

Wake County Fire Services Long Range Planning Data Analysis

July 2025 Meeting



@wakegov    

wakegov.com

Topics for Discussion

- Overview of Standard of Fire Service Response for the Unincorporated areas of Wake County
- Review the data process
- Discuss travel time for first arriving units
- Effective Response Force (ERF) for working structure fires
- **Alarm handling times**



Fire Tax District Long Range Plan Guiding Principles and Standards

- The Effective Response Force (ERF) for any reported structure fire responding emergency traffic with a minimum of 16 Firefighters should be 12 minutes 0 seconds, 90 percent of the time in unincorporated districts of Wake County.



Response Data Assessment

Remove incidents with:

- Zero response times
- Missing enroute times
- Out of order timestamps (indicating MDT problems)
- Travel times over 15 min (25 min for NWFD “Northwest District”)

Remove incidents with >7-minute due to:

- Non-emergency responses (including downgraded incidents)
- Units staged for PD to secure scene
- Inaccurate dispatch location
- Units were canceled enroute

Travel Time - Rural Wake County

10/1/24 – 3/31/25

4/1/25 – 9/30/25

Department	Total Rural Responses	Rural Emergency Responses	Travel Time 90%	Emergency Responses Over 7 Min Travel
NWFD - NW District	24	23	17:10	22
Garner Fire	1165	915	8:29	196
Fuquay-Varina Fire	899	702	7:54	123
Rolesville Fire	228	184	7:46	30
Wendell Fire	562	419	7:45	59
Northern Wake Fire	867	644	7:29	79
Zebulon Fire	274	219	7:24	30
Holly Springs Fire	122	95	7:21	11
Morrisville Fire	163	107	7:17	16
Hopkins Fire	206	143	7:05	17
Wake Forest Fire	425	307	6:56	30
Knightdale Fire	895	681	6:49	62
Apex Fire	228	186	6:44	18
Fairview Fire	482	384	6:24	23
Durham Highway Fire	239	184	6:15	12
Swift Creek Fire	143	123	6:09	8
Western Wake Fire	102	42	6:08	3
Wake-New Hope Fire	279	223	5:20	3
Cary Suburban Fire District	16	13	2:56	0

Department	Total Rural Responses	Rural Emergency Responses	Travel Time 90%	Emergency Responses Over 7 Min Travel
NWFD - NW District	43	34	13:52	32
Fuquay-Varina Fire	880	646	8:22	134
Holly Springs Fire	134	110	8:22	21
Garner Fire	1172	901	8:05	189
Wendell Fire	568	445	7:35	70
Rolesville Fire	304	247	7:27	42
Northern Wake Fire	977	755	7:08	84
Wake Forest Fire	393	292	7:05	31
Knightdale Fire	920	716	7:04	75
Zebulon Fire	276	213	7:01	22
Morrisville	162	125	6:53	11
Durham Highway Fire	278	199	6:38	17
Fairview Fire	501	388	6:33	27
Apex Fire	307	257	6:30	18
Hopkins Fire	246	179	6:22	15
Swift Creek Fire	185	151	5:52	6
Western Wake Fire	89	47	5:43	2
Wake-New Hope Fire	297	248	5:32	6
Cary Suburban	16	12	4:21	0

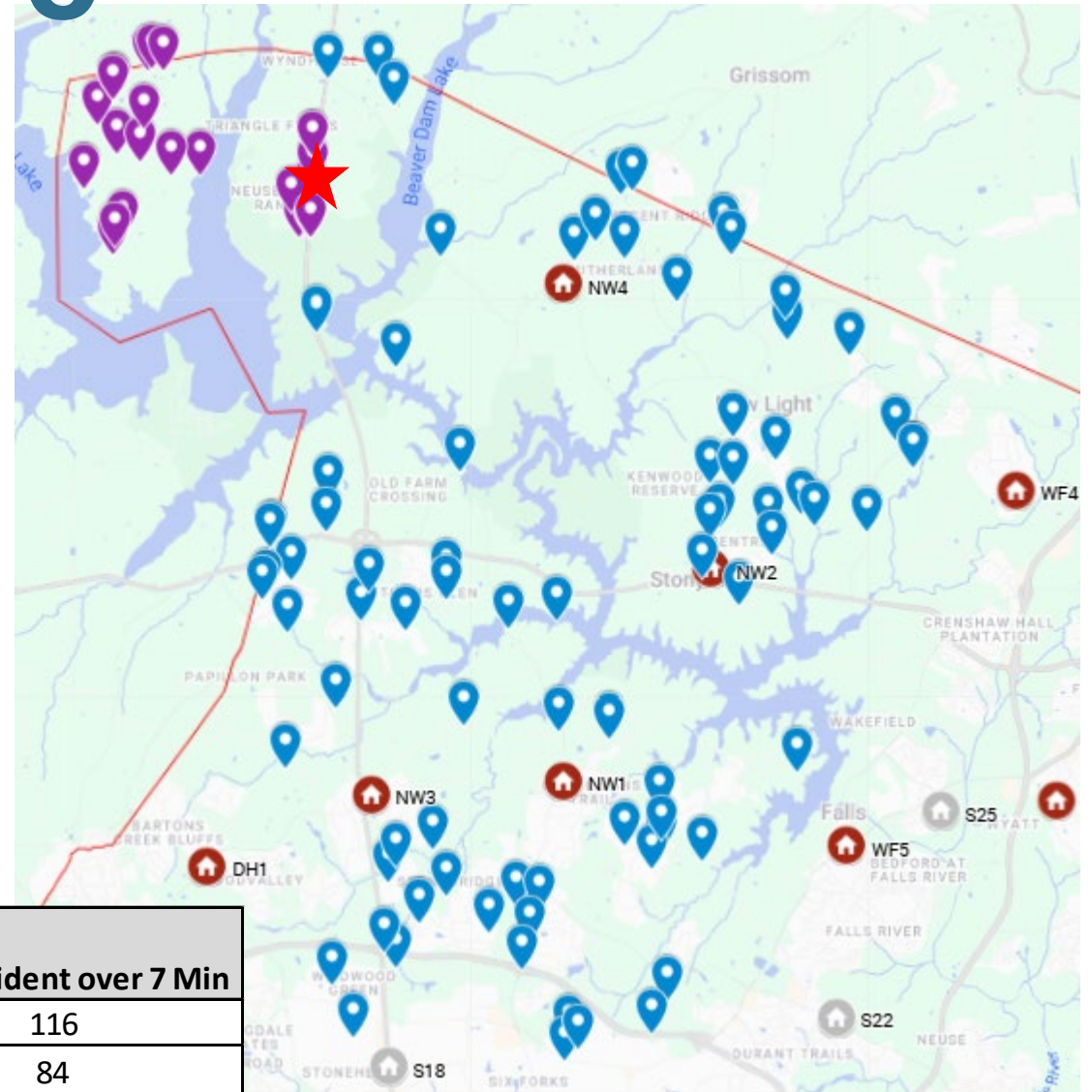
Northern Wake Fire

Northwest District

Construction on the “Hook” station has started.

With such a large district, we’ll be monitoring this – especially after the new station opens.

- 7:08 for the remainder of the district is pretty close

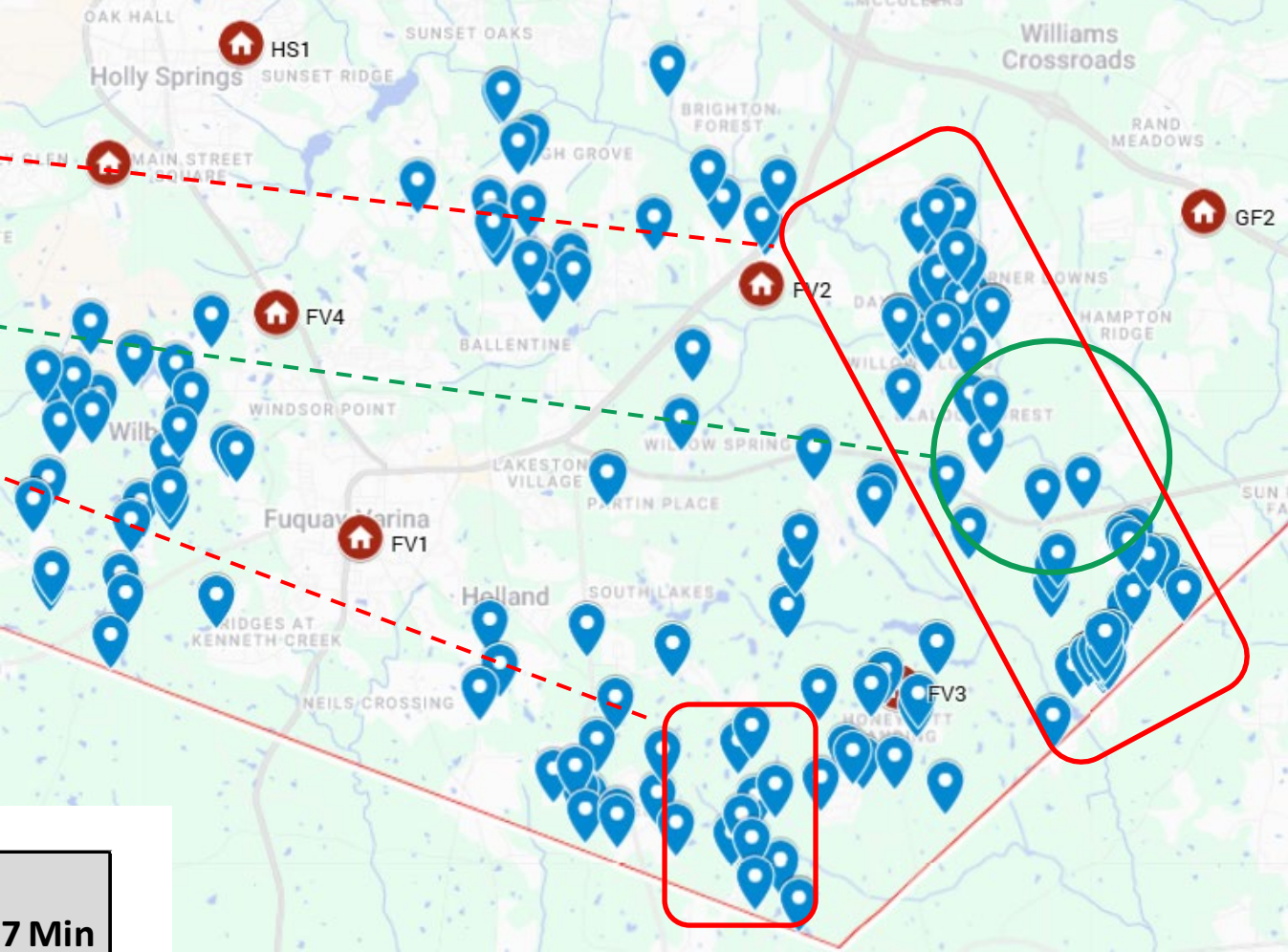


Area	Total Rural Emergency Responses	Travel Time 90%	Total Incident over 7 Min
Entire District	789	7:51	116
Without Northwest District	755	7:08	84
Northwest District Only	34	13:52	32

Fuquay-Varina Fire

Of the 134 calls over 7:00

- 50+ along the GF2/FV2 interface
- Future Station in the CIP
- FVFD has plans for station 5 in this area

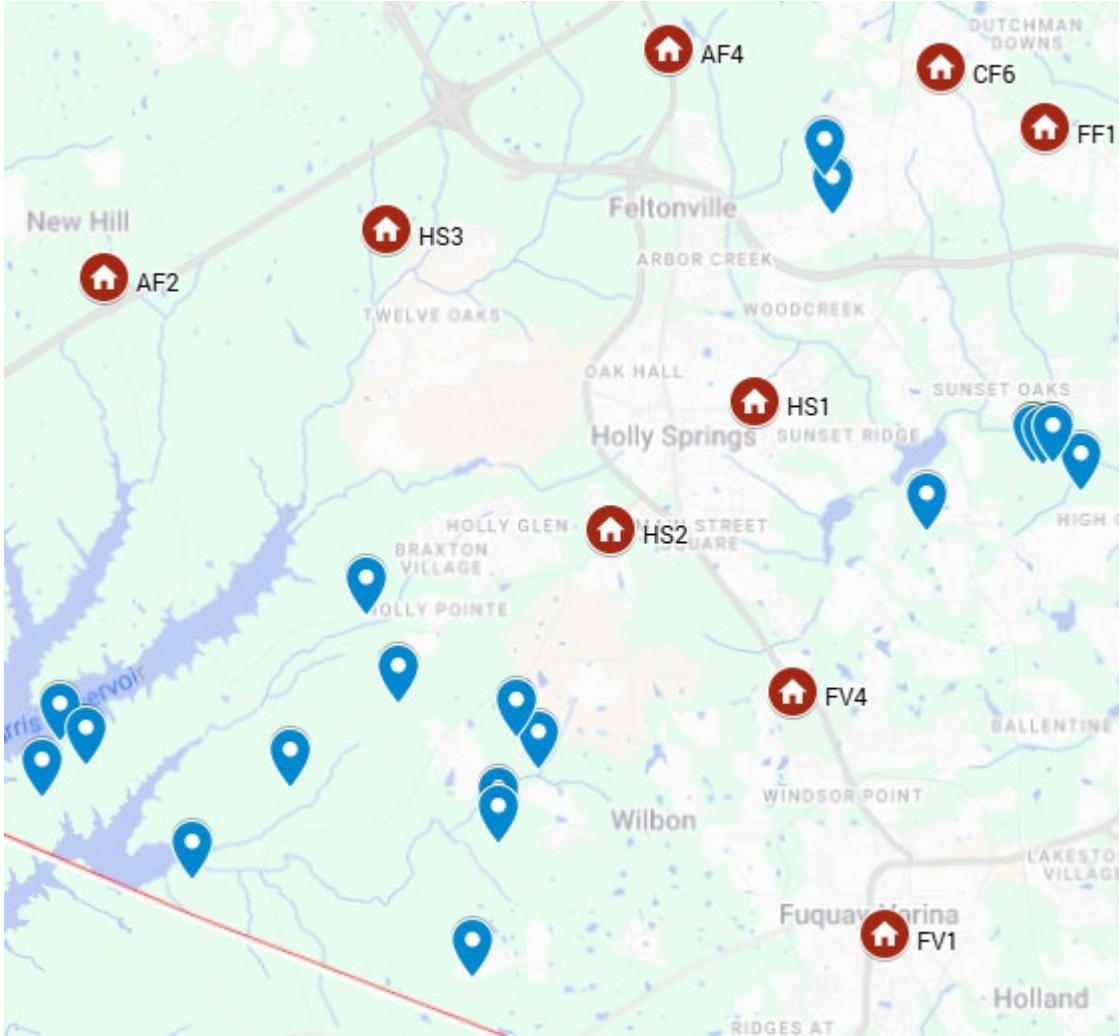


Total Rural Emergency Responses	Travel Time 90%	Total Incident over 7 Min
646	8:22	134

Holly Springs Fire

- Of the 21 calls over 7:00
- All were along the edges of the district
 - A case of:
“low numbers skew the statistics”

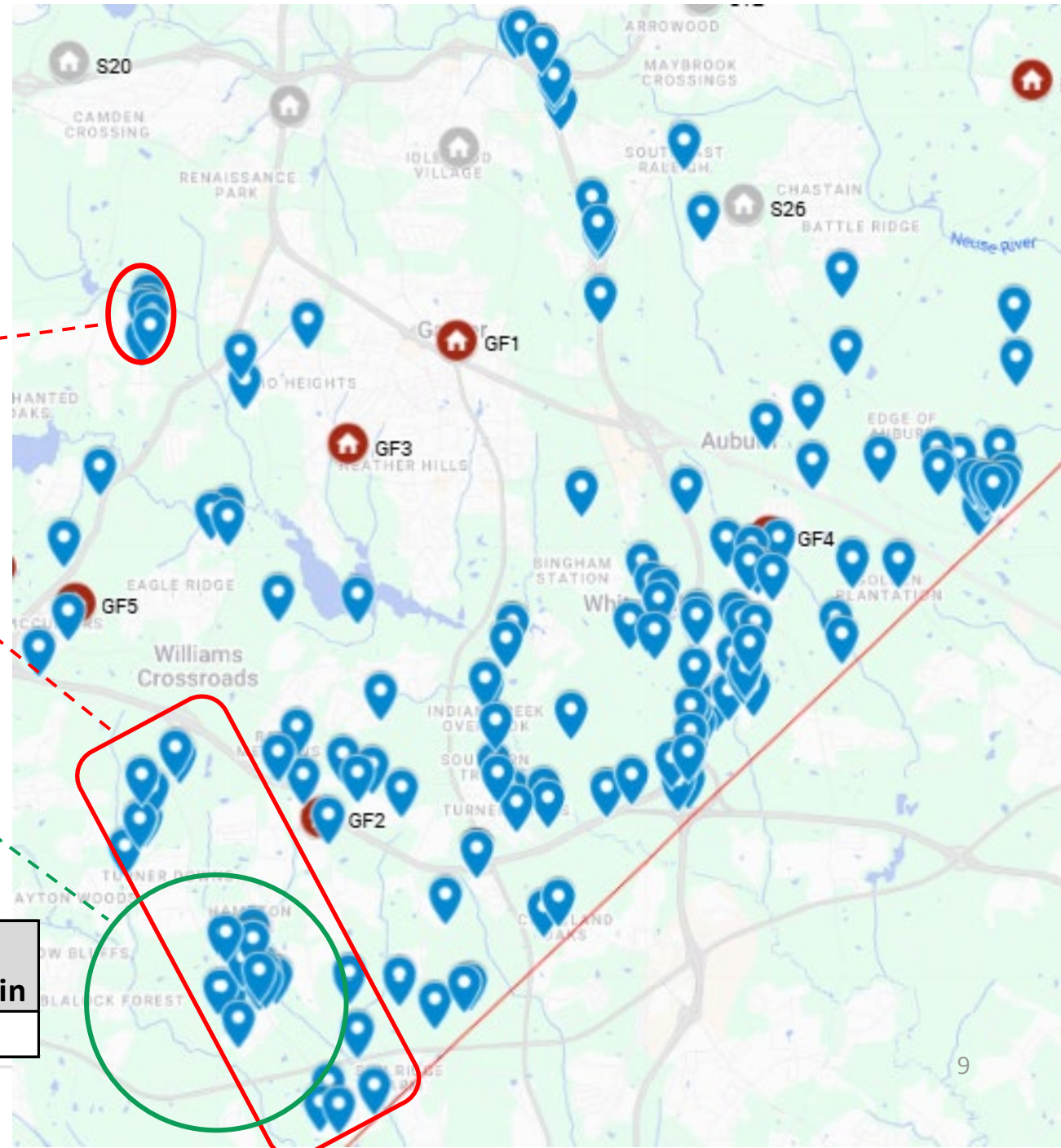
Total Rural Emergency Responses	Travel Time 90%	Total Incident over 7 Min
110	8:22	21



Garner Fire

Of the 189 calls over 7:00

- 55 on the interstate
- 7 in the All Star Mobile Home community
 - A mile deep with speed bumps
- 35+ along the GF2/FV2/FV3 interface
- Future Station in the CIP

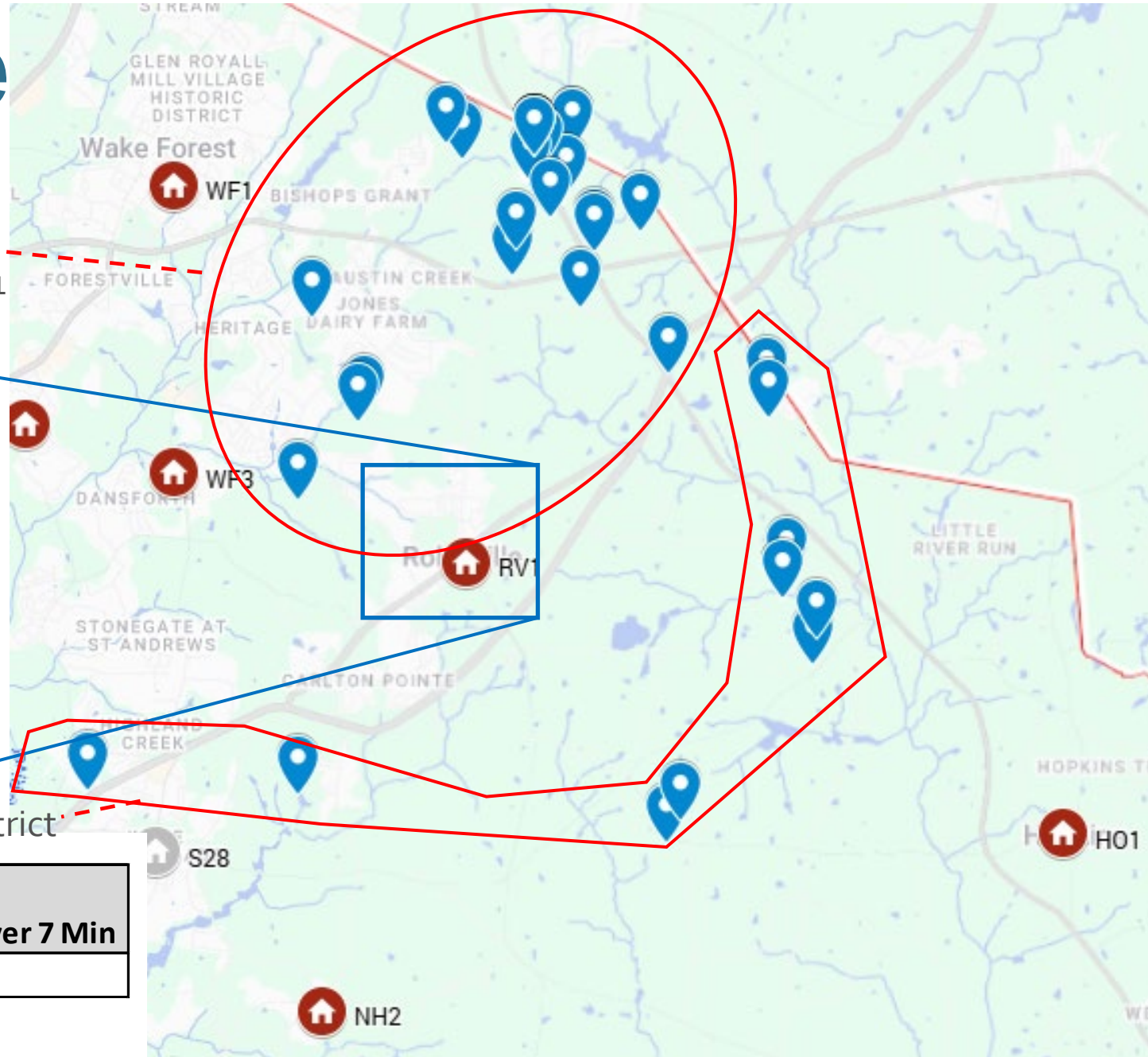
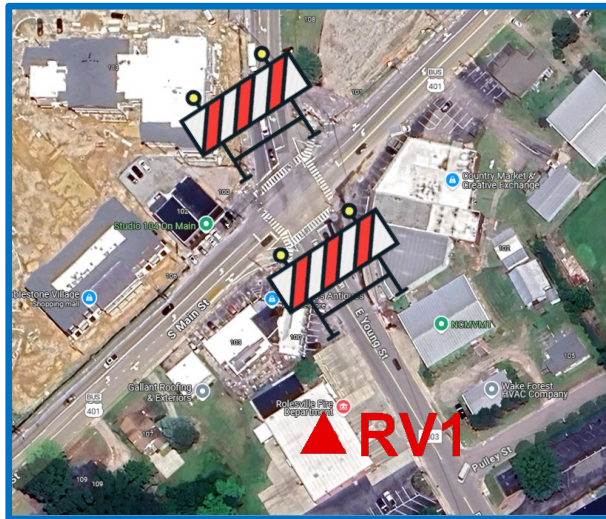


Total Rural Emergency Responses	Travel Time 90%	Total Incident over 7 Min
901	8:05	189

Rolesville Fire

Of the 42 calls over 7:00

- 25+ were north of a major road closure
- E and W Young St closed on both sides of 401
 - Reopened in early September



- 10 more were along the perimeter of the district

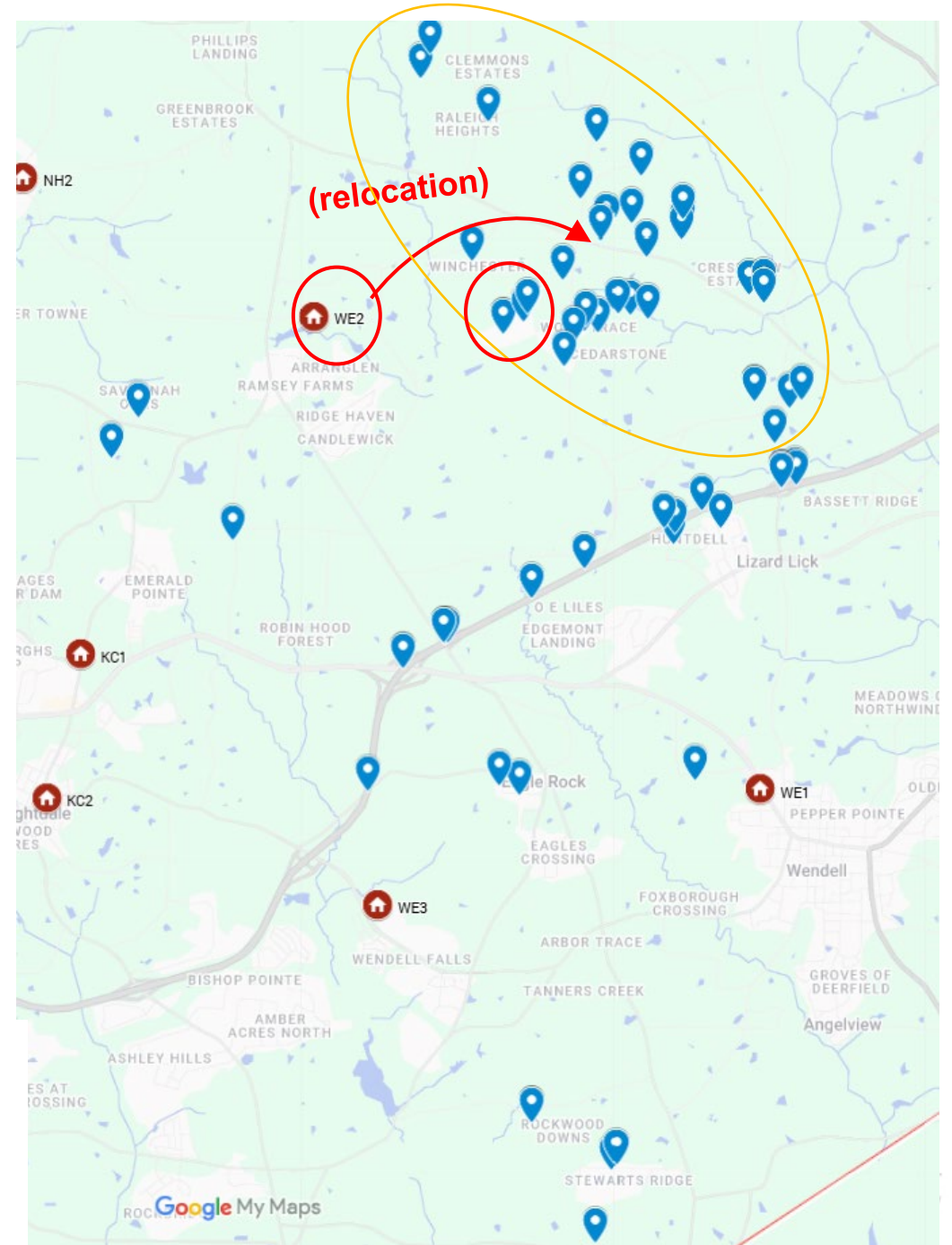
Total Rural Emergency Responses	Travel Time 90%	Total Incident over 7 Min
247	7:27	42

Wendell Fire

Of the 70 calls over 7:00

- 24 of 70 calls over 7:00 were on the interstate
- 9 of 70 calls over 7:00 were on Stag Trl
 - 28 speed bumps
- Upcoming relocation of Wendell Station 2 to Riley Hill Rd near Eunice Ln
 - Reasonable assumption that this would “fix” a large portion of these calls over 7:00

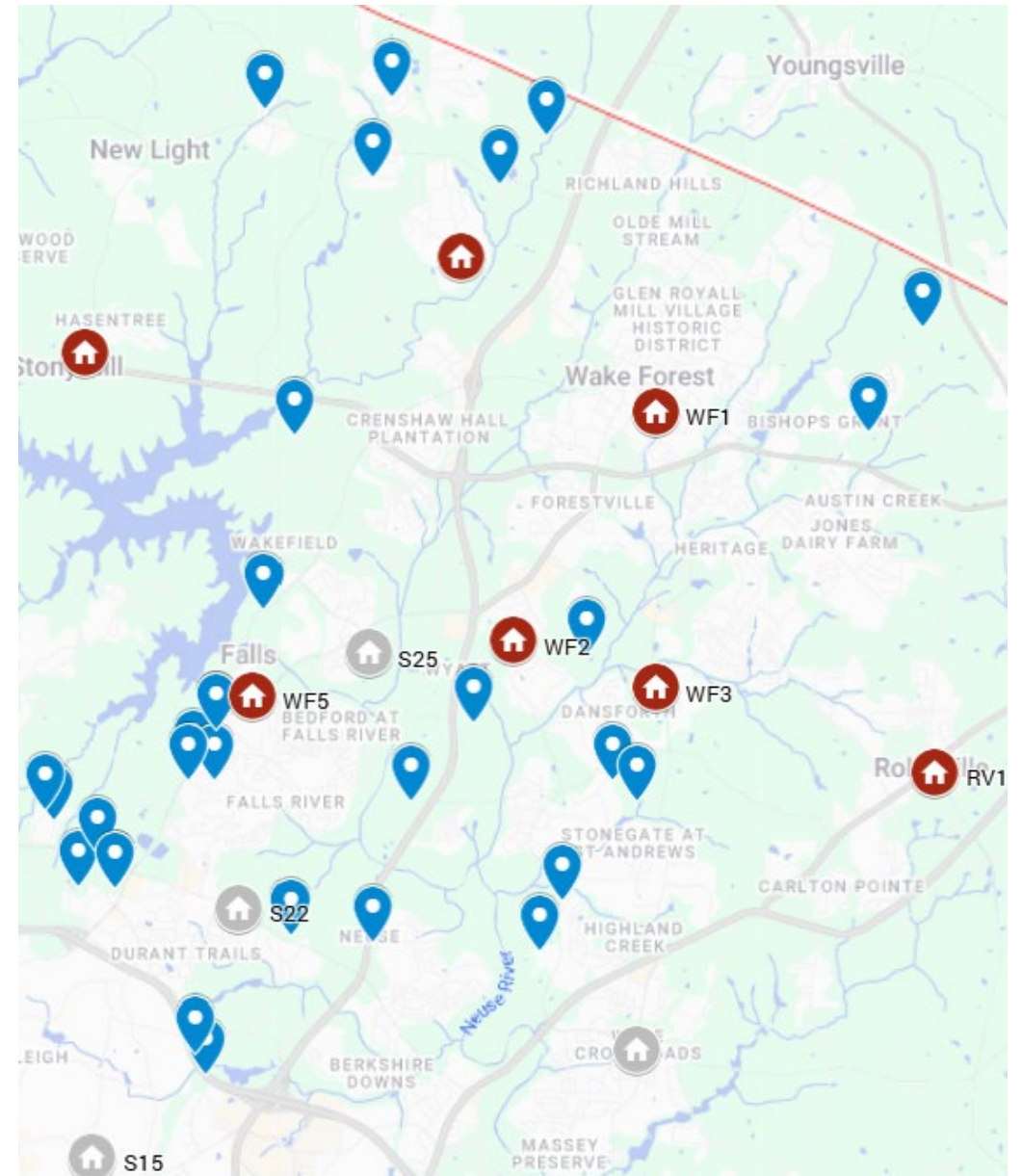
Total Rural Emergency Responses	Travel Time 90%	Total Incident over 7 Min
445	7:35	70



Wake Forest Fire

Of the 31 calls over 7:00

- 2 were on the interstate
- 6 were along the county line
- A case of:
“low numbers skew the statistics”
- 89.4% of responses were less than 7:00
 - The goal is 90%



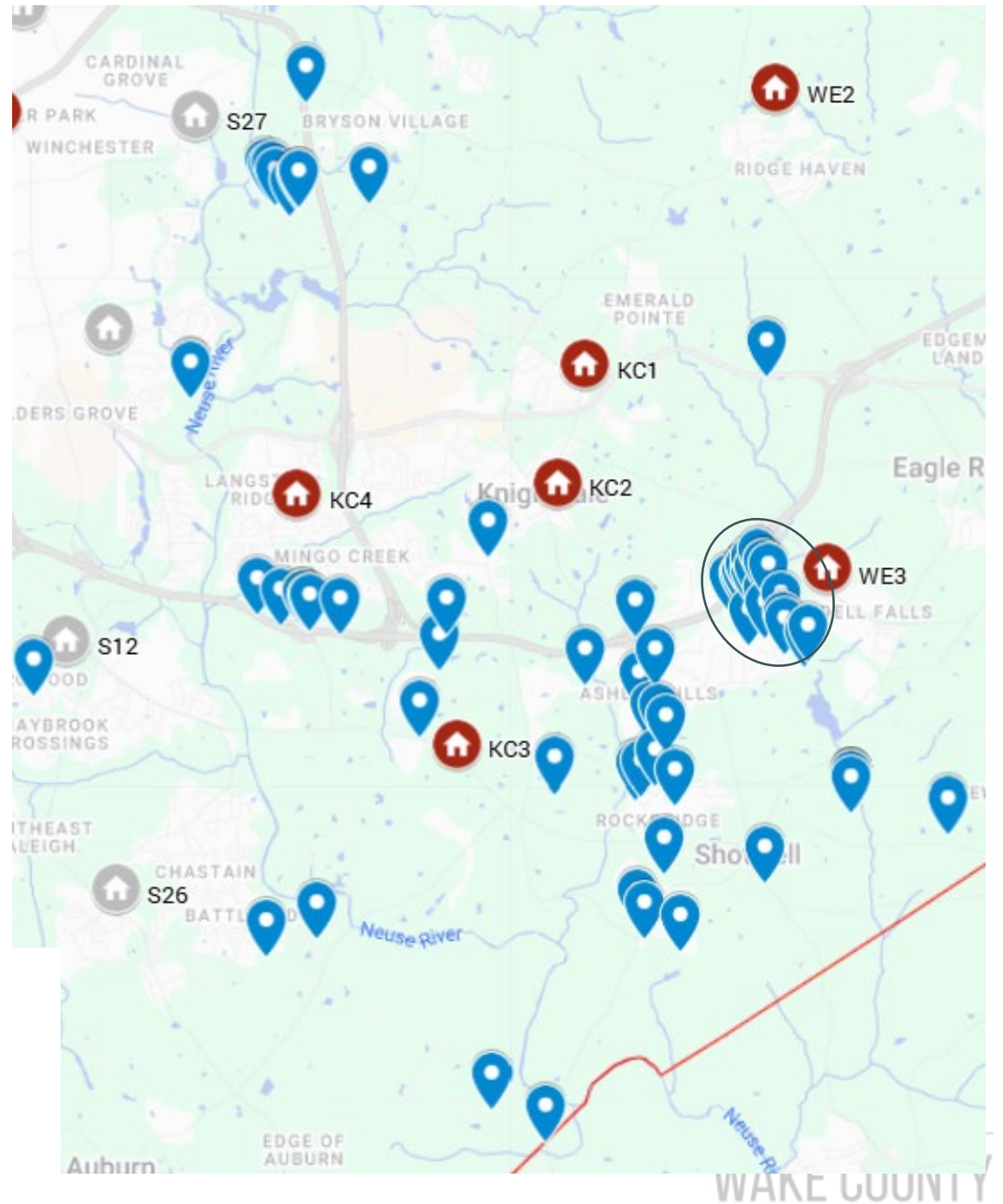
Total Rural Emergency Responses	Travel Time 90%	Total Incident over 7 Min
292	7:05	31

Knightdale Fire

Of the 75 calls over 7:00

- 12 were on the interstate
- 12 were answered by another department
 - Second duty call
- 23 calls in the back of Amber Ridge or Amber Acres North subdivisions***
- 89.5% of responses were less than 7:00
 - Goal = 90%

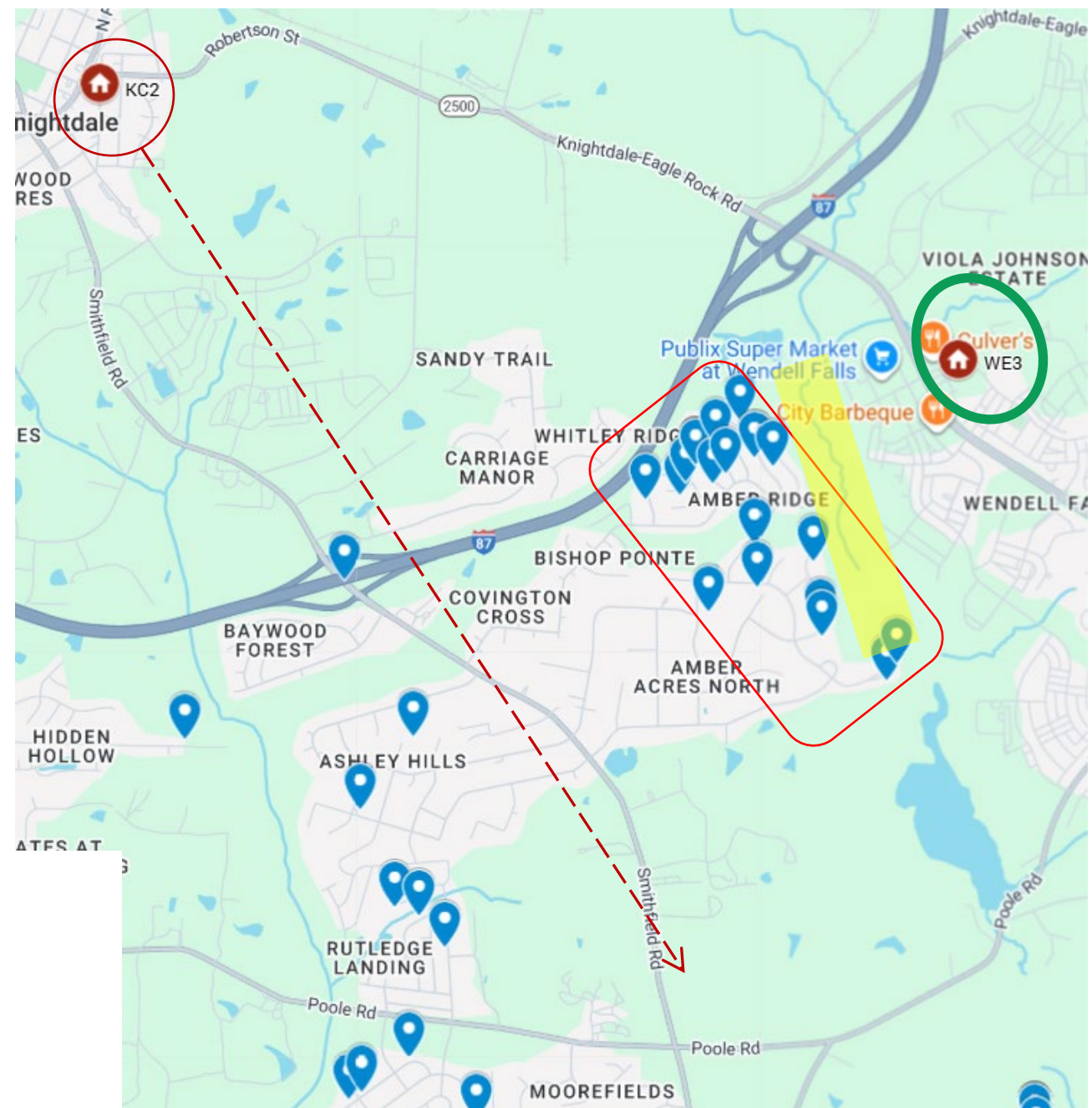
Total Rural Emergency Responses	Travel Time 90%	Total Incident over 7 Min
716	7:04	75



Knightdale Fire

(continued)

- 27 calls in the back of Amber Ridge or Amber Acres North subdivisions
- Looks like it's really close to Wendell Station 3
- Separated by 1,000 ft of wetland
- Chief Cone is working on a plan to move Knightdale Station 2 Southeast to a location that will improve this situation



Zebulon Fire

Of the 22 calls over 7:00

- 4 of 22 calls over 7:00 on 64/264
- 8 of 22 calls were due to simultaneous calls
- A case of:
“low numbers skew the statistics”
- 89.6% of responses were less than 7:00
 - The goal is 90%

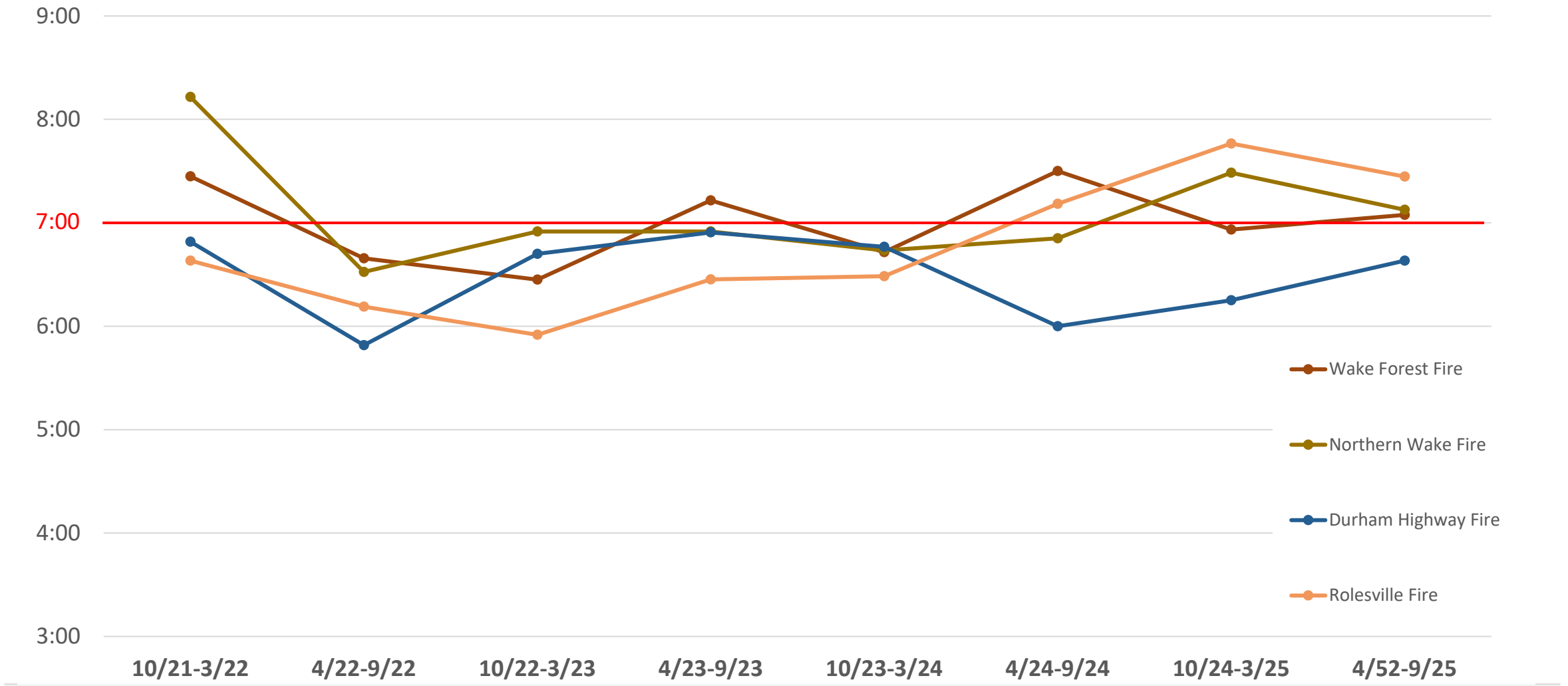
ZF1 relocation
(planned)



Total Rural Emergency Responses	Travel Time 90%	Total Incident over 7 Min
213	7:01	22

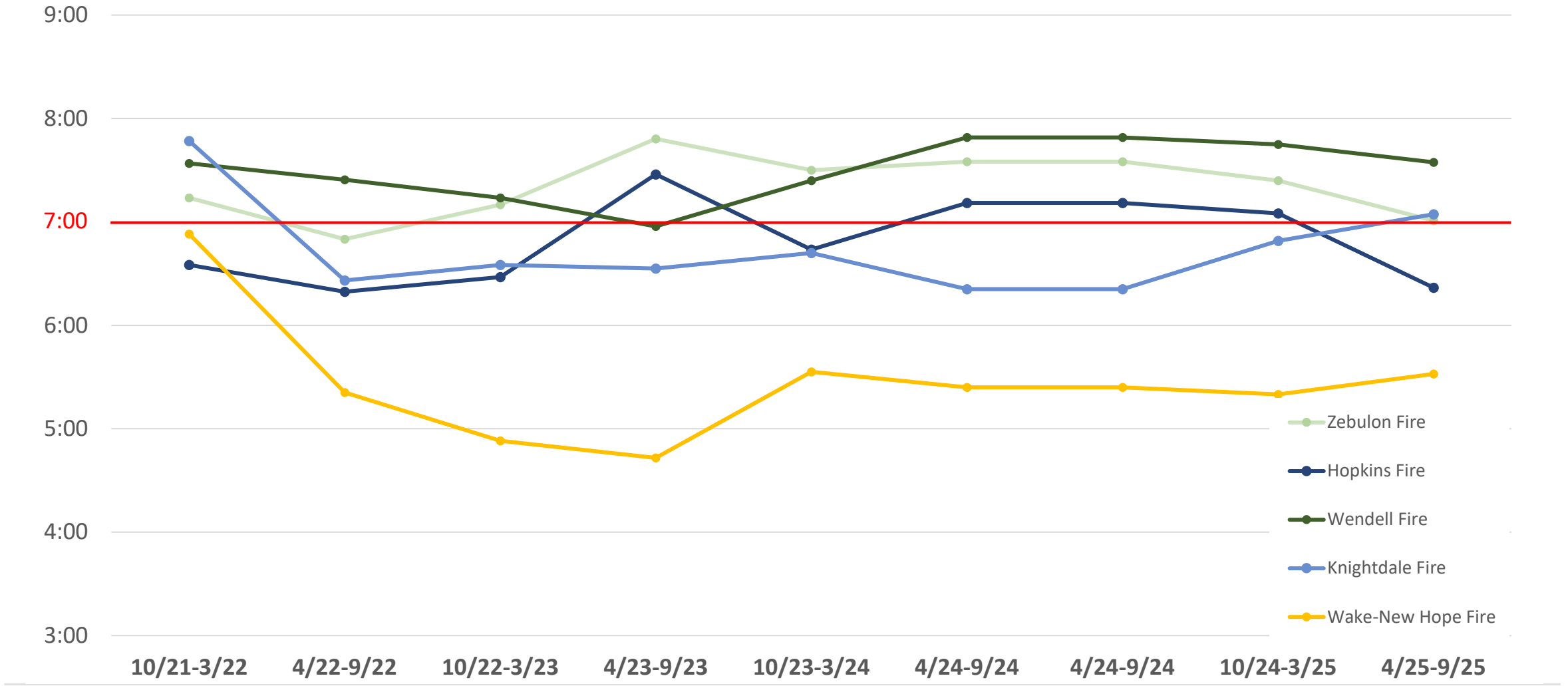
Travel Time - Rural Wake County

90th Percentile Travel Time - Northern Region



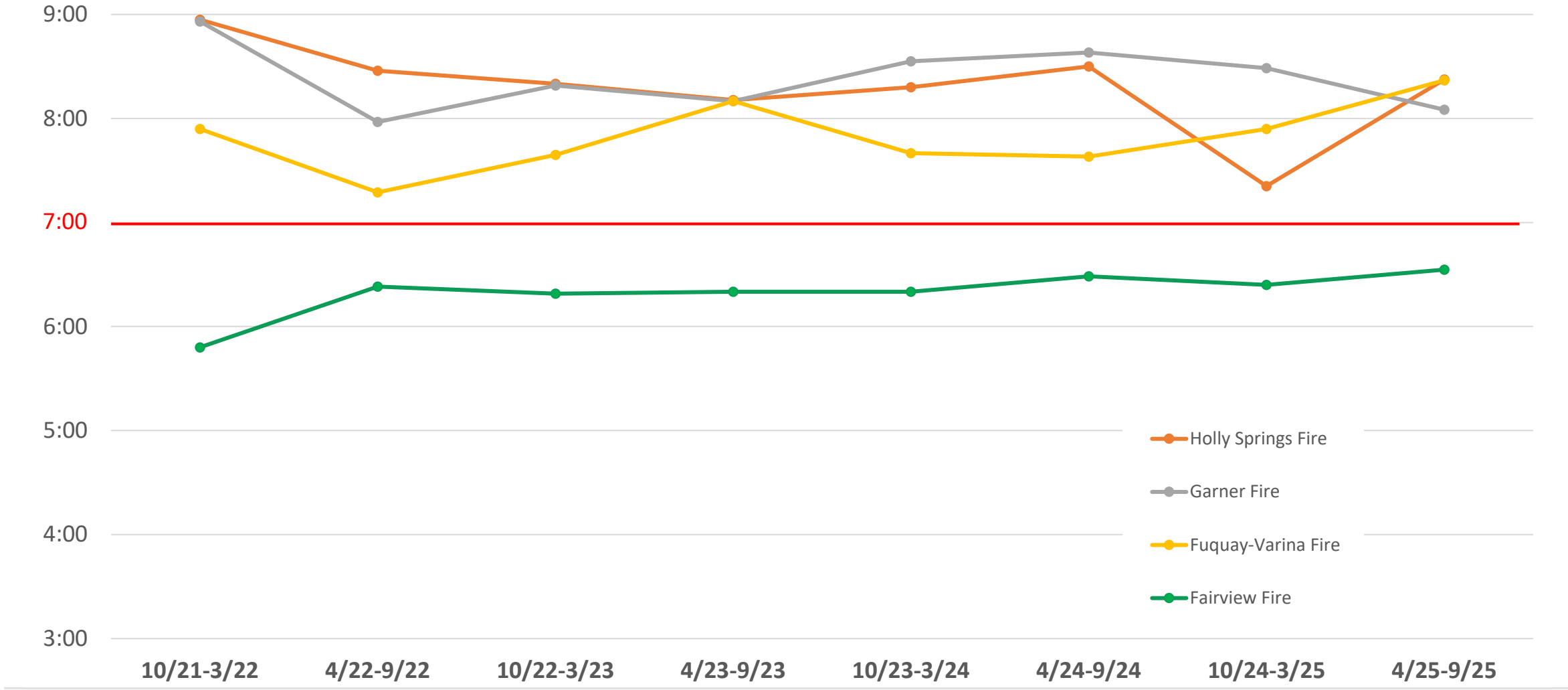
Travel Time - Rural Wake County

90th Percentile Travel Time - Eastern Region



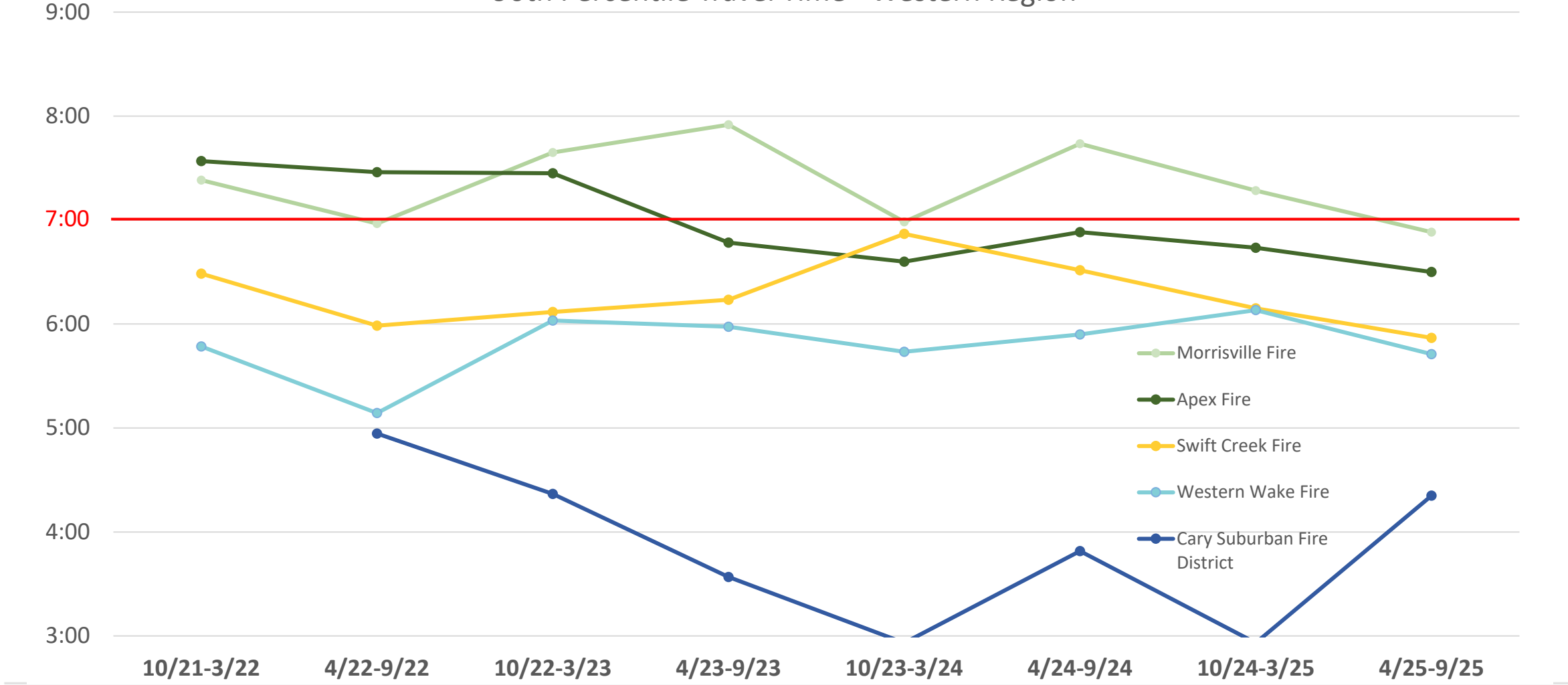
Travel Time - Rural Wake County

90th Percentile Travel Time - Southern Region



Travel Time - Rural Wake County

90th Percentile Travel Time - Western Region



Structure Fires – Unincorporated Wake County



There were **111** reported structure fires in unincorporated Wake County from 04/01/25 – 9/30/25



After evaluating each of these incidents **21** were:

Working Structure Fires (Hose lines were deployed) or Dispatched as a structure fire and assembled 16 on scene, regardless of conditions found



Out of the **21** there was **1** that did not meet the Effective Response Force (ERF) of 16 Firefighters on-scene within 12 Minutes.

Structure Fires - Rural Wake County 10/01/24 – 3/31/25

Department	Total Dispatched Structure Fires	Structure Fires Meeting Criteria	Structure Fires NOT Meeting ERF
Apex Fire	2	2	1
Cary Suburban	0	0	0
Durham Highway Fire	2	0	0
Fairview Fire	6	3	0
Fuquay-Varina Fire	15	3	0
Garner Fire	26	4	0
Holly Springs Fire	2	0	0
Hopkins Fire	6	2	0
Knightdale Fire	15	1	0
Morrisville Fire	0	0	0
Northern Wake Fire	12	3	0
Rolesville Fire	2	1	0
Swift Creek Fire	5	1	0
Wake Forest Fire	6	0	0
Wake-New Hope Fire	3	0	0
Wendell Fire	9	1	0
Western Wake	0	0	0
Zebulon Fire	0	0	0
	111	21	1

Apex Structure Fire



9908 Bonsal Crossing Rd: 12:26

First arriving unit had a travel time of 7:26

On the very edge of the county

Every responding unit had to go through Chatham County to reach the address

Effective Response Force for Structure Fires

- Timestamped as the arrival of the 16th firefighter arriving
- Target = 12:00



Future Stations

Based on Response Data the following stations have been added to the long-range CIP

- **Wendell North Public Safety Center**
 - Wendell Station 2 relocation FY26/27
- **Hopkins Public Safety Center**
 - Hopkins Station replacement FY27/28/29
- **Highway 42 Public Safety Center**
 - GF2/FV2/FV3 infill station FY27/28
- **Lake Wheeler Station**
 - Lake Wheeler area FY27/28/29
- **Garner Station 2**
 - Relocation FY29/30
- **Fairview Main Station**
 - FY30/31

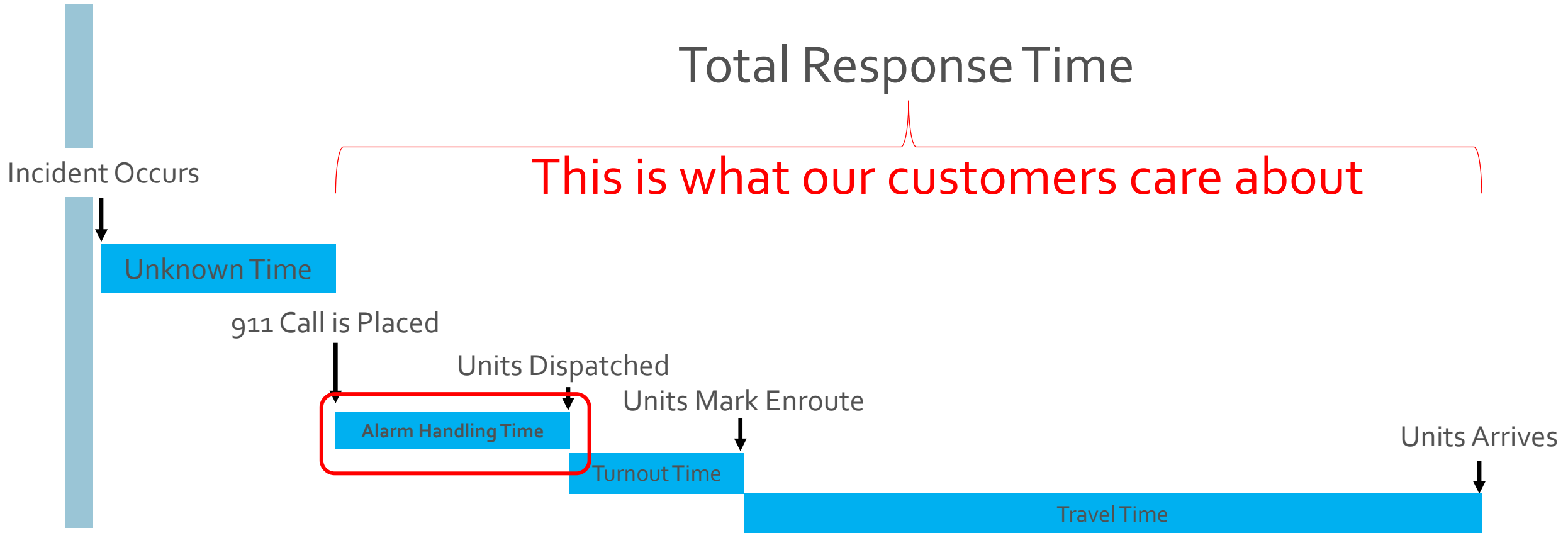


Recent and Upcoming Stations

- New Stations
 - Already broken ground:
 - Garner Station 5 – OPEN!
 - Knightdale Station 2 (relocation) – OPEN!
 - Holly Sprigs Station 3 (relocation) – OPEN!
 - Zebulon Station (relocation) – ground broken, 10/2/25
 - NWFD “Hook” station – ground broken, 12/4/25
 - Breaking Ground Soon
 - Wendell Station 2 (relocation)
 - Hopkins Station (replacement – same location)



Next Challenge: Alarm Handling Times



Alarm Handling Times

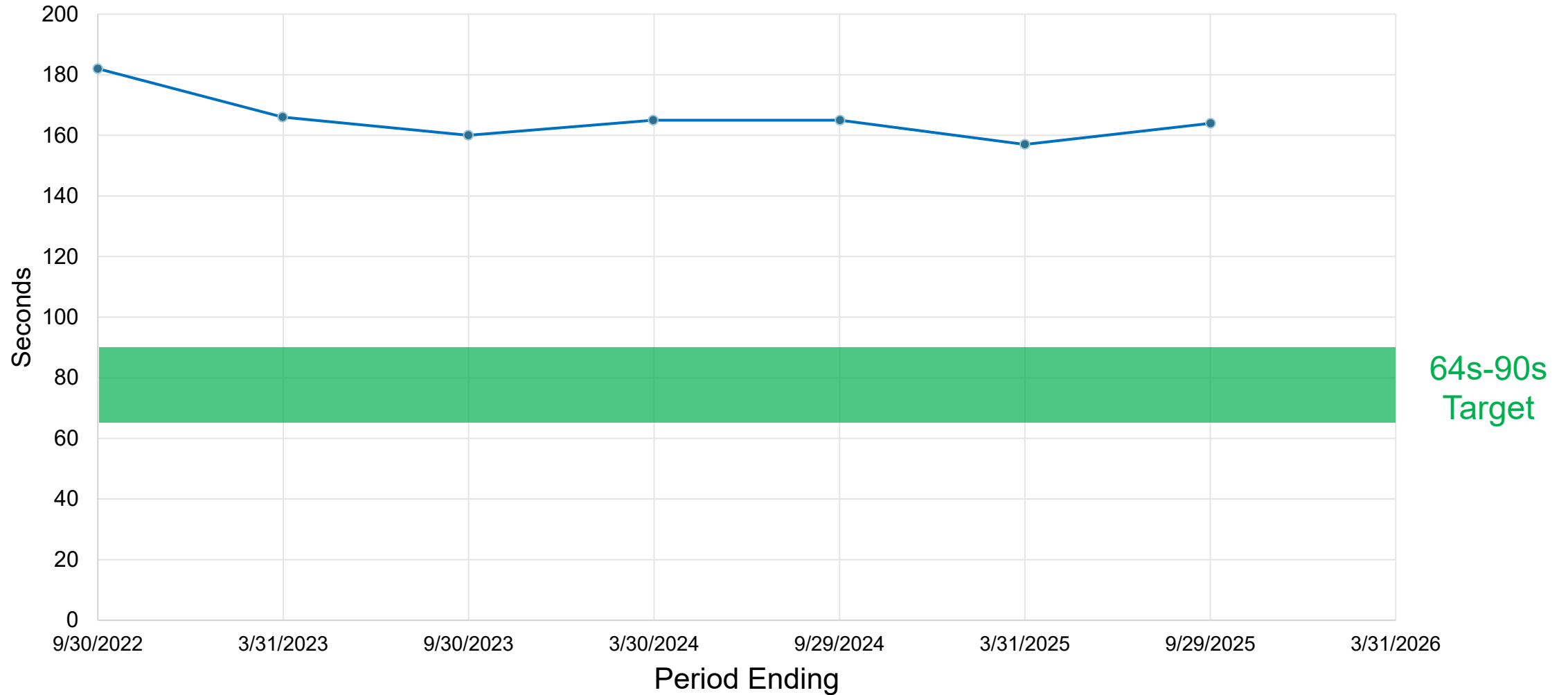
- What are the standards?
 - NFPA 1710,
 - 4.1.2.3.3
 - The fire department shall establish a performance objective of having an alarm processing time of not more than **64 seconds for at least 90 percent of the alarms** and not more than 106 seconds for at least 95 percent of the alarms.
- 4.1.2.3.3.1
 - Emergency alarm processing for the following call types shall be completed **within 90 seconds 90 percent of the time** [for special cases such as giving medical instructions, foreign languages being spoken, etc.]
- 2018 WECO agreement (still current) performance measures statements mirror these standards

Alarm Handling Times

- Where are we currently?
 - Overall for this 6-month period: **164s**
- We have engaged our partners
 - Raleigh-Wake Communications Center
 - Wake County EMS
 - Raleigh Fire
- We've started examining these numbers and have some ideas for reducing the alarm handling time.

Alarm Handling Times Over Time

90th% Alarm Handling



Long Range Plan Response Standards – General Observations

- Recommendations for improving data quality. Please encourage your fire report authors to:
 - Include mutual aid received units with staffing levels
 - Especially out-of-county units
 - **Use the response mode (emergent/non-emergent)**
 - Document (in the narrative) reasons for delayed travel times
 - Staged for PD
 - Traffic
 - Weather





Questions...