



WEST FORK SAN JACINTO RIVER

FLOOD PROTECTION PLANNING AND FLOOD EARLY WARNING SYSTEM ENHANCEMENTS

PUBLIC MEETING

July 12, 2017

San Jacinto River Authority

Montgomery County

City of Conroe

Texas Water Development Board

OneRain

Texas Water 
Development Board

OneRain 
The Rainfall Company

Project Overview

Purpose

- To enhance existing early warning system

Tasks

- Engineering analysis for conversion from ALERT to ALERT2 (Completed)
- Conversion from ALERT to ALERT2 and expansion of existing system
- Installation of a new elevated height communications antenna

ALERT to ALERT2 Upgrade

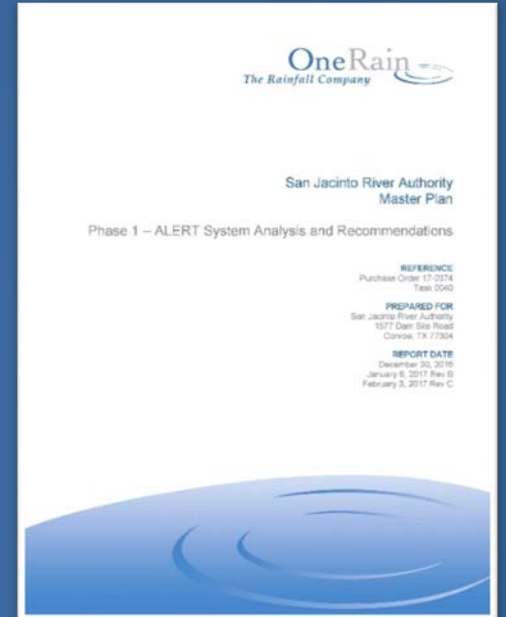
Step by Step Upgrade Plan 

Network Design

- ALERT2 ID plan
- Time Division Multiple Access (TDMA) Plan
- New Frequencies – need to be different than ALERT
- Register Agency and IDs with <http://alert2.org>

Installation Support

- New equipment, installation, and setup
- Base station configuration support



ALERT vs. ALERT2 Comparison

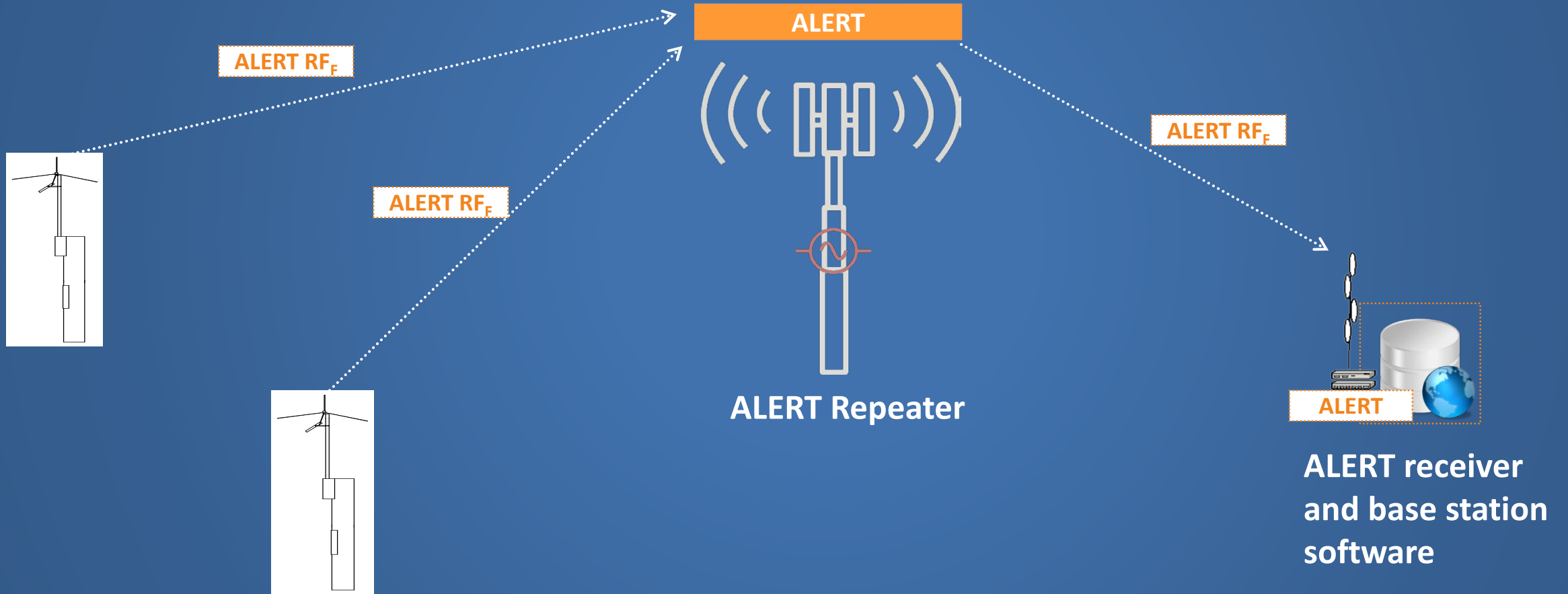
ALERT

- 300 baud
- 4 bytes per message
- 8,192 Sensor IDs in all
- Integer 0-2047 data values
- Little error detection, no correction
- Data lost from collisions

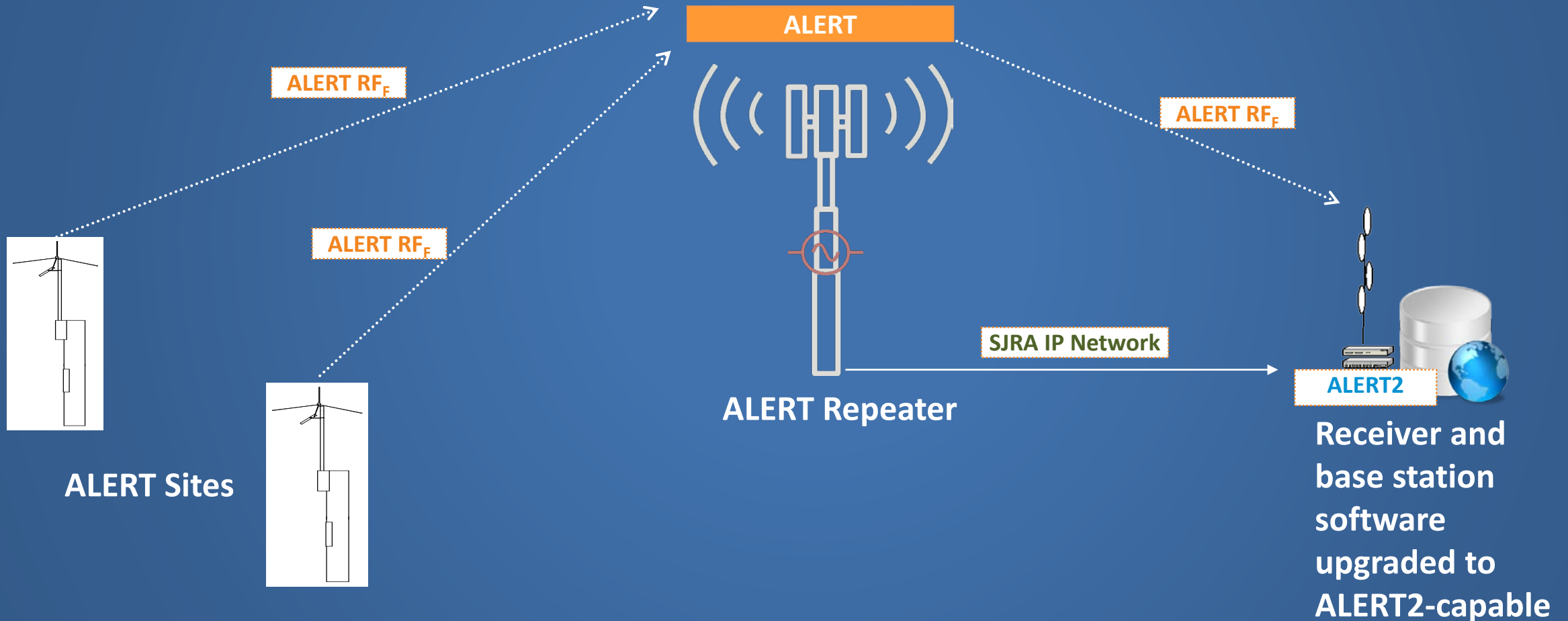
ALERT2

- 4,800 baud
- Up to 1000+ bytes per message
- 65,535 site IDs, 255 sensors/site
- Engineering units (actual stage, etc...)
- Errors detected and corrected
- No data lost from collisions

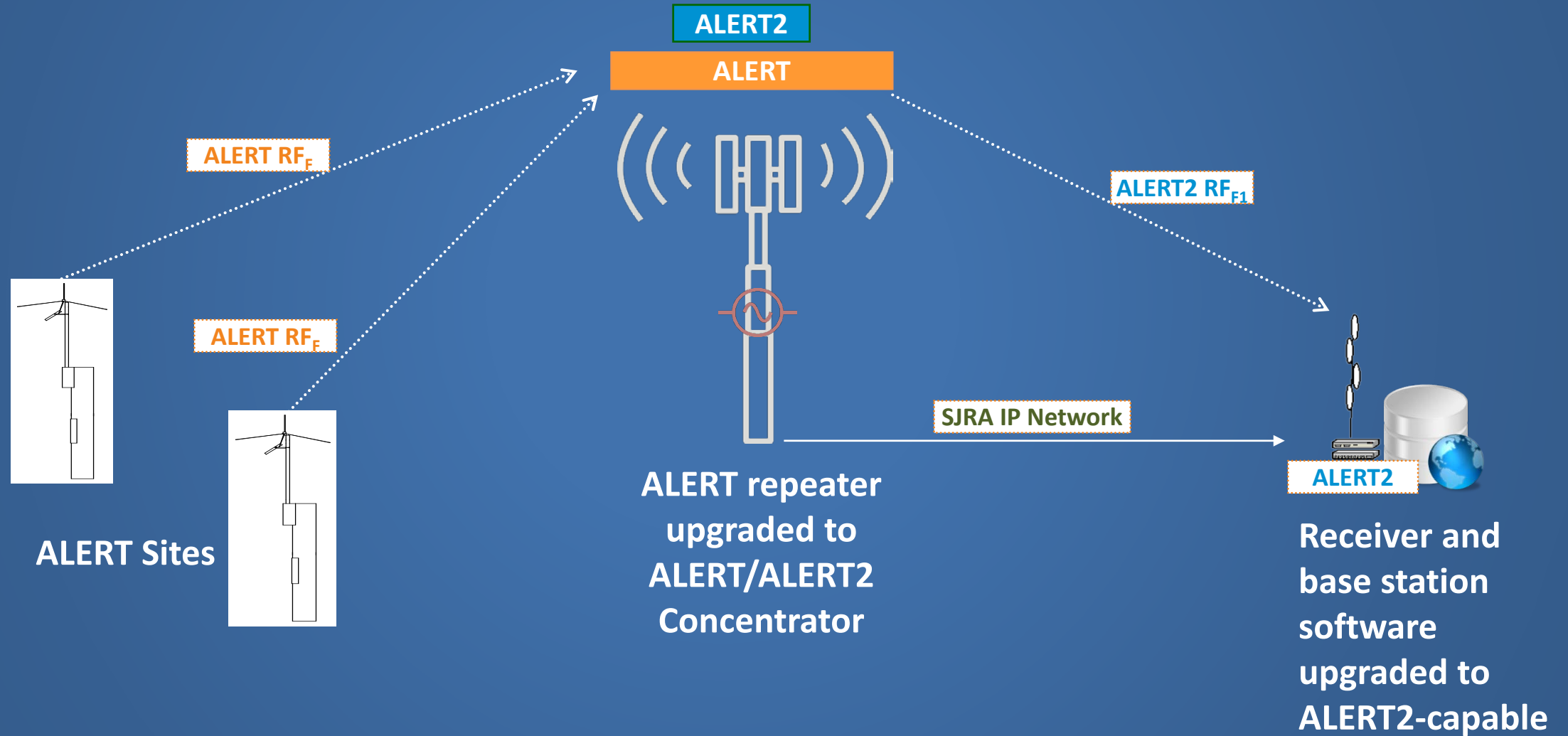
Existing ALERT Network Architecture



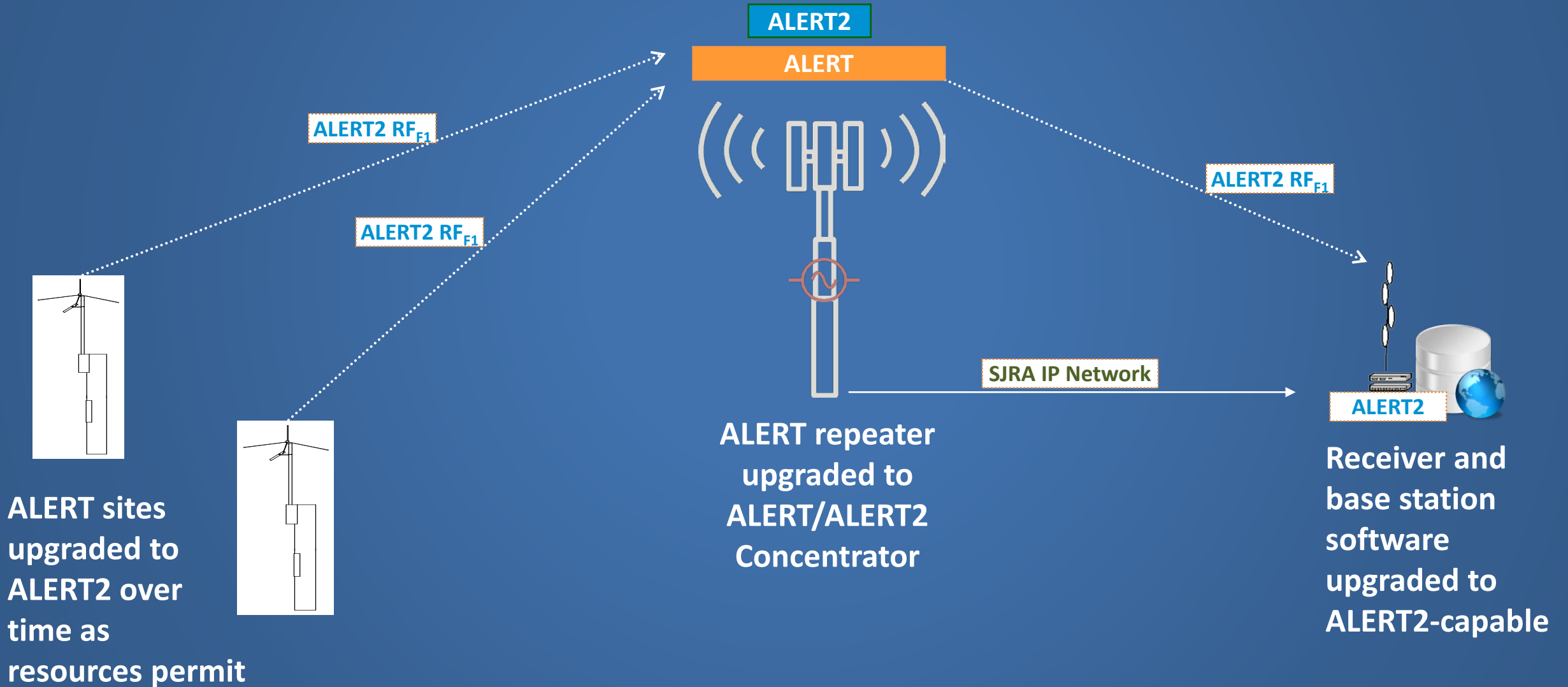
Step 1: Upgrade Receive Location



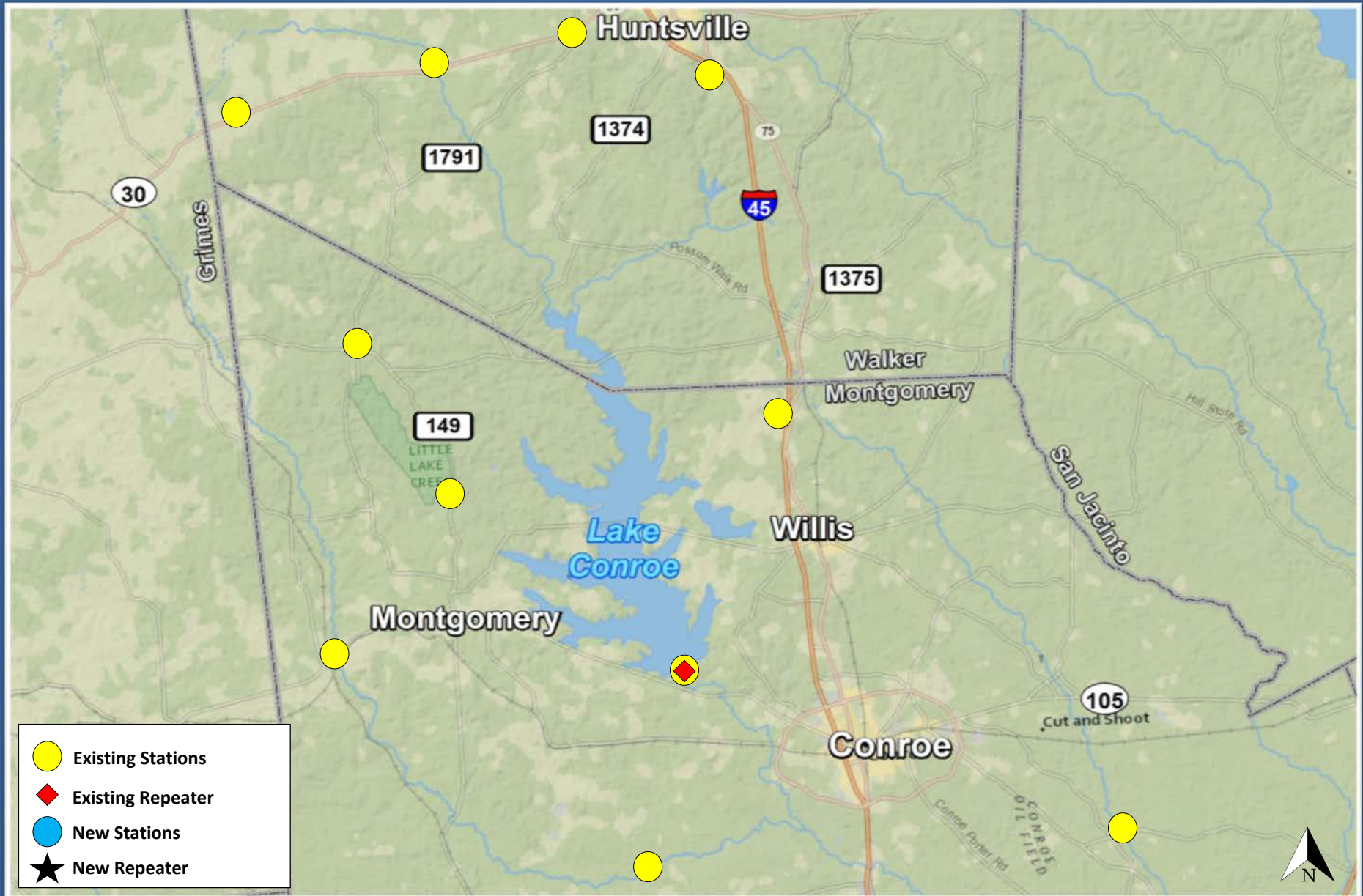
Step 2: Upgrade Repeater



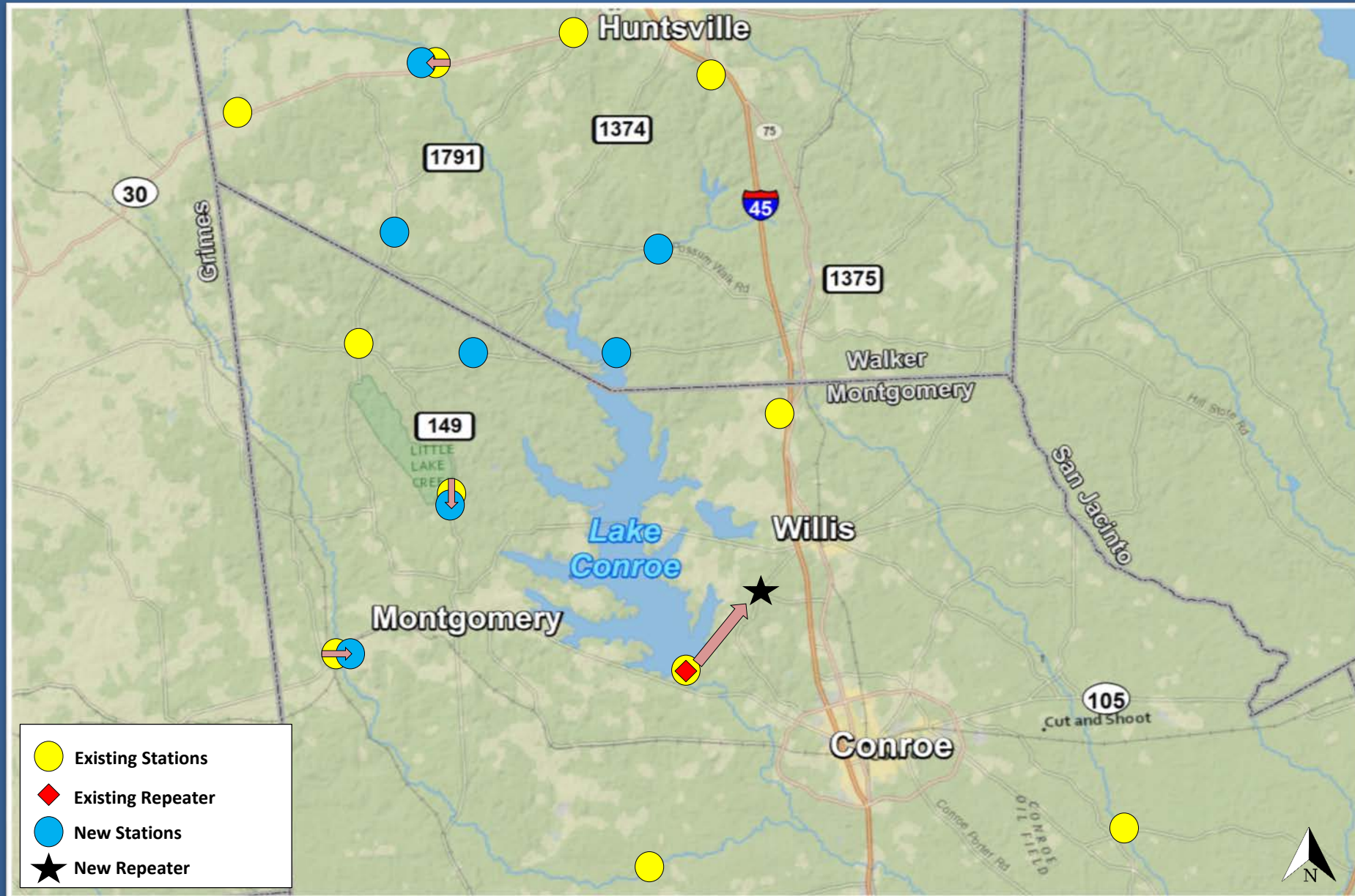
Step 3: Upgrade Field Sites



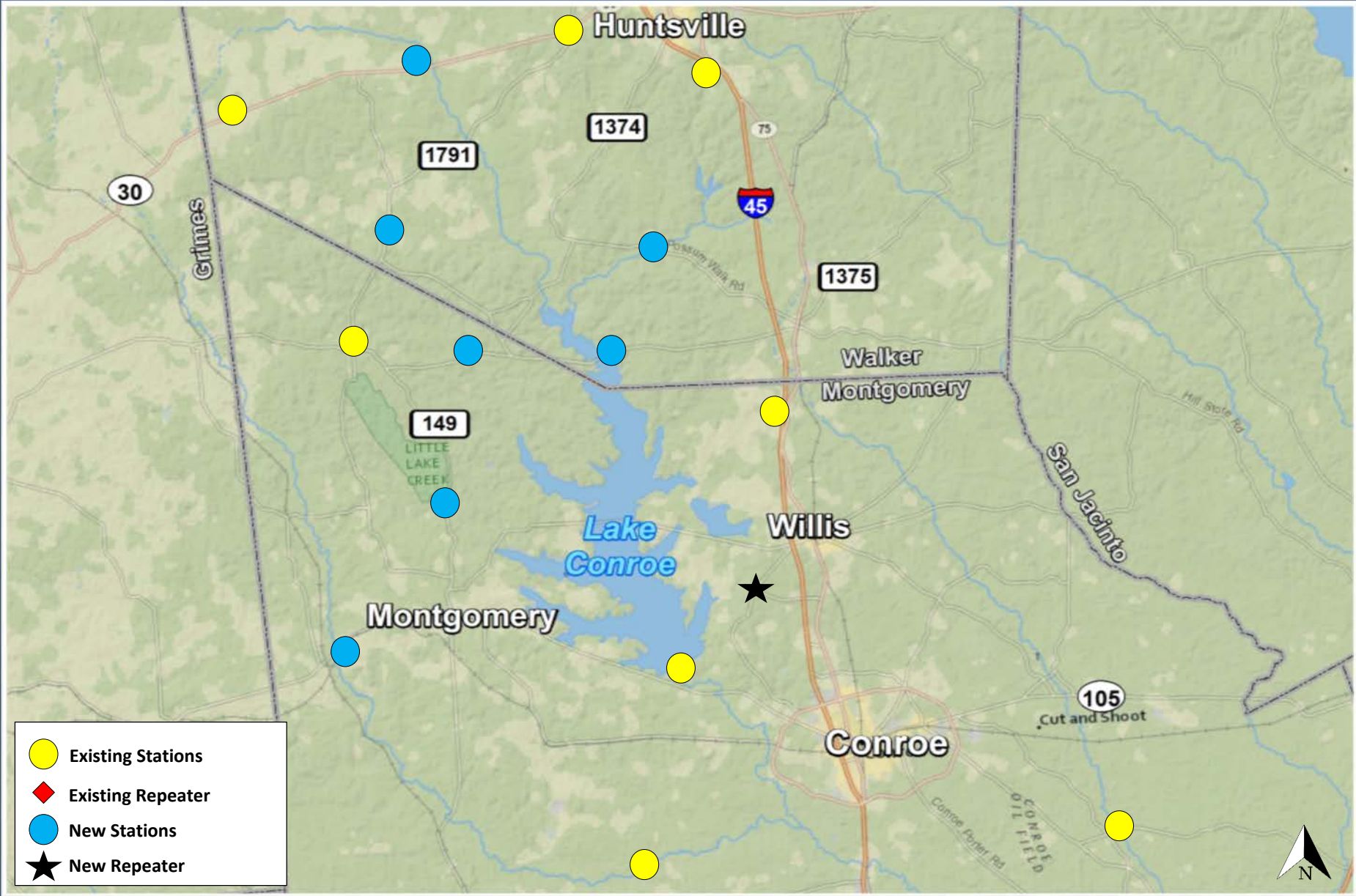
ALERT System Overview - Existing



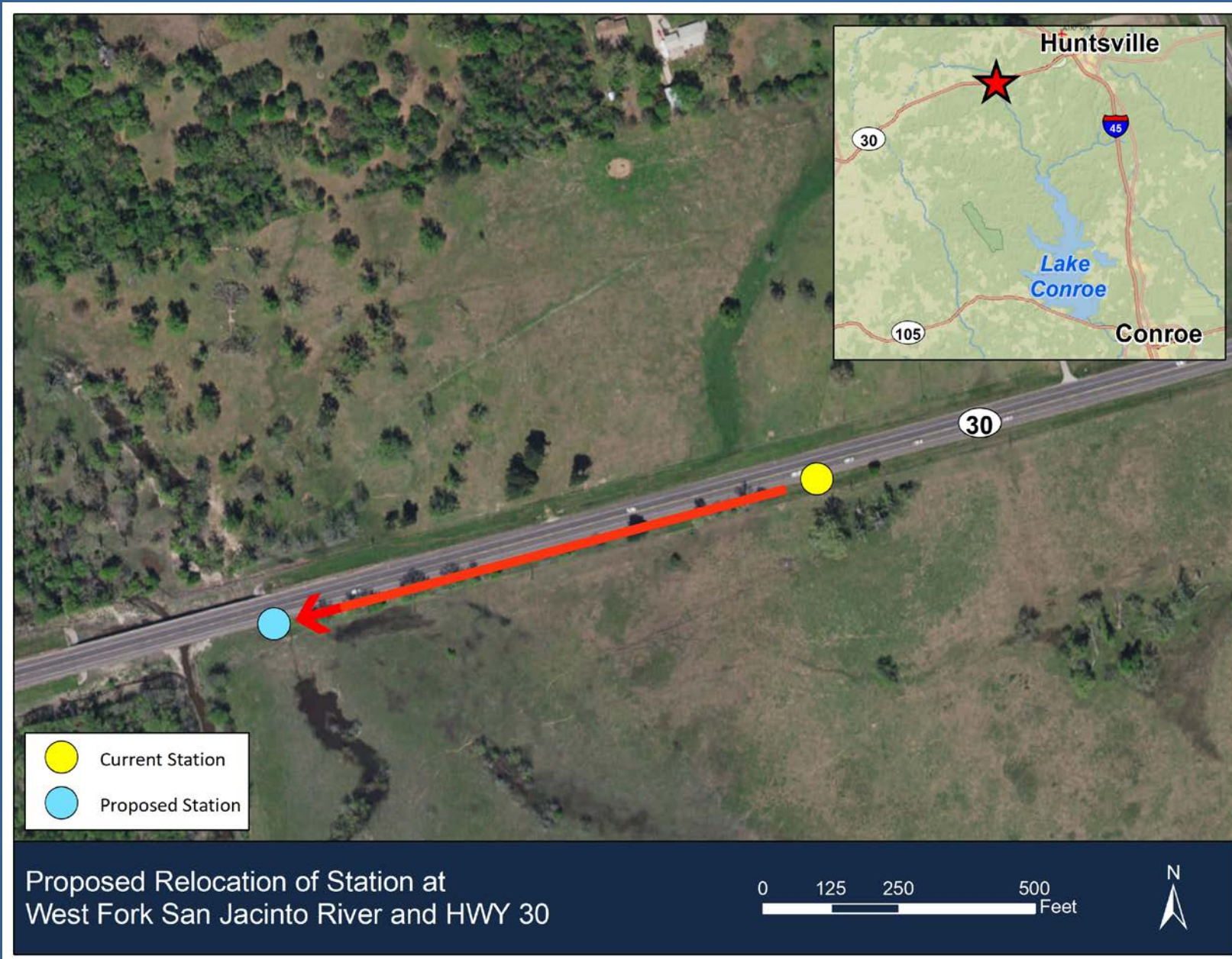
ALERT System Overview - Proposed Updates



ALERT System Overview - Proposed Final



Sample Station Relocation



Typical Installations



Flood Early Warning New Repeater Location

- Standpipe 400' elevation
- Easily attach Omni & Directional Antenna
- Located near Conroe WP 21 and existing network
- Half the cost of previously proposed alternative



QUESTIONS?

