2017 Final LCR Study Results Sierra and Stockton Local Areas

Binaya Shrestha

Regional Transmission Engineer Lead

Stakeholder Call

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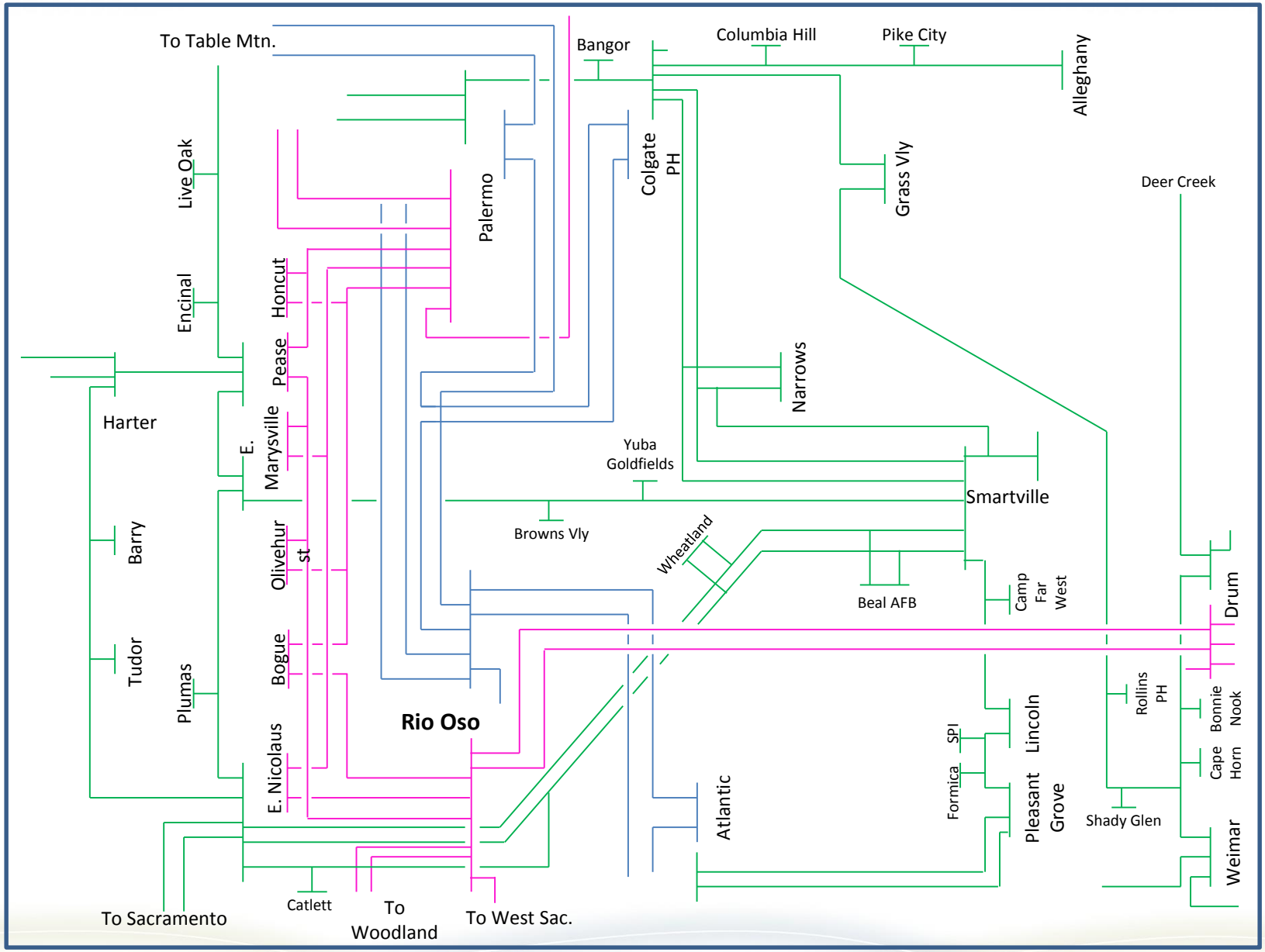
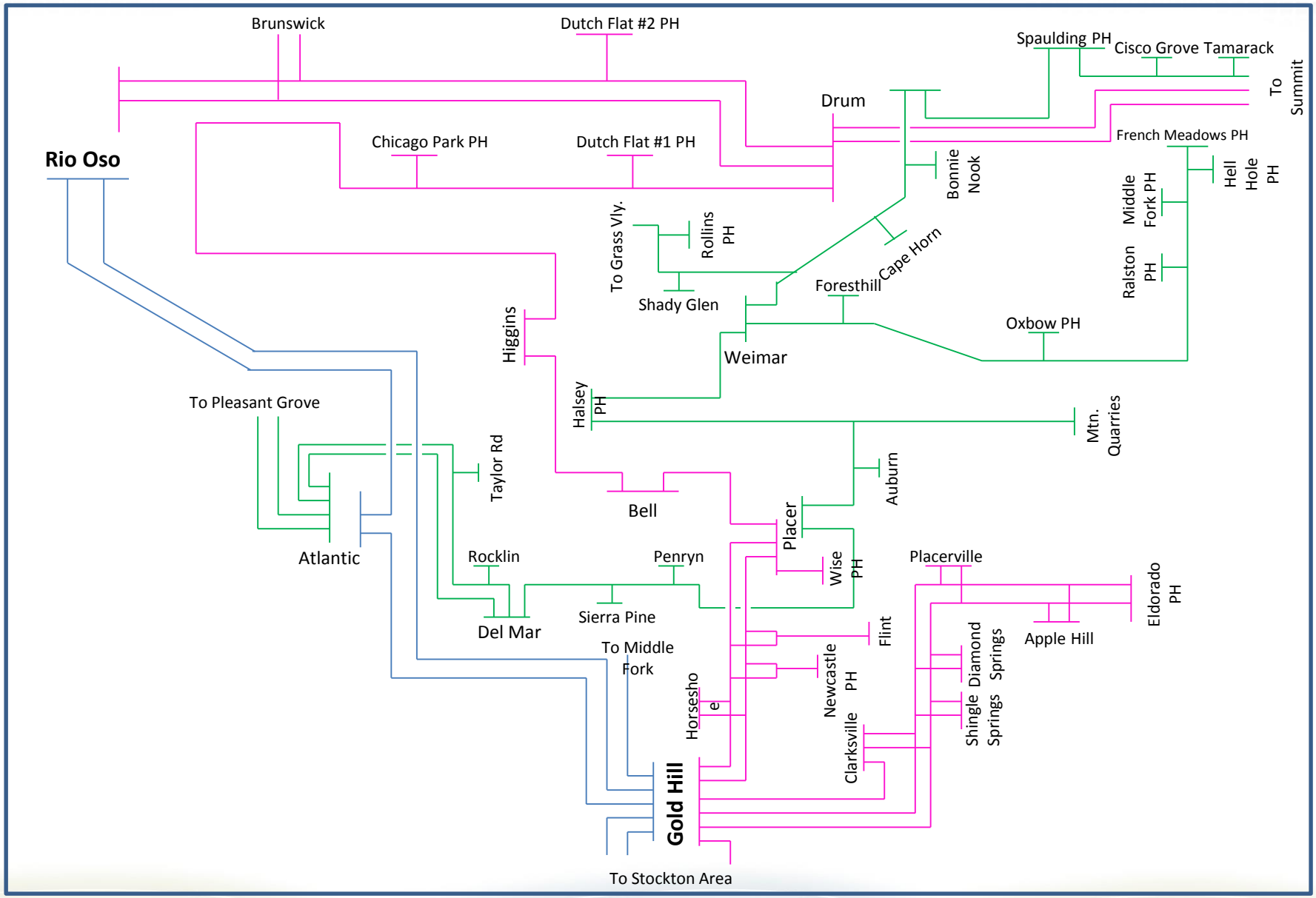
Sierra Area Load and Resources (MW)

		2017
Load	=	1688
AAEE	=	-22
Transmission Losses	=	91
Total Load	=	**1757**
Market Generation	=	890
Muni Generation	=	1110
QF Generation	=	66
Total Qualifying Capacity	=	**2066**

Northern Sierra



Southern Sierra



New transmission projects modeled:

1. Palermo-Rio Oso 115 kV Reconductoring

Critical Sierra Area Contingencies
South of Table Mountain

South of Table Mountain Sub-area – Category C

2017 LCR need: 1731 MW (includes 66 MW of QF and 1110 MW of Muni generation)

Contingency: DCTL outage Table Mountain-Rio Oso 230 kV and Table Mountain-Palermo 230 kV

Limiting component: Thermal overload on the Caribou-Palermo 115 kV line

South of Table Mountain Sub-area – Category B

2017 LCR need: No additional category B requirement. Units required for South of Palermo satisfy the category B requirement for this sub-area.

Critical Sierra Area Contingencies
South of Palermo

South of Palermo Sub-area – Category C

2017 LCR need: 1620 MW (includes 26 MW of QF and 638 MW of Muni generation as well as 251 MW of deficiency)

Contingency: DCTL Table Mountain-Rio Oso and Colgate-Rio Oso 230 kV lines

Limiting component: Thermal overload on the Pease-Rio Oso 115 kV line

South of Palermo Sub-area – Category B

2017 LCR need: 1247 MW (includes 26 MW of QF and 638 MW of Muni generation)

Contingency: Table Mountain-Rio Oso 230 kV line with Belden unit out of service

Limiting component: Thermal overload on the Pease-Rio Oso115 kV line

Critical Sierra Area Contingencies
Drum-Rio Oso

Drum-Rio Oso Sub-area – Category C

2017 LCR need: 579 MW (includes 66 MW of QF and 201 MW of Muni generation)

Contingency: Rio Oso #2 230/115 kV transformer and Rio Oso-Brighton 230 kV line

Limiting component: Thermal overload on the Rio Oso #1 230/115 kV transformer

Drum-Rio Oso Sub-area – Category B

2017 LCR need: 364 MW (includes 66 MW of QF and 201 MW of Muni generation)

Contingency: Palermo #2 230/115 kV transformer

Limiting component: Thermal overload on the Rio Oso #1 230/115 kV transformer

Critical Sierra Area Contingencies
South of Rio Oso

South of Rio Oso Sub-area – Category C

2017 LCR need: 763 MW (includes 21 MW of QF and 593 MW of Muni generation as well as 71 MW of deficiency)

Contingency: Rio Oso-Gold Hill and Rio Oso-Brighton 230 kV lines

Limiting component: Thermal overload on the Rio Oso-Atlantic 230 kV line

South of Rio Oso Sub-area – Category B

2017 LCR need: 429 MW (includes 21 MW of QF and 593 MW of Muni generation)

Contingency: Rio Oso-Gold Hill 230 kV line and Ralston unit

Limiting component: Thermal overload on the Rio Oso-Atlantic 230 kV line

Critical Sierra Area Contingencies
Pease

Pease Sub-area – Category C

2017 LCR need: Same as Category B.

Pease Sub-area – Category B

2017 LCR need: 100 MW (includes 35 MW of QF generation)

Contingency: Palermo-East Nicolaus 115 kV line and YCEC unit

Limiting component: Thermal overload on the Palermo-Pease 115 kV line

Critical Sierra Area Contingencies
Placer

Placer Sub-area – Category C

2017 LCR need: 66 MW (includes 38 MW of QF and Muni generation)

Contingency: Gold Hill-Placer #1 and #2 115 kV lines

Limiting component: Thermal overload on the Drum-Higgins 115 kV line

Placer Sub-area – Category B

2017 LCR need: 47 MW (includes 38 MW of QF and Muni)

Contingency: Gold Hill-Placer #1 115 kV line and Chicago Park unit

Limiting component: Thermal overload on the Drum-Higgins 115 kV line

Critical Sierra Area Contingencies
Placerville

Placerville Sub-area – Category C

2017 LCR need: 75 MW (includes 0 MW of QF and Muni generation as well as 49 MW of deficiency)

Contingency: Gold Hill-Clarksville and Gold Hill-Missouri Flat #2 115 kV lines

Limiting component: Thermal overload on Gold Hill-Missouri Flat #1 115 kV line

Placerville Sub-area – Category B

2017 LCR need: No requirements

Sierra Area LCR Aggregate

Available generation	Market (MW)	Muni (MW)	QF (MW)	Max. Qualifying Capacity (MW)
2017	890	1110	66	2066

	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Need
	2017	2017	2017
Category B (Single)	1247	0	1247
Category C (Multiple)	1731	312	2043

Each unit is only counted once, regardless in how many sub-areas it is needed.

In order to come up with an aggregate deficiency, where applicable the deficiencies in each smaller sub-area has been accounted for (based on their effectiveness factors) toward the deficiency of a much larger sub-area.

Changes

2017 LCR compared to 2016:

- Load forecast went down by 149 MW.
- Overall LCR need has increased by 25 MW due to increase in deficiency driven by higher flow on the limiting facility in the South of Palermo sub-area.
- The “Existing Generation Capacity Needed” had decreased by 34 MW.

Since last stakeholder meeting:

- Updated NQC.

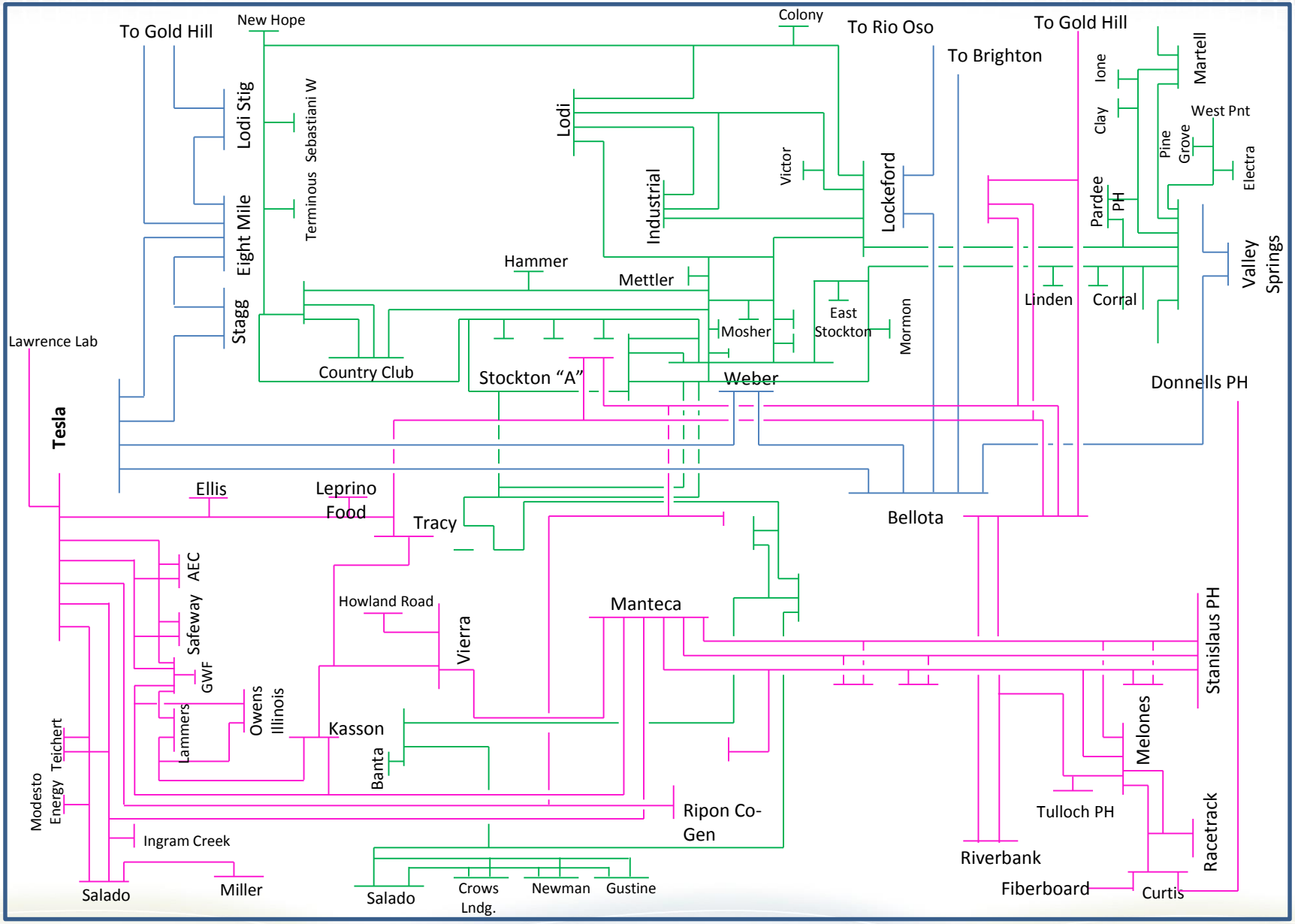
Your comments and questions are welcome.

For written comments, please send to: RegionalTransmission@caiso.com

Stockton Area Load and Resources (MW)

		2017
Load	=	1156
AAEE	=	-20
Transmission Losses	=	21
Total Load	=	**1157**
QF Generation	=	20
Muni Generation	=	129
Market Generation	=	449
Total Qualifying Capacity	=	**598**

Stockton Area



New transmission projects modeled:

1. Weber-Stockton A #1 & #2 60 kV lines Reconductor
2. Weber 230/60 kV Transformer Replacement

Critical Stockton Area Contingencies
Tesla-Bellota Sub-area

Tesla-Bellota Sub-area – Category C

TOTAL 2017 LCR need: 650 MW (16 MW of QF and 106 MW of Muni and 301 MW of deficiency)

Contingency 1: Schulte-Lammers and Schulte-Kasson-Manteca 115 kV lines.

Limiting component 1: Thermal overload on the Tesla-Tracy 115 kV line.

LCR Need: 530 MW (16 MW of QF and 106 MW of Muni and 301 MW of deficiency).

Contingency 2: Tesla-Tracy 115 kV line and Tesla-Schulte #1 115 kV line.

Limiting component 2: Thermal overload on the Tesla-Schulte #2 115 kV line.

LCR Need: 349 MW (includes 16 MW of QF and 106 MW of Muni generation).

Tesla-Bellota Sub-area – Category B

2017 LCR Need: 340 MW (includes 16 MW of QF and 106 MW of Muni generation).

Contingency: Tesla-Schulte #1 115 kV line and the loss of GWF Tracy #3.

Limiting component: Thermal overload on the Tesla-Schulte #2 115 kV line.

Critical Stockton Area Contingencies
Stanislaus Sub-area

Stanislaus Sub-area – Category C

2017 LCR need: Same as Category B.

Stanislaus Sub-area – Category B

2017 LCR need: 164 MW (includes 16 MW of QF and 88 MW of Muni generation)

Contingency: Bellota-Riverbank-Melones 115 kV line and Stanislaus PH

Limiting component: Thermal overload on the River Bank Jct.-Manteca 115 kV line

Critical Stockton Area Contingencies
Lockeford Sub-area

Lockeford Sub-area – Category C

2017 LCR need: 67 MW (includes 2 MW of QF and 23 MW of Muni generation as well as 42 MW of deficiency)

Contingency: Lockeford-Industrial and Lockeford-Lodi #2 60 kV lines

Limiting component: Thermal overload on the Lockeford-Lodi Jct. section of the Lockeford-Lodi #3 60 kV line

Lockeford Sub-area – Category B

2017 LCR need: No category B requirement.

Critical Stockton Area Contingencies
Weber Sub-area

Weber Sub-area – Category C

2017 LCR need: 28 MW (includes 2 MW of QF generation)

Contingency: Stockton A-Weber #1 and #2 60 kV lines

Limiting component: Thermal overload on the Stockton A-Weber #3 60 kV line

Weber Sub-area – Category B

2017 LCR need: No Category B requirement

Stockton Area LCR Aggregate

Available generation	Market (MW)	Muni (MW)	QF (MW)	Max. Qualifying Capacity (MW)
2017	449	129	20	598

	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Need
	2017	2017	2017
Category B (Single)	340	0	340
Category C (Multiple)	402	343	745

Each unit is only counted once, regardless in how many sub-areas it is needed.

In order to come up with an aggregate deficiency, where applicable the deficiencies in each smaller sub-area has been accounted for (based on their effectiveness factors) toward the deficiency of a much larger sub-area.

Changes

2017 LCR compared to 2016:

- Load forecast went down by 29 MW.
- Overall LCR need has decreased by 63 MW due to decrease in load forecast.

Since last stakeholder meeting:

- Updated NQC.

Your comments and questions are welcome.

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