



 **Greenville**  
NORTH CAROLINA

**FIRE/RESCUE**



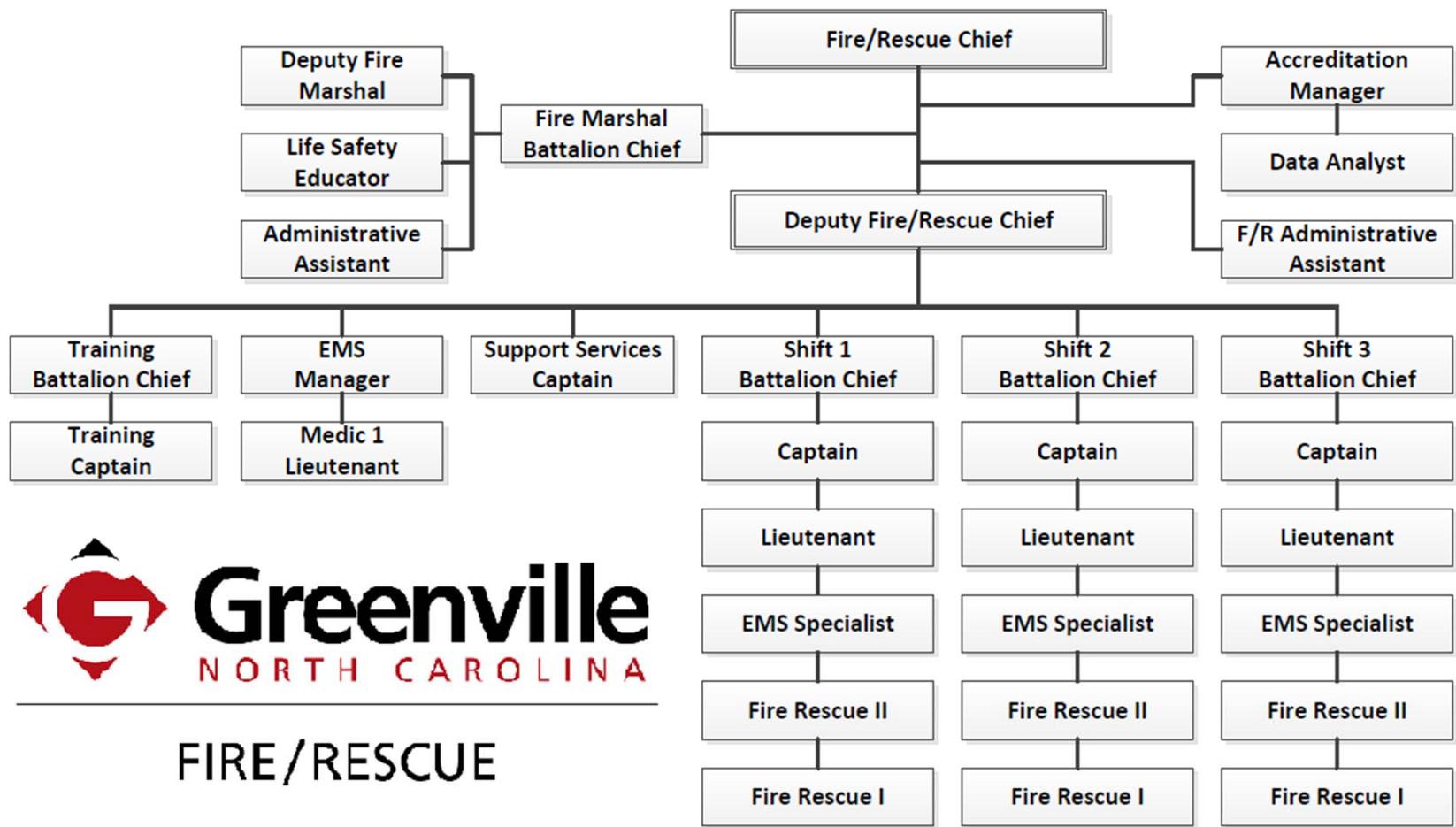
# Fire, Rescue and EMS

## An All-Hazards Department

- ▶ **Six stations**
  - ▶ 7 Paramedic-level fire trucks
  - ▶ 8 Paramedic-level ambulances
- ▶ **161 full-time employees**
  - ▶ All certified firefighters
  - ▶ All certified EMTs







**FIRE/RESCUE**



# Calls for Service

## By Comparison

### Calls for Service by Calendar Year

	2014	2015	2016*	3 Year % Chg	3 Year Total
EMS	9,834	12,411	14,403	46%	36,648
Fire/Rescue	2,257	2,439	2,582	14%	7,278
All Calls	12,091	14,850	16,985	40%	43,926

\*2016 estimated on call volume 1/1/16 - 11/30/16



# Calls for Service Percentage Breakdown

In 2015,  
personnel responded  
to nearly **15,000**  
calls for service.  
**84%** were EMS-related.

Calls for Service Percentage Breakdown

	2014	2015	2016*
EMS	9,834	12,411	14,403
Fire/Rescue	2,257	2,439	2,582
All Calls	12,091	14,850	16,985
Percent EMS	81%	84%	85%

\*2016 estimated on call volume 1/1/16 - 11/30/16





# Fire Inspections

## By Comparison

Inspections by Calendar Year Comparison			
2014	2015	2016*	3 Year % Chg
1,667	1,807	2,082	25%

\*2016 estimated on data 1/1/16 - 11/30/16



# Non-Emergency Activities For 2016

Non-Emergency Activities	
Public Education	163
Non-Emergency Public Requests	1,331
Year to Date	

Number of people reached with events:  
**20,000**  
Social media:  
**200,000**



# Fire/Rescue Budget

## General Fund

<b>FY 2016-17</b>	<b>\$ 14,004,156</b>
<b>FY 2017-18</b>	<b>\$ 14,324,455</b>





# Fire/Rescue Budget

	<u>FY 2016-17</u>	<u>FY 2017-18</u>	<u>%</u>
Personnel	\$ 12,556,565	\$ 12,844,317	89.7%
Operations	1,447,591	1,471,138	10.3%
Capital Equip.	35,500		
Capital Imp.	384,216		





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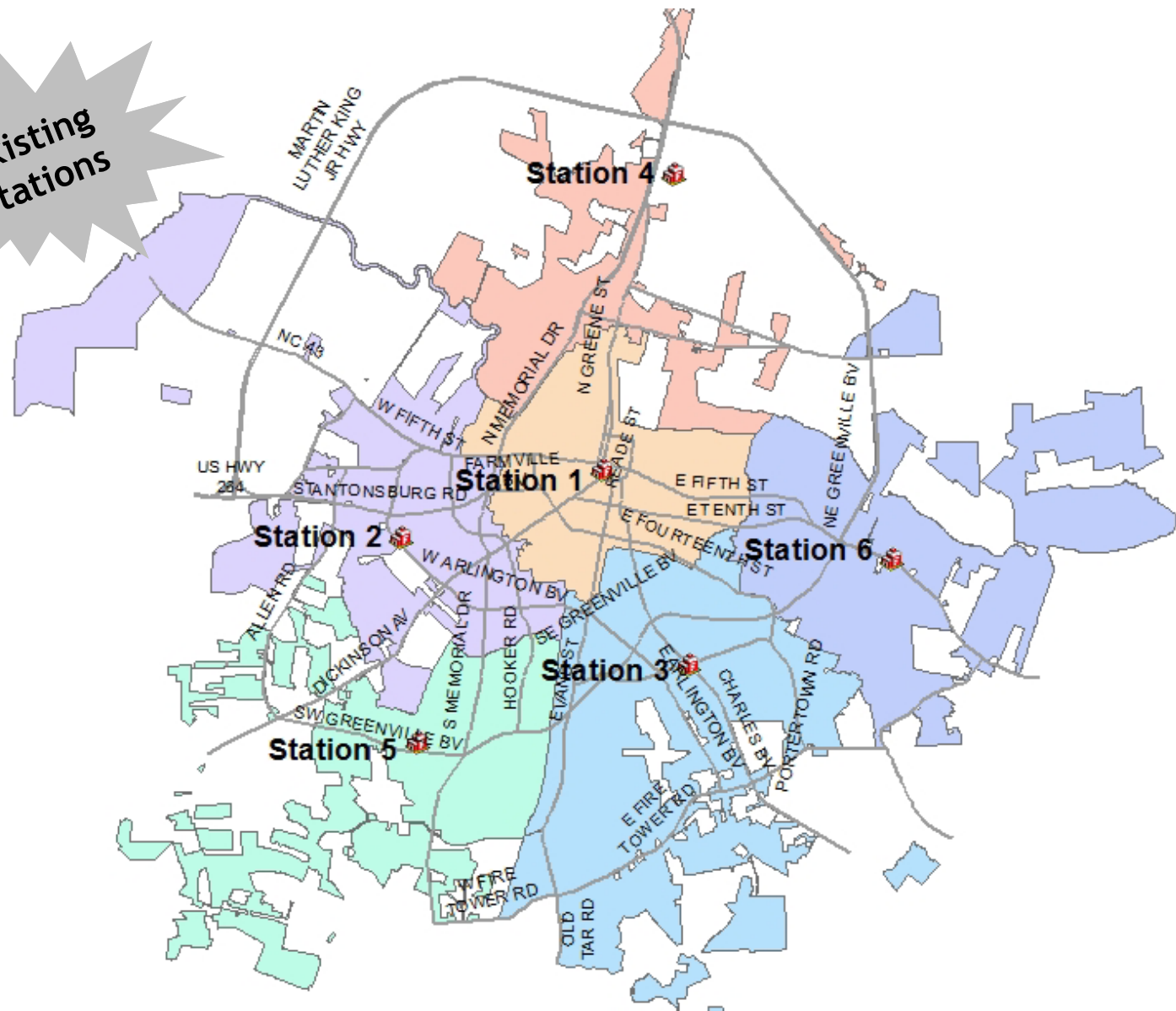
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# Facilities and Resources



Existing Stations



Station 1  
500 S Greene St

Station 2  
2490 Hemby Ln

Station 3  
2400 Charles Blvd

Station 4  
200 Staton Rd

Station 5  
255 Rollins Rd

Station 6  
3375 E 10<sup>th</sup> St



S Greene St.



# Station 1



EMS 1 & 7



ENGINE 1



TOWER 1



RESCUE 1



MEDIC 1





Hemby Ln.



# Station 2



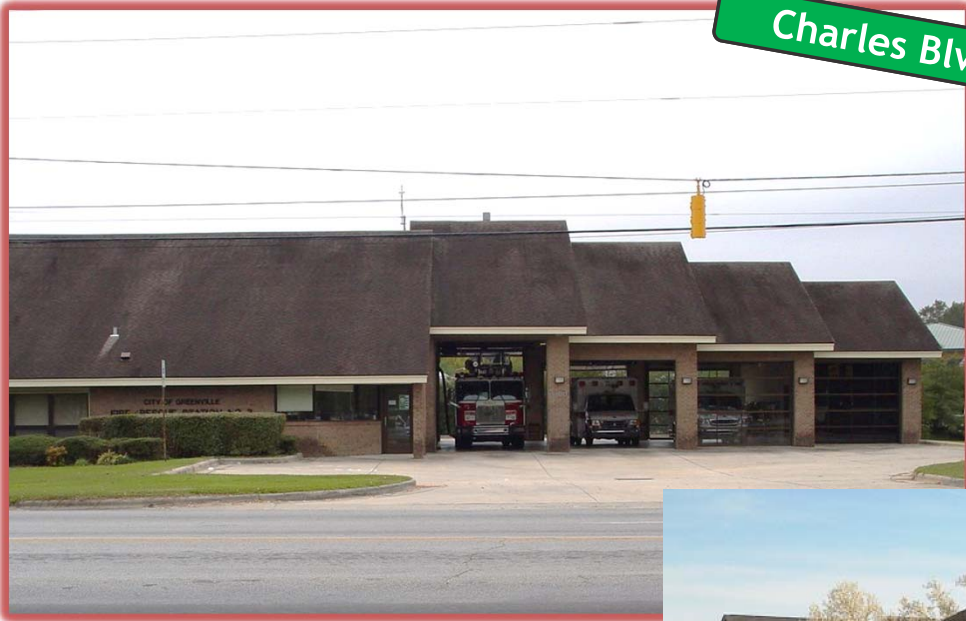
EMS 2 & 8

ENGINE 2





Charles Blvd.



## Station 3



ENGINE 3

EMS 3

SQUAD 1





Staton Rd.



# Station 4



ENGINE 4

EMS 4





Rollins Dr.



Station 5



SQUAD 2



ENGINE 5

EMS 5







E 10<sup>th</sup> St.

## Station 6



ENGINE 6

EMS 6



EMERGENCY  
OPERATIONS  
CENTER



TRAINING  
GROUNDS





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# Standards and Benchmarks



# Standards to Go By

## ▶ NFPA 1710

- ▶ Travel time: **Four minutes or less** for the arrival of the first arriving unit
- ▶ Total response: **Eight minutes or less** for advanced life support unit and/or effective firefighting force

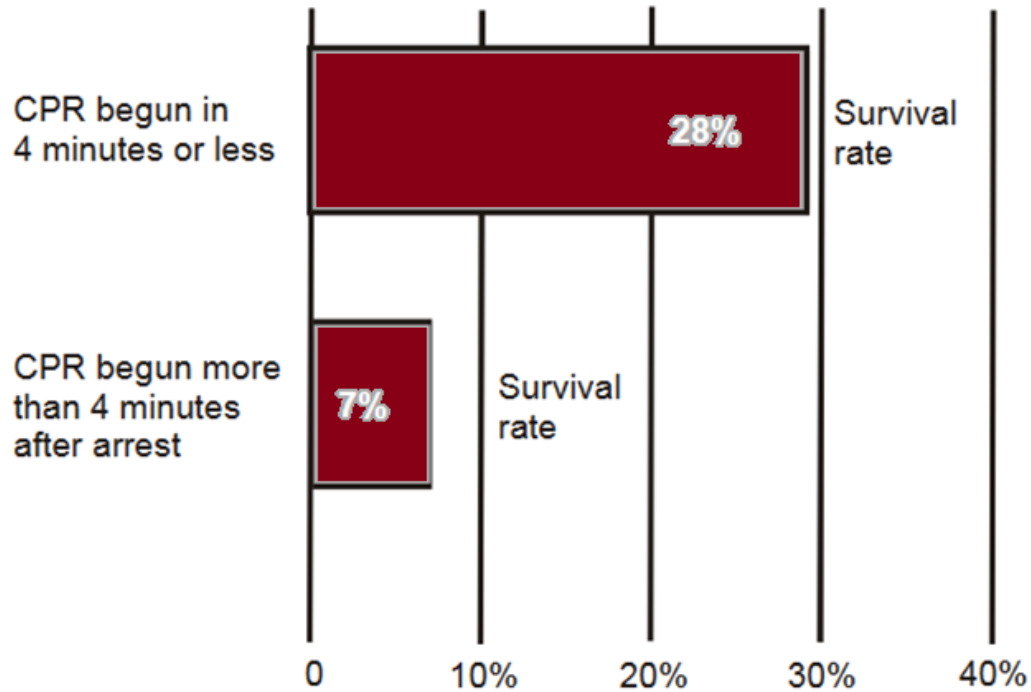
## ▶ North Carolina Rating and Response

## ▶ American Heart Association

## ▶ Insurance Service Organization



# Emergency Medical Response

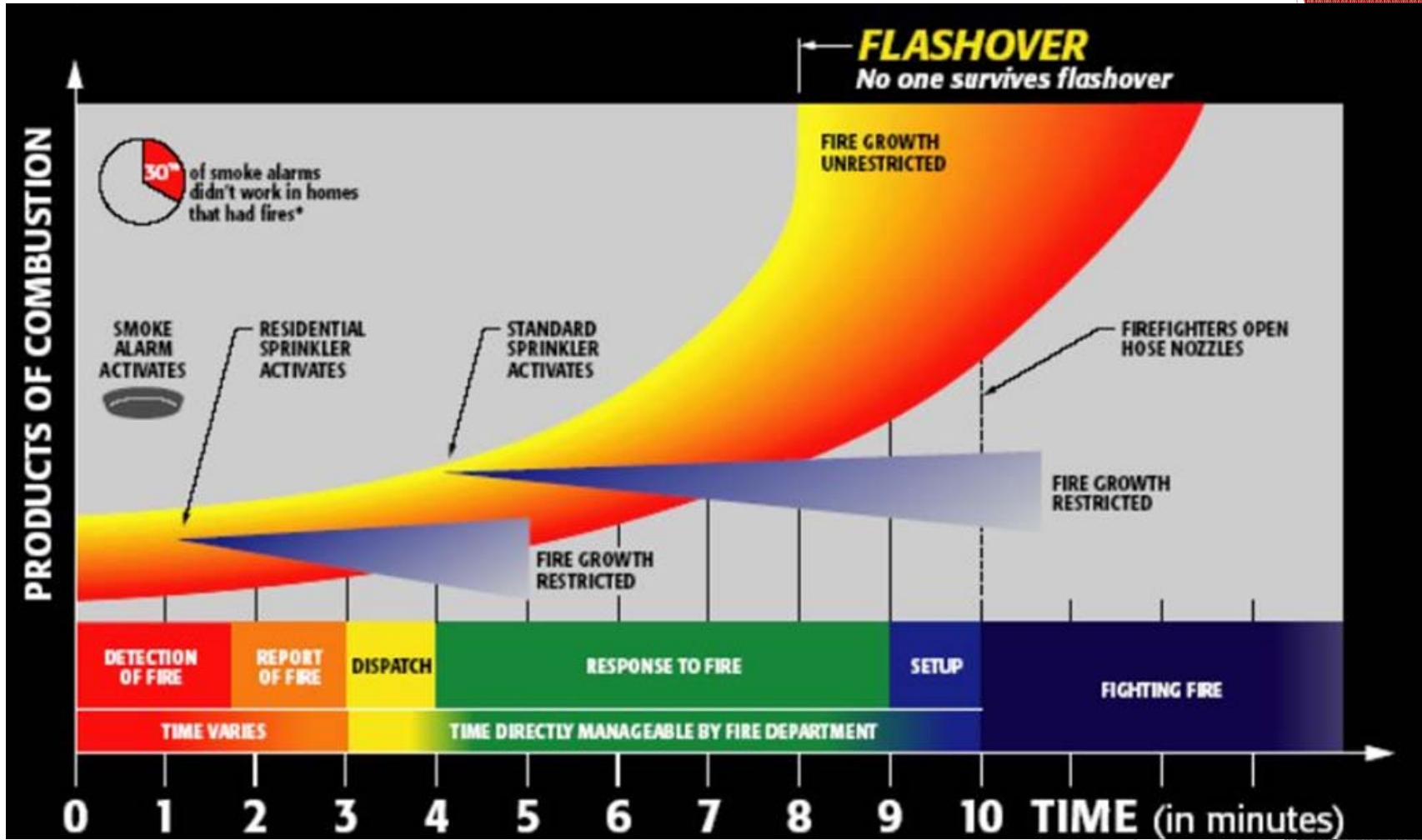


*Survival Rate of Heart Attack Victims When CPR Is Available*

The delivery of emergency medical services (EMS) by first responders is also time critical for many types of injuries and events. If a person has a heart attack and cardiopulmonary resuscitation (CPR) is started within four minutes, the victim's chances of leaving the hospital alive are almost four times greater than if the victim did not receive CPR until after four minutes. Figure 5 shows the survival rate for heart attack victims when CPR is available.







# Effective Firefighting Force

- ▶ 1 - Incident Commander
  - ▶ 1 - Pump operator
  - ▶ 2 - Fire fighters on attack lines
  - ▶ 2 - Fire fighters on backup lines
  - ▶ 1 - Fire fighter for attack line support
  - ▶ 1 - Fire fighter for backup line support
  - ▶ 2 - Fire fighters for search and rescue
  - ▶ 2 - Fire fighters for ventilation
  - ▶ 2 - Fire fighters to serve as IRIC
  - ▶ **14** - Total if aerial device not in operation
- 
- ▶ 1 - Aerial device operator
  - ▶ **15** - Total if aerial device is operational

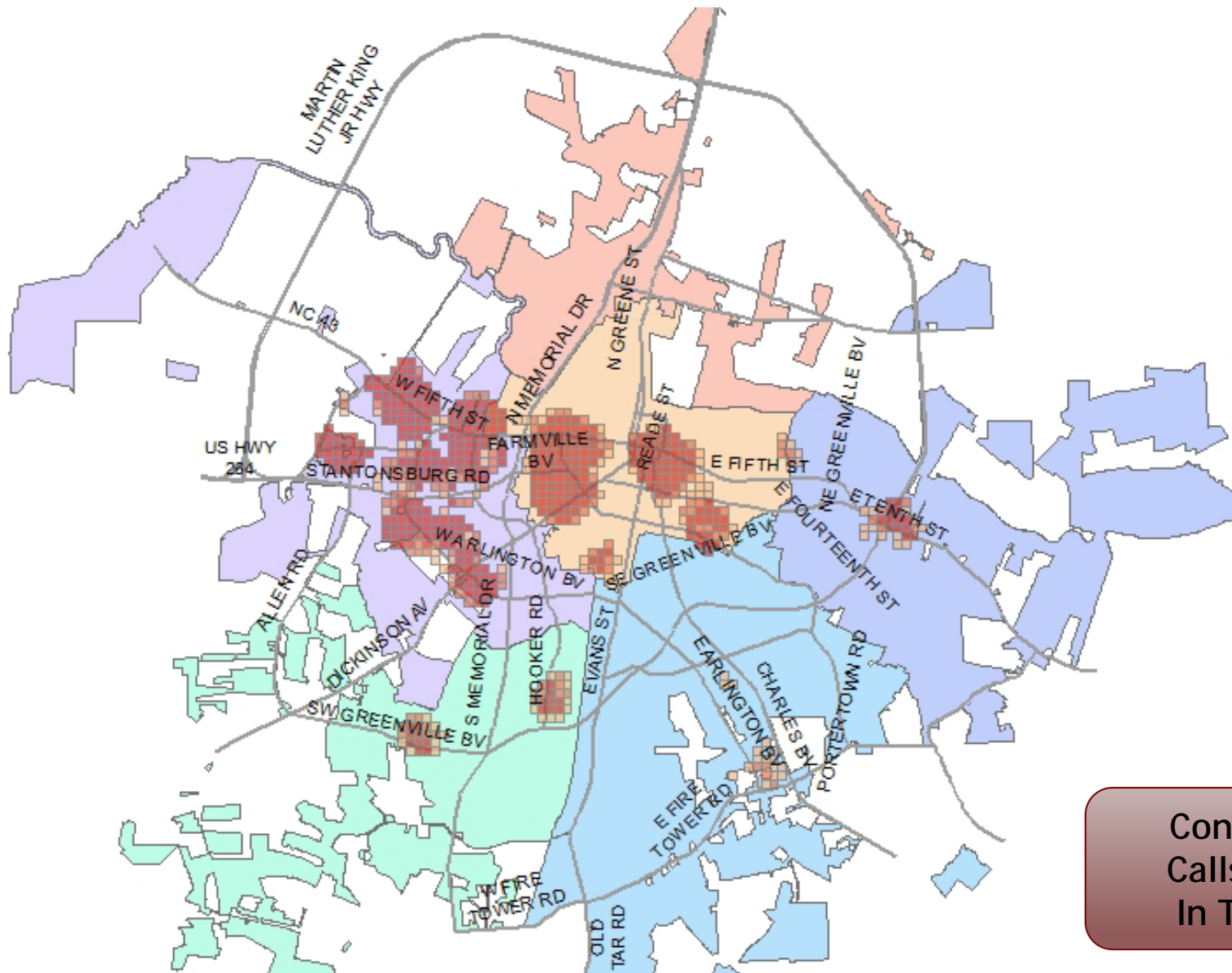




# Risk vs. Response Time Standards

- ▶ The community decides what level of risk they are willing to accept.
- ▶ Some communities may elect to adopt several response time standards for various levels of risk in the community, or they may adopt one single response time standards for all risks.





Concentration of Calls for Services In The Past Year



# Response Data

Response time - call processing, turnout and travel

- ▶ Call processing - call received to dispatch
- ▶ Turnout - dispatch to en route
- ▶ Travel - en route to time on scene

90 <sup>th</sup> Percentile Travel Time to Emergency Calls	
District 1	6 mins, 50 secs
District 2	7 mins, 8 secs
District 3	8 mins, 15 secs
District 4	9 mins, 15 secs
District 5	9 mins, 42 secs
District 6	8 mins, 51 secs
From 11/1/15 - 10/31/16	

90<sup>th</sup> Percentile total response time = 9 mins, 17 secs

\*Chart does not include call processing and turnout time.\*





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# Station Location Analysis



# Station Location Planning

- ▶ Fire department's primary responsibility is to deliver fire and EMS services
- ▶ Crews must respond in a minimal amount of time with sufficient resources to initiate fire, rescue or emergency medical activities



# Station Location Planning

Must take into account the following:

- ▶ Time
  - ▶ Flashover
  - ▶ Emergency medical services





# Methodology: Step 1

## ► Risk Matrix

### ► Based on 9 factors

1. 90<sup>th</sup> percentile travel time for emergency calls
2. Calls per year
3. Calls per day
4. Apparatus unavailability
5. Current commercial land use
6. Commercial growth
7. Single-family residence growth
8. Multi-family residence growth
9. Population density

A **matrix** is used to prioritize the placement of resources and facilities.



## Methodology: Step 2

### ▶ GIS Analysis

#### ▶ Based on 4 types of maps

1. Map to identify service areas for each district
2. Map to identify travel time between stations and locations of emergency calls
3. Map to identify gaps in coverage
4. Map to identify where all calls cluster

**GIS** (Geographic Information System) uses maps to prioritize the placement of resources and facilities.





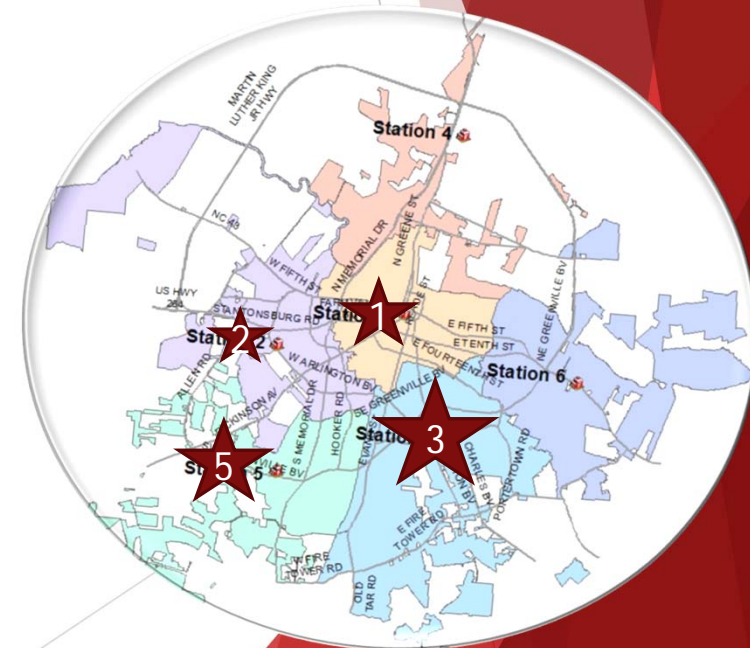
# Recommendations Based on Analysis

## ► Higher Priorities

- Station 3 - largest area in city where no units from any station can reach location within four-minute minimum. Additional station needed in area.
- Station 5 - area currently attracting residential and commercial growth, while responses times are already high. Additional station needed in area.

## ► Lower Priorities

- Station 1 - highest population density in city and second highest call volume. We are currently staffing more units in the district but expect future growth. Situation needs monitoring.
- Station 2 - ranked highest by matrix but recently upped staffing in district to meet need. Situation needs monitoring.





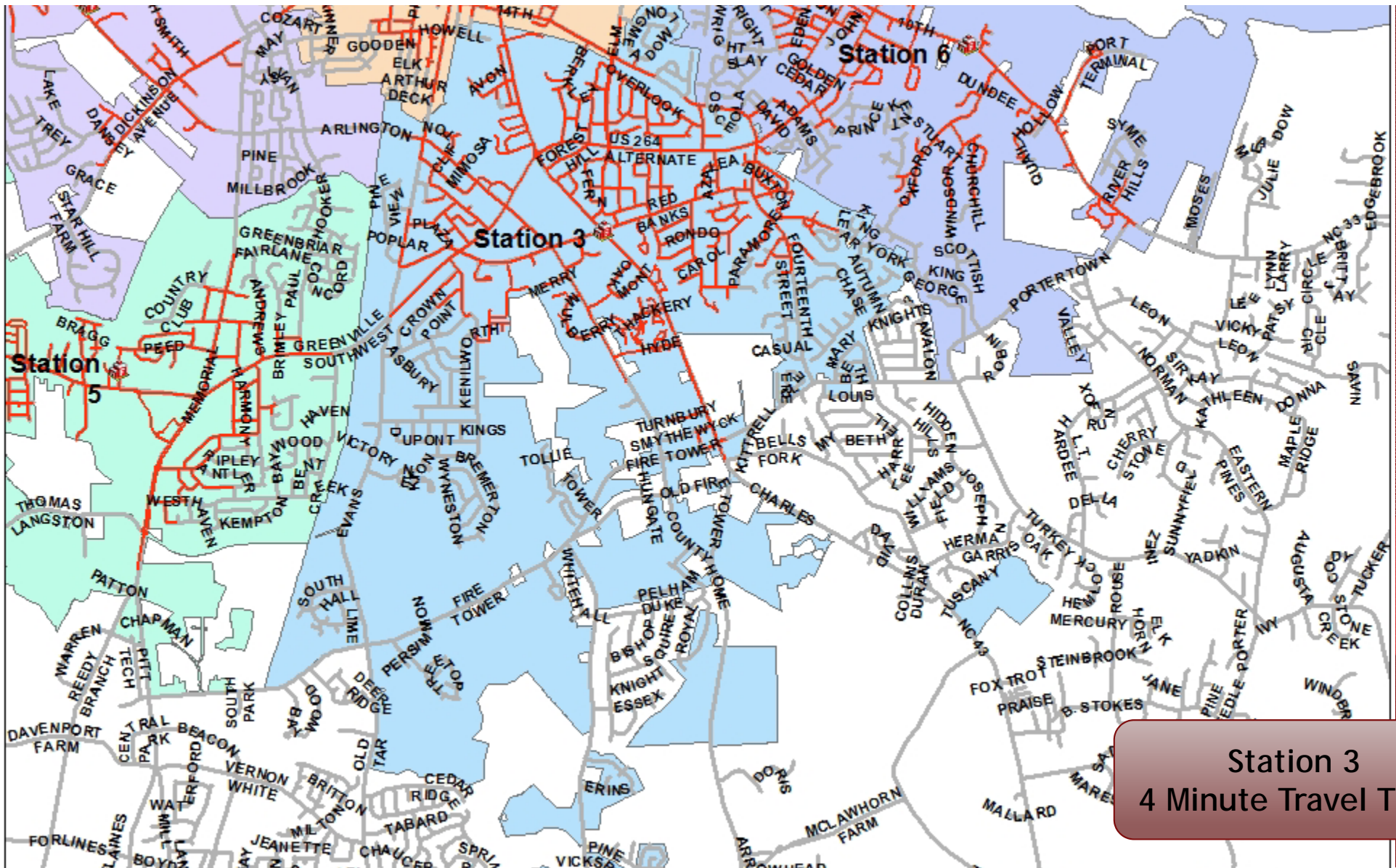
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**Highest Priority**

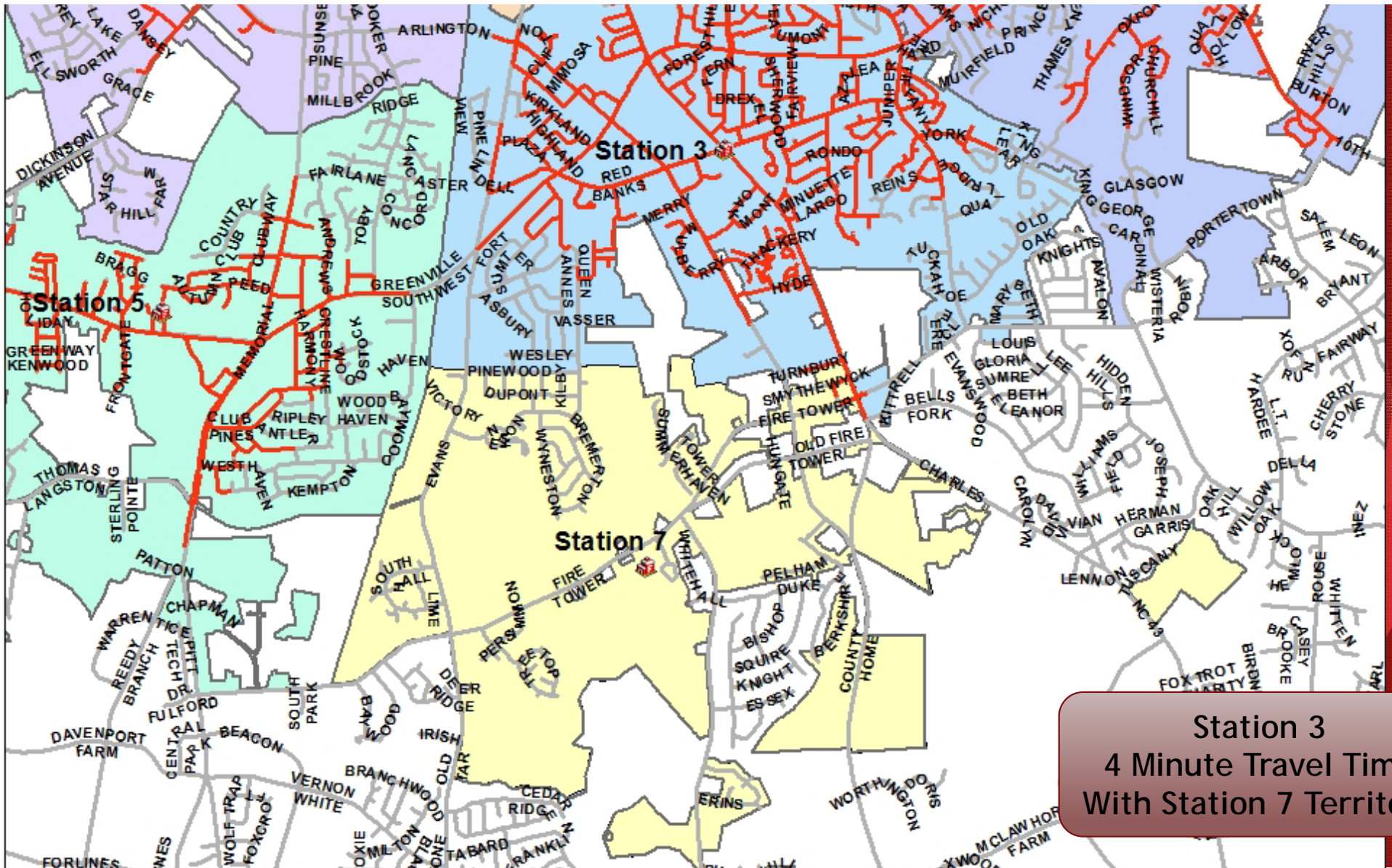






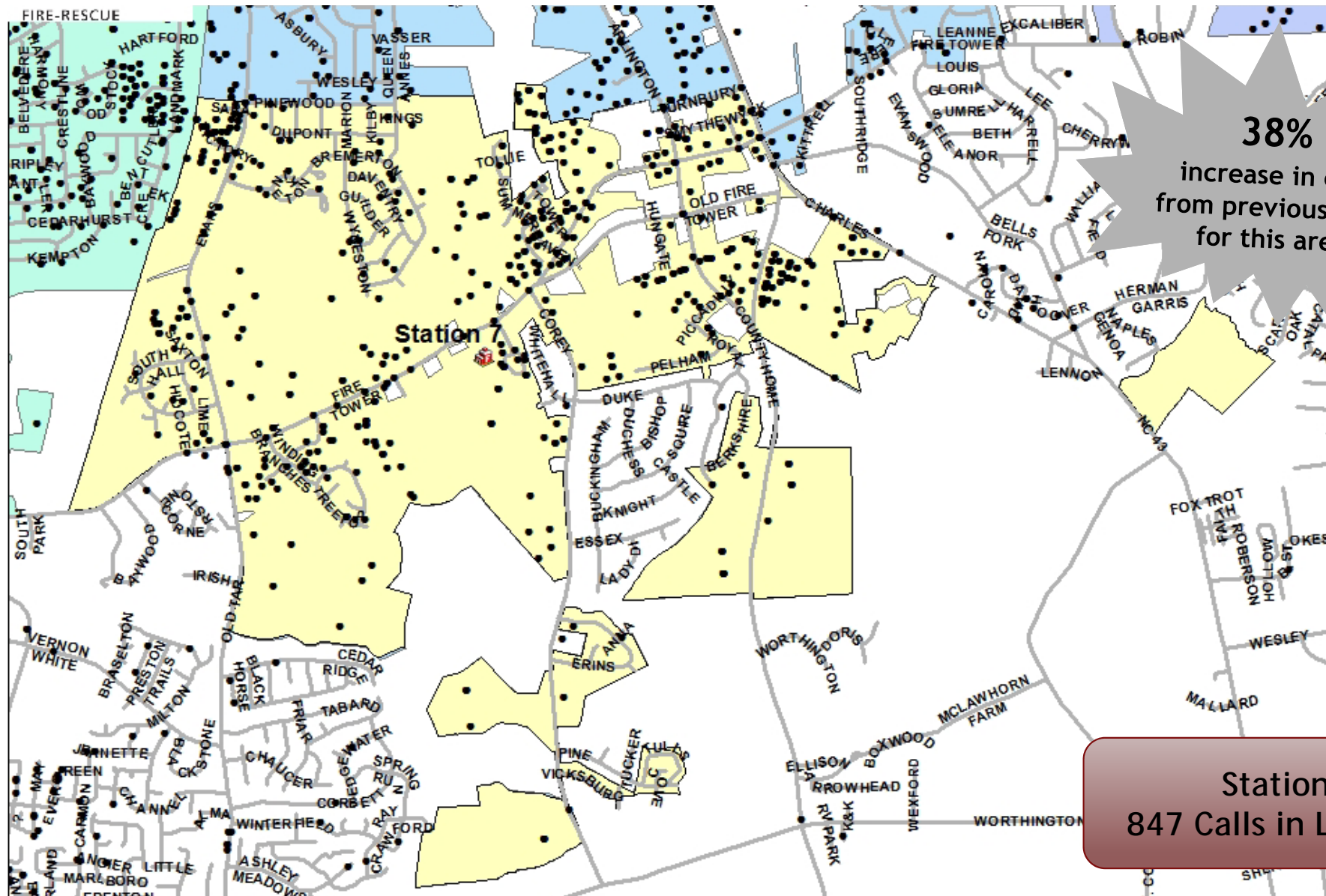
Station 3  
4 Minute Travel Time





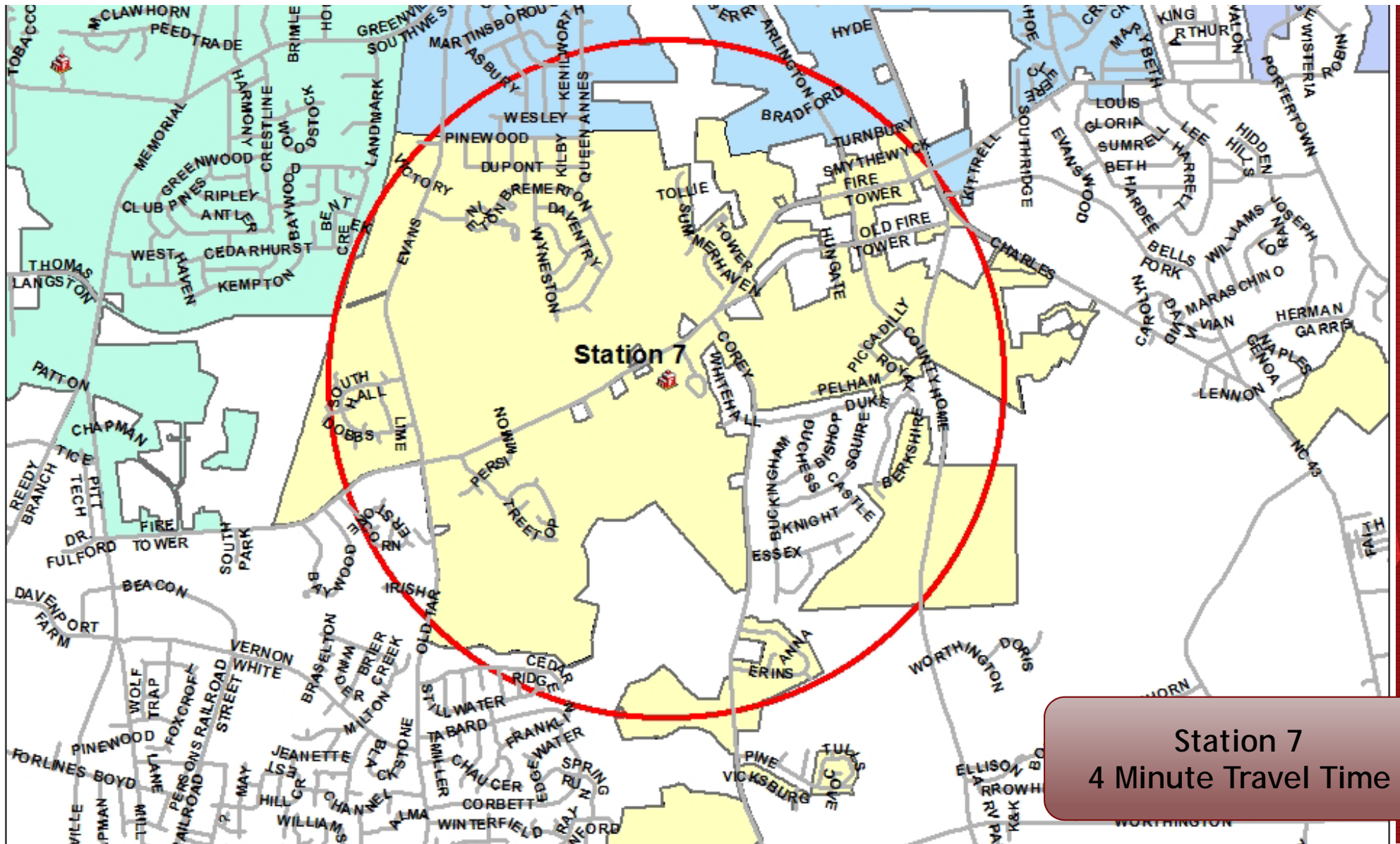
Station 3  
4 Minute Travel Time  
With Station 7 Territory





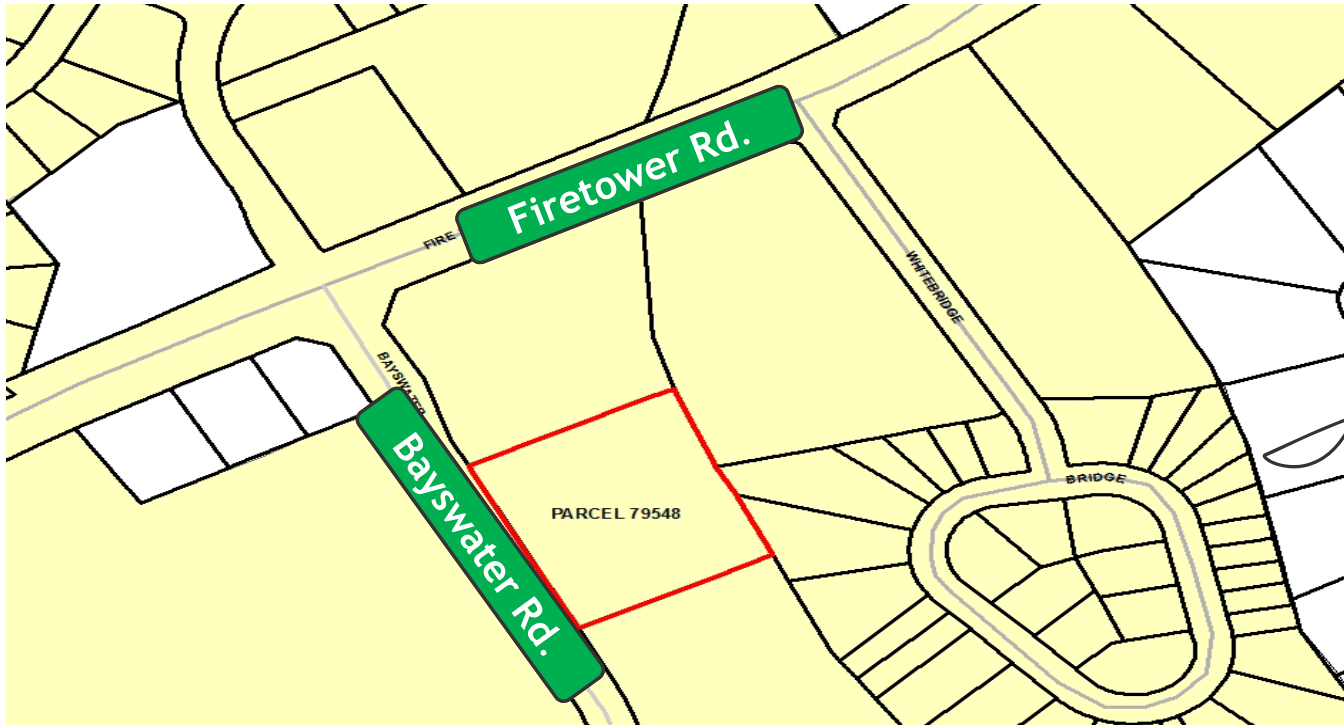
**38%**  
increase in calls  
from previous year  
for this area

**Station 7**  
847 Calls in Last Year



Station 7  
4 Minute Travel Time





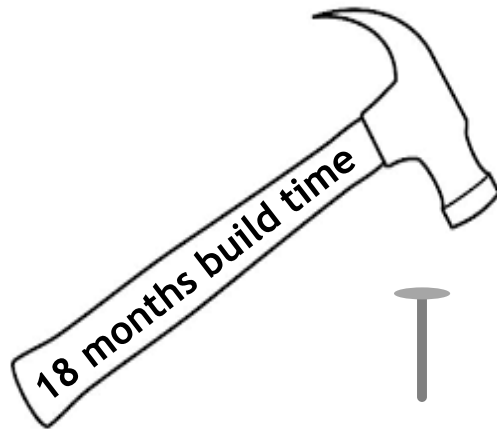
Paid \$440,000  
in October 2009

# Potential Station 7



# Station 7

- ▶ Similar to Station 6 (E 10<sup>th</sup> St)
  - ▶ 8500 square feet
  - ▶ Truck bay will be bigger
    - ▶ 41 by 80 feet
  - ▶ LEED certified



Bayswater Rd.



\$3 million



- ▶ No firm estimates
  - ▶ Estimates given based on recent municipal projects
  - ▶ GTAC project - \$275/sq ft





## Personnel Cost

For a fully-staffed, single-apparatus station, additional personnel will cost approximately \$534,798.



9 additional employees  
X \$59,422 per employee  
for salaries and benefits

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Total: \$534,798

Total Budget  
Implications  
\$3.53 million





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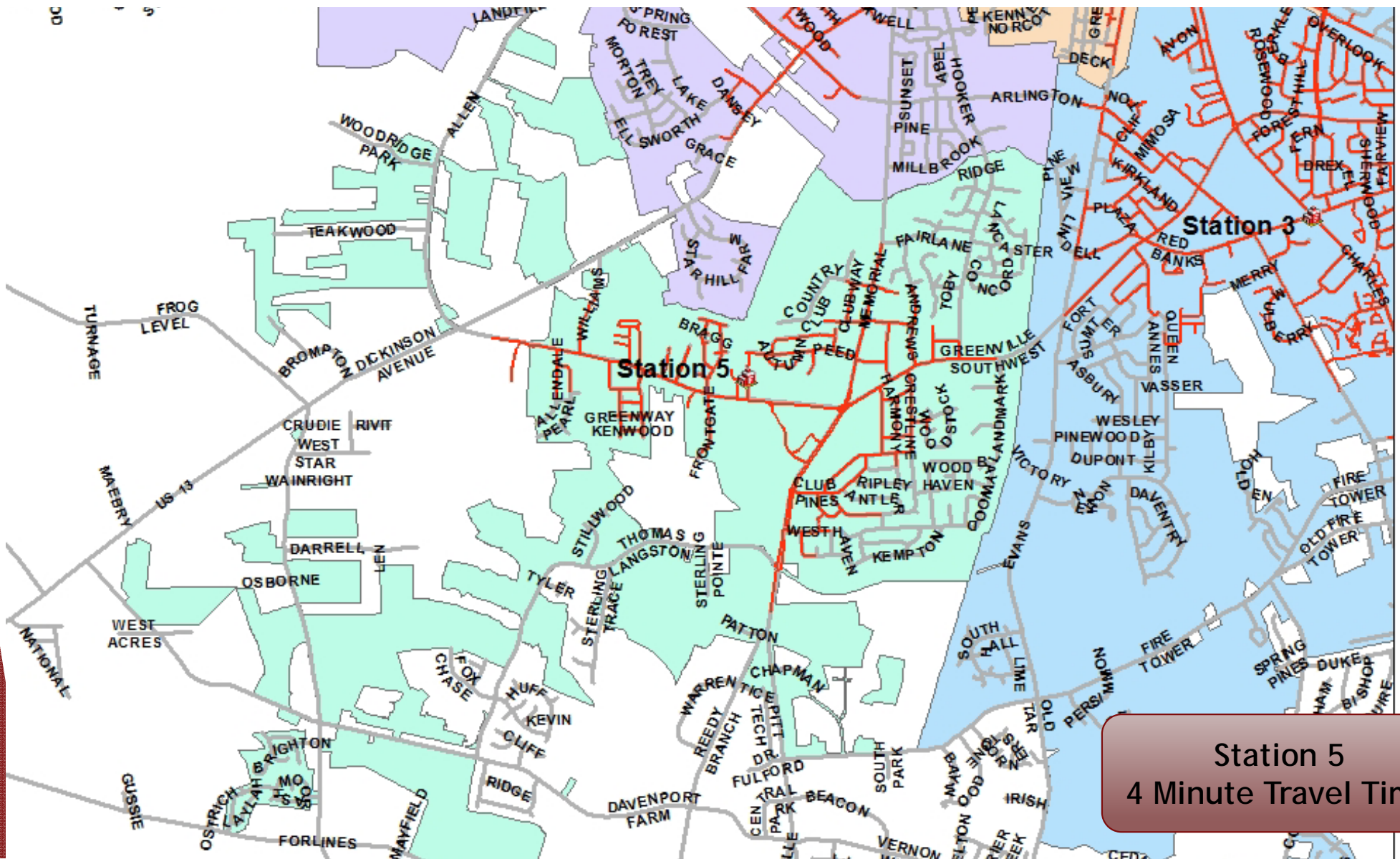
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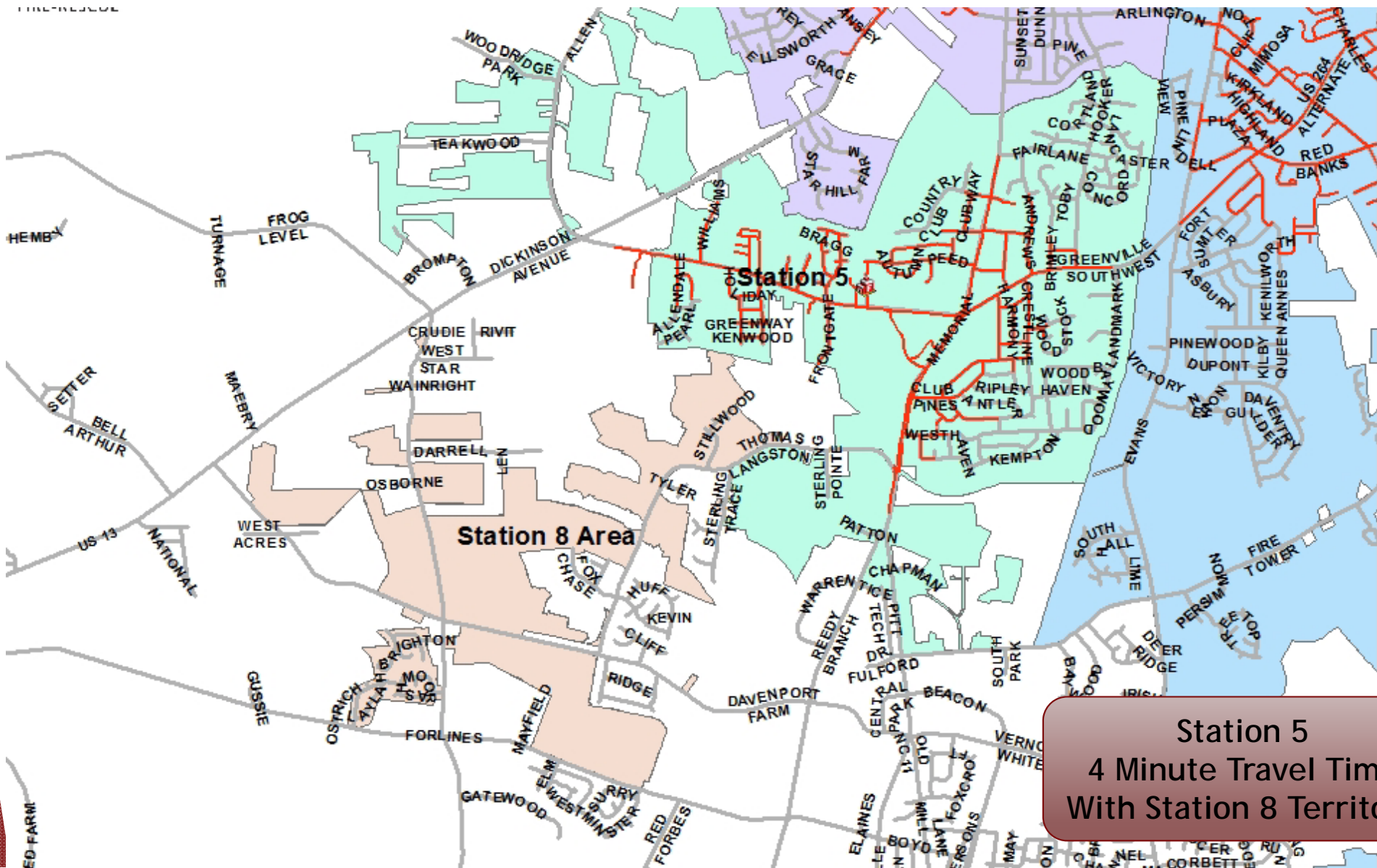
# Potential Station 8





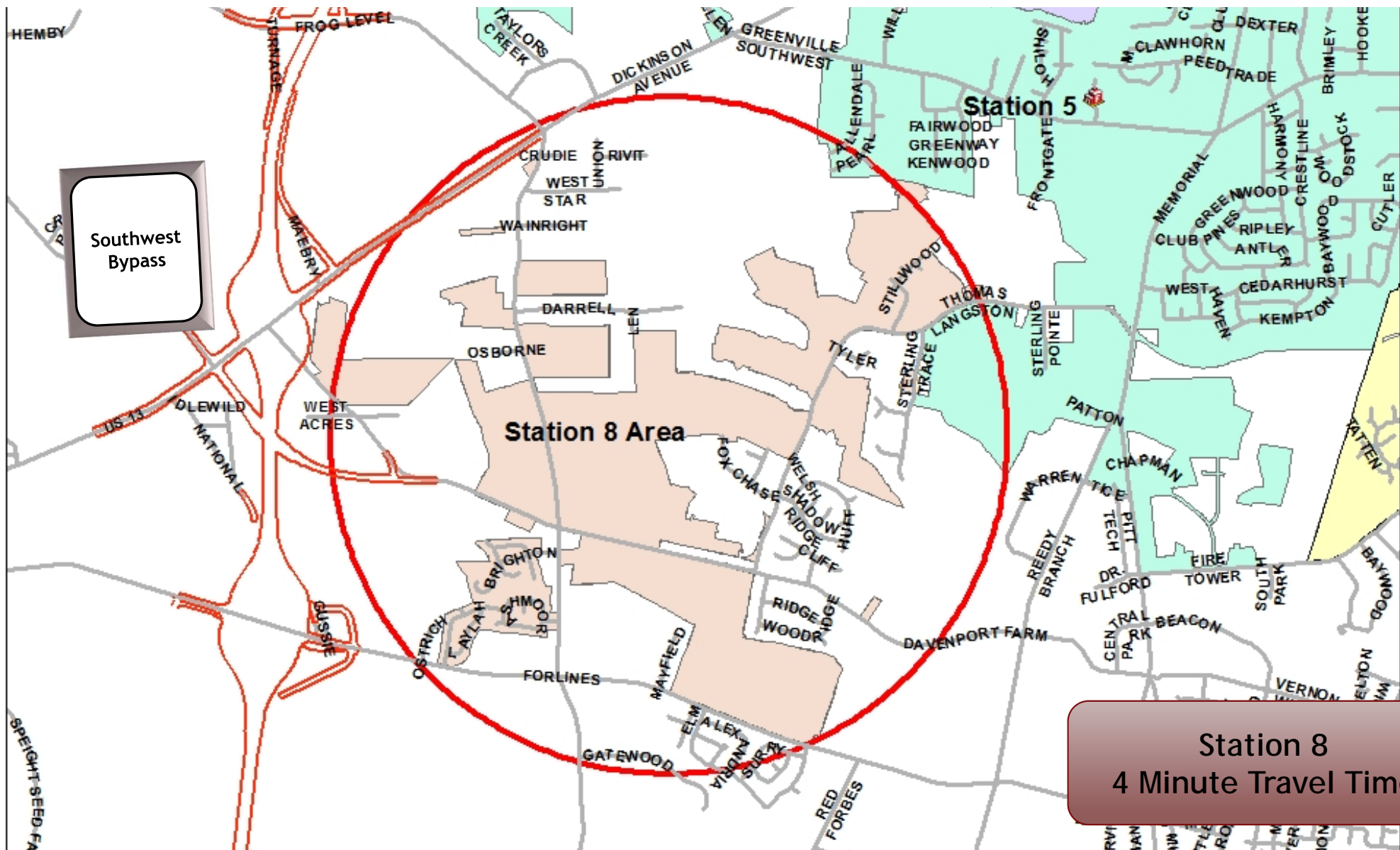


Station 5  
4 Minute Travel Time



Station 5  
 4 Minute Travel Time  
 With Station 8 Territory





Southwest Bypass

Station 5

Station 8 Area

Station 8  
4 Minute Travel Time

# Station 8

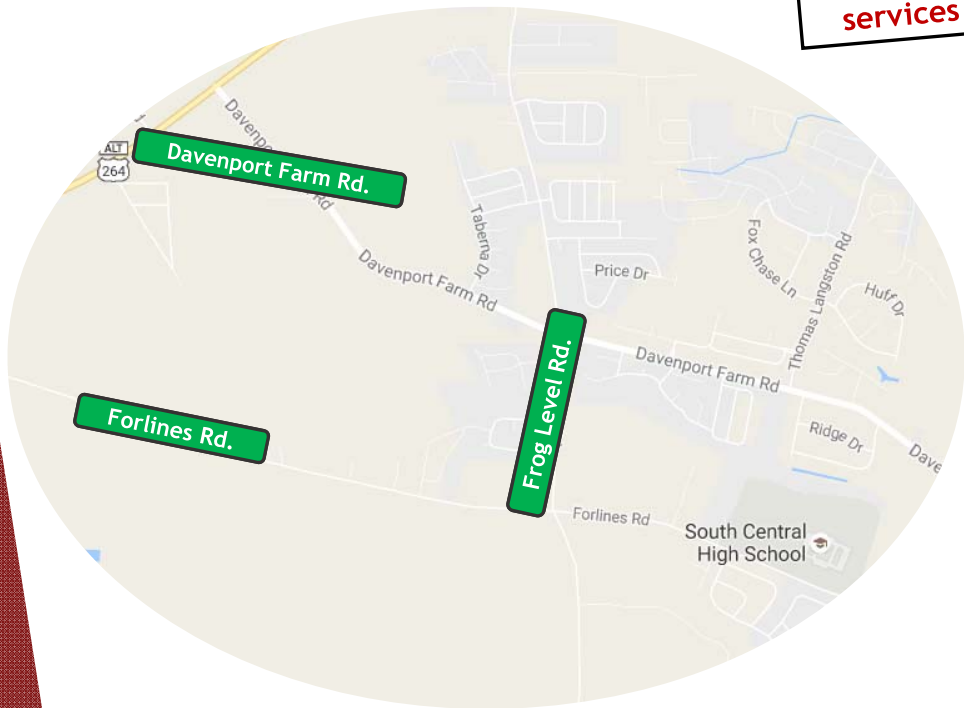
- ▶ Layout same as Station 7
- ▶ Cost similar to Station 7 with inflation adjustment
  - ▶ Approx. 3-5% per year

Require annexation into City Limits

Already have utility services available

Commercial tracts  
10-20 acres  
\$600K - \$800K

Residential parcels  
2-5 acres  
<\$50,000



- ▶ Need to purchase land in the area of Frog Level Rd. near Davenport Farms Rd.
- ▶ City experiencing growth in the area
  - ▶ Bypass to ignite more growth
- ▶ Both commercial and residential land available
- ▶ 1.5 - 2 acres needed
  - ▶ Including station, driveways and parking





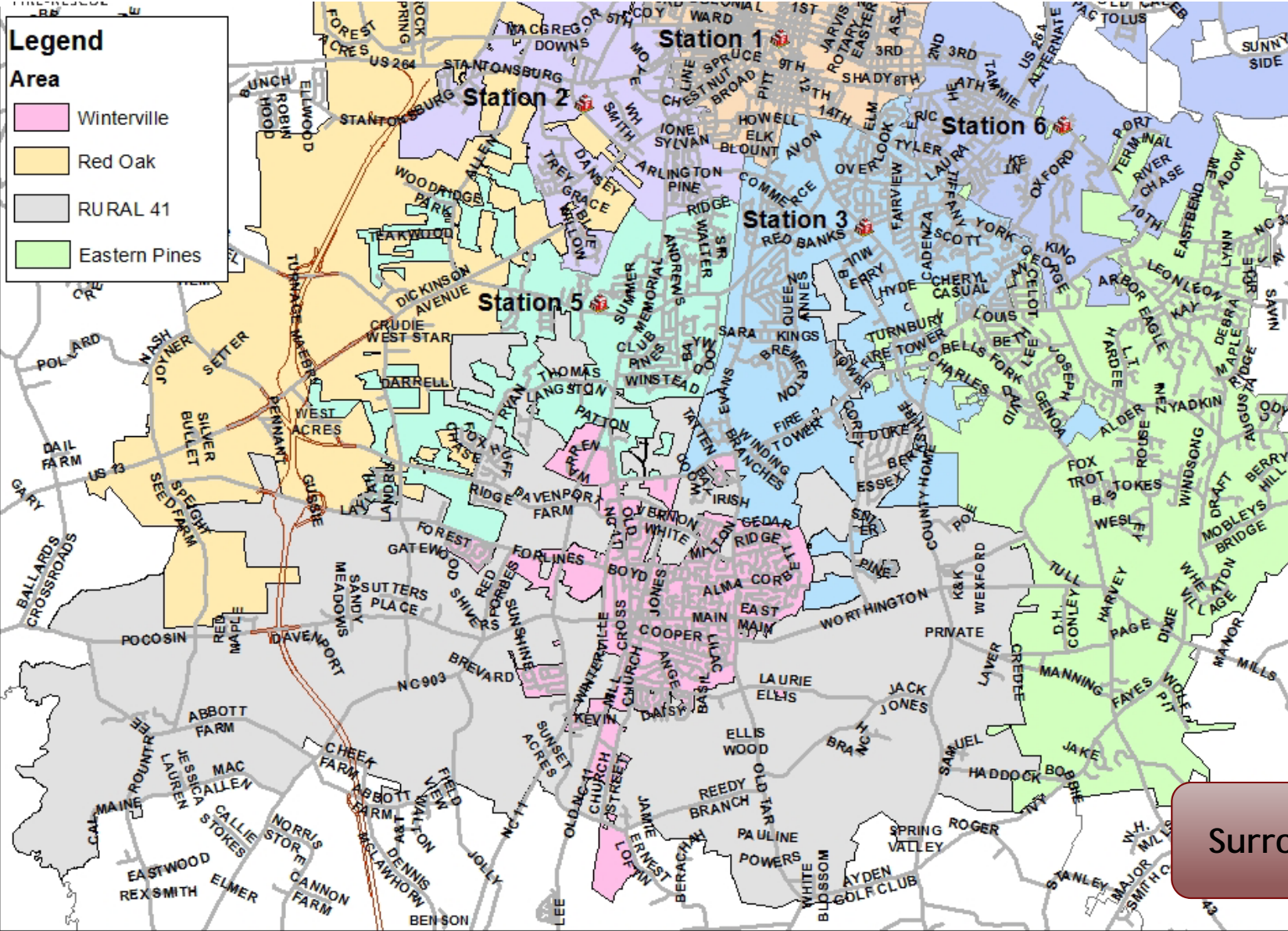
# Red Oak Collaboration



- ▶ Red Oak Volunteer Department covers portions of Pitt County bordering southwest portions of the city limits
- ▶ Current automatic aid agreement in place
- ▶ Potential for future collaborations







**Legend**

**Area**

- Winterville
- Red Oak
- RURAL 41
- Eastern Pines

Surrounding Areas





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**Questions?**



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