

ELECTRIC RELIABILITY PLAN

INFORMATION AND DISCUSSION

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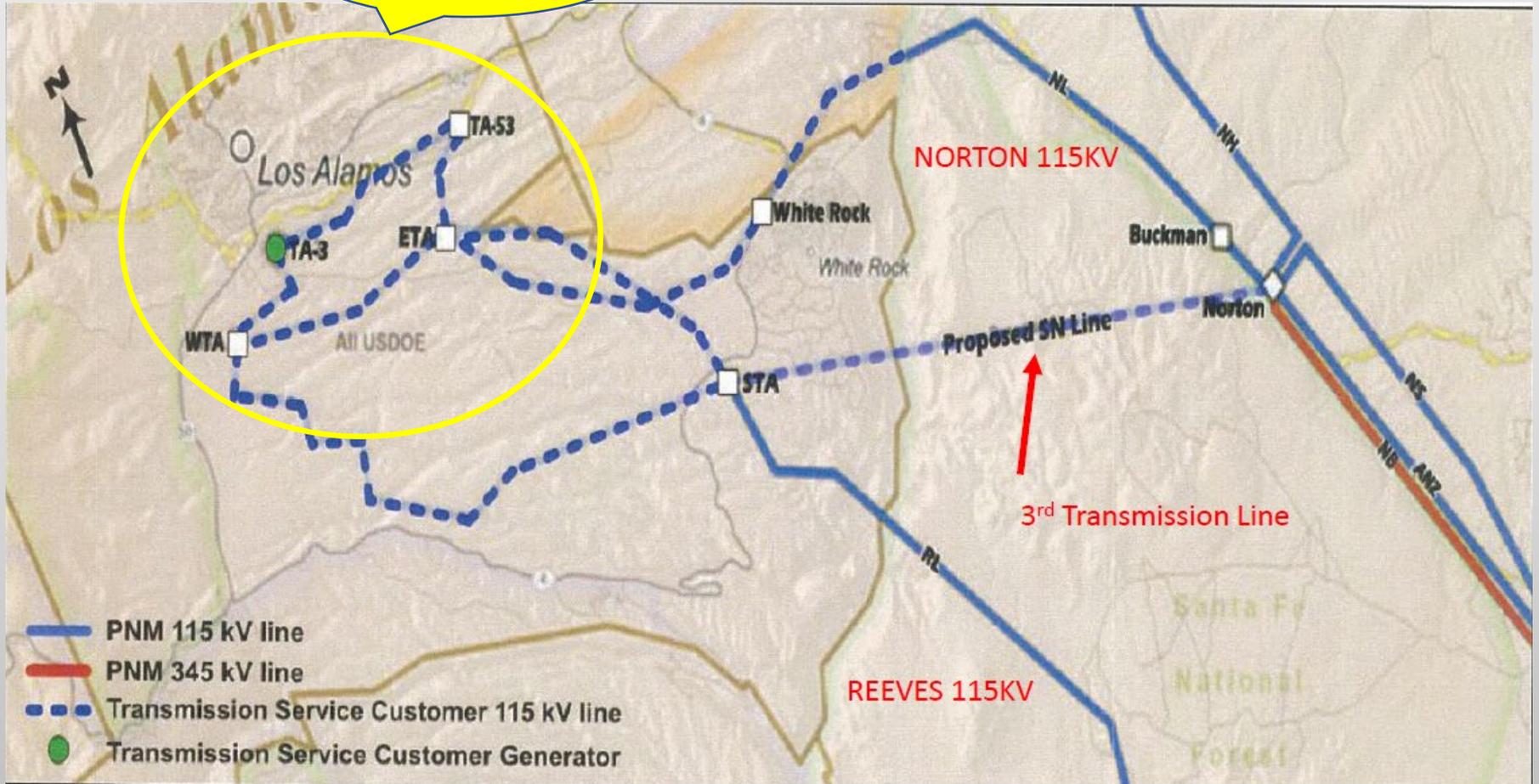


- TRANSMISSION SYSTEM
- DISTRIBUTION SYSTEM
- RELIABILITY MEASURES
- SHORT TERM ACTION PLANS
- LONG TERM ACTION PLANS

REGIONAL 115KV TRANSMISSION

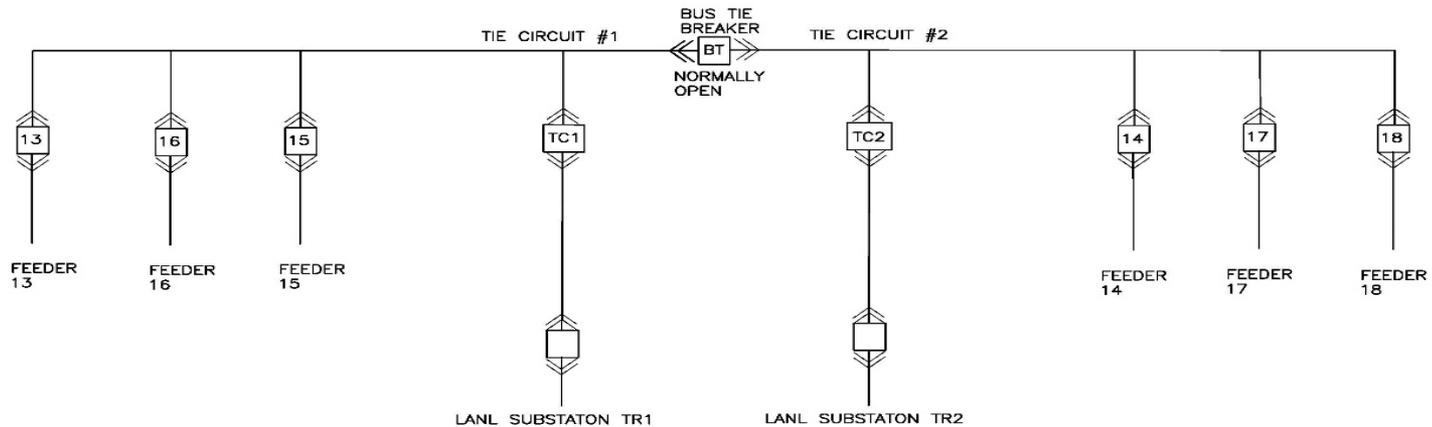
FIGURE 5.0

LOS ALAMOS
AREA



TOWNSITE SWITCH STATION

LOS ALAMOS TOWNSITE SWITCHGEAR



TC1: SUBSTATION TIE CIRCUIT #1 2-500MCM COPPER 7850'
TC2: SUBSTATION TIE CIRCUIT #2 1-1000MCM COPPER 7850'

Circuit 13: Western Area and Ski Hill

Circuit 14: Eastern Area and Pajarito Cliff Site

Circuit 15: Quemazon , North Community, Ponderosa Estates

Circuit 16: North Mesa and Barranca Mesa

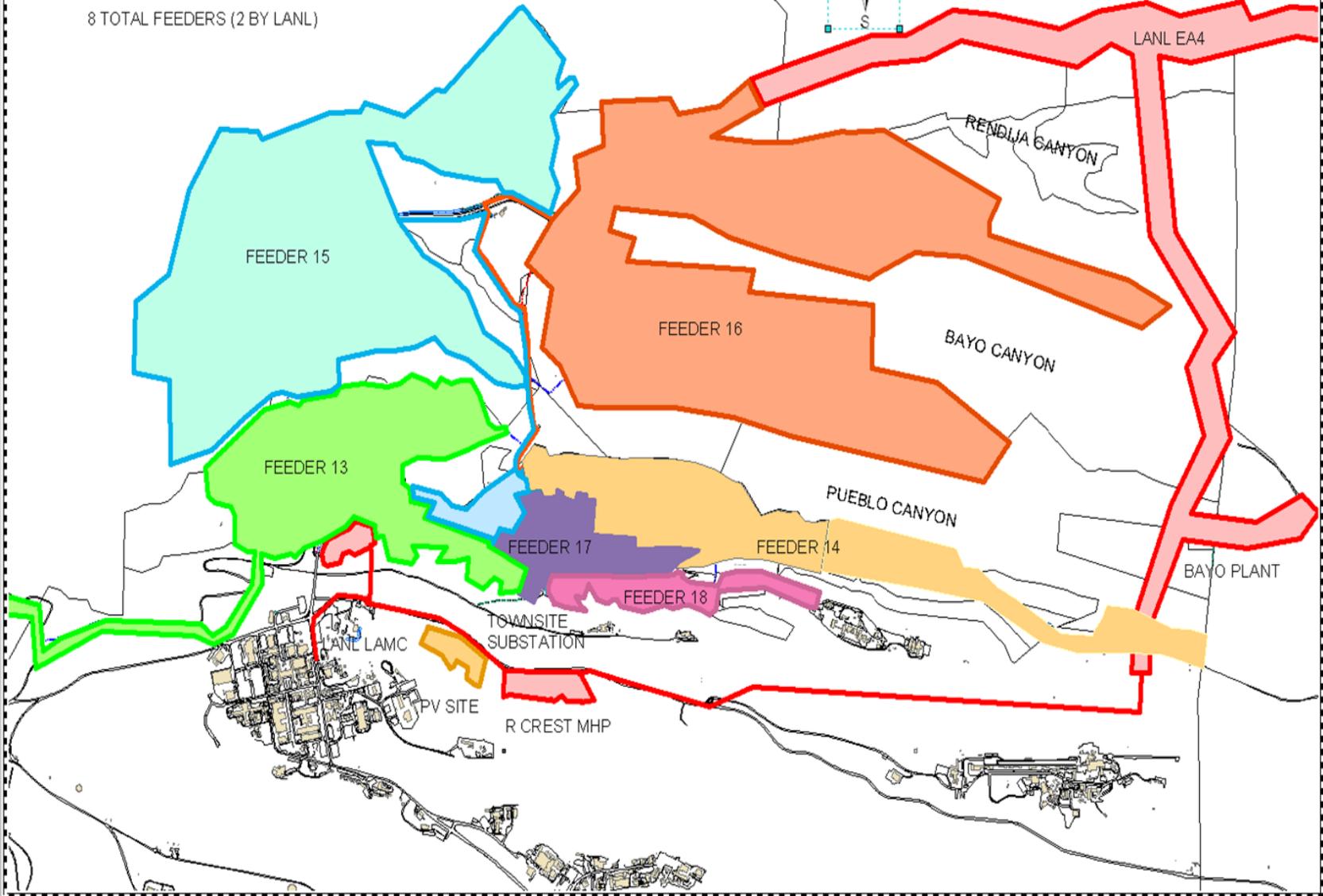
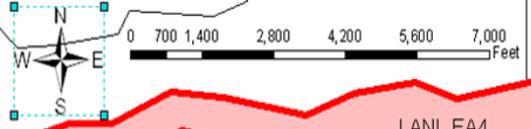
Circuit 17: Downtown Commercial North of Trinity

Circuit 18: Downtown Commercial South of Trinity and DP Road

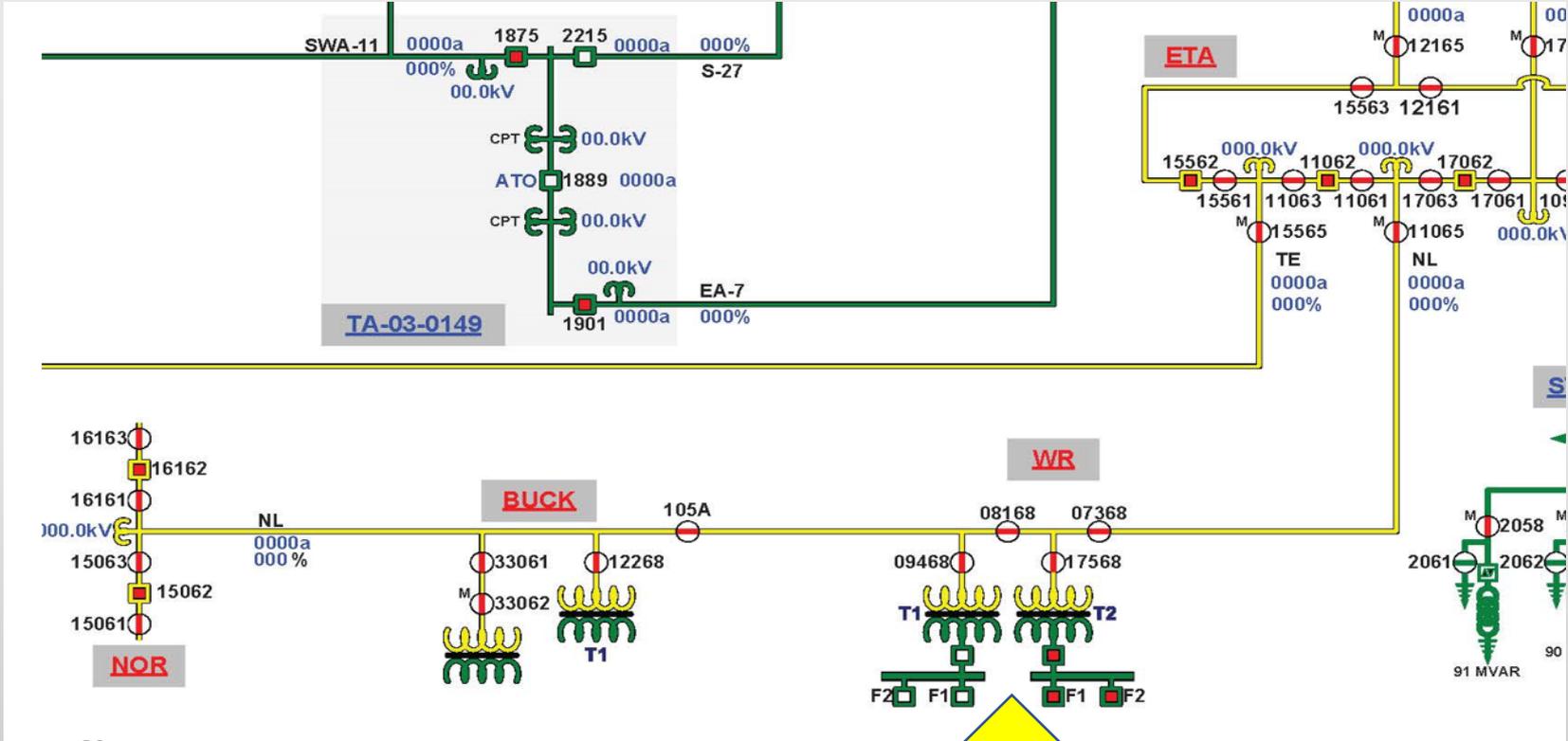
LACDPU Townsite Electric Distribution System

EXISTING FEEDER SYSTEM CONFIGURATION
(AREAS IN RED PROVIDED BY LANL)

8 TOTAL FEEDERS (2 BY LANL)

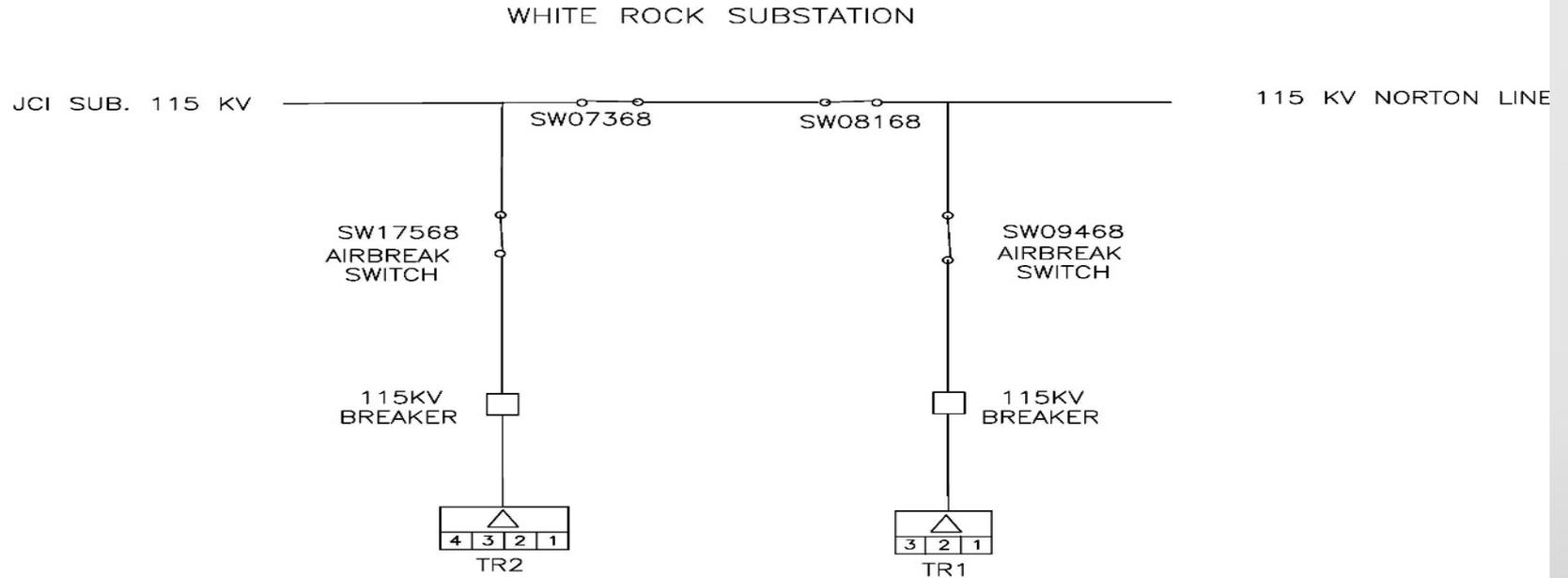


WHITE ROCK SUBSTATION



WHITE ROCK SUBSTATION

WHITE ROCK SUBSTATION



Circuit WR1: East of Rover
Circuit WR2: West of Rover
Circuit WR3: El Mirador Subdivision

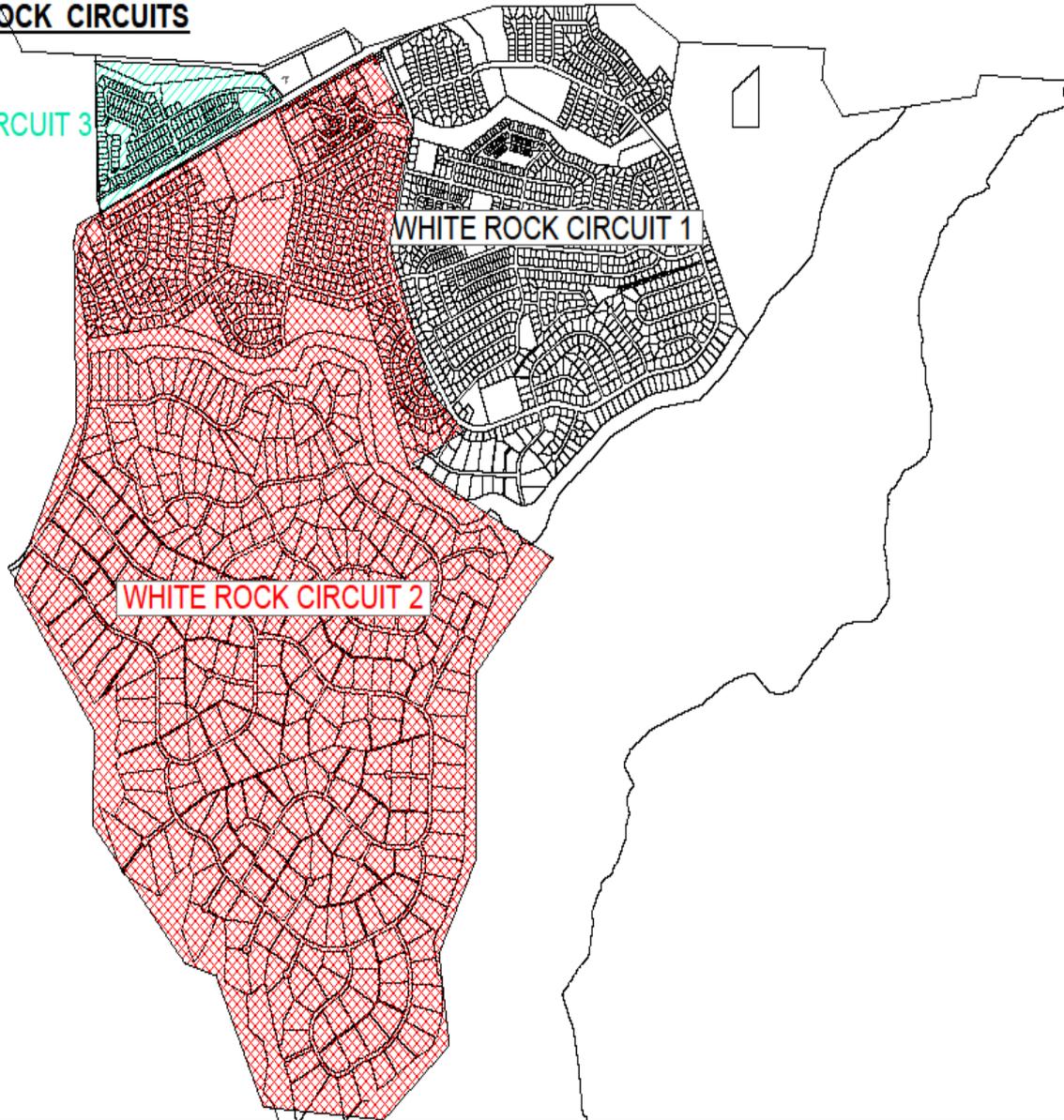


WHITE ROCK CIRCUITS

WHITE ROCK CIRCUIT 3

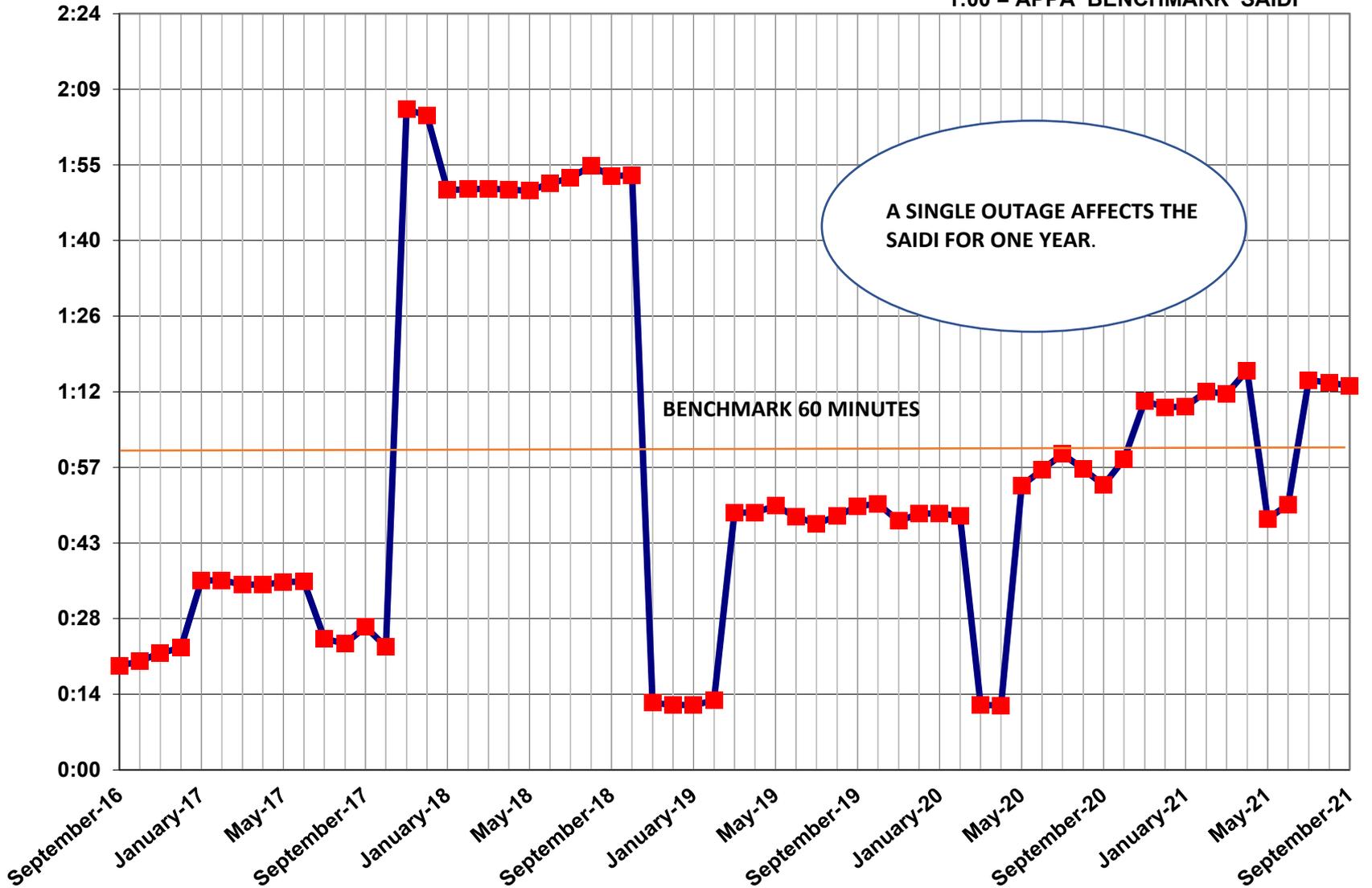
WHITE ROCK CIRCUIT 1

WHITE ROCK CIRCUIT 2



SAIDI CHART OVER A 5 YEAR PERIOD

**EACH POINT IS A 12 MONTH SAIDI HISTORY
1:00 = APPA BENCHMARK SAIDI**



Strategy for Improving the SAIDI

- **Continue to perform a root-cause analysis for every power outage.**
- **Continue with the Asset Management Program, “AMP”, for line inspections, operations & maintenance, “O&M”, etc.**
- **Continue to monitor line sections which have failed during the past; prioritize, and place into the AMP.**
- **Continue to dedicate one crew for overhead power line O&M.**
- **Continue to dedicate one crew for underground power line replacement.**
- **Manage Outage Response to minimize outage times and reduce SAIDI. The procedure for outage response is attached in the Appendix “A”.**

Short-Term Action Plans

- Asset Management Program for OH
- Overhead Pole Replacement Program
- Infrared OH line inspection
- Asset Management Program for UG
- UG Primary Replacement Program

Long-Term Action Plans

- New LASS Substation Addition



NEW LASS FEEDERS

13T - WESTERN AREA

15T- NORTH COMMUNITY

16T- BARRANCA MESA

S6- LOS ALAMOS MEDICAL CENTER

SM6- TRINITY DRIVE

**S18- EAST JEMEZ ROAD ,
EASTGATE, RENDIJA CANYON**

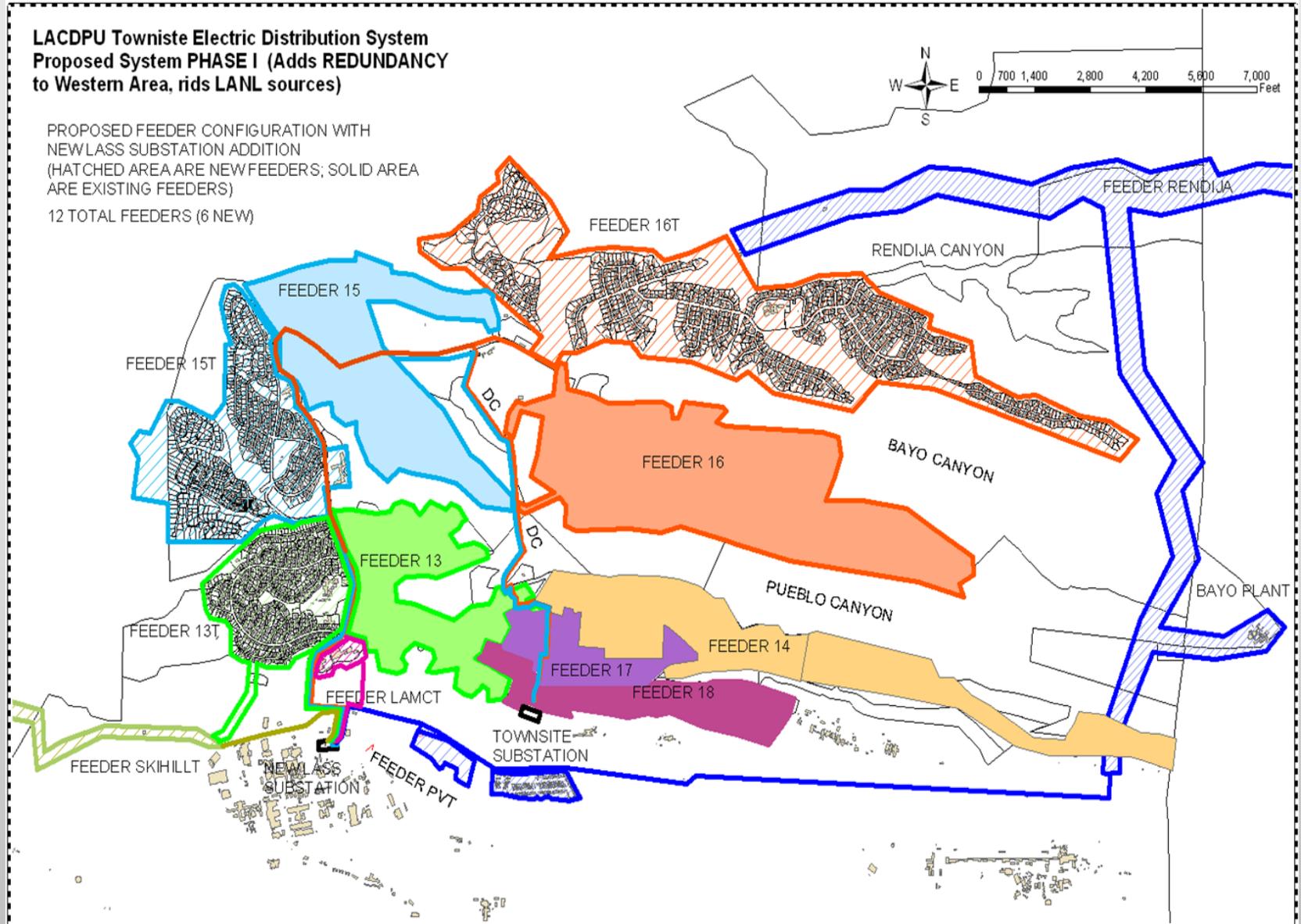
S3- ECO STATION, CONCRETE PLANT

Los Alamos Distribution Area with LASS

LACDPU Townsite Electric Distribution System Proposed System PHASE I (Adds REDUNDANCY to Western Area, rids LANL sources)

PROPOSED FEEDER CONFIGURATION WITH
NEW LASS SUBSTATION ADDITION
(HATCHED AREA ARE NEW FEEDERS; SOLID AREA
ARE EXISTING FEEDERS)

12 TOTAL FEEDERS (6 NEW)



Distribution System SCADA

The DPU electric distribution department will develop and install a SCADA system which will monitor the electric equipment in the field. The system is estimated to cost \$250,000. The system will incorporate information from the AMI, ArcGIS, and the Milsoft Modeling system to provide real time system status to crews in the field and engineering. The new SCADA system will be based in Building #5 at PCS.

AMI System

OUTAGE MESSAGE PROCESS

Momentary outage message threshold expires

Meter transmits 4 messages

Subsequent transmissions maximize receipt of larger outages ● | ● | ●

1st transmission in 32 second window after threshold

Maximizes receipt of small outages quickly ●

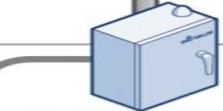


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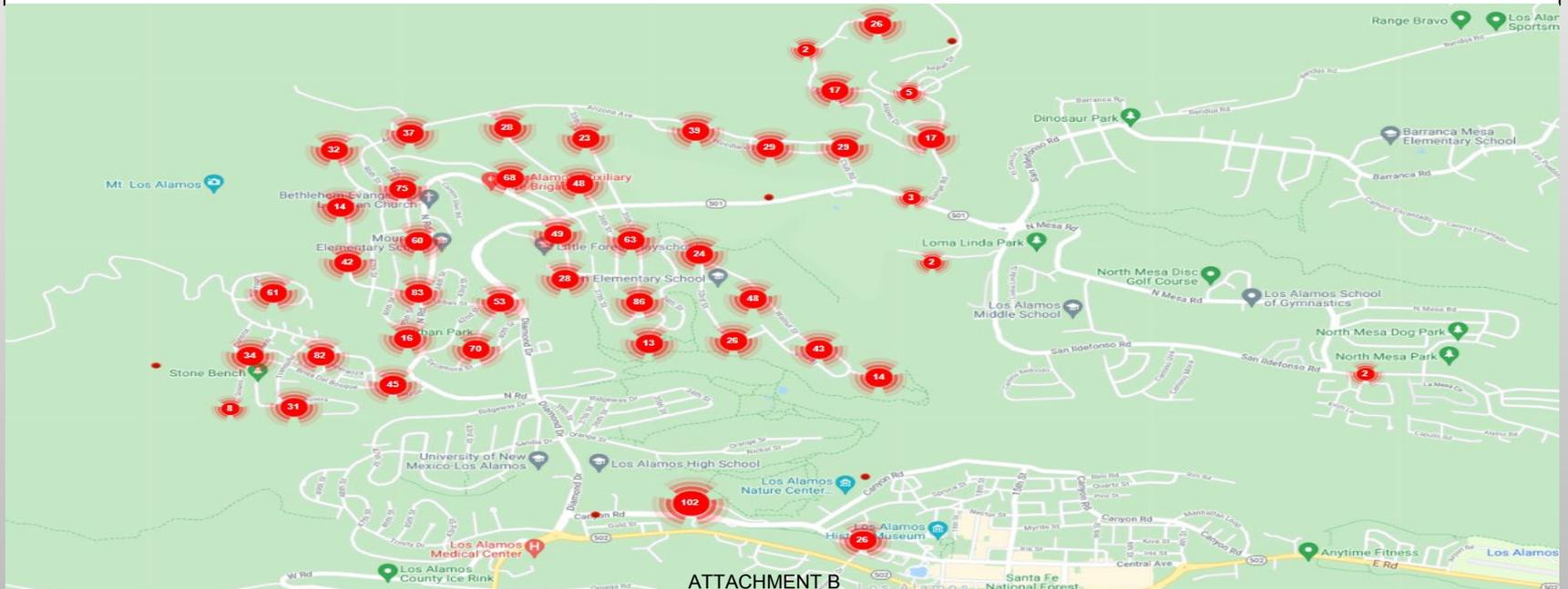
**FlexNet
Base Station**



RNI

Mutlispeak API

OMS



Future System Projects

approx. estimates prior to COVID

- EASTERN AREA (WEST OF CANYON ROAD) \$200,000
- TIMBER RIDGE \$150,000
- RIDGEWAY \$ 250,000
- OPENNHEIMER \$300,000
- WESTERN AREA \$200,000
- PONDEROSA ESTATES \$200,000
- LOS PUEBLOS \$1.6 MILLION over 2 years
- NAVAJO \$200,000
- TOTAVI \$150,000
- BIG ROCK LOOP \$300,000
- LOMA LINDA \$200,000
- DP ROAD PHASE II \$ 300,000
- PAJARITO ACRES \$1.8 MILLION over 4 years
- PIEDRA LOOP \$ 800,000 over 2 years
- DENVER STEELS \$ 300,000
- ESTATES \$ 300,000
- BROADVIEW \$ 250,000
- BRYCE AVE. \$ 400,000
- ARAGON AVE \$ 400,000

QUESTIONS