



Community Association, Inc.

Firethorne Cell Tower Exploratory Committee:

Update & Recommendations

HOA Board Special Meeting

May 15, 2024

Firethorne Cell Tower Exploratory Committee:

Mission:

The Cell Tower Exploratory Committee (herein referred to as Committee) is hereby established by the Board of Directors of the Firethorne Community Association, Inc.

The purpose of the ad hoc Cell Tower Exploratory Committee is to assist the Association in determining how to improve cell service for all residents of Firethorne, either/both through the installation of additional facilities within the Firethorne community or in adjacent areas. If any facilities are proposed for construction, the Committee would assist the Association in negotiating with the provider(s) regarding proposed terms and would work with all local agencies with jurisdiction regarding land, access, and utilities for the facilities.

Goal:

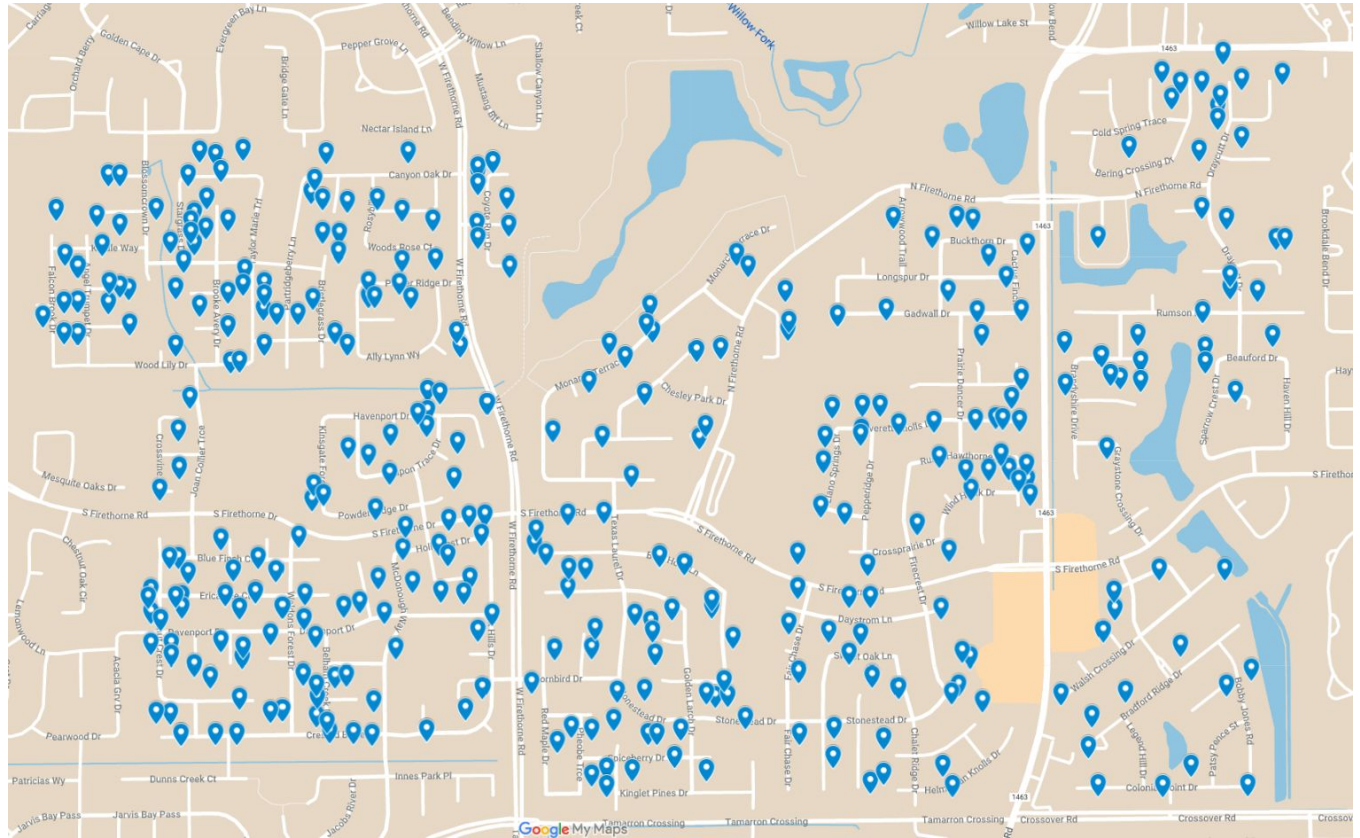
- Assess and quantify problem with cellular signal within Firethorne neighborhood
- Evaluate Pros/Cons of viable options.
- Provide recommendation to HOA board to improve cell service for making and receiving calls for all residents of Firethorne.

Agenda:

- Current state and results of survey
- Summary Analysis
- Committee Recommendations

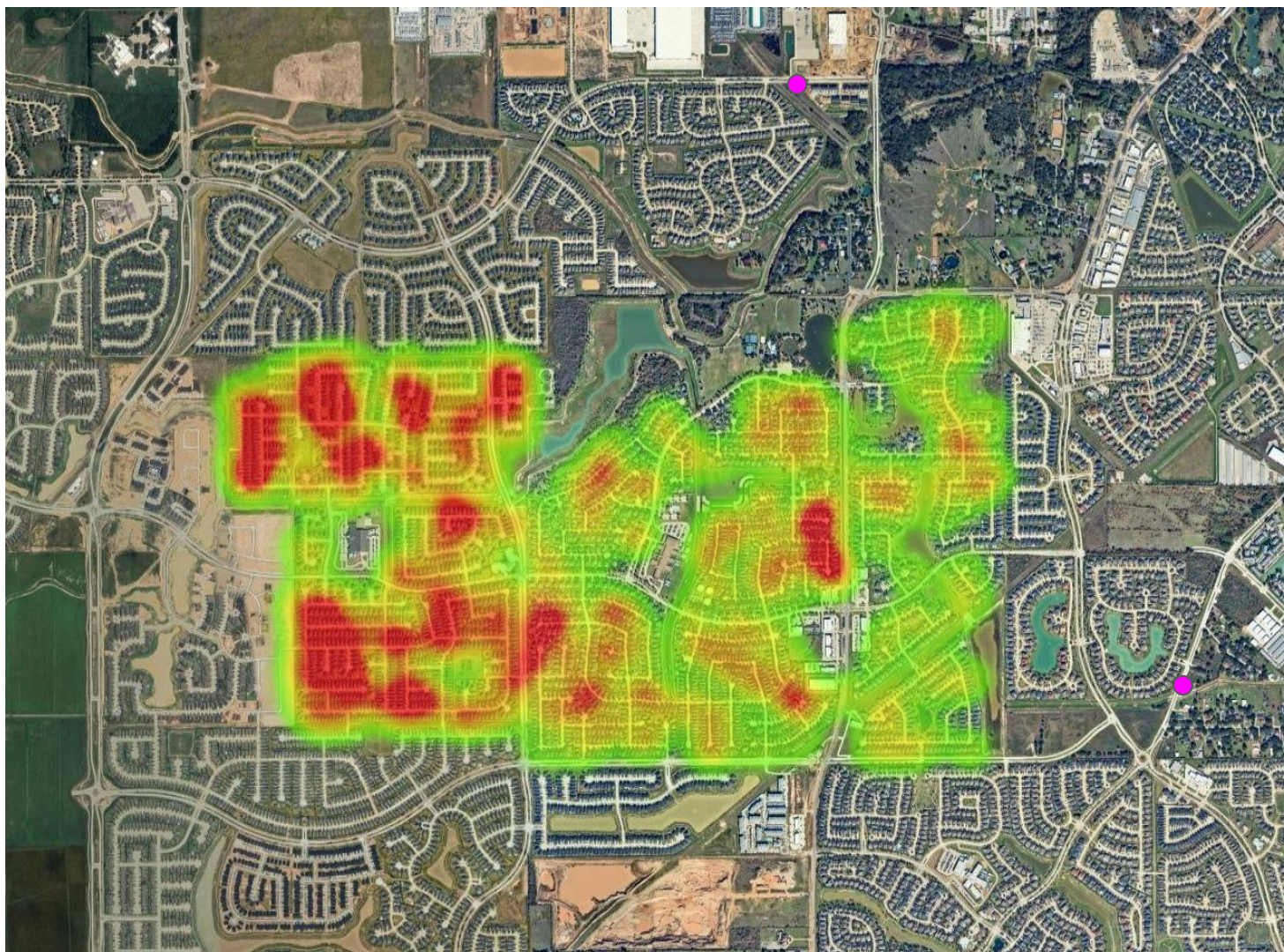
Firethorne Cell Survey - response locations (754 responses with good geographic coverage)

Verizon 48%
ATT 36%
T-mo 15%



Survey Results Unable to Make calls:

Primarily
West-Firethorne
Reports no ability to
make calls (red).



RF Drive Testing

Confirms West-Firethorne significant issues



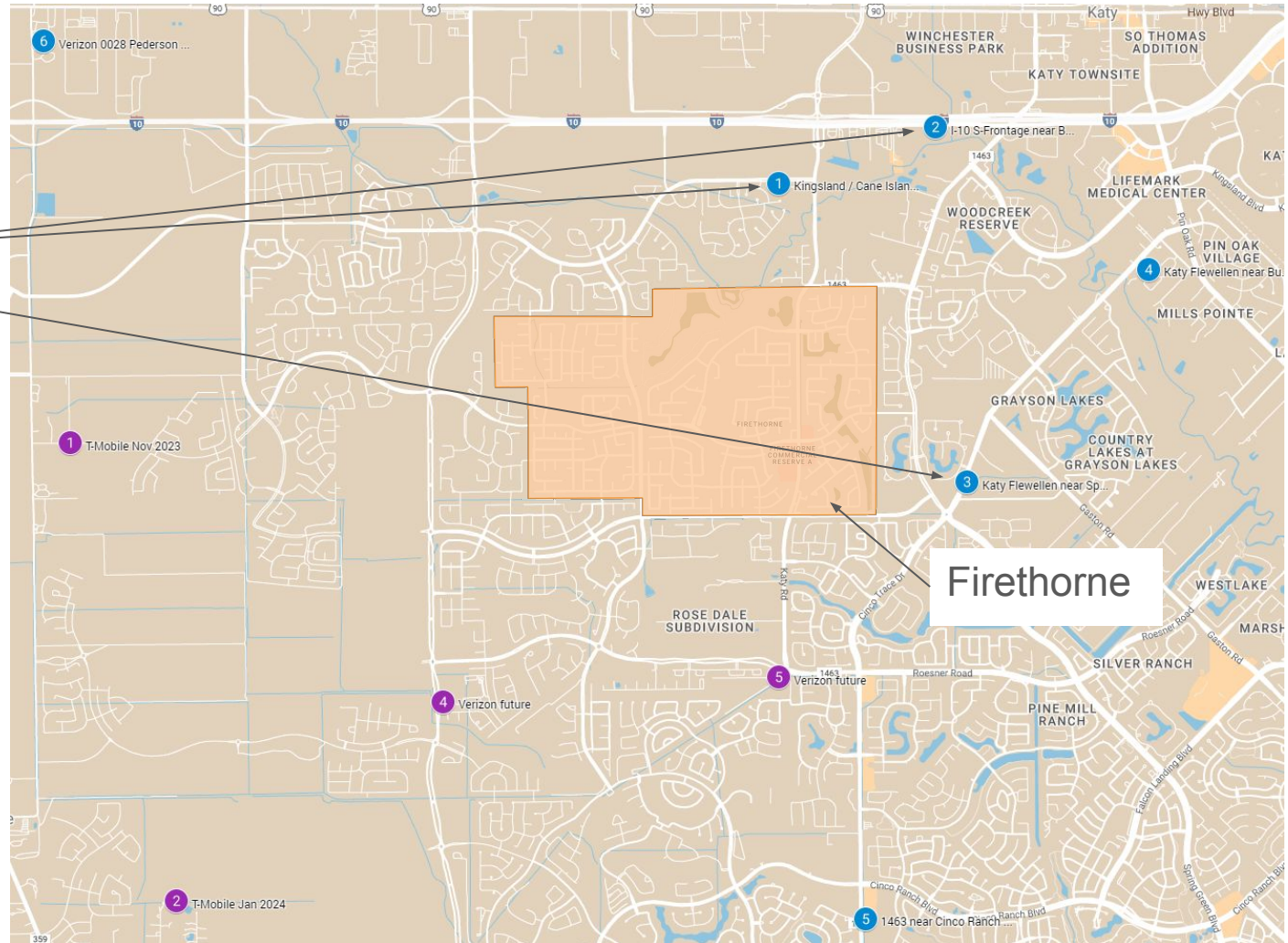
Current State

Primarily **TWO** towers servicing Firethorne (effectively)

- Tower **1** (V+T) and **2** (Att)
- Tower **3** (V+T+Att)

V=Verizon
T=T-Mobile

Blue = existing towers
Purple = proposed towers



Analysis of the Firethorne Cell Service Problem:

- The Committee considered:
 1. consultations with RF engineering experts,
 2. carriers experts including at Verizon, ATT, and T-mobile,
 3. Committee RF testing, and
 4. Firethorne geolocation-associated survey
- The Committee **Concluded**:
 - Parts of Firethorne (West) Lack sufficient “**coverage**” (i.e., RF signal).
 - The rest of Firethorne has sufficient “coverage”, but the two covering towers lack sufficient “**capacity**” to service the area resulting in apparent poor service.

This conclusion is supported by technical RF maps and committee GPS-associated spot checks.

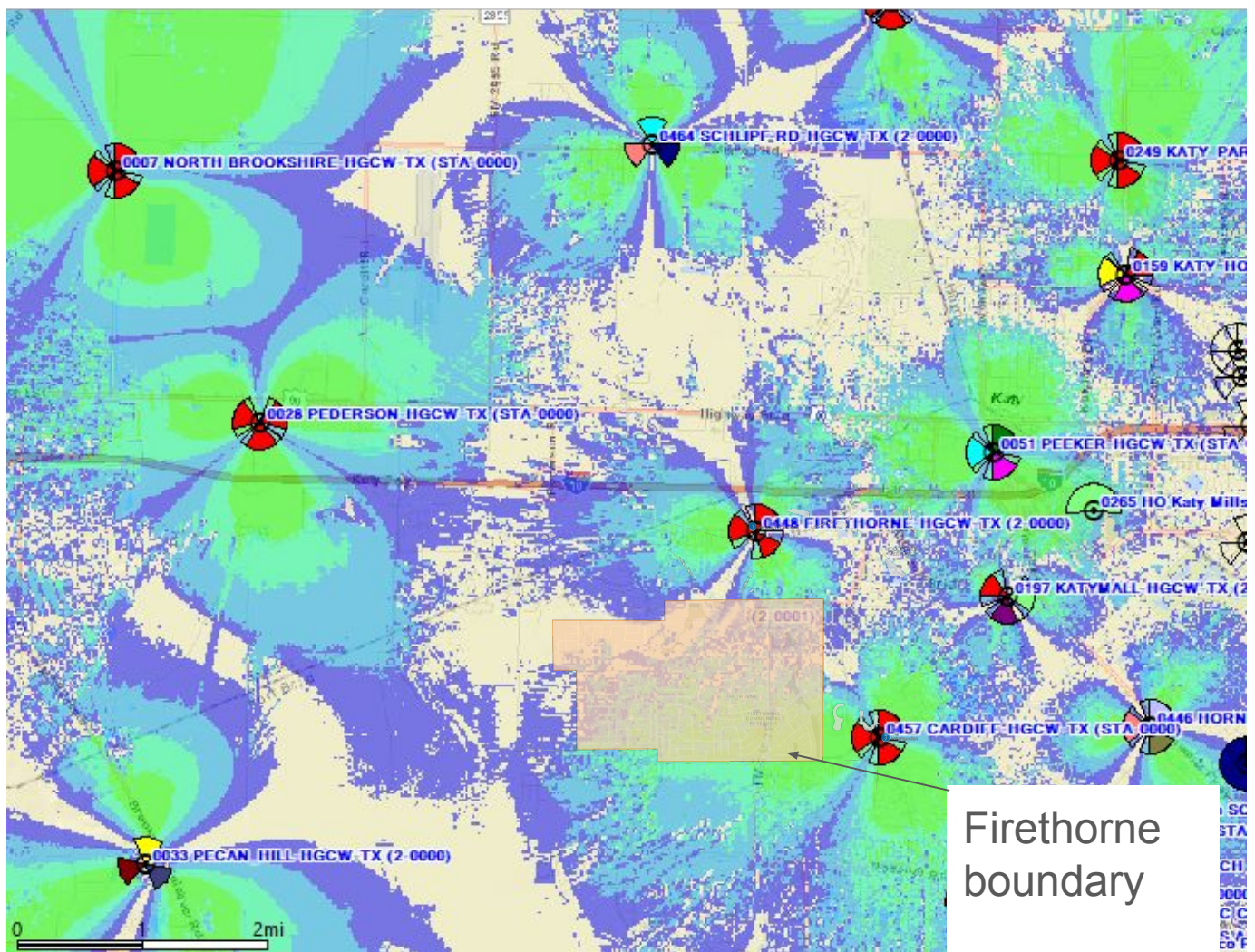
Firethorne Cell Tower Exploratory Committee Recommendations:

- Proposed solution from cellular vendor
- Macro-Cell / Tower - Pros/Cons
- Small Cell Solution
- Timeline
- Recommendation

RF Engineer Maps:

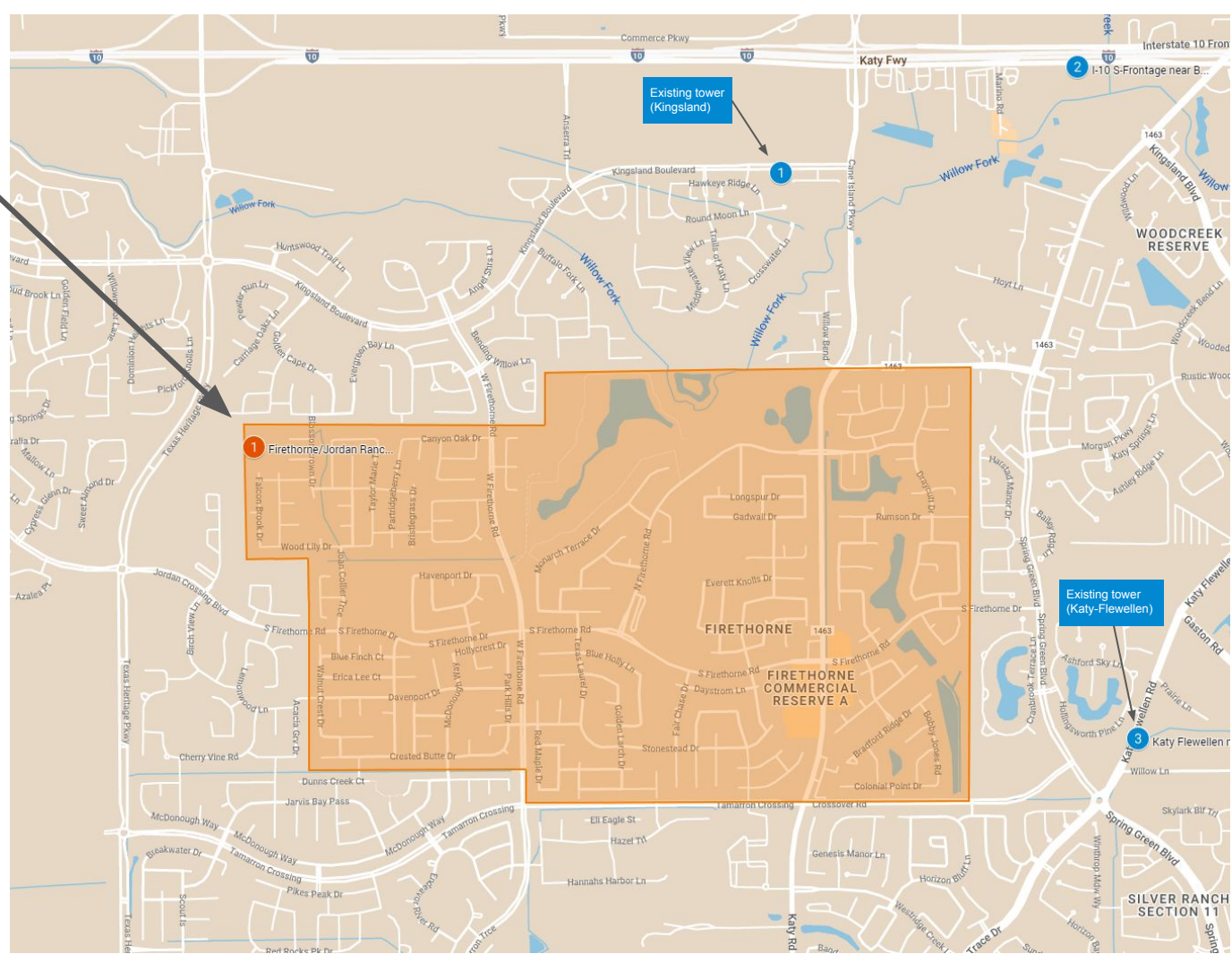
East Firethorne is primarily within 1 mile of a macro-tower and has sufficient RF.

Parts of West Firethorne are > 2 miles from a macro-tower and lack sufficient RF.

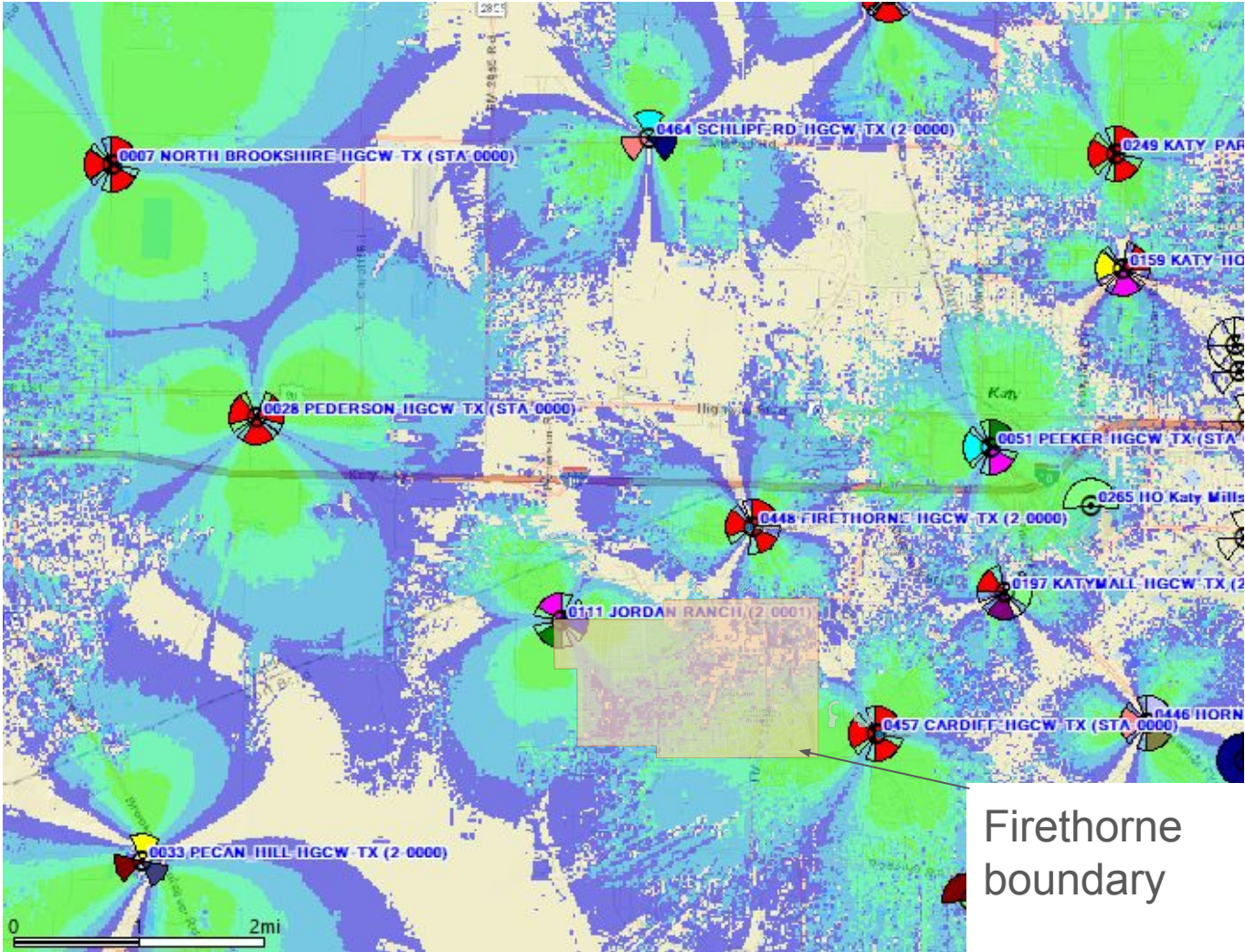


Proposed Site in NW part of Firethorne

- Calculated to fully cover Firethorne by Verizon RF engineers
- Highly attractive location to carriers
 - All 3 interested
 - Best Equipment
- Minimal overlap / penalty-score due to position relative to existing towers.

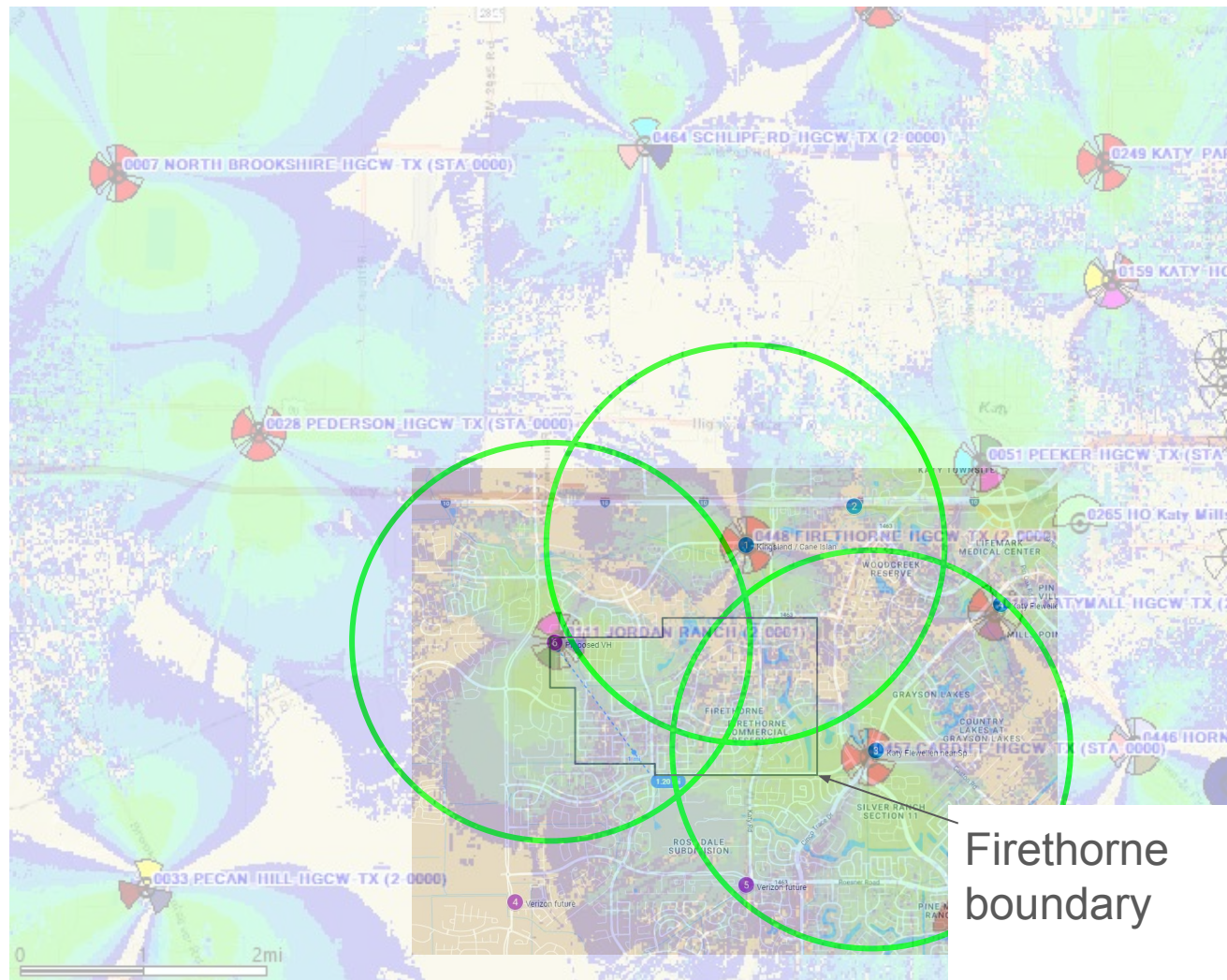


Area RF Maps
With proposed
Firethorne
“Jordan Ranch”
Macro-Tower:



Area RF Maps With proposed Firethorne “Jordan Ranch” Macro-Tower:

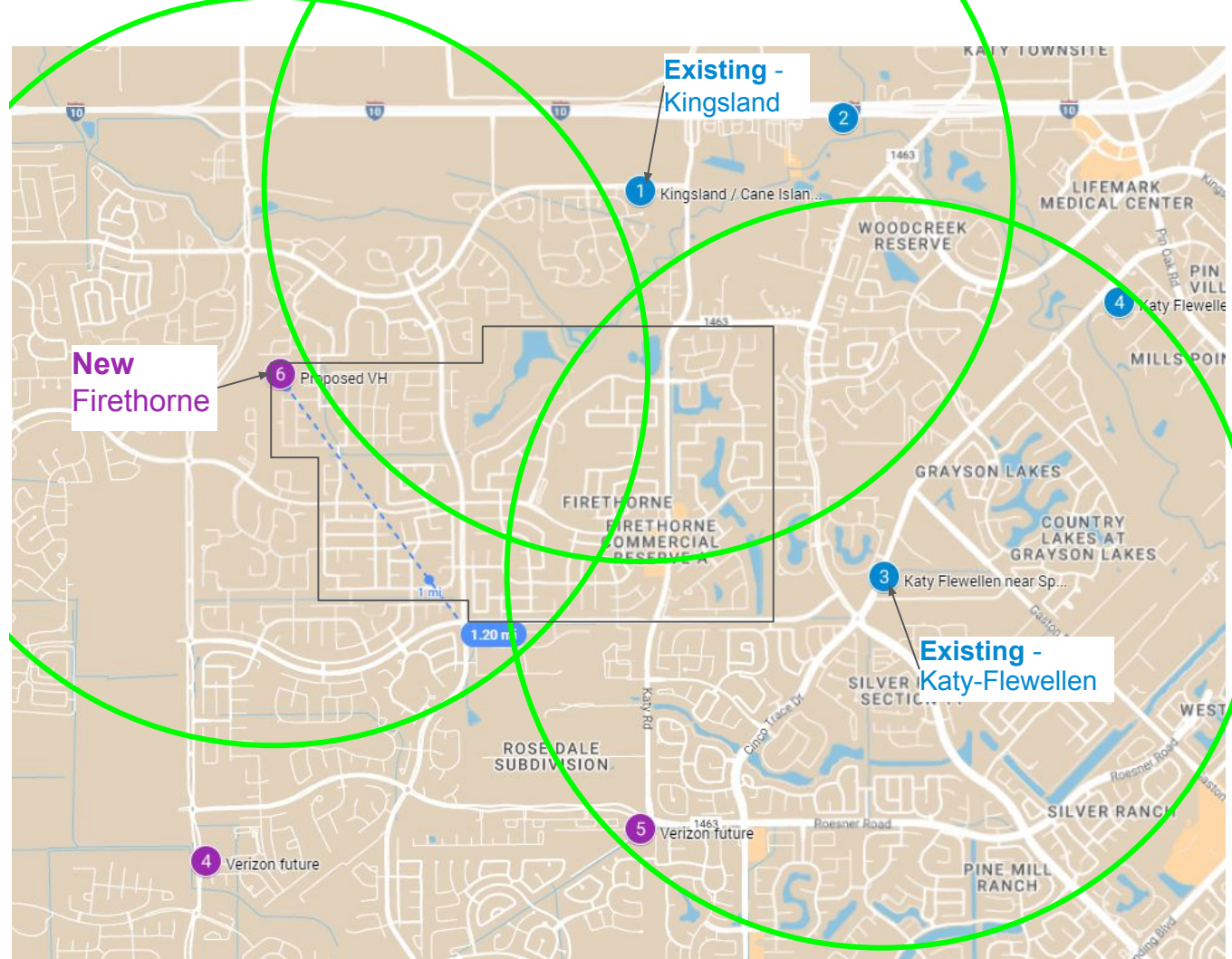
Green ring = 1.5 miles = optimal RF range



Existing towers with new Firethorne site provide sufficient *coverage and capacity* for all of Firethorne.

The proposed additional tower reduces usage of existing towers Kingsland and Katy-Flewellen such that capacity is increased due to shared load.

Green ring = 1.5 miles = optimal RF range



Closest
Firethorne
homes are
~ 300 ft. from
tower.



Orange = 300 ft

Macro-Cell / Tower - Pros/Cons

- Pros

- Accommodates all of Verizon, ATT, and T-Mobile.
- Solves current Capacity and Coverage issues identified.
- Potentially generates nominal revenue - \$1000/month.

- Cons

- Requires lease agreement (5 year plus 5x5-year extensions).
- Requires replatting - potential protests.
- Potential negative impact to Firethorne residents adjacent to site.

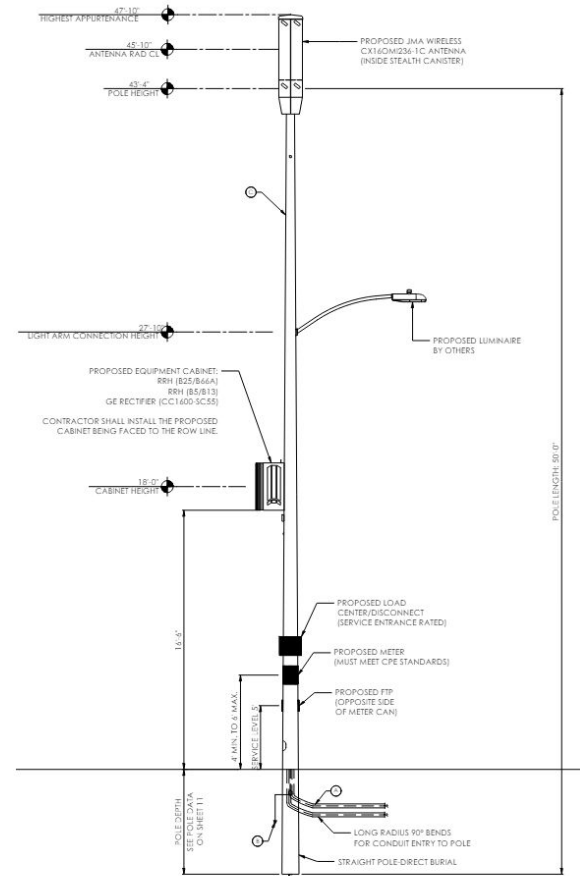


Orange = 300 ft



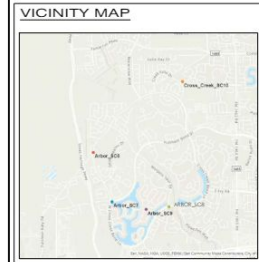
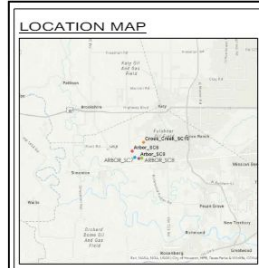
Small Cells

- Already permitted in Firethorne
- Readily installable in Right-of-ways
- No replatting required



ELEVATION VIEW CPE LIGHT POLE

Small Cell - multiple packages submitted to FBC for approval.



Sheet Number	Sheet Title
1	TITLE
2	NOTES
3	ARBOR_SC6
4	ARBOR_SC7
5	ARBOR_SC8
6	ARBOR_SC9
7	CROSS_CREEK_SC10
8	ELEVATION
9	ONE LINE AND LOAD ANALYSIS
10	DETAILS
11	DETAILS 2
12	SWPPP

SITE NAME:

VERIZON SMALL CELL CITY OF FULSHEAR PACKAGE 1

verizon

**CONSTRUCTION PLANS FOR
PROPOSED ANTENNA SITES**

VOW SITE NAME	LOCATION CODE	LAT	LONG	ESRI ADDRESS	KEY MAP
ARBOR_SC6	790110	29.714293	-95.879644	8040 2/3 W CROSS CREEK BEND LANE, FULSHEAR, TX 77441	523B
ARBOR_SC7	790119	29.704303	-95.875294	29351 2/3 FULSHEAR BEND DRIVE, FULSHEAR, TX 77441	523P
ARBOR_SC8	790136	29.703265	-95.861949	5805 2/3 CROSS CREEK BEND LANE, FULSHEAR, TX 77441	529G
ARBOR_SC9	790108	29.702769	-95.866934	9950 2/3 SUNDANCE CREEK BOULEVARD, FULSHEAR, TX 77441	529K
CROSS_CREEK_SC10	790133	29.728579	-95.858790	28130 2/3 EMERALD BROOK LANE, FULSHEAR, TX 77441	483Z

NO WATER, SEWERAGE, OR DRAINAGE PROPOSED IN THIS PLAN SET

CONTRACTOR SHALL COMPLY WITH CITY OF FULSHEAR TREE CUT ORDINANCE.

ALL INFRASTRUCTURE PROPOSED IN THIS DOCUMENT IS TO BE LOCATED WITHIN THE CITY LIMITS OF FULSHEAR. THIS HAS BEEN DESIGNATED CONSIDERING THE INCORPORATING INFRASTRUCTURE DESIGN MANUAL (SOCD) DATED AS PUBLISHED BY CITY OF FULSHEAR, EDITION: SEPTEMBER 8, 2017.

NOTE: THE POLES PROPOSED IN THIS PROJECT WILL BE CONSTRUCTED, PAINTED, AND INSTALLED BY ALL THE CITIES PAID TO INSURE CITY OF FULSHEAR, ORDINANCE NO. 2017-1426.

ONE CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG
713.253.4657 (IN HOUSTON)
NEW STATEWIDE NUMBER OUTSIDE HOUSTON: 1.800.364.6377

CONTRACTOR SHALL NOTIFY THE CITY OF FULSHEAR, PUBLIC WORKS - OFFICE OF THE CITY ENGINEER, 48 HOURS BEFORE STARTING WORK ON THIS PROJECT. RESPONSE NO. 08-186-6666.

NOTE: CONTRACTOR MUST FIELD VERIFY EXACT LOCATION AND DEPTH OF ALL EXISTING OVERGROUND UTILITY LINES AND I/MC CONSIDER PRIOR TO COMMENCING CONSTRUCTION ON THIS PROJECT.



VERIZON
SMALL CELL NODE
CONSTRUCTION PLANS FOR
PROPOSED ANTENNA
SITES

NO.	DATE	REVISIONS
1	03/24/23	1ST SUBMITTAL

DESIGNED: JG
DRAWN: JG
CHECKED: JG
SCALE:
JOB #
COF PKG 2

TITLE
1 OF 12

NOTE: CONTRACTOR MUST FIELD VERIFY EXACT LOCATION AND DEPTH OF ALL EXISTING OVERGROUND UTILITY LINES AND I/MC CONSIDER PRIOR TO COMMENCING CONSTRUCTION ON THIS PROJECT.

WARNING: CONTRACTOR IS TO VERIFY PRELIMINARY EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

Permitted and FBC approved packages in Firethorne:

DRAWING INDEX	
SHEET NUMBER	SHEET TITLE
1	TITLE
2	NOTES
3	CROSS_CREEK_SC2 OVERALL SITE PLAN
4	CROSS_CREEK_SC2
5	CROSS_CREEK_SC2 POWER DESIGN
6	CROSS_CREEK_SC2 POWER DESIGN (Z)
7	CROSS_CREEK_SC3 OVERALL SITE PLAN
8	CROSS_CREEK_SC3
9	CROSS_CREEK_SC3 POWER DESIGN
10	CROSS_CREEK_SC3 POWER DESIGN (Z)
11	ELEVATION
12	SPEC SHEET 1
13	SPEC SHEET 2
14	SPEC SHEET 3
15	ONE LINE AND LOAD ANALYSIS
16	GROUNDING
17	DETAILS
18	DETAILS 2
19	SWPPP

SITE NAME:
**VERIZON
SMALL CELL
FORT BEND CO. PKG 8**

NO WATER, WASTEWATER, OR DRAINAGE PROPOSED IN THE PLAN SET

CONTRACTOR SHALL COMPLY WITH FORT BEND COUNTY STREET USE ORDINANCE

ONE CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG! 811
713.223.4527 (IN HOUSTON)
NEW STATEWIDE NUMBER OUTSIDE HOUSTON
1.800.344.8377

CONTRACTOR SHALL NOTIFY FORT BEND COUNTY OFFICE OF THE ENGINEERING ARCHITECTS BEFORE STARTING WORK ON THIS PROJECT. TELEPHONE NO. 781.493.5000

NOTE: CONTRACTOR MUST VERIFY EXACT LOCATION AND DEPTH OF ALL EXISTING CONTEMPORARY UTILITY LINES AND BE CONSIDERATE PRIOR TO COMMENCING CONSTRUCTION ON THIS PROJECT.



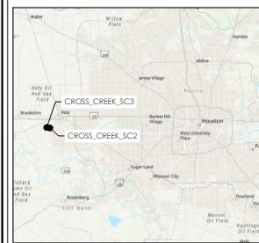
VERIZON
SMALL CELL NODE
CONSTRUCTION PLANS FOR
PROPOSED ANTENNA
SITES

verizon
CONSTRUCTION PLANS FOR
PROPOSED ANTENNA SITES

NO.	DATE	REVISIONS
01	06/06/23	1ST SUBMITTAL

VZV SITE NAME	MGD LOCATION CODE	LAT	LONG	E911 ADDRESS	KEY MAP
CROSS_CREEK_SC2	5000923460	29.752183	-95.838936	28317 2/3 S FIRETHORNE ROAD, KATY, TX 77494	4B3M
CROSS_CREEK_SC3	5000923532	29.753426	-95.866748	28138 2/3 N FIRETHORNE ROAD, KATY, TX 77494	4B3L

LOCATION MAP



VICINITY MAP



Permitted in Firethorne

Approve permit application from Cello Partnership dba Verizon Wireless/Verizon-contractor to install cell node poles and fiber optic cable along S. Firethorne Road and W Firethorne Road, Permit No. 2023-62282, Precinct 1.

Approve permit application from Cello Partnership dba Verizon Wireless/Verizon-contractor to install cell node poles and fiber optic cable along Birch View Lane, Jordan Crossing Boulevard, South Firethorne Road, Black Spur Drive, Dunns Creek Court, Cherry Vine Road and Clancy Meadows Drive, Permit No. 2023-62284, Precinct 1.

NOTE: CONTRACTOR MUST VERIFY EXACT LOCATION AND DEPTH OF ALL EXISTING CONTEMPORARY UTILITY LINES AND BE CONSIDERATE PRIOR TO COMMENCING CONSTRUCTION ON THIS PROJECT.

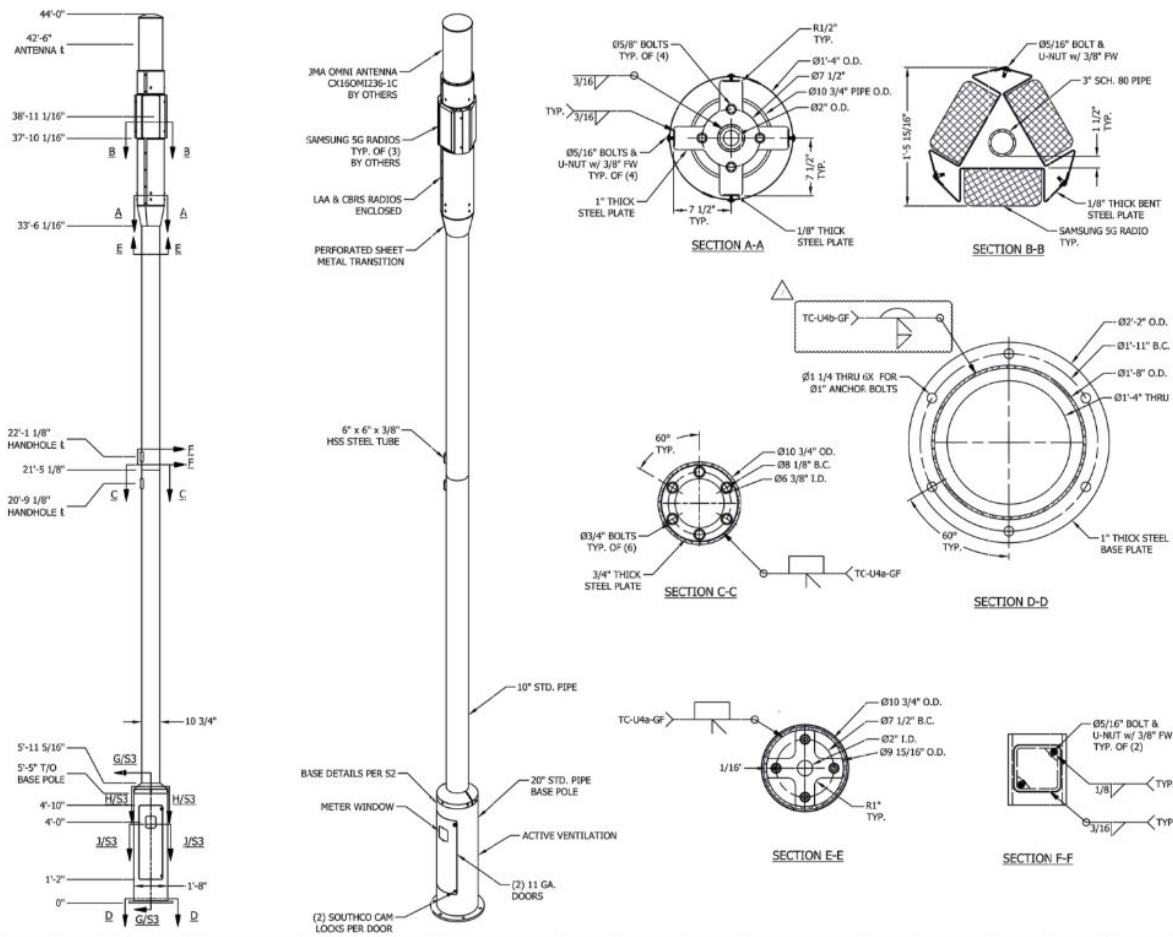
WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.



DESIGNED: TD
DRAWN: TD
CHECKED: JG
JOB #
23_VIS-016

TITLE

Self Contained Small Cell (Raycap Stealth - 4G+5G+CBRS/LAA)



Raycap **OSTEALTH**

7555-A PALMETTO CONNEMERE PARKWAY
NORTH CHARLESTON, SC 29440 USA
P: 803.781.1111
WWW.STEALTHCELLSOLUTIONS.COM

THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. IT IS THE PROPERTY OF RAYCAP/OSTEALTH SOLUTIONS, INC. IS STRICTLY CONFIDENTIAL.



DRAWING NOT TO SCALE UNLESS SPECIFIED OTHERWISE. DIMENSIONS SHOWN ARE IN INCHES UNLESS NOTED OTHERWISE.

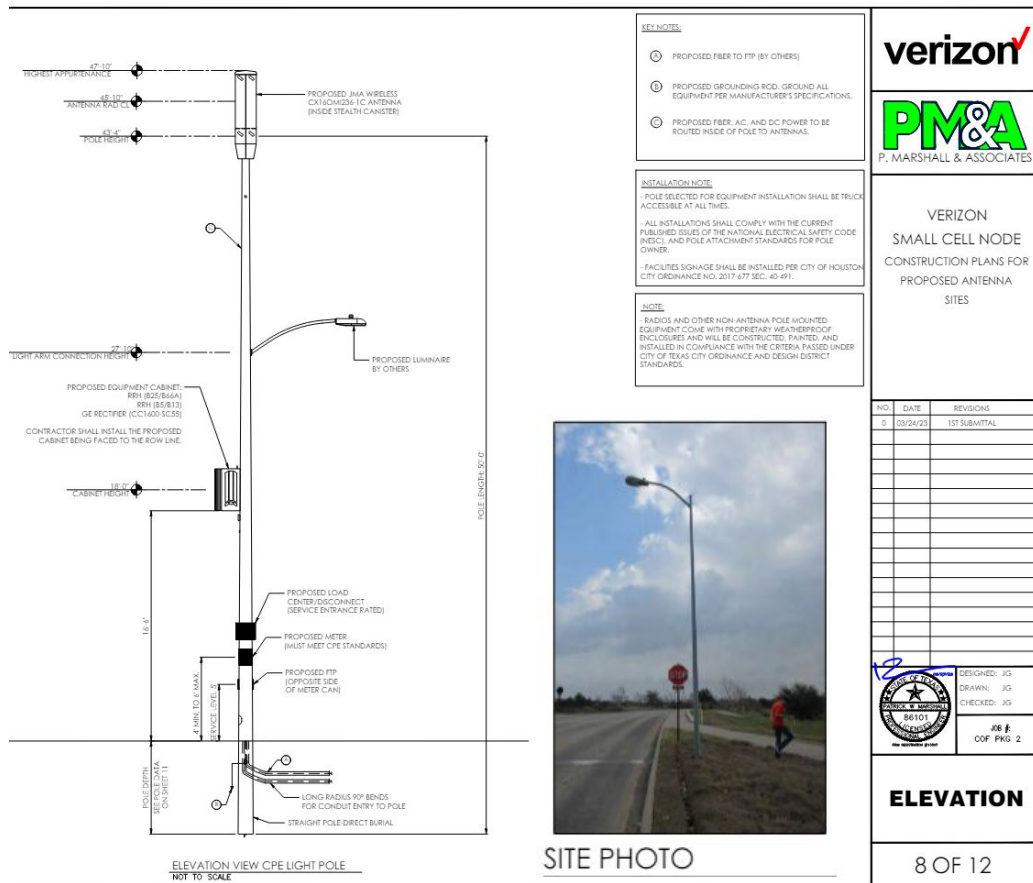
DATE: 08-01-15

ASSEMBLY - ELEVATIONS

VERIZON WIRELESS
HOUSTON POLES
HOUSTON, TX

APP. #	07-10-005063-03
DRAWN	ANS
DESIGNED	ANS
REVIEWED	ANS
S1	08-01-15
7	

Firethorne Light Pole installations



VERIZON
SMALL CELL NODE
CONSTRUCTION PLANS FOR
PROPOSED ANTENNA
SITES

NO.	DATE	REVISIONS
0	03/24/23	1ST SUBMITTAL



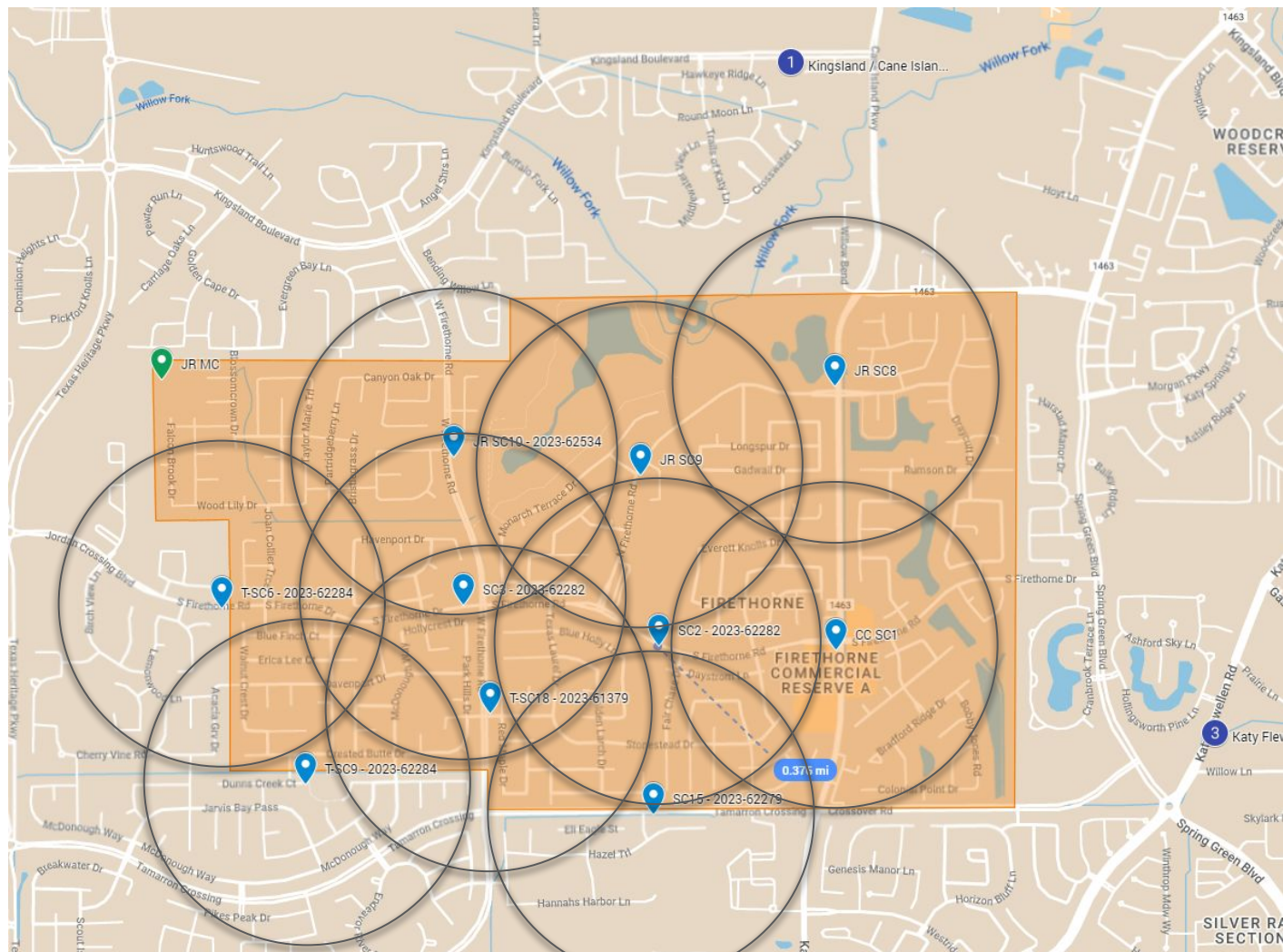
SITE PHOTO

DESIGNED: JG
DRAWN: JG
CHECKED: JG

JG #
COF PKG 2

ELEVATION

Verizon Small Cell towers at proposed sites provides nearly **complete coverage** of Firethorne without an additional macro tower:

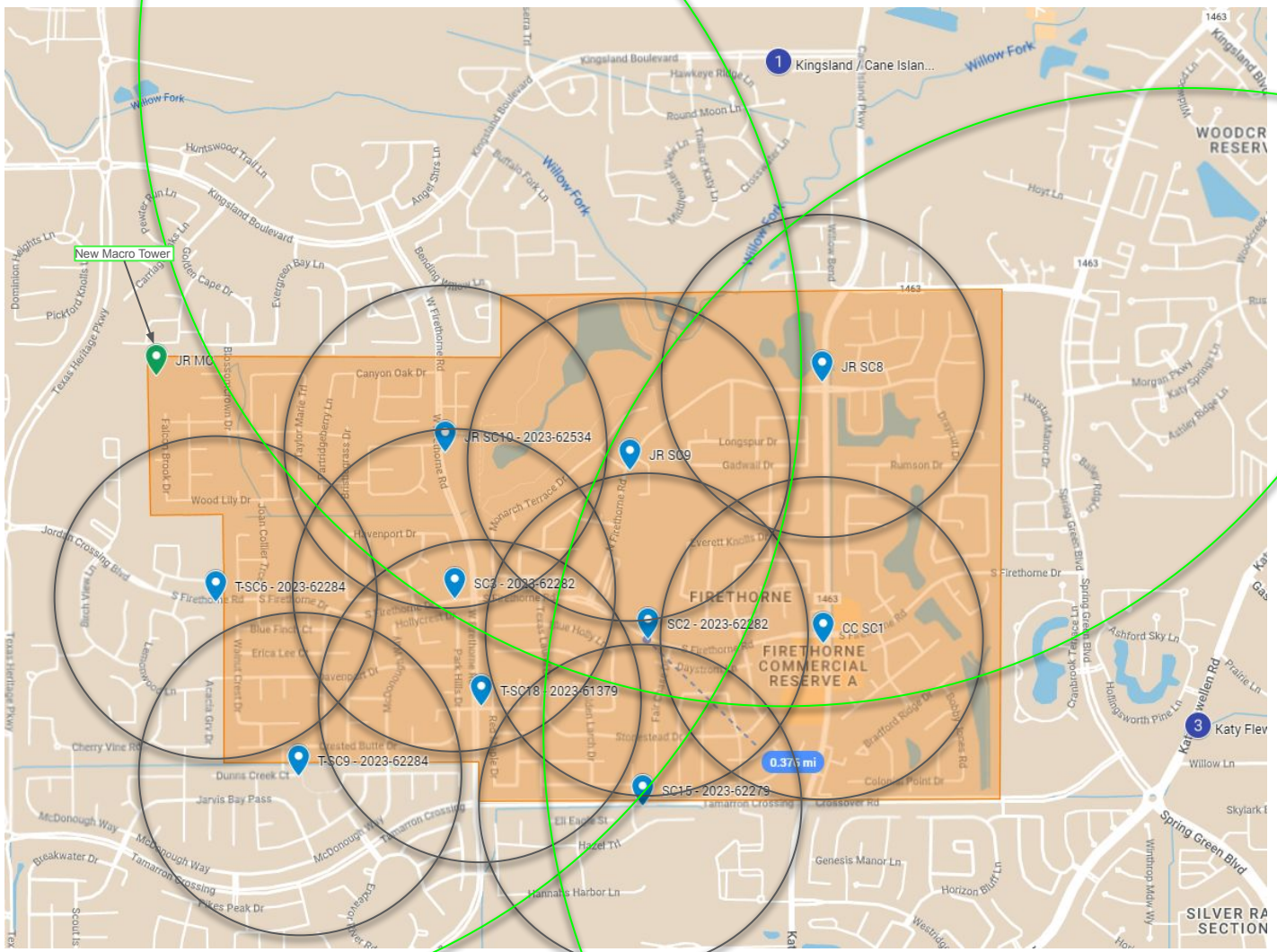


Black ring = 2000 ft (SC min range)

Combination Solution:

- Small Cells
- Macro Towers

Optimal Coverage + guaranteed multi-carrier



Green ring = 1.5 miles
Black ring = 2000 ft (SC min range)

Timeline

- Small Cells can begin install as early as end of **June 2024** - already permitted with FBC.
- Macro tower at “Jordan Ranch” tentative construction end of 2024 and online **beginning of 2025**.

Committee Recommendation based on current information:

- 1) Allow Committee to complete negotiations with Verizon to install Firethorne small cells in right-of-way without delay to provide partial immediate solution.
- 2) **HOA Board Consider** approving Verizon proposed macro-tower lease at identified “Jordan Ranch” site while facilitating small cell negotiations.
- 3) Allow Committee to continue developing alternative backup locations/solutions to ensure efficient negotiations.