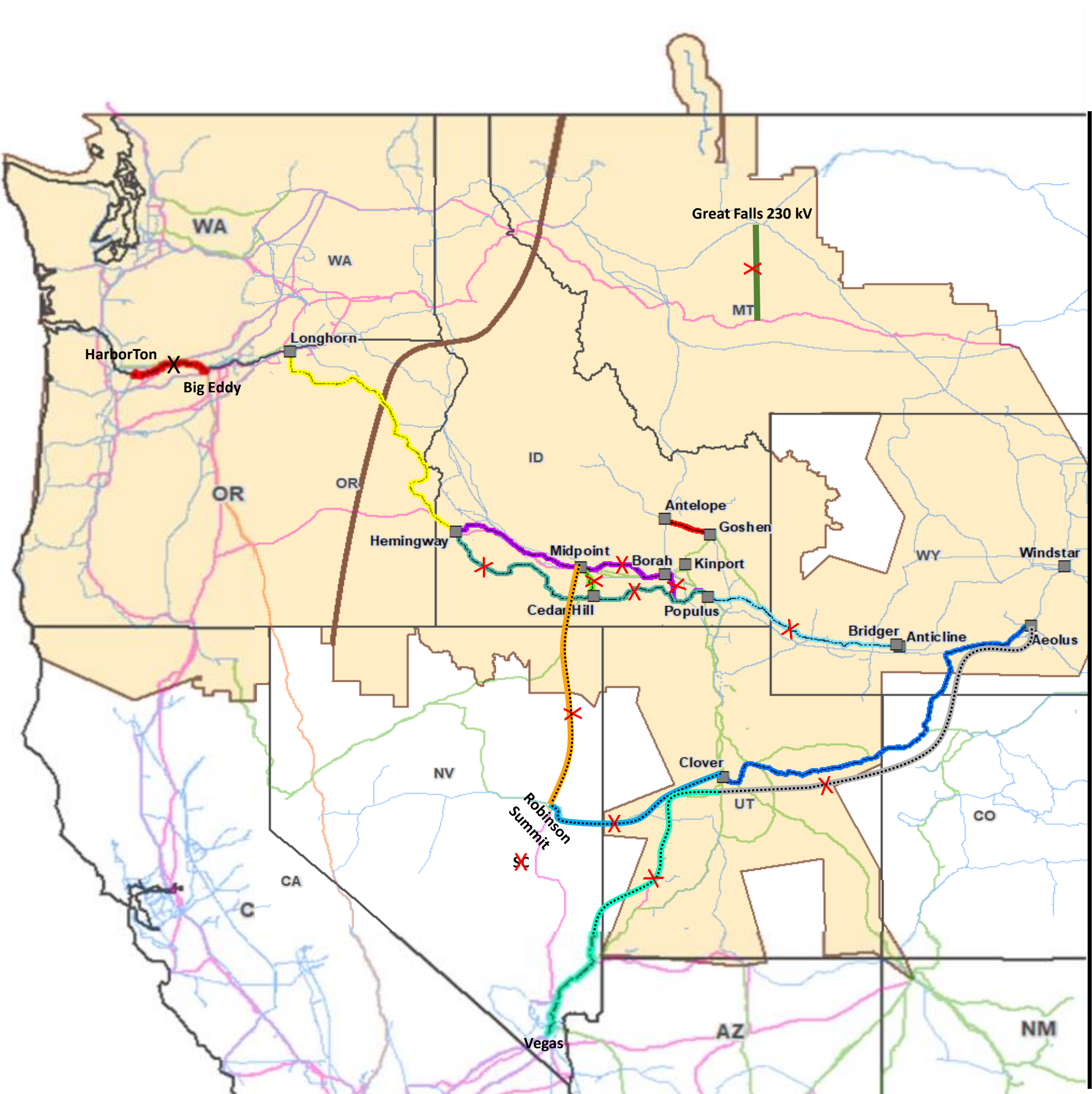
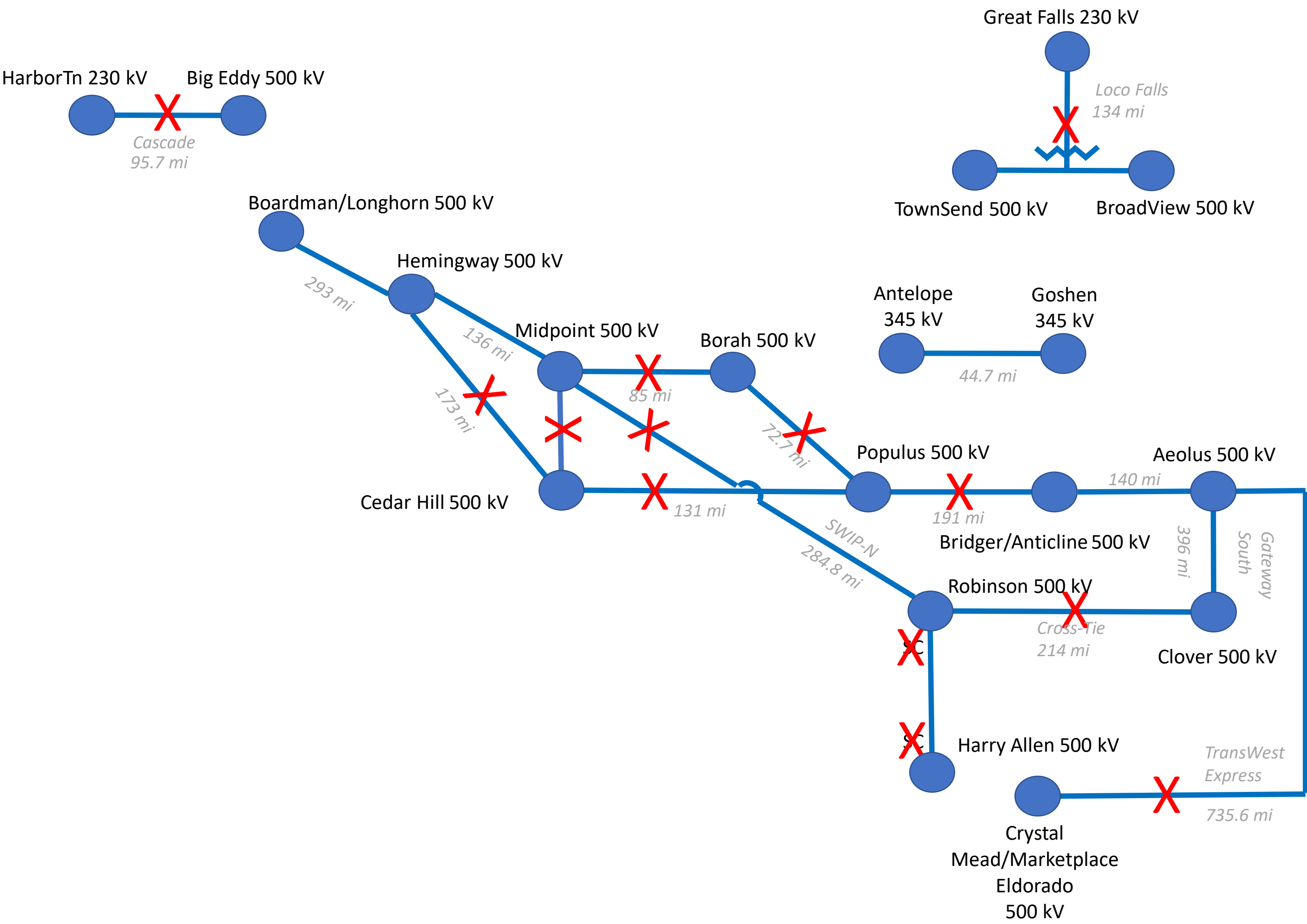
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X	X	X	X			X	X	X	X	X

RC02



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

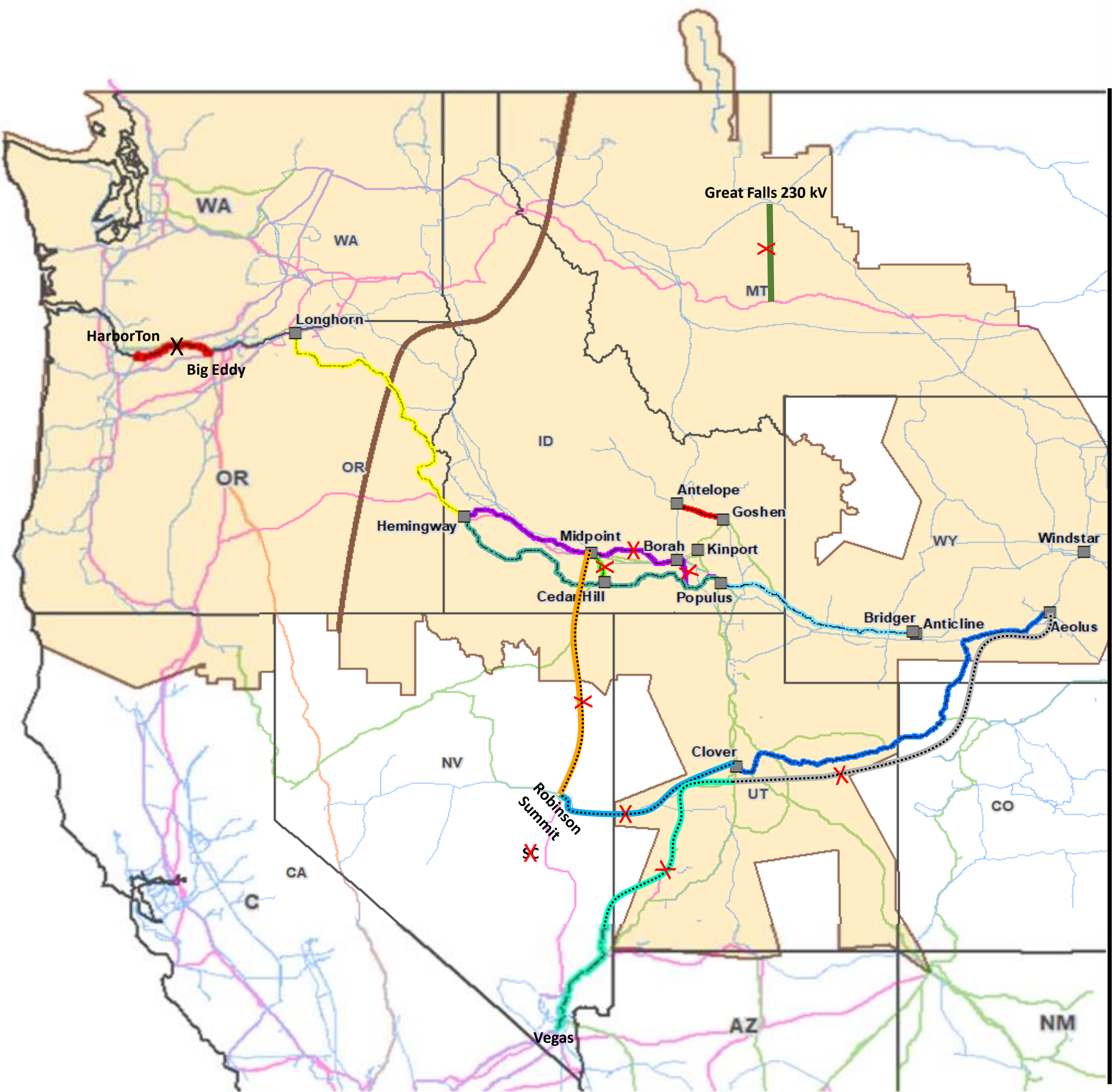
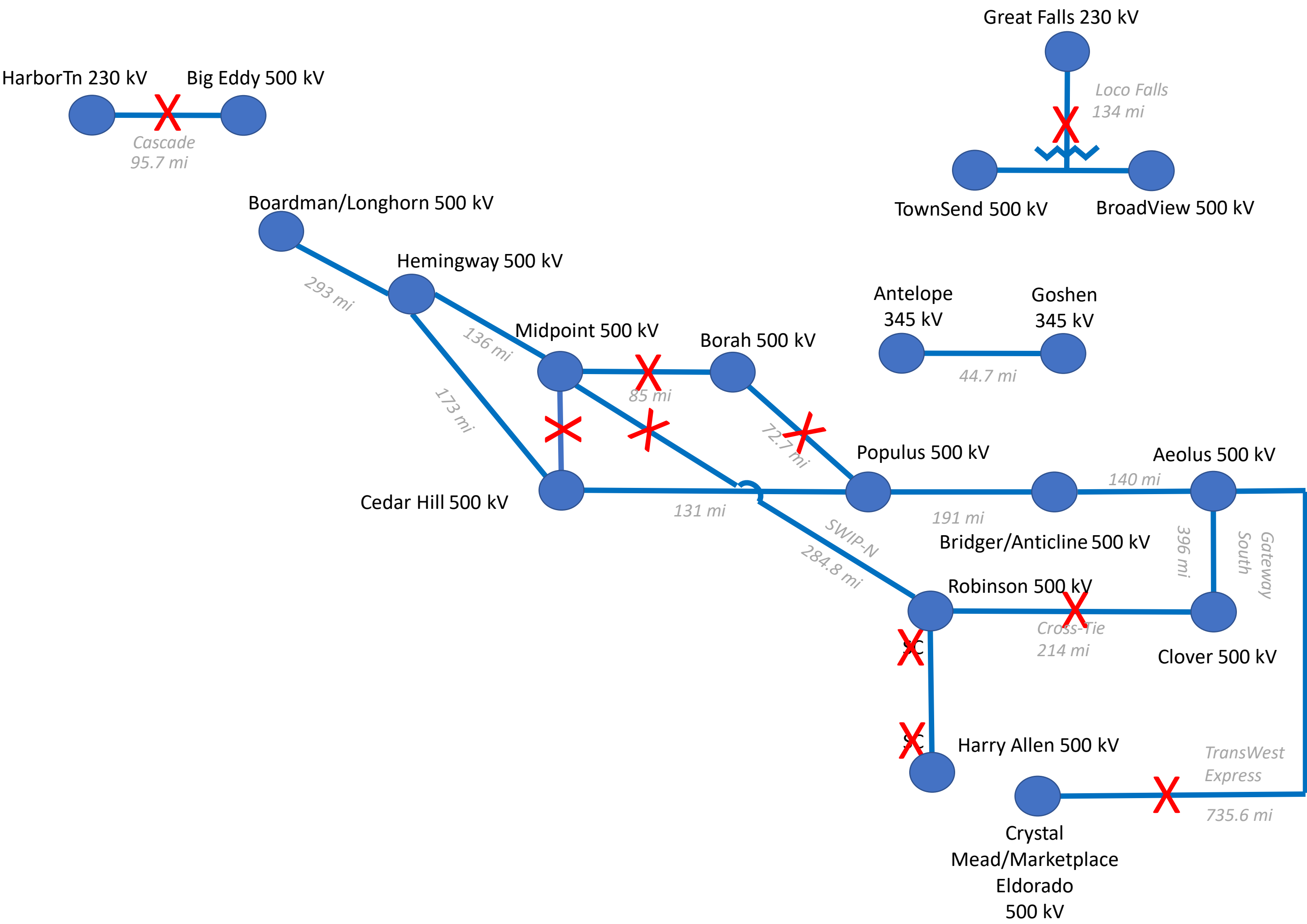
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2H [H]	Gateway West (Pop - Ced - Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X				X	X		X	X

RC03



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

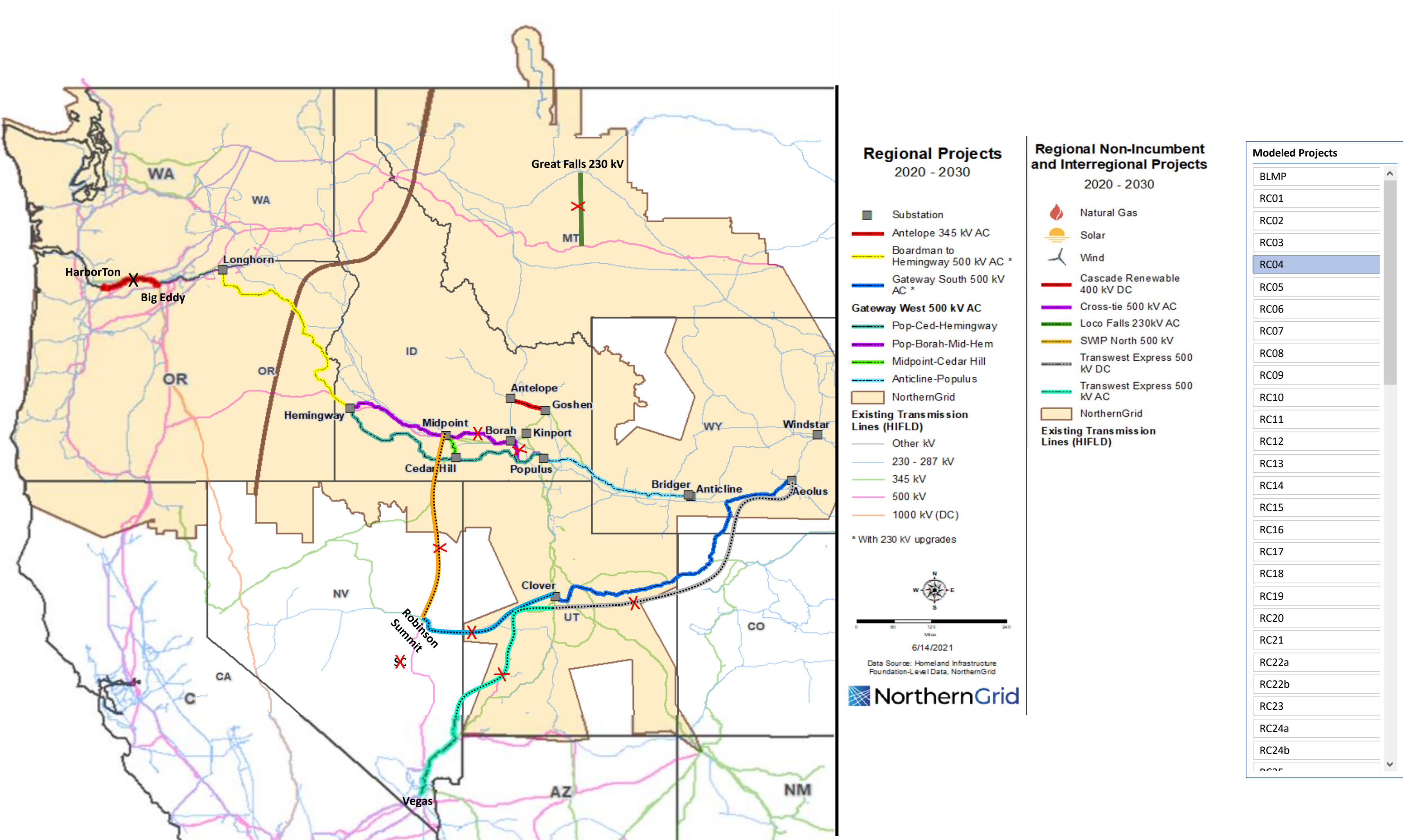
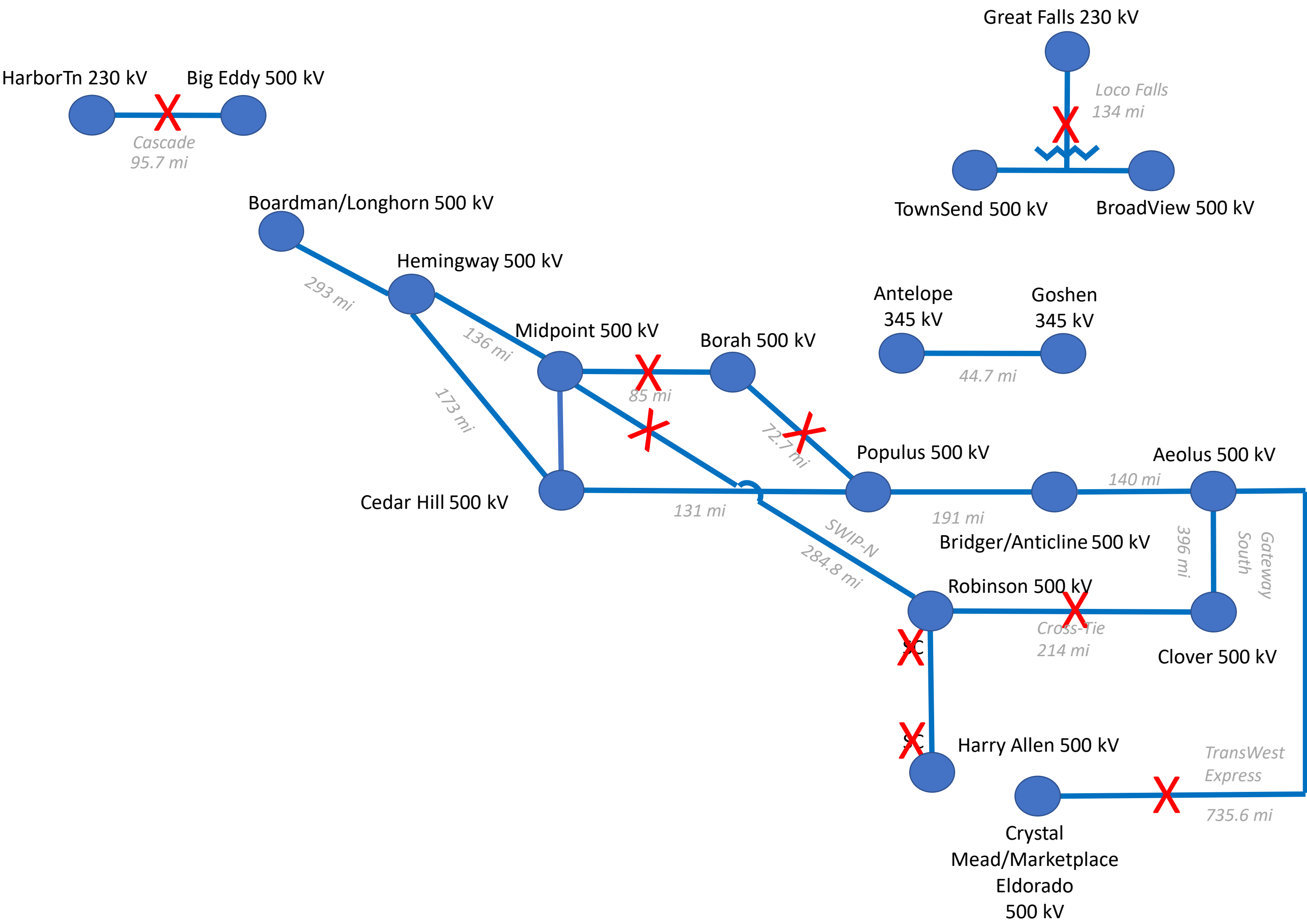
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-Tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

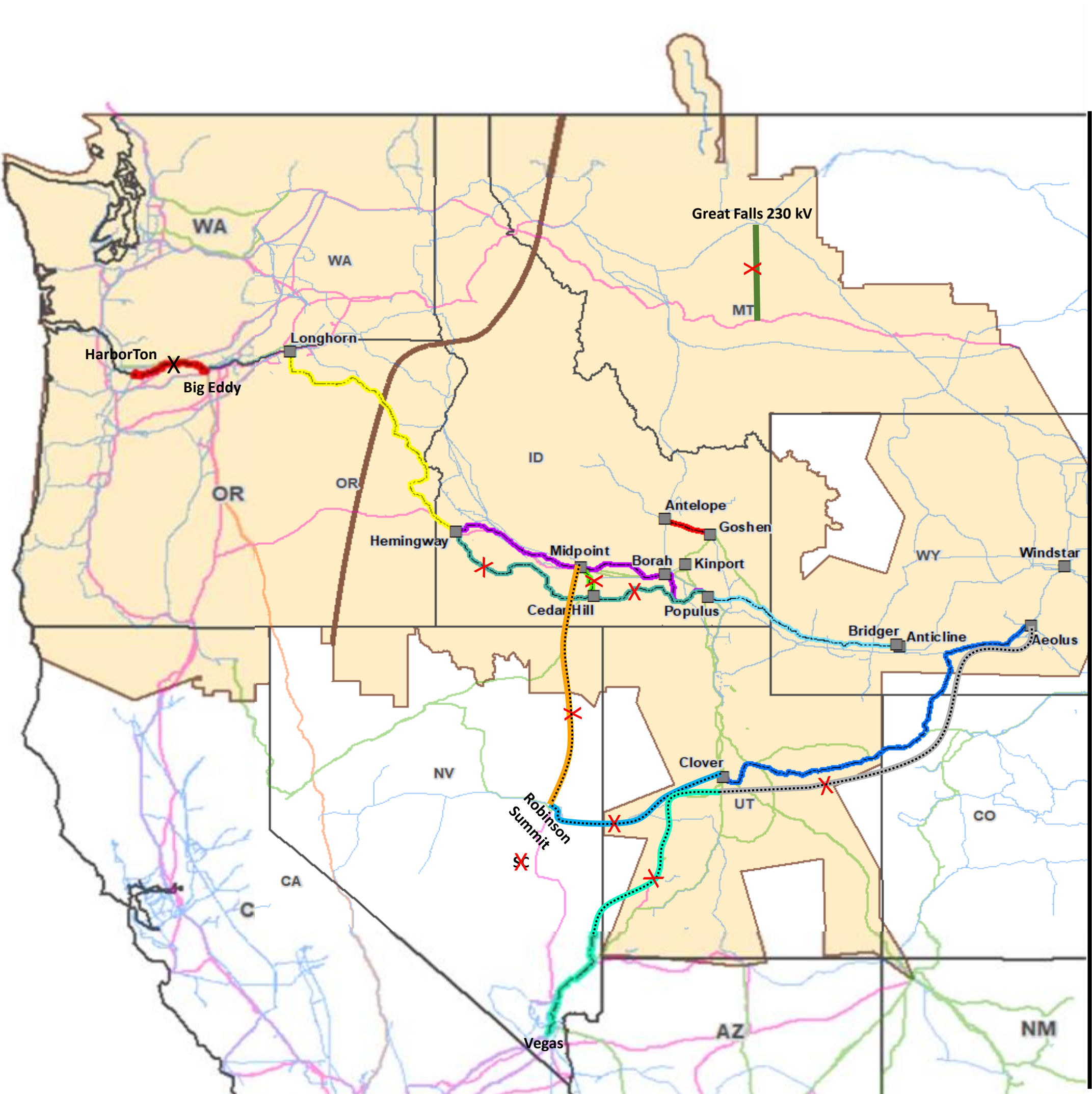
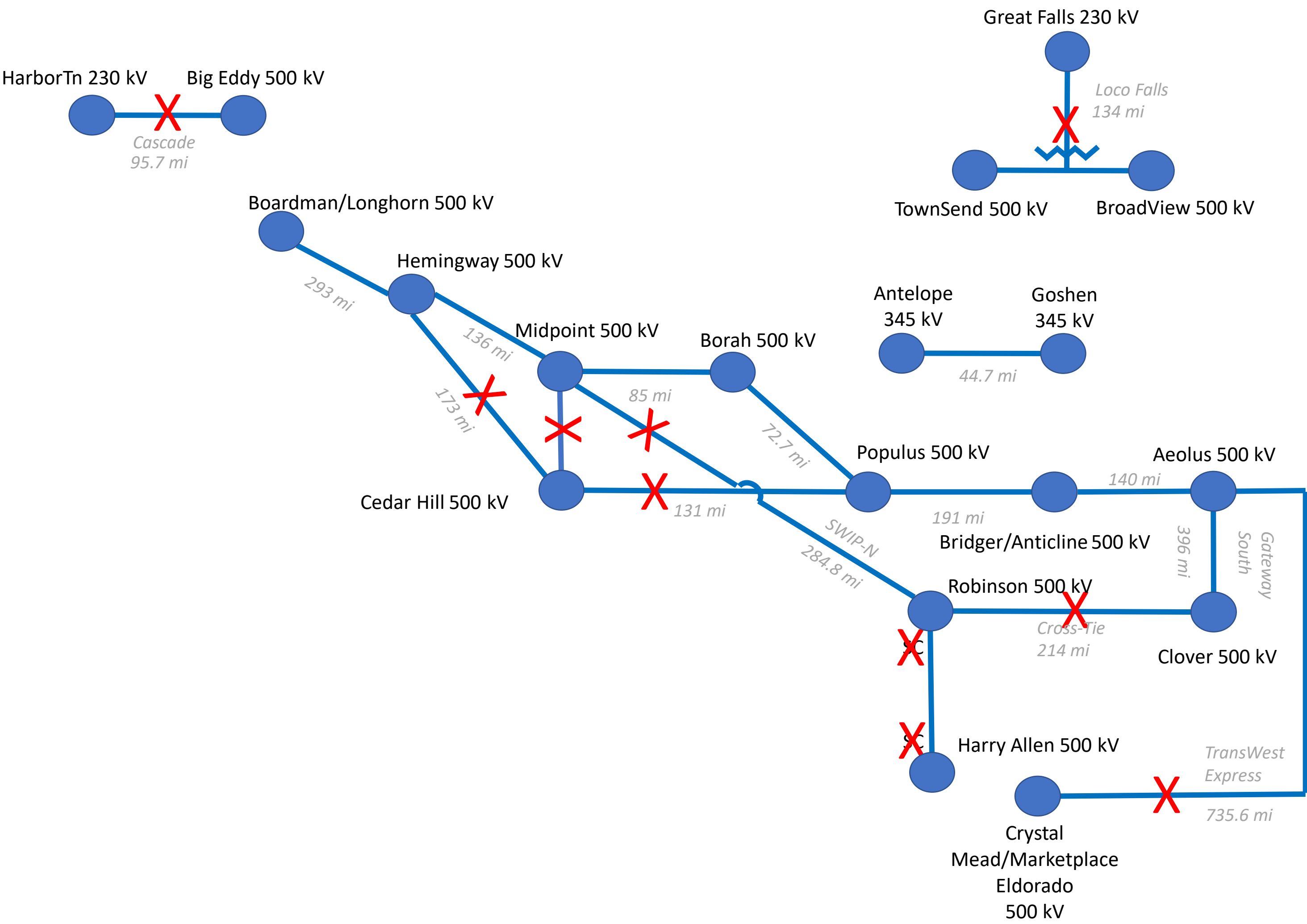
B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem) (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X					X	X	X	X	X

RC04



B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X	X	X	X	X

RC05



Regional Projects
2020 - 2030

Substation

Antelope 345 kV AC

Boardman to Hemingway 500 kV AC *

Gateway South 500 kV AC *

Gateway West 500 kV AC

Pop-Ced-Hemingway

Pop-Borah-Mid-Hem

Midpoint-Cedar Hill

Anticline-Populus

NorthernGrid

Existing Transmission Lines (HIFLD)

Other kV

230 - 287 kV

345 kV

500 kV

1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

Natural Gas

Solar

Wind

Cascade Renewable 400 kV DC

Cross-tie 500 kV AC

Loco Falls 230kV AC

SWP North 500 kV

Transwest Express 500 kV DC

Transwest Express 500 kV AC

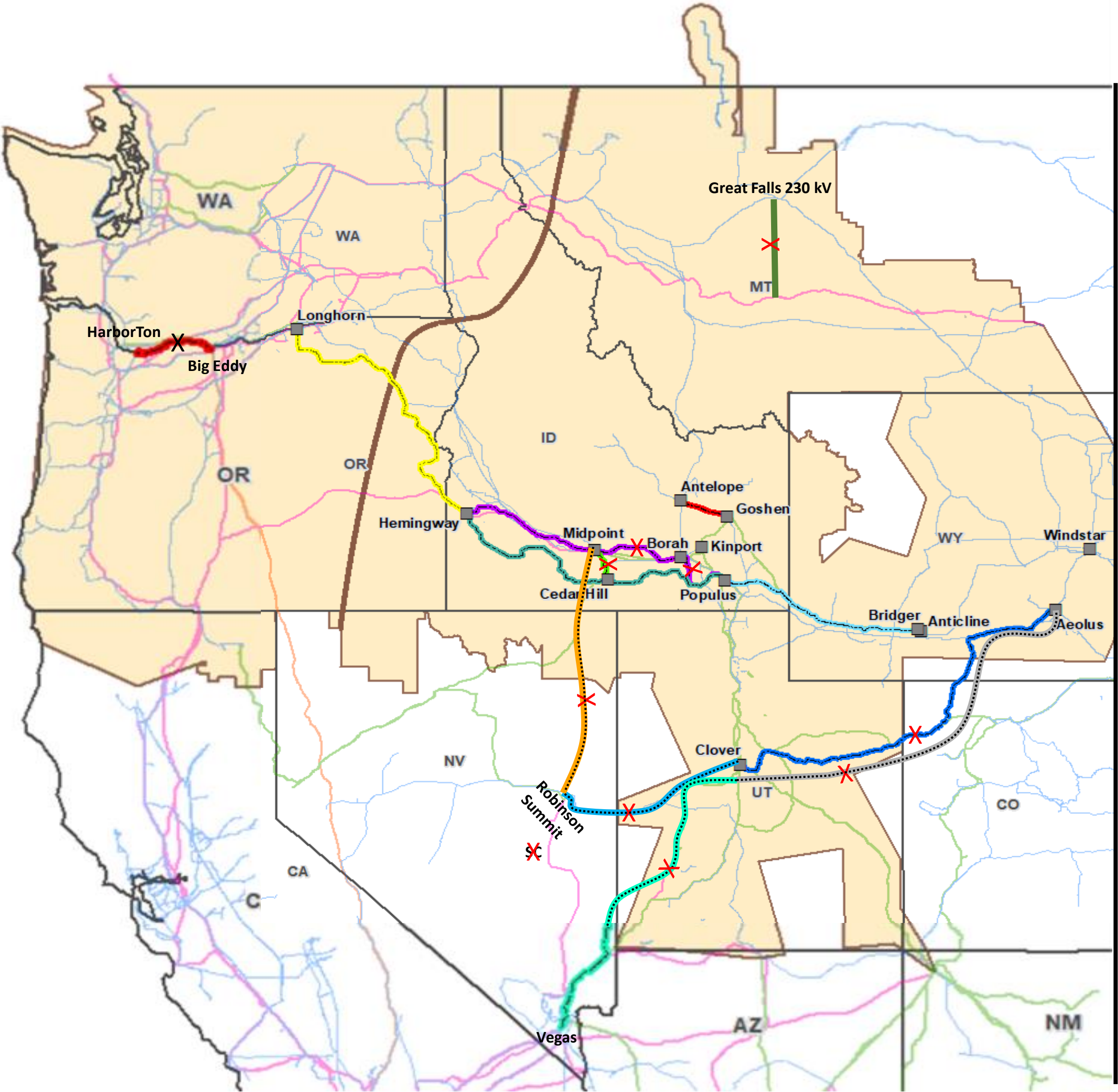
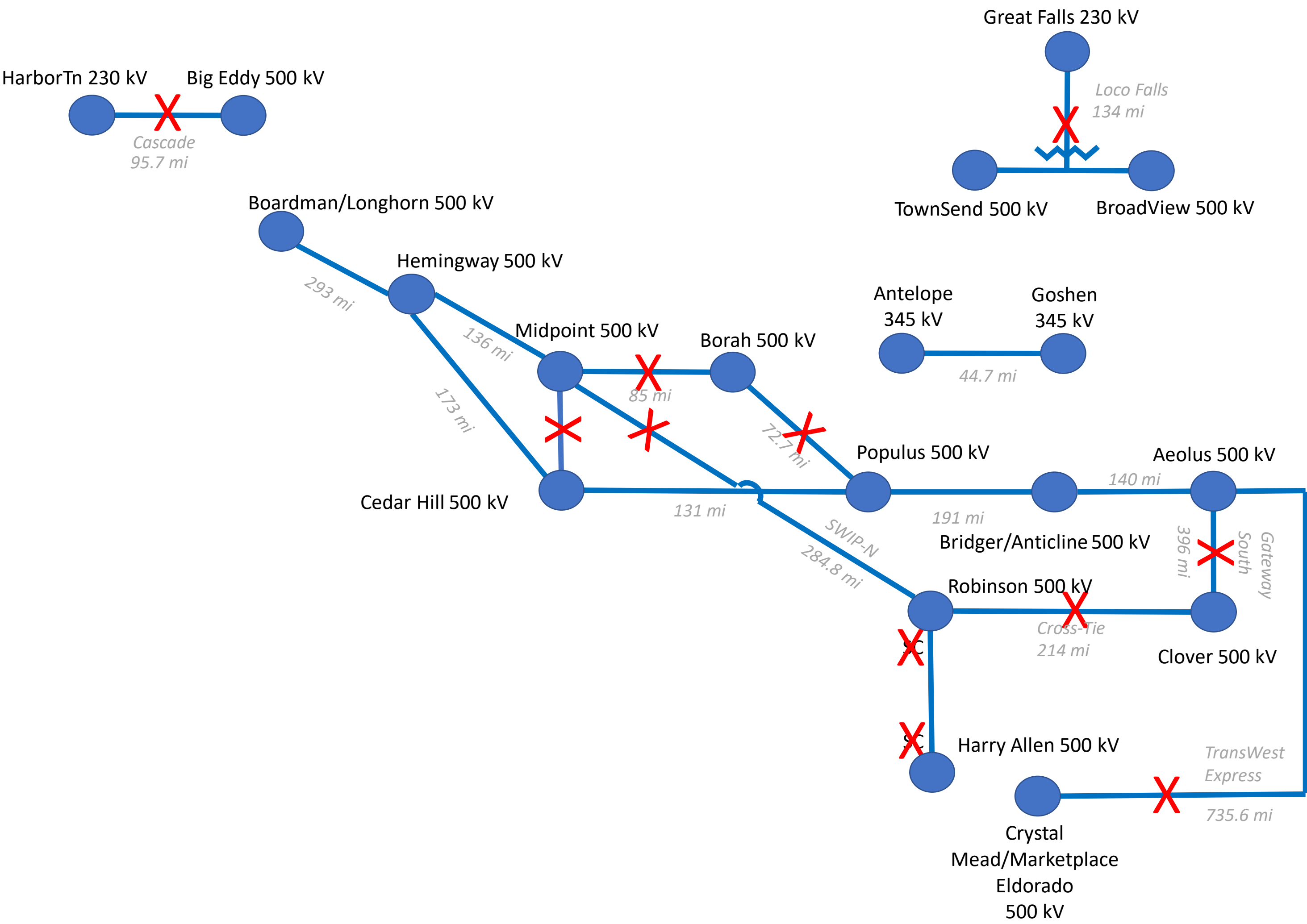
NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X			X	X	X	X	X	X

RC06



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
 - Pop-Ced-Hemingway
 - Pop-Borah-Mid-Hem
 - Midpoint-Cedar Hill
 - Anticline-Populus
- NorthernGrid
- Existing Transmission Lines (HIFLD)
 - Other kV
 - 230 - 287 kV
 - 345 kV
 - 500 kV
 - 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

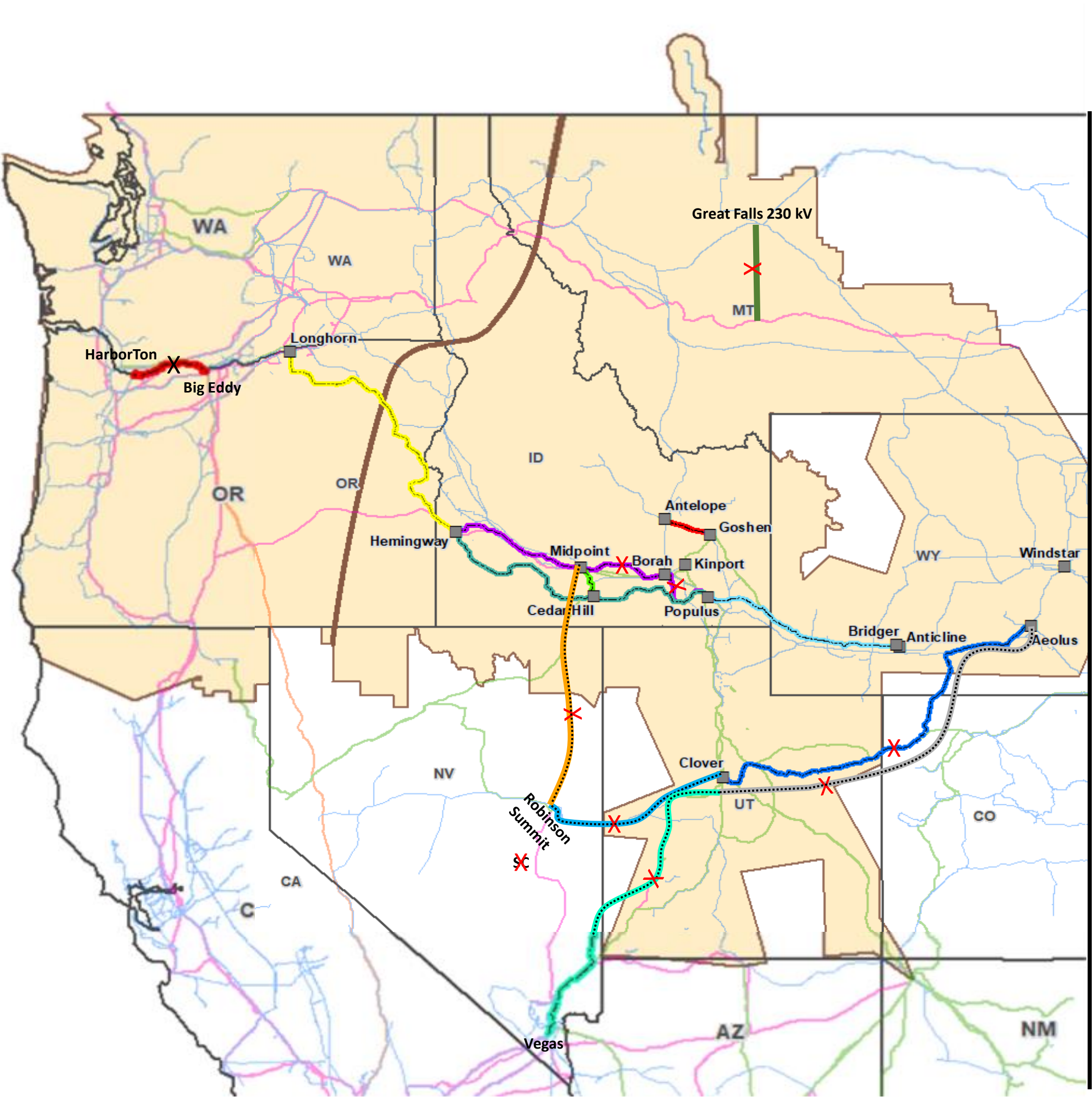
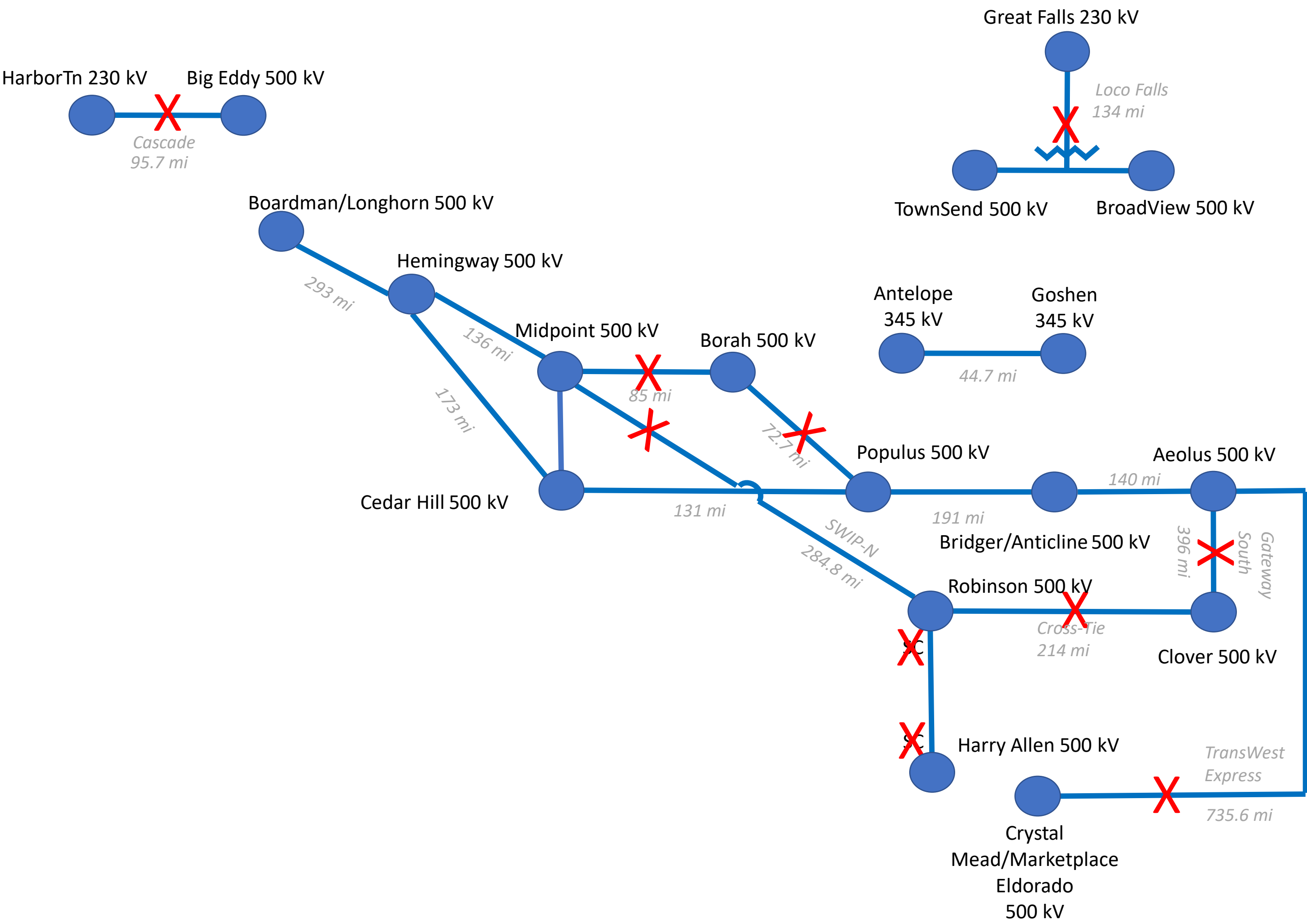
Regional Non-Incumbent and Interregional Projects
2020 - 2030

- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid
- Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X					X	X	X	X	X	X

RC07



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
 - Pop-Ced-Hemingway
 - Pop-Borah-Mid-Hem
 - Midpoint-Cedar Hill
 - Anticline-Populus
- NorthernGrid

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

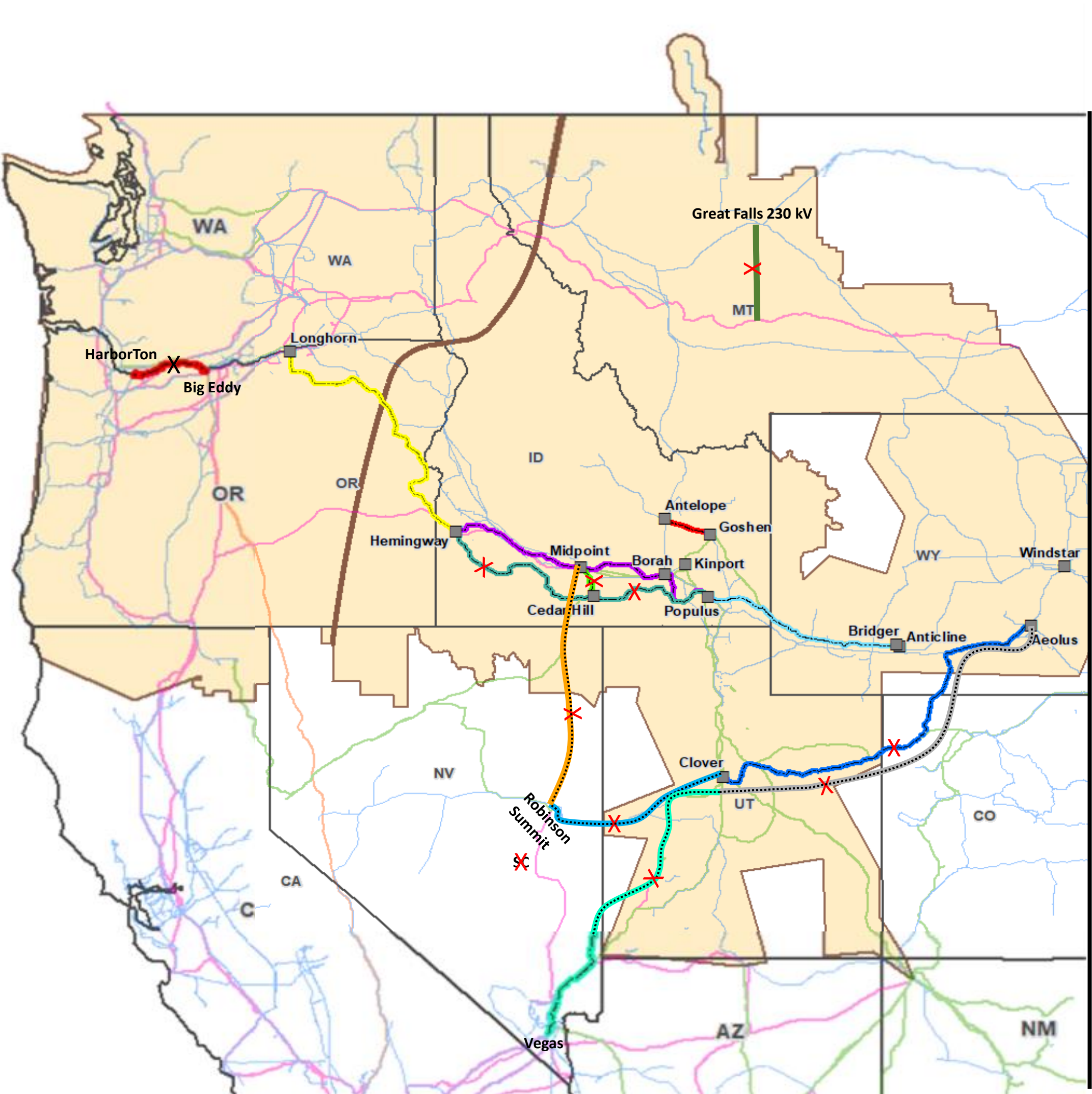
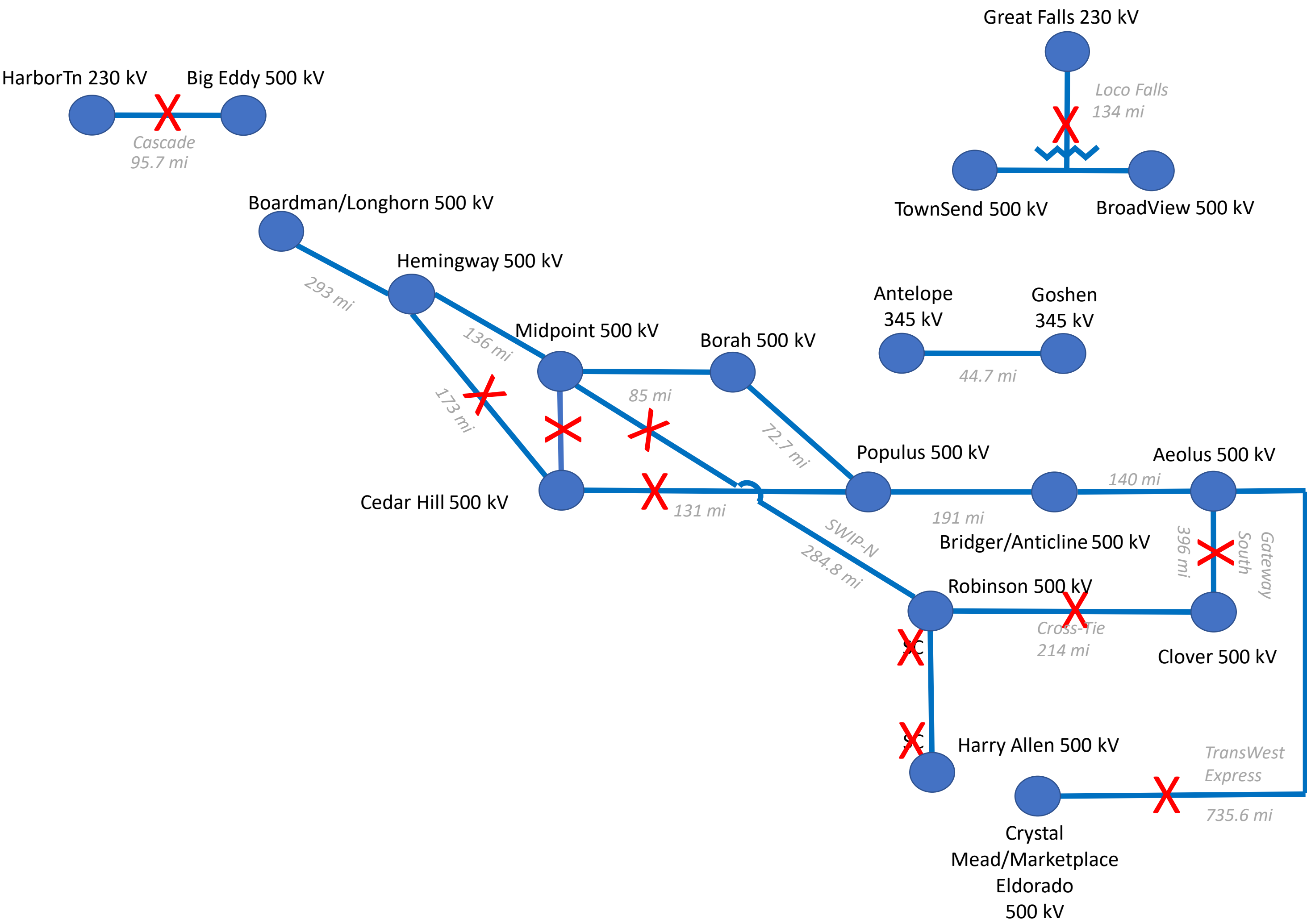
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-Tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X			X	X	X	X	X	X

RC08



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

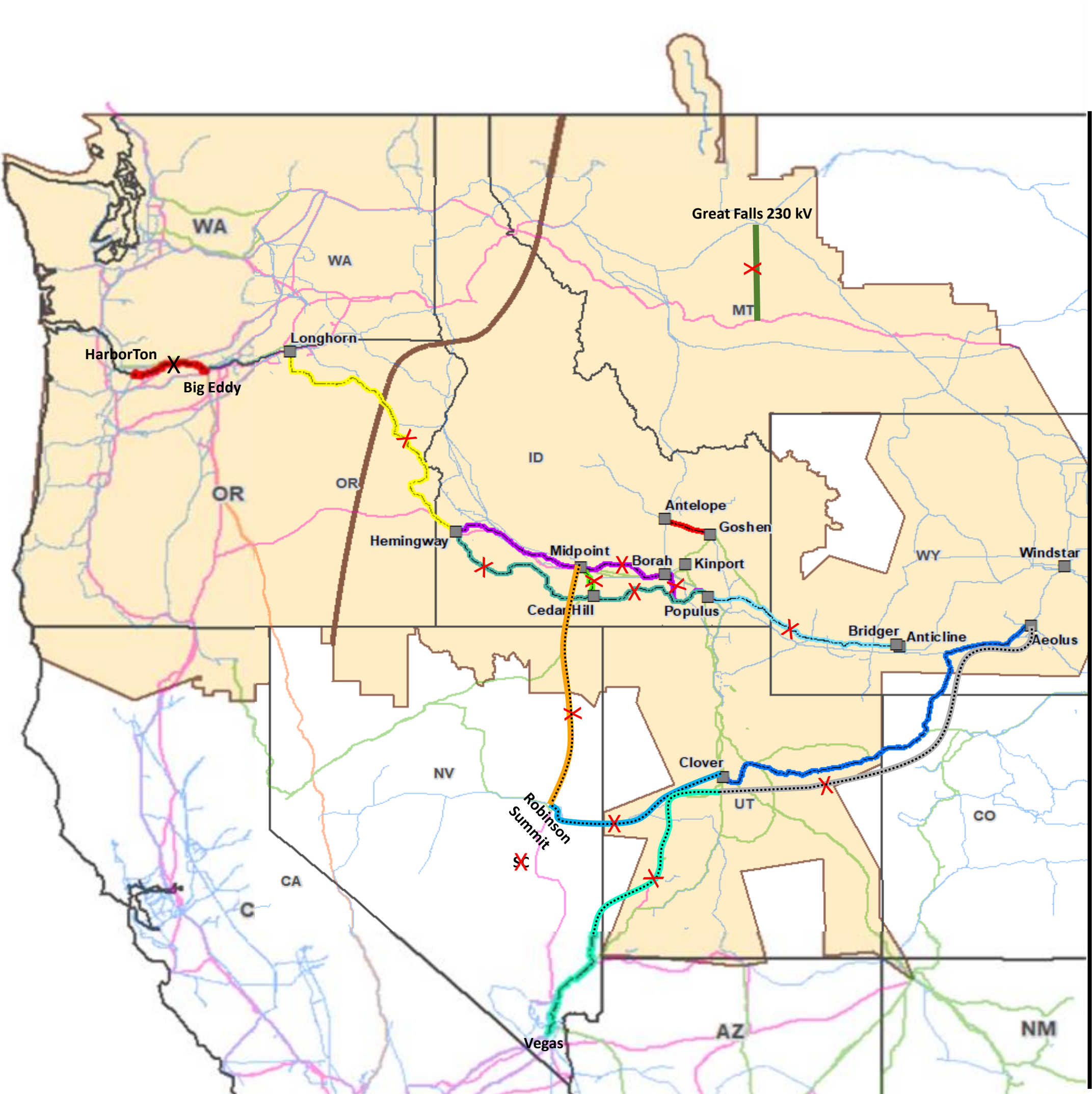
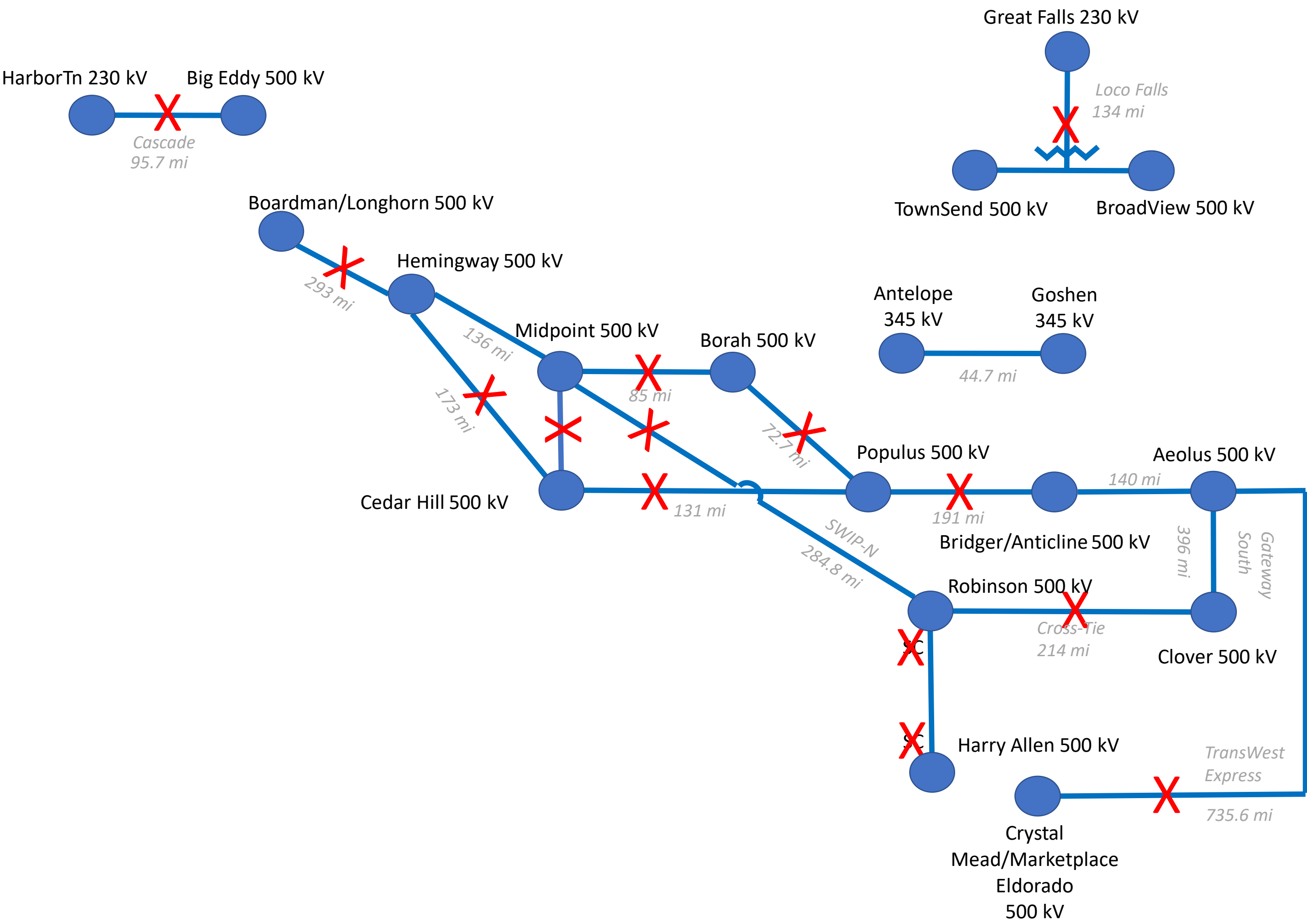
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X			X	X	X	X	X

RC09

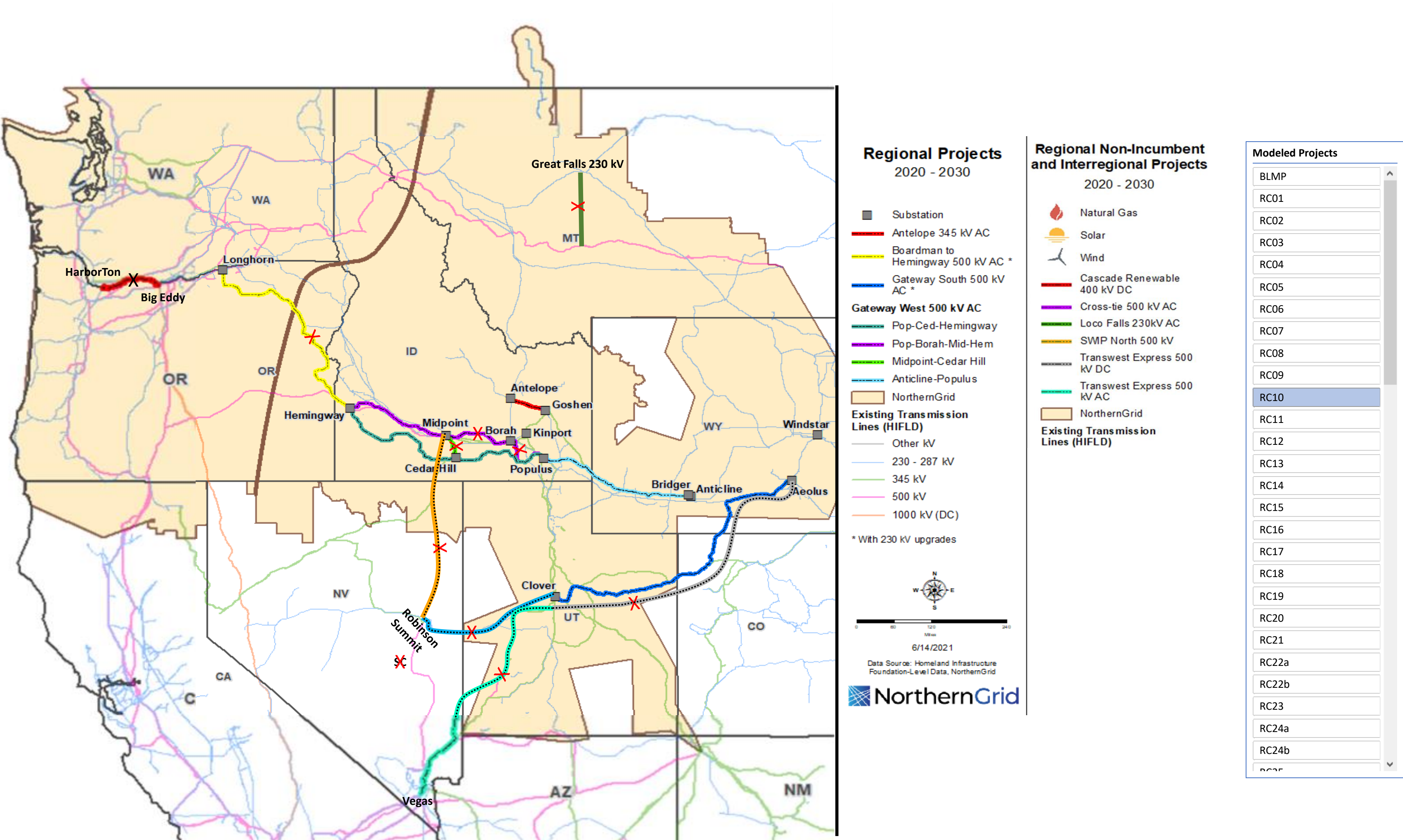
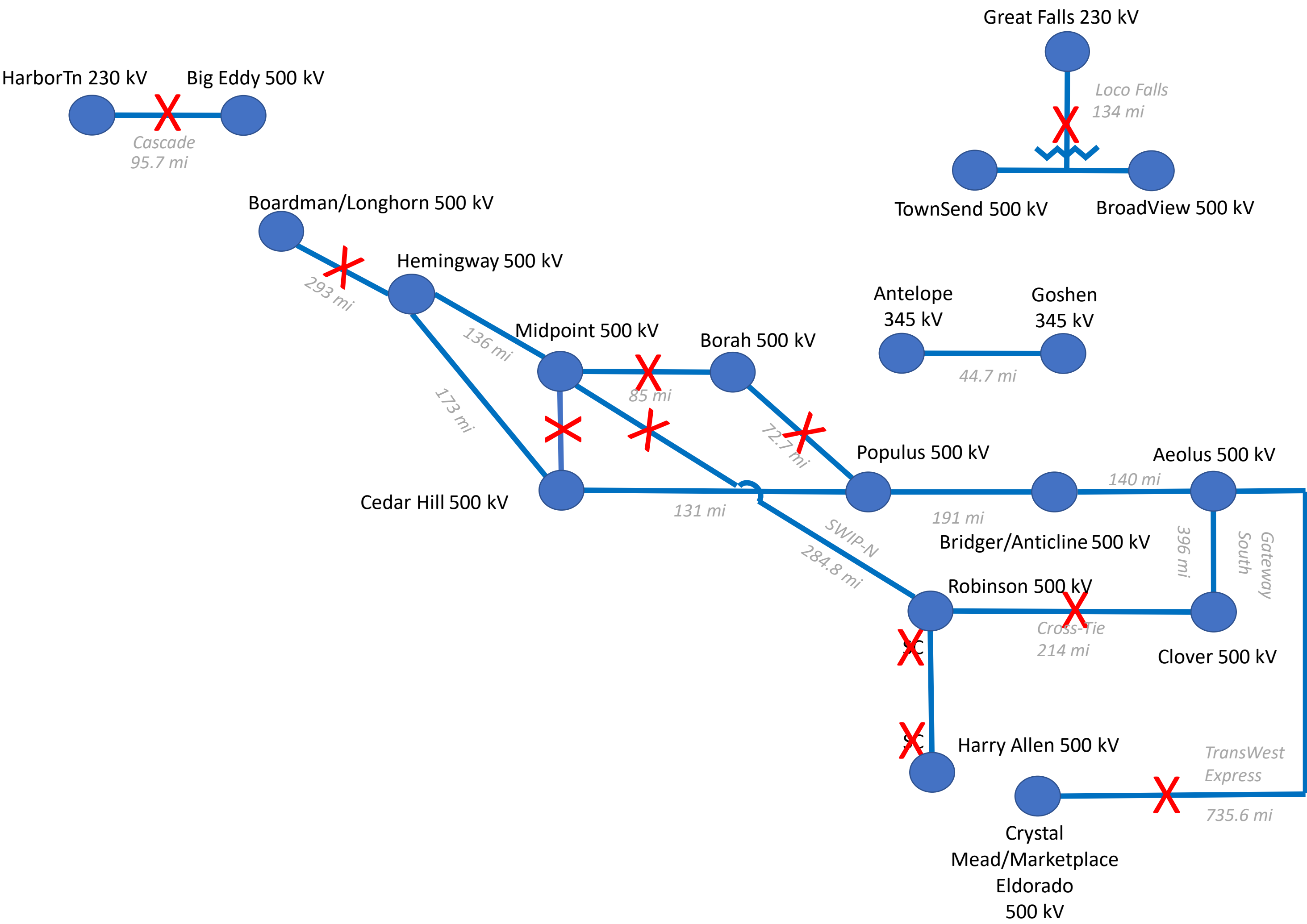


- Regional Non-Incumbent and Interregional Projects**
2020 - 2030
- Natural Gas
 - Solar
 - Wind
 - Cascade Renewable 400 kV DC
 - Cross-tie 500 kV AC
 - Loco Falls 230kV AC
 - SWP North 500 kV
 - Transwest Express 500 kV DC
 - Transwest Express 500 kV AC
 - NorthernGrid
 - Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

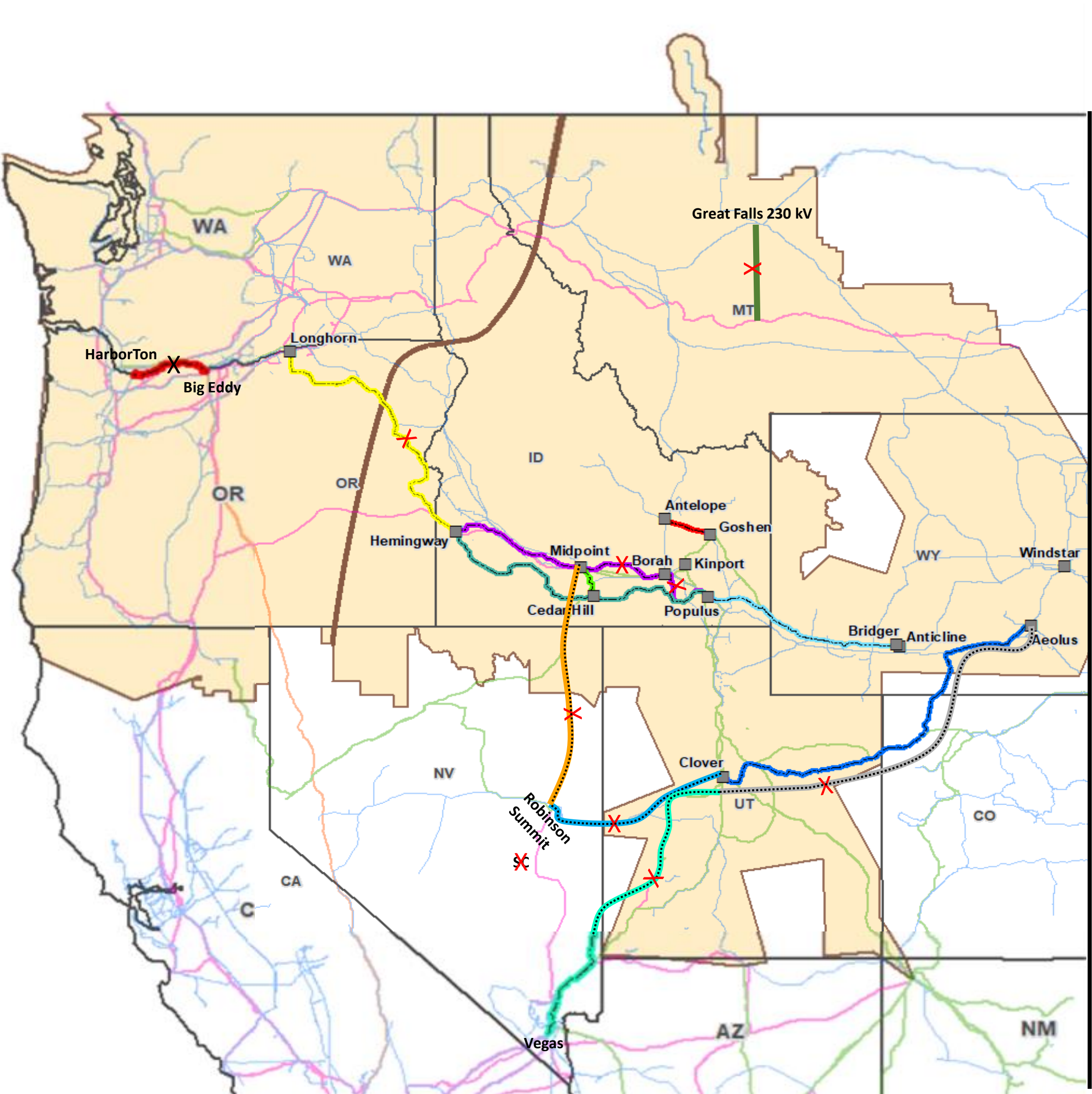
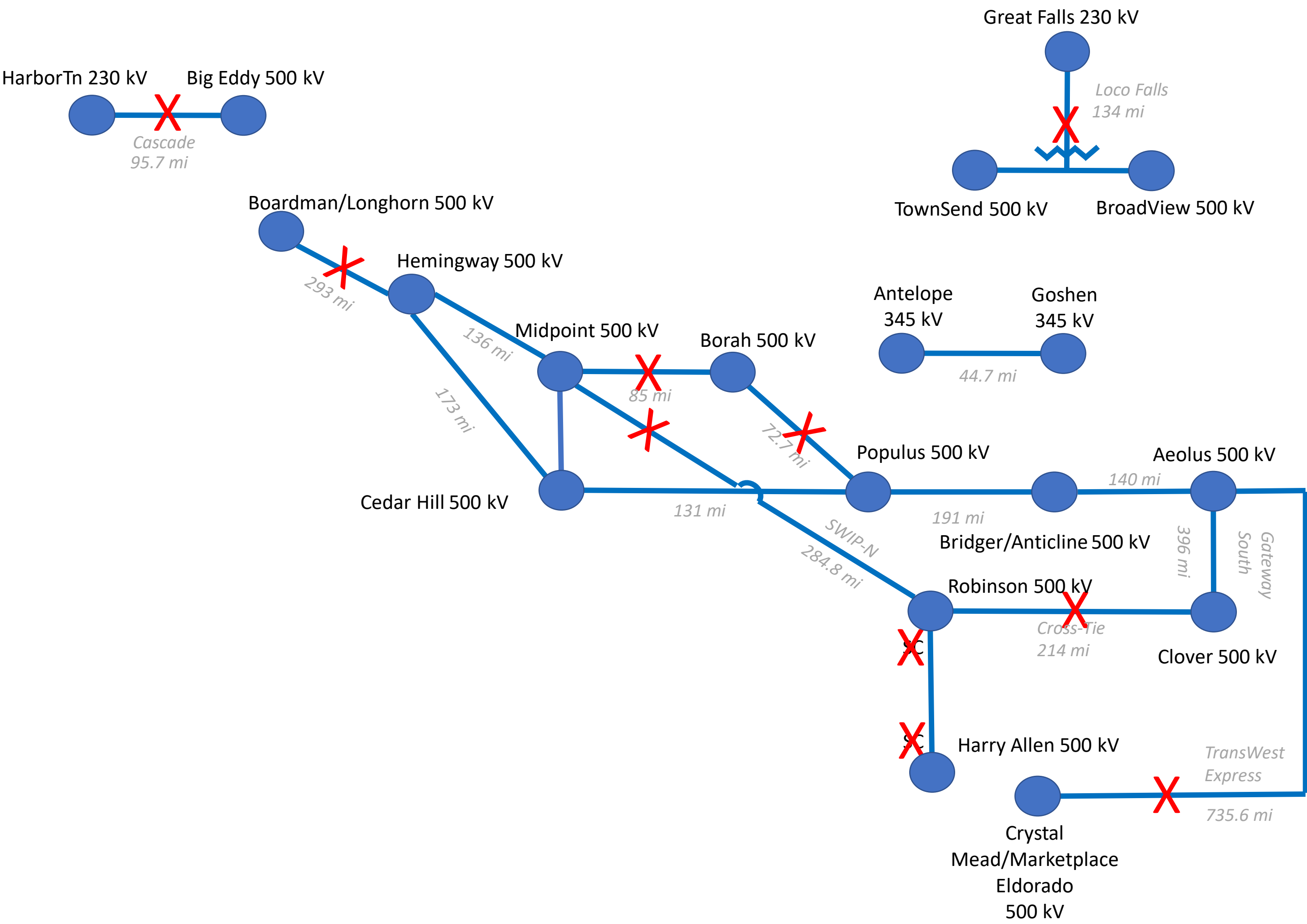
B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X		X	X				X	X	X	X	X

RC10



B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X		X					X	X	X	X	X

RC11



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

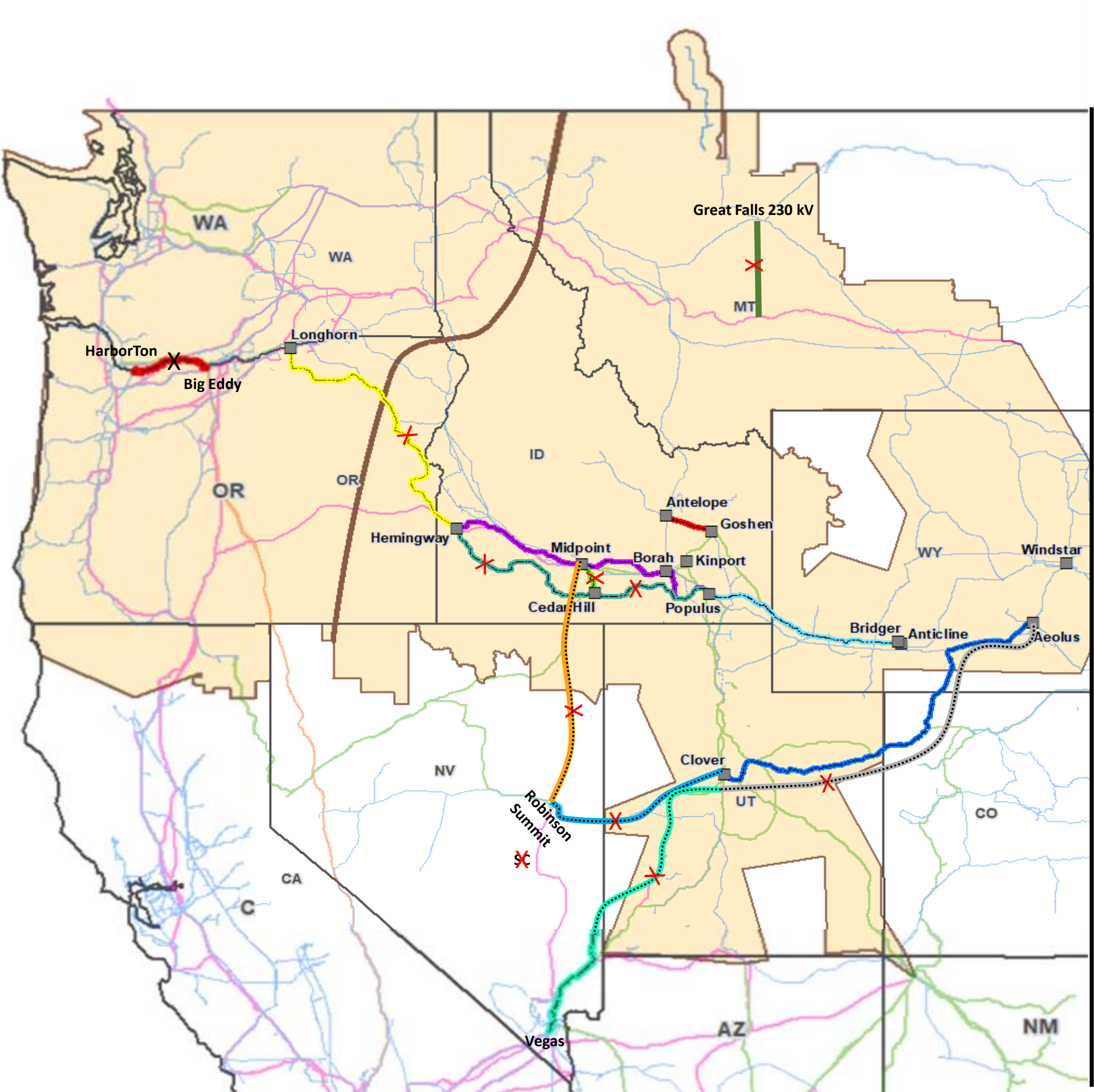
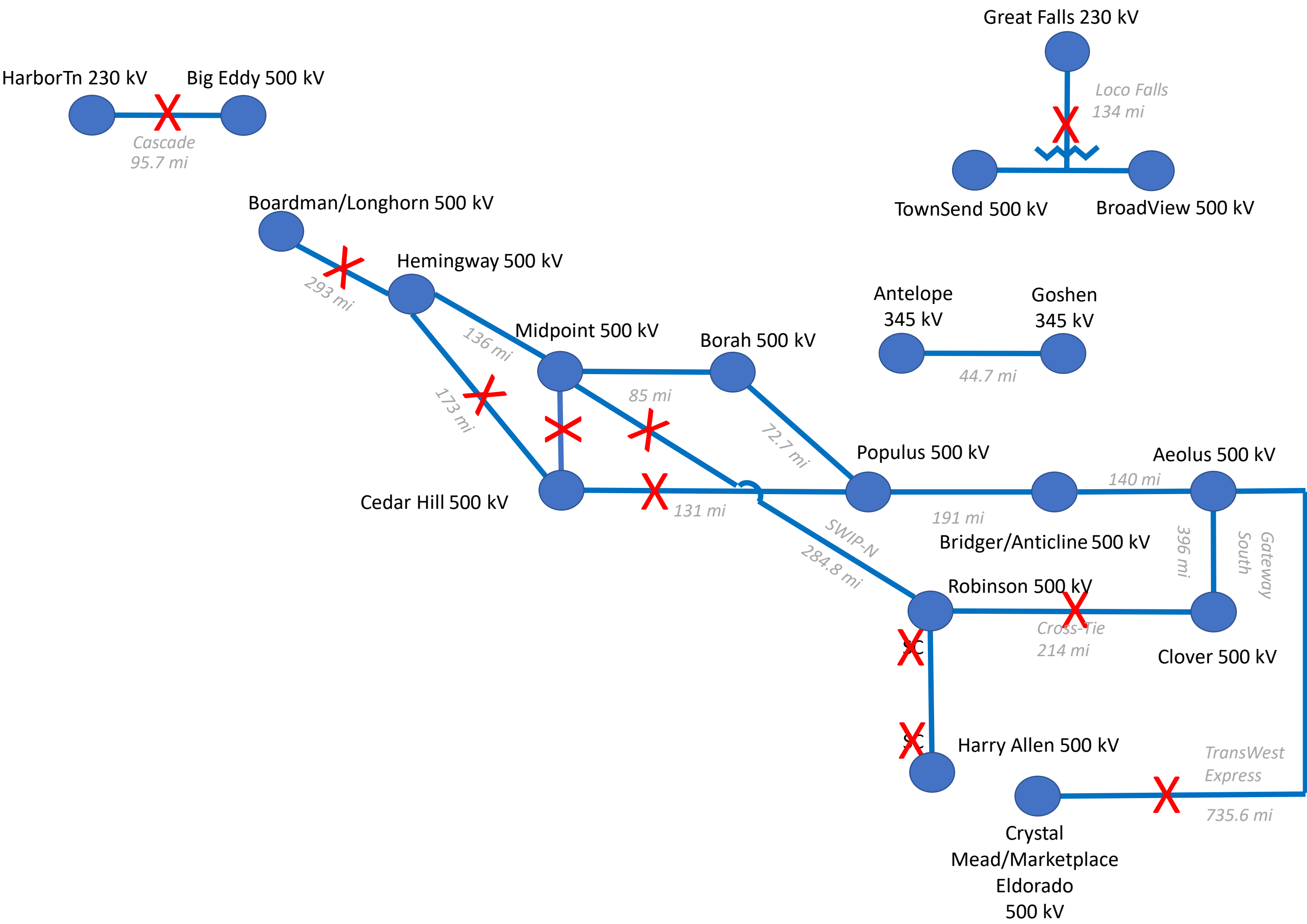
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
XX		X					XX	XX	XX	XX	X

RC12



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

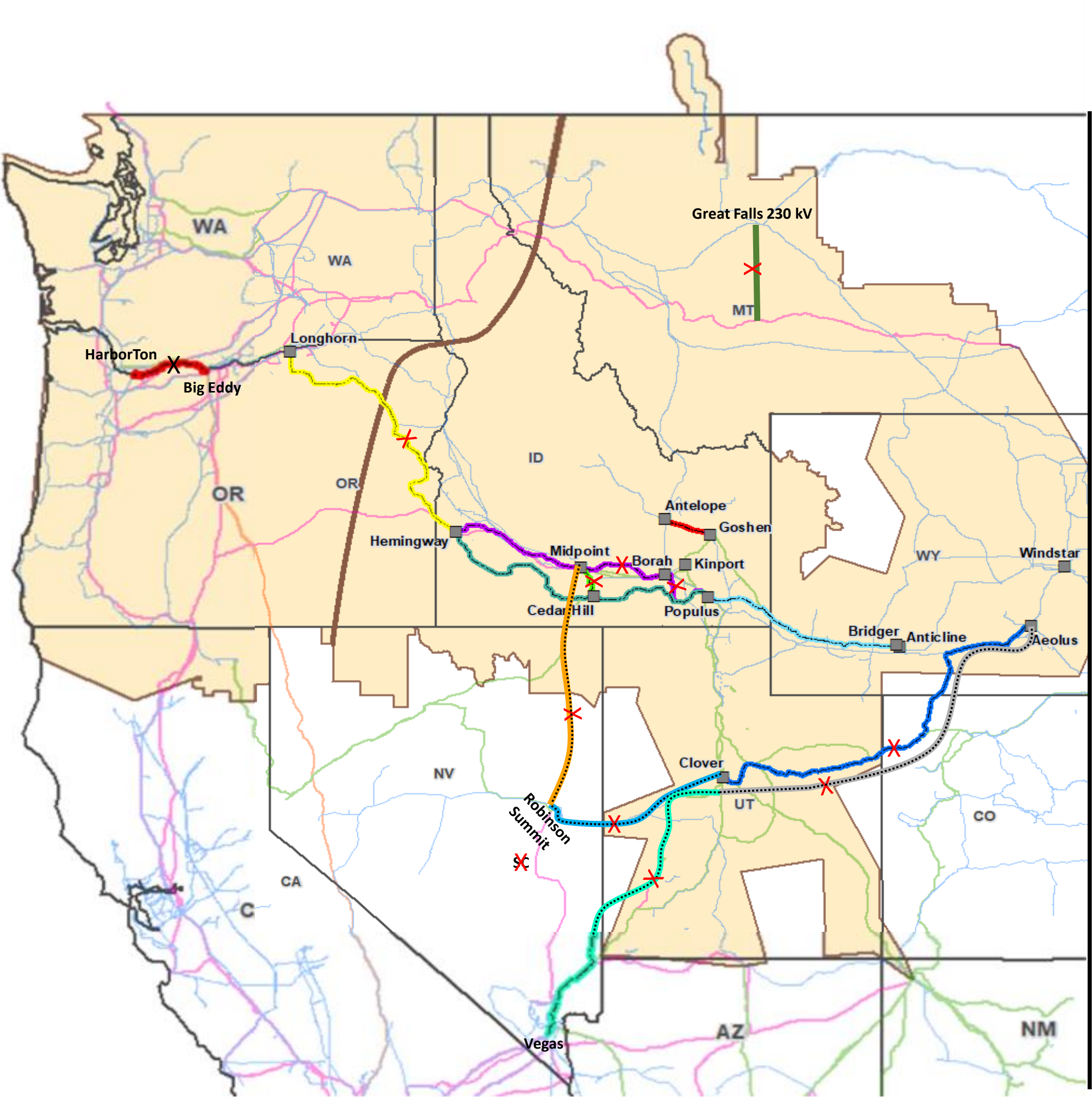
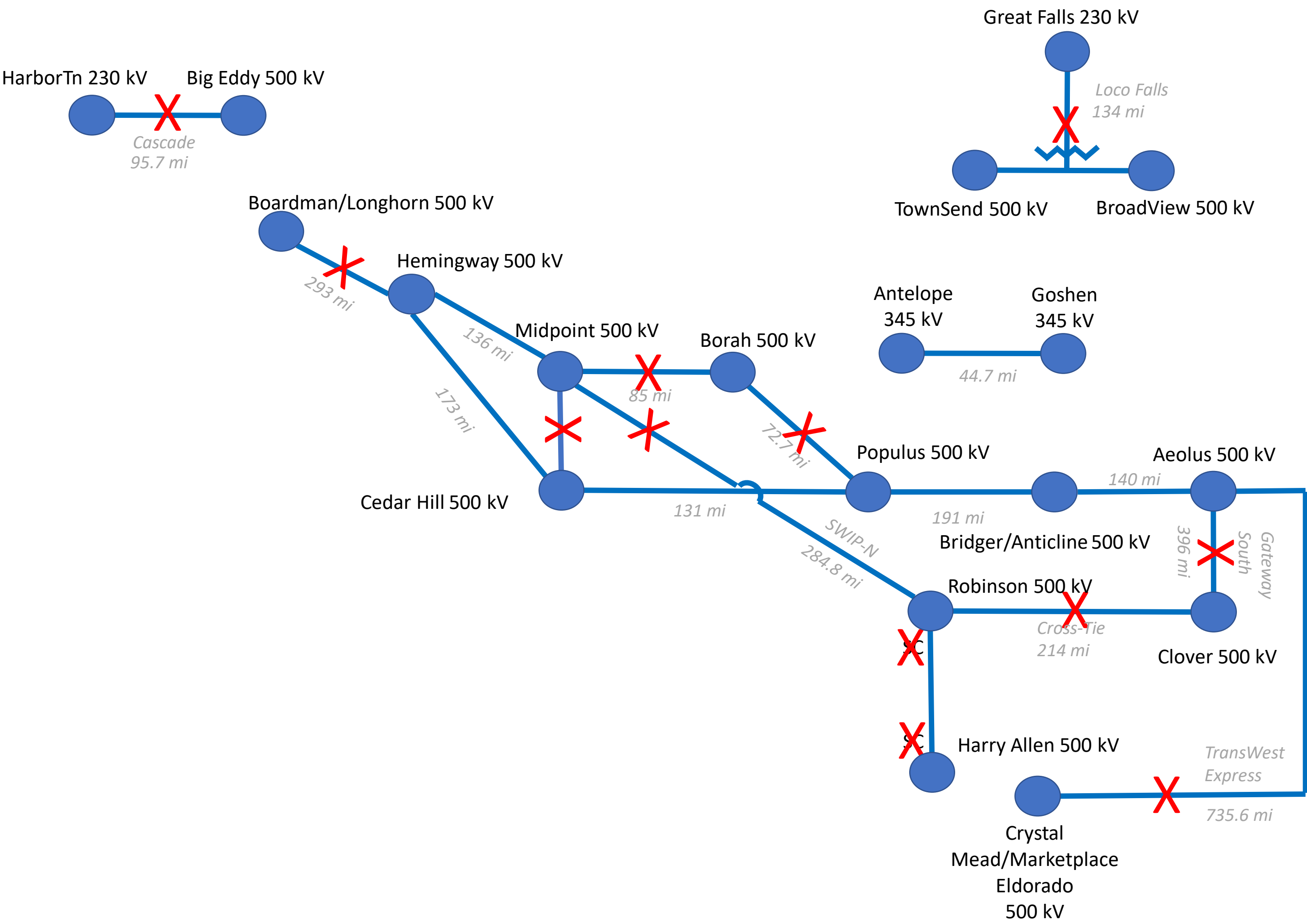
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X		X	X			X	X	X	X	X	X

RC13

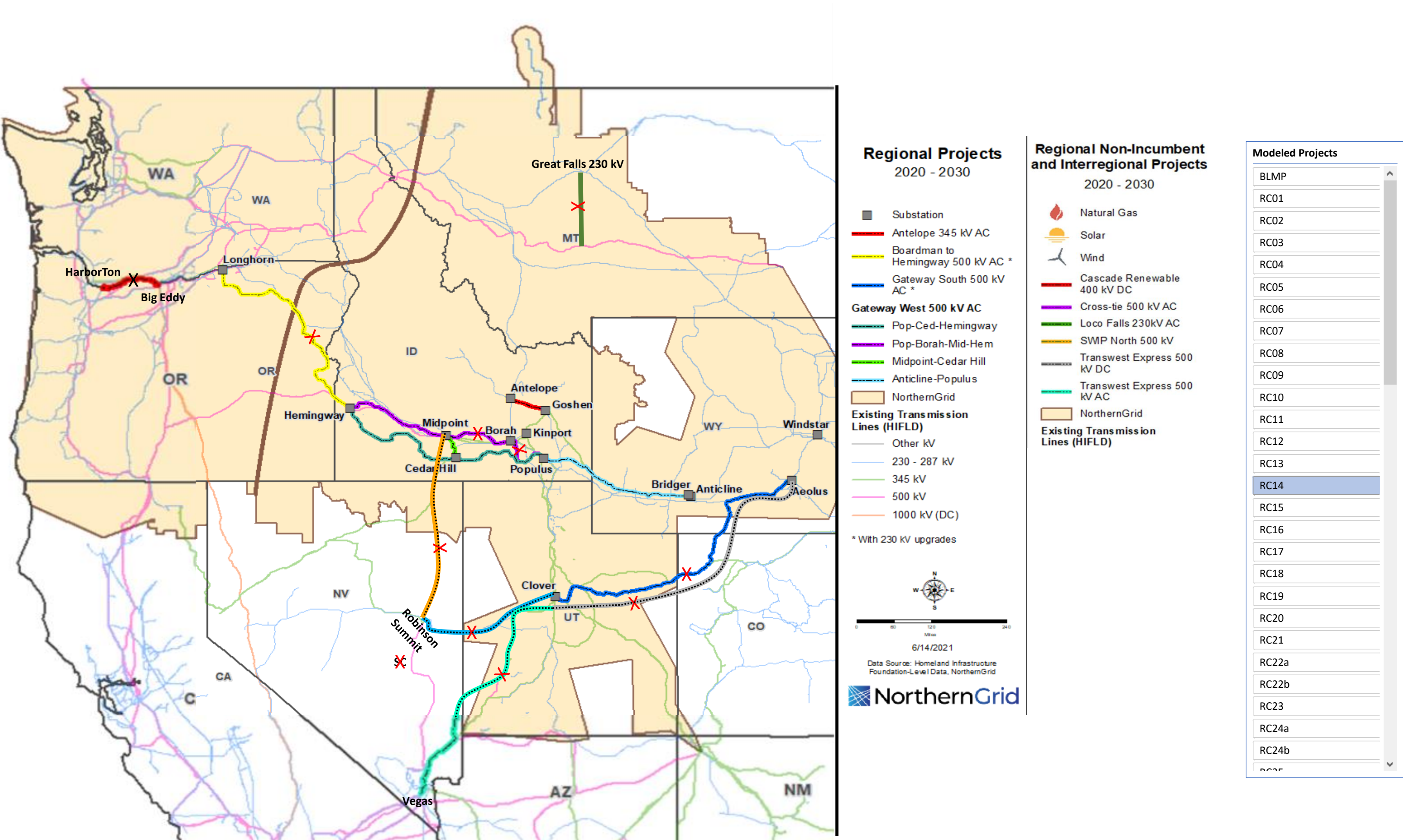
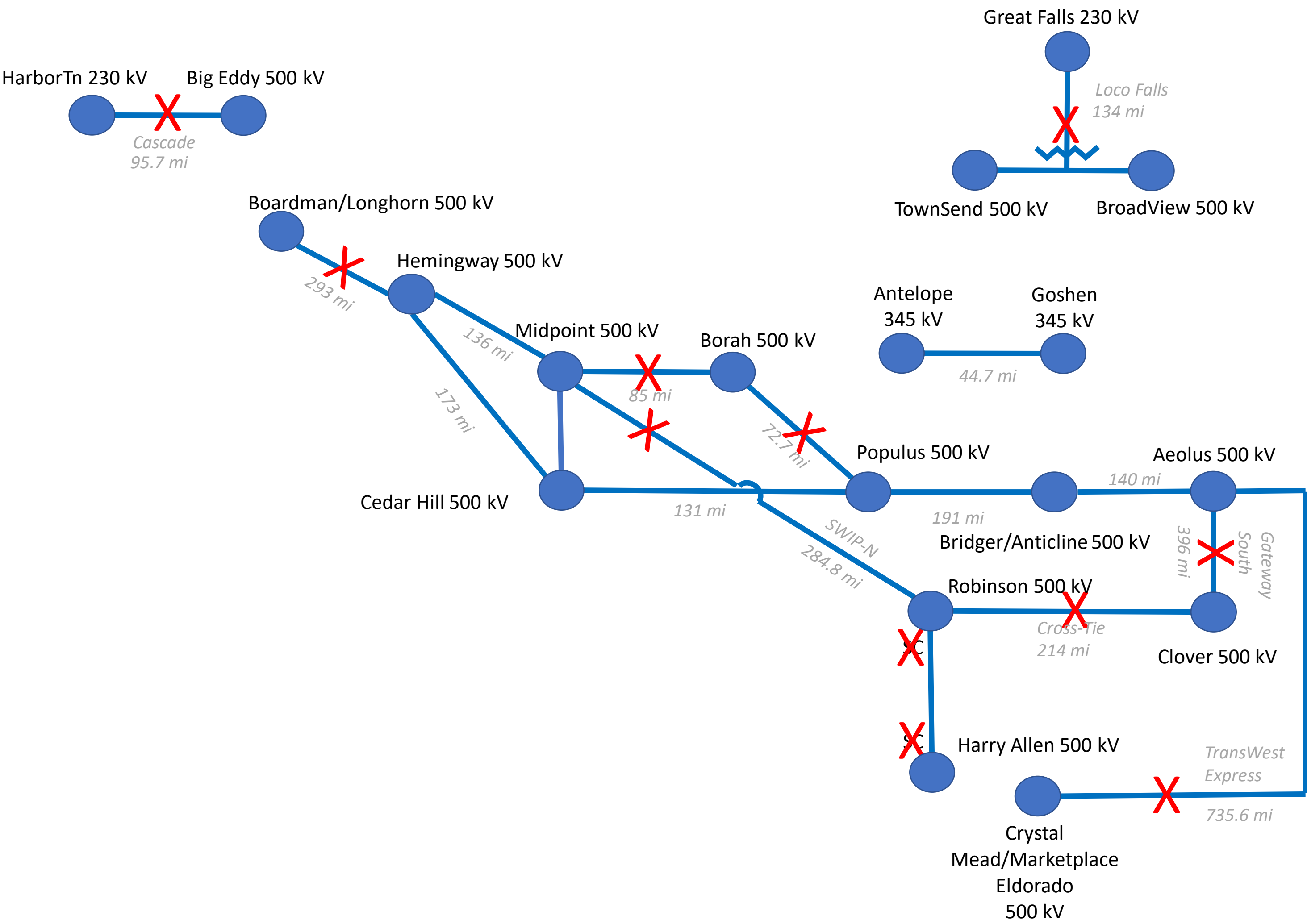


- Regional Projects**
2020 - 2030
- Substation
 - Antelope 345 kV AC
 - Boardman to Hemingway 500 kV AC *
 - Gateway South 500 kV AC *
 - Gateway West 500 kV AC
 - Pop-Ced-Hemingway
 - Pop-Borah-Mid-Hem
 - Midpoint-Cedar Hill
 - Anticline-Populus
 - NorthernGrid
- Existing Transmission Lines (HIFLD)**
- Other kV
 - 230 - 287 kV
 - 345 kV
 - 500 kV
 - 1000 kV (DC)
- * With 230 kV upgrades
- Regional Non-Incumbent and Interregional Projects**
2020 - 2030
- Natural Gas
 - Solar
 - Wind
 - Cascade Renewable 400 kV DC
 - Cross-tie 500 kV AC
 - Loco Falls 230kV AC
 - SWP North 500 kV
 - Transwest Express 500 kV DC
 - Transwest Express 500 kV AC
 - NorthernGrid
- Existing Transmission Lines (HIFLD)**

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

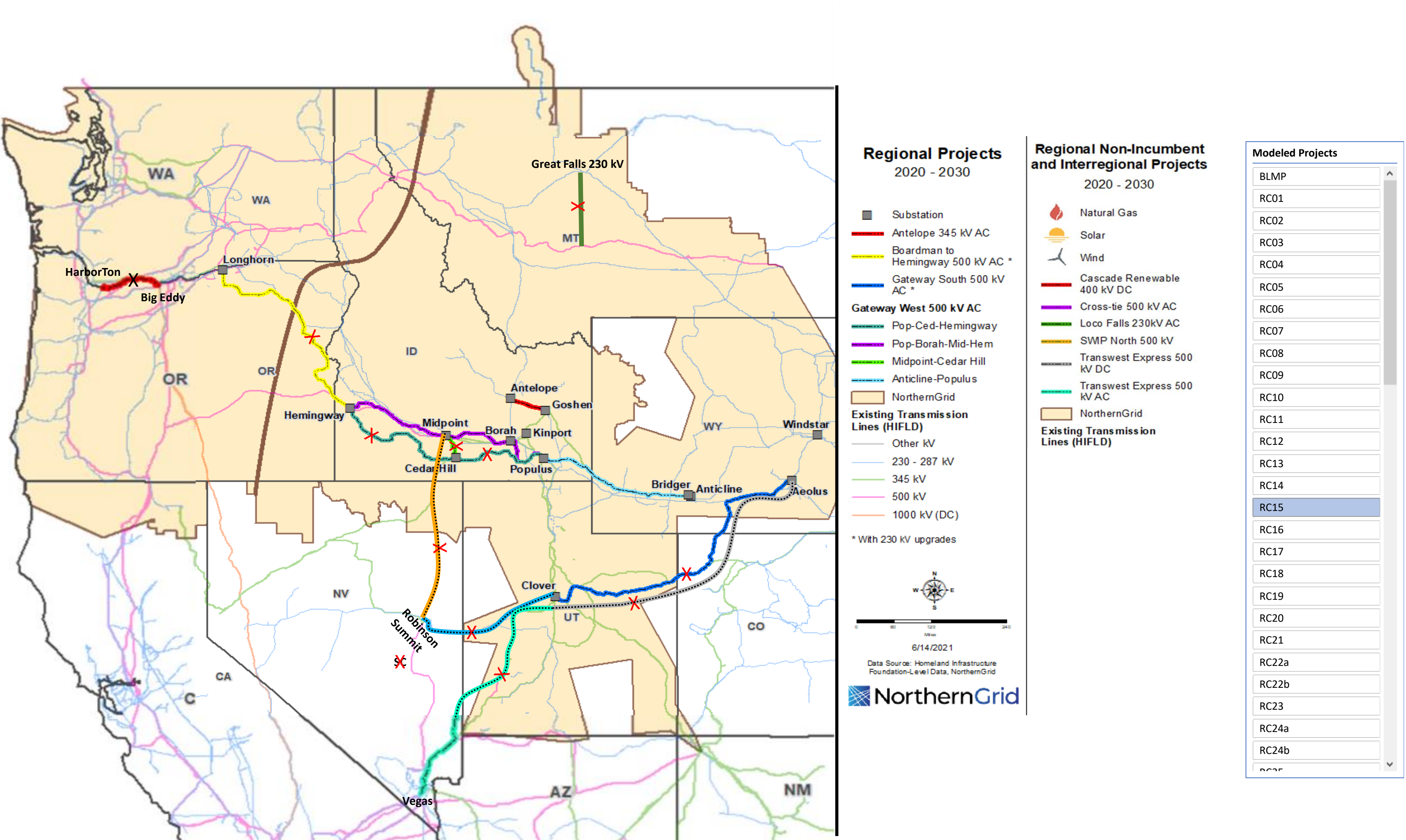
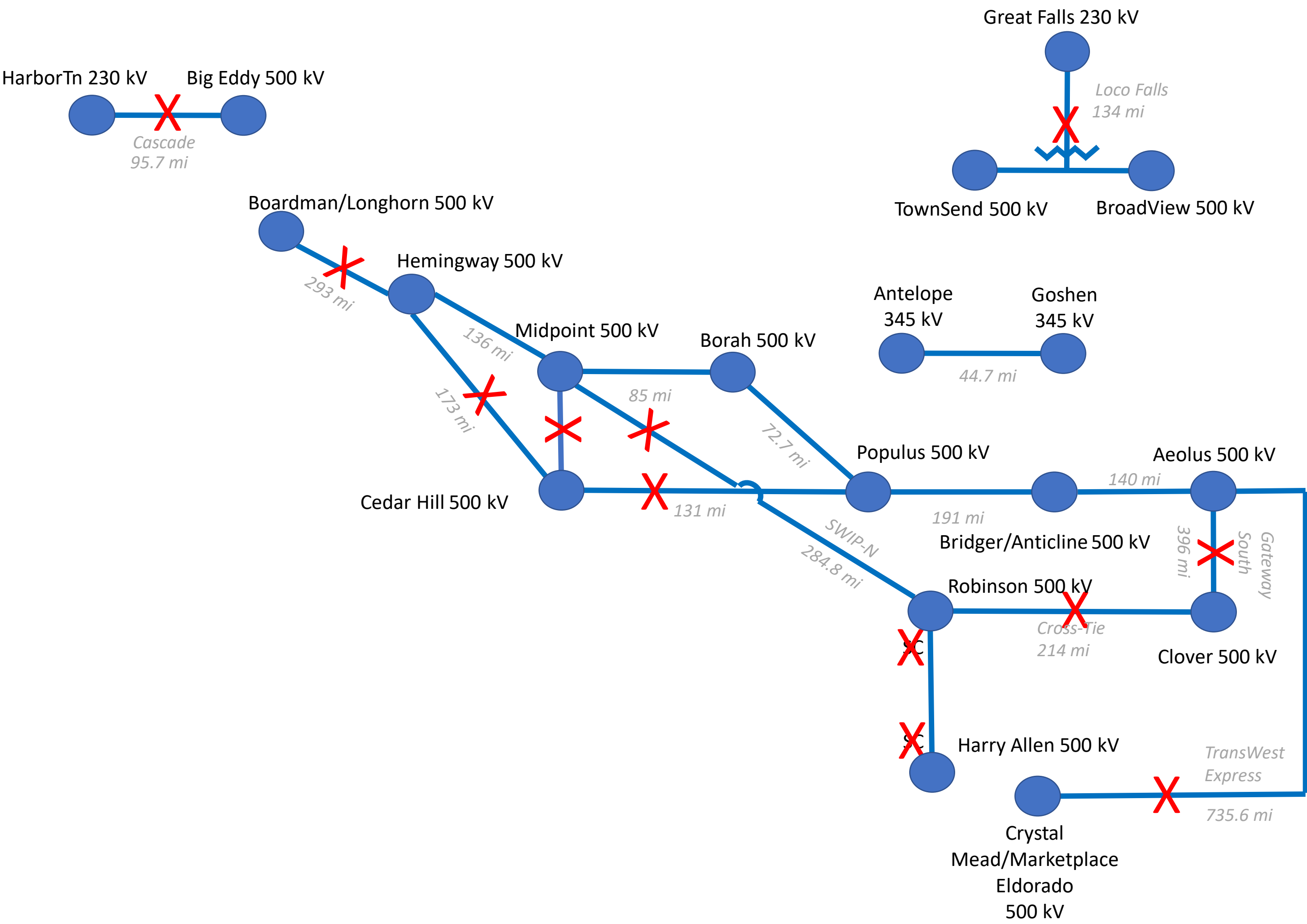
B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X		X				X	X	X	X	X	X

RC14



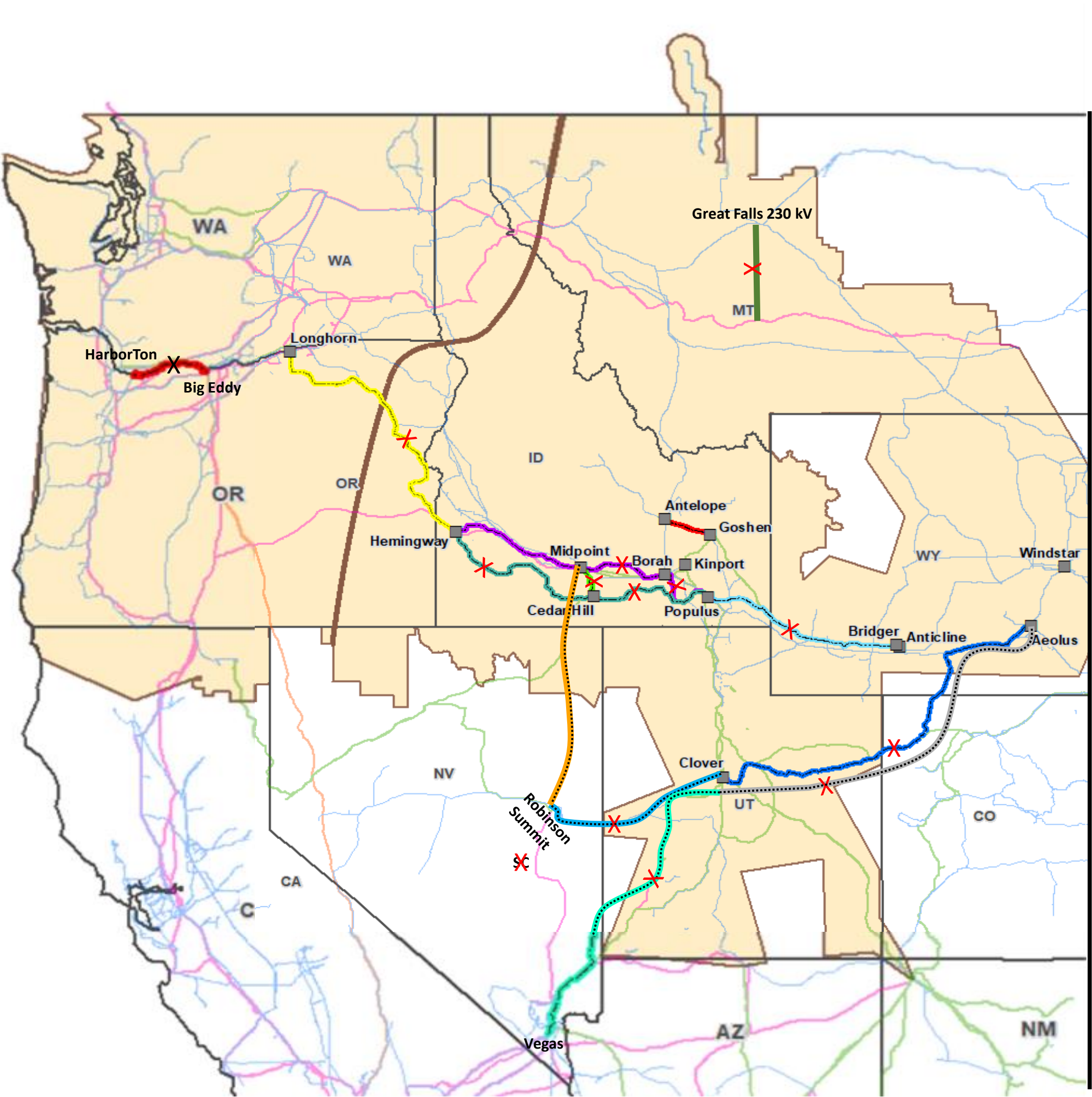
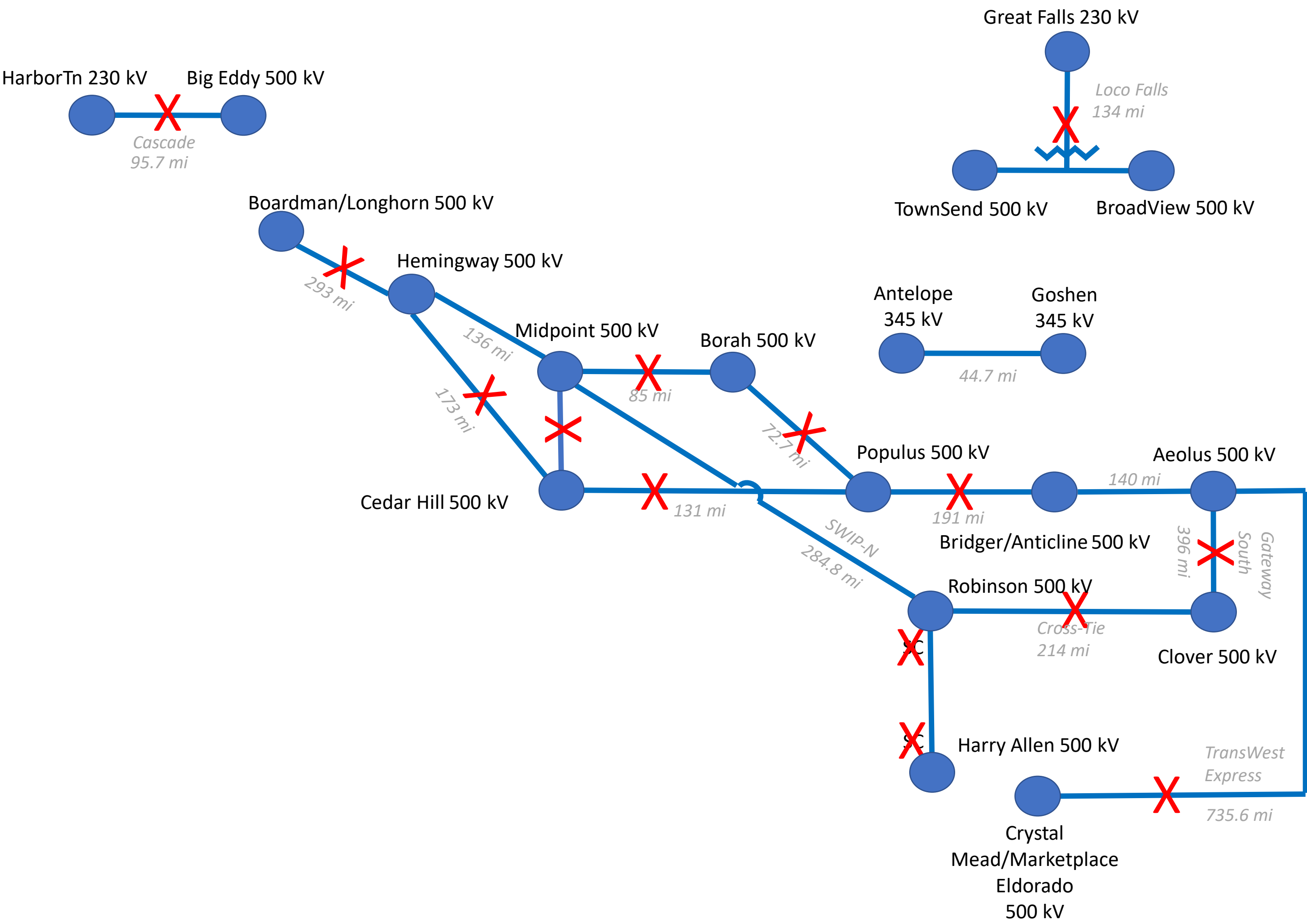
B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
XX		X				XX	XX	X	XX	X	X

RC15



B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWIP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X		X	X	X	X

RC16



Regional Projects
2020 - 2030

Substation

Antelope 345 kV AC

Boardman to Hemingway 500 kV AC *

Gateway South 500 kV AC *

Gateway West 500 kV AC

Pop-Ced-Hemingway

Pop-Borah-Mid-Hem

Midpoint-Cedar Hill

Anticline-Populus

NorthernGrid

Existing Transmission Lines (HIFLD)

Other kV

230 - 287 kV

345 kV

500 kV

1000 kV (DC)

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

Natural Gas

Solar

Wind

Cascade Renewable 400 kV DC

Cross-tie 500 kV AC

Loco Falls 230kV AC

SWIP North 500 kV

Transwest Express 500 kV DC

Transwest Express 500 kV AC

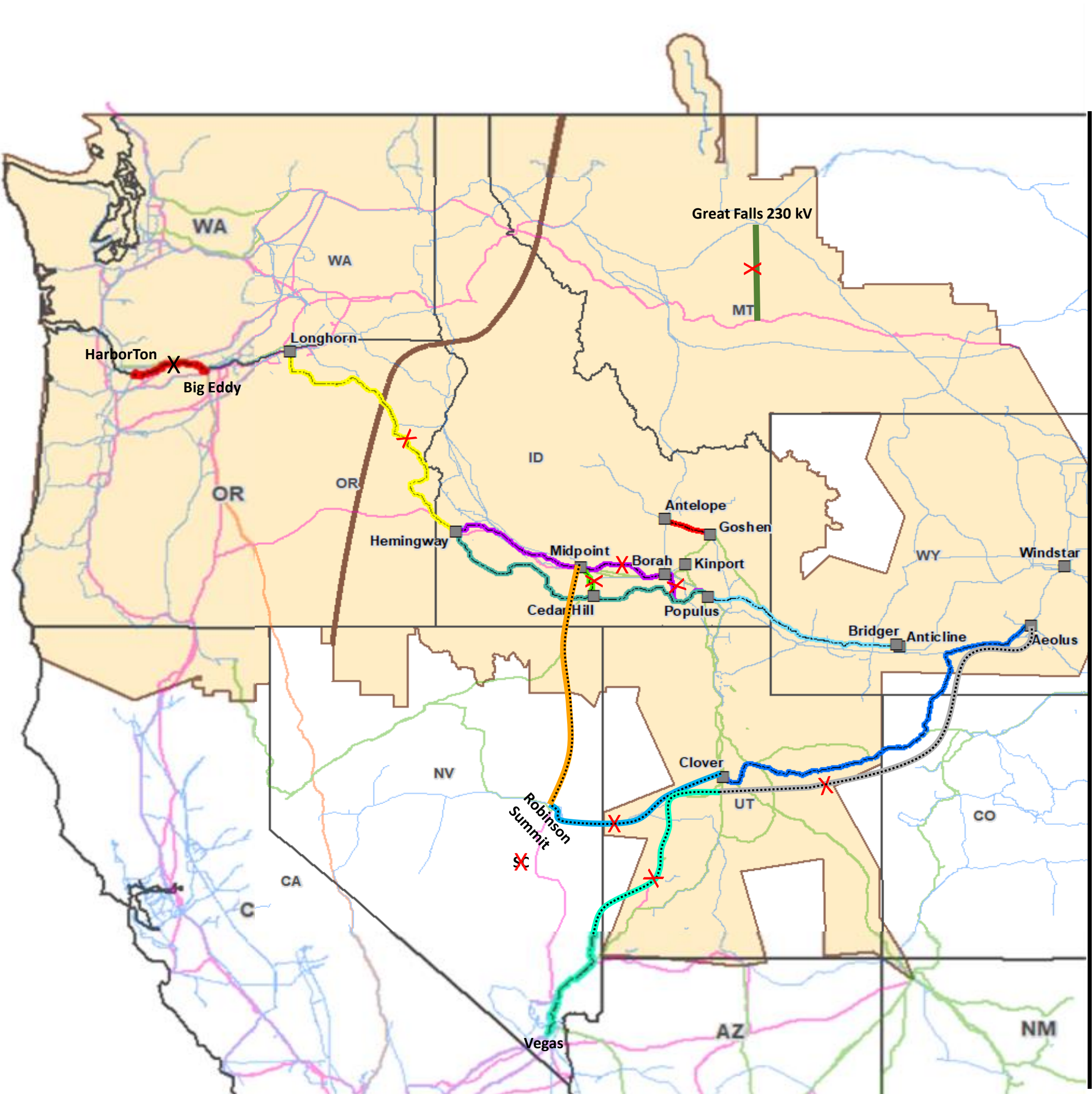
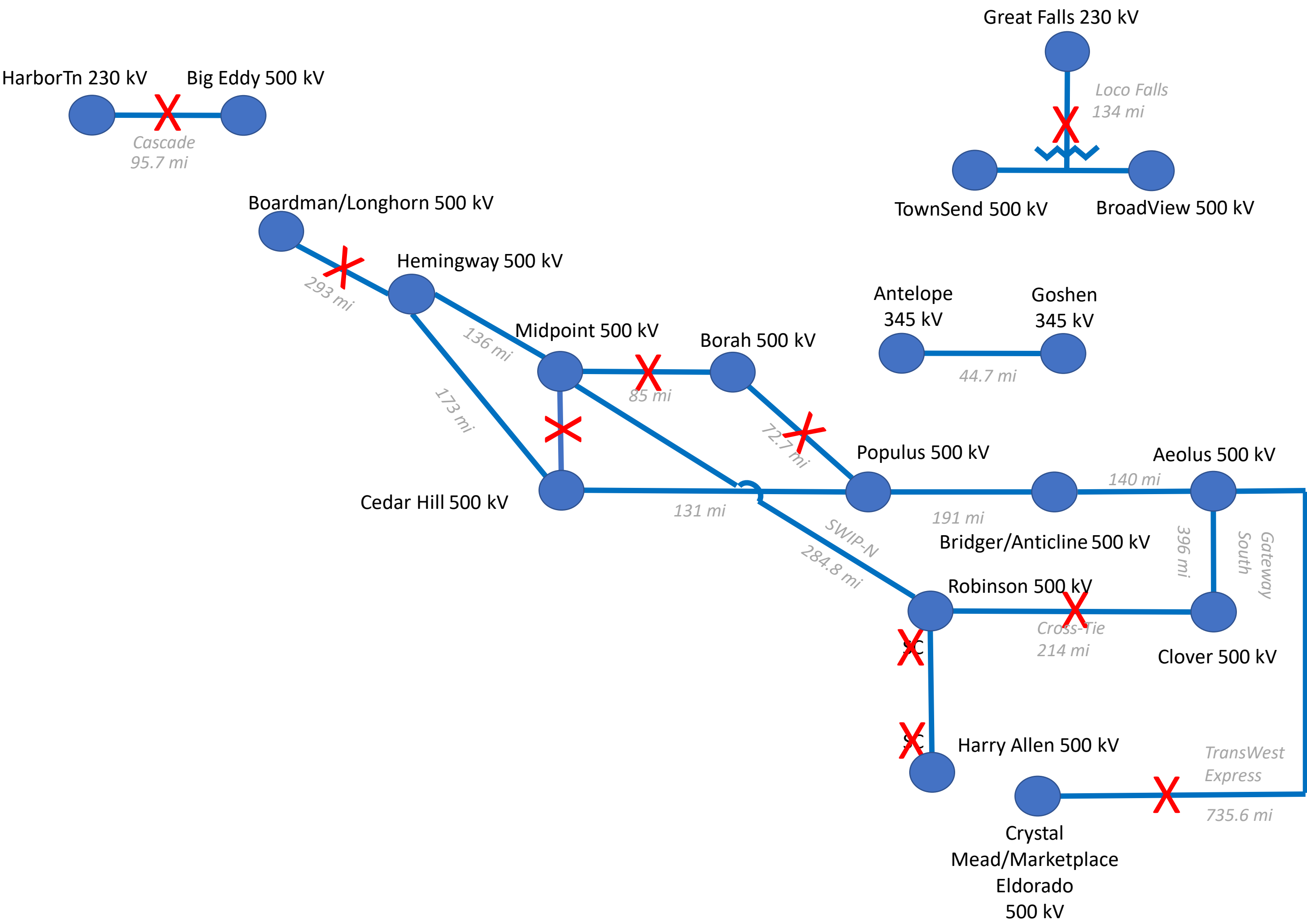
NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWIP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X		X	X					X	X	X	X

RC17



Regional Projects
2020 - 2030

Substation

Antelope 345 kV AC

Boardman to Hemingway 500 kV AC *

Gateway South 500 kV AC *

Gateway West 500 kV AC

Pop-Ced-Hemingway

Pop-Borah-Mid-Hem

Midpoint-Cedar Hill

Anticline-Populus

NorthernGrid

Existing Transmission Lines (HIFLD)

Other kV

230 - 287 kV

345 kV

500 kV

1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent
and Interregional Projects
2020 - 2030

Natural Gas

Solar

Wind

Cascade Renewable 400 kV DC

Cross-tie 500 kV AC

Loco Falls 230kV AC

SWIP North 500 kV

Transwest Express 500 kV DC

Transwest Express 500 kV AC

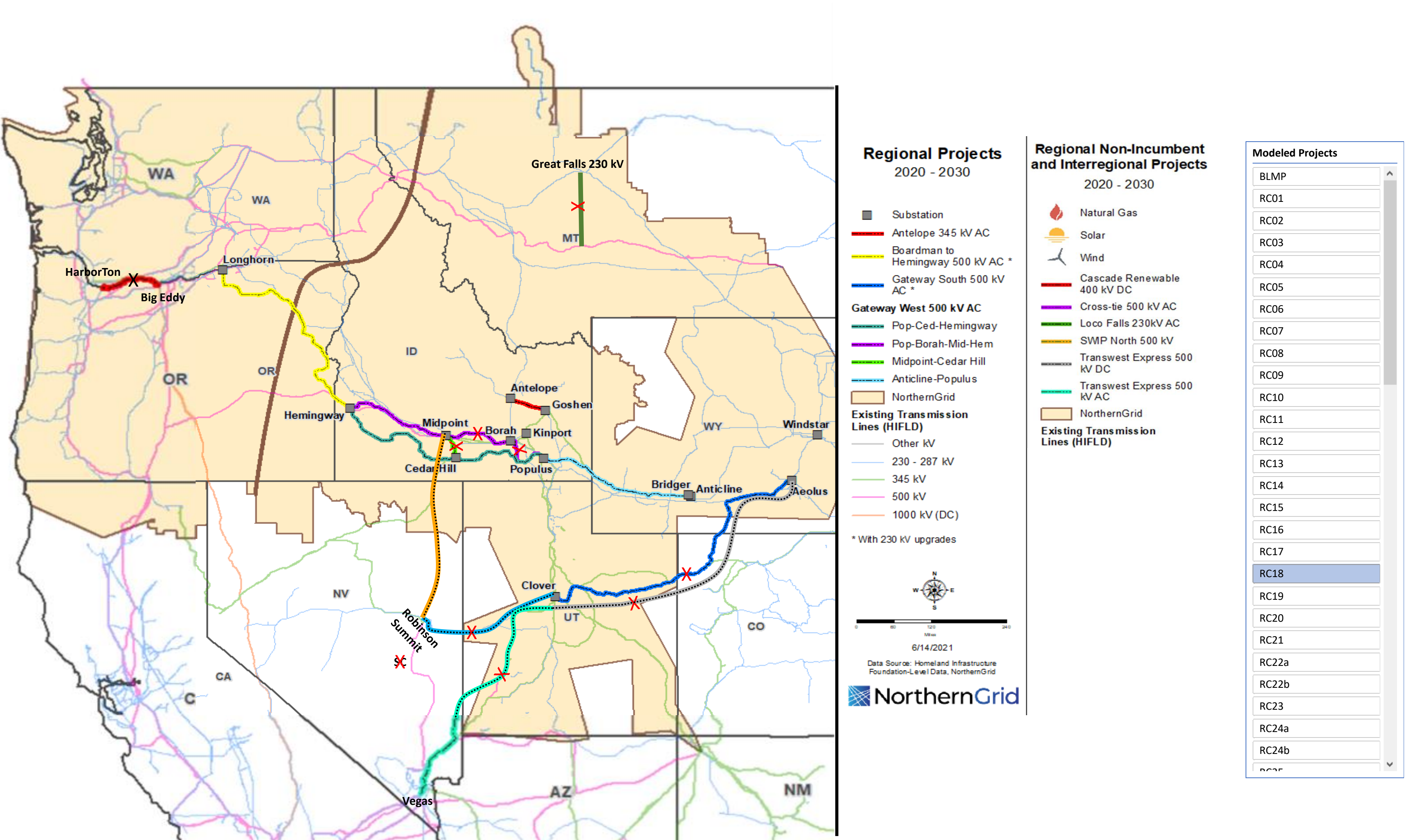
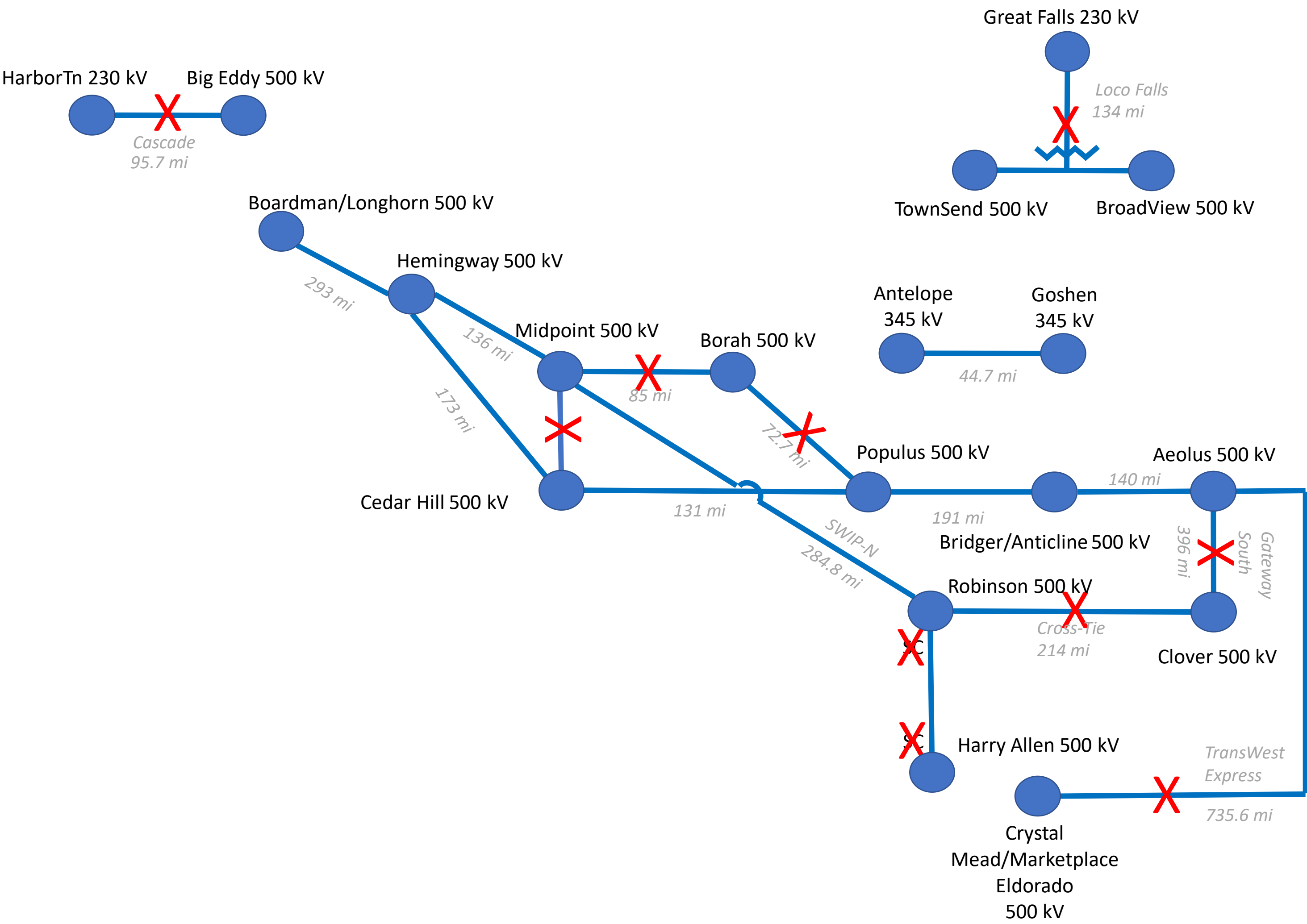
NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

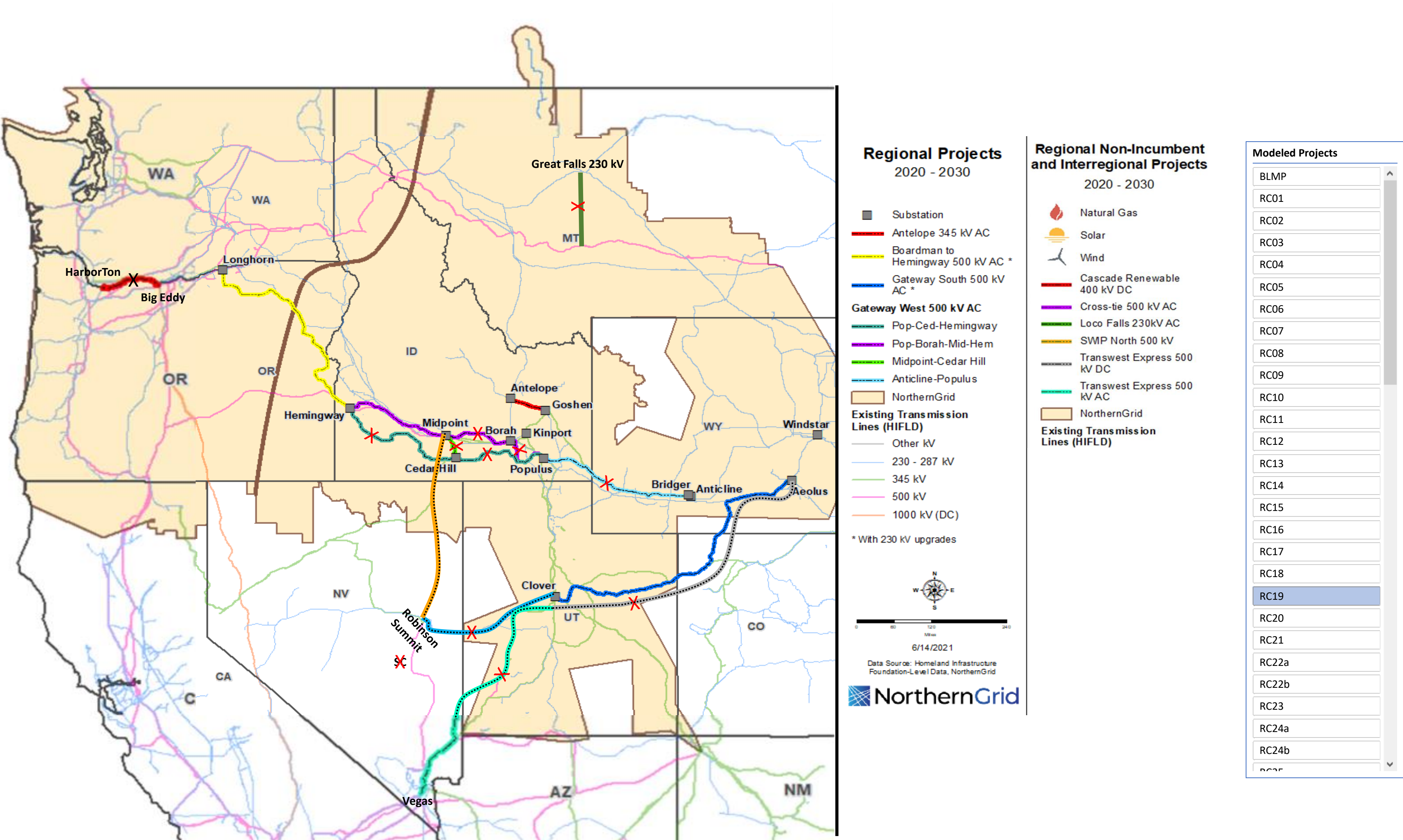
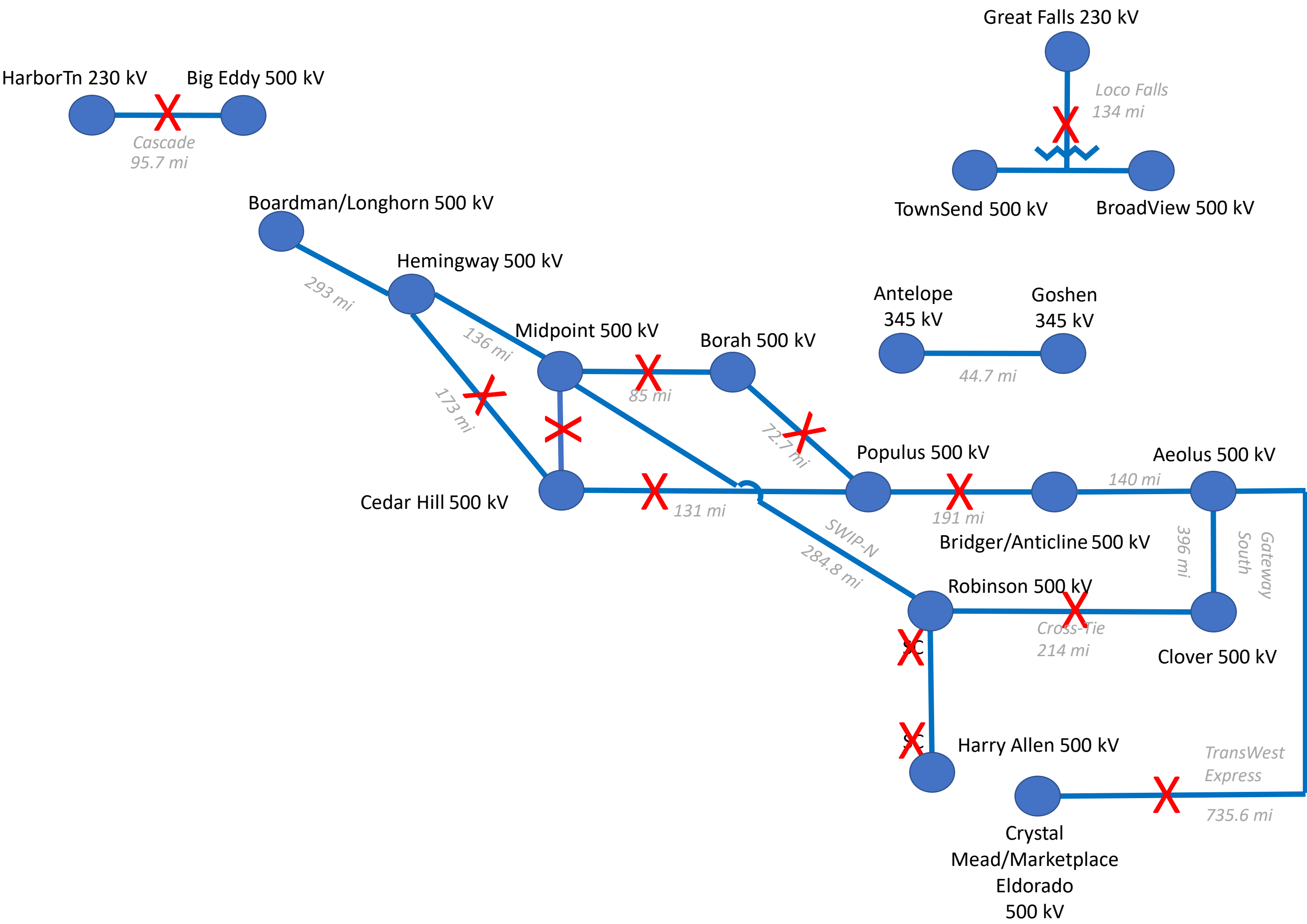
B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X			X		X	X	X	X

RC18

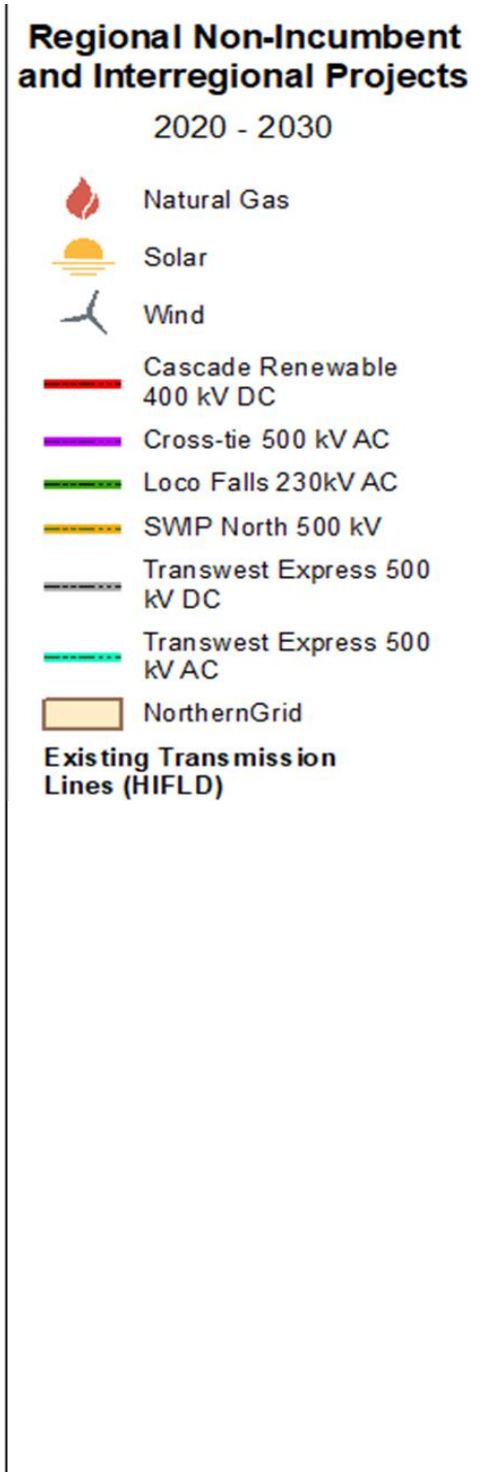
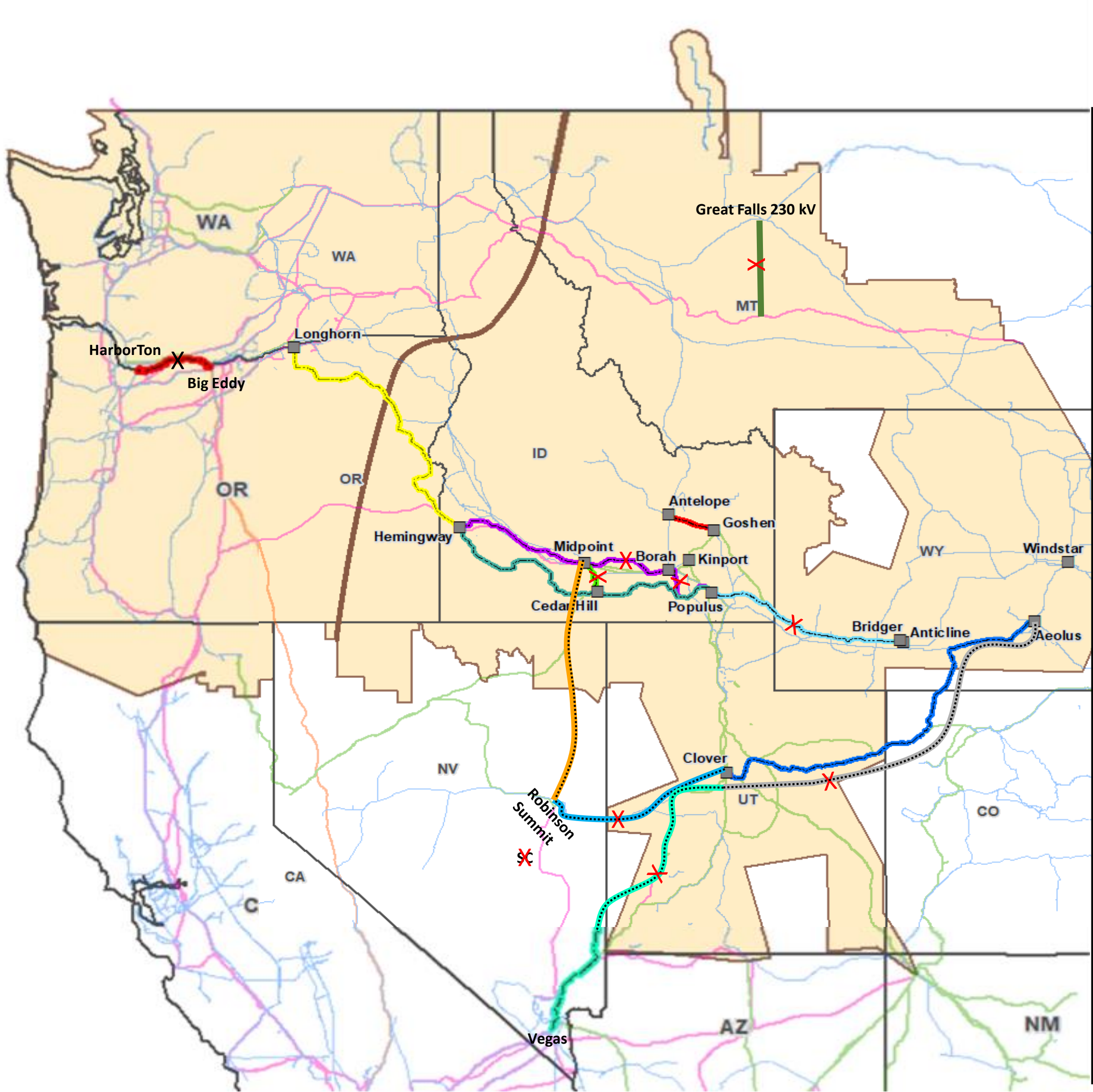


B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X	X	X	X				X	X	X	X

RC19



RC20

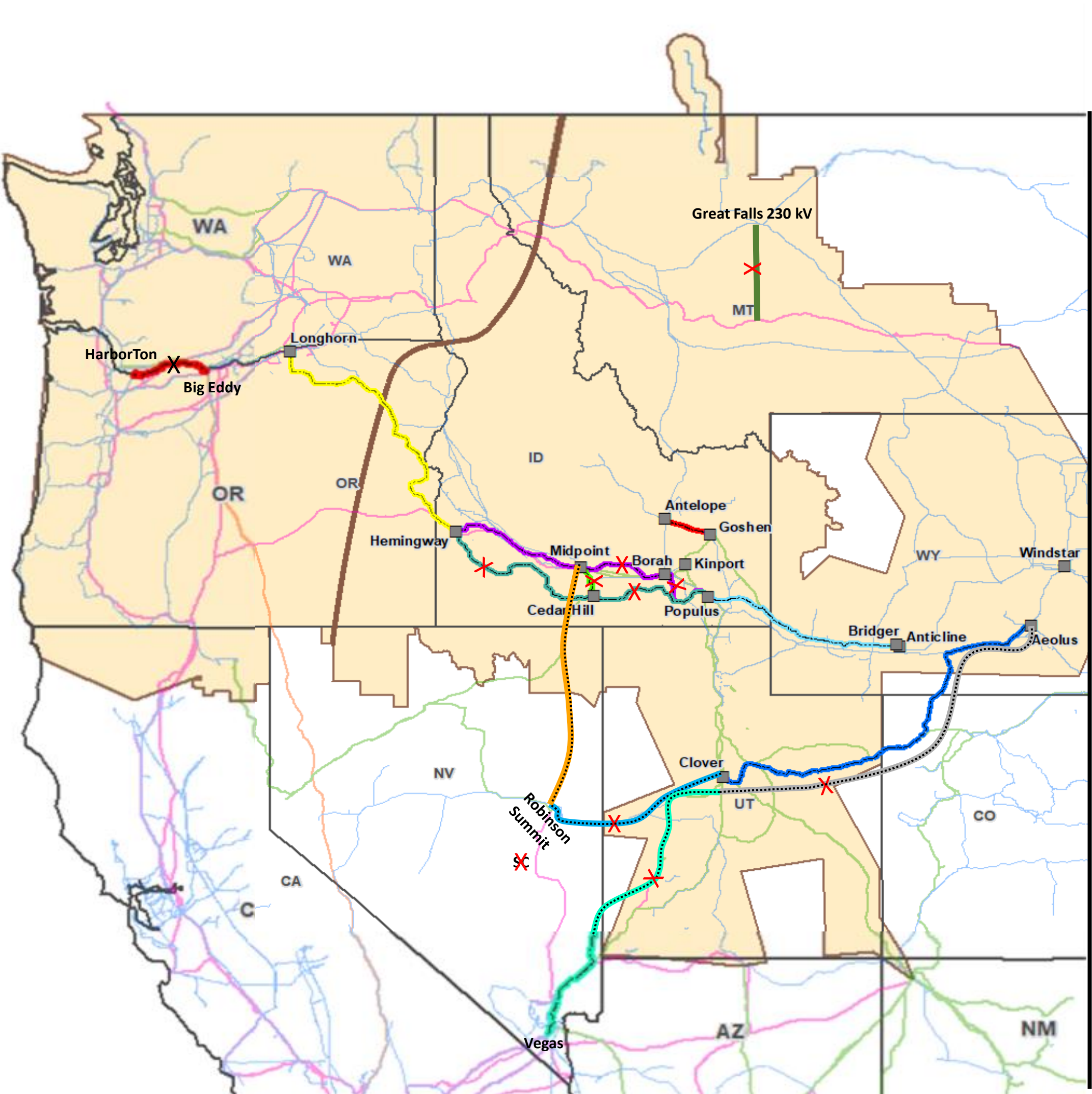
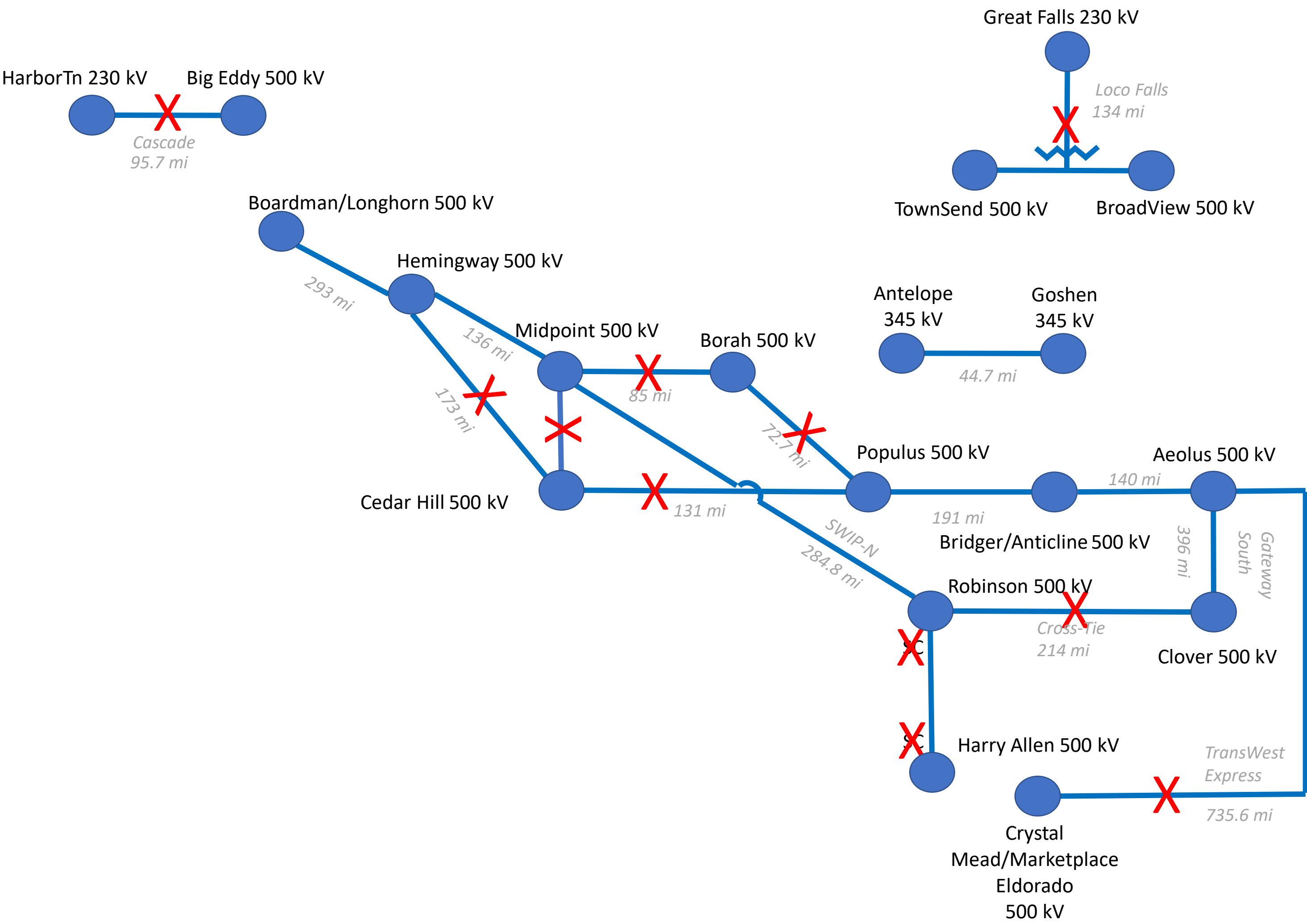


Modeled Projects

- BLMP
- RC01
- RC02
- RC03
- RC04
- RC05
- RC06
- RC07
- RC08
- RC09
- RC10
- RC11
- RC12
- RC13
- RC14
- RC15
- RC16
- RC17
- RC18
- RC19
- RC20**
- RC21
- RC22a
- RC22b
- RC23
- RC24a
- RC24b
- RC25

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X	X	X					X	X	X	X

RC21



Regional Projects
2020 - 2030

Substation

Antelope 345 kV AC

Boardman to Hemingway 500 kV AC *

Gateway South 500 kV AC *

Gateway West 500 kV AC

Pop-Ced-Hemingway

Pop-Borah-Mid-Hem

Midpoint-Cedar Hill

Anticline-Populus

NorthernGrid

Existing Transmission Lines (HIFLD)

Other kV

230 - 287 kV

345 kV

500 kV

1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

Natural Gas

Solar

Wind

Cascade Renewable 400 kV DC

Cross-tie 500 kV AC

Loco Falls 230kV AC

SWP North 500 kV

Transwest Express 500 kV DC

Transwest Express 500 kV AC

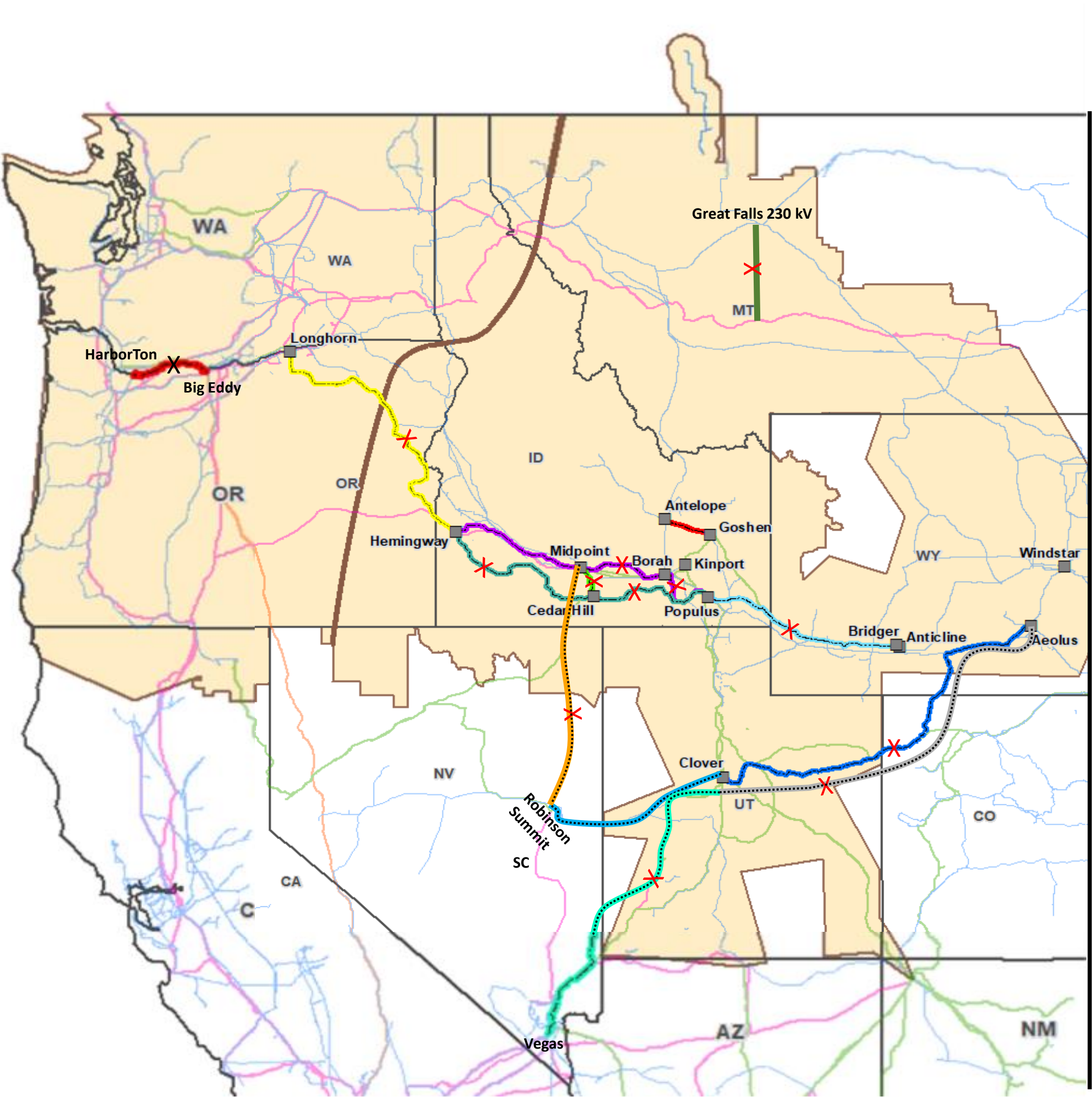
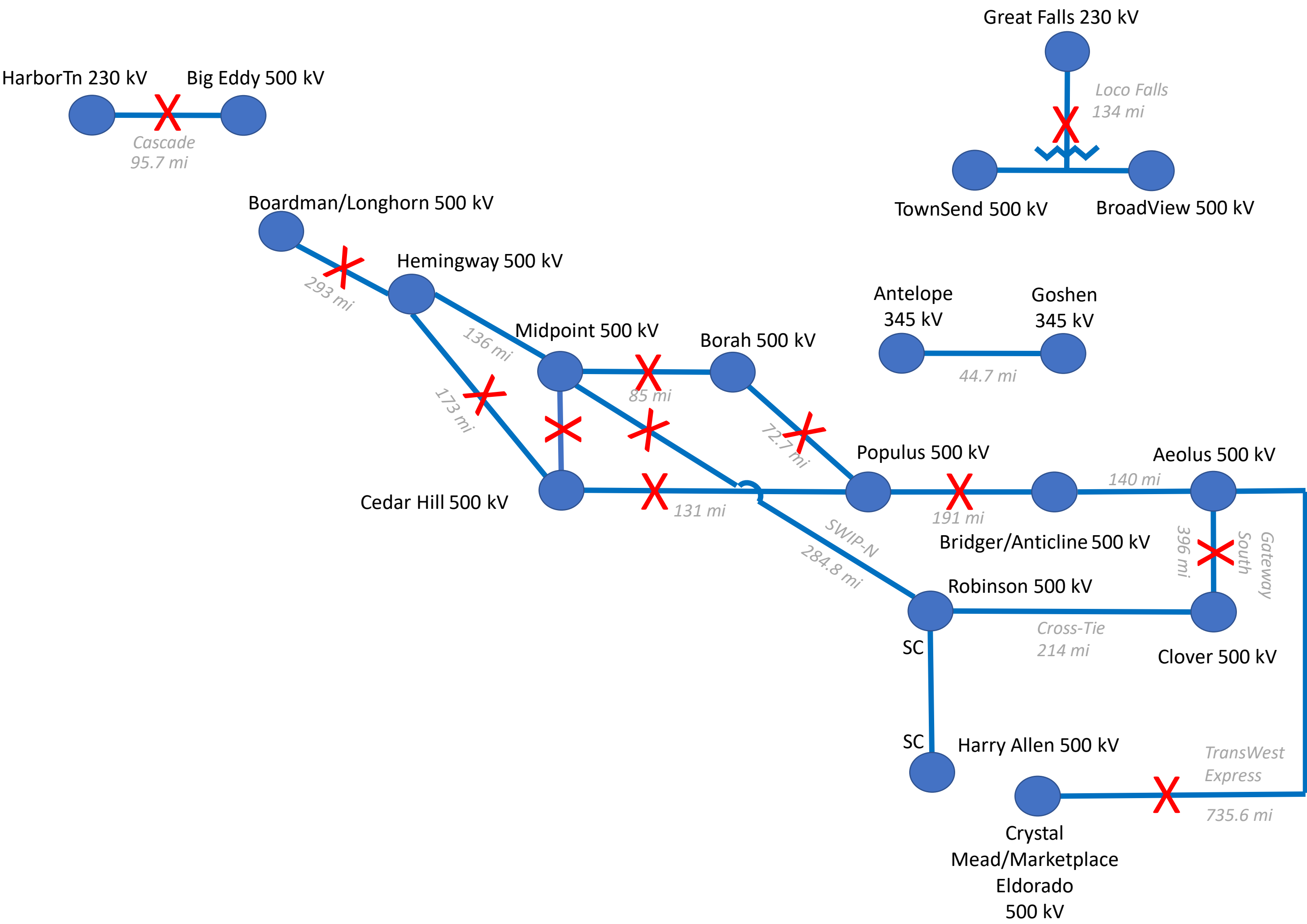
NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b
RC25

B2L [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X	X		X	X	X

RC22a



Regional Projects
2020 - 2030

Substation

Antelope 345 kV AC

Boardman to Hemingway 500 kV AC *

Gateway South 500 kV AC *

Gateway West 500 kV AC

Pop-Ced-Hemingway

Pop-Borah-Mid-Hem

Midpoint-Cedar Hill

Anticline-Populus

NorthernGrid

Existing Transmission Lines (HIFLD)

Other kV

230 - 287 kV

345 kV

500 kV

1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

Natural Gas

Solar

Wind

Cascade Renewable 400 kV DC

Cross-tie 500 kV AC

Loco Falls 230kV AC

SWP North 500 kV

Transwest Express 500 kV DC

Transwest Express 500 kV AC

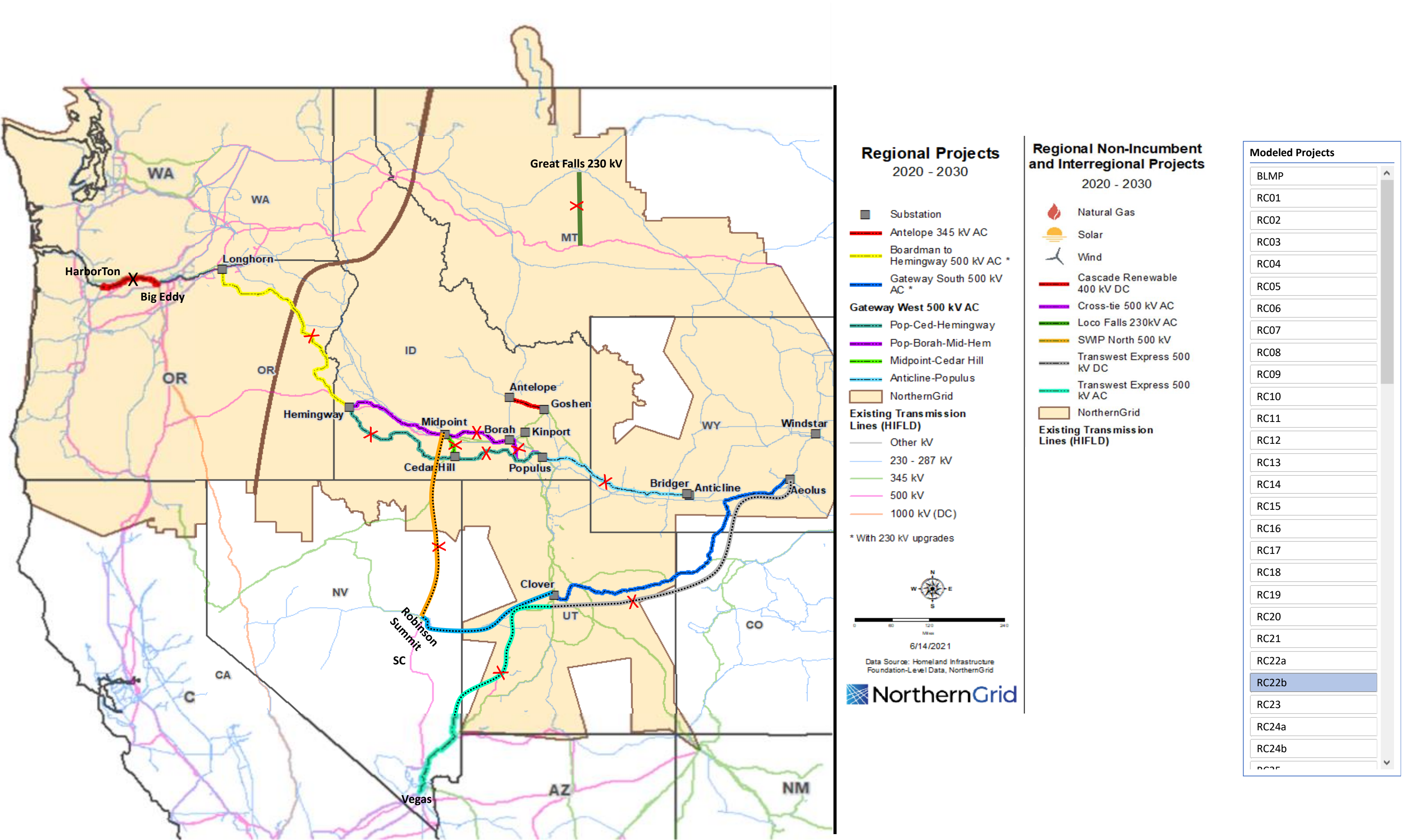
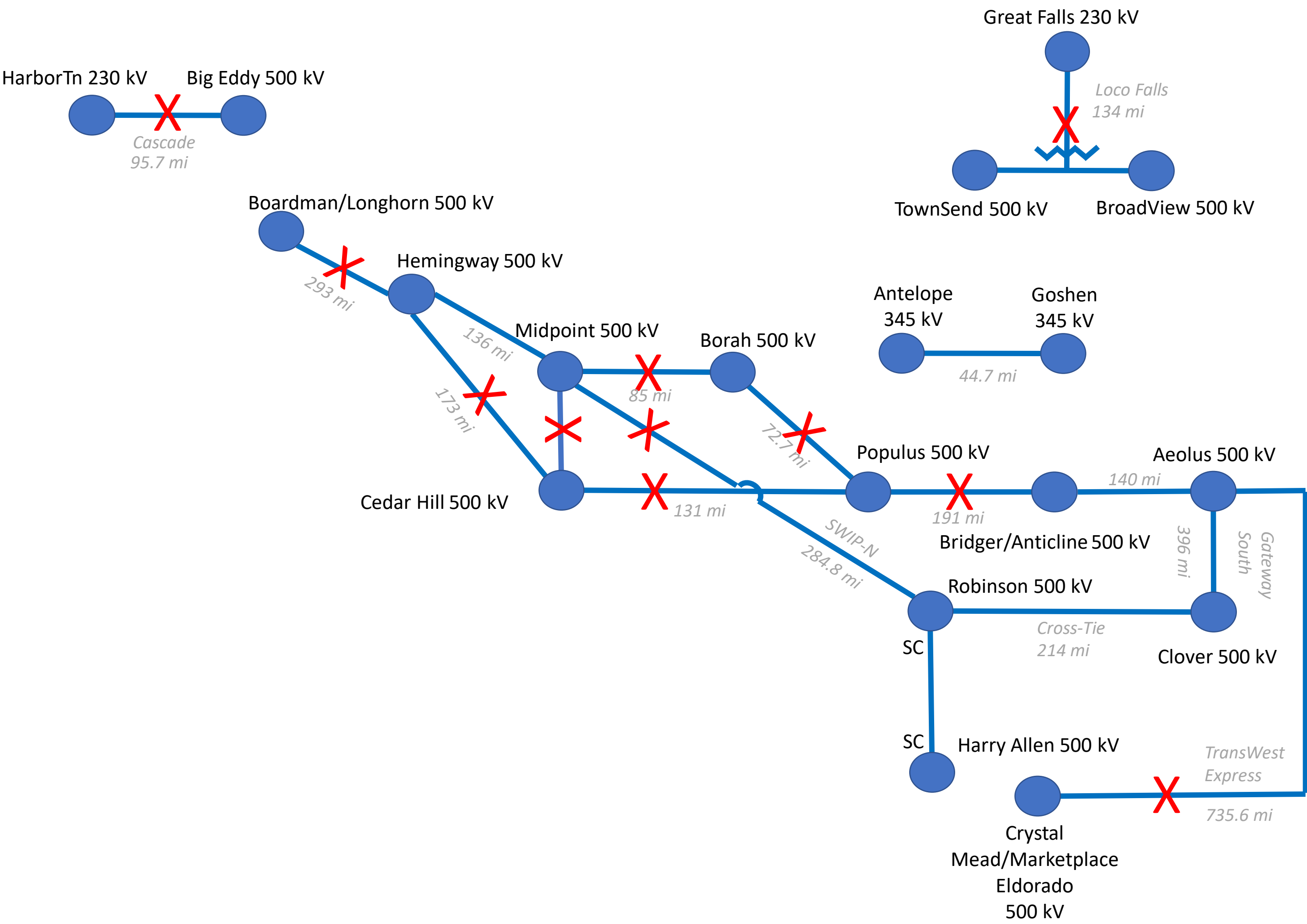
NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b
RC25

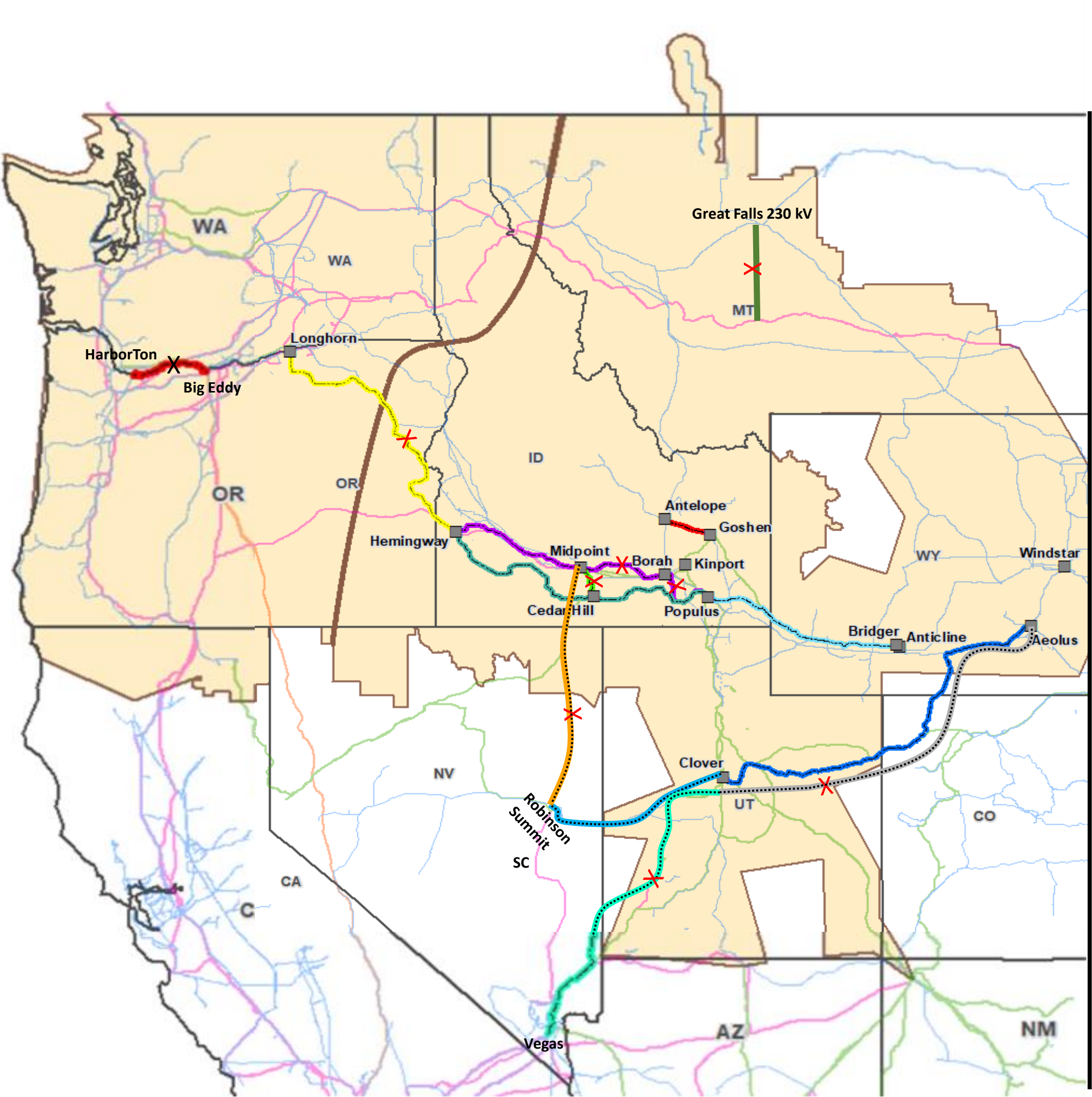
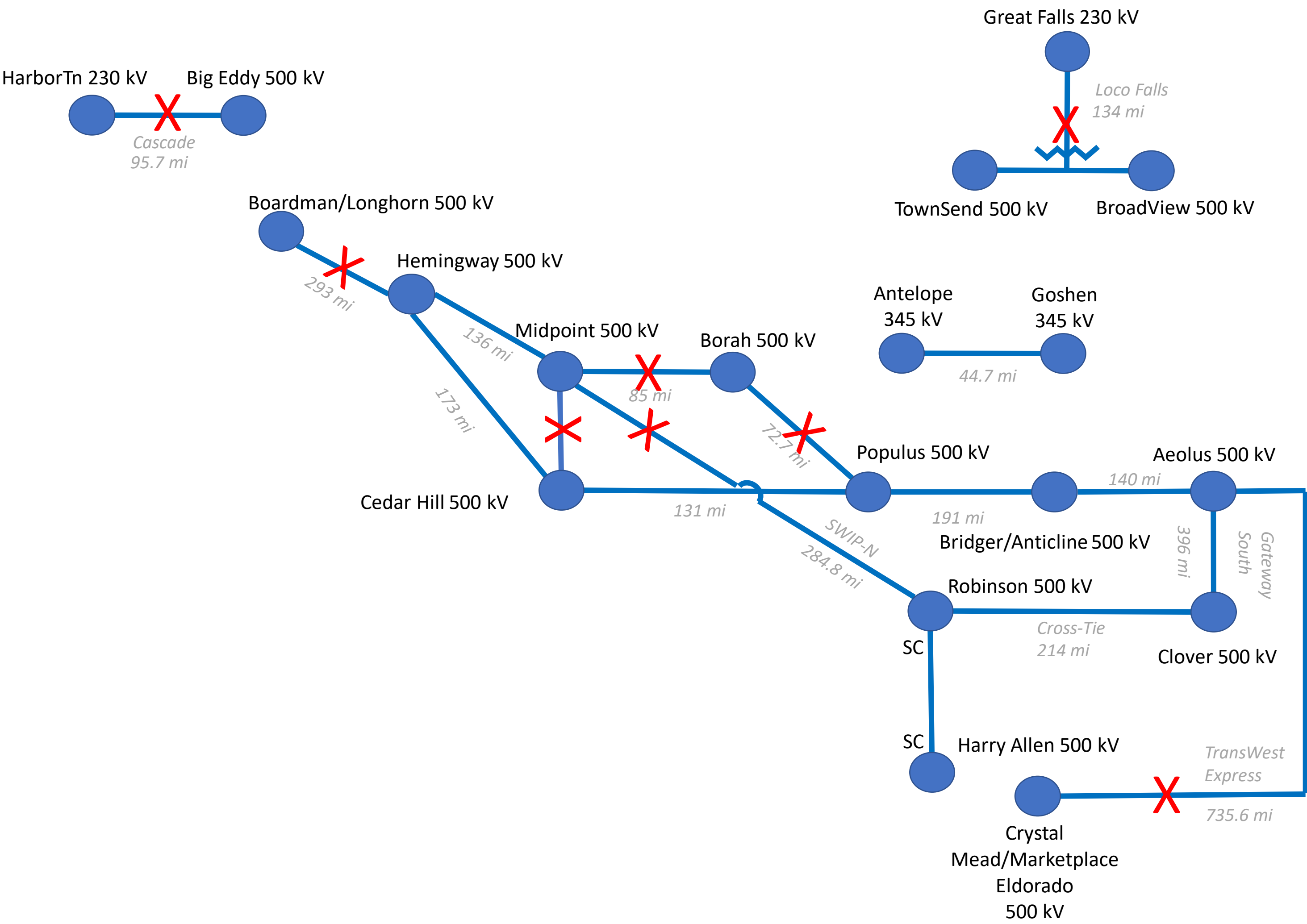
B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X			X		X	X	X

RC22b



B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X		X	X				X		X	X	X

RC23



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

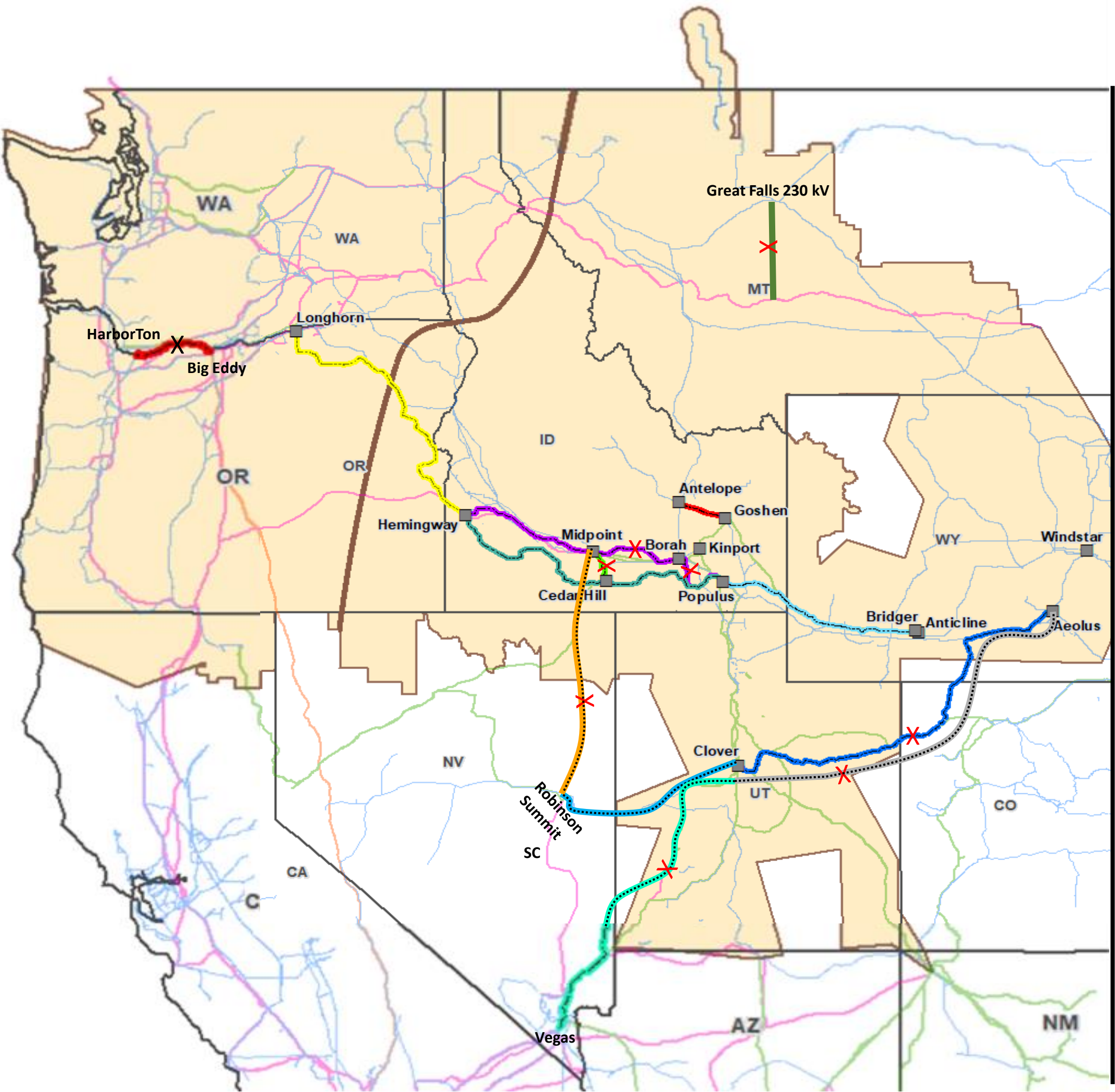
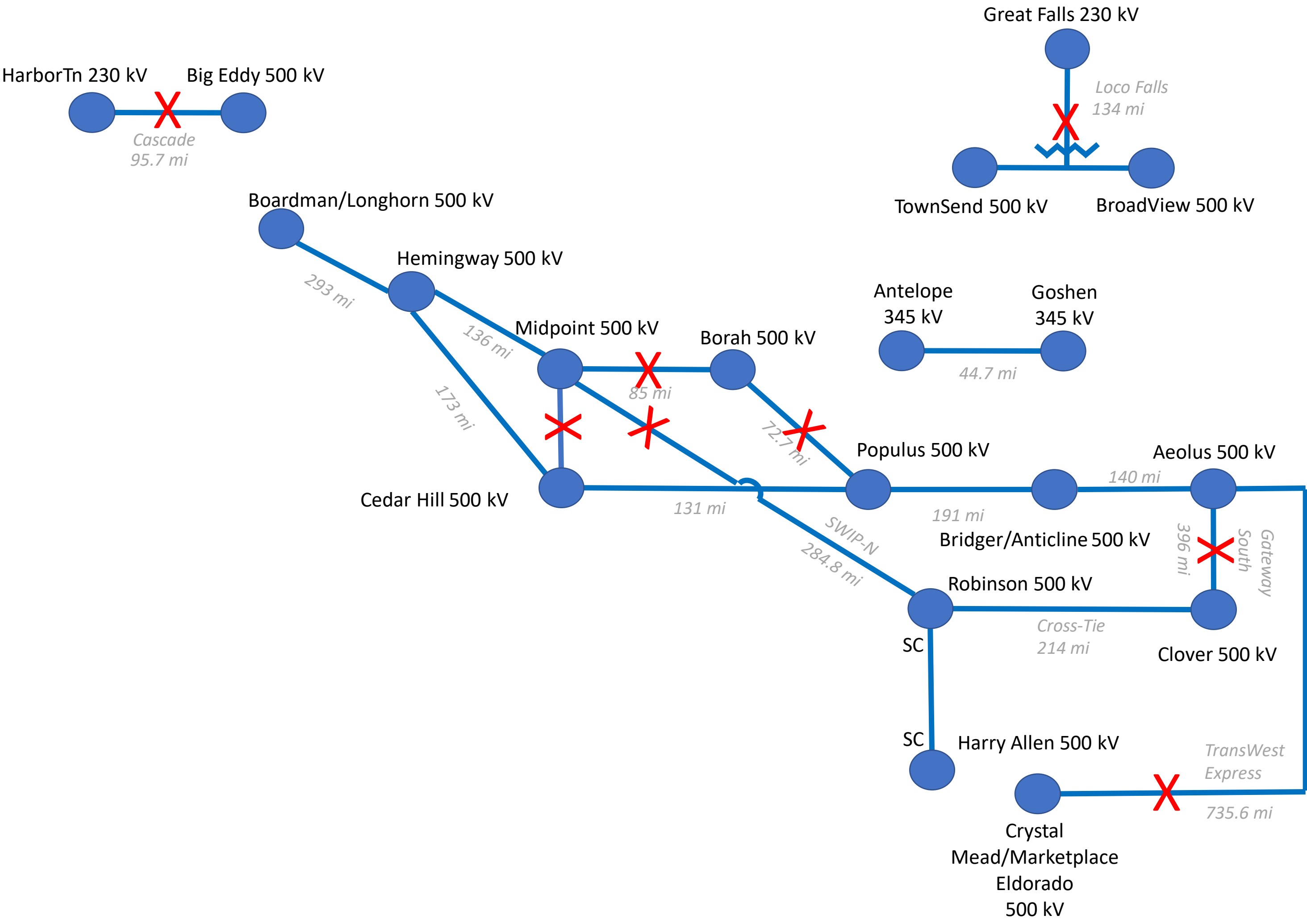
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X			X	X		X	X	X

RC24a



Regional Projects
2020 - 2030

Substation

Antelope 345 kV AC

Boardman to Hemingway 500 kV AC *

Gateway South 500 kV AC *

Gateway West 500 kV AC

Pop-Ced-Hemingway

Pop-Borah-Mid-Hem

Midpoint-Cedar Hill

Anticline-Populus

NorthernGrid

Existing Transmission Lines (HIFLD)

Other kV

230 - 287 kV

345 kV

500 kV

1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

Natural Gas

Solar

Wind

Cascade Renewable 400 kV DC

Cross-tie 500 kV AC

Loco Falls 230kV AC

SWP North 500 kV

Transwest Express 500 kV DC

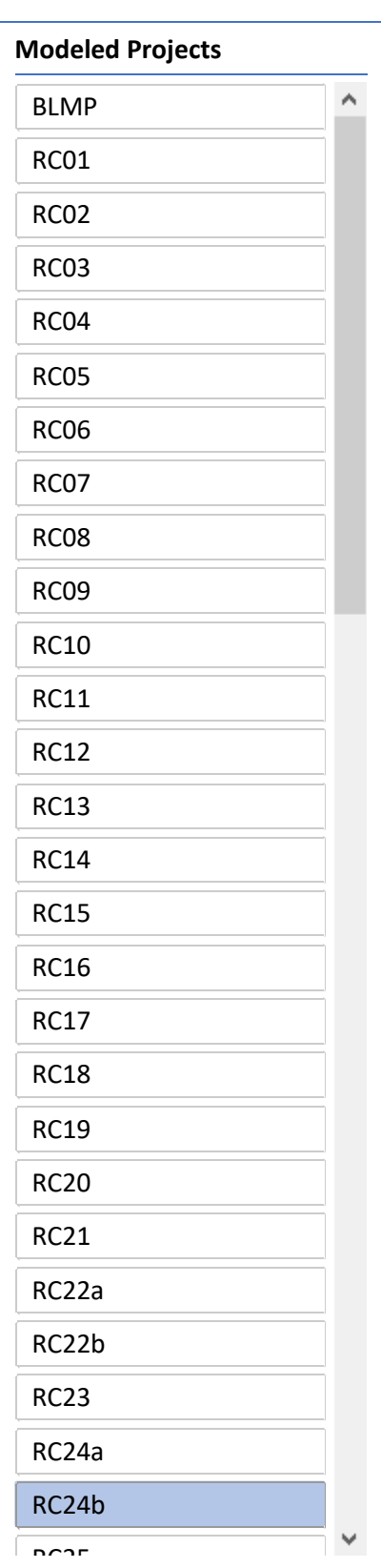
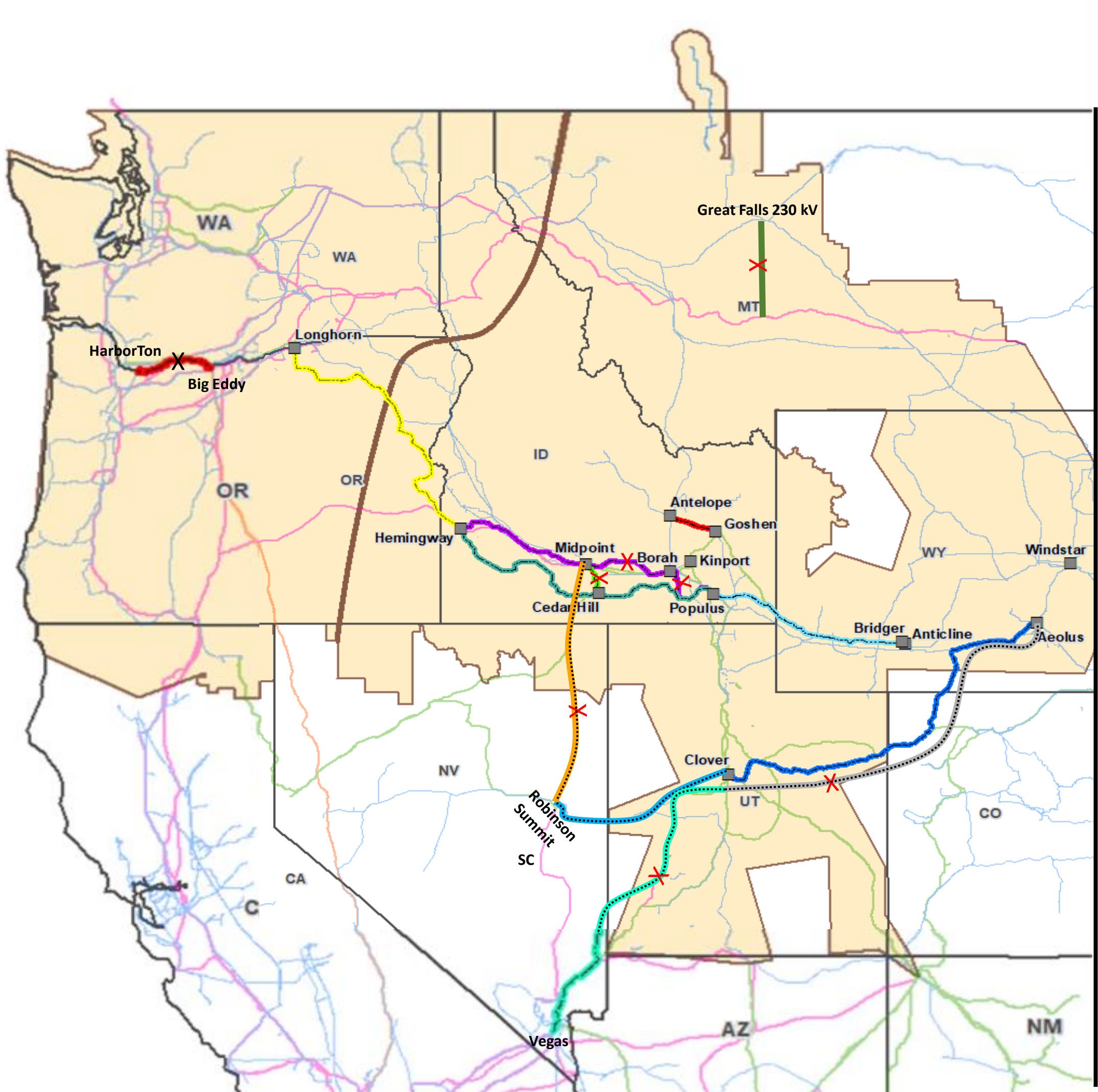
Transwest Express 500 kV AC

NorthernGrid

Existing Transmission Lines (HIFLD)

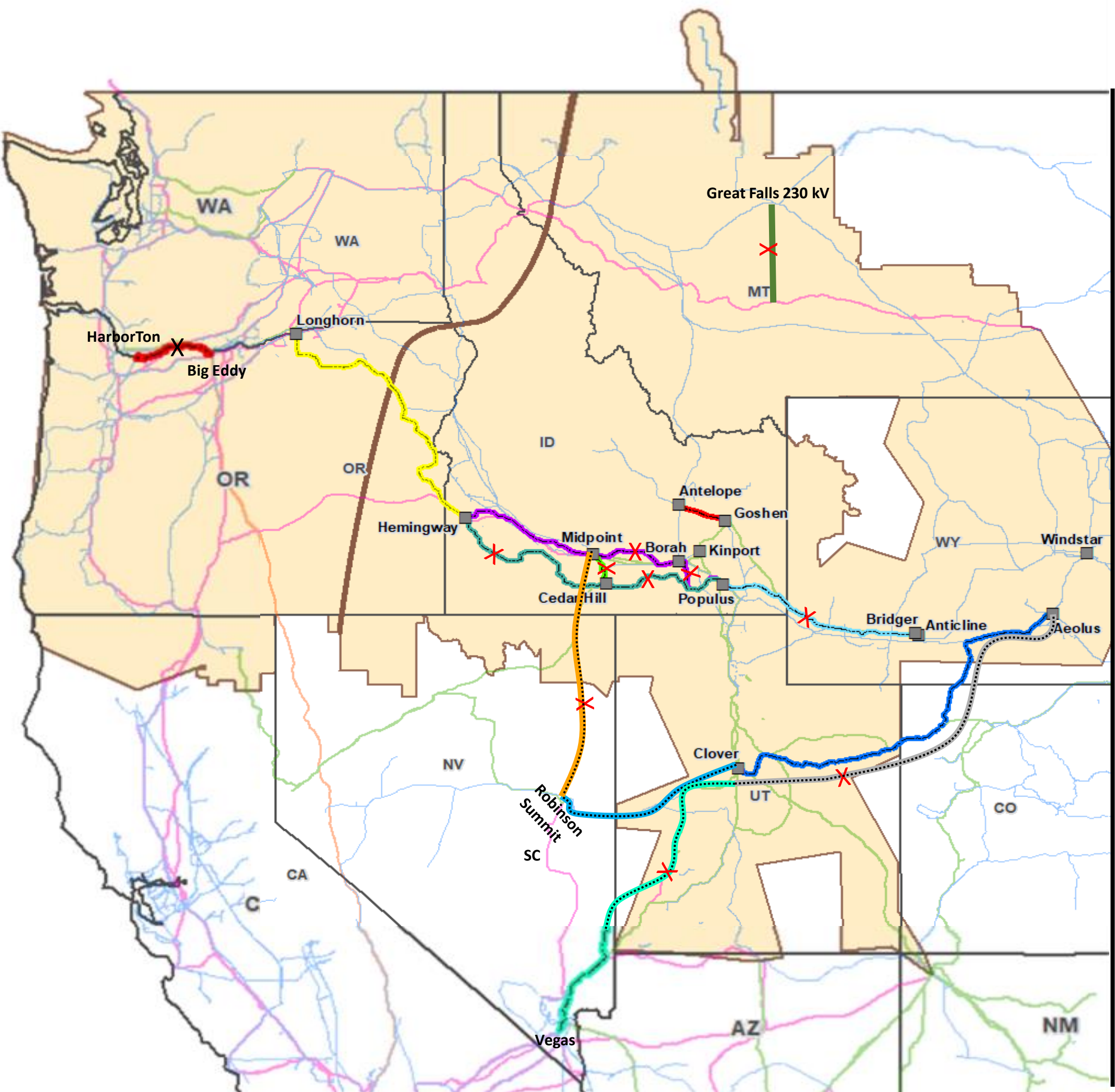
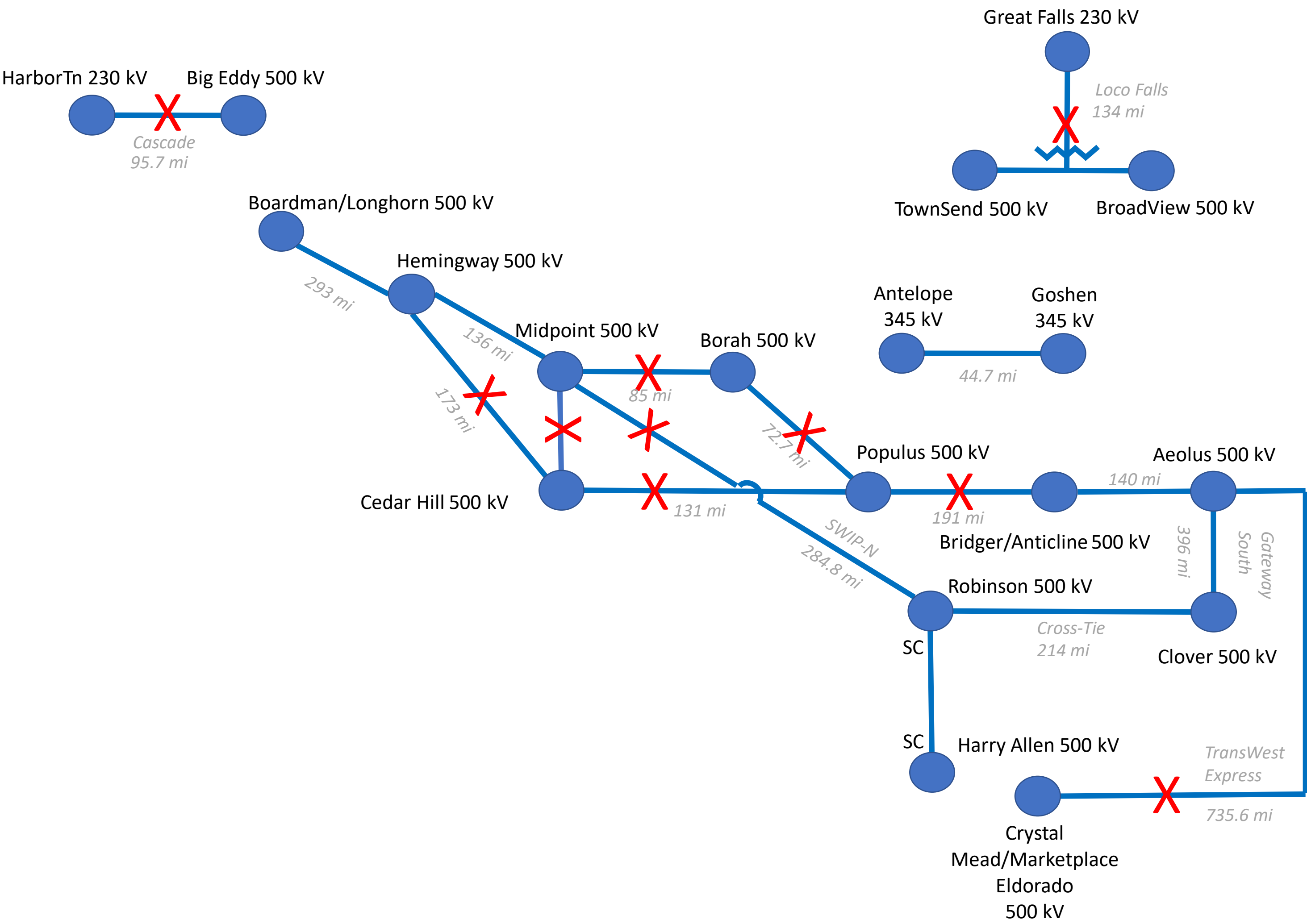
Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

RC24b



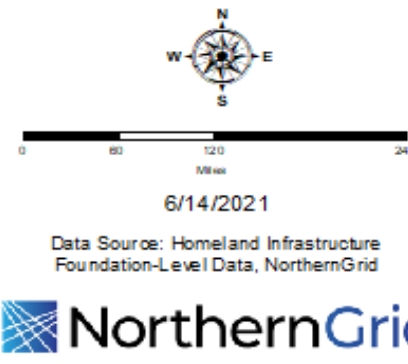
B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X	X	X	X			X		X	X	X

RC25



Regional Projects 2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid
- Existing Transmission Lines (HIFLD)
- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)
- * With 230 kV upgrades



Regional Non-Incumbent and Interregional Projects 2020 - 2030

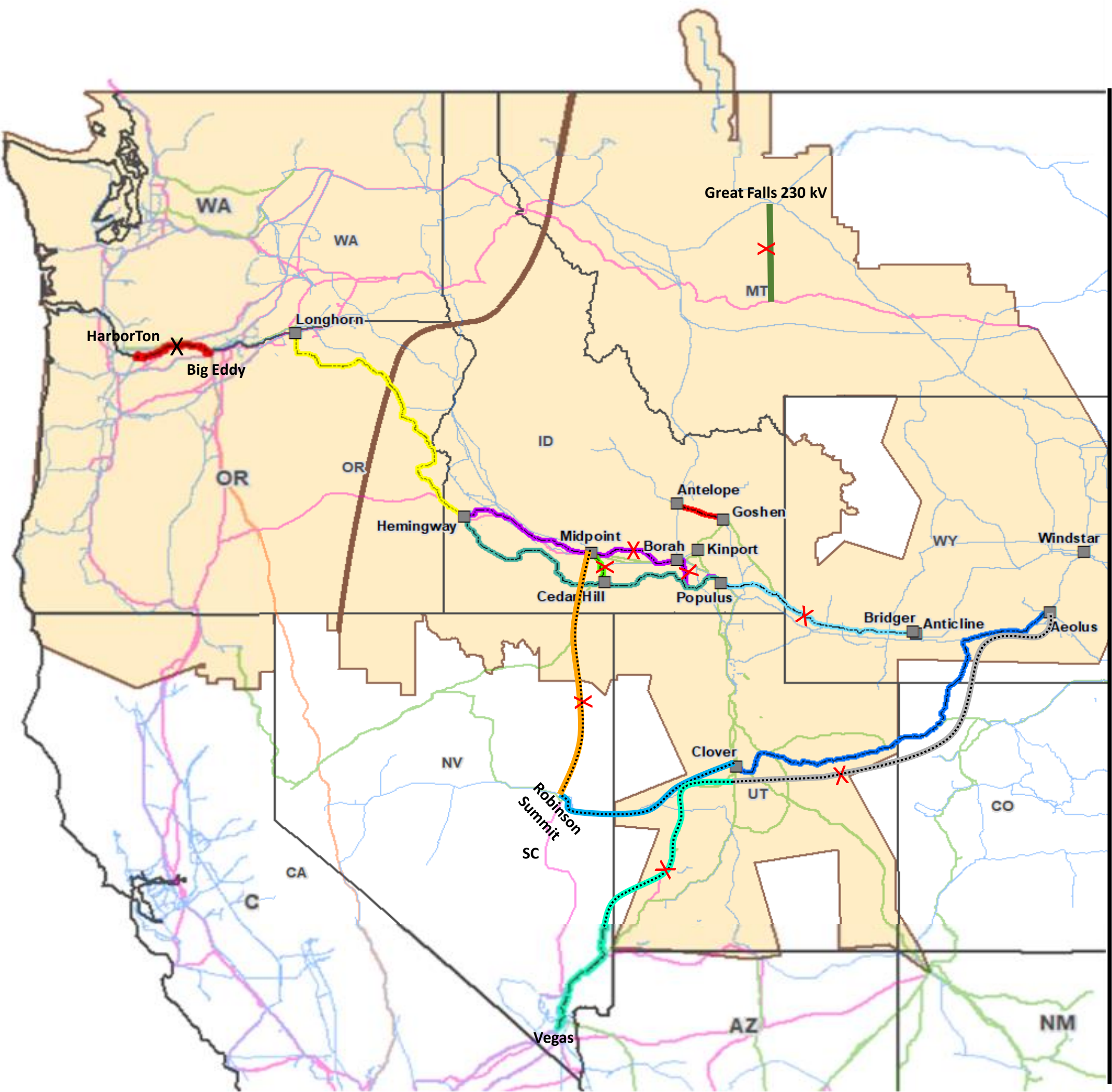
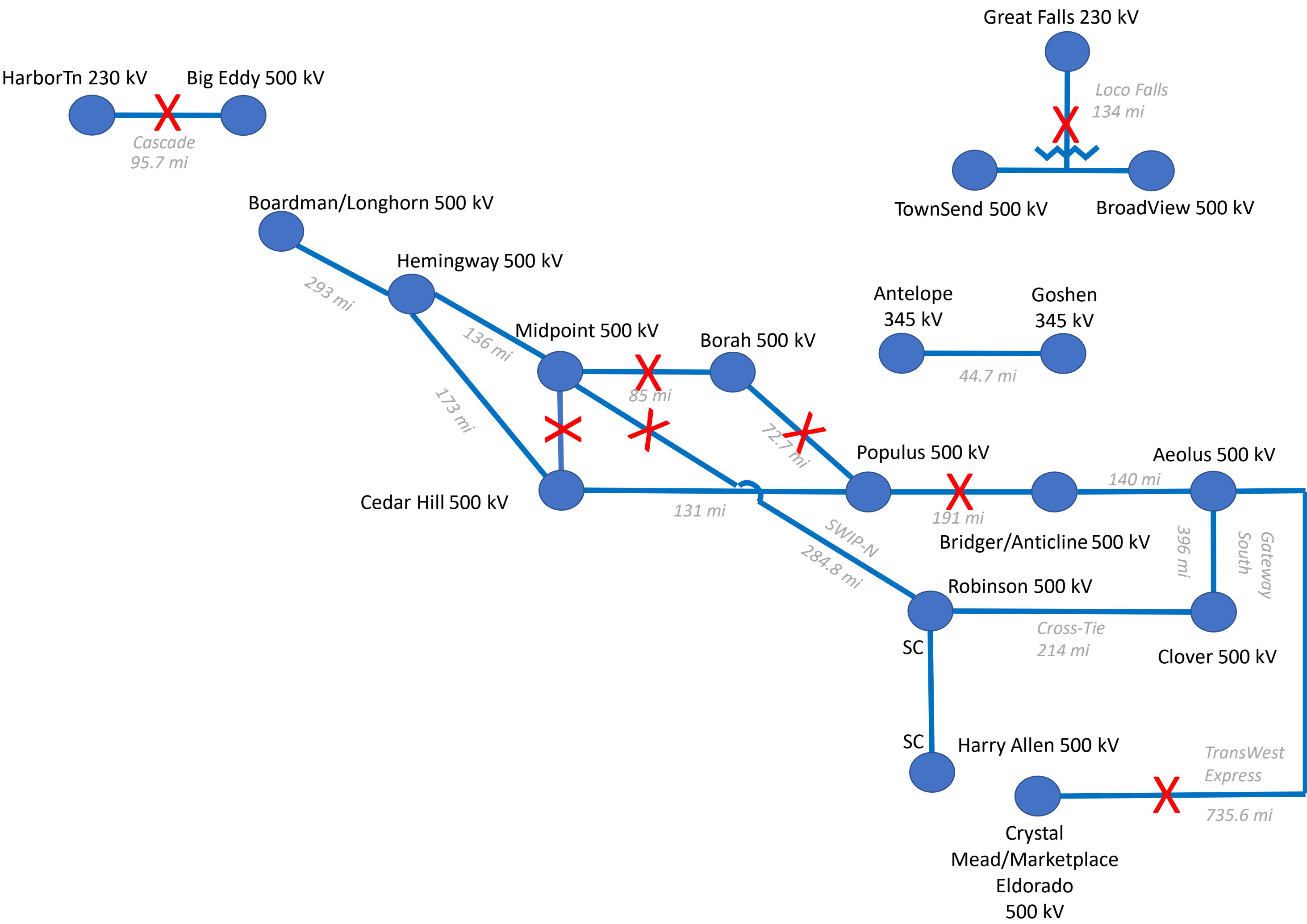
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid
- Existing Transmission Lines (HIFLD)

Modeled Projects

- BLMP
- RC01
- RC02
- RC03
- RC04
- RC05
- RC06
- RC07
- RC08
- RC09
- RC10
- RC11
- RC12
- RC13
- RC14
- RC15
- RC16
- RC17
- RC18
- RC19
- RC20
- RC21
- RC22a
- RC22b
- RC23
- RC24a
- RC24b

B21 [H]	Gateway West (Pop - Ced - Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X	X			X		X	X	X

RC26



Regional Projects
2020 - 2030

Substation

Antelope 345 kV AC

Boardman to Hemingway 500 kV AC *

Gateway South 500 kV AC *

Gateway West 500 kV AC

Pop-Ced-Hemingway

Pop-Borah-Mid-Hem

Midpoint-Cedar Hill

Anticline-Populus

NorthernGrid

Existing Transmission Lines (HIFLD)

Other kV

230 - 287 kV

345 kV

500 kV

1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

Natural Gas

Solar

Wind

Cascade Renewable 400 kV DC

Cross-tie 500 kV AC

Loco Falls 230kV AC

SWP North 500 kV

Transwest Express 500 kV DC

Transwest Express 500 kV AC

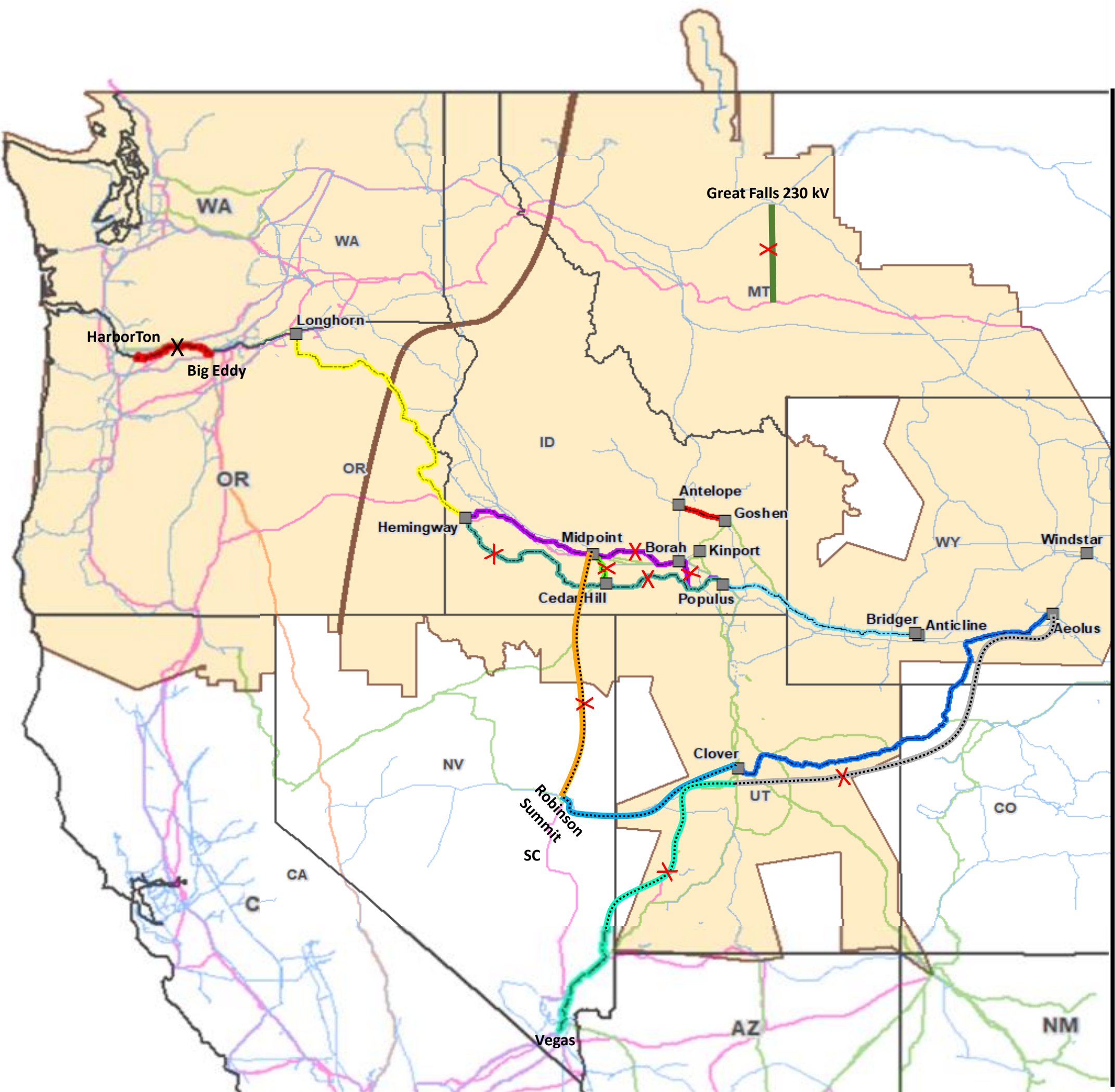
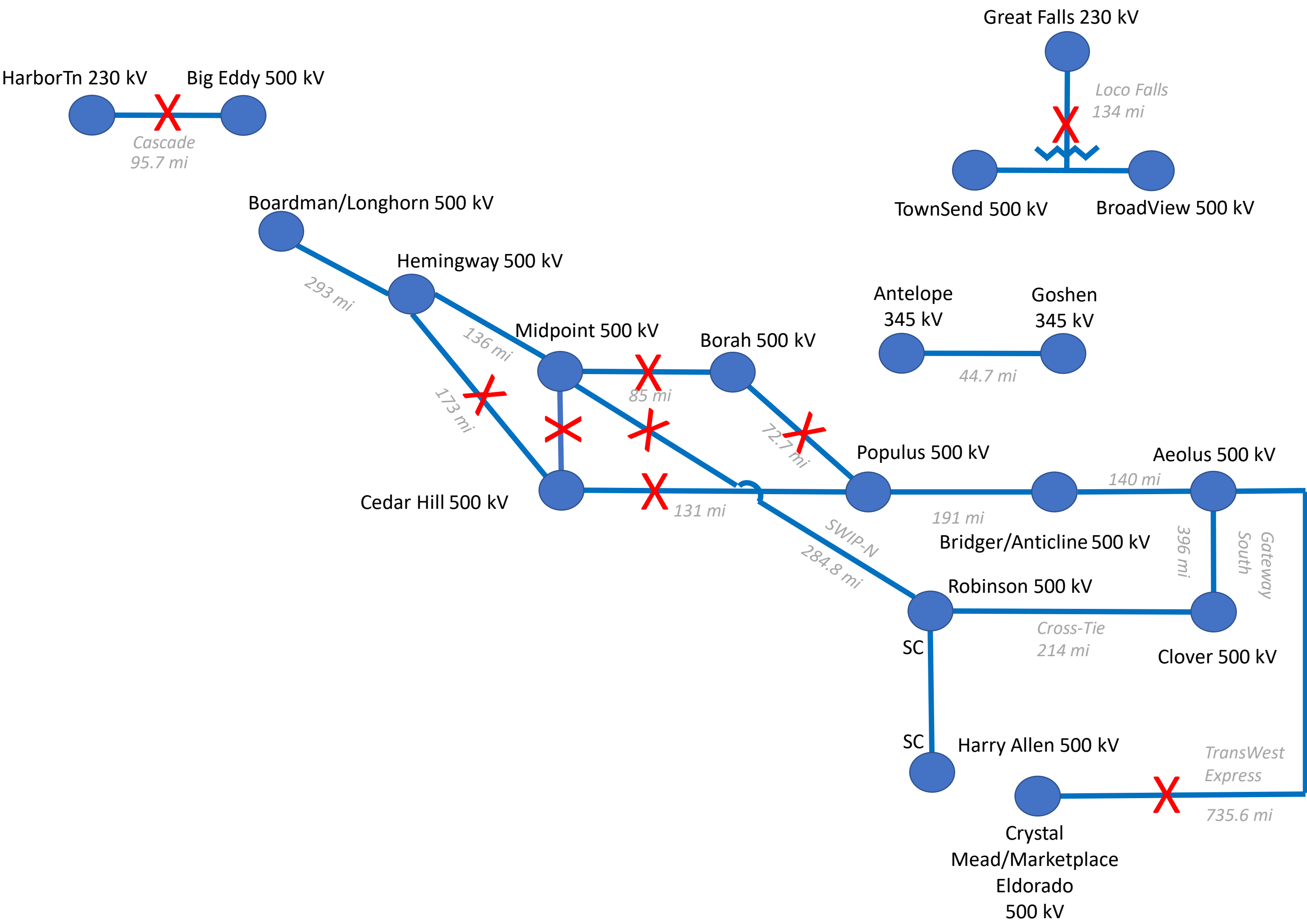
NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B27 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X	X	X				X		X	X	X

RC27



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

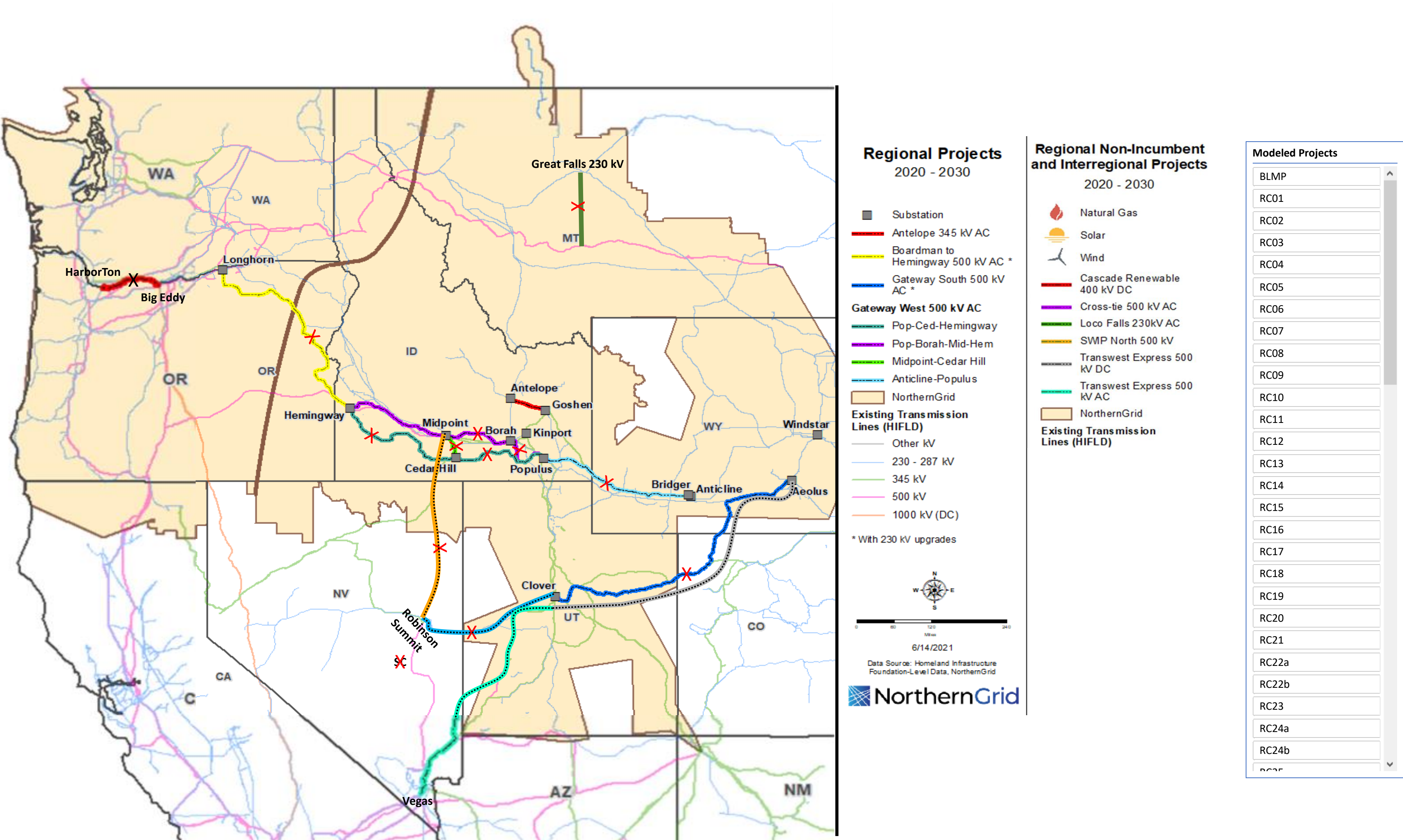
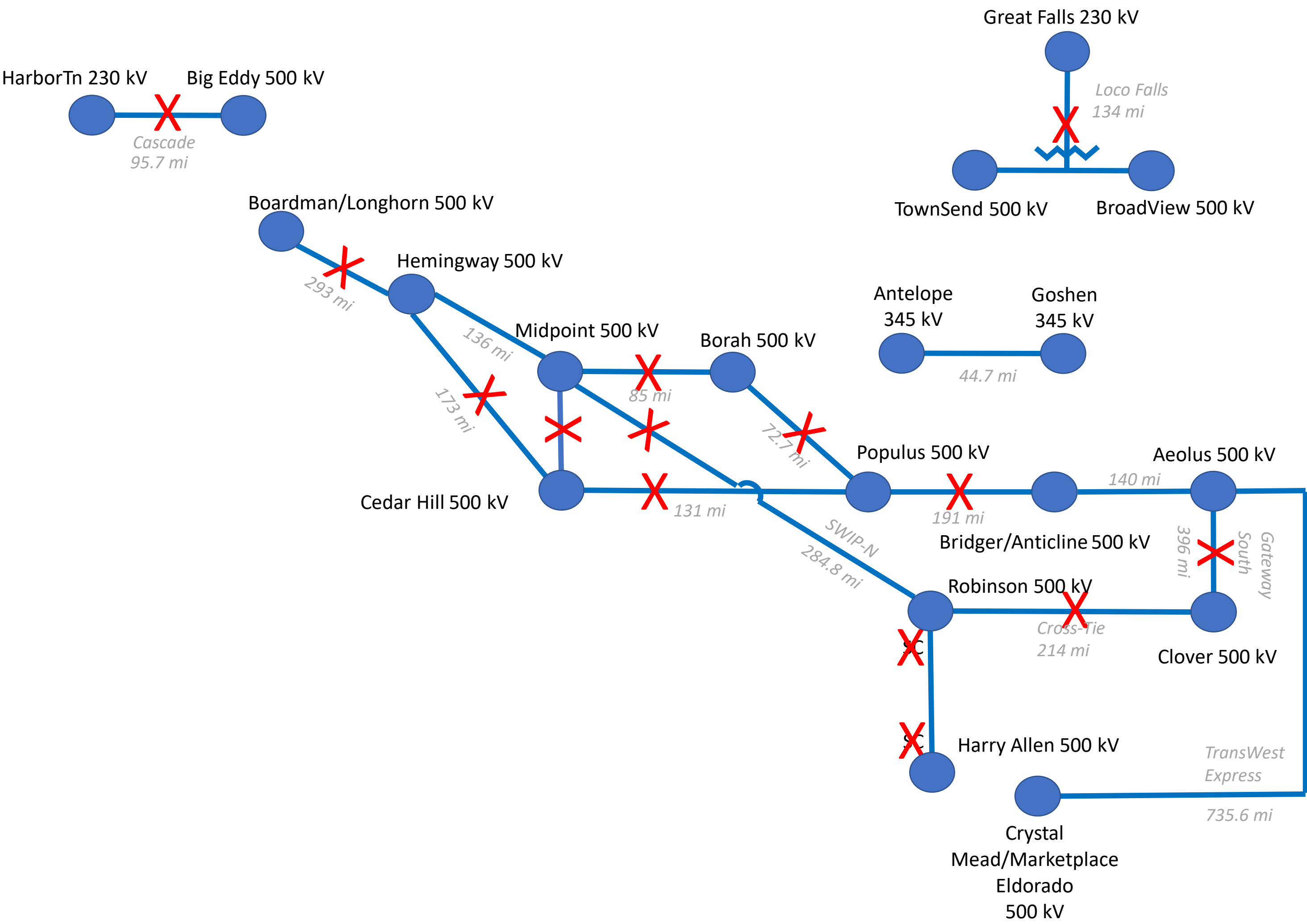
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b
RC27

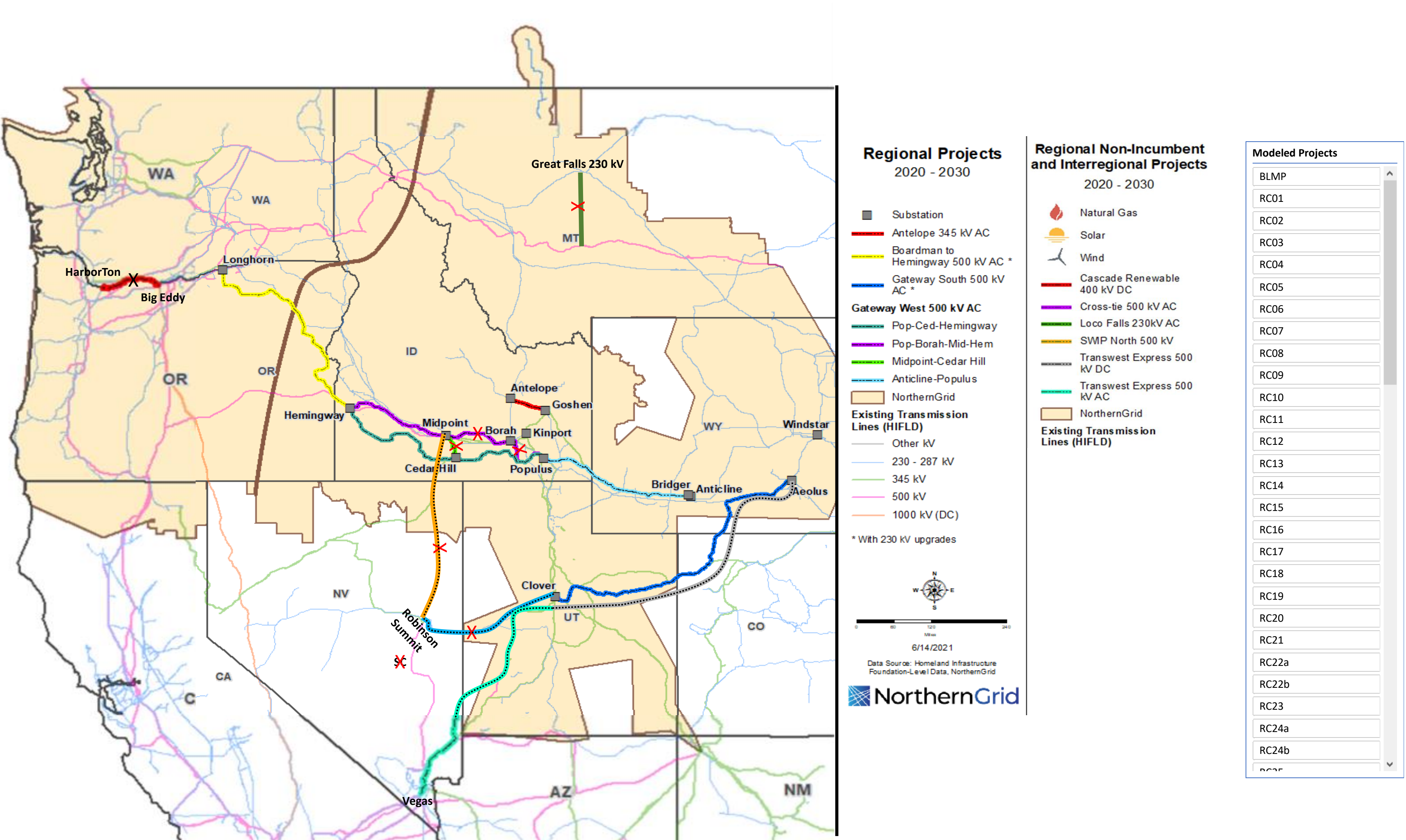
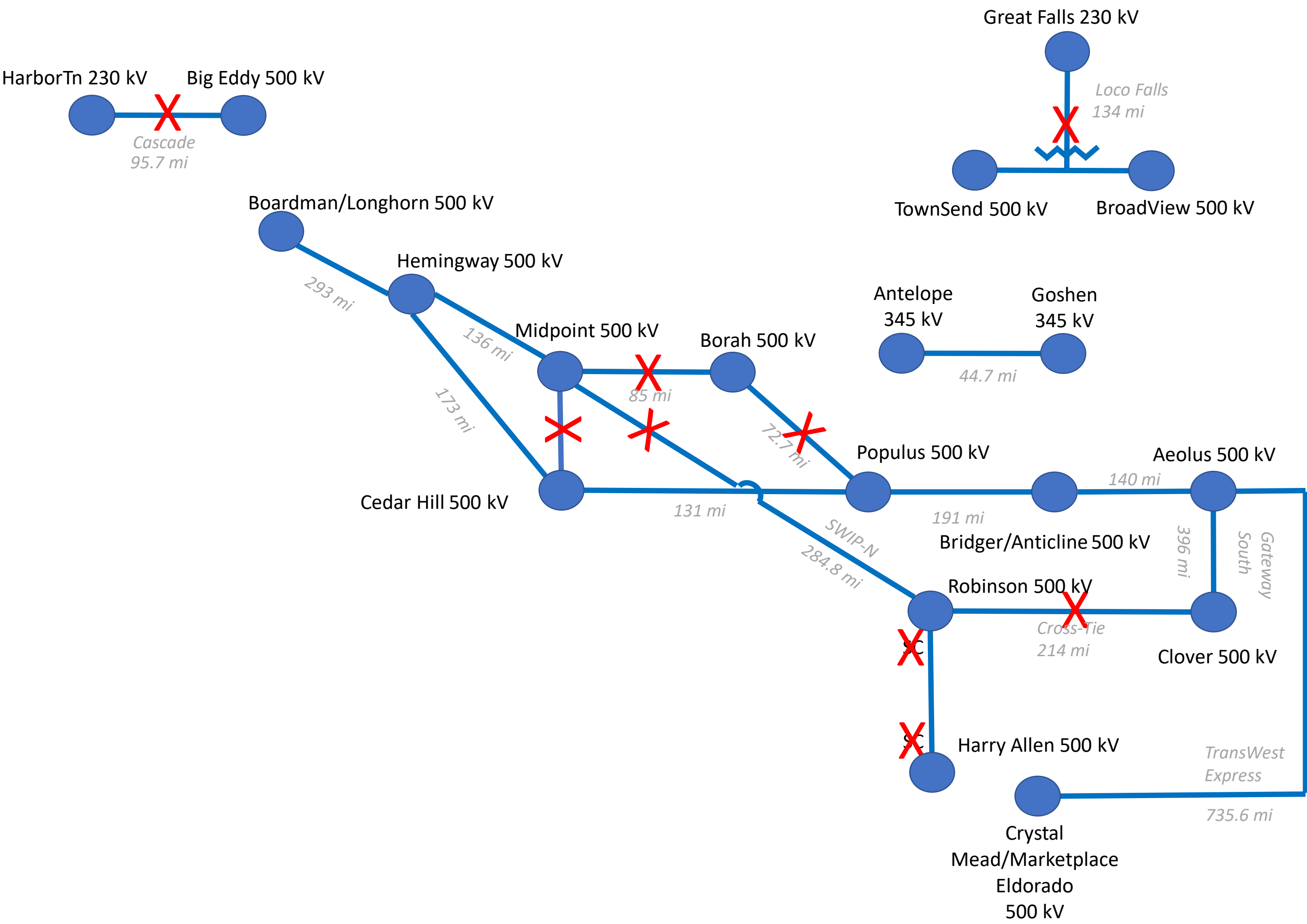
B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
XX	XX	XX	XX	XX		XX	XX	X		XX	X

RC28



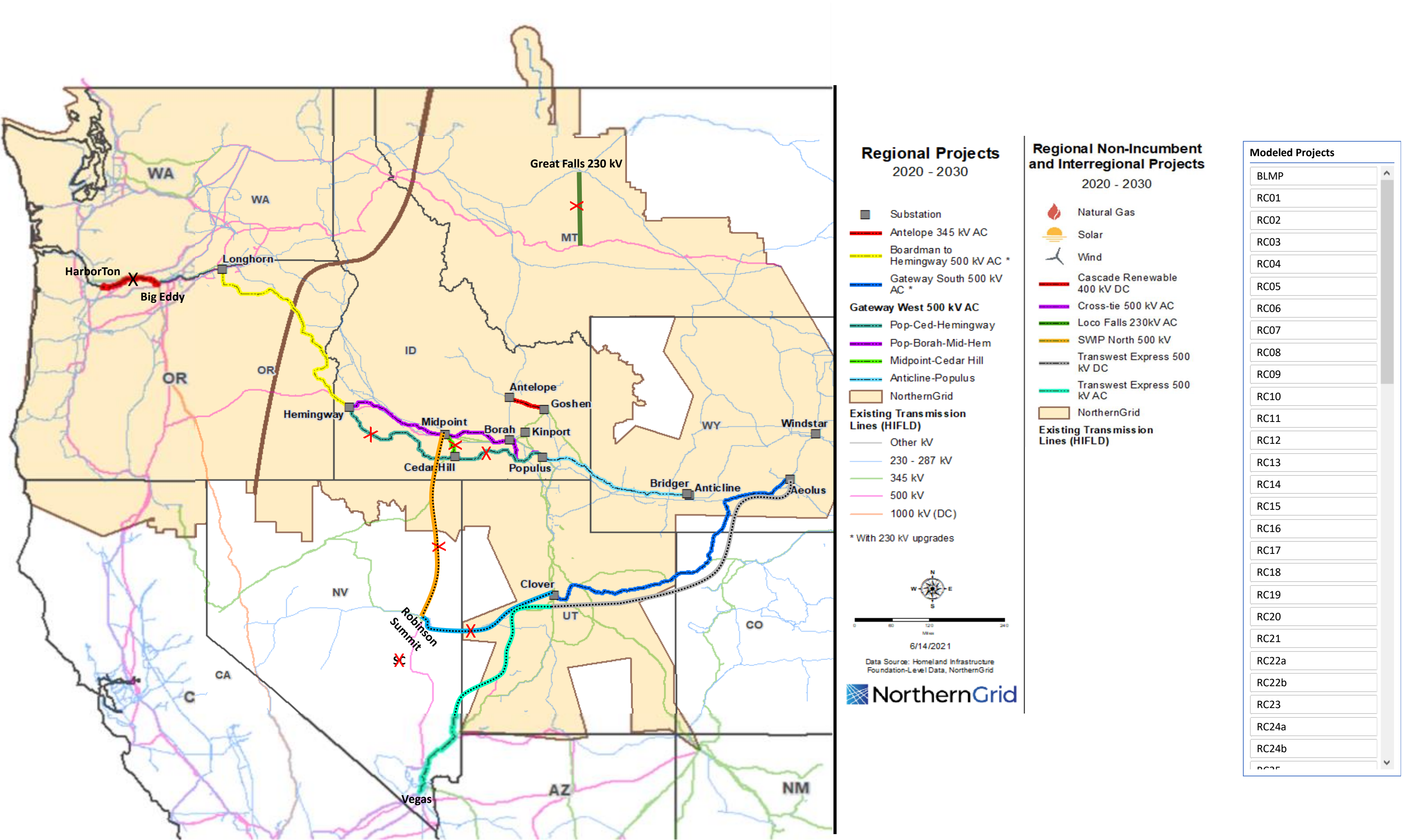
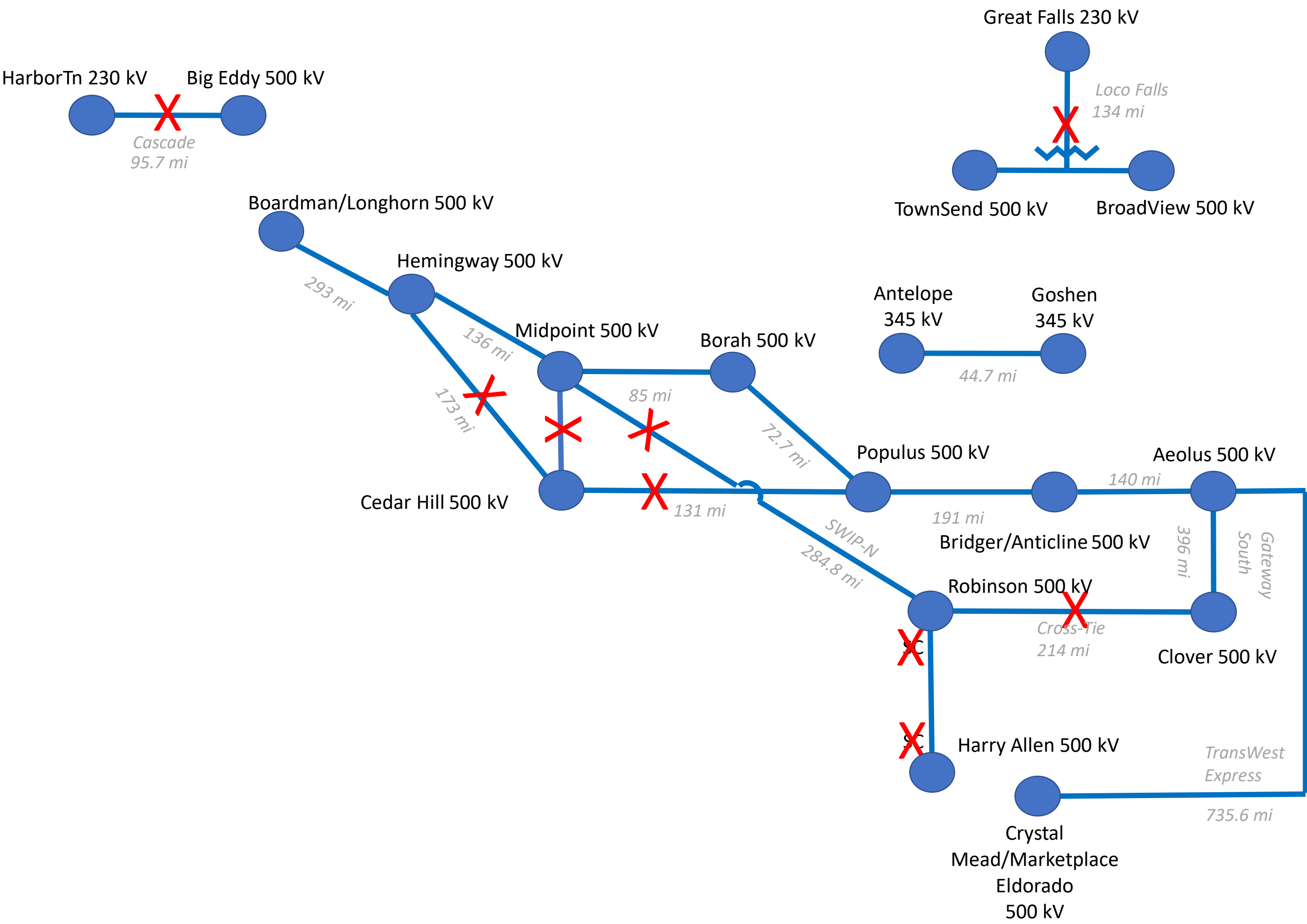
B2H [H]	Gateway West (Pop - Ced - Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X				X	X		X	X

RC29_03



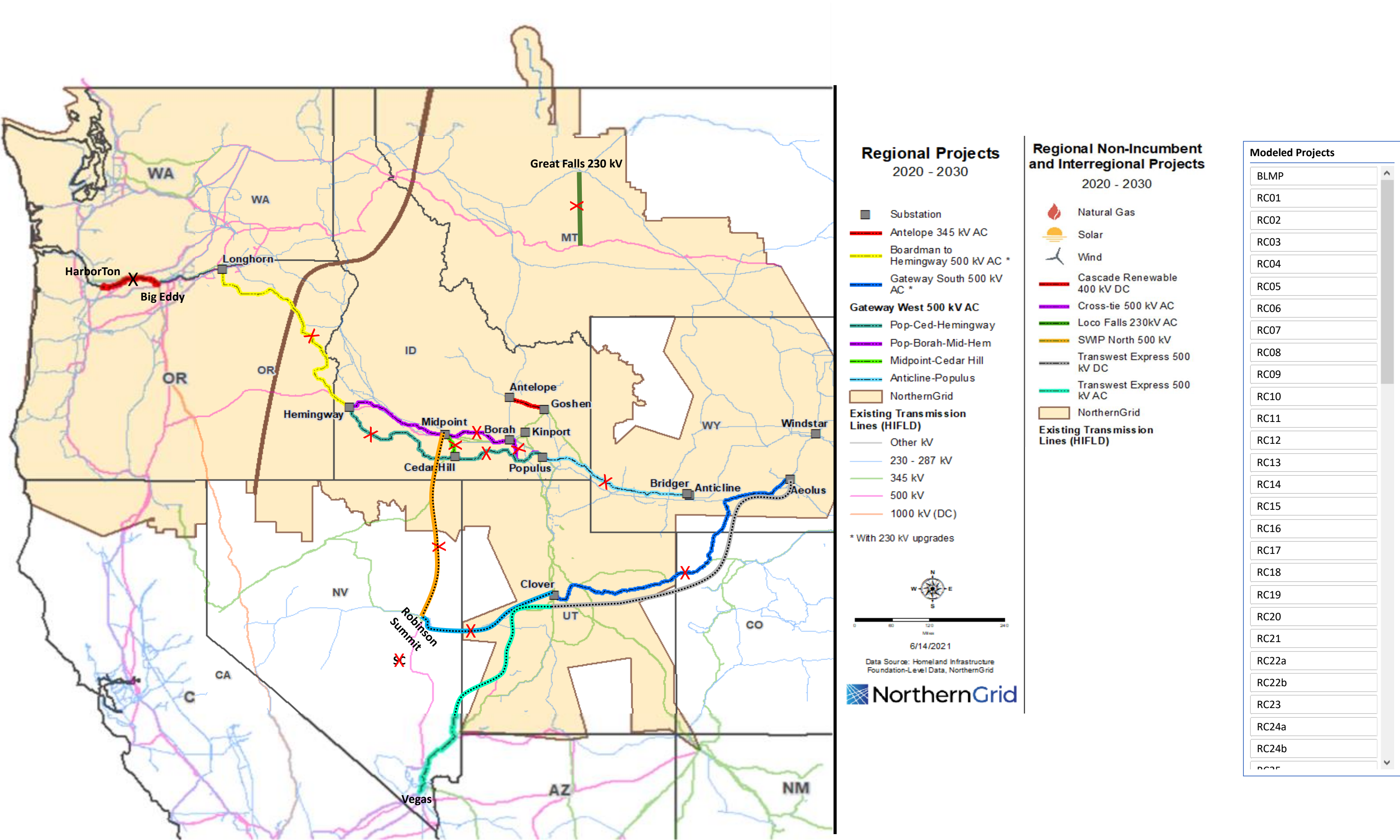
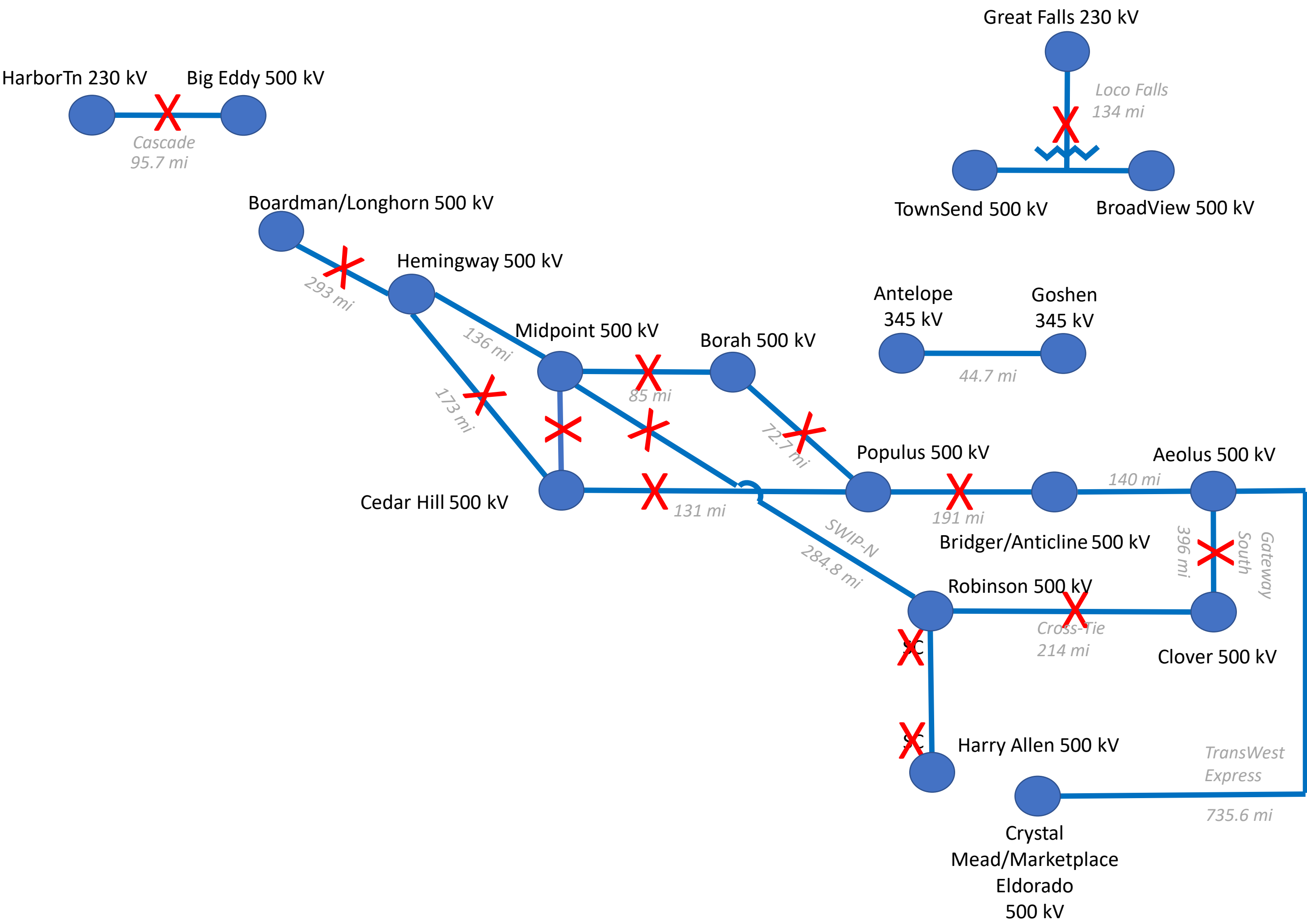
B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X	X		X	X

RC29_05



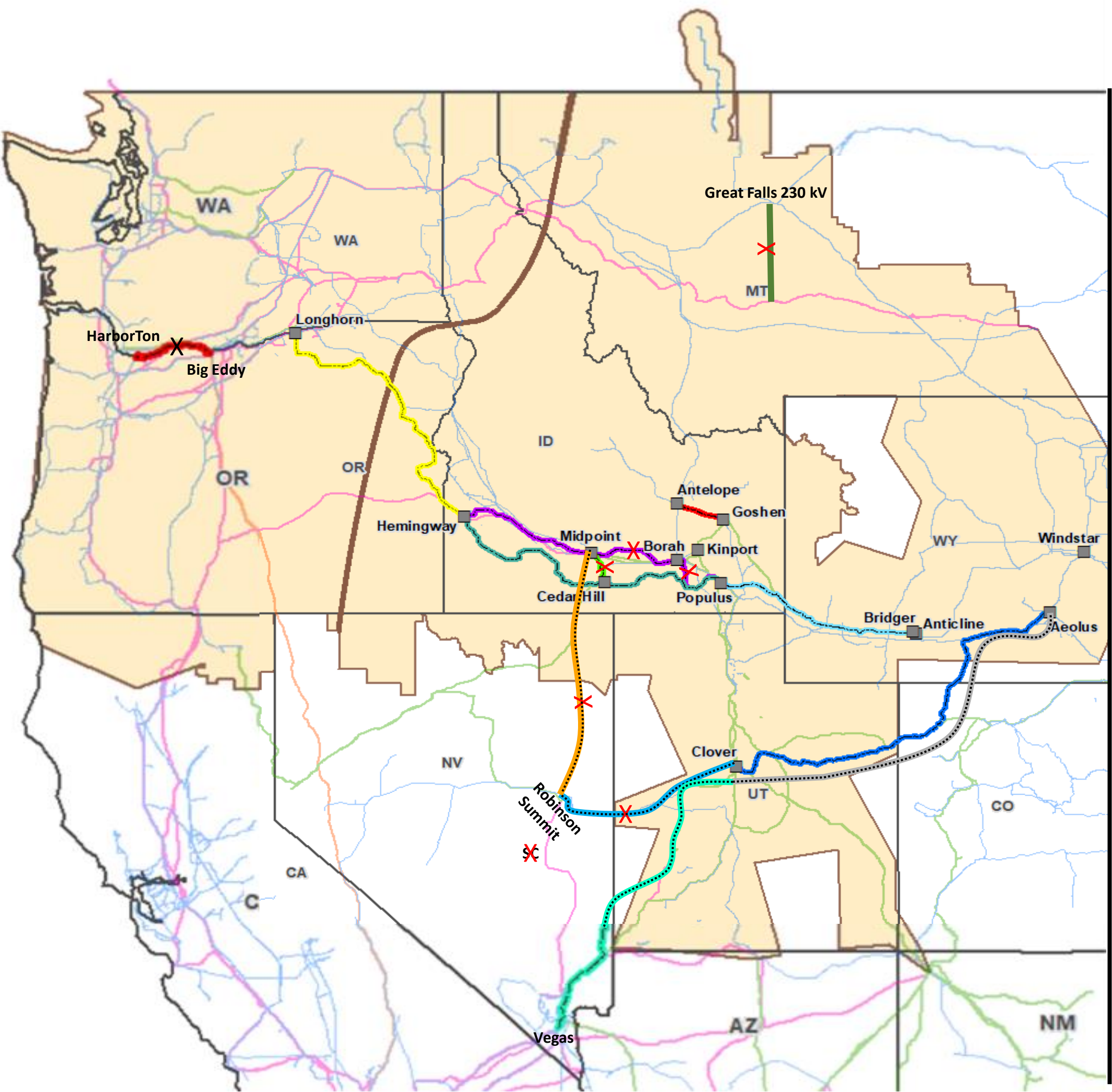
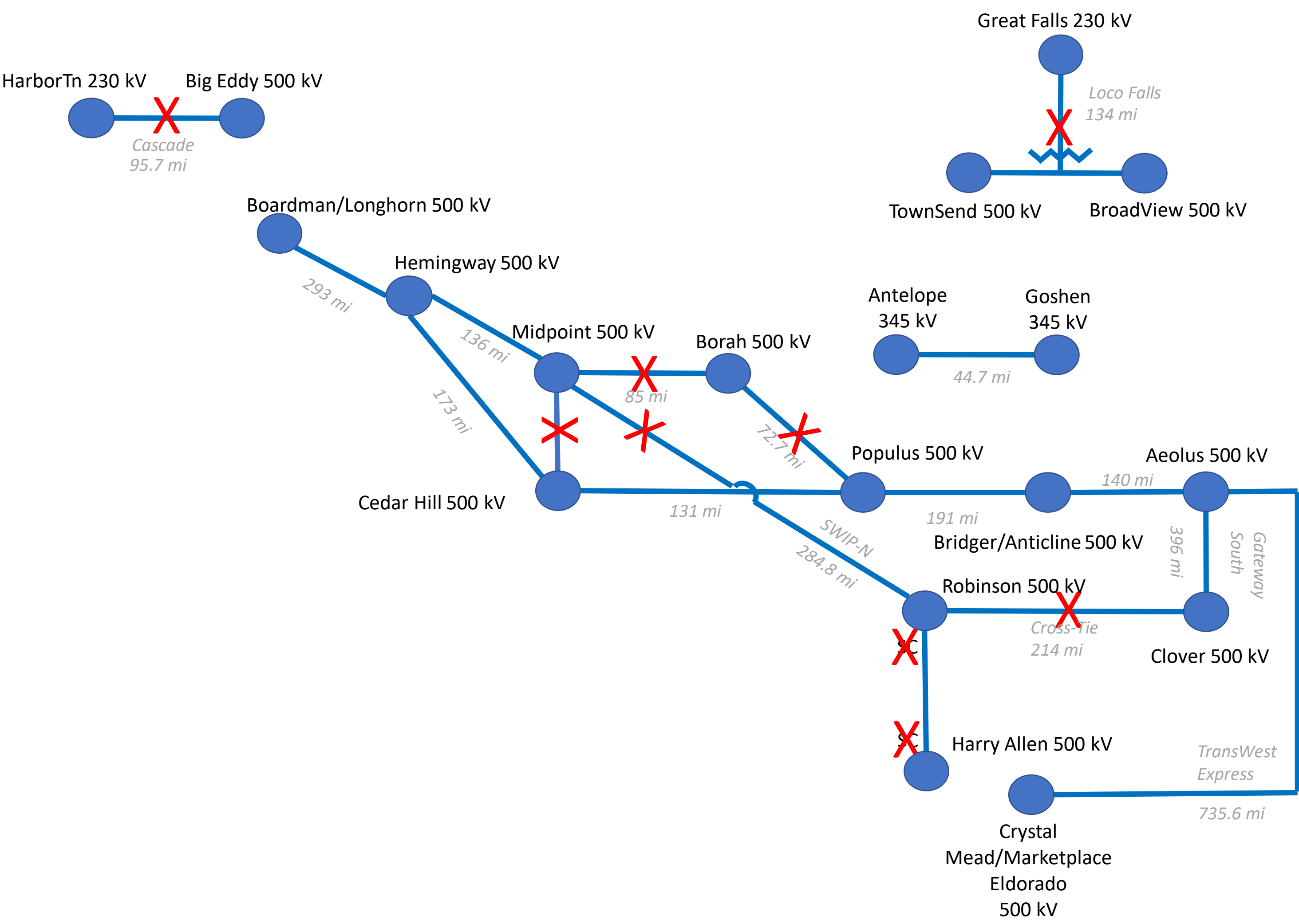
B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
XX	XX	XX	XX	XX		XX	XX	X		XX	X

RC30a



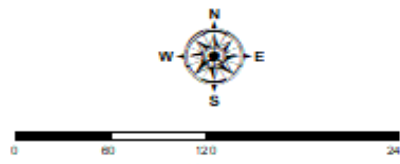
B2H [H]	Gateway West (Pop - Ced - Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X				X	X		X	X

RC30b_03



Regional Projects 2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid
- Existing Transmission Lines (HIFLD)
- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)
- * With 230 kV upgrades



6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects 2020 - 2030

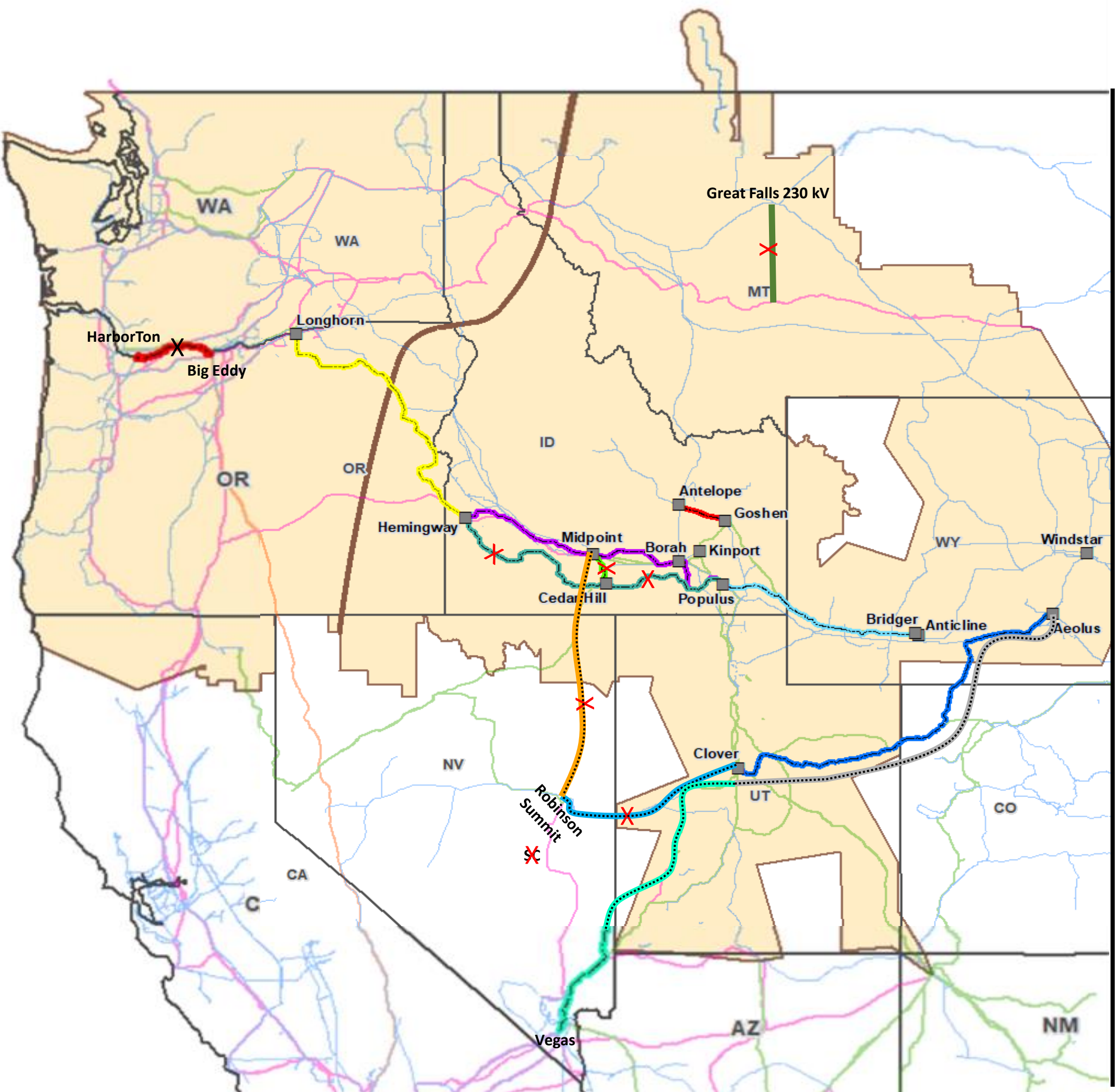
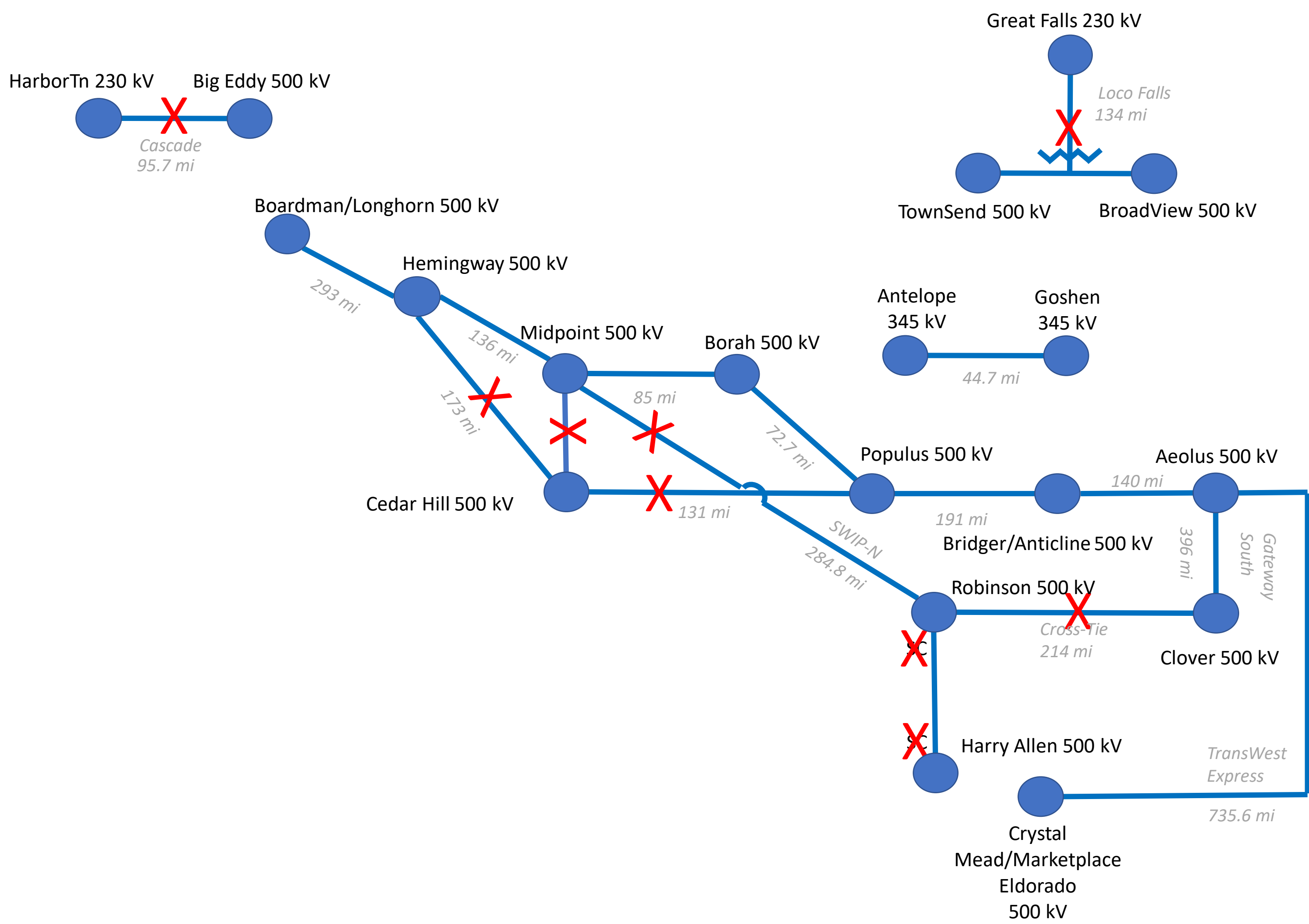
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-Tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid
- Existing Transmission Lines (HIFLD)

Modeled Projects

- BLMP
- RC01
- RC02
- RC03
- RC04
- RC05
- RC06
- RC07
- RC08
- RC09
- RC10
- RC11
- RC12
- RC13
- RC14
- RC15
- RC16
- RC17
- RC18
- RC19
- RC20
- RC21
- RC22a
- RC22b
- RC23
- RC24a
- RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X	X		X	X

RC30b_05



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

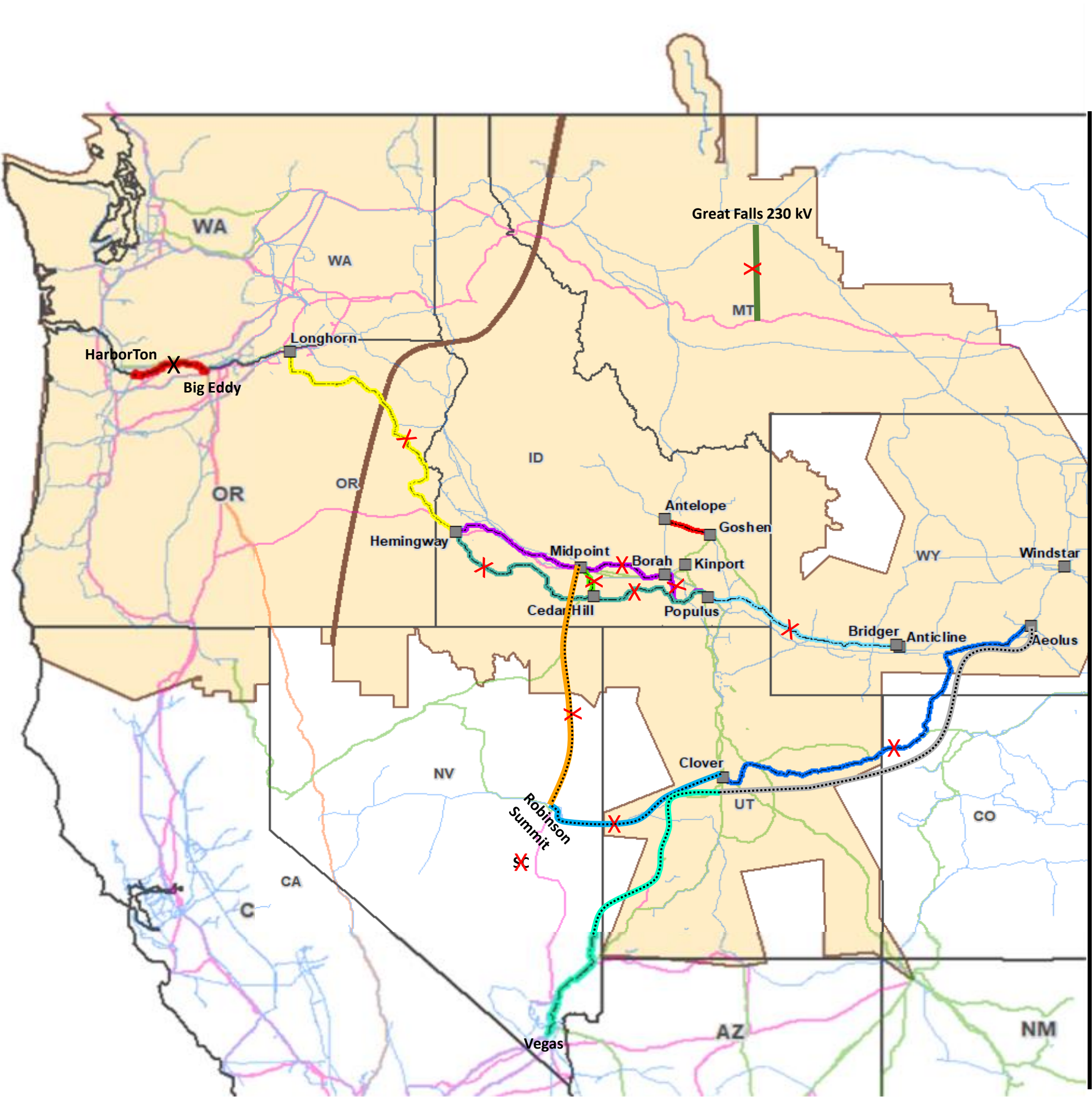
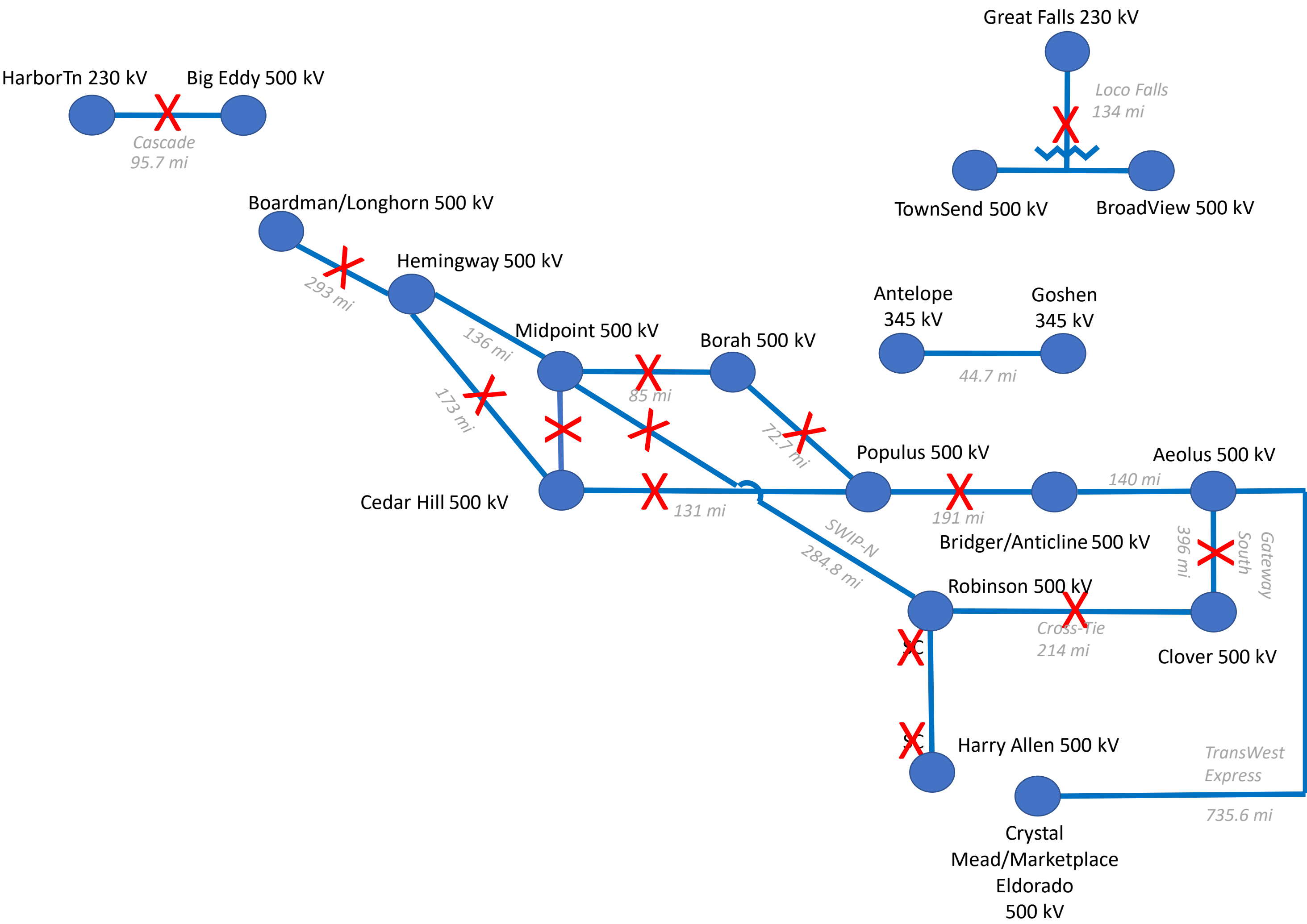
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
XX	XX	XX	XX	XX		XX	XX	X		XX	X

RC31a



Regional Projects
2020 - 2030

Substation

Antelope 345 kV AC

Boardman to Hemingway 500 kV AC *

Gateway South 500 kV AC *

Gateway West 500 kV AC

Pop-Ced-Hemingway

Pop-Borah-Mid-Hem

Midpoint-Cedar Hill

Anticline-Populus

NorthernGrid

Existing Transmission Lines (HIFLD)

Other kV

230 - 287 kV

345 kV

500 kV

1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

Natural Gas

Solar

Wind

Cascade Renewable 400 kV DC

Cross-tie 500 kV AC

Loco Falls 230kV AC

SWP North 500 kV

Transwest Express 500 kV DC

Transwest Express 500 kV AC

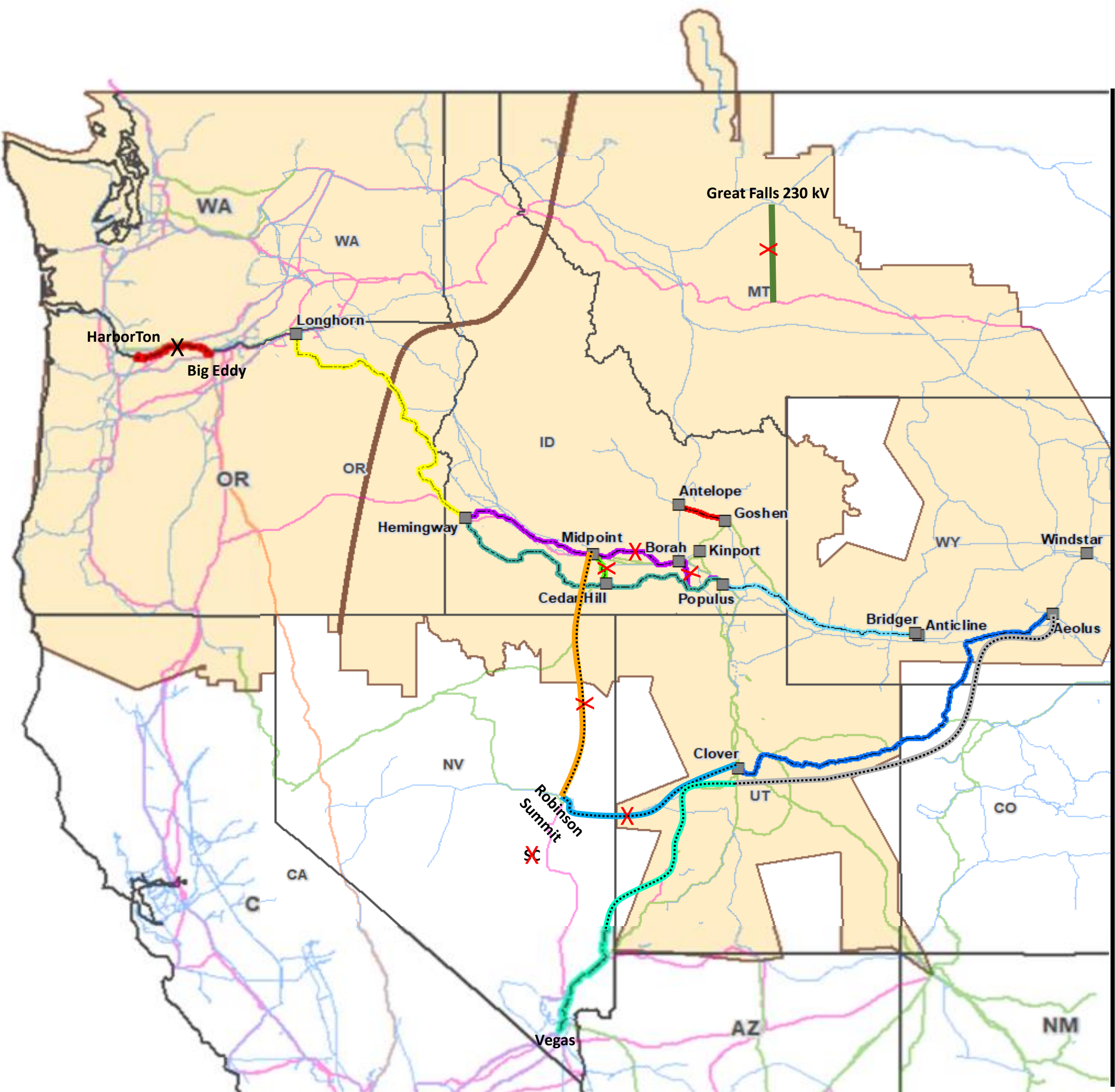
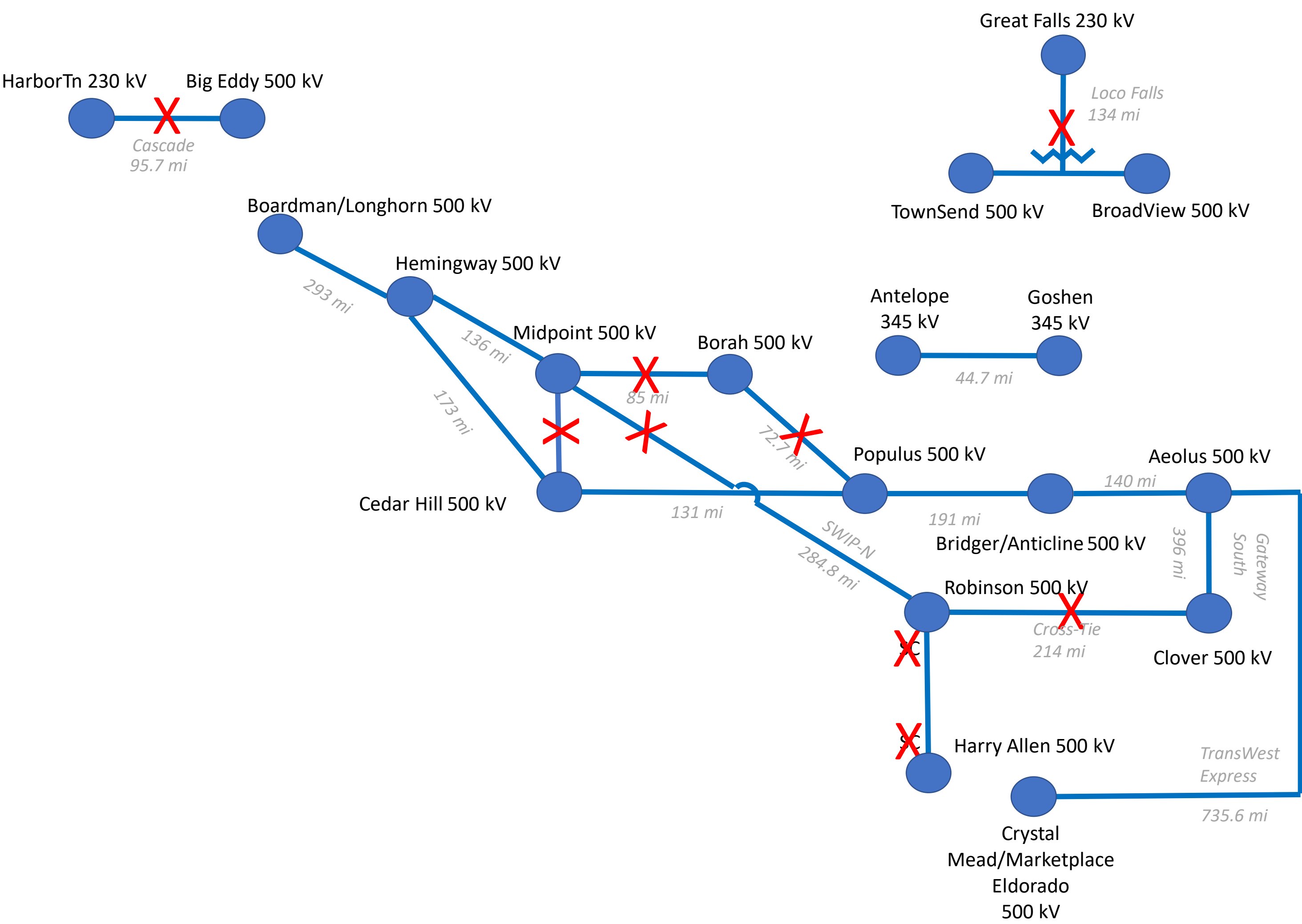
NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2H [H]	Gateway West (Pop - Ced - Hem) [E]	Gateway West (Pop - Bor - Mid - Hem) [Mid - Ced]	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-A	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X	X				X	X		X	X

RC31b_03



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

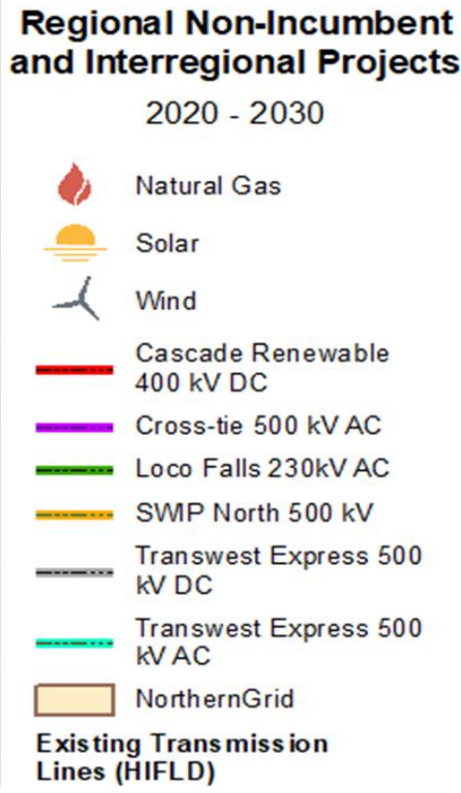
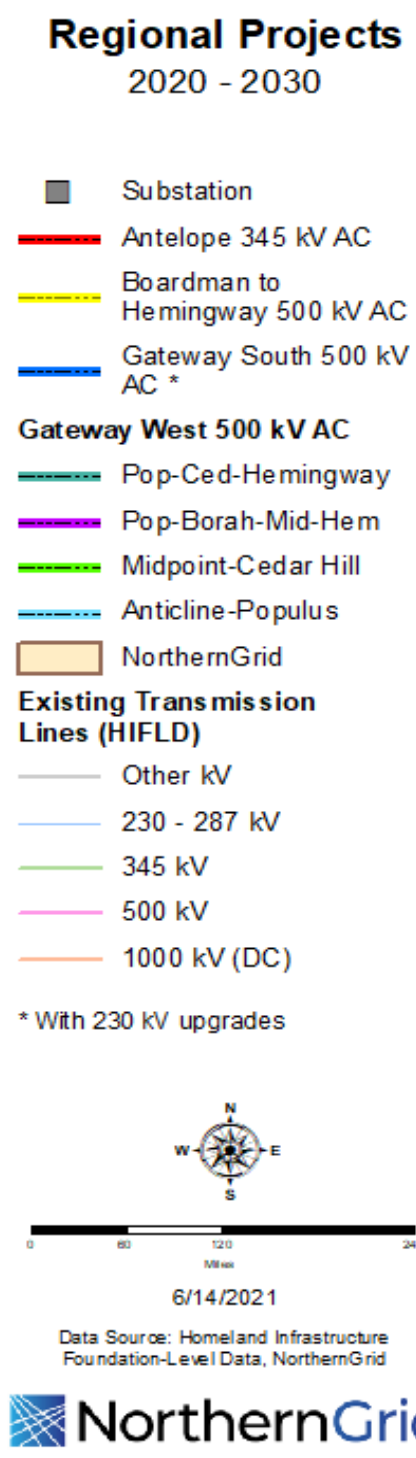
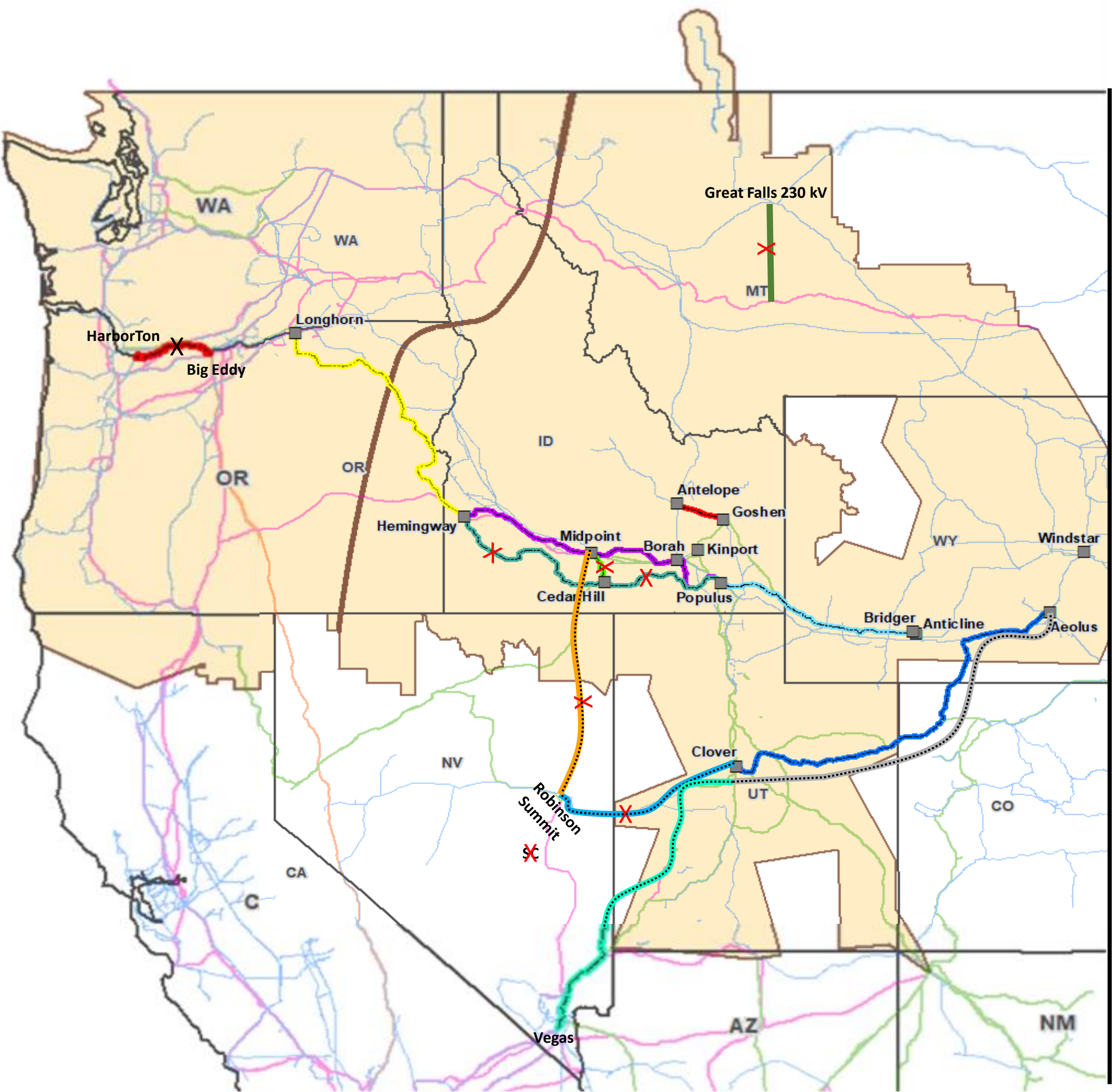
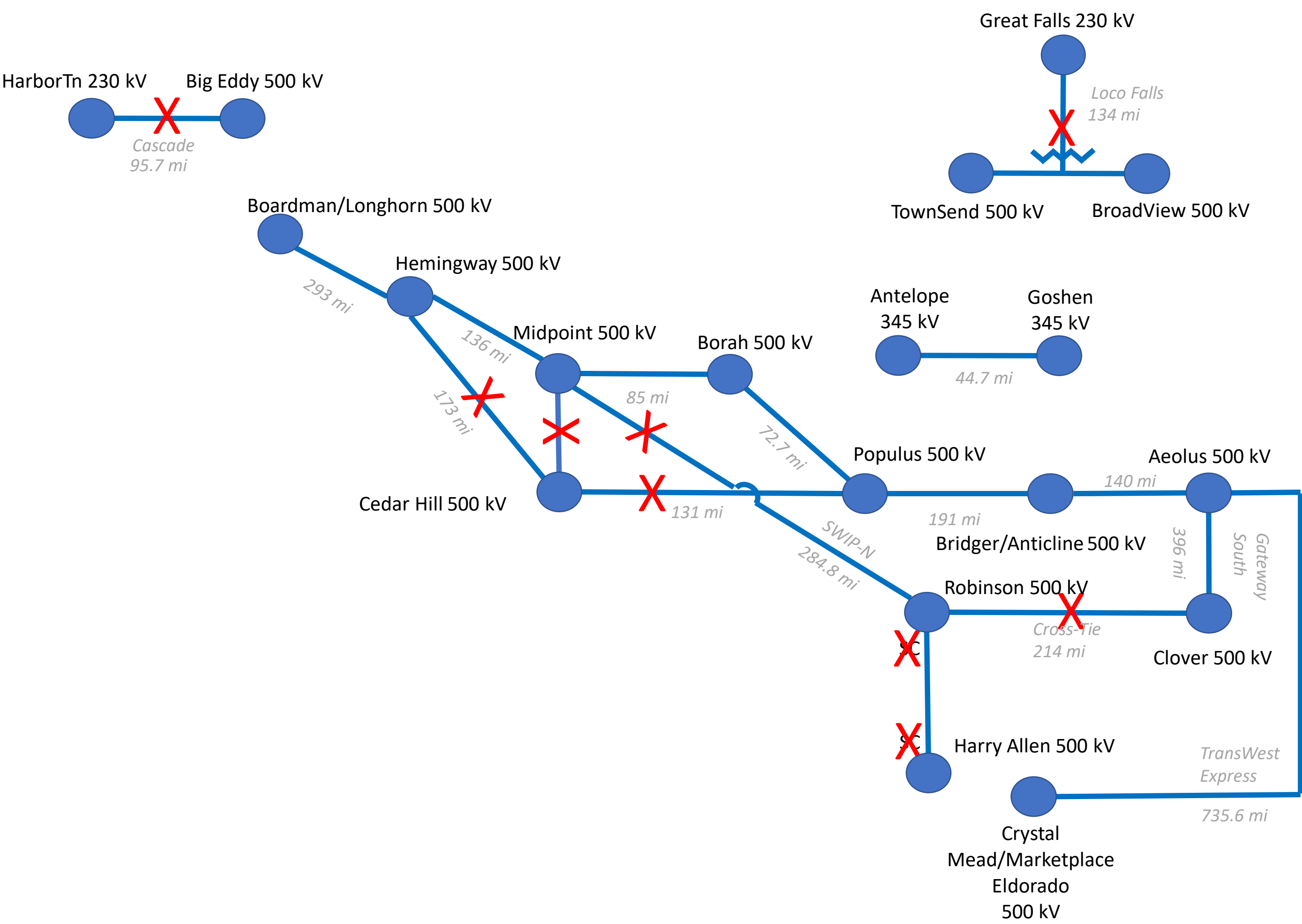
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-Tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X	X		X	X

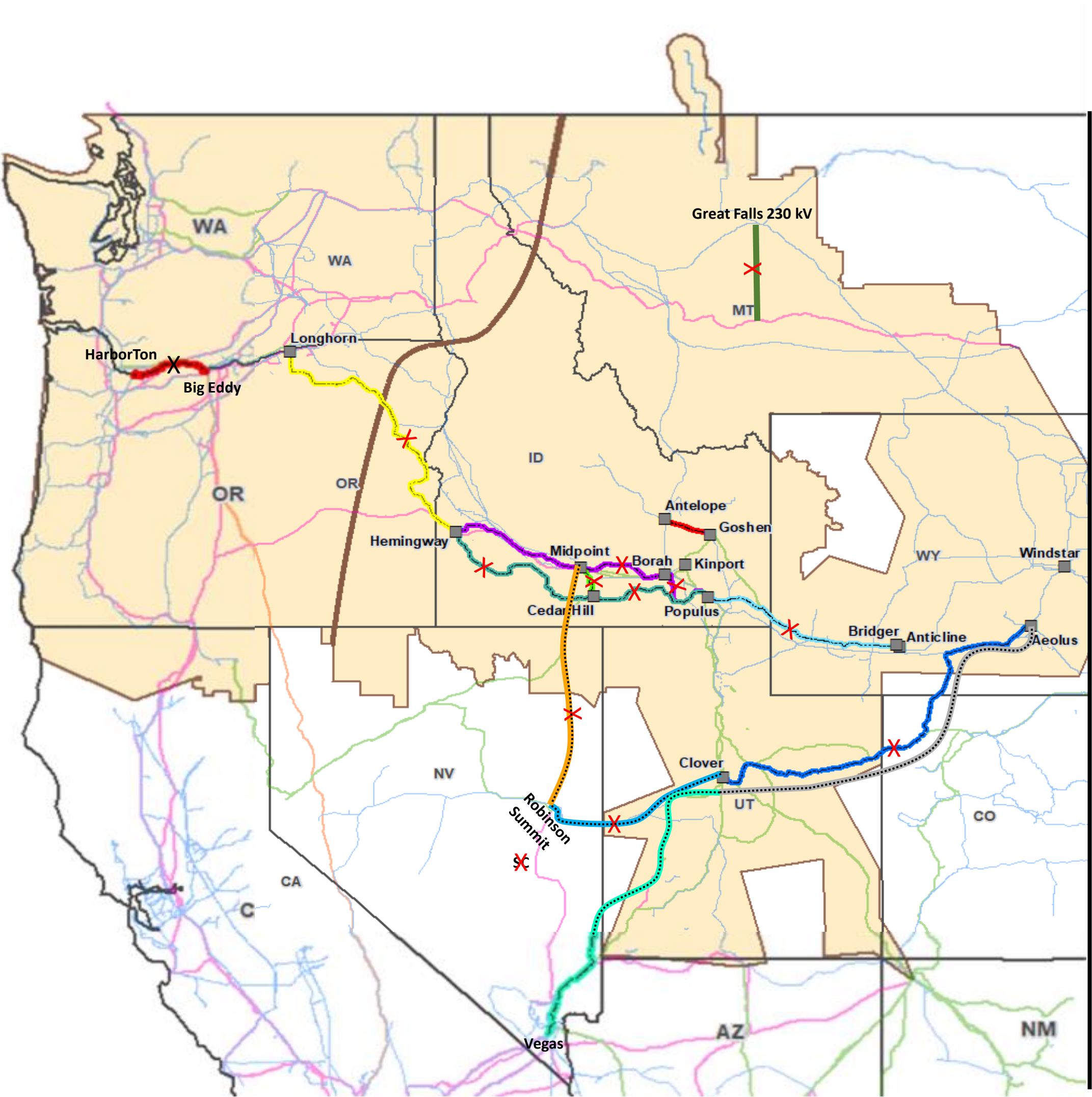
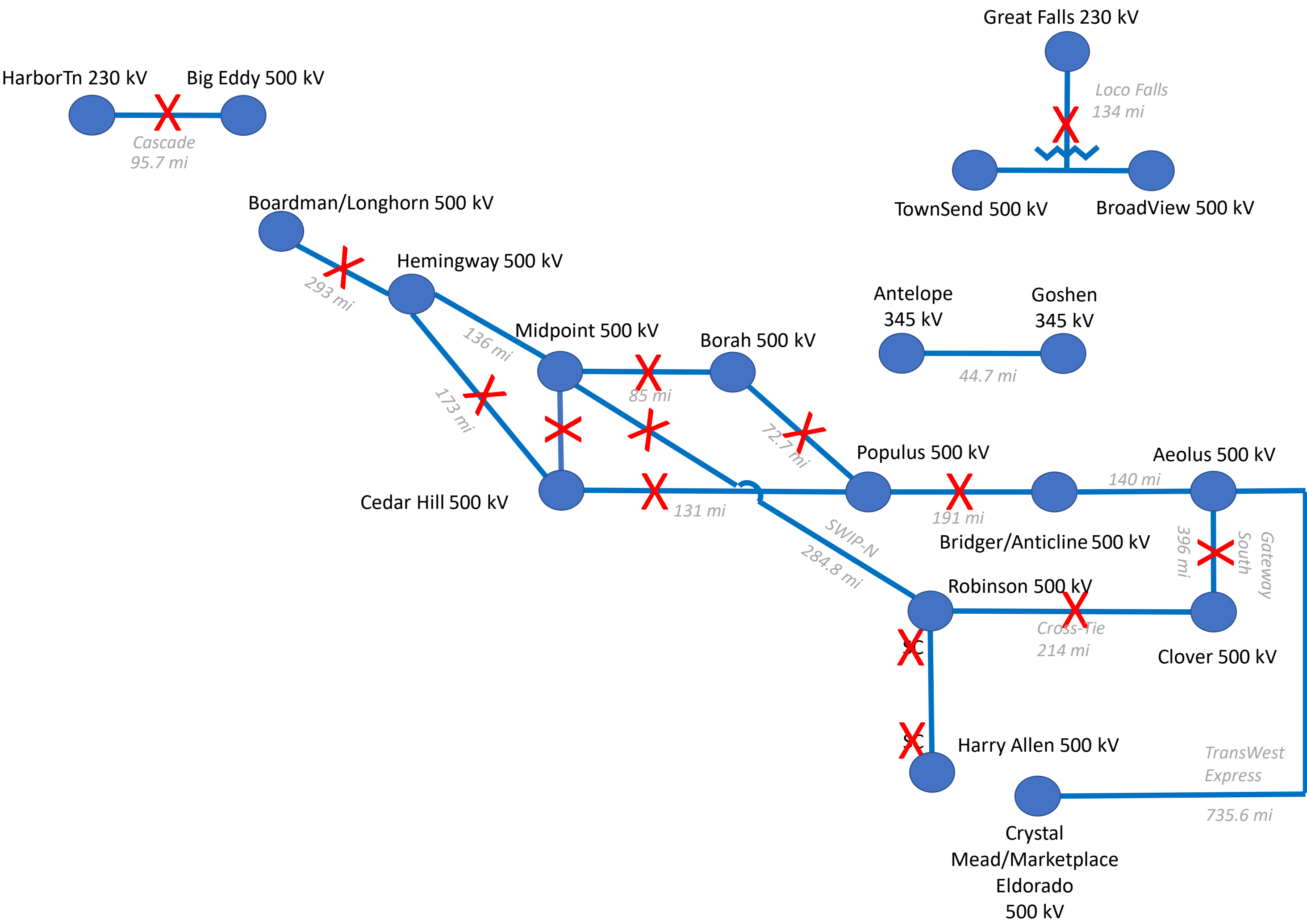
RC31b_05



Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
XX	XX	XX	XX	XX		XX	XX	X		XX	X

RC31c



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

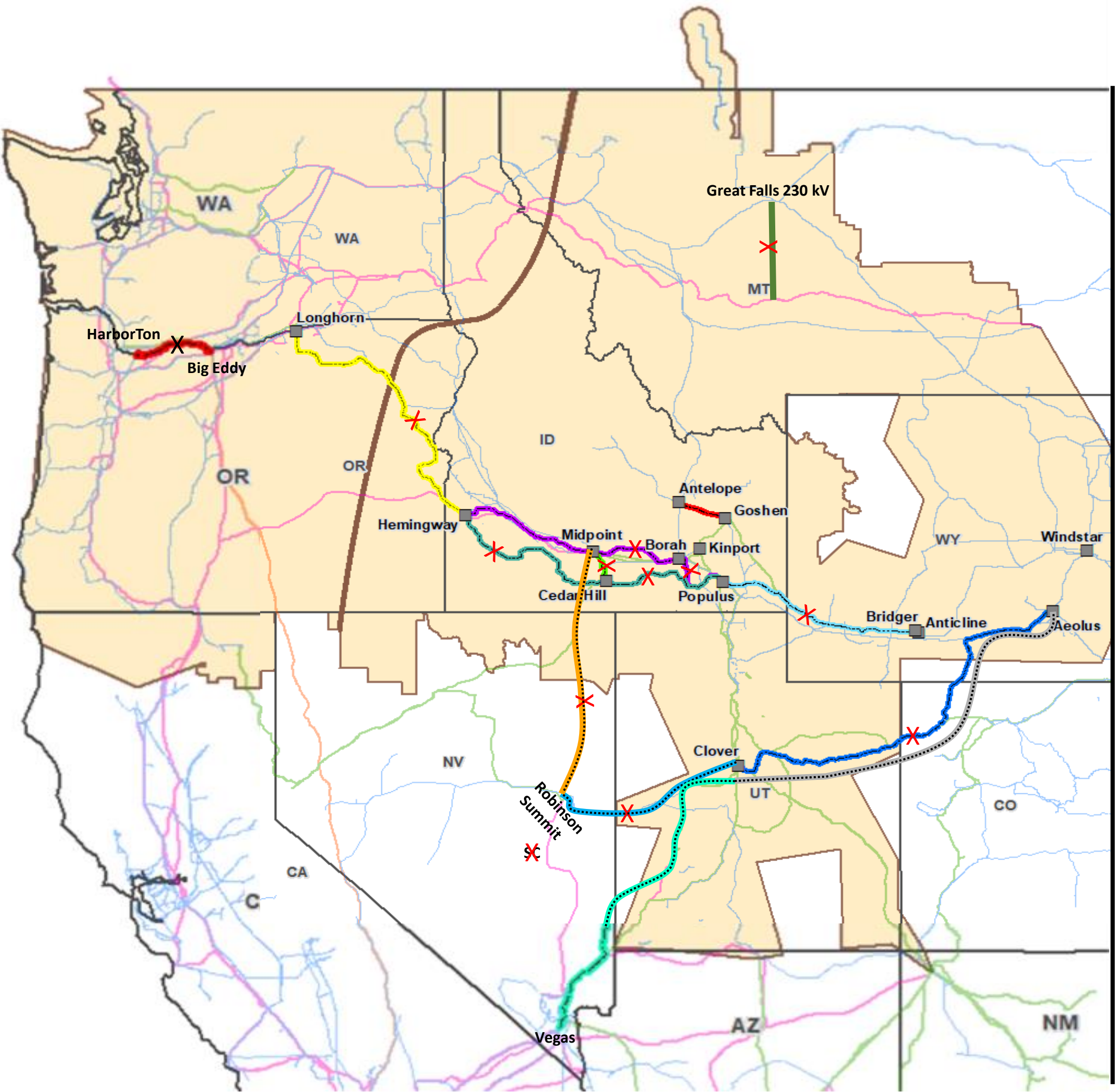
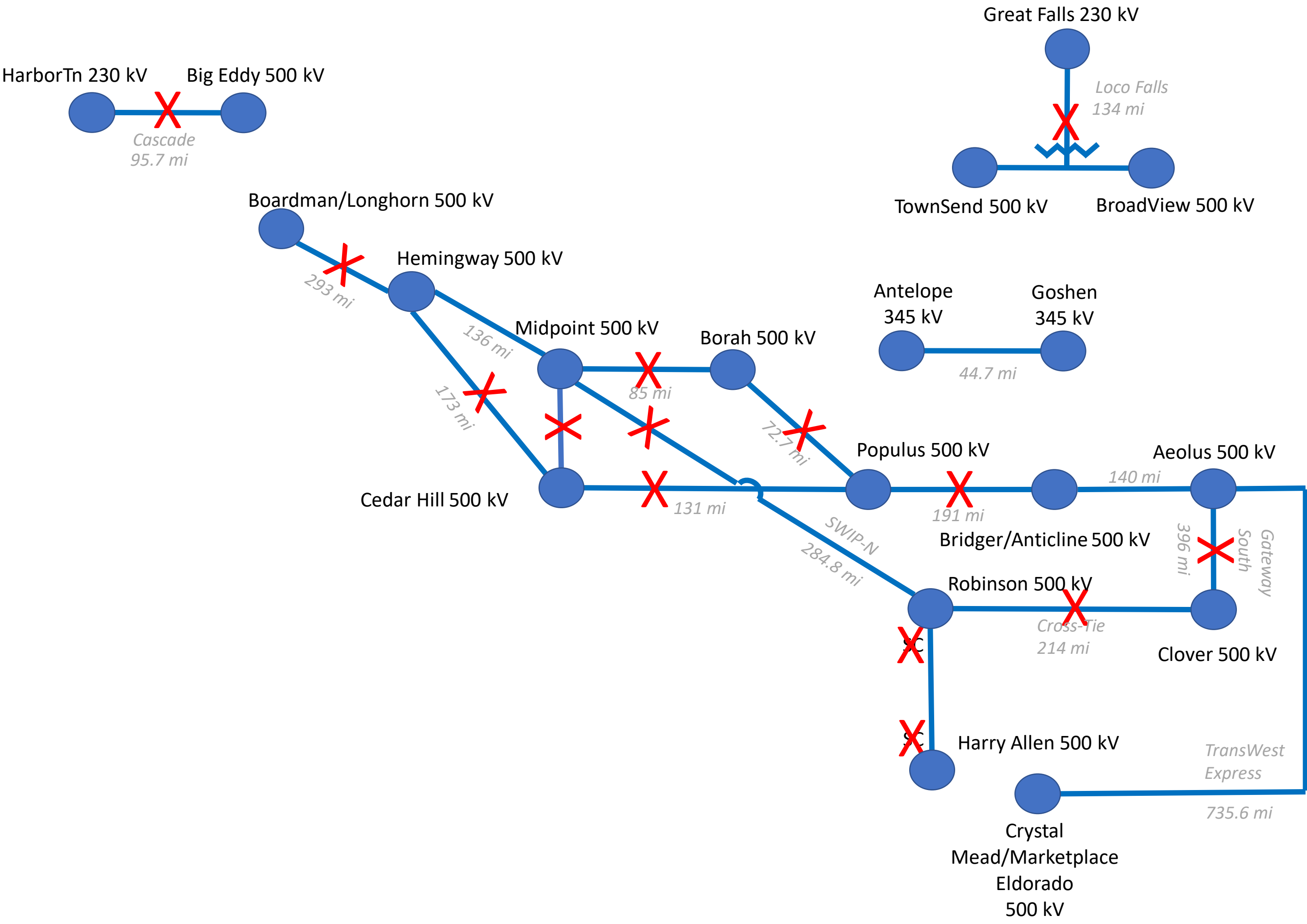
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
XX	XX	XX	XX	XX		XX	XX	XX		XX	XX

RC31c_G



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

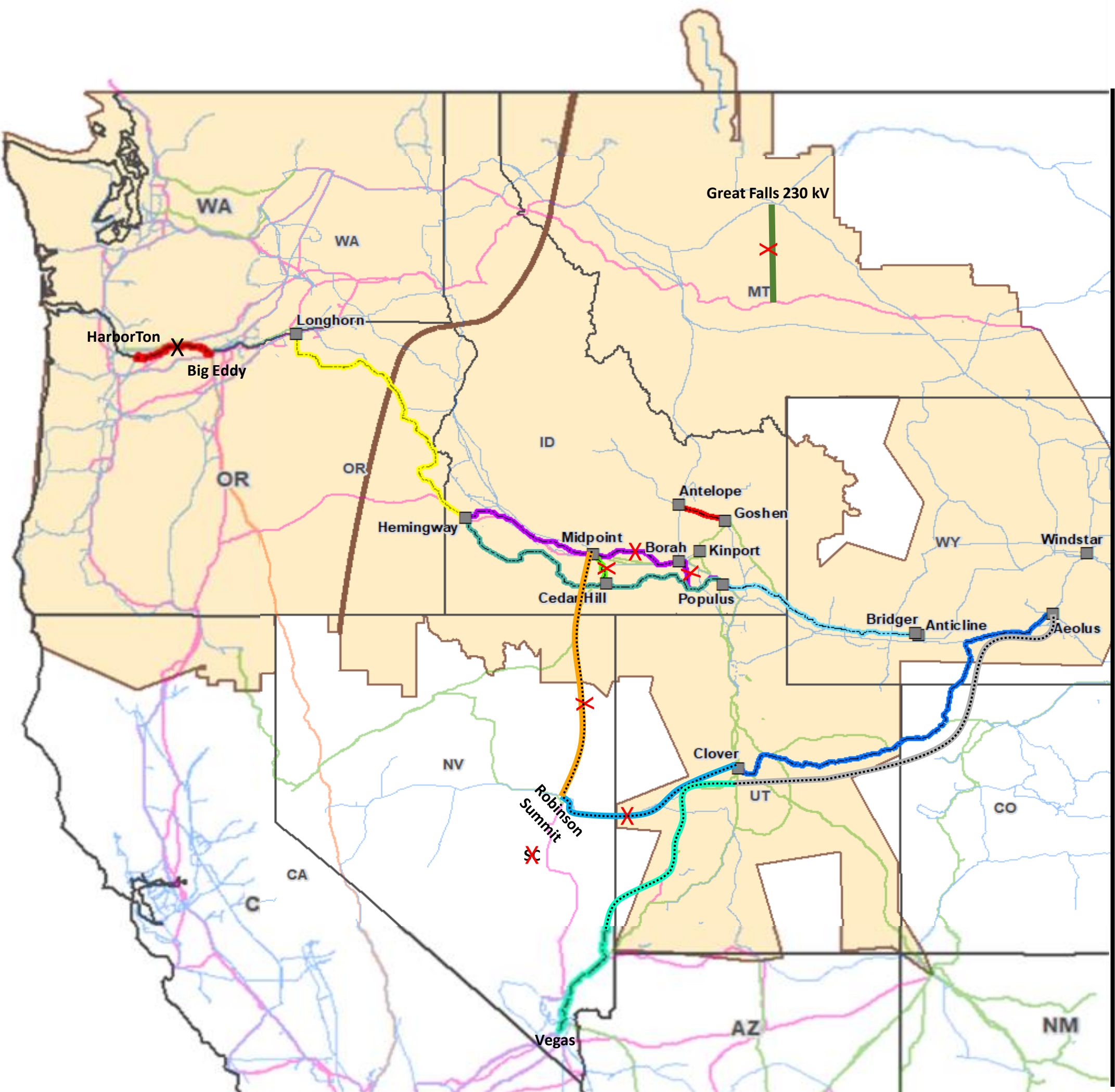
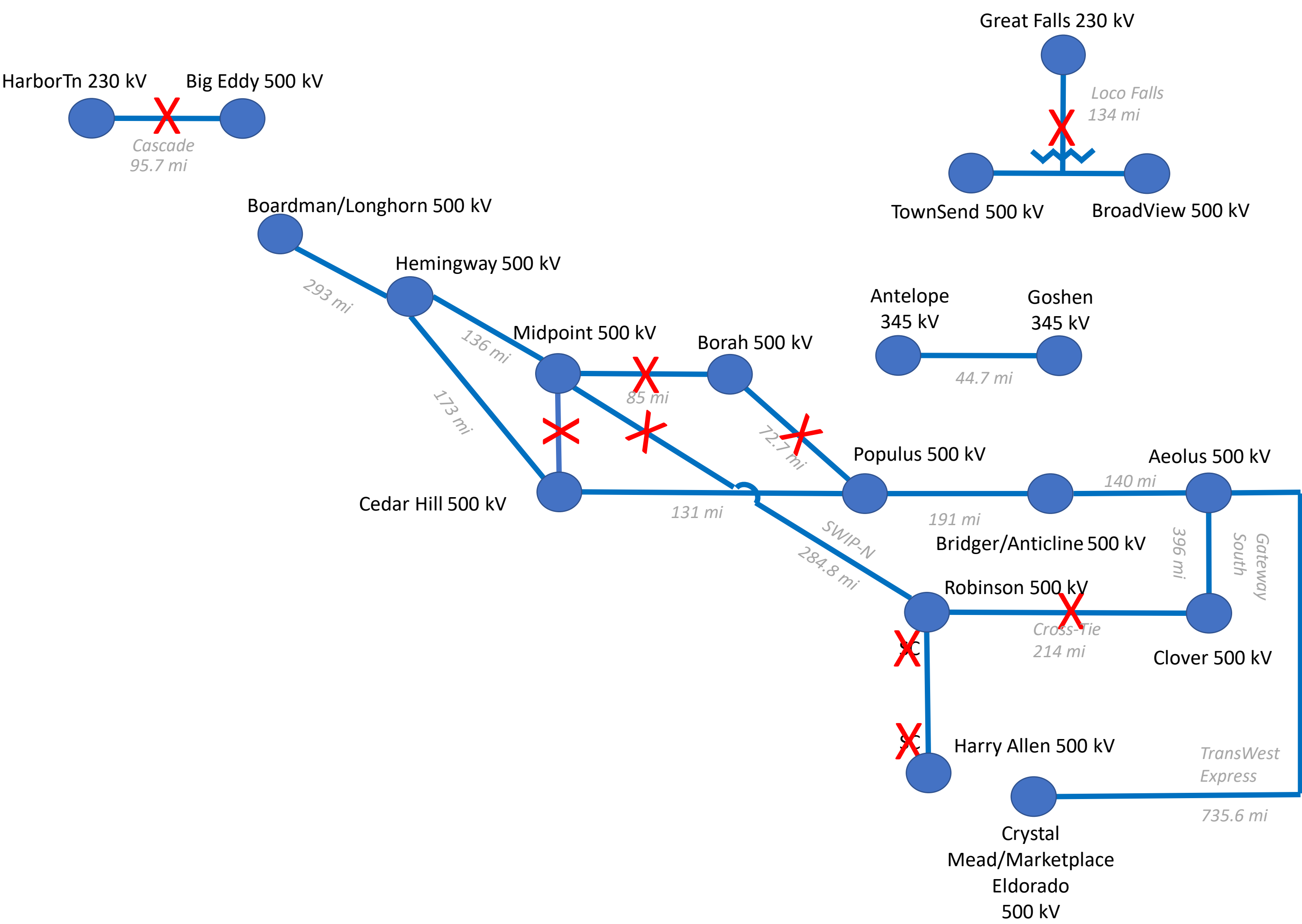
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-Tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2H [H]	Gateway West (Pop - Ced - Hem) [E]	Gateway West (Pop - Bor - Mid - Hem) [Mid - Ced]	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-A	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X	X				X	X		X	X

RC31d_03



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

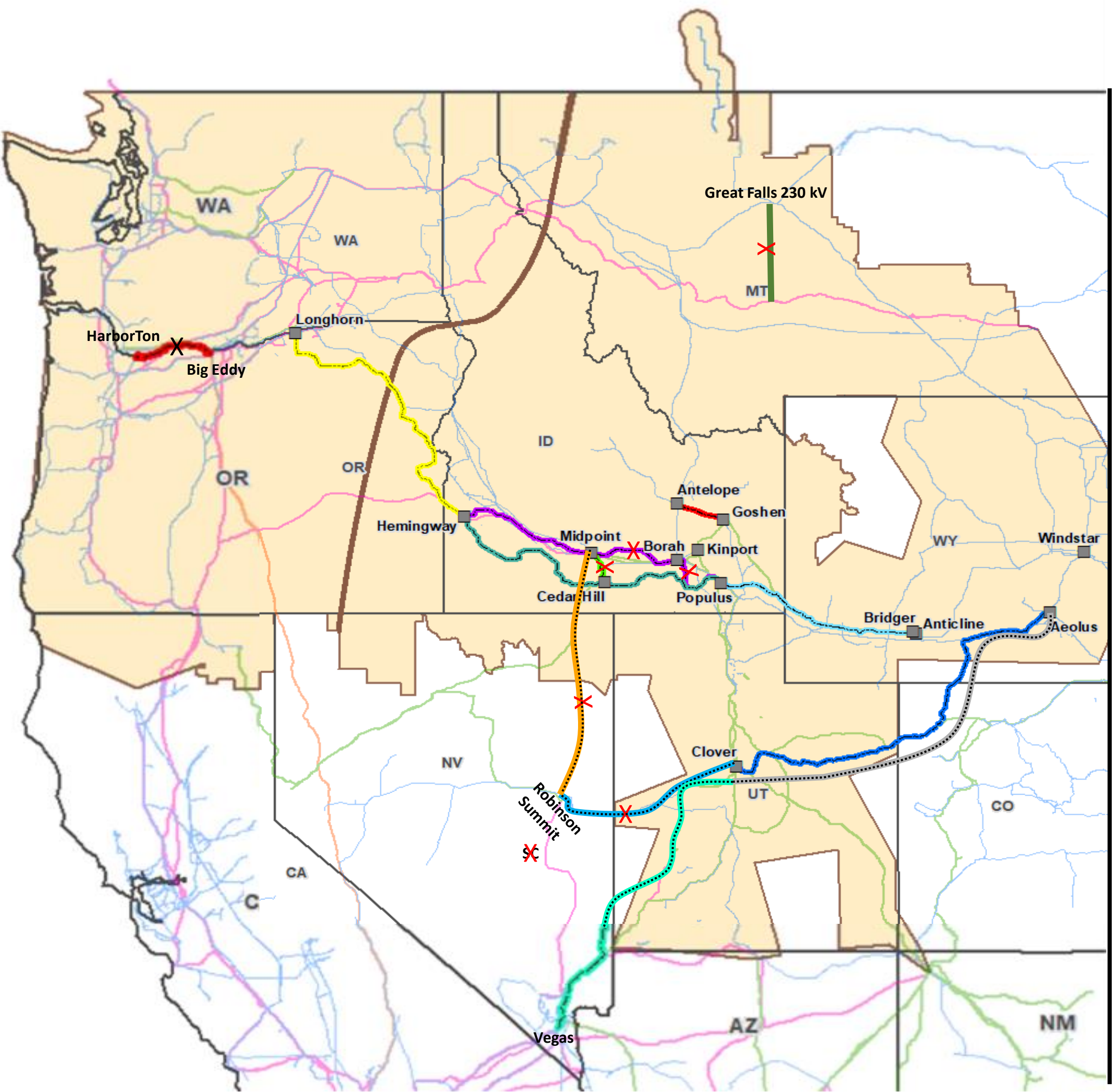
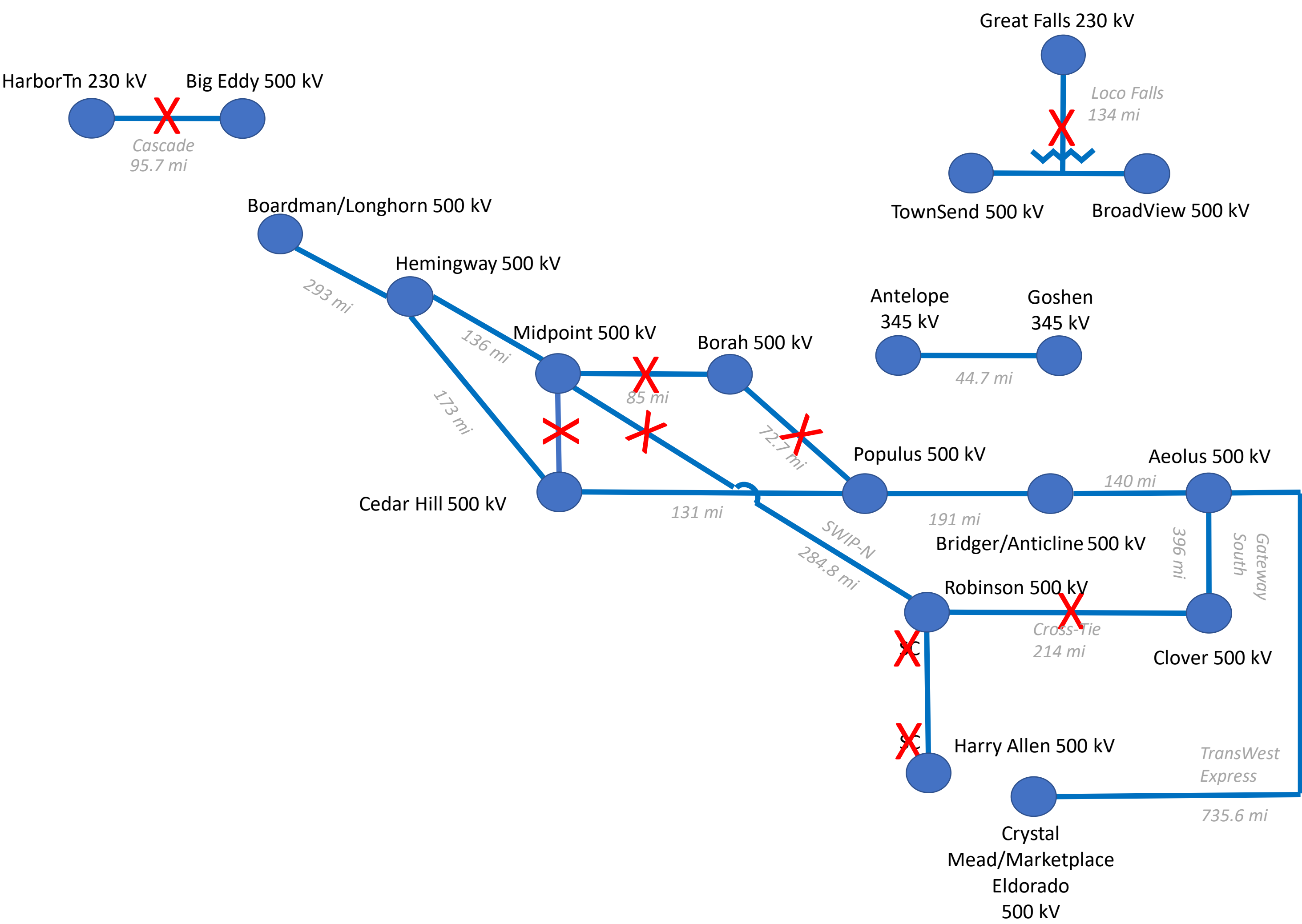
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-Tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2H [H]	Gateway West (Pop - Ced - Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X				X	X		X	X

RC31d_03_G



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

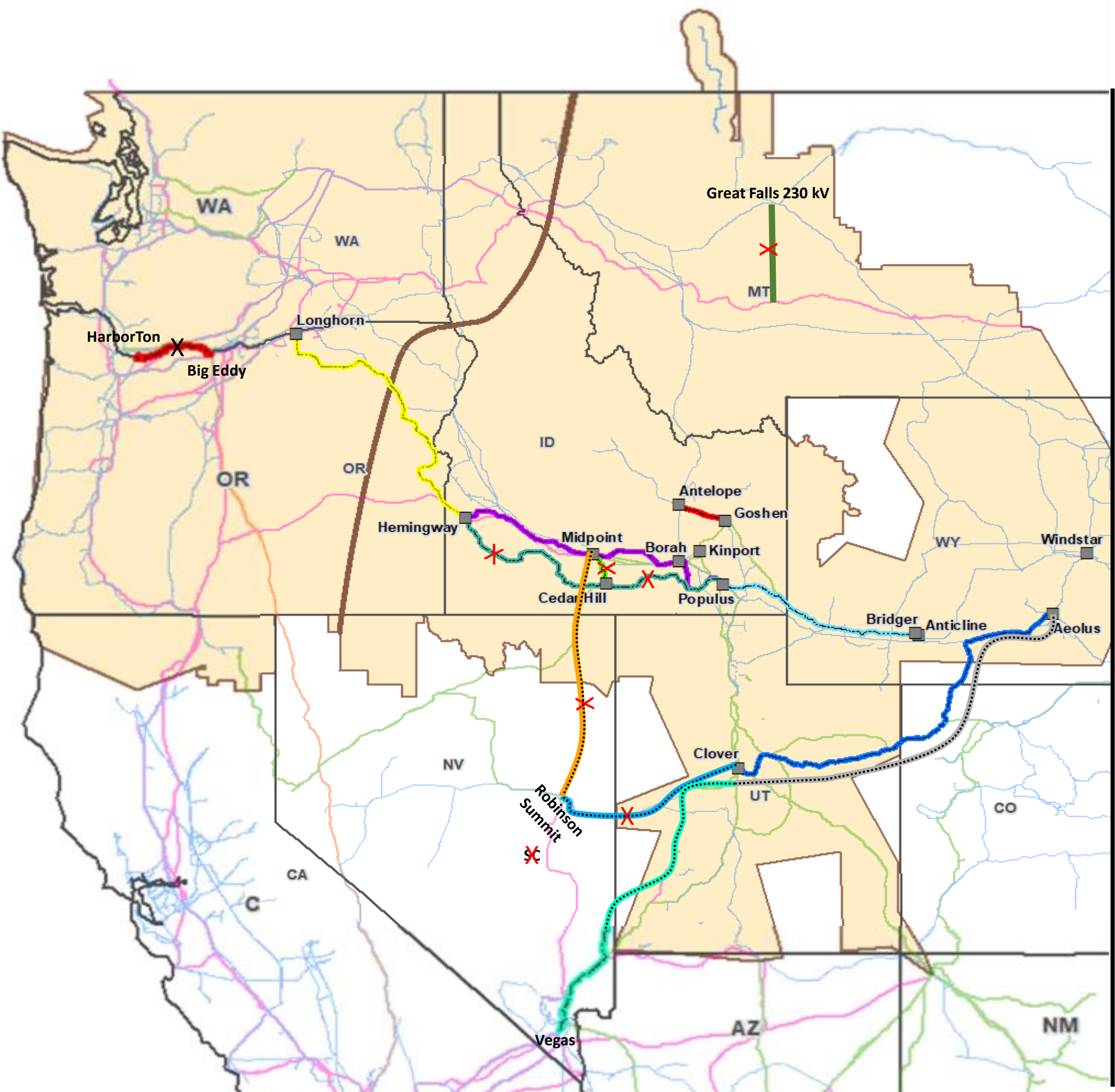
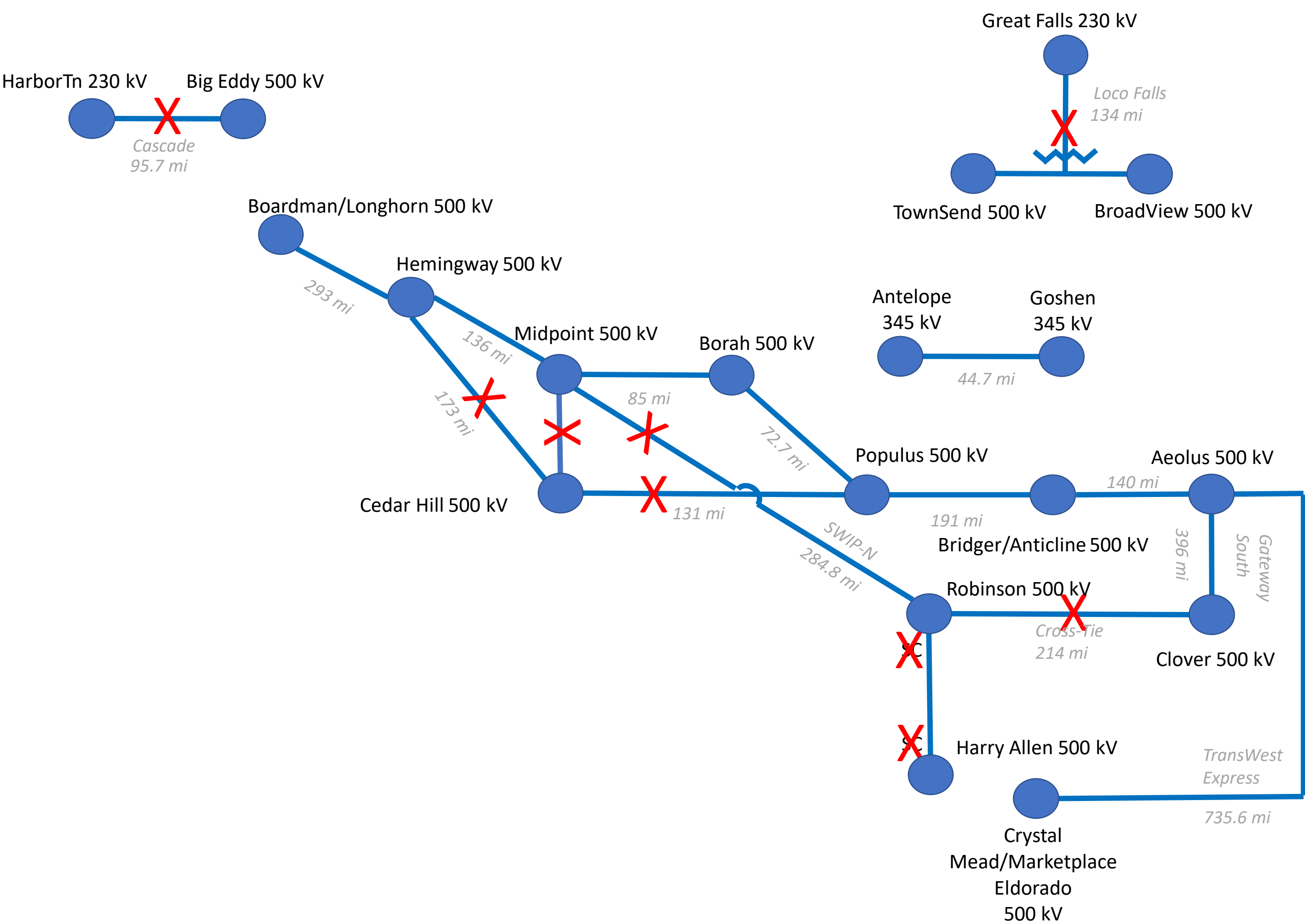
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X	X		X	X

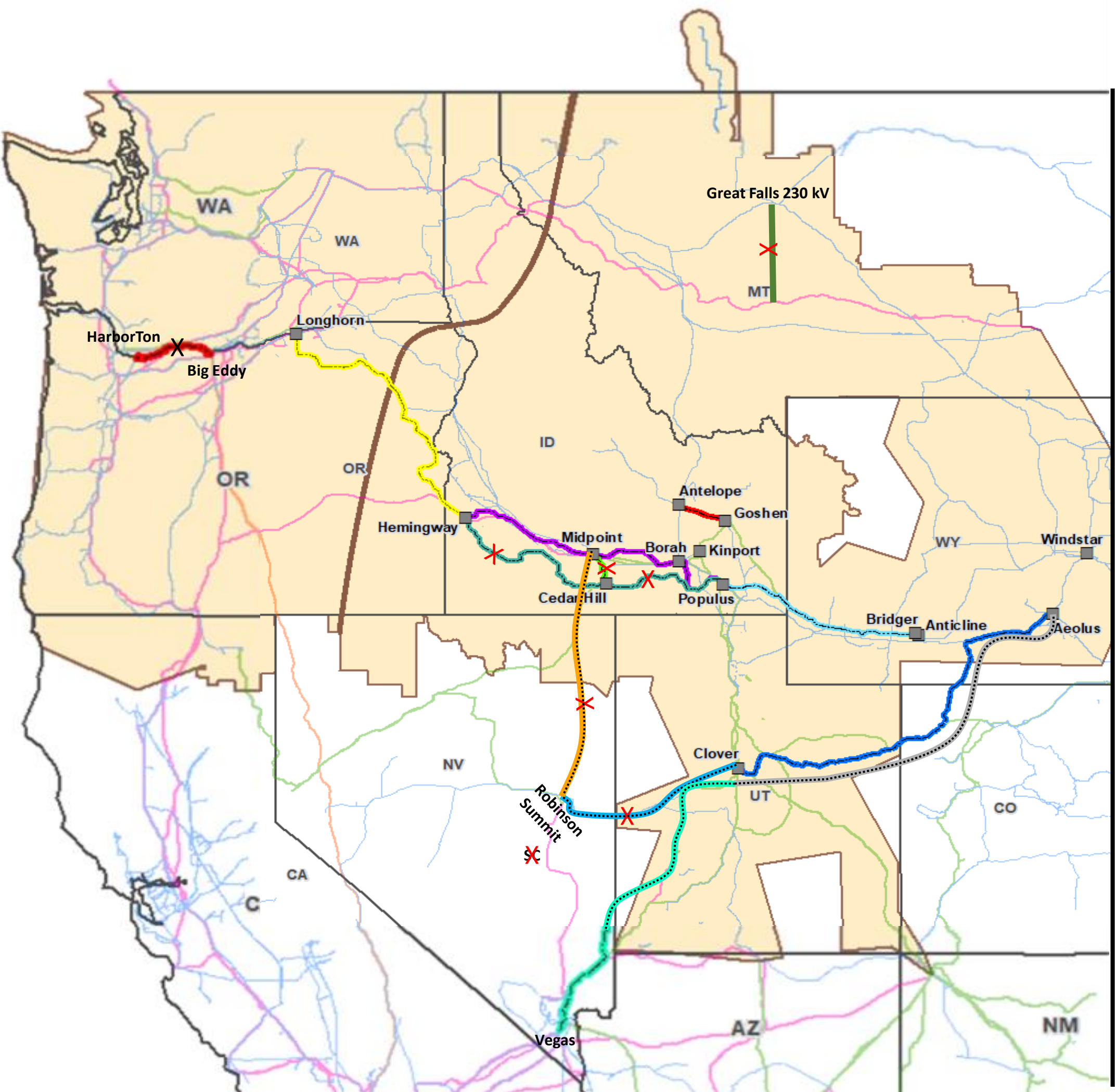
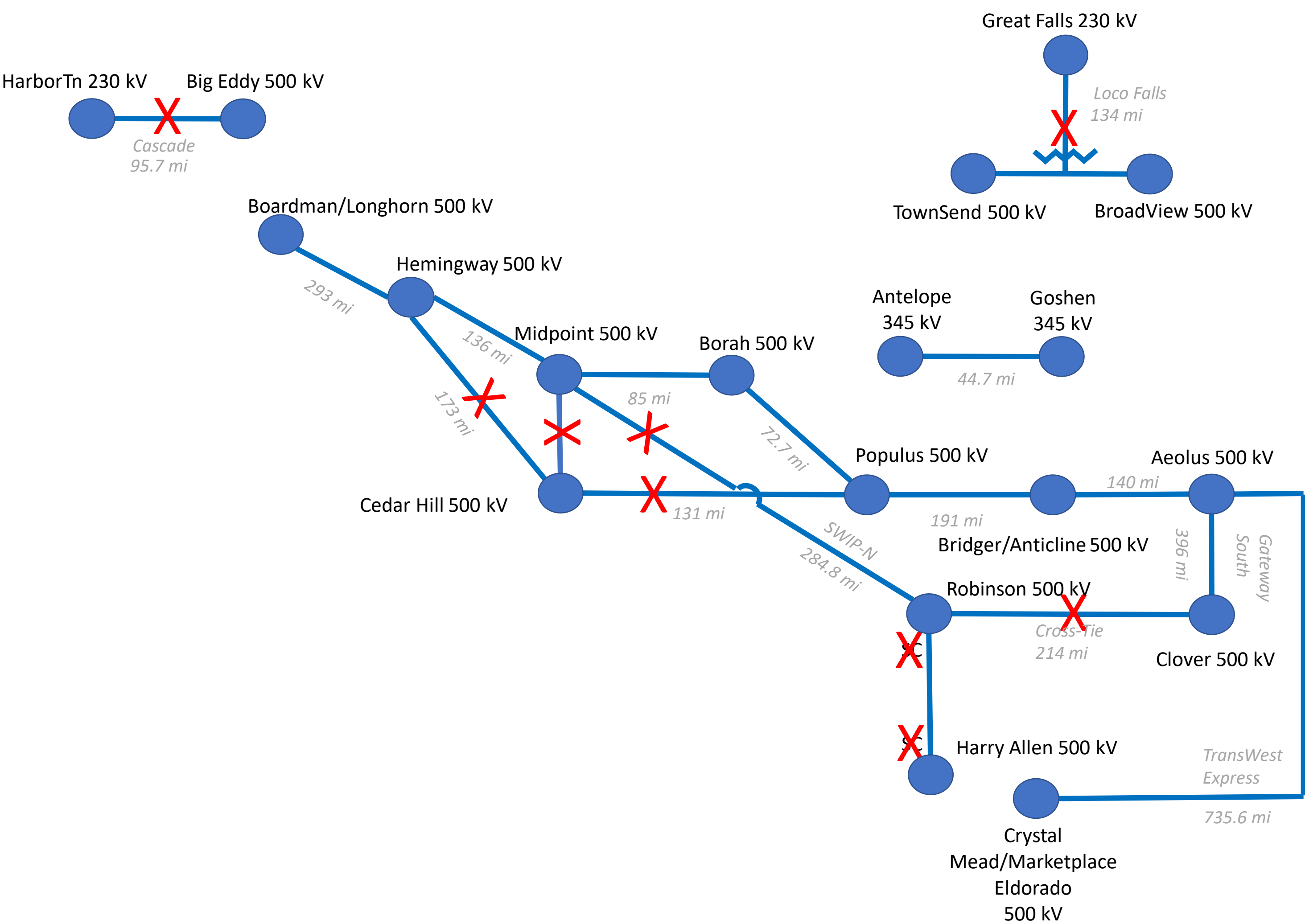
RC31d_05



Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X	X		X	X

RC31d_05_G



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

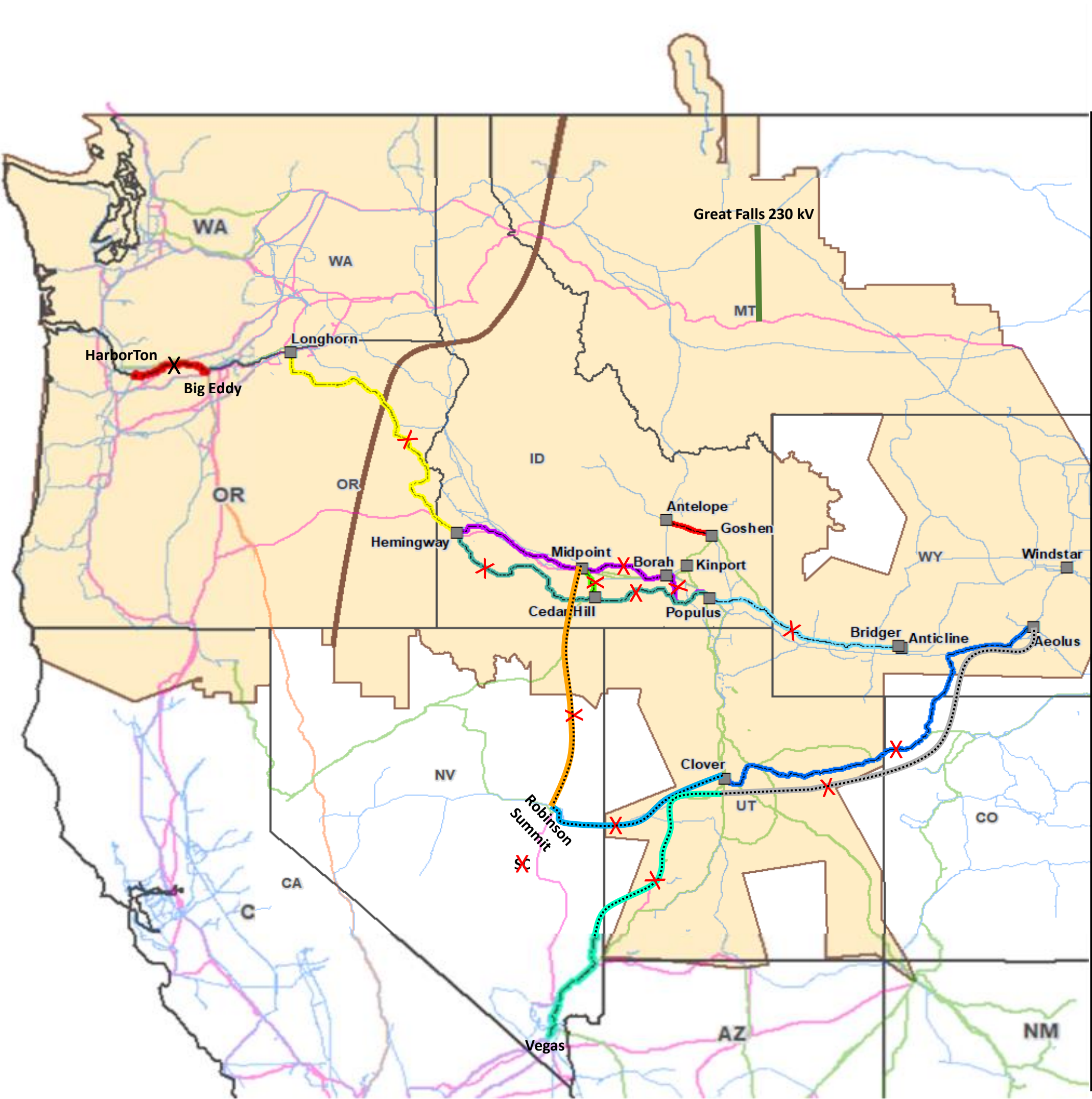
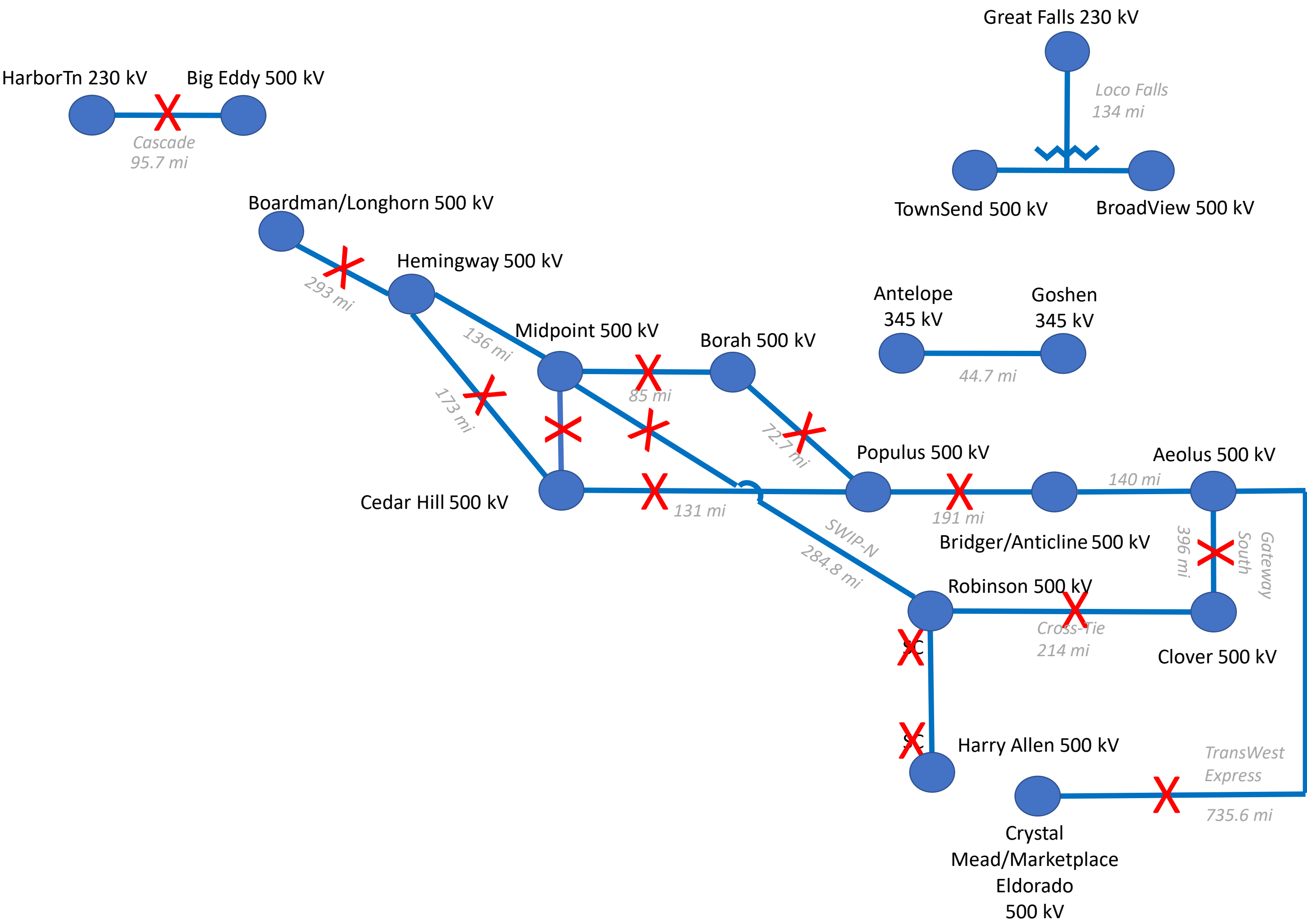
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X	X	X	X		X

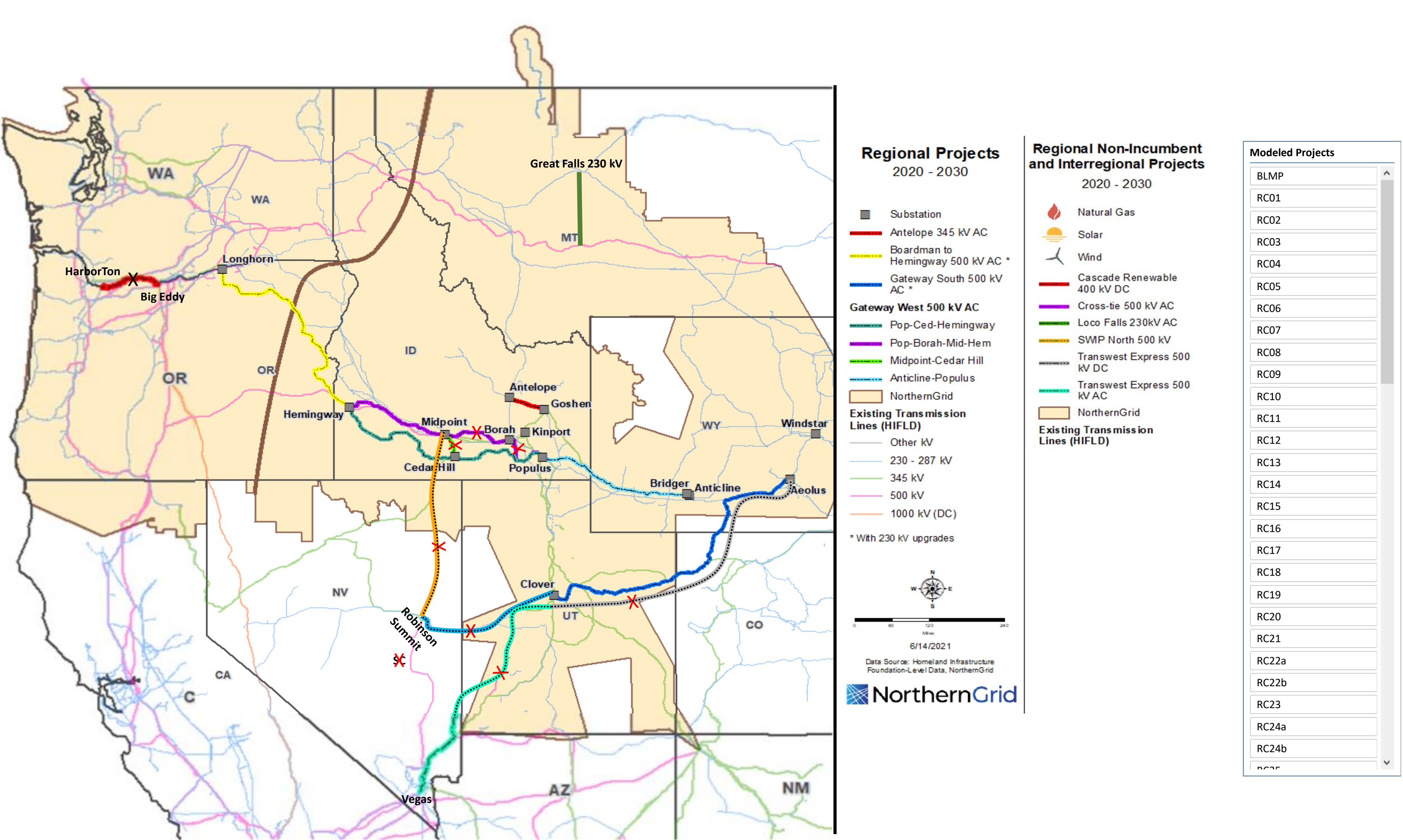
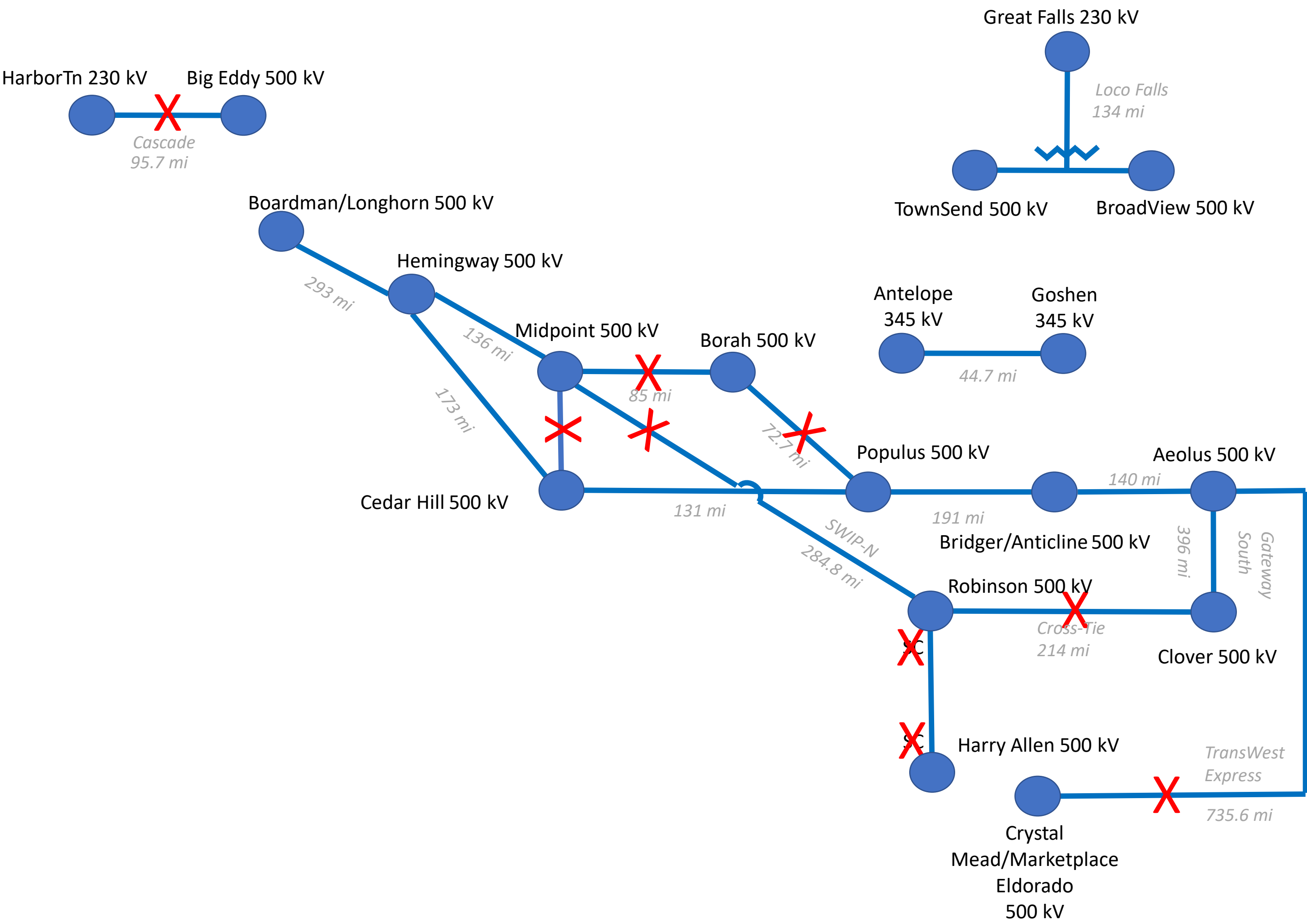
RC32



Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b
RC25

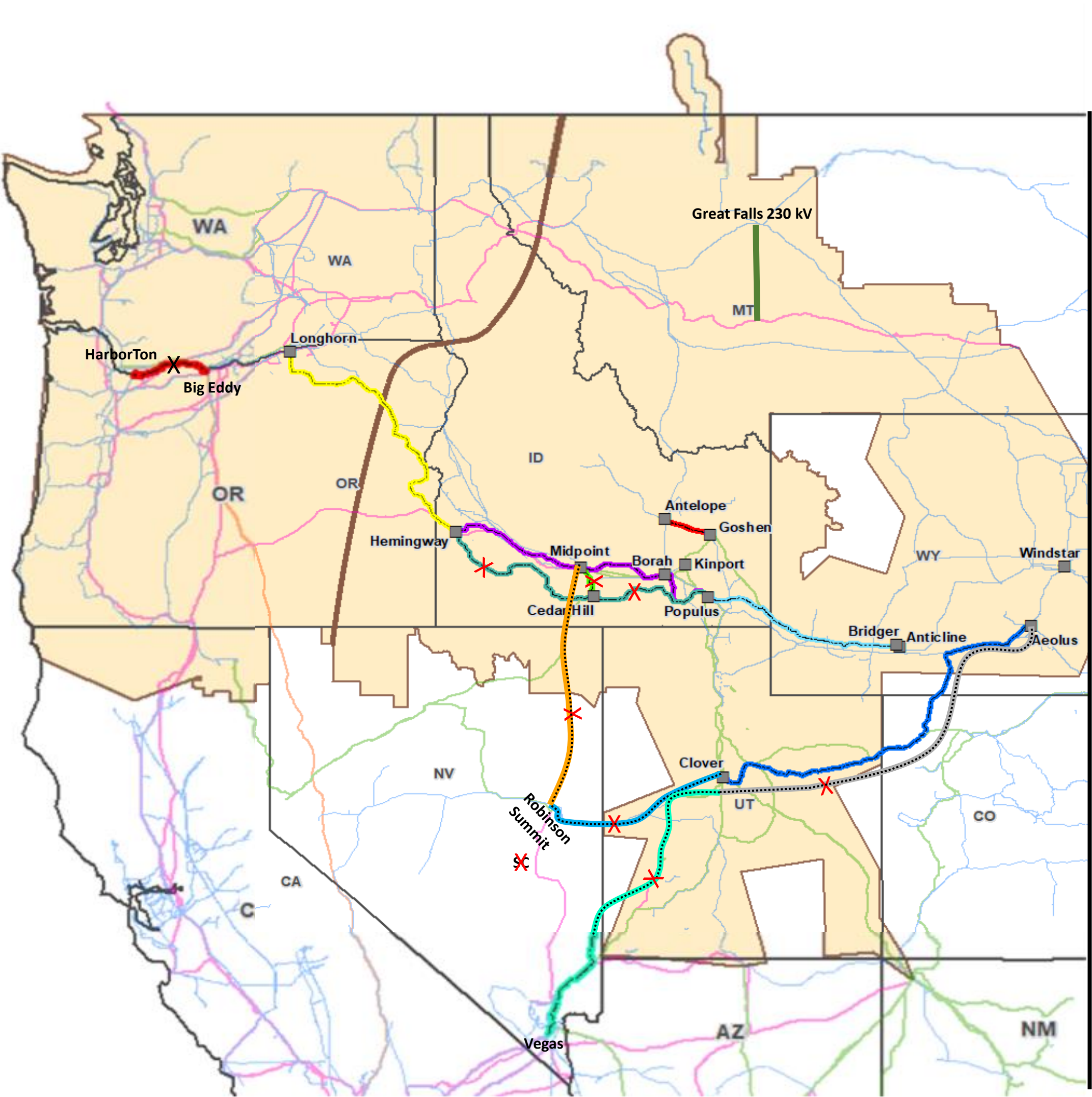
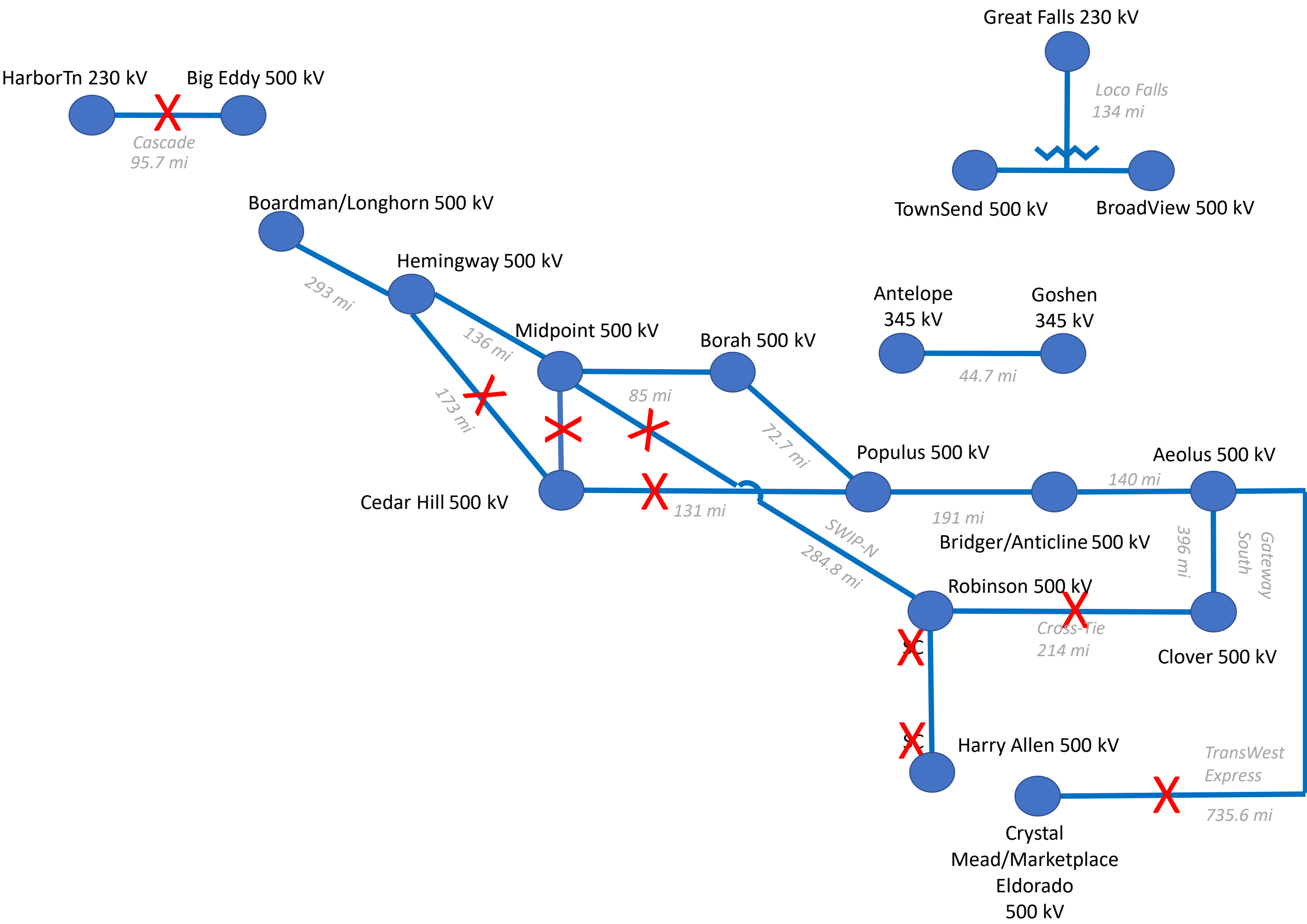
B2H [H]	Gateway West (Pop - Ced - Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X				X	X	X		X

RC33_03



B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X	X	X		X

RC33_05



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

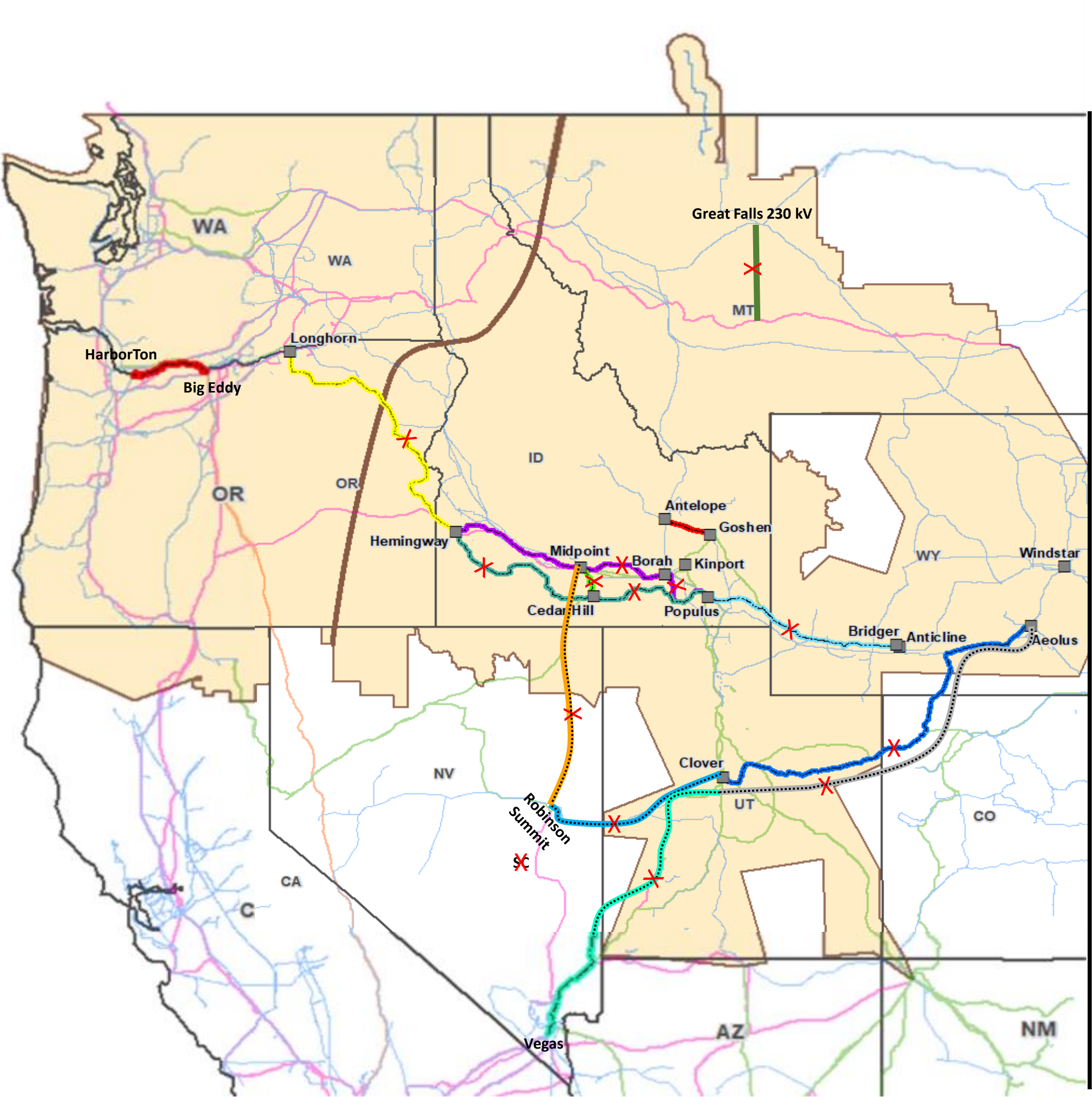
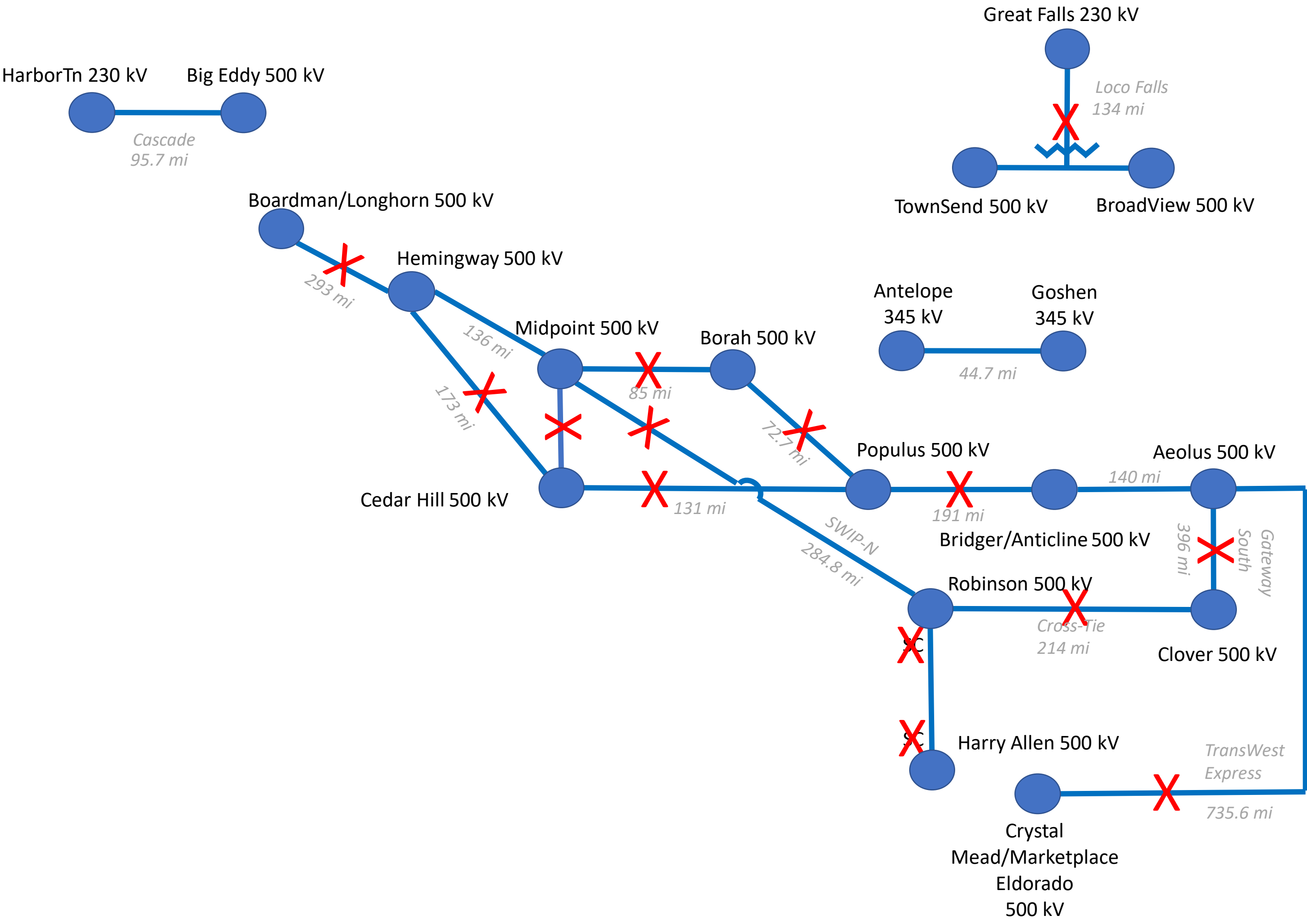
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-Tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWIP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X	X	X	X	X	

RC34a

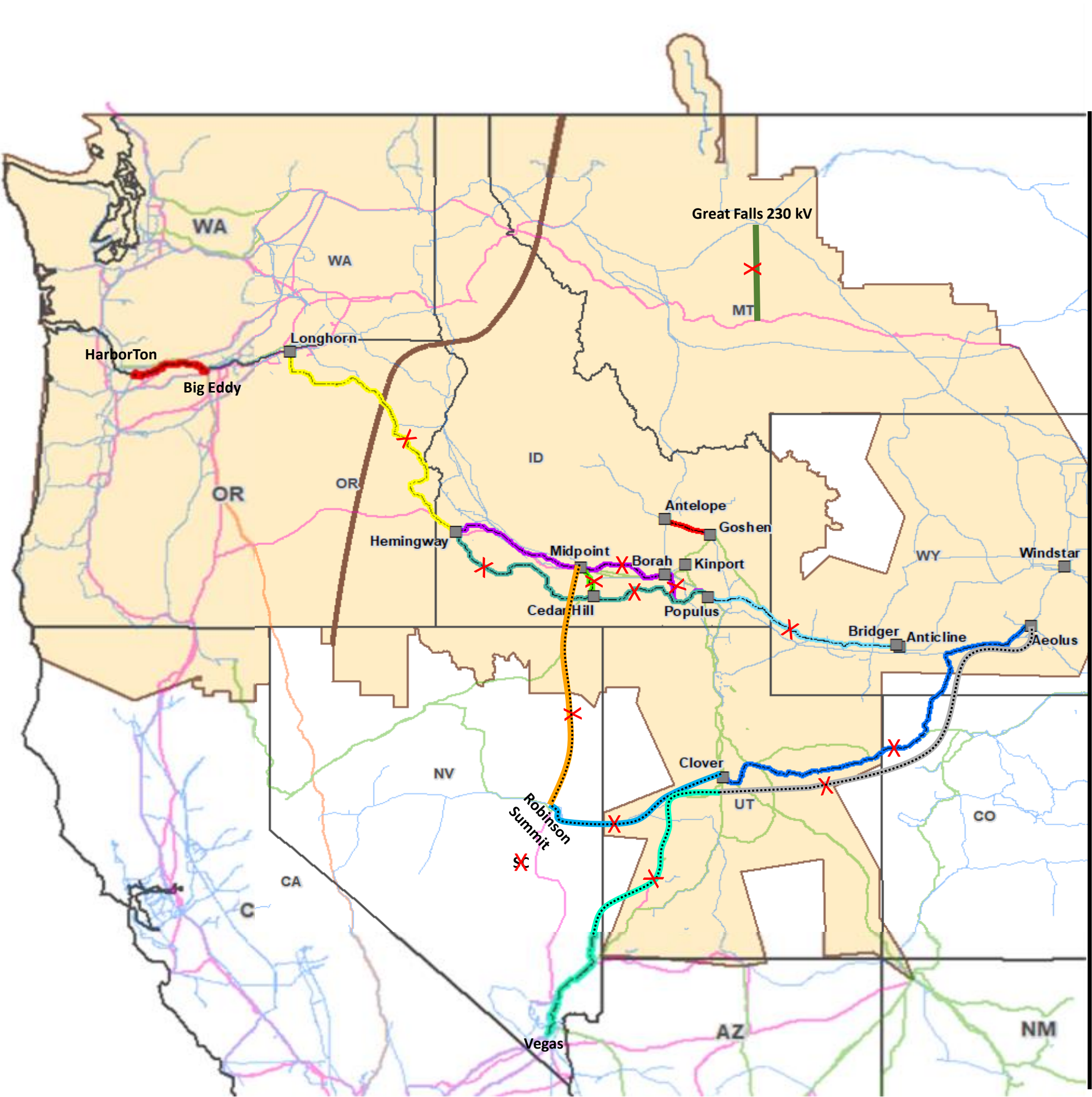
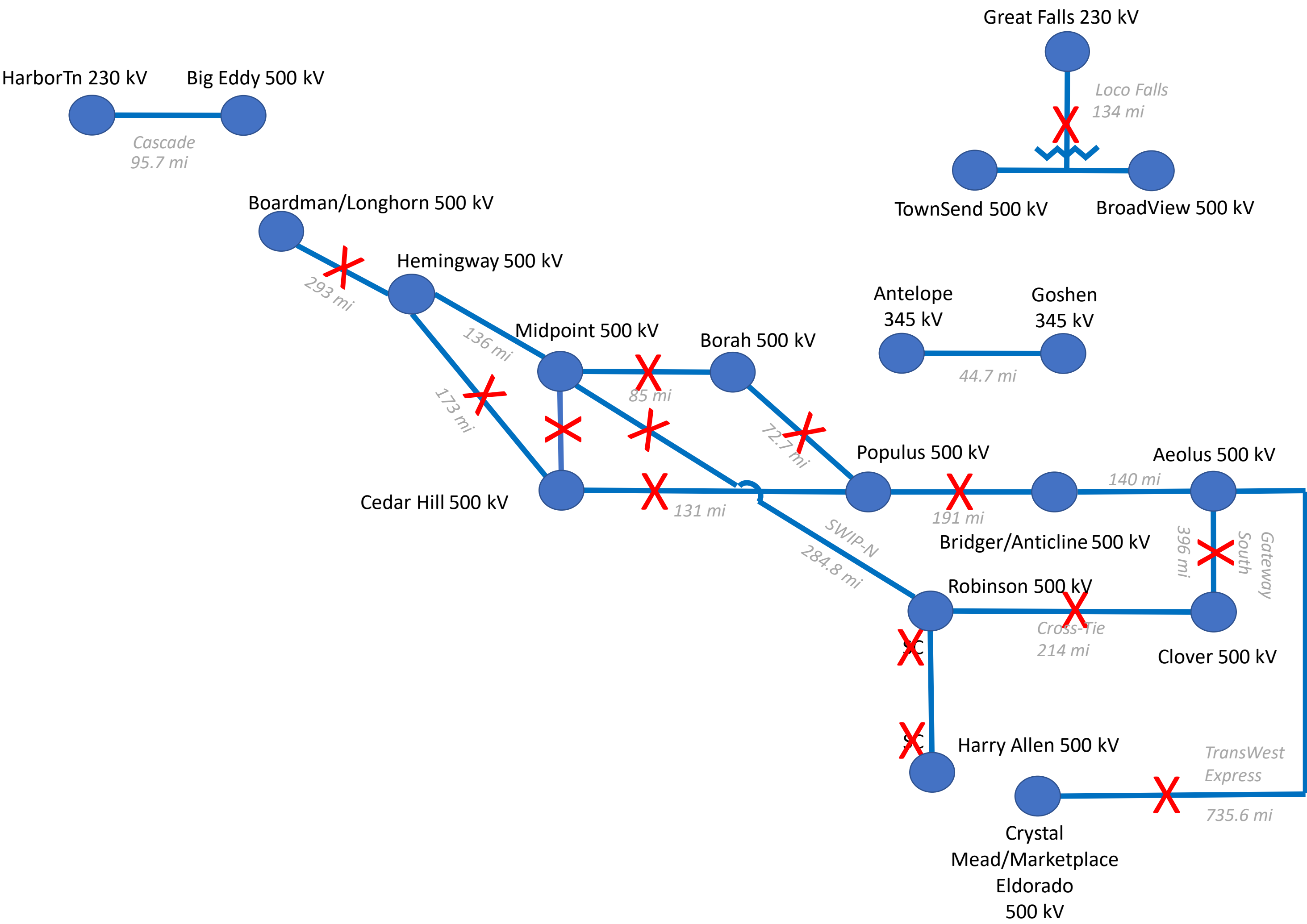


- Regional Non-Incumbent and Interregional Projects 2020 - 2030**
- Natural Gas
 - Solar
 - Wind
 - Cascade Renewable 400 kV DC
 - Cross-tie 500 kV AC
 - Loco Falls 230kV AC
 - SWIP North 500 kV
 - Transwest Express 500 kV DC
 - Transwest Express 500 kV AC
 - NorthernGrid
 - Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X	X	X	X	X	

RC34b



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

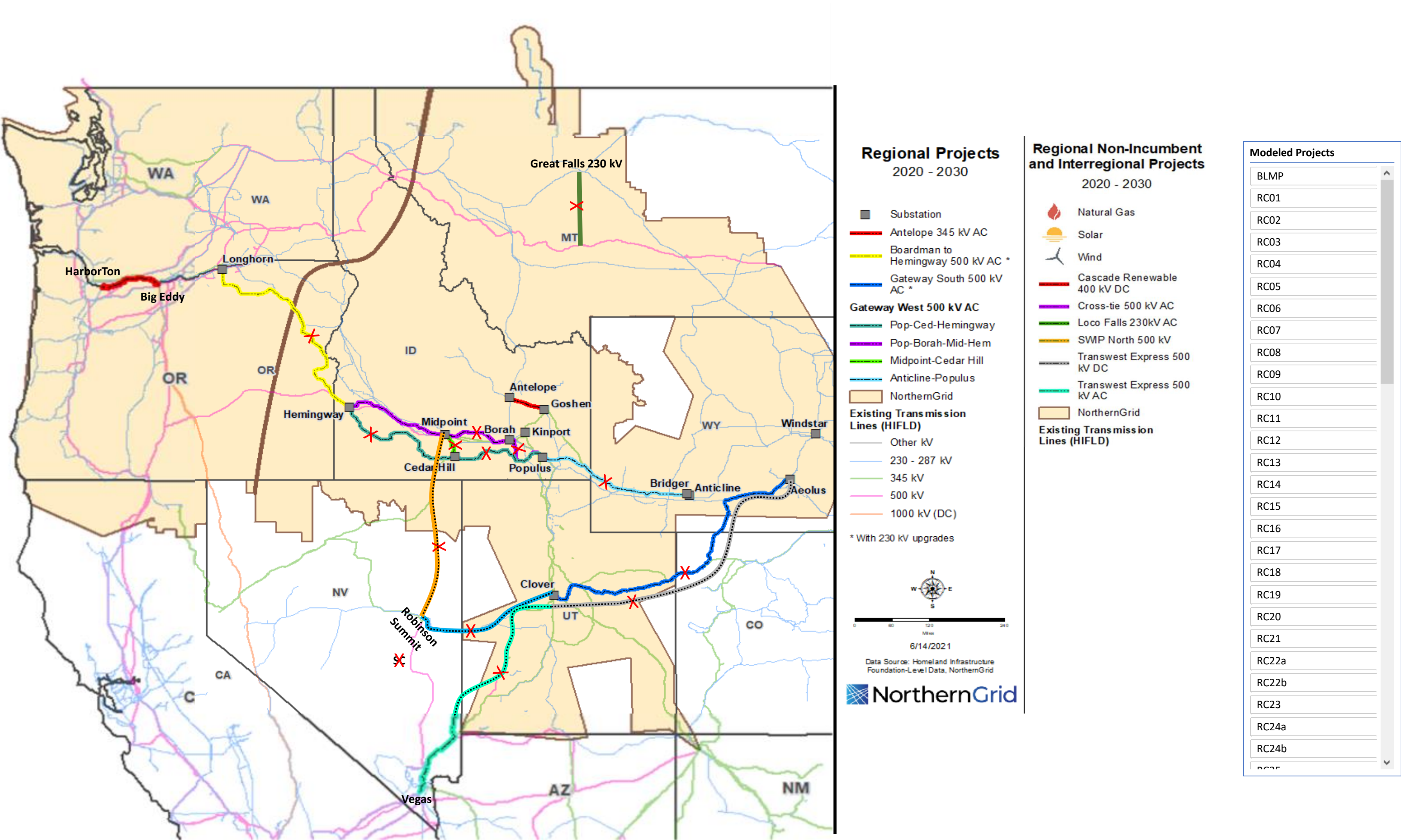
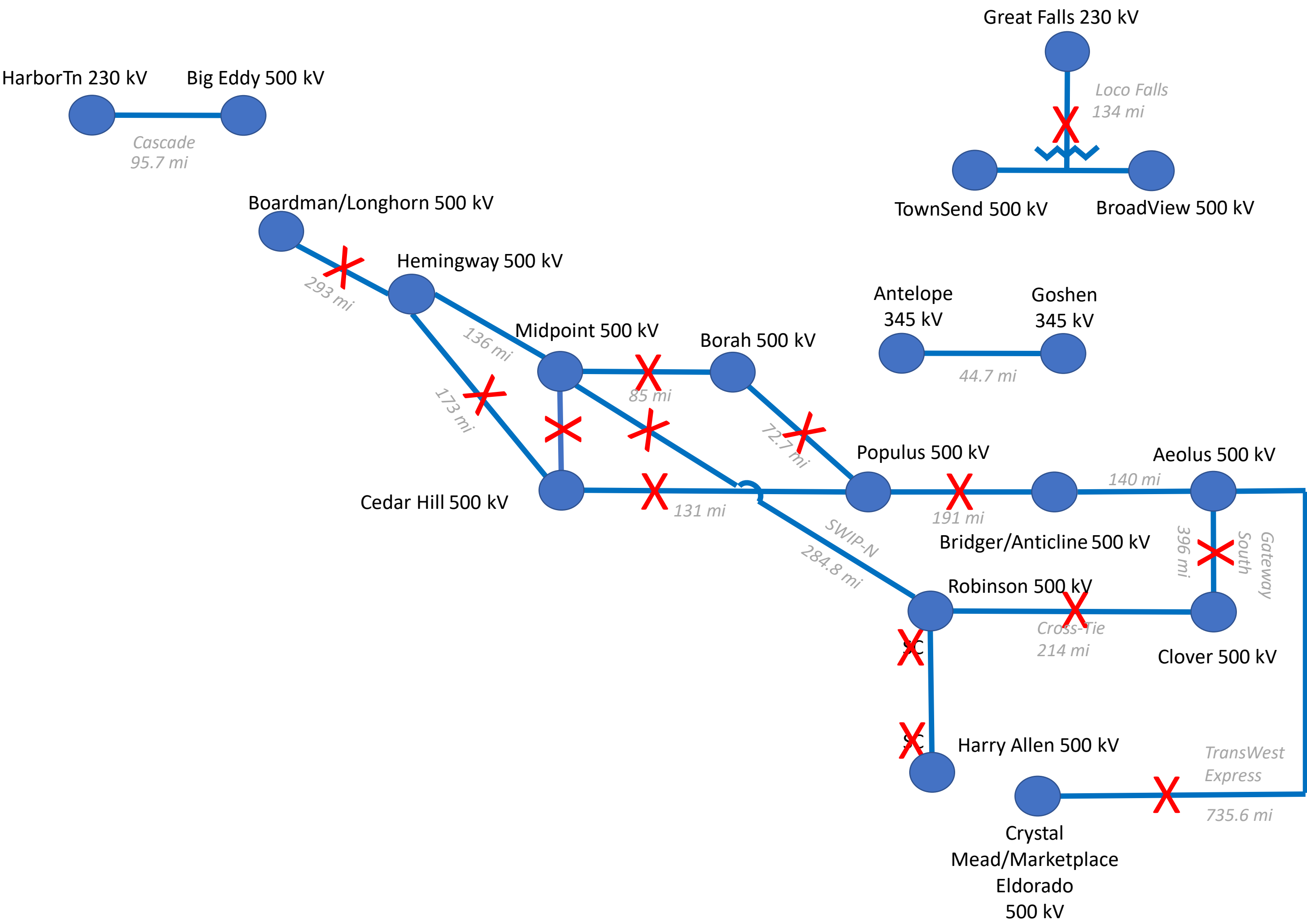
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

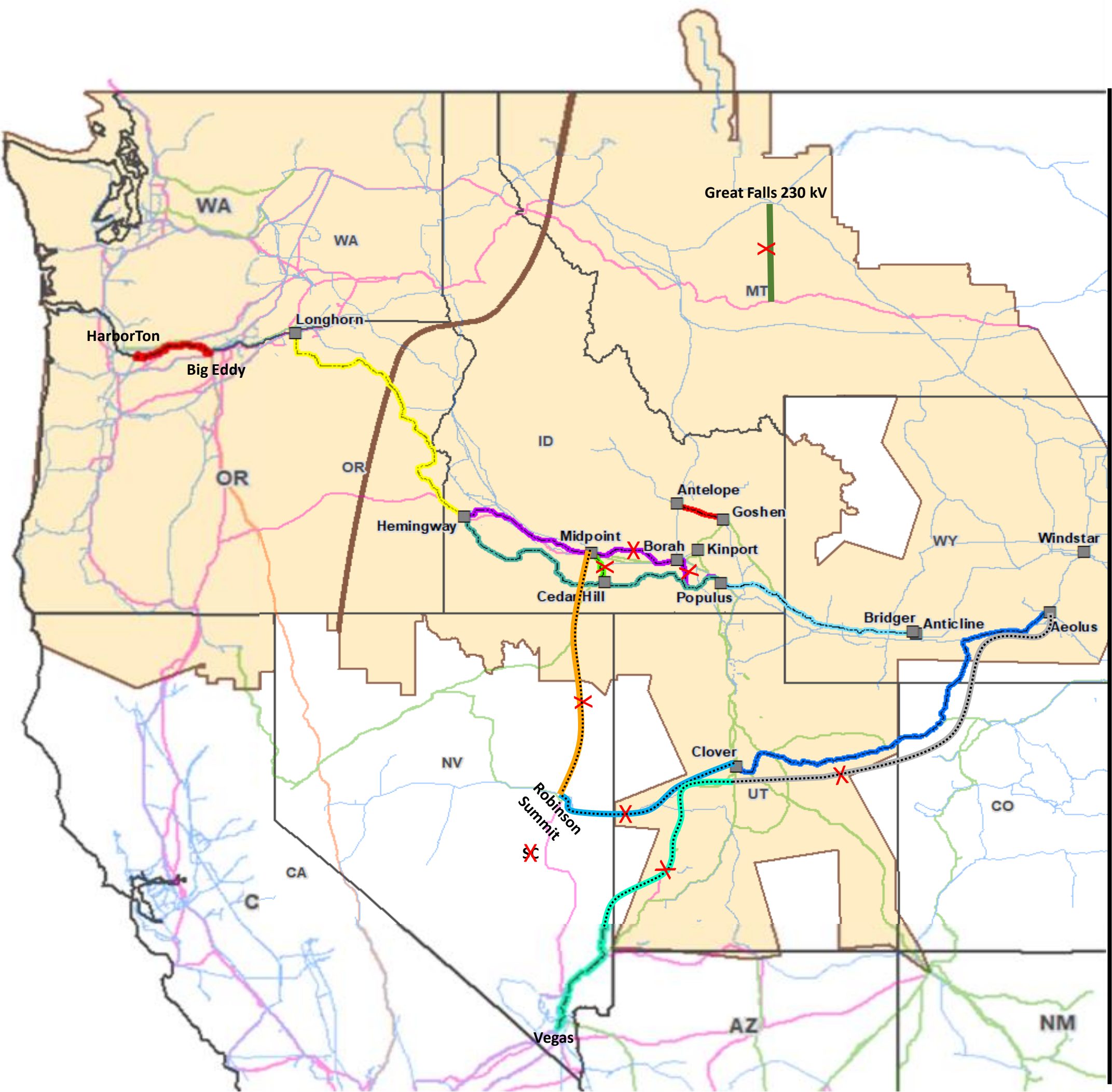
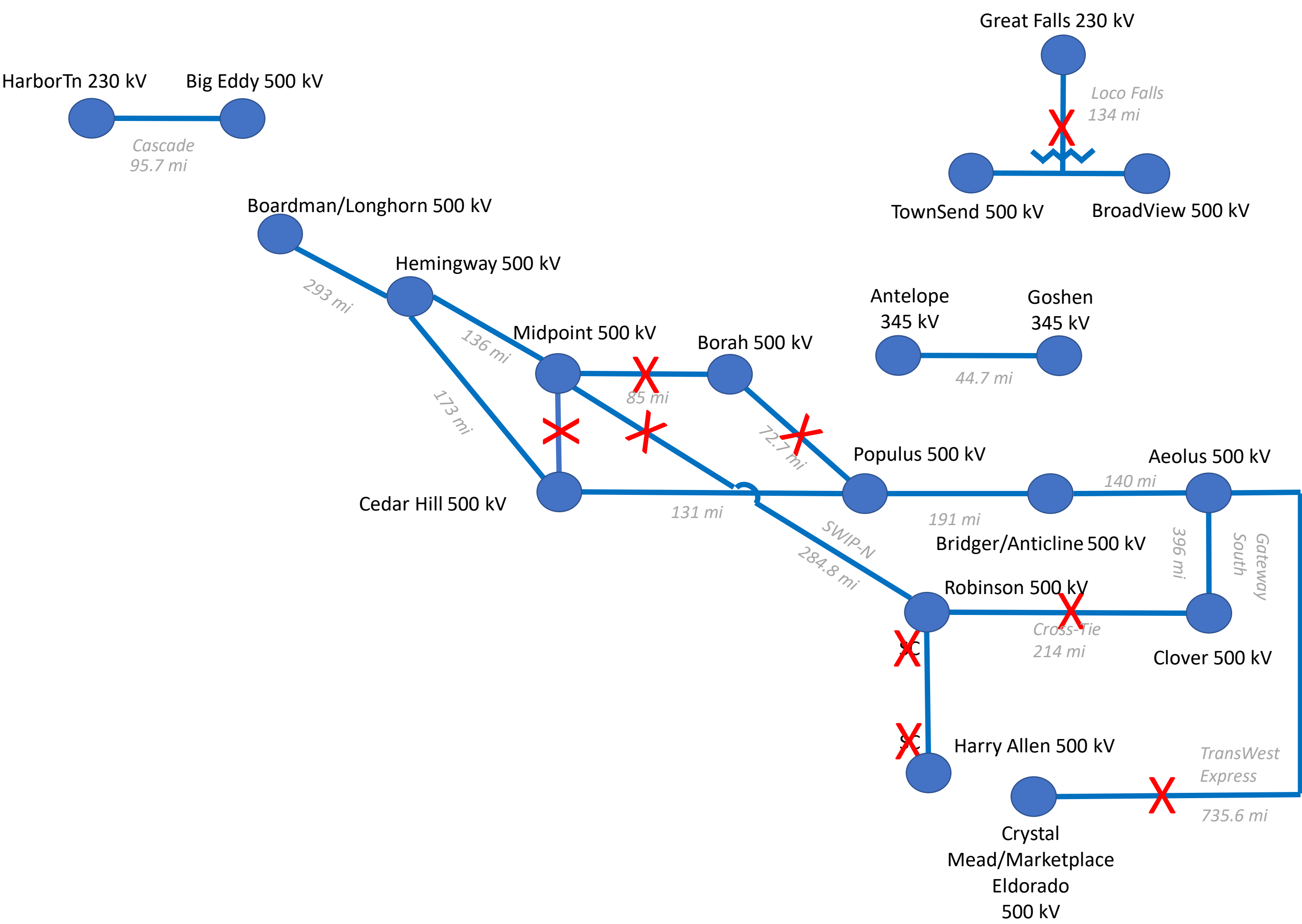
B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X	X	X	X	X	

RC34c



B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X					X	X	X	X

RC35a_03



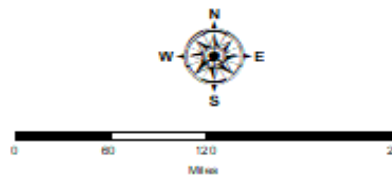
Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

- Gateway West 500 kV AC
- Pop-Ced-Hemingway
 - Pop-Borah-Mid-Hem
 - Midpoint-Cedar Hill
 - Anticline-Populus

- Existing Transmission Lines (HIFLD)
- Other kV
 - 230 - 287 kV
 - 345 kV
 - 500 kV
 - 1000 kV (DC)

* With 230 kV upgrades



6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent
and Interregional Projects
2020 - 2030

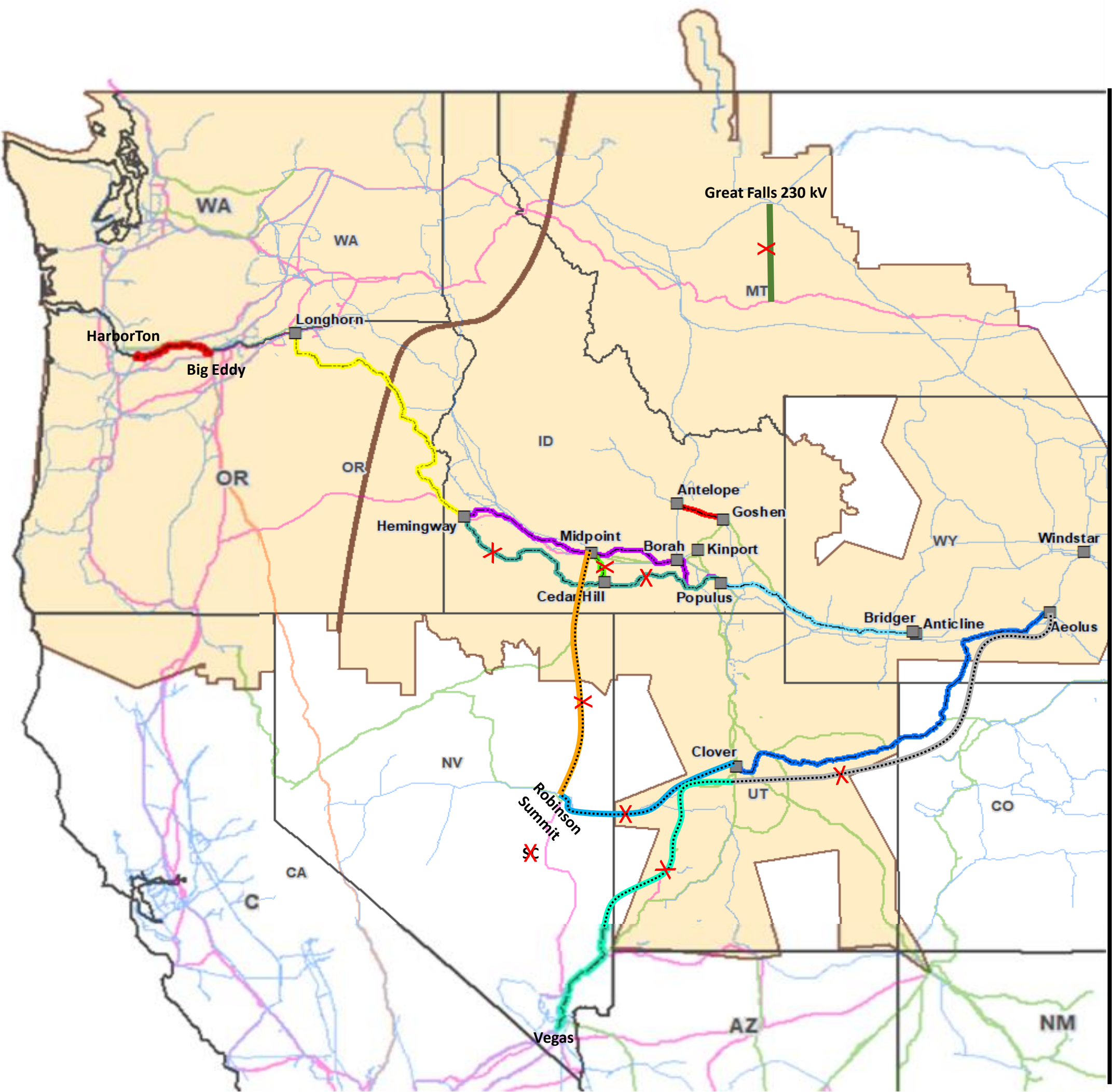
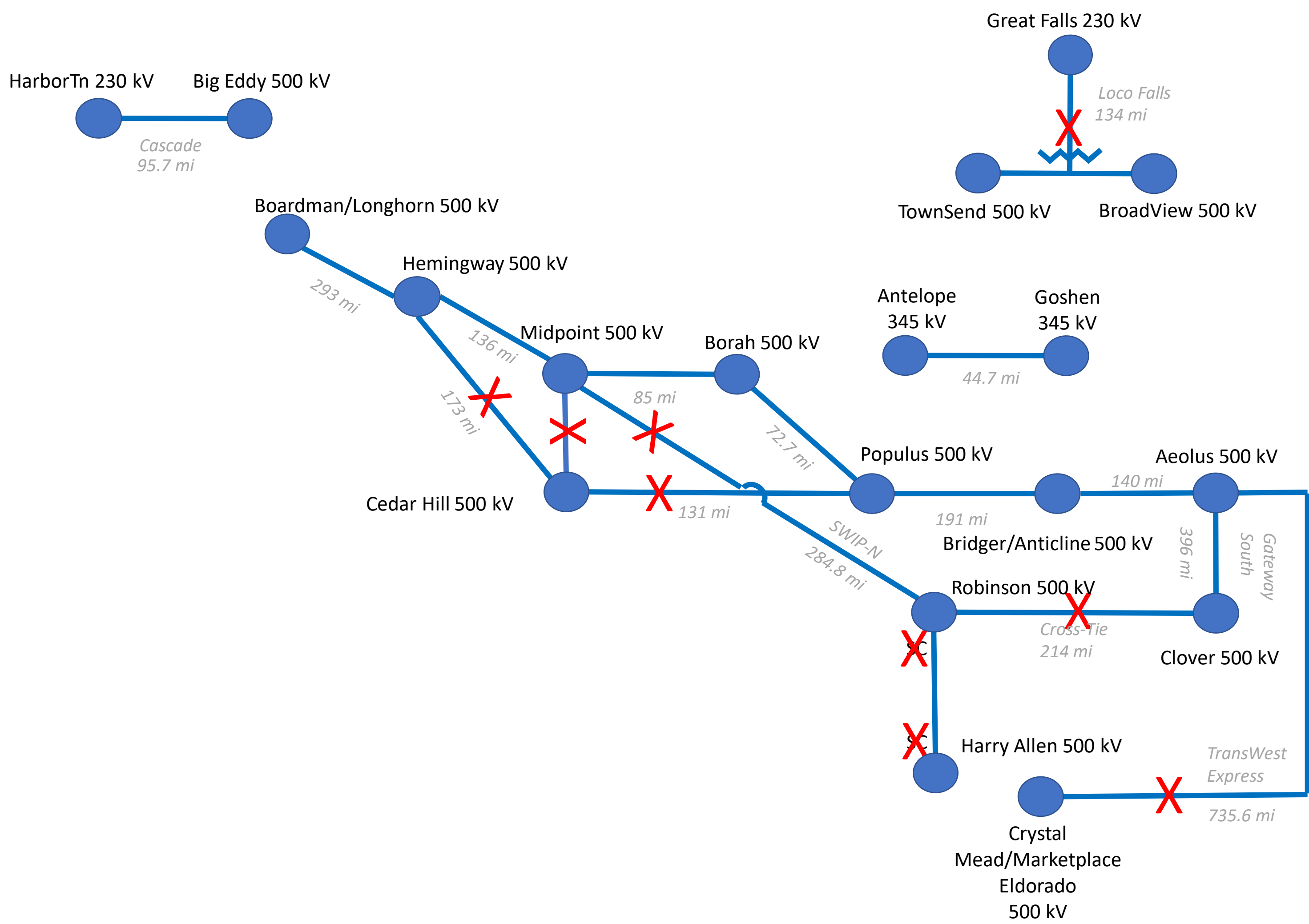
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-Tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid
- Existing Transmission Lines (HIFLD)

Modeled Projects

- BLMP
- RC01
- RC02
- RC03
- RC04
- RC05
- RC06
- RC07
- RC08
- RC09
- RC10
- RC11
- RC12
- RC13
- RC14
- RC15
- RC16
- RC17
- RC18
- RC19
- RC20
- RC21
- RC22a
- RC22b
- RC23
- RC24a
- RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X	X	X	X	

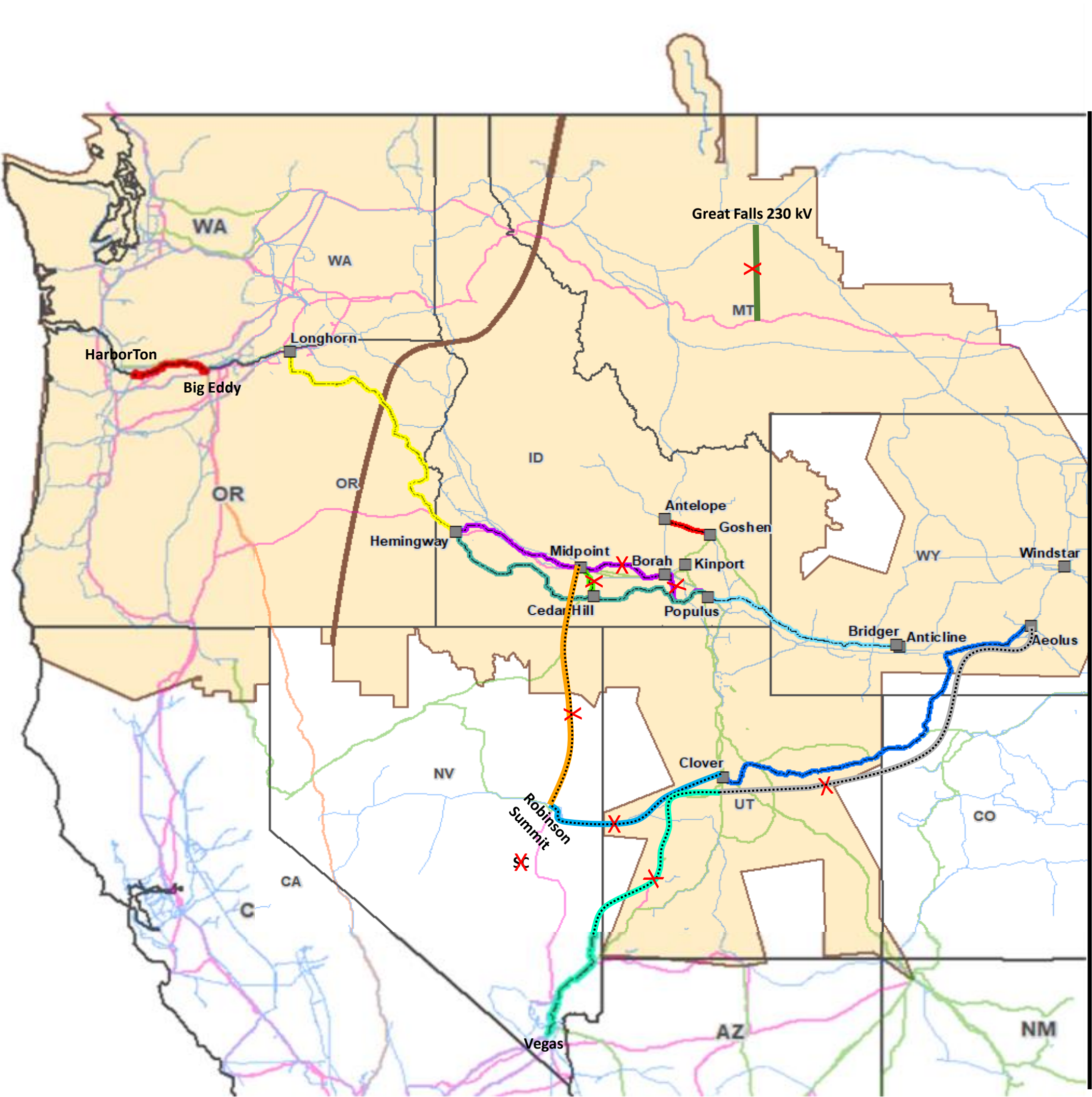
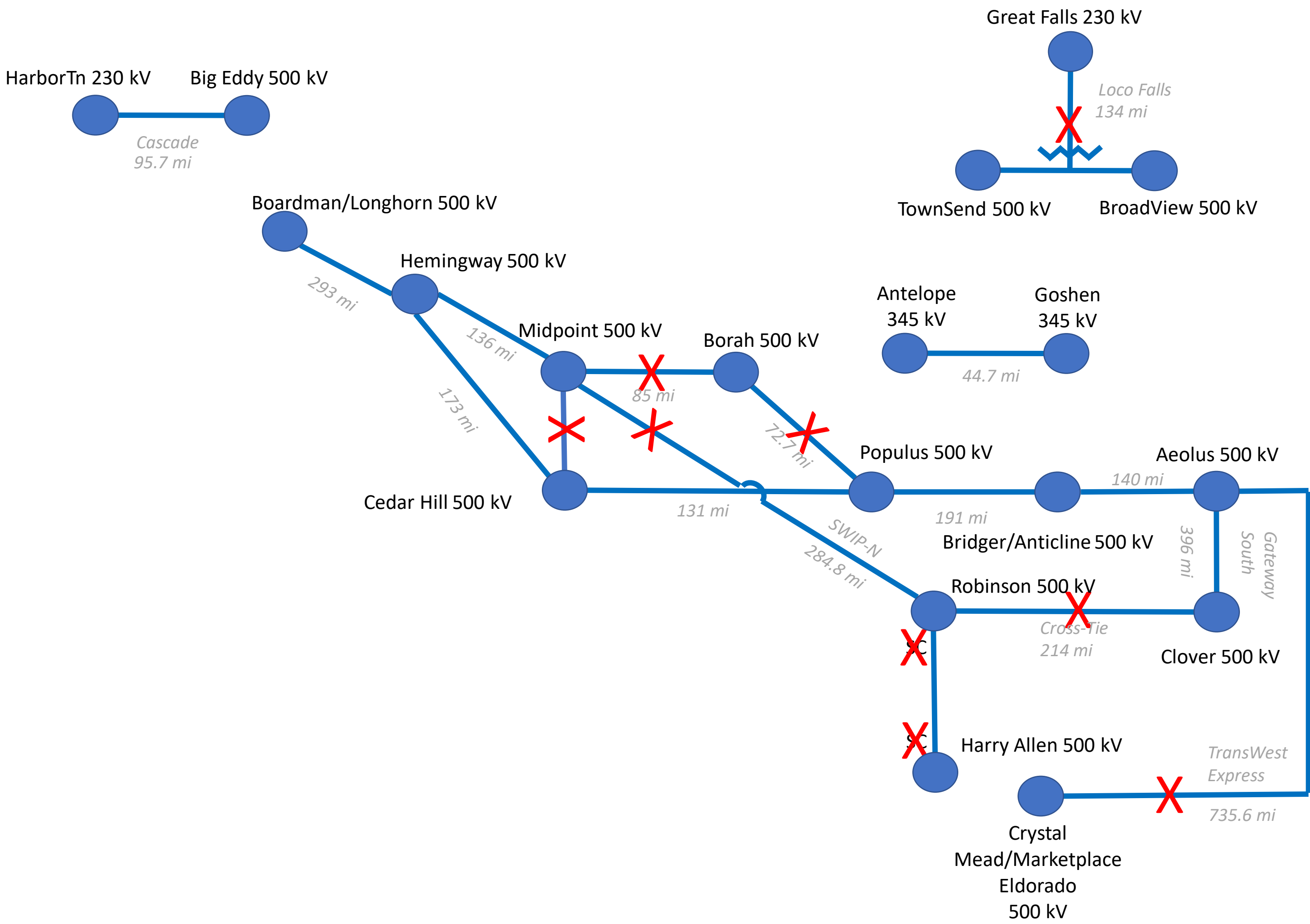
RC35a_05



Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X					X	X	X	X

RC35b_03



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

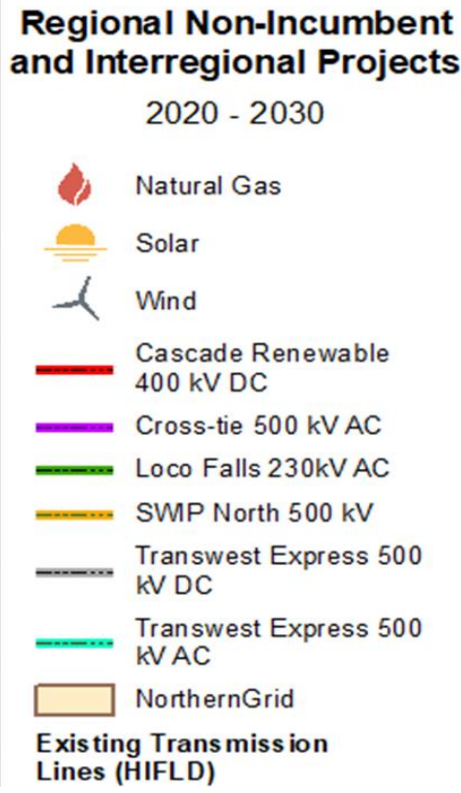
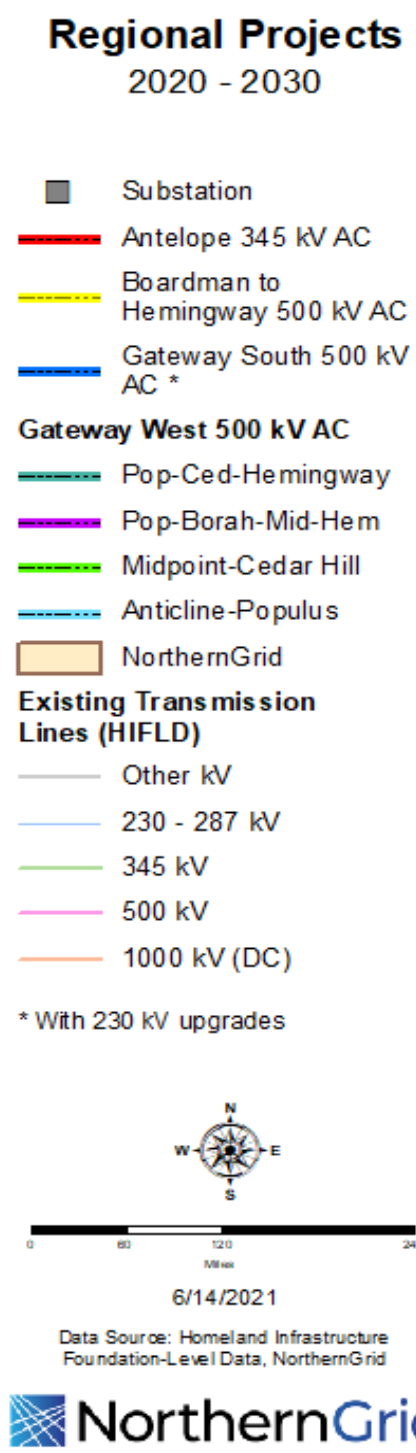
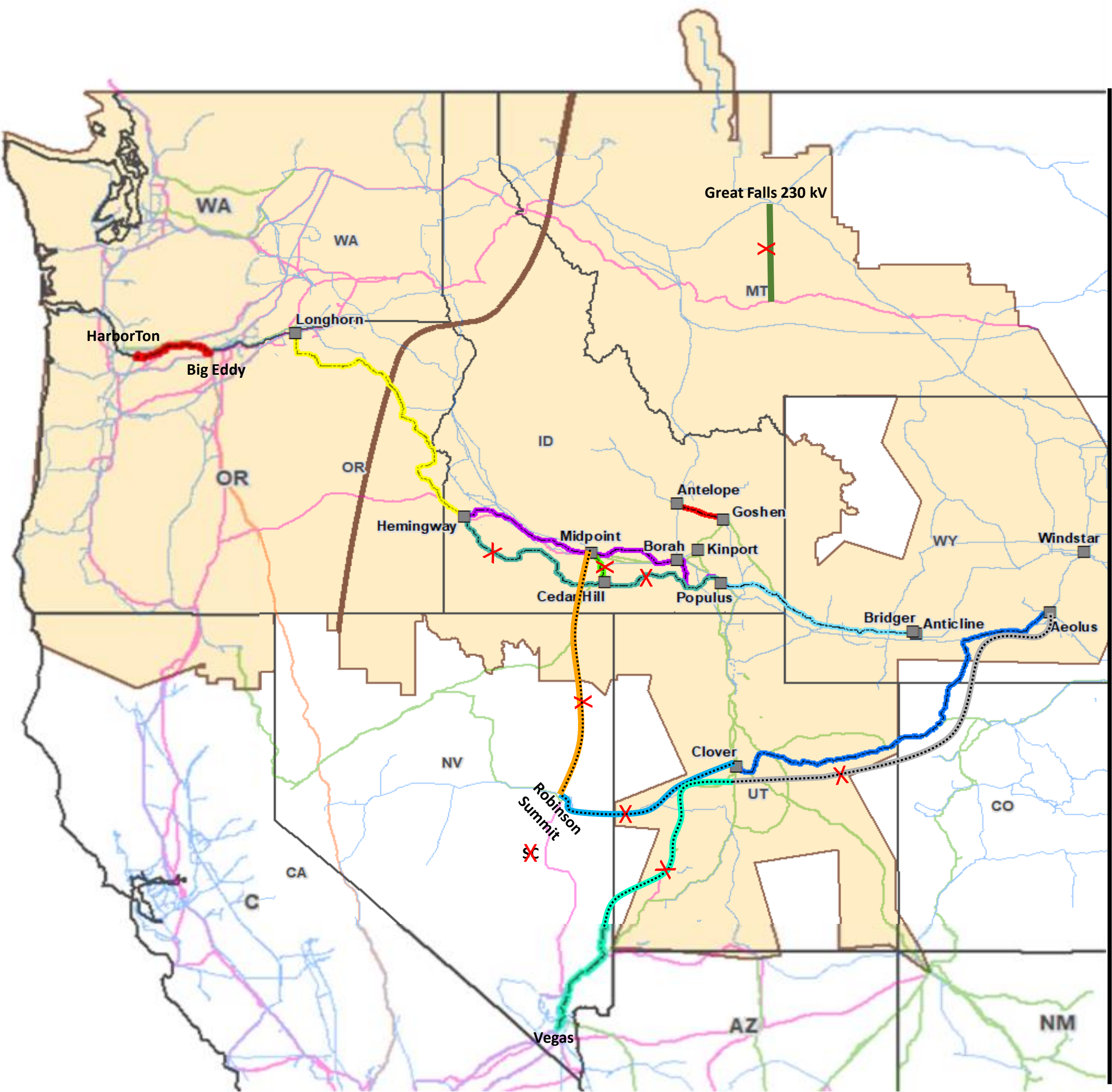
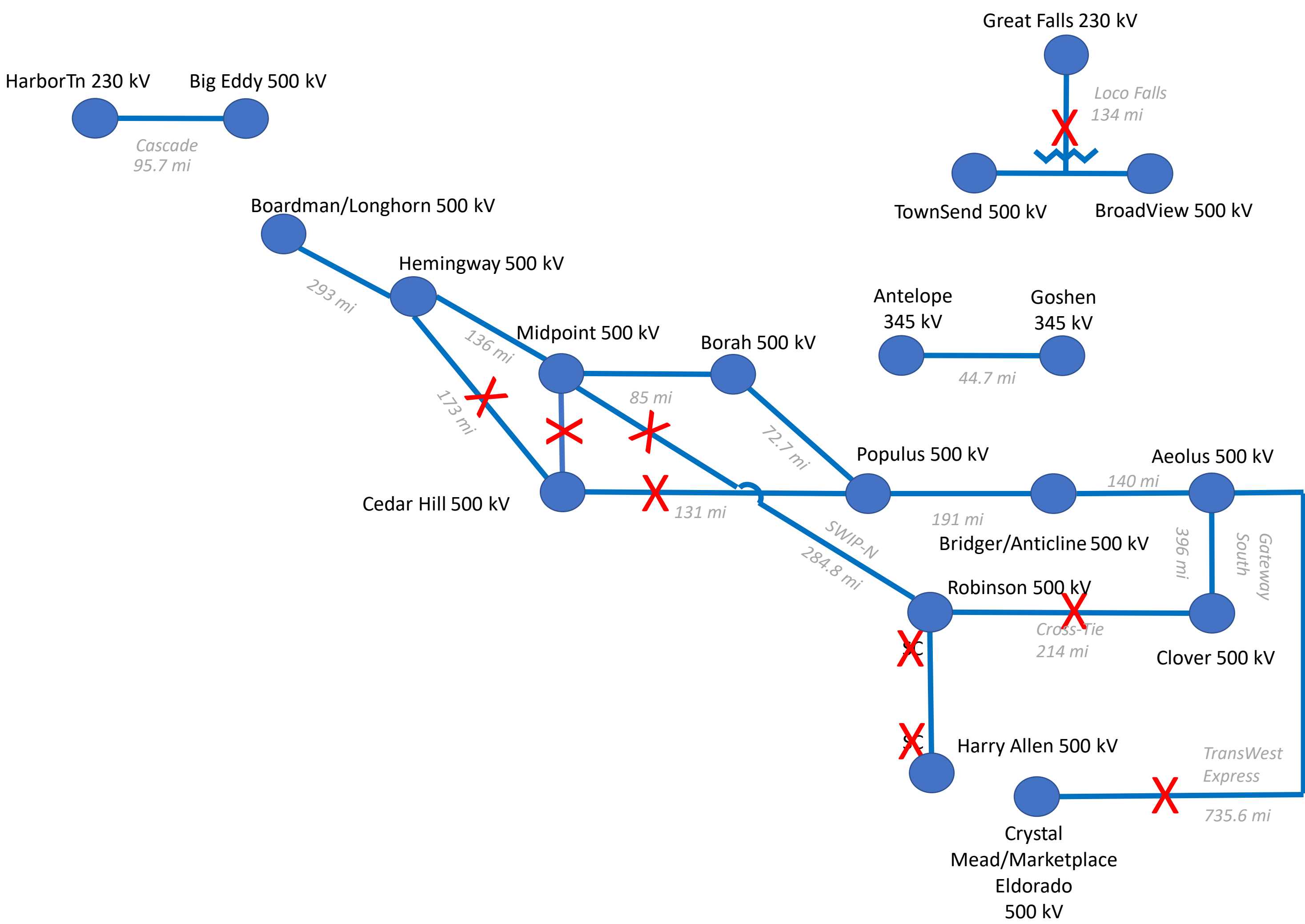
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X	X	X	X	

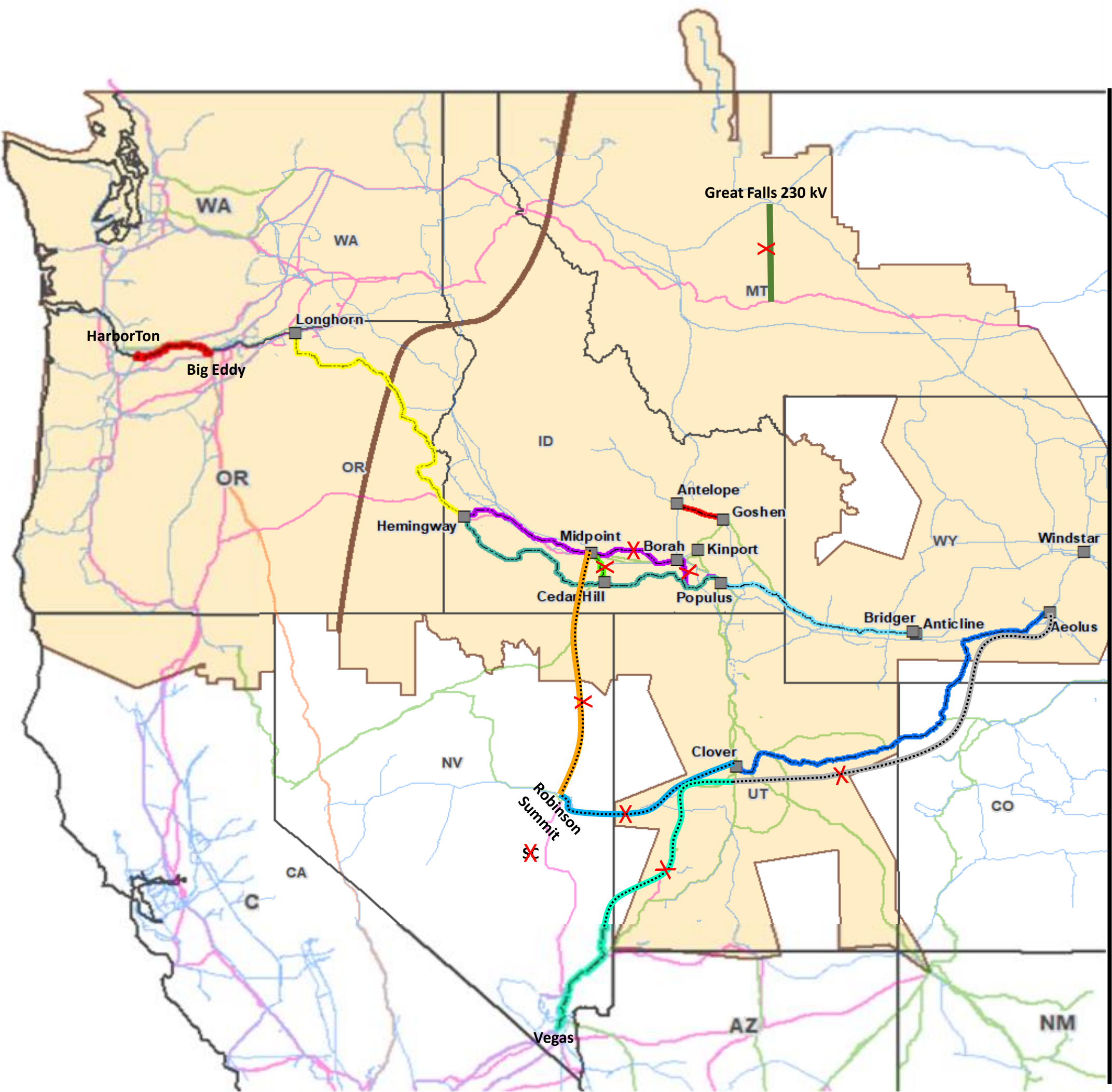
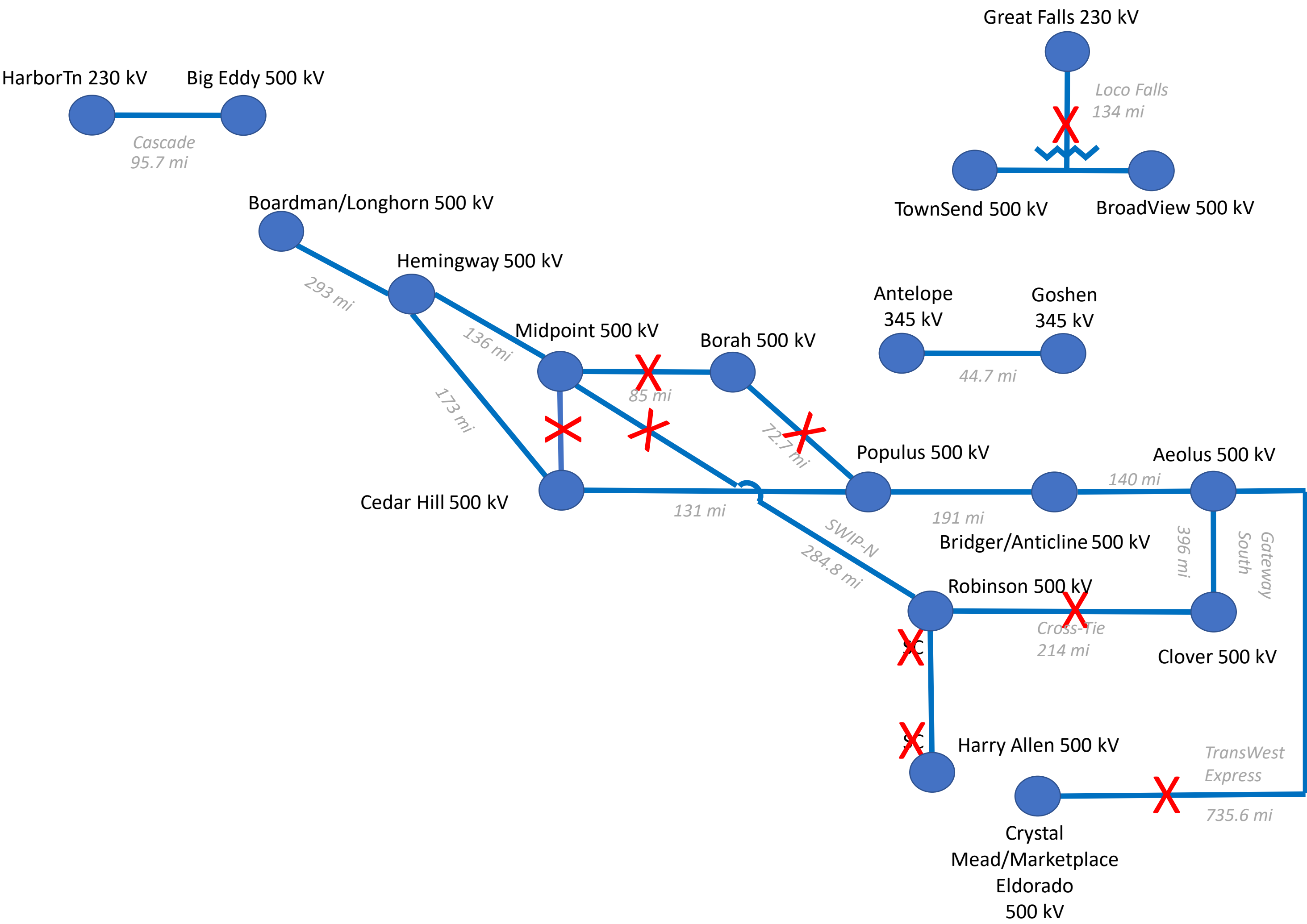
RC35b_05



Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X					X	X	X	X

RC35c_03



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

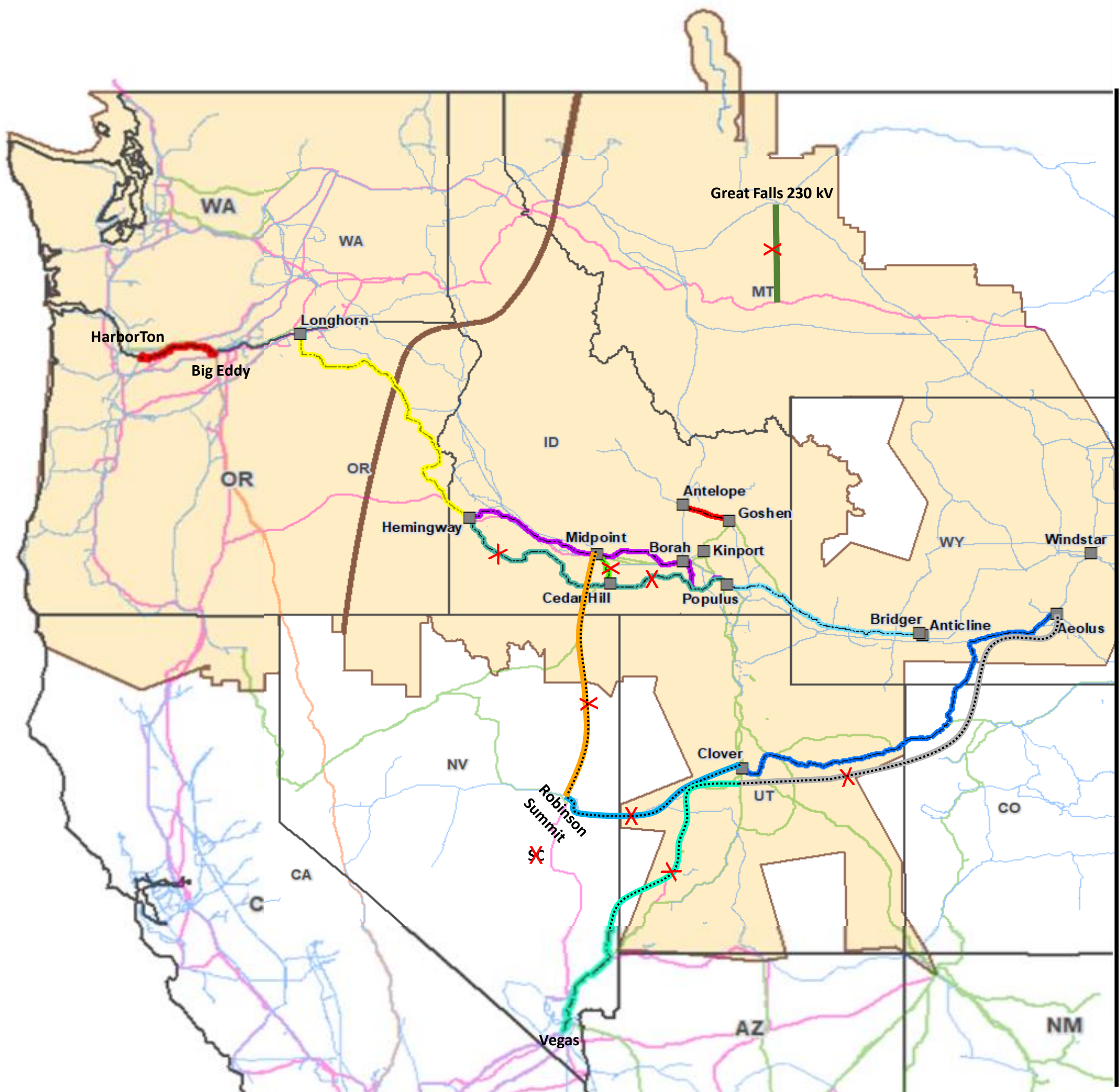
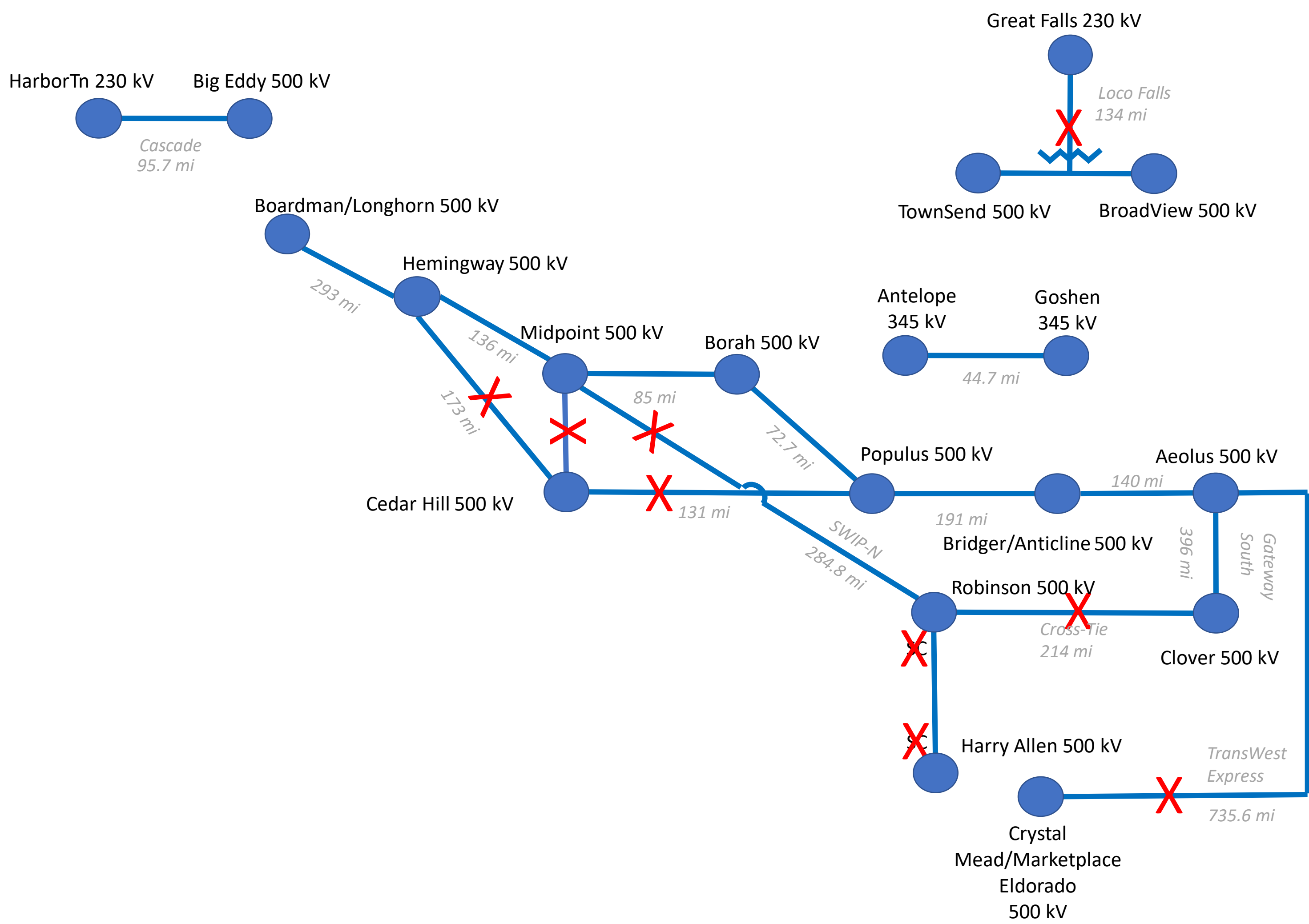
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X	X	X	X	

RC35c_05



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

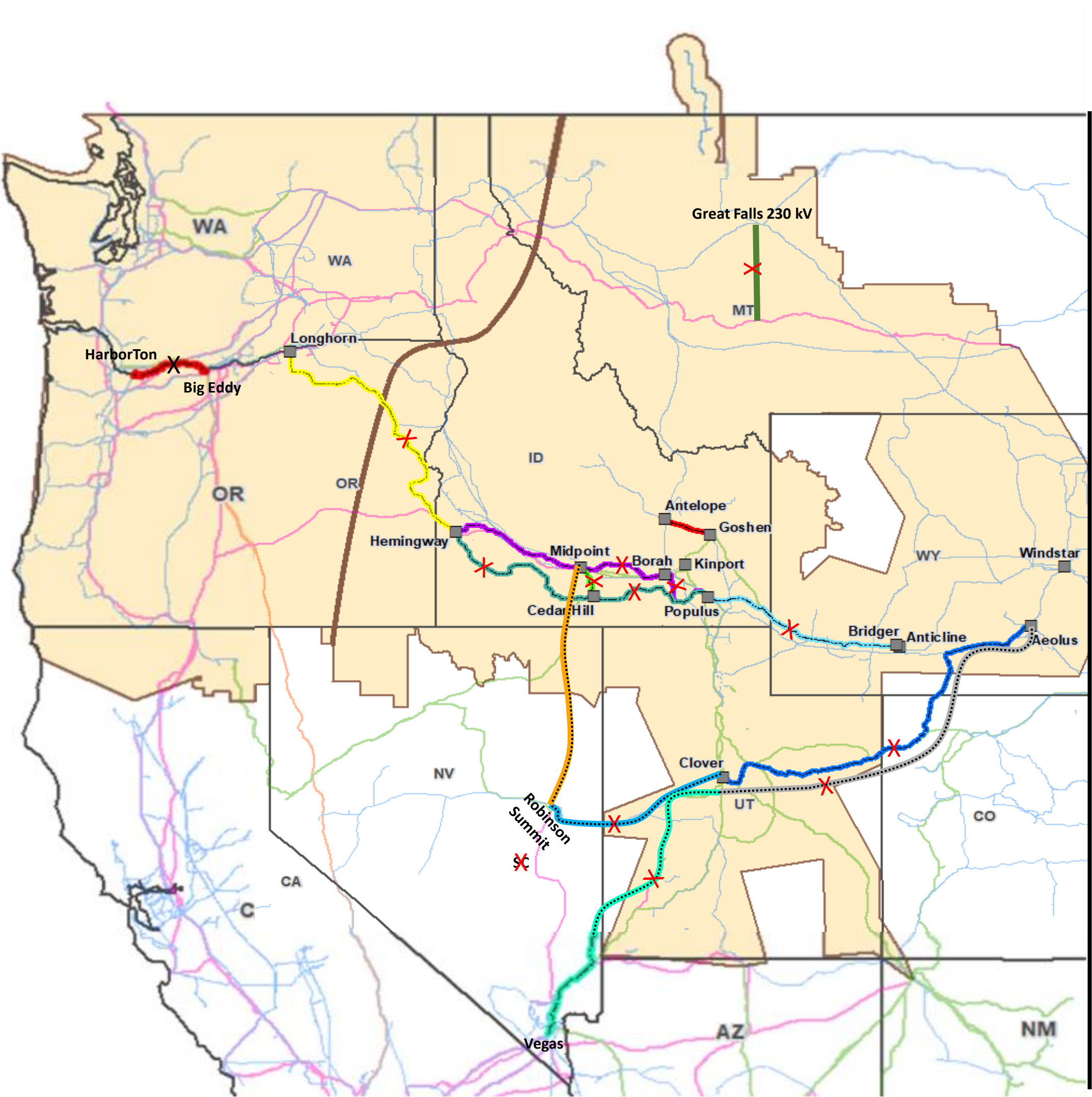
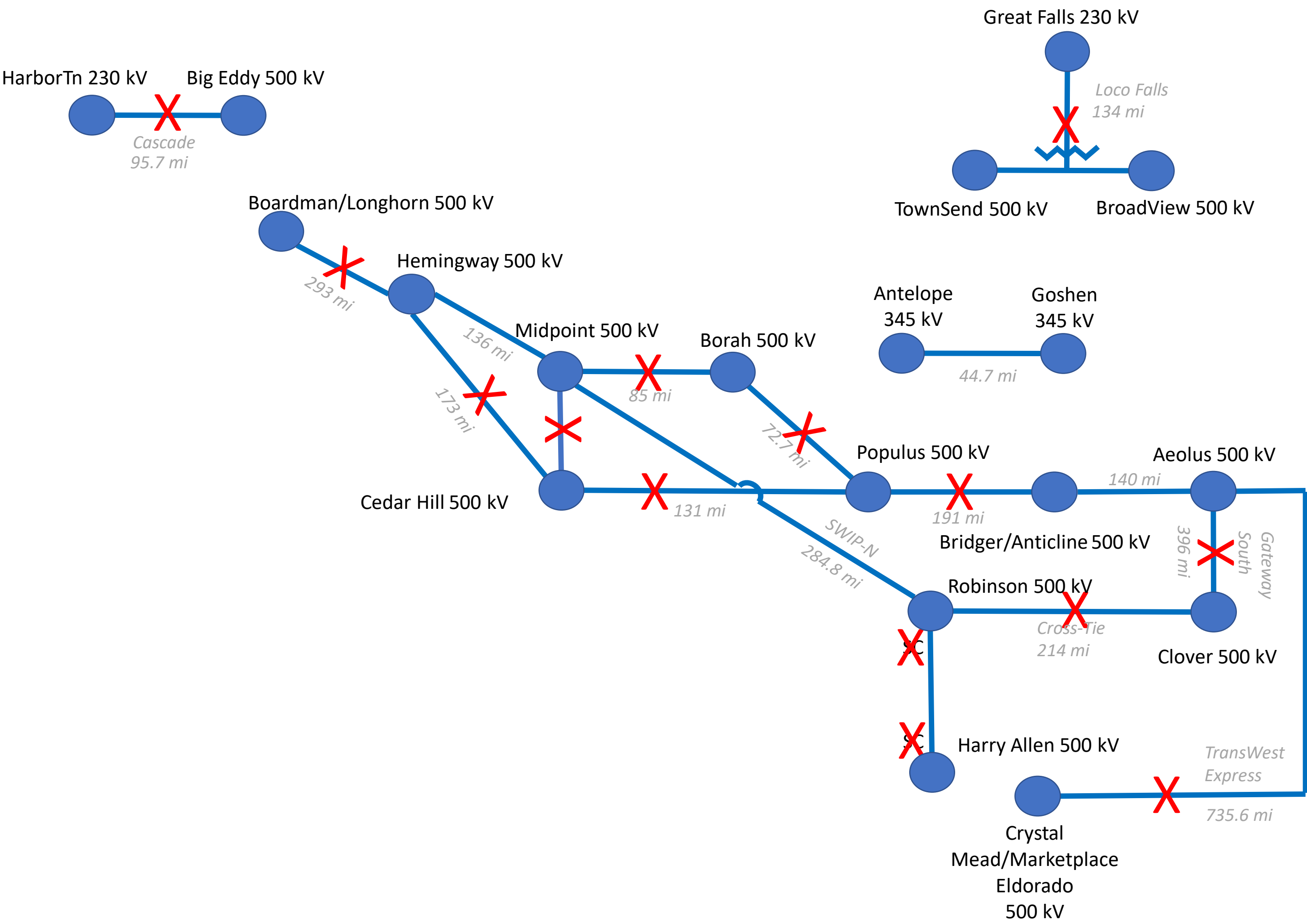
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b
RC25

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X		X	X	X	X

RC36



Regional Projects
2020 - 2030

Substation

Antelope 345 kV AC

Boardman to Hemingway 500 kV AC *

Gateway South 500 kV AC *

Gateway West 500 kV AC

Pop-Ced-Hemingway

Pop-Borah-Mid-Hem

Midpoint-Cedar Hill

Anticline-Populus

NorthernGrid

Existing Transmission Lines (HIFLD)

Other kV

230 - 287 kV

345 kV

500 kV

1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

Natural Gas

Solar

Wind

Cascade Renewable 400 kV DC

Cross-tie 500 kV AC

Loco Falls 230kV AC

SWP North 500 kV

Transwest Express 500 kV DC

Transwest Express 500 kV AC

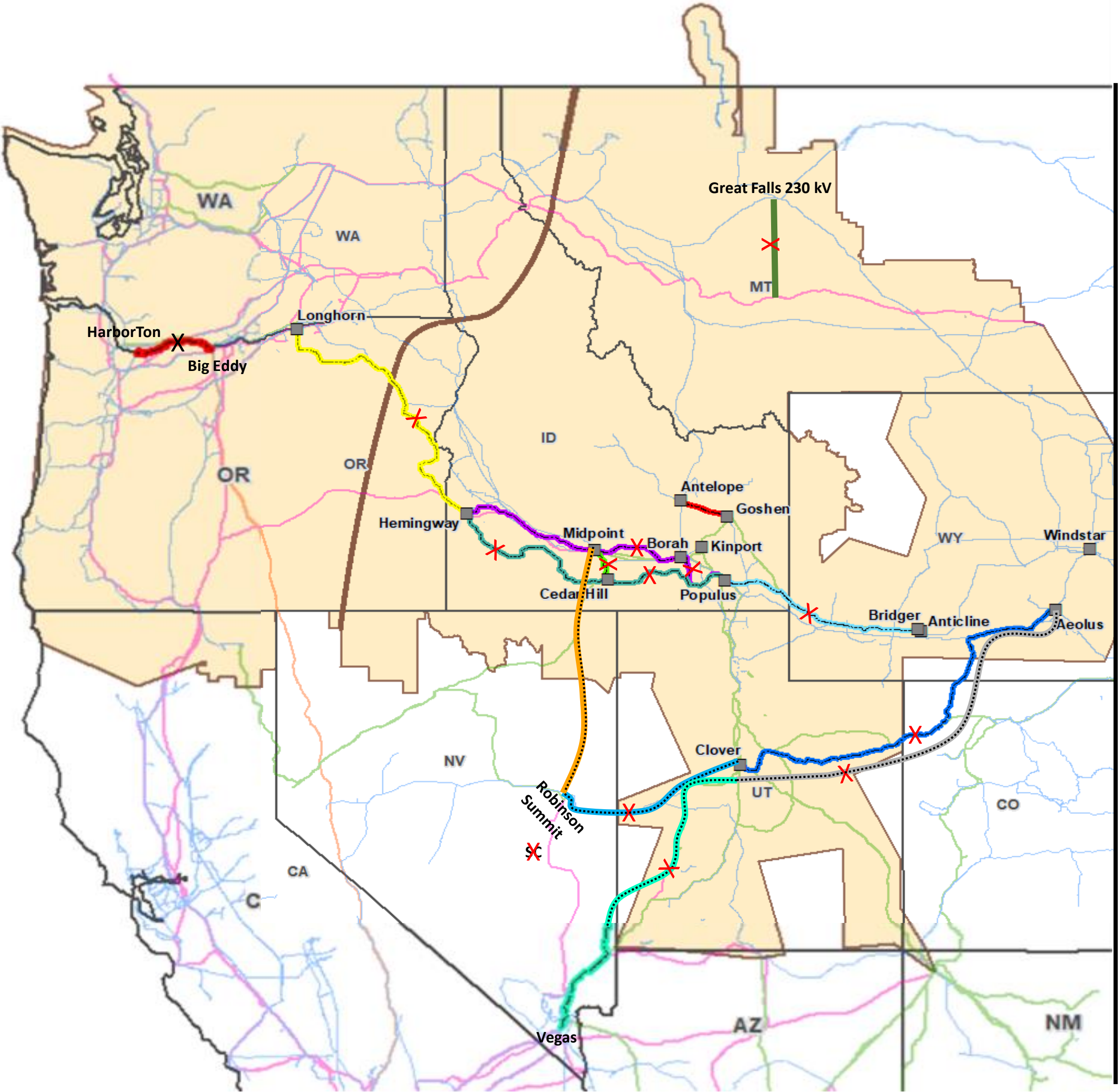
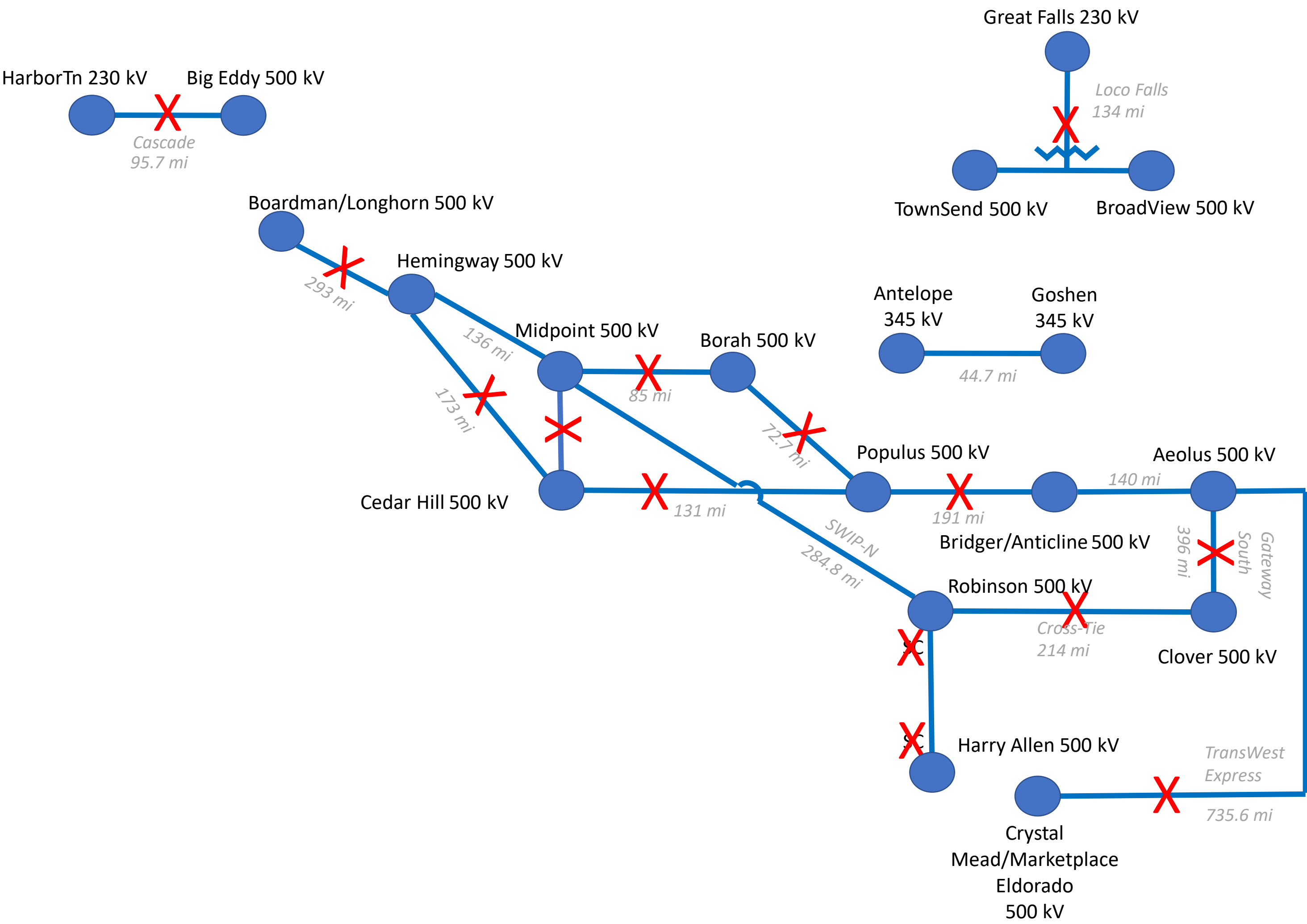
NorthernGrid

Existing Transmission Lines (HIFLD)

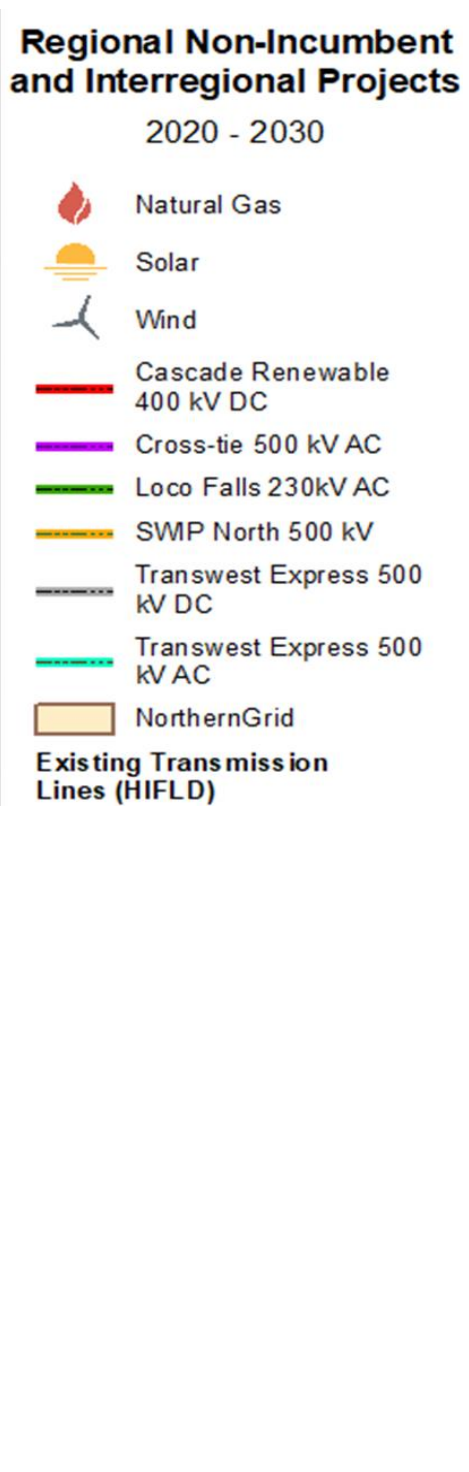
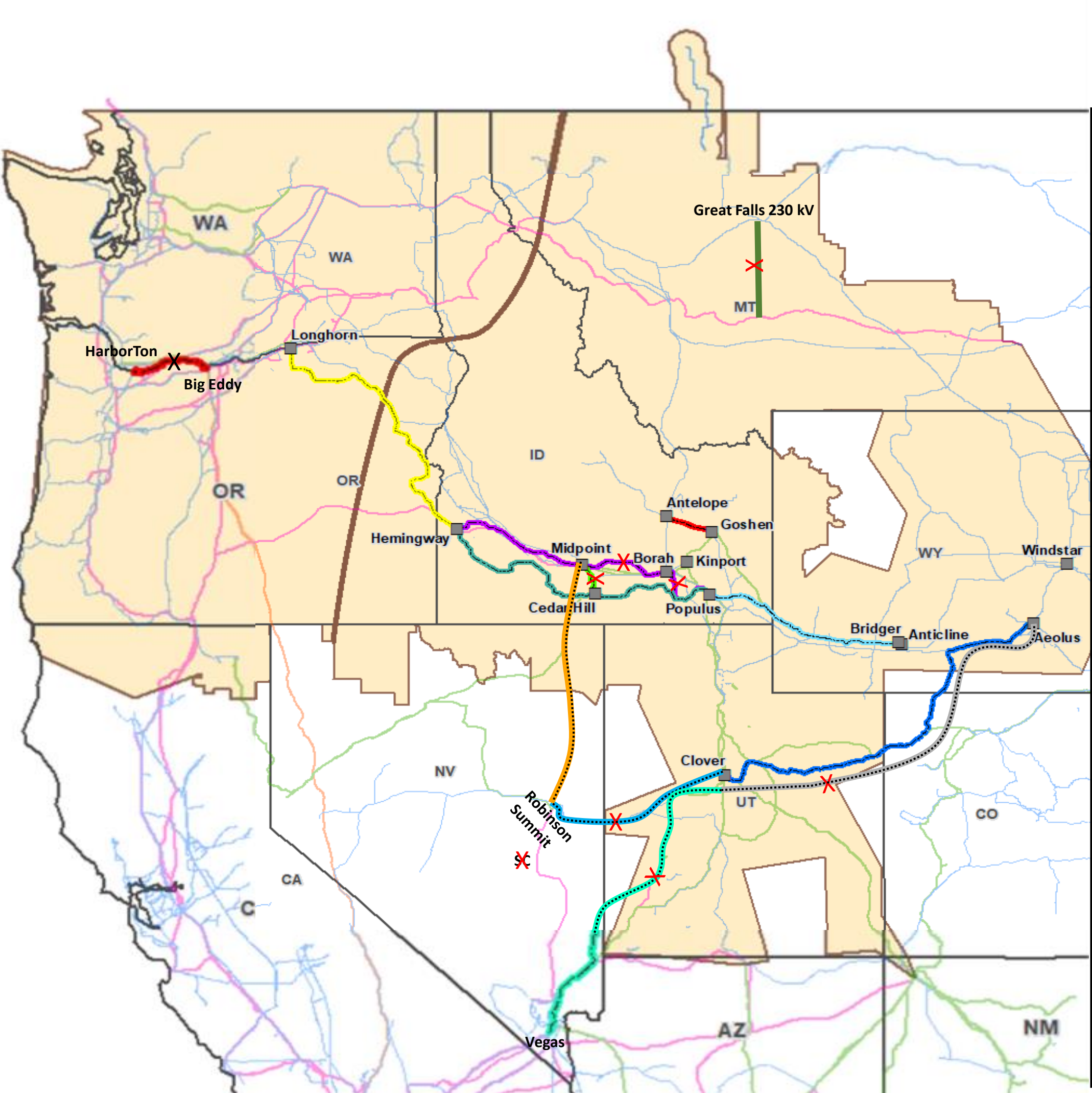
Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b
RC25

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X		X	X	X	X

RC36_G



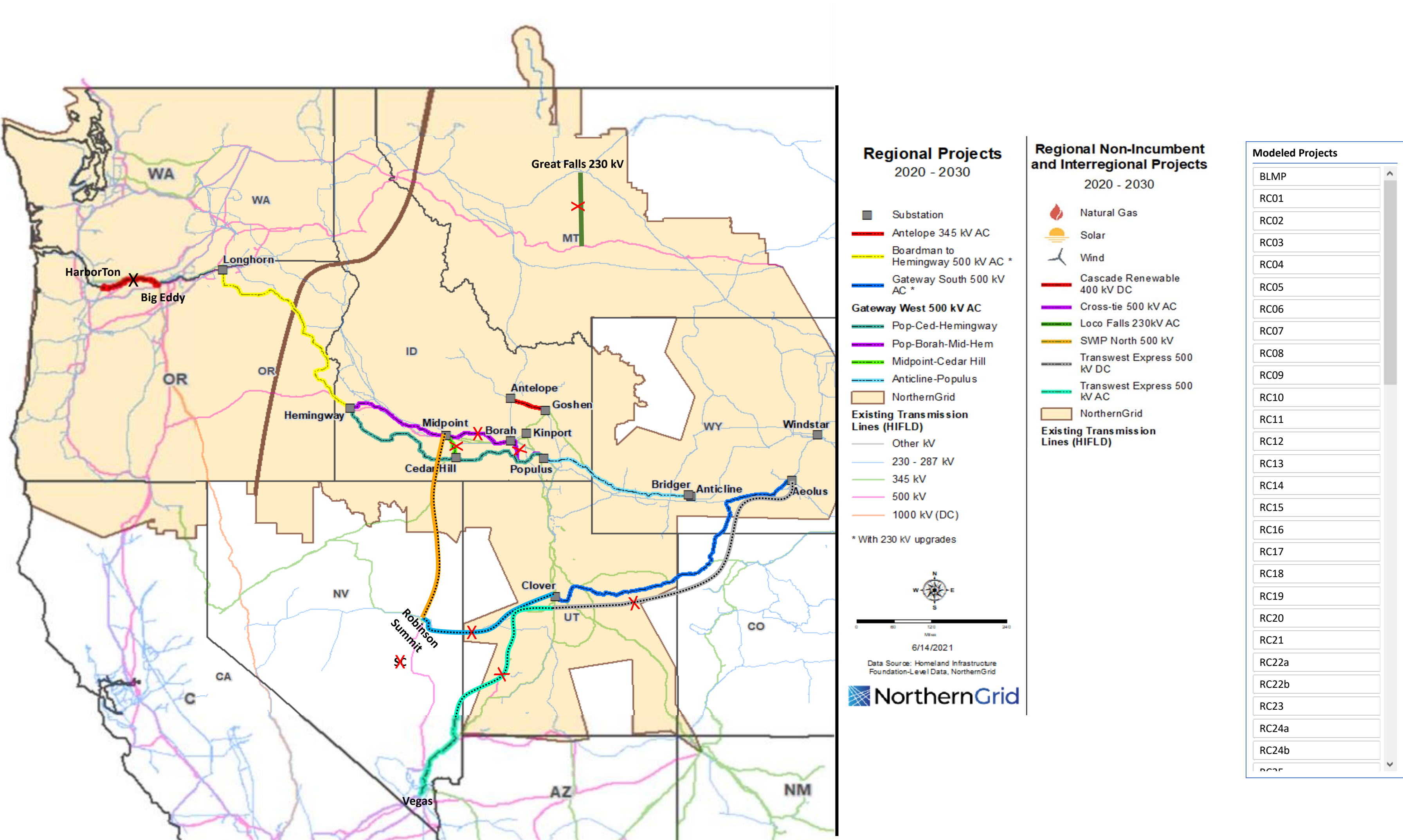
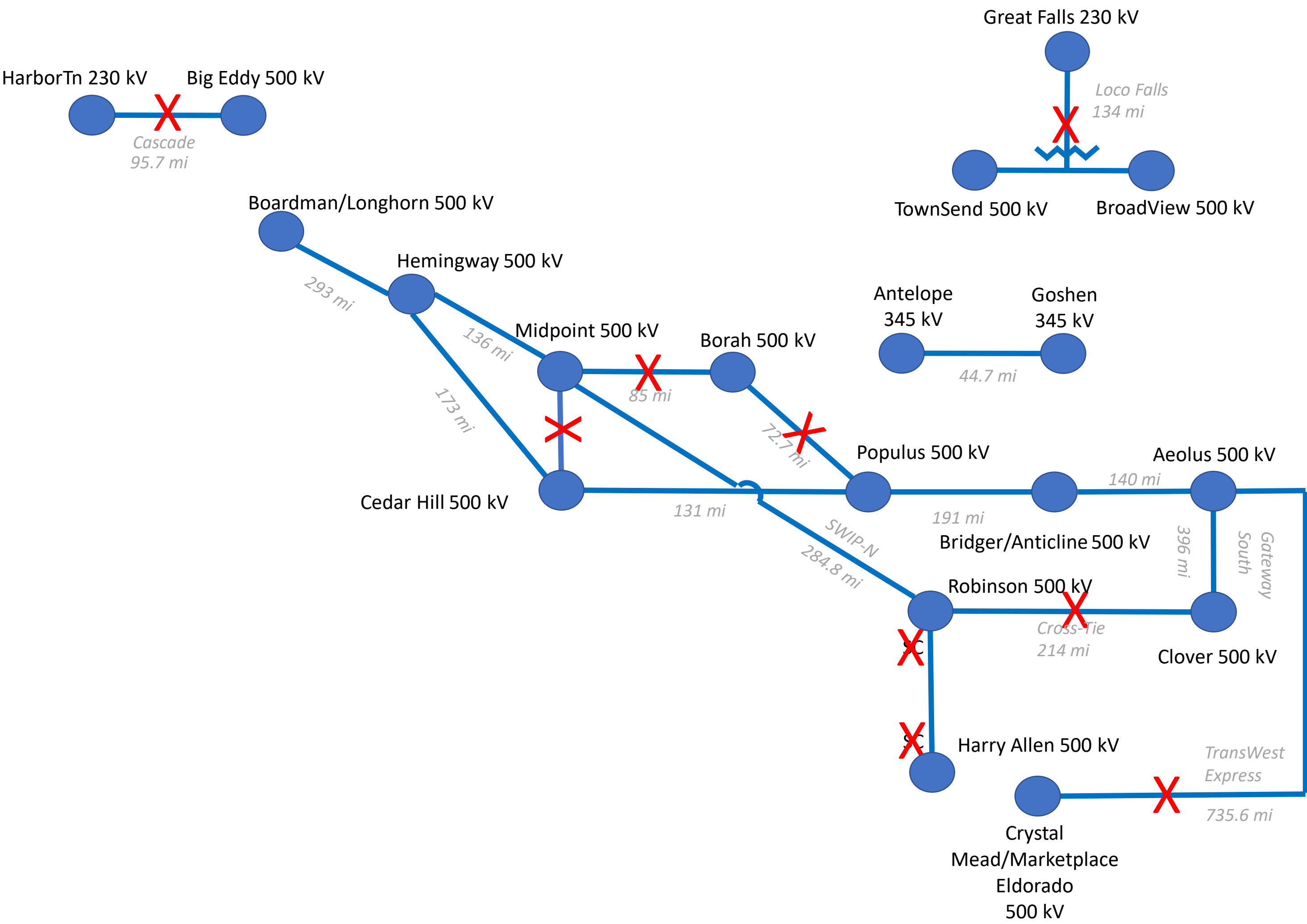
RC37_03



Modeled Projects	
BLMP	
RC01	
RC02	
RC03	
RC04	
RC05	
RC06	
RC07	
RC08	
RC09	
RC10	
RC11	
RC12	
RC13	
RC14	
RC15	
RC16	
RC17	
RC18	
RC19	
RC20	
RC21	
RC22a	
RC22b	
RC23	
RC24a	
RC24b	
RC25	

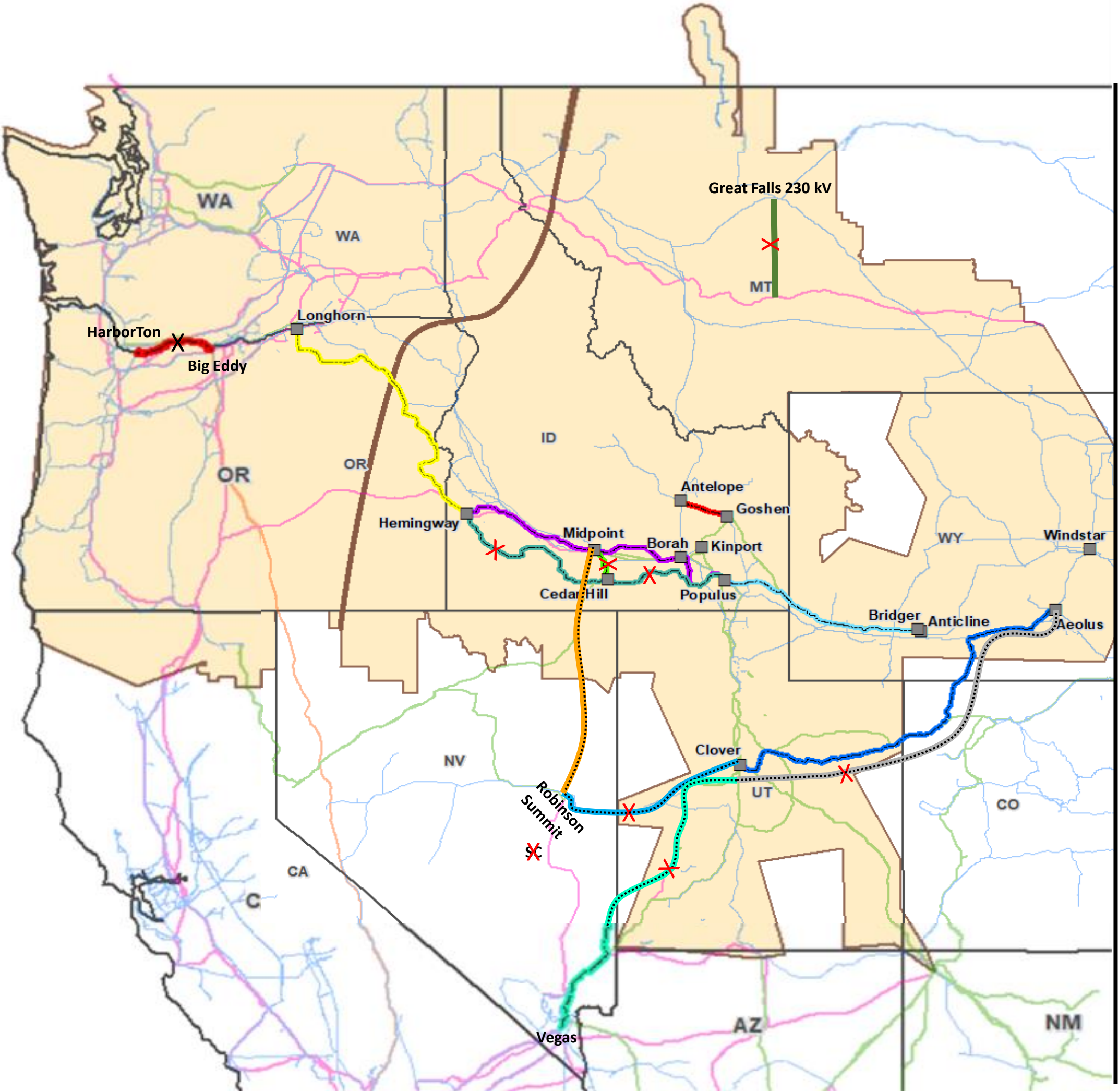
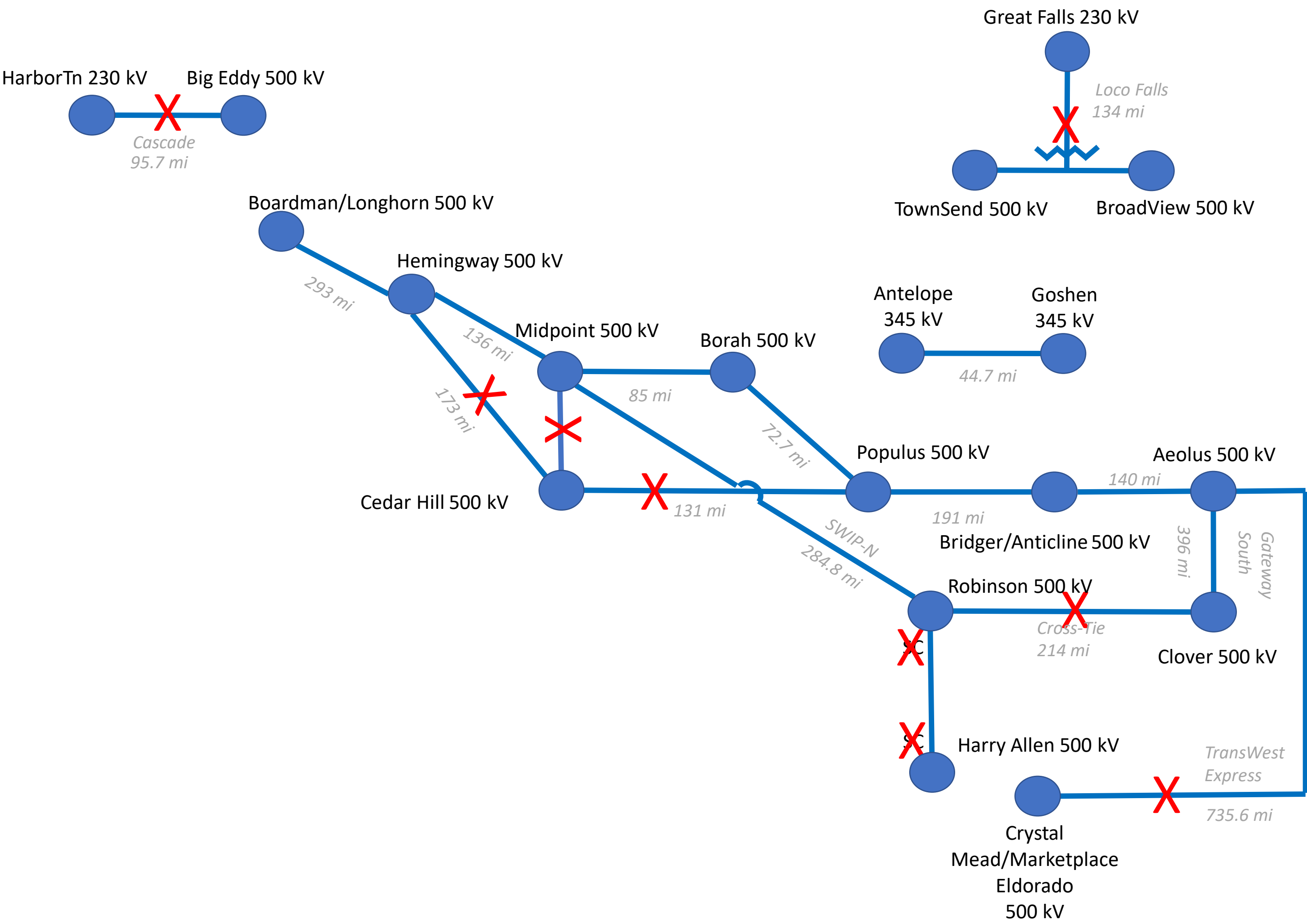
B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWIP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X					X	X	X	X

RC37_03_G



B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWIP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X					X	X	X	X

RC37_05



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

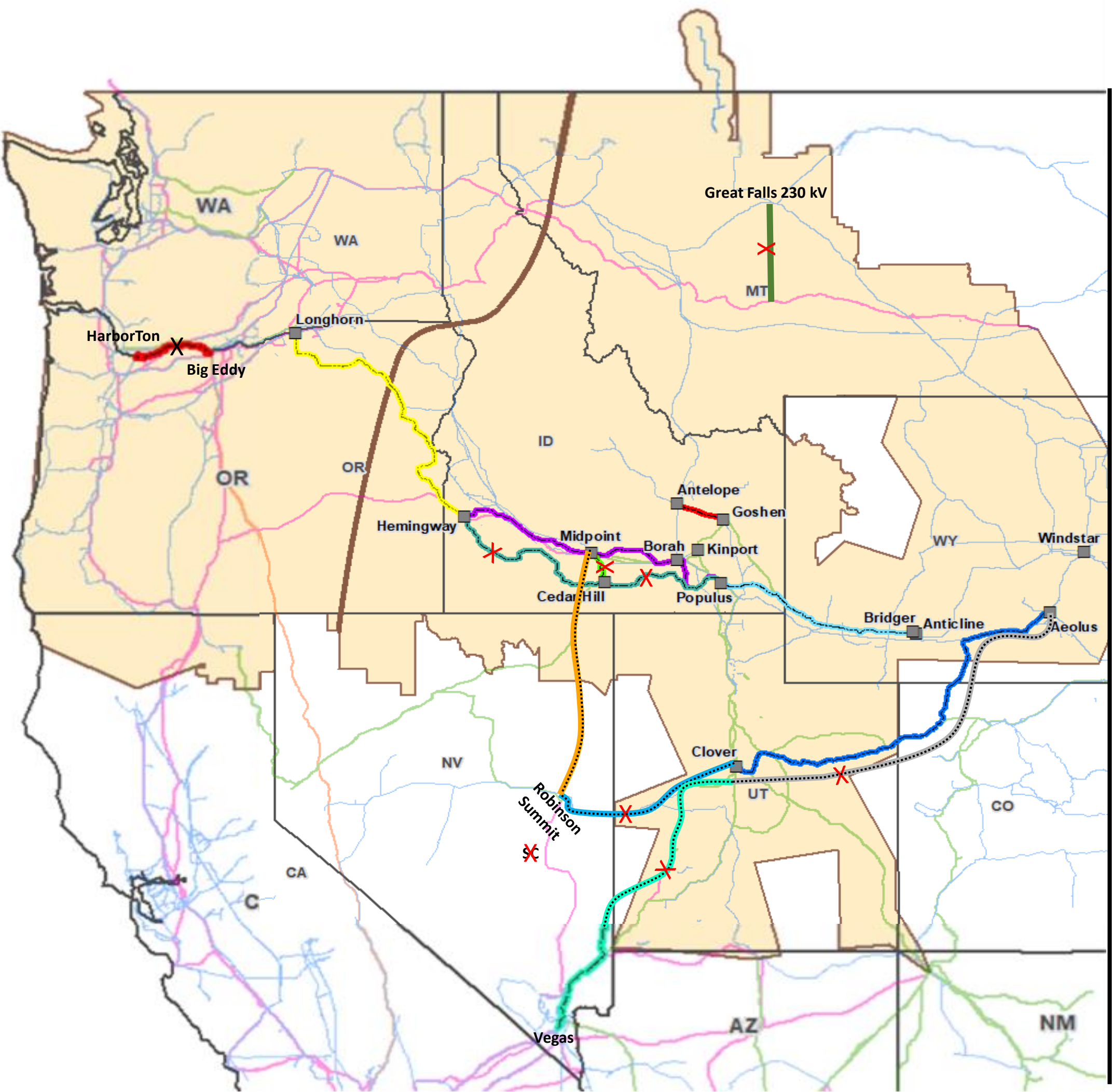
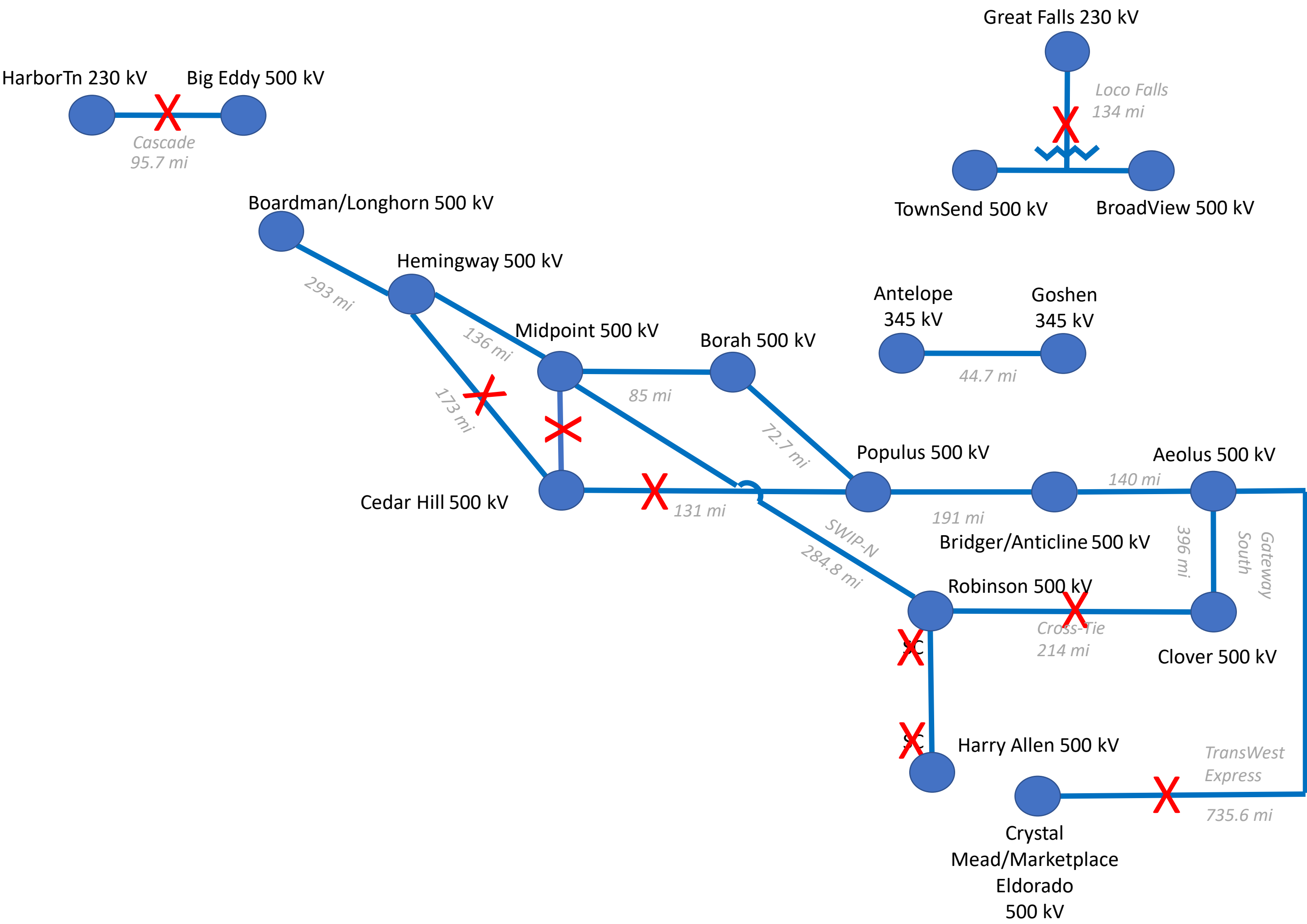
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWIP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWIP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X					X	X	X	X

RC37_05_G



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

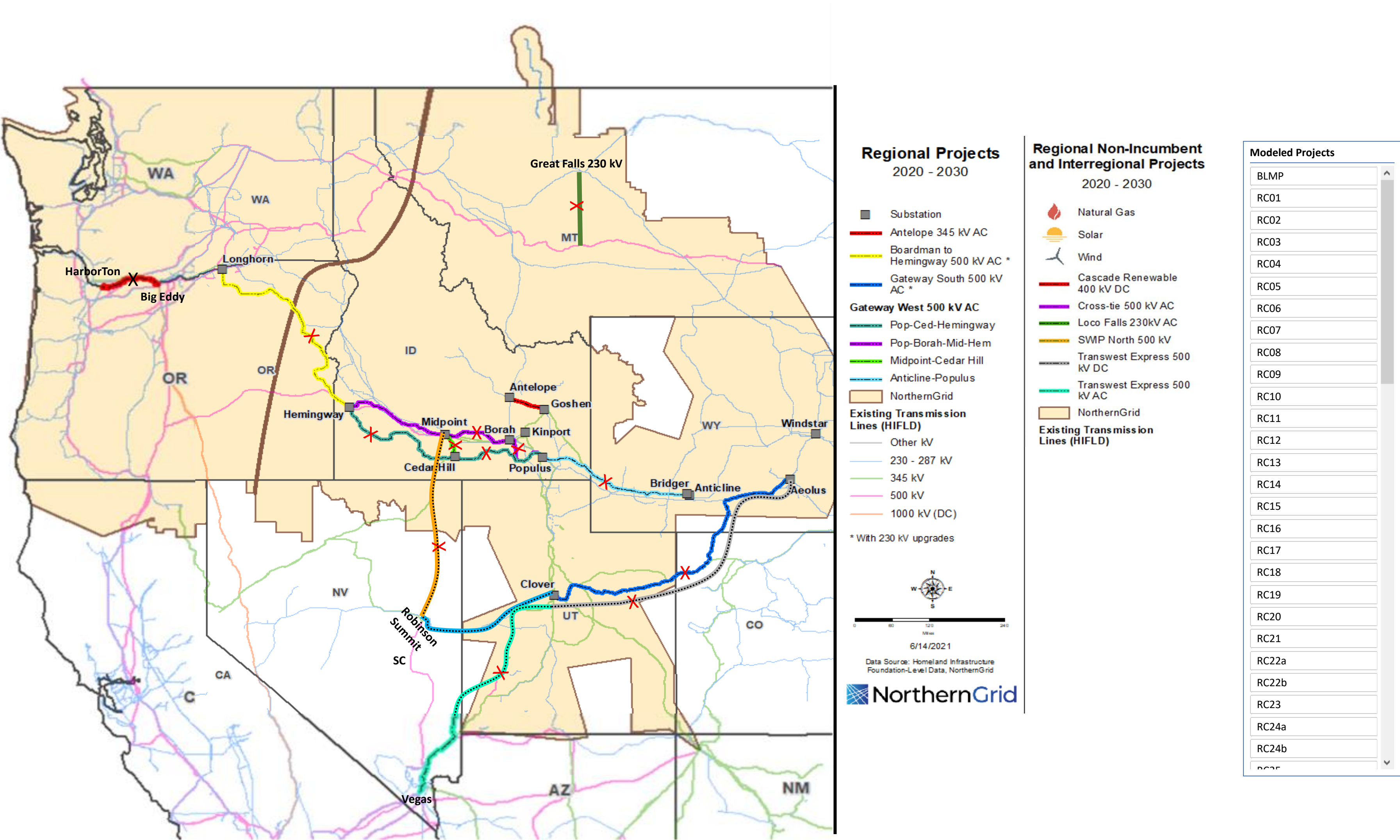
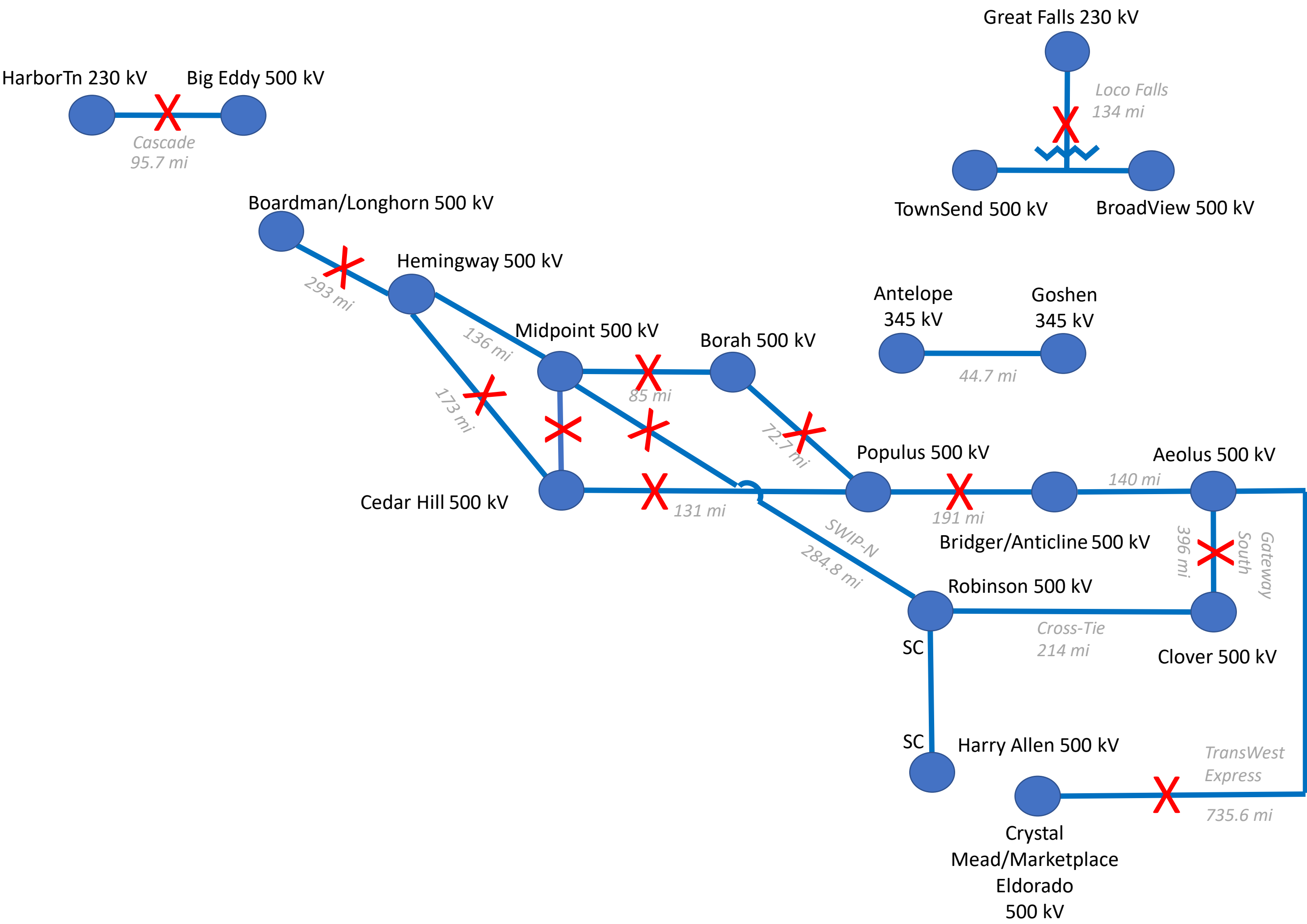
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-Isle 500 kV AC
- Loco Falls 230kV AC
- SWIP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

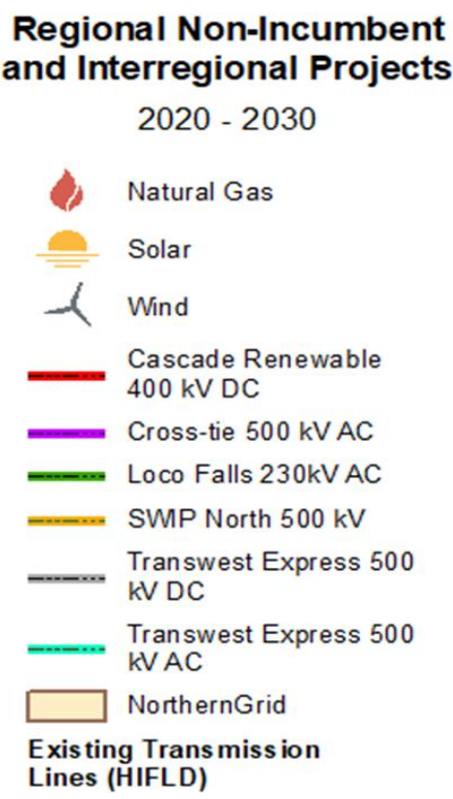
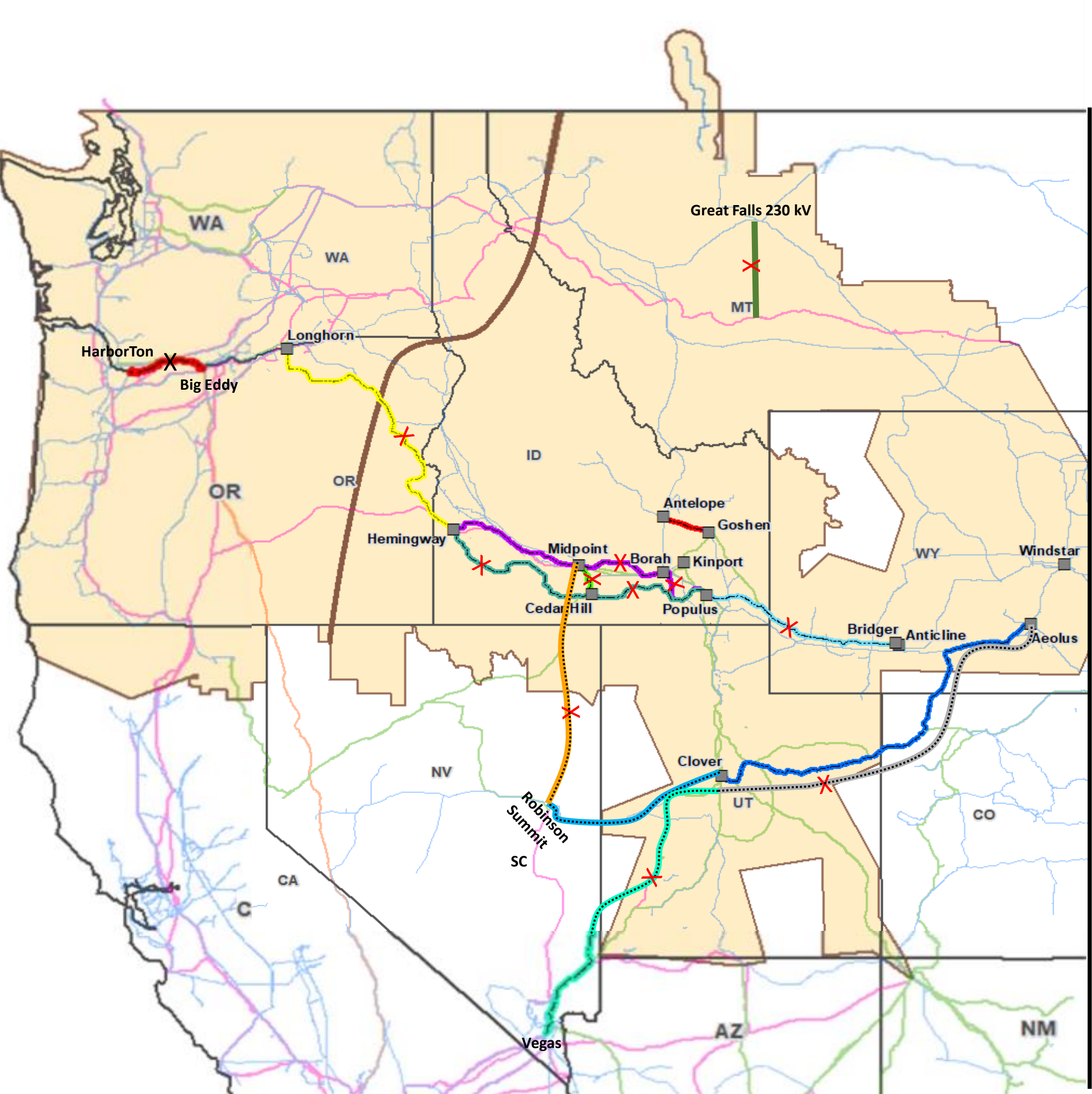
Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X	X		X	X	X

RC38



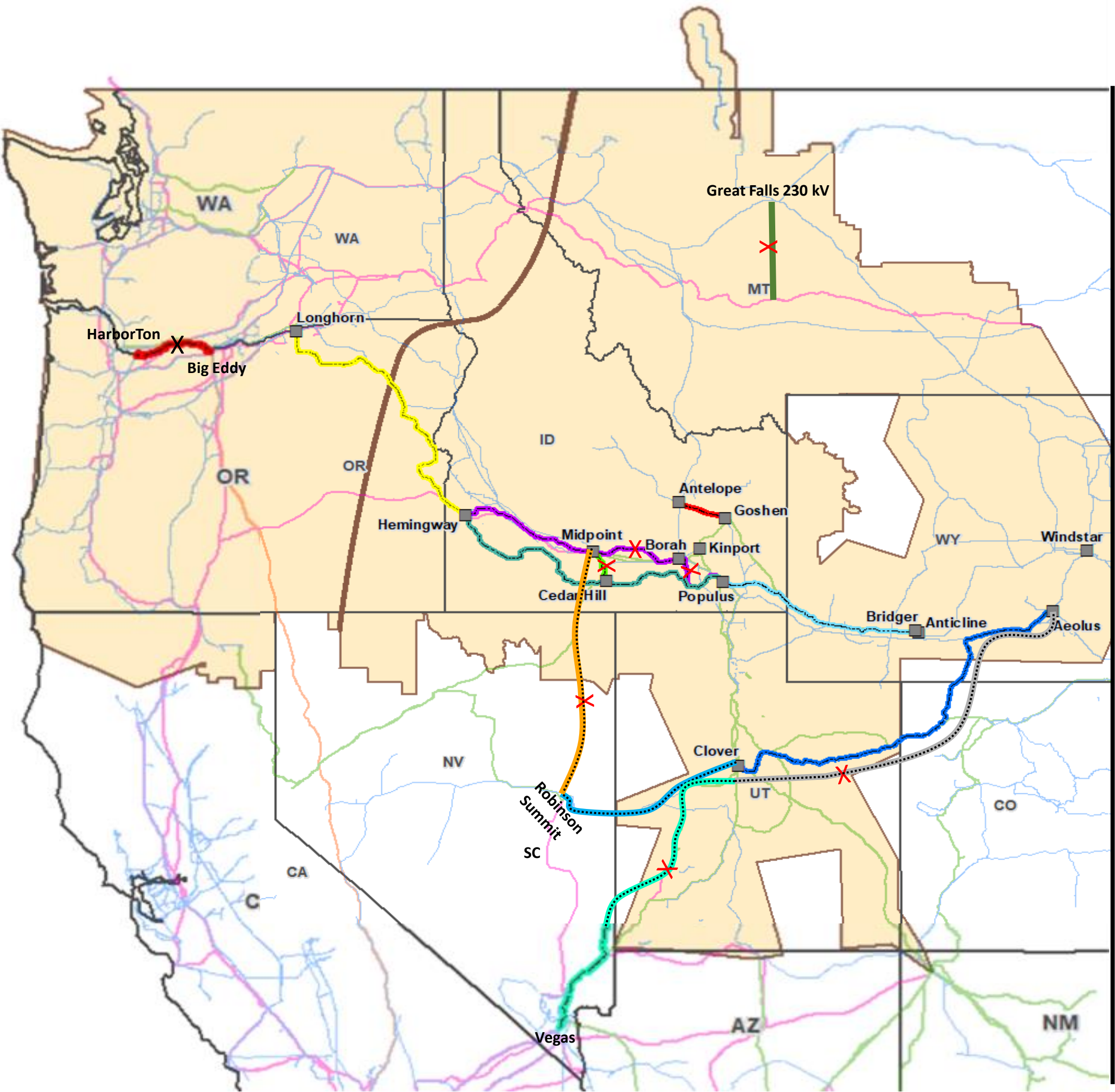
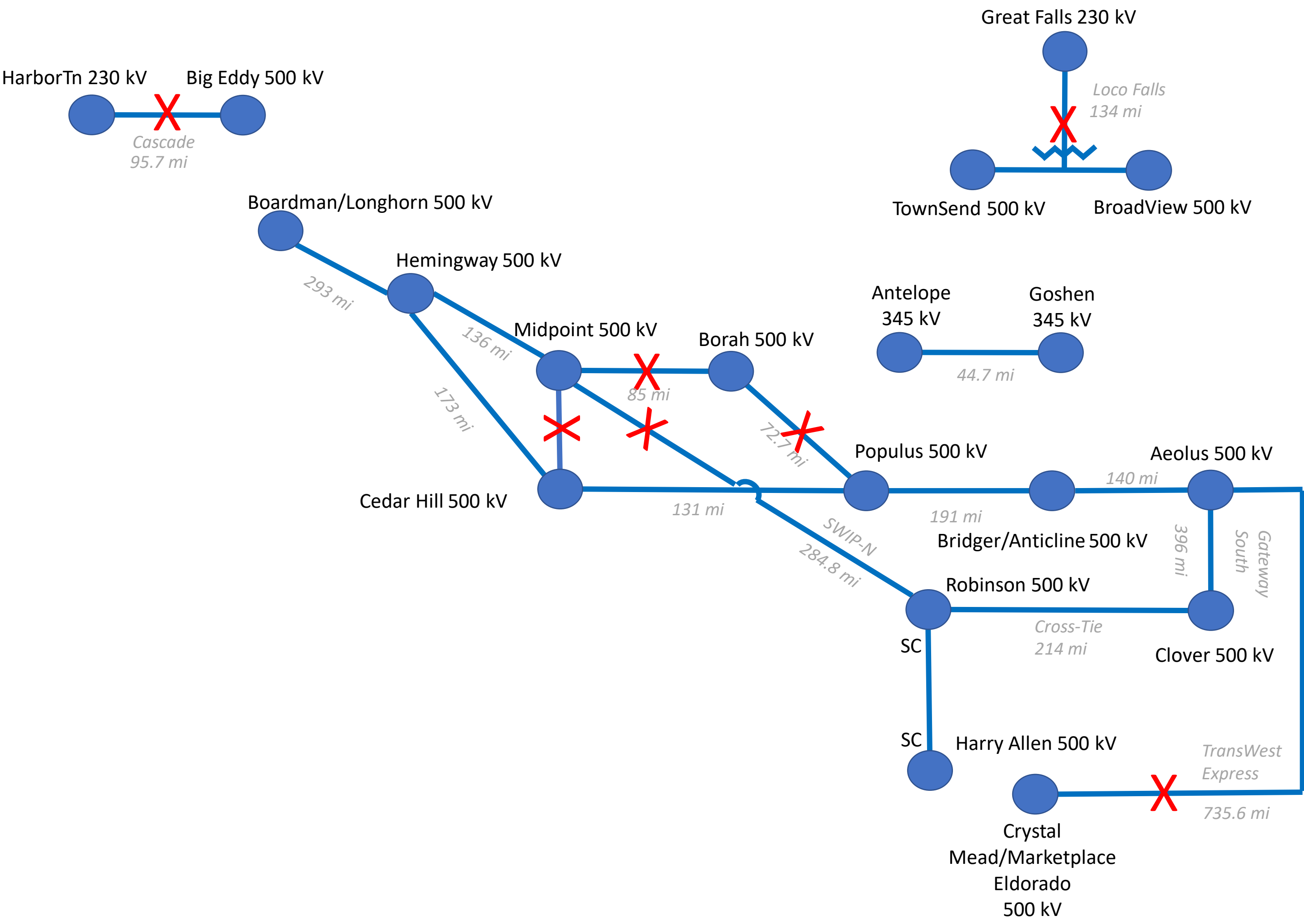
RC38_G



Modeled Projects	
BLIMP	A
RC01	
RC02	
RC03	
RC04	
RC05	
RC06	
RC07	
RC08	
RC09	
RC10	
RC11	
RC12	
RC13	
RC14	
RC15	
RC16	
RC17	
RC18	
RC19	
RC20	
RC21	
RC22a	
RC22b	
RC23	
RC24a	
RC24b	

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X				X		X	X	X

RC39_03



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

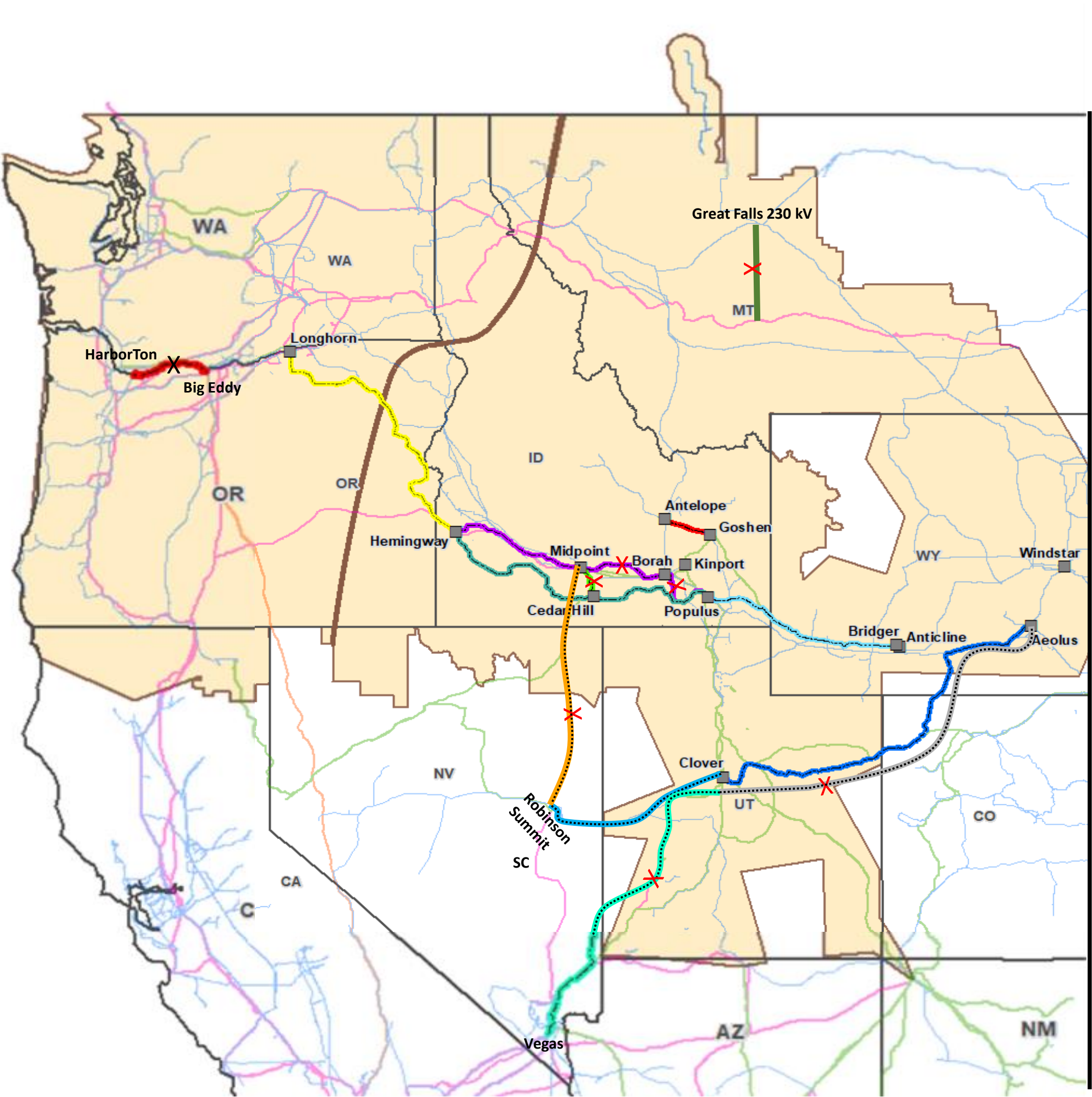
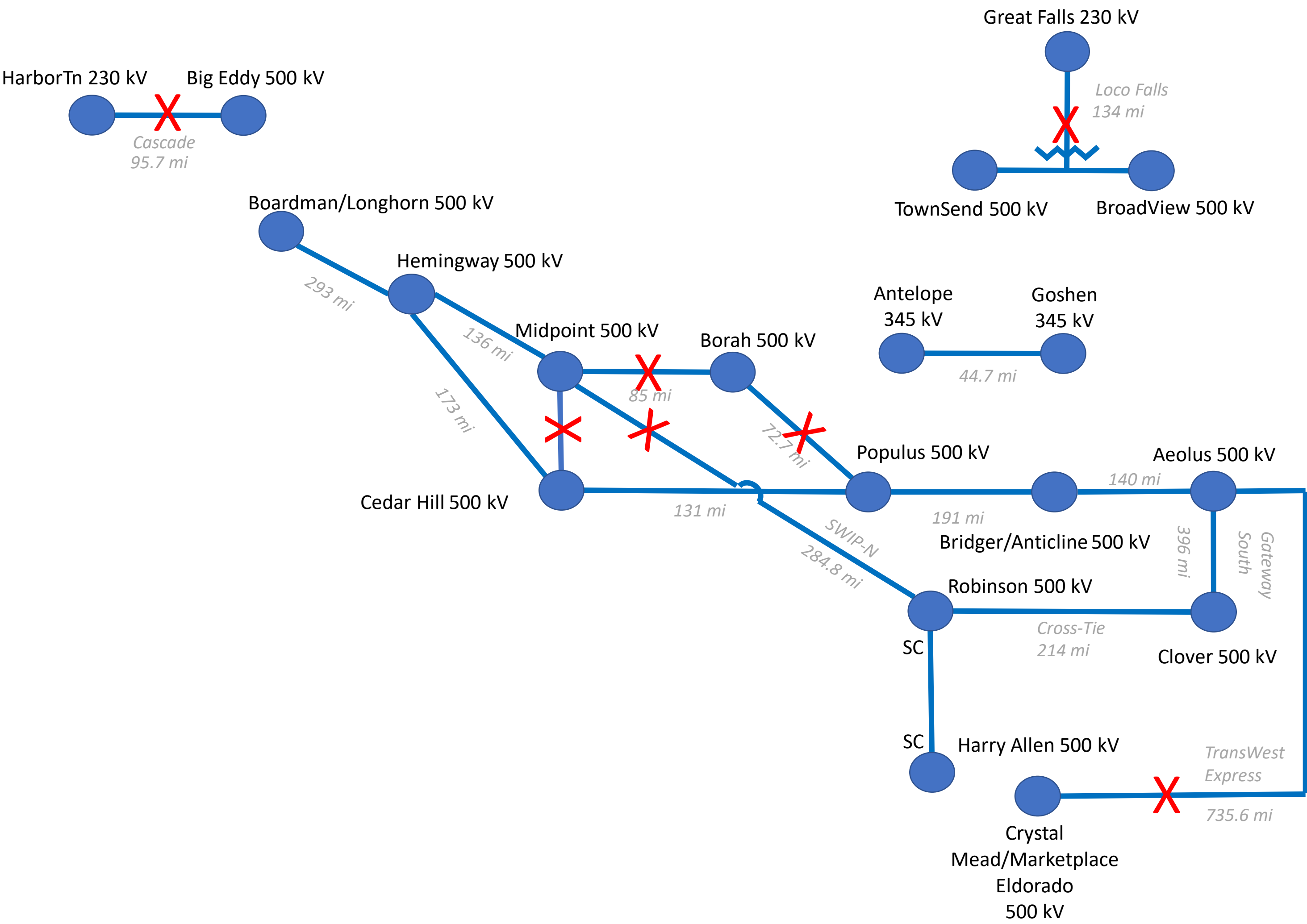
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
		X	X				X		X	X	X

RC39_03_G



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

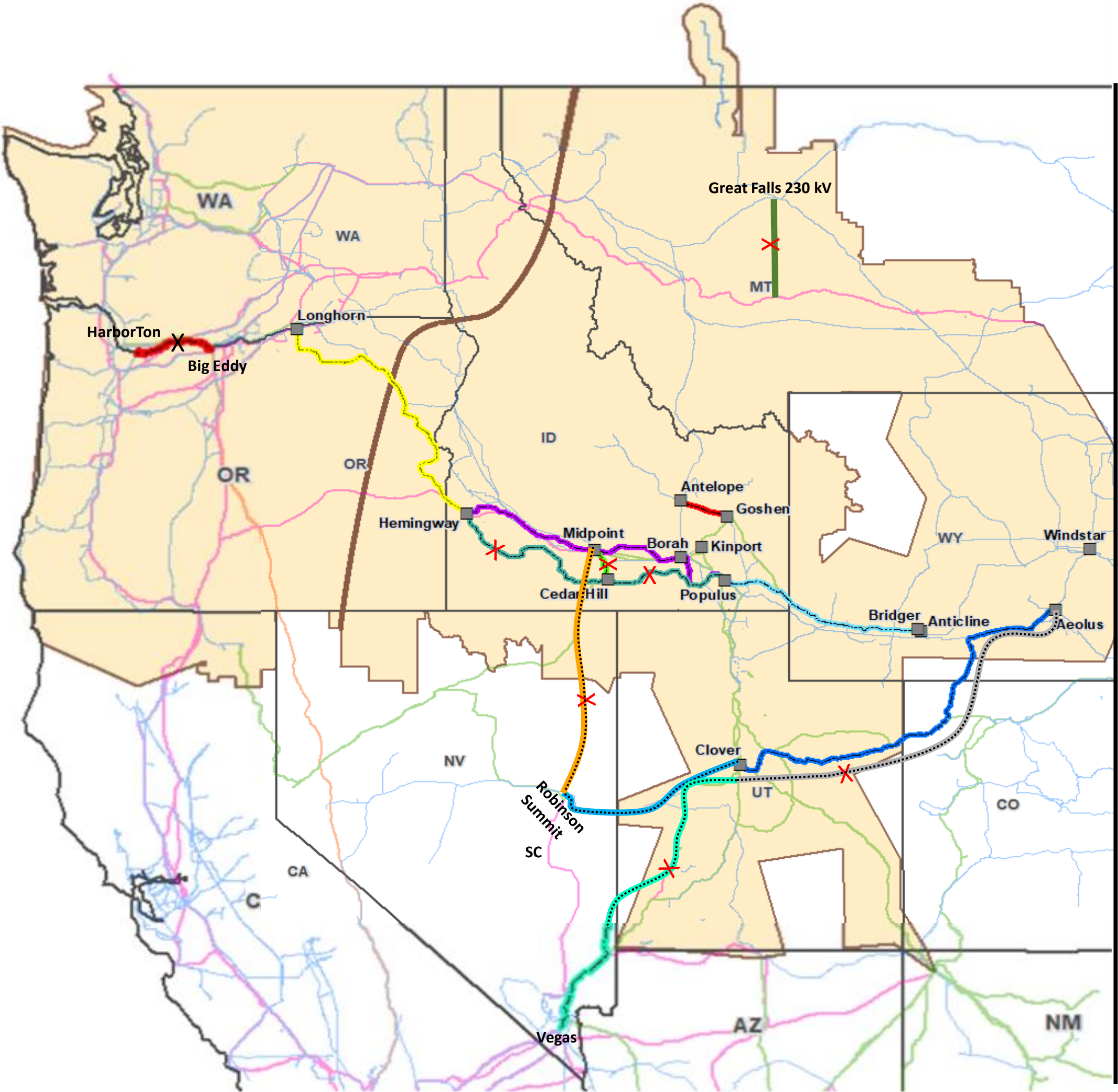
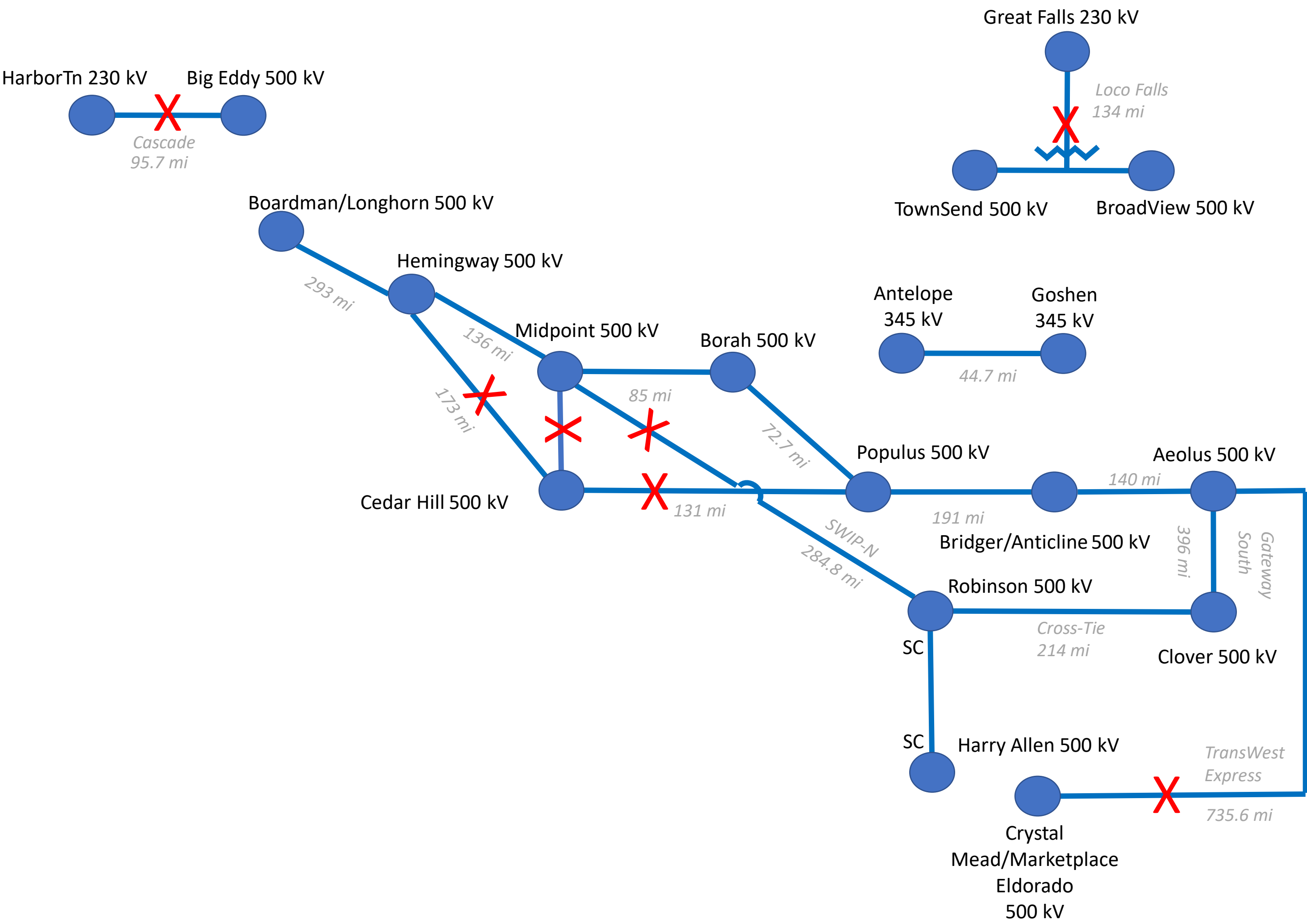
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X		X	X	X

RC39_05



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

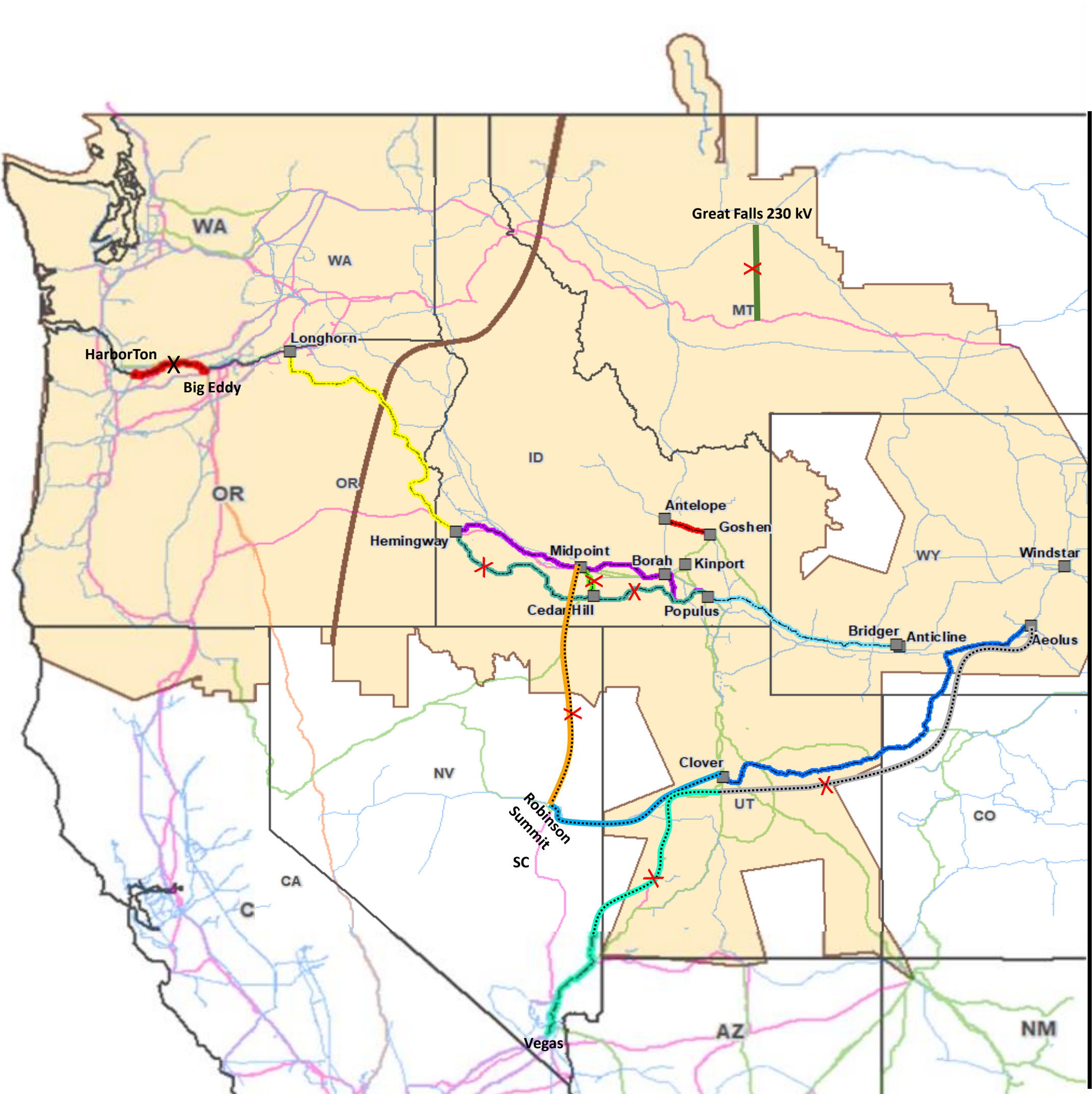
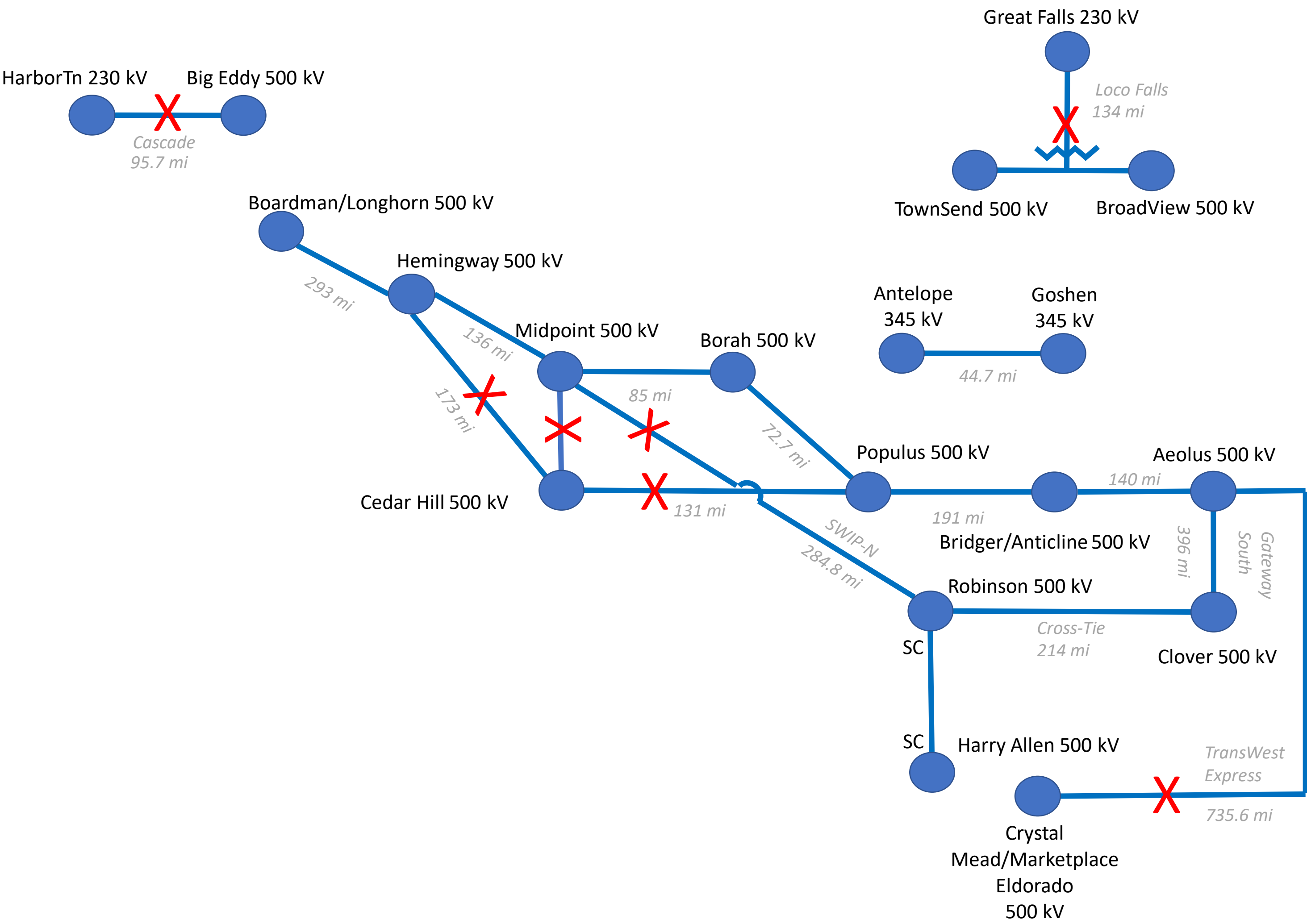
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

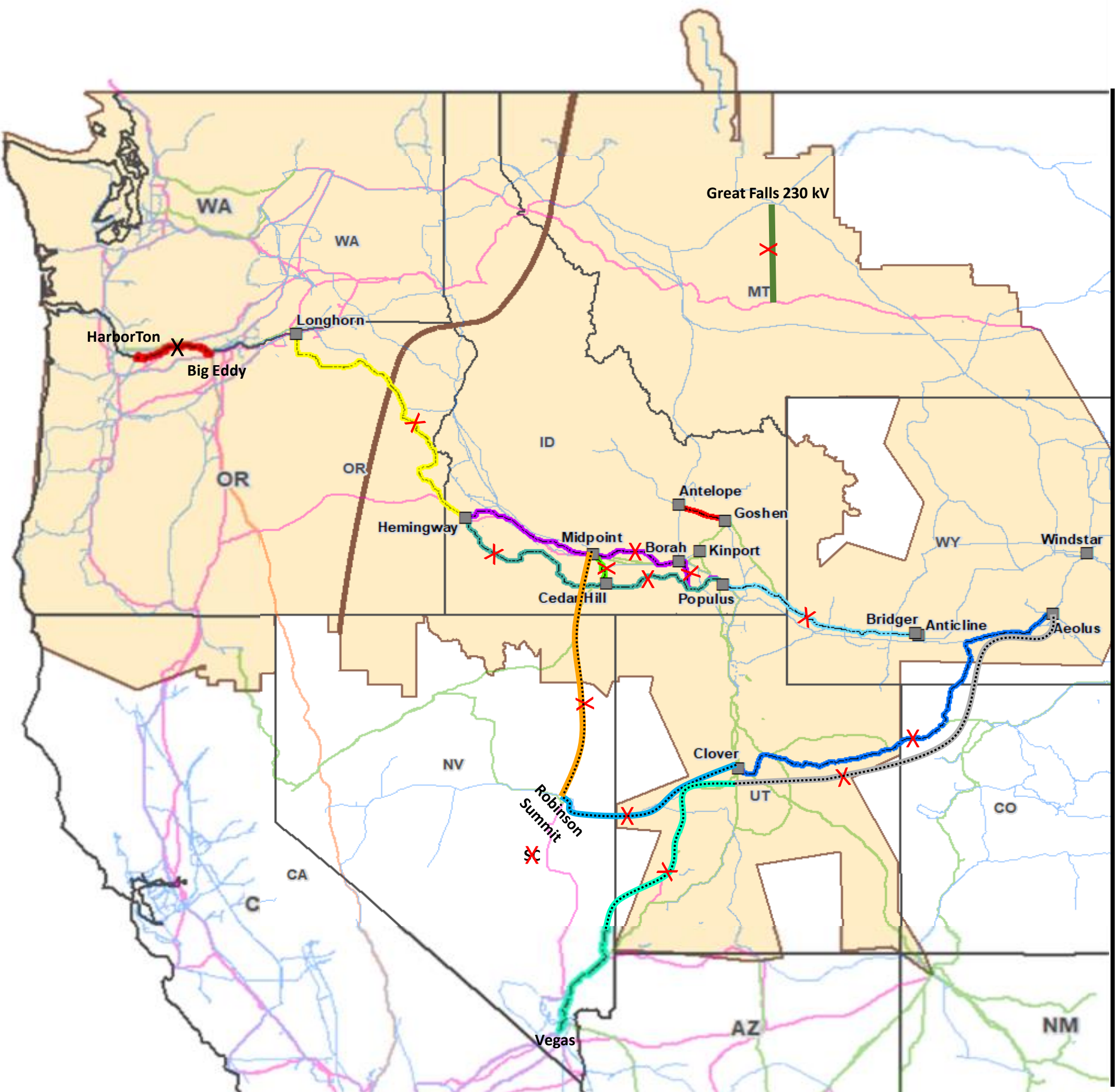
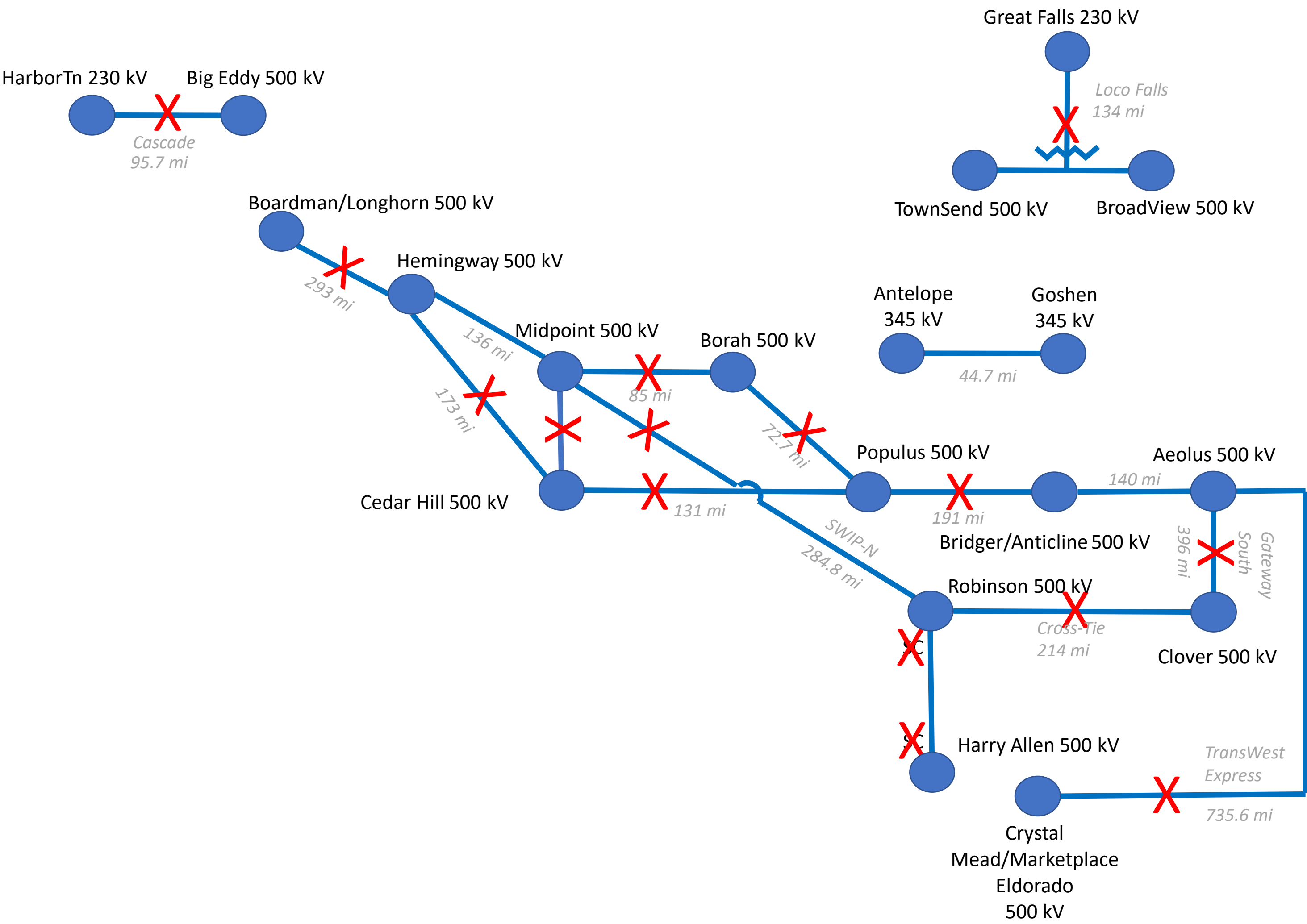
B21 [H]	Gateway West (Pop - Ced - Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
	X		X				X		X	X	X

RC39_05_G



B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X	X	X	X	X	X

RC40



Regional Projects
2020 - 2030

Gateway West 500 kV AC

Existing Transmission Lines (HIFLD)

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

Modeled Projects

BLMP

RC01

RC02

RC03

RC04

RC05

RC06

RC07

RC08

RC09

RC10

RC11

RC12

RC13

RC14

RC15

RC16

RC17

RC18

RC19

RC20

RC21

RC22a

RC22b

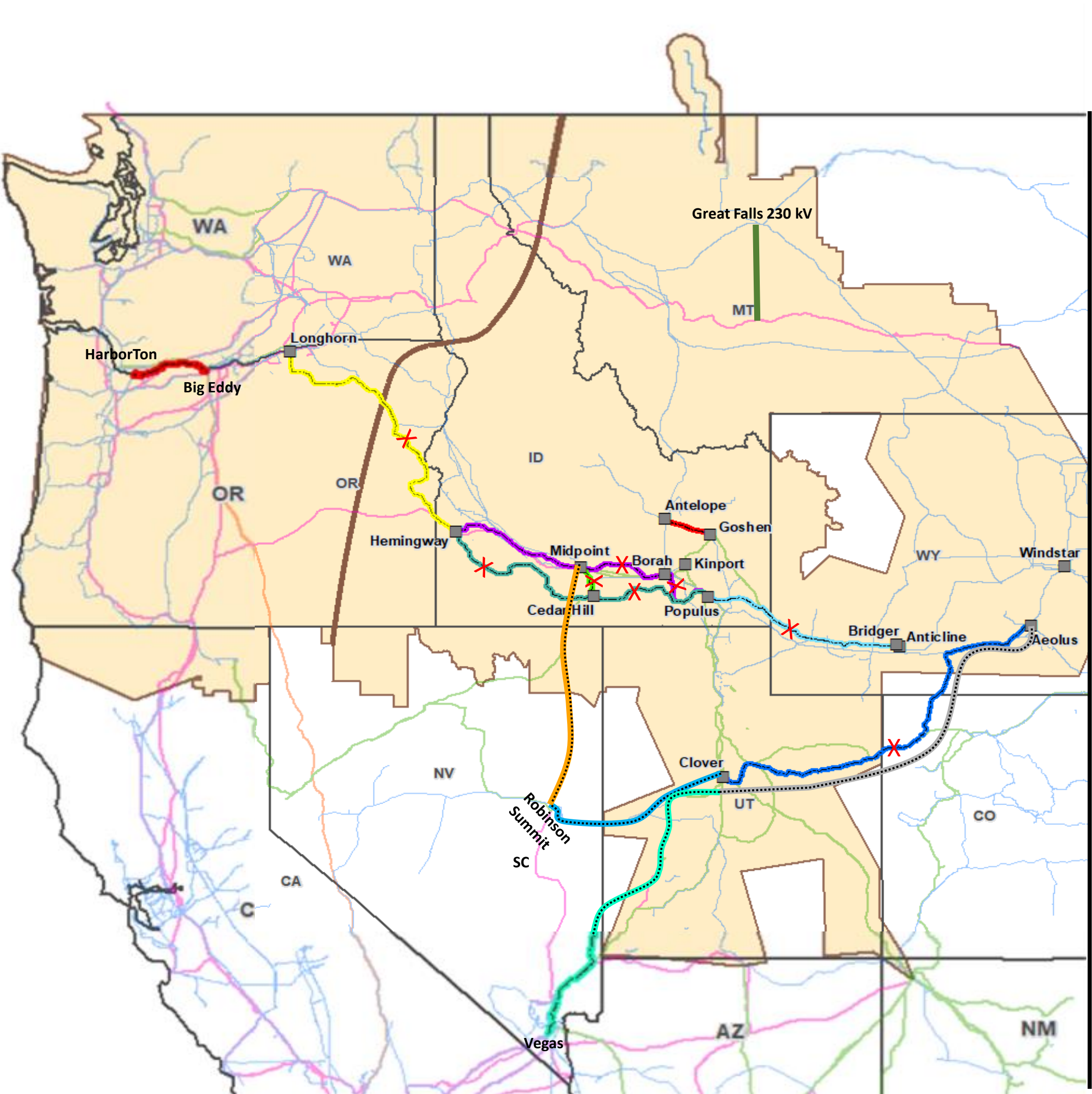
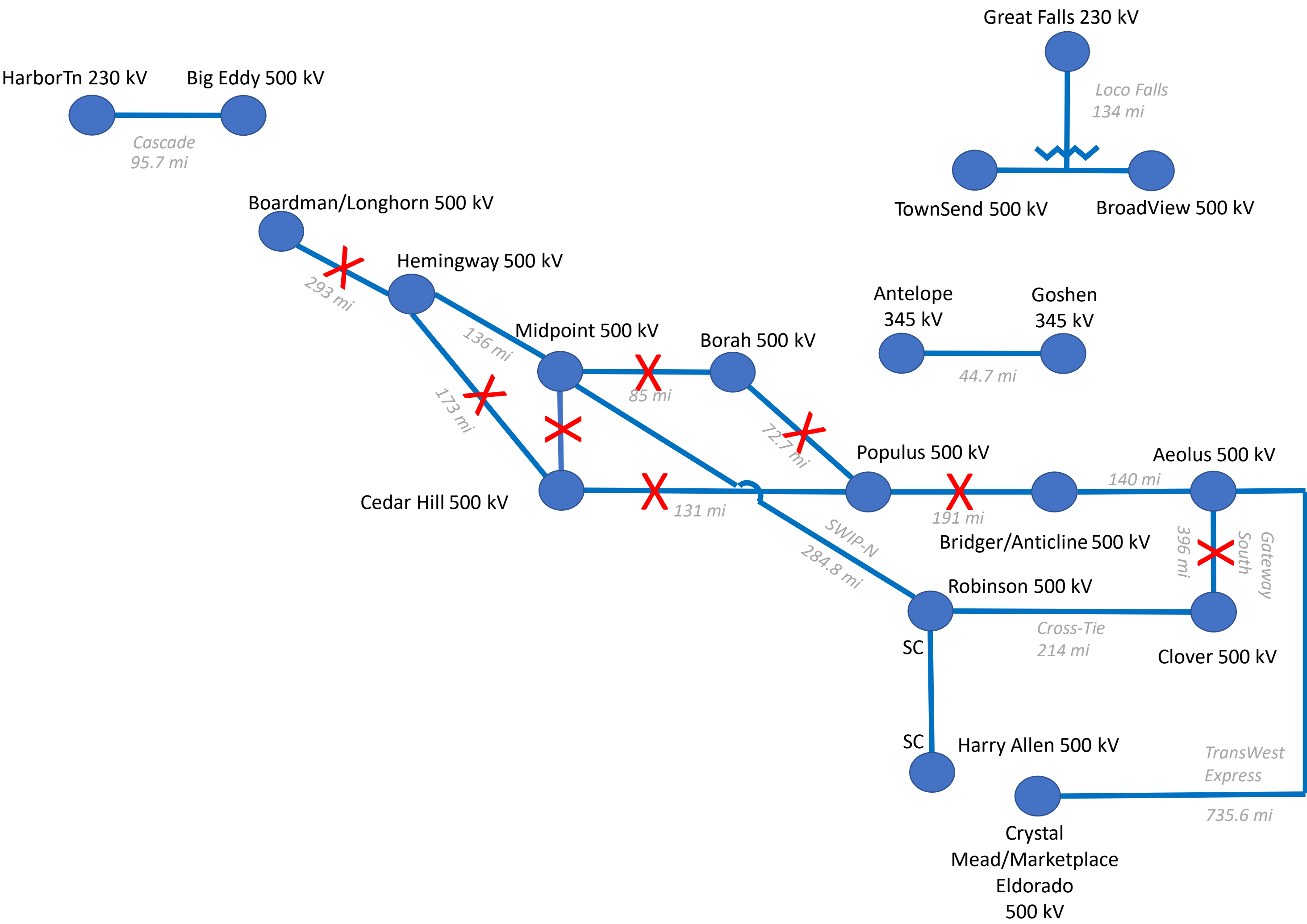
RC23

RC24a

RC24b

B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X	X		X					

RC41



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *
- Gateway West 500 kV AC
- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus
- NorthernGrid

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

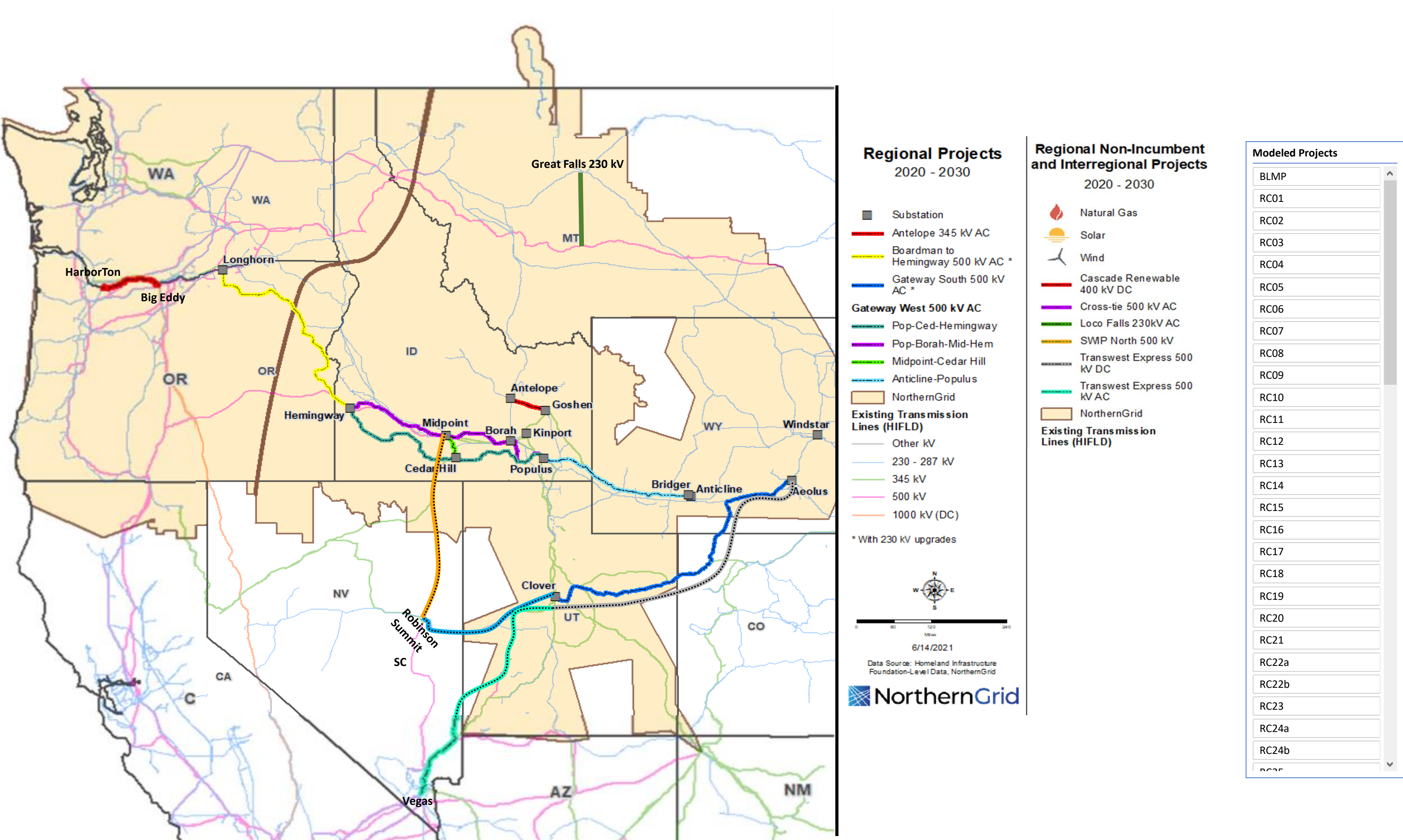
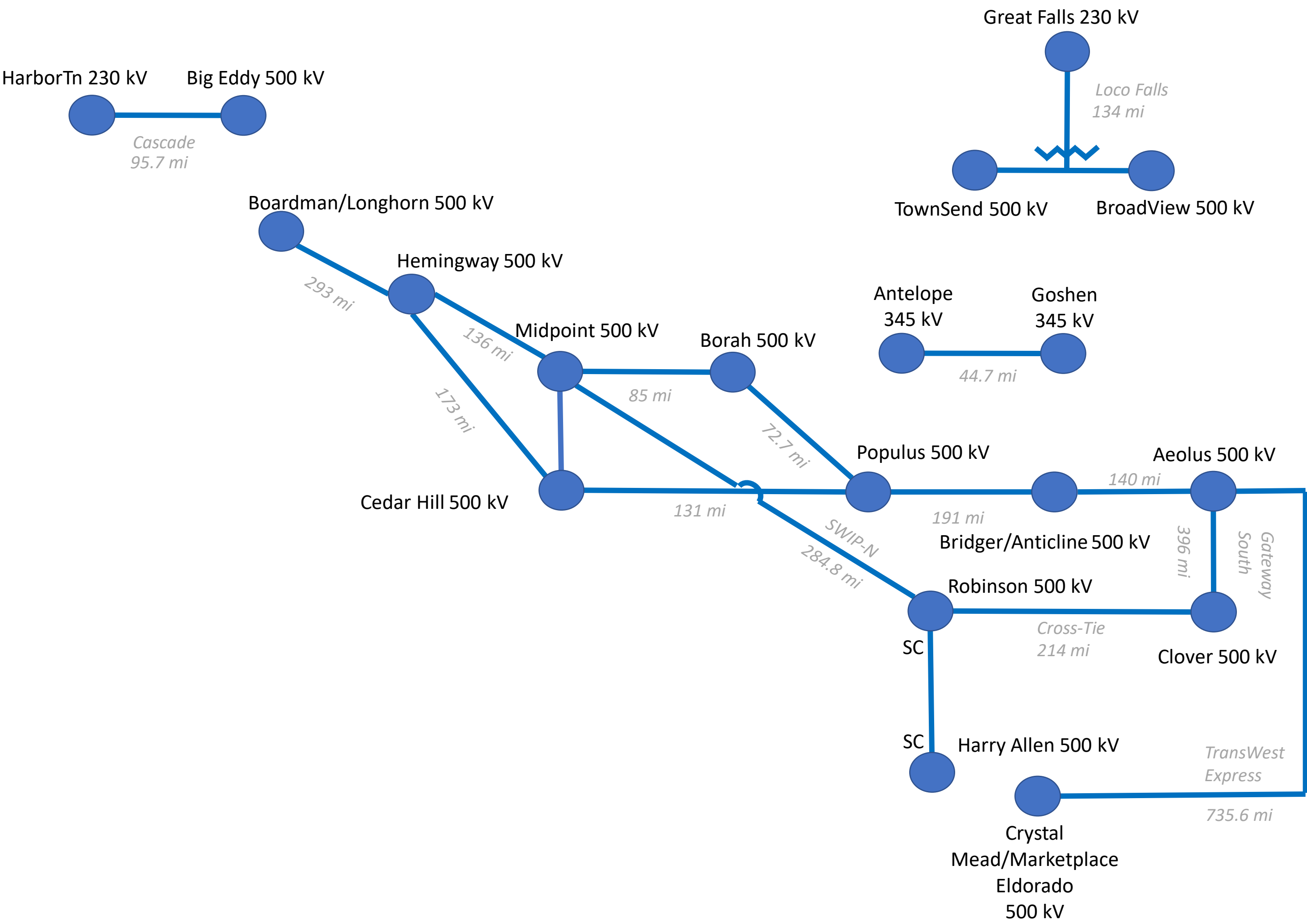
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

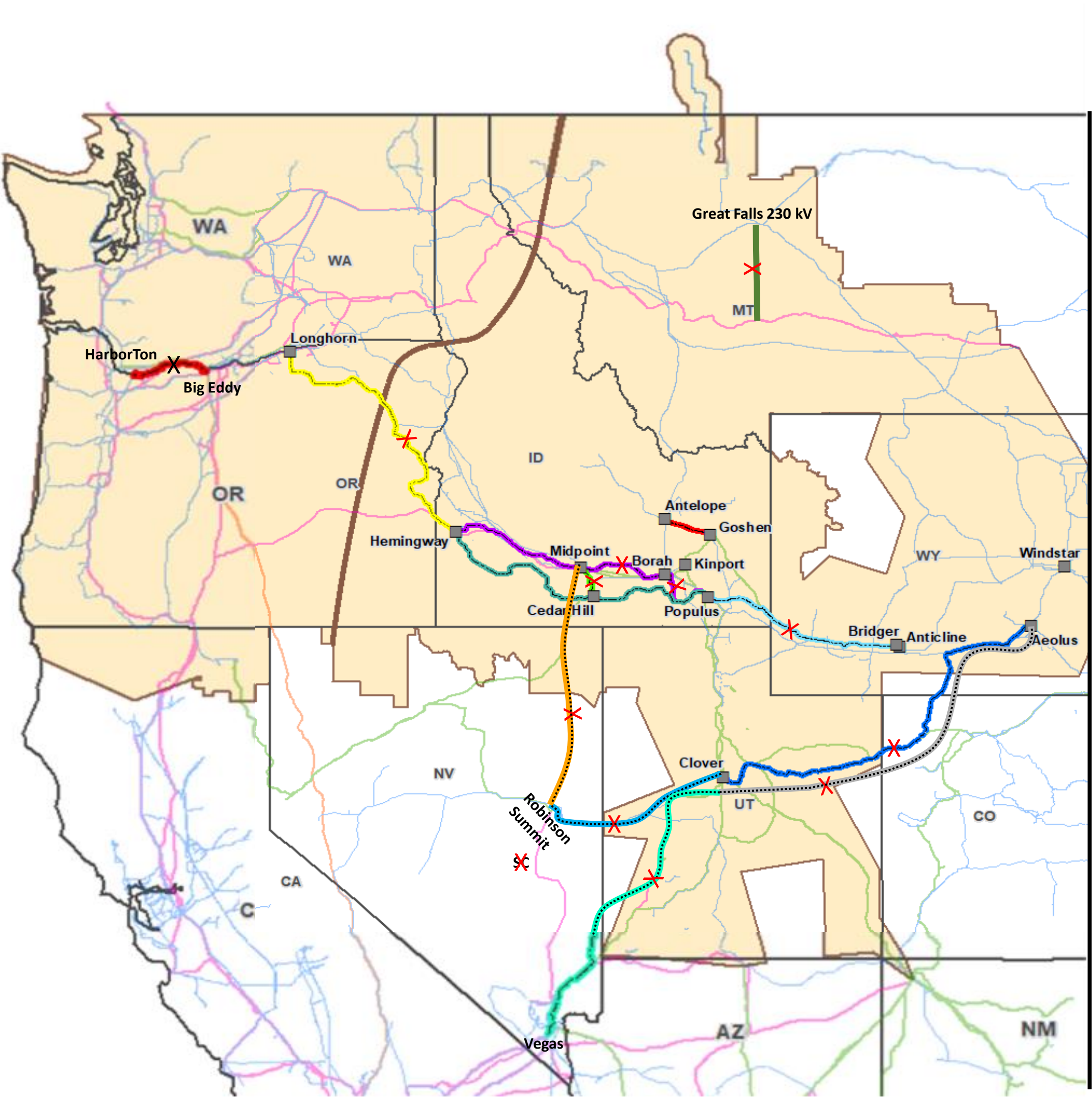
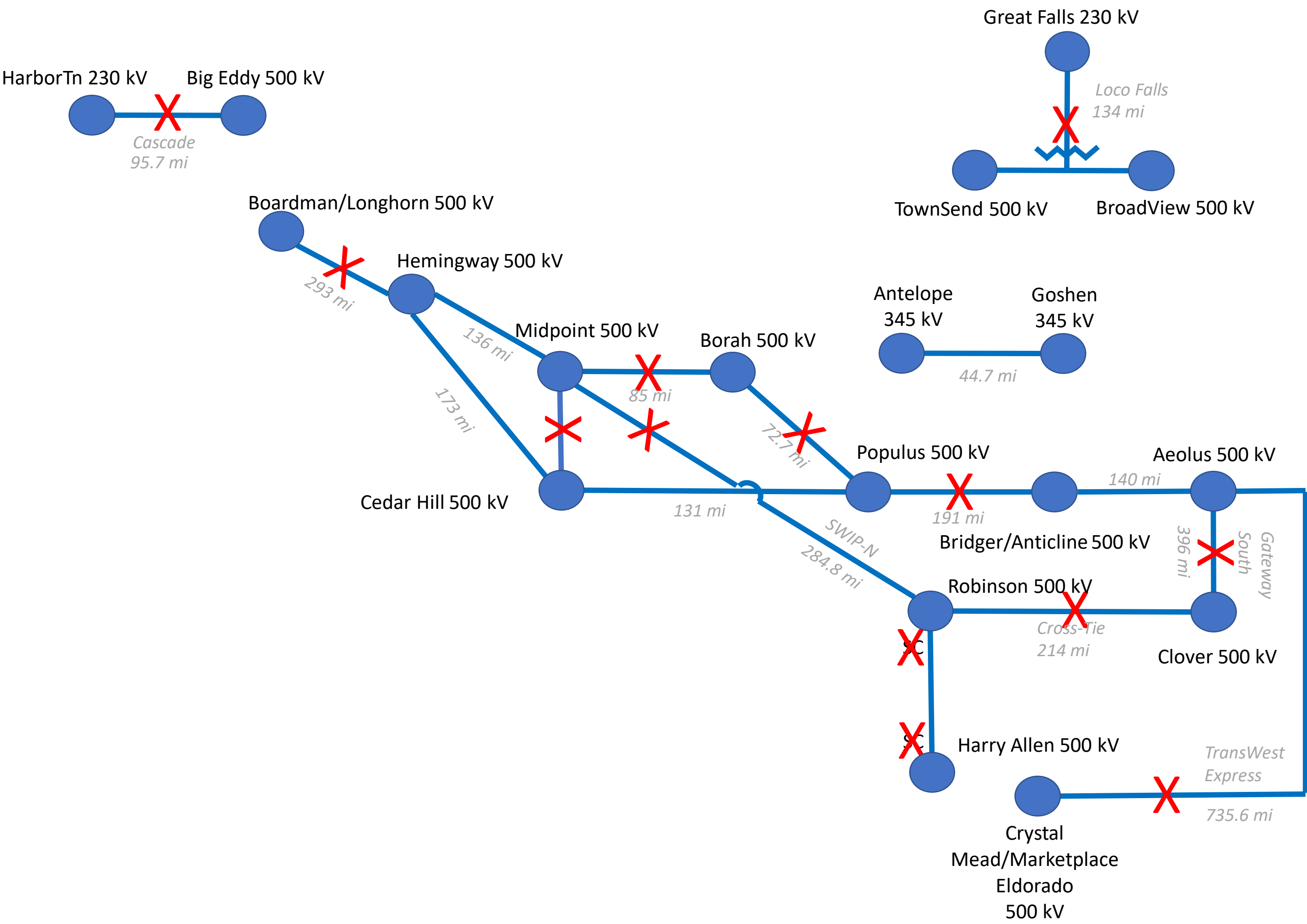
B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable

RC42



B21 [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X		X	X	X		X	X	X	X	X	X

RC43



Regional Projects
2020 - 2030

Substation

Antelope 345 kV AC

Boardman to Hemingway 500 kV AC *

Gateway South 500 kV AC *

Gateway West 500 kV AC

Pop-Ced-Hemingway

Pop-Borah-Mid-Hem

Midpoint-Cedar Hill

Anticline-Populus

NorthernGrid

Existing Transmission Lines (HIFLD)

Other kV

230 - 287 kV

345 kV

500 kV

1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

Natural Gas

Solar

Wind

Cascade Renewable 400 kV DC

Cross-tie 500 kV AC

Loco Falls 230kV AC

SWP North 500 kV

Transwest Express 500 kV DC

Transwest Express 500 kV AC

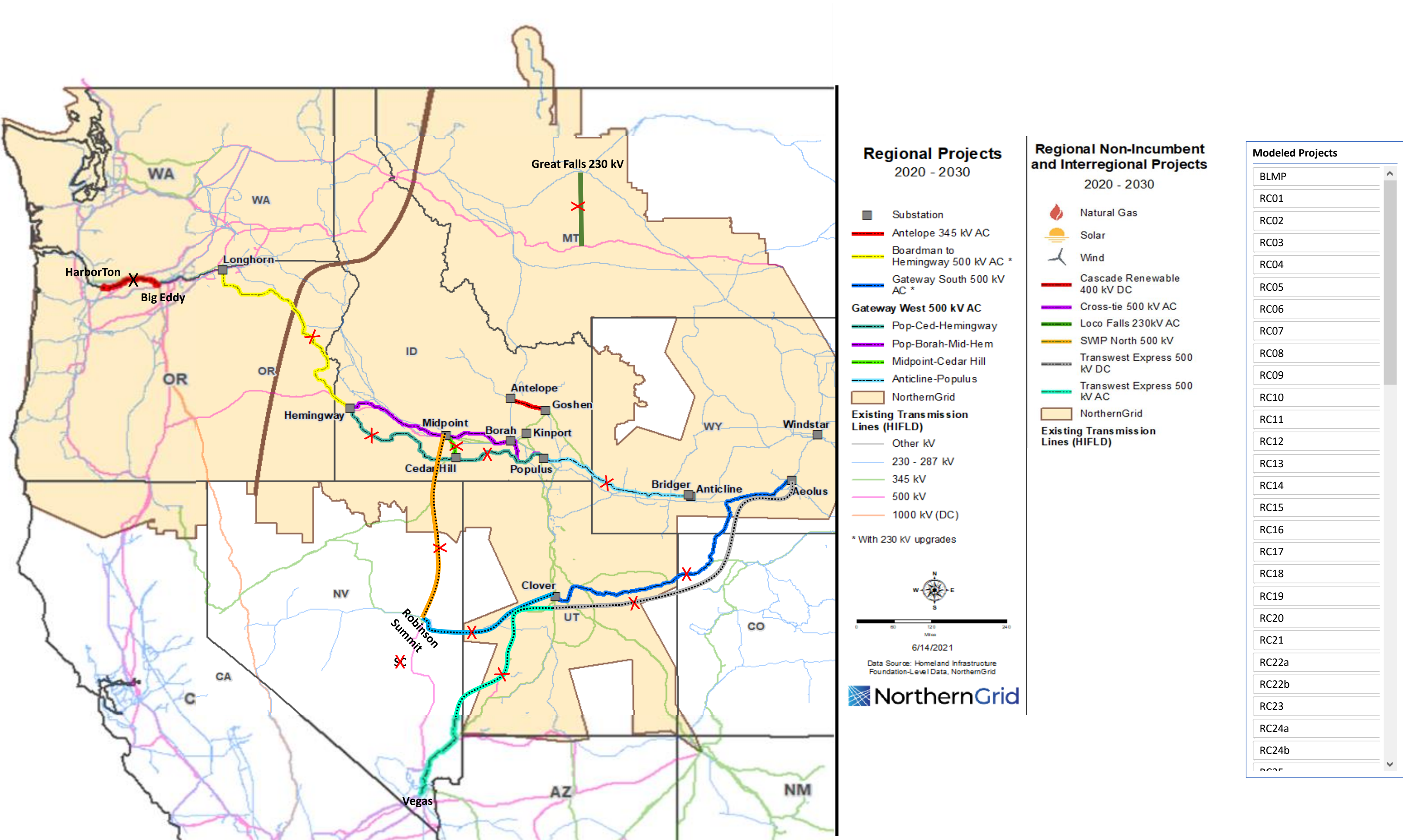
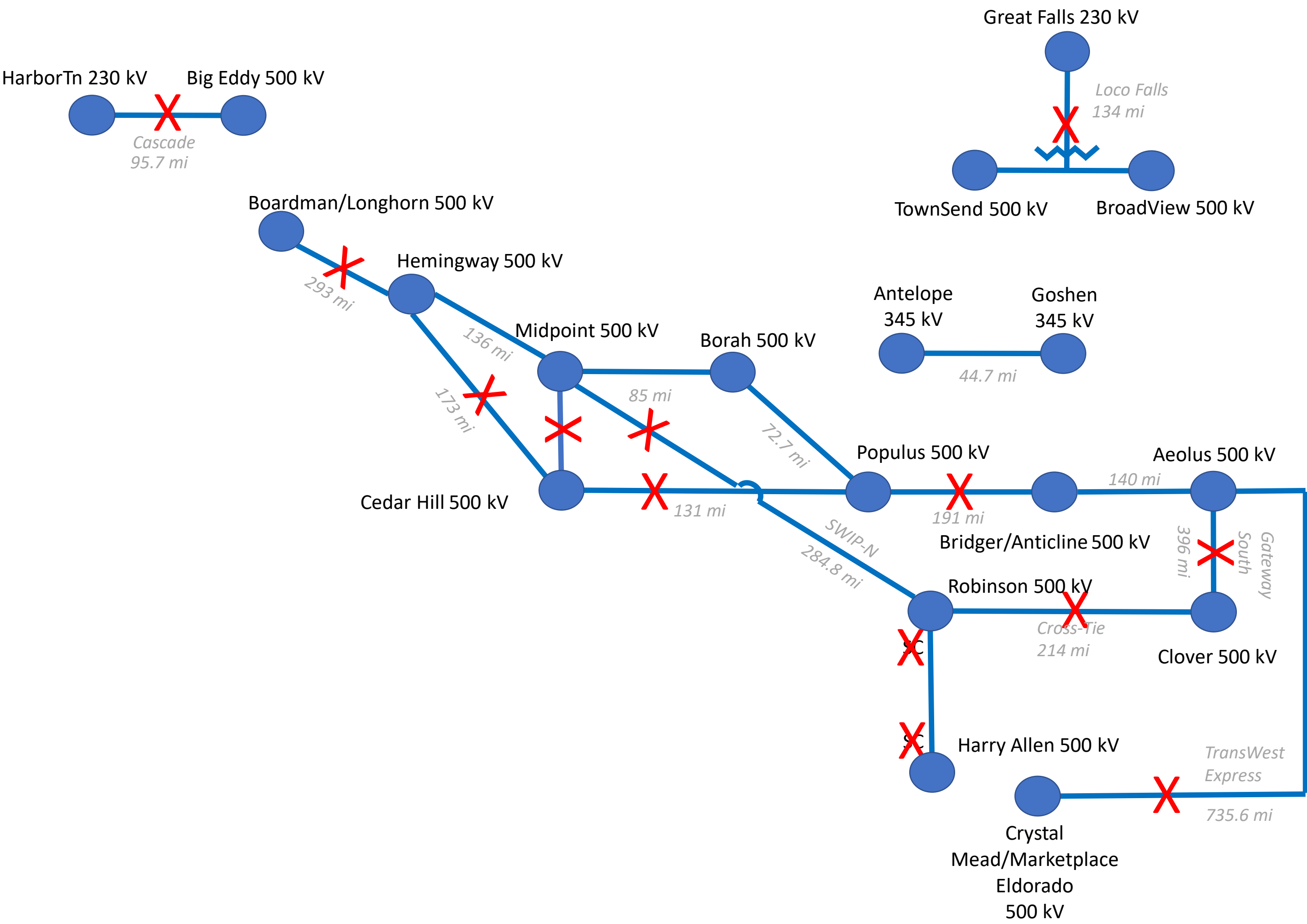
NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b
RC25

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
XX		XX		XX		XX	XX	XX	XX	XX	XX

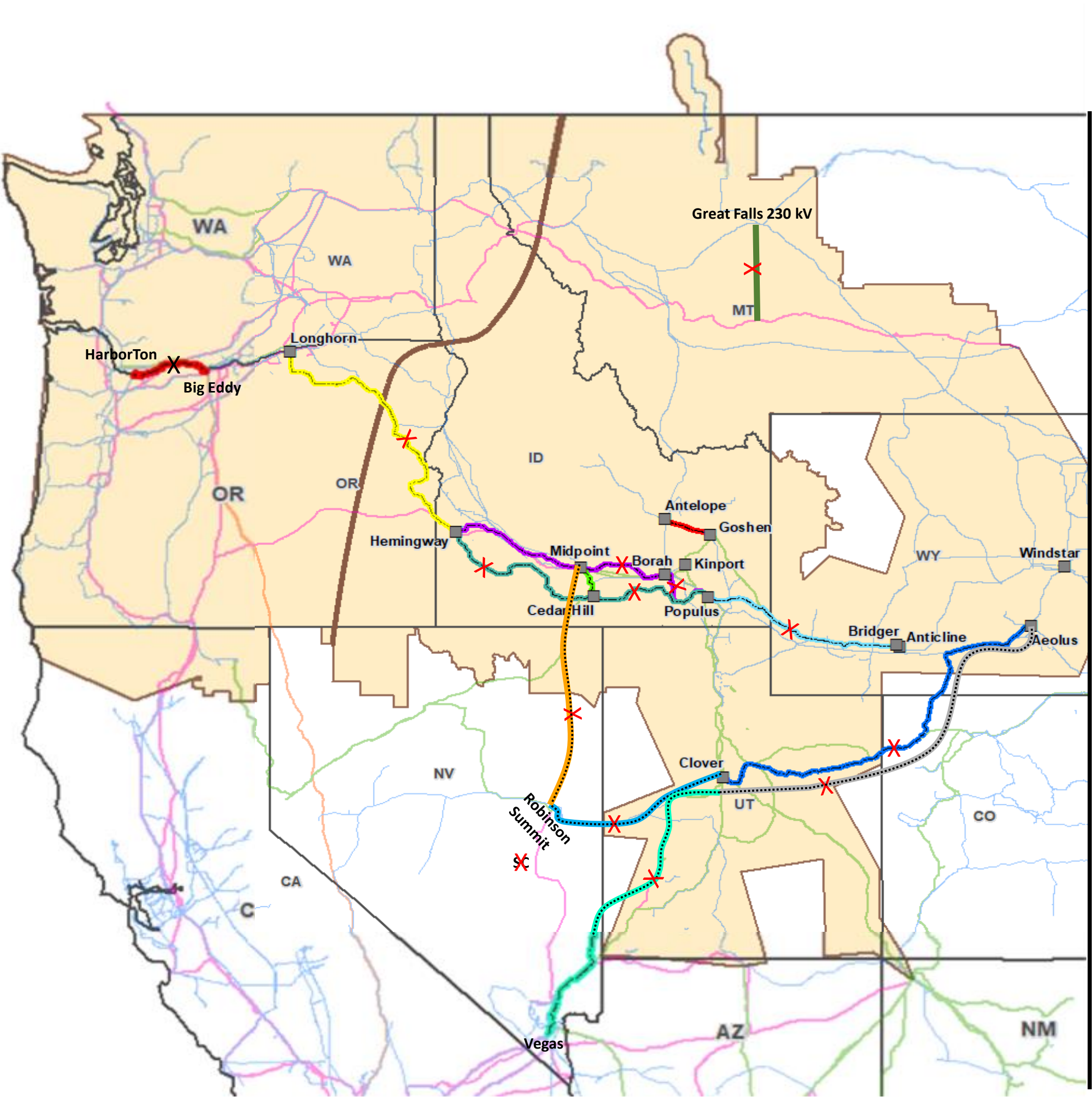
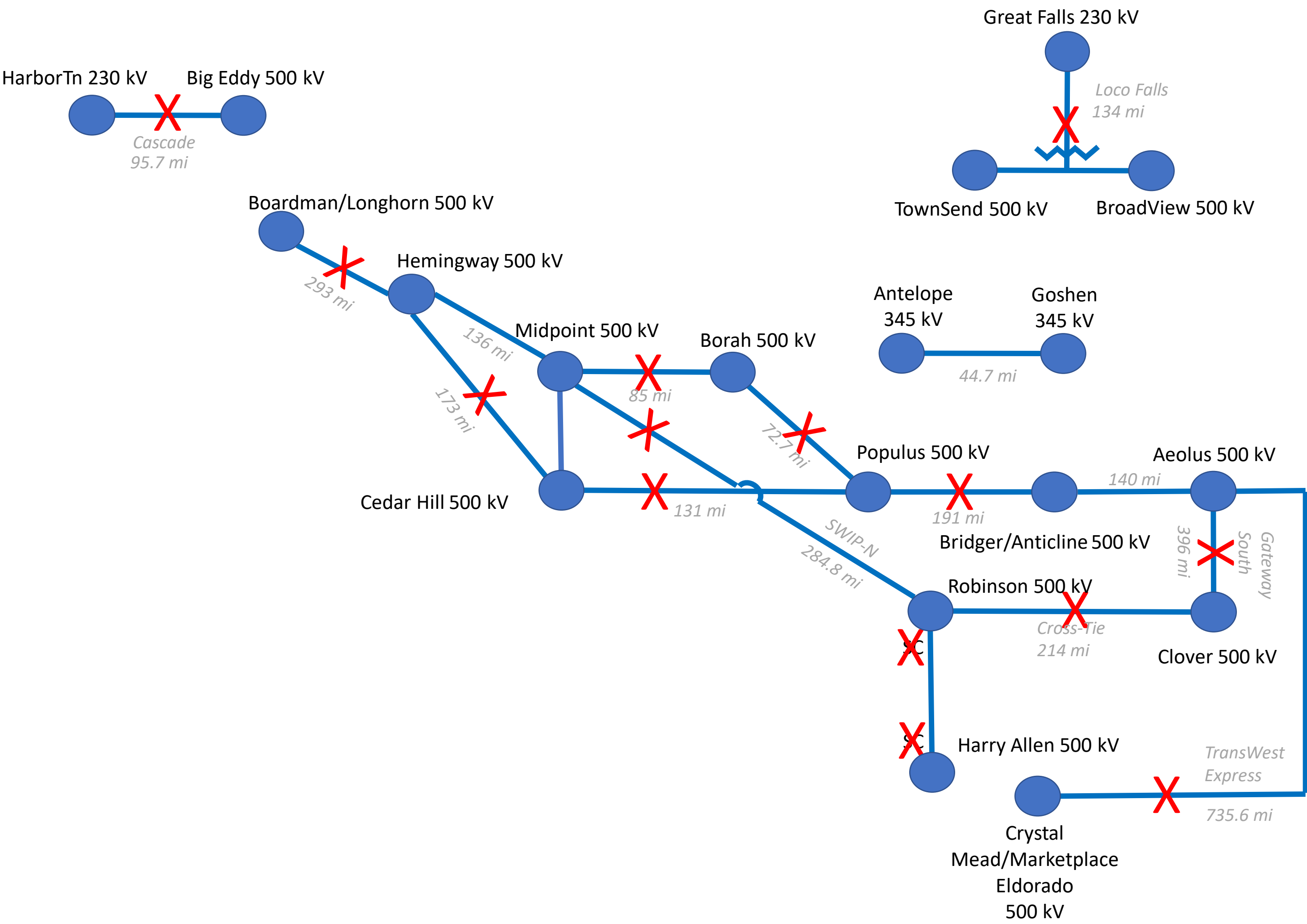
RC44



Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X		X		X	X	X	X	X	X

RC45



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
- 230 - 287 kV
- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021

Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid

NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

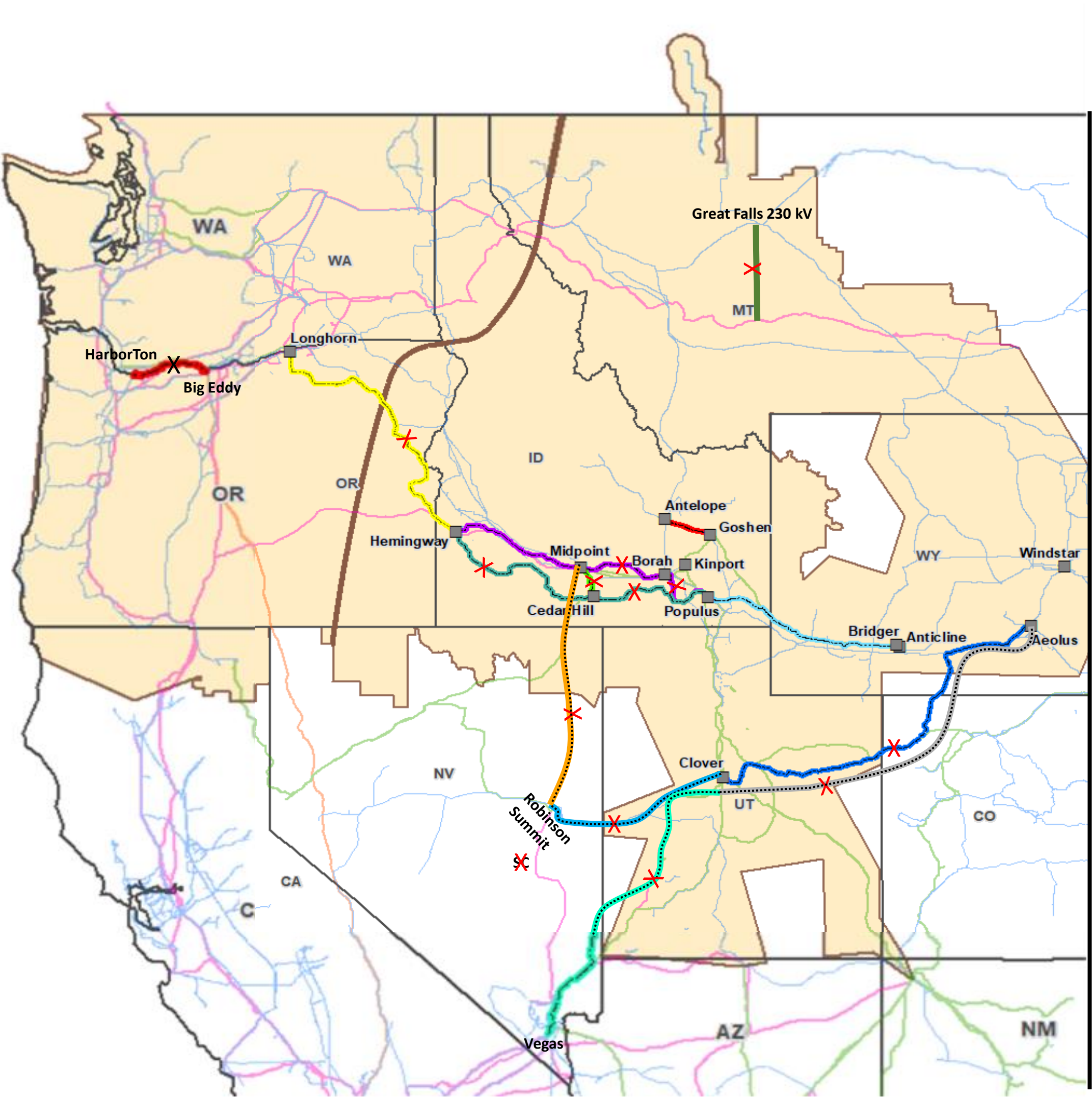
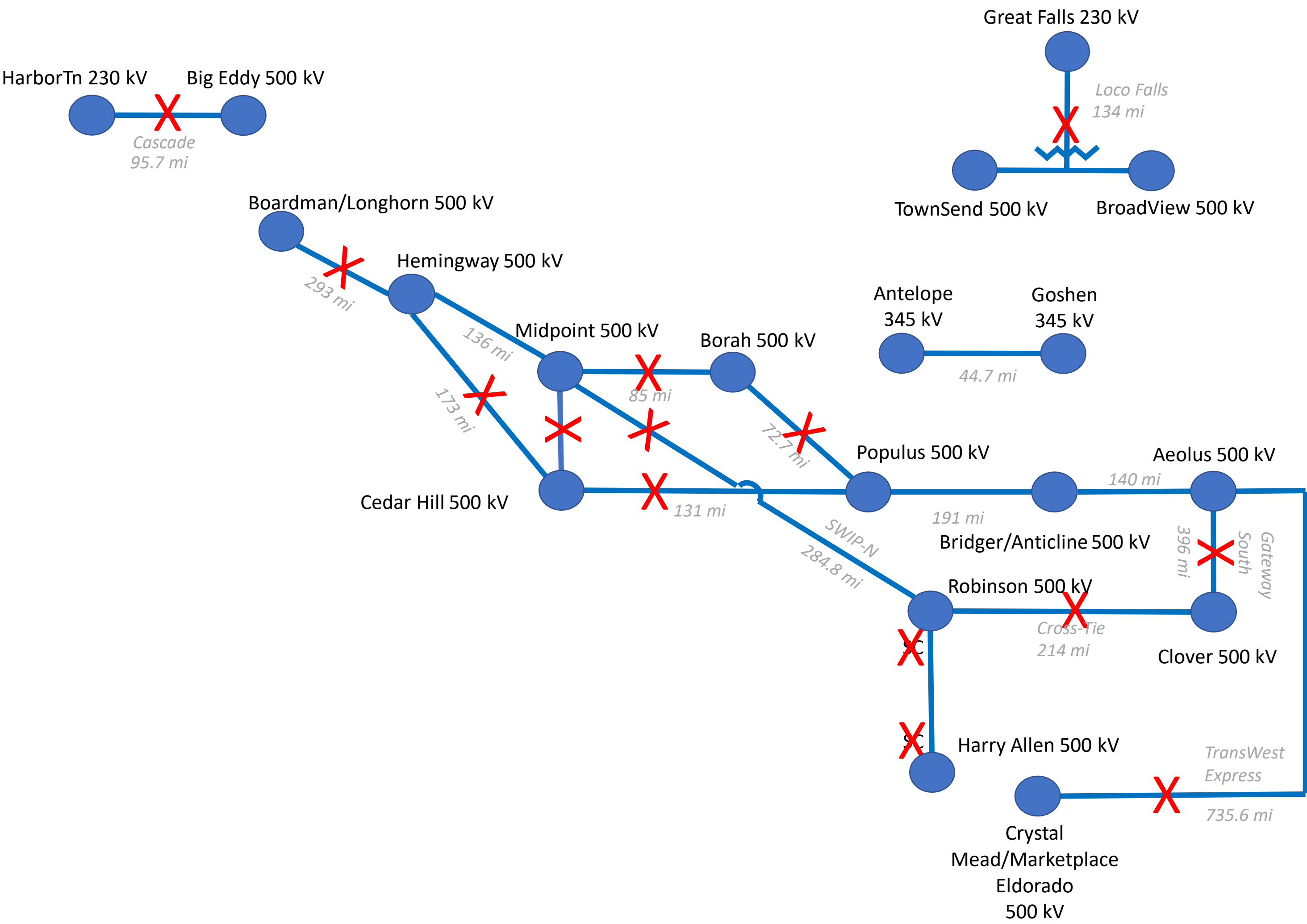
- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-Tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid

Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b

B2T [H]	Gateway West (Pop - Ced-Hem) [E]	Gateway West (Pop - Bor - Mid - Hem)	Gateway West (Mid - Ced)	Gateway West (Ant - Pop) [D-3]	Antelope	Gateway South [F]	SWP-N	Cross-Tie	TransWest Express ACDC	Loco Falls Greenline	Cascade Renewable
X	X	X	X			X	X	X	X	X	X

RC46



Regional Projects
2020 - 2030

- Substation
- Antelope 345 kV AC
- Boardman to Hemingway 500 kV AC *
- Gateway South 500 kV AC *

Gateway West 500 kV AC

- Pop-Ced-Hemingway
- Pop-Borah-Mid-Hem
- Midpoint-Cedar Hill
- Anticline-Populus

Existing Transmission Lines (HIFLD)

- Other kV
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- 345 kV
- 500 kV
- 1000 kV (DC)

* With 230 kV upgrades

6/14/2021
Data Source: Homeland Infrastructure Foundation-Level Data, NorthernGrid
NorthernGrid

Regional Non-Incumbent and Interregional Projects
2020 - 2030

- Natural Gas
- Solar
- Wind
- Cascade Renewable 400 kV DC
- Cross-tie 500 kV AC
- Loco Falls 230kV AC
- SWP North 500 kV
- Transwest Express 500 kV DC
- Transwest Express 500 kV AC
- NorthernGrid
- Existing Transmission Lines (HIFLD)

Modeled Projects
BLMP
RC01
RC02
RC03
RC04
RC05
RC06
RC07
RC08
RC09
RC10
RC11
RC12
RC13
RC14
RC15
RC16
RC17
RC18
RC19
RC20
RC21
RC22a
RC22b
RC23
RC24a
RC24b
RC25