



Alexander County

Emergency Medical Services (EMS)
Response Time Analysis



Improving EMS Response Times

Proliferation of Call Responses > 8 Minutes to the Scene

Why 8 minutes?

Although Alexander County is not bound, the

NFPA® 1710

Standard for the Organization and Deployment of Fire
Suppression Operations, Emergency Medical Operations, and
Special Operations to the Public by Career Fire Departments

Provides sound guidelines for emergency response operations

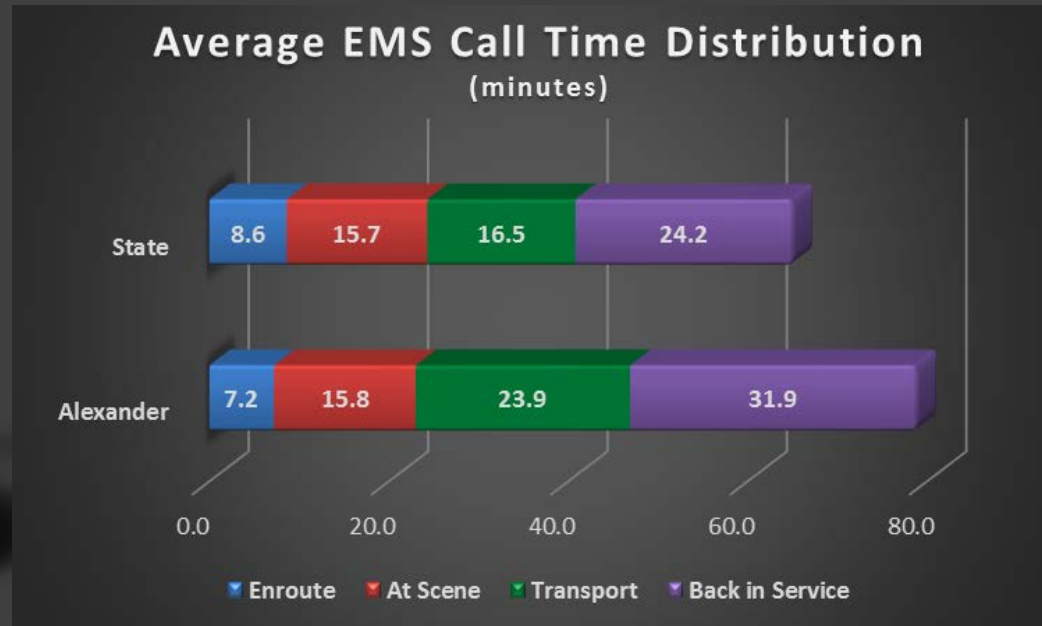
Improving EMS Response Times

Analyzed Call Data from the Past 6 years
(February 2008 through January 2014)

Can't do much about "At Scene" and "Transport" times

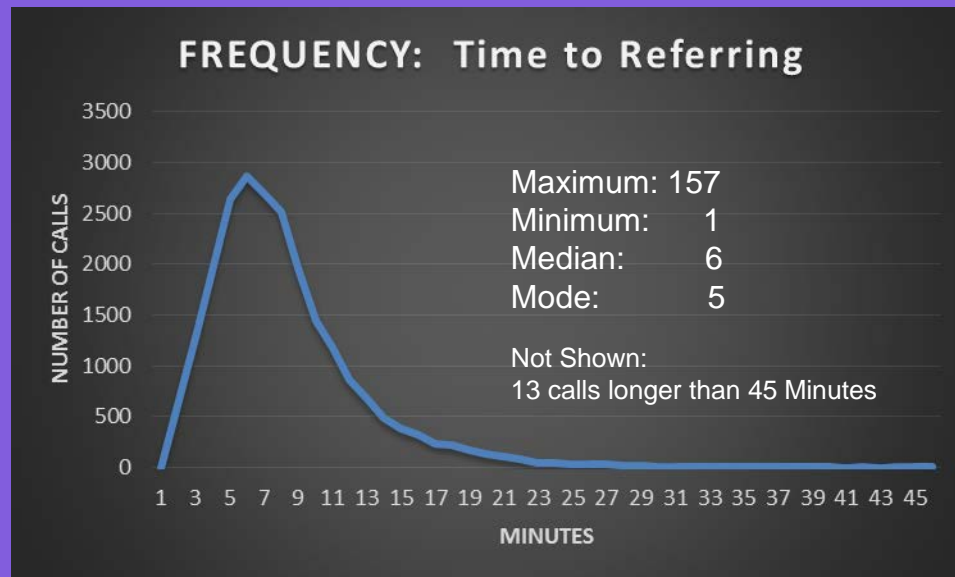
Can improve "En Route" and possibly "Back in Service"

Data is deceiving.
The high number of "minimal response" calls waters down the statistical effects of the "maximum response" call. 5,654 (21%) calls fall outside the < 8 minute standard



Improving EMS Response Times

- Timeframe: February 2008 thru January 2014
- 26,401 Total EMS Calls
- 20,747 (79%) Fall Within the 8-Minute Standard
- **5,654 (21%) Fall Greater than the 8-Minute Standard**
- Average Response Time to Scene: 7.2 Minutes

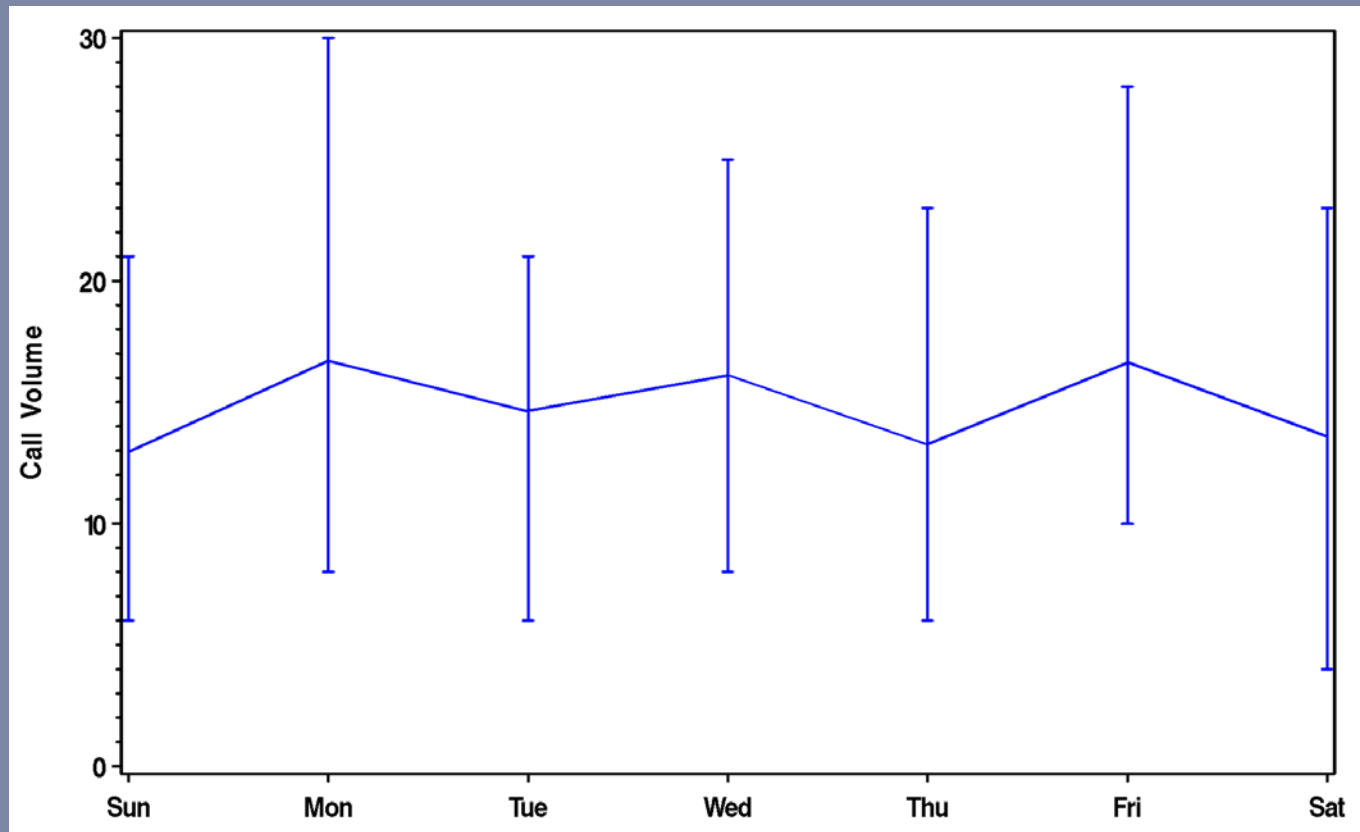


Improving EMS Response Times

- Call volume on certain days does not appear to be an issue

Source:
2013 EMS System
Response Toolkit

EMS Calls by Day of the Week
Sample :1/1/2013 thru 12/31/2013

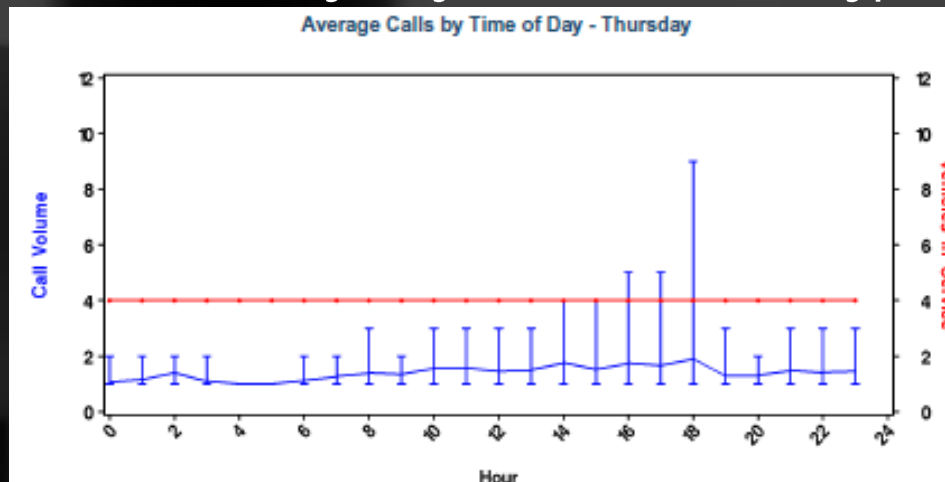


Vertical Bars Reflect Min and Max Call Volume

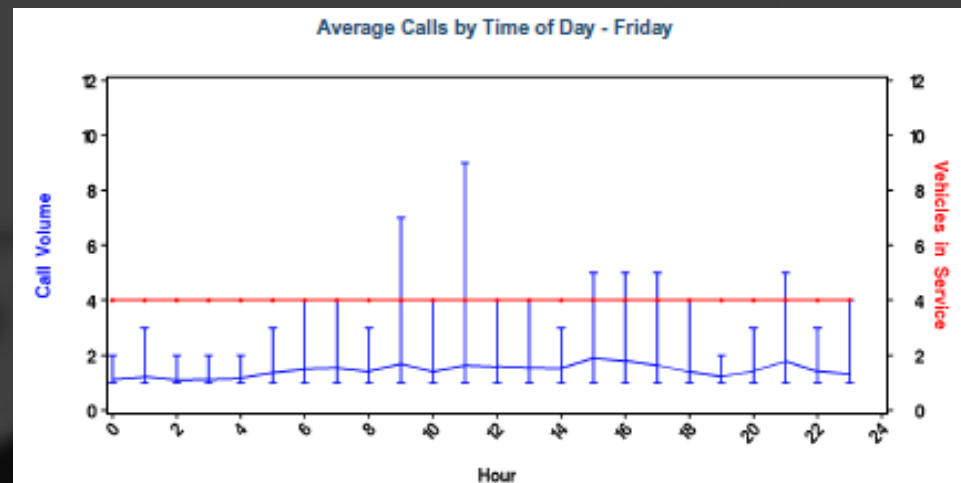
Improving EMS Response Times

- Call volume during certain hours does not appear to be an issue

EMS Calls by Day of the Week - Typical Days for 2013



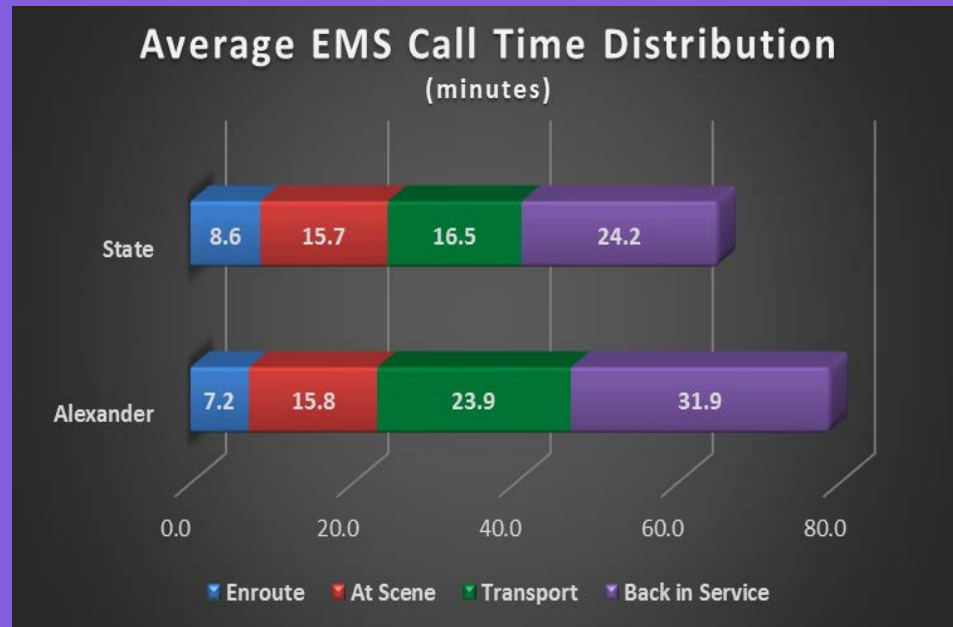
Vertical Bars
Represent Call Volume



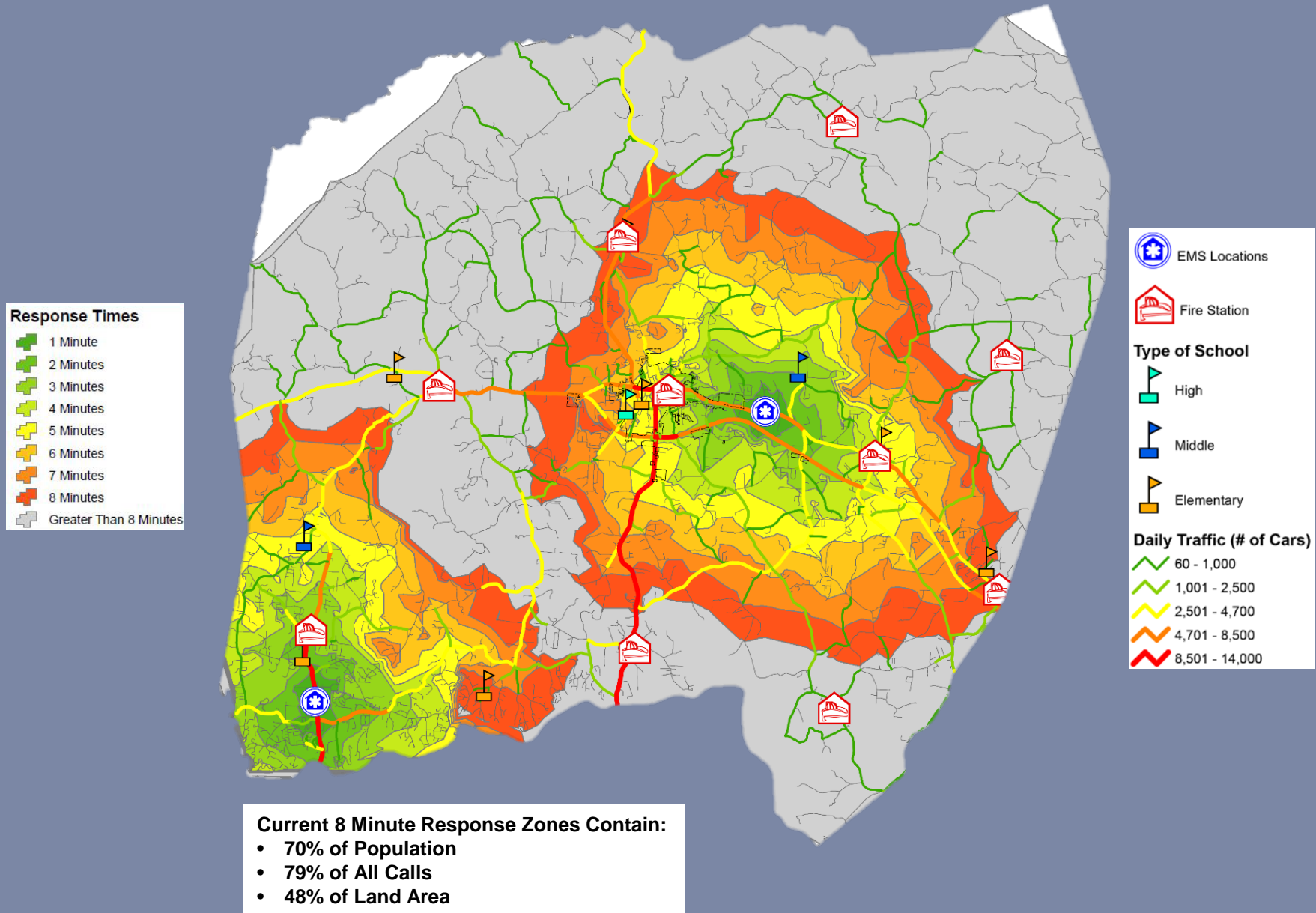
Source:
2013 EMS System
Response Toolkit

Analysis – Data Resources

- EMSCharts.com
 - Analyzed Call Data from the Past 6 years (Feb. 2008 – Jan. 2014)
- Alexander County
 - Centerlines
 - School Locations
 - Station Locations
 - County / Municipal Boundaries
- US Census 2010
 - Population Statistics
- NC DOT
 - Traffic Counts

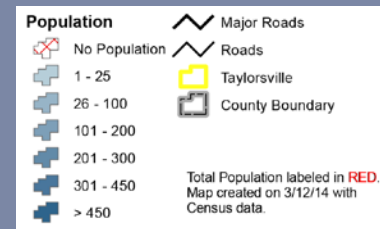


Analysis – Current Conditions



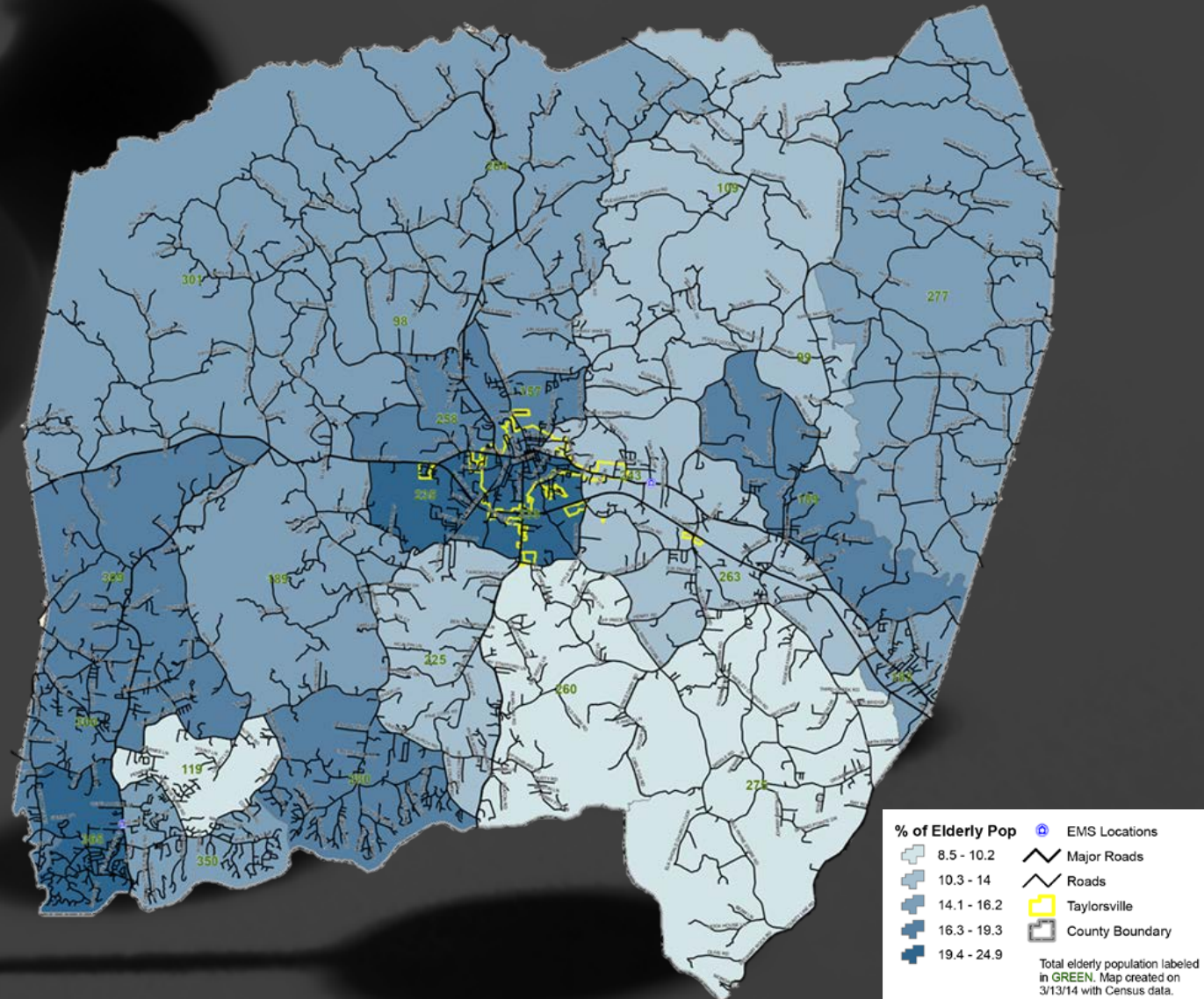
Variables:

- POPULATION CONCENTRATIONS
- POPULATION PROJECTIONS



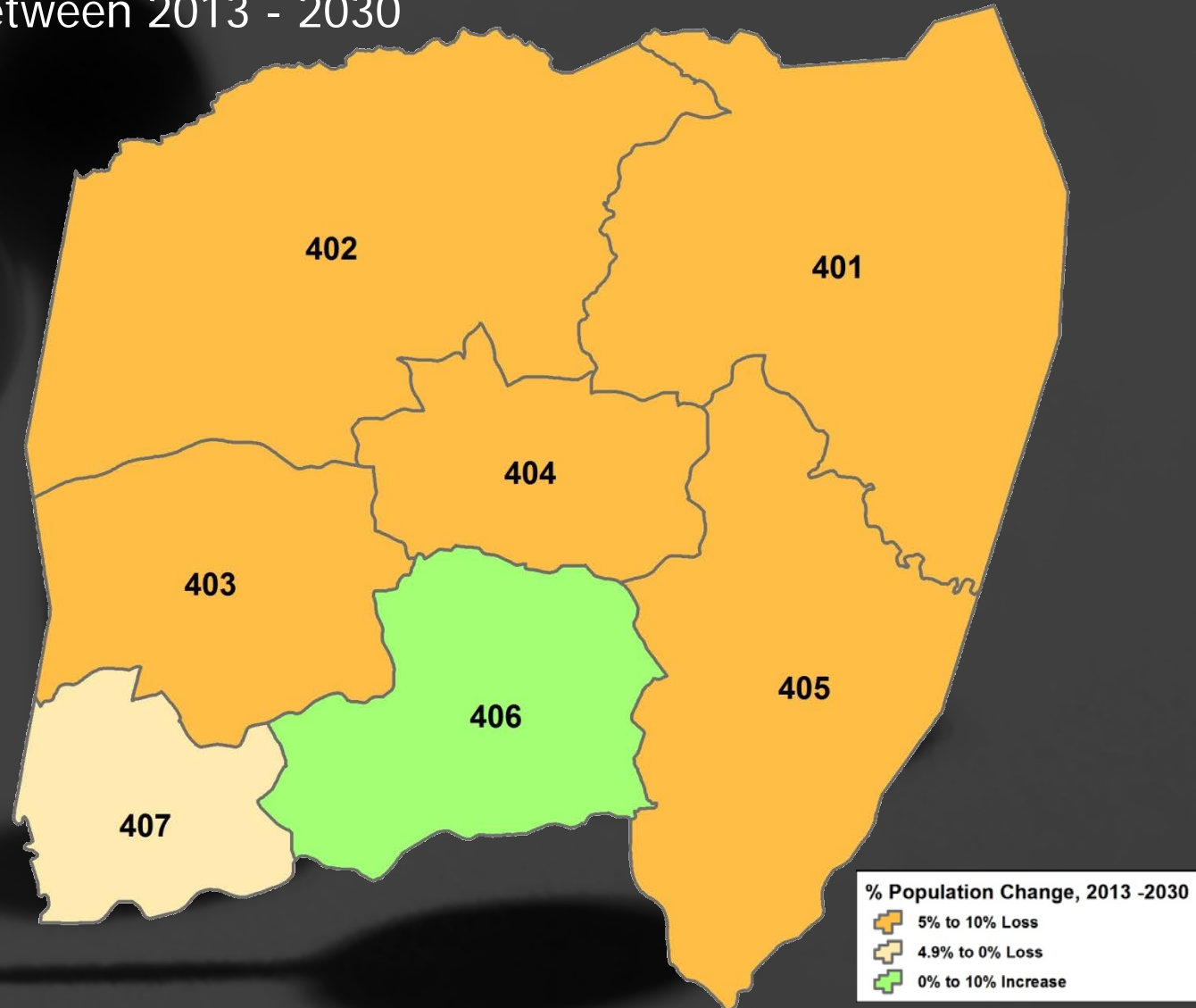
Analysis – Current Conditions

- Elderly Population Concentrations by Census Block Groups



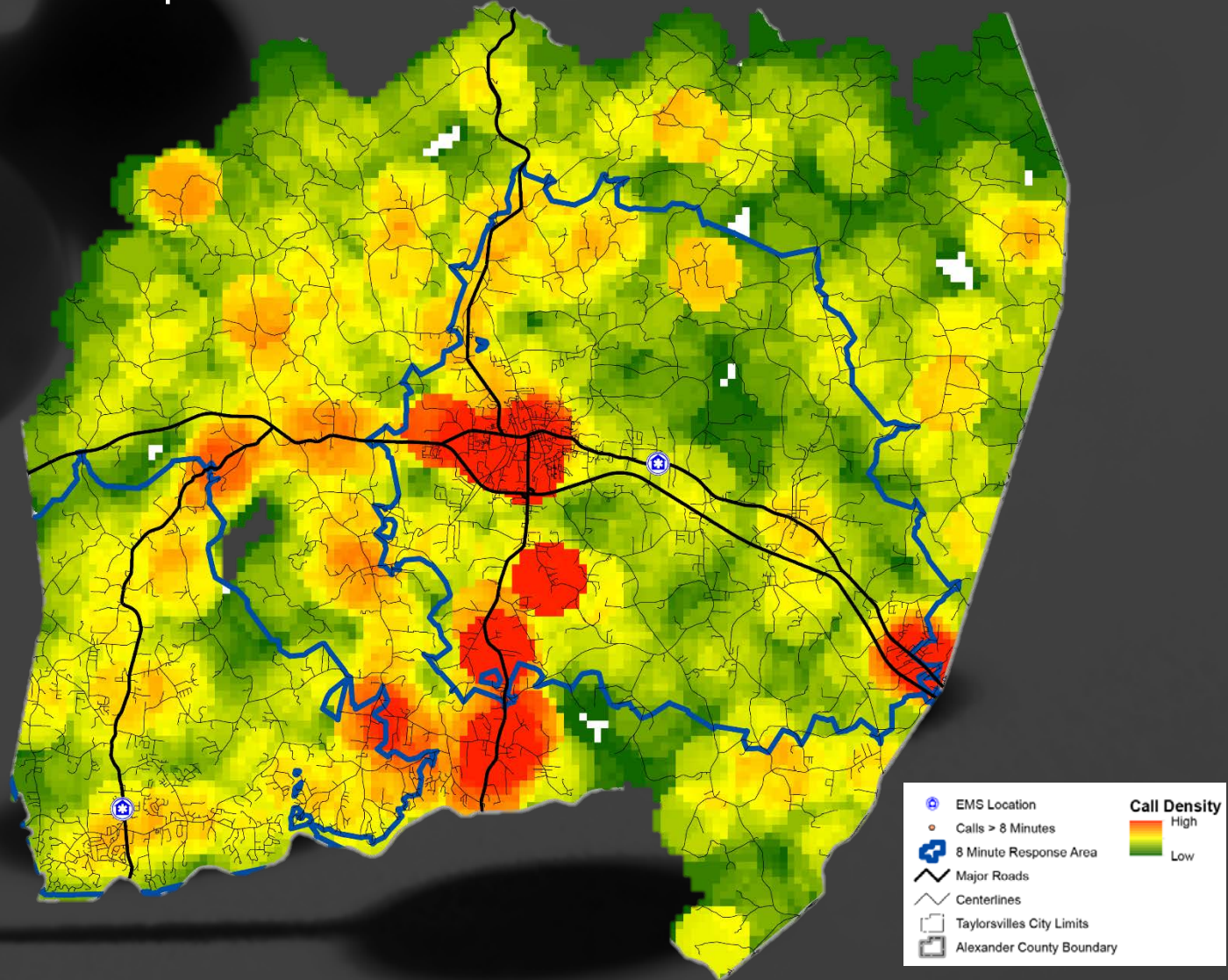
Analysis – Population Projection

- Percent Population Change by US Census Tract between 2013 - 2030



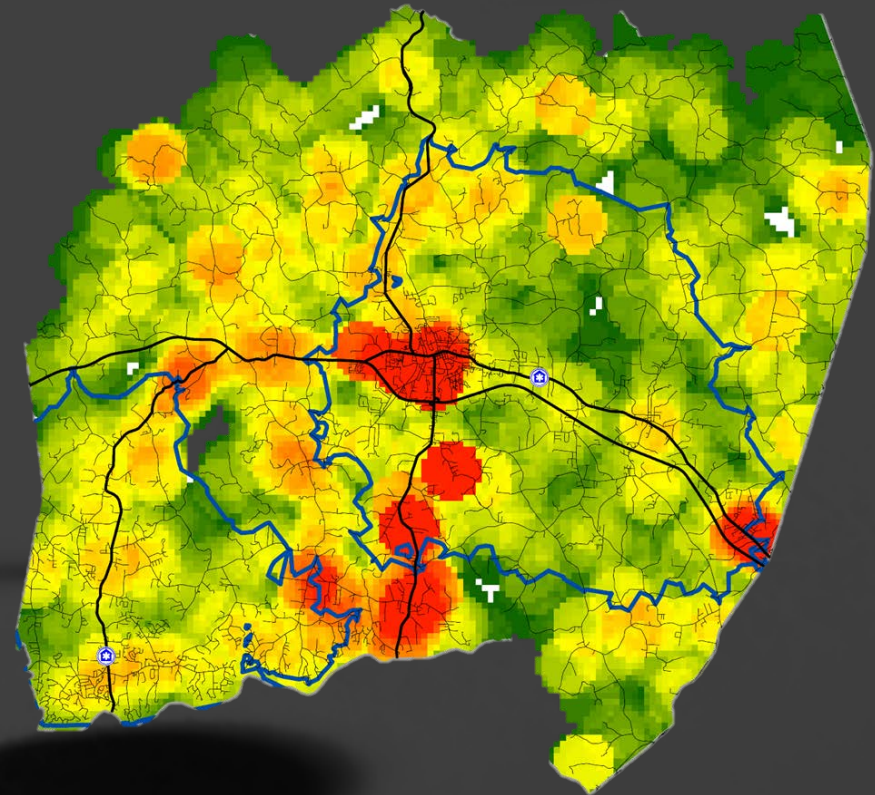
Analysis – Current Conditions

- Where are the current base stations/crews and where are the problem areas?



Analysis – Current Conditions

- Red areas show concentrations of calls with response times greater than 8 minutes
- Several of those concentrations are within areas that EMS crews could respond within 8 minutes
- Analysis indicates some of those concentrations are due to call volume (primary unit on another call)
- Two concentration areas with calls > 8 minutes are in south central portion of county (Hwy 16 S)

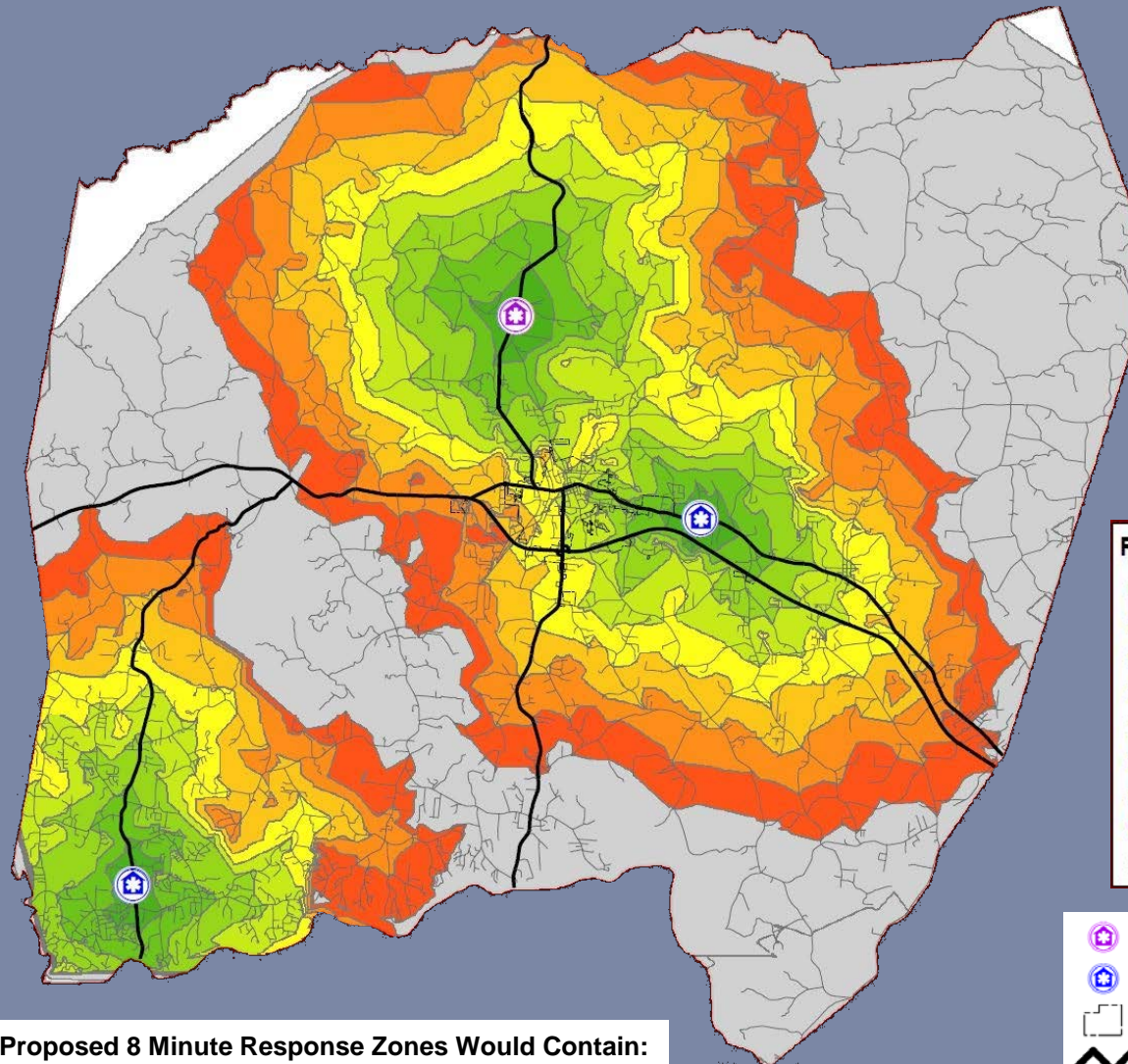


Analysis – Current Conditions

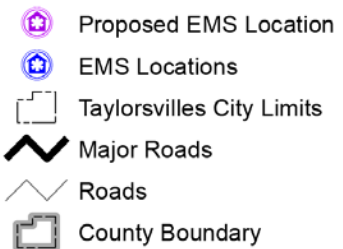
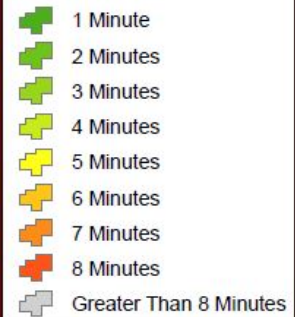
- 52% of calls with greater than 8 minute response time were within the primary response area of an existing EMS base
- 48% of calls with greater than 8 minute response time beyond the normal distance that an EMS crew could travel within 8 minutes
- Data suggests an additional unit and EMS station is justified
- WPCOG considered several locations to place a 4th EMS crew to most improve response times

Potential North Station

NC 16 HWY N and Little River Church Rd



Response Times

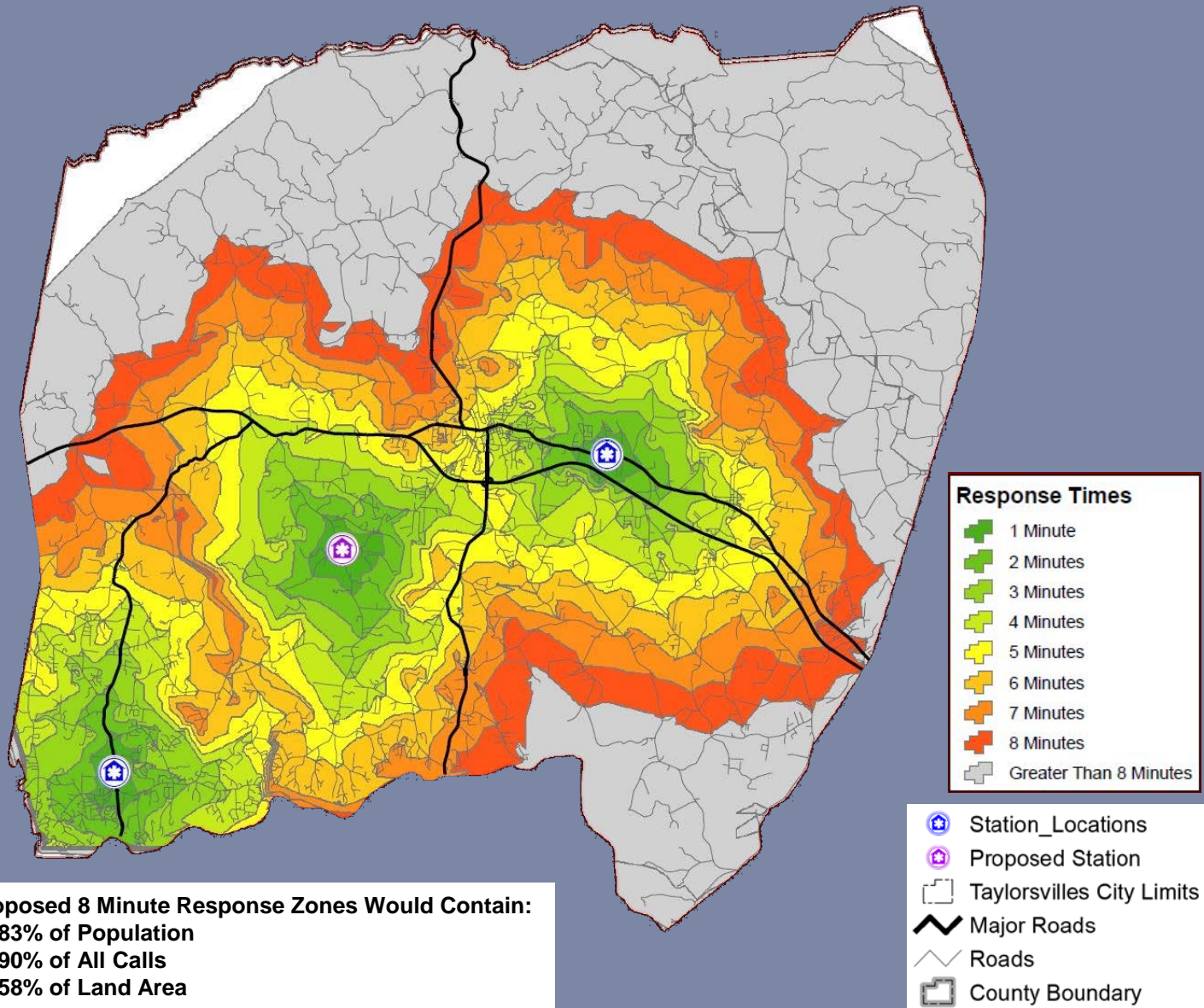


Proposed 8 Minute Response Zones Would Contain:

- 78% of Population
- 83% of All Calls
- 62% of Land Area

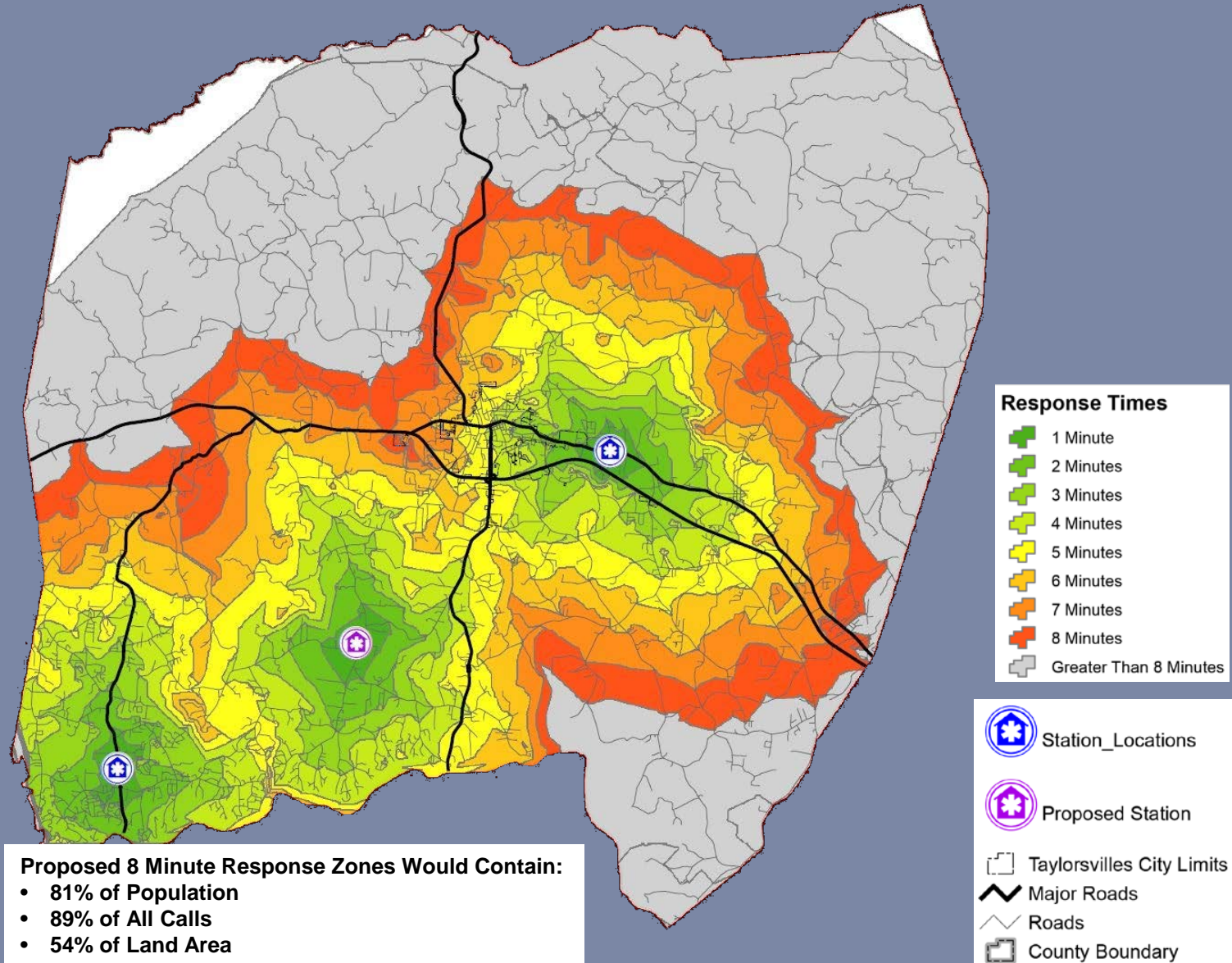
Potential Southwest Station

Southwest Part of the County located at Church Rd and Liledoun Rd



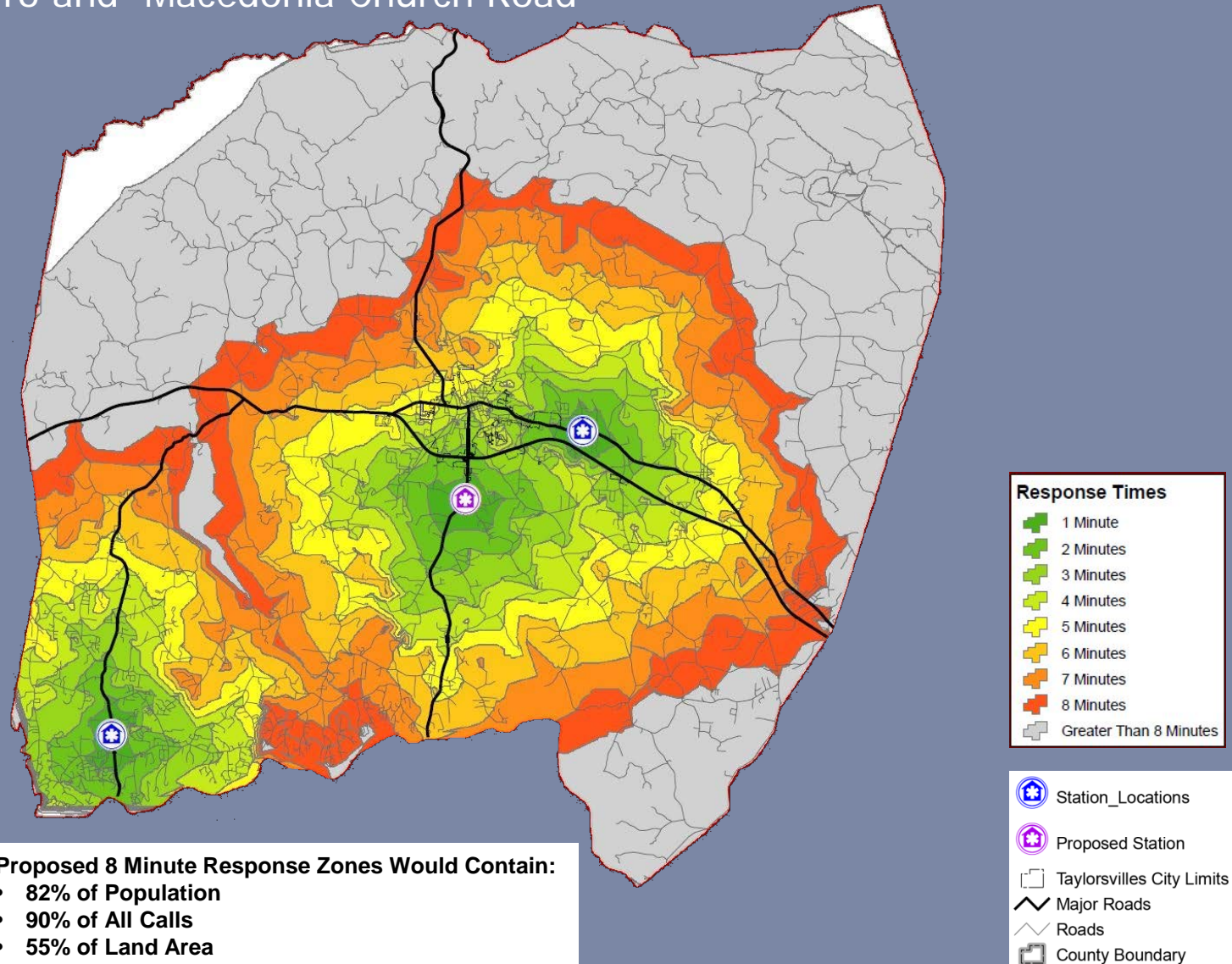
Potential Southwest Station

Southwest Part of County Located at Church and Teague Town Road



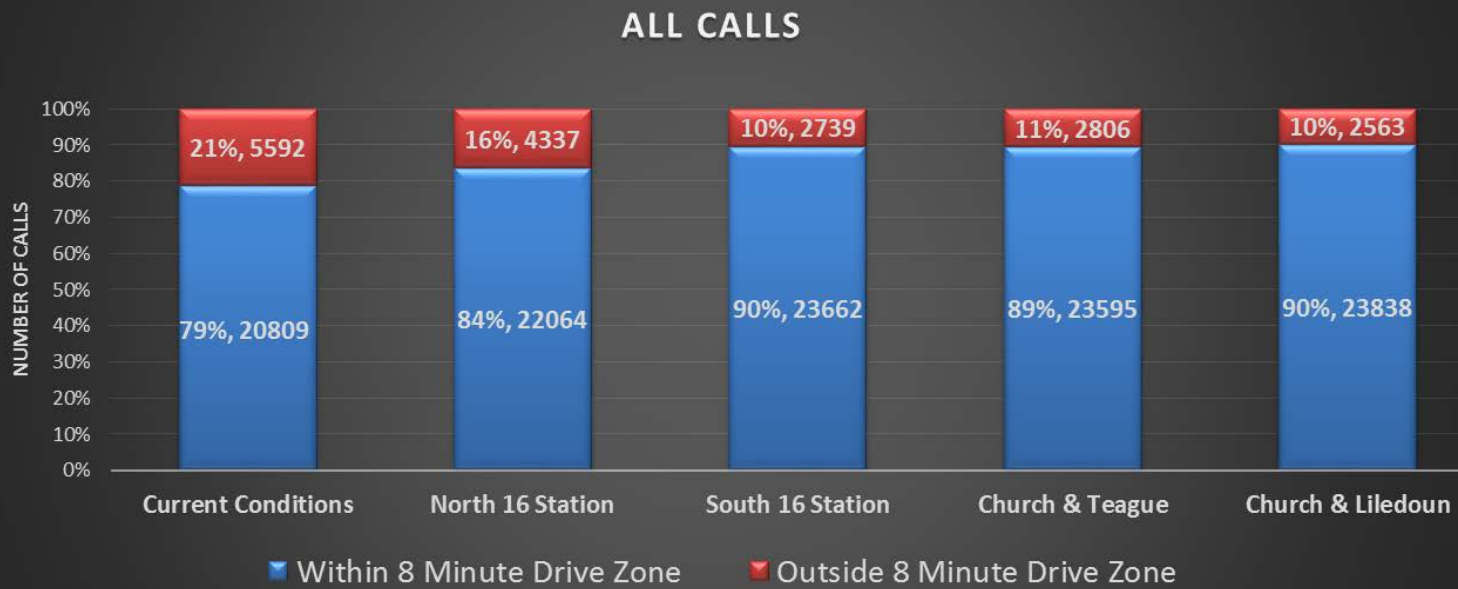
Potential South Station

South-Central Part of County Located at Intersection of Highway 16 and Macedonia Church Road



Comparison of Station Locations

- Adding a Station at Church & Liledoun provides the best solution but it is very close to the same results as Church/Teague & Hwy 16/Macedonia Rd locations
- A 3rd EMS base at any of the 4 proposed locations



Conclusions

- Many calls with response times greater than 8 minutes are due to the primary unit being tied up with another call
- Data shows the need to locate a new station to improve response times or add a 4th EMS crew to an existing station
- Data suggests placing the 4th EMS crew at a 3rd EMS base
- A new EMS base at the intersection of Church and Liledoun Roads would improve the response time for the greatest amount of calls but possible bases at Church Rd and Teague Rd or Hwy 16 S at Macedonia Rd are so close that they are very good options as well.