Proposed Fire Station #2 Relocation

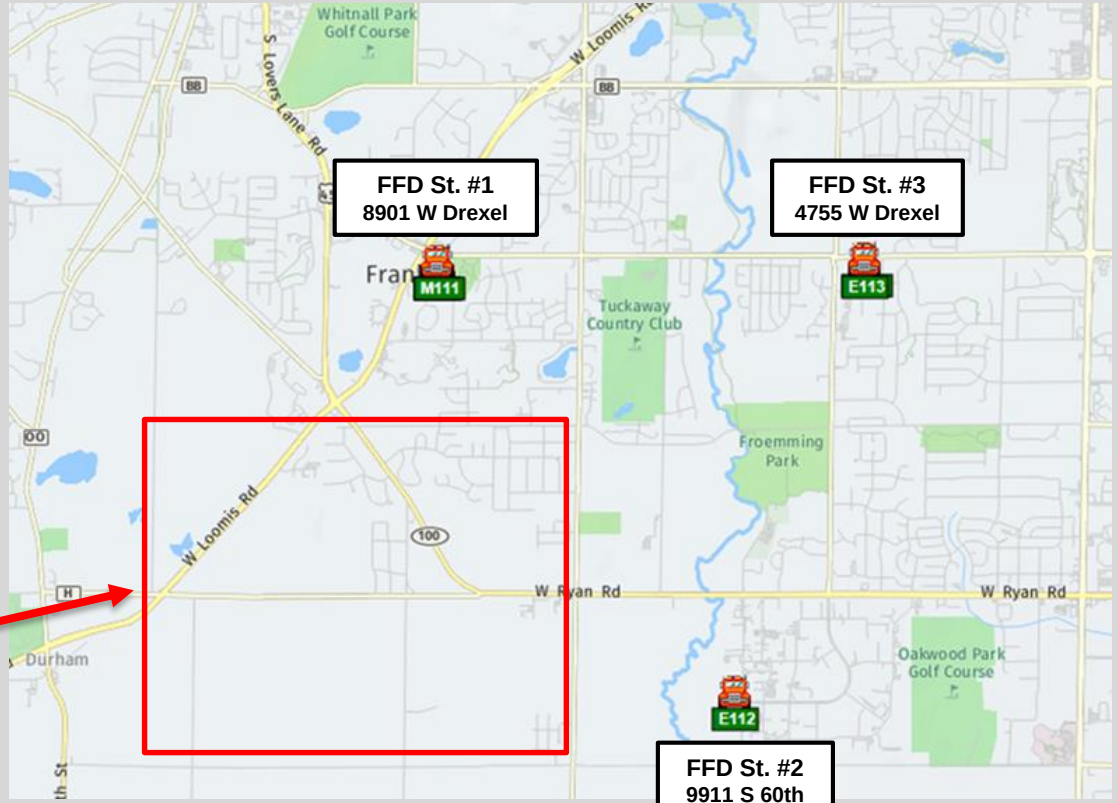
Franklin Fire Department

Video of this PowerPoint presentation to the Franklin Committee of the Whole at:
https://www.youtube.com/watch?v=W-E6q3Vc_XA&t=7s

Executive Summary

- The Franklin Fire Department provides primary Fire Response and High Quality Emergency Medical Services to the Citizens of Franklin from three fire stations.

- When Fire Station #2 was constructed in its present location (9911 S. 60th St., c.1999-2000), it was assumed that a fourth station serving the Southwestern quadrant would eventually be needed as development occurred in that area.



Executive Summary

- Current minimum staffing at Fire Station #2 is two Firefighter/Paramedics, which does not meet national standards for structural fire response. Initiatives are in play to increase staffing to four Firefighter/Paramedics to mirror our other stations, but will still require adding six new personnel.

- Significant residential and commercial development is now ongoing in the Southwest quadrant of Franklin.

- The relocation of Fire Station #2 to a more strategically placed location and increasing staffing to a minimum of four personnel would deliver substantial improvements to service delivery and meet the rapidly increasing demand for service in several areas of the city while being mindful of current fiscal conditions.

Benchmark Response Objectives

- The National Fire Protection Association (NFPA) establishes “Best Practice” standards for the Fire Service.

- NFPA 1710: ***Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*** establishes staffing and response time benchmark objectives.

NFPA 1710 Requirements

- An Initial Arriving Fire Suppression Company shall consist of a **minimum of four on-duty personnel**, deployed to provide for the arrival of an engine company **within a 240-second travel time to 90 percent of incidents.**

- Initial Arriving EMS Company shall be equipped with an automatic external defibrillator (AED) and **deployed to provide for arrival within 240 seconds to 90 percent of incidents**, and the arrival of advanced-level care providers within 480 seconds.

Note: NFPA Response time benchmark objectives are based on the length of time that an incipient fire takes to transition from room contents to involvement of the actual structural components of the building.

For EMS calls, this benchmark is based on the period of time that electrical activity remains in the heart during a cardiac arrest (during which time successful defibrillation and resuscitation are more likely).

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Note: If data can help to predict the locations and occupancy types that contribute to the majority of emergency response call volume, a fire department can use that data to make better decisions on fire station location and staffing deployment in order to set itself up for greater success in meeting the 240 seconds for 90% of responses benchmark.

WHAT WE KNOW...

EMS INCIDENTS

Approximately 80% of total call volume.

- **RESIDENTIAL** = 72%
- **BUSINESS & INDUSTRIAL** = 5%

NON-EMS INCIDENTS

Approximately 20% of total call volume.

- **RESIDENTIAL** = 55%
- **MANUFACTURING & INDUSTRIAL** = 5%

Residential development accounts for the vast majority of responses for both EMS and non-EMS (including fires, alarms sounding, motor vehicle accidents, etc.).

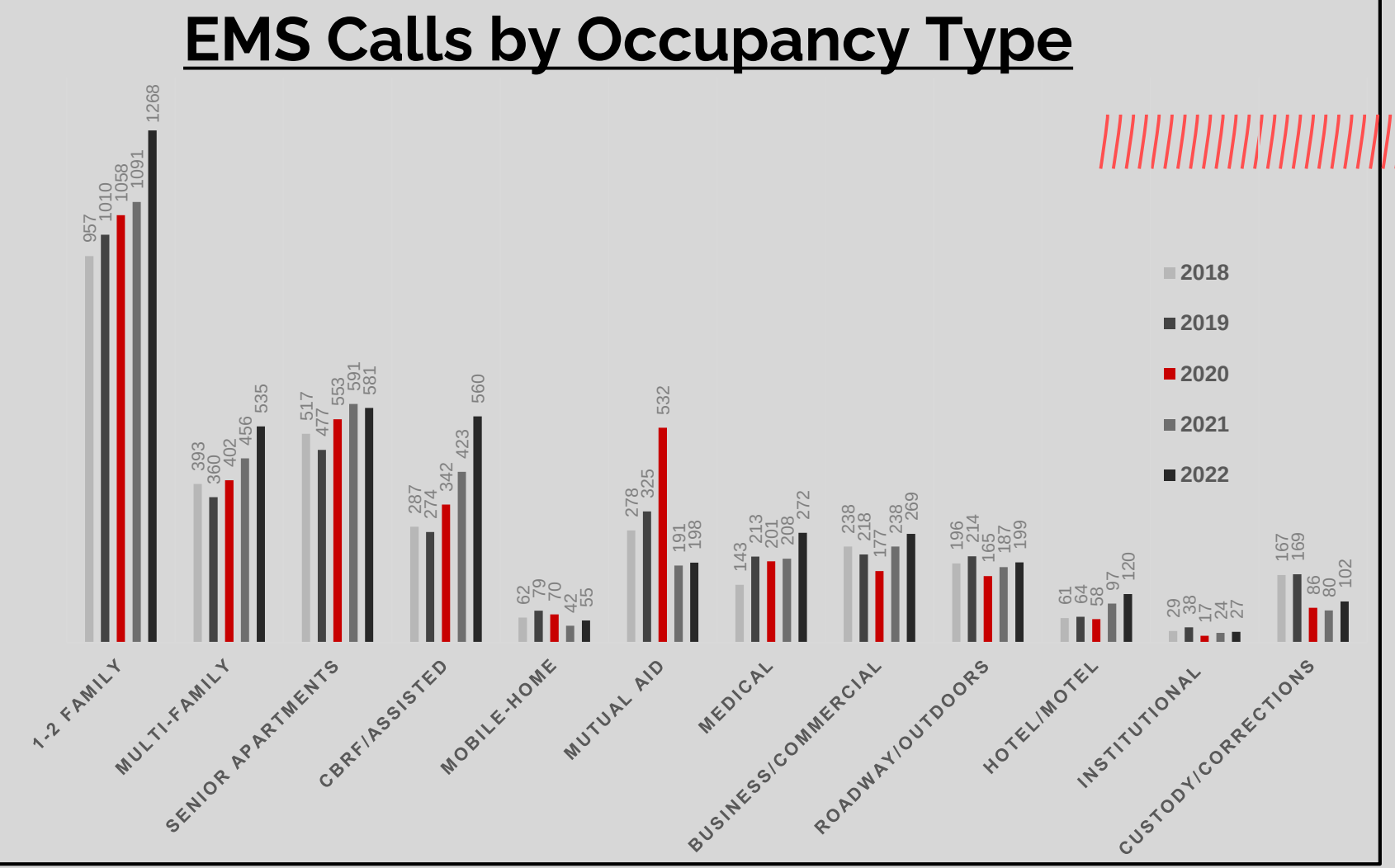
Critical Factors

- **Residential Development** is the primary driver of emergency and non-emergency Call-for-Service (CFS) volume.

- A **“Call-for-Service”** is any response; ranging from service calls and lift-assists, to large structure fires, technical rescues, complex vehicle extrications, or dive/water rescue.

- ***Location and density of Residential Development is the biggest predictor of future call volume and location, and should be the primary consideration in determining fire station locations.***

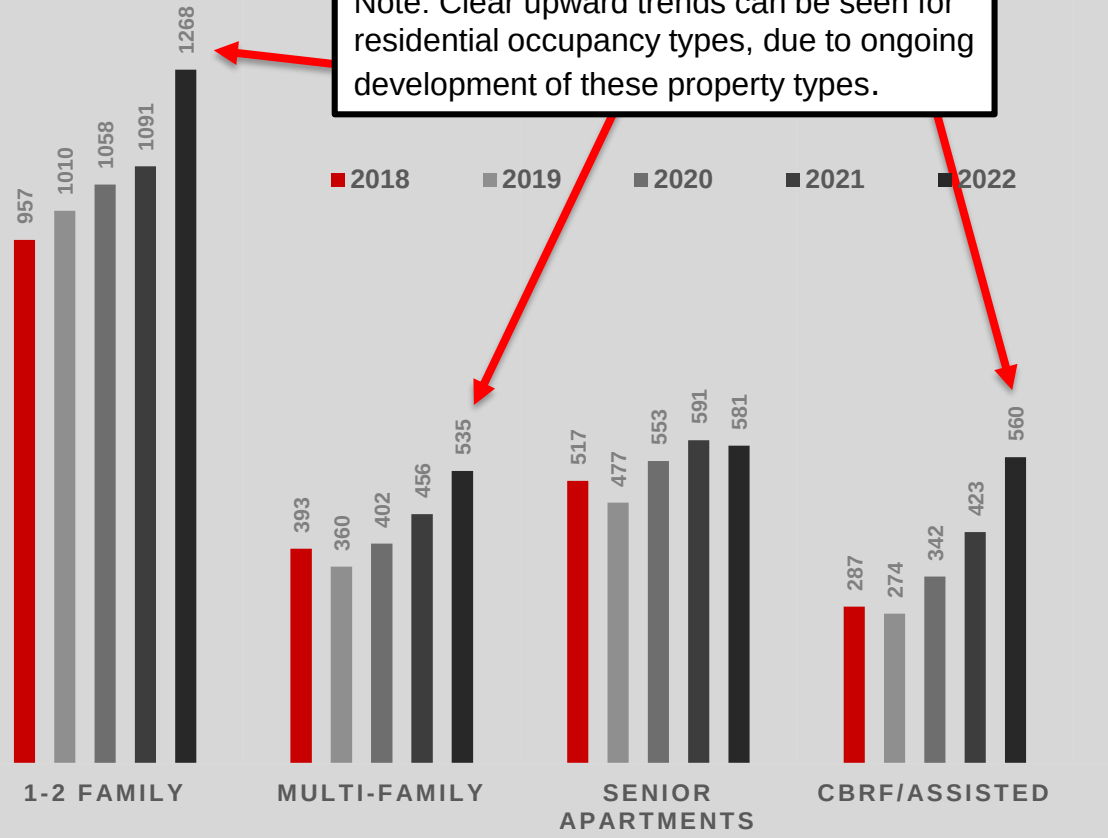
EMS Calls by Occupancy Type



Residential CFS (EMS)

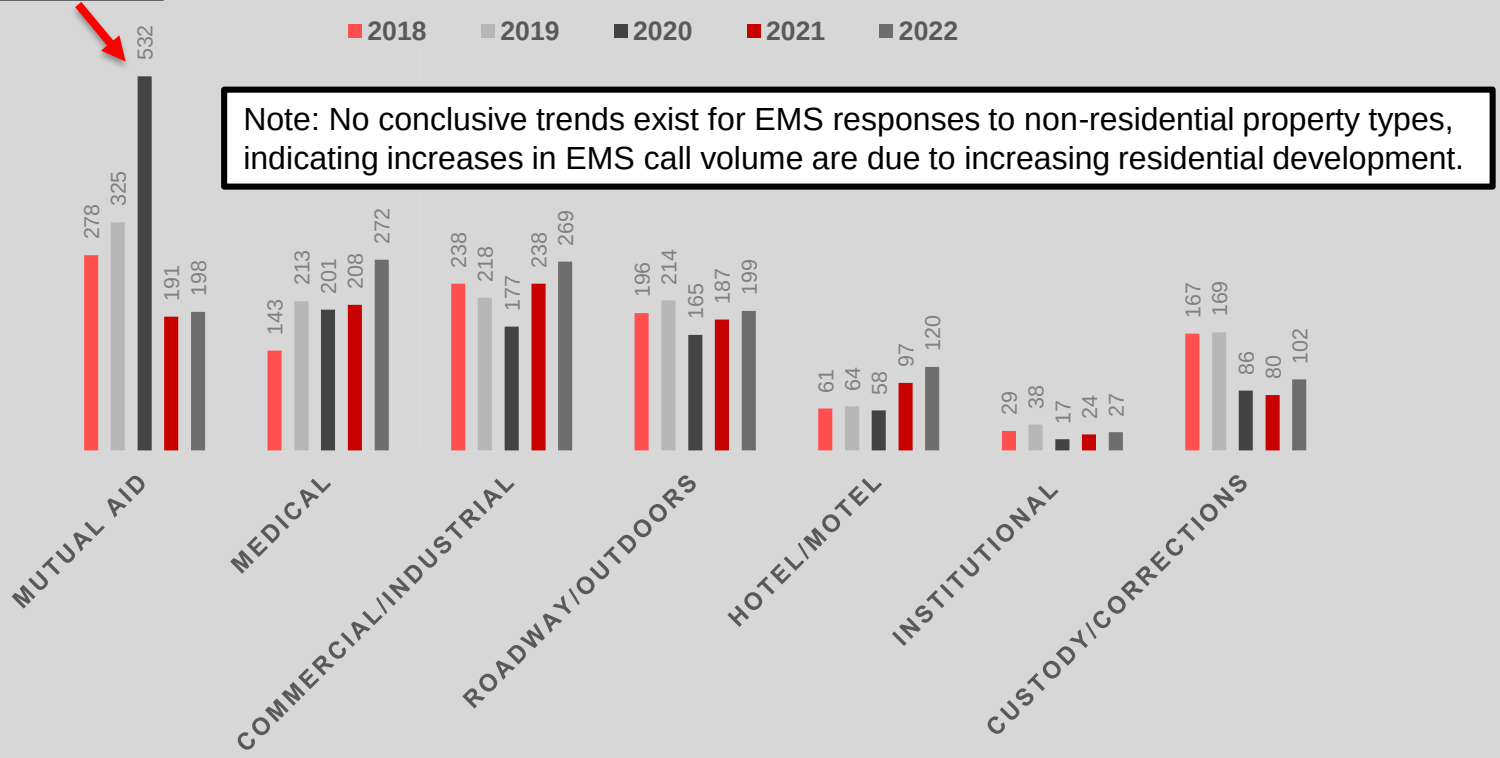
Note: Clear upward trends can be seen for residential occupancy types, due to ongoing development of these property types.

Though also residential, similar trends do not exist for mobile homes, due to no additional ongoing development of new mobile home parks.



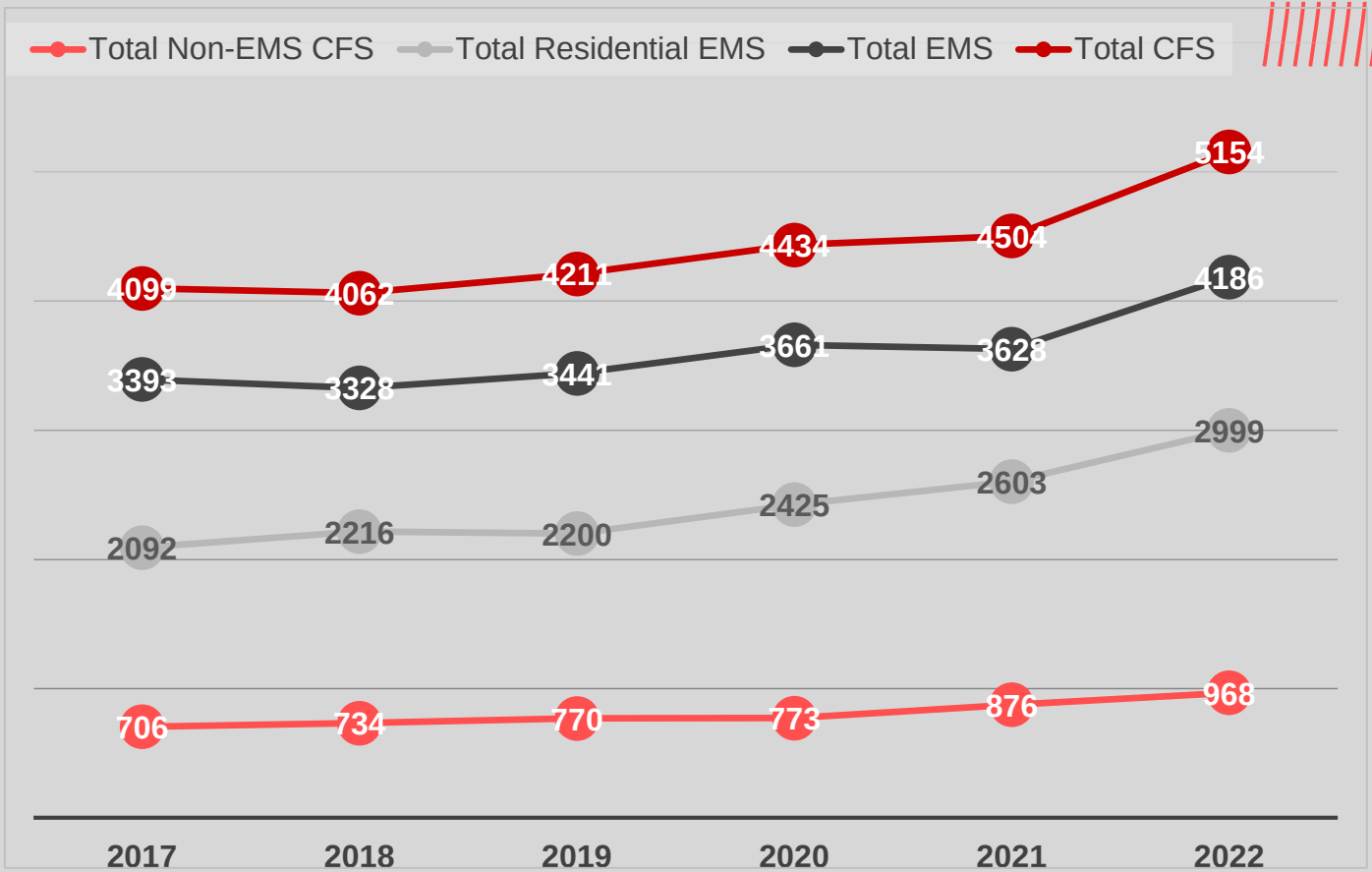
Non-Residential CFS (EMS)

CoVid 19

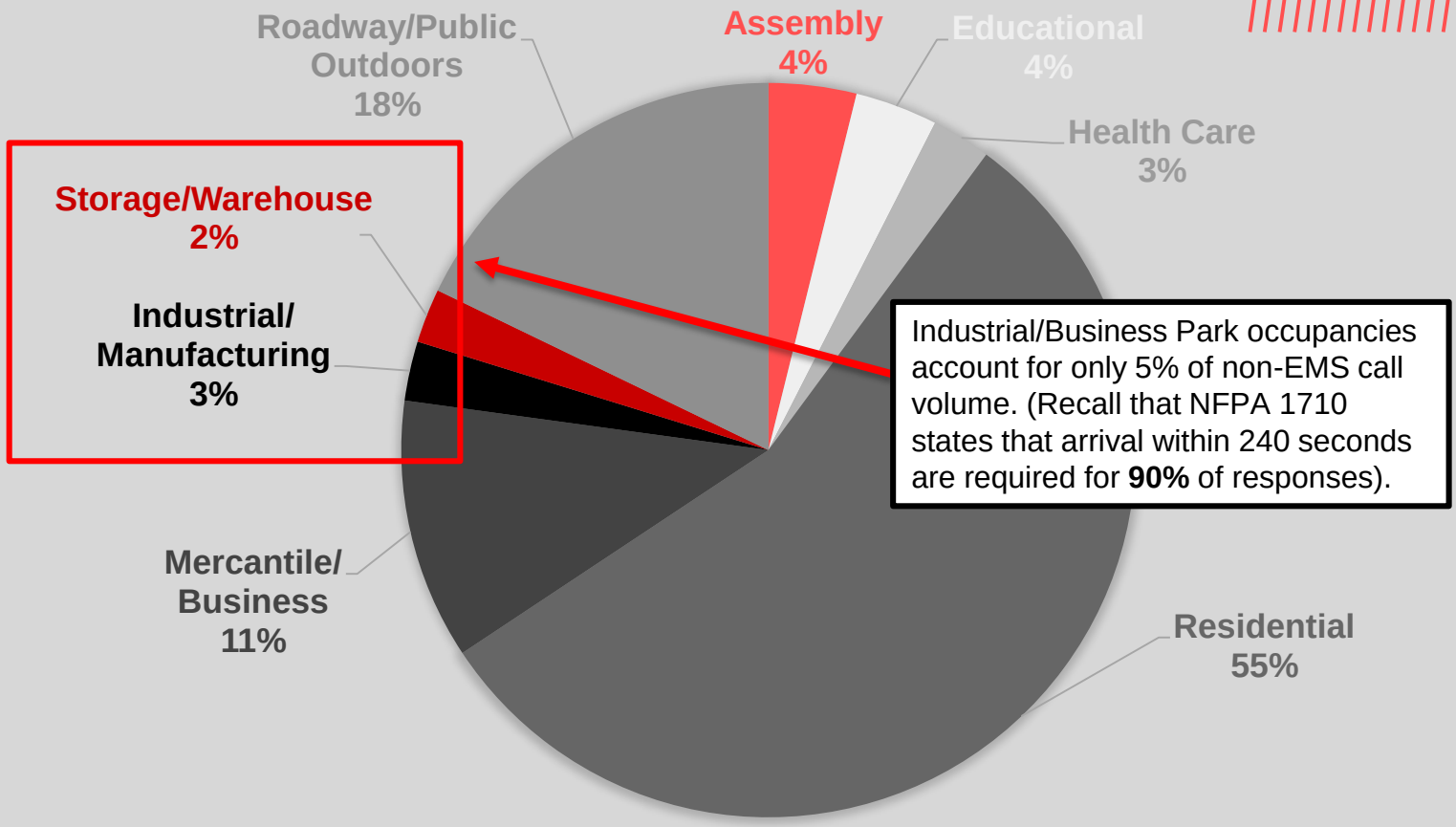


Note: No conclusive trends exist for EMS responses to non-residential property types, indicating increases in EMS call volume are due to increasing residential development.

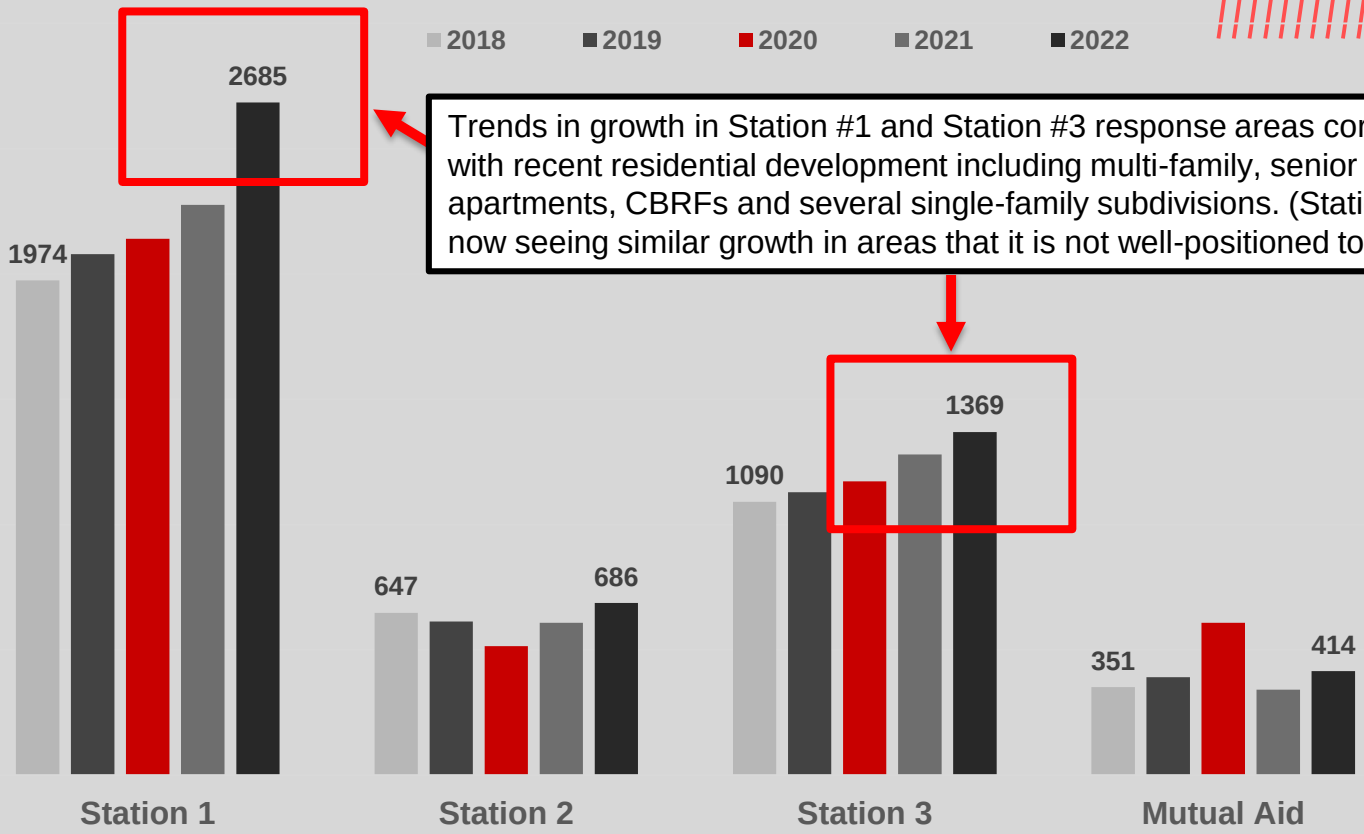
CFS Summary


Total Non-EMS CFS
Total Residential EMS
Total EMS
Total CFS
4099
4062
4211
4434
4504
5154
3393
3328
3441
3661
3628
4186
2092
2216
2200
2425
2603
2999
706
734
770
773
876
968
2017
2018
2019
2020
2021
2022

Non-EMS CFS Volume (Occupancy Type)



CFS Volume by Station Area



Trends in growth in Station #1 and Station #3 response areas correlate with recent residential development including multi-family, senior apartments, CBRFs and several single-family subdivisions. (Station #2 is now seeing similar growth in areas that it is not well-positioned to serve.)

FUTURE CHALLENGES

Significant Current & Future Residential Development

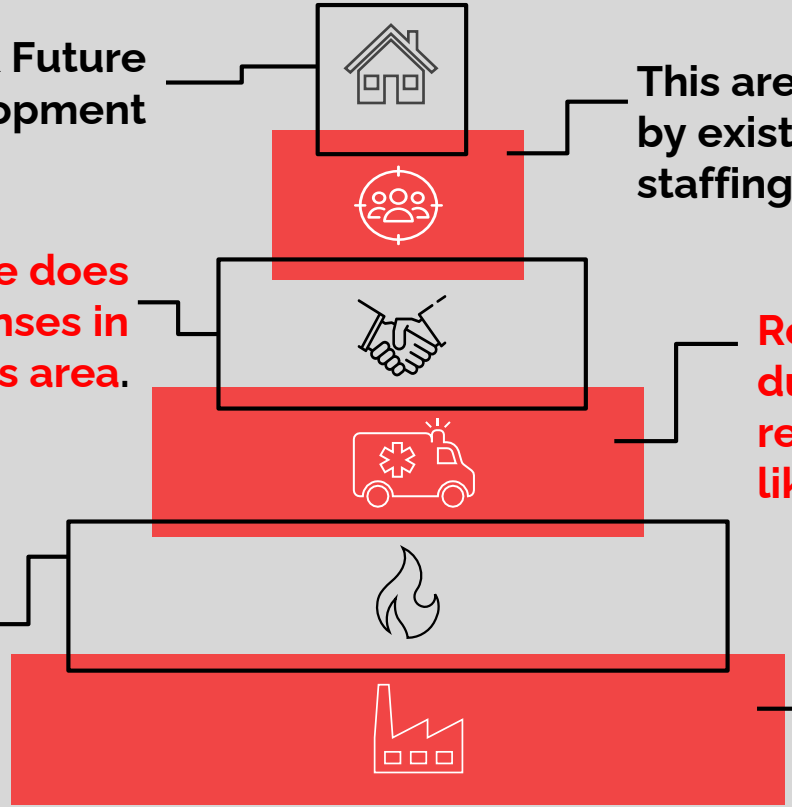
This area is not well served by existing fire stations and staffing levels.

Mutual Aid response does not offset FFD responses in this area.

Response times for first-due units and effective response force (ERF) are likely to be sub-par.

Newer homes & modern synthetic furnishings present significant challenges for fire attack.

Significant industrial development .



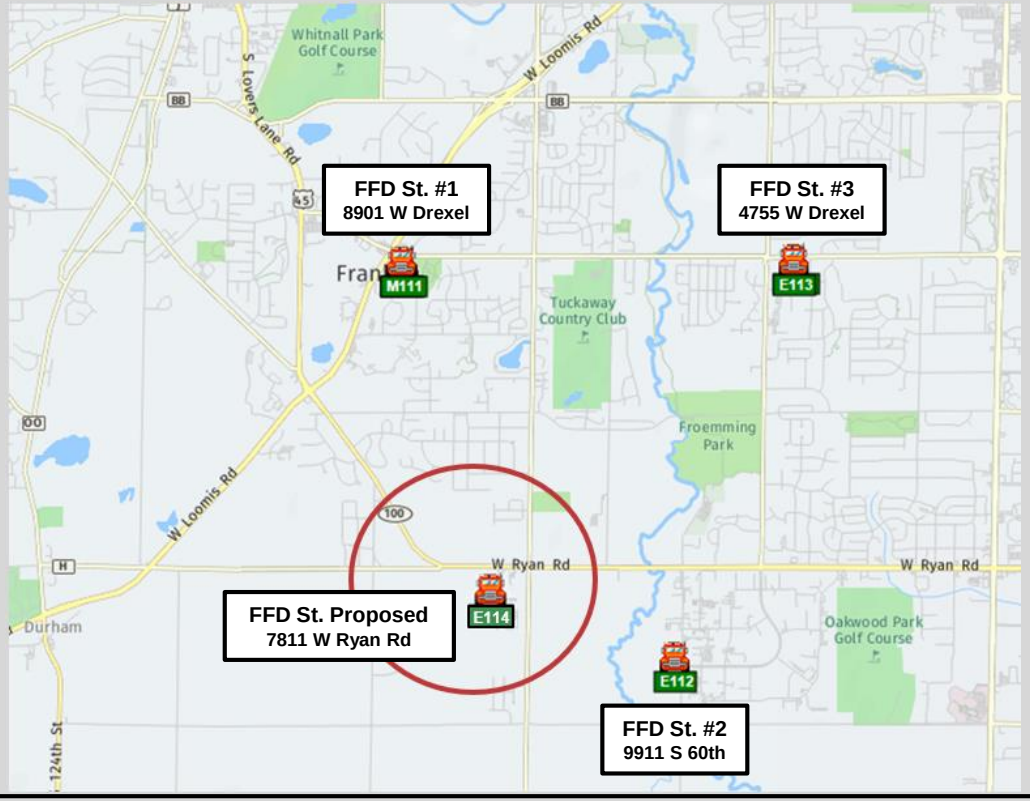
Critical Factor: Lightweight Construction

- **Residential Development in the Southwest is primarily one and two-family occupancies. Modern one and two-family homes are:**
  - Not protected by sprinkler and fire alarm systems.
  - Tend to be open-concept and utilize lightweight construction materials, contributing to rapid fire spread and structural failure.
  - Furnished with greater quantities of synthetic materials and finishes, contributing to greater heat release and more toxic smoke conditions.

Note: Video demonstration of combustion characteristics of modern versus legacy furnishings can be found at: https://youtu.be/87hAnxuh1g8

Option #1

- Construct and Staff a fourth fire station in the Southwest quadrant of the city.



Four-Station Response Model

Advantages

- Larger and inherently more capable, adaptable, and effective Fire Department.
- Better supports existing and future emergency response coverage, and enhances the backup response of existing fire department call volume.
- 25% increase in response capacity for back-to-back calls and large incidents).

Disadvantages

- Additional $2.2-$2.5 Million in annual personnel costs associated with minimum staffing of 17 per day (4 stations) versus 13 per day (3 stations). An additional 16-18 new Firefighter/Paramedics would need to be hired.
- Additional initial capital cost of approximately $1.2 - $1.8 for additional heavy fire apparatus and ambulance.
- 25% increase in annual overhead and operating costs for equipment, supplies, and utilities.

Four-Station Response Model Questions & Uncertainties…

- Availability of suitable real estate parcel at a reasonable cost?
- Ability to hire a sufficient qualified workforce to staff four stations in the present employment market?
- Would staffing four stations jeopardize future staffing increases at Station #1?

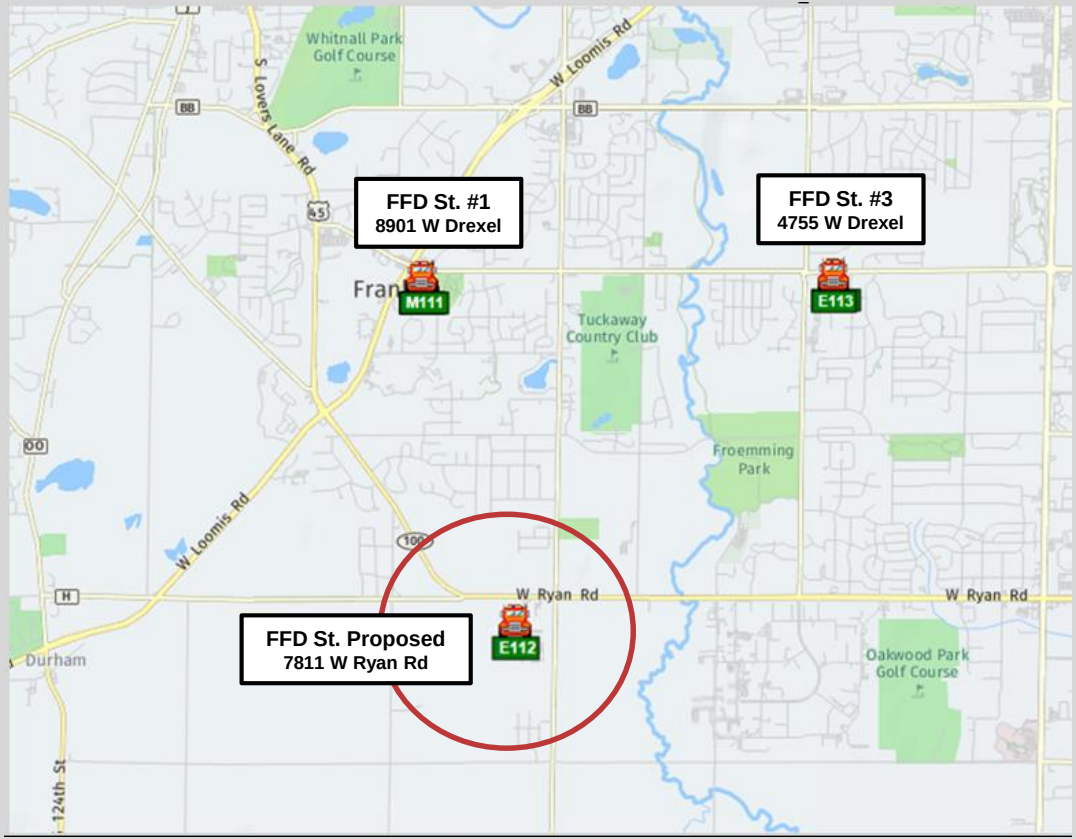
Note: While there is an urgent need to provide fire and EMS protection to the SW quadrant, Station #1 remains the busiest station and staffing will need to be added to address planned residential and commercial development that is already in the approval process.

Option #2

- **Relocate Station #2 building and staffing to a more advantageous geographic location, allowing the City to maintain a three-station response model, possibly for decades into the future.**
  - FD administration's initial assessment is that relocation to the area of 76th and Ryan Rd. would allow better coverage of the majority of the southern 1/3 of the city, due to immediate N-S and E-W access on larger thoroughfares.
  - Supplementing existing staffing with an additional six new Firefighter/Paramedics over the next two years would staff the new station with four personnel daily. There is a potential to offset startup costs over several years through FEMA SAFER Grant funding. Utilizing "Flex-Schedule" positions would largely offset existing annual overtime expenditures.
  - $7M-8M in design and construction expenditure. The land currently being considered is already City-owned (current DPW property).

Option#2

- Optimized Three-Station Response Model



Optimized Three-Station Response Model

Advantages

- Would allow Station #2 to meet industry emergency time response standards to the higher-density residential development occurring to the southwest, while not compromising response times to existing coverage area.
- Maximizes the number of residential properties that can be accessed within four minutes (NFPA industry standard) from the proposed location and all City fire stations.
- Largely supported with existing current staffing level, supplemented by flex-schedule employees, the cost of which significantly offsets current annual overtime expenditure.
- **In-depth GIS data analysis supports the efficacy of the Station Relocation Option.**

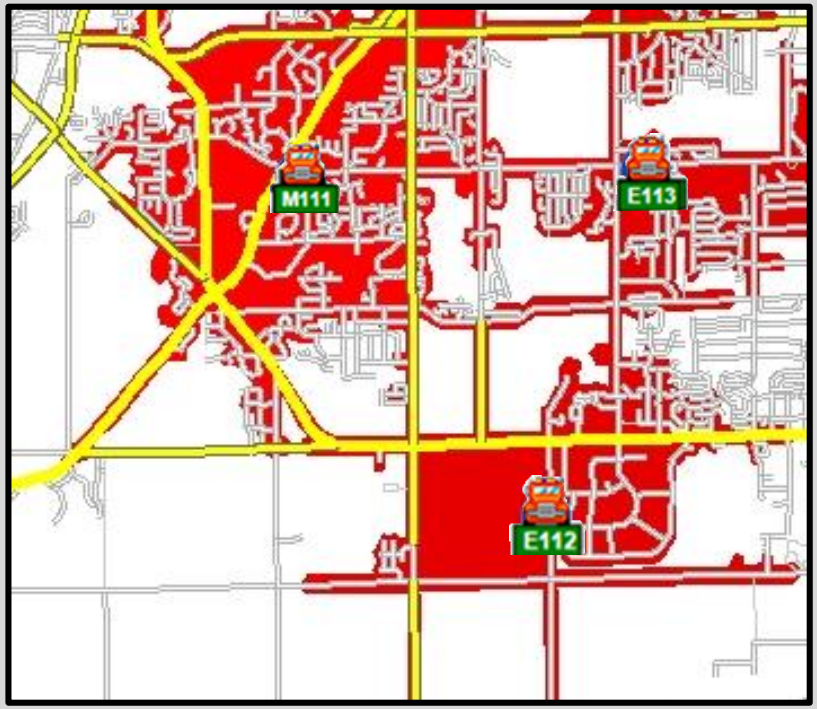
Disadvantages

- Does not expand existing response capacity or capability for either fire or EMS response.
  - However, additional resources could be put in service depending on existing daily staffing fluctuations if not committing to staffing a fourth station.
- Marginally longer response times to the southeast corner of the city are possible (though likely still within objective benchmarks when units are in quarters and available).

Note: Development in the southeast is largely commercial, with combustion-resistant construction materials and state of the art fire protection systems.

4-Minute Analysis

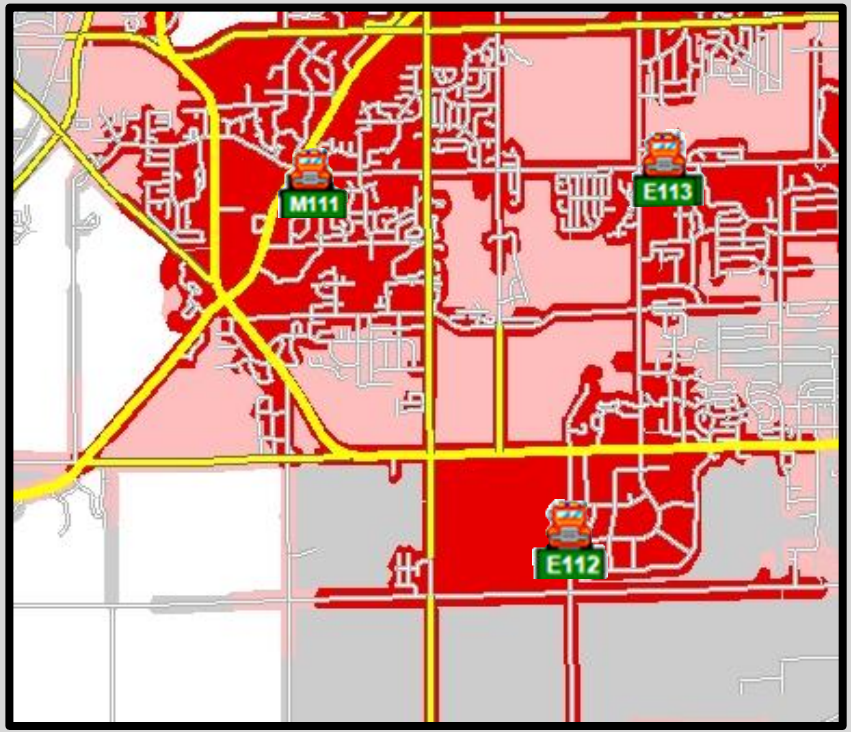
Current Station #2 VS Proposed Station

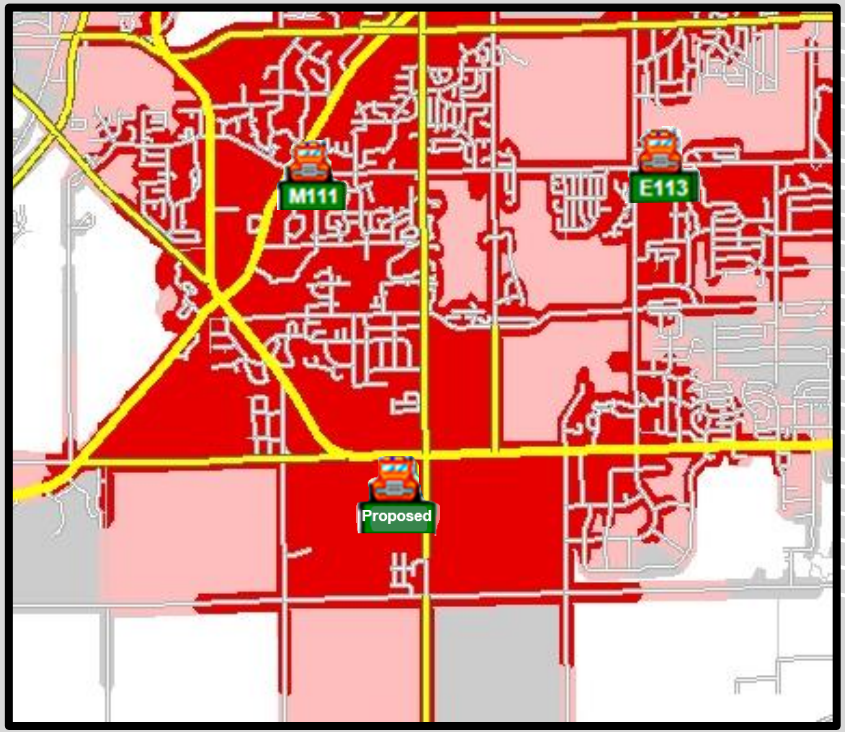


Note: Fire station travel time maps were created using the City of Franklin ESRI GIS, accounting not only for travel distance, but posted speed limits, traffic signals, and road conditions such as curves, etc. More information on the use of ESRI GIS applications in locating fire stations and optimizing response protocols can be found at: https://www.esri.com/~/media/files/pdfs/library/whitepapers/pdfs/gis-for-fire.pdf

4-Minute, 5-Minute, and 6-minute Analysis

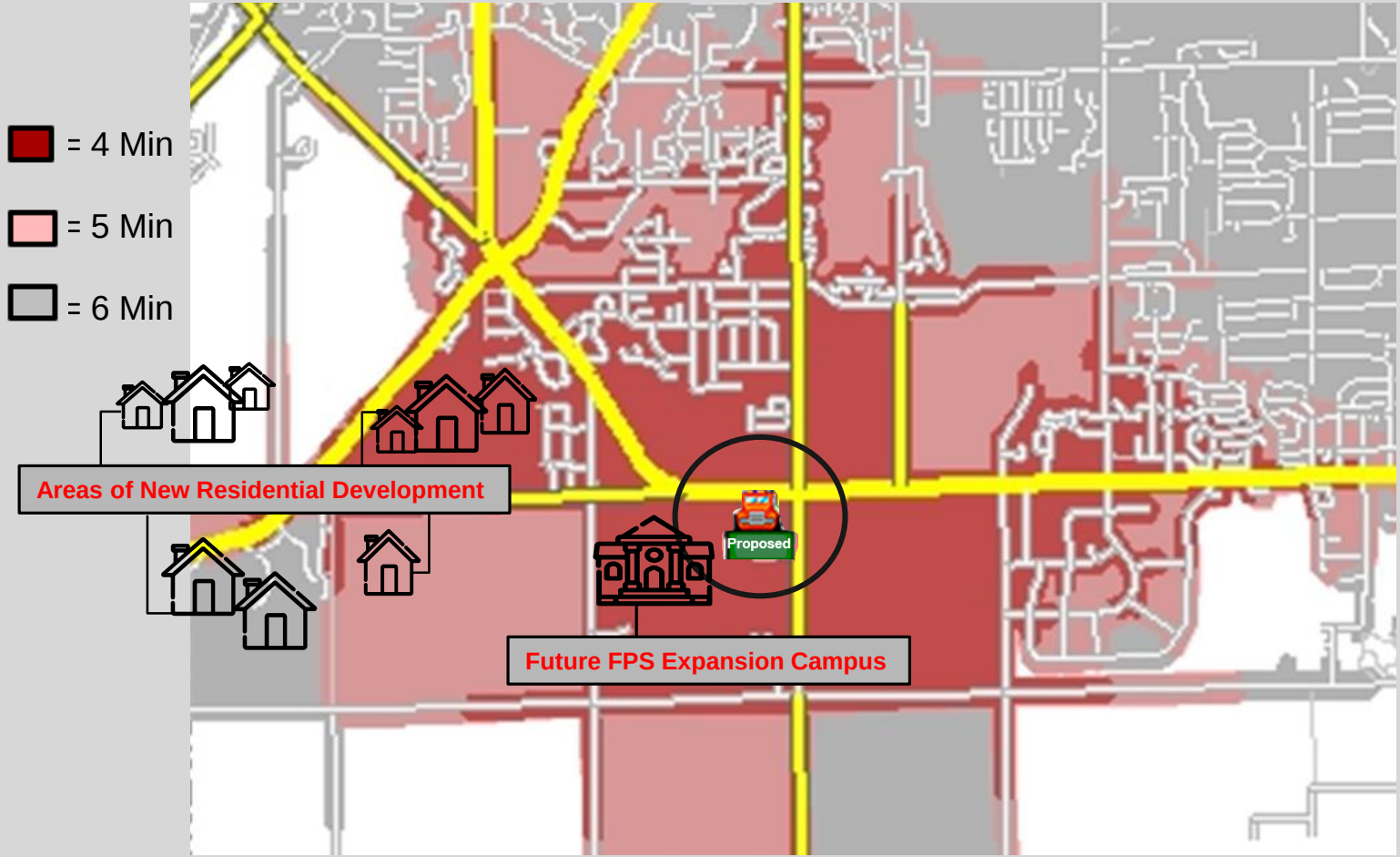
Current Station #2 VS Proposed Station





= 4 Minutes = 5 Minutes = 6 Minutes

Proposed Station #2 Drive Time Analysis



Station #2 - 4-minute Drive Time Analysis

= Station #2

= Proposed Station

= Overlap of Both

Station #2 - 4-minute Drive Time Analysis

= Station #2

= Proposed Station

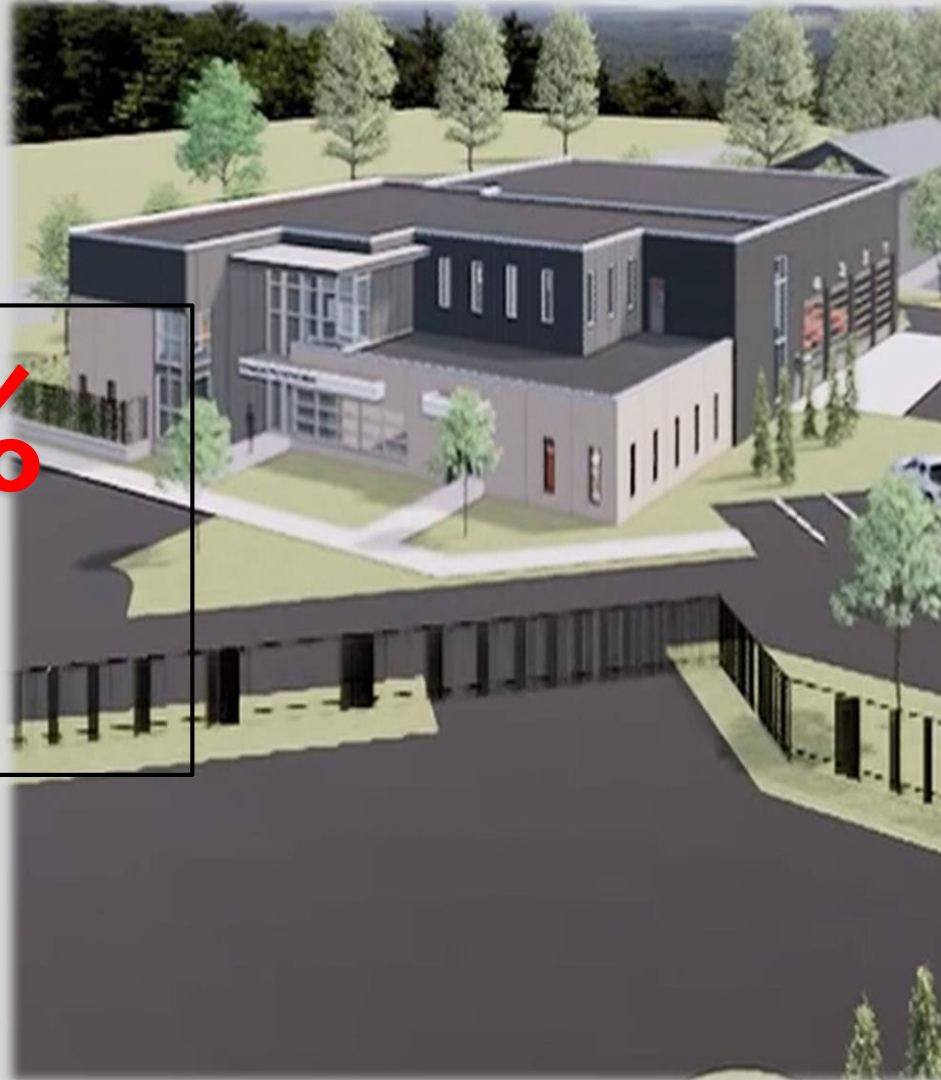
= Overlap of Both

Developable areas that will be within the 4-minute response standard from the **proposed station** as roads are constructed.

Areas served by **current station** that are undevelopable (Wetland/Floodplain)

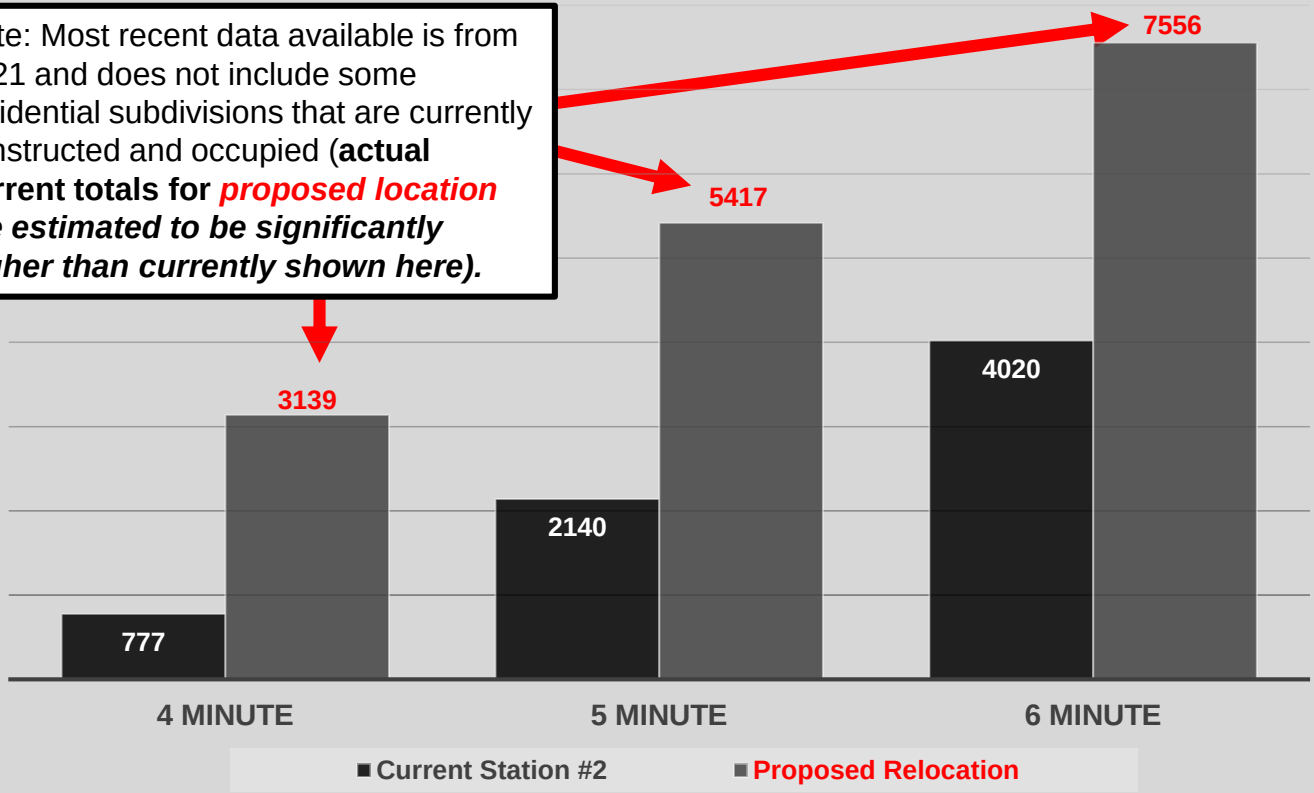
Over 300%

Increase of residential occupancies accessible within four minutes with proposed relocation.



Comparison of Number of Residential Structures within Drivetimes

Note: Most recent data available is from 2021 and does not include some residential subdivisions that are currently constructed and occupied (**actual current totals for *proposed location* are estimated to be significantly higher than currently shown here).**



Conclusion:

- Analysis of Data suggests that the City could be effectively served by three fire stations well into the future if Station #2's location is optimized **and *staffed appropriately*.**

- **Location, Location, Location…**

  - Immediate access to all directions of travel any direction on major arterials.

  - While we can't predict where any specific development will occur, we can foresee where the best access routes will be.

- Savings of $2.2 – $2.5 Million **annually** over a four-station response model at current personnel cost.

Questions?

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