



ONCOR SYSTEM IMPROVEMENTS

February 6, 2024

MARY AVENUE DISTRIBUTION FEEDERS



- **Overview**

- **Downtown Waco is currently served by the Waco East substation at MLK Blvd. & I-35 via the recently installed underground crossing under the Brazos River.**
- **Mary Ave will enable the offload of the Waco South, Colonial and Waco East substations and provide back-stand capabilities to downtown Waco.**

- **Solution**

- **Bring 2 new feeders from the new Mary Ave Substation into downtown to improve system reliability and serve the future growth needs of the downtown area.**

MARY AVENUE DISTRIBUTION FEEDERS



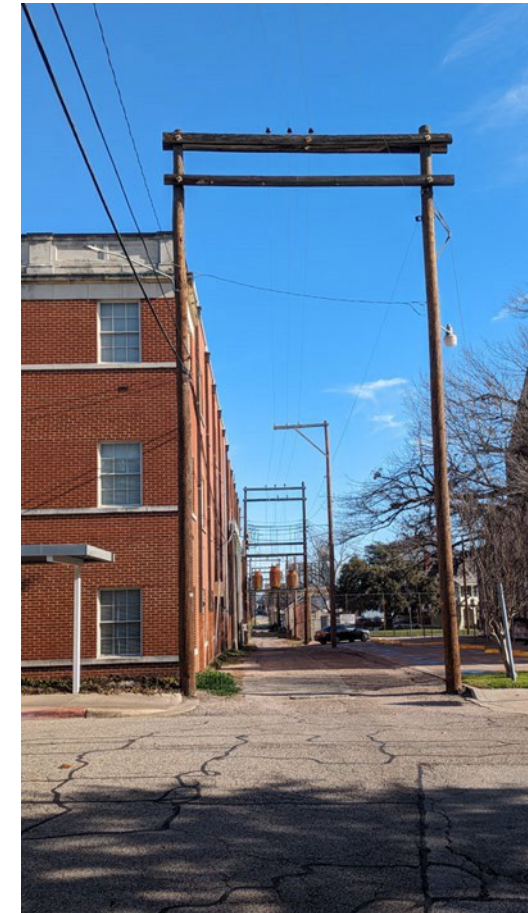
Single circuit



Double Circuit



H-Frame Structures



MARY AVENUE DISTRIBUTION FEEDERS



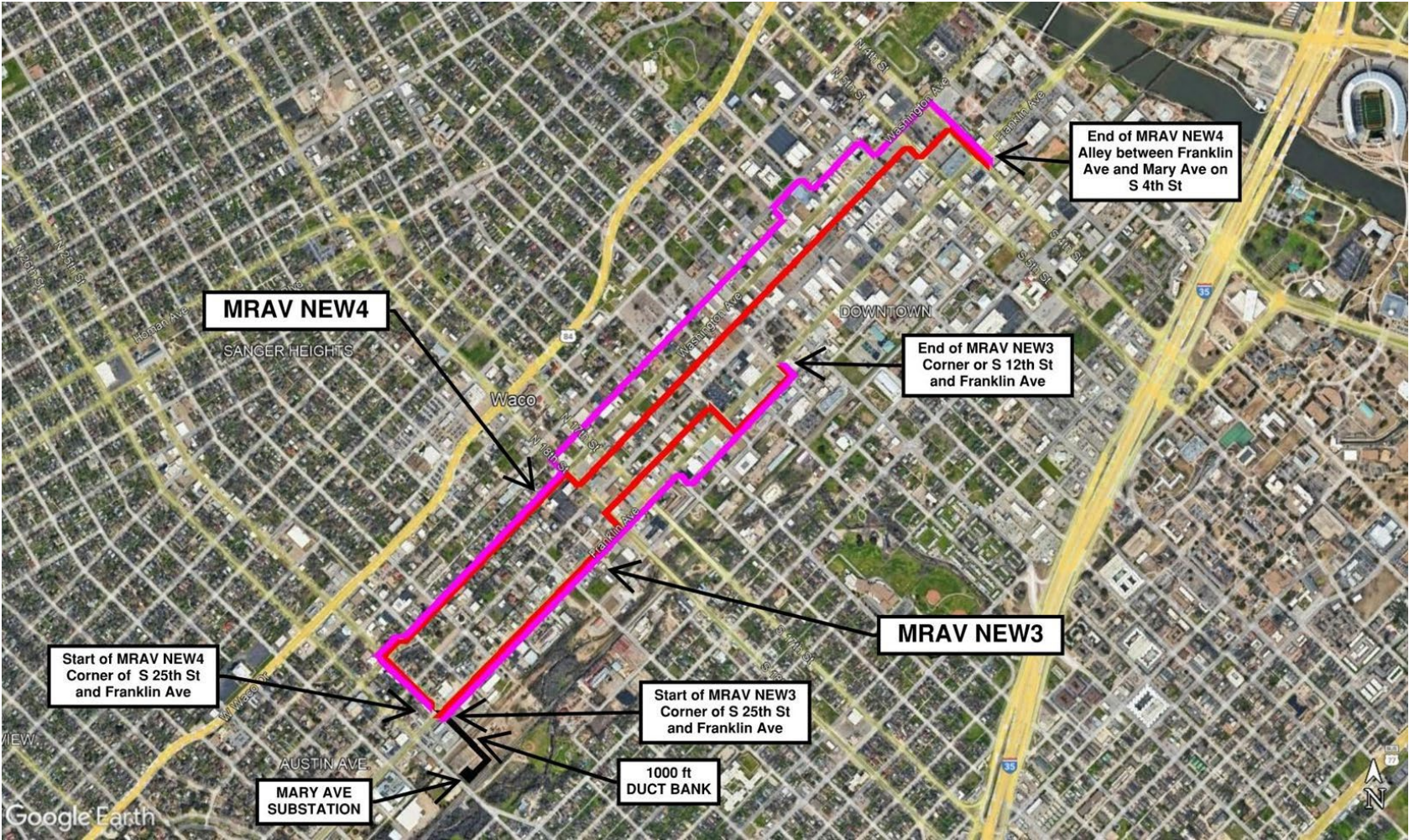
Original Plan
Item & Design



MARY AVENUE DISTRIBUTION FEEDERS



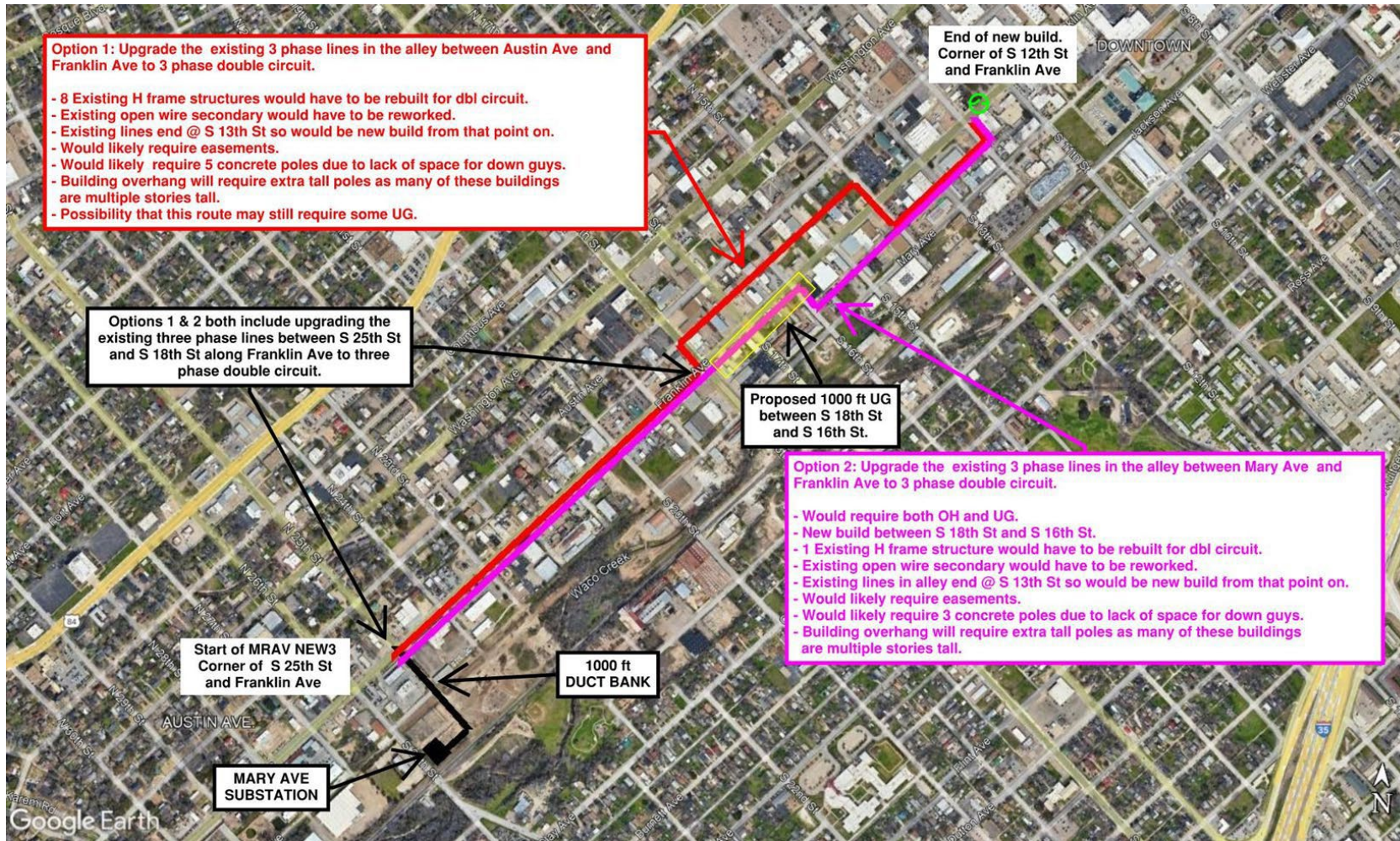
Alternate Alley
Routes



MARY AVENUE DISTRIBUTION FEEDERS

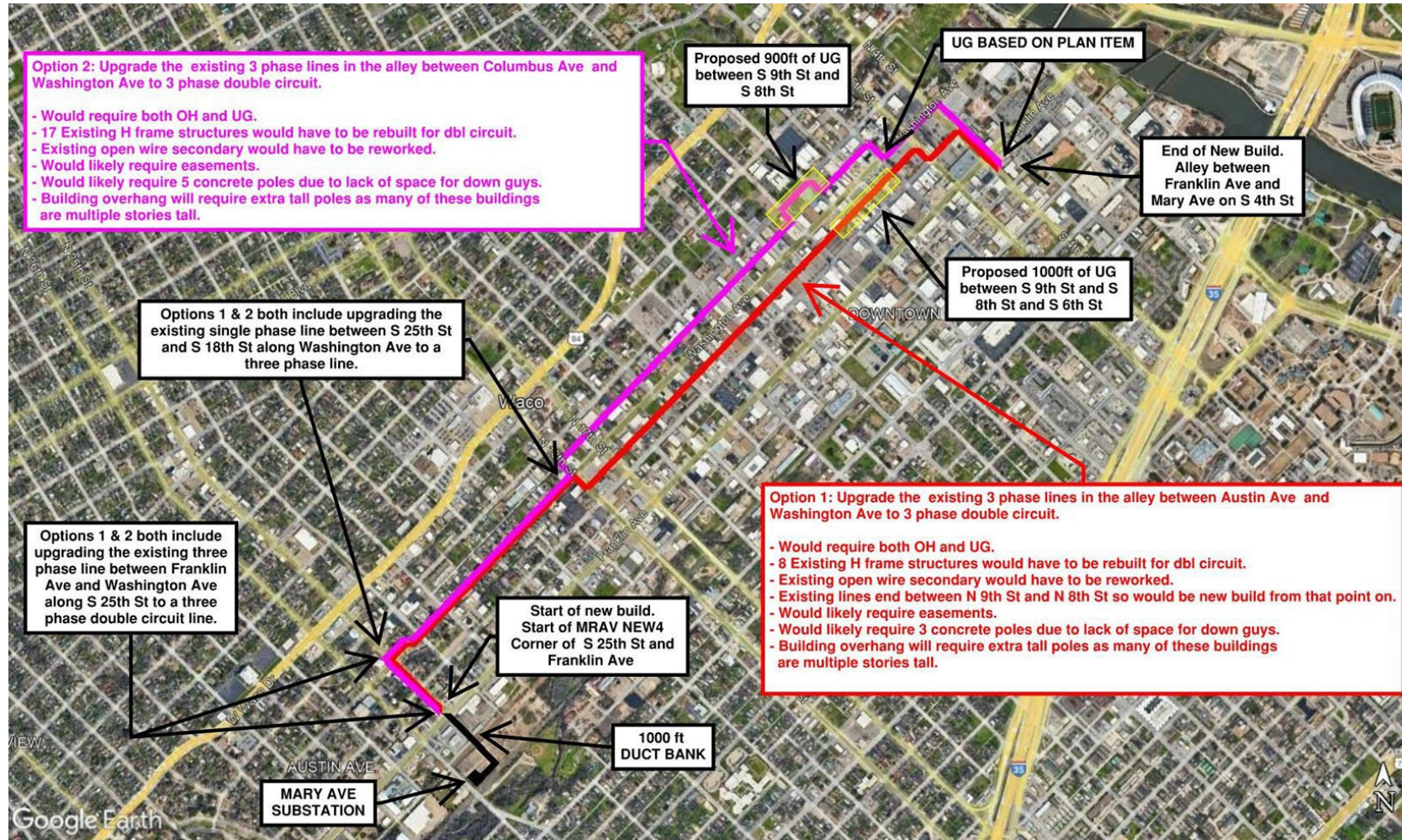


Alternate Alley
Routes
MRAV NEW3



MARY AVENUE DISTRIBUTION FEEDERS

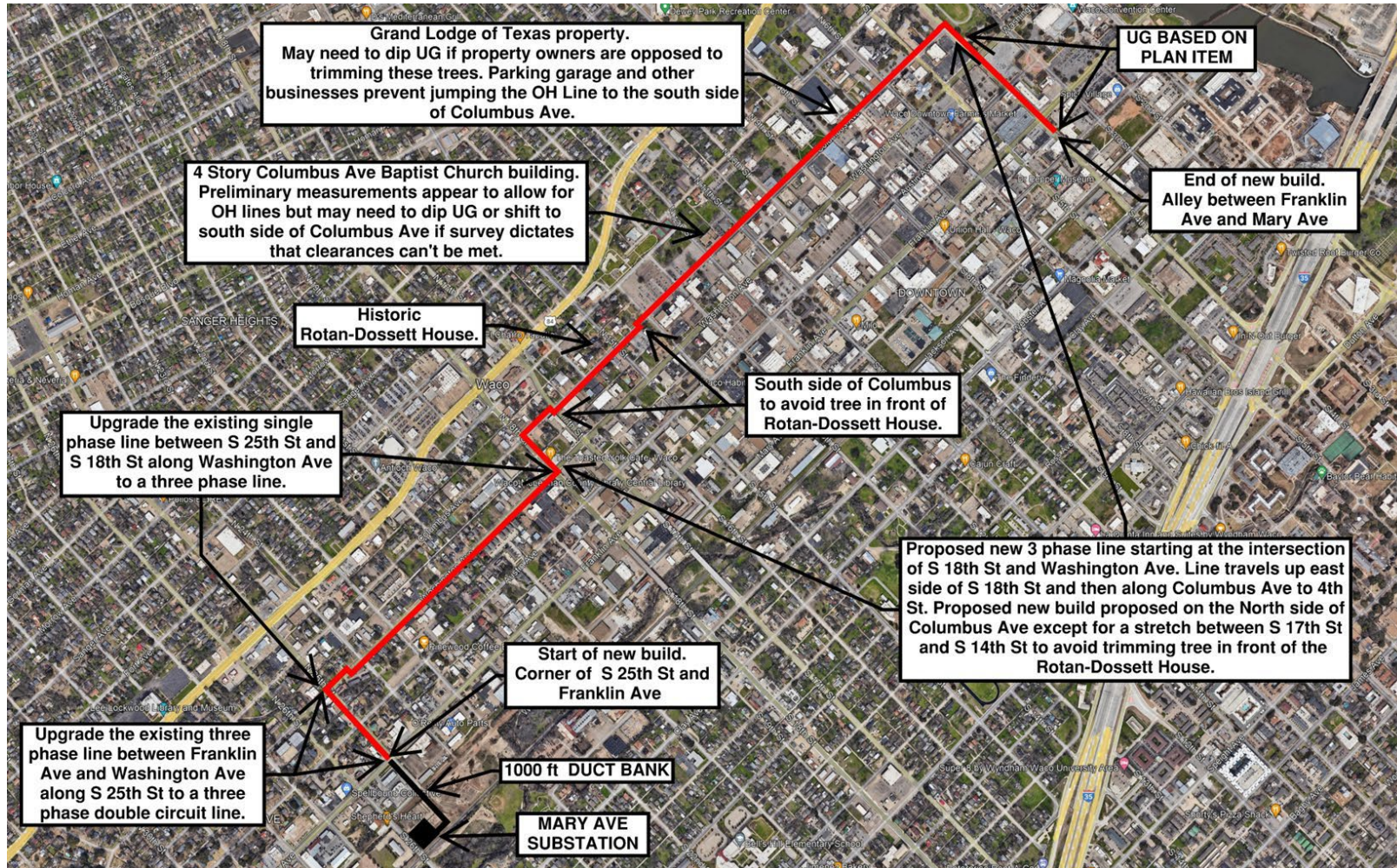
Alternate Alley Routes MRV NEW4



MARY AVENUE DISTRIBUTION FEEDERS



Columbus Ave
Route
MRV NEW4



MARY AVENUE DISTRIBUTION FEEDERS



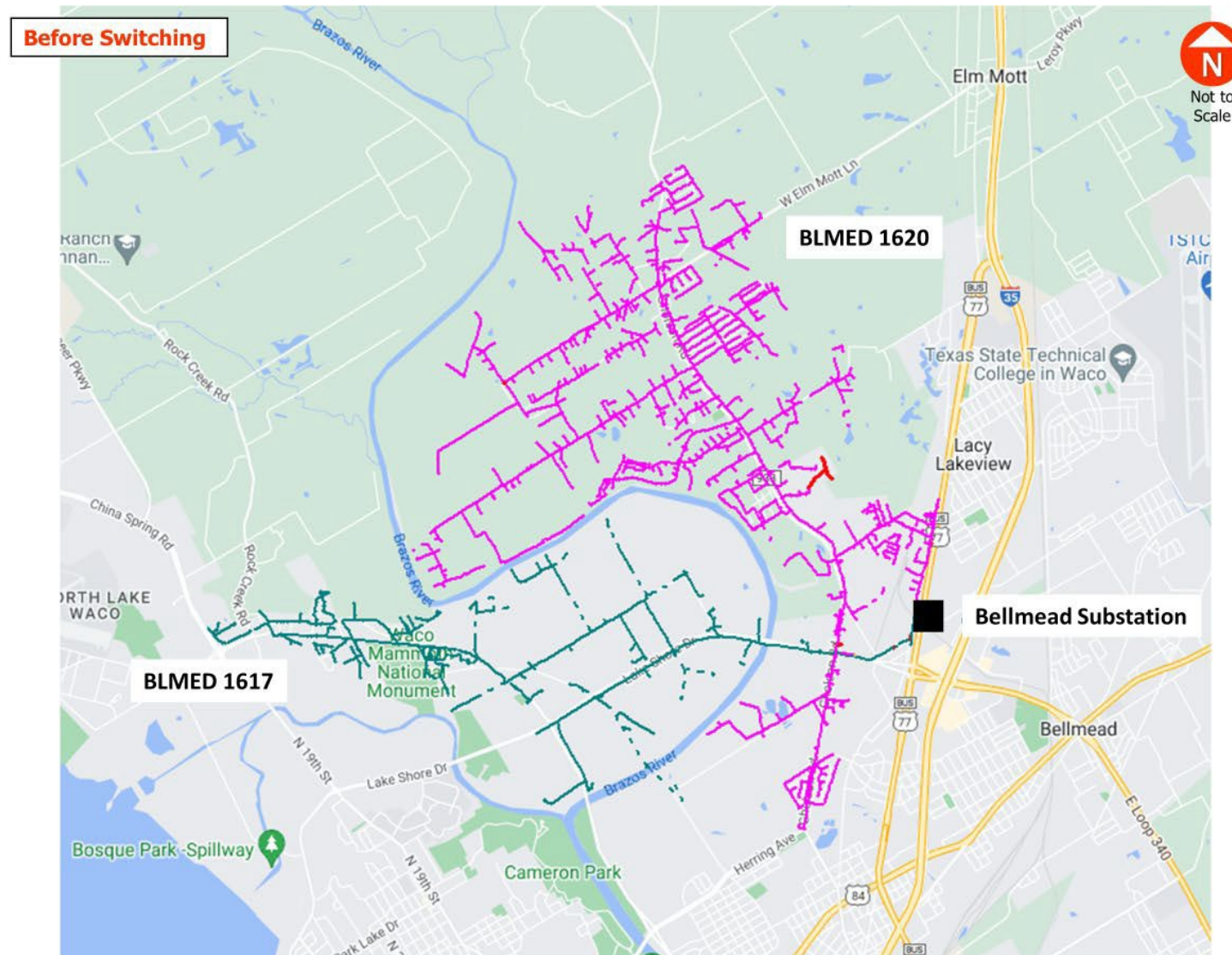
- **Cost to the City**
 - MRAV NEW3
 - Original Design: New build along Franklin Ave.
 - Estimated Cost to City is \$0.00.
 - Option 1: Alley between Franklin & Austin Ave upgraded to double circuit.
 - Estimated Cost to City is \$0.00.
 - Option 2: Alley between Franklin & Mary Ave upgraded to double circuit.
 - Estimated Cost to City is \$2,900,000 for 1000 feet of UG between S 18th St and S 16th St.

MARY AVENUE DISTRIBUTION FEEDERS



- **Cost to the City**
 - MRAV NEW4
 - Original Design: New build along Washington Ave.
 - Estimated Cost to City is \$0.00.
 - Option 1: Alley between Washington & Austin Ave upgraded to double circuit.
 - Estimated Cost to City is \$2,900,000 for 1000 feet of UG between S 8th St and S 6th St.
 - Option 2: Alley between Washington & Columbus Ave upgraded to double circuit.
 - Estimated Cost to City is \$2,600,000 for 900 feet of UG between S 9th St and S 8th St.
 - Option 3: New Build Along Columbus Ave
 - Estimated cost to city is \$0.00.

CIRCLE POINT DISTRIBUTION FEEDER



S5,S6A
Reconductor existing conductor to 3-795 AAC from GPS:
31.6019616, -97.1603422 to GPS: 31.6038374, -97.1634412
(approx. 1,400 ft.)

Install N.O. 900 amp ABS at GPS: 31.6044646, -97.1621345

S6B
Replace 300 amp OHDSC with N.O. 900
amp ABS at GPS: 31.6073223, -97.1416322

BLMED 1617

S8
Reconductor existing wire to 3-795 AAAC from GPS:
31.5925151, -97.1531832
to GPS: 31.6074729, -97.1419253.
Mid span poles to be added as needed

S6C,S7
Install 3-795 AAC from GPS:
31.599604, -97.1567684 to GPS:
31.6019616, -97.1603422
(approx. 1,500 ft.)

Install N.C. 900 amp ABS at GPS:
31.6019616, -97.1603422

S12
Install 7,500 kVA 12.5 – 25 kV AUTO XFMR as
close to the river crossing as possible

S13
Install NOVA recloser one span upline of AUTO

S9
Install 3-795 AAC with 4/0 neutral from GPS: 31.5857324,
-97.1513799 to GPS: 31.5925151, -97.1531832
(approx. 2,700 ft.)

Circle Point Sub

Proposed OVERHEAD
WO 22717877-2024NWAC302R01
CIRCLE POINT SUB P1 S9 S12 S13
S9, S12, S13

Not to Scale. For
Reference Only
Screen Shot is from February 2023

Existing Riser Pole serving
Brookdale lake Nursing Home

100-365

CC POLE CROSSING

US Army Corp Of Engineers
River crossing: ~470' span
over Brazos River

Brazos River

N. MLK JR. BVD

N. MLK JR. BVD

CC POLE CROSSING

AUTO RACK SUPPORT
AUTOXFORMER AUTO RACK SUPPORT

108-365 SLACK ANGLE

RECLOSER

108-365 SLACK ANGLE

Brazos River

Proposed OVERHEAD

WO 22717877-2024NWAC302R01
CIRCLE POINT SUB P1 S9 S12 S13 S9,
S12, S13

Not to Scale. For
Reference Only
Screen Shot is from February 2023

Willow Grove

Lovers Leap

Airport
Campgrounds

Airport Beach

Hawaiian Falls Waco

Temporarily closed

Sigma Swimming

Current design across Brazos River are
concrete poles framed 108-840. Landing
Zones are in the US Army Corp of Engineers
ROW. Span length will be ~470' 3-phase +
Neutral

Brazos River

12.5kv OH

25kv OH

Brazos River

Brookdale Lake Nursing
Home



Proposed OVERHEAD
WO 22717877-2024NWAC302R01
CIRCLE POINT SUB P1 S9 S12 S13
S9, S12, S13

Current design across Brazos River are
concrete poles framed 108-840. Landing
Zones are in the US Army Corp of Engineers
ROW. Span length will be ~470' 3-phase +
Neutral

25kv OH

Looking North from Brazos
Park along MLK Blvd

Not to Scale. For
Reference Only
Screen Shot is from 2022

Proposed OVERHEAD
WO 22717877-2024NWAC302R01
CIRCLE POINT SUB P1 S9 S12 S13 S9,
S12, S13

Proposed Span will connect to existing 3-phase line on North side of Brazos River along MLK Blvd. Existing line to be reconducted and mid-span poles to be added as needed

Current design across Brazos River are concrete poles framed 108-840. Landing Zones are in the US Army Corp of Engineers ROW. Span length will be ~470' 3-phase + Neutral

25kv
OH

Existing riser Pole serving Brookdale lake Nursing Home

Looking South from
Nursing Home
along MLK Blvd

Proposed WO22707906-01 2024NWAC302R01
CIRCLE POINT SUB P1 S6B S8

S8
Reconductor existing conductor to
3-795 AAC along N M.L.K Jr Blvd
8 existing poles replaced
4 existing poles removed
7 new poles installed as mid spans

N M.L.K Jr Blvd
LOOKING NORTH

- EXISTING POLES
- EXISTING POLES REMOVED
- PROPOSED NEW MID SPAN POLES

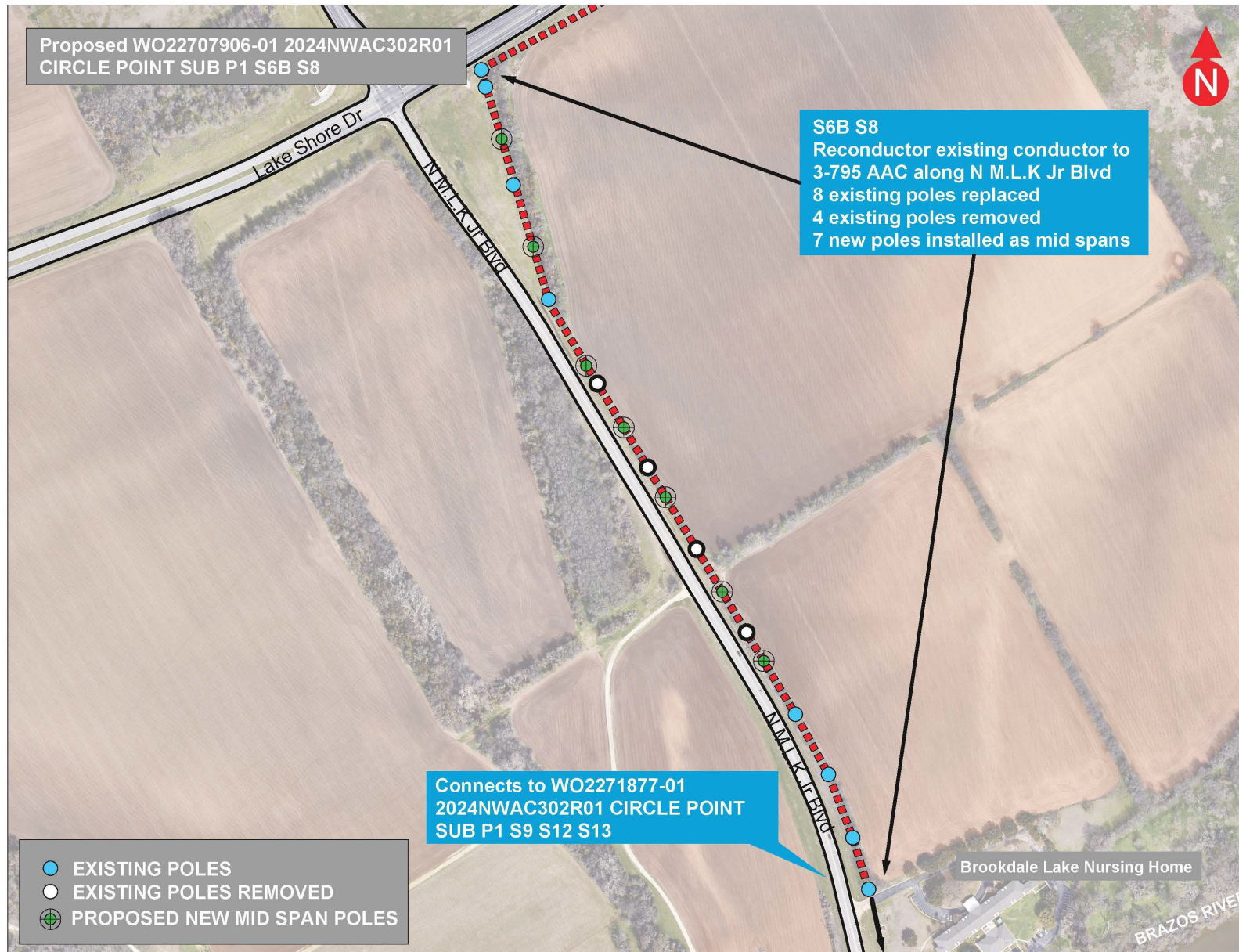
Proposed WO22707906-01 2024NWAC302R01
CIRCLE POINT SUB P1 S6B S8

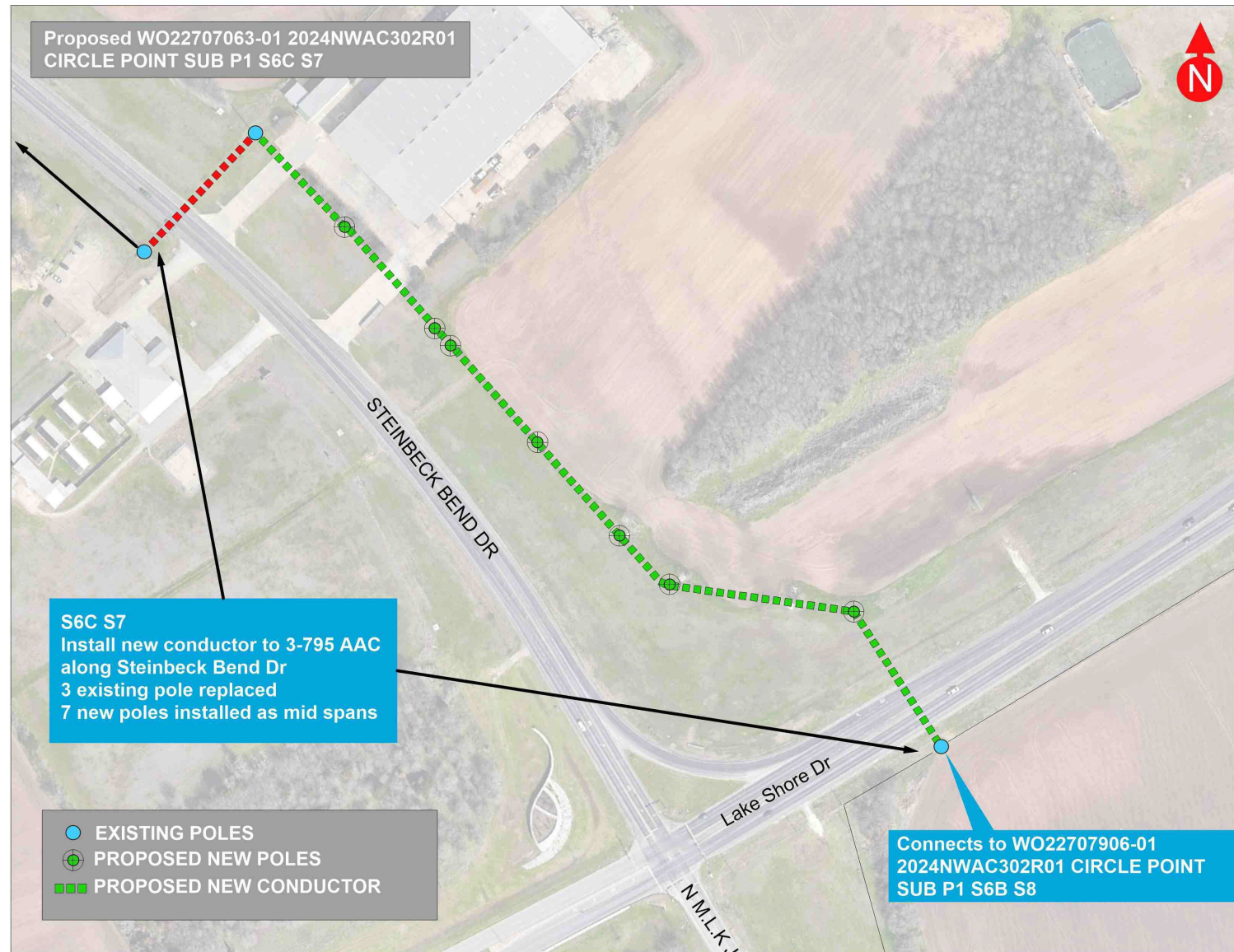
S8
Reconductor existing conductor to
3-795 AAC along N M.L.K Jr Blvd
8 existing poles replaced
4 existing poles removed
7 new poles installed as mid spans

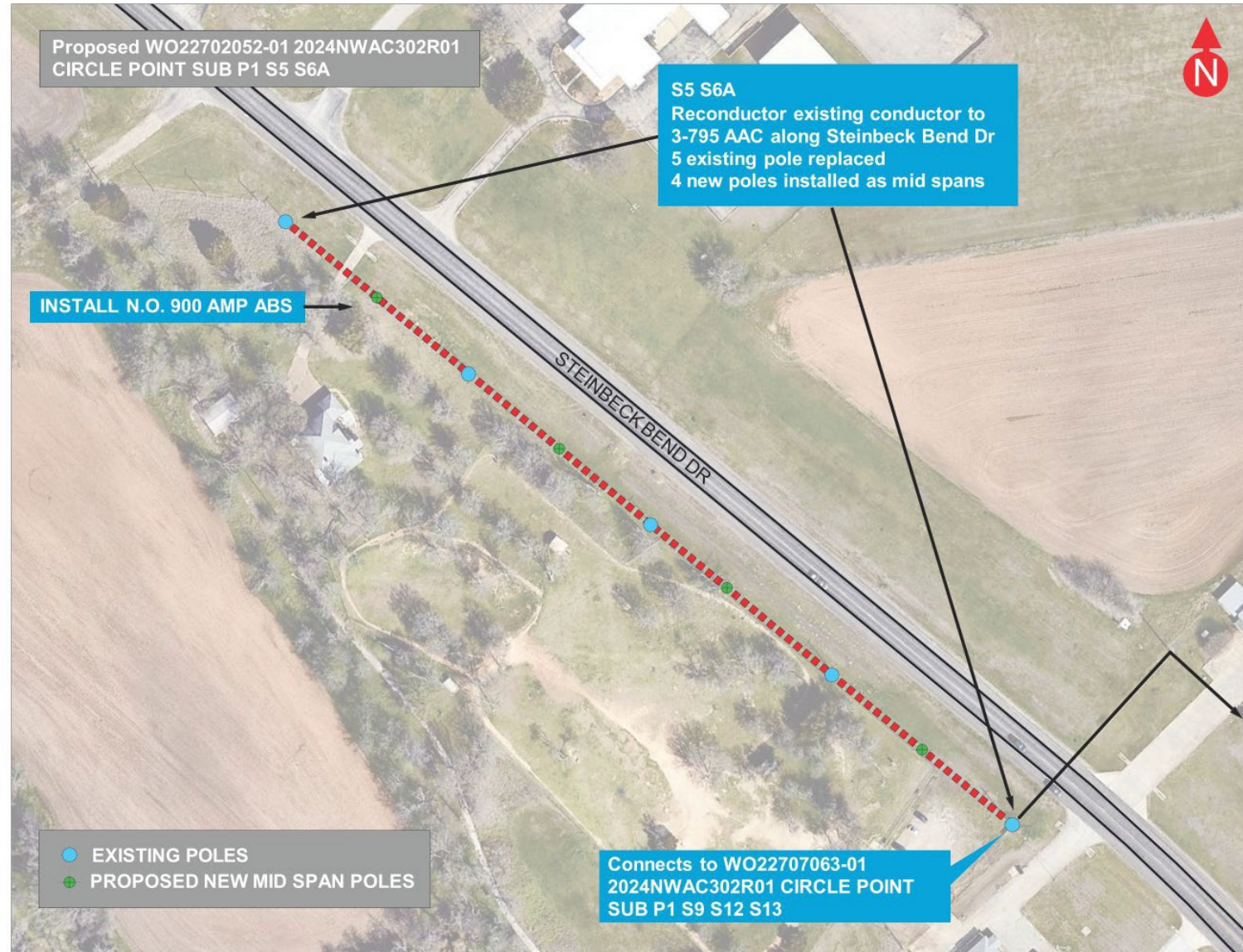
- EXISTING POLES
- EXISTING POLES REMOVED
- PROPOSED NEW MID SPAN POLES

N M.L.K Jr Blvd
LOOKING NORTH



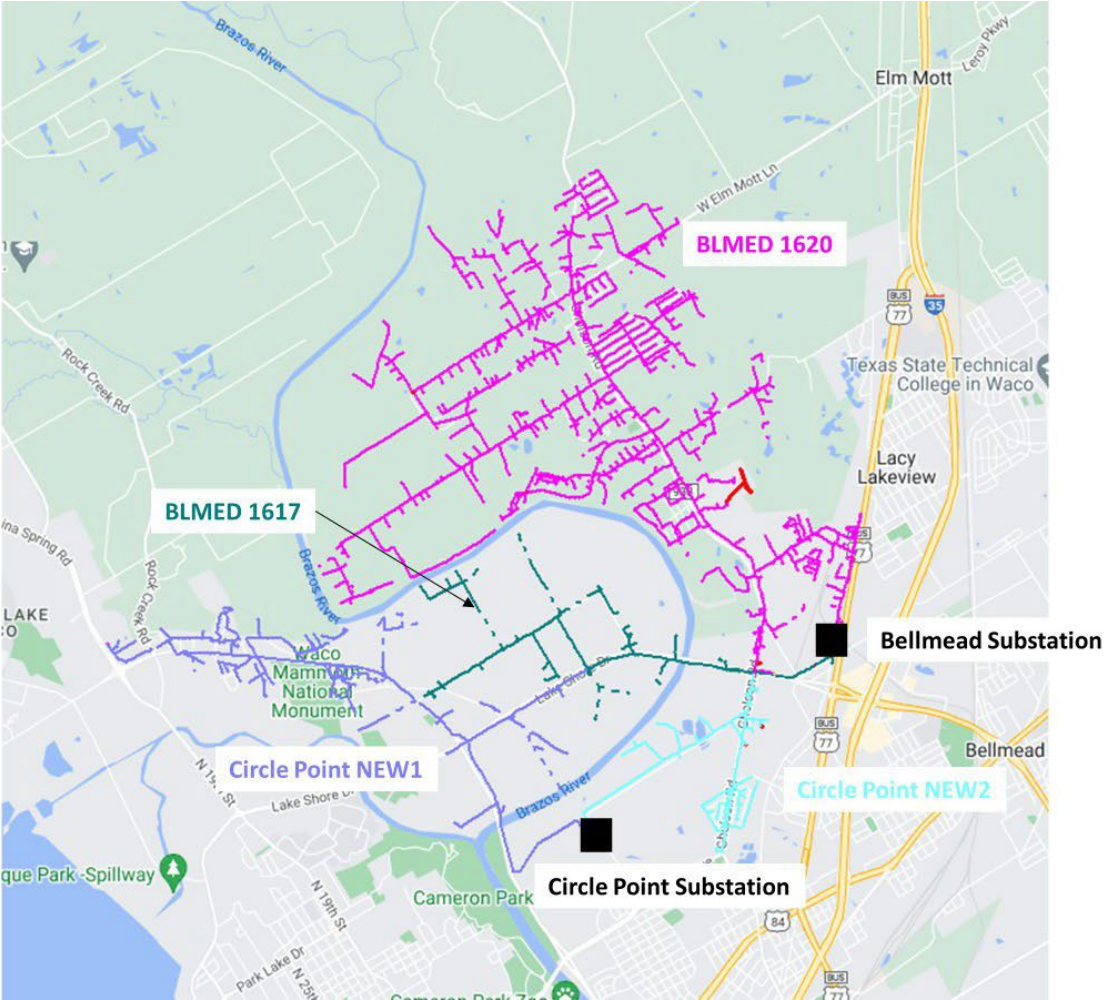






CIRCLE POINT DISTRIBUTION FEEDER

After Switching



SUBSTATION LOCATIONS BY DISTRICT



District 1

- 5.5 (Half due to one station splitting districts)
- Newest 2023/2024

District 2

- 3.5 (Half due to one station splitting districts)
- Newest 2023

District 3

- 5
- Newest 2022

District 4

- 1
- Newest Pre 2000

District 5

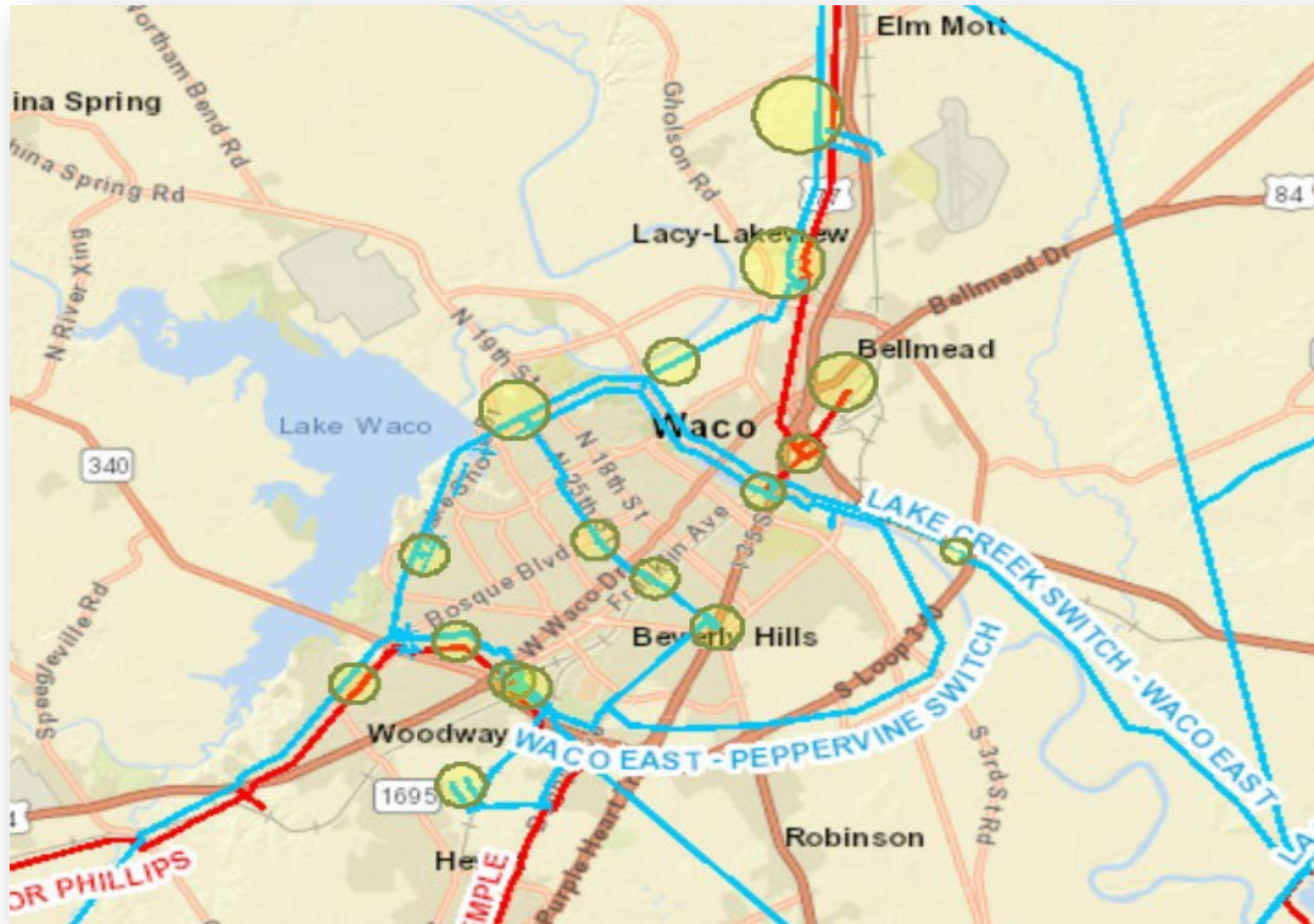
- 2
- Newest 2004

There are 17 stations located within Waco City Limits

Within the last five years, 8 stations have been built or rebuilt

Of those 8 stations, four stations are located in District 1 and four located in District 3

APPROXIMATE SUBSTATION SITE LOCATIONS



CIRCLE POINT NEED/LOADING PLAN



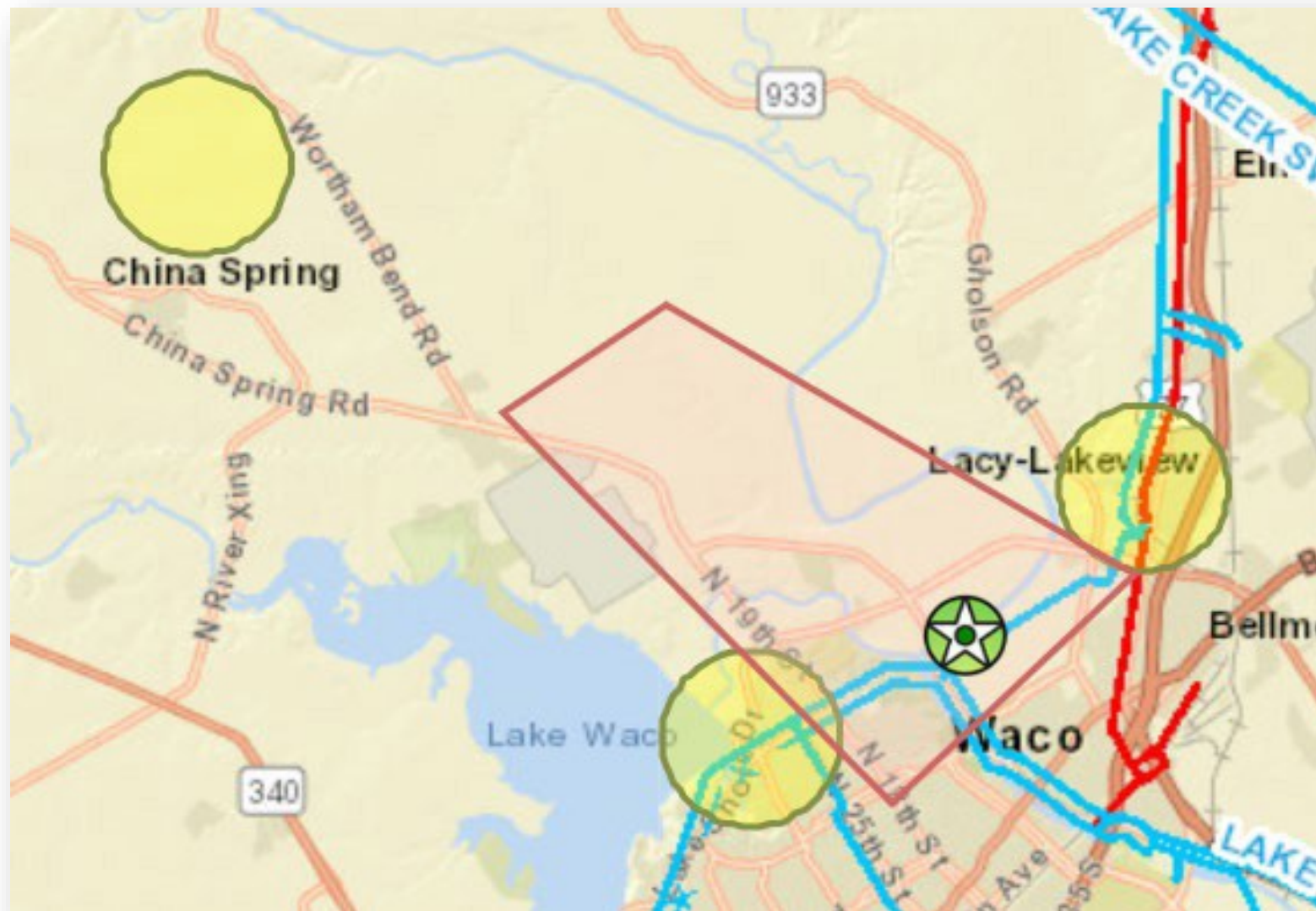
Need for Circle Point Sub

- The 2024 summer projected peak load on Bellmead Substation is over the capacity rating. Additionally China Spring Station has limited back stand. The same conditions exist for Waco North

Requirements for Circle Point Site

- Site needs to be located near existing transmission infrastructure
- Site needs to be located approximately in between the three stations listed above
- Site needs to be for sale at justifiable price (In this case we already owned property that met all requirements and were able to complete a land swap at an equally satisfactory property)
- Site needs to be located in proximity to area of anticipated load growth
- Site needs to be suitable for development of property (e.g. not located in a floodplain or other geographical deterrents)

CIRCLE POINT LOCATION



THANK YOU