



Fire Station Optimal Location Study

City Council

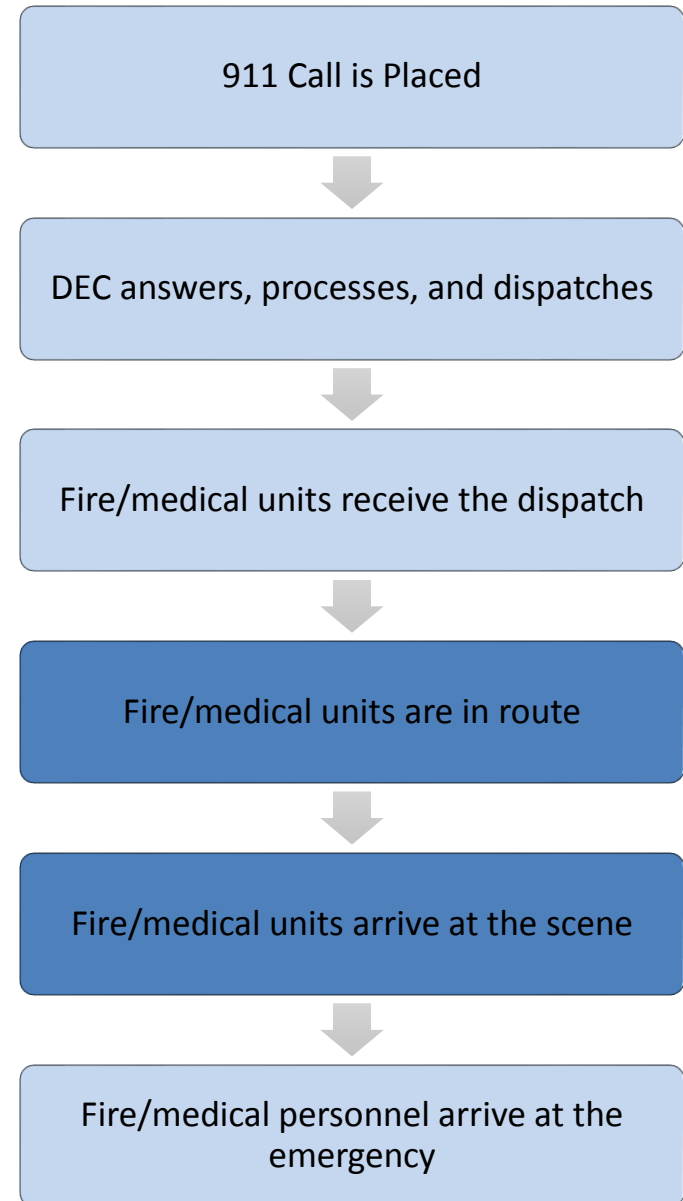
May 23, 2017



AFD, GIS, and OPA

How did the study define an optimal fire station location?

- The Alexandria Fire Department (AFD) has a travel time goal of 4 minutes to fire and medical emergencies*
- The travel time is part (dark blue) of total response time (figure to the right)
- Therefore, AFD wants to position stations so that they are within a 4 minute travel time to as many incidents as possible**
- This does not mean AFD will realize a 4 minute travel time as other variables like incident volume and unit availability have an impact



*Per NFPA guideline 1710

**Accounts for mutual aid

Fire Station Location Study

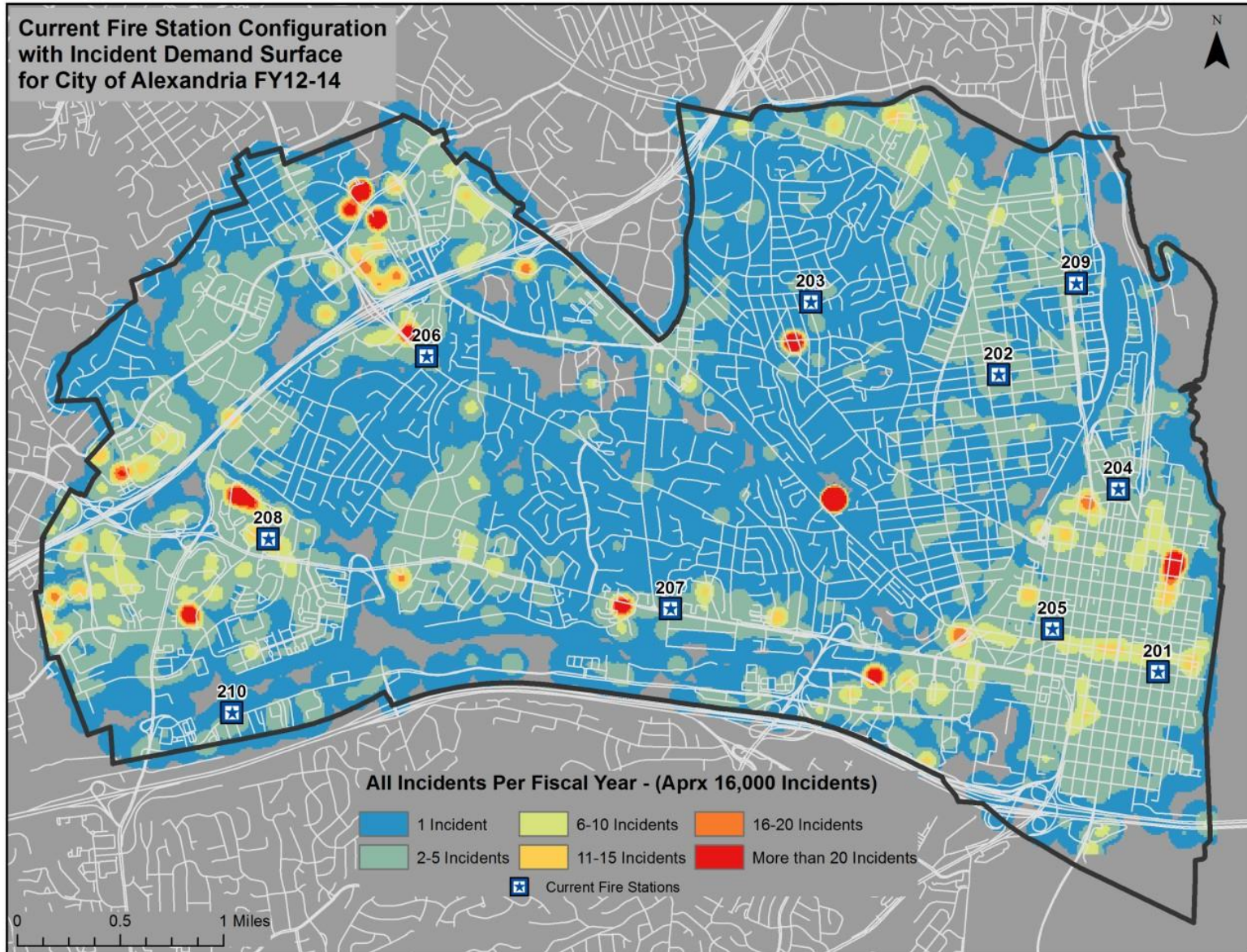
- Significant capital investment in many City fire stations needed over the next decade
- Study aimed at determining optimal station locations prior to future major capital investments
- Study aimed impact at determining if 11th fire station is needed
- Study results identify general optimal locations but does not represent at this time recommendations to move stations

How did the study assess optimal fire station locations?

1. Reviewed where all incidents occurred between from FY12 to FY14
2. Study looked at fire station location scenarios and calculated the travel time from the fire station to each individual incident
3. The optimal station is the one in which the greatest percentage of potential incidents is within a 4 minute travel time



Current Stations



98.7%

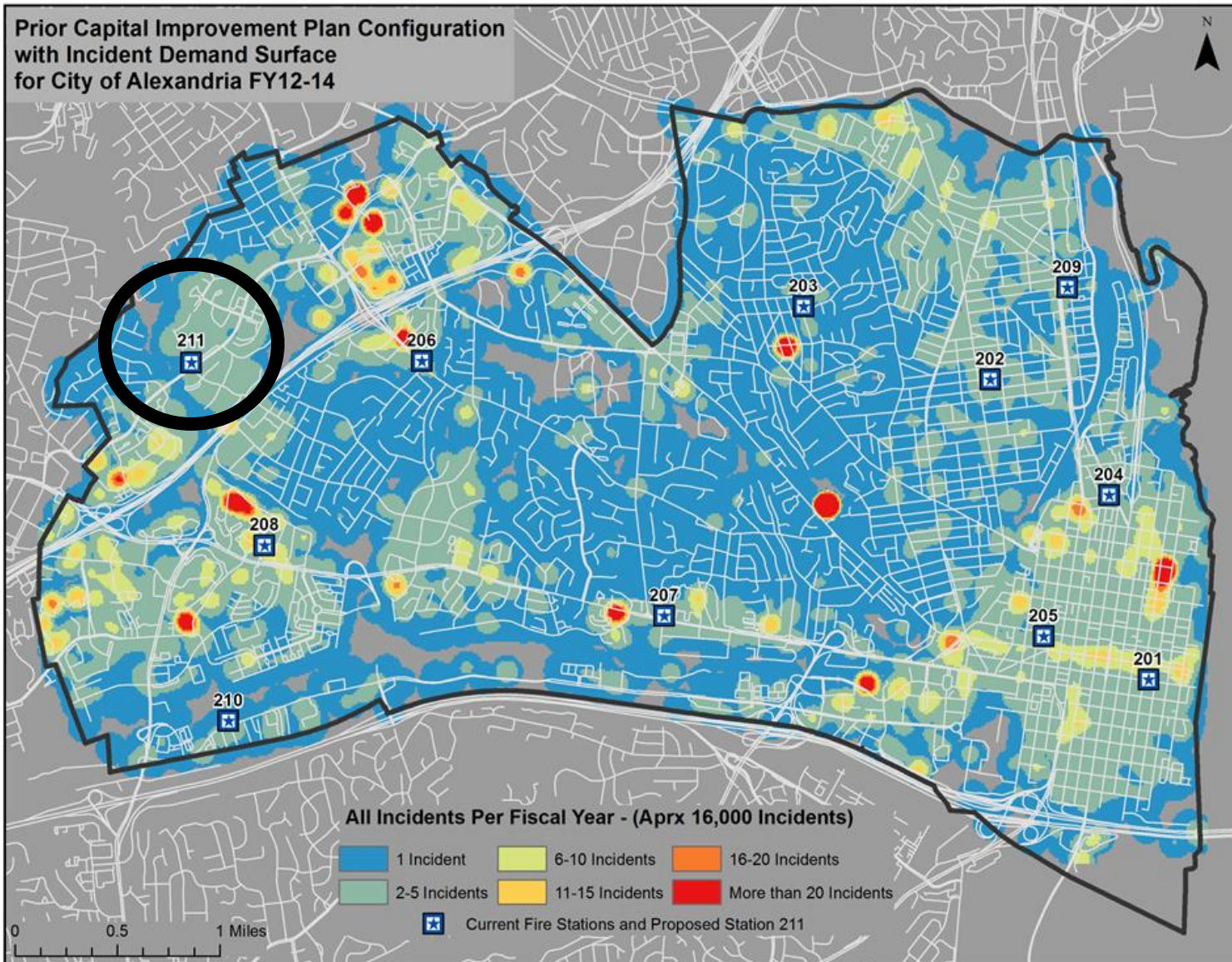
of incidents within 4 min. travel time from stations; 70.9% are within 2 mins., and there is an average travel time of 1.60 min.*

\$54.9m

in estimated additional costs over 20 years**

*Modeled travel time, not actual **\$49.0m in capital + \$5.9m in capital maintenance

Prior CIP Configuration



99.4%

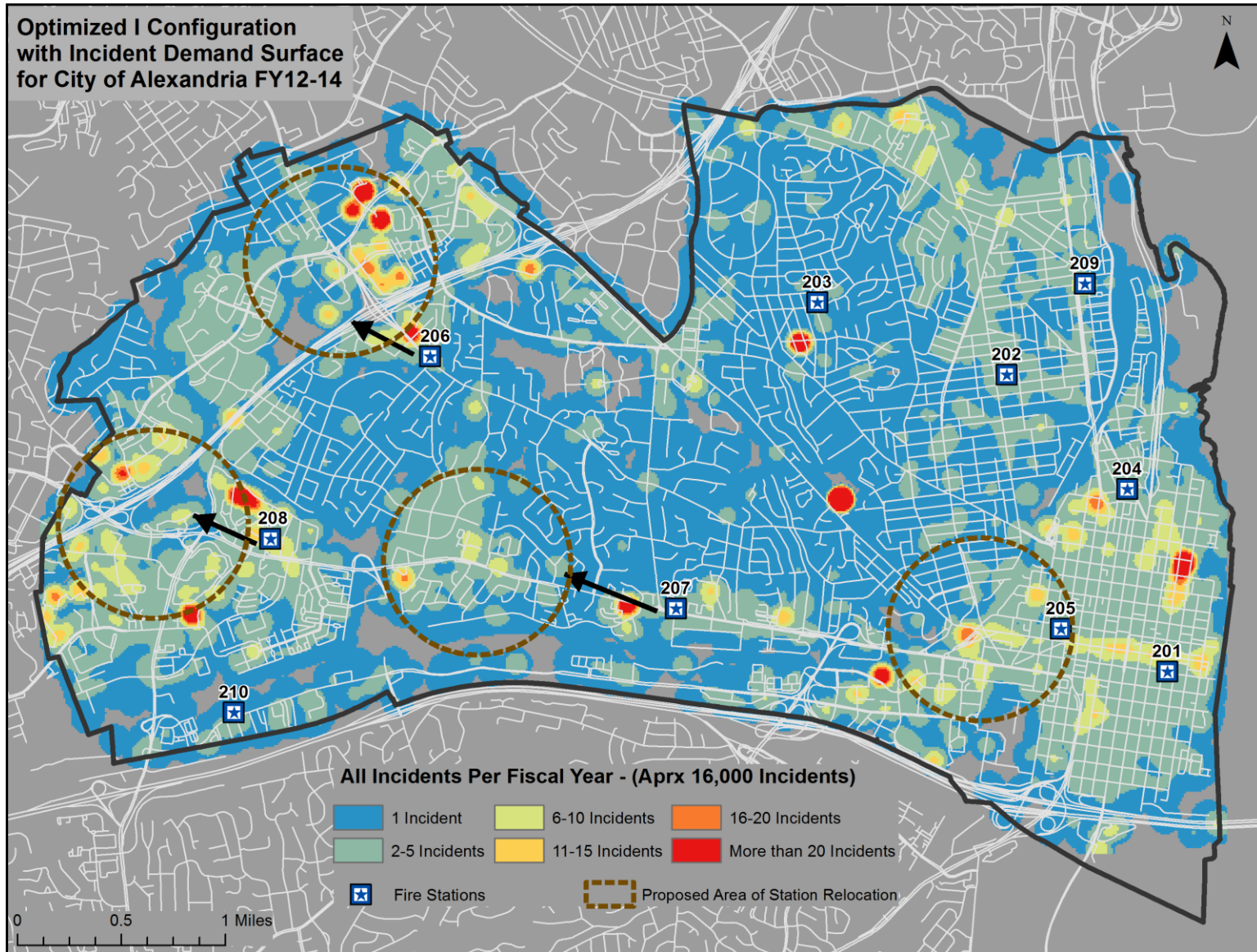
of incidents within 4 min. travel time from stations; 76.8% are within 2 mins., and there is an average travel time of 1.48 min.*

\$123.1m

in estimated additional costs over 20 years**

*Modeled travel time, not actual **\$49.0m in capital + 13.2m in capital to construct station 211 + \$5.9m in capital maintenance + \$55.0m in estimated operating costs

Optimized Scenario 1



99.3%

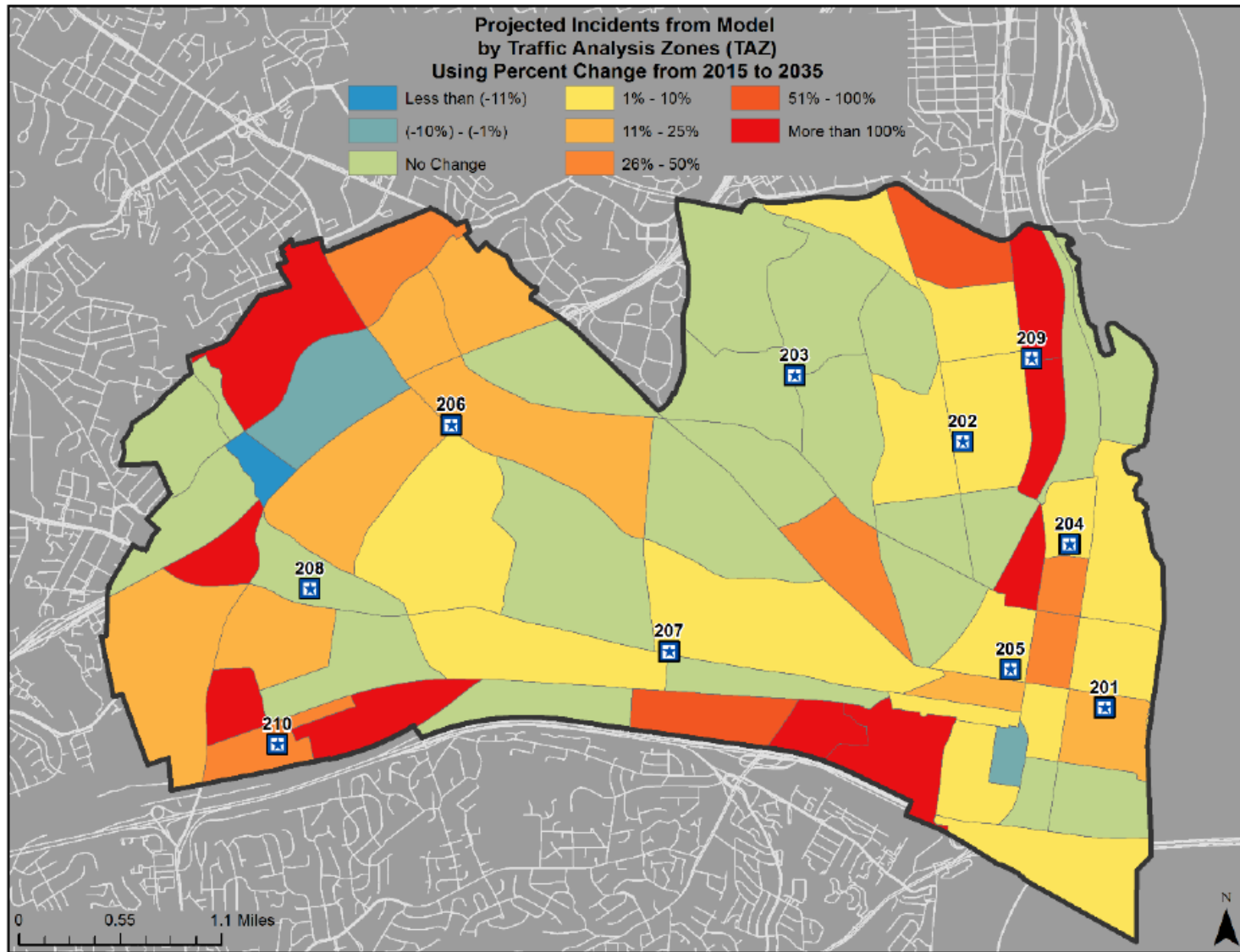
of incidents within 4 min. travel time from stations; 77.4% are within 2 mins., and there is an average travel time of 1.47 min.*

\$54.9m

in estimated additional costs over 20 years**

*Modeled travel time, not actual **\$49.0m in capital + \$5.9m in capital maintenance

Projected Future Demand



Comparison

Scenario	No. of Stations	Percent at 4 min. Travel Time	Percent at 2 min. Travel Time	Average Travel Time	Add'l Est. Cost 20 Years
Current	10	98.70%	70.90%	1.60	\$54.9m
Prior CIP	11	99.40%	76.80%	1.48	\$123.1m
Optimized 1	10	99.30%	77.40%	1.47	\$54.9m

What's Next?

- **These are not recommendations that any particular fire station should be moved;** such recommendations would only occur after further analysis, community dialog, and identification of specific, available sites
- **The City Manager/City Council have taken the following actions:**
 - Given these findings, the FY18-FY27 adopted CIP did not include a new Station 211
 - Approved \$54.9 million in adopted CIP
 - Included Fire Stations in Joint City-Schools Facility Study
- **Questions?**

