

MOUNTAIN HOME SUBSTATION ADDITION

Presented

To

ERCOT Regional Planning Group

January 24, 2017

Project Need

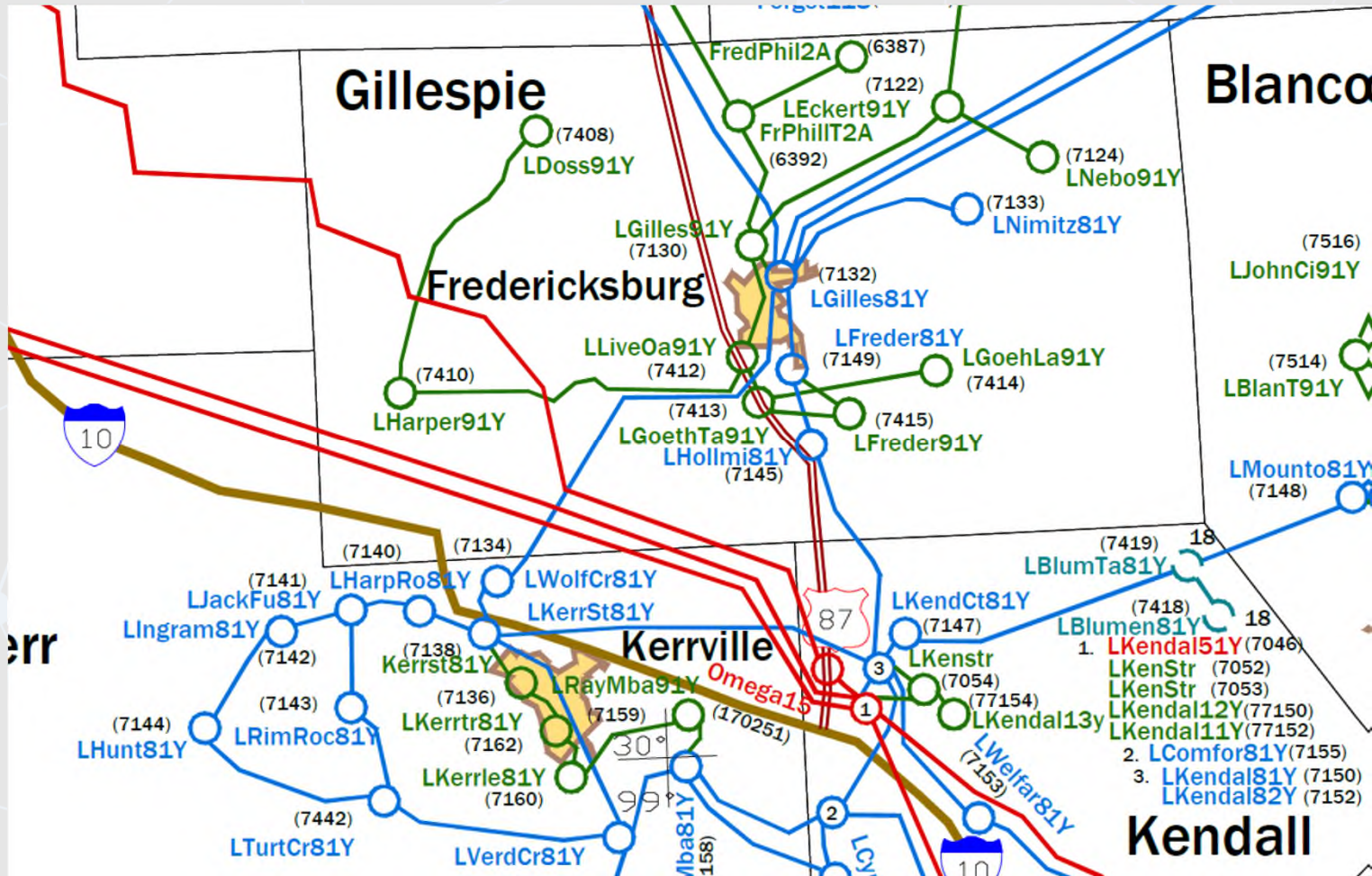
- Central Texas Electric Cooperative (CTEC) requests transmission service to new substation by December 2021.
- CTEC's distribution studies show the existing distribution system with planned improvements is inadequate after 2020.
- Winter Peak loads driving need.

Forecasted Load

- CTEC Distribution Study

Bus Number	Substation	Winter 2019-2020 KW	Winter 2020-2021 KW
7410	Harper	16,329	16,843
7408	Doss	3,596	3,732
7142	Ingram	6,712	7,003
	Total	26,637	27,578

Existing Transmission System



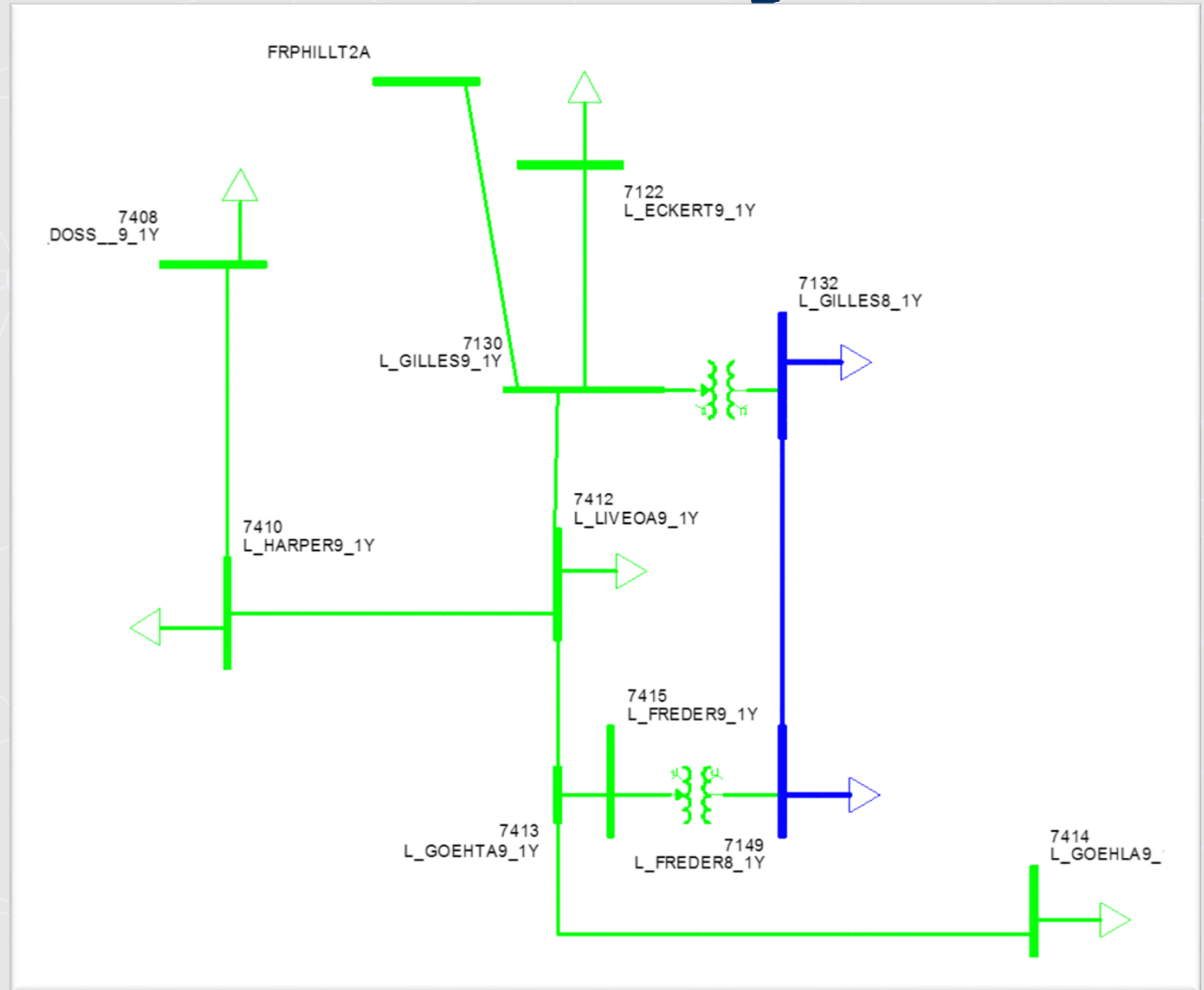
Existing Transmission System

- Base case (P0) voltage in Winter 2020/2021

Bus Number	Substation	Base Case p.u. Voltage
7408	Doss	0.8883
7410	Harper	0.8959

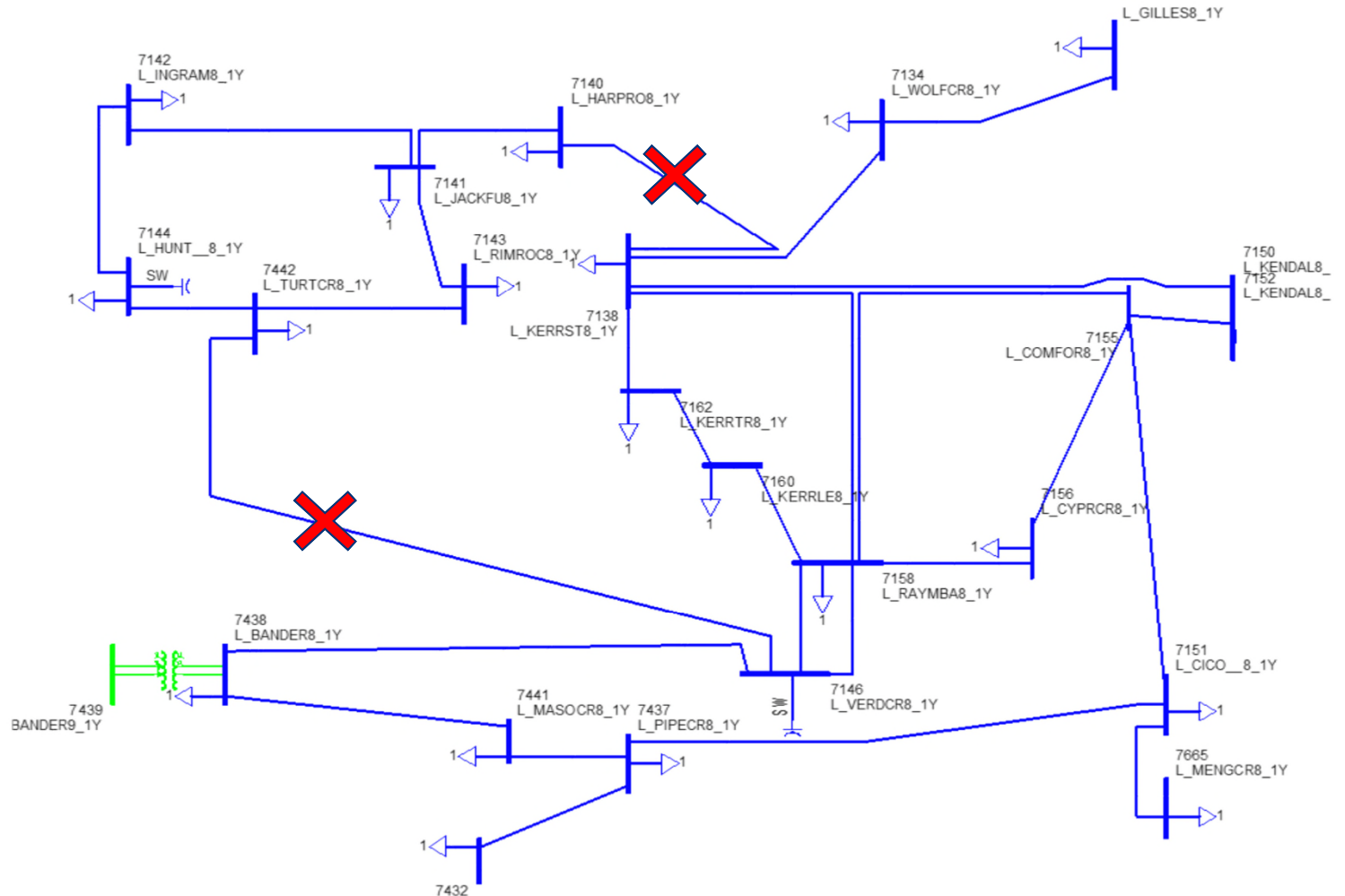
Existing Transmission System

- Autotransformer loading at Gillespie and Fredericksburg



Existing Transmission System

- West Kerrville Loop
- DSPs:
 - CTEC
 - KPUB
 - BEC



Considerations in Development of Alternatives

- Base Case voltage at Harper and Doss.
- Loading of existing 138/69 kV autotransformers.
- Vulnerability of looped load west of Kerrville
- Age, condition and configuration of the 69-kV facilities

Alternatives

- New transmission from Hunt (~7.5 miles)
- New transmission from Ingram (~10.0 miles)
- New transmission from Wolf Creek (~17.5 miles)
- The following components of scope are common to all Alternatives
 - New transmission line from Mountain Home to Harper (~11.5 Miles)
 - Convert Harper to Live Oak to 138-kV.
 - Route existing 69-kV lines around Live Oak to serve Goehman Lane substation.

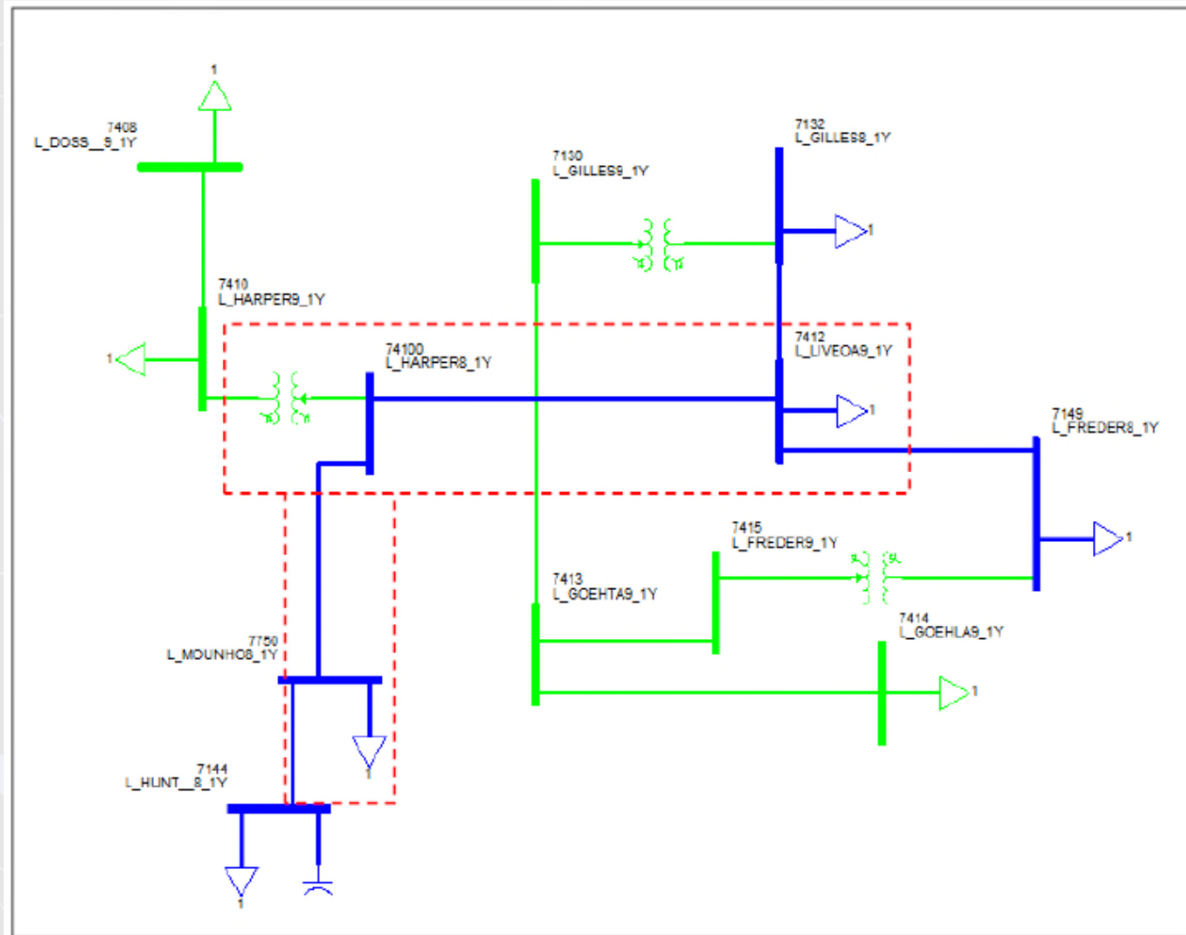
Analysis of Alternatives

Alt .	Description	Voltage	Auto Loading	Kerrville West Loop	Cost
	Radial Alternatives	-	-	-	
1	From Hunt	+	+	+	\$77.3
2	From Ingram	+	+	+	\$82.3
3	From Wolf Creek	+	+	-	\$97.7

Recommended Scope

- Construct 138-kV Mountain Home Substation
- Expand Harper to include a 138-kV bus and 138/69 kV auto.
- Construct new 138-kV transmission line from Harper to Mountain Home to Hunt (~19 miles).
- Convert existing Harper to Live Oak 69-kV to 138-kV (~21.6 miles)
- Route existing 69-kV lines around Live Oak to serve Goehman Lane substation

Recommended Scope



QUESTIONS

Charles DeWitt, P.E.
LCRA TSC

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