

1. Agenda

Documents:

[2019.11.12_SOUTHBOROUGH_EMERGENCY_PLANNING_COOMITTEE_-_SARA_TITLE_III_MEETING.PDF](#)

2. Meeting Materials

Documents:

[NATIONAL_GRID_PRESENTATION.PDF](#)

Town of Southborough, MA
Meeting of the
Southborough Emergency Planning Committee
(SARA Title III)
Emergency Operations Center, Public Safety Complex
32 Cordaville Road

AGENDA

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2019 OCT 29 A 8:38
SOUTHBOROUGH, MA

October 29, 2019

Dear all SEPC Members,

There will be a meeting of the Southborough Emergency Planning Committee (SEPC), (encompassing the LEPC), on **Tuesday, November 12, 2019**, in the Emergency Operations Center at the Southborough Public Safety Complex located at 32 Cordaville Road. The meeting will begin at **10:00 am**.

The agenda for the meeting will be as follows:

Director's remarks

Updates/Reviews:

- Emergency Operations Center (EOC) at the new Public Safety Complex
- Status of emergency plans, etc.
- Local Hazard Mitigation Plan (LHMP), Municipal Vulnerability Preparedness (MVP) program & Hazard Mitigation Grant Program (HMGP)
- Committee restructuring

Training:

- National Grid presentation on emergency response and restoration plans and processes.

Open discussion: Ask any questions, get clarification on roles & responsibilities, operations, plans, & provide input and suggestions

Any other topics raised without prior notice

Director's closing statement

Neal P. Aspesi
SEPC Chairperson
SEMA Director of Operations

Reliability, Utility 101

nationalgrid



Reliability / Utility 101

- Intro
- What causes an outage
- How the system works
- Protective equipment
- Future of the grid
- Storm preparedness

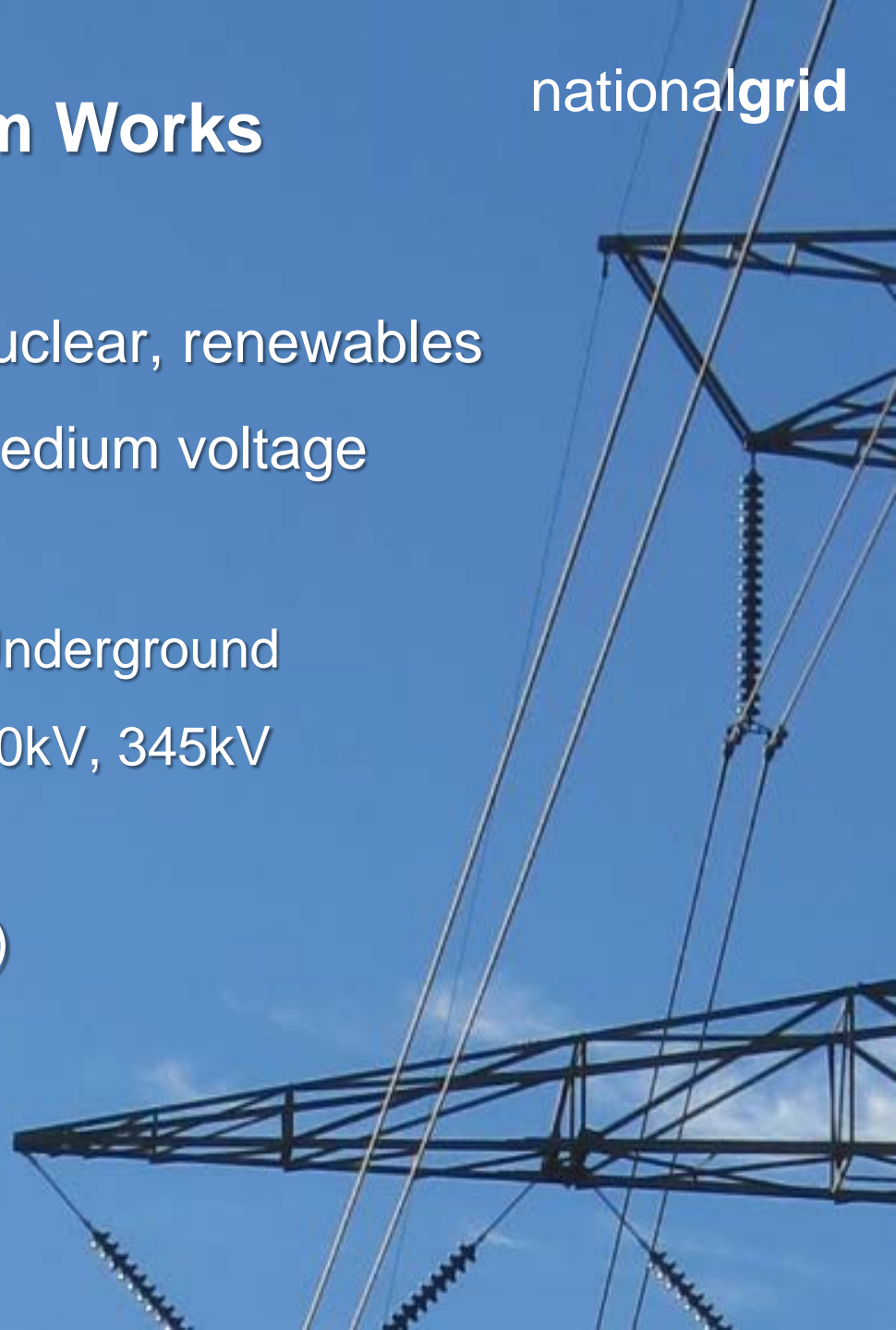
Outages and Restoration

- Outages occur when protective equipment observes an electrical fault
- Causes of faults include
 - Trees, weather, wildlife
 - Equipment failure
 - Motor vehicle accidents
- Restoration depends on the nature and location of the fault



How The Electric System Works

- Generation - Fossil fuel, nuclear, renewables
 - Typically generate at medium voltage
- Transmission Lines
 - Towers, Rights of Way, Underground
 - High voltage – 115kV, 230kV, 345kV
- Substation Transformers
- Distribution Circuits (feeders)
- Distribution Transformers



Protective Equipment

- Operates when an alarm condition is present
 - Current, voltage, fault
- Feeder Breaker (at substation)
 - Can be programmed to re-close
- Recloser (on feeder, or at specific site)
 - Interrogates line, looking for fault. If none, 're-closes'
- Fuse (on distribution transformer or line section)
 - Requires patrolling, clearing fault, manual re-fuse

Feeder Breaker

- 1st device out of substation transformer
- Largest customer impact



Regulators

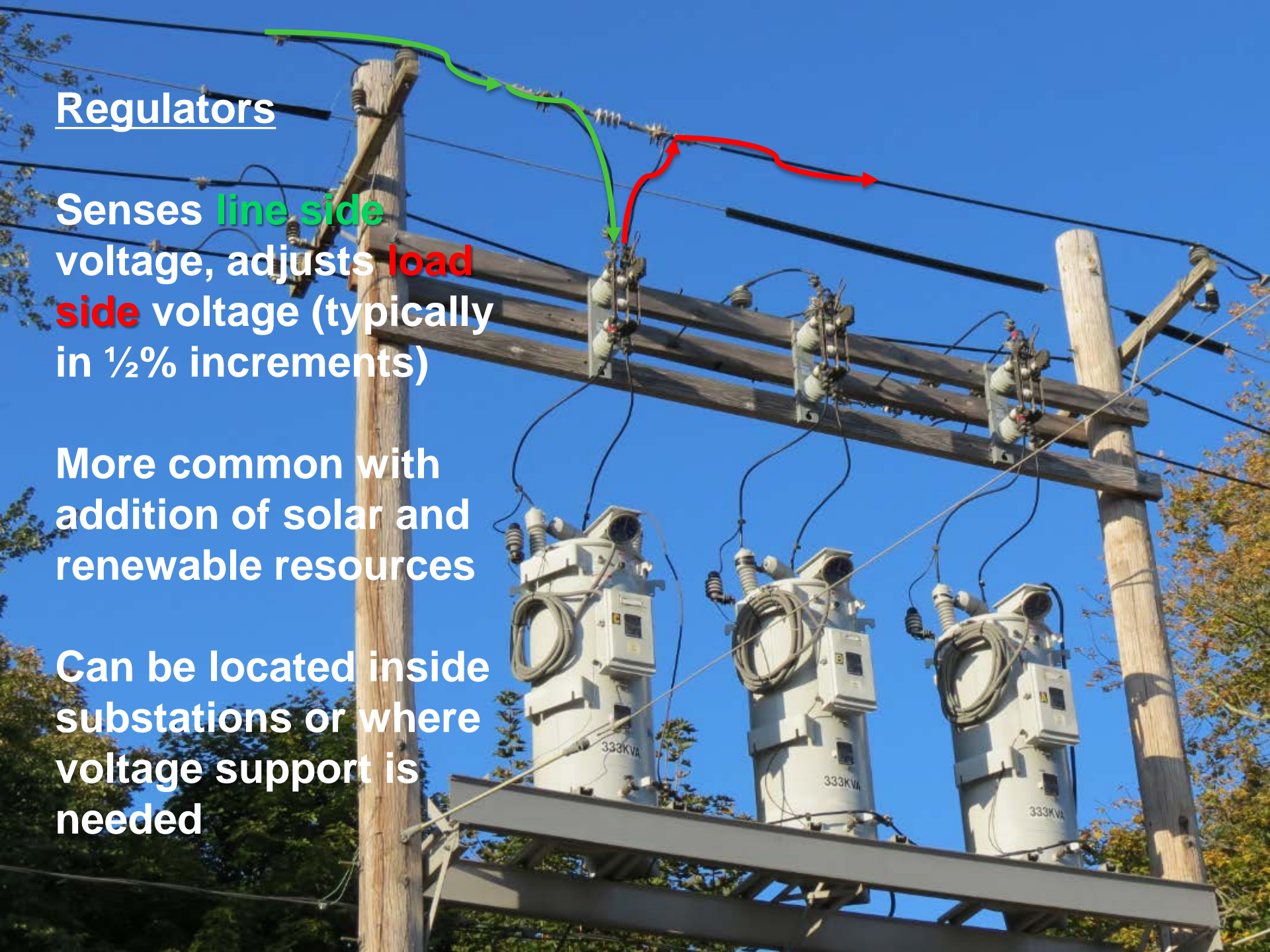


Regulators

Senses **line side** voltage, adjusts **load side** voltage (typically in ½% increments)

More common with addition of solar and renewable resources

Can be located inside substations or where voltage support is needed





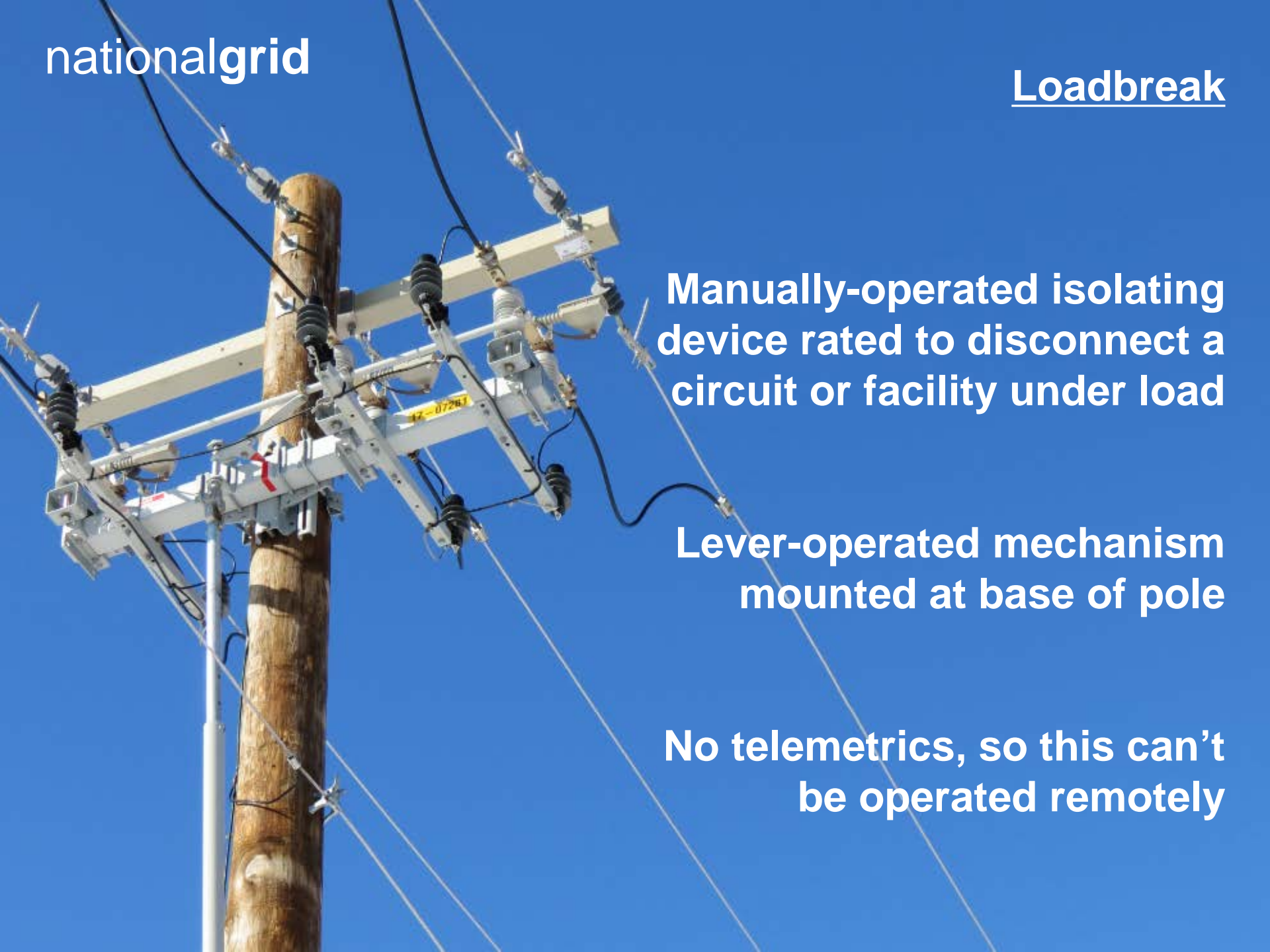
**Advanced protective device,
can be remotely operated**

**Senses voltage, frequency,
current, faults**

**Automatically opens when
protective functions triggered**

**Closes back into circuit after
programmed time delay**

Telemetry report values



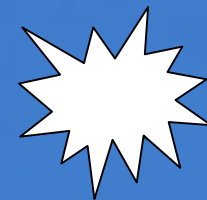
Manually-operated isolating device rated to disconnect a circuit or facility under load

Lever-operated mechanism mounted at base of pole

No telemetrics, so this can't be operated remotely

Fused Cutout

- Most common primary voltage protective device



BOOM!

- Requires patrolling downstream



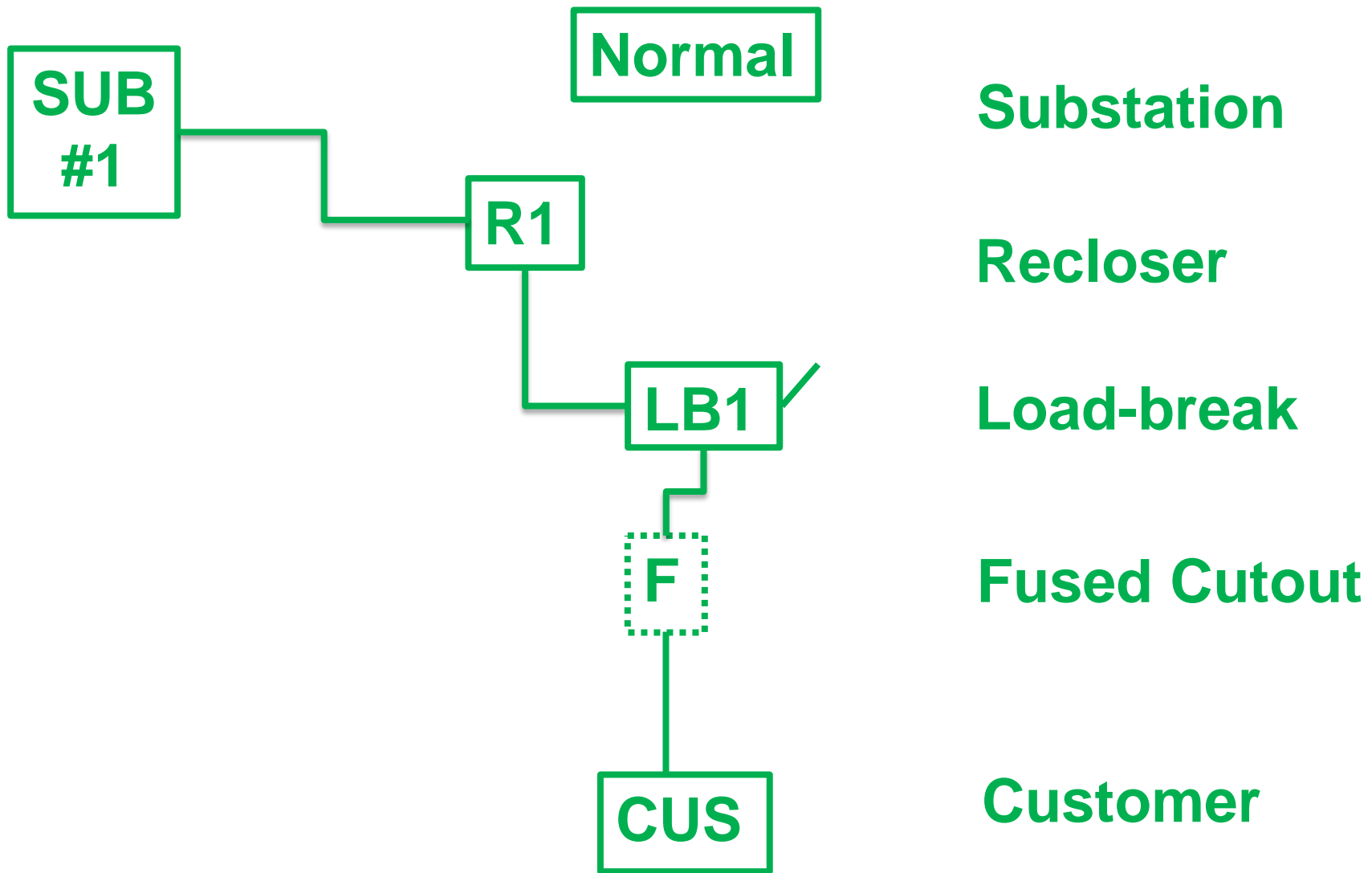
Fused Cutout

- Link will fail when current rating is exceeded
- 'Open' cutout or blown fuse indicates a fault or overload
- Requires 'hot-stick' to re-energize

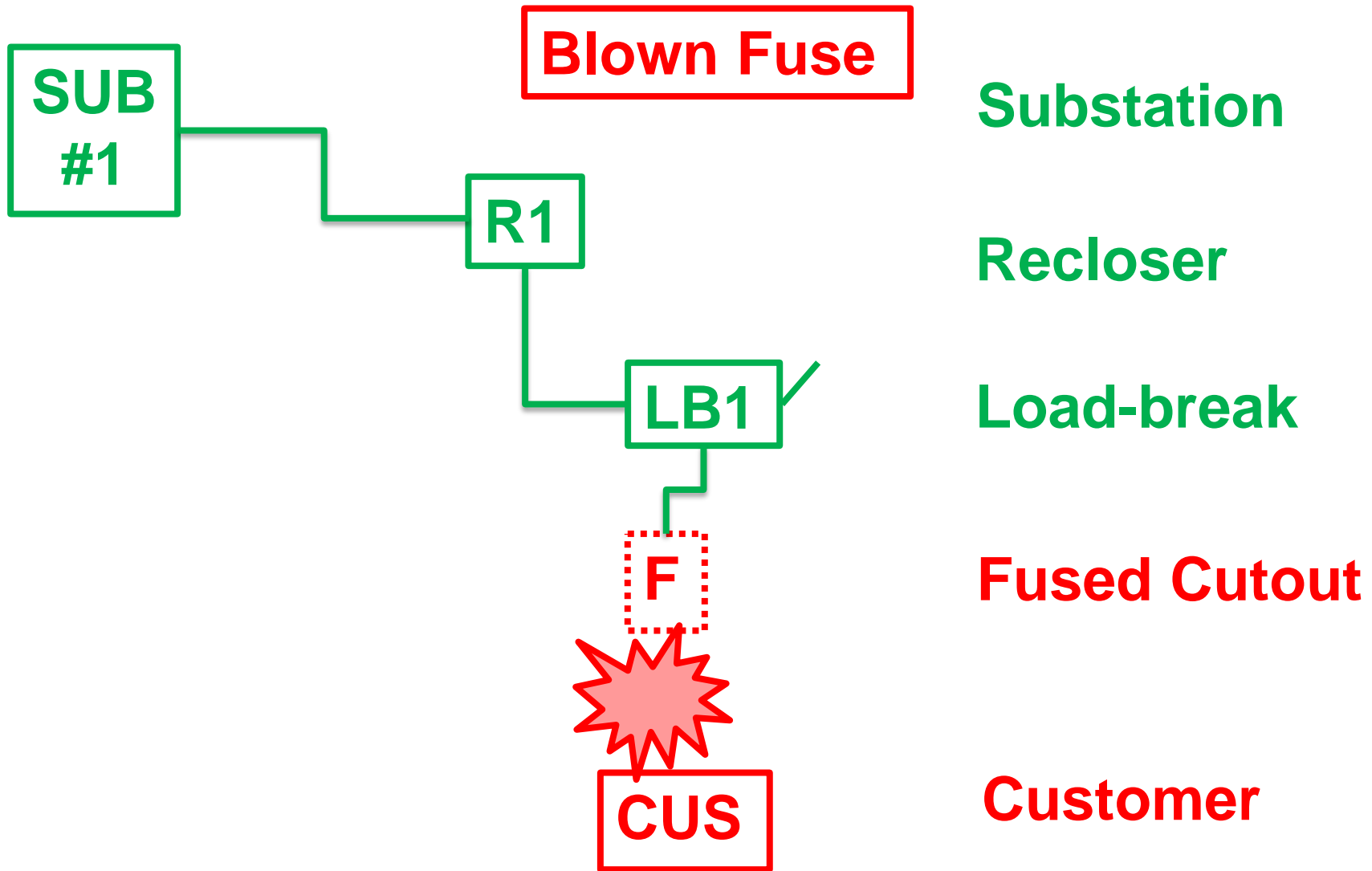
Fused Cutout

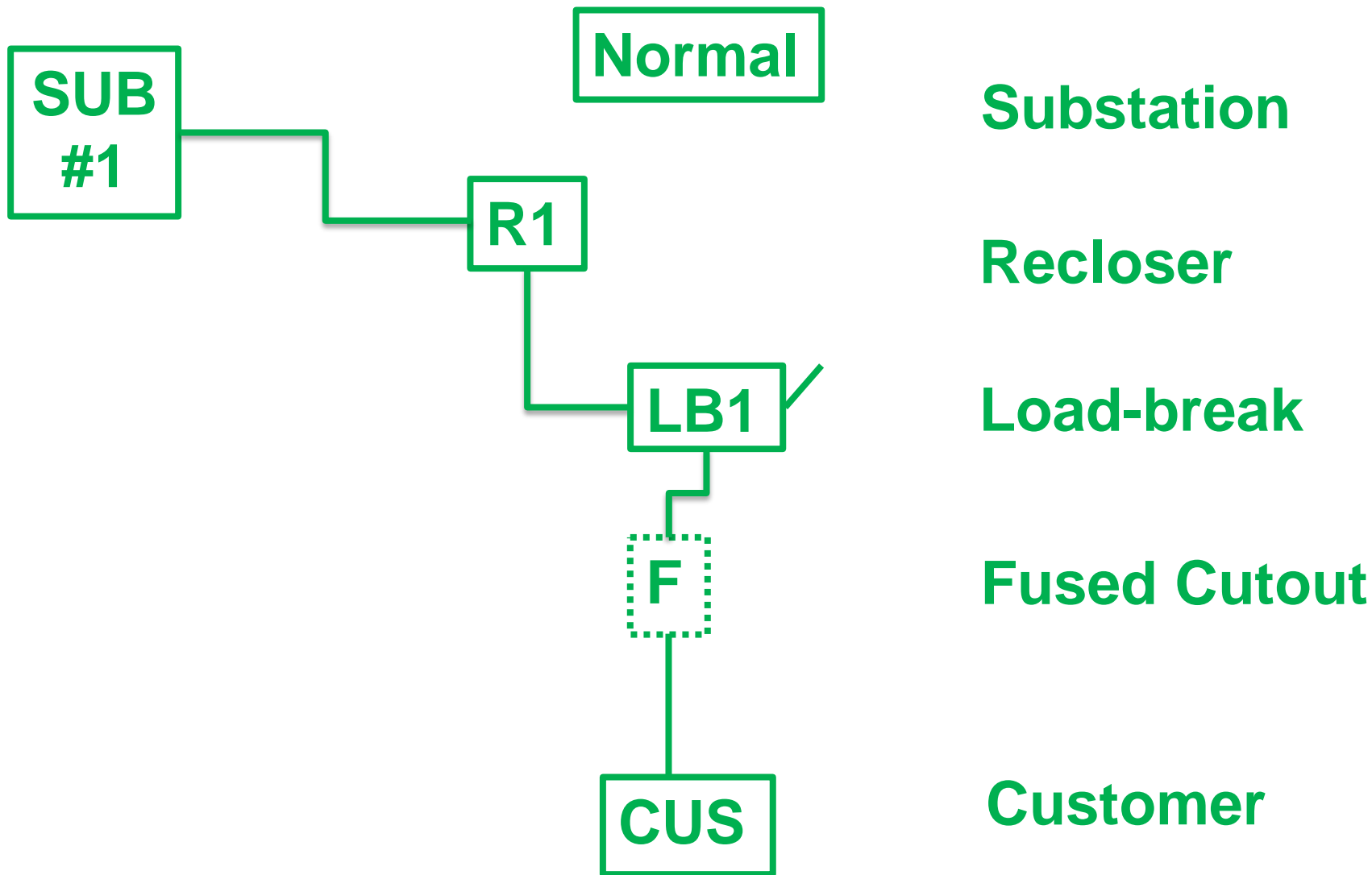


- Fuse is selected based on amps (load) flowing through the device
- Used to segment lines (as in a 'side tap fuse')
- Fuse types vary, require coordination upstream and downstream

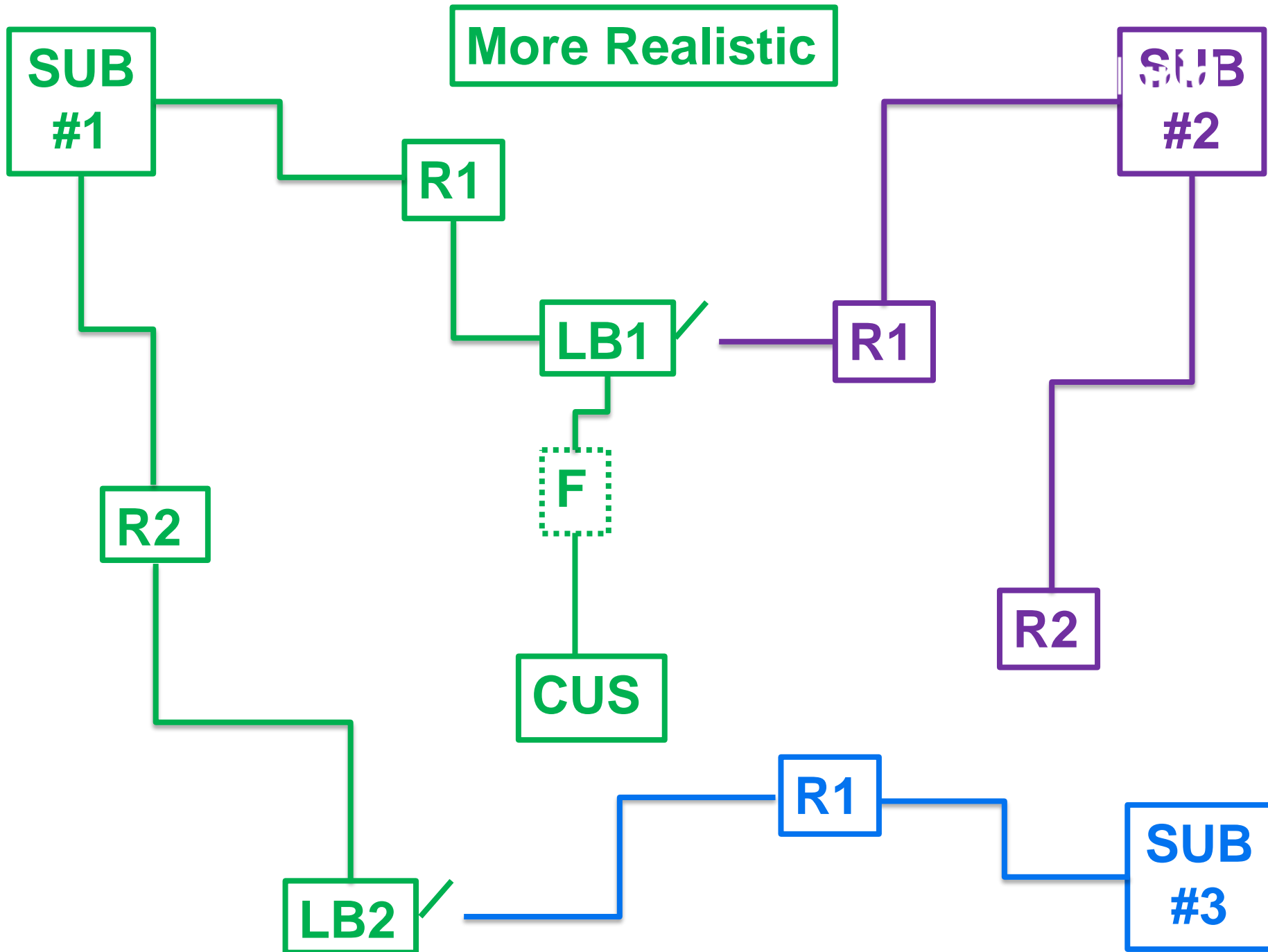


Note: diagrams are illustrative only

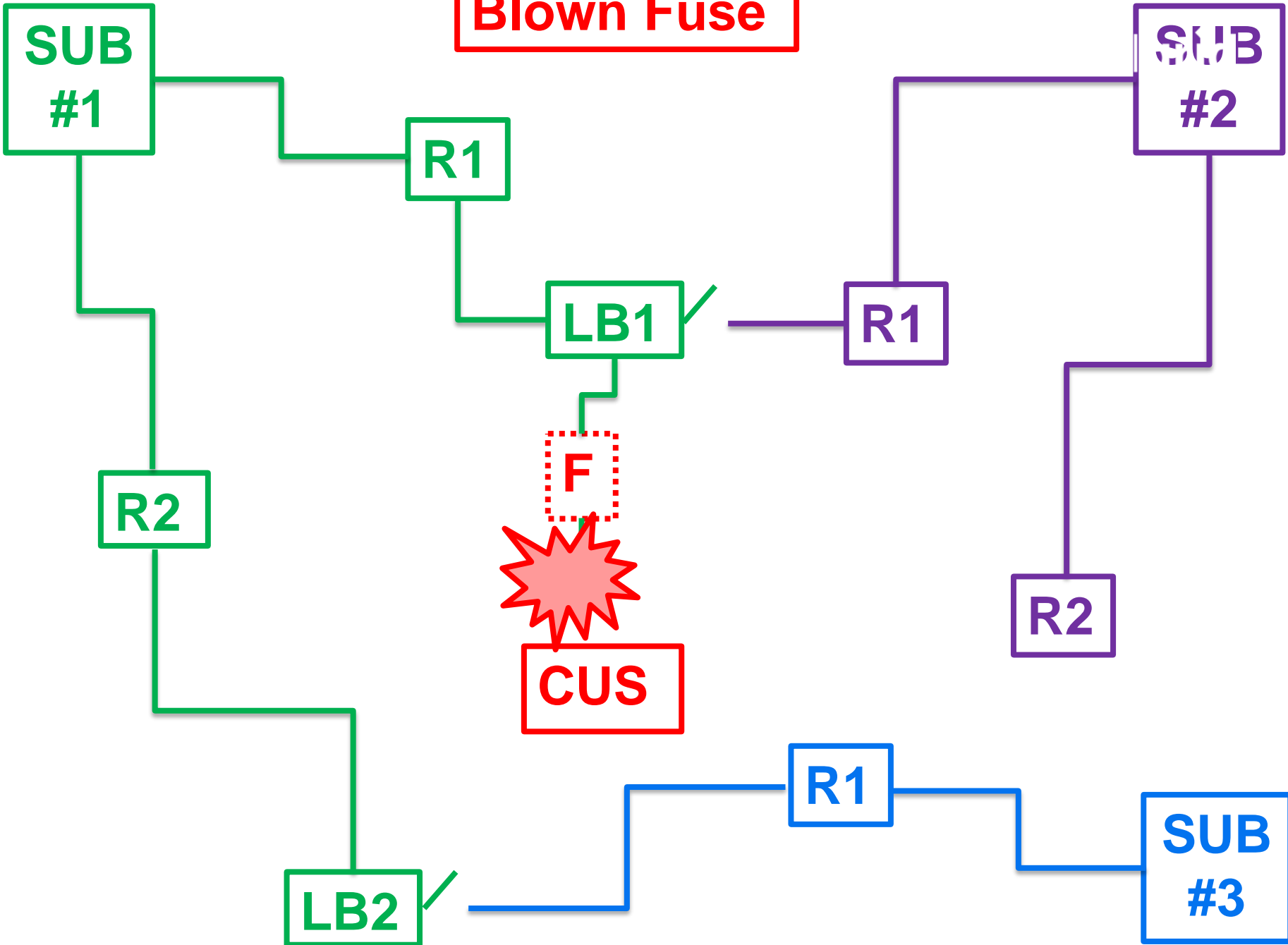


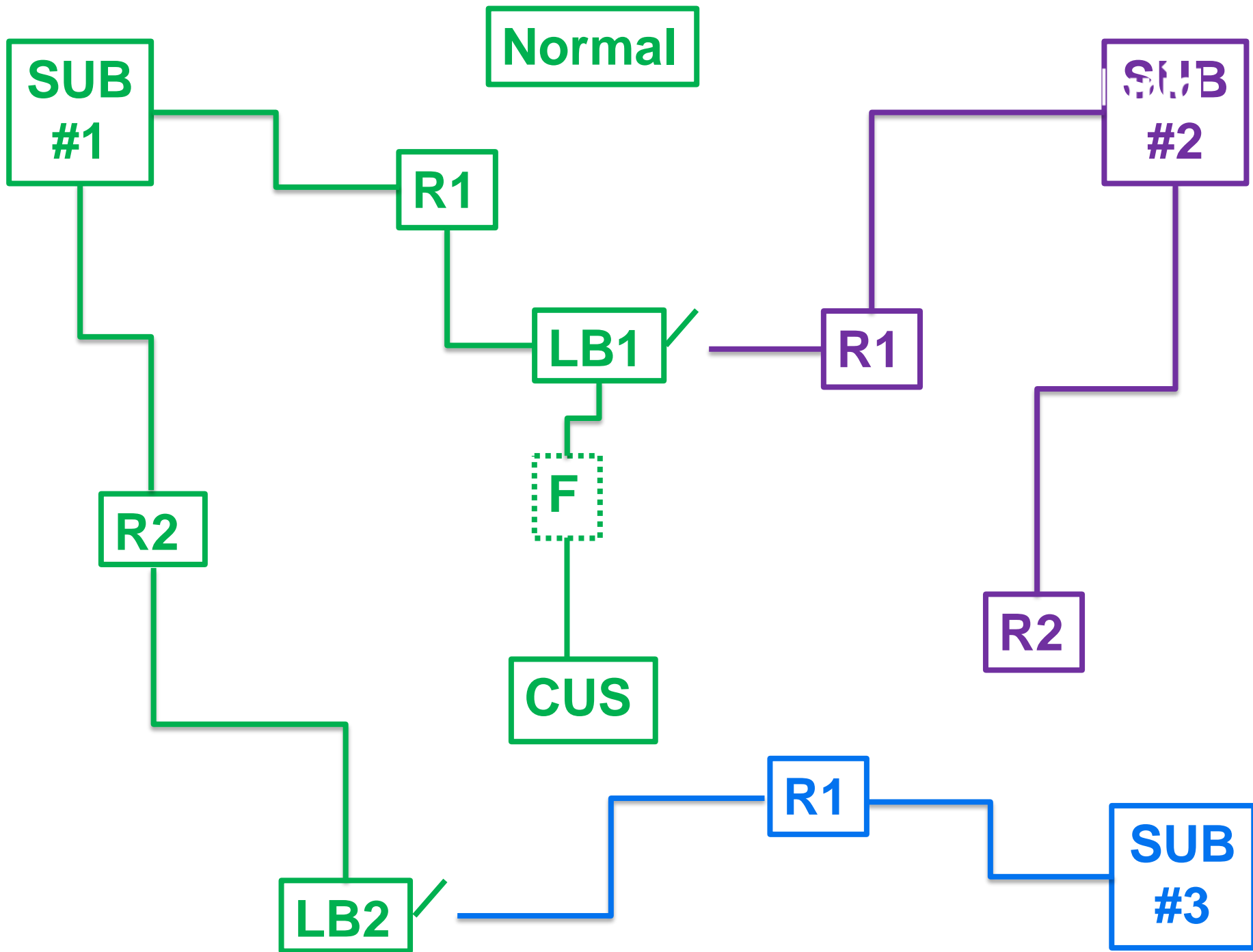


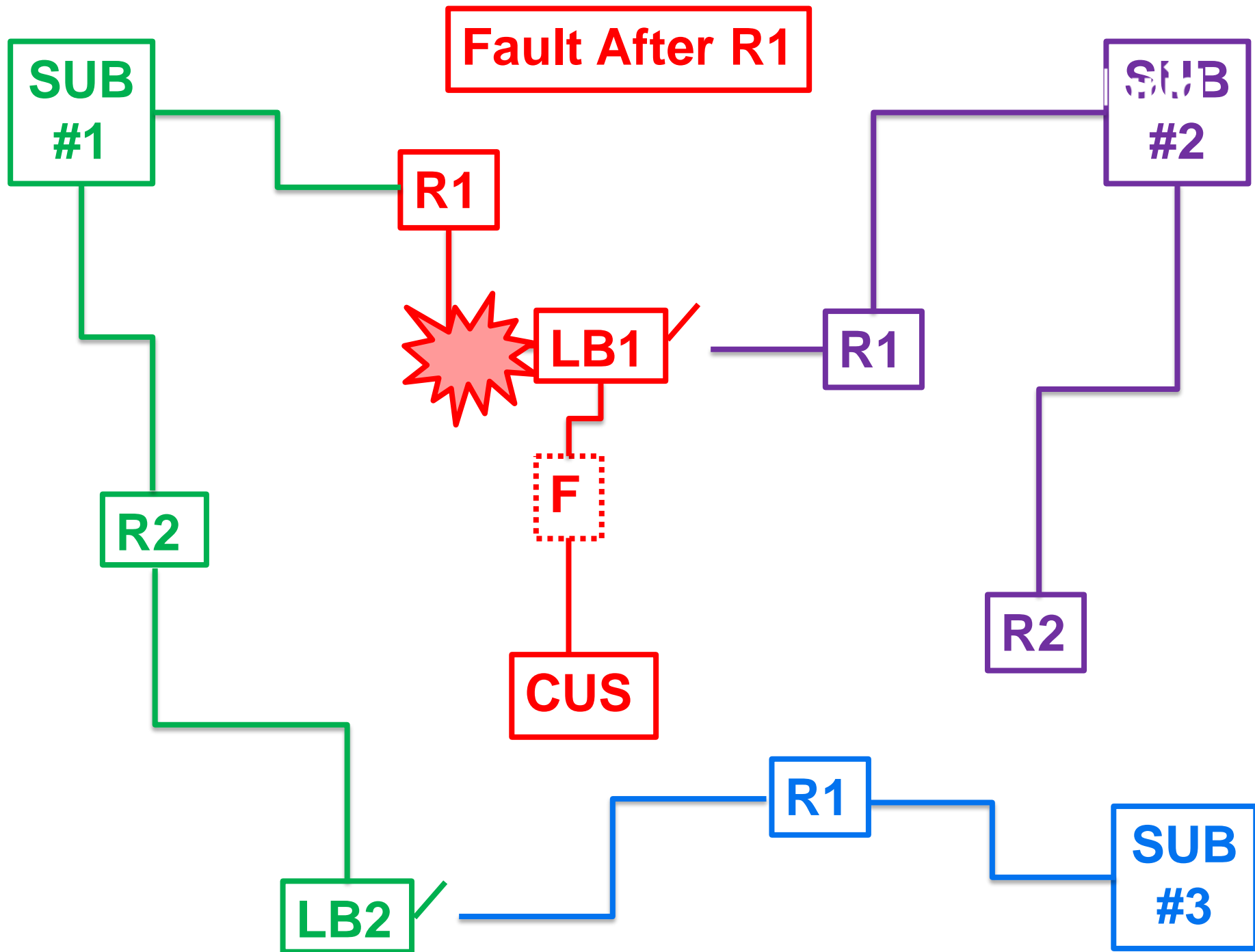
More Realistic

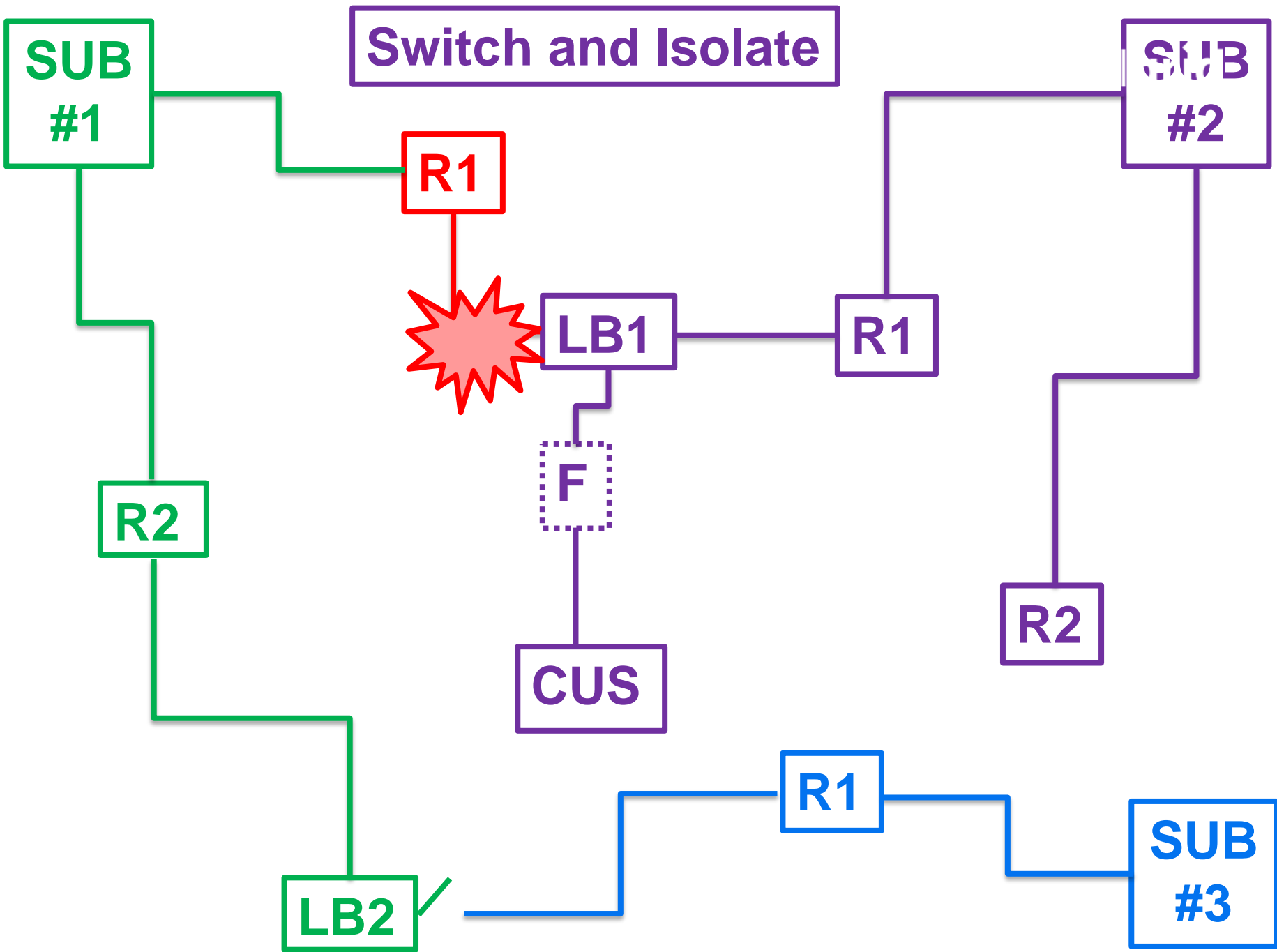


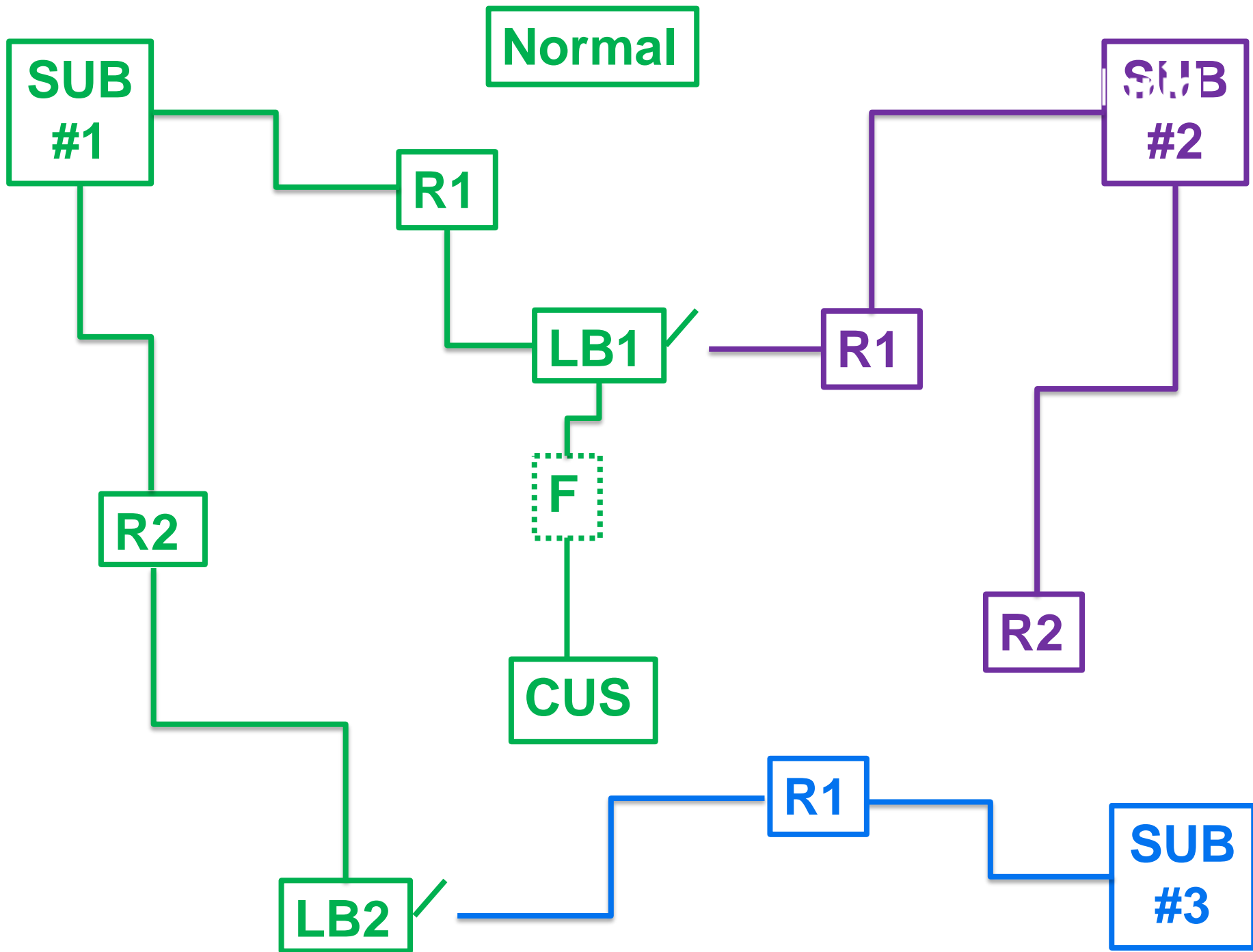
Blown Fuse

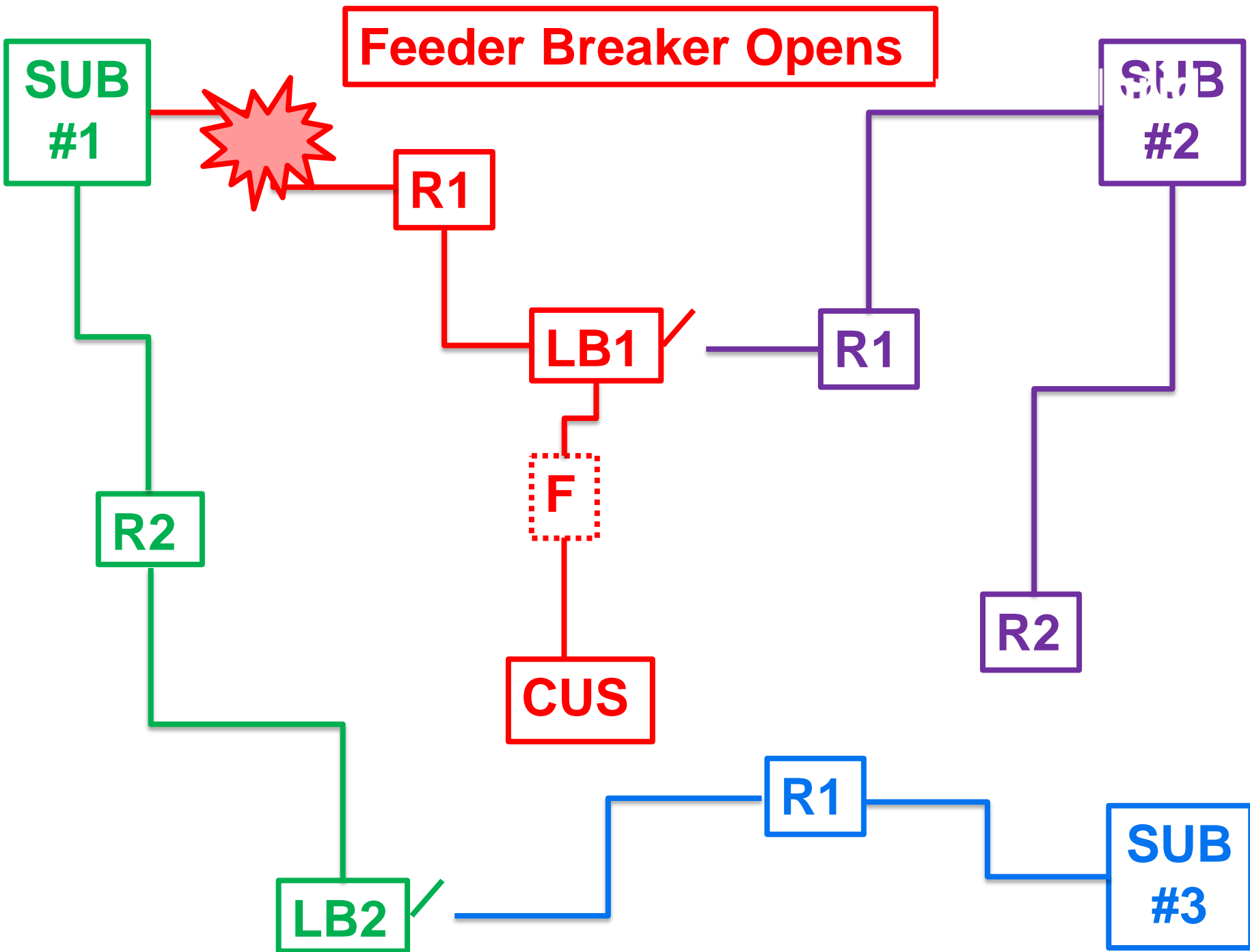


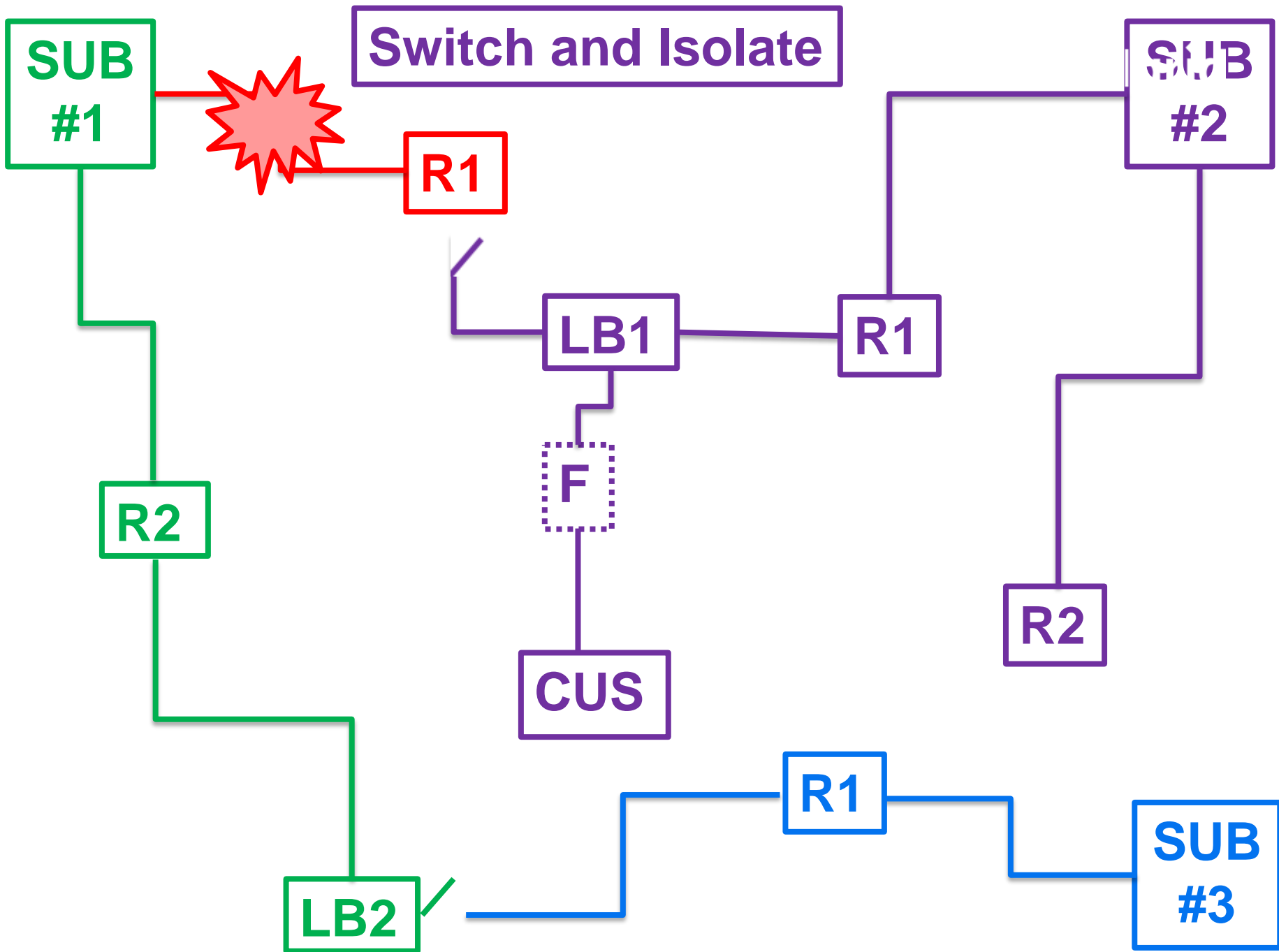




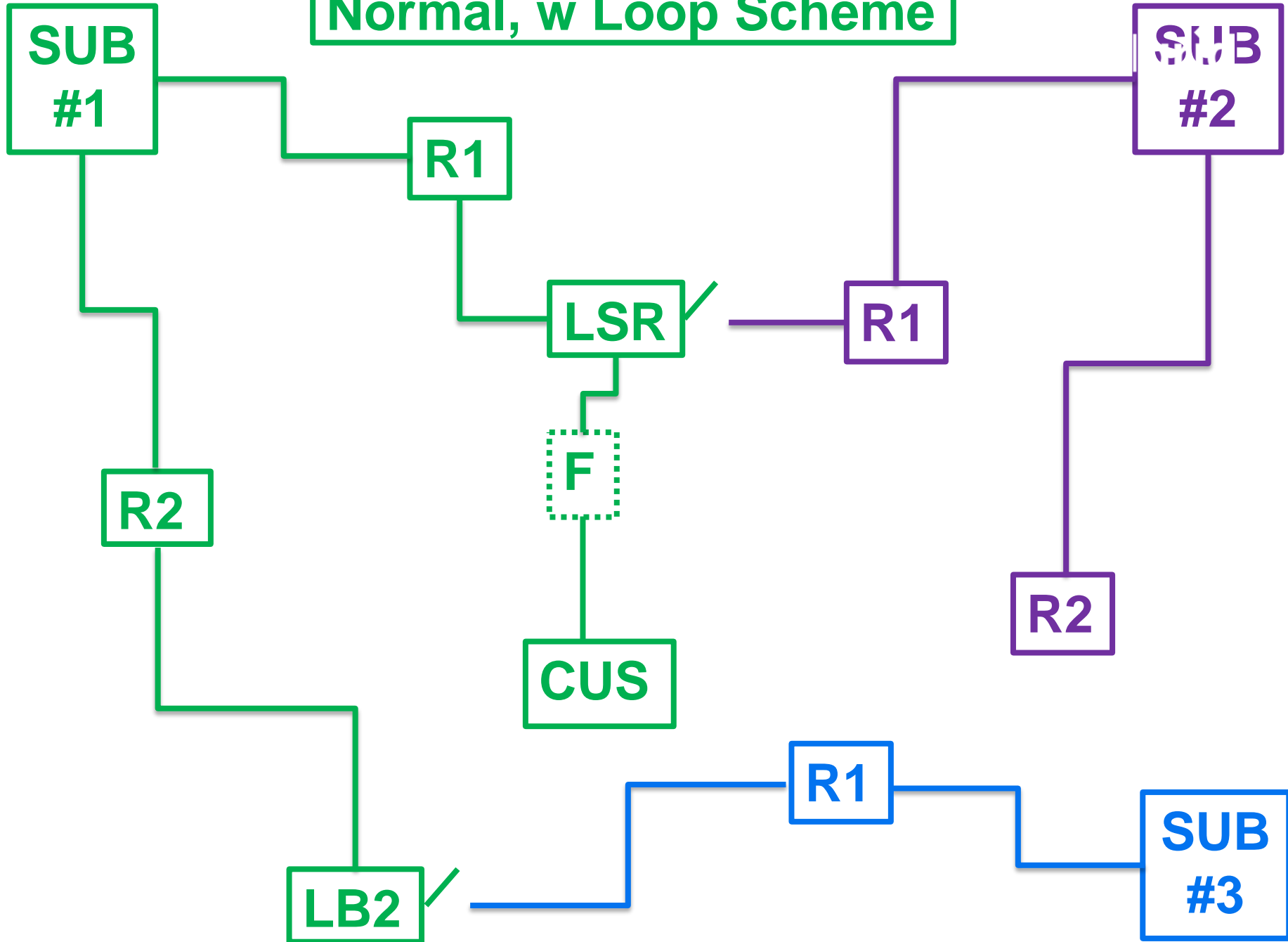


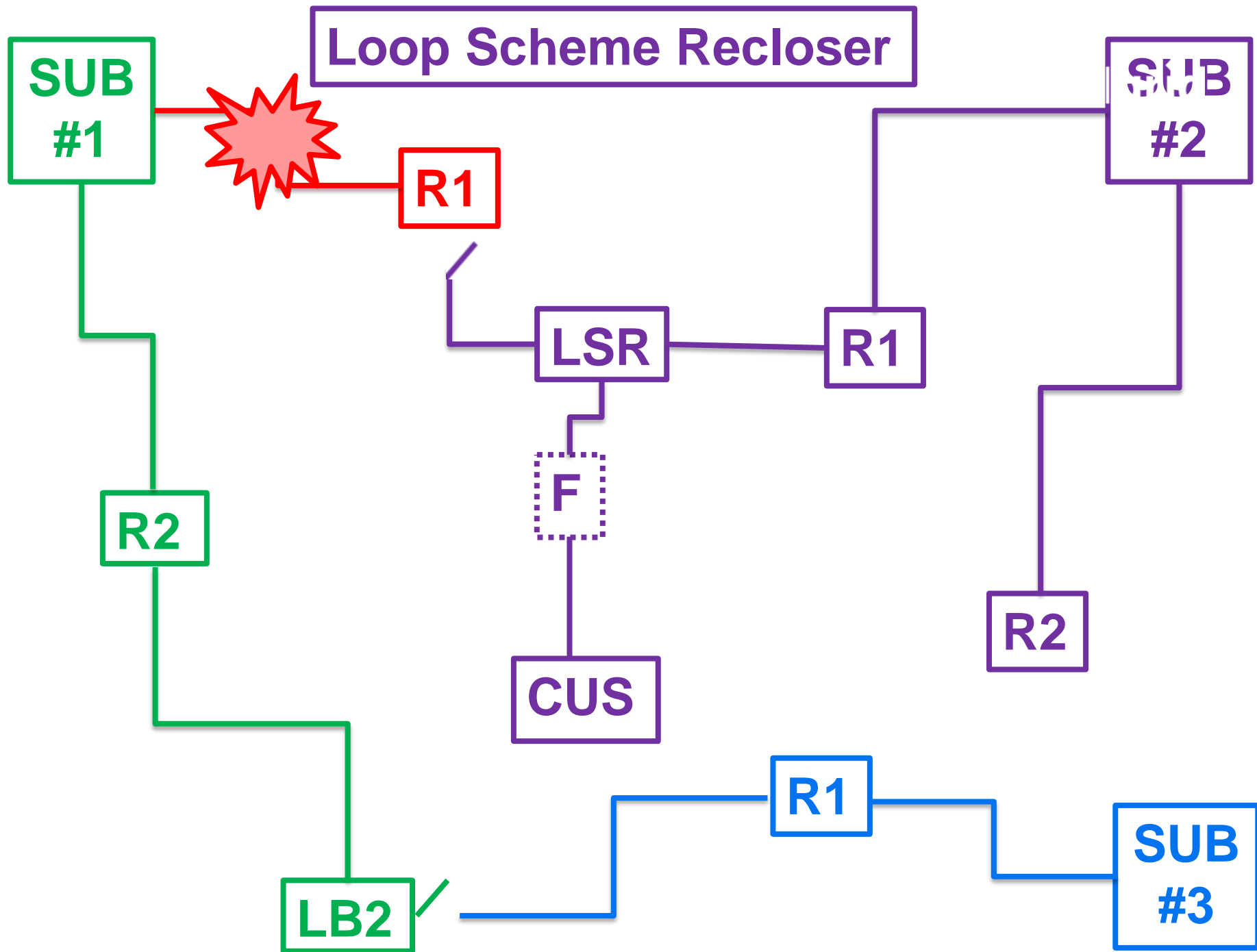


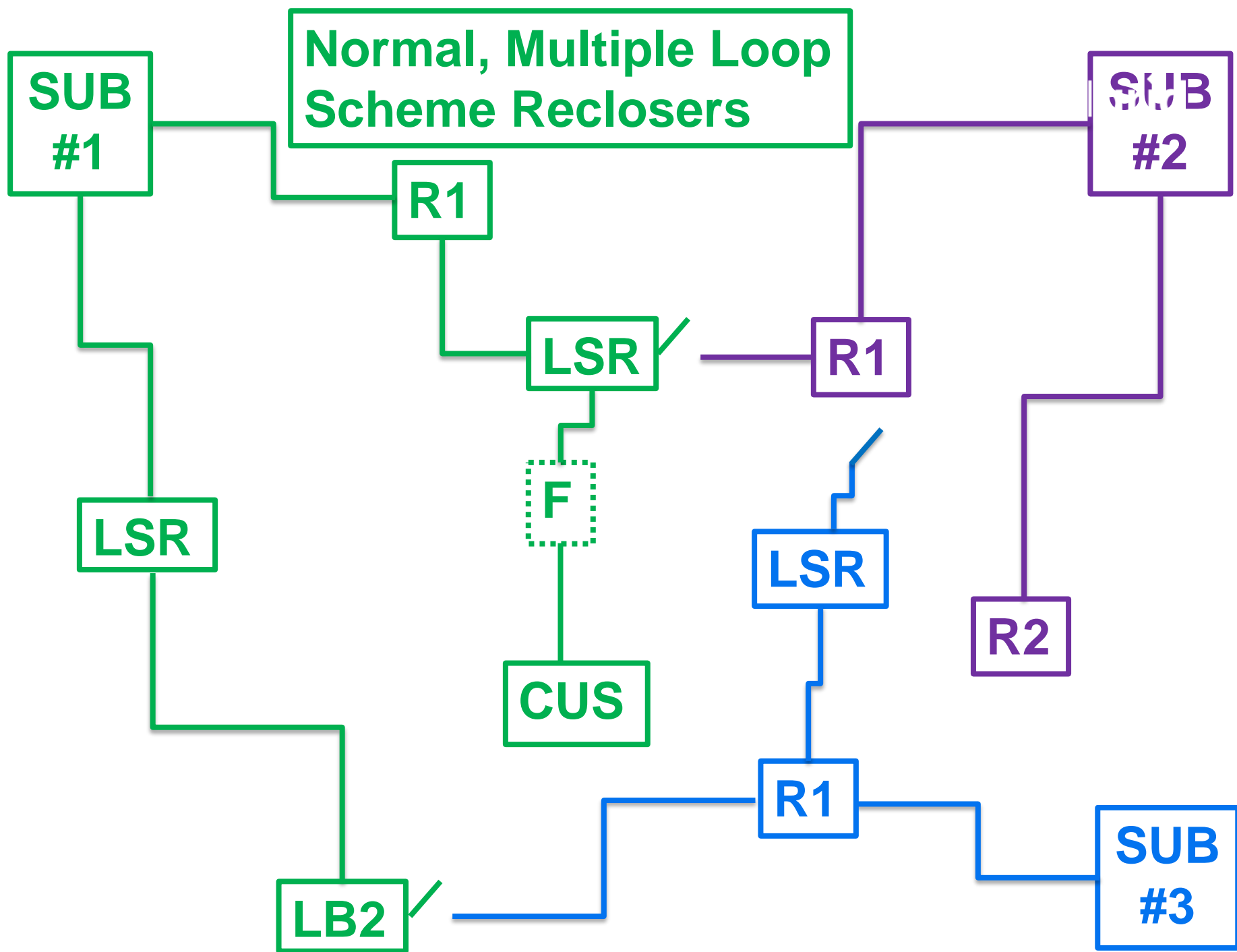




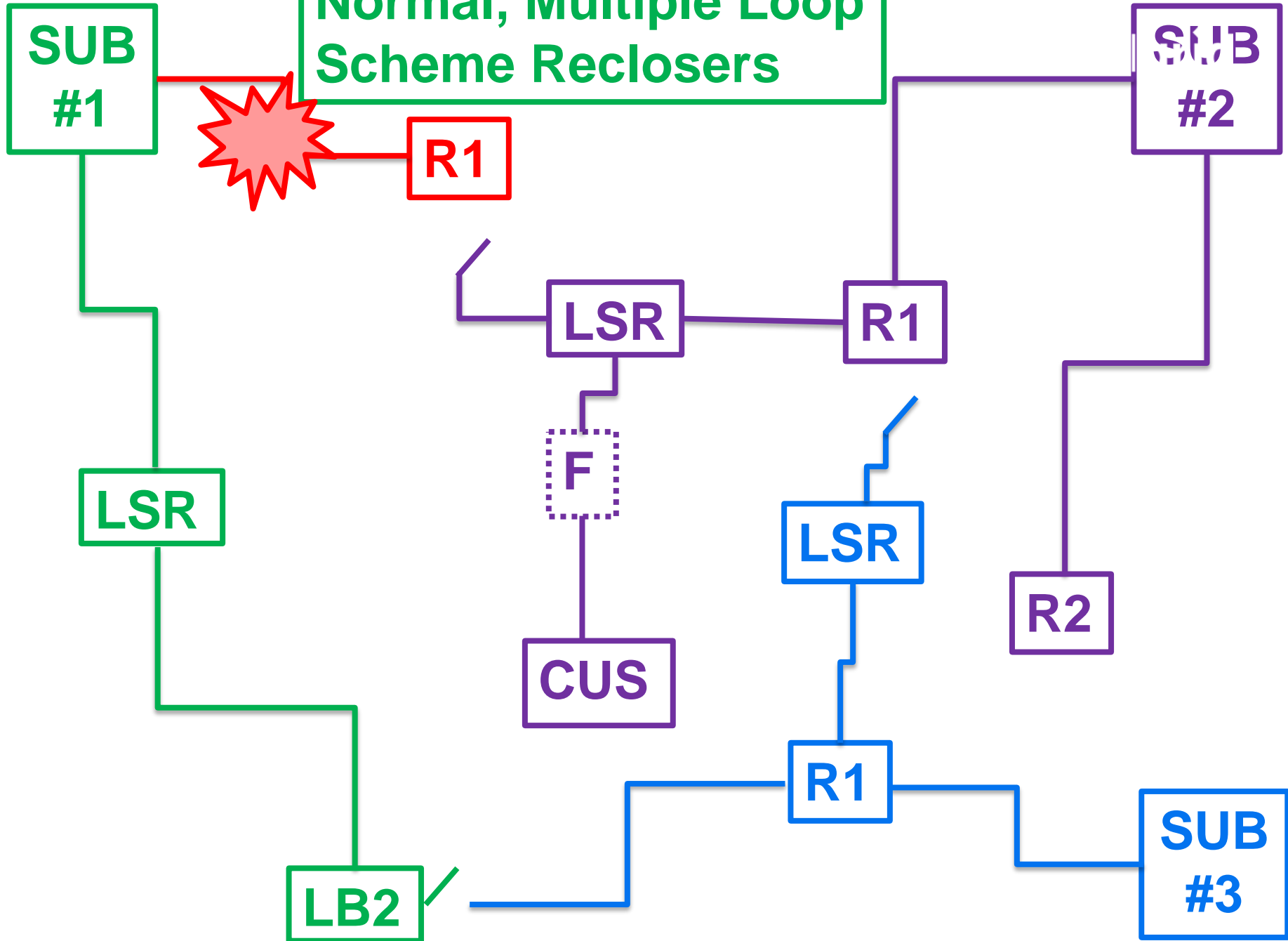
Normal, w Loop Scheme

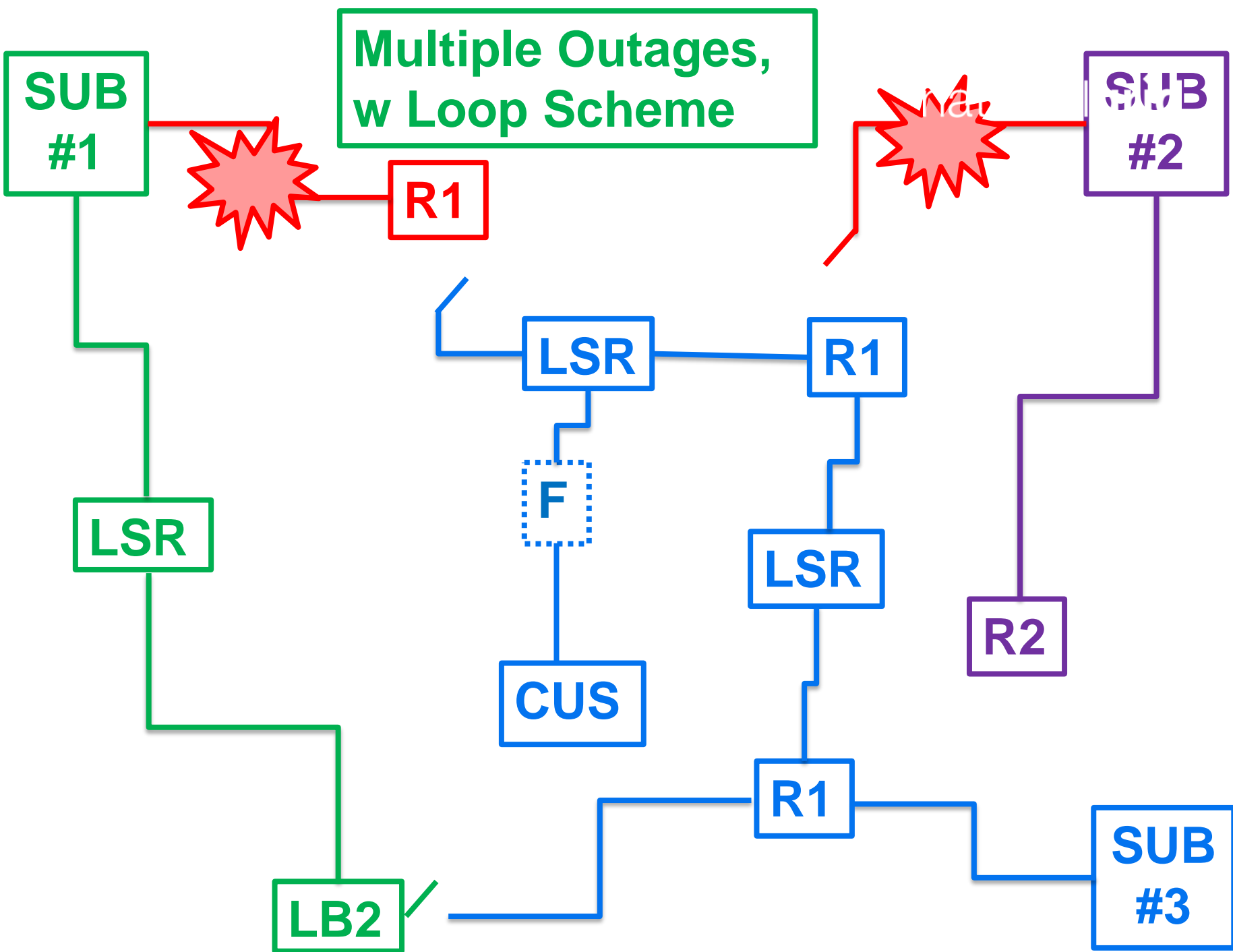






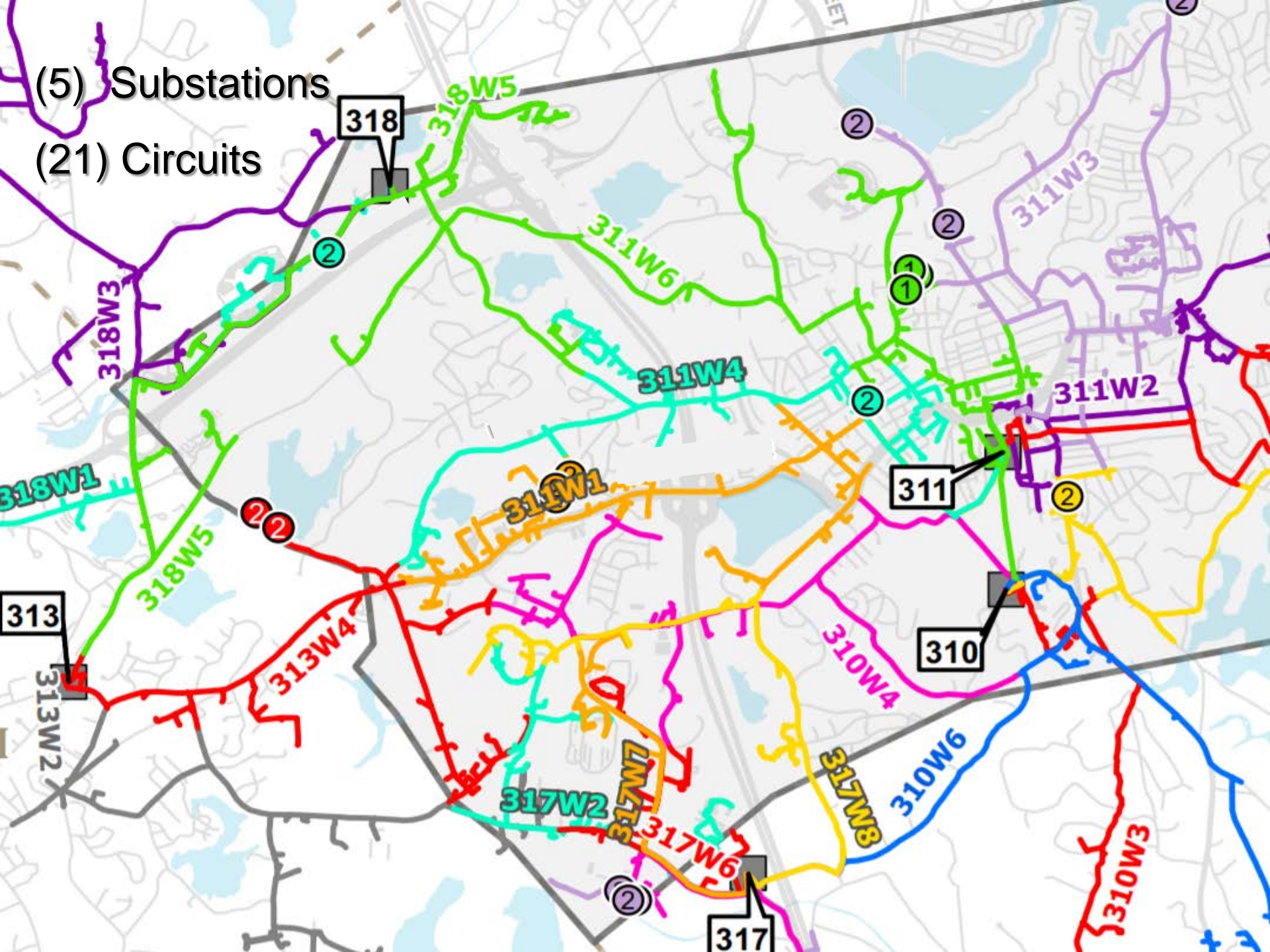
Normal, Multiple Loop Scheme Reclosers





(5) Substations

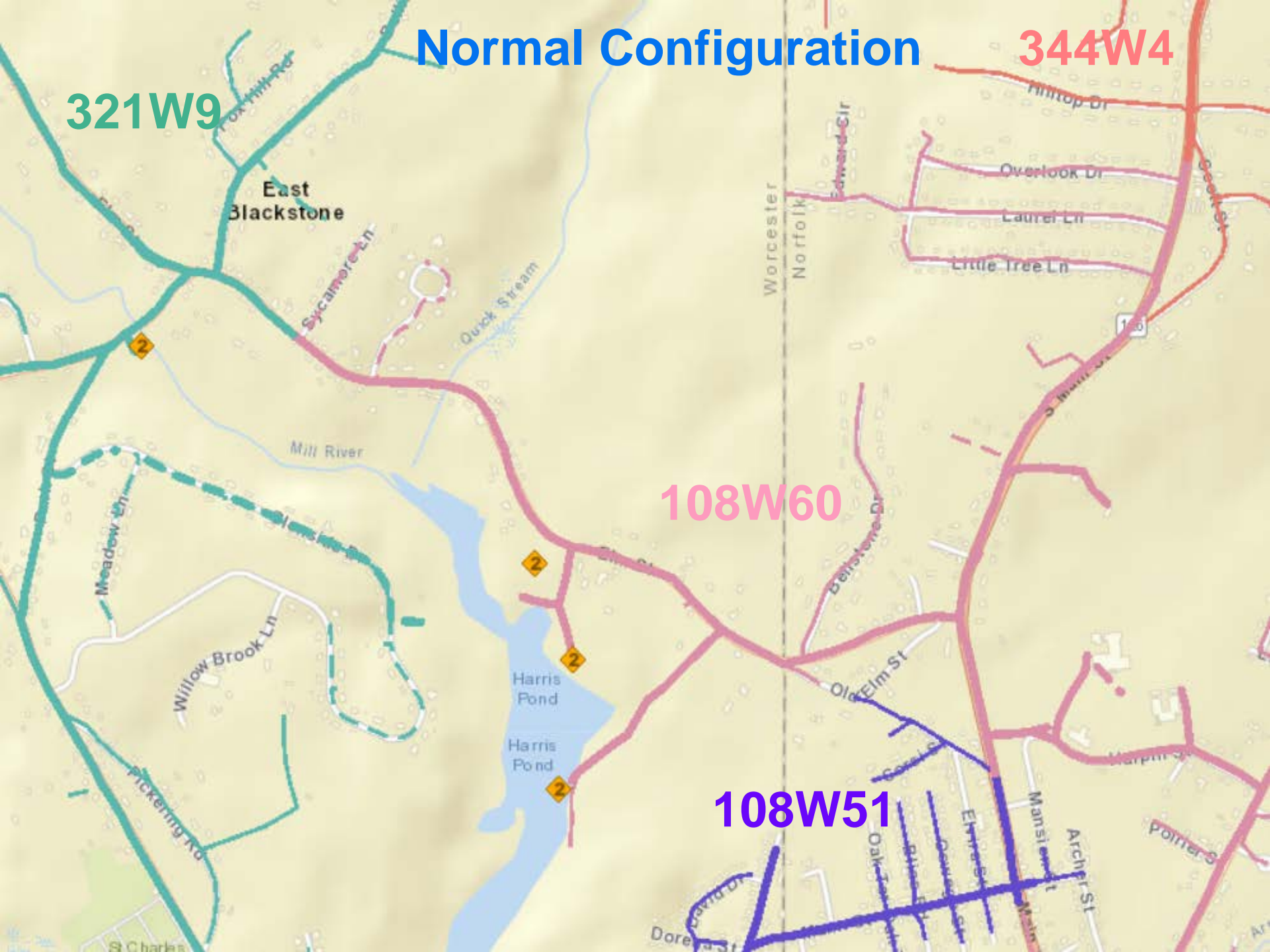
(21) Circuits



Normal Configuration

321W9

344W4



108W60

108W51

321W9

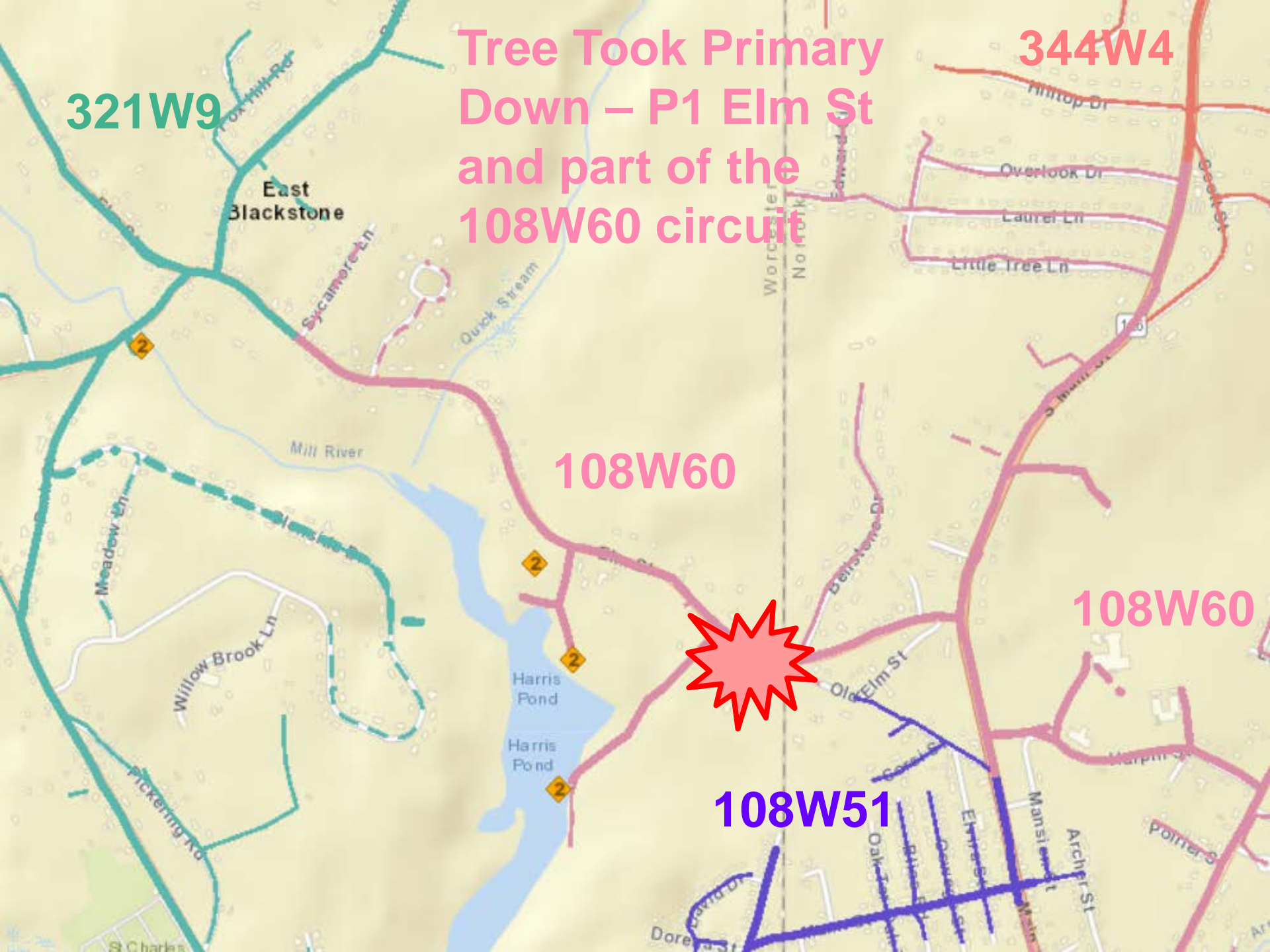
Tree Took Primary
Down – P1 Elm St
and part of the
108W60 circuit

344W4

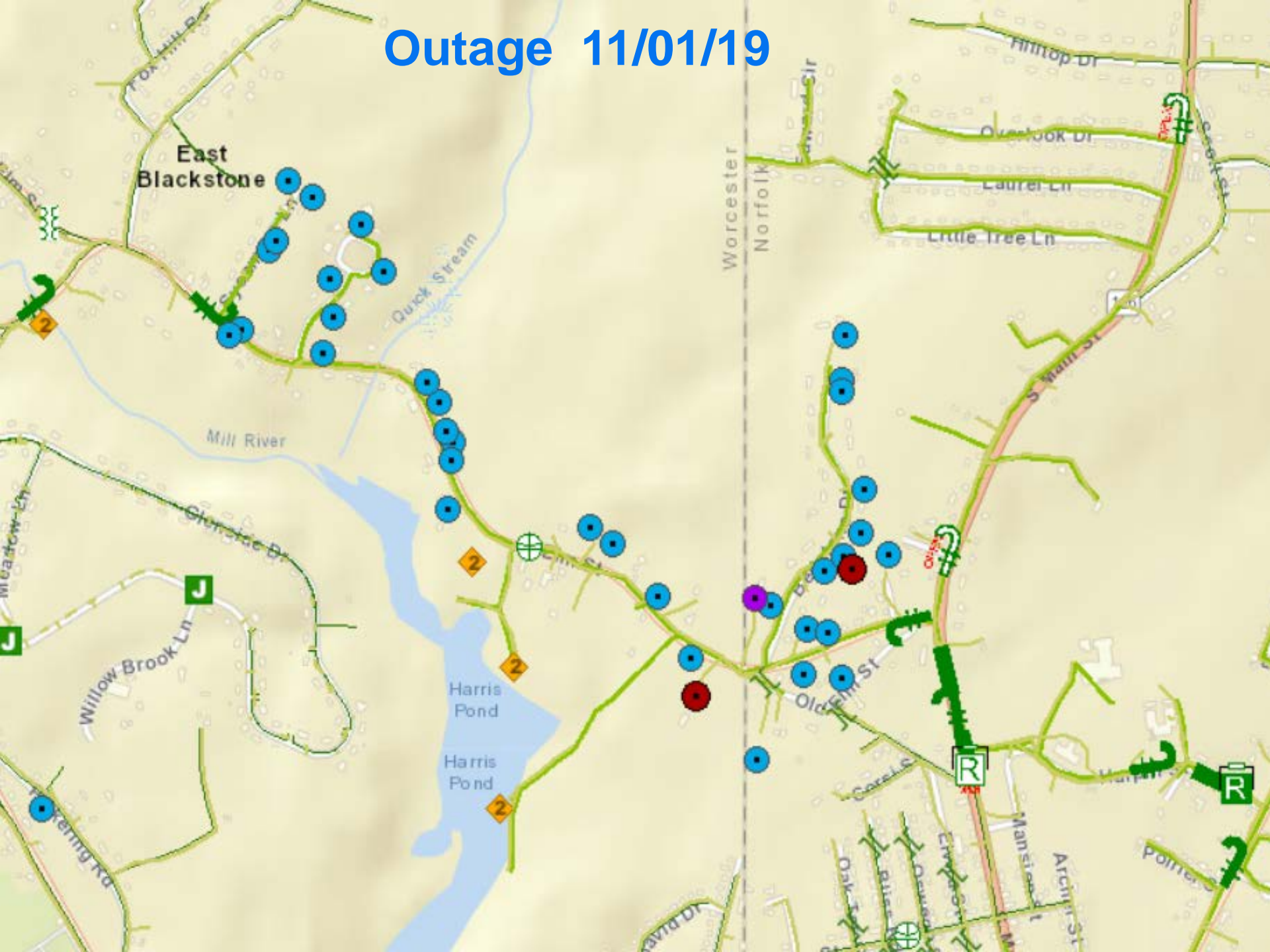
108W60

108W60

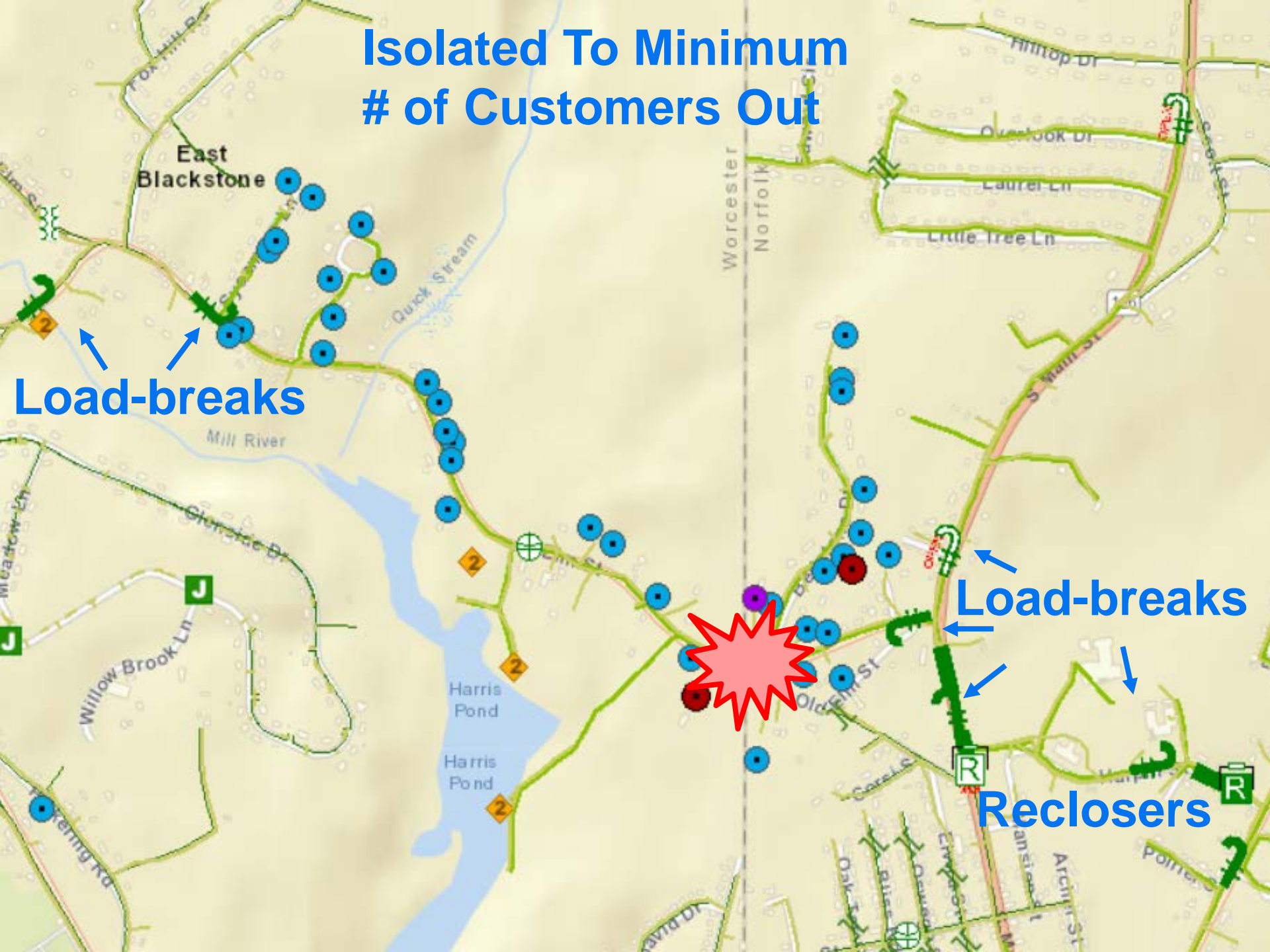
108W51



Outage 11/01/19



Isolated To Minimum
of Customers Out



Load-breaks

Load-breaks

Reclosers



MENU



SEARCH

Report Outage

Outage Status

Outage Central



nationalgrid

Number of Customers Out:



>5000



1001-5000



501-1000



51-500



<=50

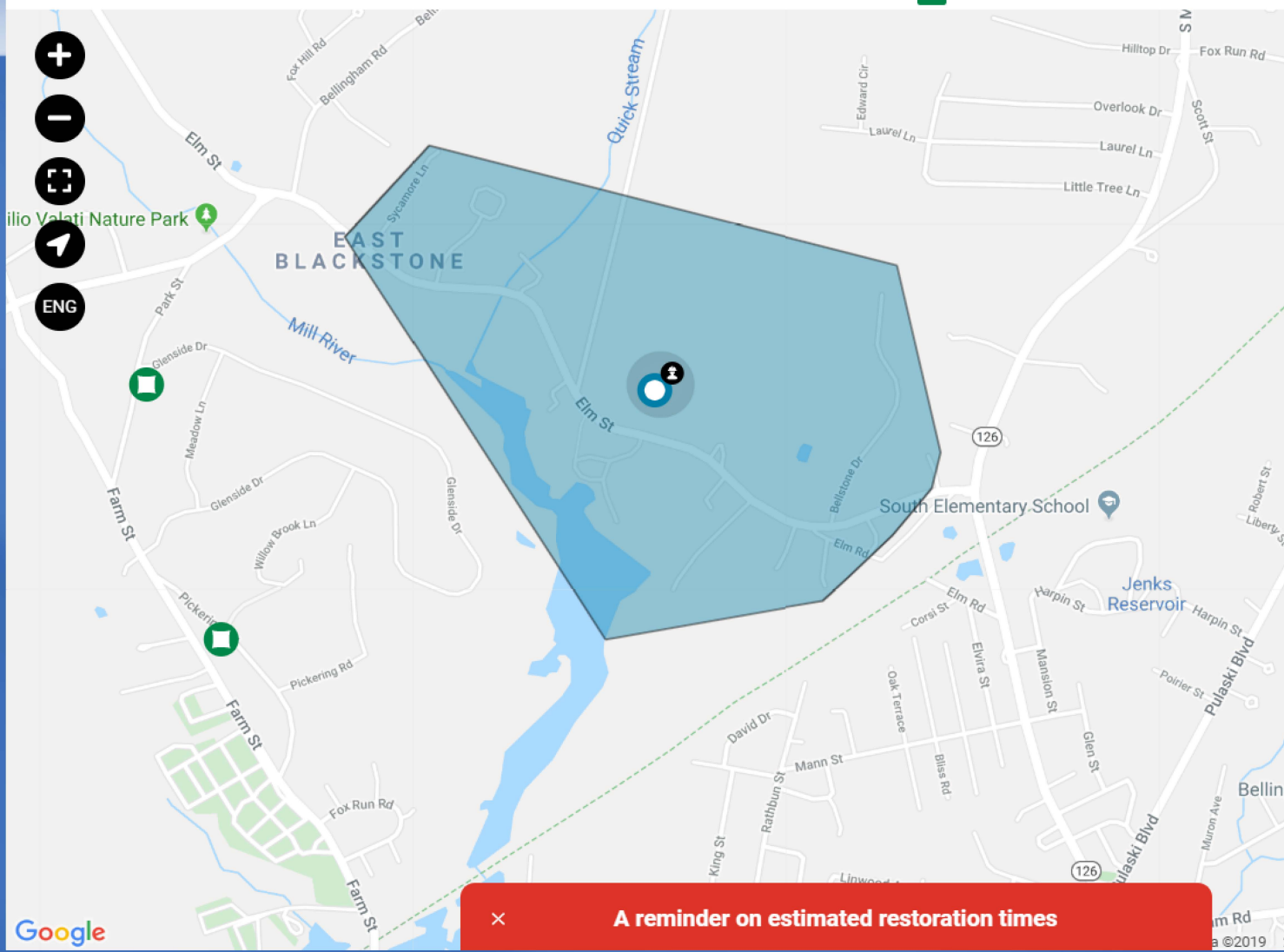


Multiple



Crew

Service Area



OUTAGE INFORMATION



Town
Bellingham,
Blackstone



Customers Affected
144



Start Time
Nov 1, 2019, 12:44 AM



Estimated Restoration
Assessing Condition



Crew Status
Assigned

Magnify/Zoom

Report Outage

Check Outage Status

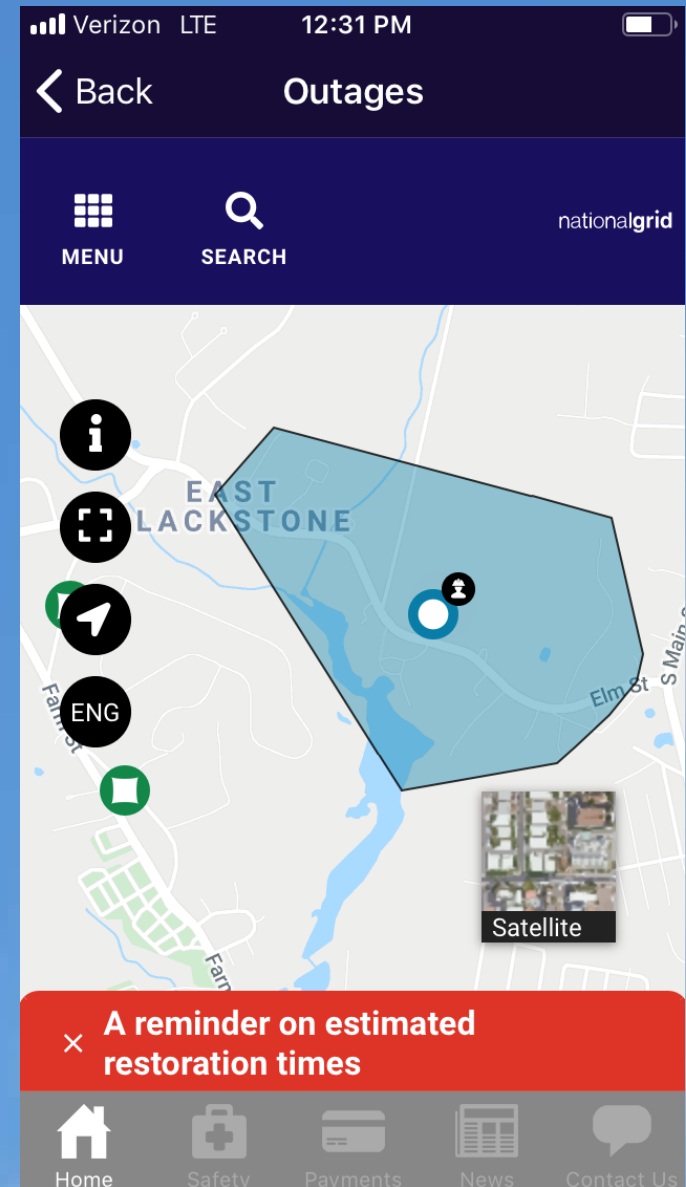


A reminder on estimated restoration times

Mobile App



- To register for text alerts, text REG to NGRID (64743)
- Enter Cell Phone or Account Number
- Report an outage
- Check status



- Public Safety first – 911 Fire and Police Priorities
- Isolate to minimize customers affected
- Substation Breaker
- Reclosers
- Load-breaks
- Outage Info



Safety During Restoration

- Bucket trucks do not operate in winds $>35\text{mph}$
- System may be switched to abnormal configuration
- Access, mobility, and safety challenges during weather events
- Restoration depends on nature and location of fault, and options available



Grid Of The Future

- More renewables - solar, wind
 - More automatic capabilities
 - More customer visibility
 - More battery storage
 - More tele-metrics

Preparing For Storms – www.redcross.org

- Have A Plan – Meet Up Spot / Communication Plan
- Prepare Your Vehicle - (Winter and Summer)
 - Maintenance - battery, tires, wipers, emergency kit
 - Scraper, shovel, sand, warm clothing, matches
- Prepare Your Home – (Winter and Summer)
 - Loose Items Should Be Secured
 - Maintenance – heating, cooling, water system
 - Fireplace – properly vented, wood
 - Medications, phone numbers, cash

Summary

- What An Outage Is
- Electric Grid Operations
- Safety Of Public, And Workers
- Preparing For Storms
- Action Items:
 - National Grid App
 - www.redcross.org

