Village of Hoffman Estates

Fire Station No. 21 & No. 22
Station Location Analysis, Facility Analysis and Conceptual Design Study

SUBMITTED TO:
Alan Wax
Fire Chief

Hoffman Estates Fire Department

Fire Station No. 21
225 Flagstaff Ln.
Hoffman Estates, Illinois 60169
Phone: 847.843.4825

Fire Station No. 22
1700 Moon Lake Blvd.
Hoffman Estates, Illinois 60169
Phone: 847.843.4825

SUBMITTED BY:
Andy Jasek
FGM Architects Inc.
1211 West 22nd Street, Suite 700
Oak Brook, Illinois 60523
Phone: 630.574.8709
Email: AndyJasek@fgmarchitects.com

FINAL REPORT

June 1, 2023

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SECTION 1
Introduction

Hoffman Estates Fire Department Mission Statement:

TO LIMIT LOSS OF LIFE, INJURY AND PROPERTY DAMAGE TO THE CITIZENS OF HOFFMAN ESTATES BY PROVIDING THE BEST FIRE PROTECTION, ADVANCED LIFE SUPPORT AND EMERGENCY SERVICES IN THE MOST COST-EFFECTIVE MANNER.

In June 2022, the team of FGM Architects and the Illinois Fire Chiefs Association Consulting Team were commissioned to conduct a Station Location Analysis, Facility Analysis and Conceptual Design Study for the Village of Hoffman Estates' Fire Stations No. 21, No. 22 and Fire Department Administration. This study includes an analysis of the geographical location, response area, and quantities of the existing stations, an evaluation of the existing facilities, an analysis of the Fire Department's space needs and a conceptual design study to identify potential solutions for the existing facilities to improve the workflow and efficiency of the Fire Department.

The purpose of evaluating the existing Fire Stations is to review the current building conditions with regards to current Fire service, building codes, space requirements, and facility requirements, as well as current staffing arrangements of the Fire Department and its future growth.

From the findings of the existing facility evaluation and discussions with the Fire Department's staff, a space needs analysis for both Fire Stations No. 21, No. 22 and Fire Department Administration was completed. The space needs analysis compares the existing square footage of the spaces/rooms against the proposed required square footage of the spaces/rooms. The proposed square footages are based on industry standards, code requirements and past project experience. From the findings of the space needs analysis, it was determined that the Fire Department's space needs at both Fire Stations No. 21 & No. 22 exceeds the current space available within the existing buildings. Continuing with a conceptual design provides potential solutions on how best to modify or replace both Fire Stations No. 21 & No. 22 to meet the Fire Department's current and future needs highlighted throughout this study.

The station location analysis uses historical data, "what-if" scenarios, various station location modeling tools, and travel times to best determine where a particular station location should be.

The station facility analysis has been generated by documenting existing conditions through the use of existing floor plans, photographs of existing conditions, and calculating the current square footage of each space. The analysis will illustrate the space deficiencies in the current buildings and the lack of space for each Fire Station. Although the buildings are in fair condition, larger facilities are required to accommodate changes in the fire service and to allow the Fire Department to work more effectively and respond to calls in a timely manner. Enclosed is the documentation of the Fire Department's current working environment and proposed solutions to address the Fire Department's immediate and future facility needs.

This study reinforces the Village of Hoffman Estates' desire to serve its community for many years to come.

SECTION 2
Station Location Analysis with Predictive Modeling

This section of the report was completed by the Illinois Fire Chiefs Association Consulting Team (IFCA Team). The station location study for the Village of Hoffman Estates (VoHE) is to determine optimal locations for the placement of fire stations in order to select the best location(s) for effective and timely responses. The IFCA Team examined the Hoffman Estates Fire Department's (HEFD) performance, trend analysis alternatives, and future station location(s) possibilities using historical data, "what-if" scenarios, various station location modeling tools, and travel times.

The analytics data for the station location analysis is located at the rear of this report as an appendix labeled **ANALYTICS ADDENDUM.**

Station Location Analysis

Hoffman Estates Fire Department

2023

EXECUTIVE SUMMARY

IFCA ASSESSMENT & CONSULTING SERVICES

TERMS OF USE

Illinois Fire Chiefs Association (IFCA) prepared this report which contains confidential and proprietary trade secrets and commercial information of the IFCA and may not be disclosed or republished by anyone other than the client organization. Violation of the confidentiality of this record will cause significant financial harm to the Illinois Fire Chiefs Association.

Executive Summary

The Illinois Fire Chiefs Association Consulting Team (IFCA Team) conducted a Station Location study for the Village of Hoffman Estates (VoHE) to determine optimal locations for the placement of fire stations to select the best location(s) for effective and timely responses. The IFCA Team examined the Hoffman Estates Fire Department's (HEFD) performance, trend analysis alternatives, and future station location(s) possibilities using historical data, “what-if” scenarios, various station location modeling tools, and travel times.

The Team used over three years of historical incident data to measure the agency's emergency services performance and compare it to National Fire Protection Association (NFPA) 1710 standards, Insurance Services Office (ISO) standards, and the Center for Public Safety Excellence (CPSE) recommendations. Using nationally recognized and accepted standards and benchmarks for data collection and analysis, the report findings determined the department’s overall baseline system performance to determine the best station location(s).

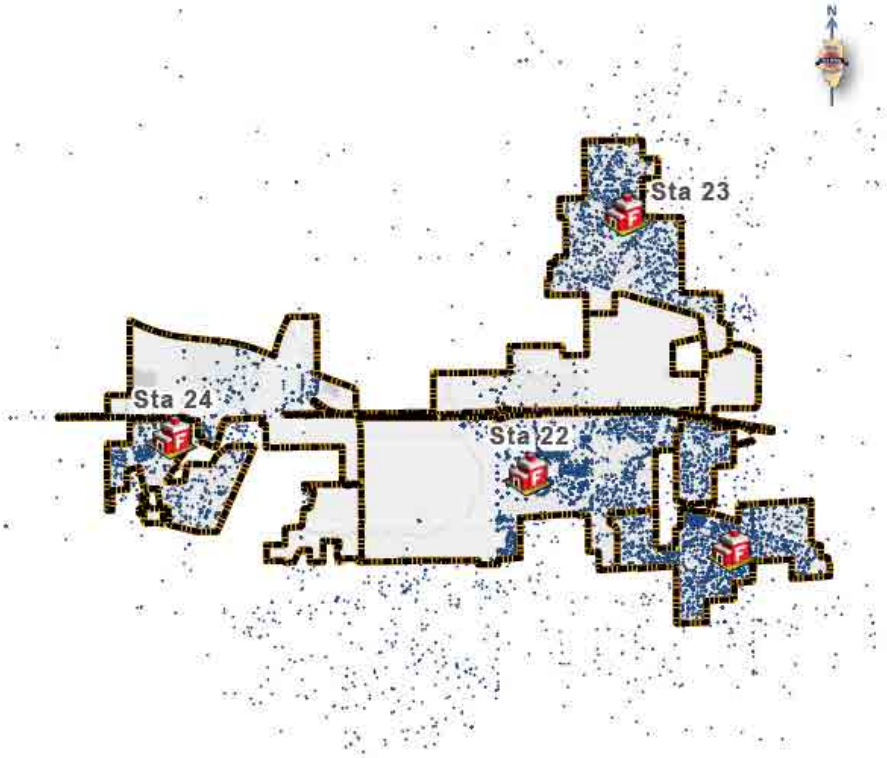
A Station Location Analysis was conducted to measure the HEFD's emergency response time performance to determine the best station location(s). The delivery of these services commonly originates from fire stations located throughout the area to be protected or within each fire station's Area of Responsibility (AOR). For the response to be effective, crews must respond in a minimum amount of time after the incident has been reported and with the proper resources to mitigate the incident.

Response time performance is a measure that receives a great deal of attention and focus from the community, administrative personnel, and elected officials. It is essential to understand that it is up to the VoHE to determine the service level objectives based on the types of services delivered, reasonable response time for the community, the area served, the resources available, and the risk level the community is willing to accept.

Recommendations in this report relate to HEFD's station locations based on historical data from January 2019 through June 2022.

Jurisdiction Basics and Service Overview

The IFCA Team analyzed 20,700 incidents from January 2019 through June 2022. The Team identified 19,104 incidents within the Total Response Area (TRA) of the HEFD. EMS-related incidents represented 76.01% of the volume within the HEFD TRA, while 1.14% were classified as fire responses. Other incident types represent the remainder. The analysis also provided insight into the call volume and incident types outside the TRA. There were 1,596 incidents (8.35%) outside the TRA within the study period.



20,700
TOTAL INCIDENTS
19,104
TRA INCIDENTS
1,596
OUTSIDE TRA INCIDENTS

Figure 1: Pg. 32 of the Addendum

Service Area Performance

HEFD's TRA is 22.6 square miles, protecting a population of 52,462 totaling 18,520 households from four fire stations currently located at 225 Flagstaff Lane (Station 21), 1700 Moon Lake Boulevard (Station 22), 1300 Westbury Drive (Station 23), and 5775 Beacon Point Drive (Station 24) in Hoffman Estates. The Fire Headquarters is located inside the Village Hall at 1900 Hassell Road.

TOTAL POPULATION	TOTAL HOUSEHOLDS	> 65 YEARS OF AGE	< 5 YEARS OF AGE	MEDIAN INCOME
52,462	18,520	8,059	2,947	$103,004

Figure 2: Pg. 4 of the Addendum

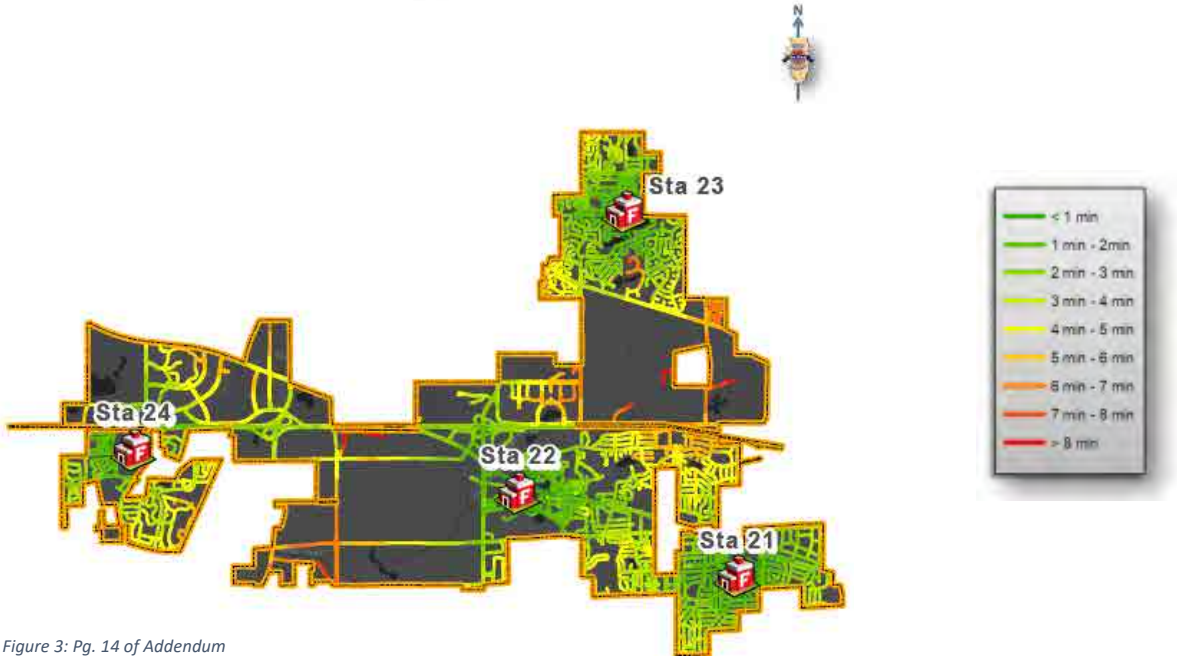


Figure 3: Pg. 14 of Addendum

Hoffman Estates Fire Department has over 266.4 linear miles of streets within the TRA, and 188 of those linear miles can be reached within a NFPA-recommended 4-minute catchment, which equates to 71% of the TRA.

Of all the incidents HEFD responds to within the TRA, 84% of its calls for service are located within a four-minute catchment (indicated in blue) of the fire stations (calculated based on speed limits of the streets). HEFD's experience consists of arrivals on scenes within 4 minutes, 74% of the time for fire incidents, and 82% for EMS within the 4-minute catchments. Actual arrivals for the entire TRA are 63% of the time for fire incidents and 73% for EMS incidents.

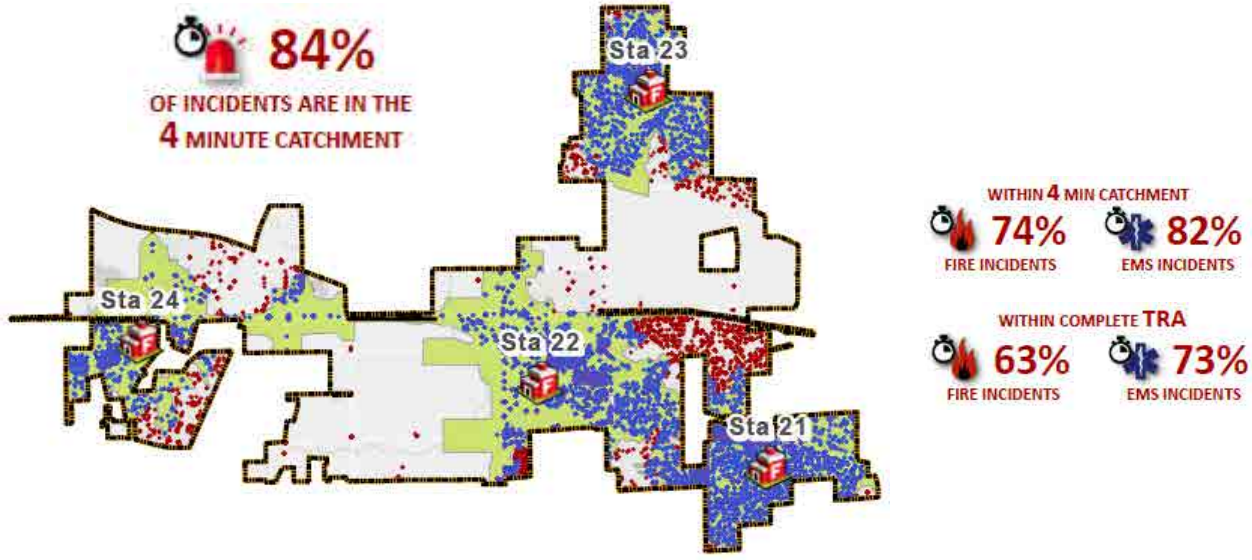
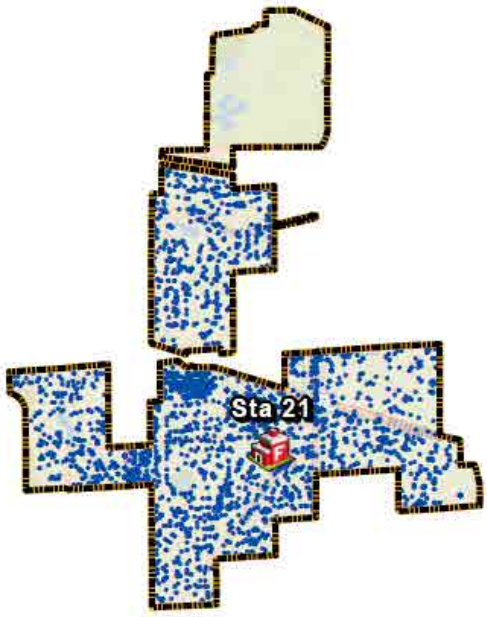


Figure 4: Pg 63 of the Addendum

Station 21



Station 21 has an Area of Responsibility (AOR) of 3.7 square miles covering a population of 17,473, totaling 6,047 households. Station 21 responded to 5,462 incidents within its AOR, which equates to 29% of the total calls within the study period. HEFD Station 21 has over 63.6 linear miles of streets within its response area, and 47.4 of those linear miles can be reached within a 4-minute catchment equaling 74% of its AOR.

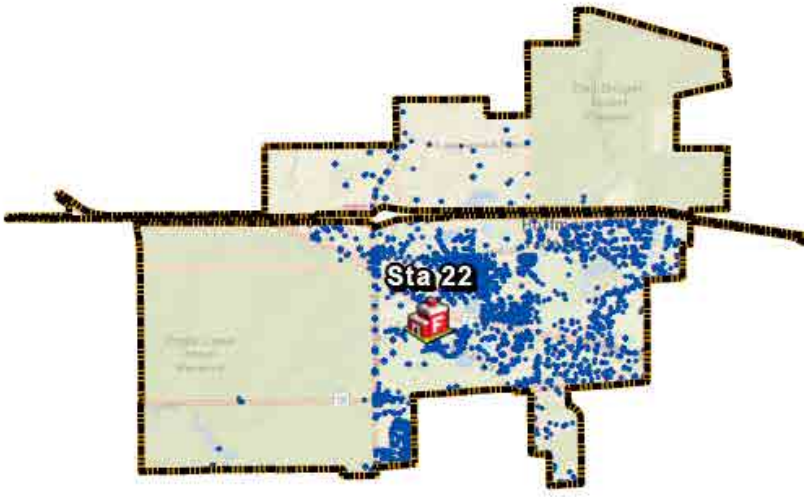
5,462 AOR INCIDENTS

29% PERCENT OF TRA

Figure 5: Pg 46 of the Addendum

Station 22

Station 22 has an Area of Responsibility (AOR) of 9.8 square miles covering a population of 16,459, totaling 6,117 households. Station 22 responded to 9,406 incidents within its AOR, which equates to 49% of the total calls within the study period. HEFD Station 22 has over 82.4 linear miles of streets within its response area, and 55.4 of those linear miles can be reached within a 4-minute catchment equaling 67% of its AOR.



9,406 AOR INCIDENTS

49% PERCENT OF TRA

Figure 6: Pg 47 of the Addendum

Station 23

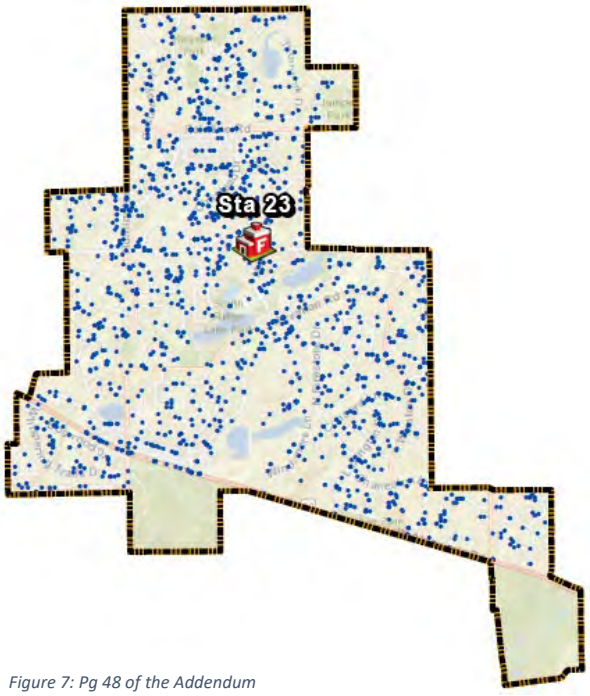


Figure 7: Pg 48 of the Addendum

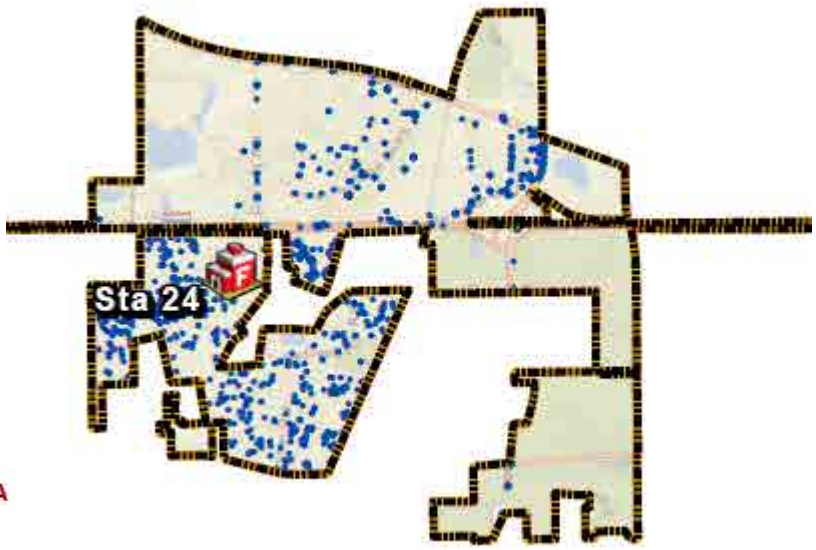
Station 23 has an Area of Responsibility (AOR) of 3.0 square miles covering a population of 13,474, totaling 4,618 households. Station 23 responded to 2,145 incidents within its AOR, which equates to 11% of the total calls within the study period. HEFD Station 23 has over 51.2 linear miles of streets within its response area, and 39.6 of those linear miles can be reached within a 4-minute catchment equaling 77% of its AOR.

2,145 AOR INCIDENTS

11% PERCENT OF TRA

Station 24

Station 24 has an Area of Responsibility (AOR) of 6.1 square miles covering a population of 5,057, totaling 1,738 households. Station 24 responded to 2,077 incidents within its AOR, which equates to 11% of the total calls within the study period. HEFD Station 24 has over 69.3 linear miles of streets within its response area, and 37.3 of those linear miles can be reached within a 4-minute catchment equaling 54% of its AOR.



2,077 AOR INCIDENTS

11% PERCENT OF TRA

Figure 8: Pg 49 of the Addendum

Station Location

The IFCA Team applied analytic modeling tools to identify ideal station locations for the TRA to achieve the most efficient overall performance. A series of "what-if" scenarios were created to determine the best placement of the stations. The Allocation Analysis tool provided 640 possible fire station locations utilizing a 4-minute drive time as the limit to determine the ideal station location. The analysis of HEFD's performance data over the three-and-a-half-year study period allowed the IFCA Team to develop numerous separate and distinct scenarios to determine the best station location(s), including Ideal Station Locations with current conditions, as well as growth scenarios with In Progress, High Likelihood, and Low Likelihood development. Options with 3-station and 5-station configurations were also analyzed, however shortcomings identified did not make those viable, and thus they are not presented here.

Ideal Station Location

Ideal Station Location configures the best station location(s) within HEFD's TRA. In this scenario, the IFCA Team removes all existing Fire Stations from the HEFD TRA and reconfigures the stations utilizing historical data to provide new fire station locations that would best serve the community. Although the IFCA Team realizes these models are extreme, they offer an excellent snapshot of the best station placement configurations. These models help visualize a best-case response scenario to the community founded on analytics.

Under the Ideal Stations section in the report, HEFD's current fire station configuration is very close to the modeling of each ideal station location configuration. Currently, HEFD station locations cover 84% of all incidents within 4 minutes. By relocating all current fire stations to ideal locations, there is a 3% increase in the number of incidents within the 4-minute catchments (from 84% to 87%).

Including in-progress and high-likelihood development projects in the calculation results in the number of incidents within the 4-minute catchments from ideal station locations increasing to 88%. (Addendum pages 96 & 97

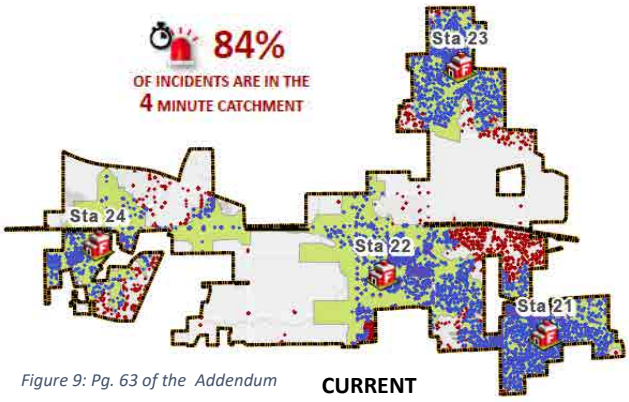


Figure 9: Pg. 63 of the Addendum **CURRENT**

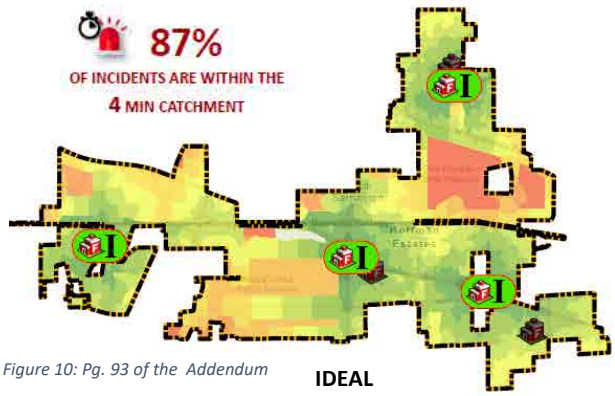


Figure 10: Pg. 93 of the Addendum **IDEAL**

Reminder: The station location scenarios are based on historical incident data over three-and-a-half years. The software that creates these scenarios locates stations in the best location to respond to these incidents. Relocating the stations to different areas within the AOR also affects the response outcomes of each scenario in the TRA. Furthermore, if HEFD decides to relocate fire stations to identified parcels or new parcels, AOR boundaries may need to be evaluated and adjusted to reflect a new location for maximum incident coverage.

Auto-Aid Impact

Automatic aid impact models were configured (pages 106-125) to illustrate the percentage of incidents a neighboring fire department station can reach within 8 minutes of travel time inside of the boundaries of HEFD. Although automatic/mutual aid from another agency's fire station cannot be guaranteed, the models show varying levels of support from surrounding fire stations. Schaumburg Fire Stations 51, 52, 54, and Streamwood Station 33 can considerably impact responding to incidents for/with Hoffman Estates in AOR 21 and AOR 22. Palatine Rural (Inverness) Fire District substantially affects Hoffman Estates AOR 23. *(Full graphics/maps are included on pgs. 106-125 of Addendum)*

Continuing to utilize or create automatic aid agreements with all neighboring agencies for augmentation and first responding (when Hoffman Estates' apparatus is committed or will endure long travel times to incidents) is recommended.

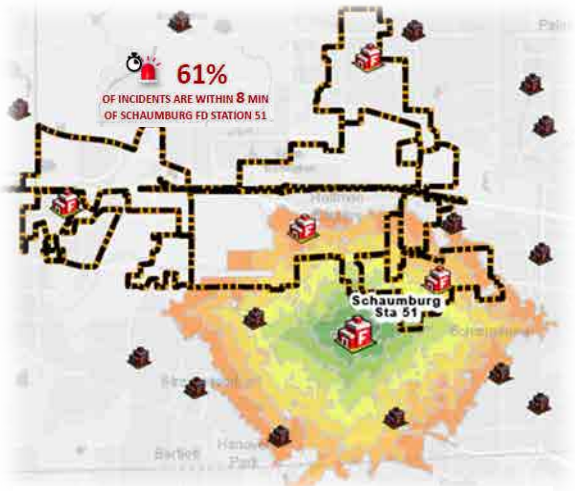


Figure 11: Pg 117 of the Addendum

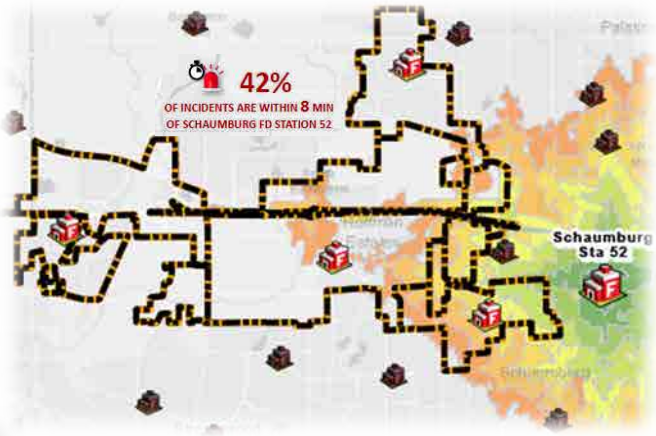


Figure 12: Pg 118 of the Addendum

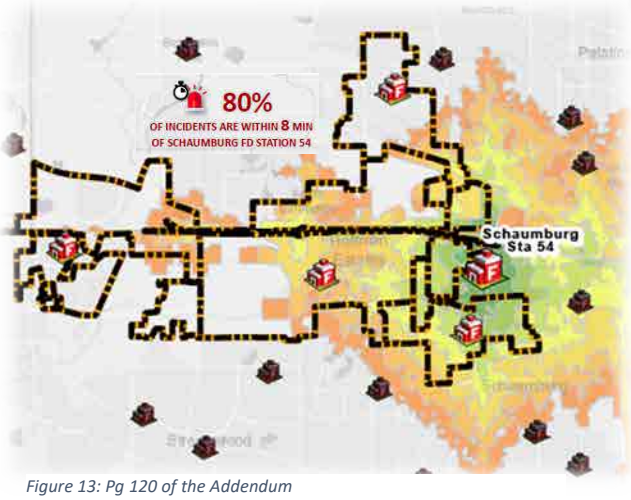


Figure 13: Pg 120 of the Addendum

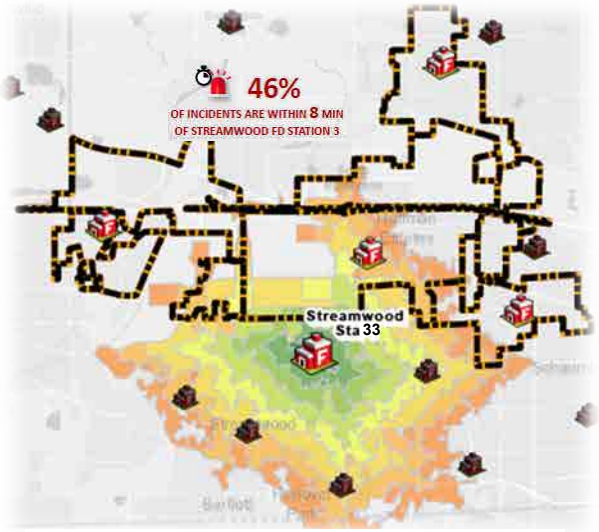


Figure 14: Pg 124 of the Addendum

Recommendations

System reliability incorporates time and distance from the resource to the incident, along with the availability and capability of the resources. When reviewing the data analytics and the overall system performance, the IFCA Team believes that station location, multiple incidents, and the number of resources to mitigate the incidents impact a timely response. Any improvement in these areas will benefit the calls for service performance.

The IFCA Team creates recommendations based on the incident data, travel times, incidents covered within the catchment areas, ideal station locations, growth impact, etc. Further considerations should be evaluated beyond the data-driven recommendations. Increases in coverage would only be realized within these recommendations by moving the station(s) to a new location(s) based on the models presented. The VoHE should consider the impact of moving a station, including site availability and feasibility, site costs, construction costs, staffing, equipment, etc., that are not included in the data analysis.

It is up to the VoHE to determine fire station distribution based on the following:

- The level of incident coverage desired
- The response goals set by the agency and its elected officials
- Financial considerations and budget impact
- FGMA report on facility analysis (remodel or rebuild scenarios).

Recommendation 1

Fire Station 21 Relocation to 411 West Higgins

HEFD's current four-stations locations are geographically located in excellent locations based on historical performance, projected performance, and current and projected community development. Relocating Stations 21, 22, 23, and 24 to the Ideal Locations will not realize enough improvement in incidents covered and response times to support and justify the financial impact of relocating these fire stations. However, if the Fire Station Facilities Analysis report reveals a need for Station 21 to be substantially remodeled, upgraded, or replaced, relocating this station to 411 West Higgins would be the best choice. **This property location increases the number of incidents within the four-minute catchment from 84% to 86%**. The relocation would improve the level of service provided by increasing the ability to reach more incidents within the catchment area and meet the objective of replacing an aging fire station by constructing a new modern facility.

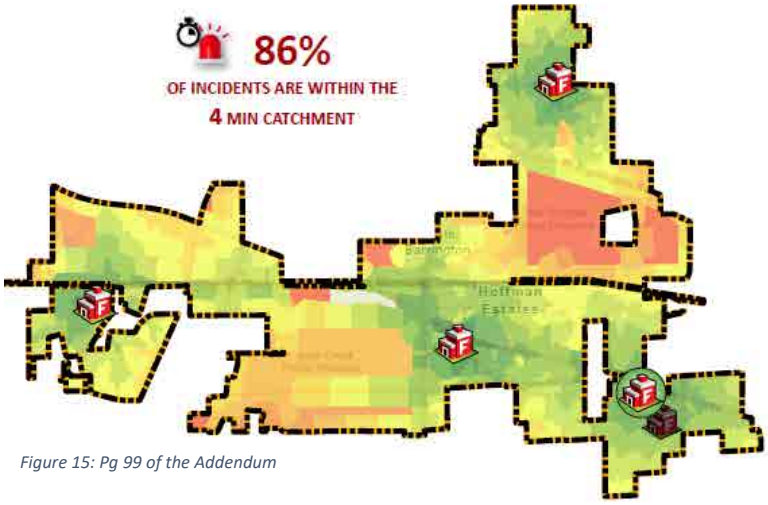


Figure 15: Pg 99 of the Addendum

Recommendation 2

Fire Station 22 Relocation to Identified Ideal Station Location Area

If the Facilities Analysis report revealed that Station 22 was in a condition where relocation was a more cost-effective option than remodeling, then constructing a new modern fire station in the identified Ideal station location area would be advisable. **This relocation would maintain the organization's 4-minute catchment of 84%.**

These recommendations to relocate or remodel Station 21 and Station 22 rely heavily on the Facilities Analysis Report. It will be the responsibility of the Village officials to determine the cost-benefit of remodeling versus relocating (building new). Additionally, site analyses must be completed before selecting the best option for potential fire station locations.

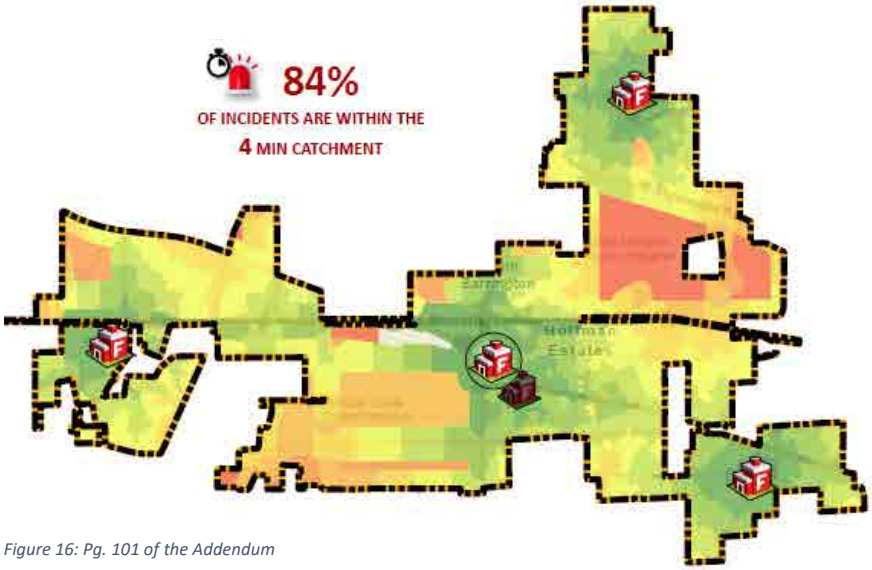
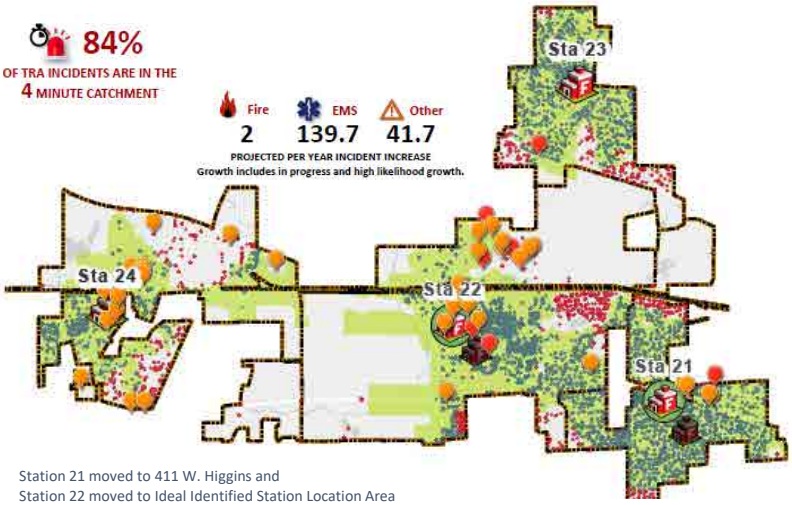


Figure 16: Pg. 101 of the Addendum

Additional Models

Additional model analytics were processed to determine the effectiveness of relocating HEFD Stations 21 (to 411 W Higgins) and 22 (to the identified Ideal station location area). In the current configuration, there would be the potential to realize a 1% increase within the TRA 4-minute catchment area. Overlaying the in-progress and highly likely growth projections, the incidents within the TRA 4-minute catchment would remain statistically unchanged from the current station locations (84%). The cost-benefit factor of building two new fire stations over a remodeling strategy is not advised based only on the minimal gains in service. However, if funding was available and it coincided with the facilities analysis to move both stations, the Village should further consider this option as it addresses the objectives of upgrading facilities and improving service performance, even though it is minimal.



Station 21 moved to 411 W. Higgins and
Station 22 moved to Ideal Identified Station Location Area

Figure 17: Pg. 104 of the Addendum

Supporting Information: Configuration of Fire Stations to Select Parcels
Several models were configured to relocate fire stations based on Village-owned or identified properties in specific AOR's.

- Station 22 to the identified ideal station location area
- Station 22 to the identified alternate station location site
- Station 21 to 411 West Higgins

Station	New Parcel Location	Current Percent Incidents Reached in 4 minutes Total TRA	Proposed Move Percent Incidents Reached in 4 minutes Total TRA	Percent Change TRA	Estimate Number of Potential incidents reached (+ or -) annually in TRA
Station 21	411 West Higgins	84%	86%	+2%	109
Station 22	Identified Ideal Location Area	84%	84%	0%	-
Station 22	Identified Alternate Location Site	84%	82%	-2%	104

Calculations are based on data contained in the report.

SECTION 3
Station No. 21, No. 22 Existing Conditions

Description of Fire Station No. 21:

Fire Station No. 21 located at 225 Flagstaff Lane was originally built in 1960. A fitness and locker room addition was constructed in the 1990's. The original building and addition were constructed of CMU masonry bearing walls clad with veneer brick. The existing membrane roof over the apparatus bays are pitched and supported by structural steel joists. The existing membrane roof over the residence wings are flat and supported by structural steel joists. The interior walls at this station are primarily CMU block partitions in the apparatus bay, bay support and residence areas.

Fire Station No. 21 is a satellite station for the Fire Department. The vehicles housed at this fire station include (1) Engine, (1) Medic, (1) Reserve Engine, and (1) Reserve Medic.

Fire Station No. 21 is located in a residential neighborhood adjacent to a church, school and park. The station is located South of Higgins Rd. off of Roselle Rd. The fire apparatus discharge directly onto Flagstaff Lane. Station No. 21 has a concrete apron with asphalt drives and parking lot.

Description of Fire Station No. 22:

Fire Station No. 22 located at 1700 Moon Lake Boulevard was originally built in the 1970s. The existing building is a single-story facility with a basement. The first floor above the basement is precast concrete planks. Exterior walls are constructed of uninsulated single wythe masonry bearing walls. The existing ballasted membrane roof over the apparatus bays, bay support and residence are flat and supported by structural steel joists. The interior walls at this station are primarily CMU block partitions in the apparatus bay, bay support and residence areas.

Fire Station No. 22 is the central station for the Fire Department. The vehicles housed at this fire station include (1) Engine, (1) Squad, (1) Ladder truck, (1) Medic, and the shift commander vehicle.

Fire Station No. 22 is located in a commercial area adjacent to the medical facilities and retail. The Station is located South of Higgins Rd. The fire apparatus discharge directly onto Moon Lake Boulevard. Station No.22 has a concrete apron with asphalt drives and parking lot.

Description of Fire Department Administration:

Fire Administration is located on the second floor of the Village Hall at 1900 Hassell Road. The department is contained within their own "suite" and includes the Fire Chief, (2) Deputies, a Battalion Chief, (1) administrator, and fire prevention staff.

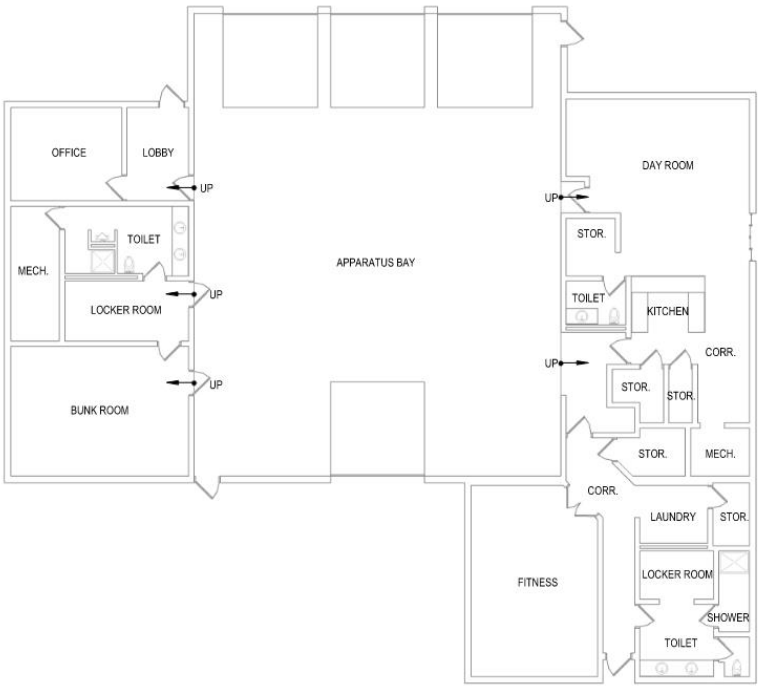
SECTION 3.1

Station No. 21

Existing Floor Plan Diagram

Ground Floor Gross Area:
6,175 sq.ft.

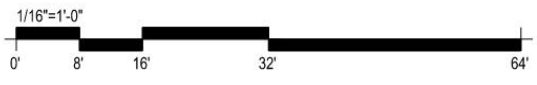
Ground Floor Net Area:
5,472 sq.ft.

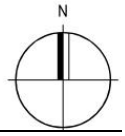


MAIN LEVEL FLOOR PLAN
SCALE: 1/16" = 1' -0"

Note:
Gross Area: The area of the entire floor plate including all walls

Net Area: The usable area not including wall thicknesses, chases and shafts





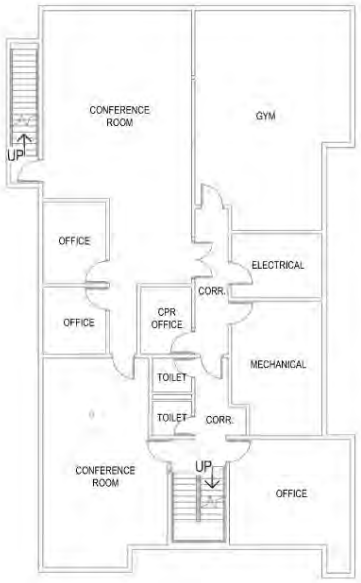
SECTION 3.2

Station No. 22
Existing Floor Plan Diagram

(Note: Room designations and uses are shown as existed following construction, before remodeling that occurred several years ago)

Basement Floor Gross Area:
3,418 sq.ft.

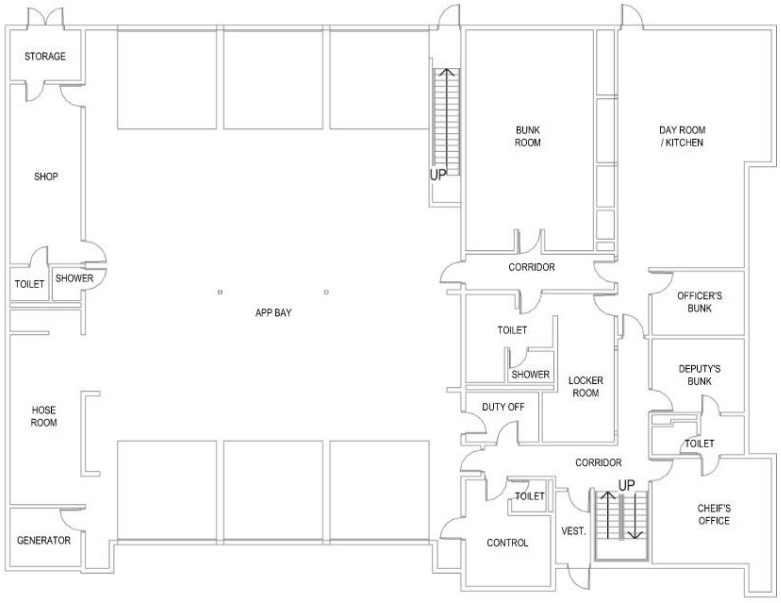
Basement Floor Net Area:
3,083 sq.ft.



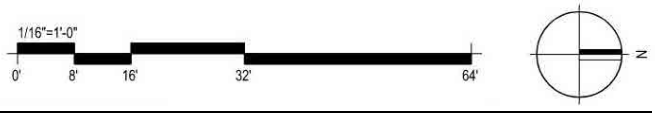
LOWER LEVEL FLOOR PLAN
SCALE: 1/16" = 1' -0"

First Floor Gross Area:
8,116 sq.ft.

First Floor Net Area:
7,493 sq.ft.



MAIN LEVEL FLOOR PLAN
SCALE: 1/16" = 1' -0"



Note:
Gross Area: The area of the entire floor plate including all walls

Net Area: The usable area not including wall thicknesses, chases and shafts

SECTION 4
Station No. 21, No. 22 & Fire Department Administration Space Needs Analysis

Space Needs Analysis

The Space Needs Analysis evaluates the Fire Department's current space usage and what their anticipated needs will be in the future at both Fire Station No. 21., No. 22 and the Fire Department Administration. The process begins by FGMA sending the fire department a pre-meeting questionnaire in order to prepare the group for the topics of discussion. Then a meeting takes place between FGMA and Fire Department representatives to thoroughly review each station room by room and discuss the current operations versus the anticipated needs.

The programs are developed with the input of the Fire Department taking into consideration their current uses, needs, and operations. Room and space sizes are based upon NFPA guidelines, typical size standards and FGMA's extensive fire station design expertise.

For the Hoffman Estates Fire Department, the difference between current conditions and proposed is substantial for both stations. Part of this need is immediate in nature as the substantial deficits are felt in the current operations and uses. The other shortcomings are trying to anticipate the future of the fire service and prepare to have space when the department grows and changes.

Several areas within the current stations do not meet NFPA guidelines and do not provide proper clearances around equipment being stored on the bay floor. Providing adequate space around equipment and keeping a clear bay floor promotes safety and helps to ensure a safe route for responders to vehicles.

The Fire Department administration is currently located on the second floor of the Village Hall. The comparison between the current conditions and proposed needs is a little more difficult to compare. This is due to the fact that the administration located in the village hall currently shares common space within the building such as bathrooms, break areas, entrance ways and lobbies, and general building infrastructure elements. The actual offices and rooms within the administrative area are for the most part sized correctly. If the administration were to be relocated to one of the fire stations, it may or may not be able to share some of the common building elements as it currently does in Village Hall. It was noted that there is not a need for additional space for other functions at the Village Hall so the relocation would be solely based on the operational desires of the Fire Department to move to one of the fire stations.

Please see the Space Needs Programs on the following pages.

Village of Hoffman Estates

Fire Station No. 21, 22, & Administration

Fire Station No. 21

FGMARCHITECTS

updated 11/18/2022
FGM # 22-3489.01

	Space Description/Room	Existing Area (Sq. Ft.)	Proposed Area (Sq. Ft.)	Notes/Comments
A. Public				
1.0	Entry Vestibule	93	70	
2.0	Lobby/ Department Tradition	-	100	
3.0	Firefighter Resiliency/ Mothers Room	-	80	(1) mothers, PTSD manage, stress manage, diabetes manage, etc. Per IL law, mothers room to be provided, and wellness room recommended per NFPA
4.0	Public - Single User Restroom - 1	-	80	(1) WC, (1) lav - constructed as storm shelter
	Sub-Total	93	330	
	15% Circulation Factor		50	area % req'd for corridors & access
	PUBLIC TOTAL	**93**	**380**	Net Sq. Ft.
B. Administration				
1.0	Officer Office	168	200	(2) workstations, (2) guest chairs, (3) closets, officer bunk in main bunk room
2.0	Firefighter Office	-	400	adjacent to bays. (3) workstations, (2) printers, laid out to have central conference table for training.
	Sub-Total	168	600	
	25% Circulation Factor	-	150	area % req'd for corridors & access
	ADMINISTRATION TOTAL	**168**	**750**	Net Sq. Ft.
C. Residential				
1.0	Dayroom - 7	700	450	Greatroom concept
2.0	Kitchen - 7	inc in dayroom	220	(3) fridges, (1) comm stove, (1) deep sink, (1) ADA sink, (1) microwave, (1) high end dishwasher (miele), ice/fill station, coffee, possible pot rack
3.0	Dining Room - 7	inc in dayroom	140	
4.0	Kitchen Pantry	63	100	(3) shift pantry closet, (1) common supply closet
5.0	Bunkrooms - 7	444	630	90 SF - bed, desk, (3) small lockers for bedding, door, walls to ceiling.
6.0	Mens Toilet/ Shower Room	184	-	
7.0	Womens Toilet/ Shower Room	223	-	
8.0	Single User Restrooms	-	300	Provide (3) rooms, with (1) WC, (1) sink and (1) shower
9.0	Universal Locker Room	-	480	(24) lockers, (2) sinks
10.0	Fitness Room	380	500	free weights, cardio equipment, stretching area, resistence training
11.0	Janitor Closet/Supplies	47	50	
12.0	Residential Laundry	-	100	washer, dryer, supplies, storage
	Sub-Total	2,041	2,970	
	20% Circulation Factor	-	594	area % req'd for corridors & access
	RESIDENTIAL TOTAL	**2,041**	**3,564**	Net Sq. Ft.

Village of Hoffman Estates

Fire Station No. 21, 22, & Administration

Fire Station No. 21

FGMARCHITECTS

updated 11/18/2022
FGM # 22-3489.01

	Space Description/Room	Existing Area (Sq. Ft.)	Proposed Area (Sq. Ft.)	Notes/Comments
D. Apparatus Area				
1.0	Apparatus Bays - (3) Bays	2,744	4,845	(2) 20'W x 85'L & (1) middle 17'W x 85'L - drive thru bays - engine, medic, reserve engine, reserve medic Screen doors on bays with sectional OH doors.
2.0	Turnout Gear Lockers	on bay floor	480	(24) sets of open rack lockers & open shelves for 2nd set of gear, negative pressure
3.0	Bay Laundry	42	180	(1) Large Extractor, washer/dryer, slop sink, drying closet/cabinet, etc. Look at possibility of installing a lift on bay floor to raise hose for drying.
4.0	Decon/EMS Dirty	inc in bay laundry	120	(1) st.stl scullery sink with sideboards, st.stl. decon shower, boot wash
5.0	EMS Supply	38	25	small closet for supplies
6.0	Work Room/ Tools/ Equipment	60	150	toolbox, work bench, spare parts storage, air compressor
7.0	Toilet	22	80	(1) WC, (1) lav, (1) shower
8.0	Hose Storage	inc in bay laundry	20	alcove off of bay floor
9.0	Chargers/Mail Alcove	45	90	located on corridor/ramp from house to bays.
10.0	Bay Storage	-	100	general equipment storage
11.0	Seasonal Storage	inc in workroom	64	snowblower, salt, weedwacker, shovels, etc.
	Sub-Total	2,951	6,154	
	5% Circulation Factor	-	308	area % req'd for corridors & access
	APPARATUS AREA TOTAL	**2,951**	**6,462**	Net Sq. Ft.
E. Support/Storage				
1.0	Mechanical Room	105	150	RTUs with control s system, HW heater, boiler, pumps, etc.
2.0	Electrical Service	114	140	MDP, ATS, panels, room for future charging power switchgear needs
3.0	I.T. Room	inc in elect	90	(1) rack - cameras, remote access, alerting, phones, etc. , space for additional (1) rack
4.0	Water Service/Sprinkler	inc in mech	80	incoming water service, fire suppression piping, etc.
5.0	General Building Storage		120	
6.0	Stairs	-	-	Assumed single story
7.0	Elevator	-	-	Assumed single story
8.0	Emergency Generator	0	-	Exterior
	Sub-Total	219	580	
	10% Circulation Factor	-	58	area % req'd for corridors & access
	SUPPORT/STORAGE TOTAL	**219**	**638**	Net Sq. Ft.
	Sub-total Net Building Area	5,472	11,793	
	15% Grossing Factor	-	1,769	Walls, mechanical chases, etc. allowance
TOTAL GROSS BUILDING AREA REQUIRED		**6,175**	**13,562**	Gross Sq. Ft.
EXTERIOR SPACE NEED REQUIREMENTS				
	Parking, TOTAL			
	Public Parking	2	4	
	Staff Parking	12	14	7, double at shift change
	Outdoor Patio			Small area for grill and seating.
	Dumpster Enclosure			

Village of Hoffman Estates

Fire Station No. 21, 22, & Administration

Fire Station No. 22

FGMARCHITECTS

updated 11/18/2022
FGM # 22-3489.01

	Space Description/Room	Existing Area (Sq. Ft.)	Proposed Area (Sq. Ft.)	Notes/Comments
A. Public				
1.0	Entry Vestibule	50	70	
2.0	Lobby/ Department Tradition	-	150	
3.0	Training Room	698	1,000	Sized for 30 people (tables and chairs)
4.0	Training Storage	70	150	tables, chairs, props, etc.
5.0	Training Kitchenette	-	25	alcove at rear of training room
6.0	Firefighter Resiliency/ Mothers Room	-	80	(1) mothers, PTSD manage, stress manage, diabetes manage, etc. Per IL law, mothers room to be provided, and wellness room recommended per NFPA
7.0	Single User Restroom - 4	52	320	(1) WC, (1) lav each - constructed as storm shelters. (2) toilet rooms existing.
	Sub-Total	870	1,795	
	15% Circulation Factor		269	area % req'd for corridors & access
	PUBLIC TOTAL	**870**	**2,064**	Net Sq. Ft.
B. Administration				
1.0	BC Office	0	see BC Suite in C	
2.0	Officer Office	see Officer Suite in C	275	(2) workstations, (2) guest chairs, (6) closets
3.0	Small Conference Room	474	inc in ff room	
4.0	Firefighter Office	150	700	adjacent to bays. (7) workstations, (3) printers, laid out to have central conference table for training.
	Sub-Total	-	975	
	25% Circulation Factor	**-**	244	area % req'd for corridors & access
	ADMINISTRATION TOTAL	**-**	**1,219**	Net Sq. Ft.
C. Residential				
1.0	Dayroom - 14	817	1,000	Greatroom concept
2.0	Kitchen - 14	inc in dayroom	450	(3) fridges, (1) comm stove, (1) deep sink, (1) ADA sink, (1) microwave, (1) high end dishwasher (miele), ice/fill station, coffeem possible pot rack
3.0	Dining Room - 14	inc in dayroom	400	
4.0	Kitchen Pantry	63	100	(3) shift pantry closet, (1) common supply closet
5.0	Bunkrooms - 13	730	1,170	90 SF - bed, desk, (3) small lockers for bedding, door, walls to ceiling.
6.0	Mens Toilet/ Shower Room	155	-	
7.0	Womens Toilet/ Shower Room	265	-	
8.0	Single User Restrooms	-	600	Provide (6) rooms, with (1) WC, (1) sink and (1) shower
9.0	Universal Locker Room		1,000	(45) lockers, (4) sinks

Village of Hoffman Estates

Fire Station No. 21, 22, & Administration

Fire Station No. 22

FGMARCHITECTS

updated 11/18/2022
FGM # 22-3489.01

	Space Description/Room	Existing Area (Sq. Ft.)	Proposed Area (Sq. Ft.)	Notes/Comments
10.0	Fitness Room	609	800	free weights, cardio equipment, stretching area, resistence training
11.0	Janitor Closet/Supplies		45	
12.0	Residential Laundry		150	(2) pairs of washers & dryers, supplies, storage
13.0	BC Bunk Suite		375	Office w/ (1) desk, (2) guest chairs & (3) closets Bunk room with (3) lockers & (3) bedding lockers Toilet room w/ (1) WC, (1) sink, (1) shower.
14.0	Officer Suite	466	-	officer bunk included with main bunk rooms
	Sub-Total	3,105	6,090	
	20% Circulation Factor	-	1,218	area % req'd for corridors & access
	RESIDENTIAL TOTAL	**3,105**	**7,308**	Net Sq. Ft.

D. Apparatus Area

1.0	Apparatus Bays - (4) Bays	3,726	6,290	(2) 20'W x 85'L & (2) middle 17'W x 85'L - drive thru bays engine, squad, tower, medic, reserve truck, reserve
2.0	Small Vehicle Bays	-	900	(2) 15'W x 30'L - back in bays, BC buggy
3.0	Turnout Gear Lockers	on bay floor	920	(45) sets of open rack lockers & open shelves for 2nd set of gear, negative pressure
4.0	Bay Laundry	260	180	(1) Large Extractor, washer/dryer, slop sink, drying closet/cabinet, etc. Look at possibility of installing a lift on bay floor to raise hose for drying.
5.0	Decon/EMS Dirty	inc in bay laundry	120	(1) st.stl scullery sink with sideboards, st.stl. decon shower, boot wash
6.0	EMS Supply	-	25	small closet for supplies
7.0	SCBA	156	180	SCBA compressor/fill station & oxygen tanks. Sink & counter for mask/backpack testing.
8.0	Work Room/ Tools/ Equipment	126	200	toolbox, work bench, spare parts storage, air compressor
9.0	Toilet	22	80	(1) WC, (1) lav, (1) shower
10.0	Hose Storage	inc in bay laundry	20	alcove off of bay floor
11.0	Chargers/Mail Alcove	72	90	located on corridor/ramp from house to bays.
12.0	Quartermaster Storage		100	gloves, helmets, hoods, uniforms, batteries, etc.
13.0	Central Supply Storage	currently at 24	320	centralized supplies for department
14.0	PubEd Storage	currently at 24	120	public education supplies
15.0	EMS Supply	currently at 24	200	centralized EMS supply for department
16.0	HazMat Storage	currently at 24	100	salt, oil dry, and foam storage
17.0	Bay Storage	26	100	general equipment storage
18.0	Seasonal Storage	inc in workroom	64	snowblower, salt, weedwacker, shovels, etc.
	Sub-Total	4,388	10,009	
	5% Circulation Factor	-	500	area % req'd for corridors & access
	APPARATUS AREA TOTAL	**4,388**	**10,509**	Net Sq. Ft.

SECTION 4.2

Village of Hoffman Estates
Fire Station No. 21, 22, & Administration

Fire Station No. 22

FGMARCHITECTS

updated 11/18/2022
FGM # 22-3489.01

	Space Description/Room	Existing Area (Sq. Ft.)	Proposed Area (Sq. Ft.)	Notes/Comments
E. Support/Storage				
1.0	Mechanical Room	230	350	RTUs with control s system, HW heater, boiler, pumps, etc.
2.0	Electrical Service	114	175	MDP, ATS, panels, room for future charging power switchgear needs
3.0	I.T. Room	inc in elect	90	(1) rack - cameras, remote access, alerting, phones, etc. , space for additional (1) rack
4.0	Water Service/Sprinkler	inc in mech	80	incoming water service, fire suppression piping, etc.
5.0	General Building Storage		120	
6.0	Stairs	378	-	Assumed single story
7.0	Elevator	-	-	Assumed single story
8.0	Emergency Generator	82	-	Exterior
	Sub-Total	804	815	
	10% Circulation Factor	-	82	area % req'd for corridors & access
	SUPPORT/STORAGE TOTAL	**804**	**897**	Net Sq. Ft.
	Sub-total Net Building Area	9,167	21,997	
	15% Grossing Factor	-	3,300	Walls, mechanical chases, etc. allowance
TOTAL GROSS BUILDING AREA REQUIRED		**11,580**	**25,296**	Gross Sq. Ft.
EXTERIOR SPACE NEED REQUIREMENTS				
	Parking, TOTAL			
	Public Parking	11	4	
	Staff Parking	14	28	14, double at shift change
	Outdoor Patio			Small area for grill and seating.
	Dumpster Enclosure			

SECTION 4.3

Village of Hoffman Estates

Fire Station No. 21, 22, & Administration

Fire Administration

FGMARCHITECTS

updated 11/18/2022
FGM # 22-3489.01

	Space Description/Room	Existing Area (Sq. Ft.)	Proposed Area (Sq. Ft.)	Notes/Comments
A. Public				
1.0	Entry Vestibule	0	70	
2.0	Lobby/ Department Tradition	152	300	small fire dept history, waiting chairs, small 4-6 person table for fire prevention meetings
3.0	Training Room	-	-	currently using VH training.
	Sub-Total	152	370	
	15% Circulation Factor		56	area % req'd for corridors & access
	PUBLIC TOTAL	**152**	**426**	Net Sq. Ft.
B. Administration				
1.0	Fire Chief Office	180	180	(1) desk, (2) guest chairs
2.0	Closet	0	20	
3.0	Deputy Chief Office	161	180	(1) desk, (2) guest chairs
4.0	Closet	0	20	
5.0	Deputy Chief Office	145	180	(1) desk, (2) guest chairs
6.0	Closet	0	20	
7.0	BC Office	145	180	(1) desk, (2) guest chairs,covers roles of training and safety
8.0	Closets	0	60	(3) closets
9.0	Administrative Assistant Office	70	150	currently a workstation cubicle. Proposed is a separate office. (1) desk, (2) guest chairs.
10.0	Administrative Analyst	70	64	open cubicle 8'x8' workstation
11.0	Hotelling Offices	130	128	(2) open cubicle 8'x8' workstations
12.0	Fire Protection - Chief Inspector Office	355	200	(1) desk, (2) guest chairs, lay-out plan table/ monitor area
13.0	Fire Inspectors	inc in above	256	(4) open deep-counter cubicle 8'x8' workstations
14.0	File/ Plan Storage	338	225	current plan storage, long term record storage, lay-out table/ monitor area for reviews
15.0	Future Office - EMS Officer?	-	180	(1) desk, (2) guest chairs
16.0	Closet	-	20	
17.0	Conference Room	317	300	12-14 people
18.0	Break Room	119	225	fridge, sink, microwave, casework storage, table for 4-6 people
19.0	Work Room/ Copy Room	inc in archive storage	80	copier/printer, supply storage, casework storage, lay-out space
20.0	File Room/ Area	80	120	access off corridors, or adjacent to administrative assistant
21.0	Quartermaster Storage	120	100	department gear supply storage
22.0	Fire Equipment Storage	65	80	knox boxes, alarms, etc.
23.0	Archive Storage	500	350	requires purging of files and department stuff.
24.0	Janitor's Closet	inc in VH space	50	mop sink, supply storage, etc.
25.0	Single User Restrooms	131	160	(2) single user rooms, each w/ (1) WC, (1) lav, & (1) shower
26.0	Locker Room area	-	160	uniform and toiletry storage for Administration, either adjacent or connected to the toilet rooms - (8) lockers
27.0	Turnout Gear	-	100	located near rear entry, open rack lockers to store administration's gear - (5) lockers
28.0	Fire Prevention Gear Storage	-	100	located near rear entry, open rack lockers to store fire prevention's gear - (5) lockers
	Sub-Total	2,926	3,888	
	25% Circulation Factor	-	972	area % req'd for corridors & access
	ADMINISTRATION TOTAL	**2,926**	**4,860**	Net Sq. Ft.

SECTION 4.3

Village of Hoffman Estates

Fire Station No. 21, 22, & Administration

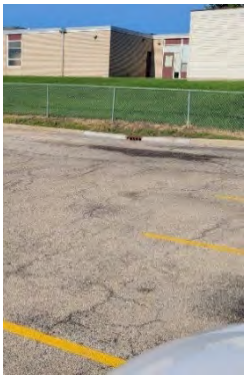
Fire Administration

FGMARCHITECTS

updated 11/18/2022
FGM # 22-3489.01

	Space Description/Room	Existing Area (Sq. Ft.)	Proposed Area (Sq. Ft.)	Notes/Comments
C. Residential				
1.0	Not Applicable			
	Sub-Total	-	-	
	20% Circulation Factor	-	-	area % req'd for corridors & access
	RESIDENTIAL TOTAL	-	-	Net Sq. Ft.
D. Apparatus Area				
1.0	Small Vehicle Bays	-	refer to notes option	If possible, inside vehicle parking - (4) 15'W x 30'L - back in bays - if possible? About 1,800 s.f.
	Sub-Total	-	-	
	5% Circulation Factor	-	-	area % req'd for corridors & access
	APPARATUS AREA TOTAL	-	-	Net Sq. Ft.
E. Support/Storage				
1.0	Mechanical Room	inc in VH space	refer to notes option	Administration occupies. RTUs with control s system, HW heater, boiler, pumps, etc.. Can be eliminated if combined with main fire station.
2.0	Electrical Service	inc in archive storage	refer to notes option	Administration occupies. MDP, ATS, panels. Can be eliminated if combined with main fire station.
3.0	I.T. Room	inc in VH space	50	(1) rack - cameras, remote access, alerting, phones, etc. ,
4.0	Water Service/Sprinkler	inc in VH space	refer to notes option	Administration occupies. Incoming water service, fire suppression piping, etc.
5.0	Department Storage	-	80	
6.0	Stairs	inc in VH space	-	Assumed single story
7.0	Elevator	inc in VH space	-	Assumed single story
8.0	Emergency Generator	inc in VH space	-	Exterior
	Sub-Total	-	130	
	10% Circulation Factor	-	13	area % req'd for corridors & access
	SUPPORT/STORAGE TOTAL	-	**143**	Net Sq. Ft.
	Sub-total Net Building Area	3,078	5,429	
	15% Grossing Factor	-	814	Walls, mechanical chases, etc. allowance
TOTAL GROSS BUILDING AREA REQUIRED		**3,990**	**6,243**	Gross Sq. Ft.
EXTERIOR SPACE NEED REQUIREMENTS				
	Parking, TOTAL			
	Public Parking	?	3	
	Staff Parking	?	14	

SECTION 5.1
Fire Station No. 21
Existing Condition Report



Fire Station No. 21 - Existing Building Condition Report

Fire Station No. 21 was originally constructed in 1960. A fitness and locker room addition was constructed in the 1990's. The original building and addition were constructed of CMU masonry bearing walls clad with veneer brick. The existing membrane roof over the apparatus bays is pitched and supported by structural steel joists. The existing membrane roofs over the residence wings are flat and supported by structural steel joists. The interior walls at this station are primarily CMU block partitions in the apparatus bay, bay support and residence areas.

Site and Parking

- Visitation by the public proves difficult due to there being (3) entrance doors to approach with no clear main entrance noted. In addition, all but (1) entrance or egress exit is not accessible. These issues need to be addressed.

- Fourteen (14) public and staff parking spaces for the facility are provided on the Southwest side of the station. One (1) ADA parking space is provided at the main entry. There are not enough parking spaces provided in the parking lot and street parking is not allowed in this neighborhood to accommodate all staff vehicles on shift or during shift change when the required parking count doubles. Parking issues need to be addressed.

- The concrete apron, concrete patio, asphalt parking lot and asphalt drives are in poor condition and have areas of significant cracking and should be replaced in the near future. If not replaced, water will continue to penetrate below the paved surface to the base and degrade the surface.

- Asphalt in front of the trash enclosure appears to have been replaced recently but will need to be replaced again soon if not replaced with concrete to hold up to the weight of the garbage trucks being exerted on it weekly.

- Existing masonry trash enclosure gates appear to be in fair condition, but hardware is starting to fall apart and should be replaced in the near future. Steel bollards and framed gate doors should be provided in lieu of composite wood framing for longer life cycle and durability. Several areas of brick veneer were noted as having cracked grout joints at walls and limestone caps. These issues should be addressed by tuckpointing all of the exterior brick veneer walls and limestone caps or replacing limestone caps in kind or with aluminum coping.

SECTION 5.1
Fire Station No. 21
Existing Condition Report

Building Envelope:

- The existing pitched roof at apparatus bays and both residence wings' flat roofs consist of a single ply roofing membrane and rigid insulation that is supported by steel decking and bar joists. The roofing membrane appears to be in good condition after being replaced in 2011. It does not appear that additional insulation was added to the roofs when replaced. Existing roof insulation appears to be half of the required amount based on today's construction standards and Energy Code requirements. This condition results in a higher energy usage and cost for the Owner and needs to be addressed.

- Existing roof deck overhangs at the apparatus bays expose the steel roof deck outside the building, this condition does not meet today's construction standards and Energy Code requirements. Existing exterior wall and roof conditions allow for thermal transfer and potential moisture issues that affect the interior of the building and masonry cavity wall. This condition results in a higher energy usage cost to the owner and deterioration of the exposed steel deck by rust. This issue needs to be addressed.

- Existing soffits at the north side of both residence wings have the existing steel roof decks exposed to exterior unconditioned air due to the soffited areas having air transfer grilles. Existing transfer grilles do not appear to be original but have since been covered up with cardboard to stop unconditioned air from entering the building through the soffits. This condition does not meet today's construction standards and Energy Code requirements. This issue needs to be addressed.

- Existing soffits at entry doors do not have gutters or down spouts, this limits staff and visitors cover from rainfall when entering and exiting the building as well as not directing water away from doors so that puddles cannot form and potentially freeze in the winter months. This issue should be addressed.

- All existing aluminum coping has large gaps between the face of coping and exterior walls, this condition allows for insects and small animals to potentially infest and damage the existing exterior wall and roof membrane. This issue should be addressed.

- Cavity walls contain approximately 1" of rigid insulation. This is a third of the required amount based on today's construction standards and Energy Code requirements. This condition results in a higher energy usage and cost for the Owner.

SECTION 5.1
Fire Station No. 21
Existing Condition Report

Building Envelope:

- There are several steel lintels at window and door openings that have cracked mortar joints. If not addressed these lintels will continue to allow water to penetrate the cavity wall and potentially deteriorate the existing steel lintels. These issues should be addressed by tuckpointing all lintels with cracked or missing mortar joints.

- Several areas of brick veneer were noted having cracked grout joints at walls, parapets, and sills. Though some areas appear to have been tuck pointed or caulked, there were many other areas that have been yet to be addressed. These issues appear to be the result from water penetrating the cavity wall from multiple sources such as parapets, and heads and sills of windows. These issues should be addressed by tuckpointing all of the exterior brick veneer walls.

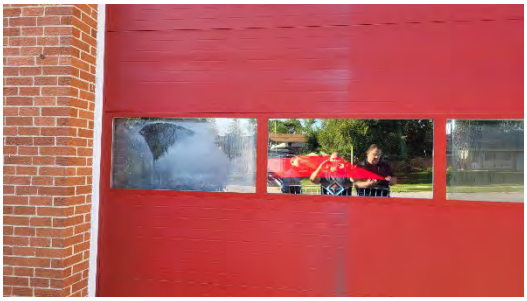
- Due to the time frame in which the building was constructed and from reviewing the original construction drawings, the exterior cavity walls contain 0" to less than 1" of rigid insulation. This is a quarter of the required amount based on today's construction standards and Energy Code requirements. This condition results in a higher energy usage and cost for the Owner. This issue needs to be addressed.

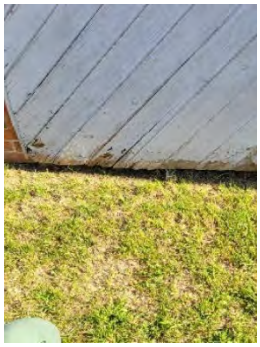
- The glazing at existing hollow metal window frames above front and rear apparatus bay doors have been removed and replaced with painted plywood. There is no insulated glazing units or wall cavity insulation at these openings in the exterior wall, this condition does not meet today's construction standards and Energy Code requirements. This condition results in a higher energy usage cost to the owner. It is suggested all window units and sealant be replaced with more energy efficient windows to reduce energy usage and cost for the Owner.

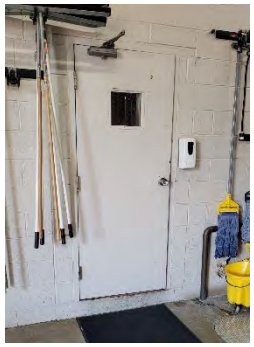
- Existing glazing units at the East and West sides of apparatus bay wood frames are original plate glass and do not meet today's construction standards and Energy Code requirements. This condition results in a higher energy usage cost to the owner. It is suggested all window units and sealant be replaced with more energy efficient windows to reduce energy usage and cost for the Owner.

- The existing aluminum clad wood windows appear to be in fair shape, some window leaks were reported. All existing window sealant has several gaps and is no longer pliable due to weathering and needs to be addressed. It is suggested all windows and sealant be replaced with more energy efficient units.

SECTION 5.1
Fire Station No. 21
Existing Condition Report







Building Envelope:

- The existing glass sectional overhead doors have missing glass cracked seals and do not meet the current energy code. This condition results in a higher energy usage and cost for the Owner. Overhead doors appear to be at the end of their life expectancies and should be replaced soon.

- All exterior grouted solid hollow metal frames and doors have started to rust through the weathered paint finish. It is suggested that all exterior hollow metal doors and frames be replaced with insulated doors and thermally broken frames to reduce energy usage and cost for the Owner.

- The infilled front and rear west residence wing openings are clad with painted wood paneling. The exterior wood paneling finishes are faded and deteriorating. This type of construction is subpar to typical commercial building construction. Due to the wall's construction type and the exterior cladding starting to show signs of deterioration it is suggested that they be replaced with a more suitable cladding material and insulation to reduce energy usage and cost for the Owner.

Accessibility:

Since the building was constructed and last renovated, accessibility requirements have changed with the Americans with Disabilities Act (ADA). The accessibility guidelines mandate that all public facilities are to be designed, constructed, or altered to assure equal accessibility to all members of society. If any type of renovation within the building occurs, multiple accessibility violations would need to be addressed. The violations range from minor issues to larger problems that would require significant renovation work. Below is a summary of violations reviewed during the building assessment:

- All entrances and egress exits for the facility do not meet ADA requirements due to not providing ramps at existing elevation changes at the gas curbs. Required push/pull door clearances and door hardware as required per code do not exist and do not allow a handicapped visitor or employee to enter, exit or traverse the facility safely.

- Interior room signage is not provided within the building. ADA compliant signage needs to be provided as required.

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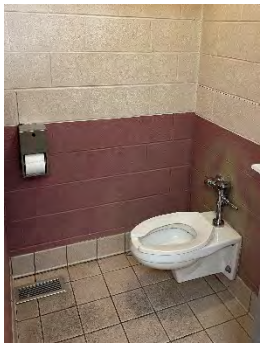
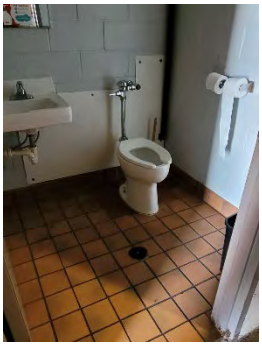

Accessibility:

- Most doors that exit to and from occupiable rooms along the path of egress do not have the required push/pull clear floor space provided that allows a handicapped visitor or employee to enter or exit the facility safely.
- The majority of door hardware throughout the station is knobs. These would need to be replaced with ADA compliant lever handles that do not require tight grasping, pinching, or twisting of the wrist to operate.
- All toilet/shower rooms do not meet ADA requirements in regard to reach ranges, plumbing fixture clearances, turning radius clearances and push/pull door clearance requirements. Inside the toilet rooms there is not enough clear floor space for a person in a wheelchair to turn around, transfer onto the toilet or open the door to exit. Also, the plumbing fixtures and several toilet accessories are not ADA compliant and the required grab bars are not provided.
- All toilet/shower rooms are lacking ADA compliant shower stalls.
- All toilet/shower rooms are lacking ADA compliant toilet stalls.
- Sinks in toilet/shower rooms and kitchen do not allow front approach wheelchair access as required per ADA. Sink bases and counter tops would need to be replaced with ADA compliant sink bases.
- Kitchen Countertops do not meet ADA requirements in regard to maximum work surface height requirements. The countertop is too high for a person in a wheelchair to access.
- All kitchen and toilet room casework are not provided with ADA complaint door and drawer pulls. Replace pulls as required.

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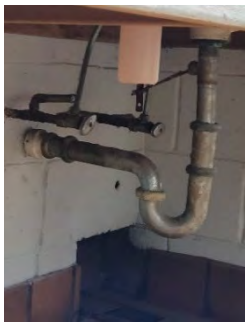

Building Code Issues:

- Code required fire separations are not provided between the Storage (Apparatus Bay) and Residence (Bunks, Dayroom, Kitchen, etc) This issue needs to be addressed.
- Mechanical /Electric room is currently being used for overflow storage and the minimum clearances for panels and water service are not provided. Access to these areas allows for tampering with equipment. Best practice is to provide a location for this equipment that can be secured and reduce storage in this space.
- All exposed sink and lavatory piping not covered or protected.
- Commercial hood in kitchen not provided with required make-up air unit. This issue needs to be addressed if hood is altered in the future.
- All emergency egress doors do not have the required panic door hardware.

NFPA Life Safety Code:

The National Fire Prevention Association (NFPA) publishes a series of safety codes and standards devoted to minimizing the possibility of fire and other risks. As a public facility dedicated to minimizing fires and other risks, this Fire Station is required to follow the standards set forward by the NFPA Life Safety Code Standards. Below is a list of NFPA violations that were observed:

- There is no NFPA 72 compliant gas detection system within the Apparatus Bay.

NFPA 1851 lays out the guidelines for handling elements that have been contaminated with hazardous materials. Many of the standards are related to standard operating procedures that need to be developed by the Fire Department. However, some of the procedures also require physical spaces that needs to be integrated into the existing building. Listed below are some of the observed violations of NFPA 1851 due to space limitations within the current facility:

- To prevent cross contamination, a designated decontamination area is required for routine cleaning of personal protective equipment that has been in contact with hazardous materials. There is no dedicated decontamination room observed within the current facility, all fire gear is being stored on the Apparatus Bay floor.

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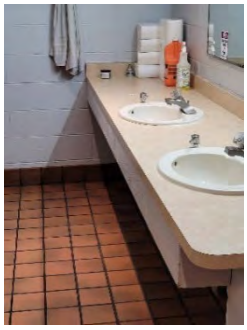

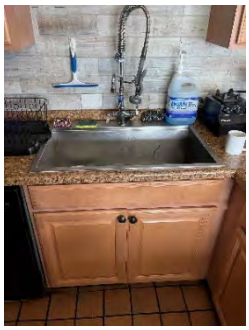

General Notes:

- Most of the facility has 2'x2' acoustical ceiling tiles that appear to be in good condition. There were some stained and damaged tiles, those tiles should be replaced.
- All existing light fixtures throughout the facility were replaced with more efficient LED light fixtures a couple years ago.
- The countertops are plastic laminate with a composite wood core, this product type at a wet surface location is not suggested due to possible delamination of the finish and deterioration of the composite wood core. It is suggested that all countertops in toilet rooms and kitchen be replaced with a more durable product like solid surface or quartz.

Mechanical Systems:

East Residence

- The east side of the building is heated and cooled by (1) York model TG8S080, 2010 and (1) Carrier model 59SC2, 2013. Both furnaces are gas fired, standard efficiency, down flow and appear to be in good condition. Each furnace has an associated humidifier and cooling coil. The associated 3-ton condensing units are located on grade outside of the mechanical room. The Carrier condensing unit on the east side is past its useful life and should be replaced in the near future.
- Combustion air is provided by two door louvers, one high and one low. The supply ductwork is routed underground to floor registers. The return is routed above the ceiling, to ceiling grilles. The furnaces are controlled by programmable thermostats.
- The kitchen has a commercial exhaust hood with a fire suppression system. No make-up air for the hood was observed. The expected useful life of this equipment is 20 years.
- Several rusted or damaged floor supply registers were noted. Replace the floor supply registers that are damaged or in poor condition with new heavy-duty registers.

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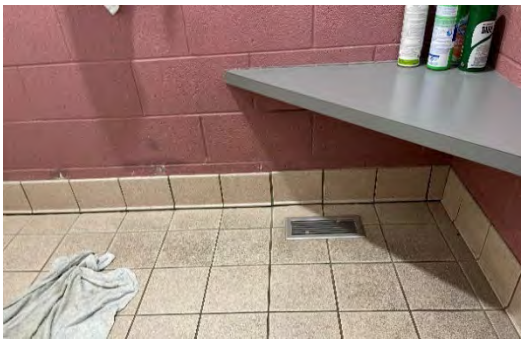


West Residence

- The west side of the building is heated and cooled by (1) Carrier furnace. Carrier model59SC2, 2019. The furnace is gas fired, standard efficiency, down flow. The furnace has an associated humidifier and cooling coil. The associated 2-ton condensing unit is located on grade outside of the mechanical room.

- This system serves the Bunk Room and offices. The supply ductwork is routed underground to floor registers. The return is routed above the ceiling to wall grilles. No means of combustion air was observed.

- Several rusted or damaged floor supply registers were noted. Replace the floor supply registers that are damaged or in poor condition with new heavy-duty registers.

Plumbing Systems:

Sanitary

- The underground sanitary waste and vent system utilizes hub and spigot cast iron and schedule 40 PVC. The above grade sanitary waste and vent system is generally hub and spigot cast iron (3" and larger) and galvanized pipe (2" and smaller). Exposed piping appears to be in fair condition. It is suggested to periodically inspect (camera) and clean (rodding acceptable, jetting preferred) the sanitary system to increase the life expectancy of the system.

Exterior

- The building's exterior has wall hydrants, overflow scuppers, and roof drain piping. The overflow scuppers splash into a gutter that ties directly into the storm system (schedule 40 PVC) underground on the west side of the building. On the east side the scuppers splash to grade using the gutter system. The roof drains splash on grade utilizing schedule 40 PVC. The storm system appears to be in fair to good condition.

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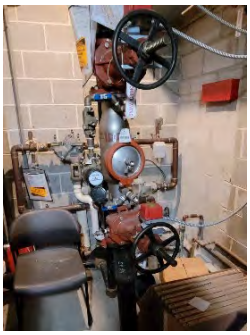

Plumbing Systems:

Interior

- The building has separate domestic and fire protection water services. The fire suppression service is ductile iron pipe while the domestic service is copper. The water piping is generally copper pipe with soldered joints and some sections of galvanized piping. The building has a 2" water meter, and a 2" RPZ for domestic water. 2" domestic water service and 4" fire protection. Exposed water piping is in good condition.

- Isolation valves were not observed at all fixtures. It is suggested that isolation valves be added. Without adding isolation valves, repairs will likely require all domestic water to be shut down.

- It is suggested that any galvanized piping be removed and replaced with copper piping when the opportunity presents itself.

- Existing water heater is in fair condition but is nearing the end of its useful life cycle and missing code required expansion tank. It is suggested that the hot water heater be replaced with more efficient unit with code required expansion tank.

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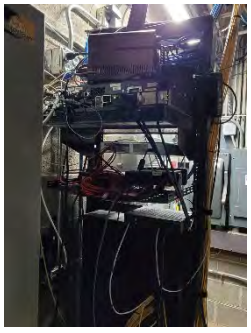

Electrical System:

- The electrical service to the building is an overhead type rated at 200-amps, delta 120/240v, single phase system.

  Per ComEd's record the peak demand occurred in January 2022 with 13.50 KW (56 amps). The electrical service has a spare capacity of 144 amps for little future expansion.

- The main electrical panel is in the mechanical room that is sub feeding one panel and then the sub feeding panel is sub feeding two panels, so there is total of (4) panels. The electrical panels are still working properly, but in poor condition since they are the ends of their lifespans and at their maximum capacities.

- It is suggested that incoming service be upgraded from 200A to 300A and changed from 120/240v1ph to 120/208v 3ph. This will help off load just being a single phase and would use less panels since two panels are at each side of the building. Each side should have one bigger panel with 42 circuit breakers instead of using two small panels with less circuit breakers.

- Existing sprinkler and domestic water piping runs over electric panels and IT racks. Pipes need to be rerouted away from the electrical panels in the mechanical room and some of the equipment needs to be rearranged, like the automatic transfer switch, for additional clearance and non-violation of the codes.

- Existing meter is on the exterior of the mechanical room and where the incoming service enters the building. The building is backed-up by a generator. Generator appears to be near its end of lifespan assuming it's more than 25 years old.

Fire Alarm System:

- Existing Notifier fire alarm panel is located in the mechanical/electrical room. Pull stations are provided as required. Existing system appears to be regularly serviced and in good working condition but is out of date and does not meet current code requirements. Existing fire alarm system and fire alarm devices to be replaced as required to meet current codes.

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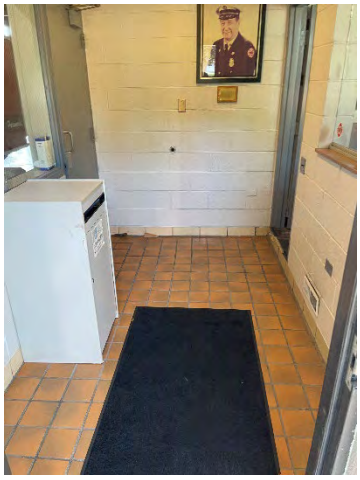

Interior:

Lobby

- The lobby is undersized and main entry does not have a separate vestibule. Not having this separation of heating/cooling zones from the exterior results in higher energy usage. It is suggested that the existing hollow metal door and frame be replaced with a thermally broken frame and insulated door system and potentially a new vestibule be added.
- The existing main entry door does not have the International Building Code (IBC) required exiting hardware and the door is designated as a fire exit with signage but does not have panic/exit hardware. The code required emergency exit door hardware needs be provided at this location.
- Code required fire separations are not provided between apparatus bay and lobby. Existing CMU call construction and penetrations to be reviewed and existing hollow metal frames, glazing and doors to be rated.
- Elevation changes at gas curb between lobby and watch office does not allow a handicapped employee or visitor to enter or safely egress out of the station office as required by accessibility and building codes. This issue needs to be addressed.
- Flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that flooring be replaced.
- Painted CMU is reaching the end of its lifespan and needs to be repainted.

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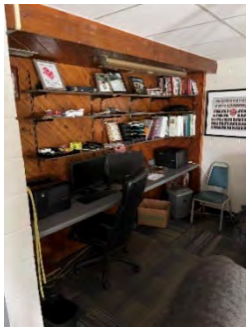

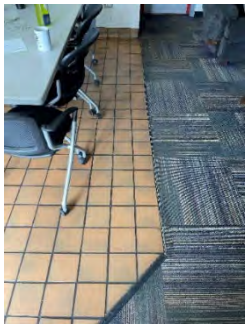

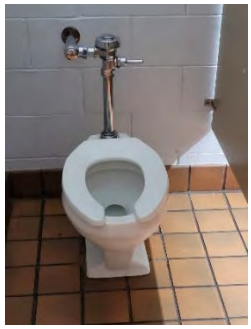

Office

- Office is undersized. (1) workstation and file cabinets are provided but should be larger to meet the Department 's operational needs. Flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that flooring be replaced.

- Office has direct emergency access to the Apparatus Bays; the doors are not equipped with weather seals which could allow contaminants to penetrate the space. This issue needs to be addressed by providing weather seals at a minimum, but a better buffer zone should be provided to maintain isolation between 'cold' and 'hot' zones.

- Elevation changes at gas curb between lobby and watch office do not allow a handicapped employee or visitor to enter or safely egress out of the station office as required by accessibility and building codes. This issue needs to be addressed.

Men's Toilet/Shower/Locker Room

- The Men's Toilet/Shower/Locker Room is accessed from the bunk room and apparatus bay and is undersized. The locker room consists of one (1) floor-mount, flush valve water closet, one (1) urinal, two (2) lavatories and one (1) shower. The water closet, urinals, lavatory faucets and shower appear to be in fair condition.

- The Men's Toilet/Shower/Locker Room is currently not meeting the Illinois Plumbing Code (IPC) by not having lavatories that utilize a thermostatic mixing valve to limit hot water temperature. The code required floor drain, piping and thermostatic mixing valves at the lavatory need to be provided. Also, it is suggested that all the lavatories' hardware be replaced because they are at the end of their life spans.

- The Men's Toilet/Shower/Locker Room is located directly off the apparatus bay and creates adjacency issues in which exhaust transfer from the vehicles in the apparatus bay can enter into the Toilet/Shower/Locker Room. The apparatus bays and residence wing are two separate closed mechanical systems/ zones but due to regular use of the locker room as a path for emergency calls and typical activities, exhaust from the vehicles is emitted into the Toilet/Shower/Locker Room every time the door opens and is then recirculated into the rest of the building. The lack of seals on the locker room door into the apparatus bays is also aiding in the transfer of exhaust. These issues need to be addressed.

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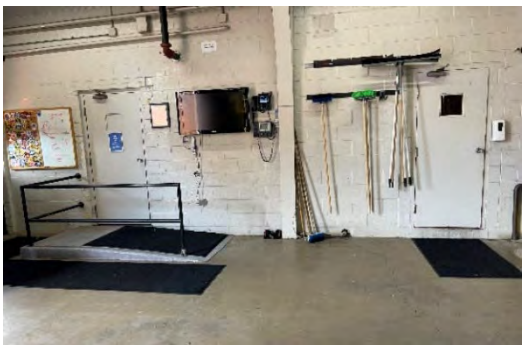

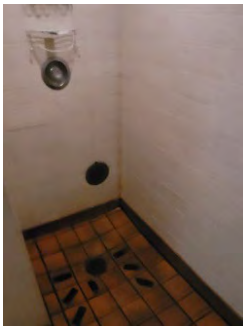

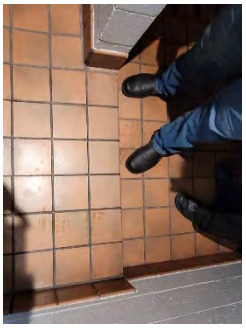

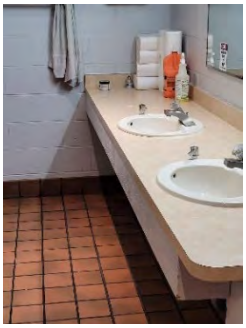

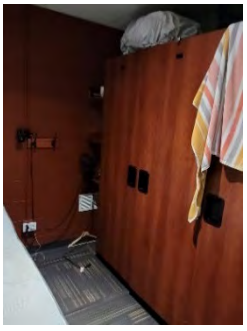

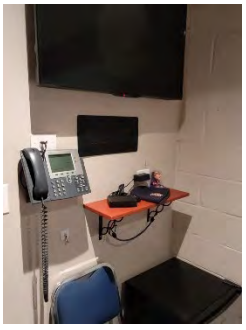

Men's Toilet/Shower/Locker Rooms

- Elevation changes at gas curb between Men's Toilet/Shower/Locker Rooms and apparatus bay does not allow a handicapped employee or visitor to enter or safely egress out of the space as required by accessibility and building codes. This issue needs to be addressed.
- The Men's Toilet/Shower/Locker Rooms do not meet ADA requirements in regard to reach ranges, plumbing fixture clearances, turning radius clearances and push/pull door clearance requirements. Inside the toilet rooms there is not enough clear floor space for a person in a wheelchair to turn around, transfer onto the toilet or open the door to exit. Also, the plumbing fixtures and several toilet accessories are not ADA compliant and the required grab bars are not provided.
- The Men's Toilet/Shower/Locker Rooms are lacking ADA compliant shower stalls.
- The Men's Toilet/Shower/Locker Rooms are lacking ADA compliant toilet stalls.
- Countertops do not meet ADA requirements in regard to maximum work surface height requirements. The countertop is too high for a person in a wheelchair to access.

Bunk Room

- There are (8) existing bunk areas separated by lockers. Bunk count does not meet current need for future growth. Existing bunks have required separation between individuals but does allows noise to easily reverberate throughout the entire room. Current trends have all 4 walls of the bunk room from floor to ceiling provided with sound insulation to reduce sound transfer, doors or door openings can be provided depending on the station's operation.
- The flow through the station is providing as direct as possible access to the Apparatus Bays in order to decrease response times for emergency calls. However, this results in a 'warm' zone directly off the Bays. Providing a better flow and buffer while still addressing direct response and access to the Bays would create a healthier environment and improve operations.

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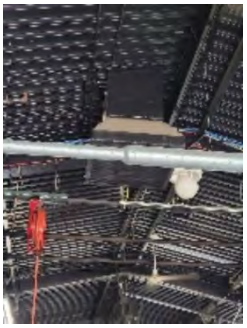

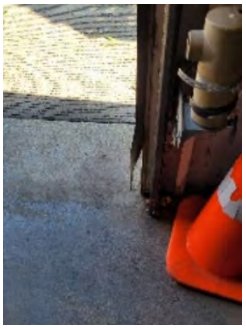

Apparatus Bay

- Apparatus Bays are a back-in style. The bays are tight based upon the original bay spacing. In addition, equipment and other storage is also located along the bay floor. This storage encroaches on egress aisles around vehicles and provides a safety concern.
- The Apparatus Bay is heated by two (2) gas fired unit heaters. The heaters are 80% efficient and are controlled by wall mounted thermostats.
- The Apparatus Bay contains a Plymovent exhaust capture system for the emergency vehicles. The Apparatus Bay also has a general exhaust fan mounted at the roof peak and ducted to a central exhaust grille. This fan is reported to be controlled by a wall switch but is not currently operational.
- There is currently no operating general exhaust system or gas detection system in the Apparatus Bay as required per current mechanical code. A gas detection system interlocked with the general exhaust system allows the exhaust system to operate intermittently or when CO/NO2 levels rise above the gas detection system set points. This issue needs to be addressed.
- A heavy-duty cast-iron trench drain serves the apparatus bay floor. The trench drain is connected to an oil separator (triple basin). The bay has one (1) hot and cold hose bib, two (2) general purpose hose connections and one (1) truck fill. Fixtures and equipment are in fair condition. Oil separator lid needs to be made gas tight, replace as required. The hose reels and truck fill do not have an RPZ to protect the potable water system. Add dedicated cold-water line and 2" RPZ for truck fill and hose reels.
- All existing light fixtures throughout the facility were replaced with more efficient LED light fixtures a couple years ago.
- The existing sectional overhead doors have cracked glazing seals and do not meet the current energy code. This condition results in a higher energy usage and cost for the Owner. Overhead doors appear to be at the end of their life expectancies and should be replaced soon.

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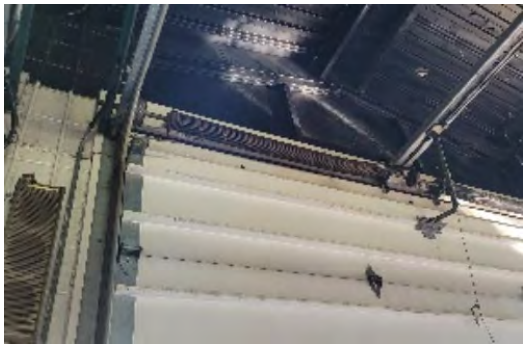
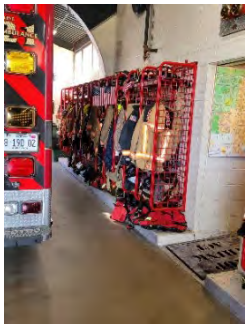
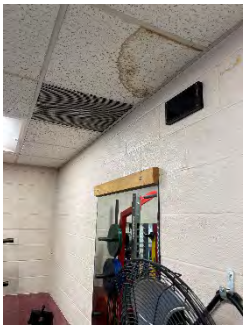
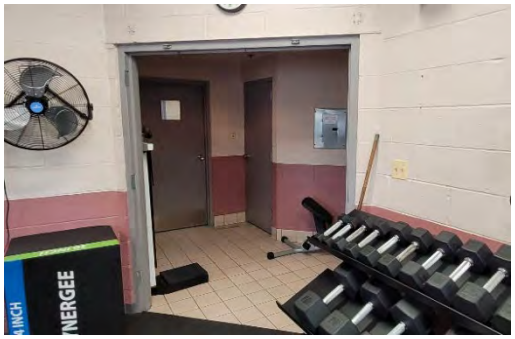








Apparatus Bay

- The Apparatus Bay doors are only 12'-0" high, which limits what equipment can be stored at the station. The Department of Transportation standards recommends a minimum height of 13'-10" that will accommodate most equipment. This issue should be addressed.

- Turnout gear lockers are provided and installed along the walls of the bay. Locating gear directly on the bay floor exposes the personal protective equipment to UV lighting, fluorescent lighting, apparatus exhaust, and potential theft. This is a vital piece of protective equipment for the firefighter. Maintenance and proper storage are vital. Best practices say that this equipment should be housed in a separate room that can be shut off from most of the items listed above.

- A separate EMS Decon area is not provided. NFPA guidelines recommend an EMS Decon area be provided to wash and clean off pathogens and other contaminants from equipment after calls.

- Existing concrete slab cracking was observed in the Apparatus Bay. Floor cracking in the apparatus bays does not present a structural integrity issue but the issue should be addressed.

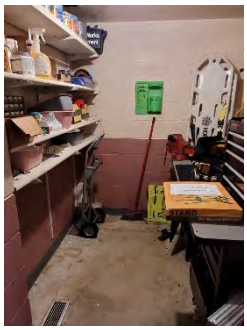
- Exposed concrete slab is in fair condition but has received years of stains after absorbing fossil fuels and chemicals. It is suggested that the concrete floor get coated with an epoxy system to seal the existing conditions of the slab, protect for future use and add slip resistance to the floor.

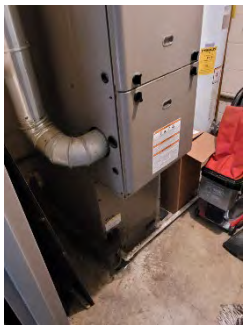
Laundry Room

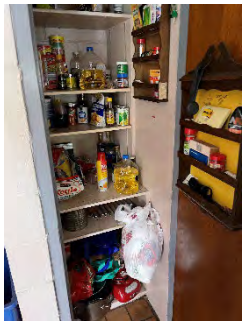
- Existing residential laundry and gear wash extractor are located together off the main residence. Location of laundry room requires all staff to bring soiled residential and contaminated gear through the bays and into the residence areas. This conflicts with national guidelines and violates the 'hot' vs 'cold' zone separation. This issue needs to be addressed.

SECTION 5.1

Fire Station No. 21
Existing Condition Report







Storage Rooms

- Storage and supply rooms are undersized thus leaving the existing station cluttered. There is not a potential opportunity to reorganize, replace shelving or remove unused equipment to provide more storage space. Larger dedicated storage and mechanical rooms need to be provided.

Kitchen

- The kitchen for the station is undersized. Existing refrigerators are located in adjacent spaces because there is not space to locate them in the kitchen. Existing kitchen does not allow the proper space required for the typical food prep triangle.

- Existing countertops are plastic laminate with a composite wood core, this product at a wet surface location is not suggested due to possible delamination of the finish and deterioration of the composite wood core. It is suggested that all countertops in the kitchen be replaced with a more durable product like solid surface or quartz.

- Commercial hood in kitchen not provided with required make-up air unit. This issue needs to be addressed if hood is altered in the future.

- Sink base cabinet in the kitchen does not allow front approach wheelchair access as required per ADA. Sink base would need to be replaced with ADA compliant sink base.

- Kitchen Countertops do not meet ADA requirements in regard to reach range and maximum work surface height requirements. The countertop is too high for a person in a wheelchair to access.

SECTION 5.1
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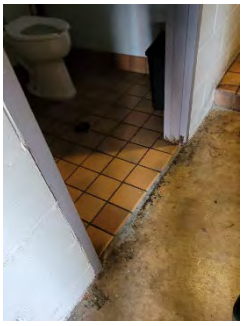
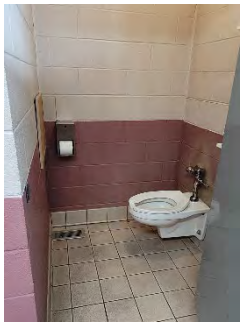
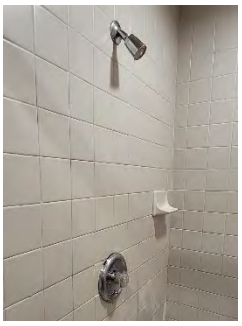
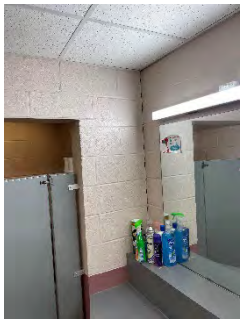






Toilet Room

- The toilet rooms do not meet ADA requirements in regard to reach ranges, plumbing fixture clearances, turning radius clearances and push/pull door clearance requirements. Inside the toilet rooms there is not enough clear floor space for a person in a wheelchair to turn around, transfer onto the toilet or open the door to exit. Also, the plumbing fixtures and several toilet accessories are not ADA compliant and the required grab bars are not provided.
- Toilet rooms are lacking ADA compliant toilet stalls.
- Countertops do not meet ADA requirements in regard to maximum work surface height and approach requirements. The countertop is too high for a person in a wheelchair to access.

Women's Toilet/Shower/Locker Room

- Elevation changes at gas curb between Women's Toilet/Shower/Locker Rooms and apparatus bay does not allow a handicapped employee or visitor to enter or safely egress out of the space as required by accessibility and building code. This issue needs to be addressed.
- The Women's Toilet/Shower/Locker Rooms do not meet ADA requirements in regard to reach ranges, plumbing fixture clearances, turning radius clearances and push/pull door clearance requirements. Inside the toilet rooms there is not enough clear floor space for a person in a wheelchair to turn around, transfer onto the toilet or open the door to exit. Also, the plumbing fixtures and several toilet accessories are not ADA compliant and the required grab bars are not provided.
- The Women's Toilet/Shower/Locker Rooms are lacking ADA compliant shower stalls.
- The Women's Toilet/Shower/Locker Rooms are lacking ADA compliant toilet stalls.
- Countertops do not meet ADA requirements in regard to maximum work surface height and approach requirements. The countertop is too high for a person in a wheelchair to access.

SECTION 5.2
Fire Station No. 22
Existing Condition Report

Fire Station No. 22 - Existing Building Condition Report

Fire Station No. 22 was originally built in the 1970s. The existing building is a single-story facility with a basement. The first floor above the basement is precast concrete planks. Exterior walls are constructed of uninsulated single wythe masonry bearing walls. The existing ballasted membrane roof over the apparatus bays, bay support and residence are flat and supported by structural steel joists. The interior walls at this station are primarily CMU block partitions in the apparatus bay, bay support and residence areas.

Site and Parking

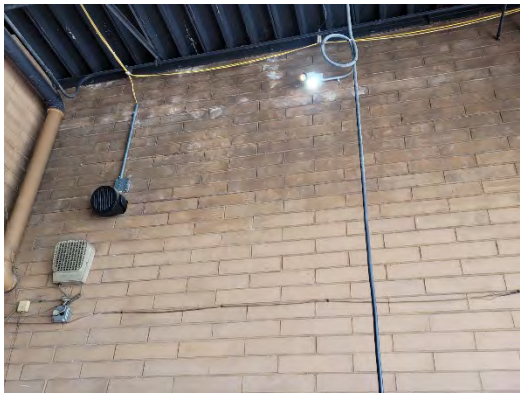
- Existing staff parking spaces for the facility are on the west side of the building and existing public convenience parking spaces for the facility are located at the main entry of the building. Current parking space count is sufficient for current needs.

- The asphalt parking and drives are in poor condition and have areas of cracking and should be replaced in the near future. If not replaced, water will continue to penetrate below the paved surface to the base and degrade the surface.

- The concrete apron has cracking at the control joints and should be replaced in the near future. If not replaced, water will continue to penetrate below the paved surface to the base and degrade the surface.

- Existing masonry trash enclosure gates appear to be in fair condition, but hardware is starting to fall apart and should be replaced in the near future. Steel bollards and framed gate doors should be provided in lieu of composite wood framing for longer life cycle and durability. Several areas of brick veneer were noted as having cracked grout joints at walls and limestone caps. These issues should be addressed by tuckpointing all of the exterior brick veneer walls and limestone caps or replacing limestone caps in kind or with aluminum coping.

SECTION 5.2
Fire Station No. 22
Existing Condition Report



Building Envelope:

- The existing flat roof at the apparatus bays, bay support and residence are single ply ballasted roofing systems with rigid insulation and is supported by steel decking and bar joists. The roofing membrane appears to be in good condition after being recently repaired. Existing roof insulation appears to be half of the required amount based on today's construction standards and Energy Code requirements. This condition results in a higher energy usage and cost for the Owner and needs to be addressed.

- All areas of single wythe load bearing masonry was noted as having efflorescence and cracked or missing grout joints at walls of interior surfaces. Efflorescence typically can be seen on exterior faces of masonry walls due to water penetrating the wall from multiple sources such as parapets, and heads and sills of windows. Existing efflorescence on interior surface of masonry wall appears to be due to negative pressure drawing the moisture through the mortar and masonry and into the building. Though some areas appear to have been tuck pointed or caulked there were still many other areas that have been yet to be addressed. This issue needs to be addressed or the entire exterior load bearing wall will continue to deteriorate leading to potential structural issues. This issue involves the entire building, and there is simply no easy way to fully seal out moisture from entering the building and continuing to cause damage.

- Due to the time frame in which this single wythe masonry building was constructed and from reviewing the original construction drawings, the exterior walls contain no insulation. This condition does not meet today's construction standards and Energy Code requirements. This condition results in a higher energy usage and cost for the Owner and should be addressed.

- There are several interior and exterior steel lintels at window and door openings that appear to have started to rust at the surface and were painted. If not addressed soon these lintels will continue to deteriorate and potentially allow water to penetrate the cavity wall and lead to other issues. It is suggested that all steel lintels be sanded to remove paint and surface rust and receive the required primer/paint coats to seal and protect the steel.

- The existing aluminum clad wood windows appear to be in fair shape but are past their useful lifespan and have been wrapped and painted. It is suggested they be replaced with more energy efficient windows to reduce energy usage and cost for the Owner.

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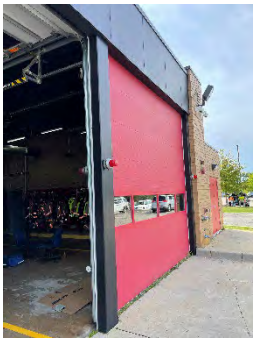

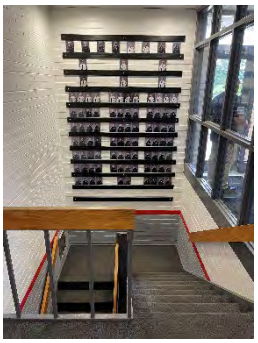

Building Envelope:

- The existing glass sectional overhead doors appear to have recently been painted and appear to be in good condition. No issues reported.

- All exterior grouted hollow metal frames and doors are in good condition but do not meet today's construction standards and Energy Code requirements. It is suggested that all exterior hollow metal doors and frames be replaced with insulated doors and thermally broken frames to reduce energy usage and cost for the Owner.

Accessibility:

Since the building was constructed and last renovated, accessibility requirements have changed with the Americans with Disabilities Act (ADA). The accessibility guidelines mandate that all public facilities are to be designed, constructed, or altered to assure equal accessibility to all members of society. If any type of renovation within the building occurs, multiple accessibility violations would need to be addressed. The violations range from minor issues to larger problems that would require significant renovation work. Below is a summary of violations reviewed during the building assessment:

Accessibility:

- All entrance/egress exits for the facility do not meet ADA requirements due to existing elevation changes at stoops that do not allow a handicapped visitor or employee to enter or exit the facility safely.

- No elevator, accessible stairs or ramps are provided that currently serve the facility. A handicapped visitor or employee cannot currently access the training/meeting room since it is in the basement.

- Existing stairs to basement do not have ADA required handrails. Also, handrails are not the proper shape or diameter and do not extend beyond the top and bottom risers the required 12". The guardrails and handrails would need to be replaced with new compliant guardrails and handrails.

- Egress paths to exit the facility do not meet ADA requirements due to doors swinging the wrong way that do not allow a handicapped visitor or employee to exit or travel through the facility safely.

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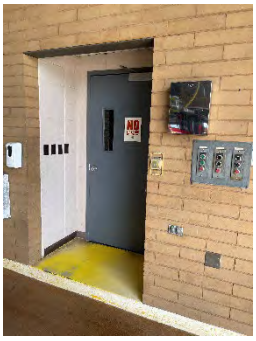




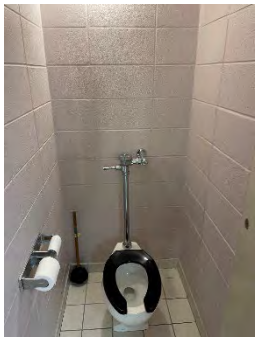
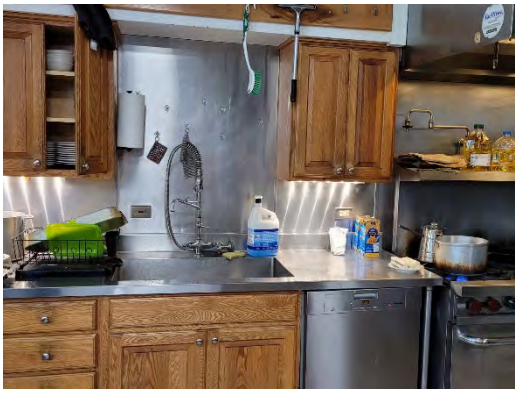

Accessibility:

- All entrance/egress exits for the facility do not meet ADA requirements due to existing elevation changes at gas curbs that do not allow a handicapped visitor or employee to enter or exit the facility safely.
- Most doors entrance and exits to and from occupiable rooms along the path of egress do not have the required push/pull clear floor space provided that allows a handicapped visitor or employee to enter or exit the facility safely.
- Kitchen Countertops do not meet ADA requirements in regard to reach range and maximum work surface height requirements. The countertop is too high for a person in a wheelchair to access.
- All casework doors and drawers do not have ADA compliant pulls. These would need to be replaced with an ADA wire pull that does not require tight grasping or pinching to operate.
- Sink base cabinet in kitchen does not allow front approach wheelchair access as required per ADA. Sink base would need to be replaced with ADA compliant sink base.
- All toilet/shower rooms do not meet ADA requirements in regard to reach ranges, plumbing fixture clearances, turning radius clearances and push/pull door clearance requirements. Inside the toilet rooms there is not enough clear floor space for a person in a wheelchair to turn around, transfer onto the toilet or open the door to exit. Also, the plumbing fixtures and several toilet accessories are not ADA compliant and the required grab bars are not provided.
- All toilet/shower rooms are lacking ADA compliant shower stalls.
- All toilet/shower rooms are lacking ADA compliant toilets.
- Existing stairs, toilet rooms and exits do not meet ADA signage requirements, no signage is currently provided. The entire facility needs to be provided with ADA compliant rooms signage.
- Most door hardware throughout the building are knobs. These would need to be replaced with ADA compliant lever handles that do not require tight grasping, pinching, or twisting of the wrist to operate.

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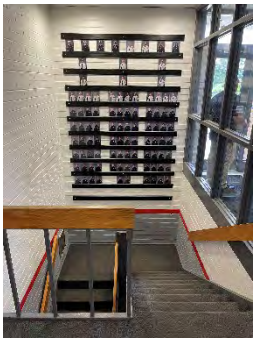

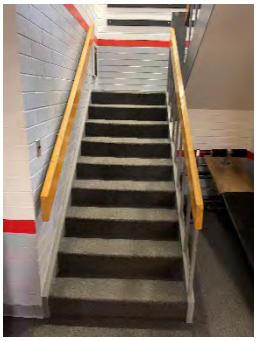

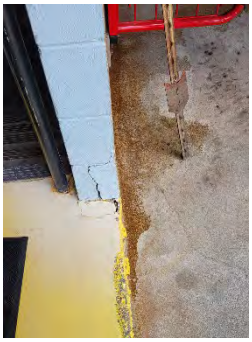

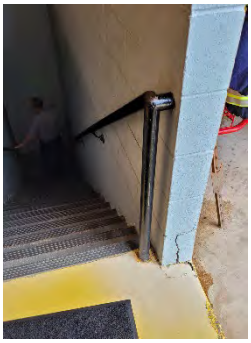

Building Code Issues:

- There is no elevator that services the facility. Currently, a handicapped visitor or employee cannot access the training room since it is in the basement. This issue needs to be addressed.

- The existing stair does not have ADA required hand and guard rails. Also, handrails are not the proper shape or diameter and do not extend beyond the top and bottom risers the required 12". The guardrails and handrails would need to be replaced with new compliant guardrails and handrails.

- There is not a code compliant egress path from the basement. Stair is not enclosed in fire rated construction, does not meet the minimum width requirement, and does not exit directly to the exterior. Two egress stairs are required for exiting. This issue needs to be addressed.

NFPA Life Safety Code:

The National Fire Prevention Association (NFPA) publishes a series of safety codes and standards devoted to minimizing the possibility of fire and other risks. As a public facility dedicated to minimizing fires and other risks, this Fire Station is required to follow the standards set forward by the NFPA Life Safety Code Standards. Below is a list of NFPA violations that were observed:

- There is no NFPA 72 compliant gas detection system within the Apparatus Bay.

NFPA 1851 lays out the guidelines for handling elements that have been contaminated with hazardous materials. Many of the standards are related to standard operating procedures that need to be developed by the Fire Department. However, some of the procedures also require physical spaces that need to be integrated into the existing building. Listed below are some of the observed violations of NFPA 1851 due to space limitations within the current facility:

- To prevent cross contamination, a designated decontamination area is required for routine cleaning of personal protective equipment that has been in contact with hazardous materials. There is no dedicated decontamination room observed within the current facility, all fire gear is being stored on the Apparatus Bay floor.

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First Floor Interior:

General Notes

- Most of the facility has 2'x4' acoustical ceiling tiles that appear to be in good condition. All existing light fixtures throughout the facility were replaced with more efficient LED light fixtures a couple years ago.

- The countertops are plastic laminate, this product type at a wet surface location is not suggested due to possible delamination of the finish and deterioration of the composite wood core. It is suggested that all countertops in toilet rooms and kitchen be replaced with a more durable product like solid surface or quartz.

Mechanical system:

- Existing mechanical system comprised of three (3) Carrier furnaces. Each furnace is gas fired, standard efficiency, up flow configuration. The furnaces have associated humidifiers and cooling coils. The associated condensing units are located on grade at the north face of the building.

- One furnace serves the lower level. Ductwork is routed at the ceiling with ceiling supply and return diffusers. The second furnace serves the ground level east side. Ductwork is routed at the lower-level ceiling with supply stubs up to floor registers, the return duct is routed up to the 1st floor ceiling with sidewall return grilles. The third furnace serves the ground level west side. Ductwork is routed at the lower-level ceiling with supply stubs up to floor registers, the return duct is routed up to the 1st floor ceiling with sidewall return grilles. Most of the floor supply registers are in fair to poor condition.

- The expected useful life of the furnaces is 18 years. The furnaces are approximately 4 years old and appear to be in good condition. The expected useful life of the condensing units is 18 years. The condensing units are approximately 10 years old and appear to be in fair condition.

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Plumbing Systems:

Sanitary

- The underground sanitary waste and vent system is hub and spigot cast iron. The above grade sanitary waste and vent system is generally hub and spigot cast iron (3" and larger) and galvanized pipe (2" and smaller). Exposed piping appears to be in good condition; however, given the age of the facility, it is unlikely that the interior of the galvanized piping is still in good condition. It is suggested that the existing sanitary system be inspected (camera) and cleaned (rodding acceptable, jetting preferred) to increase the life expectancy of the system.

Interior

- The fire suppression service is ductile iron pipe while the domestic service is copper. The water piping is generally copper pipe with soldered joints. The building has a 2" water meter, a 2" RPZ for potable water. The fire protection system (truck fills & sprinkler heads) has a 4" double detector check. Isolation valves were not observed at fixture groups. Isolation valves should be installed when construction requires it.

- The mechanical room consists of an atmospheric natural gas water heater, a duplex sewage ejector pump system, a duplex sump pump system, one (1) service sink and a floor drain. The water heater is 98 gallons, 75,100 BTUH. The 2" water service and associated 2" RPZ are also located in the room. There is an unused water stub inside the room. Code requires dead ends be less than 2'-0" in length, reduce as required.

Exterior

- The building's exterior has two (2) wall hydrants and scupper system for overflows. The wall hydrants appear to be in fair to good condition.

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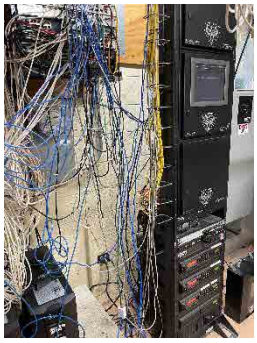

Electrical System:

- The electrical service to the building is an underground type rated at 400-amps, 120/208v, three phase system, the meter is in the electrical room. The building is backed-up by a generator. During power loss, the Automatic Transfer Switch (ATS) is located in the electrical room and transfers power from normal (ComEd) power to Emergency (generator) power. The electrical service has a spare capacity of 266 amps for minor future expansion.

- The electrical service is registered with ComEd. Per ComEd's record the peak demand occurred in January 2022 with 27.80 KW (134 amps).

Fire Alarm System:

- Existing Notifier fire alarm panel is located in the mechanical/electrical room. Pull stations are provide as required. Existing system appears to be regularly serviced and in good working conditions but is also out of date and does not meet current code requirements. Existing fire alarm system and fire alarm devices to be replaced as required to meet current codes.

General Notes:

- Most of the facility has 2'x4' acoustical ceiling tiles that appear to be in good condition. Some stained and damaged tiles should be replaced.

- All existing light fixtures throughout the facility were replaced with more efficient LED light fixtures a couple years ago.

- The countertops are plastic laminate, this product type at a wet surface location is not suggested due to possible delamination of the finish and deterioration of the composite wood core. It is suggested that all countertops in toilet rooms and kitchen be replaced with a more durable product like solid surface or quartz.

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Interior First Floor:

Vestibule

- Main entrance is narrow and undersized, visitors enter into a small corridor and then move into main intersection of station corridors. A more inviting entry should be reviewed, at a minimum the vestibule should be widened.

- Tile flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that flooring be replaced. The CMU appears to have been painted recently.

Station Corridors

- Most door access and exits to and from occupiable rooms along the path of egress do not have the required push/pull clear floor space provided that allows a handicapped visitor or employee to enter or exit the facility safely.

- There is not a code compliant egress path from the basement. Stair is not enclosed in fire rated construction, does not meet the minimum width requirement, and does not exit directly to the exterior. Two egress stairs required for exiting. This issue needs to be addressed.

- Carpet flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that carpet flooring be replaced with a more resilient material that can hold up to boot traffic better like tile or vinyl. The CMU appears to have been painted recently.

Officer Suite

- Office appears to be correctly sized, but bunk and toilet room are undersized. Required area for workstation and file storage provided. Office connected to toilet and bunk to form a suite. Flow between spaces is less than desirable, this issue should be addressed.

- All toilet/shower rooms do not meet ADA requirements in regard to reach ranges, plumbing fixture clearances, turning radius clearances and push/pull door clearance requirements. Inside the toilet rooms there is not enough clear floor space for a person in a wheelchair to turn around, transfer onto the toilet or open the door to exit. Also, the plumbing fixtures and several toilet accessories are not ADA compliant and the required grab bars are not provided.

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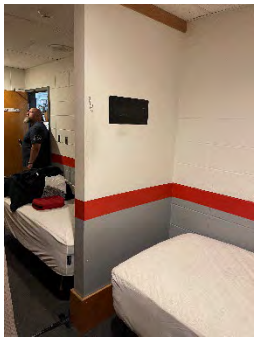


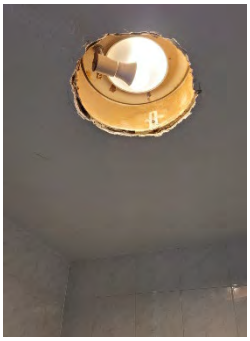

- Toilet/shower room is lacking ADA compliant shower stalls.
- All toilet/shower rooms are lacking ADA compliant toilet stalls.
- Sinks in toilet/shower rooms do not allow front approach wheelchair access as required per ADA. Sink base/counter tops would need to be replaced with ADA compliant sink bases.
- Tile appears to be original to the building and is reaching the end of its lifespan. It is suggested that flooring be replaced.

Officer Bunks

- (2) officer bunks are combined to house (2) joined bunk areas provided with (3) beds and (9) lockers.
- Bunk room does not provide space for ADA compliant turning radius and push/pull door clearance requirements that allows safe entrance and egress from the space.
- Tile flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that flooring be replaced. CMU appears to have been painted recently.

Communication Room

- Communication room is undersized for the station's operations. More room for additional workstations and conference table should be provided if possible.
- Carpet flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that carpet flooring be replaced with a more resilient material that can hold up to boot traffic better like tile or vinyl. CMU appears to have been painted recently.

Men's Locker Room

- All toilet/shower rooms do not meet ADA requirements in regard to reach ranges, plumbing fixture clearances, turning radius clearances and push/pull door clearance requirements. Inside the toilet rooms there is not enough clear floor space for a person in a wheelchair to turn around, transfer onto the toilet or open the door to exit. Also, the plumbing fixtures and several toilet accessories are not ADA compliant and the required grab bars are not provided.

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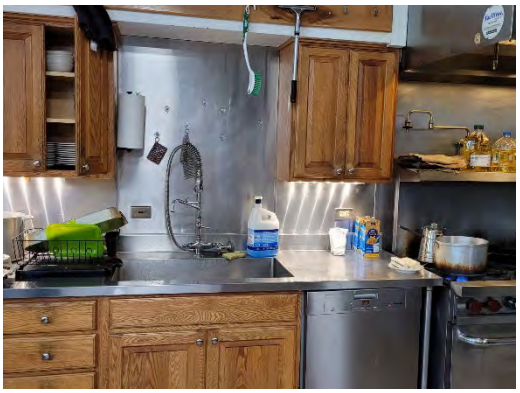


- All toilet/shower rooms are lacking ADA compliant shower stalls.
- All toilet/shower rooms are lacking ADA compliant toilet stalls.
- Sinks in toilet/shower rooms and kitchen do not allow front approach wheelchair access as required per ADA. Sink base/counter tops would need to be replaced with ADA compliant sink base.
- Countertops do not meet ADA requirements in regard to maximum work surface height requirements. The countertop is too high for a person in a wheelchair to access.
- Tile flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that flooring be replaced. CMU appears to have been painted recently.

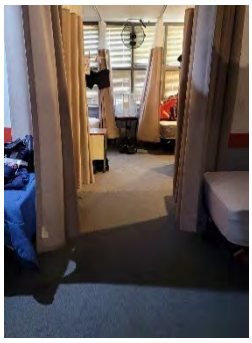
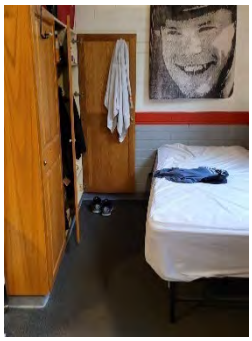
Kitchen

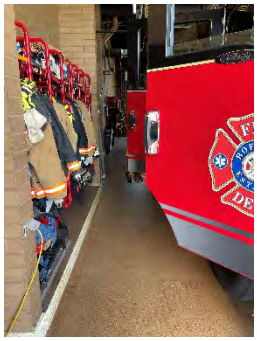
- The kitchen for the facility is undersized. Tile flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that flooring be replaced. The CMU walls appear to have been painted recently. Stainless steel countertops appear to be in good condition. With all the hard surfaces noted in this area, sound reverberance should be addressed in the Kitchen/Dayroom/Dining.
- Sink base cabinet in the kitchen does not allow front approach wheelchair access as required per ADA. Sink base would need to be replaced with ADA compliant sink base.
- Kitchen Countertops do not meet ADA requirements in regard to reach range and maximum work surface height requirements. The countertop is too high for a person in a wheelchair to access.
- All casework doors and drawers do not have ADA compliant pulls. These would need to be replaced with ADA wire pulls that do not require tight grasping or pinching to operate.

Dayroom

- Dayroom appears to be slightly undersized. Seating arrangement in the space is not desirable. New room layout and furniture arrangement to be reviewed to increase monitor sight lines.

SECTION 5.2
Fire Station No. 22
Existing Condition Report


Bunk/Locker Room

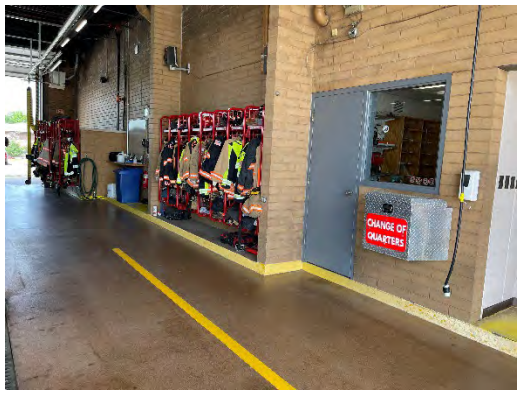
- There are eight (8) existing bunk areas separated by curtains. Bunk count does not meet current need or future growth. Existing bunks to do allow required separation between individuals and allows noise to easily reverberate throughout the entire room. Current trends have all 4 walls of the bunk room from floor to ceiling and provide sound insulation to knock down sound transfer, doors or door openings can be provided depending on the station's operation.
- Twenty-four (24) lockers are provided, this is not enough to meet future growth. Additional lockers need to be provided. Current trends have the lockers either located in the individual bunk rooms or in a combined locker room with toilet/shower rooms directly located off the locker room to allow for individual changing space.
- Carpet flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that carpet flooring be replaced.

Apparatus Bays

- Apparatus Bays are a back-in style. The bays are tight based upon the original bay spacing. In addition, equipment and other storage is also located along the bay floor. This storage encroaches on egress aisles around vehicles and provides a safety concern. The lack of storage for the bay, seasonal, training and public ed needs to be addressed.
- Apparatus bay is heated by four (4) gas fired unit heaters. The heaters are 80% efficient and are controlled by wall mounted thermostats. The expected useful life of the Apparatus Bay unit heaters is 13 years. The exact age of the unit heaters is not known; however, they are relatively new and appear to be in good condition.
- The Apparatus Bay contains a Plymovent exhaust capture system for the emergency vehicles. The Apparatus Bay also has a general exhaust fan mounted on the roof and ducted to a central exhaust grille. This fan is controlled by a wall switch but is not currently operational.
- The Generator Room, Workshop and Hose Drying room each have a gas fired unit heater, controlled by wall mounted thermostats. The Hose Drying room and Workshop each has exhaust ducted to a roof mounted exhaust fan. The dryer exhaust is ducted to an exterior wall louver.

SECTION 5.2
Fire Station No. 22
Existing Condition Report





Apparatus Bays

- There is currently no operating general exhaust system or gas detection system in the Apparatus Bay. Code requires a minimum of 0.75 CFM/sq.ft exhaust. A gas detection system interlocked with the general exhaust system allows the exhaust system to operate intermittently or when CO/NO2 levels rise above the gas detection system setpoints.

- All existing light fixtures throughout the facility were replaced with more efficient LED light fixtures a couple years ago.

- The Apparatus Bay doors are only 12'-0" high, which limits what equipment can be stored at the Station. The Department of Transportation standards recommends a minimum height of 13'-10" that will accommodate most equipment. This issue should be addressed.

- Existing concrete slab cracking was observed in the Apparatus Bay. Floor cracking in the apparatus bays does not present a structural integrity issue but the issue should be addressed.

- Epoxy flooring is in fair condition but has received years of stains after absorbing fossil fuels and chemicals and is deteriorating. It is suggested that the concrete floor get coated with a new epoxy system to seal the existing conditions of the slab and protect for future use. Epoxy floor systems also provide slip resistance.

- Turnout gear lockers are provided and installed along the walls of the bay. Locating gear directly on the bay floor exposes the personal protective equipment to UV lighting, fluorescent lighting, apparatus exhaust, and potential theft. This is a vital piece of protective equipment for the firefighter. Maintenance and proper storage are vital. Best practices say that this equipment should be housed in a separate room that can be shut off from most of the items listed above.

- All personal and gear laundry is done on the bay floor, this poses issues for contamination between clean and dirty spaces. Clean towels and other items are stored on the bay floor. To prevent cross contamination, a designated decontamination area is required for routine cleaning of personal protective equipment that has been in contact with hazardous materials.

SECTION 5.2
Fire Station No. 22
Existing Condition Report

Apparatus Bays

- Heavy-duty cast-iron trench drains serve the apparatus bay floor. The trench drain is connected to an oil separator (triple basin). The bay has one (1) service sink with standard trap, two (2) washing machines, one (1) ice machine, two (2) general purpose hose connections and two (2) 2" truck fills. Reseal oil separator to make it airtight and provide vent at washing machine waste line.

- The flow through the station is providing as direct as possible access to the Apparatus Bays in order to decrease response times for emergency calls. However, this results in a 'warm' zone directly off of the Bays. Providing a better flow and buffer while still addressing direct response and access to the Bays would create a healthier environment and improve operations.

Lower Level:

Training Room

- Existing training room is severely undersized. Existing training room was designed to seat twelve (12) but needs to accommodate thirty (30) at weekly training sessions. To correctly accommodate the current space needs for training, this space needs to be larger.

- No training storage room is provided adjacent to the training room, storage cabinets line the walls. By not having a separate storage room this undersized room is even less usable due to training tools and equipment occupying the already limited space.

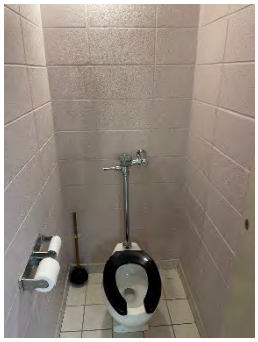
- Carpet flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that carpet flooring be replaced with a more resilient material that can hold up to boot traffic better like tile or vinyl. CMU walls appear to have been painted recently.

Conference Room

- Conference room/report writing/workstations are provided in the basement. These spaces do not appear to be regularly used but should be located adjacent to other operational type spaces.

- Carpet flooring appears to be original to the building and is reaching the end of its lifespan. It is suggested that carpet flooring be replaced with a more resilient material that can hold up to boot traffic better like tile or vinyl. CMU walls appear to have been painted recently.

SECTION 5.2
Fire Station No. 22
Existing Condition Report



Fitness

- Fitness room is undersized for the Department's desired use of the fitness room. Flooring is not rated for fitness applications. A sports floor is typically suggested for fitness applications.
- Ceiling height is a bit lower than desired, current fitness trends have larger equipment and requires taller ceiling clearance.

Women's Locker Room

- All toilet/shower rooms do not meet ADA requirements in regard to reach ranges, plumbing fixture clearances, turning radius clearances and push/pull door clearance requirements. Inside the toilet rooms there is not enough clear floor space for a person in a wheelchair to turn around, transfer onto the toilet or open the door to exit. Also, the plumbing fixtures and several toilet accessories are not ADA compliant and the required grab bars are not provided.
- Toilet/shower room is lacking ADA compliant shower stalls.
- The Toilet/shower room is lacking an ADA compliant toilet stall.
- Sinks in toilet/shower room do not allow front approach wheelchair access as required per ADA. Sink base/counter tops would need to be replaced with ADA compliant sink base.
- Tile appears to be original to the building and is reaching the end of its lifespan. It is suggested that flooring be replaced.

SECTION 6
Fire Station No. 21 & No. 22 Existing Conditions Analysis

Existing Conditions Analysis of Station No.21 & No.22:

The analysis of Fire Station No. 21 & No. 22 focused on 5 major points of concern:

1. Systems, equipment, and spaces/ functions that the facility should have with regards to current Fire Service standards and recommendations
2. Spaces the current Fire Station is lacking because of the size of the existing facility.
3. Relationships/ interconnection & separation/ isolation of spaces.
4. Building envelope issues/ concerns and structural deficiencies
5. Miscellaneous comments/ issues

Items were also evaluated on a life safety basis. Certain items should be completed sooner than others, based upon the impact they have on the safety of the occupants, officers, firefighters, or public.

This classification approach is shown to provide a minimum amount of work required to get the current facilities safe for its occupants. It helps define each item according to operations and need. Ultimately, it helps the Village plan on how best to address points of concern throughout the facility. However, correcting each safety item will still not address any space shortcomings in the building.

By evaluating and making recommendations to address the current building conditions, a baseline cost impact is established to bring the building up to current standards. It is anticipated these improvements will extend the buildings' lifespans by another 15 to 20 years. However, none of the space or operational deficiencies are corrected with these costs.

The total cost impact of improving the existing building conditions:

Station 21:	**Low**	**$2,000,000**
	High	**$3,000,000**
Station 22:	**Low**	**$3,500,000**
	High	**$4,500,000**

These are significant costs and, as was noted above, do not account for any additional square footage added to the buildings or ancillary costs such as furniture/fixture replacements. The other important factor to note is how undersized each facility is:

Station 21:	**Current**	**6,175 sq.ft.**
	Proposed	**13,562 sq.ft.**
Station 22:	**Current**	**11,534 sq.ft.**
	Proposed	**25,296 sq.ft.**

The next section of the report, potential solutions, will analyze on how best to solve each station's situation to meet the Department's future needs highlighted throughout this study.

SECTION 7

Fire Station No. 21 & No. 22 & Fire Department Administration Potential Solutions

Potential Solutions

The Potential Solutions studied include the following:

7.1 Fire Station No.21

Solution A - A new station on the existing site
Solution B - A new station located south of the police facility
Solution C - A new station located to the north of the police facility within the existing parking lot

7.2 Fire Station No.22

Solution A - A new station on the existing site
Solution B - A new station on the vacant site along Barrington Road
Solution C- A new station located within the Northwest Corporate Center

7.3 Fire Department Administration

Evaluation of department relocation

On the following pages are descriptions, plan diagrams, and budgets of each concept explored.

SECTION 7.1
Fire Station No. 21
Solution A

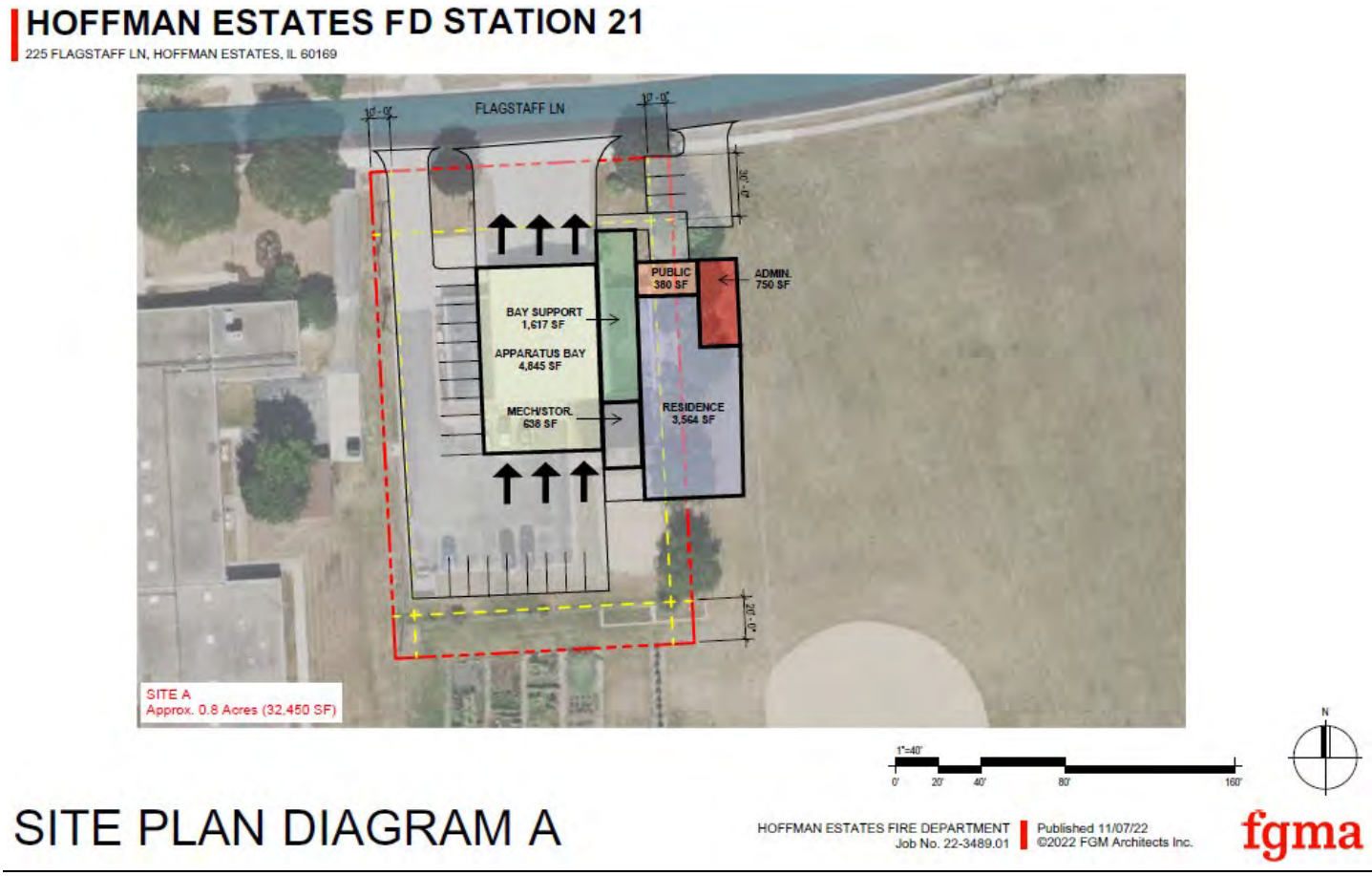
SOLUTION A:

This solution shows a new proposed station rebuilt on the existing site at 225 Flagstaff Lane. Due to the increased proposed size of 13,562 sq.ft. the building does not fit within the existing property and setback lines. However, the adjacent park property is owned by the Village so additional property can be allocated along the eastern property line.

In order to accommodate the larger station, an additional .2 acres would be needed to fit the building in this location. It must be noted that the proposed 1-acre site would fit the building and associated parking and drives but no water detention has been identified.

This solution allows the station to remain in its current location, but a temporary relocation would be necessary for the operations of the station while construction is being completed. Decisions on where responders could be relocated would need to be determined by the Village. Potential options include moving into a neighboring fire department, relocating to a nearby industrial storage or vacant building, or relocate to a temporary trailer and hoop structure for the apparatus. These temporary situations could add an additional $250,000 to the project cost.

Alternately, since the Village owns the adjacent park, a new station could be built in the park, which would allow operations to continue in the existing facility during construction.



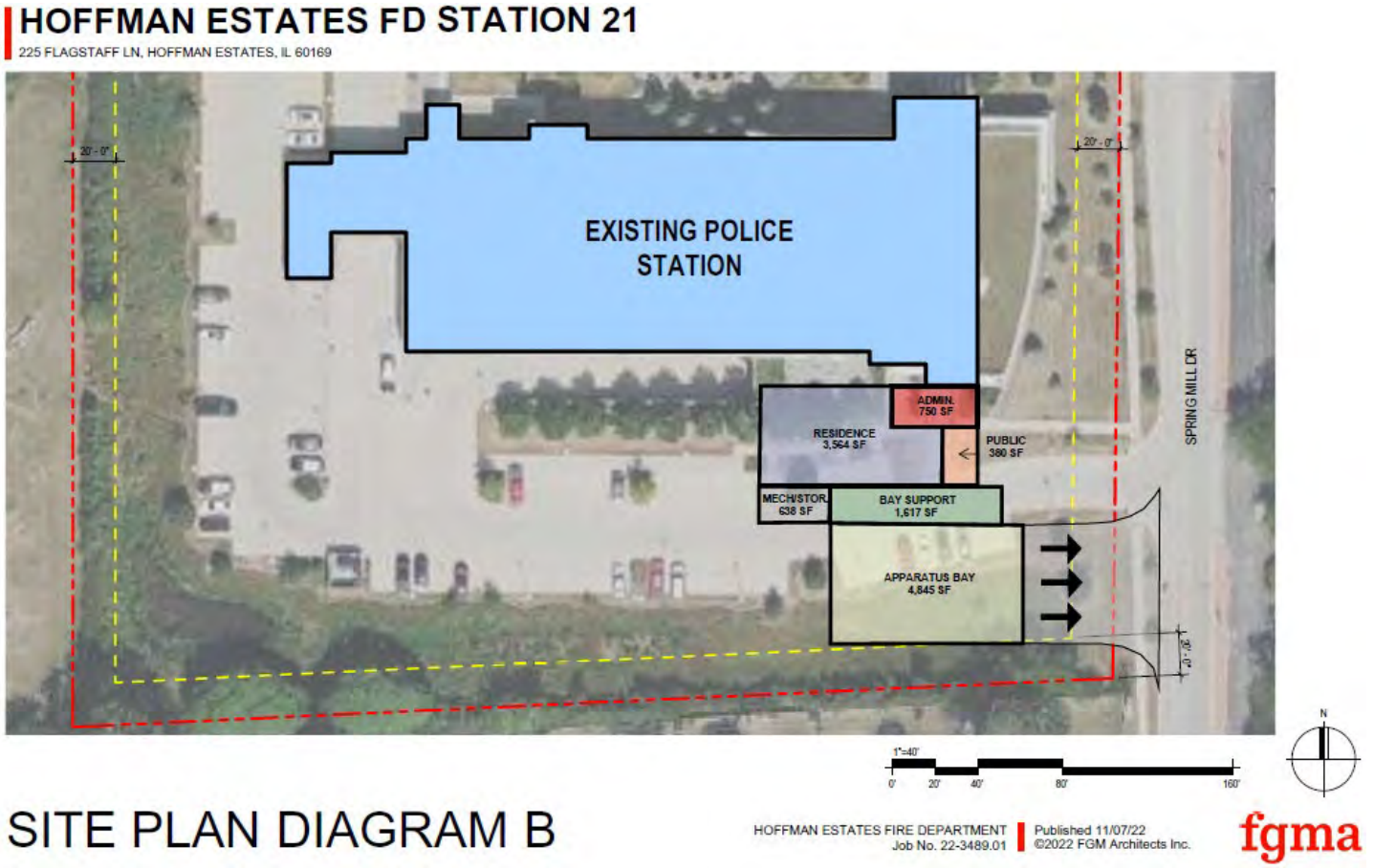
SECTION 7.1
Fire Station No. 21
Solution B

SOLUTION B:

This solution shows a new proposed station built on the south side of the existing police facility located at 411 W Higgins. The 13,562 sq.ft. building is shown attached to the south entrance area of the police facility. The building does fit within the exiting property and setback lines; however, the size of the building would prohibit the current circular traffic pattern completely around the police facility. It also encroaches into the detention area along the south property line.

This solution allows the new station to be built while operations remain active at the current facility.

Based on the discussion above, this solution is not a preferred option.



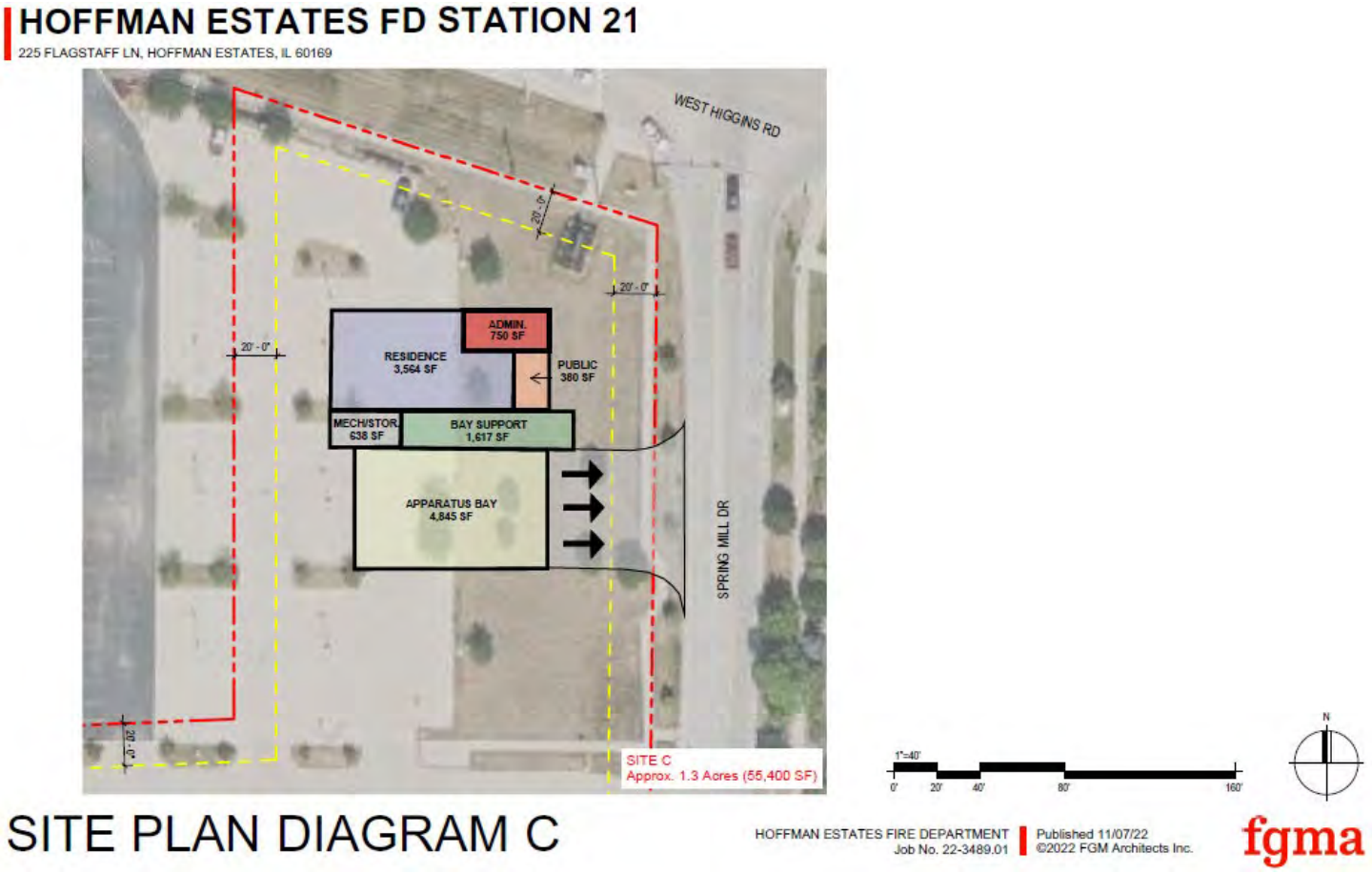
SECTION 7.1
Fire Station No. 21
Solution C

SOLUTION C:

This solution shows a new proposed station built on the north side of the existing police facility located at 411 W Higgins. The 13,562 sq.ft. building is located in the existing parking lot to the north of the police facility. The building does fit within the exiting property and setback lines.

The existing parking lot would need to be reconfigured and an analysis of parking lot spaces for the whole site performed. Consideration must also be given to the adjacent church sharing the lot. This location will alter the presence of the police station from the corner intersection but will provide a public safety campus arrangement.

This solution also allows the new station to be built while operations remain active at the current facility. Per the location analysis, this site is a recommended option based solely on location.



SECTION 7.1
Fire Station No. 21 Budget

Station No. 21 Budget:
This page represents the budget for a new station as indicated in any of the solutions shown for Station No. 21.

Village of Hoffman Estates
New Fire Station No. 21

FGMARCHITECTS

DRAFT

March 29, 2023

Station Study - Project Budget

FGM#: 22-3489.01

	Item	Quantity	Unit	Cost/Unit Low	Cost/Unit High	Construction Cost Low	Construction Cost High	Remarks
1.0	**NEW FIRE STATION CONSTRUCTION**							Costs include building and ordinary site work
1.1	New Station Construction	13,562	s.f.	$ 450	$ 470	$ 6,102,900	$ 6,374,140	
1.2	Existing Station Demolition	13,562	s.f.	$ 13	$ 15	$ 176,306	$ 203,430	
1.3	**Sub-Total Fire Station Construction**					**$ 6,279,206**	**$ 6,577,570**	
2.0	**Design and Construction Contingency (10%)**					$ 627,921	$ 657,757	
3.0	**Total Fire Station Construction Budget**					**$ 6,907,127**	**$ 7,235,327**	Includes contingency
4.0	**Allowances for Items to be Purchased by the Owner**							
4.1	Furniture and Furnishings					$ 50,000	$ 75,000	
4.2	Window Treatments					$ 7,500	$ 15,000	
4.3	Kitchen/Laundry Equipment					$ 35,000	$ 40,000	
4.4	Radio and Station Alerting Equipment					$ 35,000	$ 45,000	
4.5	Fitness Equipment					$ -	$ -	by foreign fire?
4.6	Computer Systems					$ 10,000	$ 15,000	
4.7	Wireless Network System					$ 10,000	$ 15,000	
4.8	Maintenance/Janitorial Equipment					$ 2,500	$ 5,000	
4.9	Telephone System					$ 10,000	$ 15,000	
4.10	Wireless Telephone Boosters/Amplifiers					$ -	$ -	
4.11	Miscellaneous Equipment and Furnishings					$ 10,000	$ 20,000	For items such as plaques, displays, art, etc.
4.12	**Total Allowances for Items to be Purchased by the Owner**					**$ 170,000**	**$ 245,000**	
5.0	**Allowances for Items Fees and Soft Costs**							
5.1	Architectural and Engineering Fees (10%)					$ 627,921	$ 657,757	Incl. Struct, MEP&FP, Civil, Landscape
5.3	Surveys & Soil Investigations					$ 8,000	$ 10,000	
5.4	Material Testing During Construction					$ 15,000	$ 20,000	
5.5	Building Commissioning					$ 15,000	$ 20,000	Basic Commissioning - req'd by code
5.6	Printing Costs					$ 1,500	$ 2,000	
5.8	Utility Company Charges (Electric, Gas, Telephone, Water)					$ 50,000	$ 75,000	
5.9	Fiber Optic Service Provider					$ -	$ -	
5.10	Moving Costs					TBD	TBD	
5.11	Utility costs during construction					$ 15,000	$ 25,000	
5.12	**Total Allowances for Fees and Soft Costs**					**$ 732,421**	**$ 809,757**	
6.0	**Owner's Contingency (5%)**					**$ 313,960**	**$ 328,879**	5% of Construction Cost Sub Total
7.0	**TOTAL FIRE STATION BUDGET**					**$ 8,123,508**	**$ 8,618,963**	
8.0	Inflation per annum (4%)					$ 324,940	$ 344,759	1 year of interest. Add 4% for each add. year
8.1	2025 Construction Cost					$ 8,448,448	$ 8,963,721	build in 2025
9.0	**Notes:**							
9.1	The budget is based upon a construction start in 2024.							
9.3	The budget for this project is preliminary and is based on historical information. These costs may vary significantly as the project becomes more fully developed.							
9.4	Estimate excludes: land purchase, premium costs for work done in phases, out of sequence, out of normal working hours, hazardous material removal, foundation obstructions, traffic signalization costs, environmental costs which are unknown at this time, extraordinary site development costs.							
9.5	Project Budgets do not include legal fees or financing costs.							
9.6	Construction Costs are based utilizing a Design-Bid-Build project delivery method.							

SECTION 7.2
Fire Station No. 22
Solution A

SOLUTION A:

This solution shows a new proposed station built on the existing site located at 1700 Moon Lake Blvd. The proposed 25,296 sq.ft. building is more than double the size of the existing facility. Even though the diagram illustrates a single-story layout, a multi-story facility would still be difficult to fit on the current site and would add to the overall cost and increase the size due to required stairs and elevator. The building does not fit within the existing property and setback lines. Required parking and drives become extremely difficult to accommodate on this site.

The current 1.4-acre site is sloped along the north and west property lines so it will make it difficult to build in those areas. The size and proportions of the current property make it very difficult for this to be a viable option for a new expanded station.

This solution would also require a temporary relocation for the operations of the station while construction is being completed. Decisions on where responders could be relocated would need to be determined by the Village. Potential options include moving into a neighboring fire department, relocating to a nearby industrial storage or vacant building, or relocate to a temporary trailer and hoop structure for the apparatus. These temporary situations could add an additional $250,000 to the project cost.

HOFFMAN ESTATES FD STATION 22

1700 MOON LAKE BLVD., HOFFMAN ESTATES, IL 60169

SITE PLAN DIAGRAM A

HOFFMAN ESTATES FIRE DEPARTMENT
Job No. 22-3489.01

Published 11/07/22

fgma

SECTION 7.2
Fire Station No. 22
Solution B

SOLUTION B:

This solution shows a new proposed station built on a random vacant location within the identified location area. The proposed 25,296 sq.ft. building is more than double the size of the overall site. The building barely fits within the exiting setback lines and there is no additional room for parking and drives.

Per the location analysis, this site is not a recommended option based on its location. We do not recommend any further consideration of sites in this area.

HOFFMAN ESTATES FD STATION 22

1700 MOON LAKE BLVD., HOFFMAN ESTATES, IL 60169

SITE PLAN DIAGRAM B

HOFFMAN ESTATES FIRE DEPARTMENT
Job No. 22-3489.01

Published 11/07/22

fgma

SECTION 7.2
Fire Station No. 22
Solution C

SOLUTION C:

This solution shows a new proposed station built on a site randomly selected along Higgins Road in order to be able to perform geographical location analysis calculations. The site is more than ample to fit the proposed 25,296 sq.ft. building. The location analysis is in the Executive Summary and the Addendum.

This solution allows the new station to be built while operations remain active at the current facility. Per the location analysis this site is a recommended option based solely on location.

One potential drawback to this location is that there is some risk involved exiting onto Higgins Rd.

HOFFMAN ESTATES FD STATION 22
1700 MOON LAKE BLVD., HOFFMAN ESTATES, IL 60169

SITE PLAN DIAGRAM C

HOFFMAN ESTATES FIRE DEPARTMENT
Job No. 22-3489.01
Published 03/13/23

fgma

SECTION 7.2
Fire Station No. 22 Budget

Station No. 22 Budget:
This page represents the budget for a new station as indicated in any of the solutions shown for Station No. 22.

Village of Hoffman Estates

FGMARCHITECTS

New Fire Station No. 22

DRAFT

March 29, 2023

Station Study - Project Budget

FGM#: 22-3489.01

	Item	Quantity	Unit	Cost/Unit Low	Cost/Unit High	Construction Cost Low	Construction Cost High	Remarks
1.0	**NEW FIRE STATION CONSTRUCTION**							Costs include building and ordinary site work
1.1	New Station Construction	25,296	s.f.	$ 440	$ 460	$ 11,130,240	$ 11,636,160	
1.2	**Sub-Total Fire Station Construction**					**$ 11,130,240**	**$ 11,636,160**	
2.0	**Design and Construction Contingency (10%)**					$ 1,113,024	$ 1,163,616	
3.0	**Total Fire Station Construction Budget**					**$ 12,243,264**	**$ 12,799,776**	Includes contingency
4.0	**Allowances for Items to be Purchased by the Owner**							
4.1	Furniture and Furnishings					$ 125,000	$ 150,000	
4.2	Window Treatments					$ 15,000	$ 20,000	
4.3	Kitchen/Laundry Equipment					$ 45,000	$ 55,000	
4.4	Radio and Station Alerting Equipment					$ 45,000	$ 55,000	
4.5	Fitness Equipment					$ -	$ -	by foreign fire?
4.6	Computer Systems					$ 15,000	$ 20,000	
4.7	Wireless Network System					$ 15,000	$ 20,000	
4.8	Maintenance/Janitorial Equipment					$ 2,500	$ 5,000	
4.9	Telephone System					$ 15,000	$ 20,000	
4.10	Wireless Telephone Boosters/Amplifiers					$ -	$ -	
4.11	Miscellaneous Equipment and Furnishings					$ 15,000	$ 25,000	For items such as plaques, displays, art, etc.
4.12	**Total Allowances for Items to be Purchased by the Owner**					**$ 292,500**	**$ 370,000**	
5.0	**Allowances for Items Fees and Soft Costs**							
5.1	Architectural and Engineering Fees (10%)					$ 1,113,024	$ 1,163,616	Incl. Struct, MEP&FP, Civil, Landscape
5.3	Surveys & Soil Investigations					$ 10,000	$ 20,000	
5.4	Material Testing During Construction					$ 25,000	$ 30,000	
5.5	Building Commissioning					$ 20,000	$ 22,500	Basic Commissioning - req'd by code
5.6	Printing Costs					$ 1,500	$ 2,000	
5.8	Utility Company Charges (Electric, Gas, Telephone, Water)					$ 50,000	$ 75,000	
5.9	Fiber Optic Service Provider					$ -	$ -	
5.10	Moving Costs					TBD	TBD	
5.11	Utility costs during construction					$ 20,000	$ 30,000	
5.12	**Total Allowances for Fees and Soft Costs**					**$ 1,239,524**	**$ 1,343,116**	
6.0	**Owner's Contingency (5%)**					**$ 556,512**	**$ 581,808**	5% of Construction Cost Sub Total
7.0	**TOTAL FIRE STATION BUDGET**					**$ 14,331,800**	**$ 15,094,700**	
8.0	Inflation per annum (4%)					$ 573,272	$ 603,788	1 year of interest. Add 4% for each add. year
8.1	2025 Construction Cost					$ 14,905,072	$ 15,698,488	build in 2025
9.0	**Notes:**							
9.1	The budget is based upon a construction start in 2024.							
9.3	The budget for this project is preliminary and is based on historical information. These costs may vary significantly as the project becomes more fully developed.							
9.4	Estimate excludes: land purchase, premium costs for work done in phases, out of sequence, out of normal working hours, hazardous material removal, foundation obstructions, traffic signalization costs, environmental costs which are unknown at this time, extraordinary site development costs.							
9.5	Project Budgets do not include legal fees or financing costs.							
9.6	Construction Costs are based utilizing a Design-Bid-Build project delivery method.							

SECTION 7.3
Fire Department Administration Analysis

Analysis:

The fire department administration was initially analyzed for the potential of it moving out of the Village Hall and into one of the fire stations being considered. The current administration "suite" shares many spaces and functions with other Village Hall departments so the relocation would necessitate an additional 6,243 sq.ft. to any of the potential solutions.

It was found that the actual offices and rooms within the administrative area are for the most part sized correctly. It was noted that there is not a need for additional space for other functions at the Village Hall so the relocation of fire administration would be solely based on the operational desires of the Fire Department to move to one of the fire stations.

SECTION 8
Fire Station No.21 & No.22 Conclusion/ Summary

Our team conducted a fire station feasibility and needs study for the Village of Hoffman Estates Fire Department. The purpose of the study was to review current fire station locations and facilities, and to provide long-term recommendations for fire station needs, locations and infrastructure, taking into consideration response trends, planned or potential Village growth, and best practices in today's fire/rescue/EMS services.

The Village recognizes that Station No. 21 and No. 22 are in need of a significant investment. Before the Village makes decisions related to such an investment, FGMA and IFCA reviewed the existing facilities to ensure the Village makes the best use of its resources.

Both stations have been well maintained over the years, but they are past their useful life expectancies. Their current conditions and the required additional space needs necessitate the replacement of both stations.

Station No. 21:
There are two viable options for the Village to choose for this station. It can either be re-built in its current location (or on Village-owned adjacent land) or in the parking lot of the police station. Both options will cost between $8.1 and $8.7 million.

Station No. 22:
The recommended option for this station is to build a new facility in the identified ideal location area. This option will cost between $14.3 and $15.1 million for construction (excludes land acquisition costs).

This study is to be utilized as a starting point and is intended to provide the Village of Hoffman Estates with the necessary information to make an informed decision on which direction should be taken to address the location and space needs for Fire Stations No 21 & No 22.

APPENDIX
Analytics Addendum

Station Location Analysis

Hoffman Estates Fire Department

2023

TERMS OF USE

Illinois Fire Chiefs Association (IFCA) prepared this report which contains confidential and proprietary trade secrets and commercial information of the IFCA and may not be disclosed or republished by anyone other than the client organization. Violation of the confidentiality of this record will cause significant financial harm to the Illinois Fire Chiefs Association.

Auto Aid Impact

Definitions

All Incidents: All incidents regardless of NFIRS group codes.

AOR: Area of Responsibility. The geographical area in which a particular fire station has primary responsibility to respond.

AW: Area workload is the percentage of a given time frame in which there is a demand for service within a station's AoR.

Catchment: The area covered by drive time from the fire station and is displayed by minute intervals. This is calculated based on speed limits along the most direct route to the scene from the fire station.

Coverage: A geographical area within which a fire station(s) provides services.

Drive Time: The time measured from fire company going en-route to fire company arriving on scene.

EMS Incidents: Incidents in the NFIRS group codes 300's. These also include rescues that may or may not have medical components.

ERF: The acronym for Effective Response Force which is the minimum number of personnel and equipment needed to effectively mitigate an incident.

Fire Incidents: Incidents in the NFIRS group codes 100's.

Historical: Incidents that have happened in the past. Data that has been collected in the past.

Hotspot: A representation of an area with a statistical higher density than its surrounding area.

Other Incidents: Incidents in the NFIRS group codes 200's, and 400's through 900's.

Projected: The results that may happen in the future based on analysis.

Response Time: The time measured from fire company notification to fire company on scene. This consists of Turnout Time and Drive Time.

Service Area: A geographical area where service is provided or demanded.

STAC: The acronym for Station Concentration and is the count of fire stations within an eight-minute travel time from an incident.

TRA: The complete geographical area in which a fire agency is responsible to provide service.

Turnout Time: The time measured from fire company notification to fire company going en-route.

Demographic Overview
Demographic - TRA
Demographic - AoR 21
Demographic - AoR 22
Demographic - AoR 23
Demographic - AoR 24

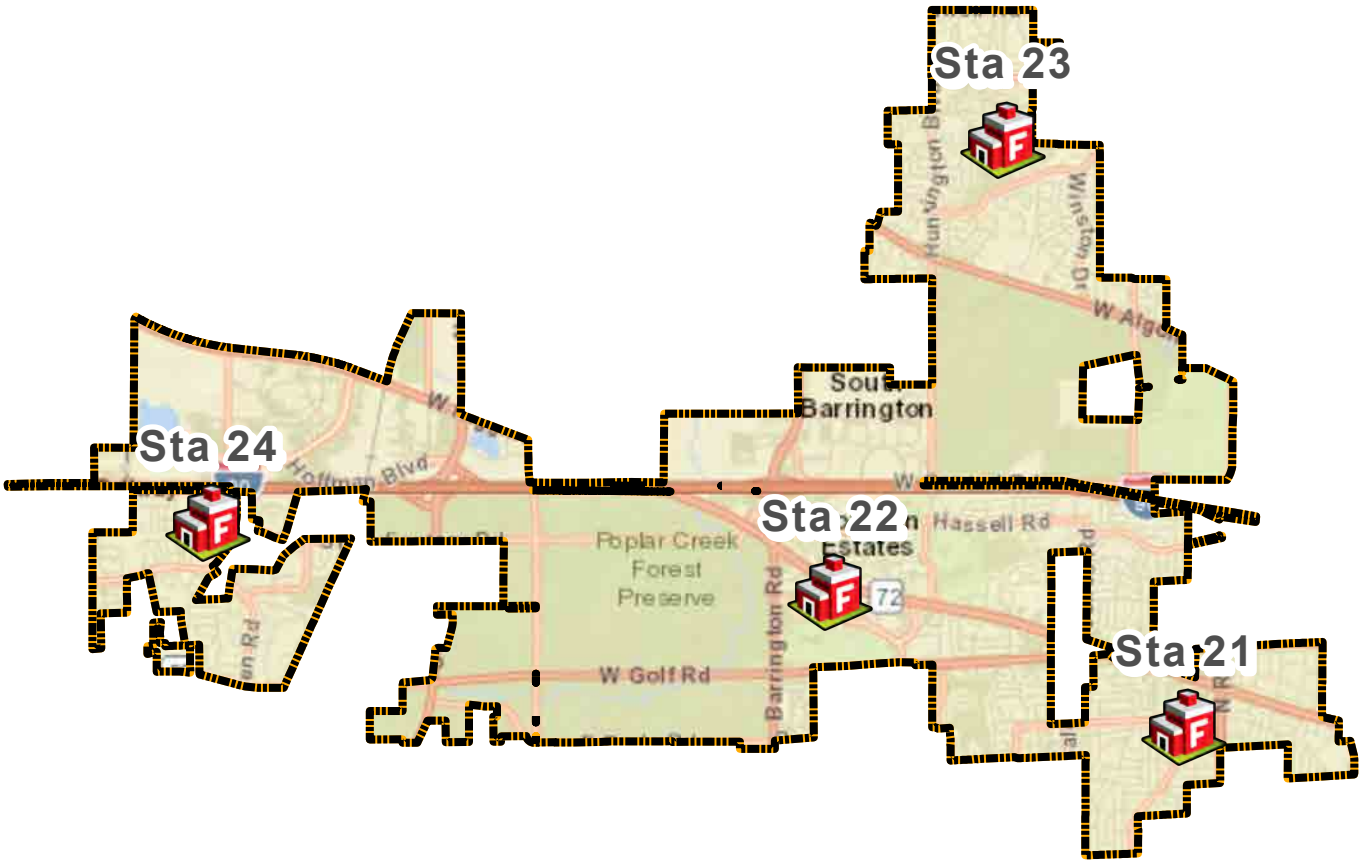
The following demographic data is provided using Esri's demographic estimates for popular variables including: 2021 Total Population, 2021 Household Population, 2021 Median Age, 2021 Median Household Income, 2021 Per Capita Income, 2021 Diversity index and many more. Data is available from country, state, county, ZIP Code, tract, and block group level.





	TOTAL POPULATION	TOTAL HOUSEHOLDS	> 65 YEARS OF AGE	< 5 YEARS OF AGE	MEDIAN INCOME
TRA	52,462	18,520	8,059	2,947	$103,004
AoR 21	17,473	6,047	2,558	1,001	$91,297
AoR 22	16,459	6,117	2,605	987	$82,843
AoR 23	13,474	4,618	2,265	591	$145,456
AoR 24	5,057	1,738	631	367	$120,422

The TRA stats are for the complete agency while the AoR stats are a part of the whole TRA.



22.6
AREA IN SQUARE MILES

52,462
TOTAL POPULATION

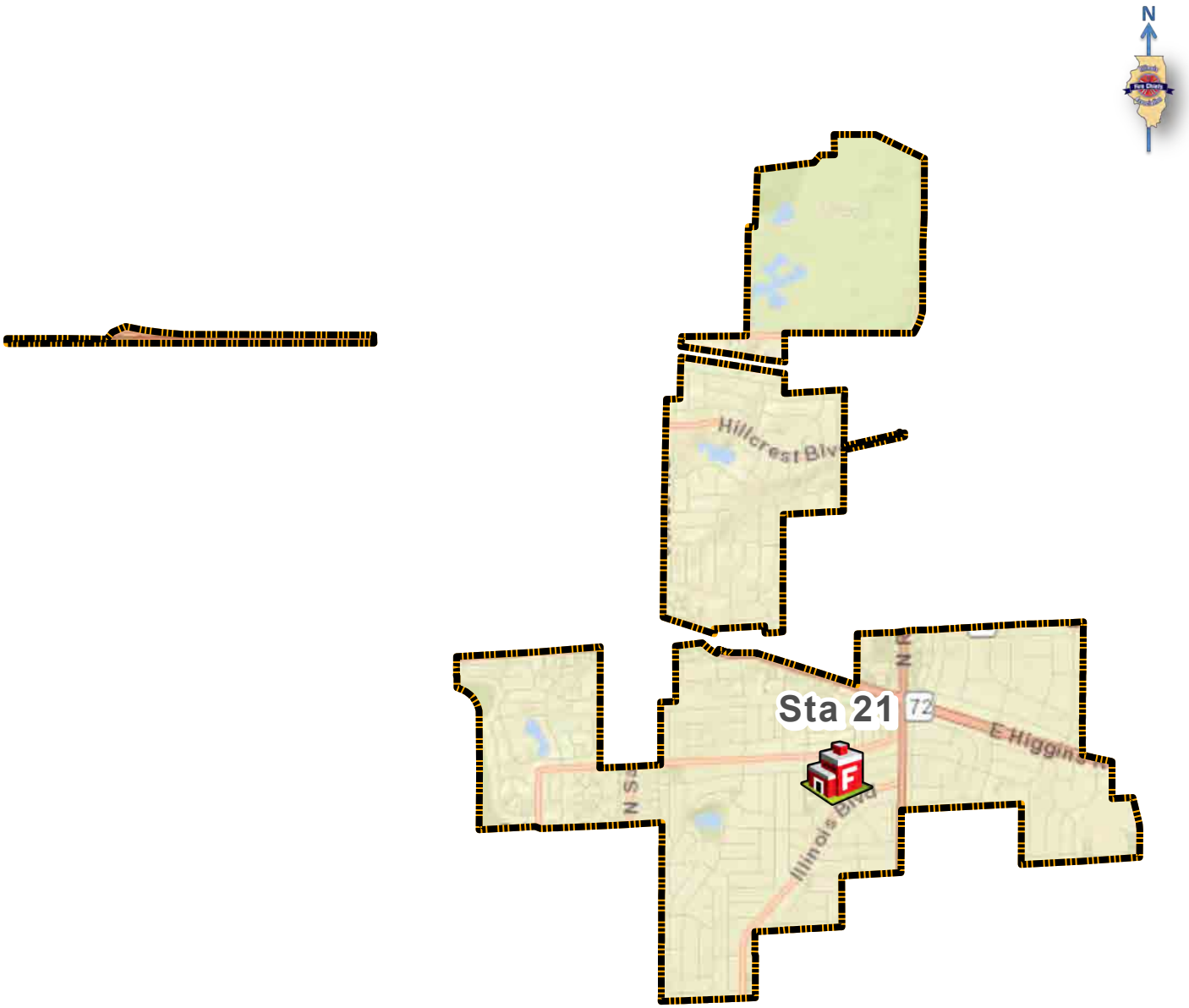
18,520
TOTAL HOUSEHOLDS

8,059
OVER 65 YEARS OF AGE

2,947
UNDER 5 YEARS OF AGE

$103,004
MEDIAN INCOME

Map Layer Esri, HERE, Garmin, NGA, USGS, NPS



3.7
AREA IN SQUARE MILES

17,473
TOTAL POPULATION

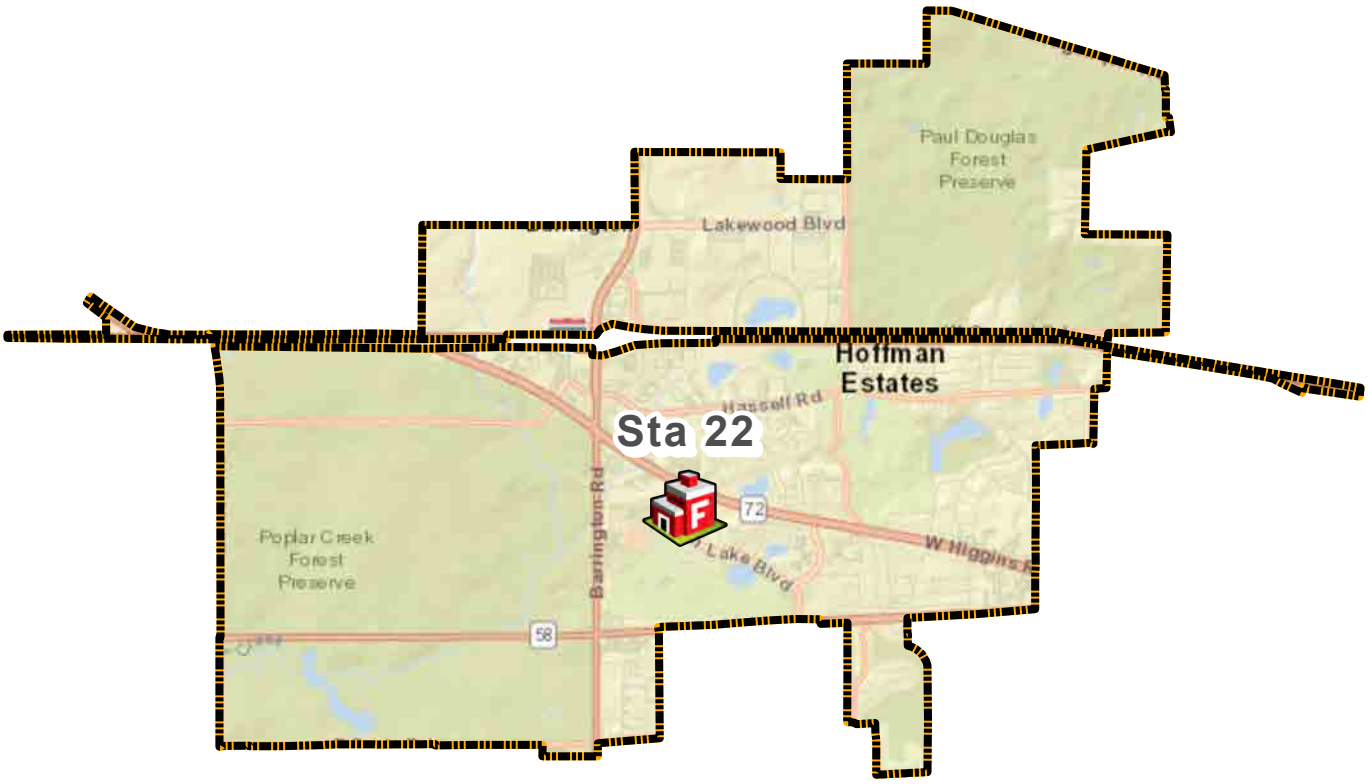
6,047
TOTAL HOUSEHOLDS

2,558
OVER 65 YEARS OF AGE

1,001
UNDER 5 YEARS OF AGE

$91,297
MEDIAN INCOME

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS



9.8
AREA IN SQUARE MILES

16,459
TOTAL POPULATION

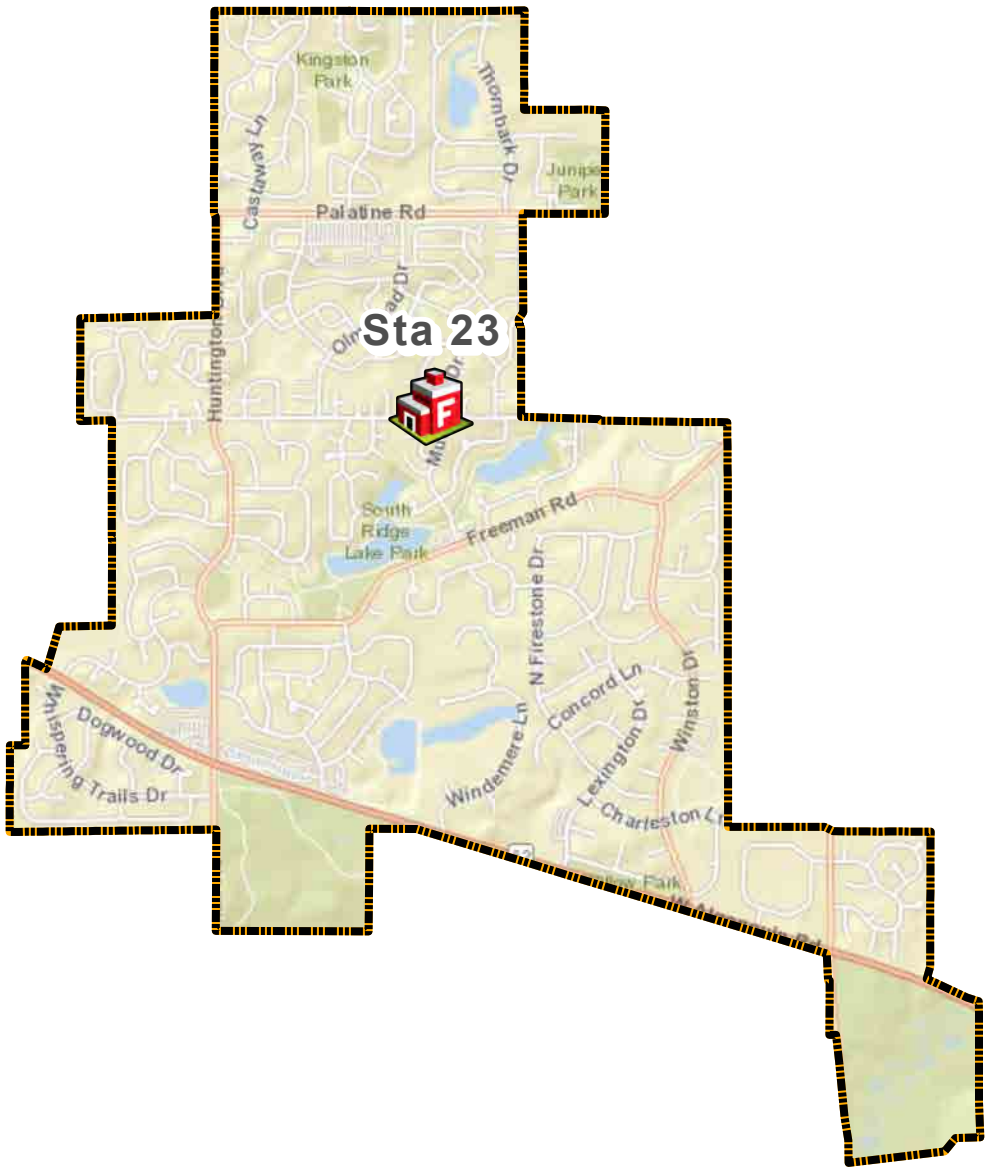
6,117
TOTAL HOUSEHOLDS

2,605
OVER 65 YEARS OF AGE

987
UNDER 5 YEARS OF AGE

$82,843
MEDIAN INCOME

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS



3.0
AREA IN SQUARE MILES

13,474
TOTAL POPULATION

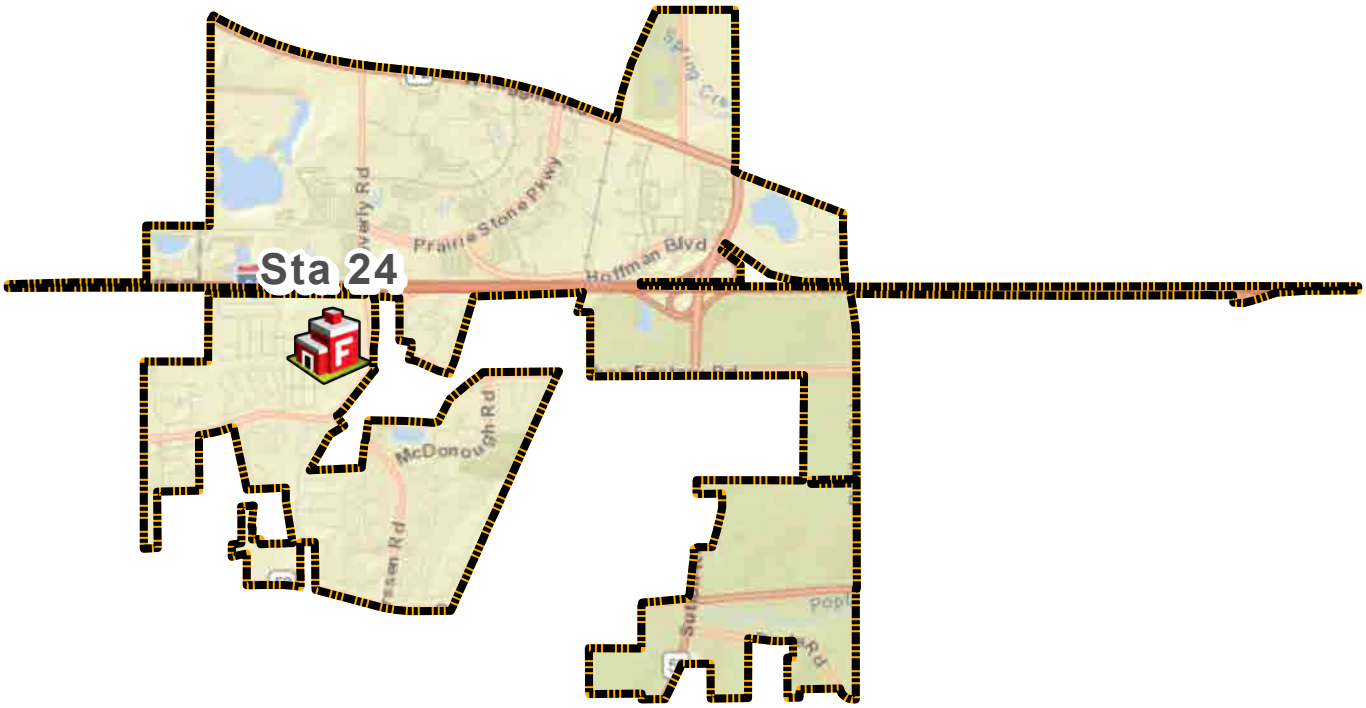
4,618
TOTAL HOUSEHOLDS

2,265
OVER 65 YEARS OF AGE

591
UNDER 5 YEARS OF AGE

$145,456
MEDIAN INCOME

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS



6.1
AREA IN SQUARE MILES

5,057
TOTAL POPULATION

1,738
TOTAL HOUSEHOLDS

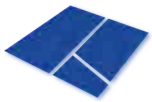
631
OVER 65 YEARS OF AGE

367
UNDER 5 YEARS OF AGE

$120,422
MEDIAN INCOME

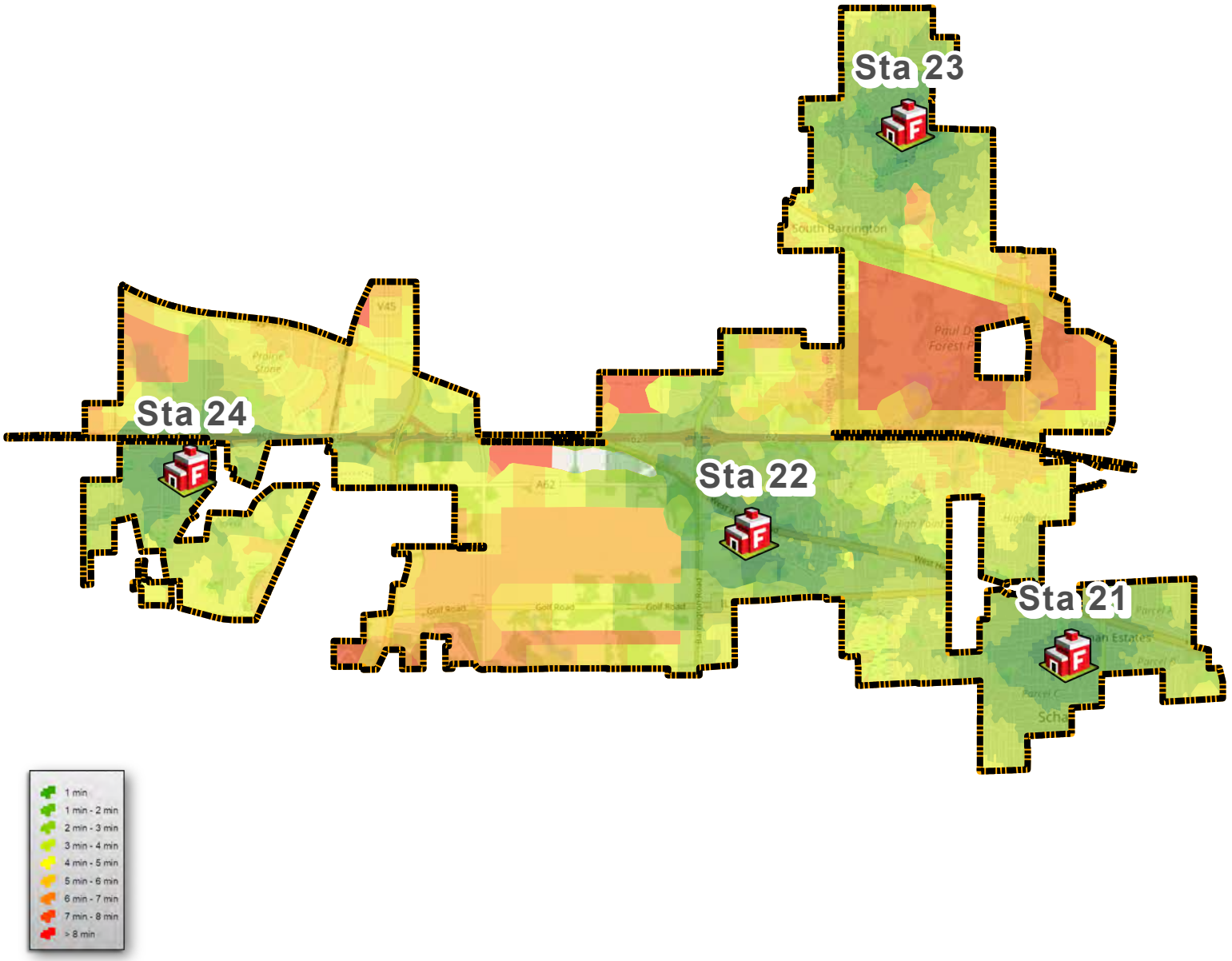
Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Service Area Overview
Area Served by Drive Times - TRA
4 min and 8 min Drive Times - TRA
Streets Covered by Drive Times - TRA
Area Served by Drive Times - AoR 21
4 min and 8 min Drive Times - AoR 21
Streets Covered by Drive Times - AoR 21
TRA Coverage - AoR 21
Area Served by Drive Times - AoR 22
4 min and 8 min Drive Times - AoR 22
Streets Covered by Drive Times - AoR 22
TRA Coverage - AoR 22
Area Served by Drive Times - AoR 23
4 min and 8 min Drive Times - AoR 23
Streets Covered by Drive Times - AoR 23
TRA Coverage - AoR 23
Area Served by Drive Times - AoR 24
4 min and 8 min Drive Times - AoR 24
Streets Covered by Drive Times - AoR 24
TRA Coverage - AoR 24



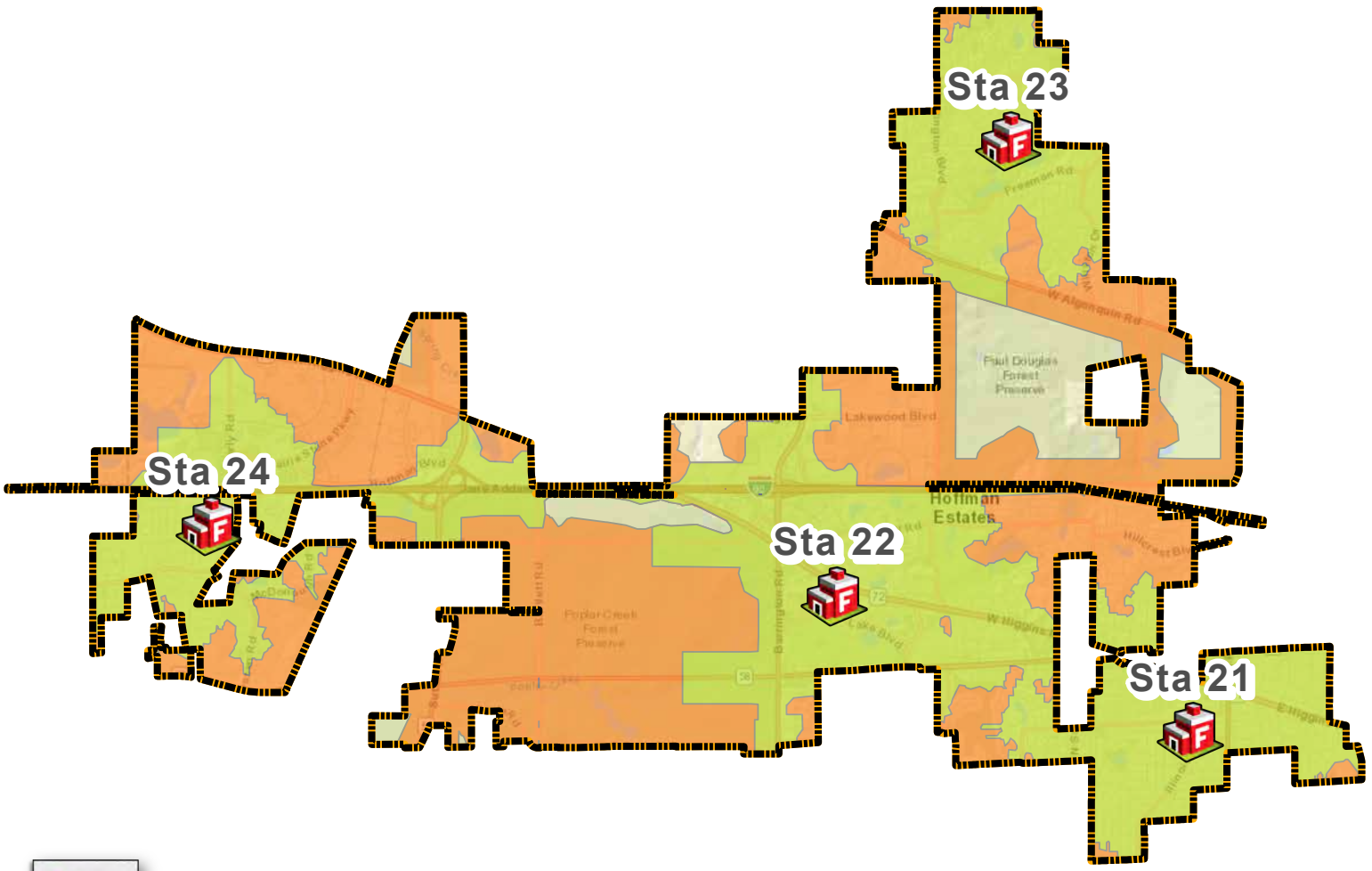

	AREA SERVED	4 MIN CATCHMENT AREA	STREETS SERVED	4 MIN CATCHMENT STREETS
TRA	22.6	50%	266.4	71%
AoR 21	3.7	64%	63.6	74%
AoR 22	9.8	40%	82.4	67%
AoR 23	3	73%	51.2	77%
AoR 24	6.1	42%	69.3	54%

"AREA SERVED" is measured in square miles and "STREETS SERVED" is measured in linear miles. The TRA stats are for the complete agency while the AoR stats are a part of the whole TRA.



Catchments represent the area covered by drive time from the fire stations and are displayed in one-minute increments.

4 min and 8 min Drive Times - TRA



4 MINUTE COVERAGE

11.2
AREA IN SQUARE MILES

50%
PERCENTAGE OF TRA

8 MINUTE COVERAGE

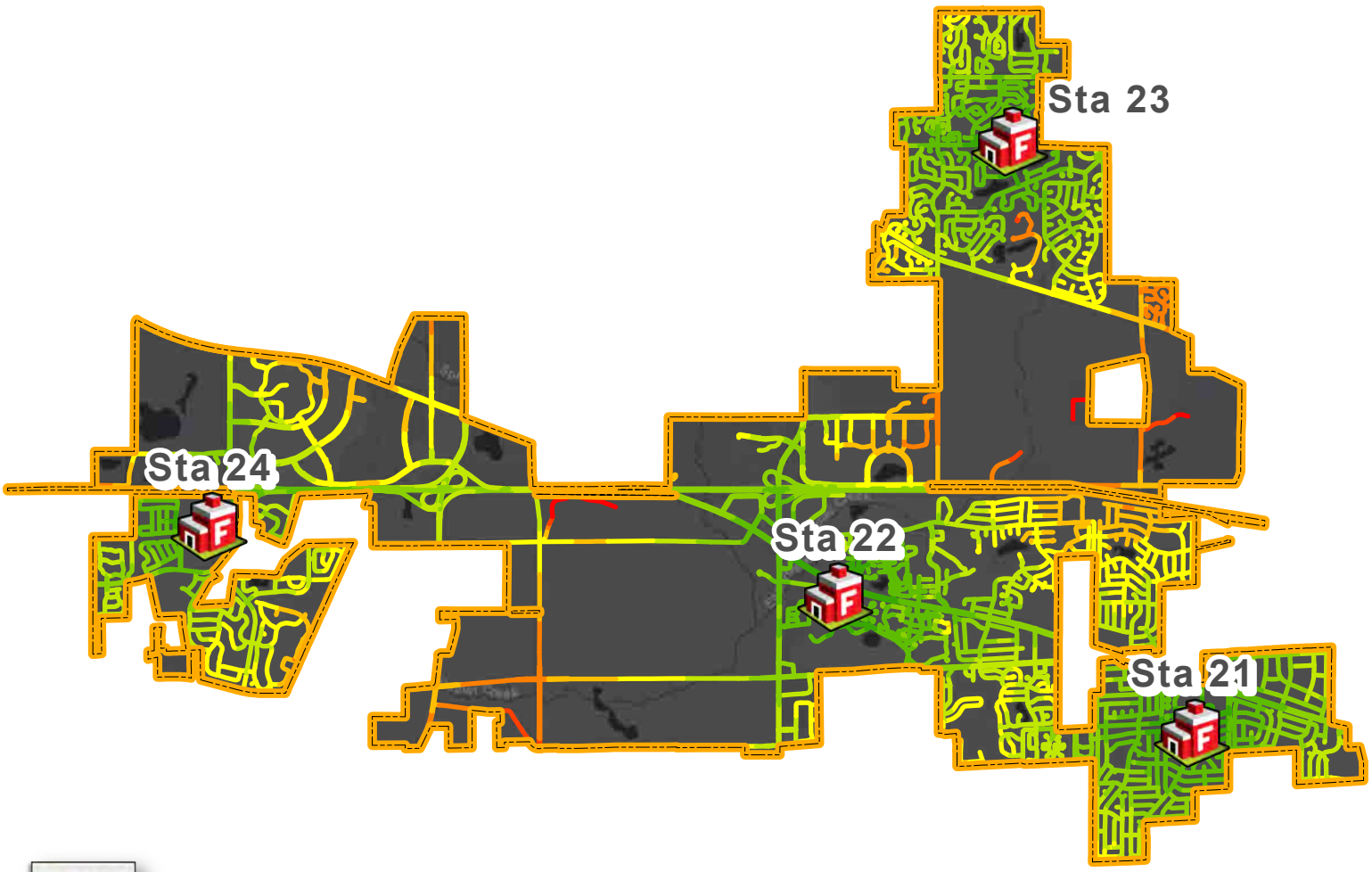
20.7
AREA IN SQUARE MILES

92%
PERCENTAGE OF TRA

Catchments represent the area covered by drive time from the fire stations and are displayed at the four-minute and eight-minute increments.

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Streets Covered by Drive Time - TRA



266.4
ROAD MILES

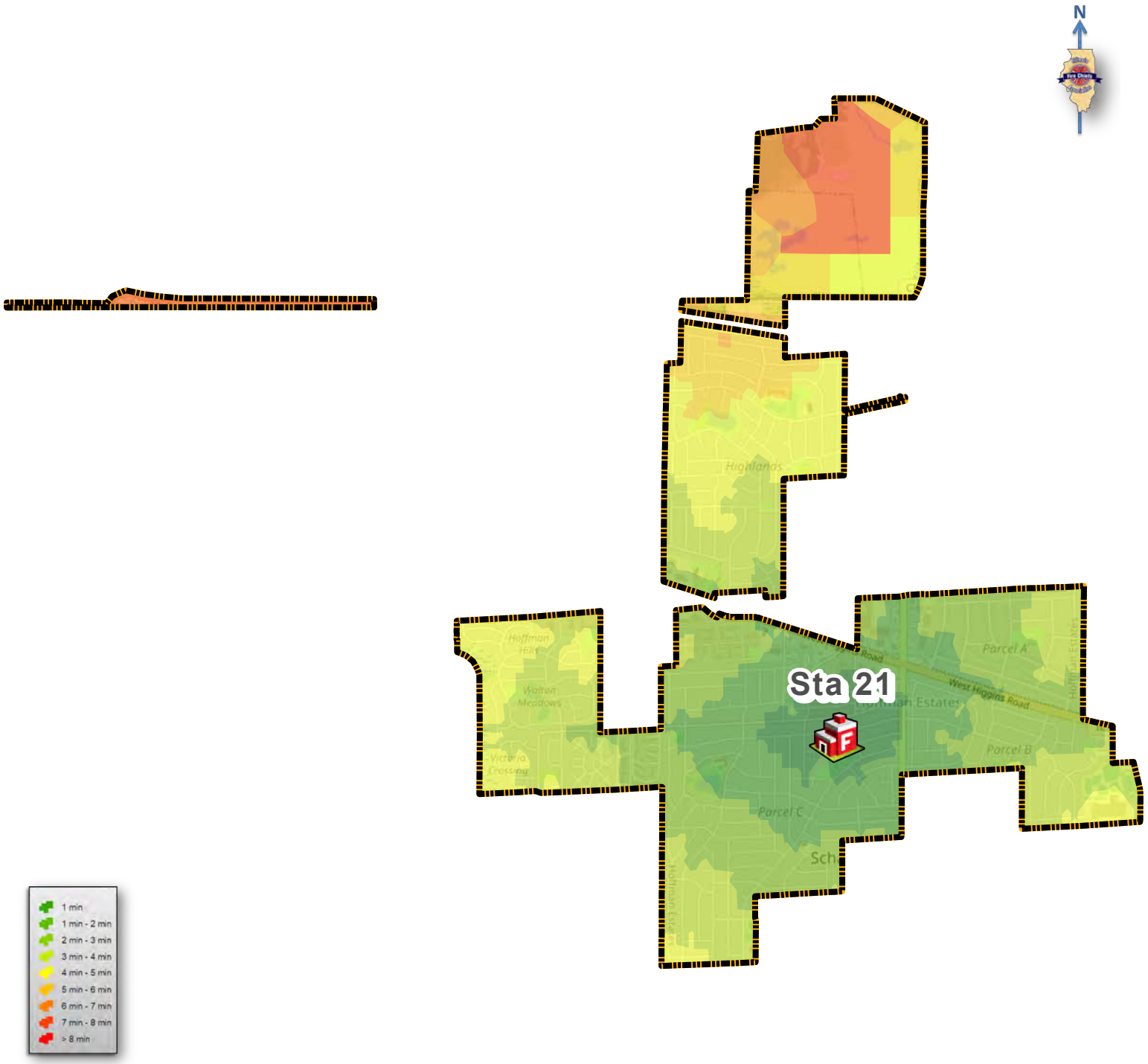
4 MINUTE COVERAGE
188.1
ROAD MILES

4 MINUTE COVERAGE
71%
PERCENTAGE OF TRA

Street travel time is the time of travel from the fire stations and is displayed in one-minute increments.

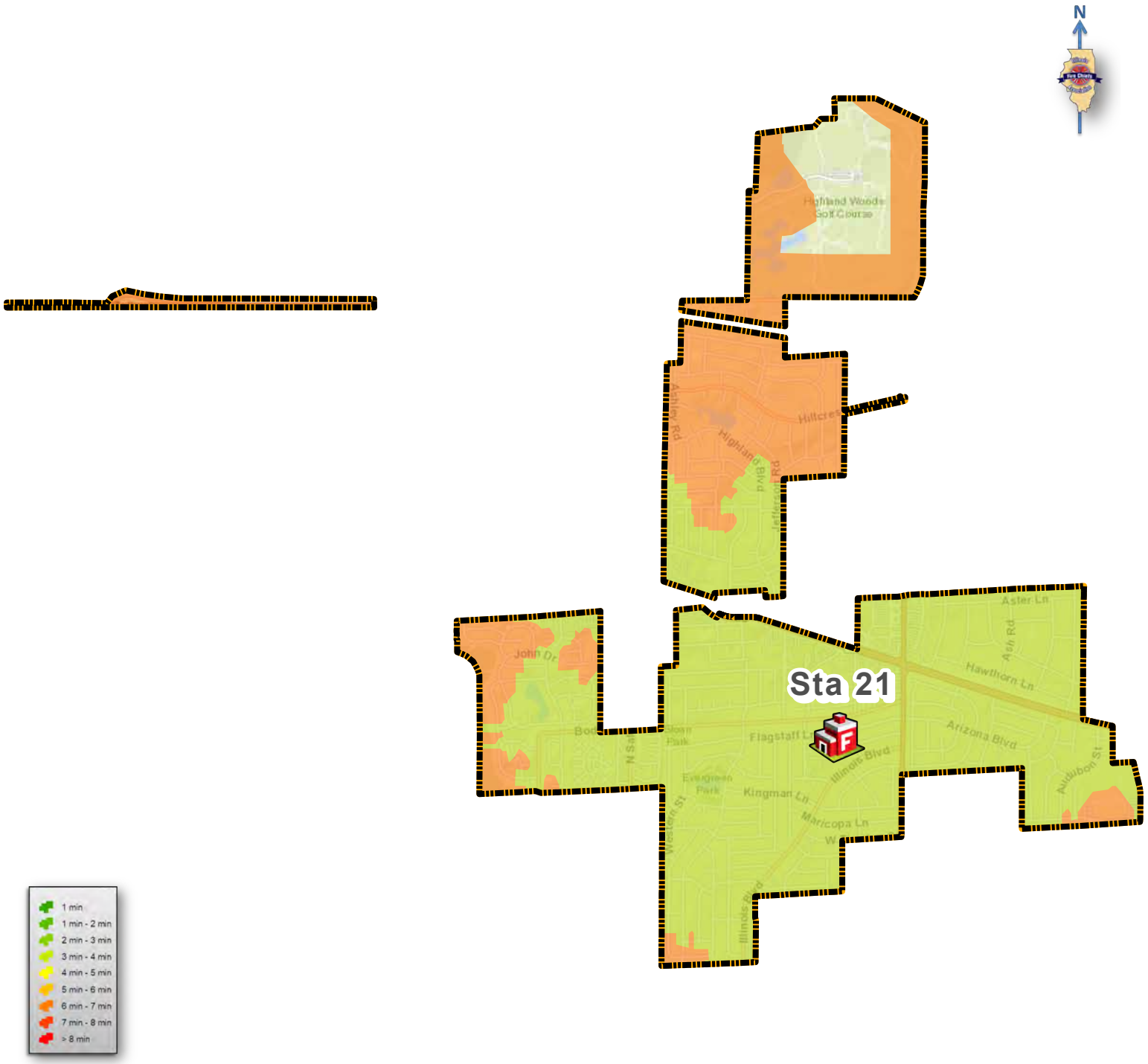
Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA

Area Served by Drive Time - AoR 21



Catchments represent the area covered by drive time from the fire stations and are displayed in one-minute increments.

4 min and 8 min Drive Times - AoR 21



4 MINUTE COVERAGE

2.4 AREA IN SQUARE MILES

64% PERCENTAGE OF AoR 21

8 MINUTE COVERAGE

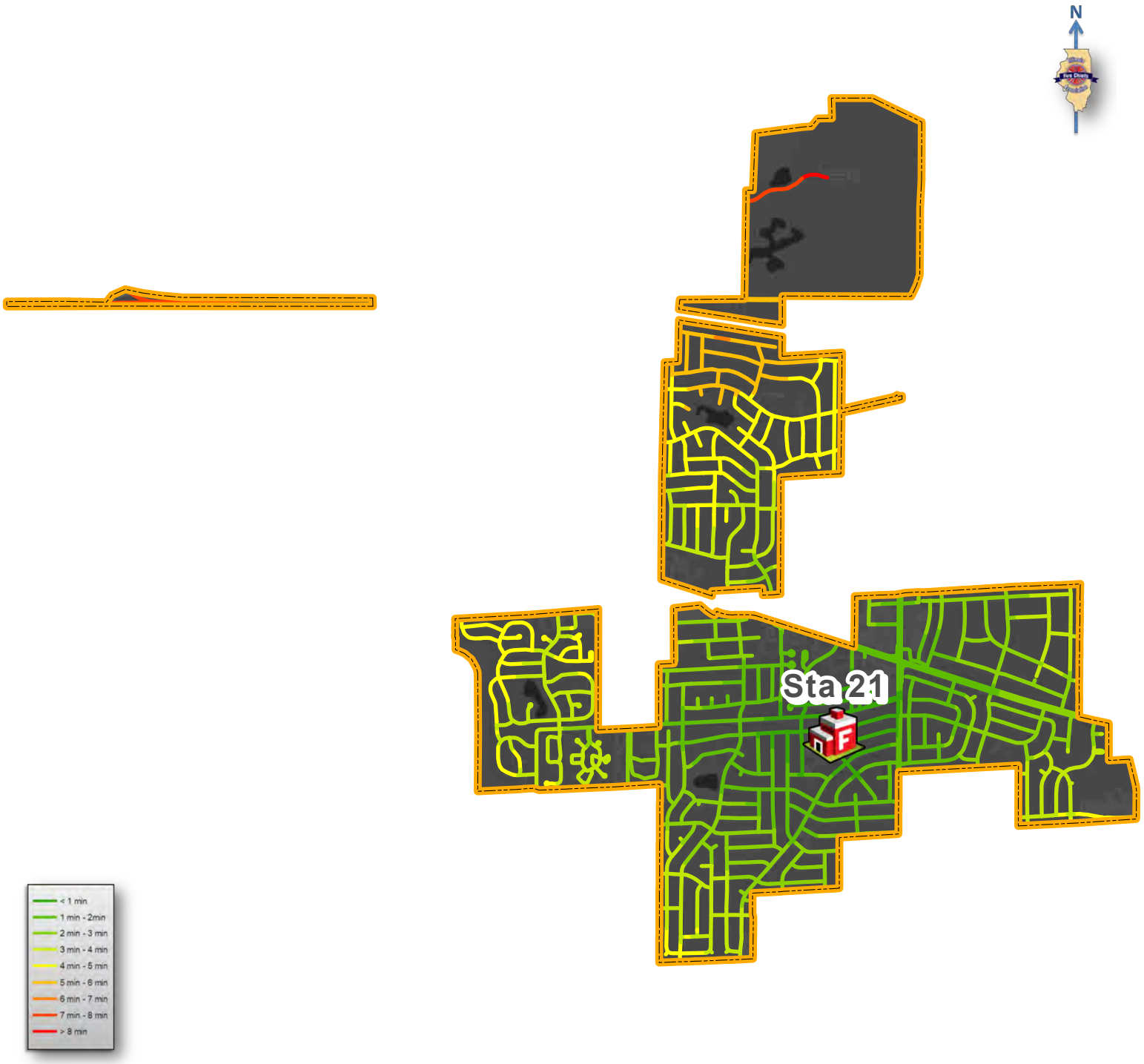
3.4 AREA IN SQUARE MILES

92% PERCENTAGE OF AoR 21

Catchments represent the area covered by drive time from the fire stations and are displayed at the four-minute and eight-minute increments.

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Streets Covered by Drive Time - AoR 21

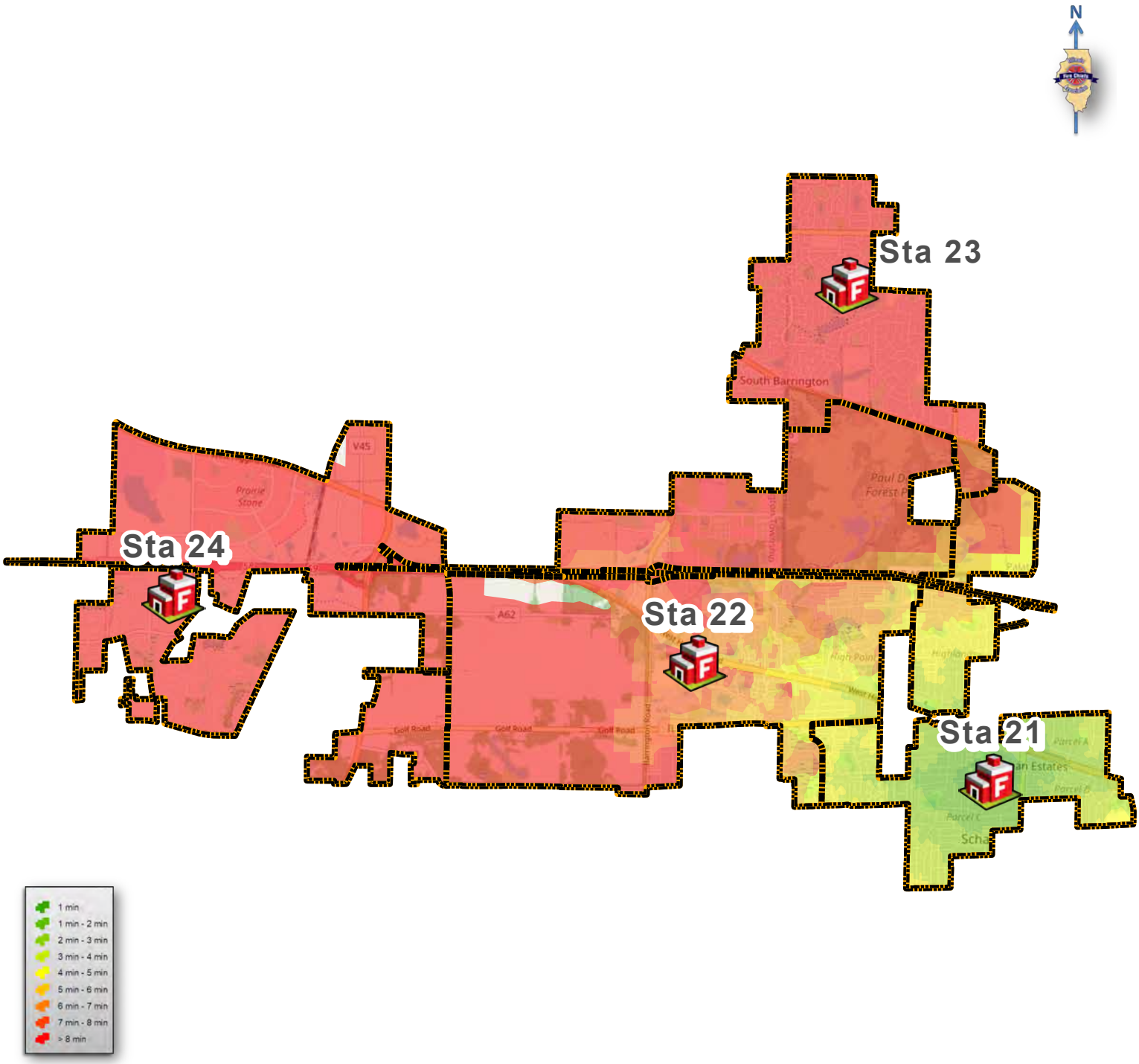


63.6
ROAD MILES

4 MINUTE COVERAGE
47.4
ROAD MILES

4 MINUTE COVERAGE
74%
PERCENTAGE OF AoR 21

Street travel time is the time of travel from the fire stations and is displayed in one-minute increments.



4 MINUTE COVERAGE

2.5
AREA IN SQUARE MILES

11%
PERCENTAGE OF TRA

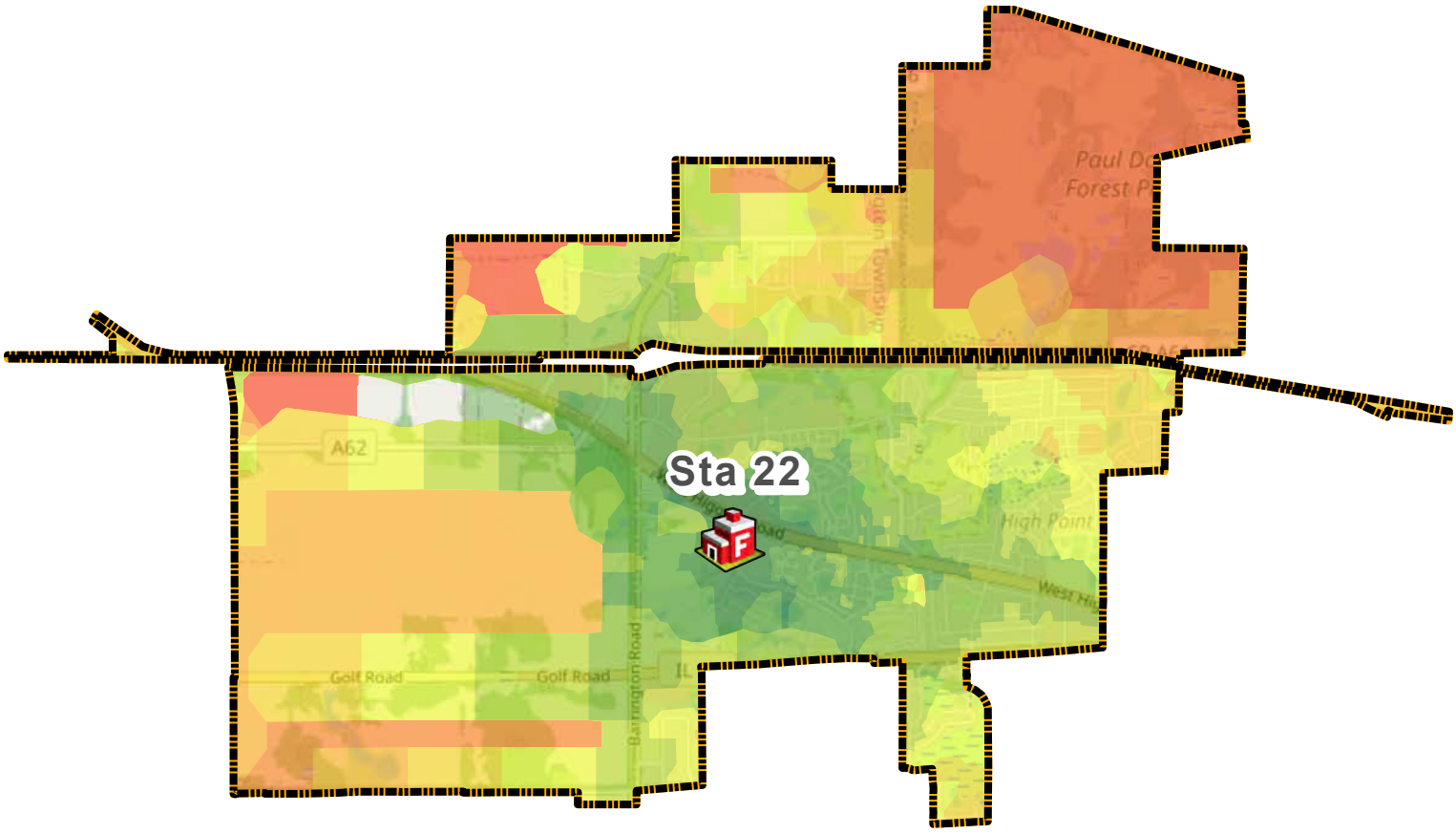
8 MINUTE COVERAGE

7.4
AREA IN SQUARE MILES

33%
PERCENTAGE OF TRA

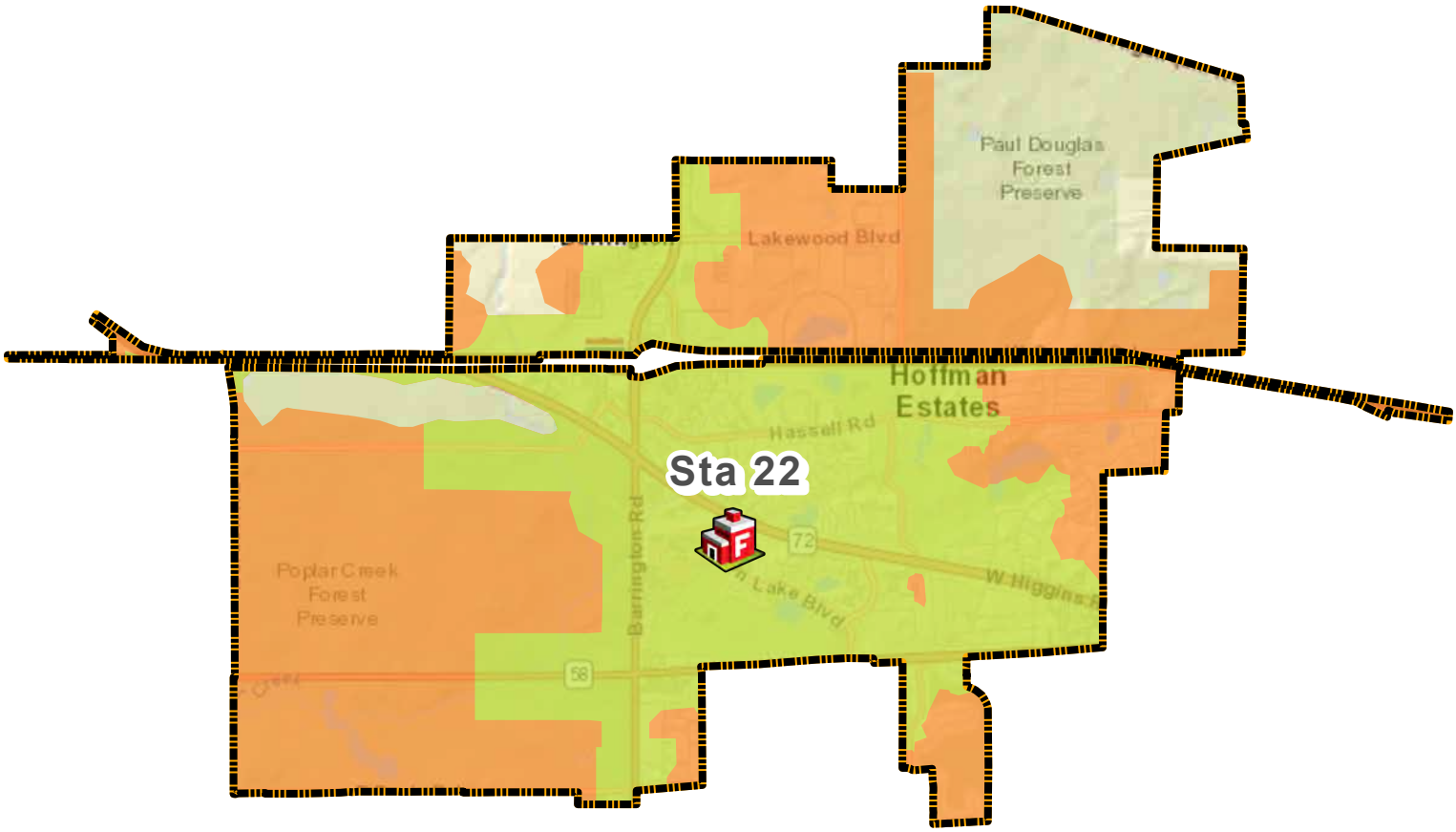
Catchments represent the area covered by drive time from the fire stations and are displayed in one-minute increments.

Area Served by Drive Time - AoR 22



Catchments represent the area covered by drive time from the fire stations and are displayed in one-minute increments.

4 min and 8 min Drive Times - AoR 22



1 min
1 min - 2 min
2 min - 3 min
3 min - 4 min
4 min - 5 min
5 min - 6 min
6 min - 7 min
7 min - 8 min
> 8 min

4 MINUTE COVERAGE

3.9 AREA IN SQUARE MILES

40% PERCENTAGE OF AoR 22

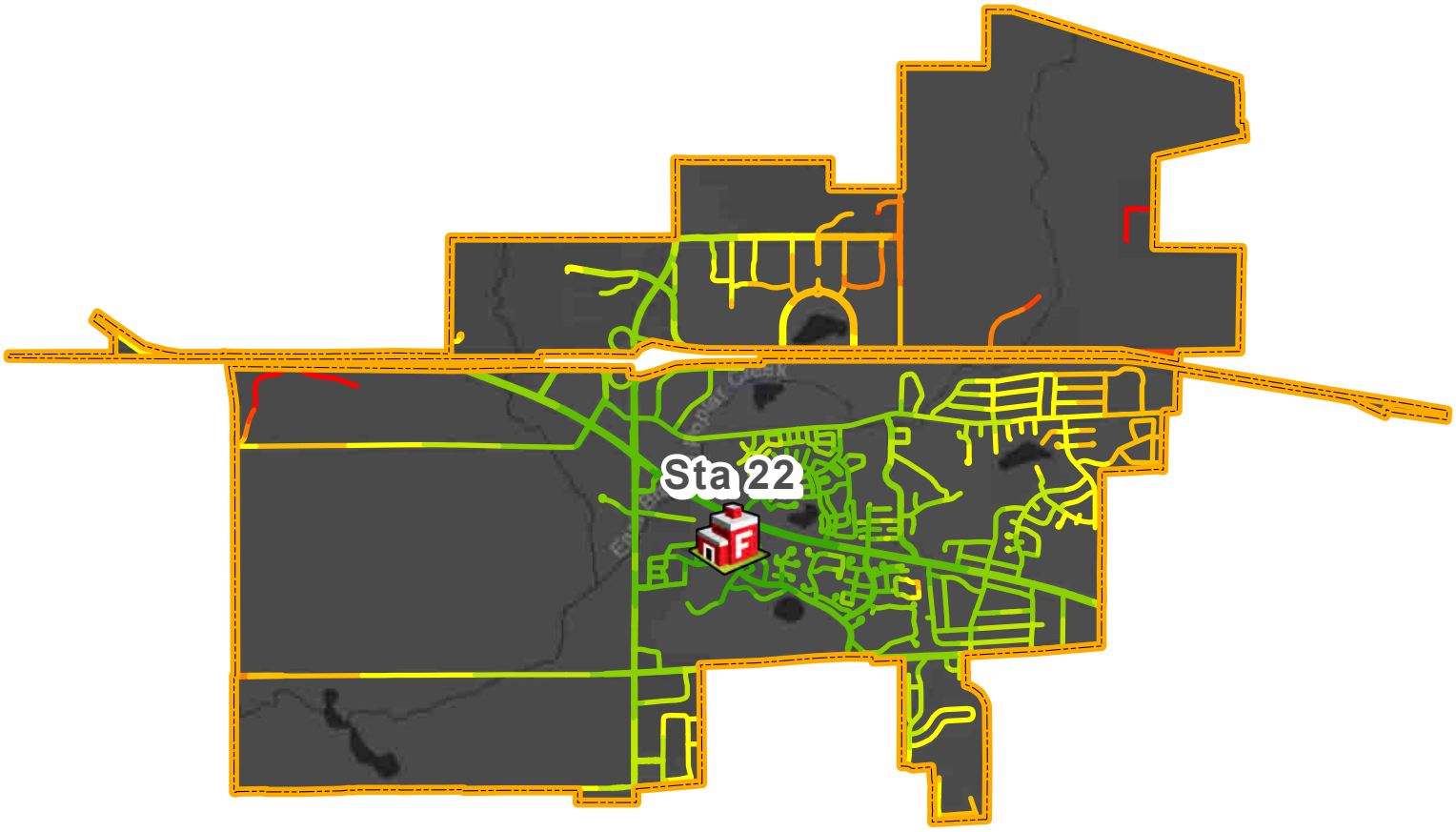
8 MINUTE COVERAGE

8.1 AREA IN SQUARE MILES

83% PERCENTAGE OF AoR 22

Catchments represent the area covered by drive time from the fire stations and are displayed at the four-minute and eight-minute increments.

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

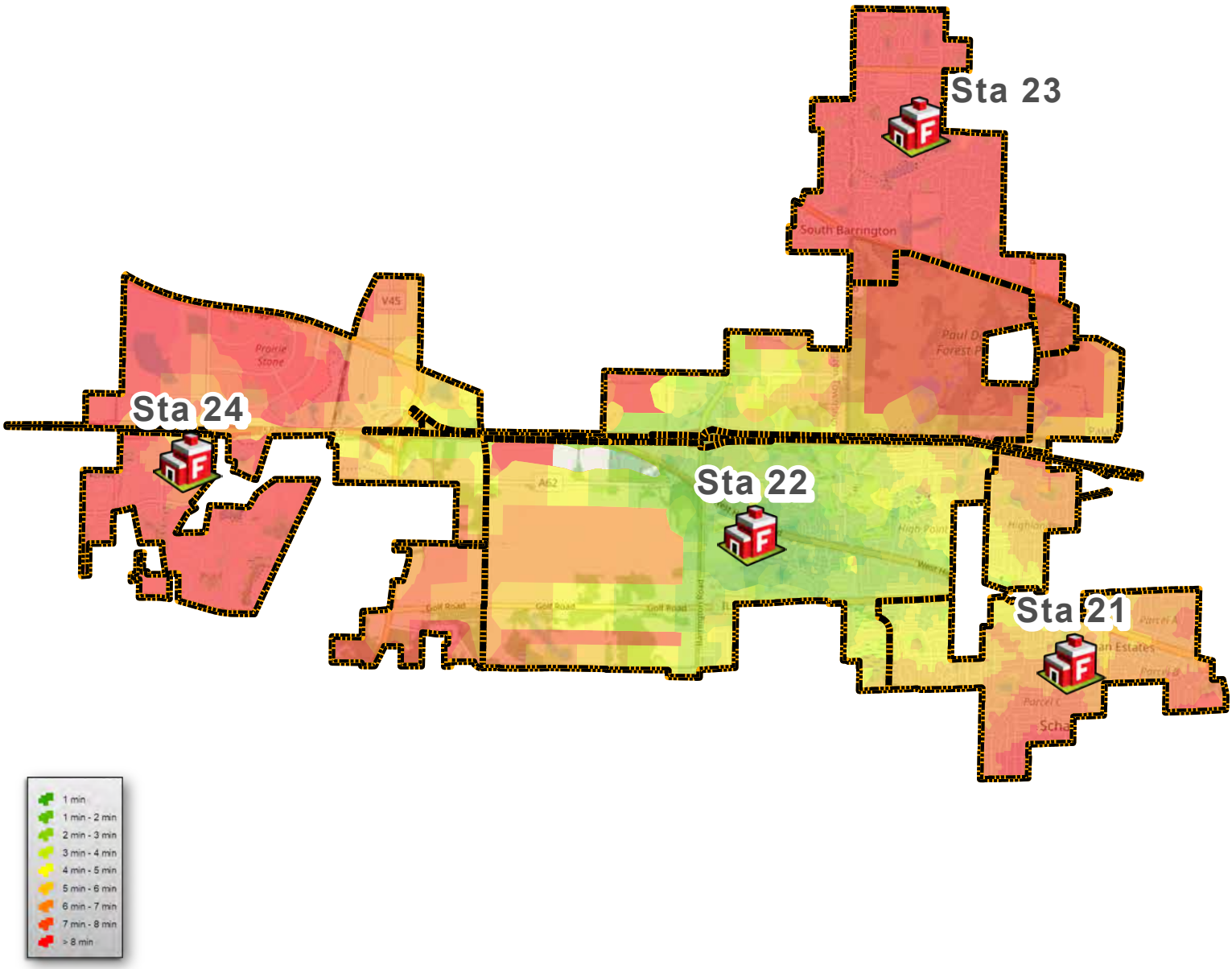


82.4
ROAD MILES

4 MINUTE COVERAGE
55.4
ROAD MILES

4 MINUTE COVERAGE
67%
PERCENTAGE OF AoR 22

Street travel time is the time of travel from the fire stations and is displayed in one-minute increments.



4 MINUTE COVERAGE

4.3
AREA IN SQUARE MILES

19%
PERCENTAGE OF TRA

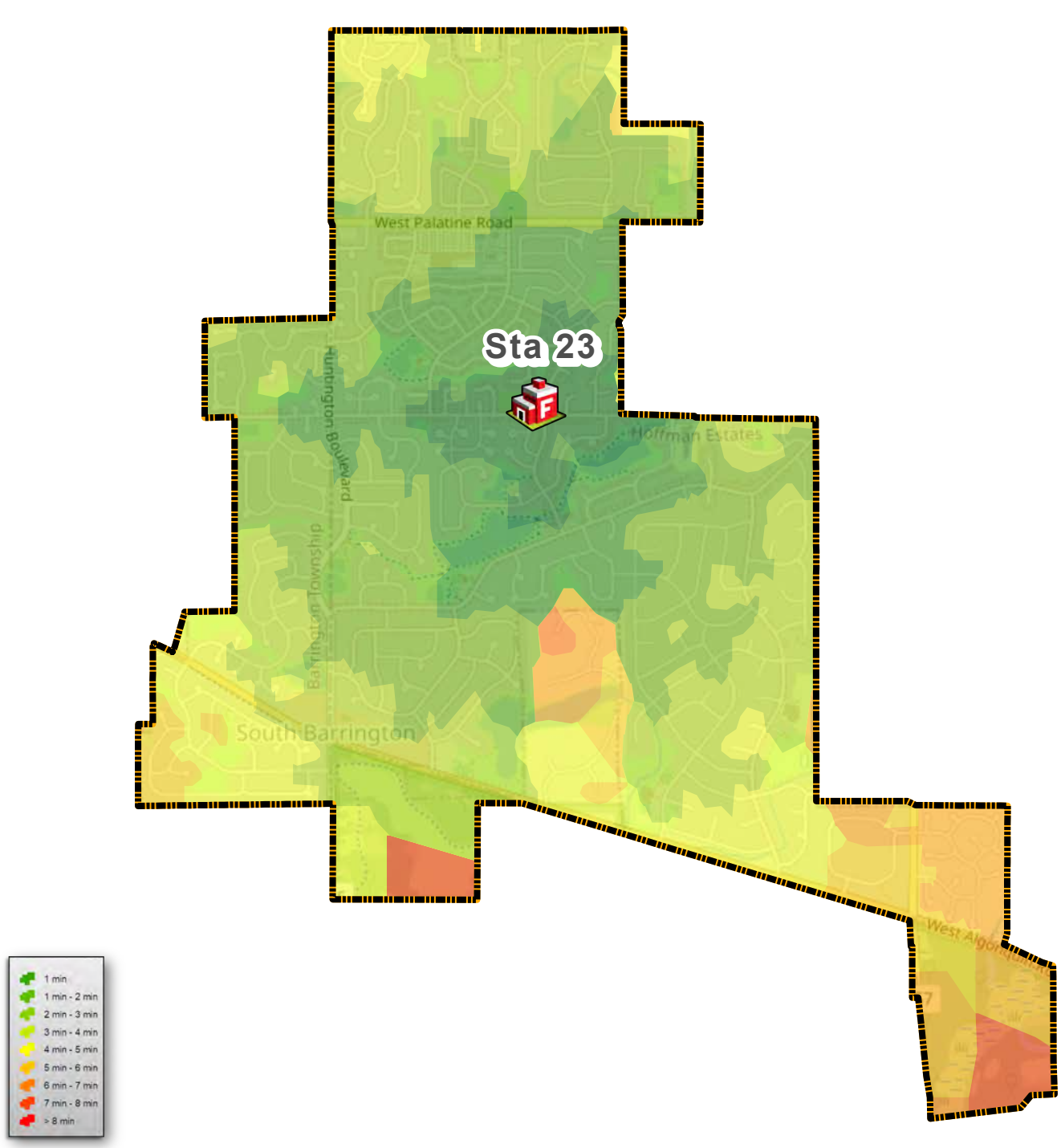
8 MINUTE COVERAGE

14.6
AREA IN SQUARE MILES

65%
PERCENTAGE OF TRA

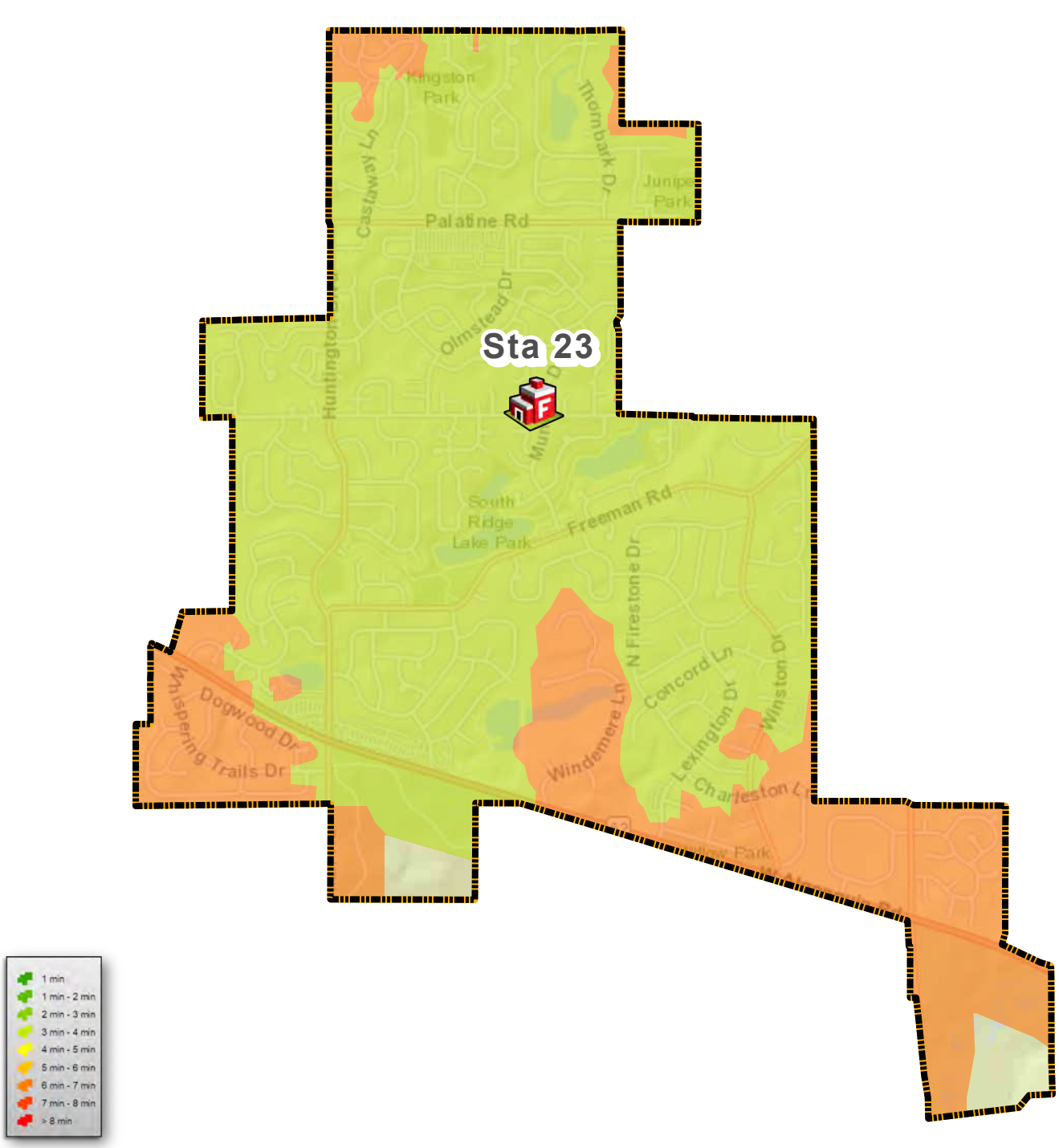
Catchments represent the area covered by drive time from the fire stations and are displayed in one-minute increments.

Area Served by Drive Time - AoR 23



Catchments represent the area covered by drive time from the fire stations and are displayed in one-minute increments.

4 min and 8 min Drive Times - AoR 23



4 MINUTE COVERAGE

2.2
AREA IN SQUARE MILES

73%
PERCENTAGE OF AoR 23

8 MINUTE COVERAGE

2.9
AREA IN SQUARE MILES

97%
PERCENTAGE OF AoR 23

Catchments represent the area covered by drive time from the fire stations and are displayed at the four-minute and eight-minute increments.

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Streets Covered by Drive Time - AoR 23

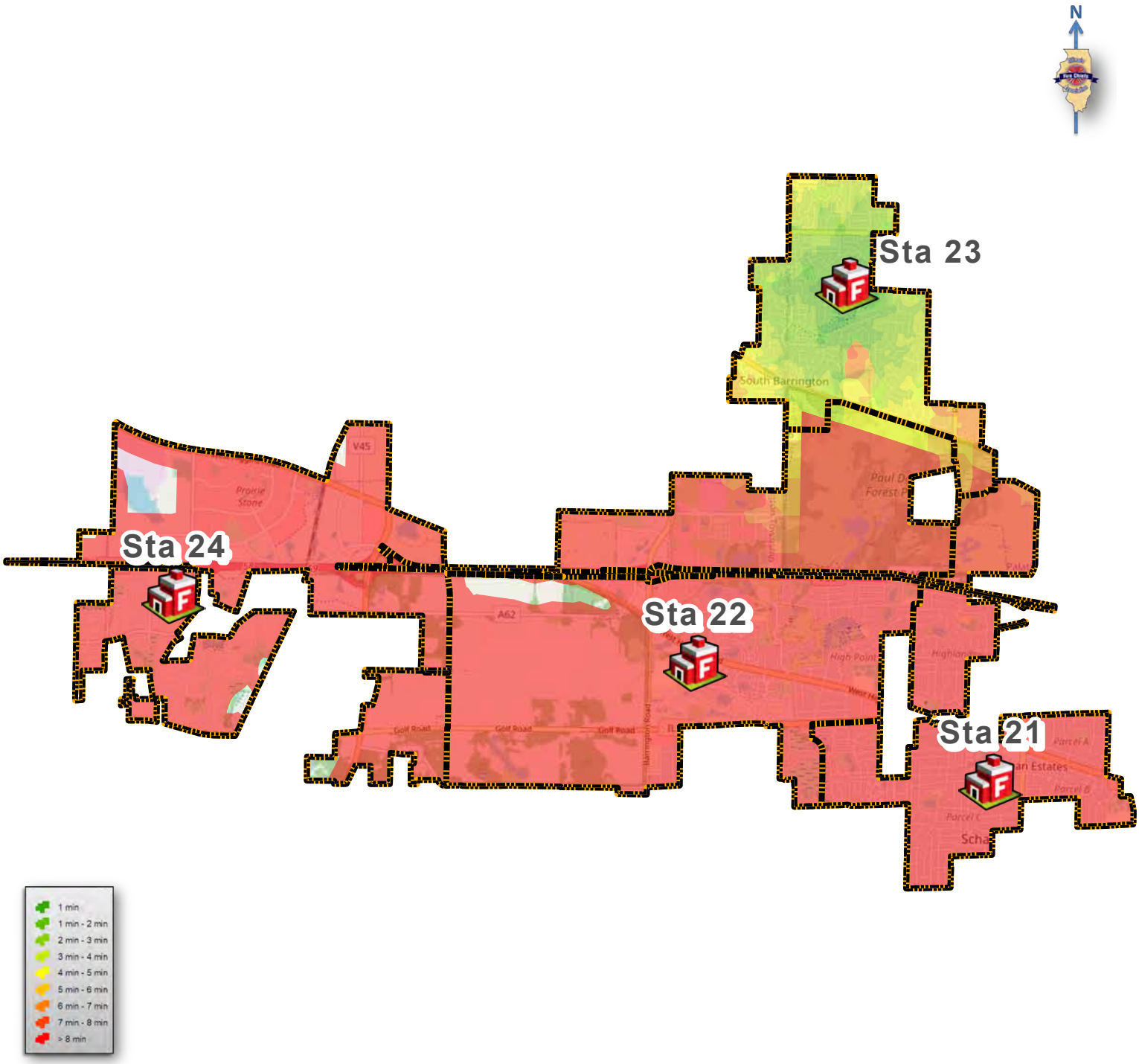
51.2
ROAD MILES

4 MINUTE COVERAGE
39.6
ROAD MILES

4 MINUTE COVERAGE
77%
PERCENTAGE OF AoR 23

Street travel time is the time of travel from the fire stations and is displayed in one-minute increments.

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA



4 MINUTE COVERAGE

2.2
AREA IN SQUARE MILES

10%
PERCENTAGE OF TRA

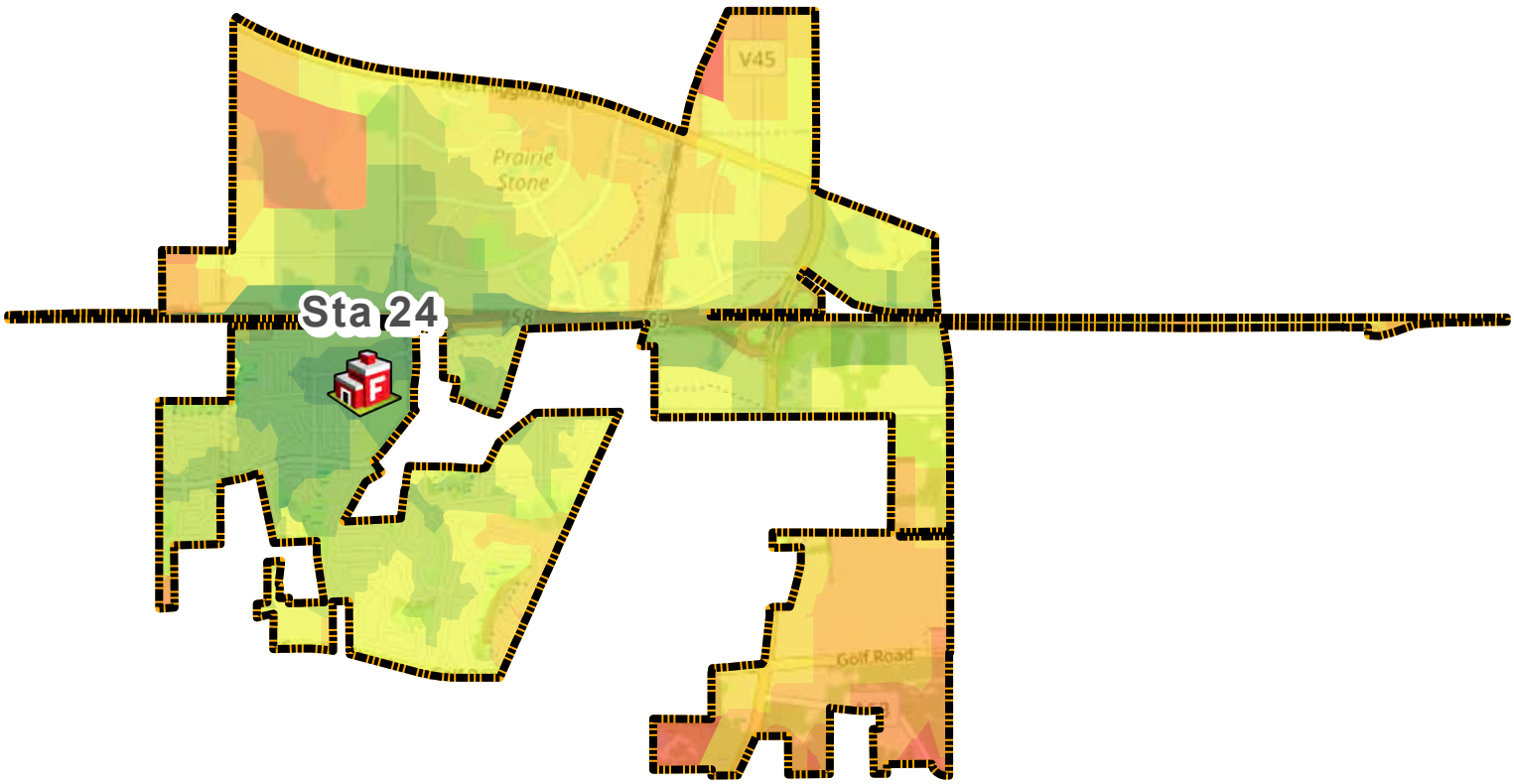
8 MINUTE COVERAGE

3.5
AREA IN SQUARE MILES

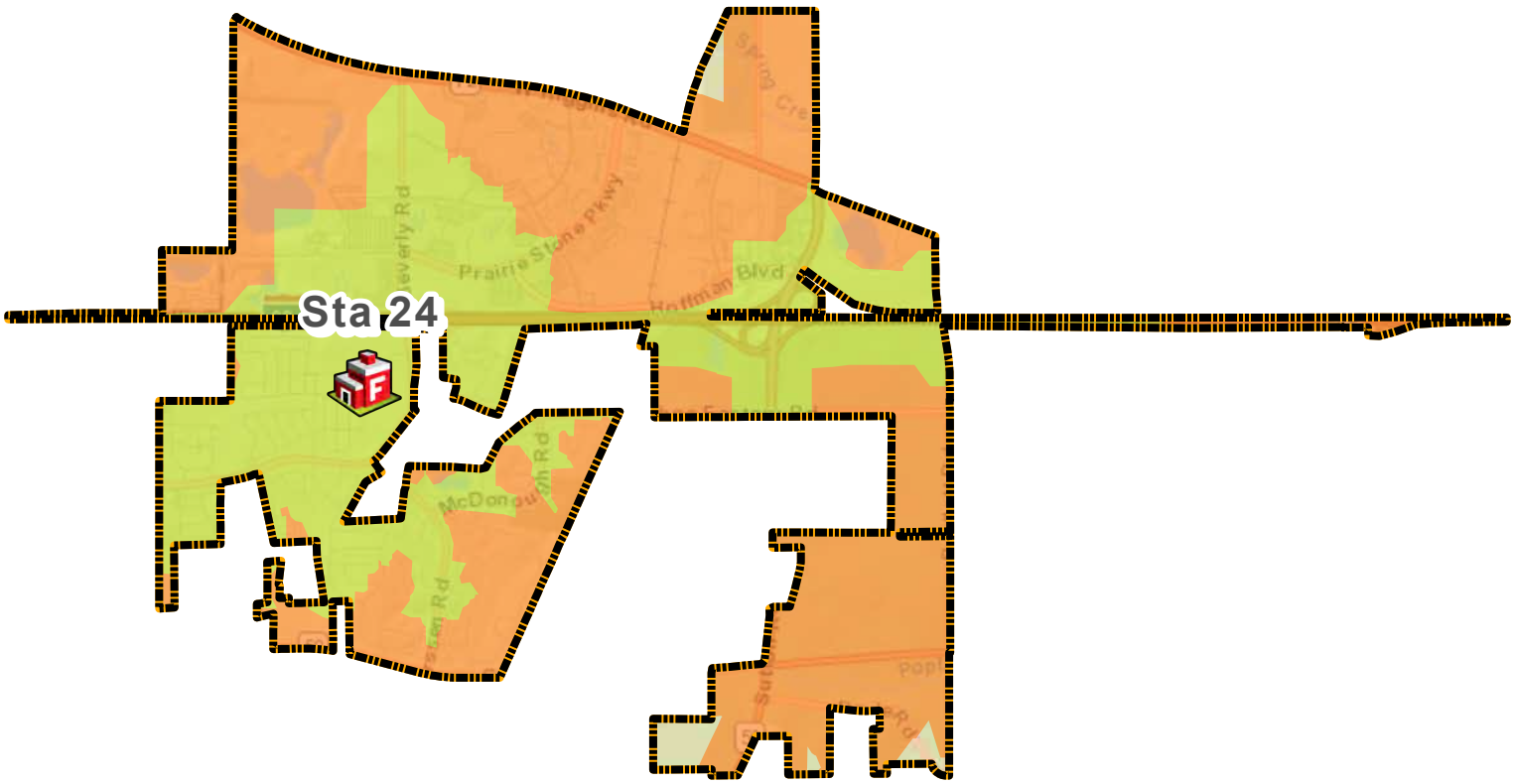
15%
PERCENTAGE OF TRA

Catchments represent the area covered by drive time from the fire stations and are displayed in one-minute increments.

Area Served by Drive Time - AoR 24



Catchments represent the area covered by drive time from the fire stations and are displayed in one-minute increments.



4 MINUTE COVERAGE

2.6 AREA IN SQUARE MILES

42% PERCENTAGE OF AoR 24

8 MINUTE COVERAGE

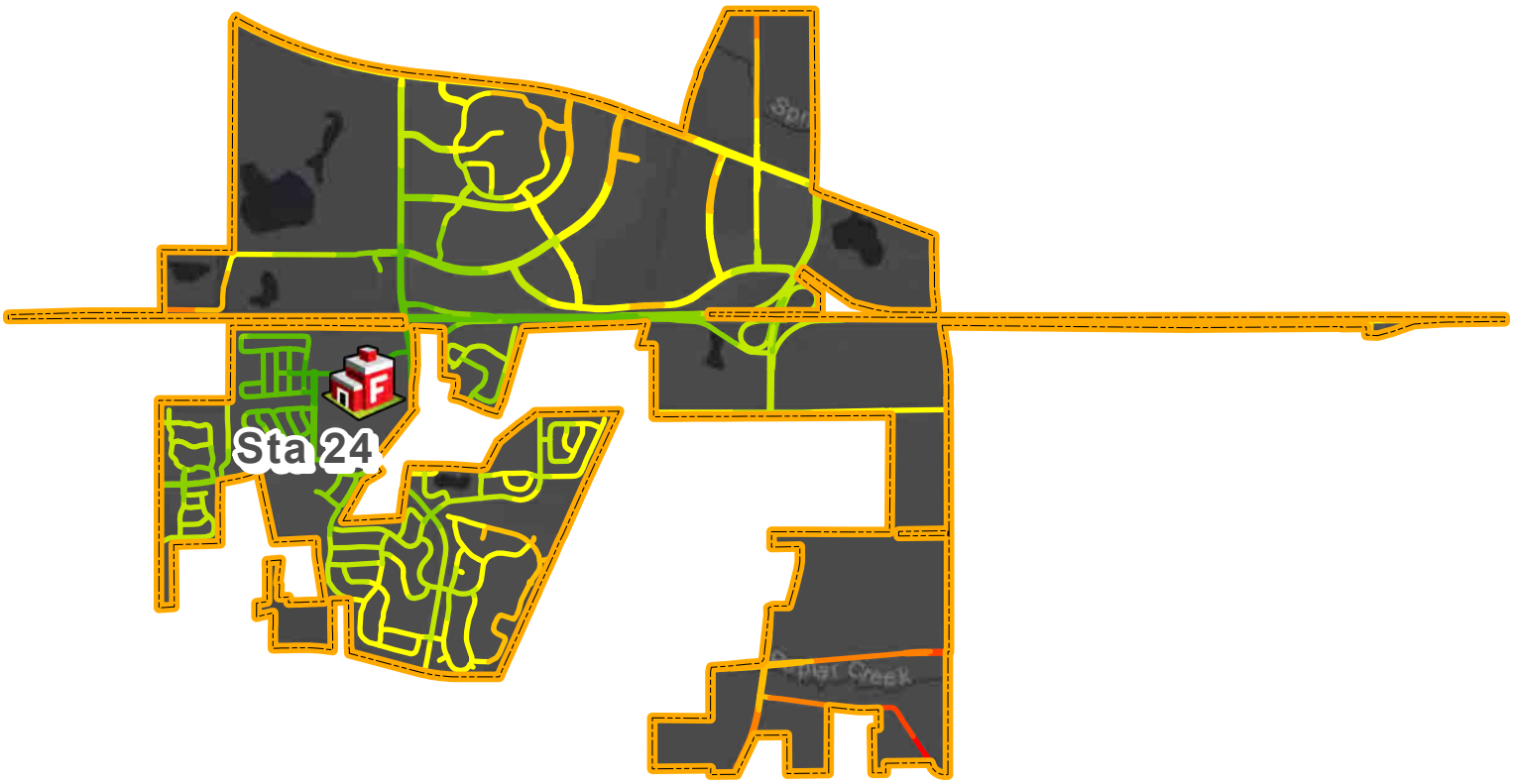
6.0 AREA IN SQUARE MILES

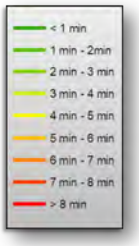
98% PERCENTAGE OF AoR 24

Catchments represent the area covered by drive time from the fire stations and are displayed at the four-minute and eight-minute increments.

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Streets Covered by Drive Time - AoR 24





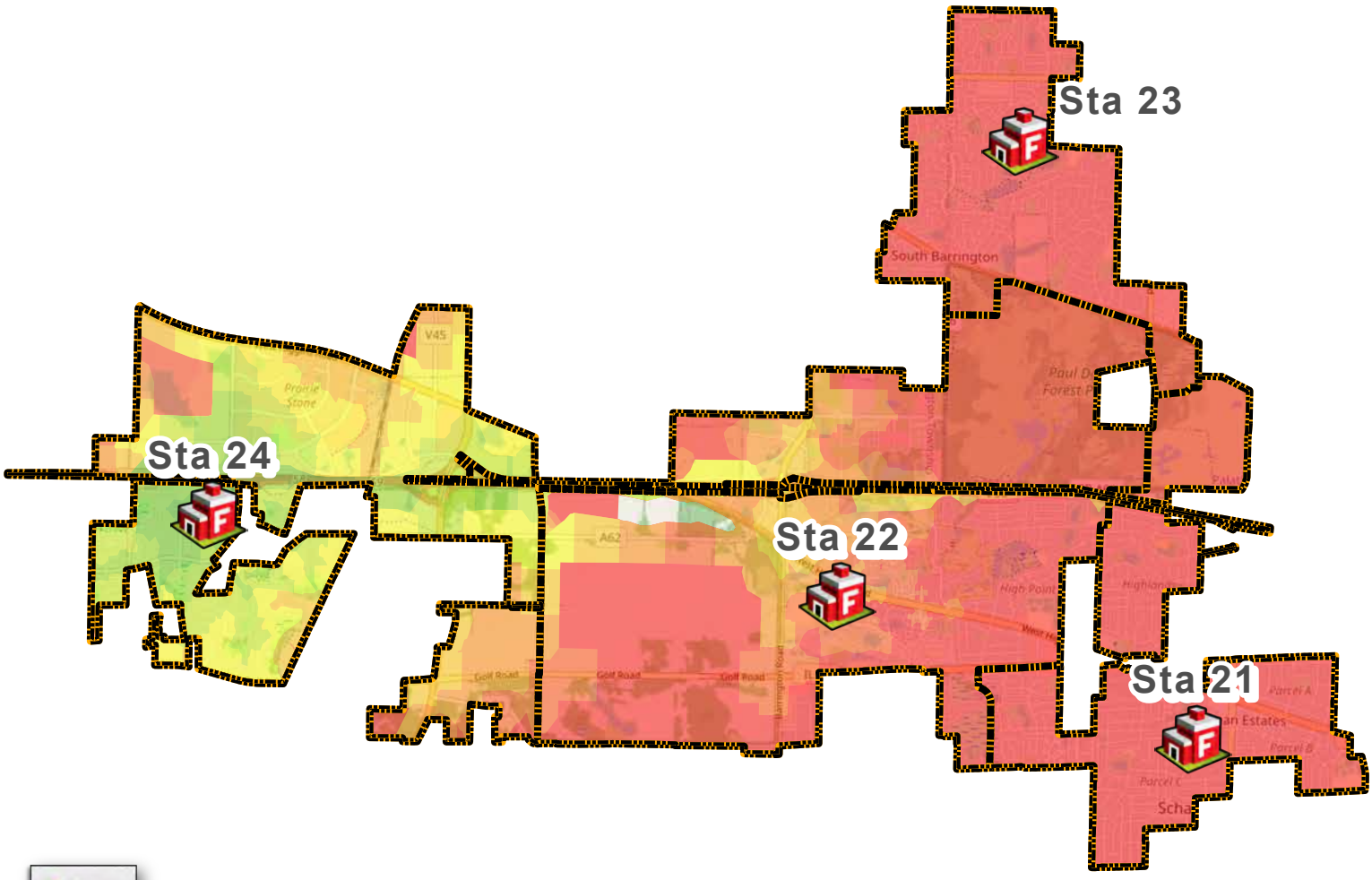
69.3
ROAD MILES

4 MINUTE COVERAGE
37.3
ROAD MILES

4 MINUTE COVERAGE
54%
PERCENTAGE OF AoR 24

Street travel time is the time of travel from the fire stations and is displayed in one-minute increments.

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA



4 MINUTE COVERAGE

2.6
AREA IN SQUARE MILES

12%
PERCENTAGE OF TRA

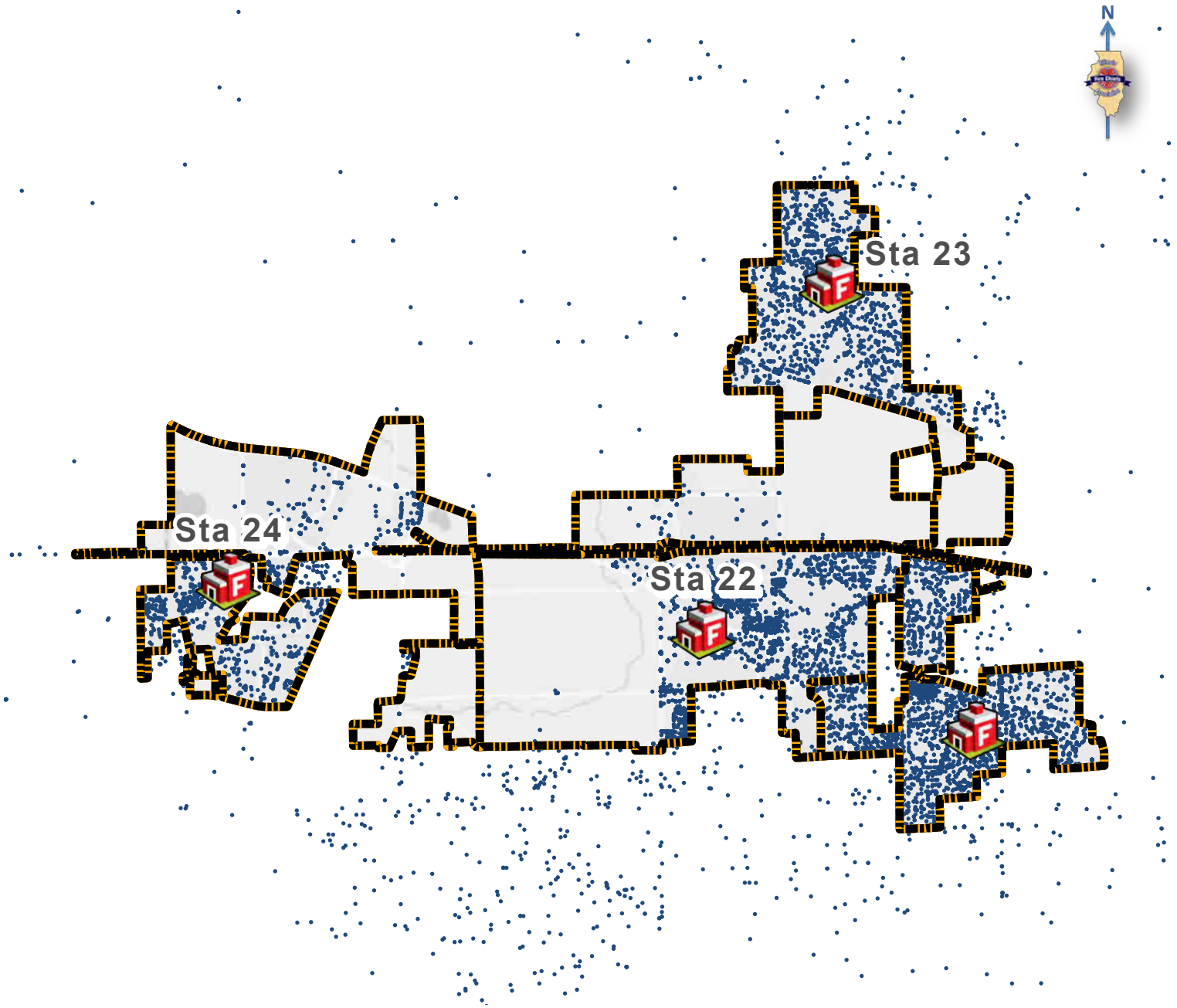
8 MINUTE COVERAGE

9.5
AREA IN SQUARE MILES

42%
PERCENTAGE OF TRA

Catchments represent the area covered by drive time from the fire stations and are displayed in one-minute increments.

All Incidents
Inside TRA Incidents
Outside TRA Incidents
NFIRS Group - 100
NFIRS Group - 200
NFIRS Group - 300
NFIRS Group - 400
NFIRS Group - 500
NFIRS Group - 600
NFIRS Group - 700
NFIRS Group - 800
NFIRS Group - 900



HOFFMAN ESTATES FIRE DEPARTMENT

SOURCE OF INCIDENT DATA

JAN 2019 - JUN 2022

INCIDENT TIME PERIOD

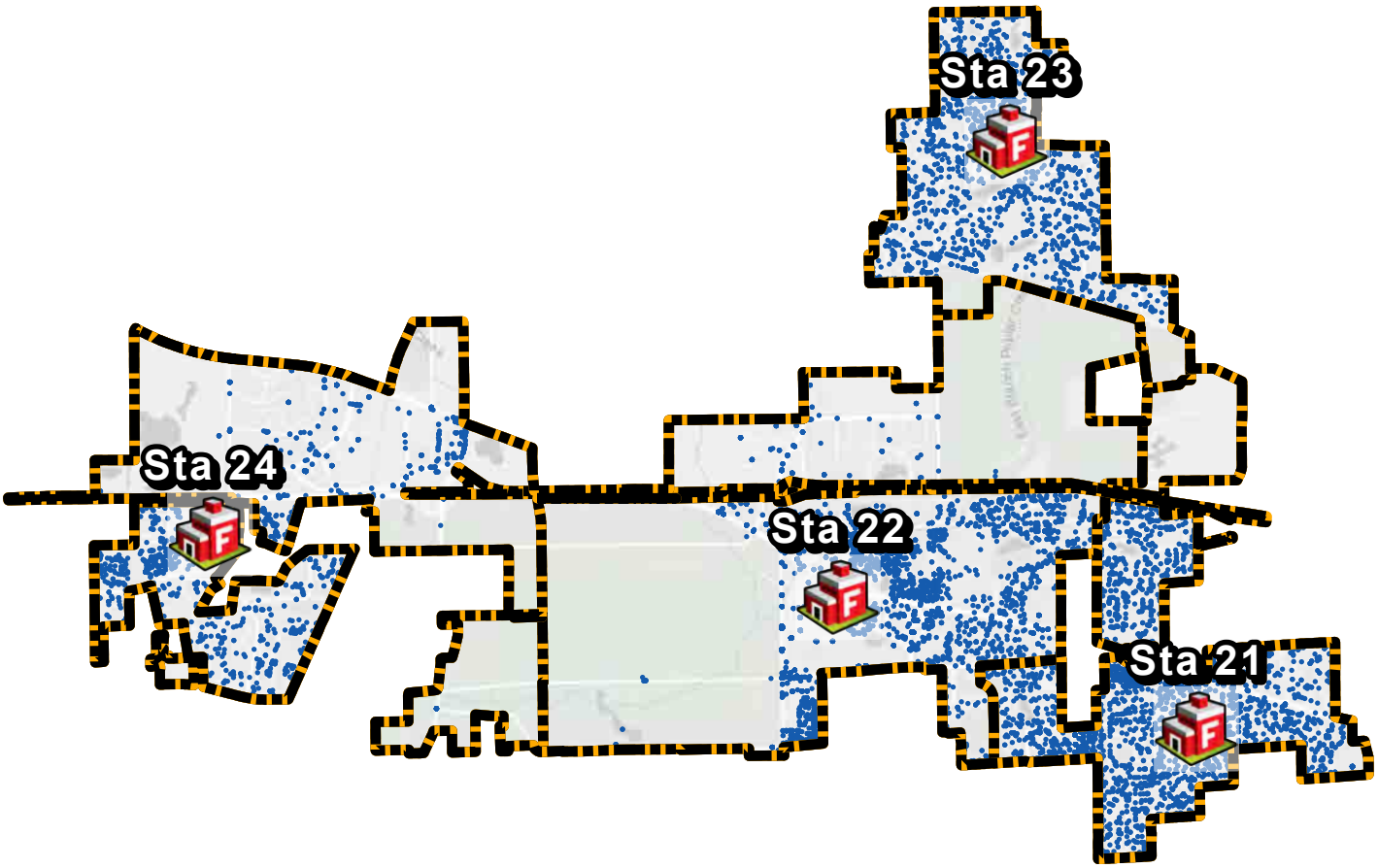
20,700
TOTAL INCIDENTS

19,104
TRA INCIDENTS

1,596
OUTSIDE TRA INCIDENTS

Map Layer Esri, HERE, Garmin, USGS, EPA, NPS

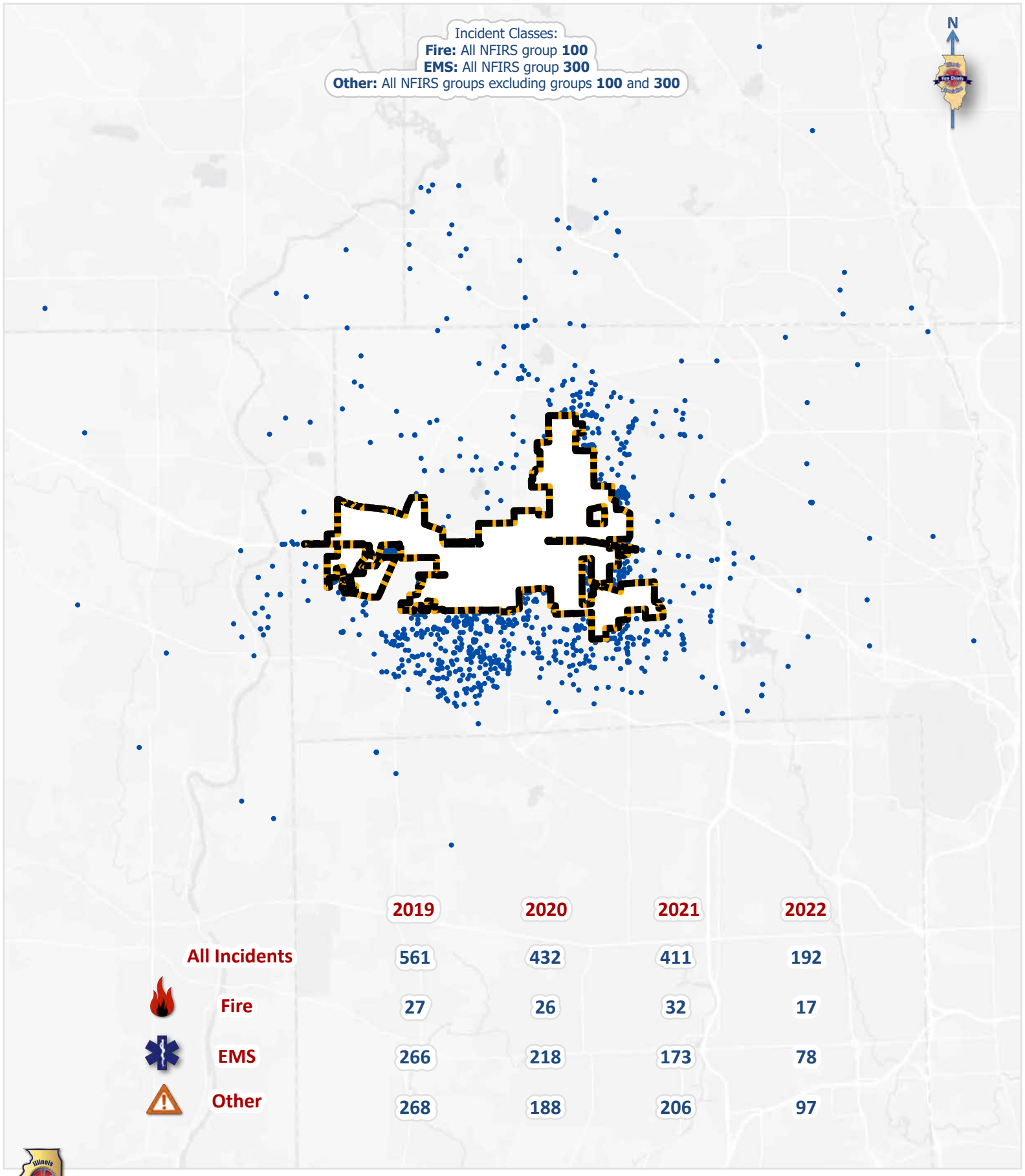
Incident Classes:
Fire: All NFIRS group **100**
EMS: All NFIRS group **300**
Other: All NFIRS groups excluding groups **100** and **300**



	2019	2020	2021	2022
All Incidents	5,421	5,061	5,835	2,787
Fire	77	65	77	37
EMS	4,074	3,828	4,490	2,129
Other	1,270	1,168	1,268	621

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA

Outside TRA Incidents



	2019	2020	2021	2022
All Incidents	561	432	411	192
Fire	27	26	32	17
EMS	266	218	173	78
Other	268	188	206	97

Map Layer Esri, HERE, Garmin, USGS, EPA, NPS

Incident counts are for all incidents, inside and outside of TRA.

Fire	358 Incidents
Brush or brush-and-grass mixture fire	9
Building fire	67
Building Fire Out of town	55
Chimney or flue fire, confined to chimney or flue	1
Cooking fire, confined to container	58
Dumpster or other outside trash receptacle fire	16
Fire contained in Appliance	2
Fire, other	4
Fires in structure other than in a building	2
Forest, woods or wildland fire	1
Fuel burner/boiler malfunction, fire confined	2
Grass fire	4
Mulch Fire	32
Natural vegetation fire, other	3
Off-road vehicle or heavy equipment fire	1
Outside equipment fire	3
Outside rubbish fire, other	5
Outside rubbish, trash or waste fire	21
Passenger vehicle fire	53
Road freight or transport vehicle fire	9
Special outside fire, other	1
Trash or rubbish fire, contained	9

Incident counts are for all incidents, inside and outside of TRA.

Overpressure Rupture Explosion Overheat No Fire — 23 Incidents

Air or gas rupture of pressure or process vessel	1
Excessive heat, scorch burns with no ignition	19
Fireworks explosion (no fire)	1
Overpressure rupture of air or gas pipe/pipeline	1
Overpressure rupture of steam boiler	1

Incident counts are for all incidents, inside and outside of TRA.

Rescue EMS — 15,256 Incidents

Accident involving bicycle	13
Cardiac Emergency	3
Check on Well Being - No Patient	11
Chemical abuse, drugs or alcohol	3
Emergency medical service incident, other	8
EMS call, excluding vehicle accident with injury	13,891
Ems Call, No Patient Contact	38
Extrication of victim(s) from vehicle	6
Extrication, rescue, other	3
Fall injury	3
High-angle rescue	2
Lock-in (if lock out , use 511)	11
Medical Alert-False Activation	60
Medical assist, assist EMS crew	9
Motor vehicle accident with extrication	42
Motor vehicle accident with injuries	879
Motor vehicle accident with no injuries.	79
Motor vehicle/pedestrian accident (MV Ped)	23
OB emergency, childbirth	1
Psychological emergency	1
Removal of victim(s) from stalled elevator	155
Rescue or EMS standby	1
Search for person in water	1
Swift water rescue	1
Swimming/recreational water areas rescue	1
Trauma not related to a motor vehicle accident	1
Vehicle Accident involving motorcycle	7
Water & ice-related rescue, other	2
Watercraft rescue	1

Incident counts are for all incidents, inside and outside of TRA.

Hazardous Condition No Fire — 505 Incidents

Accident, potential accident, other	1
Arcing, shorted electrical equipment	31
Attempted burning, illegal action, other	1
Biological hazard, confirmed or suspected	4
Breakdown of light ballast	2
Building or structure weakened or collapsed	4
Carbon monoxide incident	91
Chemical hazard (no spill or leak)	3
Chemical spill or leak	6
Combustible/flammable gas/liquid condition, other	3
Electrical wiring/equipment problem, other	32
Gas leak (natural gas or LPG)	188
Gasoline or other flammable liquid spill	11
Hazardous condition, other	2
Heat from short circuit (wiring), defective/worn	7
Oil or other combustible liquid spill	2
Overheated motor	33
Power line down	80
Toxic condition, other	1
Vehicle accident, general cleanup	3

Incident counts are for all incidents, inside and outside of TRA.

Service Call **1,182 Incidents**

Animal problem	2
Animal rescue	4
Assist invalid	358
Assist police or other governmental agency	64
Cover assignment, standby, moveup	34
Defective elevator, no occupants	23
Elevator, Open line - no occupants	7
Lock-out	120
Odor Investigation Unfounded/Unknown (if odor	195
Person in distress, other	8
Police matter	106
Public service	52
Public service assistance, other	75
Ring or jewelry removal	3
Service Call, other	3
Smoke Detector Install	4
Smoke or odor removal	31
Unauthorized burning	4
Water evacuation	4
Water or steam leak	62
Water problem, other	23

Incident counts are for all incidents, inside and outside of TRA.

Canceled Good Intent — 1,132 Incidents

Allowable use of outdoor fireplace	4
Authorized controlled burning	15
Dispatched & canceled en route	624
Dispatched & returned by another agency	86
EMS call, party transported by non-fire agency	5
Errant Dispatch/Dispatcher Error	14
Good intent call, No Patient Contact	35
Good intent call, other	50
HazMat release investigation w/no HazMat	10
No incident found on arrival at dispatch address	176
Prescribed fire	2
Smoke from barbecue, tar kettle	3
Smoke scare, odor of smoke	56
Steam, other gas mistaken for smoke, other	15
Steam, vapor, fog or dust thought to be smoke	14
Vicinity alarm (incident in other location)	2
Wires down, Not power	17
Wrong location	4

Incident counts are for all incidents, inside and outside of TRA.

False Alarm False Call	2,216 Incidents
Alarm system activation, no fire - unintentional	335
Alarm system sounded due to malfunction	172
Bomb scare - no bomb	2
Broken sprinkler due to being struck	4
Broken sprinkler due to freezing	9
Broken Sprinkler Pipe - Unknown Reason	4
Carbon monoxide detector activation, no CO	125
Central station, malicious false alarm	19
CO detector - Low Battery/End of Life	8
CO detector activation due to malfunction	42
Detector activation, no fire - unintentional	111
Direct tie to FD, malicious false alarm	30
Dry valve tripped - no fire	22
Emergency Medical Alarm-False activation	8
Extinguishing system activation	2
Extinguishing system activation due to malfunction	4
False alarm or false call, other	8
Heat detector activation due to malfunction	26
Malicious, mischievous false call, other	38
Municipal alarm system, malicious false alarm	12
Open 911 Line Ambulance Response	4
Smoke Alarm - Low Battery/End of Life	8
Smoke detector activation due to malfunction	264
Smoke detector activation, no fire - unintentional	467
Sprinkler activation due to malfunction	24
Sprinkler activation, no fire - unintentional	22
Supervisory (tamper, low temp, low pressure)	6
System malfunction, other	84
Trouble Alarm - Loss of signal/Comm Failure	22
Trouble Alarm - Phone line problem	1
Trouble Alarm - Radio transmitter problem	16
Trouble Alarm - unknown reason	33
Trouble Alarm Reset	28
Trouble Alarm Unable to reset	170
Trouble alarm due to power outage	29
Unintentional transmission of alarm, other	57

Incident counts are for all incidents, inside and outside of TRA.

Severe Weather and Natural Disaster — 3 Incidents

Flood assessment	1
Lightning strike (no fire)	2

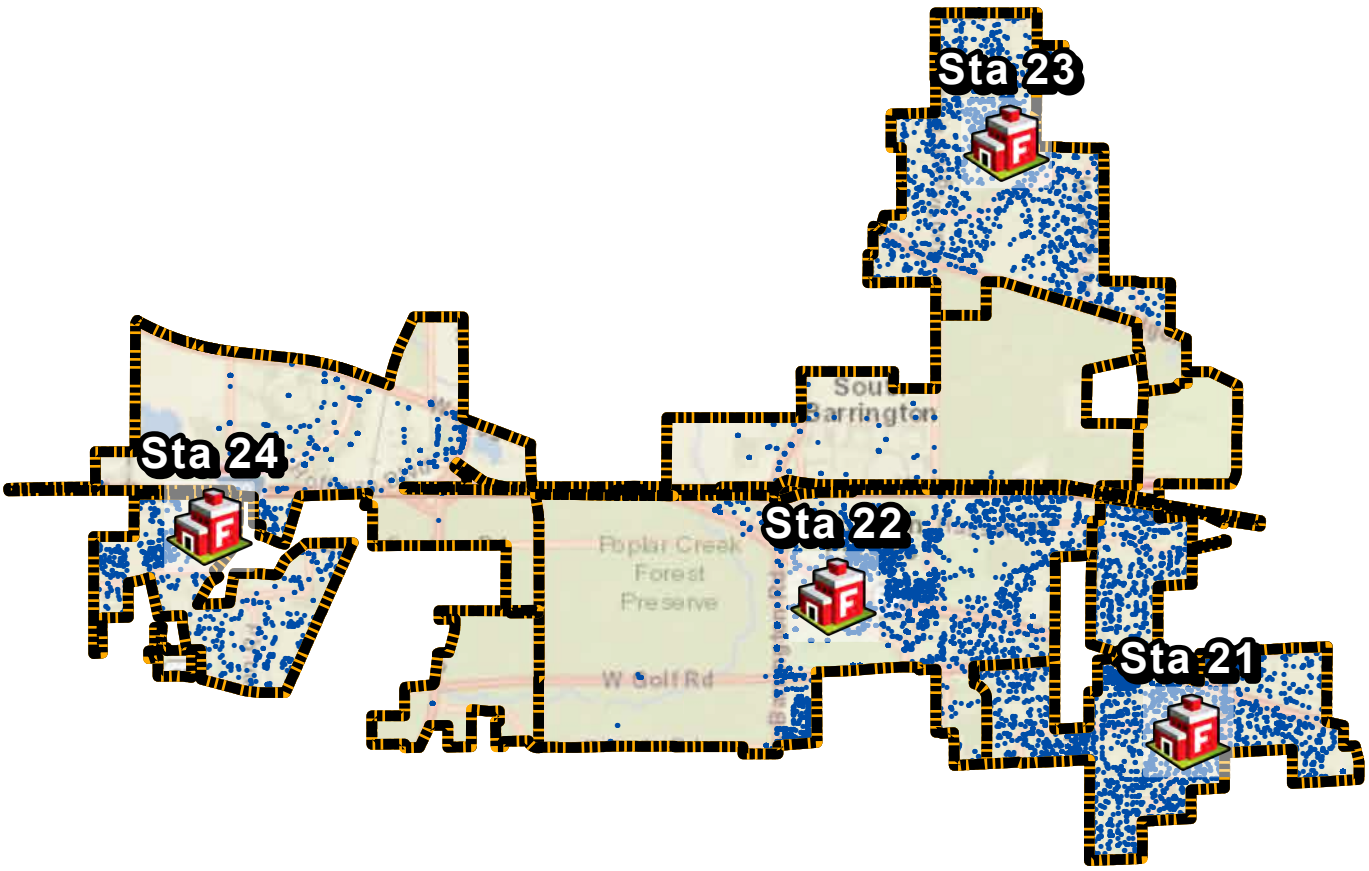
Incident counts are for all incidents, inside and outside of TRA.

Special Incident Type	7 Incidents
Citizen complaint	5
Special type of incident, other	2

TRA
AoR 21
AoR 22
AoR 23
AoR 24

Counts and percentages are for incidents only within the TRA.

19,090
TRA INCIDENTS



NFIRS Groups: Counts and Percentages

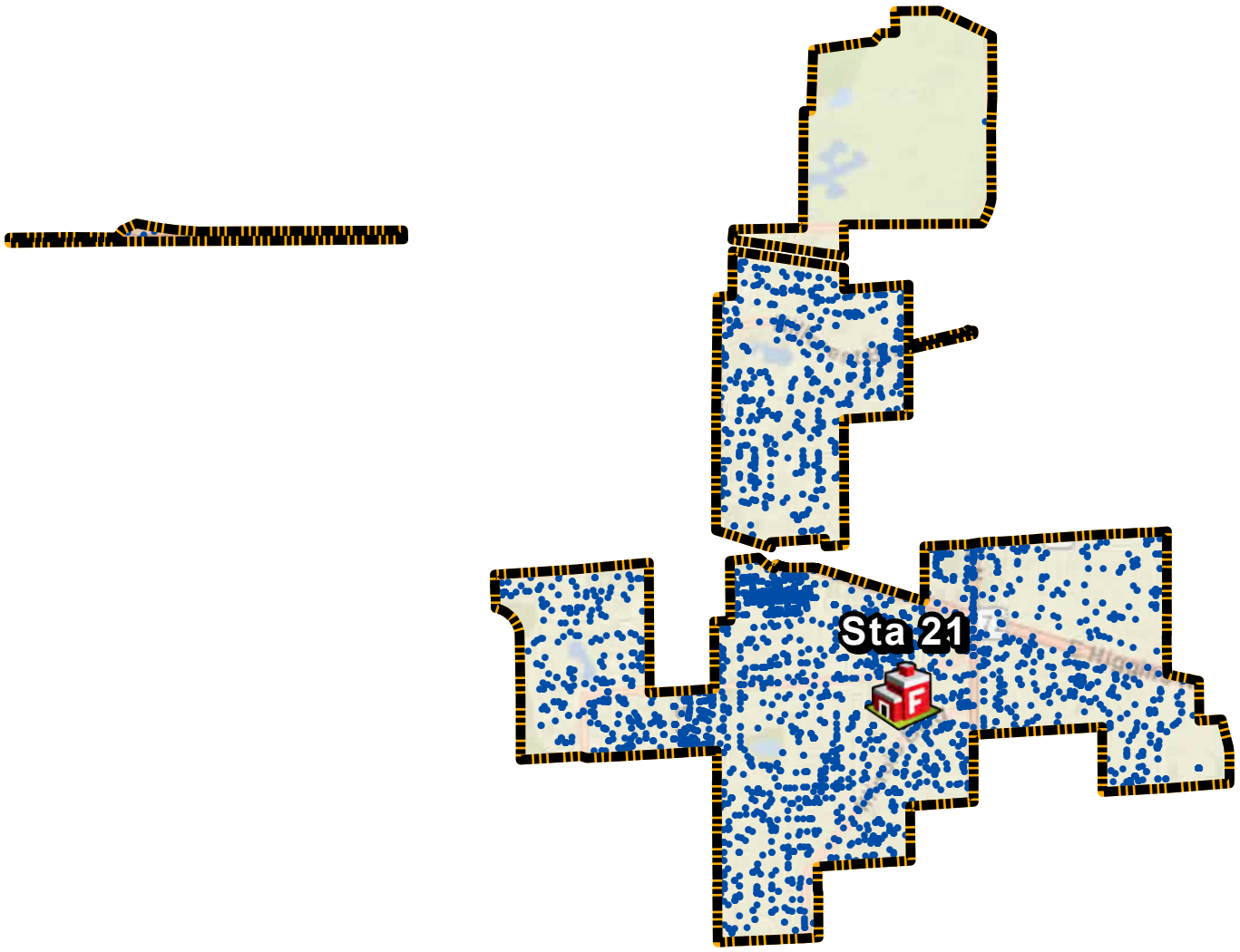
100	200	300	400	500	600	700	800	900
1.3%	0.1%	76.1%	2.5%	5.8%	3%	11.2%	<0.1%	<0.1%
256	22	14,521	478	1,100	568	2,135	3	7

Map Layer Esri, HERE, Garmin, NGA, USGS, NPS, Esri, HERE, Garmin, USGS, EPA, NPS

Counts and percentages are for incidents only within the AoR.

5,462
AOR INCIDENTS

29%
PERCENT OF TRA



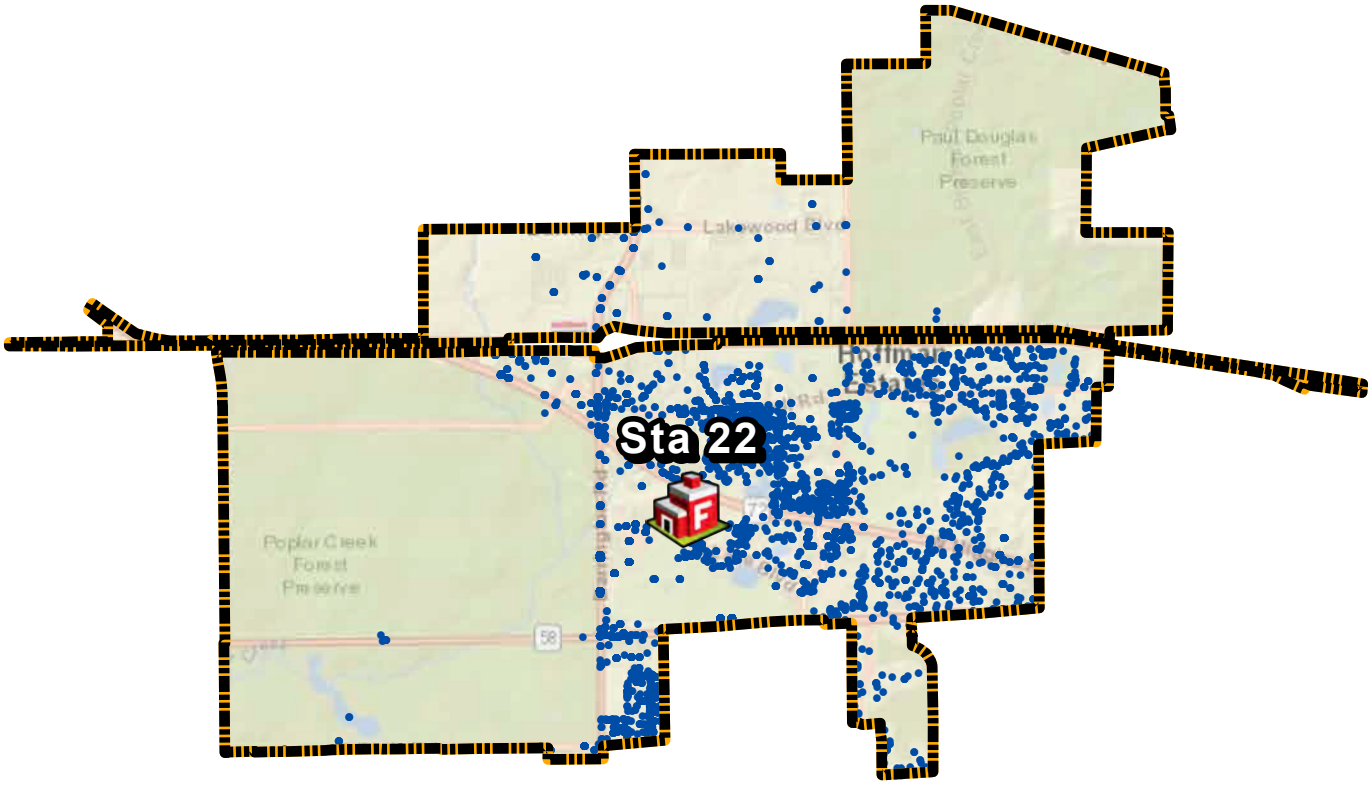
NFIRS Groups: Percentages and Counts

100	200	300	400	500	600	700	800	900
1.6%	0.1%	72.9%	3.7%	5.9%	2.9%	12.9%	<0.1%	0.1%
87	4	3,981	201	322	159	703	2	3

Counts and percentages are for incidents only within the AoR.

9,406
AOR INCIDENTS

49%
PERCENT OF TRA



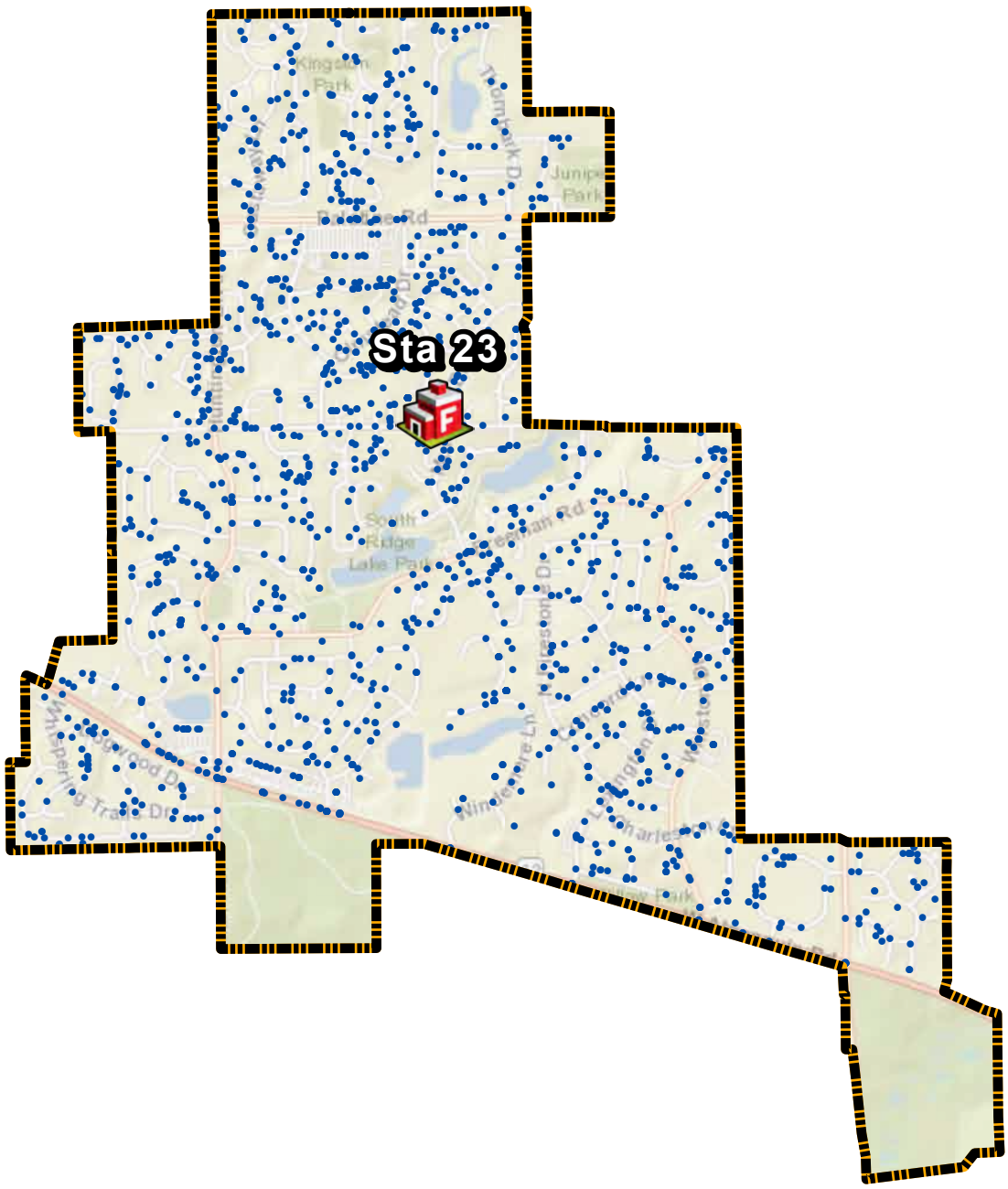
NFIRS Groups: Percentages and Counts

100	200	300	400	500	600	700	800	900
1%	0.1%	79.2%	1.8%	5.1%	2.5%	10.2%	0%	<0.1%
90	12	7,451	170	479	238	963	0	3

Counts and percentages are for incidents only within the AoR.

2,145
AOR INCIDENTS

11%
PERCENT OF TRA



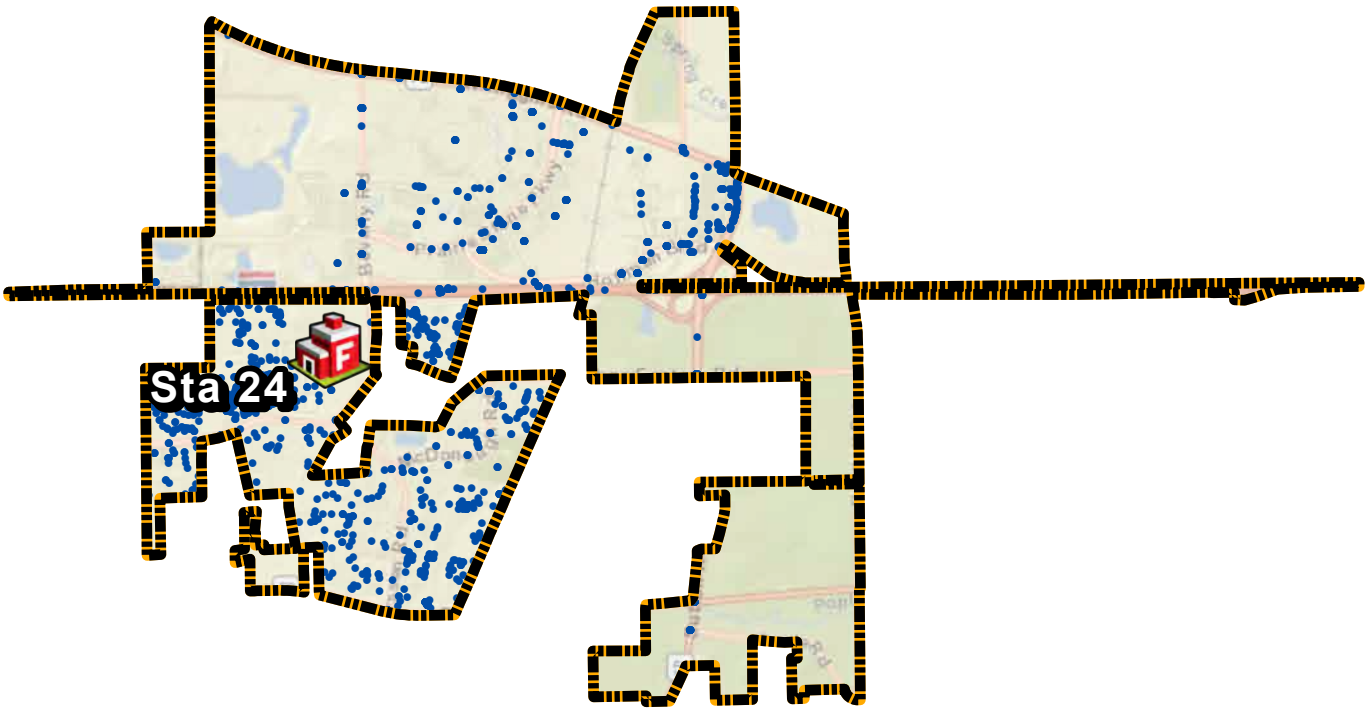
NFIRS Groups: Percentages and Counts

100	200	300	400	500	600	700	800	900
1.6%	0.1%	75.5%	2.5%	8.9%	2.7%	8.6%	<0.1%	0%
35	2	1,620	53	191	58	185	1	0

Counts and percentages are for incidents only within the AoR.

2,077
AOR INCIDENTS

11%
PERCENT OF TRA



NFIRS Groups: Percentages and Counts

100	200	300	400	500	600	700	800	900
2.1%	0.2%	70.7%	2.6%	5.2%	5.4%	13.7%	0%	<0.1%
44	4	1,469	54	108	113	284	0	1

NFIRS Group 100 - 900

NFIRS Group 100

NFIRS Group 200

NFIRS Group 300

NFIRS Group 400

NFIRS Group 500

NFIRS Group 600

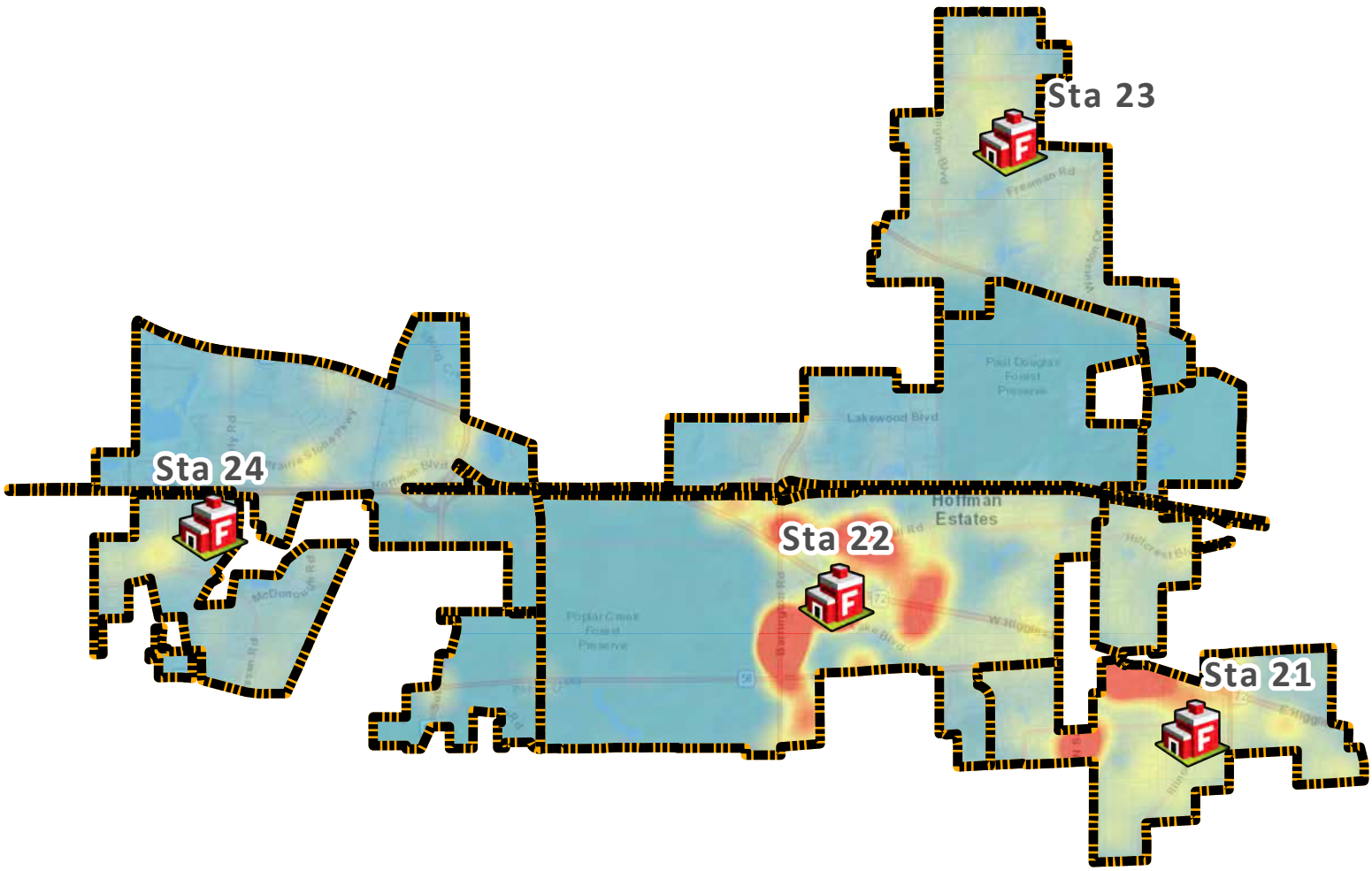
NFIRS Group 700

NFIRS Group 800

NFIRS Group 900

Counts and percentages are for incidents only within the TRA.

19,090
INCIDENTS



NFIRS 100 - 900 : All Incidents

Percentage of TRA incidents

29% AOR 21

49% AOR 22

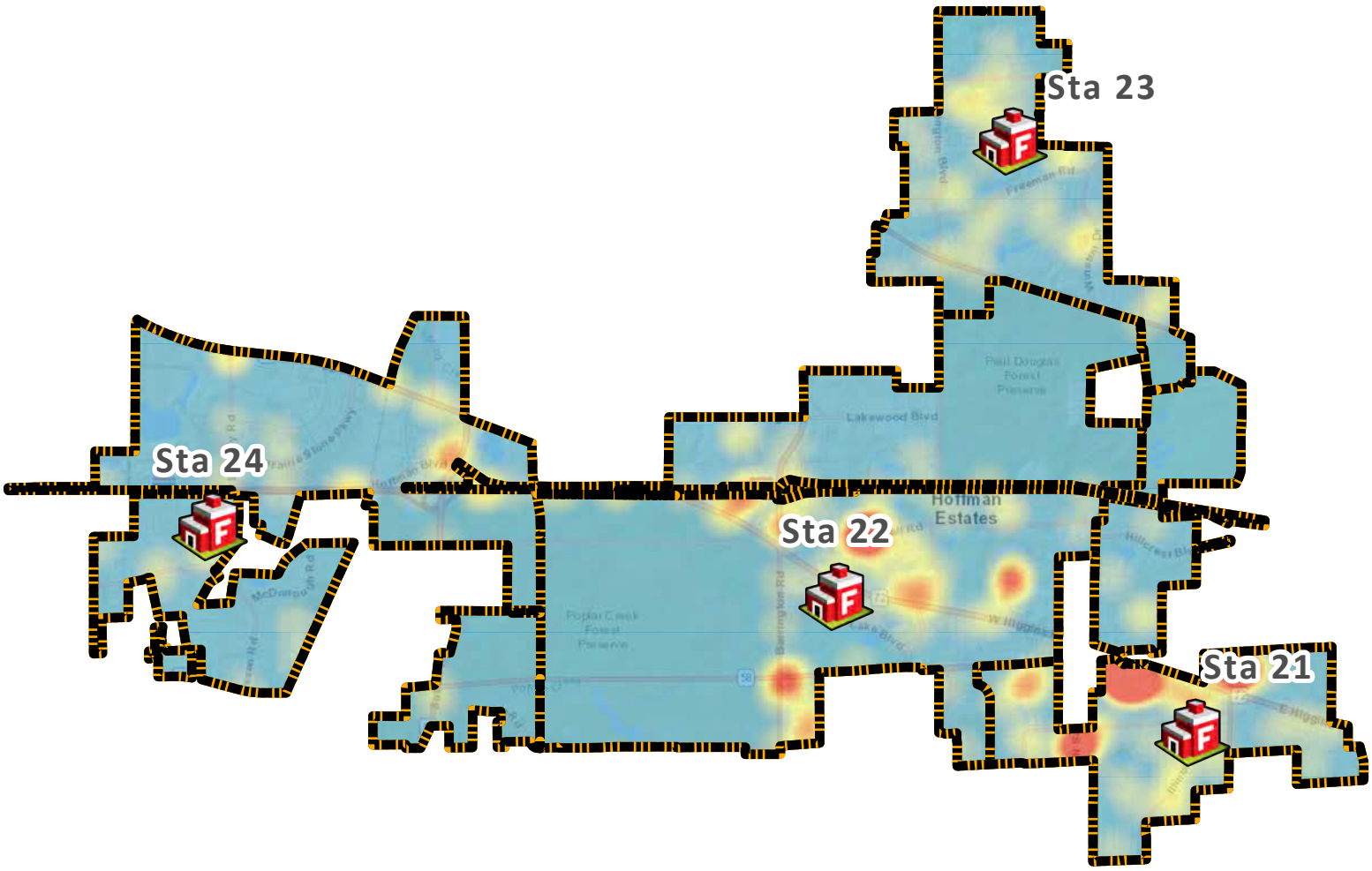
11% AOR 23

11% AOR 24

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Counts and percentages are for incidents only within the TRA.

256
INCIDENTS



NFIRS 100 : Fire

Percentage of TRA incidents

34% AOR 21

35% AOR 22

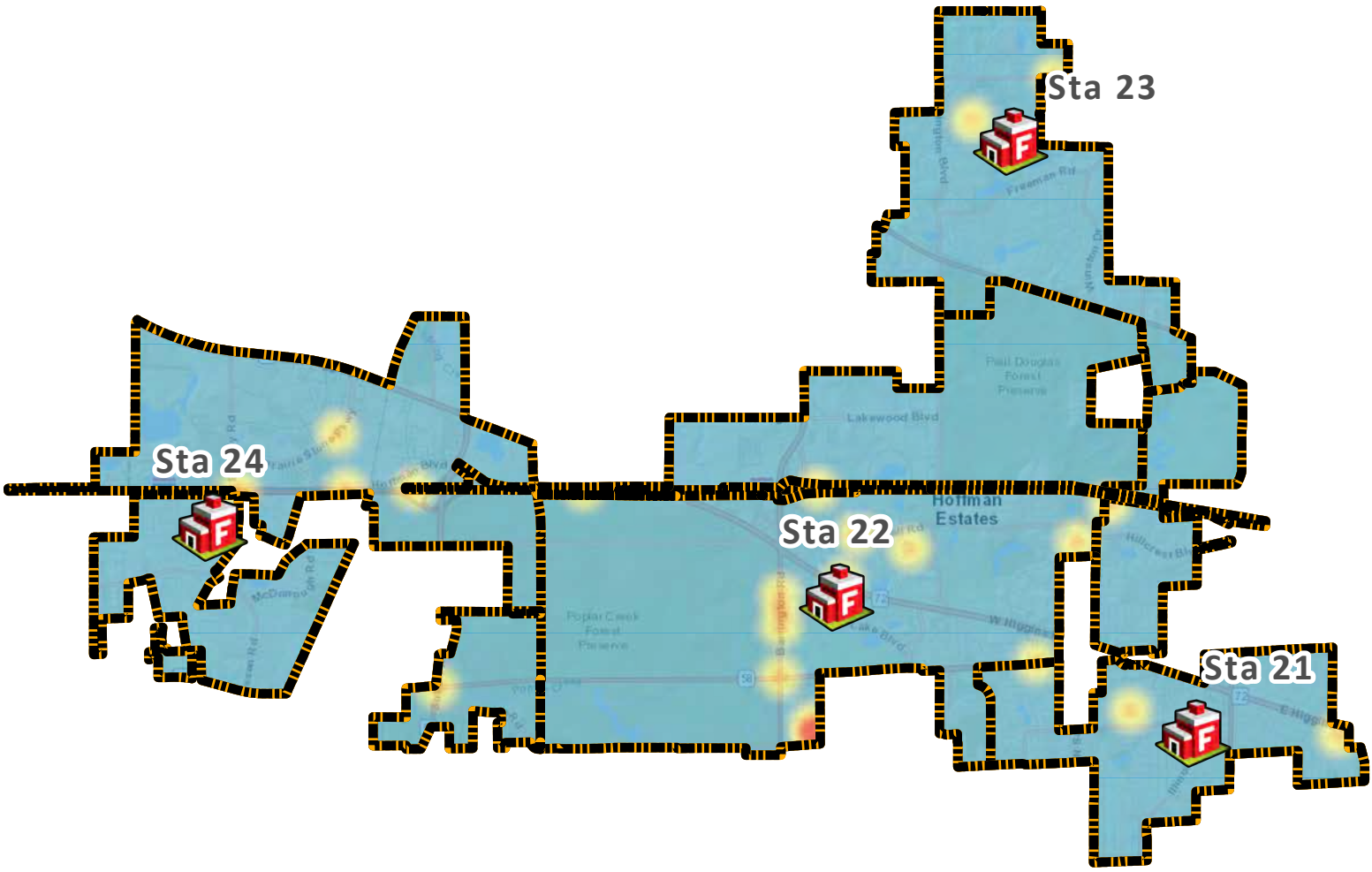
14% AOR 23

17% AOR 24

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Counts and percentages are for incidents only within the TRA.

22
INCIDENTS



NFIRS 200 : Overpressure Rupture Explosion Overheat No Fire

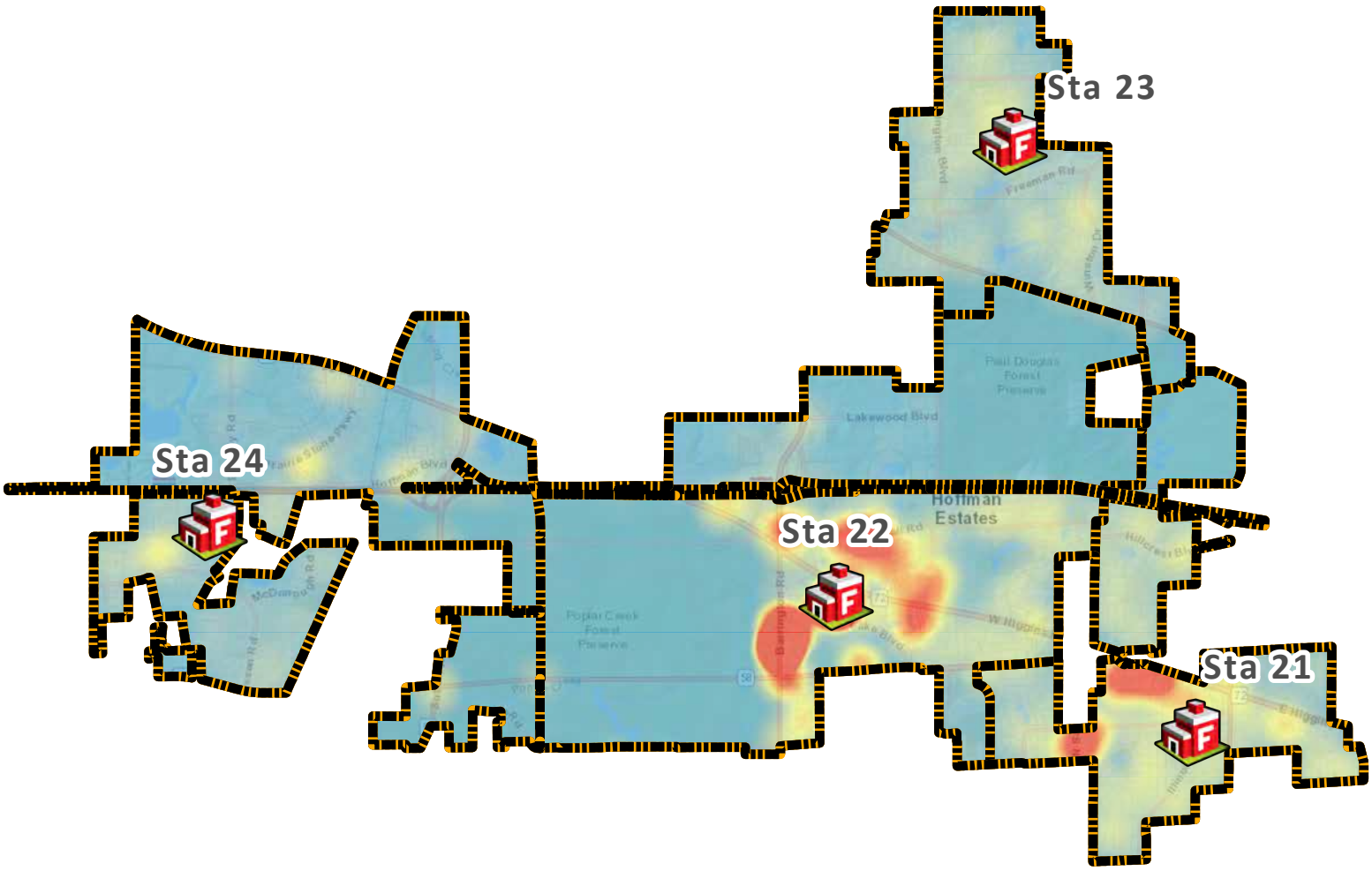
Percentage of TRA incidents

AOR 21	AOR 22	AOR 23	AOR 24
18%	55%	9%	18%

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Counts and percentages are for incidents only within the TRA.

14,521
INCIDENTS



NFIRS 300 : Rescue EMS

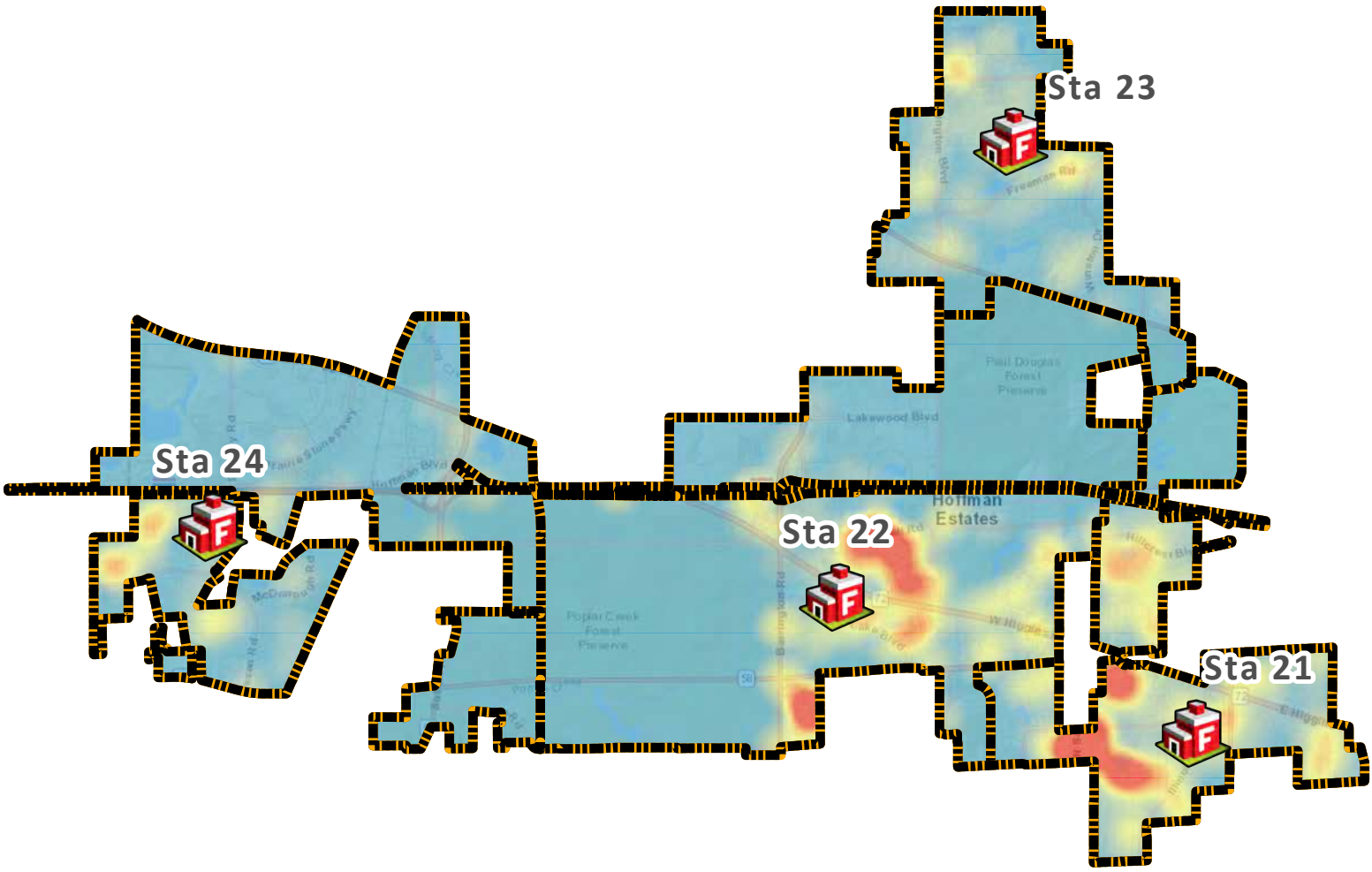
Percentage of TRA incidents

AOR 21	AOR 22	AOR 23	AOR 24
27%	51%	11%	10%

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Counts and percentages are for incidents only within the TRA.

478
INCIDENTS



NFIRS 400 : Hazardous Condition No Fire

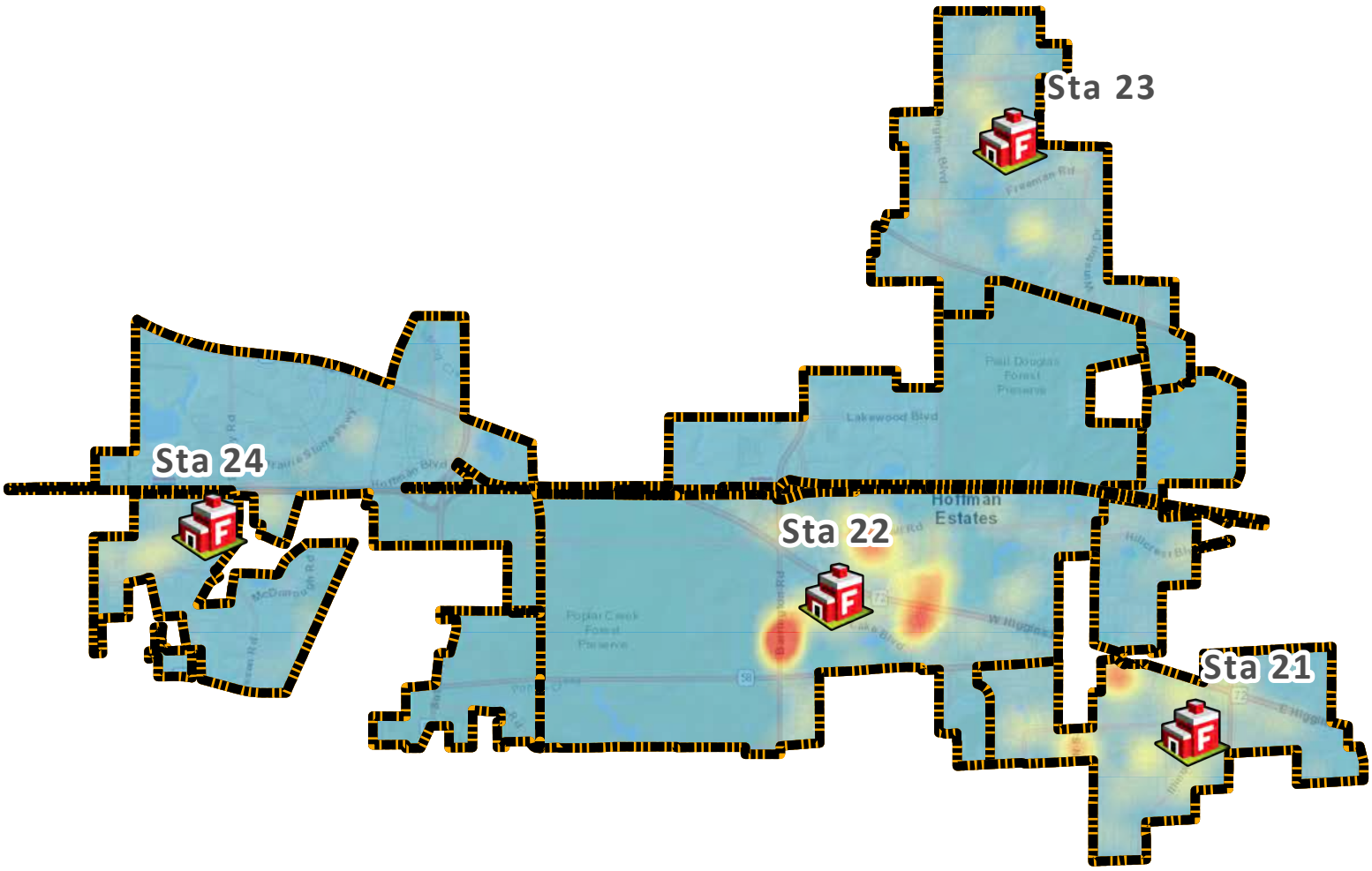
Percentage of TRA incidents

AOR 21	AOR 22	AOR 23	AOR 24
42%	36%	11%	11%

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Counts and percentages are for incidents only within the TRA.

1,100
INCIDENTS



NFIRS 500 : Service Call

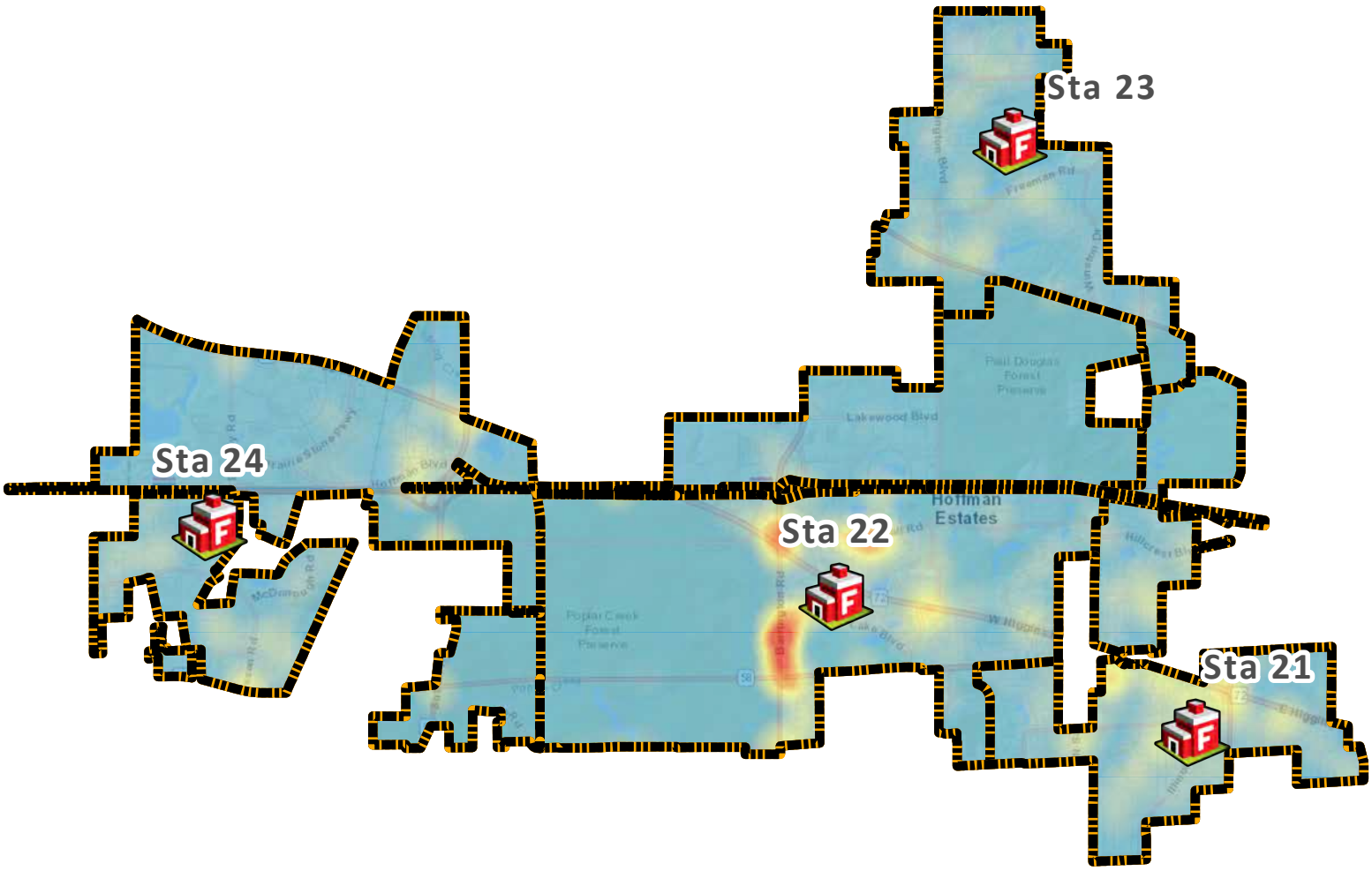
Percentage of TRA incidents

AOR 21	AOR 22	AOR 23	AOR 24
29%	44%	17%	10%

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Counts and percentages are for incidents only within the TRA.

568
INCIDENTS



NFIRS 600 : Canceled Good Intent

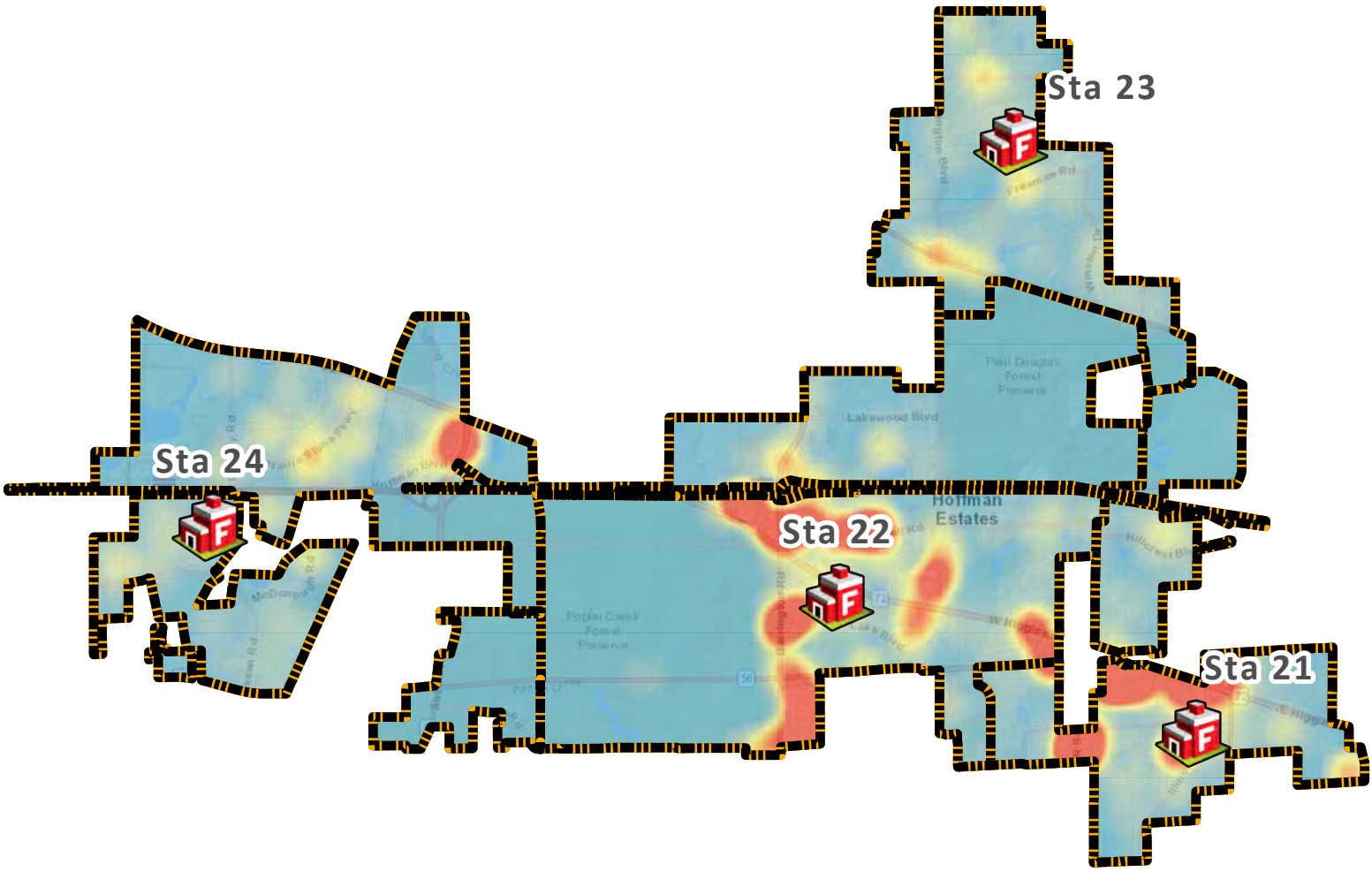
Percentage of TRA incidents

AOR 21	AOR 22	AOR 23	AOR 24
28%	42%	10%	20%

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Counts and percentages are for incidents only within the TRA.

2,135
INCIDENTS



NFIRS 700 : False Alarm False Call

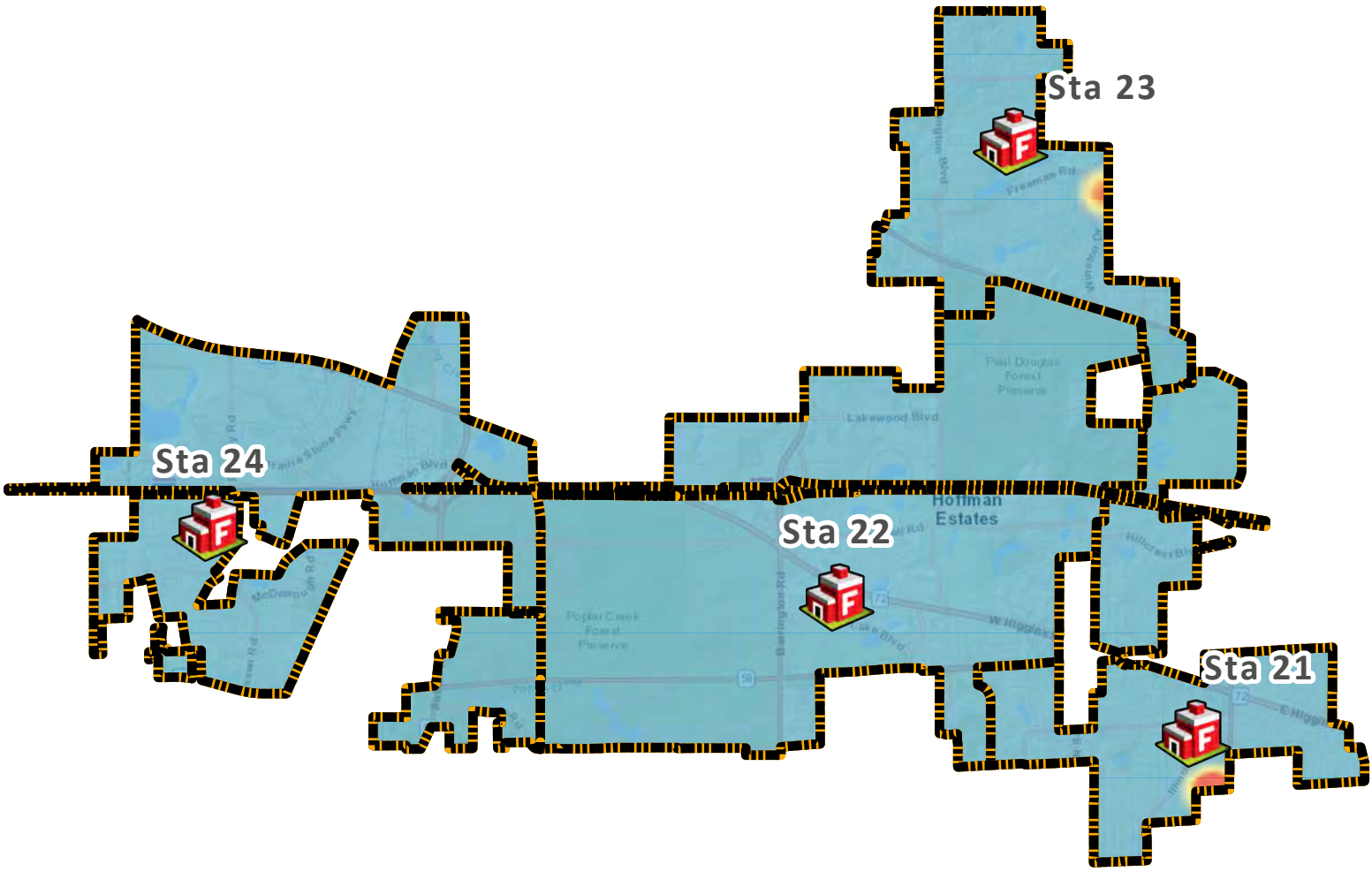
Percentage of TRA incidents

AOR 21	AOR 22	AOR 23	AOR 24
33%	45%	9%	13%

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Counts and percentages are for incidents only within the TRA.

3
INCIDENTS



NFIRS 800 : Severe Weather and Natural Disaster

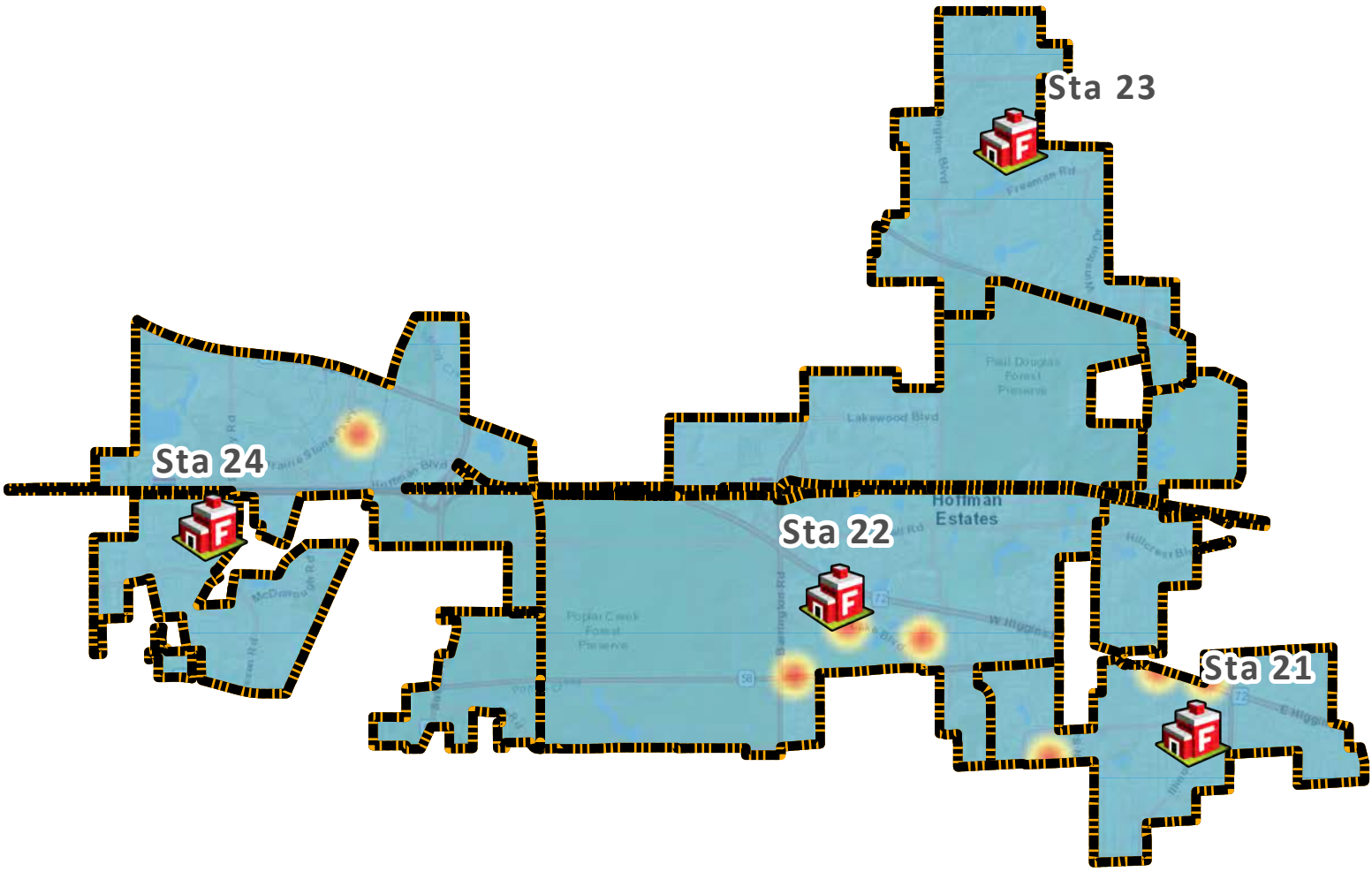
Percentage of TRA incidents

AOR 21	AOR 22	AOR 23	AOR 24
67%	0%	33%	0%

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS

Counts and percentages are for incidents only within the TRA.

7
INCIDENTS

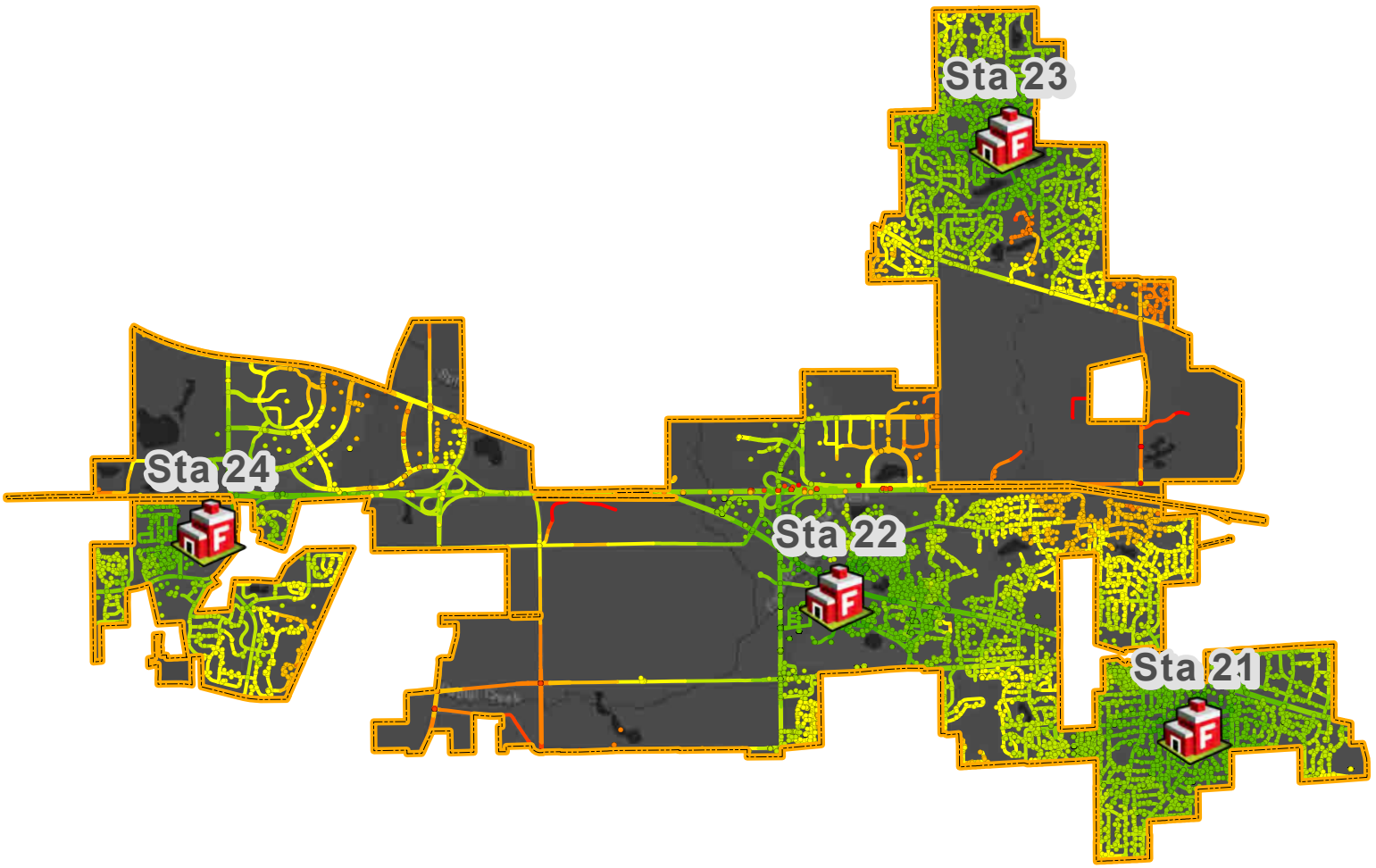


NFIRS 900 : Special Incident Type

Percentage of TRA incidents

AOR 21	AOR 22	AOR 23	AOR 24
43%	43%	0%	14%

Incidents & Streets by Drive Time - TRA
Incidents - TRA
Response Times - TRA
Response Times by Year - TRA
Turnout Times by Years -TRA
ERF - TRA
Incidents & Streets by Drive Time - AoR 21
Incidents - AoR 21
Response Times - AoR 21
Response Times by Year - AoR 21
Turnout Times by Years - AoR 21
ERF - AoR 21
Incidents & Streets by Drive Time - AoR 22
Incidents - AoR 22
Response Times - AoR 22
Response Times by Year - AoR 22
Turnout Times by Years - AoR 22
ERF - AoR 22
Incidents & Streets by Drive Time - AoR 23
Incidents - AoR 23
Response Times - AoR 23
Response Times by Year - AoR 23
Turnout Times by Years - AoR 23
ERF - AoR 23
Incidents & Streets by Drive Time - AoR 24
Incidents - AoR 24
Response Times - AoR 24
Response Times by Year - AoR 24
Turnout Times by Years - AoR 24
ERF - AoR 24



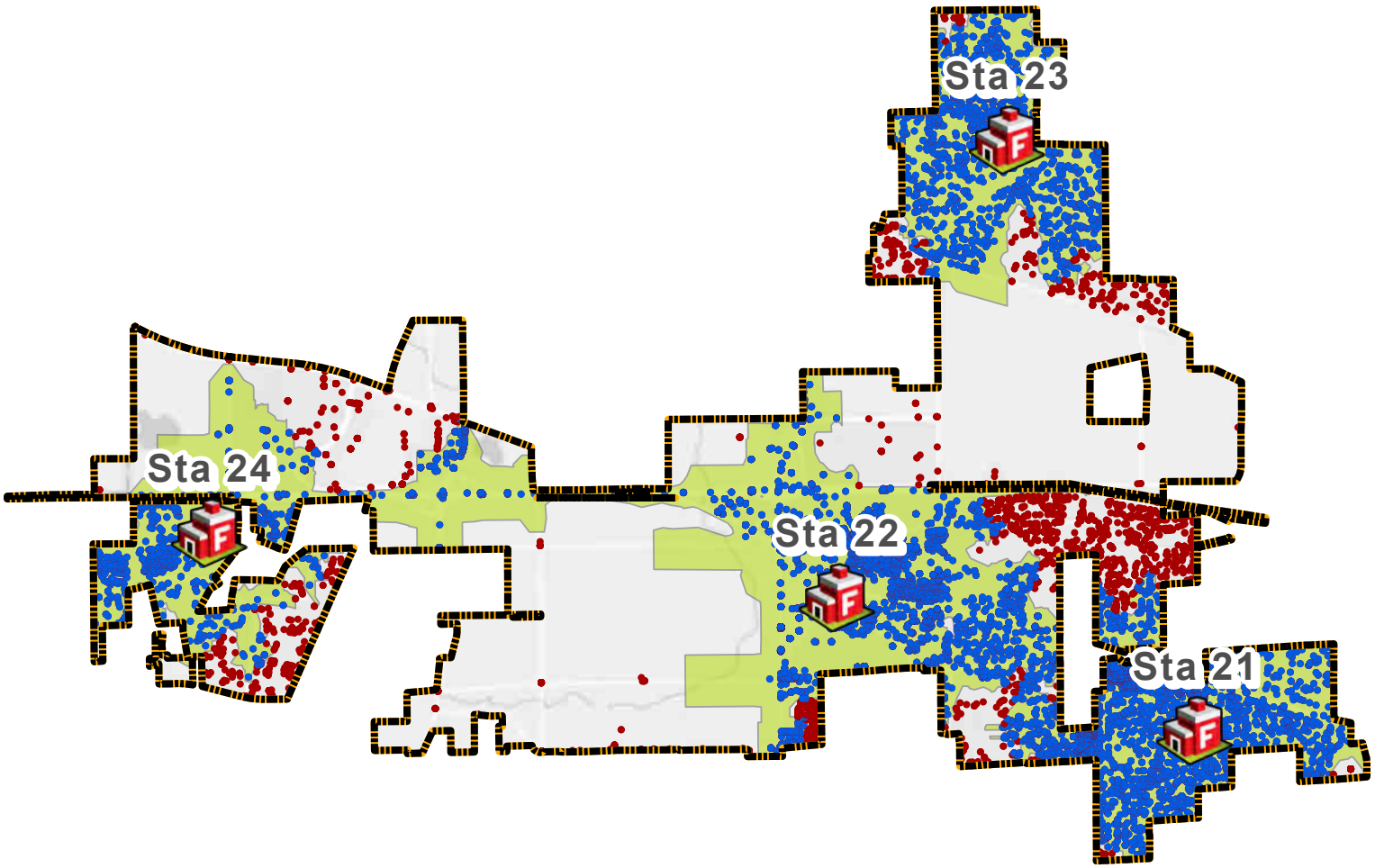
- 1 min
- 1 min - 2 min
- 2 min - 3 min
- 3 min - 4 min
- 4 min - 5 min
- 5 min - 6 min
- 6 min - 7 min
- 7 min - 8 min
- > 8 min

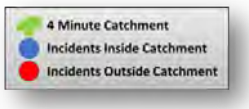
Incidents and streets are displayed in one-minute increments based on travel time from the closest fire station.

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA

84%

OF INCIDENTS ARE IN THE 4 MINUTE CATCHMENT





Percentages of "First On Scene" from Historic RESPONSE Times

WITHIN 4 MIN CATCHMENT

74% FIRE INCIDENTS

82% EMS INCIDENTS

WITHIN COMPLETE TRA

63% FIRE INCIDENTS

73% EMS INCIDENTS

Map Layer Esri, HERE, Garmin, USGS, EPA, NPS

Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
All	00:06:34	00:05:39	00:05:05	00:04:38	00:04:15
Fire	00:07:22	00:06:28	00:05:42	00:05:12	00:04:48
EMS	00:06:13	00:05:24	00:04:53	00:04:26	00:04:04

All Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:06:34	00:05:39	00:05:05	00:04:38	00:04:15
Calculated	00:05:43	00:04:50	00:04:12	00:03:47	00:03:27

Fire Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:07:22	00:06:28	00:05:42	00:05:12	00:04:48
Calculated	00:06:14	00:05:27	00:04:51	00:04:22	00:04:07

EMS Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:06:13	00:05:24	00:04:53	00:04:26	00:04:04
Calculated	00:05:41	00:04:48	00:04:08	00:03:44	00:03:20

Other Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:07:23	00:06:24	00:05:46	00:05:16	00:04:50
Calculated	00:05:44	00:04:58	00:04:21	00:03:53	00:03:41

All Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:06:42	00:05:40	00:05:07	00:04:21	00:04:33
2020	00:06:29	00:05:35	00:05:01	00:04:24	00:04:11
2021	00:06:55	00:05:51	00:05:12	00:04:42	00:04:17
2022	00:06:48	00:05:45	00:05:07	00:04:39	00:04:13

Fire Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:09:33	00:07:30	00:06:18	00:05:29	00:05:07
2020	00:10:27	00:07:39	00:06:26	00:05:38	00:05:10
2021	00:11:46	00:08:16	00:06:58	00:06:13	00:05:44
2022	00:13:34	00:09:00	00:06:59	00:06:05	00:05:04

EMS Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:04:43	00:04:18	00:09:37	00:03:49	00:06:12
2020	00:04:53	00:04:26	00:04:04	00:03:41	00:03:31
2021	00:04:41	00:06:56	00:04:17	00:04:04	00:05:27
2022	00:06:24	00:05:31	00:04:57	00:04:31	00:04:07

Other Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:07:20	00:06:15	00:05:36	00:05:06	00:04:41
2020	00:07:21	00:06:12	00:05:31	00:05:01	00:04:36
2021	00:07:45	00:06:24	00:05:43	00:05:07	00:04:37
2022	00:07:27	00:06:21	00:05:37	00:05:02	00:04:36

All Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:56	00:01:35	00:01:18	00:00:56	00:00:58
2020	00:02:07	00:01:47	00:01:37	00:01:16	00:01:26
2021	00:02:09	00:01:44	00:01:30	00:01:18	00:01:10
2022	00:01:55	00:01:38	00:01:24	00:01:12	00:01:02

Fire Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:02:06	00:01:53	00:01:41	00:01:31	00:01:23
2020	00:03:04	00:02:05	00:01:51	00:01:41	00:01:33
2021	00:03:26	00:02:26	00:02:04	00:01:46	00:01:28
2022	00:03:50	00:01:48	00:01:43	00:01:26	00:01:23

EMS Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:08	00:03:26	00:02:10	00:00:46	00:00:39
2020	00:01:30	00:01:19	00:01:10	00:01:02	00:02:33
2021	00:01:16	00:01:11	00:01:57	00:01:01	00:00:57
2022	00:01:50	00:01:32	00:01:18	00:01:07	00:00:59

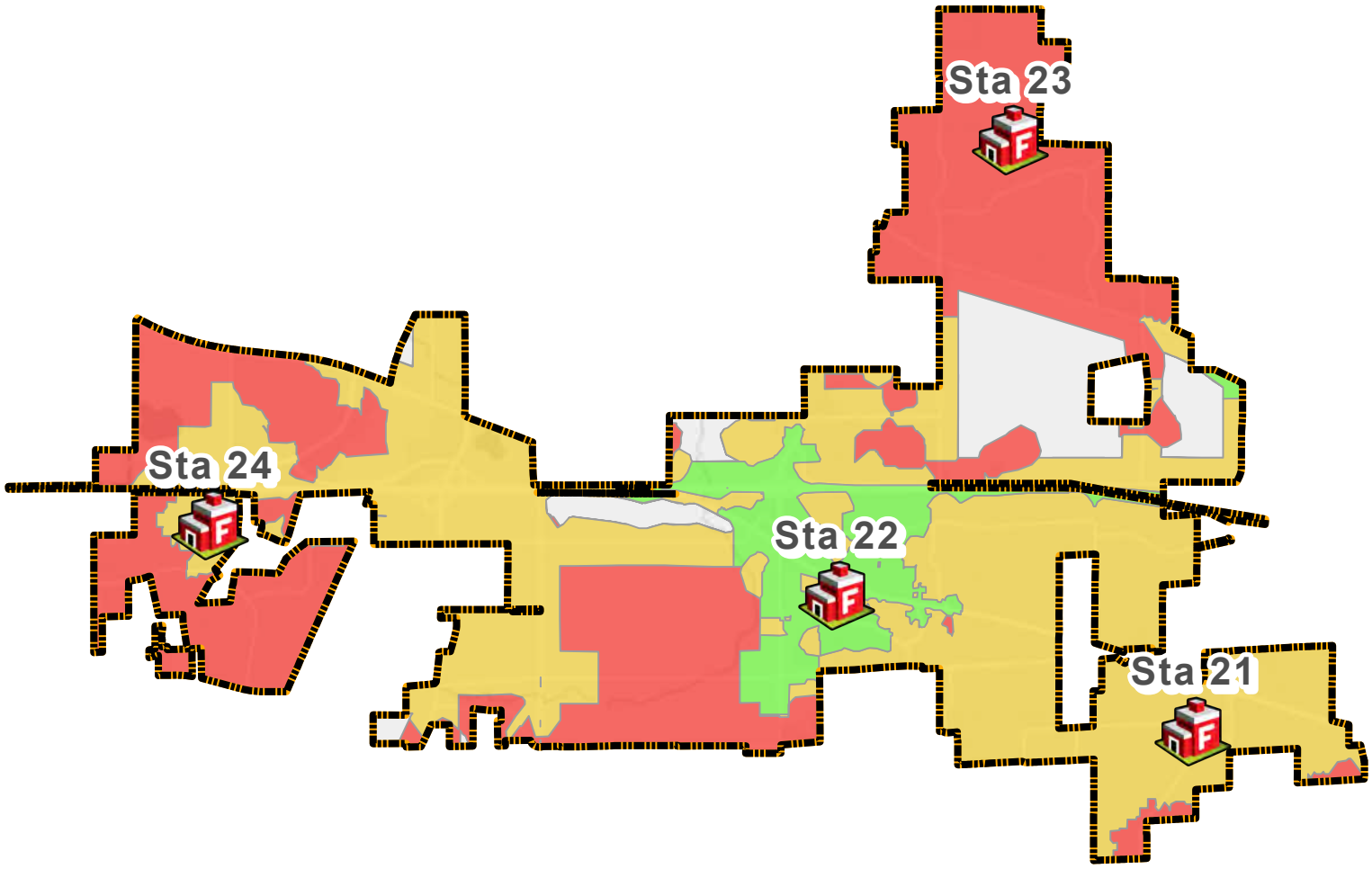
Other Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:02:06	00:01:44	00:01:29	00:01:14	00:00:55
2020	00:02:17	00:01:57	00:01:44	00:01:34	00:01:26
2021	00:02:12	00:01:50	00:01:37	00:01:29	00:01:19
2022	00:02:06	00:01:48	00:01:38	00:01:25	00:01:15

ERF

EFFECTIVE RESPONSE FORCE

FULL COMPLIMENT WITHIN 8 MINUTES



63%
OF INCIDENTS ARE COVERED BY **2** STATIONS

15%
OF INCIDENTS ARE COVERED BY **3** STATIONS

0%
OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layer Esri, HERE, Garmin, USGS, EPA, NPS

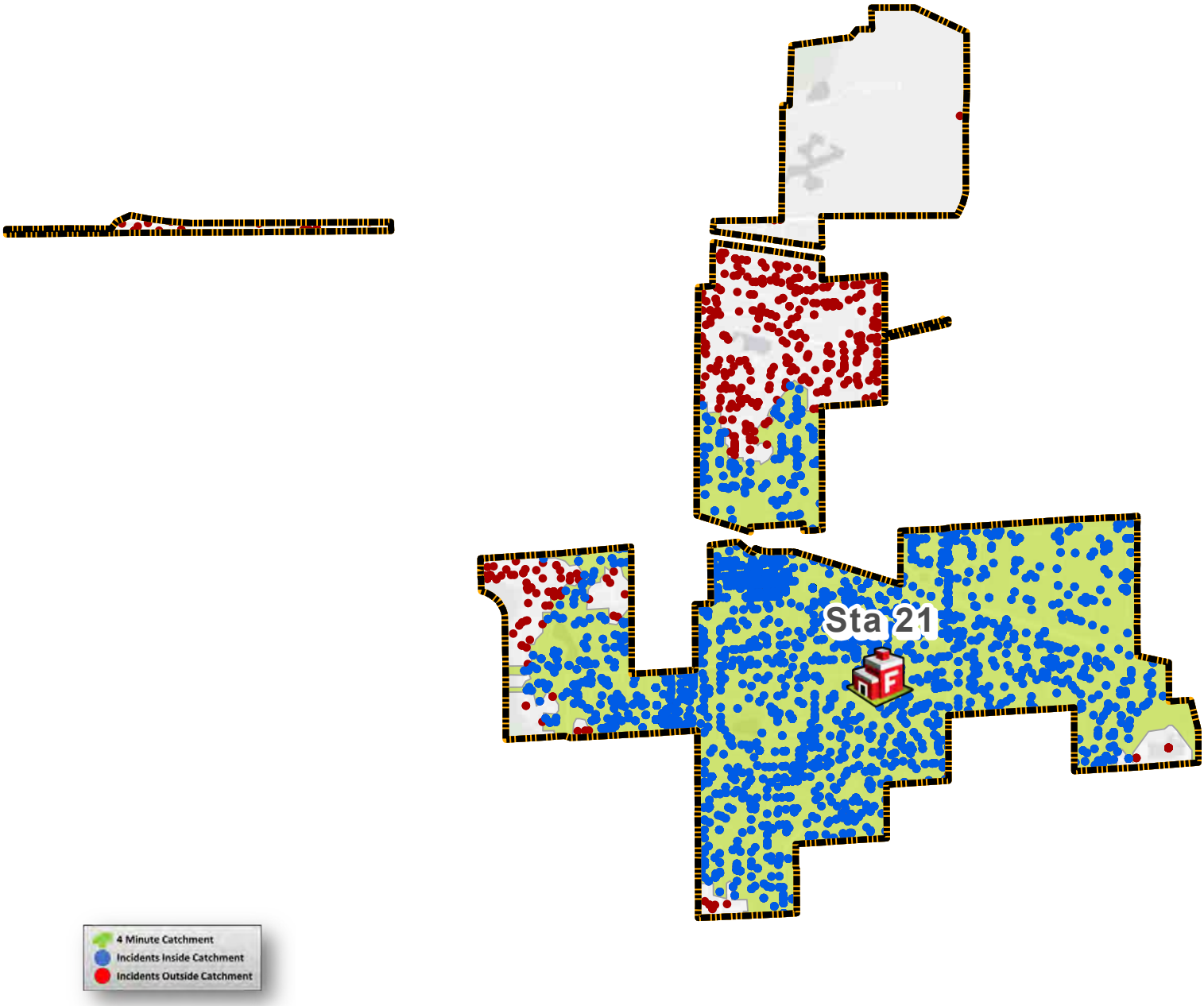
Incidents & Streets by Drive Time - AoR 21

Incidents and streets are displayed in one-minute increments based on travel time from the closest fire station.

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA

84%

OF INCIDENTS ARE IN THE 4 MINUTE CATCHMENT



Percentages of "First On Scene" from Historic RESPONSE Times

WITHIN 4 MIN CATCHMENT

73% FIRE INCIDENTS

82% EMS INCIDENTS

WITHIN COMPLETE AoR

69% FIRE INCIDENTS

73% EMS INCIDENTS

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA

Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
All	00:06:21	00:05:31	00:05:02	00:04:40	00:04:20
Fire	00:06:48	00:05:50	00:05:24	00:05:02	00:04:42
EMS	00:06:03	00:05:21	00:04:53	00:04:30	00:04:12

All Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:06:21	00:05:31	00:05:02	00:04:40	00:04:20
Calculated	00:05:23	00:04:46	00:04:12	00:03:50	00:03:34

Fire Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:06:48	00:05:50	00:05:24	00:05:02	00:04:42
Calculated	00:05:22	00:04:46	00:04:12	00:04:07	00:03:53

EMS Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:06:03	00:05:21	00:04:53	00:04:30	00:04:12
Calculated	00:05:27	00:04:52	00:04:20	00:03:52	00:03:34

Other Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:07:15	00:06:05	00:05:25	00:05:02	00:04:42
Calculated	00:05:18	00:04:21	00:03:55	00:03:47	00:03:33

All Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:06:24	00:05:33	00:05:03	00:04:41	00:04:18
2020	00:06:07	00:05:26	00:05:00	00:04:38	00:04:19
2021	00:06:30	00:05:32	00:05:00	00:04:38	00:04:19
2022	00:06:13	00:05:28	00:05:01	00:04:39	00:04:18

Fire Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:05:53	00:05:32	00:05:11	00:05:07	00:04:48
2020	00:05:38	00:05:25	00:05:13	00:04:48	00:04:41
2021	00:07:54	00:06:05	00:05:35	00:04:53	00:04:36
2022	00:06:45	00:05:24	00:05:04	00:04:42	00:04:33

EMS Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:06:07	00:05:23	00:04:53	00:04:29	00:04:08
2020	00:05:51	00:05:19	00:04:53	00:04:28	00:04:11
2021	00:06:17	00:05:24	00:04:54	00:04:33	00:04:14
2022	00:06:01	00:05:19	00:04:53	00:04:32	00:04:13

Other Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:07:08	00:06:11	00:05:32	00:05:06	00:04:46
2020	00:07:21	00:06:04	00:05:20	00:04:58	00:04:41
2021	00:07:00	00:05:50	00:05:15	00:04:52	00:04:34
2022	00:07:03	00:05:54	00:05:24	00:04:51	00:04:32

All Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:52	00:01:31	00:01:17	00:01:01	00:00:49
2020	00:02:04	00:01:44	00:01:33	00:01:22	00:01:13
2021	00:02:03	00:01:40	00:01:27	00:01:16	00:01:06
2022	00:02:00	00:01:39	00:01:24	00:01:13	00:01:02

Fire Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:52	00:01:48	00:01:39	00:01:31	00:01:18
2020	00:02:30	00:01:59	00:01:50	00:01:37	00:01:36
2021	00:03:40	00:01:49	00:01:41	00:01:26	00:01:12
2022	00:02:09	00:02:02	00:01:44	00:01:31	00:01:23

EMS Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:45	00:01:26	00:01:11	00:00:57	00:00:46
2020	00:01:57	00:01:38	00:01:27	00:01:16	00:01:07
2021	00:02:04	00:01:38	00:01:24	00:01:14	00:01:03
2022	00:01:52	00:01:32	00:01:19	00:01:08	00:00:59

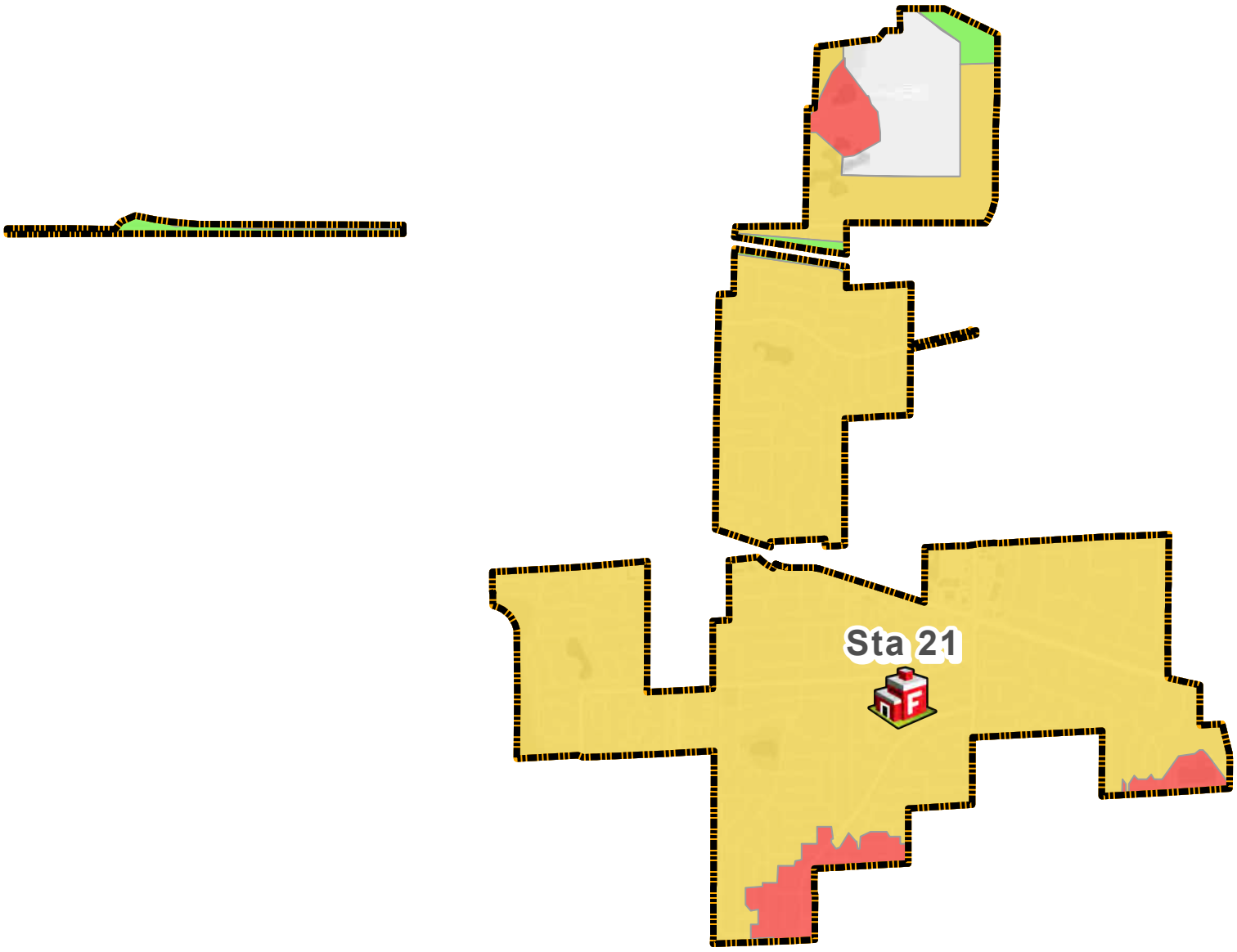
Other Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:02:05	00:01:42	00:01:28	00:01:15	00:00:58
2020	00:02:17	00:01:55	00:01:44	00:01:37	00:01:27
2021	00:01:59	00:01:42	00:01:33	00:01:25	00:01:16
2022	00:02:10	00:01:47	00:01:36	00:01:24	00:01:13

ERF

EFFECTIVE RESPONSE FORCE

FULL COMPLIMENT WITHIN 8 MINUTES



93%
OF INCIDENTS ARE COVERED BY **2** STATIONS

1%
OF INCIDENTS ARE COVERED BY **3** STATIONS

0%
OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA

Incidents & Streets by Drive Time - AoR 22

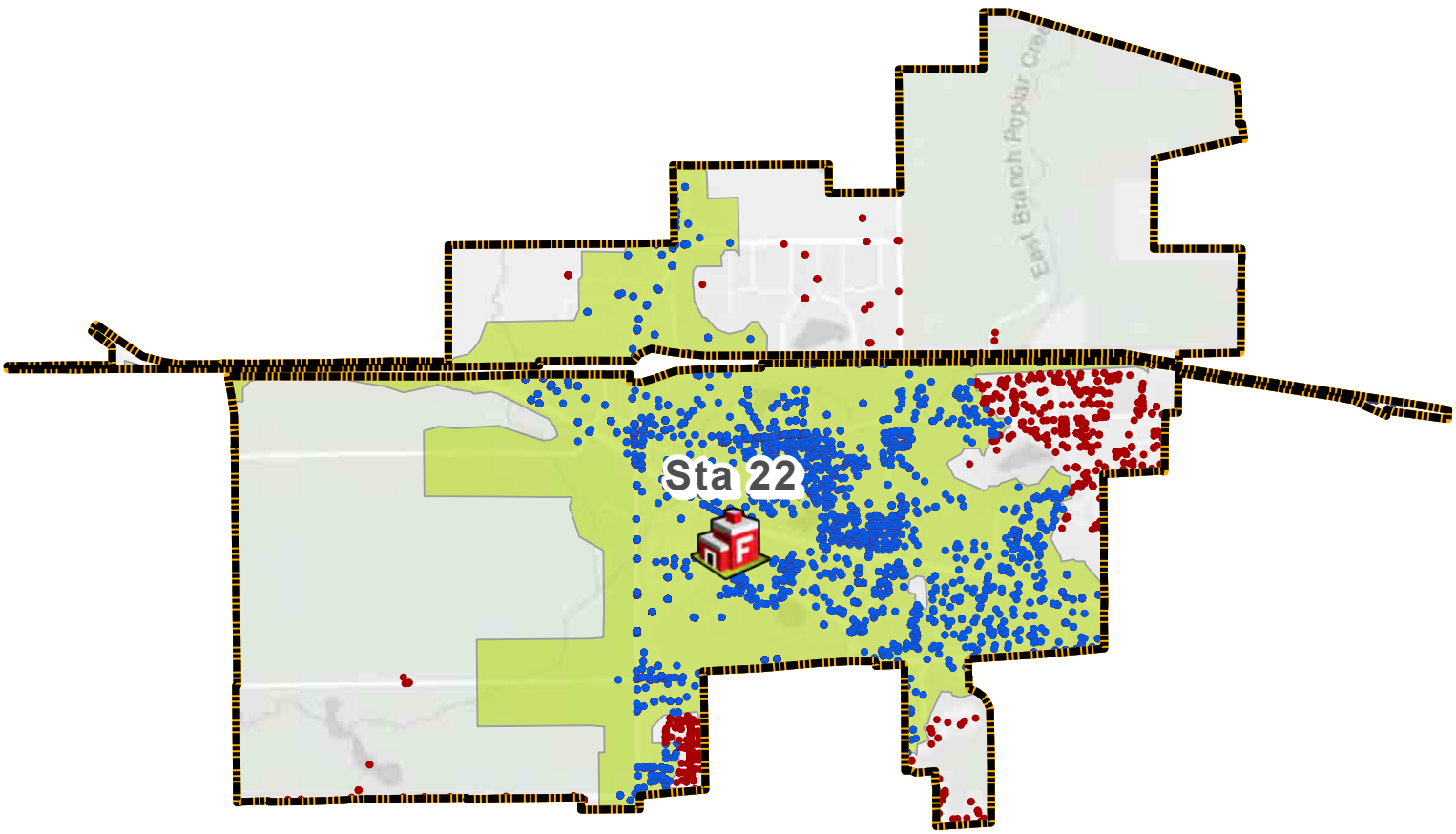
1 min
1 min - 2 min
2 min - 3 min
3 min - 4 min
4 min - 5 min
5 min - 6 min
6 min - 7 min
7 min - 8 min
> 8 min

Incidents and streets are displayed in one-minute increments based on travel time from the closest fire station.

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA

89%

OF INCIDENTS ARE IN THE 4 MINUTE CATCHMENT



Percentages of "First On Scene" from Historic RESPONSE Times

WITHIN 4 MIN CATCHMENT

75% FIRE INCIDENTS

84% EMS INCIDENTS

WITHIN COMPLETE AoR

66% FIRE INCIDENTS

78% EMS INCIDENTS

Map Layer Esri, HERE, Garmin, USGS, EPA, NPS

Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
All	00:06:13	00:05:21	00:04:47	00:04:20	00:03:55
Fire	00:06:41	00:06:05	00:05:32	00:05:00	00:04:42
EMS	00:05:53	00:05:05	00:04:32	00:04:06	00:03:42

All Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:06:13	00:05:21	00:04:47	00:04:20	00:03:55
Calculated	00:05:06	00:04:12	00:03:44	00:03:20	00:03:18

Fire Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:06:41	00:06:05	00:05:32	00:05:00	00:04:42
Calculated	00:05:47	00:05:18	00:04:41	00:04:19	00:04:08

EMS Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:05:53	00:05:05	00:04:32	00:04:06	00:03:42
Calculated	00:04:57	00:04:05	00:03:41	00:03:18	00:03:08

Other Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:07:05	00:06:12	00:05:37	00:05:10	00:04:43
Calculated	00:05:33	00:04:44	00:04:02	00:03:44	00:03:30

All Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:06:16	00:05:26	00:04:51	00:04:23	00:04:00
2020	00:06:02	00:05:13	00:04:41	00:04:13	00:03:49
2021	00:06:25	00:05:27	00:04:49	00:04:22	00:03:55
2022	00:06:05	00:05:13	00:04:40	00:04:13	00:03:50

Fire Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:07:00	00:05:57	00:05:31	00:05:01	00:04:45
2020	00:06:26	00:05:47	00:05:41	00:05:10	00:04:46
2021	00:06:34	00:06:13	00:04:45	00:04:37	00:04:25
2022	00:06:31	00:05:31	00:05:00	00:04:42	00:04:28

EMS Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:05:52	00:05:07	00:04:35	00:04:09	00:03:47
2020	00:05:50	00:05:02	00:04:27	00:04:00	00:03:36
2021	00:06:04	00:05:07	00:04:36	00:04:08	00:03:44
2022	00:05:45	00:05:03	00:04:28	00:04:04	00:03:40

Other Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:06:56	00:06:11	00:05:38	00:05:14	00:04:48
2020	00:06:43	00:05:54	00:05:21	00:04:52	00:04:32
2021	00:07:19	00:06:24	00:05:45	00:05:17	00:04:46
2022	00:06:50	00:05:57	00:05:24	00:04:48	00:04:28

All Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:58	00:01:35	00:01:19	00:01:04	00:00:52
2020	00:02:07	00:01:47	00:01:33	00:01:22	00:01:13
2021	00:02:08	00:01:43	00:01:31	00:01:19	00:01:08
2022	00:01:52	00:01:35	00:01:21	00:01:10	00:01:01

Fire Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:02:06	00:01:57	00:01:51	00:01:35	00:01:22
2020	00:02:15	00:01:58	00:01:55	00:01:41	00:01:32
2021	00:02:26	00:02:18	00:01:56	00:01:52	00:01:32
2022	00:01:48	00:01:46	00:01:43	00:01:29	00:01:25

EMS Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:54	00:01:31	00:01:13	00:01:00	00:00:51
2020	00:02:03	00:01:42	00:01:29	00:01:18	00:01:09
2021	00:02:06	00:01:40	00:01:26	00:01:14	00:01:03
2022	00:01:49	00:01:30	00:01:15	00:01:06	00:00:58

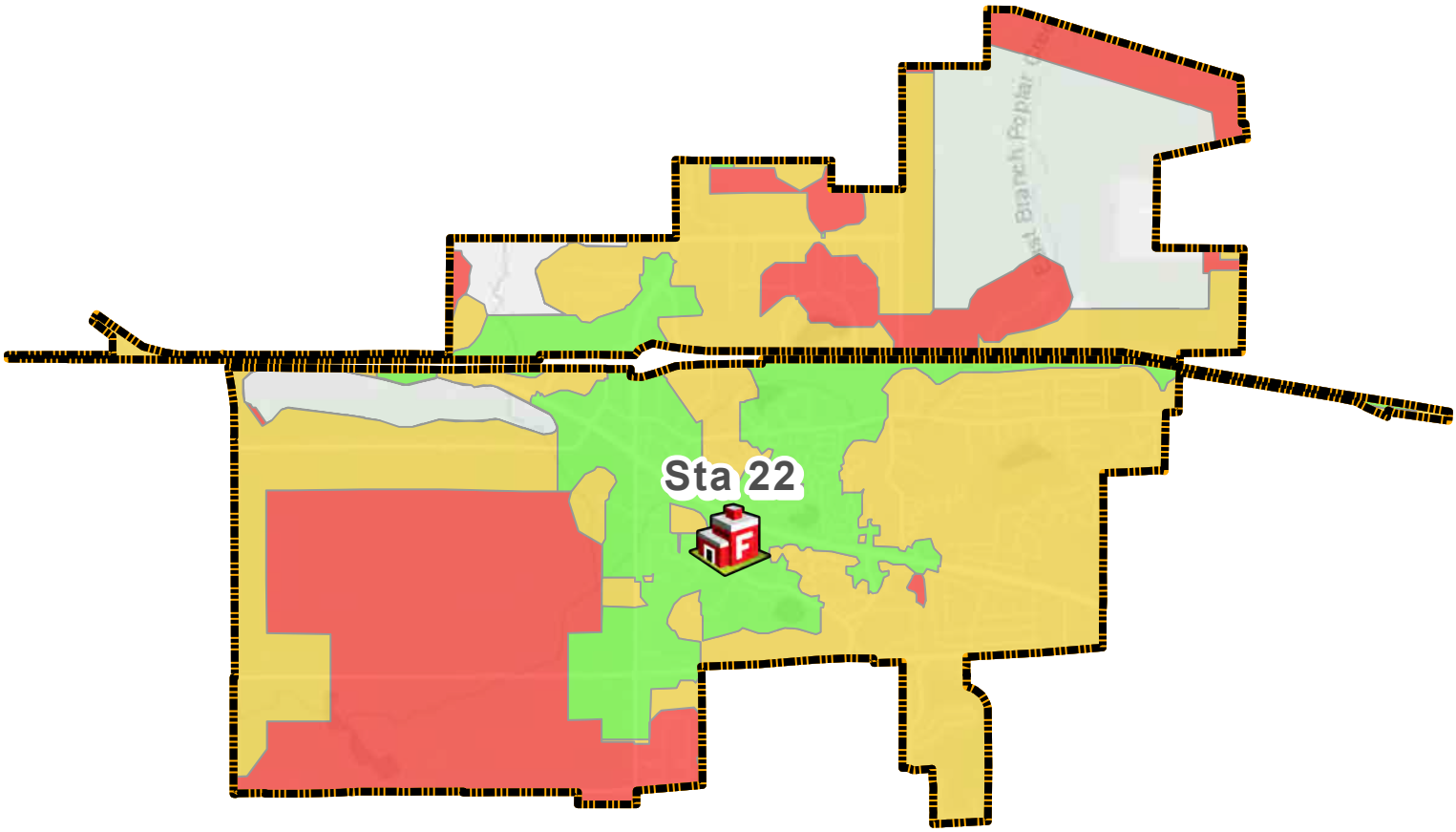
Other Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:02:08	00:01:48	00:01:33	00:01:21	00:01:02
2020	00:02:10	00:01:57	00:01:44	00:01:34	00:01:28
2021	00:02:12	00:01:52	00:01:41	00:01:32	00:01:25
2022	00:02:00	00:01:45	00:01:38	00:01:24	00:01:13

ERF

EFFECTIVE RESPONSE FORCE

FULL COMPLIMENT WITHIN 8 MINUTES



1 Station ERF
2 Stations ERF
3 Stations ERF

65%
OF INCIDENTS ARE COVERED BY **2** STATIONS

29%
OF INCIDENTS ARE COVERED BY **3** STATIONS

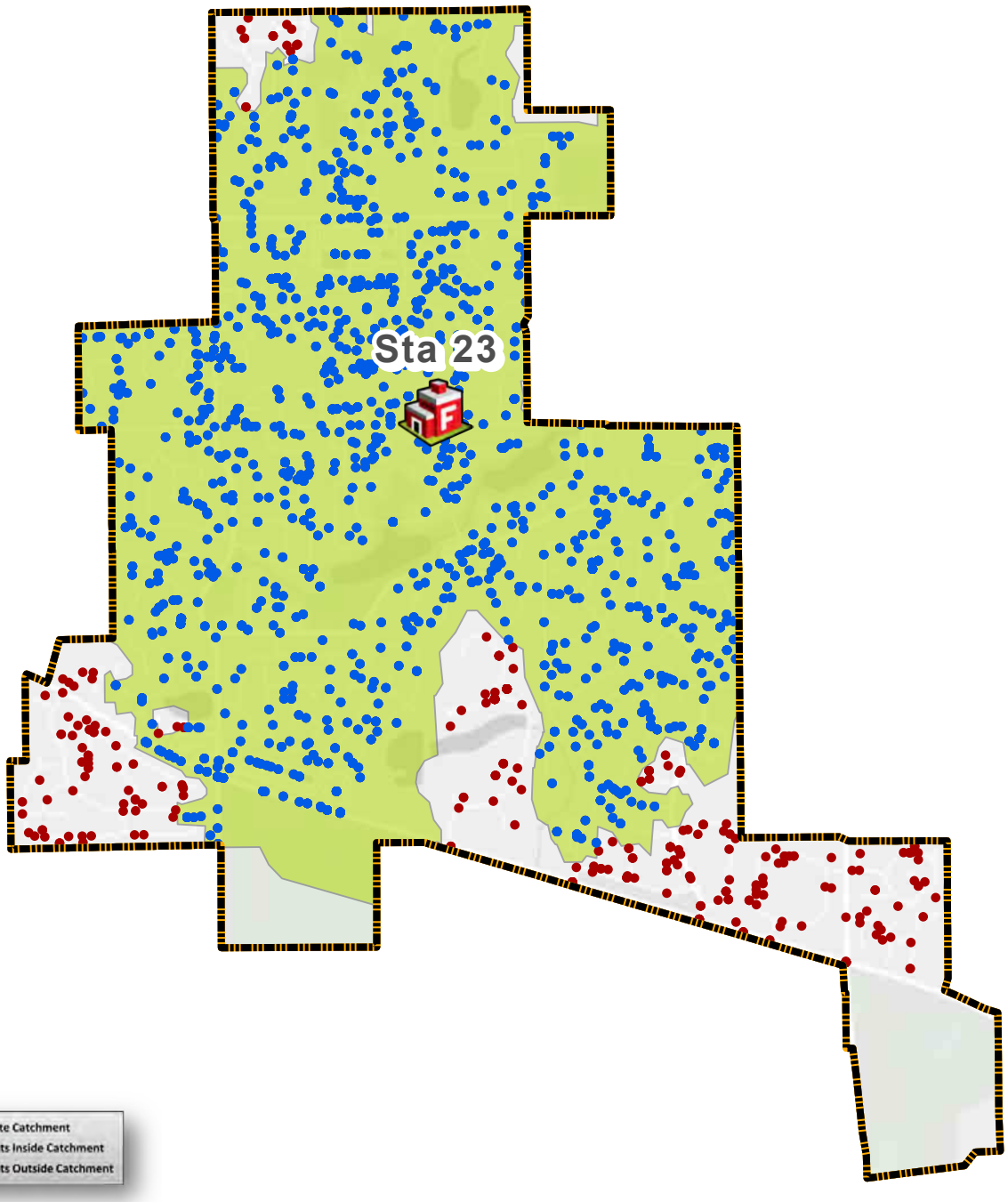
0%
OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layer Esri, HERE, Garmin, USGS, EPA, NPS

Incidents and streets are displayed in one-minute increments based on travel time from the closest fire station.

84%

OF INCIDENTS ARE IN THE 4 MINUTE CATCHMENT



Percentages of "First On Scene" from Historic RESPONSE Times

WITHIN 4 MIN CATCHMENT

90% FIRE INCIDENTS

82% EMS INCIDENTS

WITHIN COMPLETE AoR

80% FIRE INCIDENTS

72% EMS INCIDENTS

Map Layer Esri, HERE, Garmin, USGS, EPA, NPS

Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
All	00:06:21	00:05:37	00:05:05	00:04:39	00:04:20
Fire	00:06:36	00:05:16	00:05:03	00:04:50	00:04:35
EMS	00:06:06	00:05:24	00:04:57	00:04:31	00:04:12

All Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:06:21	00:05:37	00:05:05	00:04:39	00:04:20
Calculated	00:05:42	00:04:47	00:04:21	00:04:04	00:03:46

Fire Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:06:36	00:05:16	00:05:03	00:04:50	00:04:35
Calculated	00:06:10	00:04:53	00:04:34	00:04:20	00:03:53

EMS Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:06:06	00:05:24	00:04:57	00:04:31	00:04:12
Calculated	00:05:47	00:04:46	00:04:20	00:04:02	00:03:47

Other Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:07:20	00:06:17	00:05:40	00:05:11	00:04:44
Calculated	00:05:24	00:04:47	00:04:24	00:04:09	00:03:40

All Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:06:07	00:05:24	00:04:58	00:04:35	00:04:19
2020	00:06:11	00:05:25	00:04:59	00:04:38	00:04:17
2021	00:06:44	00:05:47	00:05:15	00:04:38	00:04:18
2022	00:06:31	00:05:54	00:05:11	00:04:50	00:04:28

Fire Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:05:03	00:04:53	00:04:52	00:04:41	00:04:02
2020	00:05:08	00:04:50	00:04:47	00:04:35	00:03:52
2021	00:06:36	00:05:57	00:05:32	00:05:15	00:05:12
2022	00:05:56	00:05:56	00:03:57	00:03:44	00:03:44

EMS Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:05:52	00:05:15	00:04:53	00:04:32	00:04:16
2020	00:05:46	00:05:15	00:04:47	00:04:26	00:04:07
2021	00:06:18	00:05:35	00:05:05	00:04:31	00:04:15
2022	00:06:16	00:05:43	00:05:04	00:04:35	00:04:13

Other Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:06:48	00:05:49	00:05:20	00:04:49	00:04:27
2020	00:07:23	00:06:21	00:05:33	00:05:09	00:04:45
2021	00:07:49	00:06:30	00:05:56	00:05:21	00:04:34
2022	00:06:46	00:06:17	00:06:03	00:05:38	00:05:11

All Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:48	00:01:29	00:01:16	00:01:00	00:00:49
2020	00:01:59	00:01:45	00:01:30	00:01:21	00:01:13
2021	00:01:59	00:01:36	00:01:23	00:01:12	00:01:04
2022	00:01:49	00:01:36	00:01:24	00:01:10	00:01:04

Fire Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:58	00:01:53	00:01:37	00:01:31	00:01:28
2020	00:05:45	00:01:42	00:01:36	00:01:33	00:01:29
2021	00:03:13	00:03:03	00:02:25	00:02:13	00:01:34
2022	00:01:44	00:01:44	00:01:28	00:01:25	00:01:25

EMS Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:43	00:01:27	00:01:12	00:01:00	00:00:49
2020	00:01:55	00:01:41	00:01:26	00:01:18	00:01:12
2021	00:01:57	00:01:35	00:01:21	00:01:09	00:01:01
2022	00:01:45	00:01:30	00:01:16	00:01:07	00:01:01

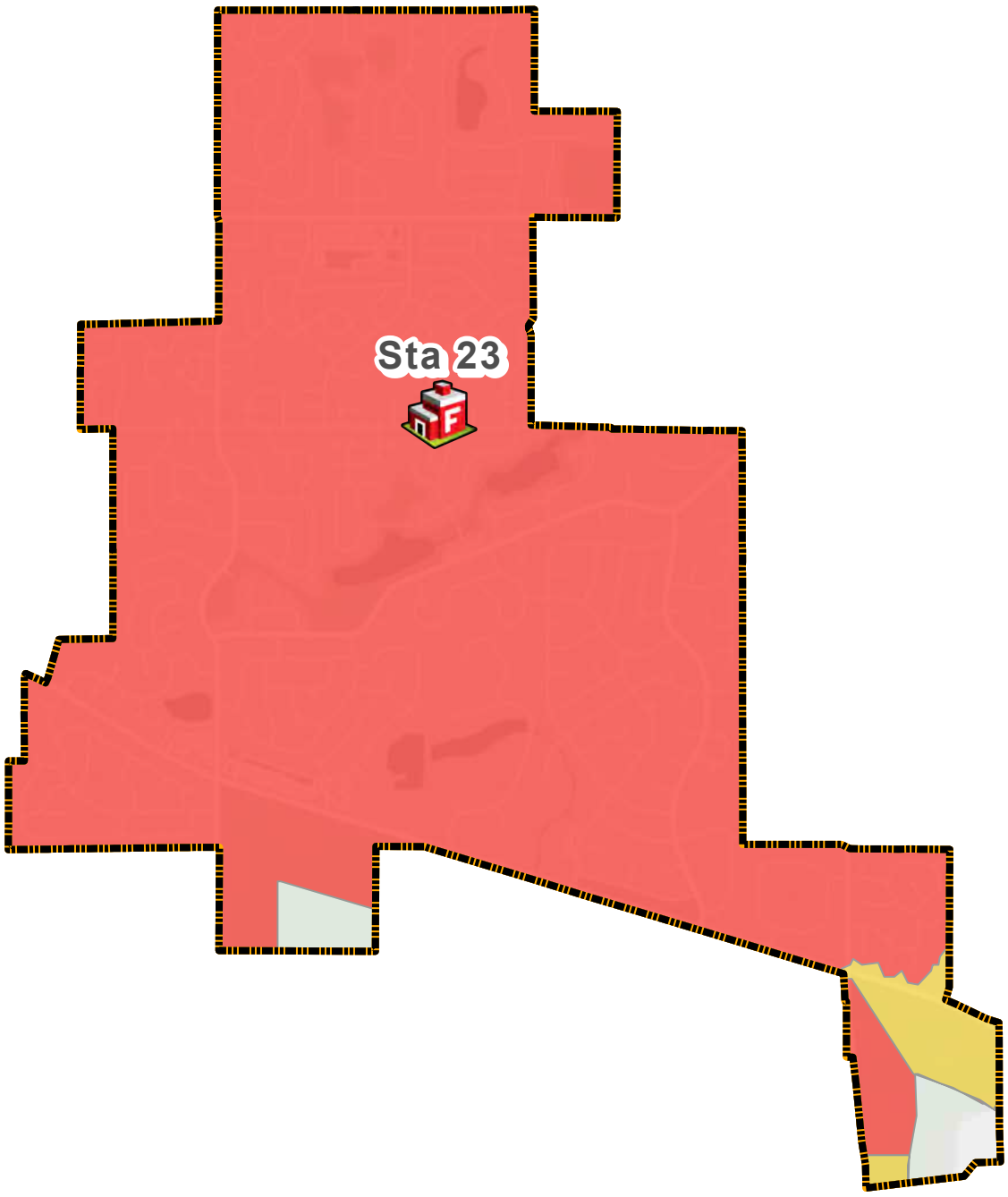
Other Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:01:56	00:01:32	00:01:21	00:01:01	00:00:46
2020	00:02:03	00:01:50	00:01:40	00:01:29	00:01:21
2021	00:01:56	00:01:38	00:01:30	00:01:17	00:01:12
2022	00:01:54	00:01:46	00:01:42	00:01:34	00:01:21

ERF

EFFECTIVE RESPONSE FORCE

FULL COMPLIMENT WITHIN 8 MINUTES



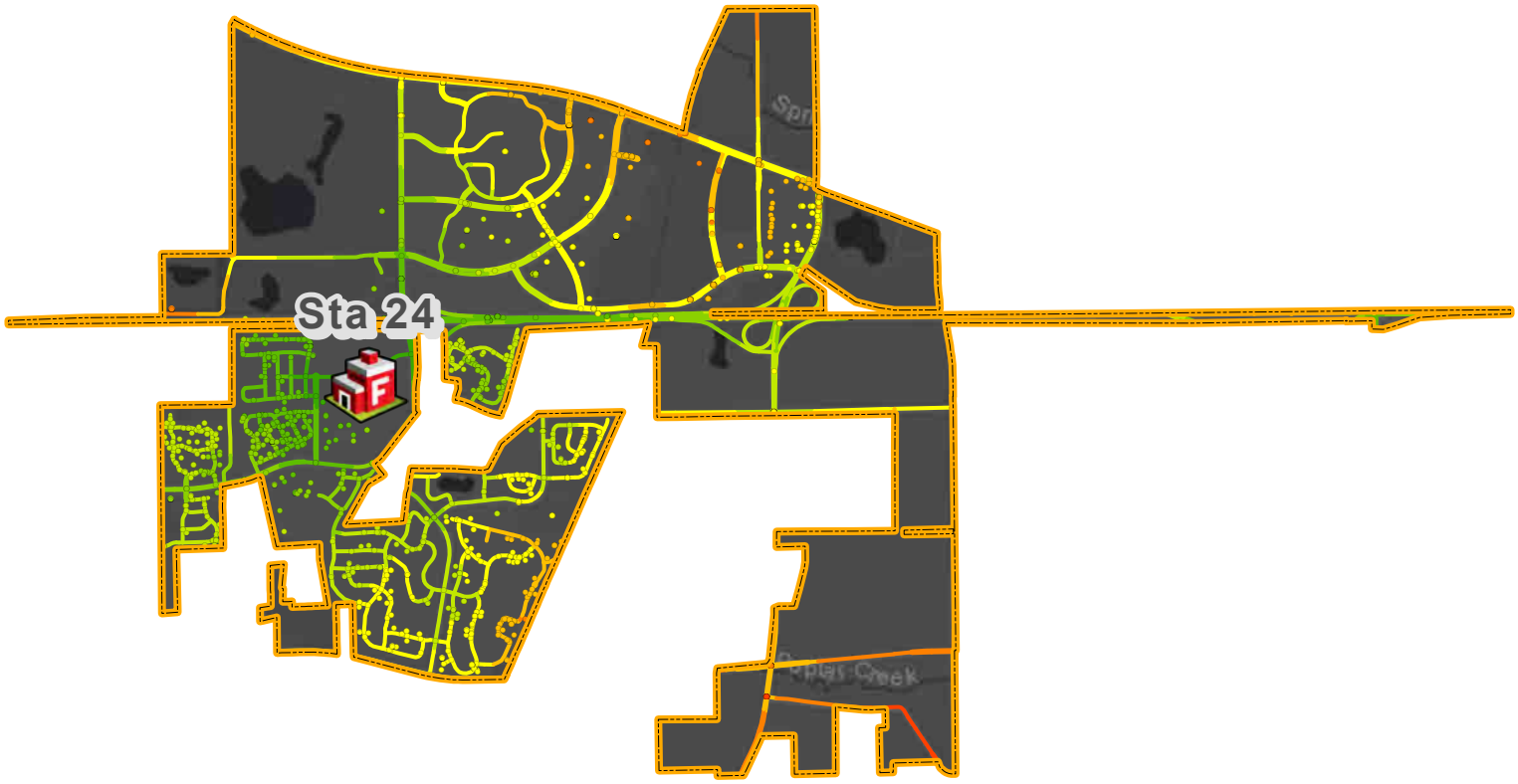
1 Station ERF
2 Stations ERF
3 Stations ERF

1%
OF INCIDENTS ARE COVERED BY **2** STATIONS

0%
OF INCIDENTS ARE COVERED BY **3** STATIONS

0%
OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA



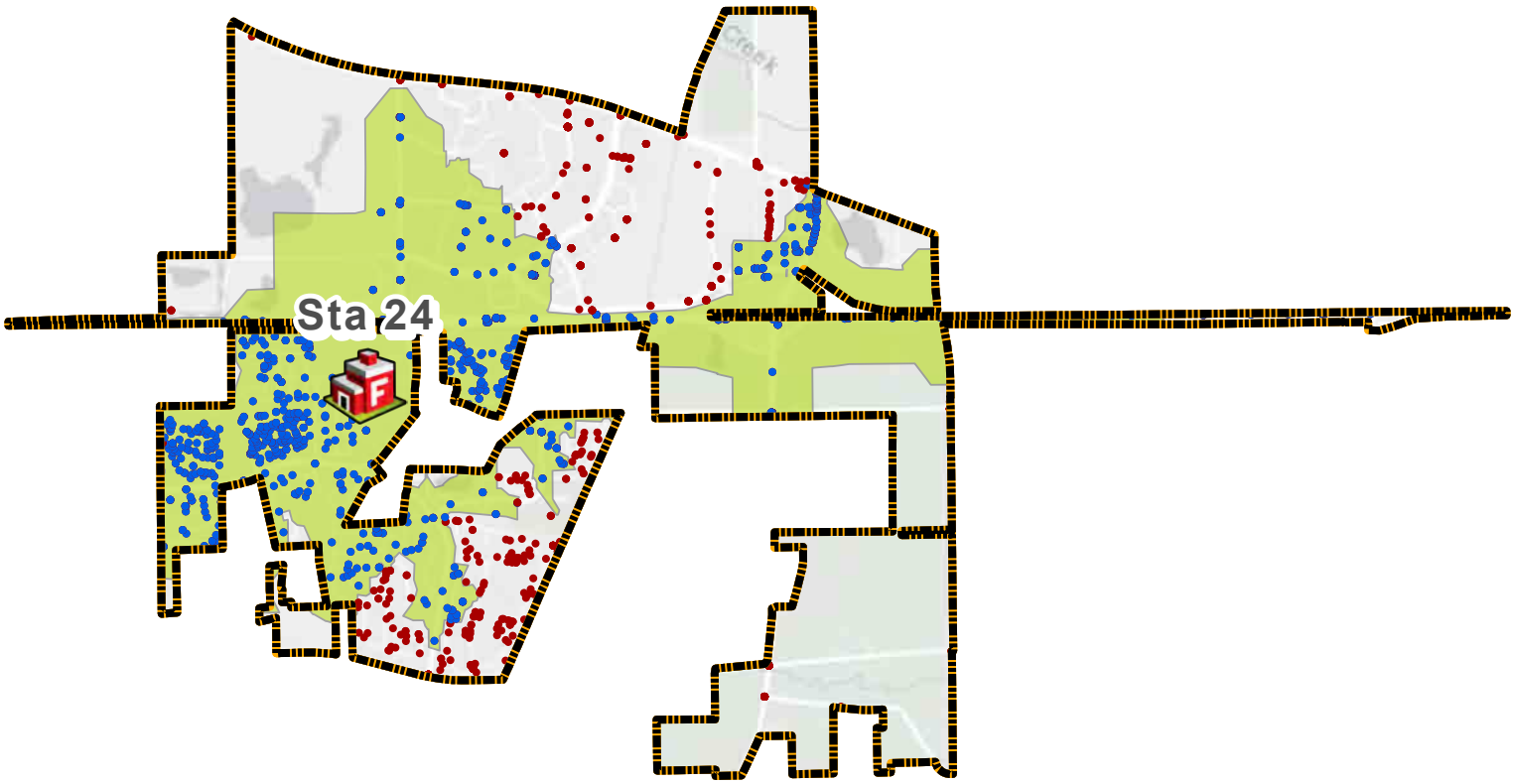
- 1 min
- 1 min - 2 min
- 2 min - 3 min
- 3 min - 4 min
- 4 min - 5 min
- 5 min - 6 min
- 6 min - 7 min
- 7 min - 8 min
- > 8 min

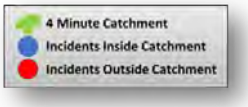
Incidents and streets are displayed in one-minute increments based on travel time from the closest fire station.

Map Layer Esri, HERE, Garmin, USGS, EPA, NPS

46%

OF INCIDENTS ARE IN THE 4 MINUTE CATCHMENT





Percentages of "First On Scene" from Historic RESPONSE Times

WITHIN 4 MIN CATCHMENT

47% FIRE INCIDENTS

66% EMS INCIDENTS

WITHIN COMPLETE AoR

30% FIRE INCIDENTS

44% EMS INCIDENTS

Map Layer Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA

Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
All	00:07:56	00:06:58	00:06:22	00:05:53	00:05:28
Fire	00:09:08	00:07:54	00:07:30	00:06:47	00:06:29
EMS	00:07:29	00:06:40	00:06:04	00:05:38	00:05:14

All Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:07:56	00:06:58	00:06:22	00:05:53	00:05:28
Calculated	00:06:52	00:06:26	00:05:51	00:05:31	00:05:07

Fire Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:09:08	00:07:54	00:07:30	00:06:47	00:06:29
Calculated	00:07:46	00:06:34	00:06:22	00:05:51	00:05:33

EMS Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:07:29	00:06:40	00:06:04	00:05:38	00:05:14
Calculated	00:07:06	00:06:31	00:05:51	00:05:30	00:05:03

Other Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
Historic	00:08:55	00:07:33	00:06:54	00:06:26	00:06:02
Calculated	00:06:39	00:06:16	00:05:47	00:05:32	00:05:13

All Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:07:54	00:06:53	00:06:13	00:05:42	00:05:18
2020	00:07:34	00:06:45	00:06:19	00:05:49	00:05:18
2021	00:07:56	00:07:00	00:06:24	00:05:58	00:05:34
2022	00:08:13	00:07:01	00:06:25	00:05:54	00:05:29

Fire Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:07:54	00:07:30	00:06:57	00:06:20	00:06:06
2020	00:07:54	00:07:39	00:06:28	00:05:57	00:05:05
2021	00:08:20	00:08:13	00:08:02	00:07:36	00:06:47
2022	00:09:38	00:09:38	00:07:22	00:06:29	00:06:29

EMS Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:07:38	00:06:27	00:05:54	00:05:32	00:05:09
2020	00:07:17	00:06:37	00:06:03	00:05:30	00:05:11
2021	00:07:35	00:06:46	00:06:17	00:05:44	00:05:24
2022	00:07:47	00:06:45	00:06:04	00:05:39	00:05:16

Other Incidents Response Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:09:08	00:07:32	00:06:49	00:06:27	00:05:55
2020	00:08:16	00:07:21	00:06:33	00:06:09	00:05:45
2021	00:09:27	00:07:16	00:06:44	00:06:15	00:05:58
2022	00:08:46	00:07:56	00:07:05	00:06:48	00:05:58

All Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:02:07	00:01:43	00:01:24	00:01:07	00:00:54
2020	00:02:11	00:01:50	00:01:39	00:01:28	00:01:18
2021	00:02:14	00:01:52	00:01:38	00:01:24	00:01:12
2022	00:01:57	00:01:37	00:01:26	00:01:16	00:01:04

Fire Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:02:17	00:01:58	00:01:31	00:01:25	00:01:24
2020	00:04:14	00:02:05	00:01:31	00:01:26	00:01:25
2021	00:02:48	00:02:13	00:01:28	00:01:20	00:01:19
2022	00:01:21	00:01:21	00:01:04	00:01:00	00:01:00

EMS Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:02:08	00:01:42	00:01:23	00:01:06	00:00:55
2020	00:02:07	00:01:45	00:01:36	00:01:25	00:01:15
2021	00:02:12	00:01:48	00:01:36	00:01:21	00:01:11
2022	00:01:56	00:01:34	00:01:23	00:01:12	00:01:01

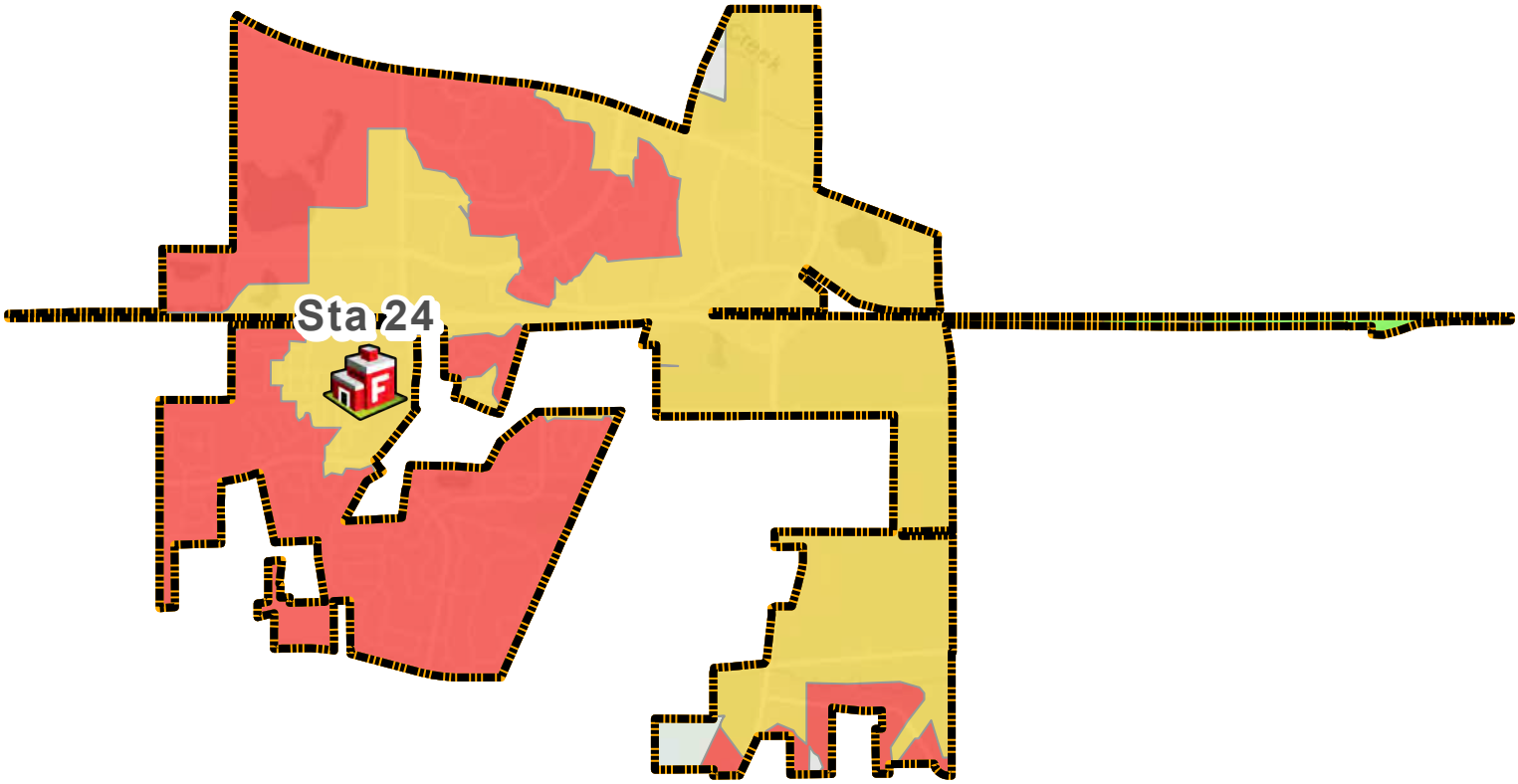
Other Incidents Turnout Time (h:mm:ss)

	90%	80%	70%	60%	50%
2019	00:02:05	00:01:42	00:01:27	00:01:03	00:00:46
2020	00:02:19	00:02:01	00:01:44	00:01:33	00:01:24
2021	00:02:14	00:01:56	00:01:43	00:01:30	00:01:17
2022	00:01:58	00:01:44	00:01:36	00:01:23	00:01:13

ERF

EFFECTIVE RESPONSE FORCE

FULL COMPLIMENT WITHIN 8 MINUTES



1 Station ERF
2 Stations ERF
3 Stations ERF

38%
OF INCIDENTS ARE COVERED BY **2** STATIONS

2%
OF INCIDENTS ARE COVERED BY **3** STATIONS

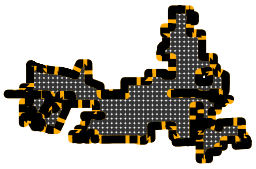
0%
OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layer Esri, HERE, Garmin, USGS, EPA, NPS

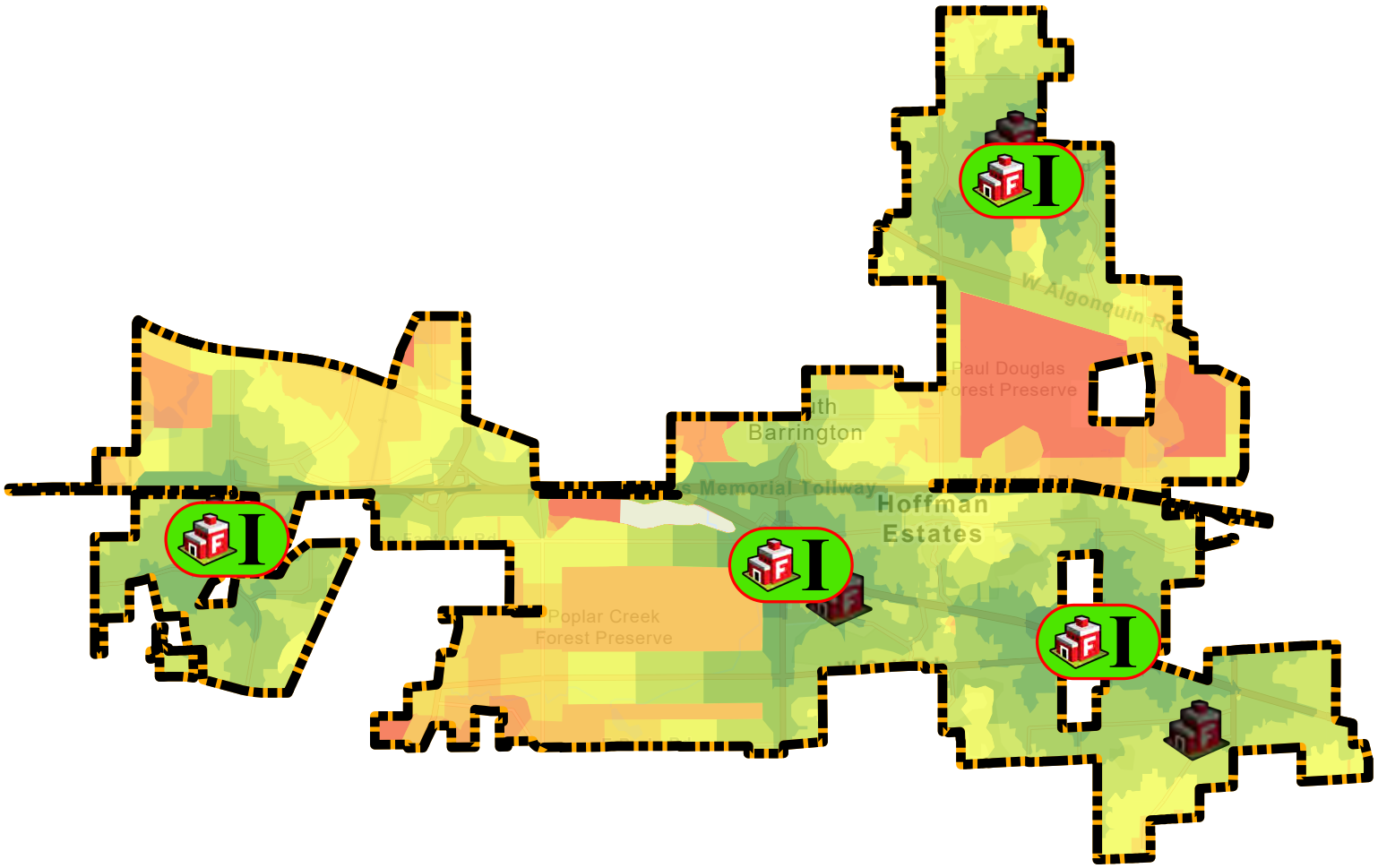
4 Stations
4 Stations - 4 min and 8 min Drive Times Comparison
4 Stations - 4 Minute Catchment Incidents
4 Stations - Growth: In Progress
4 Stations - Growth: High Likelihood
4 Stations - Growth: Low Likelihood
Station 21 to 411 W Higgins
Station 22 to Identified Alternate Station Location Site
Station 22 to Ideal Identified Station Location Area
Station 21 and Station 22 Moved - 4 min and 8 min Drive Times Comparison
Station 21 and Station 22 Moved - 4 Minute Catchment Incidents
Station 21 and Station 22 Moved - 4 Minute Catchment Incidents with Growth

87%

OF INCIDENTS ARE WITHIN THE 4 MIN CATCHMENT



640 possible sites.



ERF

13%
OF INCIDENTS ARE COVERED BY **2** STATIONS

13%
OF INCIDENTS ARE COVERED BY **3** STATIONS

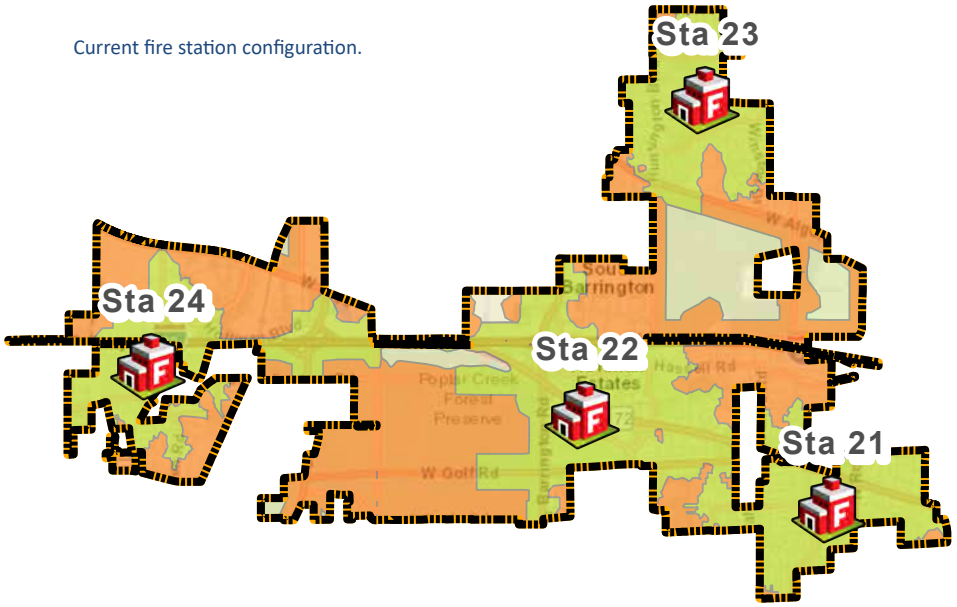
0%
OF INCIDENTS ARE COVERED BY **4** STATIONS

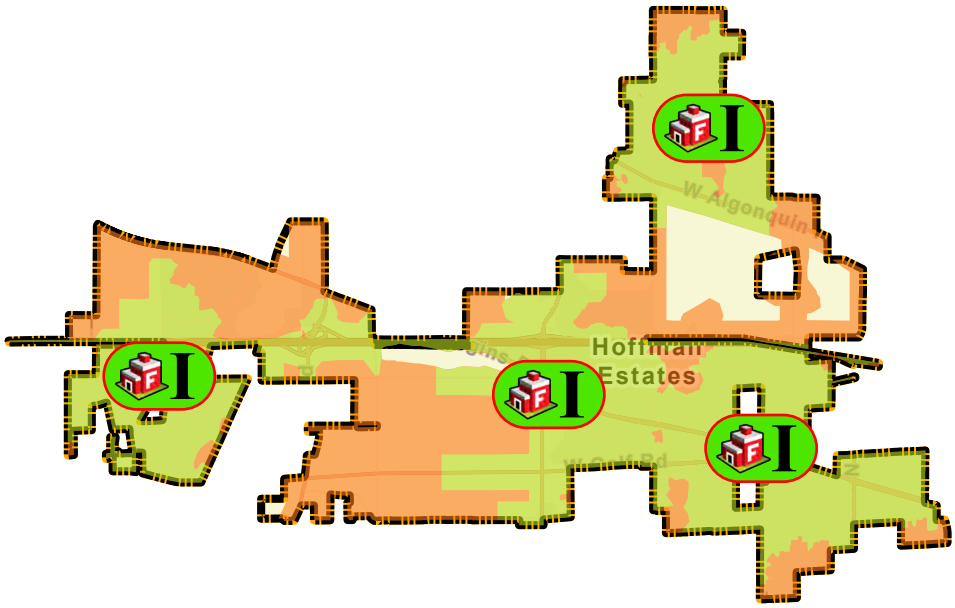
Ideal Station Location:

The Ideal Station Location was calculated using ESRI's Location - Allocation Analysis tool. 640 possible fire station sites were used with a 4 minute drive time as the cutoff to reach as many incidents as possible.

4 Stations
4 min and 8 min Drive Times Comparison

Current fire station configuration.





4 Ideal Stations.

4 MINUTE COVERAGE

	AREA IN SQUARE MILES	PERCENTAGE OF TRA
Current	11.2	50%
Ideal	13	57%

8 MINUTE COVERAGE

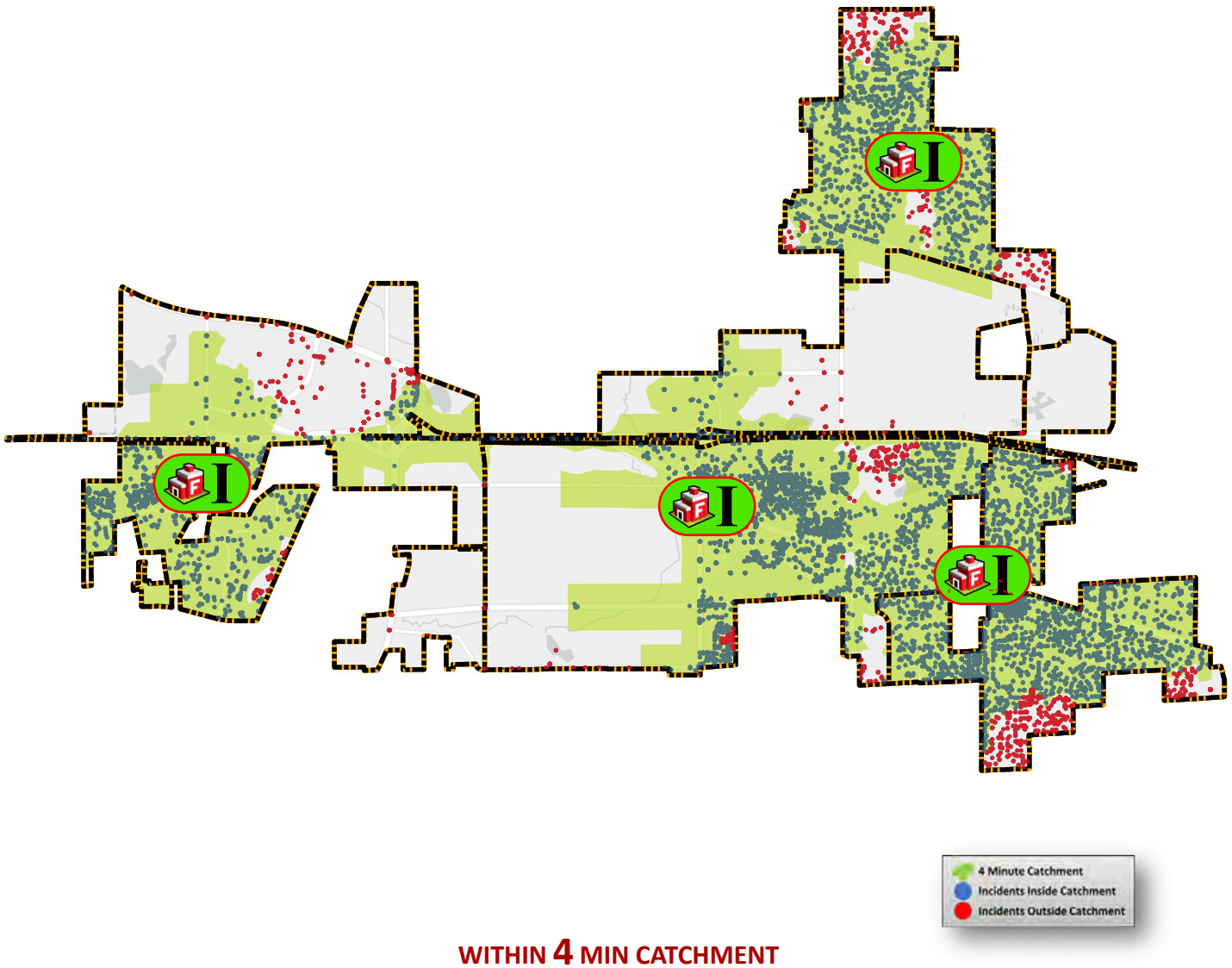
	AREA IN SQUARE MILES	PERCENTAGE OF TRA
Current	20.7	92%
Ideal	20.9	93%

Catchments represent the area covered by drive time from the fire stations and are displayed at the four-minute and eight-minute increments.

Map Layer Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, Esri, HERE, Garmin, NGA, USGS, NPS

87%

OF TRA INCIDENTS ARE IN THE 4 MINUTE CATCHMENT



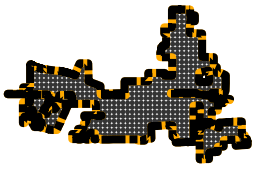
WITHIN 4 MIN CATCHMENT

	FIRE INCIDENTS	EMS INCIDENTS	OTHER INCIDENTS
Current	77%	83%	80%
Ideal	80%	88%	84%

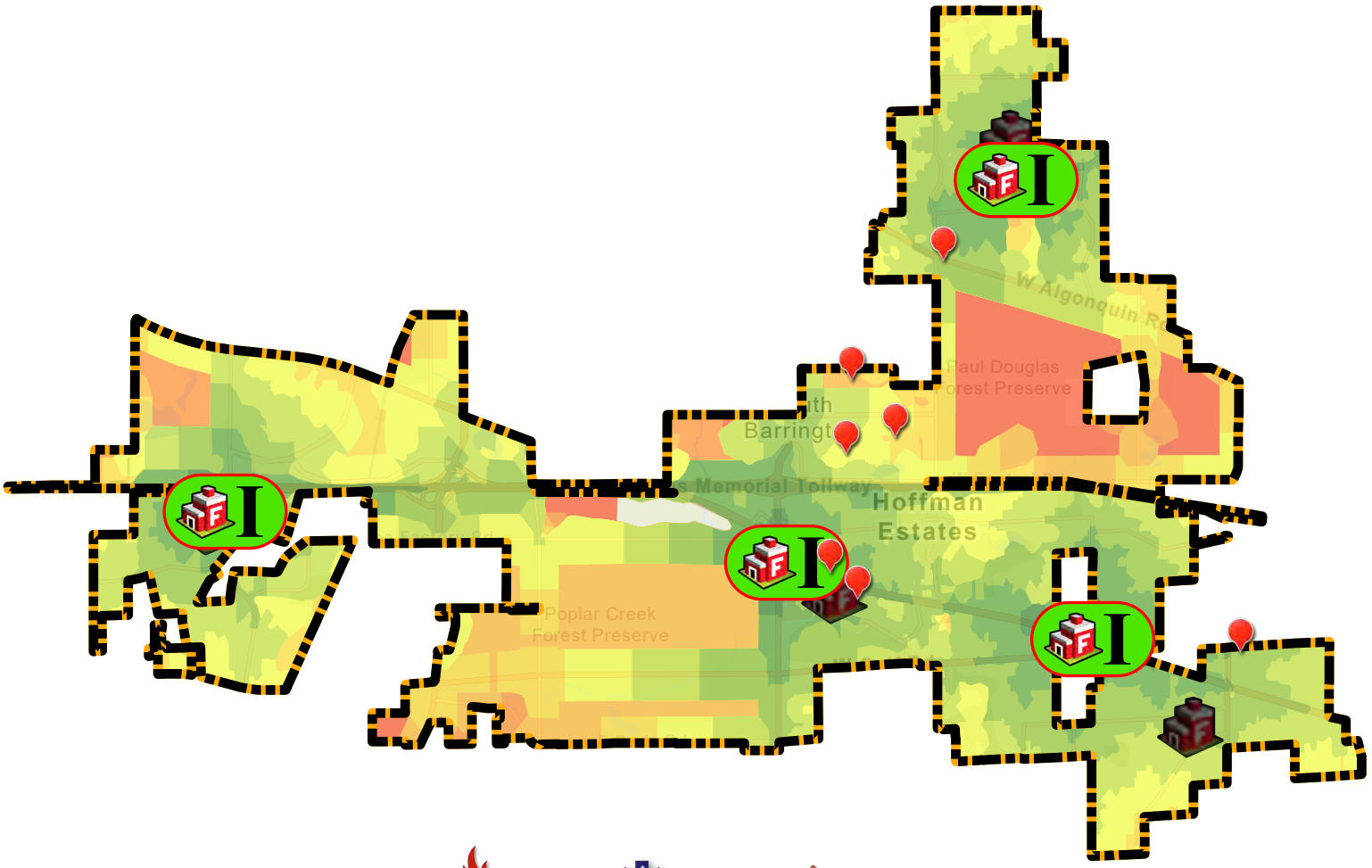
Map Layer Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

88%

OF INCIDENTS ARE WITHIN THE 4 MIN CATCHMENT



640 possible sites.



1 min
1 min - 2 min
2 min - 3 min
3 min - 4 min
4 min - 5 min
5 min - 6 min
6 min - 7 min
7 min - 8 min
> 8 min

Fire	EMS	Other
0.3	18	5.4

PROJECTED PER YEAR INCIDENT INCREASE

ERF

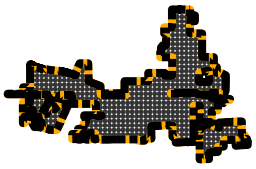
30%	30%	0%
OF INCIDENTS ARE COVERED BY 2 STATIONS	OF INCIDENTS ARE COVERED BY 3 STATIONS	OF INCIDENTS ARE COVERED BY 4 STATIONS

Ideal Station Location:

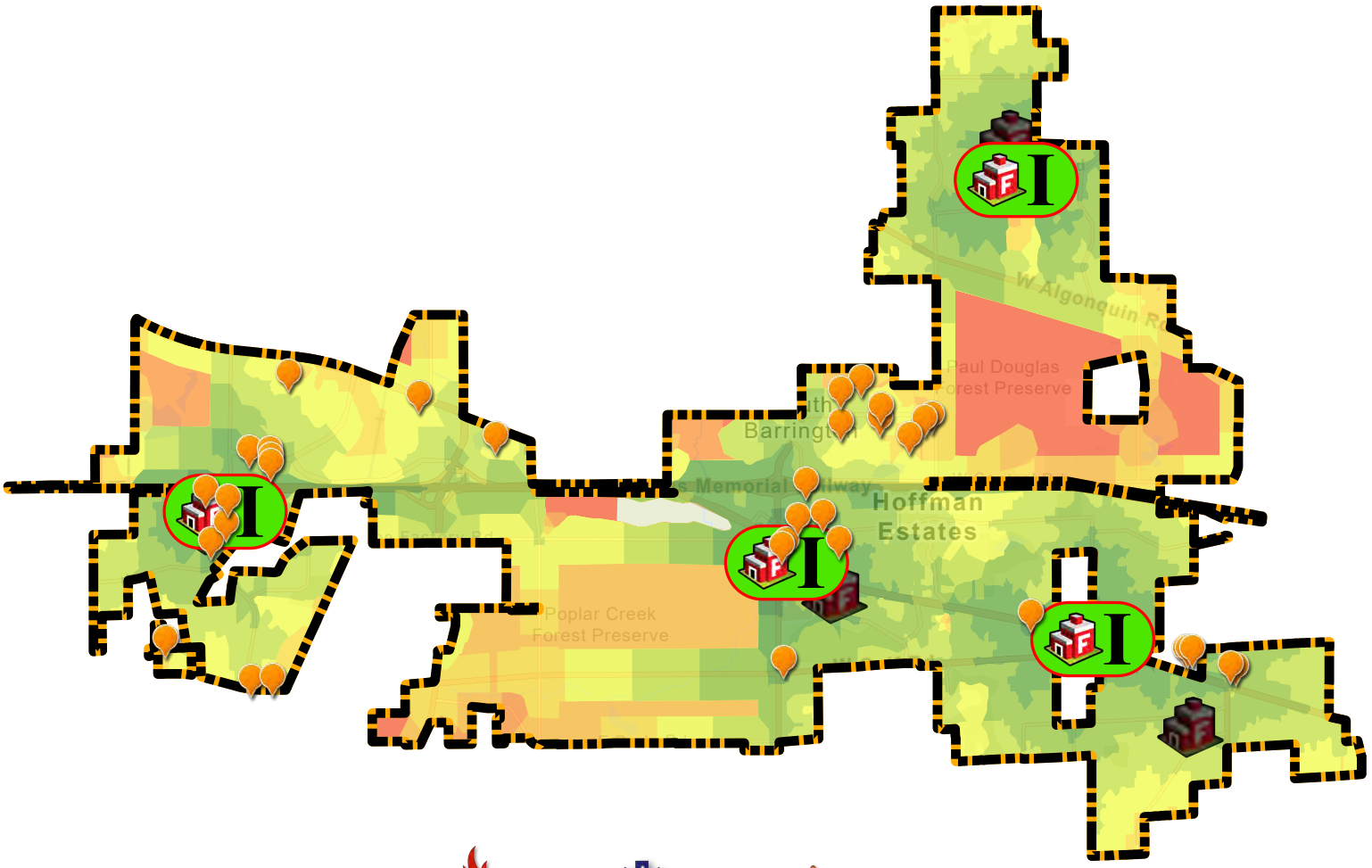
The Ideal Station Location was calculated using ESRI's Location - Allocation Analysis tool. 640 possible fire station sites were used with a 4 minute drive time as the cutoff to reach as many incidents as possible.

88%

OF INCIDENTS ARE WITHIN THE 4 MIN CATCHMENT



640 possible sites.



Fire	EMS	Other
1.7	121.7	36.3

PROJECTED PER YEAR INCIDENT INCREASE

1 min
1 min - 2 min
2 min - 3 min
3 min - 4 min
4 min - 5 min
5 min - 6 min
6 min - 7 min
7 min - 8 min
> 8 min

ERF

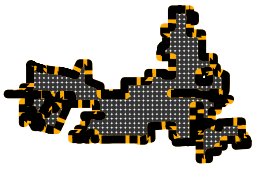
30%	30%	0%
OF INCIDENTS ARE COVERED BY 2 STATIONS	OF INCIDENTS ARE COVERED BY 3 STATIONS	OF INCIDENTS ARE COVERED BY 4 STATIONS

Ideal Station Location:

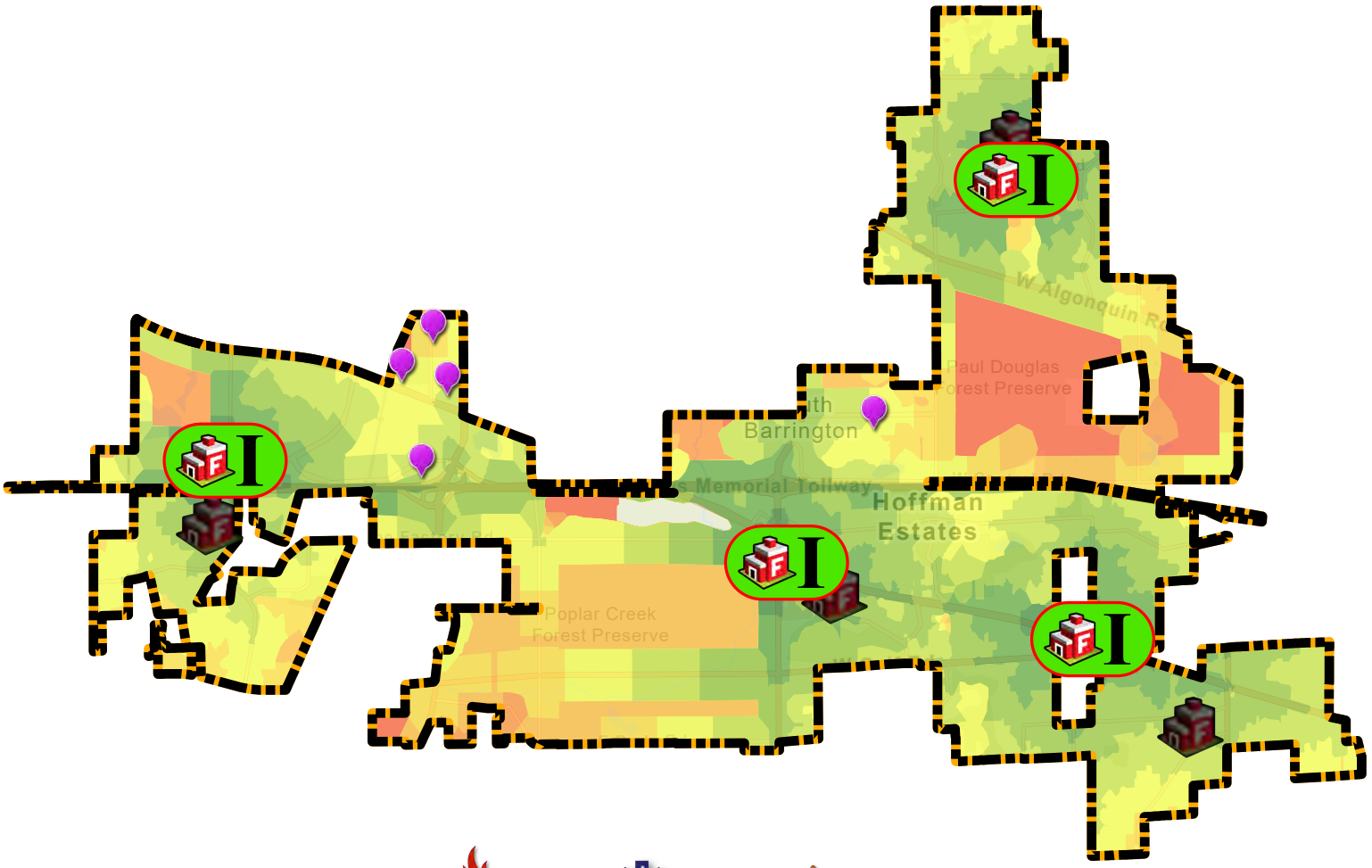
The Ideal Station Location was calculated using ESRI's Location - Allocation Analysis tool. 640 possible fire station sites were used with a 4 minute drive time as the cutoff to reach as many incidents as possible.

84%

OF INCIDENTS ARE WITHIN THE 4 MIN CATCHMENT



640 possible sites.



Fire	EMS	Other
1.4	103.1	30.6

PROJECTED PER YEAR INCIDENT INCREASE

1 min
1 min - 2 min
2 min - 3 min
3 min - 4 min
4 min - 5 min
5 min - 6 min
6 min - 7 min
7 min - 8 min
> 8 min

ERF

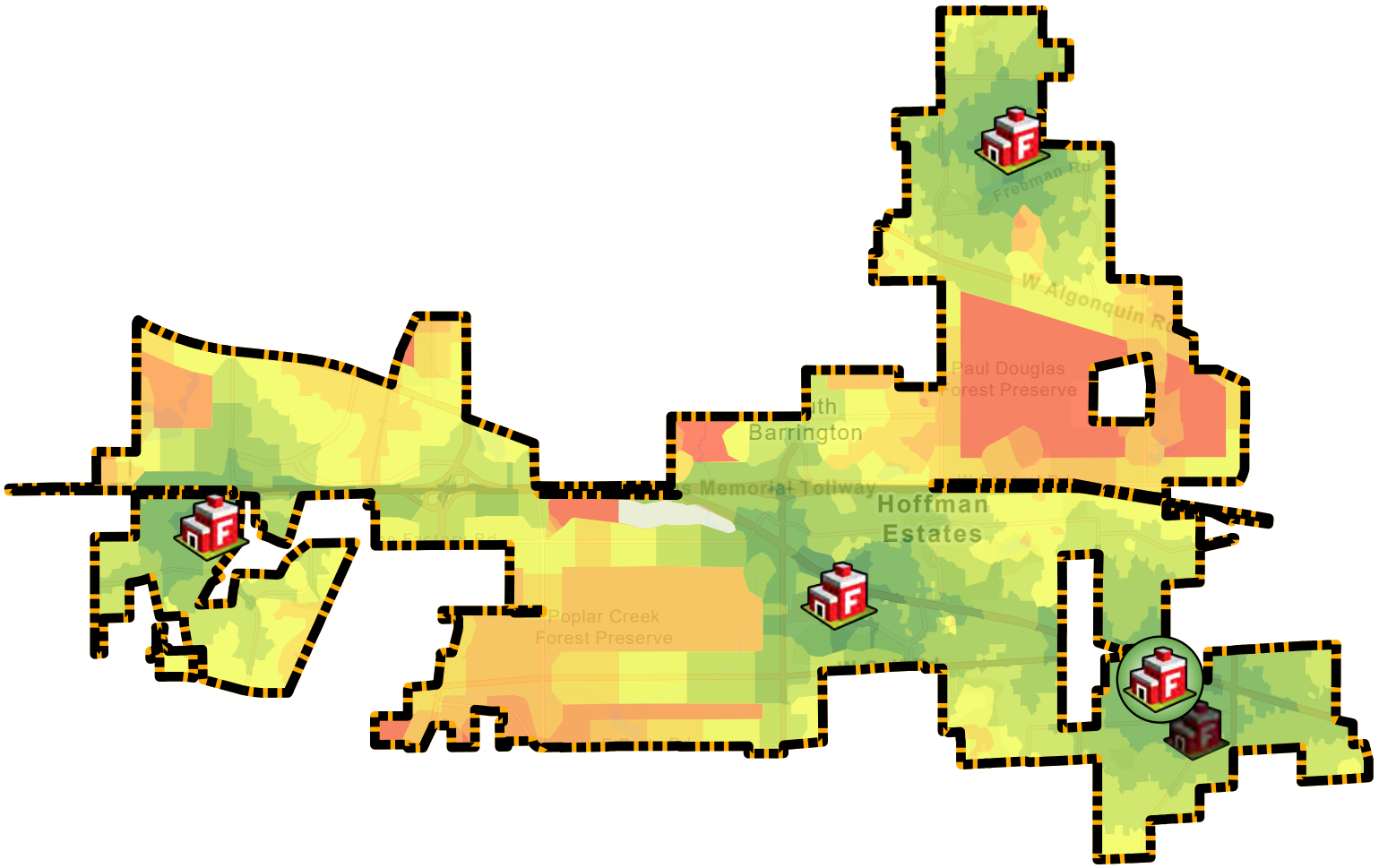
25%	25%	0%
OF INCIDENTS ARE COVERED BY 2 STATIONS	OF INCIDENTS ARE COVERED BY 3 STATIONS	OF INCIDENTS ARE COVERED BY 4 STATIONS

Ideal Station Location:

The Ideal Station Location was calculated using ESRI's Location - Allocation Analysis tool. 640 possible fire station sites were used with a 4 minute drive time as the cutoff to reach as many incidents as possible.

86%

OF INCIDENTS ARE WITHIN THE 4 MIN CATCHMENT



ERF

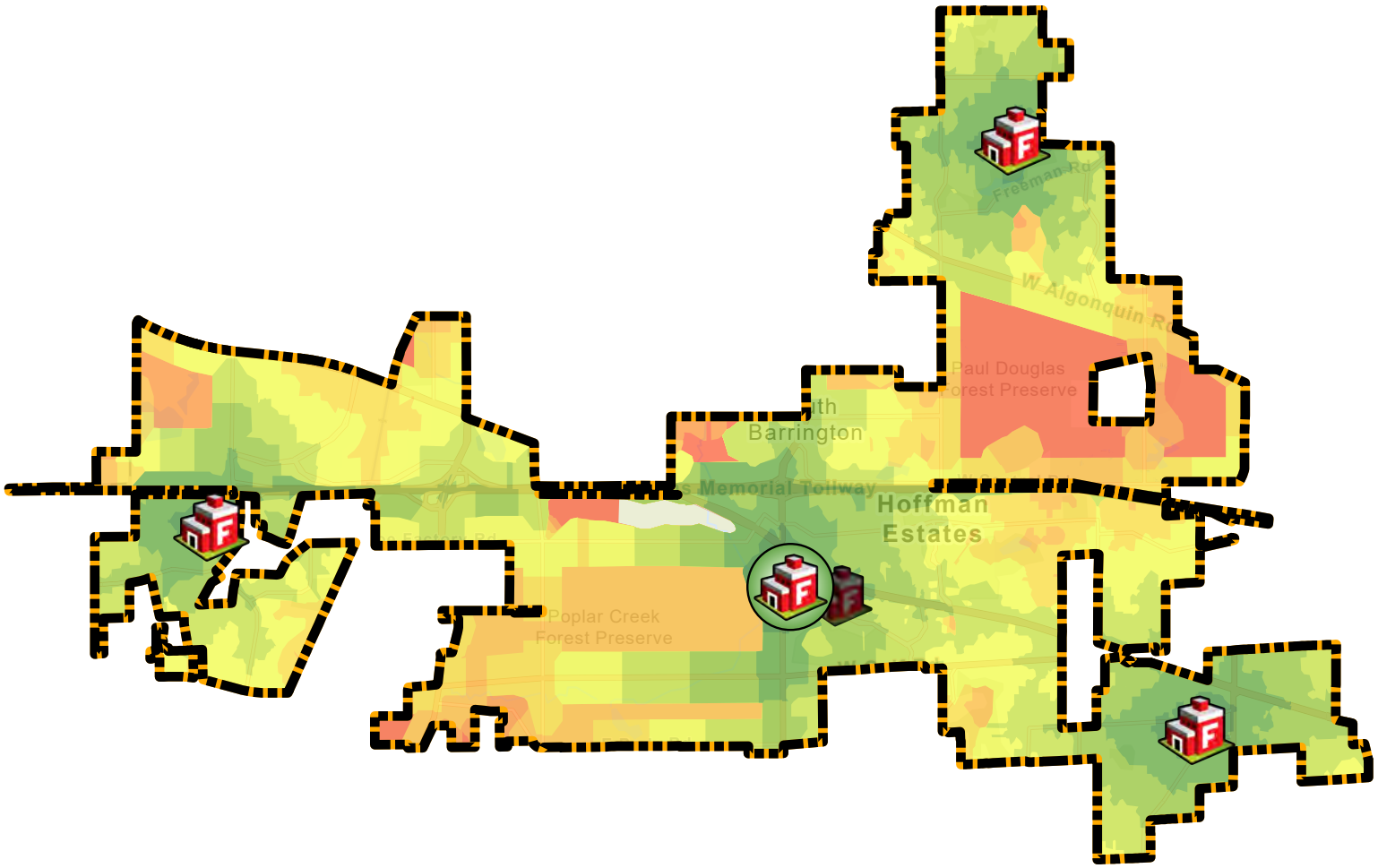
24%
OF INCIDENTS ARE COVERED BY **2** STATIONS

24%
OF INCIDENTS ARE COVERED BY **3** STATIONS

0%
OF INCIDENTS ARE COVERED BY **4** STATIONS

82%

OF INCIDENTS ARE WITHIN THE 4 MIN CATCHMENT



ERF

15%
OF INCIDENTS ARE COVERED BY **2** STATIONS

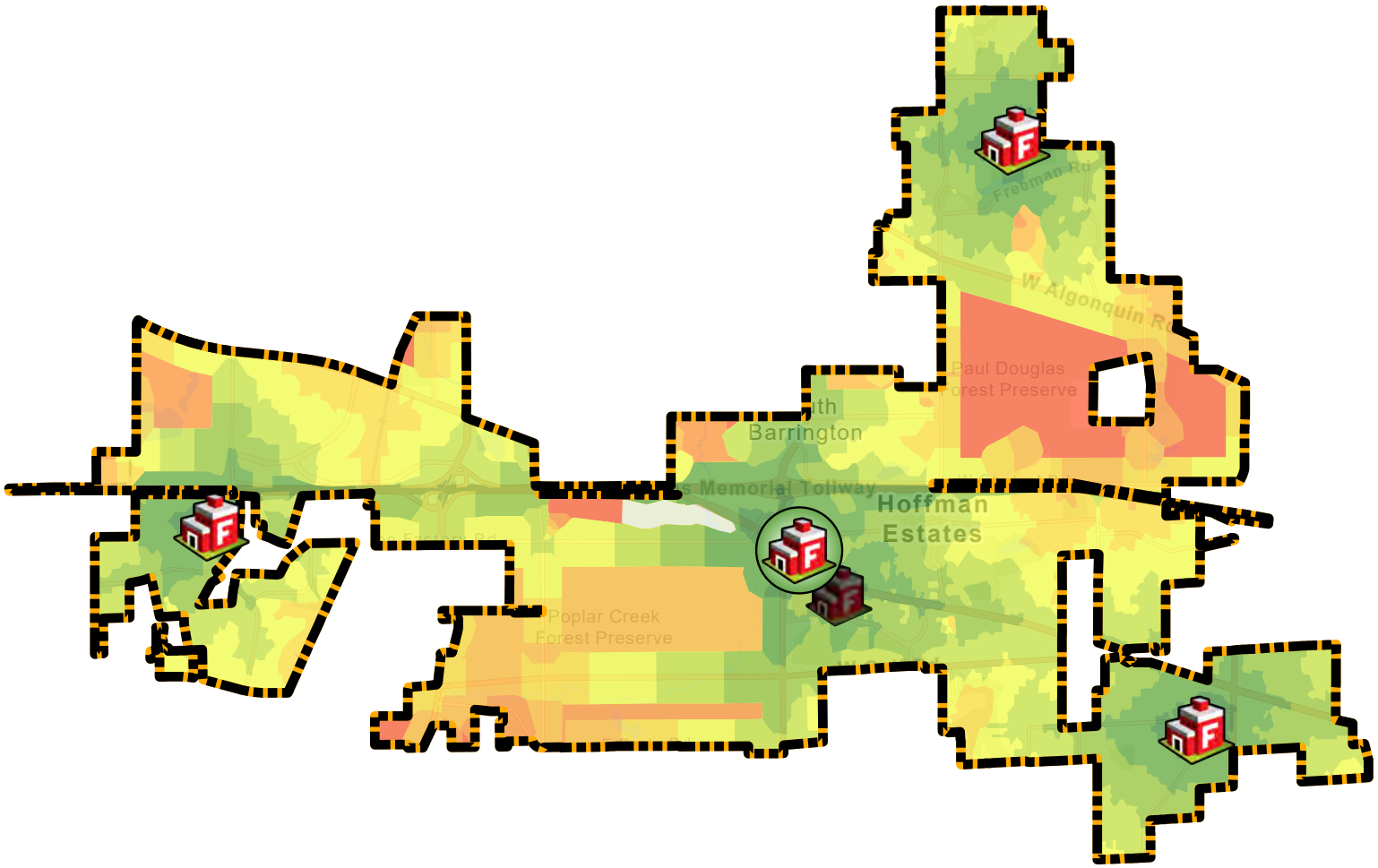
15%
OF INCIDENTS ARE COVERED BY **3** STATIONS

0%
OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layer Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

84%

OF INCIDENTS ARE WITHIN THE 4 MIN CATCHMENT



ERF

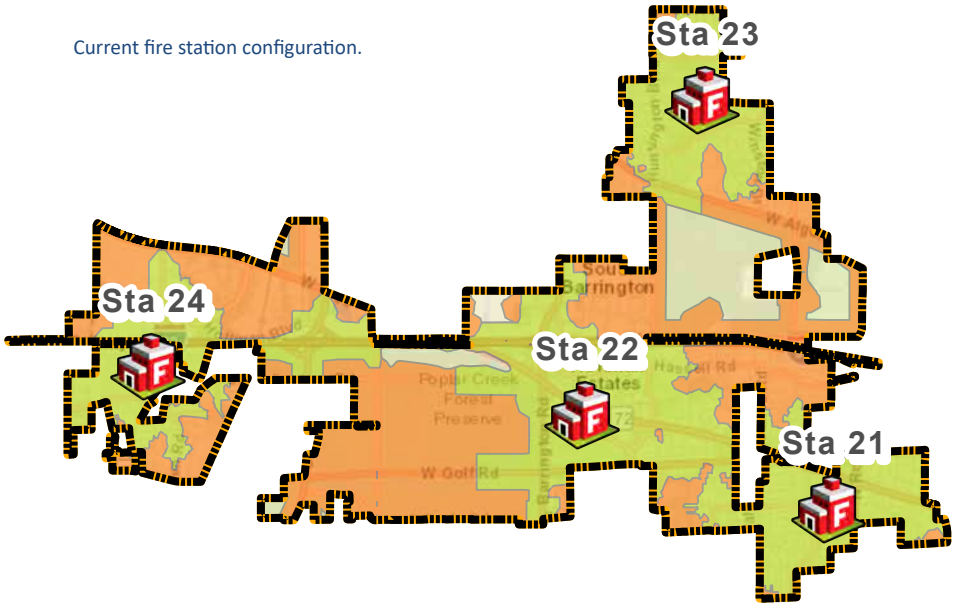
15%
OF INCIDENTS ARE COVERED BY **2** STATIONS

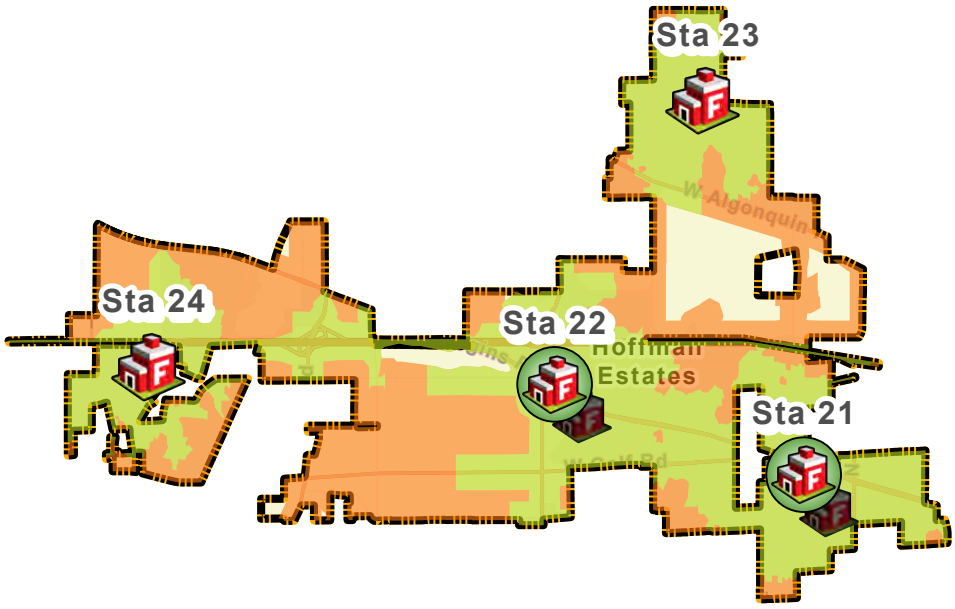
15%
OF INCIDENTS ARE COVERED BY **3** STATIONS

0%
OF INCIDENTS ARE COVERED BY **4** STATIONS

Station 21 and Station 22 moved
4 min and 8 min Drive Times Comparison

Current fire station configuration.





Station 21 moved to 411 w Higgins and
Station 22 moved to Ideal Identified
Station Location Area

4 MINUTE COVERAGE

	AREA IN SQUARE MILES	PERCENTAGE OF TRA
Current	11.2	50%
Proposed	12.2	54%

8 MINUTE COVERAGE

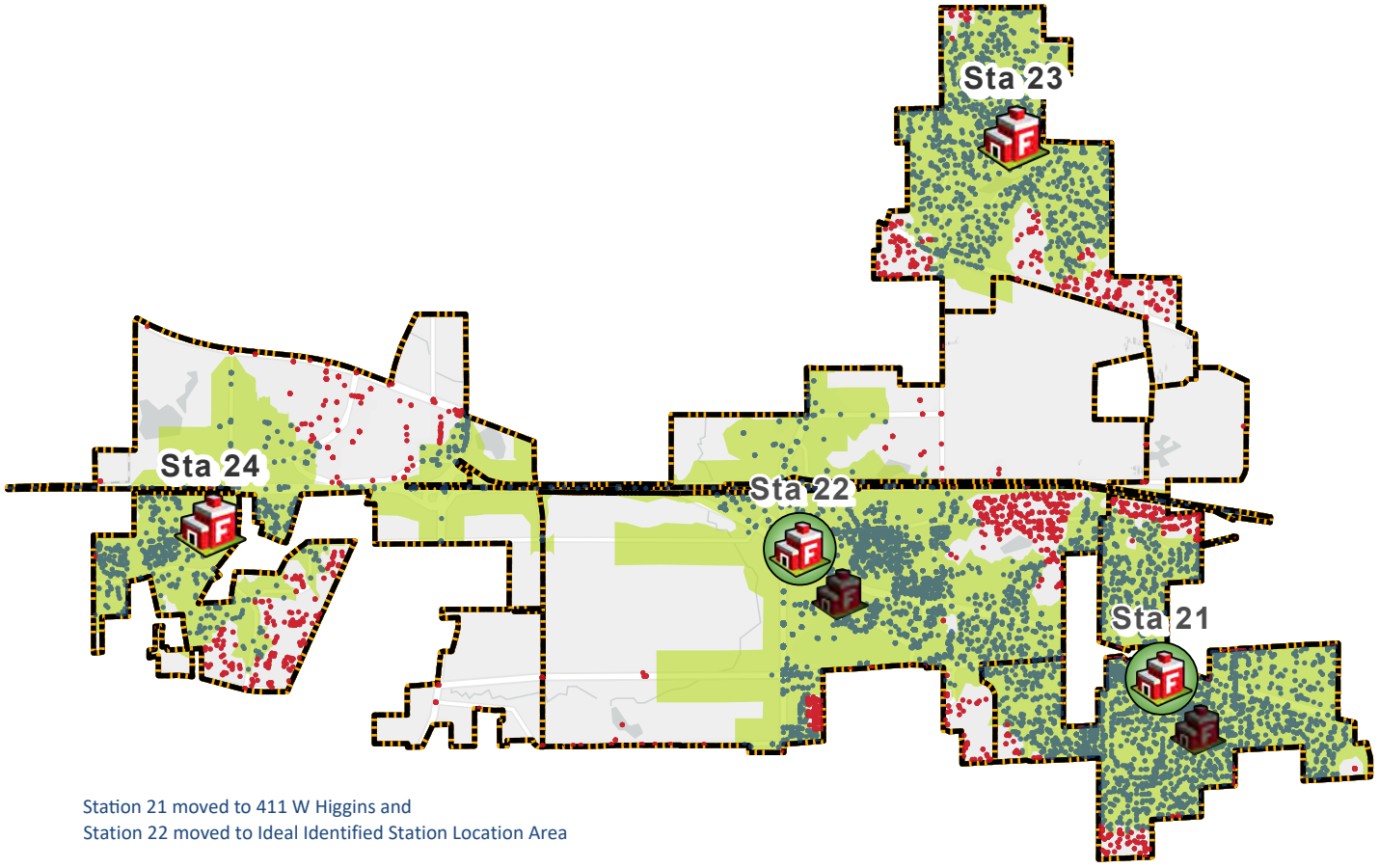
	AREA IN SQUARE MILES	PERCENTAGE OF TRA
Current	20.7	92%
Proposed	20.9	93%

Catchments represent the area covered by drive time from the fire stations and are displayed at the four-minute and eight-minute increments.

Station 21 and Station 22 moved
4 Minute Catchment Incidents

85%

OF TRA INCIDENTS ARE IN THE 4 MINUTE CATCHMENT



Station 21 moved to 411 W Higgins and
Station 22 moved to Ideal Identified Station Location Area

WITHIN 4 MIN CATCHMENT

	FIRE INCIDENTS	EMS INCIDENTS	OTHER INCIDENTS
Current	77%	83%	80%
Ideal	80%	88%	84%
Proposed	83%	86%	83%

Map Layer Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

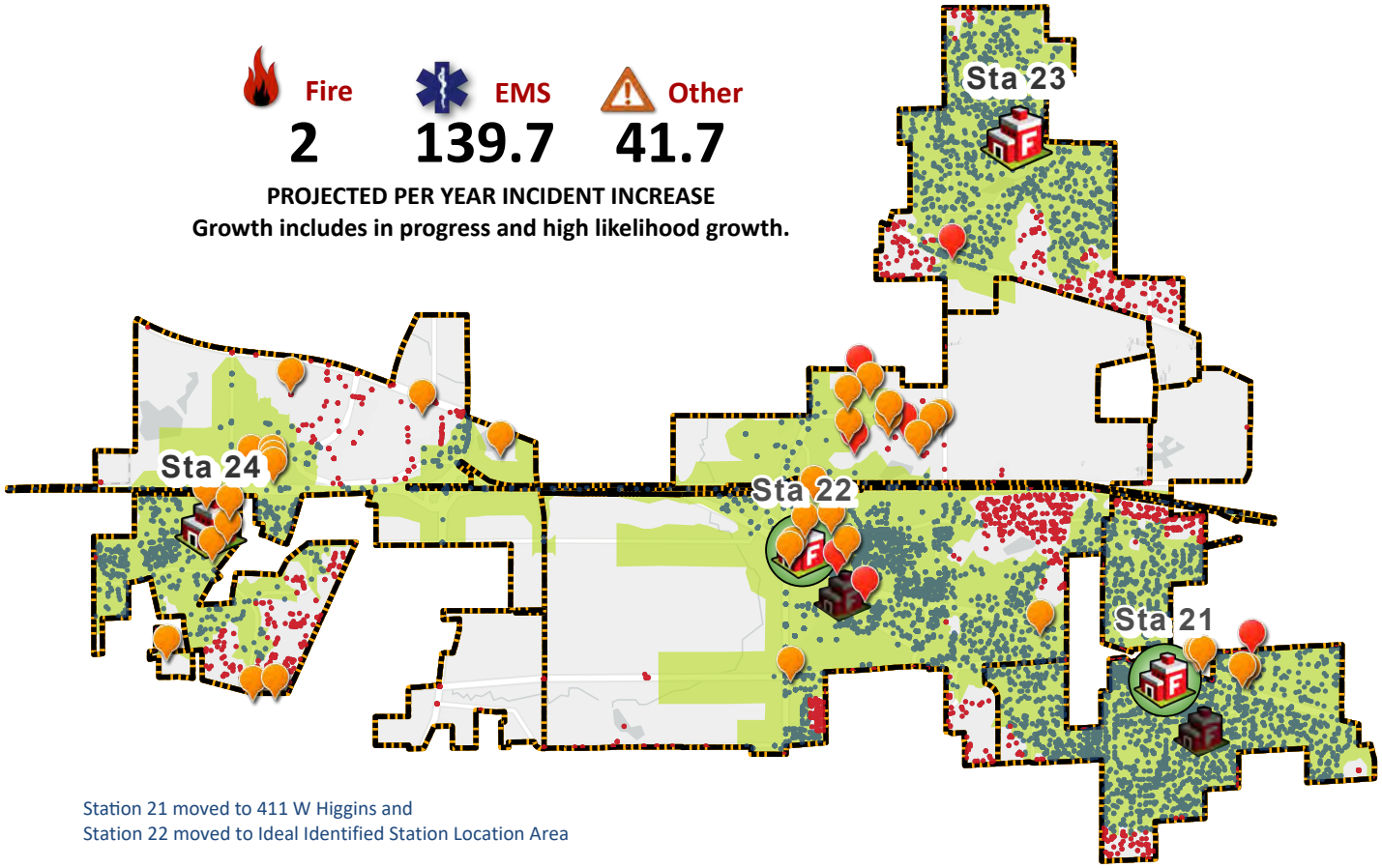
Station 21 and Station 22 moved
4 Minute Catchment Incidents with Growth

84%

OF TRA INCIDENTS ARE IN THE 4 MINUTE CATCHMENT

Fire	EMS	Other
2	139.7	41.7

PROJECTED PER YEAR INCIDENT INCREASE
Growth includes in progress and high likelihood growth.



Station 21 moved to 411 W Higgins and
Station 22 moved to Ideal Identified Station Location Area

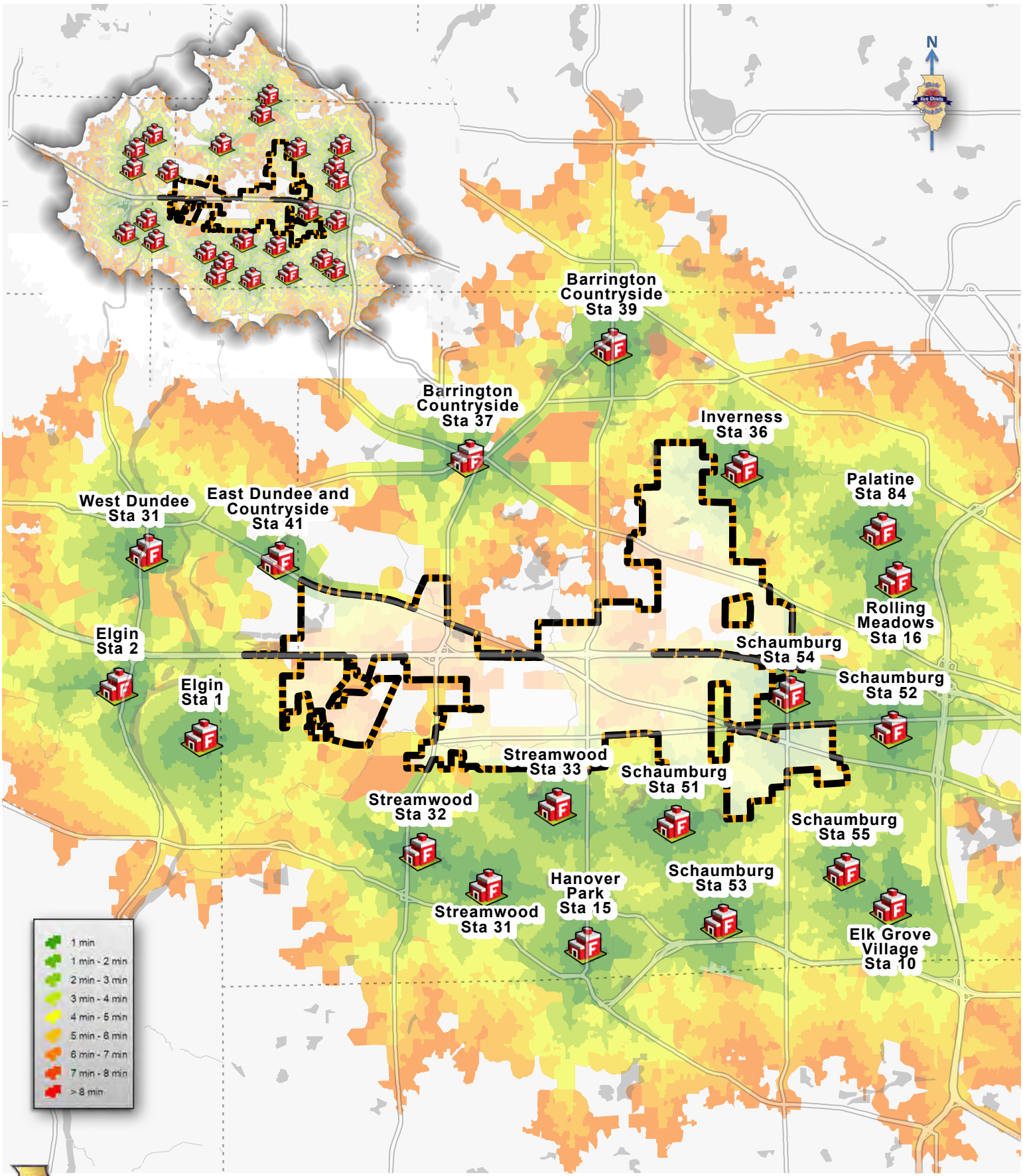
WITHIN 4 MIN CATCHMENT

	FIRE INCIDENTS	EMS INCIDENTS	OTHER INCIDENTS
Current	77%	83%	80%
Ideal	80%	88%	84%
Proposed	83%	84%	82%

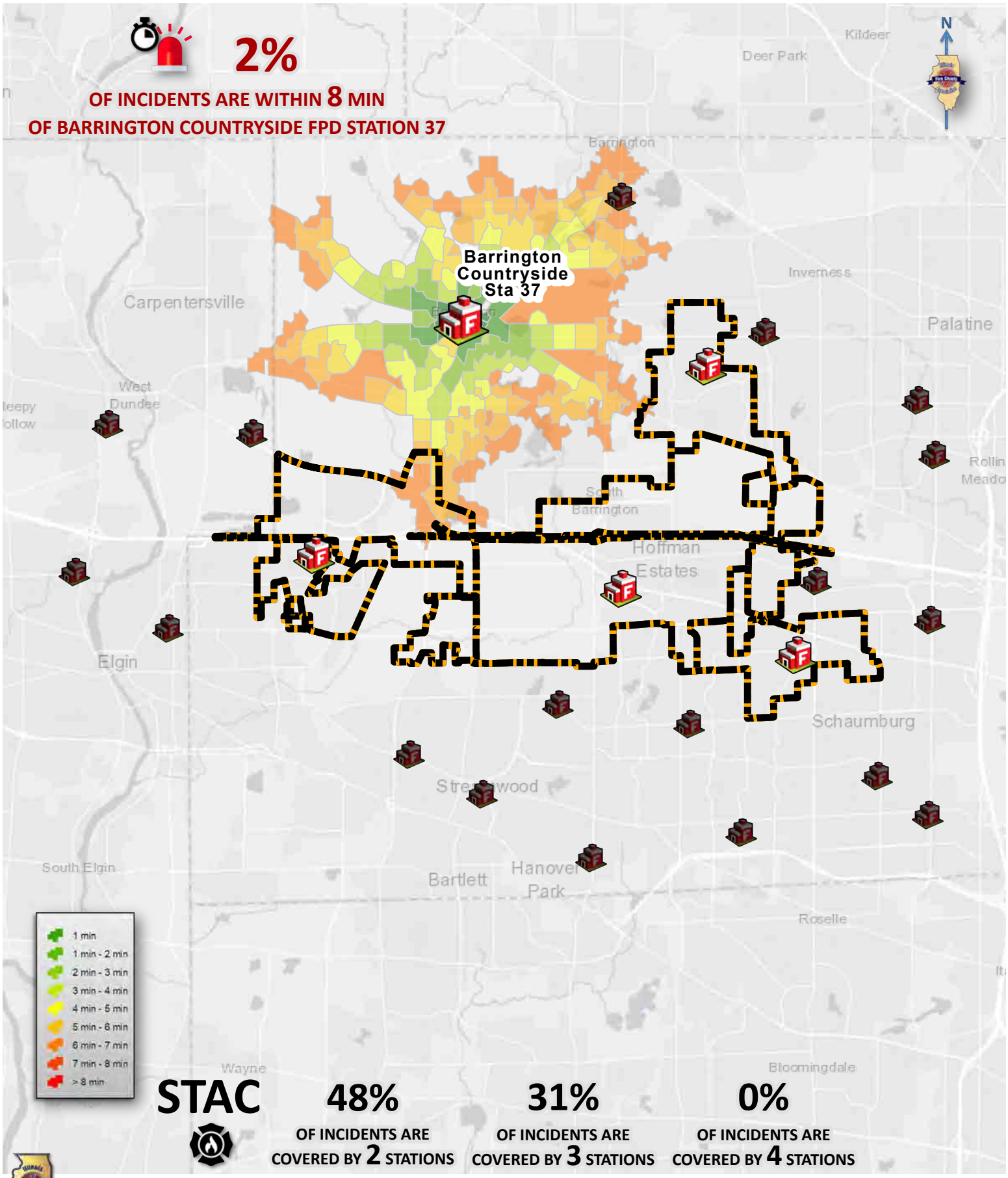
Map Layer Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

Selected Auto Aid Stations
Barrington Countryside FPD Station 37
Barrington Countryside FPD Station 39
East Dundee and Countryside FPD Station 41
Elgin FD Station 1
Elgin FD Station 2
Elk Grove Village FD Station 10
Hanover Park FD Station 15
Inverness FPD Station 36
Palatine FD Station 84
Rolling Meadows FD Station 16
Schaumburg FD Station 51
Schaumburg FD Station 52
Schaumburg FD Station 53
Schaumburg FD Station 54
Schaumburg FD Station 55
Streamwood FD Station 31
Streamwood FD Station 32
Streamwood FD Station 33
West Dundee FD Station 31

Selected Auto Aid Stations



Catchments represent the area covered by drive time from the fire stations and are displayed in on-minute increments.



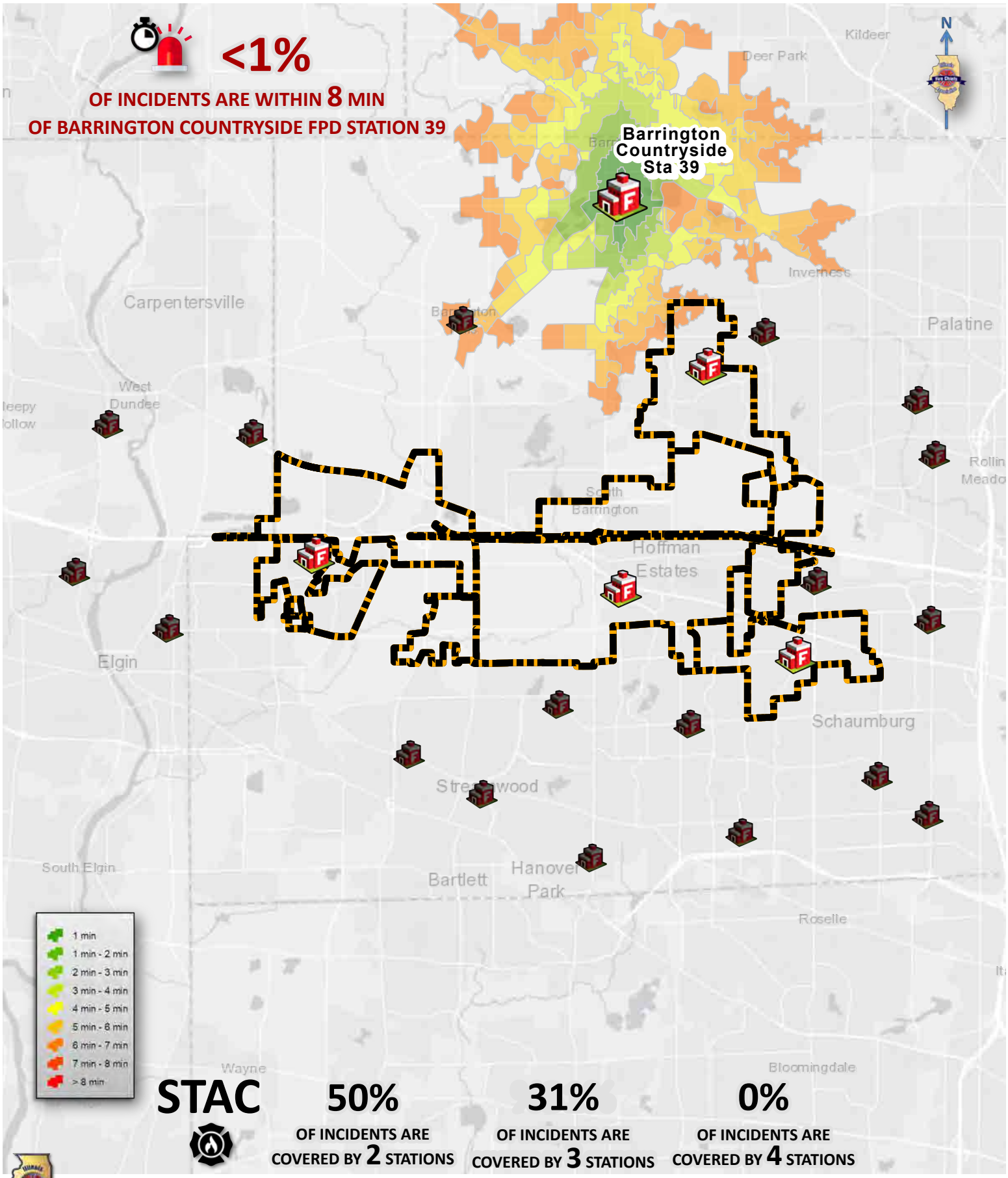
STAC

48% OF INCIDENTS ARE COVERED BY **2** STATIONS

31% OF INCIDENTS ARE COVERED BY **3** STATIONS

0% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



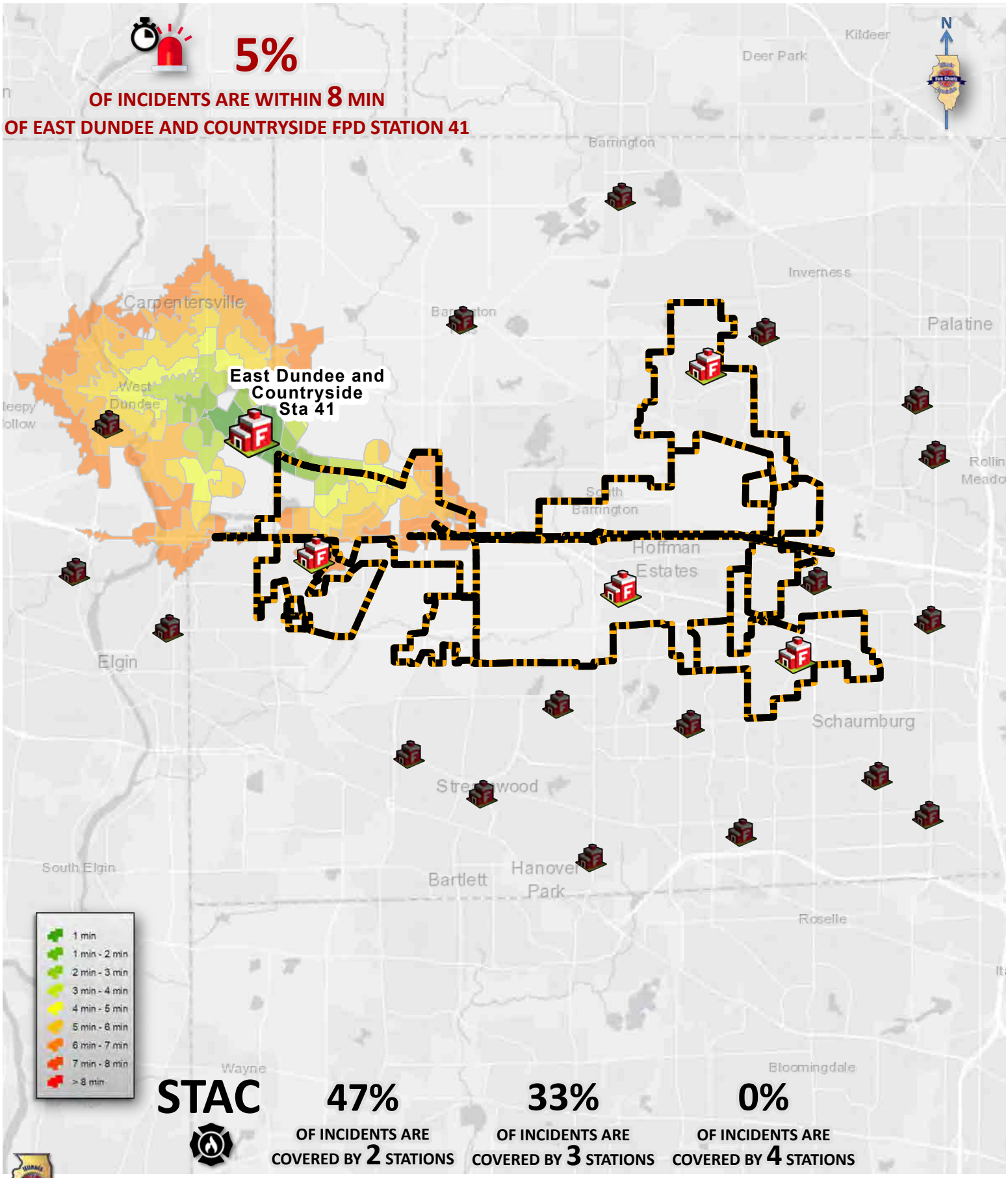
STAC

50% OF INCIDENTS ARE COVERED BY **2** STATIONS

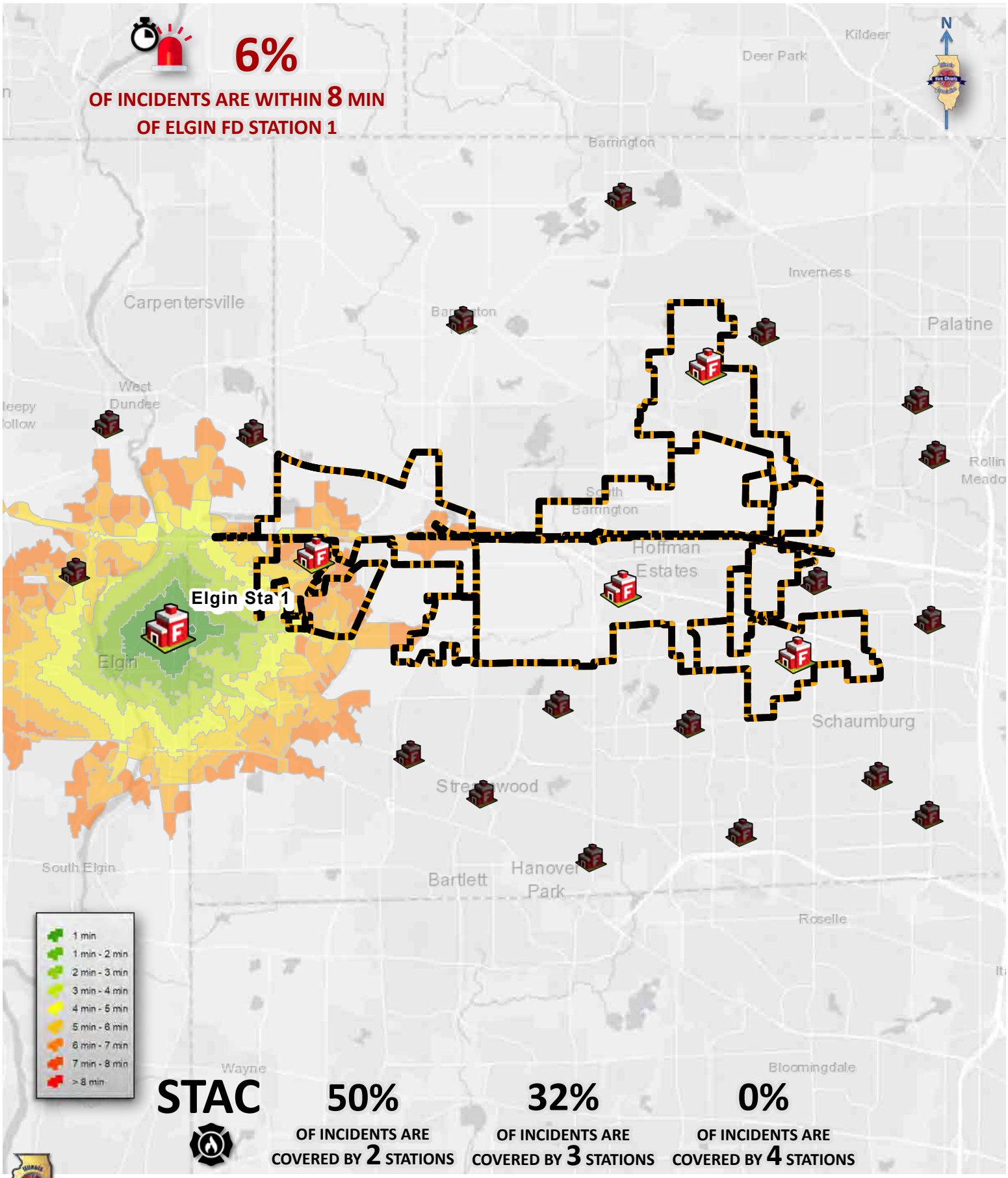
31% OF INCIDENTS ARE COVERED BY **3** STATIONS

0% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



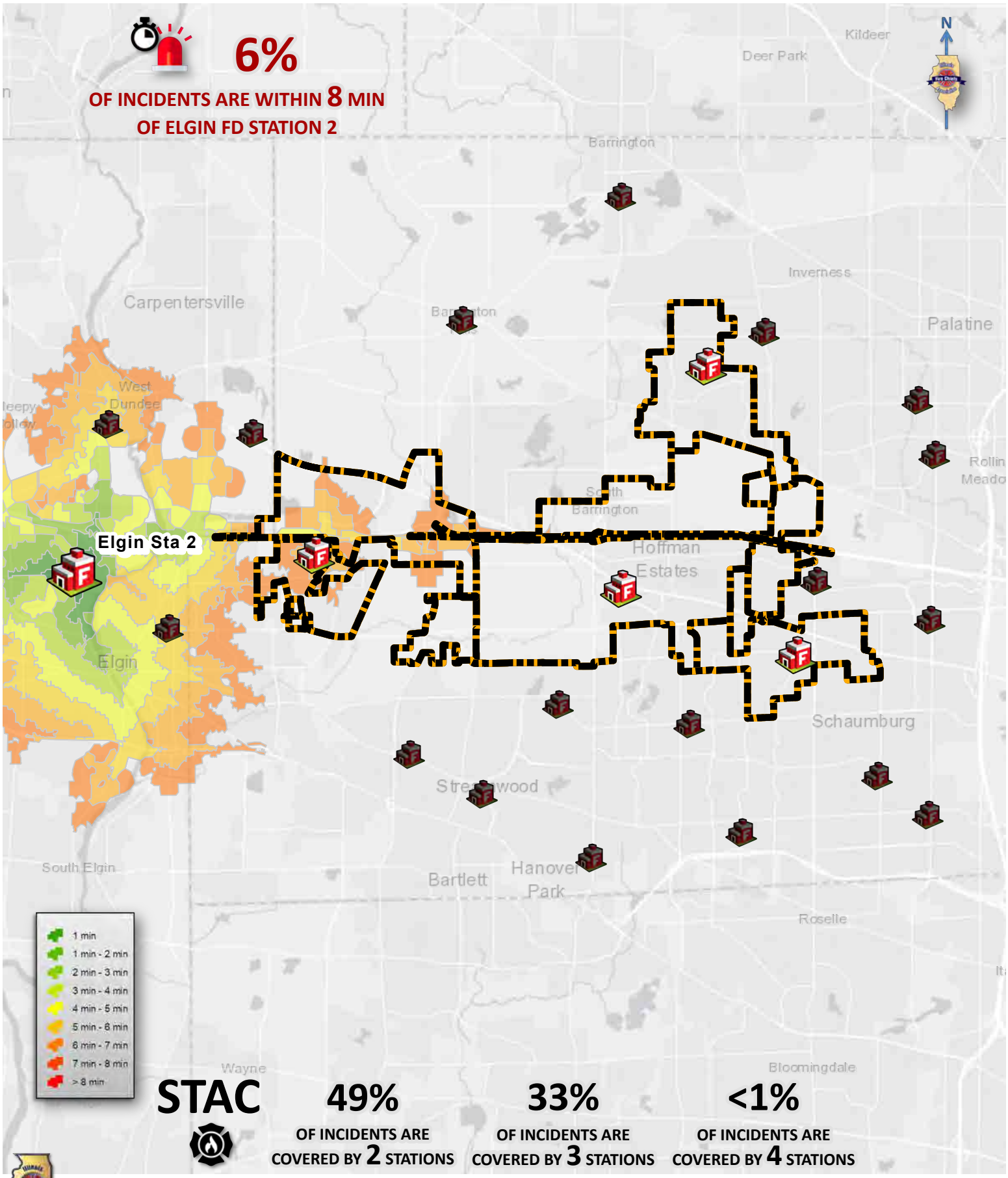
STAC

50% OF INCIDENTS ARE COVERED BY **2** STATIONS

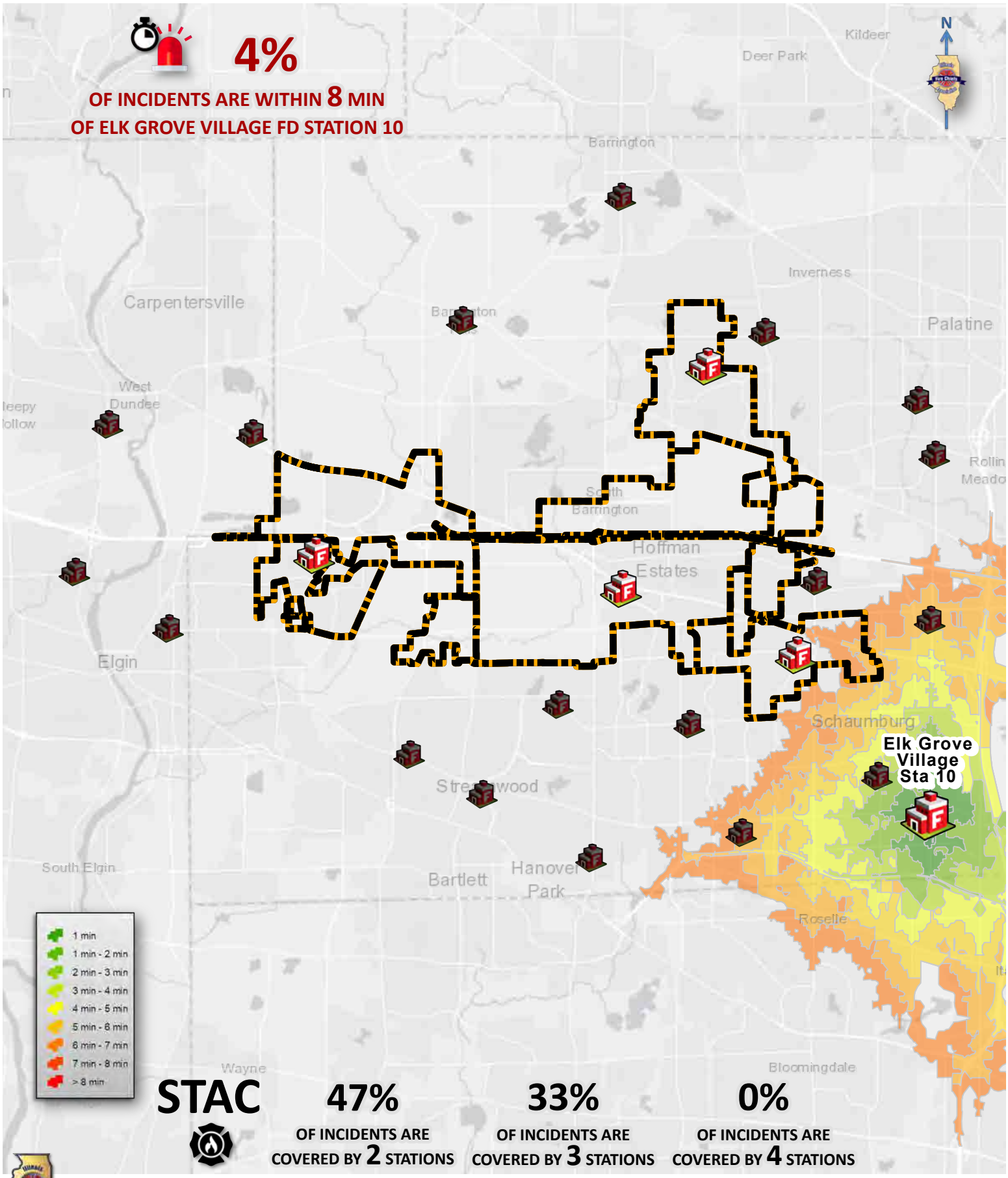
32% OF INCIDENTS ARE COVERED BY **3** STATIONS

0% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



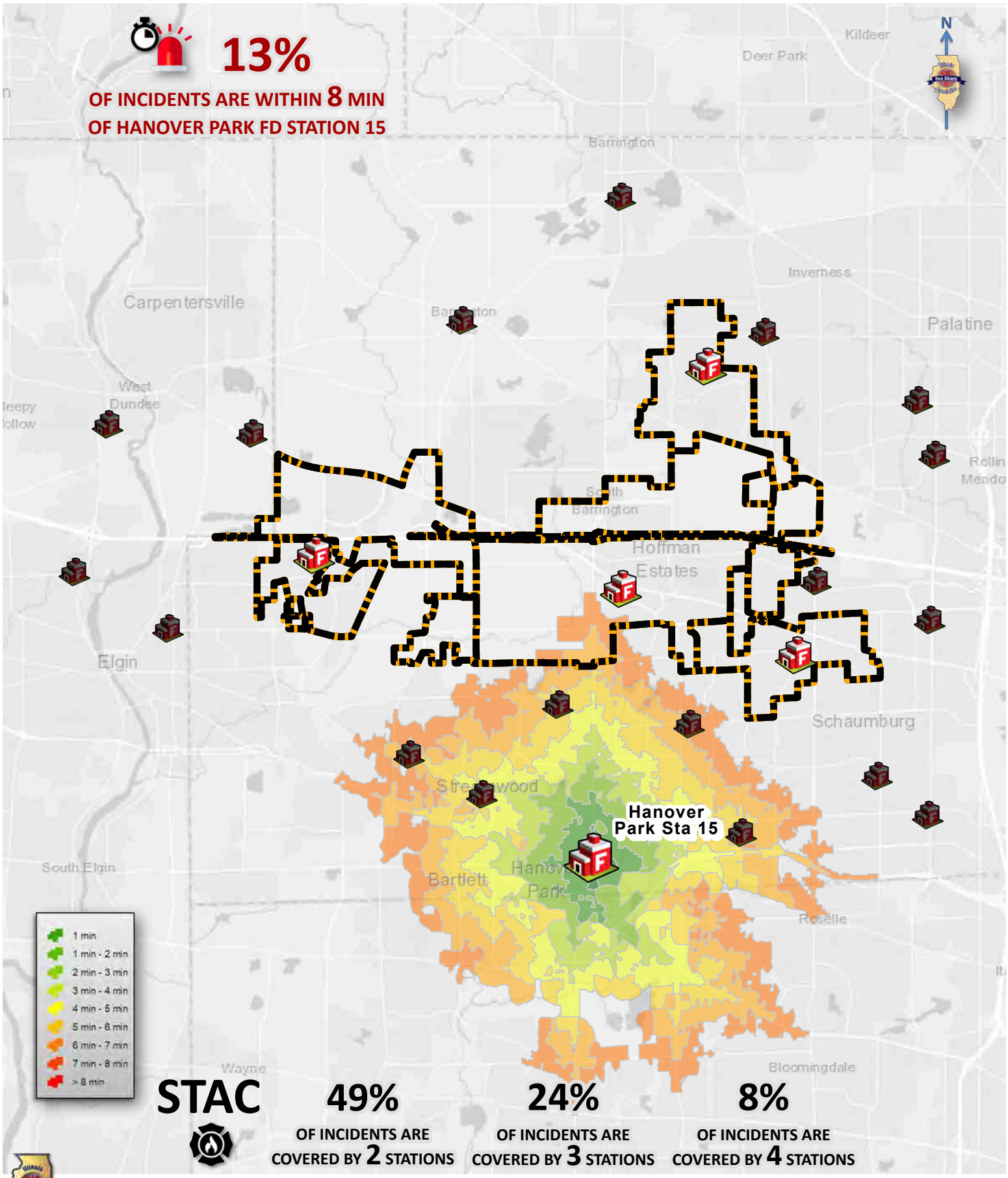
STAC

47% OF INCIDENTS ARE COVERED BY **2** STATIONS

33% OF INCIDENTS ARE COVERED BY **3** STATIONS

0% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



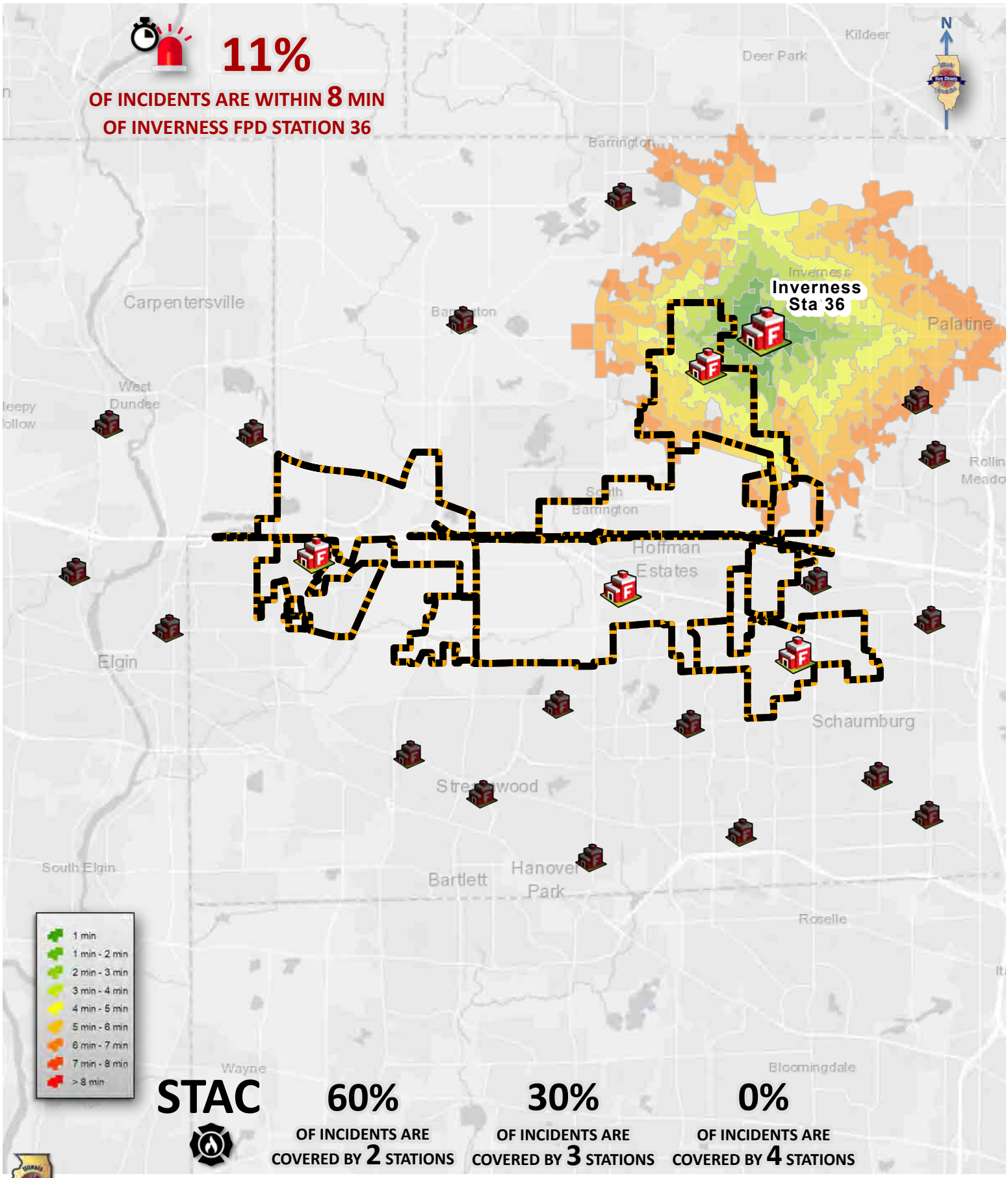
STAC

49% OF INCIDENTS ARE COVERED BY **2** STATIONS

24% OF INCIDENTS ARE COVERED BY **3** STATIONS

8% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



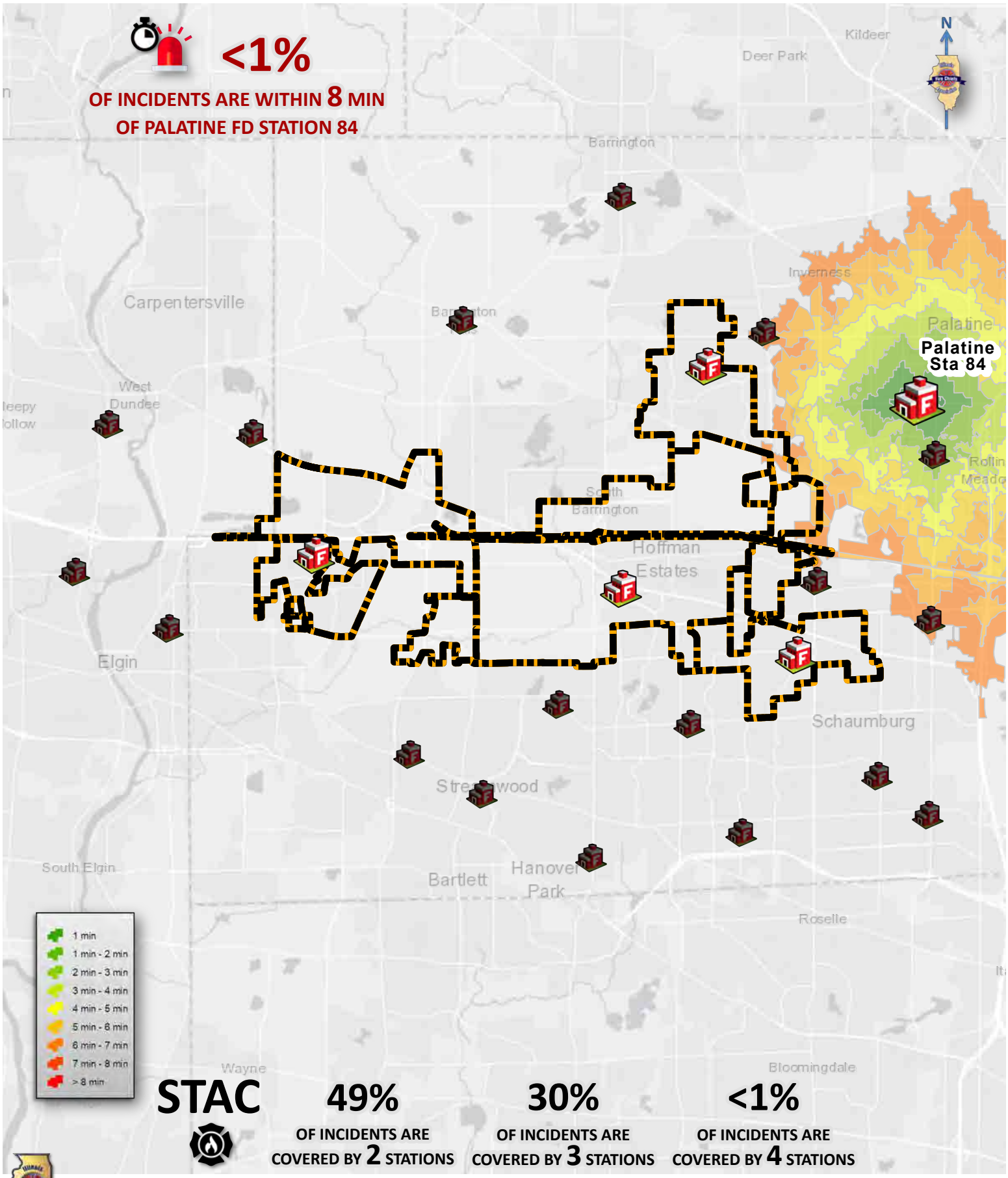
STAC

60% OF INCIDENTS ARE COVERED BY **2** STATIONS

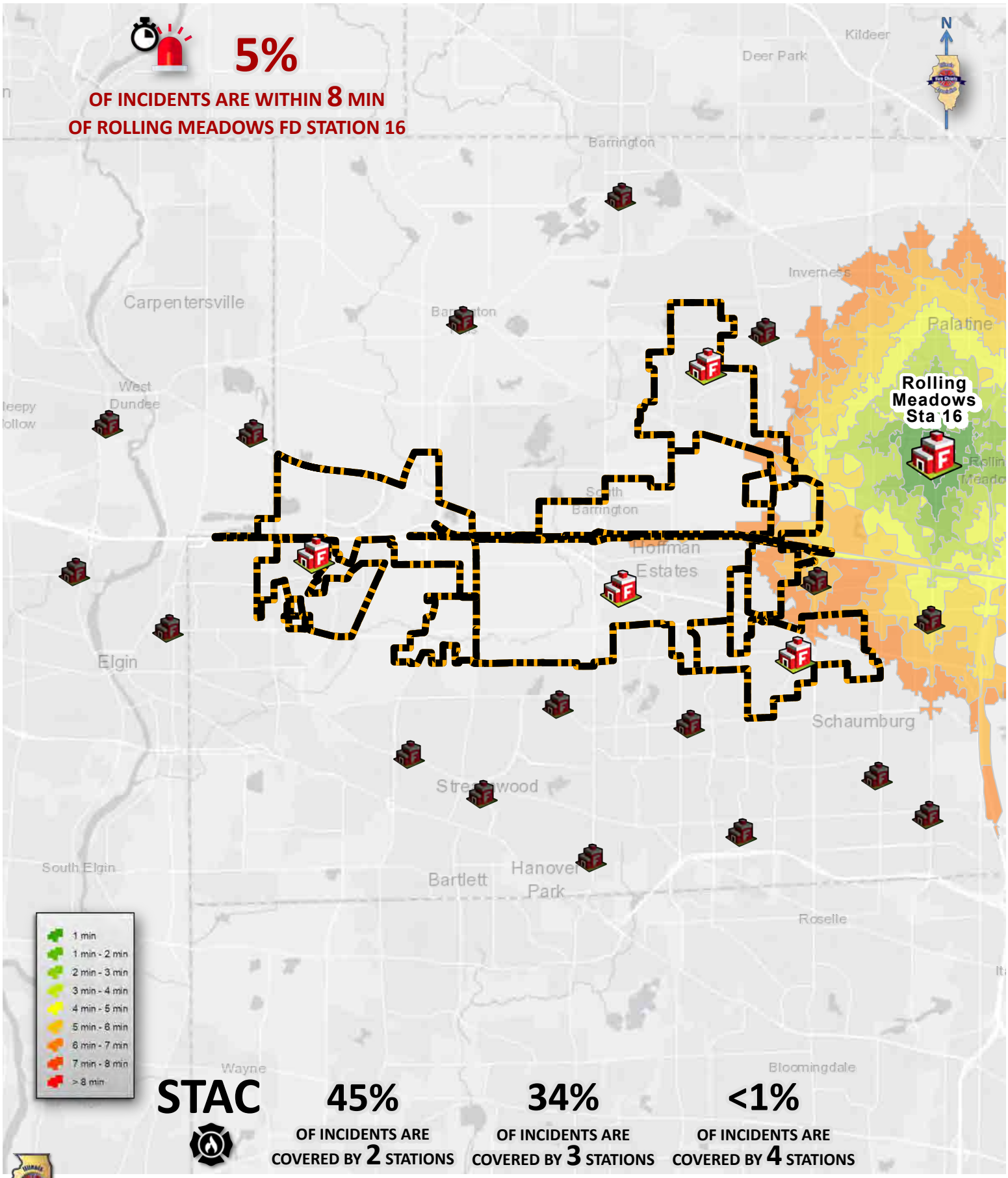
30% OF INCIDENTS ARE COVERED BY **3** STATIONS

0% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



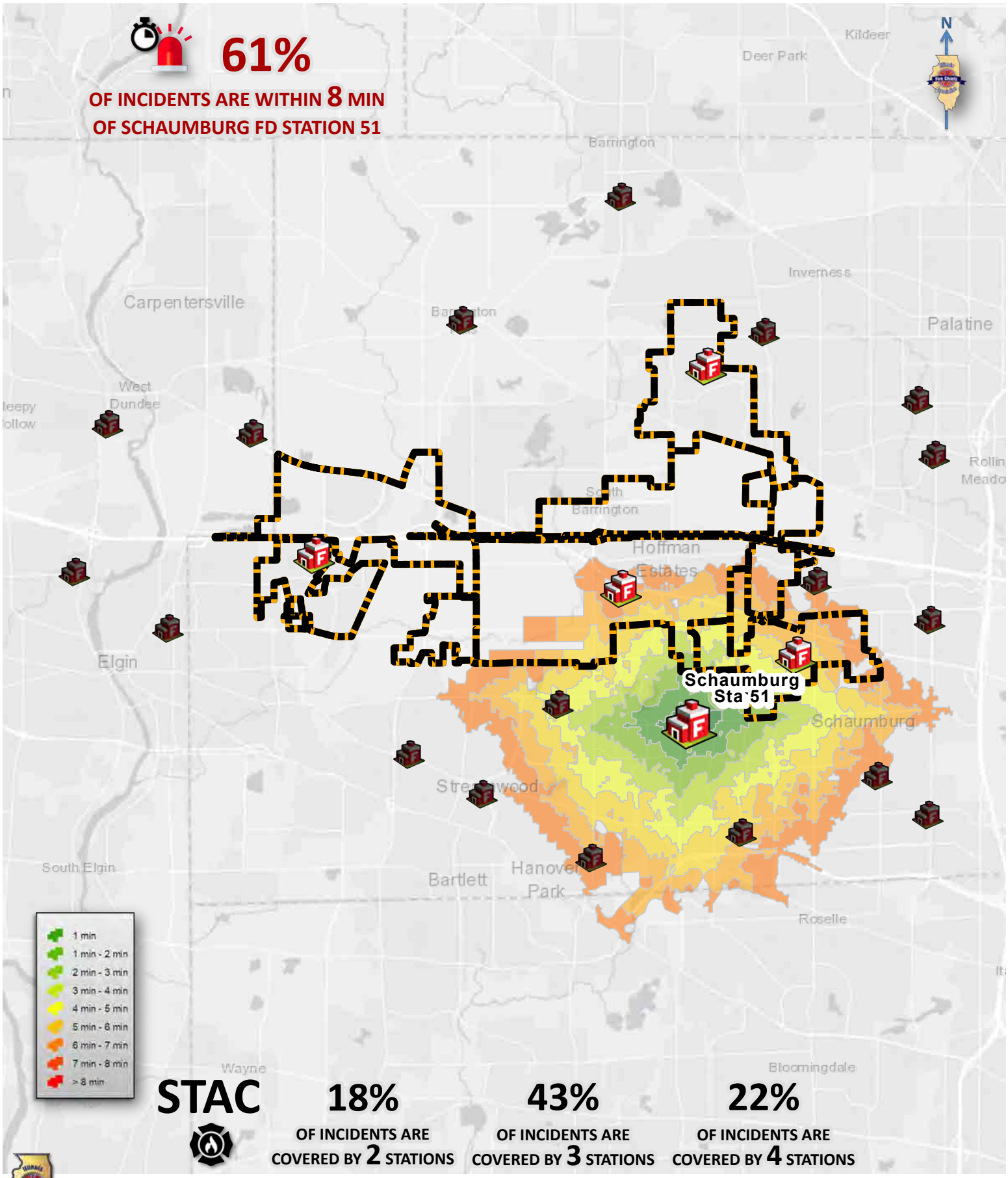
STAC

45% OF INCIDENTS ARE COVERED BY **2** STATIONS

34% OF INCIDENTS ARE COVERED BY **3** STATIONS

<1% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



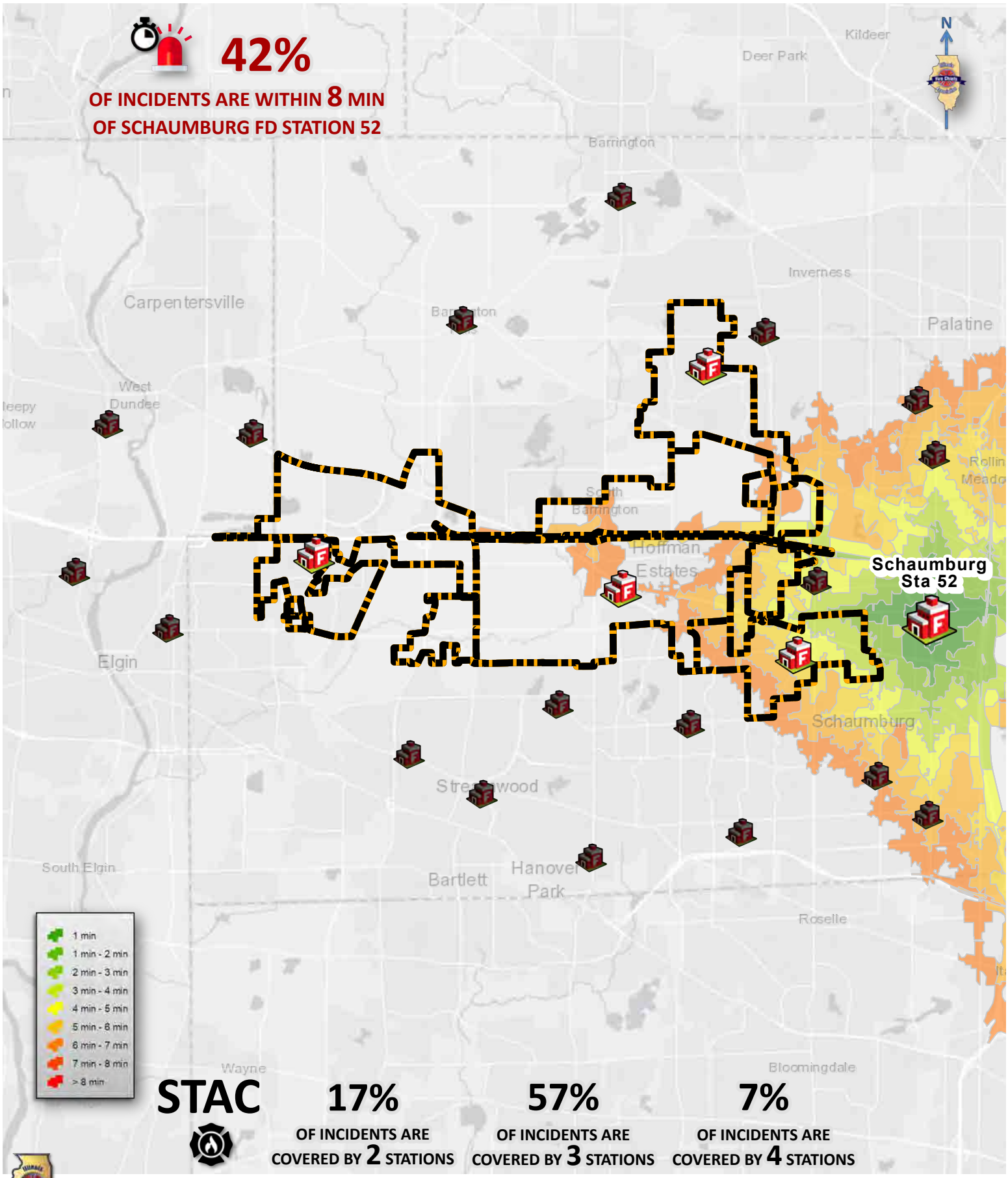
STAC

18% OF INCIDENTS ARE COVERED BY **2** STATIONS

43% OF INCIDENTS ARE COVERED BY **3** STATIONS

22% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



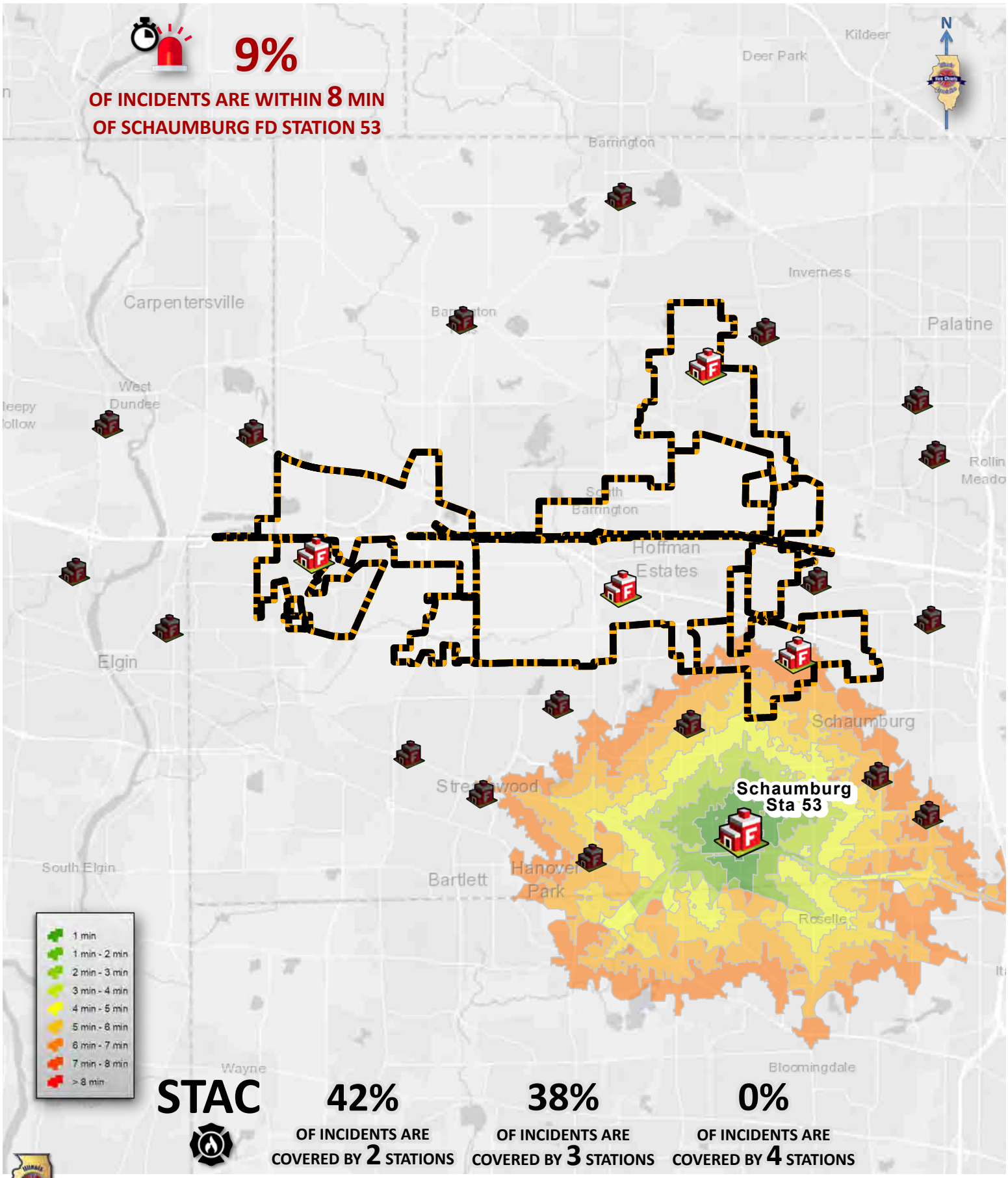
STAC

17% OF INCIDENTS ARE COVERED BY **2** STATIONS

57% OF INCIDENTS ARE COVERED BY **3** STATIONS

7% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



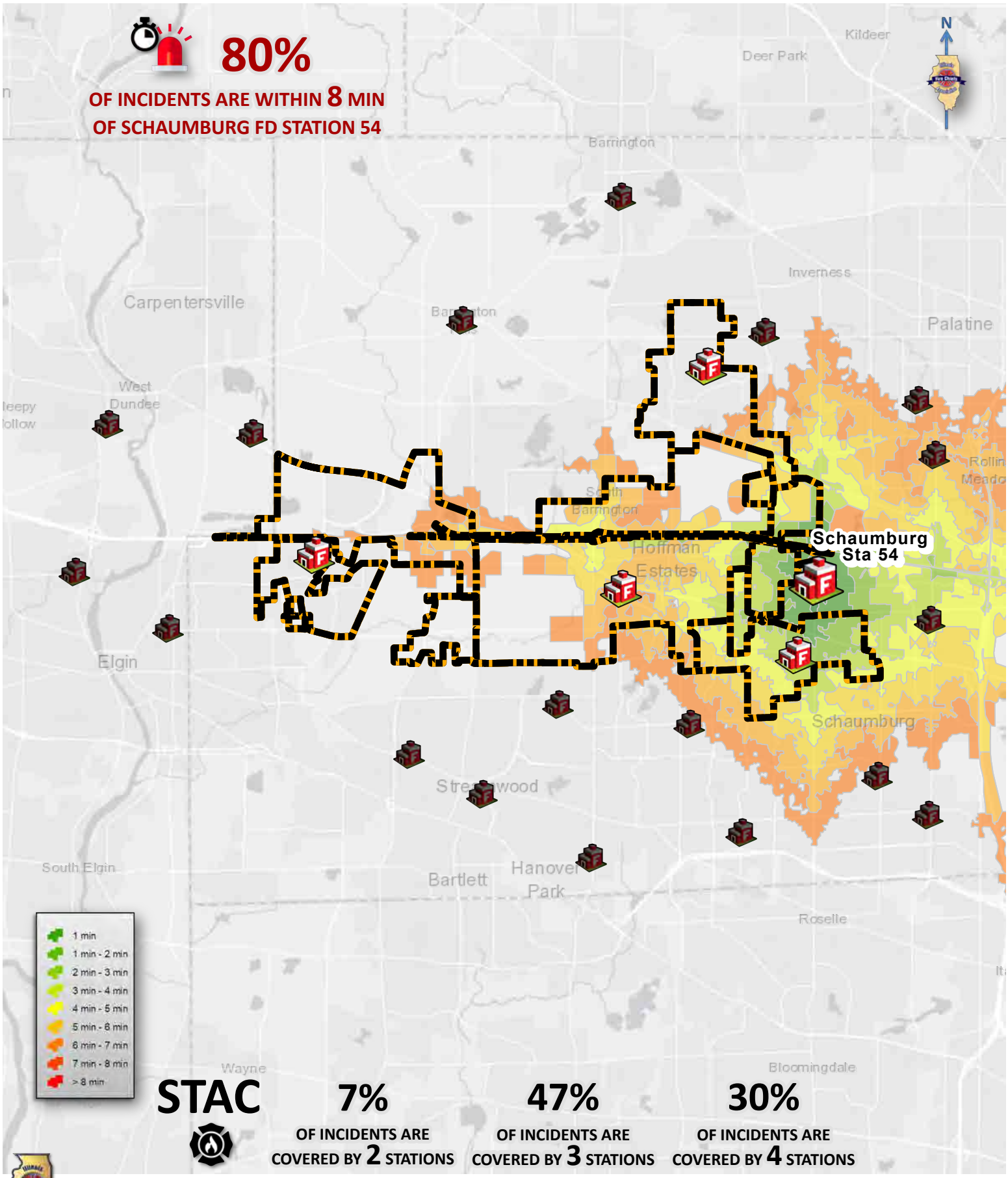
STAC

42% OF INCIDENTS ARE COVERED BY **2** STATIONS

38% OF INCIDENTS ARE COVERED BY **3** STATIONS

0% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



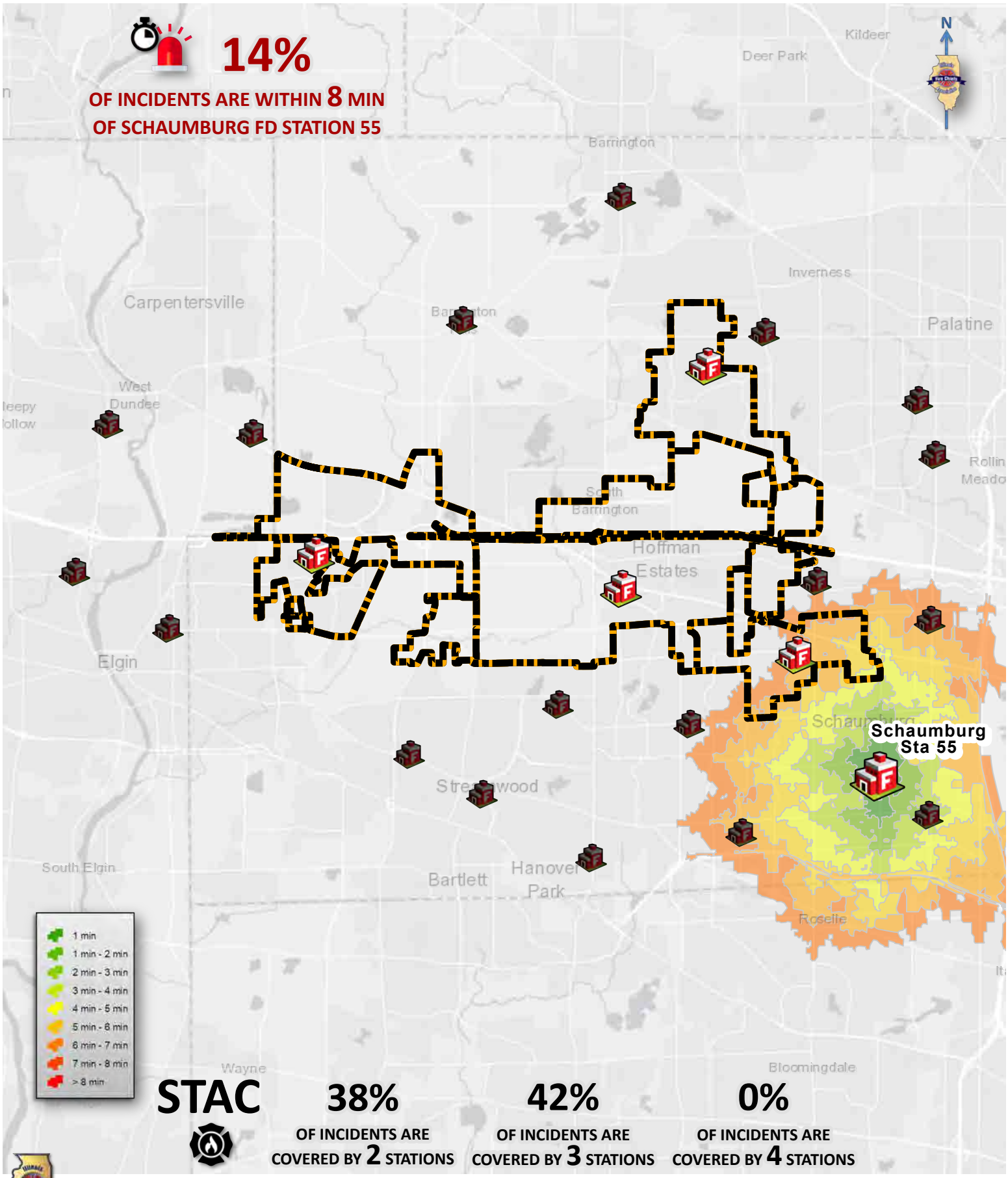
STAC

7% OF INCIDENTS ARE COVERED BY **2** STATIONS

47% OF INCIDENTS ARE COVERED BY **3** STATIONS

30% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



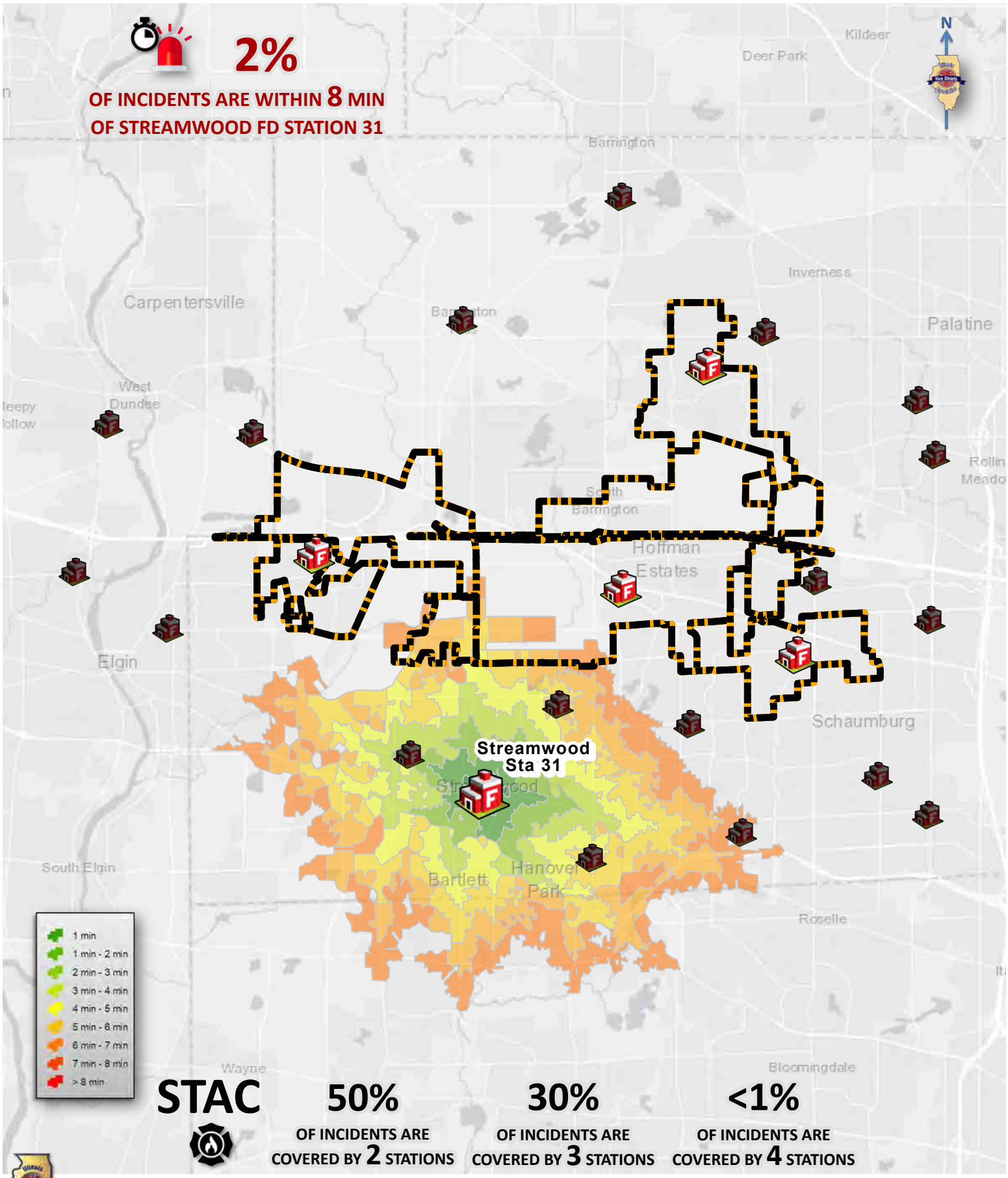
STAC

38% OF INCIDENTS ARE COVERED BY **2** STATIONS

42% OF INCIDENTS ARE COVERED BY **3** STATIONS

0% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



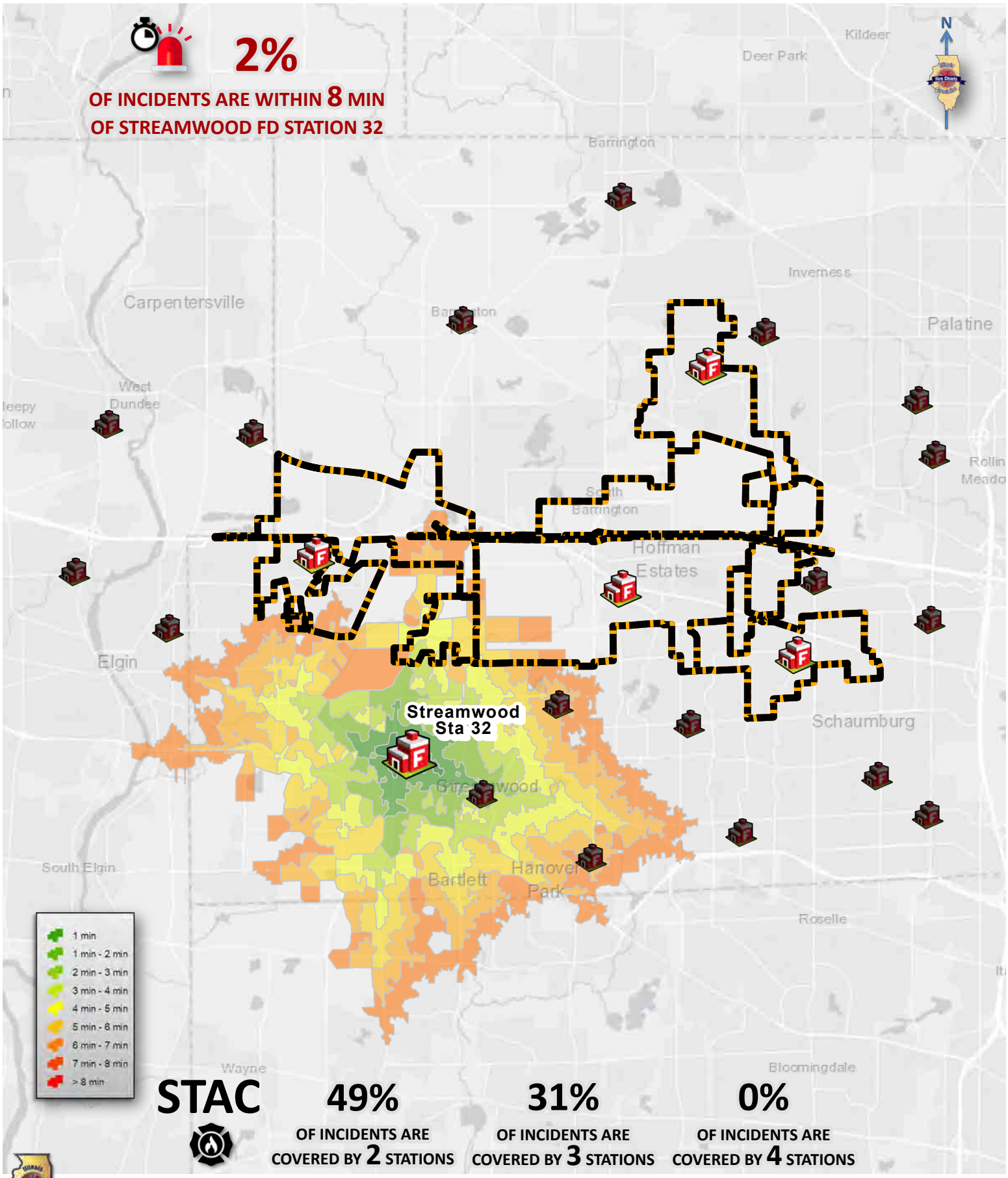
STAC

50% OF INCIDENTS ARE COVERED BY **2** STATIONS

30% OF INCIDENTS ARE COVERED BY **3** STATIONS

<1% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



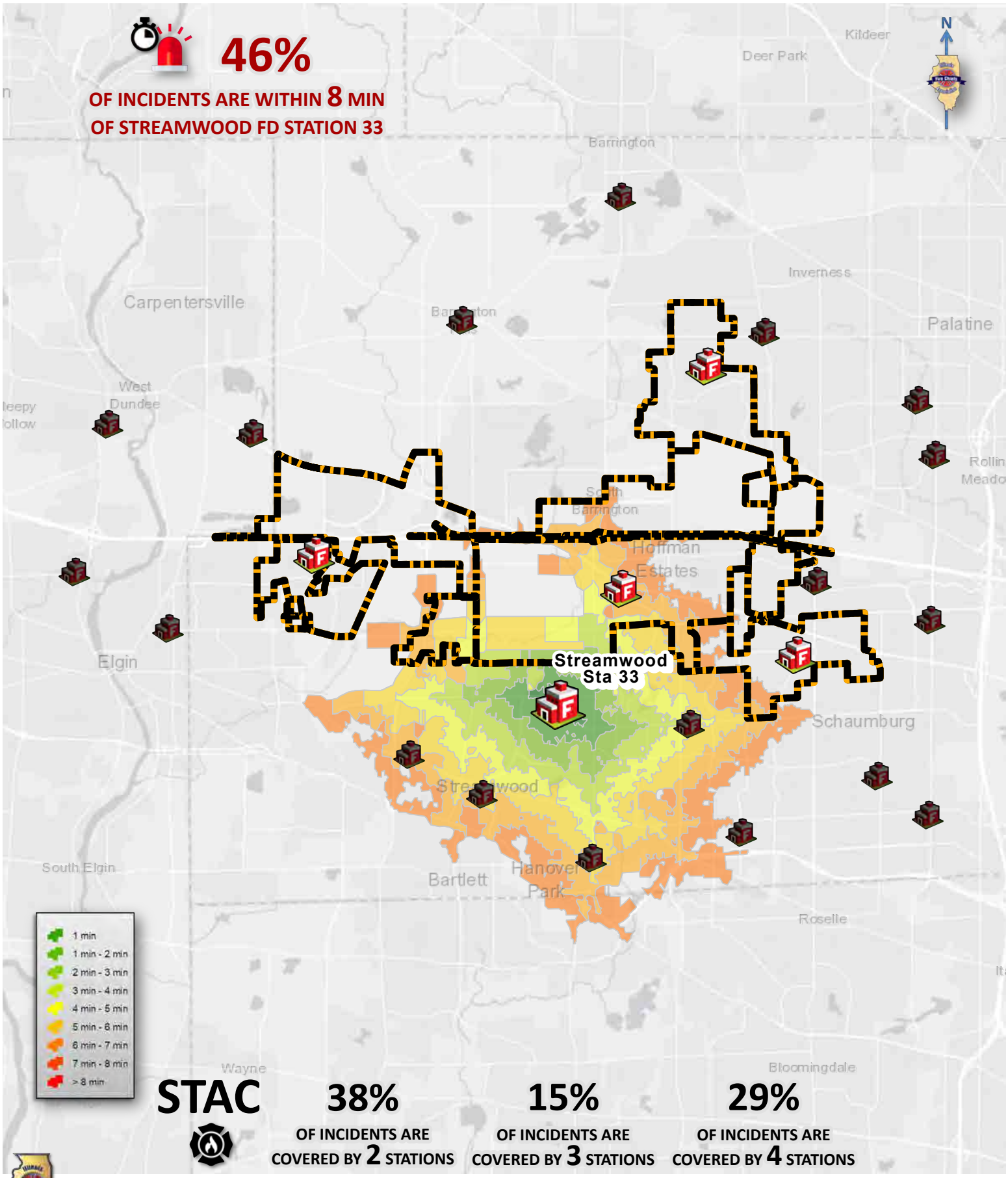
STAC

49% OF INCIDENTS ARE COVERED BY **2** STATIONS

31% OF INCIDENTS ARE COVERED BY **3** STATIONS

0% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



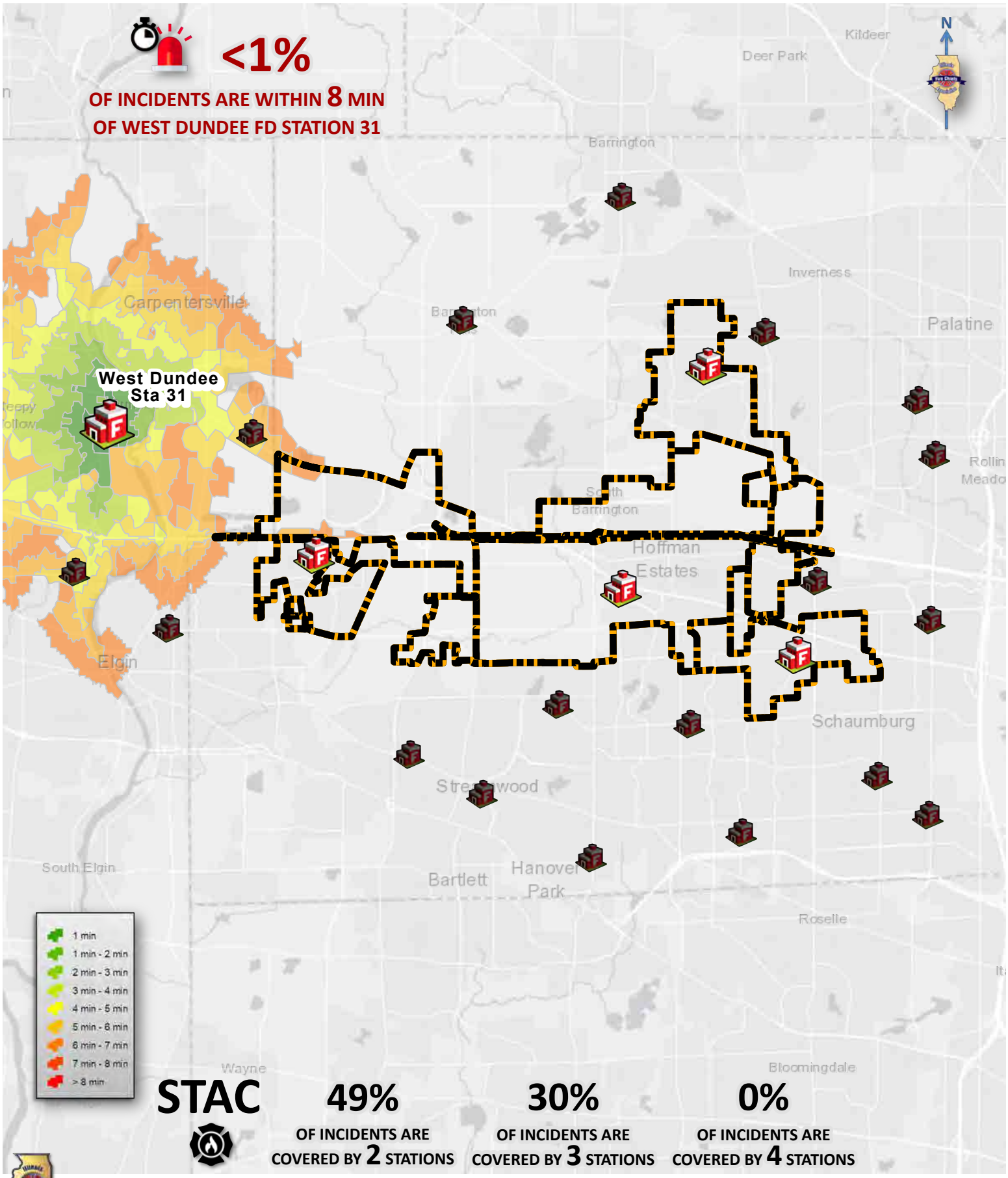
STAC

38% OF INCIDENTS ARE COVERED BY **2** STATIONS

15% OF INCIDENTS ARE COVERED BY **3** STATIONS

29% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS



STAC

49% OF INCIDENTS ARE COVERED BY **2** STATIONS

30% OF INCIDENTS ARE COVERED BY **3** STATIONS

0% OF INCIDENTS ARE COVERED BY **4** STATIONS

Map Layers: Esri, HERE, NPS, Esri, HERE, Garmin, USGS, EPA, NPS

Created By: Illinois Fire Chiefs Association
www.illinoisfirechiefs.org
Program Director
Dave Slivinski
(630) 201-6871
dslivinski@illinoisfirechiefs.org