



# Unified Government Clerk's Office

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## NOTICE OF SPECIAL MEETING

To the Members of the Governing Body of the  
Unified Government of Wyandotte County/Kansas City, Kansas:

You are hereby notified that a Special Meeting of the Unified Government of Wyandotte County/Kansas City, Kansas, is scheduled to be conducted in a hybrid format on Thursday, May 1, 2025, at 5:00 PM, for a presentation of the Kansas City Kansas Fire Department Master Plan from IAFF Local 64 in the Commission Chambers, Lobby Level of the Municipal Office Building, 701 N. 7<sup>th</sup> Street, Kansas City, Kansas. **A copy of the presentation is attached to this notice.**

The public will be able to observe or listen to the special session live on YouTube or UGTV, or through ZOOM; information is below. The public may also view the special session from the fifth-floor conference room of the Municipal Office Building, 701 N. 7<sup>th</sup> Street, Kansas City, Kansas.

Please click the link below to join the webinar:

<https://wycokck.zoom.us/j/82683547747>

**Webinar ID: 826 8354 7747**

Or One tap mobile:

+12532158782,81423989537# US (Tacoma)

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Or Telephone:

Dial (for higher quality, dial a number based on your current location):

+1 253 205 0468 US; +1 253 215 8782 US (Tacoma); +1 346 248 7799 US (Houston)

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+1 309 205 3325 US

+1 312 626 6799 US (Chicago)

+1 360 209 5623 US

+1 386 347 5053 US

+1 507 473 4847 US

+1 564 217 2000 US

+1 646 558 8656 US (New York)

+1 646 931 3860 US

+1 689 278 1000 US

+1 301 715 8592 US (Washington DC)

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877 853 5257 US Toll-Free

888 475 4499 US Toll-Free

International numbers available:

<https://wycokck.zoom.us/j/k8NYSQTW>

Dated this 29th day of April 2025.

# IAFF Local 64 Master Plan Presentation

May 1, 2025

**"Protecting Public Safety: Staffing and Station  
Coverage"**

A comprehensive analysis and strategic  
recommendations to ensure optimal fire department  
operations for public safety and firefighter welfare.





# Introduction



## Service Delivery

Optimize Fire and EMS response capabilities across Kansas City.



## Standards Compliance

Achieve NFPA 1710 standards and implement fire industry science.



## Station Planning

Address current station location selection and staffing challenges.



## Recommendations

Present Local 64's strategic staffing and station distribution plan.







# Background & Authority

## Service Analysis

Comprehensive evaluation of current Fire/EMS service delivery performance.

## Strategic Planning

Committee development of KCKFD Master Plan with stakeholder input.

## Commission Presentation

Formal submission of findings for consideration and potential adoption.

## Alternative Options

Opportunity for stakeholders to present alternative strategies and solutions.





# *NFPA 1710: Organization and Deployment of Fire Suppression Operations, EMS, and Special Operations in Career Fire Departments*

## *National Standards*

MINIMUM STAFFING: Four firefighters per apparatus required for effective operations and safety.

RESPONSE TIMES: 240 seconds (4 minute) travel time requirements to ensure prompt emergency response. (90% - sets the floor)

ALARM COMPLEMENT: Required number of personnel for different emergency incident types (low, medium, high hazard).

UNDERSTAFFING IMPACTS: Significant delays in critical emergency operations and increased risks.



# National Institute of Standards and Technology (NIST)



## Fire Industry Science

Evidence-based research on firefighting effectiveness and safety parameters.



## Crew Size Effects

Measures impact of staffing levels on firefighter efficiency and safety outcomes.



## Health Impacts

Increased injury rates, mental health concerns, and burnout from understaffing.



## Operational Efficiency

Proper staffing enhances fireground performance and reduces attrition challenges.





# IAFF GIS Study

## Data Collection

Five years of comprehensive response data from 2018-2022.

## Standards Application

Analysis based on national standards and industry-recognized science.



## Roads Traveled Analysis

Actual travel routes rather than simplified distance measurements.

## Response Metrics

Detailed timing for incident types, apparatus deployment, and service durations.





## Current Staffing Levels vs. NFPA 1710

23

Fire Companies

Daily staffing across Kansas City Kansas Fire Department.

9

Medic Units

Emergency medical services units deployed daily.

14

Understaffed

Companies operating below the NFPA 1710 minimum standard.

4

NFPA Standard

Minimum firefighters per company per NFPA 1710.





# Proposed Station Closures

1

## Historical Coverage

Western growth and expansion of the City limits over the last 50 years.

2

## Station 15 Closure

- Closed Summer 2020
- Reopened Fall 2022

3

## Proposed Closures

Analysis of projected response time delays in affected areas.

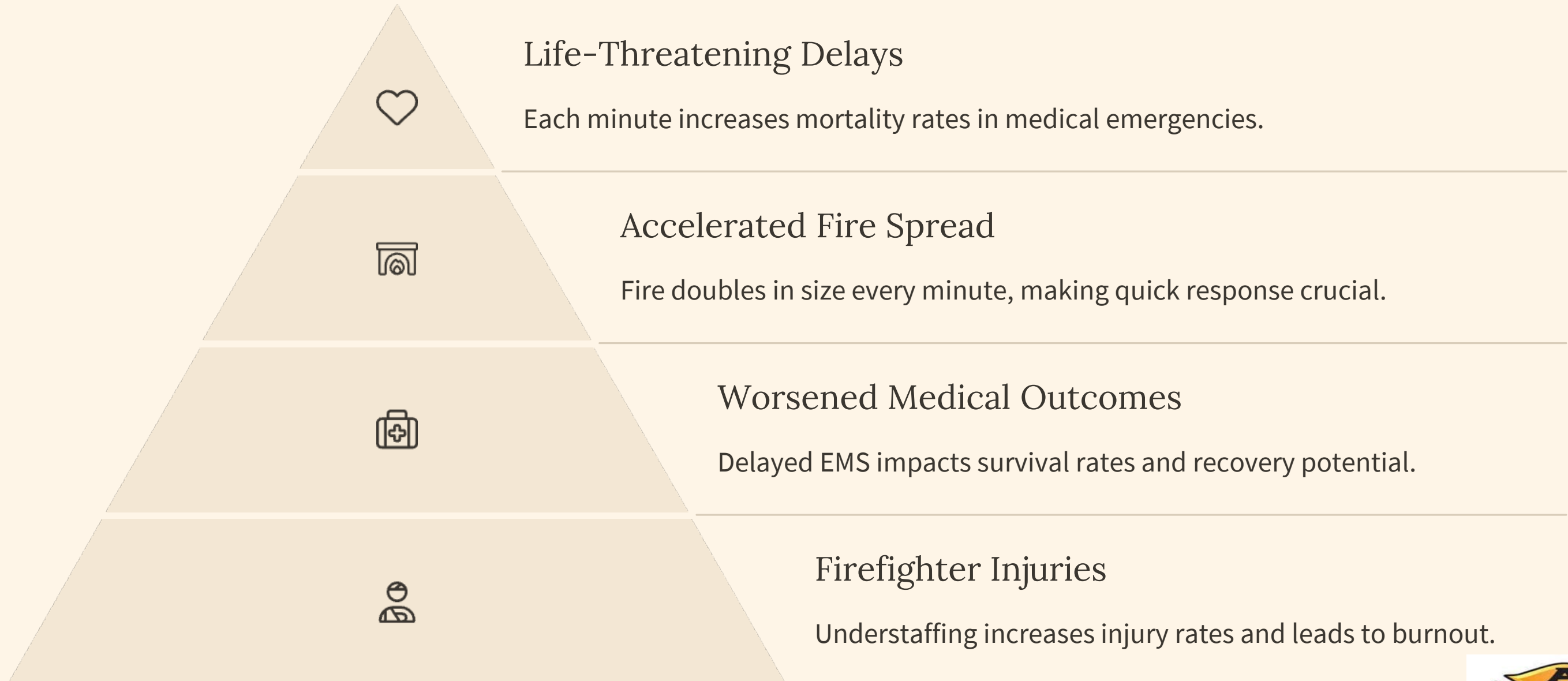
4

## Coverage Gaps

Identification of critical areas that would experience dangerous delays.



# Public Safety Risks of Inadequate Coverage



# Budget Constraints and Funding

## Essential Services

Fire/EMS services are a necessity for public safety, not an optional expense.

- Currently operating with significant deficiencies
- Future growth demands additional resources
- Prevention costs less than disaster response

## Funding Solutions

Strategic approaches to address budget constraints while maintaining service levels.

- Explore alternative revenue sources
- Reassess resource allocation priorities
- Implement long-term funding strategies





# Community Impact and Public Opinion

Survey Data consistently shows the Fire Department at the top of the Unified Government for satisfaction rate.

97%



# Proposed Solutions

- The KCKFD should maintain existing station coverage.
- Continue to evaluate and address areas of deficiency and future growth.
- The KCKFD should increase minimum daily staffing to become compliant with recognized national safety standards.
- Strategies for optimizing resources without sacrificing safety.
- Evaluate potential policy adjustments to meet NFPA 1710 compliance.



| STATION | ADDRESS                                 | AGE – YEARS | CONDITION     | RECOMMENDATION     |
|---------|-----------------------------------------|-------------|---------------|--------------------|
| 1 – HQ  | 815 N. 6 <sup>th</sup> Street           | 95          | Poor          | Build New          |
| 2       | 6241 State Avenue                       | 46          | Poor          | Remodel            |
| 3       | 420 Kansas Avenue                       | 74          | Deplorable    | Build New          |
| 4       | 3044 N. 82 <sup>nd</sup> Street         | 68          | Deplorable    | Build New          |
| 5       | 910 Quindaro Blvd.                      | 70          | Deplorable    | Build New          |
| 6       | 9548 State Avenue                       | 24          | Poor          | Remodel            |
| 7       | 2717 Strong Avenue                      | 74          | Deplorable    | Build New          |
| 8       | 3131 N. 123 <sup>rd</sup> Street        | 46          | Deplorable    | Build New          |
| 9       | 1100 Central Avenue                     | 58          | Poor          | Build New          |
| 10      | 2210 W. 36 <sup>th</sup> Avenue         | 30          | Poor          | Remodel            |
| 11      | 3100 State Avenue                       | 101         | Deplorable    | Build New          |
| 12      | 2913 Hutton Road                        | 5           | Near New      | New – no action    |
| 14      | 2615 N. 27 <sup>th</sup> Street         | 69          | Deplorable    | Build New          |
| 15      | 444 Kindleberger Road                   | 38          | Poor          | Remodel            |
| 16      | 1900 S. 55 <sup>th</sup> Street         | 1           | New           | New – no action    |
| 18      | 5429 Leavenworth Road                   | 47          | Poor          | Remodel            |
| 19      | 1011 N. 80 <sup>th</sup> Terrace        | 53          | Poor          | Remodel            |
| 20      | 72 <sup>nd</sup> Street & Kansas Avenue | 00          | Pending - NEW | Start Construction |



# PHASE 1

| NEW BUILD         | RENOVATION |
|-------------------|------------|
| STATION 8         | STATION 10 |
| STATION 4         | STATION 2  |
| STATION 9         | STATION 18 |
| STATION 14        | STATION 19 |
| TRAINING FACILITY |            |





## PHASE 2

| NEW BUILD  | RENOVATION |
|------------|------------|
| STATION 11 | STATION 15 |
| STATION 7  | STATION 6  |
| STATION 3  | STATION 12 |
| STATION 5  | STATION 16 |
| STATION 1  | STATION 20 |



# Apparatus Staffing Recommendation

- Daily staffing should be increased to a minimum of 4 firefighters on all companies.
- To accomplish:
  - Fill all vacant and frozen firefighter positions.
  - Hire regularly to maintain staffing levels.
  - Evaluate overall PIN structure to optimize efficiencies.
- Communications (Dispatchers).



# Call to Action

- **Maintain** all current fire station coverage.
- **Increase** minimum staffing to NFPA 1710-compliant levels.
- **Invest** in infrastructure repair and modernization to secure public safety for future generations.



# Conclusion

- The KCKFD's current response capabilities do not meet travel time objectives consistent with industry standards.
- The KCKFD's current staffing model is not compliant with NFPA minimum staffing.
- 15 of our 18 Fire Stations are in need of extensive renovation or of being rebuilt.

## Next Steps:

- Initiate action as soon as fiscally possible.
- Future of the Strategic Planning Committee.





THANK YOU



# **MASTER PLAN 2025**

**International Association of  
Fire Fighters**

# **LOCAL 64**



## Introduction and Purpose

The International Association of Fire Fighters Local 64 would like to express our appreciation for the opportunity to contribute to the development and implementation of the Master Plan for Fire and EMS Service of the Kansas City Kansas Fire Department (KCKFD).

Pursuant to Article 35 of the Memorandum of Agreement (MOA) between the Unified Government of Wyandotte County/Kansas City Kansas (Employer) and the International Association of Fire Fighters Local 64 (Union) the parties were tasked with the development of a Master Plan for Fire and EMS Service to the community. Within this process, criteria were developed, agreed to, and memorialized in the MOA (see below) which gives the parties authority and direction on how to accomplish this goal.

### **Memorandum of Agreement Article 35 – Minimum Manning**

a) The Department is in the process of undertaking a comprehensive Fire/EMS service analysis through a joint Union-Management process. Factors considered in the analysis and in the development of a comprehensive master plan for the Department include, but are not limited to the following: station locations including potential new stations and renovation and expansion and/or closure of existing stations, deployment of manpower and apparatus, response times, and safety of fire personnel and consideration of the NFPA 1710. The parties shall form a strategic planning committee and have appointed representatives to this committee to develop recommendations relevant to Fire/EMS service, including development of a Master Plan. The Master Plan shall evaluate and make recommendations regarding minimum manning requirements, including the requirements as identified in sub-paragraph (b) and (c) of this Article. The committee may consider any relevant documentation, reports or data including but not limited to the FACETS report and IAFF GIS report. The Master Plan recommendation shall be presented to the Commission. The parties are not required to reach consensus on all matters of the Master Plan and may present the Commission with alternative options on any individual or any multitude of issues. The parties' recommendation or alternative recommendations shall be submitted to the Commission contemporaneously prior to the end of 2023. After presentation of the Master Plan recommendation to the Commission, the Unified Government Commission shall be permitted to change any of the minimum manning provisions within sub-paragraphs (b) and (c) of this Article. Until this occurs, the following minimum requirements shall be maintained.

b) The Department will not operate a fire suppression shift with less than 73 bargaining unit suppression personnel except in cases of emergency. In no event will the Department operate a fire suppression shift with less than 69 bargaining unit suppression personnel. The Department will utilize overtime to ensure that there will be at least 69 bargaining unit suppression personnel in emergency situations. "Emergency", for purposes of this section, shall include personnel absences due to unscheduled leaves. The Department will not operate less than twenty-two (22) companies during the term of this agreement.

c) Three safety officers shall be on duty at all times.

d) All fire suppression pumpers, will be staffed with a minimum of three (3) employees in order to be considered "in service" and available for use. All Fire Department aerials and quints will operate with four (4) employees except in cases of emergency at which time aerials and quints may operate with three (3) employees. "Emergency", for purposes of this section, shall include personnel absences due to unscheduled leaves.

e) The parties recognize that the Fire/EMS Service Analysis addresses contractual issues other than the manning issues identified in sub-paragraphs (b) through (d) above. If the recommendations of the strategic planning committee address contractual issues other than those identified in sub-paragraphs (b) through (d) above, negotiations over such issues shall be deemed

to be reopened and the parties agree that they will meet and confer in good faith to attempt to arrive at an agreement over such issues.

### **History of the Committee**

Upon completion of the 2011 - 2013 Memorandum of Agreement, Union and Management were directed to perform a Fire/EMS service analysis. The FACETS Consulting group was requested to perform a Municipal Services Review, to assist the parties in their work. The FACETS group completed its study and presented its findings to the Unified Government in 2016. It was revealed by the consultants during the presentation of their report that they were directed by the employer to find a 5% reduction in staffing of the Fire Department. The FACETS report did acknowledge National Fire Protection Association (NFPA), Standard 1710, (2020 edition) *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* regarding minimum company staffing levels and recommended Fire Department compliance with minimum 4 firefighter staffing. However, the report also recommended the closure of 5 fire companies, reduction of EMS Units, and elimination of fire suppression positions. The report also recognized the deteriorating conditions of the fire stations and made recommendations to address them. It should be noted that cost savings are not a recognized criteria pursuant to the Memorandum of Agreement nor a valid consideration when performing a “Standard of Cover” analysis as it relates to Fire and EMS service. A “Standard of Cover” is a plan which outlines how a fire department should distribute and concentrate its resources for emergencies and is developed based on a community risk assessment and needs. In response to the FACETS report, due to the recommendations for reductions in service within the Fire Department, Local 64 requested and submitted to the Unified Government a rebuttal document from the International Association of Firefighters (IAFF) Headquarters, which can be seen in Appendix A.

During the period from the completion of the FACETS report to the middle 2023, the committee met and had further discussions, however a full plan was not completed and presented to the Commission. Upon the completion of the new Piper Fire Station 12, the Unified Government County Administrator’s office and the Fire Department subsequently closed Station 15 on July 23, 2020 and relocated the Pumper company to Station 12 to place the new station in service. Through efforts of the Union, the Mayor’s Office, and the Unified Government Commission, Station 15 was re-opened with a newly created Pumper company commissioned into service on November 1, 2022. Approximately Spring of 2023 the Fire Department and Unified Government selected and purchased the new site for Station 20 at 72<sup>nd</sup> & Kansas Avenue without involvement of the full committee.

In the Fall of 2023, under the current Fire Administration, the committee members reconvened with the purpose of completion of the development of the Master Plan for presentation and consideration of adoption to the Unified Government Commission in accordance with the MOA. That process has been ongoing, to include an initial presentation given jointly by the Fire Department and Union on September 26, 2024. This initial report included topics such as station locations and conditions, current department staffing models, fire industry science, and recognized fire service national safety standards. Pursuant to the terms established by the MOA, the parties are not required to reach consensus on all matters and may present to the Commission alternative options on any individual or any multitude of issues. There are a number of topics which the parties are in agreement such as subjects identified in the fall 2024 report, although there are topics for which the parties have differing opinions. The Local 64 plan will bring forth and identify those recommendations.

### **Funding**

The Union fully understands the scope of the project relative to cost and the commitment which will need to be made by the Unified Government to address the obvious need. Historically fire stations and apparatus within the Fire Department have been neglected and allowed to

deteriorate. We have reached a point where the cost to renovate or build new fire stations is increasing exponentially each year. It is not feasible and will not be obtainable to finance this project without considering additional funding mechanisms. It is the Union's recommendation that all funding options be researched and considered. The parties should work together through the committee to optimize the most efficient and productive manners to accomplish the goals outlined. Additionally, the Union recommends that the Unified Government evaluate the specific needs of each location identified for a new station build with respect to size, bay numbers, and living quarters. The Department should have flexibility to build for the anticipated need in an effort to optimize efficiency with available funds.

### **Key Documents and Resources**

The Union utilized numerous resources and nationally recognized fire service industry standards and practices to assist in the development of these recommendations including but not limited to, National Fire Protection Association (NFPA) Standards, to include recognized apparatus travel time considerations, National Institute of Science and Technology (NIST) research, the 2017 IAFF FACETS Rebuttal document, the 2023 IAFF GIS Mapping Study, and Insurance Services Office reports.

### **Travel time**

Travel time is one of the components of total response time for an incident. On most emergency incidents, fire apparatus respond from fixed locations (fire stations) rather than from somewhere within the response district, so the ability to predict travel time has value for planning and evaluating fire protection in a community.

NFPA 1710 Section 4.1.2.1(3) establishes a travel time of 240 seconds or less for the arrival of the first arriving engine company at a fire suppression incident. Travel time is defined by NFPA as: the time interval that begins when a unit is enroute to the emergency incident and ends when the unit arrives at the scene.

The ISO Fire Suppression Rating Schedule (FSRS) has always evaluated the distribution of fire resources throughout the community based on a fixed travel distance of 1.5 miles for an engine (pumper) company and 2.5 miles for a ladder company. In the revised (2012) ISO FSRS, under section 510A and 540, as an alternative to the fixed distance used in Section 560, ISO will credit the results of a systematic performance evaluation of travel time using "computer-aided dispatch" (CAD) history to demonstrate that, with its current deployment of companies, each fire department meets the time constraints for initial arriving engine in accordance with the general criteria of NFPA 1710.

The 1.5- and 2.5-mile distance is based on research that was conducted by the RAND Institute fifty years ago in 1975. This research looked at travel time of various types of fire apparatus. One of the results of this research was the determination that the average speed of a fire engine on an emergency response was 35 miles per hour (MPH) over the average terrain, with average traffic and weather condition, and slowing for intersections. Not all fire apparatus is equal in size, weight, acceleration, response speed, and maneuverability. For example, a large ladder truck may be slower than a pumper. Response territories can also be markedly different.

Terms like "travel time", "roads traveled", "road miles" are key. This means you can't use "as the crow flies". A 1.5-mile circle around a fire station does not suffice. A road may wind, a bridge may be too low or doesn't meet the GVWR, or maybe a street dead ends thus changing the route necessary and this is why a crow flies analysis isn't possible. A 100% accurate map would not have perfectly straight diamonds but would rather follow the roads for a rough diamond or irregular polygon shape. If you have the CAD data available, the GIS roads traveled time is the most accurate. If you don't have accurate CAD data available, then it is common to use a diamond polygon shape. The least accurate method used to determine station locations is a 1.5-mile concentric circle which represents "as the crow flies" and we all know that is not realistic.

According to the NIST study, there should be sufficient redundancy or an overlap in the system to allow for simultaneous calls and high volume of near simultaneous responses without



compromising the safety of the public or the firefighters. And cutting firehouses, apparatus, and firefighters would likely yield an increase in community fire losses, both human and property.

### **National Institute of Science and Technology research**

The impact of staffing and deployment decisions on the safety of the public and firefighters was the basis for the NIST study. It was done in collaboration with the NFPA, the IAFF, and the International Association of Fire Chiefs (IAFC) to measure and evaluate the impact of crew size and staffing upon response to an emergency incident. The research was conducted while tasks were completed utilizing those different crew sizes. Results showed that four person crews were able to complete the tasks over five (5) full minutes faster than a three-person crew. This equates to a twenty-five percent (25%) increase in efficiency over a three-person crew, which also leads to significant reductions in physiological effects on the crew members to include lower heart rates and blood pressure due to less exertion. For these reasons, the NFPA 1710 standards recommend four person crews for engine and ladder companies strictly based on scientific research and data.

## **IAFF GIS Mapping Study**

The Union requested from the International Association of Fire Fighters (IAFF) Headquarters a geographic information systems (GIS) mapping study. This study was requested to provide information and resources to decision makers of the Unified Government of Wyandotte County/Kansas City, Kansas regarding the importance of maintaining adequate resources (apparatus, personnel, and stations) to meet incident demand. Using geographic information systems (GIS) mapping software and historical computer-aided dispatch (CAD) data, performance and response capabilities were assessed based on industry standards contained in the National Fire Protection Association (NFPA®) Standard 1500: *Standard on Fire Department Occupational Safety and Health* and 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*.

The KCKFD recently completed a new Station 16 in the Turner area which now houses both apparatus and personnel from the former Stations 16 and 17, which were closed upon the new Station 16 becoming operational. This study will analyze the department's response capabilities with expected staffing, deployment, and the new Station 16. This study will also examine the KCKFD current response capabilities and compare them with a recommended staffing and deployment configuration. Analyses will evaluate KCKFD's ability to meet industry standard objectives, provide adequate emergency response, and assess the need for additional resources. Additional personnel and resources are needed for KCKFD to meet the increasing emergency demand and developing areas currently not covered by fire department resources in a timely manner. This study provides specific recommendations to improve the department's ability to provide effective and efficient emergency response.

### **Staffing and Deployment**

The members of the Kansas City Kansas Fire Department provide fire suppression, emergency medical services (EMS) first response and transport at the Advanced Life Support (ALS) level, hazardous materials (HazMat) response, heavy search and rescue team, trench rescue, tactical medic, high angle rescue, and water rescue coverage to the citizens of, and visitors to, Kansas City, Kansas 24 hours per day, seven days per week. Additionally, the department is responsible for an unincorporated area south of Bonner Springs, Kansas (Loring).

The Kansas City Kansas Fire Department has a daily minimum frontline staffing of 96 firefighters, three Safety Officers, three Battalion Chiefs, one Assistant Chief Shift Commander, and one EMS Supervisor. Truck and Rescue companies deploy with four firefighters. All pumper (engine) companies typically deploy with three firefighters. When not staffed with four firefighters, the Kansas City Kansas Fire Department operates apparatus that are not staffed to provide effective, efficient, and safe emergency operations required by NFPA 1710 and the

Occupational Safety and Health Administration's (OSHA) rules and regulations. Staffing units below the minimums set by industry standards result in crews being less efficient in completing critical fireground tasks. The smaller the crew size, the more tasks an individual must complete, which contributes to the delay in initiating fire attack, containing fire, and limiting property damage. In typical fire response scenarios, first-arriving crews must travel from stations further away before beginning interior firefighting operations. These delay fire suppression operations, which advances fire growth.

KCKFD maintains, staffs, and deploys out of 18 fire stations and staffs 15 pumpers, two rescues, six truck apparatus, nine medic units, and several support, specialty, and reserve units. KCKFD utilizes quint apparatus for truck response. A quint is a fire apparatus with a permanently mounted fire pump, a water tank, a hose storage area, an aerial device, and a complement of ground ladders. A quint apparatus is capable of performing truck operations, such as forcible entry, ventilation, search and rescue, aerial operations, utility control, and overhaul and salvage work. A quint is also capable of pumper response and performs pumper operations when first on scene. Once additional apparatus arrives on scene, the quint will transition to ladder operations. This practice is inefficient as the truck company may have to re-position itself to perform ladder operations delaying life-saving fire suppression and rescue tasks.

KCKFD also cross-staffs apparatus, for ladder truck and medical incident response, with personnel assigned primarily to fire apparatus. Cross-staffing is a practice whereby firefighters staff several types of emergency response vehicles in a work period. The type and scope of an emergency (e.g., fire, emergency medical incident, rescue) dictate which type of emergency response vehicle the responders deploy (i.e., pumper, truck, quint, medic, rescue). Often, cross-staffing leaves apparatus understaffed and creates the possibility of personnel being out of the station on one piece of apparatus and needing to return to the station to transfer equipment and board a different apparatus for a subsequent incident. Because the fire department cross-staffs with firefighters assigned to fire apparatus, when pumper units are engaged in response or unavailable, fire apparatus and medic units are unstaffed thus unavailable to deploy. For example, if Rescue 6 is responding to an emergency or is otherwise unavailable, Tower 6 is not staffed. In this scenario, first-arriving crews must travel from stations further away before beginning ladder truck operations. This delays search and rescue operations, typically responsible by truck companies.

The Kansas City Kansas Fire Department houses 11 medic units for medical emergency incidents, but only nine medic units are staffed at all times. Medic companies also perform firefighter duties. As determined through CAD data analysis, staffing one more or all medic units in conjunction with current staffing will improve the department's workload of fire apparatus at those stations. Additionally, it will reduce the department's frequency of deploying pumper companies, thus decreasing the likelihood of fire apparatus being unavailable or delays in response when pumpers are already engaged in response. Additional staffing would also help reduce firefighter fatigue, thus reducing the potential for injury.

### **Key Findings - Staffing**

Currently, the Kansas City Kansas Fire Department maintains a daily minimum of 96 firefighters, each shift, at 18 stations. The Kansas City Kansas Fire Department does not staff all suppression apparatus with four firefighters. The KCKFD staffs pumper apparatus with three firefighters. Fire suppression apparatus not staffed with a minimum of four firefighters do not meet minimum company staffing objectives outlined in NFPA 1500: *Standard on Fire Department Occupational Safety and Health Program* and 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*.

Tower 6 is cross-staffed with personnel assigned to Rescue 6. Ladder truck response capabilities are not available when Rescue 6 is already engaged in response or otherwise unavailable. Truck operations, such as forcible entry, ventilation, search and rescue, aerial operations, utility control and overhaul and salvage work may be further delayed in this scenario.

The Kansas City Kansas Fire Department cross-staffs two medic units, for medical response, with three fire fighters assigned to suppression apparatus. When these suppression apparatus are deployed, medic unit response is unavailable. Conversely, when these medic units are deployed, fire suppression apparatus is unavailable as personnel assigned to these apparatus are engaged in medic response.

### **Call Data Analysis**

According to Kansas City Kansas Fire Department emergency call data, call volume has increased. Total incidents of the department increased 13.9% from 2018 to 2022. All of the KCKFD fire stations saw a consistent yearly total in call volume from 2018 to 2022. Station 2 had the biggest increase in response totals (16.5%), Medic 2 saw a 39.8% increase from 2018 through 2022. Station 9 made the most responses from 2018 through 2022, 10.8% of total staffed unit responses. Station 9 staffs a pumper and a medic unit. From 2018 through 2022, the department had a UHU of 0.323 which is above the recommended UHU of 0.30. In 2022, the yearly medics' unit hour utilization (UHU) was the highest at 0.34. Medic units 2, 3, 5, 6, 9, and 18 all had a UHU over 0.30. Only three of the nine staffed medic units were below 0.30.

To have a UHU of below 0.30, KCKFD would need to staff 10 medic units at all times. NFPA 1710 states that the first unit shall be on scene within four minutes (240 seconds) of travel to 90% of incidents. From 2018 through 2022, the 90th percentile travel time to all incidents for the first unit on scene was four minutes and 57 seconds (297 seconds). Rapid response is essential to initiating effective fire suppression and rescue operations that seek to minimize fire spread and maximize the odds of preserving both life and property.

Department travel times that are consistently higher than four minutes suggest that the department may need additional resources. Not only are the department travel times more than four minutes, but only four of 19 stations have travel times lower than four minutes. The longest 90th percentile travel time for first-arriving staffed apparatus of the KCKFD was 10 minutes and 46 seconds (646 seconds) by Medic 3 at Station 3 during the time period. Medic 3 is the closest medic unit to the university hospital for transport response. Growth in emergency demand and the city's footprint will further increase travel times and risk to the citizens of Kansas City.

### **Response Coverage Analysis**

NFPA 1710 requires the first-arriving fire company with four firefighters at a structure fire to be on scene within four minutes to 90% of incidents. With the implementation of the new Station 16, these requirements can only be met on 41.9% of roads within the response jurisdiction. Staffing fire apparatus with four firefighters will significantly improve response to areas with high demand outside the department's current emergency "2 In/2 Out" capabilities. By implementing the recommended staffing and deployment, the department would likely be able to assemble four firefighters within four minutes of travel on 55.9% of roads, a 33.6% increase in response coverage compared to capabilities under KCKFD's expected 2024 staffing and deployment. NFPA 1710 requires the arrival of 17 firefighters within eight minutes to be the standard for safe, effective, and efficient operations at a typical residential structure fire. With the implementation of the new Station 16, these requirements can only be met on 58.1% of roads within the response jurisdiction. By implementing the recommended staffing and deployment, the department would likely be able to assemble a minimum of 17 firefighters within eight minutes of travel on 75.7% of roads, a 30.4% increase in response coverage compared to capabilities under KCKFD's expected 2024 staffing and deployment.

NFPA 1710 requires a minimum of 28 firefighters, including one incident commander with an aide, arriving on the scene of a medium-hazard structure fire within eight minutes of travel. With the implementation of the new Station 16, these requirements can only be met on 21.0% of roads within the response jurisdiction. By implementing the recommended staffing and deployment, the department would likely be able to assemble a minimum of 28 firefighters within eight minutes of travel on 42.9% of roads, a 103.9% increase in response coverage compared to capabilities under KCKFD's expected 2024 staffing and deployment.

NFPA 1710 requires a minimum of 41 firefighters, including one incident commander with an aide, a total of 43 responders, arriving on the scene of a high-rise or high-hazard structure fire within 10 minutes 10 seconds of travel. With the implementation of the new Station 16, these requirements can only be met on 28.3% of roads within the response jurisdiction. By implementing the recommended staffing and deployment, the department would likely be able to assemble a minimum of 43 firefighters within 10 minutes 10 seconds of travel on 42.9% of roads, a 78.8% increase in response coverage compared to capabilities under KCKFD's expected 2024 staffing and deployment. This report determined that most area roads are not currently serviced within safe and effective time frames. Additionally, with the expected new Station 16 and proposed station closures, road coverage is further decreased. As such, there is an increased risk of death or injury to firefighters and citizens, as well as an increased risk of considerable property loss of housing units and businesses throughout the city.

Mapping analysis shows that increasing apparatus and staffing levels would increase existing initial full alarm response capabilities to all building hazard incidents, including typical residential structures, and improve response capabilities for simultaneous incidents. Any proposed closure of station or apparatus would further increase the risk and danger to the citizens of Kansas City and KCKFD firefighters.

### **Response Operations and Standards**

Staffing and deployment decisions should be made based on the historical location of calls, travel times to specific target hazards, compliance with departmental Standard Operating Procedures (SOPs), existing industry standards (e.g., NFPA 1500 and NFPA 1710), and the citizens' expectations of receiving an adequate number of qualified personnel on appropriate apparatus within acceptable time frames to make a difference in their emergency. Below you will find fact sheets that provide a summary of the requirements addressed in NFPA 1710:





## KEY REQUIREMENTS FOR EMERGENCY SERVICES IN NFPA 1710

The minimum requirements for provision of emergency services by career fire departments can be found in 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*.

NFPA 1710 addresses the structure and operation of organizations providing such services, which include fire suppression and other assigned emergency response responsibilities such as EMS and special operations.

The requirements intend to provide effective, efficient, and safe protective services to help prevent fires, reduce risk to lives and property, deal with incidents that occur, and help prepare for anticipated incidents.

The requirements are listed in NFPA 1710 for fire department service deployment based on the type of occupancy, along with the appropriate response staffing levels for each. The minimum staffing level for each occupancy is listed below. For the full breakdown of staffing requirements by position, refer to the subsections specific to each occupancy in 5.2.4.

### KEY REQUIREMENTS



**Occupancy Type:** Single-Family Dwelling  
**Deployment:** Minimum of 16 members or 17 if aerial device is used

The initial full alarm assignment to a structure fire in a typical 2000 ft<sup>2</sup> (186 m<sup>2</sup>), two-story, single-family dwelling without a basement and with no exposures must provide for a minimum of 16 members (17 if an aerial device is used).



**Occupancy Type:** Open-Air Strip Mall  
**Deployment:** Minimum of 27 members or 28 if aerial device is used

The initial full alarm assignment to a structure fire in a typical open-air strip shopping center ranging from 13,000 ft<sup>2</sup> to 196,000 ft<sup>2</sup> (1203 m<sup>2</sup> to 18,209 m<sup>2</sup>) in size must provide for a minimum of 27 members (28 if an aerial device is used).



**Occupancy Type:** Garden-Style Apartment  
**Deployment:** Minimum of 27 members or 28 if aerial device is used

The initial full alarm assignment to a structure fire in a typical 1200 ft<sup>2</sup> (111 m<sup>2</sup>) apartment within a three-story, garden-style apartment building must provide for a minimum of 27 members (28 if an aerial device is used).



**Occupancy Type:** High-Rise  
**Deployment:** Minimum of 42 members or 43 if building is equipped with fire pump

The initial full alarm assignment to a fire in a building with the highest floor greater than 75 ft (23 m) above the lowest level of fire department vehicle access must provide for a minimum of 42 members (43 if the building is equipped with a fire pump).





## KEY REQUIREMENTS FOR EMERGENCY SERVICES IN NFPA 1710 *CONTINUED*

### ADDITIONAL REQUIREMENTS

Fire departments that respond to fires in occupancies that present hazards greater than those found in 5.2.4 must deploy additional resources on the initial alarm as described in 5.2.4.6.

Even though fireground staffing levels have changed, NFPA 1710 continues to require that engine companies be staffed with a minimum of four on-duty members, as stated in 5.2.3. In addition, 5.2.2.2.1 requires that the fire department identify minimum company staffing levels as necessary to meet the deployment criteria required in 5.2.4 to ensure that a sufficient number of members are assigned, on duty, and available to safely and effectively respond with each company.

Additional changes to the 2020 edition of the standard include an update to the definition for *career fire department* and a clarification of how to determine if the department would fall under either NFPA 1710 or NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*.

Several new definitions relating to geographic areas based on population density have been added and the number of responders needed based on the type of incident and tasks to accomplish has been included. New requirements have been added for mobile water supply tankers/tenders and deployment and training of incident safety officers. Also, material on wildland fire suppression has been expanded.

### RESPONSE OBJECTIVES

Documenting the benchmarks and response objectives that make up NFPA 1710 is crucial to capturing and tracking data that would be helpful in ensuring the necessary allocation of resources.

| Benchmarks                                 | Response Objectives                                     |
|--------------------------------------------|---------------------------------------------------------|
| Alarm answer                               | 15 sec 95% of the time<br>or<br>40 sec 99% of the time  |
| Alarm processing                           | 64 sec 95% of the time<br>or<br>106 sec 99% of the time |
| Turnout - Fire                             | 80 sec                                                  |
| Turnout - EMS                              | 60 sec                                                  |
| First-due engine                           | 240 sec (4 min)<br>90% of the time                      |
| Second-due engine                          | 360 sec (6 min)<br>90% of the time                      |
| Initial full alarm - Low/<br>medium hazard | 480 sec (8 min)<br>90% of the time                      |
| Initial full alarm - High hazard           | 610 sec (10 min 10 sec)<br>90% of the time              |

### Learn More

- ▶ Visit [nfpa.org/1710](https://nfpa.org/1710) for free digital access to the standard.
- ▶ Sign up on [nfpa.org/NFPA-Membership](https://nfpa.org/NFPA-Membership) to:
  - Get one-on-one help with your technical questions at [nfpa.org/tqs](https://nfpa.org/tqs)
  - Access exclusive content
  - Search content and connect with your peers to share information and answer questions on NFPA's online community at [nfpa.org/xchange](https://nfpa.org/xchange)

### Recommendations

The recommendations listed are based on the desire to meet the performance objectives in NFPA 1710 and the findings of the GIS evaluation of the current staffing and deployment practices of the Kansas City Kansas Fire Department.

KCKFD should increase firefighter personnel totals to ensure all fire apparatus, which include pumpers, quints, and rescues, are always staffed with a minimum of four firefighters to meet the minimum staffing objectives in NFPA 1710. KCKFD should staff a pumper company at Station 2 with four fighters at all times. This will ensure Quint 2 operates as a truck company and does not perform pumper duties. This will improve truck response capabilities in areas near Station 2, regardless of what apparatus is first on scene. Currently, Quint 2 operates as a pumper

when first to arrive on scene. Increase the number of truck companies to ensure there are adequate units staffed and available to respond to incidents as they occur throughout KCKFD's response area. Specifically, staffing a truck company at Station 9, will improve the department's six-minute ladder truck response, eight-minute, and 10-minute 10-second full alarm response capabilities. The department should increase the number of staffed medic companies to ensure there are adequate units staffed and available to respond to incidents as they occur throughout the KCKFD response area. Specifically, the department should staff a medic at Station 1 with a minimum of two firefighters per shift. KCKFD should increase staffing to ensure its personnel response to a low-hazard structure fire consists of a minimum of 16 firefighters and one command officer for a total of 17 personnel. Additional staffing personnel will not only increase full alarm assignment coverage but also decrease the overall workload of firefighters by placing more personnel at the scene sooner.

KCKFD should increase staffing to ensure response to a medium-hazard structure fire consists of a minimum of 26 firefighters, one command officer, and one officer aide to total 28 personnel, and to a high-hazard structure fire consist of a minimum of 36 firefighters, six officers, and one command officer to total 43 personnel to meet the objectives outlined in NFPA 1710.

The department should be involved with Unified Government of Wyandotte County/Kansas City Kansas decision makers concerning growth and development to address areas not currently covered with effective response forces including those areas of increasing demand. A comprehensive growth plan will help the department decide where to place future fire stations, apparatus, and staff. Stations should be built over time to address current and future demand and additional full-time units staffed within industry standards should be added as needed.

### **Risk Assessment**

The Kansas City Kansas Fire Department serves a 128 square mile area of Kansas City, Kansas which also includes Wyandotte County. Portions of the department's response boundary also include an unincorporated area south of Bonner Springs, Kansas.

A risk analysis was performed on the City of Kansas City, Kansas to assess the need for emergency services. According to the 2021 U.S. Census population estimates, the city had a population of 154,804. This is an increase of 6.2% from the 2010 Census population total (145,786). The same 2021 Census estimates also revealed that 20.8% of the population was in a vulnerable category due to age. This category consists of persons under the age of five (7.5%) and persons 65 years of age and older (13.8%) but does not include the special needs population. These populations typically place an increased demand on public safety resources because they are at a higher risk of fire-related injury and death as a result of their inability, or reduced ability, to evacuate in an emergency. These groups may also be unable to care for themselves or have multiple health issues. Additionally, 16.8% of the population was living at or below the poverty level. These are people who generally lack the means to properly maintain residences, which can lead to an increased risk of fire. In addition, 13.6% of the population had a disability and 19.4% of the population was uninsured. People living with disabilities are more likely to experience medical complications and require specialized patient care placing increased stress on responders. Those without health insurance are more likely to not receive preventive services and screenings, have poorer health outcomes due to delayed diagnoses, and may not be able to receive care to manage chronic diseases. Lack of access to regular medical care leads to a higher risk for medical complications resulting in an increase in EMS demand. Typically, people living within these demographic characteristics are at an increased risk for medical complications. There were 63,738 housing units estimated in 2021. Estimates show housing units consisting of single or semi-detached houses (78.5%), multifamily housing structures containing between two and 10 apartment units (6.9%), multifamily housing structures containing 10 or more apartment units (12.5%), and other dwellings including mobile homes (2.1%). Of these structures, 43% were constructed between 1940 and 1970, and 17.8% were built in 1939 or earlier (60.8% total). Typically, when there are high numbers of older buildings constructed before current fire codes

were developed, there is an increased demand on emergency services. Census estimates also indicated vacant housing units made up 9.3% of total housing. Based on a January 2018 NFPA study, over 50% of all structure fires in vacant buildings are intentionally set. Structure fires in vacant structures are approximately three times more likely to spread beyond the structure of origin compared to structure fires in occupied properties. Firefighters have an increased risk of injury in vacant building fires due to poorly maintained properties, unsafe heating sources, and the lack of working fire alarms and sprinklers.

### **Workload Analysis**

To evaluate the department's workload, incident and response data were examined. Local 64 provided CAD data for responses performed by the KCKFD from January 1, 2018, through December 31, 2022. The CAD data include, but is not limited to, details such as incident identifier number, type of incident, location of the incident, responding apparatus, dispatch time, enroute time, arrival time, and the time when the apparatus and personnel have cleared the scene. The CAD data were analyzed to evaluate the department's workload metrics including the total number of incidents and unit responses, identified where incidents occurred in the past, and the 90th percentile travel time of the first unit on scene. Using these findings, the department will be able to assess how workload, call volume, and deficiencies in staffing and apparatus utilization have affected their response capabilities. It will provide decision makers with the necessary information to better allocate resources to ensure KCKFD provides effective and efficient emergency response.

### **Data Notations**

To accurately examine the department's workload and past performance the following should be noted: The analysis is based on the typical staffing configuration from January 1, 2018 through December 31, 2022. Records with errors in reporting enroute time, arrival time, and/or incidents that were canceled before the first unit arrived on scene were excluded when evaluating travel times. Typically, deployed pumpers, quints, medic units, tankers, brush units and specialized apparatus only were considered when evaluating travel time for the first unit on scene.

### **Call Volume Analysis**

An important metric to consider is the number of incidents compared to the number of apparatus responses. Each incident can require more than one apparatus to respond. Responses are labor intensive and frequently require personnel from multiple apparatus to complete critical tasks simultaneously. Examining the number of responses performed by each apparatus will assist in determining the workload of each unit. From 2018 to 2022, KCKFD's units responded to 167,208 incidents and performed 318,707 responses. Typically, incidents require more than one apparatus to respond. Additional resources should be positioned at fire stations that have a high frequency of responses to incidents to ensure equitable, timely, safe, and effective responses.

### **Unit Hour Utilization**

When creating a staffing and deployment plan, it is important to understand how many medic units need to be in service and where they should be positioned to provide effective and efficient EMS response. When determining the number of medic units required to be in service, it is important to factor in how a department's travel times, system readiness, and level of patient care are negatively affected if a department operates with insufficient resources. Based on these considerations, unit hour utilization (UHU) was used to calculate the number of medic units that should be in service throughout the day to meet recommendations. UHU is used to estimate the number of staffed frontline medic units needed to provide patient transportation. It should also be noted, KCKFD medic units also provide fire suppression response. For this analysis, all incident responses by medic units were examined. UHU is an important parameter used to assess EMS workload and is designed to determine the productivity of medic units, based on call volume for a specified period. In the analysis presented in this report, UHU calculations were based on the

need to provide Fire and EMS response 24 hours per day/seven days per week, in addition to EMS transport. A unit hour is equal to one hour of service by a fully equipped and staffed transport unit available for dispatch. Utilization is a measure of productivity, which compares the available resources (unit hours) with the actual amount of time spent on an incident including treatment and transport.

$$\text{UHU} = (\text{Incidents}) \div (\text{Time Interval in Hours} * \text{Number of Units}).$$

An efficient UHU for EMS medic unit response is 0.30, which allows for a good balance between system readiness, availability for response to other personnel-intensive incidents, and planning for an increase in demand in the future. Operating at a UHU above the recommended levels results in medic units likely not being available or experiencing a delay in responses. High UHU also results in provider fatigue, which increases the department's liability. Operating at a lower UHU helps to reduce provider fatigue, thus reducing the potential for injury. Preventing provider fatigue reduces the risk to the patient from injury, medication errors, and poor decision making with patient care, thus reducing the liability for the department.

For this analysis, the recommended UHU for the overall department was set at 0.30 to account for an increase in demand in the future. The recommended staffing factors indicate the necessary number of medic units needed to meet the EMS demand. It does not factor in whether the department has enough personnel to appropriately respond to other hazards in the city.

Based on the department's UHU, KCKFD should have 10 medic units assigned with their own dedicated crew and in service 24 hours a day, seven days a week. Any projected increase in future demand, the department should consider additional units.

### **Travel Time & Roads Traveled Analysis**

The travel time analysis examined the enroute and arrival on scene times included in the CAD data to calculate the travel times for apparatus responding to incidents. NFPA 1710 requires a travel time of four minutes (240 seconds) or less for the first-arriving pumper company at the scene of fire incidents and for the first-arriving medic company with basic life support (BLS) capability or higher at the scene of EMS incidents for at least 90% of the incidents. Travel times that are consistently higher than these benchmarks pose a risk to the community and suggest that the department needs additional resources. The department did not meet NFPA 1710 travel time objectives for EMS and fire incidents. Between 2018 and 2022, KCKFD failed to meet the NFPA objective each year with travel times of the first responding unit from each station.

### **Mapping Analysis**

An examination of KCKFD's response capabilities was performed to examine the department's response coverage. Response coverage examined the department's capabilities based on the current and recommended staffing and deployment. Travel times were modeled using ESRI ArcGIS Pro 3.0. Fire stations were identified on GIS maps as starting points with apparatus traveling at posted road speeds. When generating the maps, several assumptions needed to be addressed prior to drawing conclusions from the analysis. These assumptions are as follows: Modeled travel speeds are based on reasonable and prudent historical traffic speeds using Wednesdays at 9:00 AM. Actual response speeds may be slower, and the associated travel times greater, with any unpredictable impedances including, but not limited to:

- Traffic Incidents: Collisions and vehicle breakdowns causing lane blockages and driver distractions.
- Work Zones: Construction and maintenance activity that can cause added travel time in locations and times where congestion is not normally present.
- Weather: Reduced visibility-road surface problems and uncertain waiting conditions result in extra travel time and altered trip patterns.
- Special Events: Demand may change due to identifiable and predictable causes.
- Traffic Control Devices: Poorly timed or inoperable traffic signals, railroad grade crossings, speed control systems, and traveler information signs contribute to irregularities in travel time.



- **Inadequate Road or Transit Capacity:** The interaction of capacity problems with the aforementioned sources causes travel time to expand much faster than demand.

In addition, it is reasonable to suggest that because larger emergency vehicles are generally more cumbersome and require greater skill to maneuver, their response may be more negatively affected by their weight, size, and in some cases, inability to travel narrow surface streets. As discussed, computer modeling only considers the travel time of the apparatus. Decision makers should understand that once apparatus and personnel arrive on the incident scene there are other essential tasks that must be completed which require additional time before access, rescue, and suppression can take place. Tasks such as establishing a water supply, forcible entry (access), and deployment of an attack line are not considered in computer modeling. Other additional factors also include: The time from the arrival of the apparatus to the onset of interior fire operations (access interval) must be considered when analyzing response system capabilities. The access interval is dependent upon factors such as distance from the apparatus to the task location and the elevation of the incident and locked doors or security bars that must be breached. Impediments like these may add to the delay between the discovery of a fire and the initiation of an actual fire attack.

### **New Station 16 Response Capabilities**

The following GIS maps compares the results of the analysis of the current response capabilities of the Kansas City Kansas Fire Department and the response capabilities following the implementation of the New Station 16 at 1800 S 55th Street.

**Four-Minute Response Coverage:** NFPA 1710 requires that the first unit be on scene within four minutes of travel to 90% of incidents. Four minutes of travel time is the allowable maximum travel time for the first-arriving apparatus at the scene of a fire, first responding unit to an EMS incident, and BLS unit if there is not a first responding unit already on the scene.

**Emergency "2 In/2 Out" Operations Capabilities, Minimum of Four Firefighters Within Four Minutes:** NFPA 1710 requires that the first unit be on scene within four minutes of travel to 90% of incidents. OSHA's Emergency "2 In/2" Out operations require a minimum of four firefighters to be present before firefighting personnel may initiate an interior attack on a structural fire.

**Six-Minute Truck Response:** NFPA 1710 (2020) requires that a second-arriving apparatus be on the scene within six minutes or less of travel time. The industry standard does not state a second-arriving apparatus shall be a truck company. The following analysis uses the National Institute of Science and Technology (NIST) report on Residential Fireground Field Experiments as a model of response. The truck company not only arrives in close proximity to the first pumper company, but it is also the second company to arrive. Truck operations include forcible entry, ventilation, search and rescue, aerial operations, utility control, overhaul, and salvage work.

### **Low-Hazard Response**

NFPA 1710 requires a minimum of 16 firefighters and one command officer (17 total) to arrive on the scene of a low-hazard structure fire within eight minutes of travel to 90% of incidents. Low-hazard structures are typically two-story single-family dwellings without a basement and with no exposures.

### **Medium-Hazard Response**

NFPA 1710 requires a minimum of 26 firefighters and one incident commander and one aide (28 total) to arrive on the scene of a medium-hazard structure fire within eight minutes of travel to 90% of incidents. Medium-hazard structures consist of open-air strip shopping centers and three-story, garden-style apartment buildings. Medium-hazard occupancies descriptions include apartments, offices, mercantile, and industrial occupancies not normally requiring extensive rescue or firefighting forces.



### **High-Hazard Response**

NFPA 1710 requires a minimum of 41 firefighters and one incident commander and one aide (43 total) to arrive on the scene of a high-hazard structure fire within 10 minutes 10 seconds of travel to 90% of incidents. High-hazard structures consist of high rises and can be extrapolated to large area buildings such as manufacturing centers, warehouses, grocery stores, schools, and other structures with a high fire load and populations.

### **Proposed Closure of Stations 3, 5, and 11**

At the request of Local 64, GIS analysis was performed to examine the department's response capabilities of a proposed scenario by the KCKFD, which would include the closure of Station 3, Station 5 and Station 11. The analysis was according to the staffing and deployment configuration found in the link to the IAFF GIS study.

### **Recommended Capabilities**

All fire companies are staffed with four firefighters at all times. This includes Rescue 1, and Tower 6. KCKFD should staff a pumper company at Station 2 with four fighters at all times. This will ensure Quint 2 operates as a truck company and does not perform pumper duties. Additionally, the recommendation includes staffing a truck company at Station 9 to improve the department's six-minute ladder truck response. The department should also staff a medic at Station 1 with a minimum of two firefighters per shift.

### **Summary**

The table listed in the IAFF GIS study displays four-, eight-, and 10-minute -10 second road coverages comparing current response coverage, expected, proposed and recommended staffing and deployment according to IAFF recommendations. Other than ladder truck response, the closure of stations has resulted in a decrease in coverage for each NFPA 1710 response scenarios. KCKFD does not meet staffing and performance objectives as outlined in industry standards to provide for safe, efficient, and effective responses to fires or rescue situations.

## **Local 64 Recommendations on Fire Stations**

Through analysis of the IAFF GIS study, assessment of current building conditions and locations, and consideration of maintaining existing service, the Union identified stations which should not be in the conversation for demolition, rebuild, or relocation. These fire stations will need renovation. These include Station numbers 2, 6, 10, 15, 18, and 19.

Additionally, Stations 12, 16, and 20 are near new, new, or beginning construction respectively. The recommendation for these facilities at this time is no action. However, near end term of this plan these buildings will likely be approximately 15-20 years old and renovation should be planned to ensure maintenance and continued serviceability.

The Union also identified stations which need to be demolished and rebuilt in either the same or a similar location with respect to current first due district. These include Station numbers 1, 3, 4, 5, 7, 8, 9, 11, and 14. Identification of locations for these new buildings should be done jointly through the recognized joint labor management process and should take into consideration maintaining existing coverage while considering strategically the best site location possible for enhanced coverage.

Lastly, the Union recommends consideration of additional future fire stations to address identified current deficiencies in coverage and anticipated growth and development of the community. Table 1 below will show current status and recommendations for existing KCKFD fire stations. Table 2 will show the Union's recommendation for priority of action. The Union is recommending a two-phase plan for the completion of the project. The first phase should be initiated as soon as possible and completed before proceeding to the second phase. Phase one will

include new construction, renovation, and also consideration of a County-wide training facility. It should be noted that Station 20 is not recognized in the first phase of the plan as location, funding, and design have been developed. The Union recommends that the original plan for Station 20 proceed as designed with a 2 ½ Bay fire station (same as new Piper Station 12) and breaking ground as soon as possible.

The KCKFD does not have or maintain an adequate training facility for a department of our size. Adequate initial and ongoing training is critical in the fire service to ensure preparedness and safety of the public and the firefighters. The Unified Government should consider the development of a Fire Department training facility.

**Table 1 Station Conditions & Recommendations**

| <b>Station</b> | <b>Address</b>       | <b>Age/<br/>Years</b> | <b>Condition</b> | <b>Recommendation</b> |
|----------------|----------------------|-----------------------|------------------|-----------------------|
| 1/HQ           | 815 N. 6th Street    | 95                    | Poor             | Build New             |
| 2              | 6241 State Avenue    | 46                    | Poor             | Remodel               |
| 3              | 420 Kansas Avenue    | 74                    | Deplorable       | Build New             |
| 4              | 3044 N. 82nd Street  | 68                    | Deplorable       | Build New             |
| 5              | 910 Quindaro Blvd.   | 70                    | Deplorable       | Build New             |
| 6              | 9548 State Avenue    | 24                    | Poor             | Remodel               |
| 7              | 2717 Strong Avenue   | 74                    | Deplorable       | Build New             |
| 8              | 3131 N. 123rd Street | 46                    | Deplorable       | Build New             |
| 9              | 1100 Central Avenue  | 58                    | Poor             | Build New             |
| 10             | 2210 W. 36th Avenue  | 30                    | Poor             | Remodel               |
| 11             | 3100 State Avenue    | 101                   | Deplorable       | Build New             |
| 12             | 2913 Hutton Road     | 5                     | Near New         | New - No Action       |
| 14             | 2615 N. 27th Street  | 69                    | Deplorable       | Build New             |
| 15             | 444 Kindleberger Rd. | 38                    | Poor             | Remodel               |
| 16             | 1900 S. 55th Street  | 1                     | New              | New - No Action       |
| 18             | 5429 Leavenworth Rd. | 47                    | Poor             | Remodel               |
| 19             | 1011 N. 80th Terrace | 53                    | Poor             | Remodel               |
| 20             | 72nd & Kansas Ave.   | ???                   | Pending - New    | Start Construction    |

## Table 2 Station Action Plan

### Phase 1

| New Builds        | Renovations |
|-------------------|-------------|
| Station 8         | Station 10  |
| Station 4         | Station 2   |
| Station 9         | Station 18  |
| Station 14        | Station 19  |
| Training Facility |             |

### Phase 2

| New Builds | Renovations |
|------------|-------------|
| Station 11 | Station 15  |
| Station 7  | Station 6   |
| Station 3  | Station 12  |
| Station 5  | Station 16  |
| Station 1  | Station 20  |

## Local 64 Recommendation for Staffing

The KCKFD staffs 23 Fire Companies and nine Medic Units 24 hours a day, seven days a week. Six Aerial Ladder Trucks and two Rescue Apparatus staff with minimum four Firefighters except for emergency staffing. Fourteen of the 15 Pumper Companies staff with three Firefighters. When suppression units are not staffed with a minimum of four firefighters, they are not compliant with the recognized national safety standards. Additionally, apparatus which do not maintain a minimum of four firefighter staffing do not meet travel time objectives in the industry standard. The KCKFD should progress towards NFPA minimum apparatus staffing requirements of four firefighters. Compliance with minimum staffing standards will increase efficiency and reduce task fatigue for fire crews. Table 3 below shows KCKFD staffing with three firefighters daily and the necessary increases to meet national standards.

At this time, the Fire Department has twelve (12) PINs that are frozen, current openings, and recruits actively advancing through the current Fire Academy. These positions in the system impact the daily operations and staffing which could be used to improve our ability to reach the minimum standards for staffing. To accomplish the recommendations set forth in NFPA 1710, KCKFD needs to staff a total of 114 firefighters daily to reach the standard. Currently, as seen above, KCKFD staffs 100 firefighters per shift to include safety officers and the medical supervisor. This is an additional 14 firefighters per shift for a total of 42 firefighters. With consideration of the frozen PINs (12) and current recruit class (10), the total number of 42 can likely be reduced to 20 new positions. These numbers do not fully account for the staffing factor to consider scheduled leaves.

**Table 3 Current and Recommended Suppression/EMS Staffing**

| <b>Station</b> | <b>Address</b>       | <b>Apparatus</b>                  | <b>Current<br/>Daily<br/>Staffing</b>              | <b>Recommended<br/>Daily<br/>Staffing</b>          |
|----------------|----------------------|-----------------------------------|----------------------------------------------------|----------------------------------------------------|
| 1/HQ           | 815 N. 6th Street    | Pumper 1<br>Rescue 1              | 3 Firefighters<br>4 Firefighters                   | 4 Firefighters<br>4 Firefighters                   |
| 2              | 6241 State Avenue    | Quint 2<br>HazMat 2<br>Medic 2    | 4 Firefighters<br>Cross Staffed<br>2 Firefighters  | 4 Firefighters<br><br>2 Firefighters               |
| 3              | 420 Kansas Avenue    | Pumper 3<br>HazMat 3<br>Medic 3   | 4 Firefighters<br>Cross Staffed<br>2 Firefighters  | 4 Firefighters<br><br>2 Firefighters               |
| 4              | 3044 N. 82nd Street  | Pumper 4<br>Medic 4               | 3 Firefighters<br>Cross Staffed                    | 4 Firefighters                                     |
| 5              | 910 Quindaro Blvd.   | Pumper 5<br>Medic 5               | 3 Firefighters<br>2 Firefighters                   | 4 Firefighters<br>2 Firefighters                   |
| 6              | 9548 State Avenue    | Rescue 6<br>Tower 6               | 4 Firefighters<br>Cross Staffed                    | 4 Firefighters                                     |
| 7              | 2717 Strong Avenue   | Pumper 7<br>Truck 7<br>Medic 7    | 3 Firefighters<br>4 Firefighters<br>2 Firefighters | 4 Firefighters<br>4 Firefighters<br>2 Firefighters |
| 8              | 3131 N. 123rd Street | Pumper 8                          | 3 Firefighters                                     | 4 Firefighters                                     |
| 9              | 1100 Central Avenue  | Pumper 9<br>Medic 9               | 3 Firefighters<br>2 Firefighters                   | 4 Firefighters<br>2 Firefighters                   |
| 10             | 2210 W. 36th Avenue  | Pumper 10<br>Truck 10             | 3 Firefighters<br>4 Firefighters                   | 4 Firefighters<br>4 Firefighters                   |
| 11             | 3100 State Avenue    | Pumper 11                         | 3 Firefighters                                     | 4 Firefighters                                     |
| 12             | 2913 Hutton Rd.      | Quint 12<br>Medic 12              | 4 Firefighters<br>2 Firefighters                   | 4 Firefighters<br>2 Firefighters                   |
| 14             | 2615 N. 27th St.     | Pumper 14<br>Truck 14             | 3 Firefighters<br>4 Firefighters                   | 4 Firefighters<br>4 Firefighters                   |
| 15             | 444 Kindleberger Rd. | Pumper 15                         | 3 Firefighters                                     | 4 Firefighters                                     |
| 16             | 1900 S. 55th Street  | Pumper 16<br>Truck 17<br>Medic 17 | 3 Firefighters<br>4 Firefighters<br>2 Firefighters | 4 Firefighters<br>4 Firefighters<br>2 Firefighters |
| 18             | 5429 Leavenworth Rd. | Pumper 18<br>Medic 18             | 3 Firefighters<br>2 Firefighters                   | 4 Firefighters<br>2 Firefighters                   |
| 19             | 1011 N. 80th Terrace | Pumper 19<br>Medic 19             | 3 Firefighters<br>2 Firefighters                   | 4 Firefighters<br>2 Firefighters                   |
| 20             | 72nd & Kansas Avenue | Pumper 20<br>Medic 20             | 3 Firefighters<br>Cross Staffed                    | 4 Firefighters                                     |

## **Communications Staffing**

The Union recommends that the Fire Department increase the number of bargaining unit dispatchers in the Communications Center to 15. Communications is an essential first step in the response to requests for emergency assistance for all call types. NFPA 1710 incorporates into its overall response timeframe recommendations an established time frame for the jurisdictional communications center's receipt and processing of a request for aid and dispatch of appropriate resources.

The KCKFD has historically struggled to maintain staffing in the Fire Communications Center. Dispatchers have a difficult and stressful job as the first link to the public when requesting assistance. Understaffing drives mandatory overtime and fatigue as well as may cause delays in processing requests and response to service. The Union recommends increasing personnel in the Communications Center to a minimum of 15 bargaining unit Dispatchers. On duty assignment should be five Dispatchers per eight-hour shift, with a minimum of four Dispatchers on duty at all times.

## **Conclusion**

In conclusion, regardless of the type of response, fire suppression units are not always staffed in compliance with industry standards for safe, efficient, and effective responses to fires or rescue situations. When suppression units are not staffed with a minimum of four firefighters, they do not meet the company staffing objectives outlined in NFPA 1500 and NFPA 1710. Additionally, the Kansas City Kansas Fire Department's current response capabilities do not meet travel time objectives included in the industry standard NFPA 1710, which directs the first unit staffed with a minimum of four firefighters to arrive on scene within four minutes of travel, the second unit to arrive on scene within six minutes, the assembly of 17 and 28 firefighters at a low- and medium-hazard structure fires within eight minutes and the assembly of 43 firefighters at high-hazard structure fires within 10 minutes 10 seconds for 90% of incidents. GIS analysis modeled where the lack of resources affects the department's current response coverage capabilities. Call data was also examined to identify the need for more staffing using metrics including the increasing travel time of the first-arriving apparatus from 2018 to 2022. Many areas with high concentrations of responses from the KCKFD were found to be uncovered by a fire company within four minutes. These areas must wait for fire companies to travel from stations positioned further away, delaying response and interior fire suppression operations needed at structure fire incidents.

Mapping analysis showed that existing response capabilities to typical residential building structures (low-hazard), multi-residential buildings (medium-hazard) and high-rise buildings (high-hazard) are not serviced with sufficient firefighter personnel within safe and effective time frames. The risk assessment of incident demand identified areas where emergencies have typically occurred in the past and where they are likely to occur in the future. The department should examine where emergencies have typically occurred in the past and make efforts to ensure these areas continue to receive the same level of coverage while adjusting resources and deployment as needed in an effort to achieve complete compliance with industry standards. Areas with accelerated development and population growth will require additional coverage in the future. Any projected increase in emergency response demands should also be considered before changes are implemented, focusing on associated hazard types and planned response assignments.

As explained by the Commission on Fire Accreditation International, Inc. in its *Creating and Evaluating Standards of Response Coverage for Fire Departments* manual,

“If resources arrive too late or are understaffed, the emergency will continue to escalate... What fire companies must do, if they are to save lives and limit property damage, is arrive within a short period of time with adequate resources to do the job. To control the fire before it reaches its maximum intensity requires geographic dispersion (distribution) of technical expertise and cost-effective clustering (concentration) of apparatus for maximum effectiveness against the greatest number and types of risks.”



Optimally, there needs to be a balance between both elements. The ramifications of low staffing levels, as they pertain to the loss of life and property within a community, are essential when considering a fire department's deployment configuration. A fire department should be designed to adequately respond to multiple emergencies occurring simultaneously in a manner that aims to minimize the loss of life and the loss of property that the fire department is charged to protect. Any proposed changes in staffing, deployment, and station location should be made only after considering the historical location of calls, response times to specific target hazards, compliance with departmental Standard Operating Procedures, existing industry standards, including NFPA 1500 and 1710, and the citizens' expectation of receiving an adequate number of qualified personnel on appropriate apparatus within acceptable time frames to make a difference in their emergency.

# References

Link to IAFF GIS Study:

<https://gis.iaff.org/portal/apps/storymaps/stories/14202815b22444debf1101351a57681a>

National Fire Protection Association (NFPA), Standard 1710, (2020 edition) *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*.

Robinson, B, et al: (2010), “Report on Residential Fire Ground Field Experiment” National Institute of Standards and Technology.

Commission on Fire Accreditation International, Inc., *Creating and Evaluating Standards of Response Coverage for Fire Departments*, manual

# Appendix A:

*Rebuttal to the Municipal Services Review-Fire Suppression and Fire-Based EMS Services for the Unified Government Wyandotte County-City of Kansas City Kansas, February 2016*

**Rebuttal to the  
Municipal Services Review-Fire Suppression  
and Fire-Based EMS Services for the Unified  
Government Wyandotte County-City of Kansas  
City Kansas**

**February 2016**

## Rebuttal Summary

In an effort to reduce City budgets, the Kansas City administration contracted with FACETS Consulting, LLC, to conduct a study on current Kansas City Fire Department (KCKFD) operations, as well as make recommendations that would help to improve efficiency and expand resources into the western portion of the city. The FACETS team made a number of recommendations including, but not limited to, Standard Operating Procedures (SOPs), staffing and deployment, training, recruitment, Emergency Medical Services, and station locations.

Following are some salient details included in the report that may require further analysis and consideration:

### **Data: The FACETS team collected and analyzed budget data and dispatch information for 2012-2014.**

Budgets are a prediction. They are what a City or municipal leaders anticipate may happen, but not what will or has actually happened. A more effective method might have been to look at the City's or Fire Department's Certified Audited Financial Reports or Annual Reports to gain a better perspective on actual monetary operations. Although, it is possible that the consultants used the term "budget" as a broad term for all financial documents.

Additionally, dispatch information does not provide the entire story when it comes to fire department performance. Other factors, such as assembly time, access interval time, task mitigation times and outcomes should have also been examined.

### **The consultants recommend standardizing procedures among all three shifts in regard to both operations and administrative procedures.**

The IAFF concurs and further recommends that all SOPs be a part of on-going training for all firefighters and officers.

### **"Implement a standard risk management procedure to be used by KCKFD company officers and incident commanders at all emergency scenes...efforts are needed to incorporate and observe nationally proven best practices and industry standards..."**

It is recommended that the KCKFD refer to the National Incident Management System (NIMS), as well as NFPA 1561: *Standard on Emergency Services Incident Management System and Command Safety*.

### **"Assign one on-duty Safety Officer per shift."**

Currently, the KCKFD assigns 3 Safety Officers per shift. The Safety Officers are highly trained in all aspects of suppression and rescue techniques and respond to and assist with a myriad of tasks within the Department. Among their assigned response duties are:

- Response to house fires and general alarms
- Response to motor vehicle accidents



- Response to gas leaks and investigations
- Response to all Hazardous Materials calls
- Response to Active Shooter incidents

In addition, these Officers also:

- Assist with all rescue calls, including USAR, confined space, collapse, high angle, swift water, and trench
- Transport firefighters with non-life threatening injuries from an incident scene to the hospital
- Assist with shift change relief on incidents occurring near to or beyond shift end times
- Transport equipment to and from maintenance
- Transport boats for boat rescue operations, if necessary
- Assist Training Officers with training evolutions and reports

KCKFD responded to over 22,000 calls in 2014. Due to the responsibilities listed above, among others not listed, AND the high call volume experienced by the KCKFD, it is unfathomable that one Safety Officer per shift would be sufficient. To do this would jeopardize the lives of KCKFD firefighters and the citizens they are sworn to protect.

**FACETS makes a number of recommendations pertaining to dispatch including staffing, training, and procedures.**

Although it is not stated, the KCKFD should implement a priority dispatch system, if not already doing so. This will also assist in ensuring that appropriate types and numbers of apparatus and personnel are sent to all incident scenes.

**The consultants recommend that the KCKFD should explore mutual/automatic aid agreements with surrounding jurisdictions, including the Kansas City, MO Fire Department and others in neighboring Johnson County.**

It is certainly a good idea to maintain advantageous relationships and pursue opportunities for cost-sharing. However, the KCKFD will need to make sure that all agreements entered into can provide services on a "quid-pro-quo" basis. It is also important that KCKFD not be in the habit of turning over revenue-generating calls to mutual/automatic aid companies.

**FACETS recommends that 2 of the 9 current ambulance transport units can be converted into peak-time units.**

This recommendation was based on an analysis of Unit Hour Utilization (UHU). First, the consultants have mis-defined what a UHU is. They stated that it is an indicator of the amount of time a unit is available for response. In reality, it is a means of determining the "busy-ness" of fire department apparatus, typically ambulances, and how often these units are unavailable for

response. In that way, decision makers can determine if and when additional units need to be put into service.

It appears that FACETS based their calculations on an average of 18,890 EMS calls received annually. However, in addition to the 9 ambulances, the KCKFD also uses Advanced Life Support suppression apparatus to provide first response on EMS calls. It appears these apparatus were included in the UHU calculation. UHU should be calculated individually for the transport units and the fire apparatus. These calculations should not be comingled. The UHU for the transport units or ambulances should be based on the number of in-service hours for these units separately from fire apparatus

When calculating a UHU, certain assumptions must be made. For most, a transport time of one hour is typically assumed, beginning the clock when the unit leaves the station until it is back in service. (In reality, due to overcrowding in the ERs and ambulance diversions, this is not always the case.) The first response units may be on-scene for a much shorter time, and therefore, should not be included in the UHU calculation as noted above. Additionally the first response units respond to much more than EMS calls. Therefore, their UHU cannot be based on only EMS calls.

**"Require paramedics to gather full billing information on customers."**

Although not explicitly stated by the consultants, the KCKFD should implement electronic patient care reports (ePCR). Using ePCR has been shown to improve collection rates due to the ease of data entry by field providers. It also contains defined data points that must be satisfied for the report to be closed successfully. This is essential because Medicare and insurance companies rely on certain benchmarks, as well as certain procedures performed, to be documented in reports to justify payment. Handwritten reports that must be "re-entered" into a computer database can be entered faster into a computer by omitting certain benchmarks in order to hasten data entry. These omissions can cause billing claims to be denied due to lack of a justifiable medical need. Electronic reporting relies on real time, point of contact data entry, which eliminates the need to enter reports twice. It additionally facilitates error free data transfer to hospitals for the patient care record, which is frequently a problem with handwritten reports. It alleviates frustration of field providers, especially if the software can auto-generate information such as patient data for frequent callers, patient address information based on social security numbers, certain medicine doses, or record narratives.

**The consultants state that the KCKFD should perform a cost analysis of the inter-facility ambulance program, and turn that service over to private providers.**

If the incentive behind this entire review is to improve efficiency and save money, why is there a recommendation to cut a service that adds \$400,000 to the municipality's coffers? Additionally, having KCKFD personnel performing this service must add some comfort to the citizens in that it is "their" firefighters taking care of them, rather than an impersonal company looking to make a buck.



**"Modify the assignment procedure for firefighter paramedics and firefighter EMTs on ambulances to allow for long term assignments to a single fire station rather than continual rotation...Allow the company officer in each station to appropriately utilize staff on engines, ladders, quints, and ambulances."**

It is current practice in many fire departments that provide EMS to rotate personnel between suppression apparatus and ambulances. First, there is less "burnout" and turnover for those who are assigned to the ambulances. Additionally, it allows all personnel to keep their skills fresh by participating in various Departmental service provisions.

Allowing the company officer in each station to assign personnel may have some drawbacks. A rotational schedule should be decided upon by administration and adhered to. All contractual directives must be followed and there may be absolutely no room for bias.

**"Assess fees for Fire Prevention Services..."**

There are also other areas where the Department can assess fees. The KCKFD may consider billing for motor vehicle accidents, extrications, and air-medical evacuation landing zones, if not already doing so. It is recommended the Department look into the legality of billing for these services as well as explore partnerships and apply for grant monies to assist in offsetting operational and educational costs.

**"There is no national standard for fire apparatus replacement."**

It is true there is no national standard in place. It is recommended that the KCKFD utilize NFPA Standard 1911: *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus* and NFPA 1912: *Standard for Fire Apparatus Refurbishing* when developing a replacement plan.

**The FACETS team included several Geographic Information Systems (GIS) maps as support for some recommendations concerning the realignment of resources.**

It appears that the person that conducted the GIS analysis in this report used polygons to represent response time layers. This method is not the most accurate representation of KCKFD's capabilities, as the polygons would also include parks and land areas where no structures exist, and locations where the fire department would not typically respond. Included as an attachment in this document are maps produced by an IAFF GIS Analyst, using tested methodology for mapping fire department response capabilities. These maps were created using ArcGIS 10.3 and the most up-to-date road data available. The IAFF analyst used actual roads covered within nationally recognized response time frames to depict KCKFD's response capabilities. This methodology has been verified as accurate by various fire departments and governments, and also adopted by some consulting firms.

**IAFF Local 64 is committed to the citizens of Kansas City to provide the highest level of public safety possible. Local 64 leaders and members desire to be proactive and work with Department and City**

**Administrators to determine how to improve capabilities in currently underserved areas. Simply taking resources away from areas where they are needed to redeploy them elsewhere is not a responsible solution.**

In light of that, IAFF Local 64 has also developed a proposal for deployment that not only improves response times throughout the entire City, but also staffs apparatus in a manner that is safer for both firefighters and citizens. The table below summarizes the results of the GIS mapping for all three scenarios: current operations, FACETS recommendations, and IAFF Local 64's proposed deployment plan.

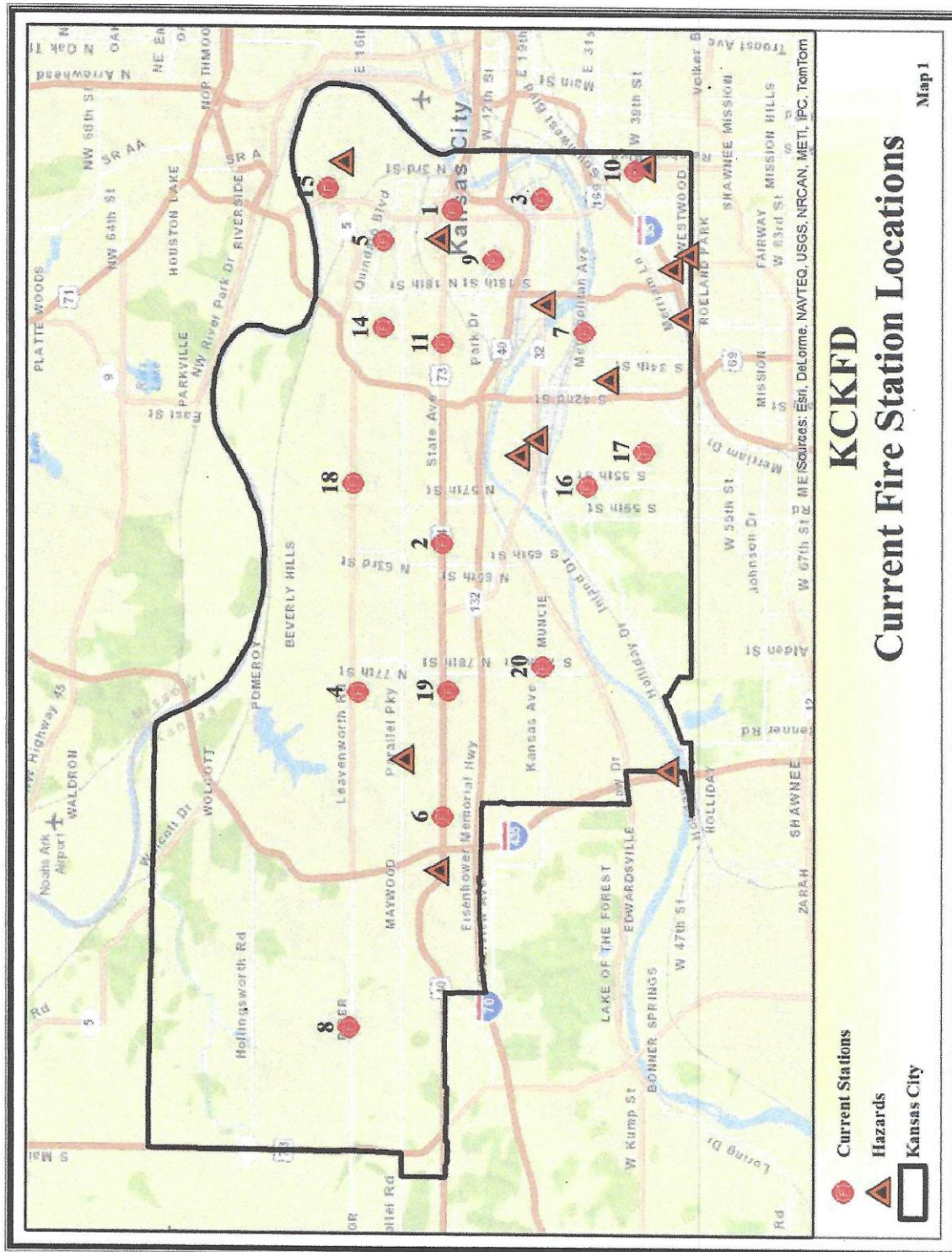
|                            | Current | FACETS | IAFF 64 |
|----------------------------|---------|--------|---------|
| 4-Minute Engine/Quint      | 66.3    | N/A    | N/A     |
| 4-Minute 2 In/2 Out        | 57.0    | 67.4   | 67.9    |
| 8-Minute, 15 Personnel     | 74.7    | 77.7   | 82.1    |
| 8-Minute, 27 Personnel     | 41.5    | 42.4   | 48.6    |
| 10.17-Minute, 43 Personnel | 43.9    | 44.8   | 46.5    |

All maps were created using ArcMap 10.3. The data used allows for traffic to be included in the modeling as to more closely simulate real-world conditions. The traffic feature for the following maps was set to replicate weekday traffic within the response jurisdiction. Specifically, Wednesday afternoon at 2:15 PM.

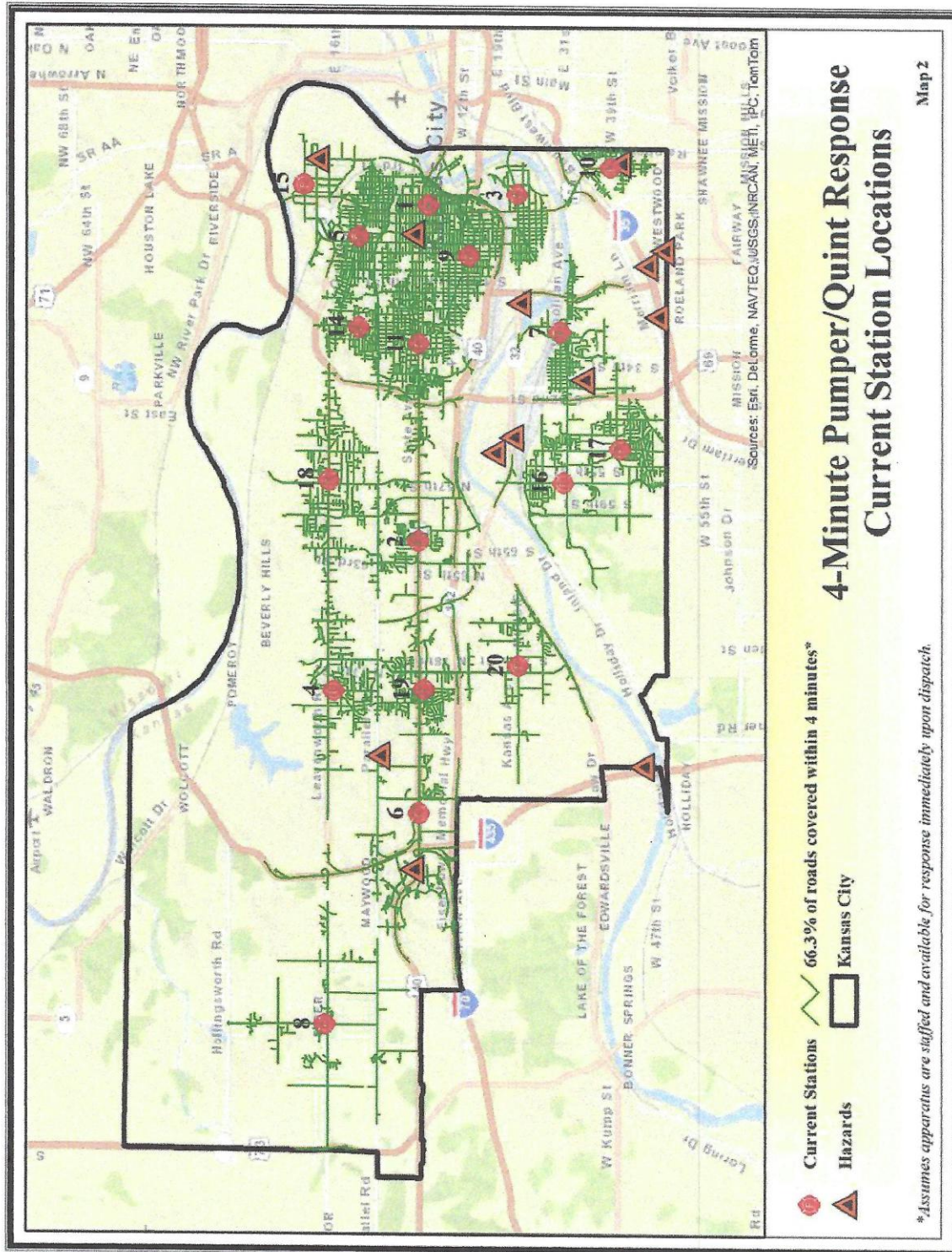
Fire department response capabilities were assessed against National Fire Protection Association Standard 1710 response time guidelines of 4 and 8 minutes for first-due and full alarm assignments, respectively, as well as national guidelines requiring a minimum of four individuals on scene before interior operations can commence.

Beginning with Map 15, an incident density layer was added to each map in order to see how well KCKFD is currently doing, and projected to do, in reaching areas with high densities of calls. Call incident data is from 2014 and includes all types of calls to which the KCKFD responded. It is important to note that due to the volume of incidents, some may have not been plotted, or were plotted incorrectly as a result of invalid address information.

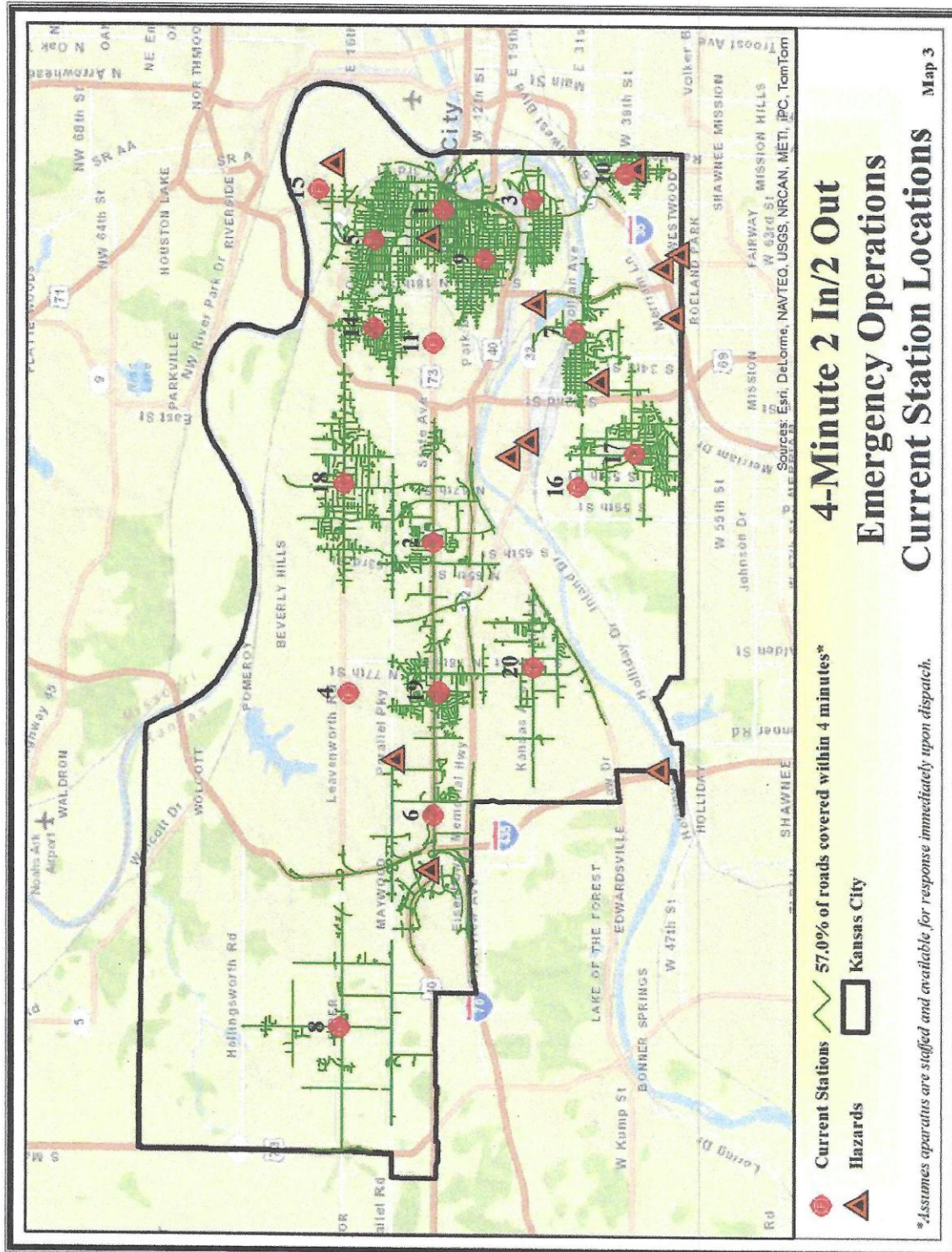






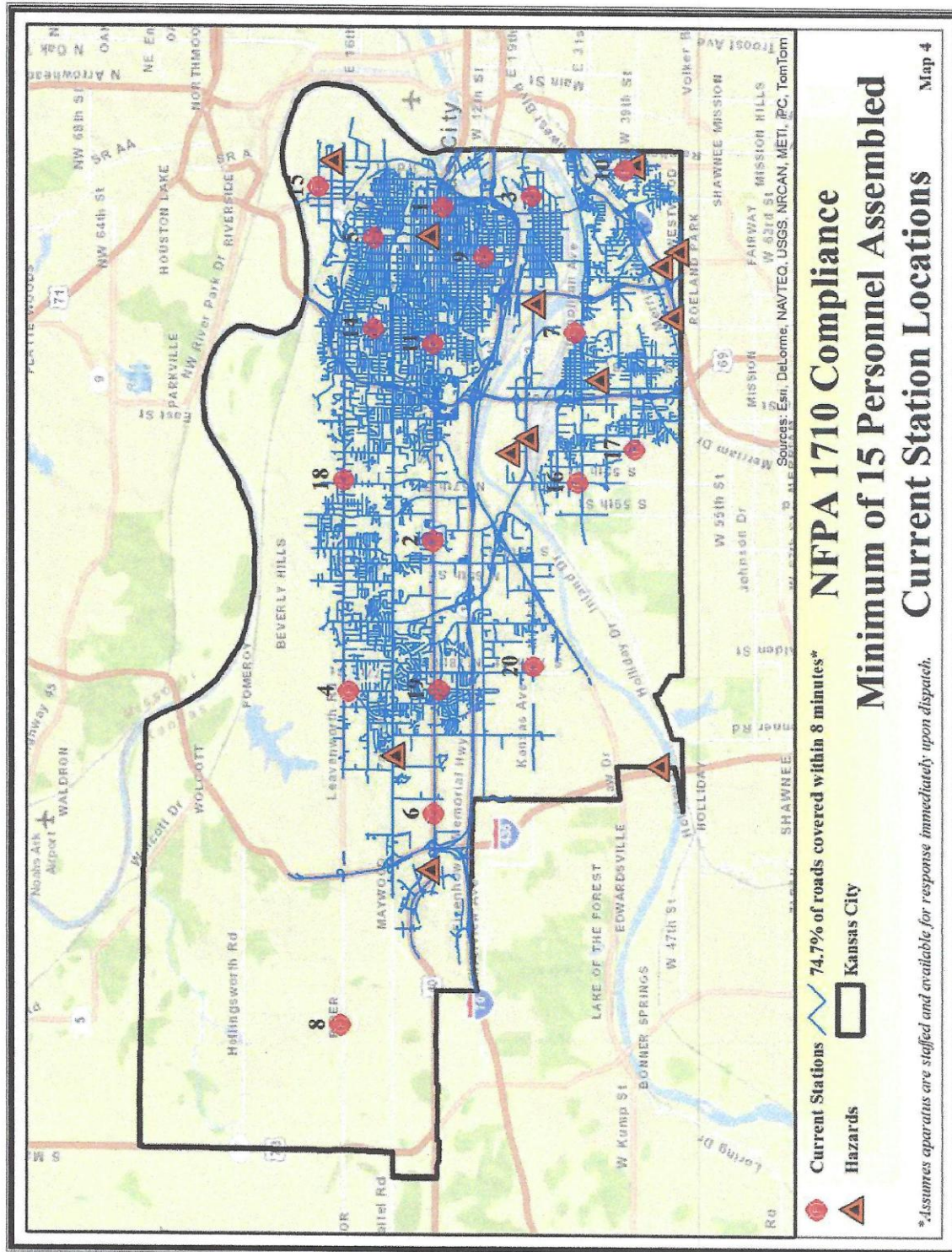




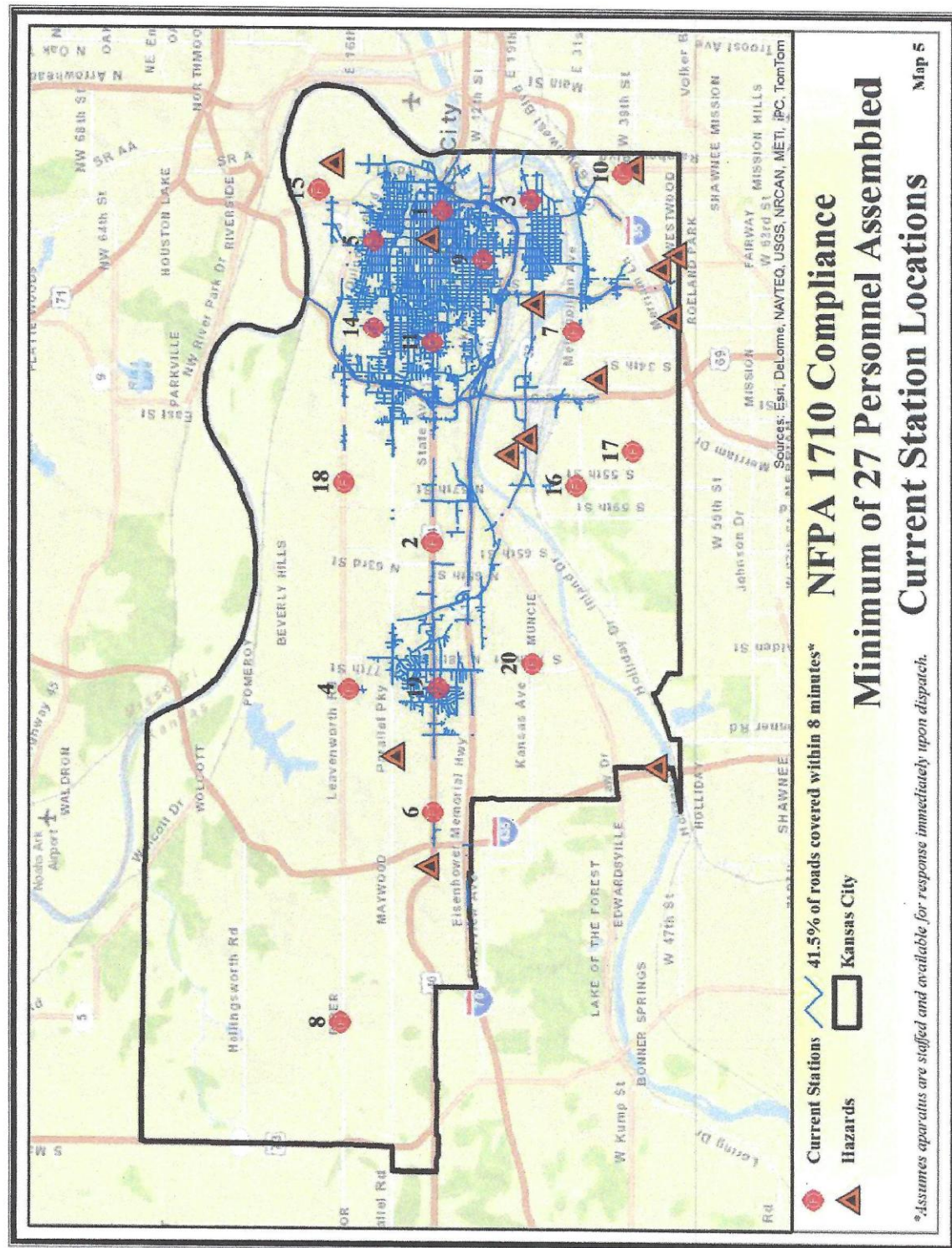


\*Assumes apparatus are staffed and available for response immediately upon dispatch.

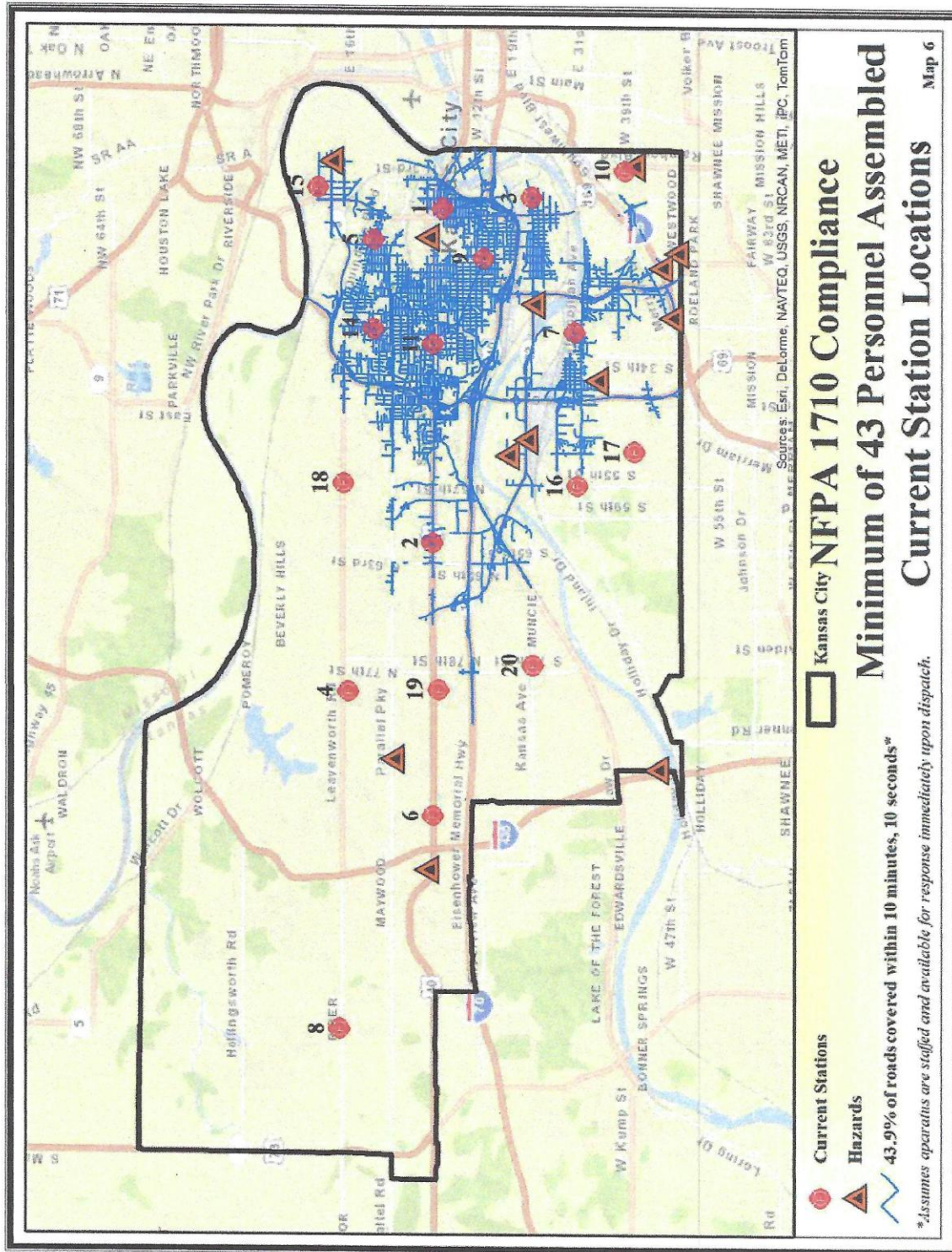






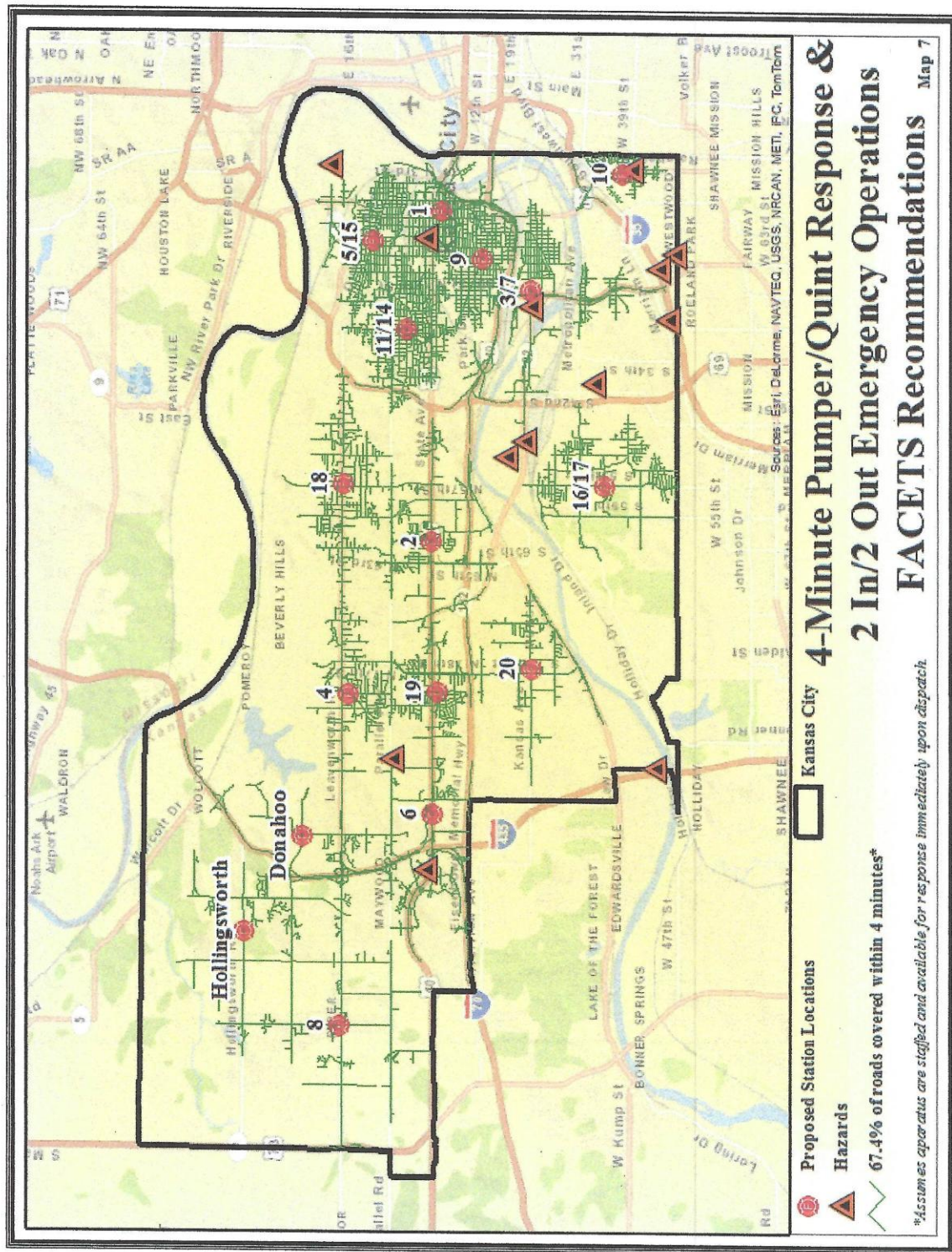




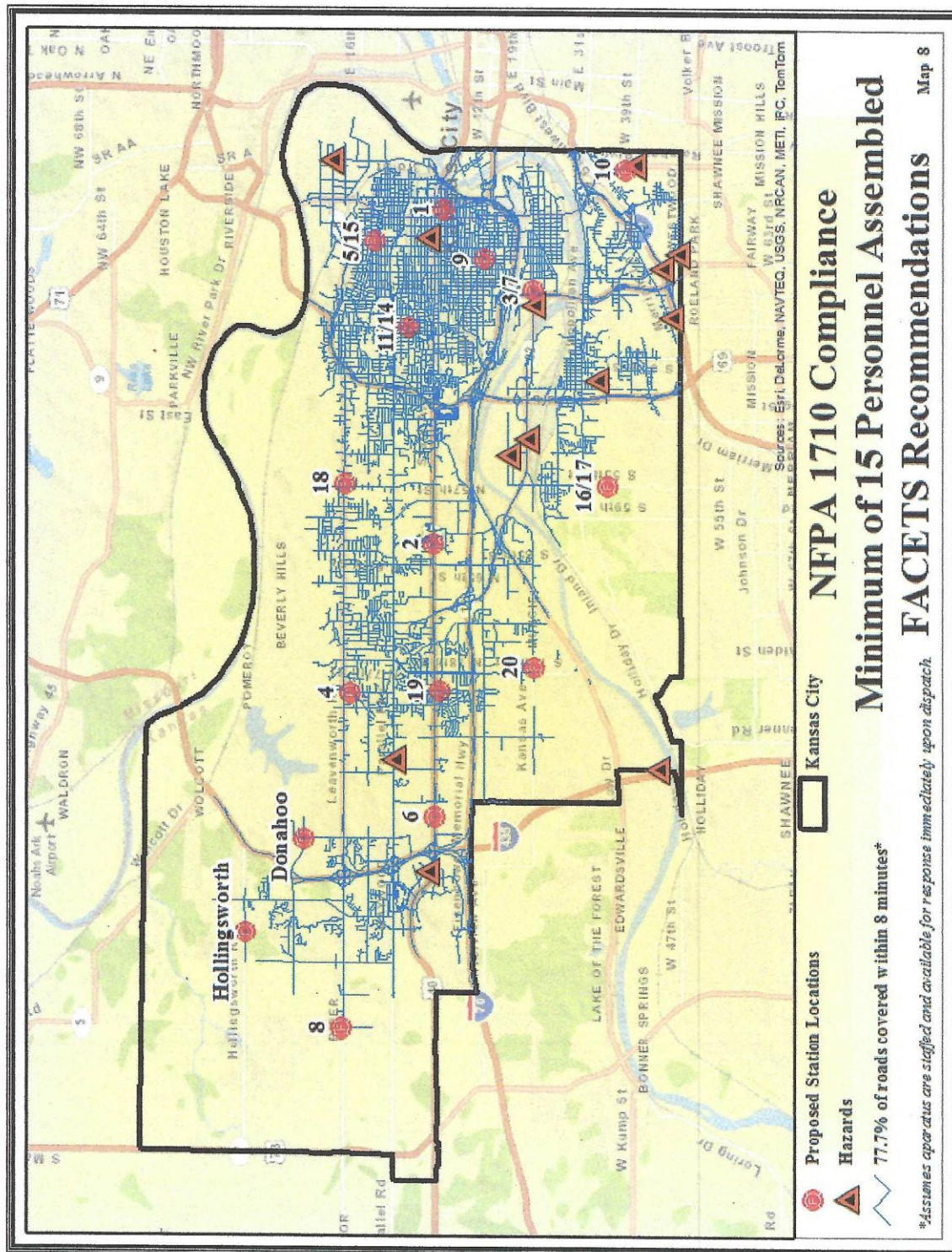


Kansas City NFPA 1710 Compliance  
**Minimum of 43 Personnel Assembled**  
**Current Station Locations**









Proposed Station Locations

Hazards

77.7% of roads covered within 8 minutes\*

Kansas City

NFPA 1710 Compliance

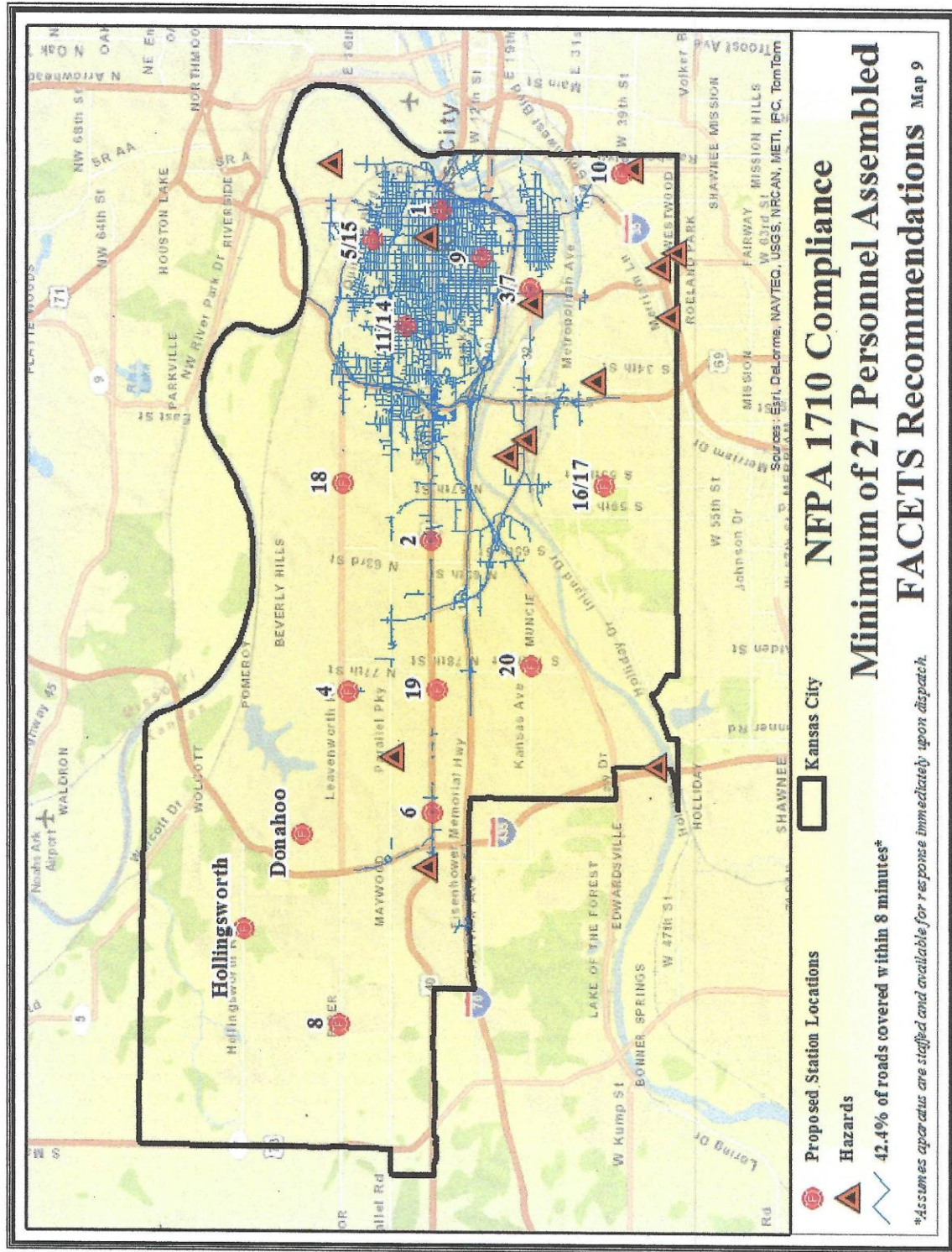
Minimum of 15 Personnel Assembled

FACETS Recommendations

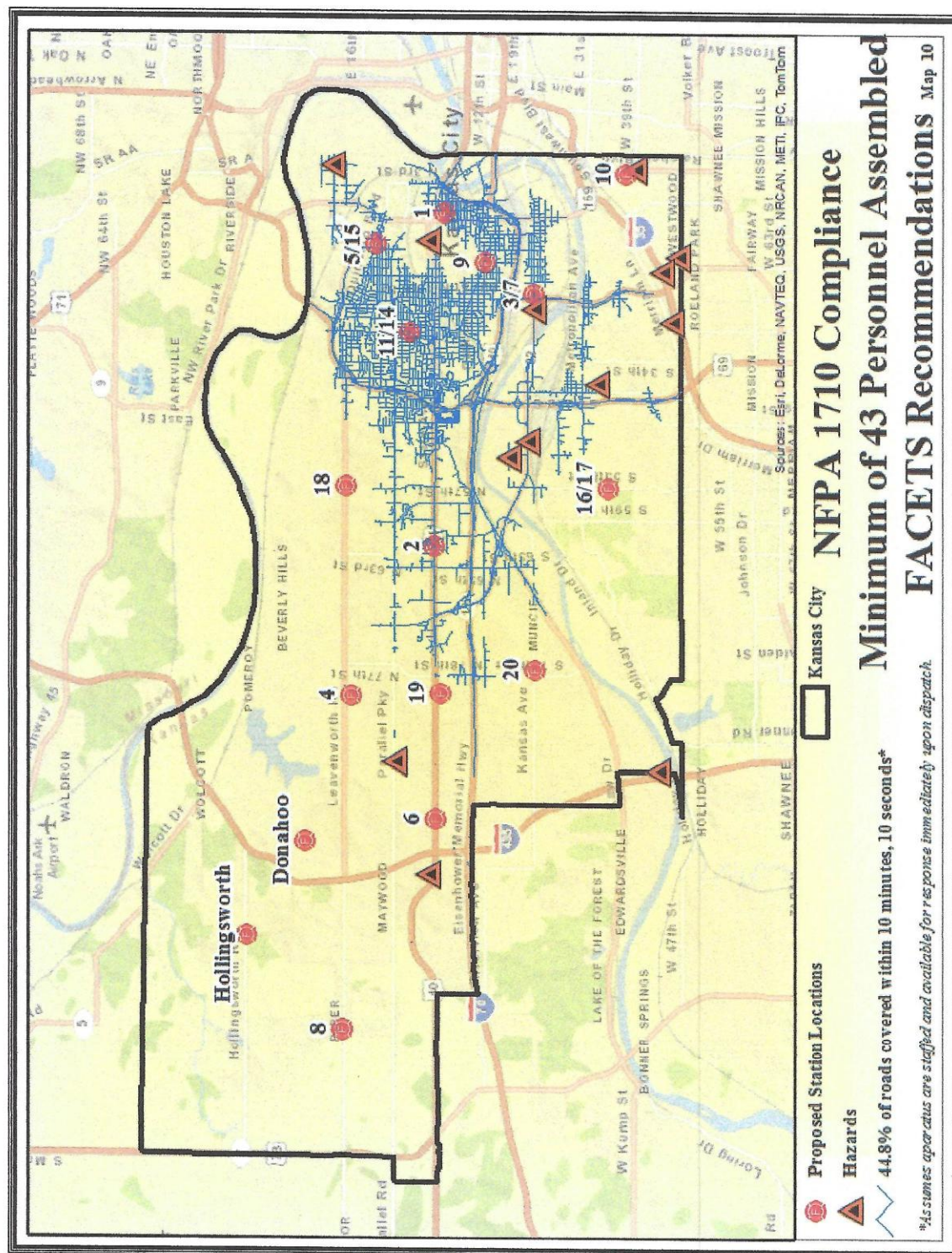
Map 8

\*Assumes apparatus are staffed and available for response immediately upon dispatch.

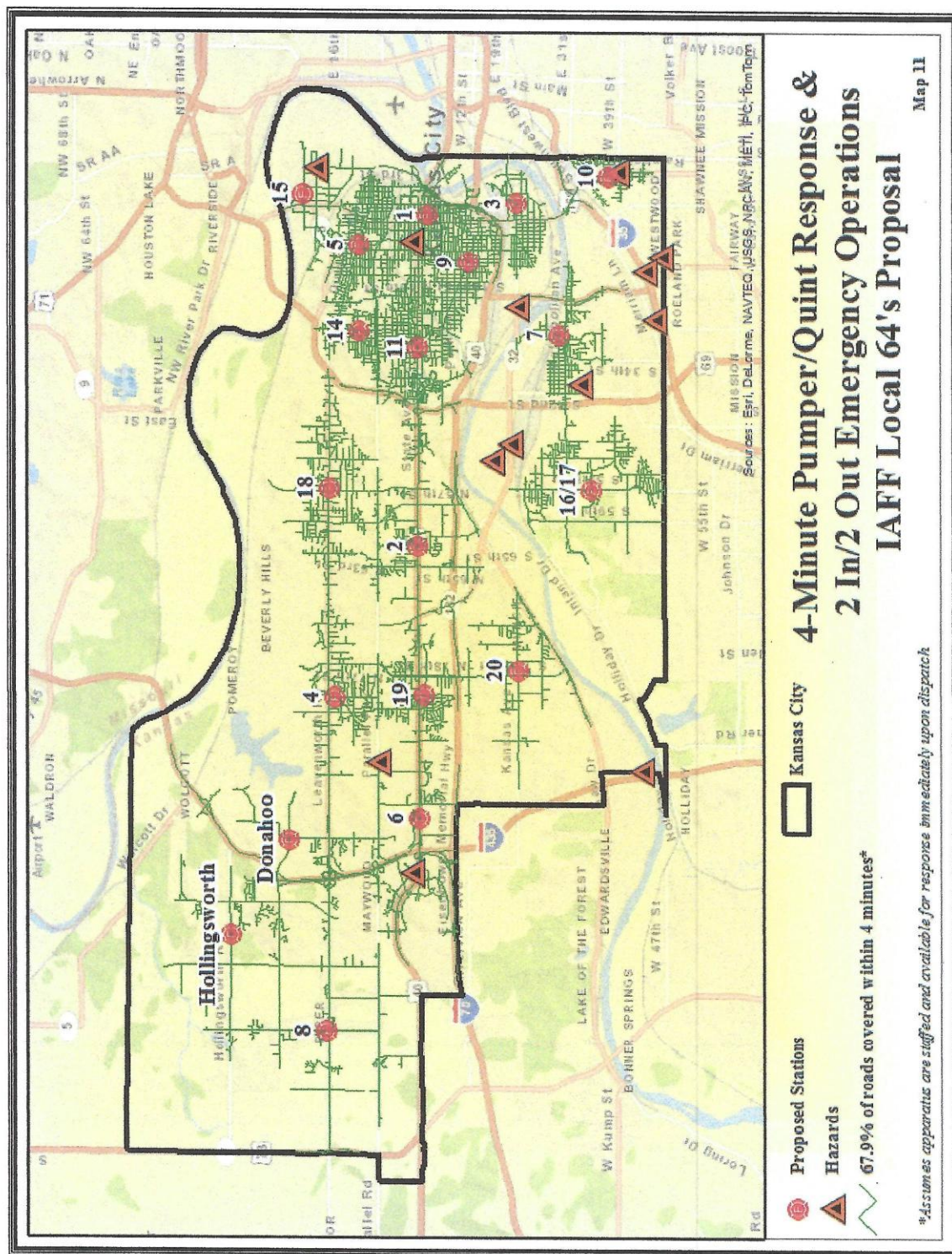




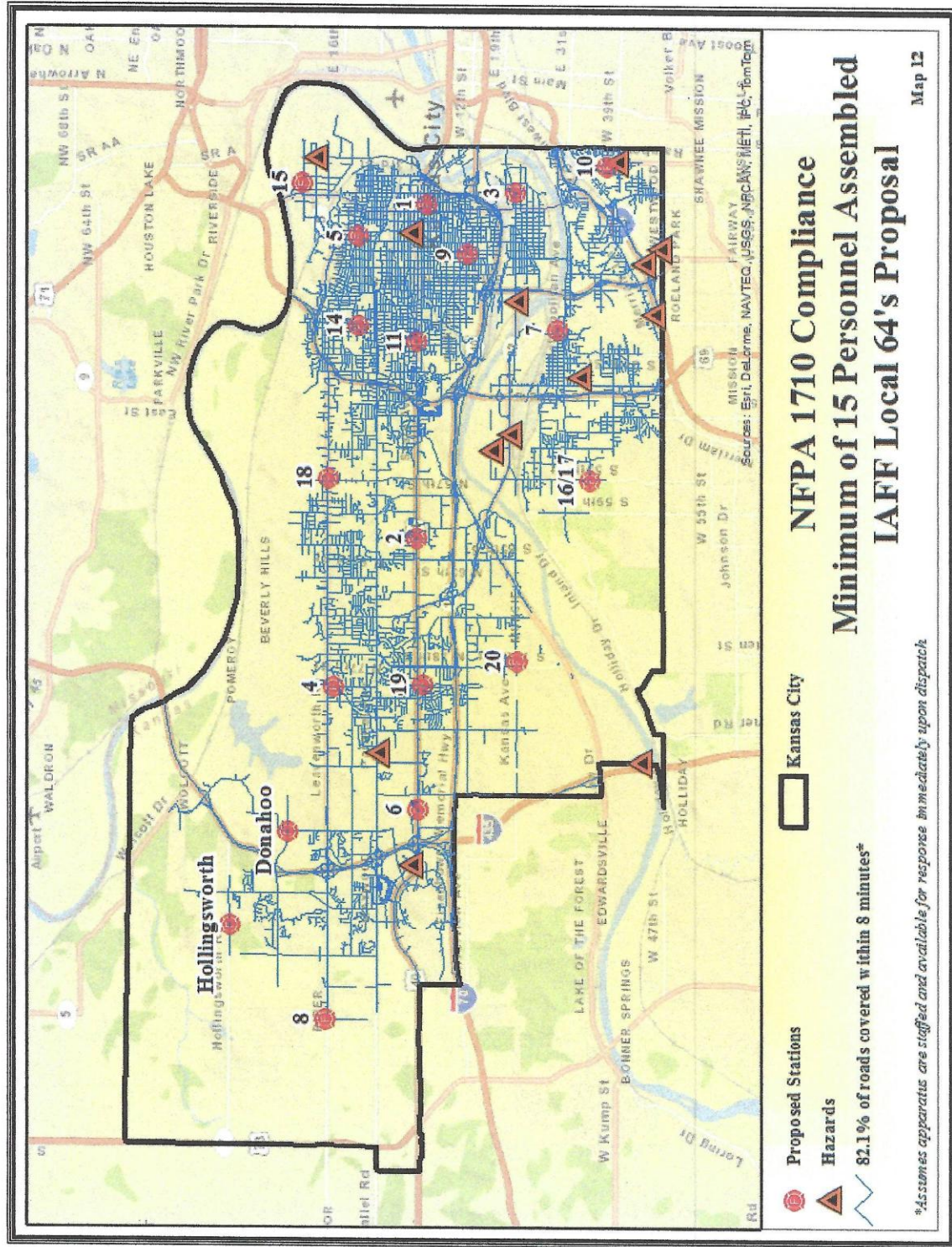




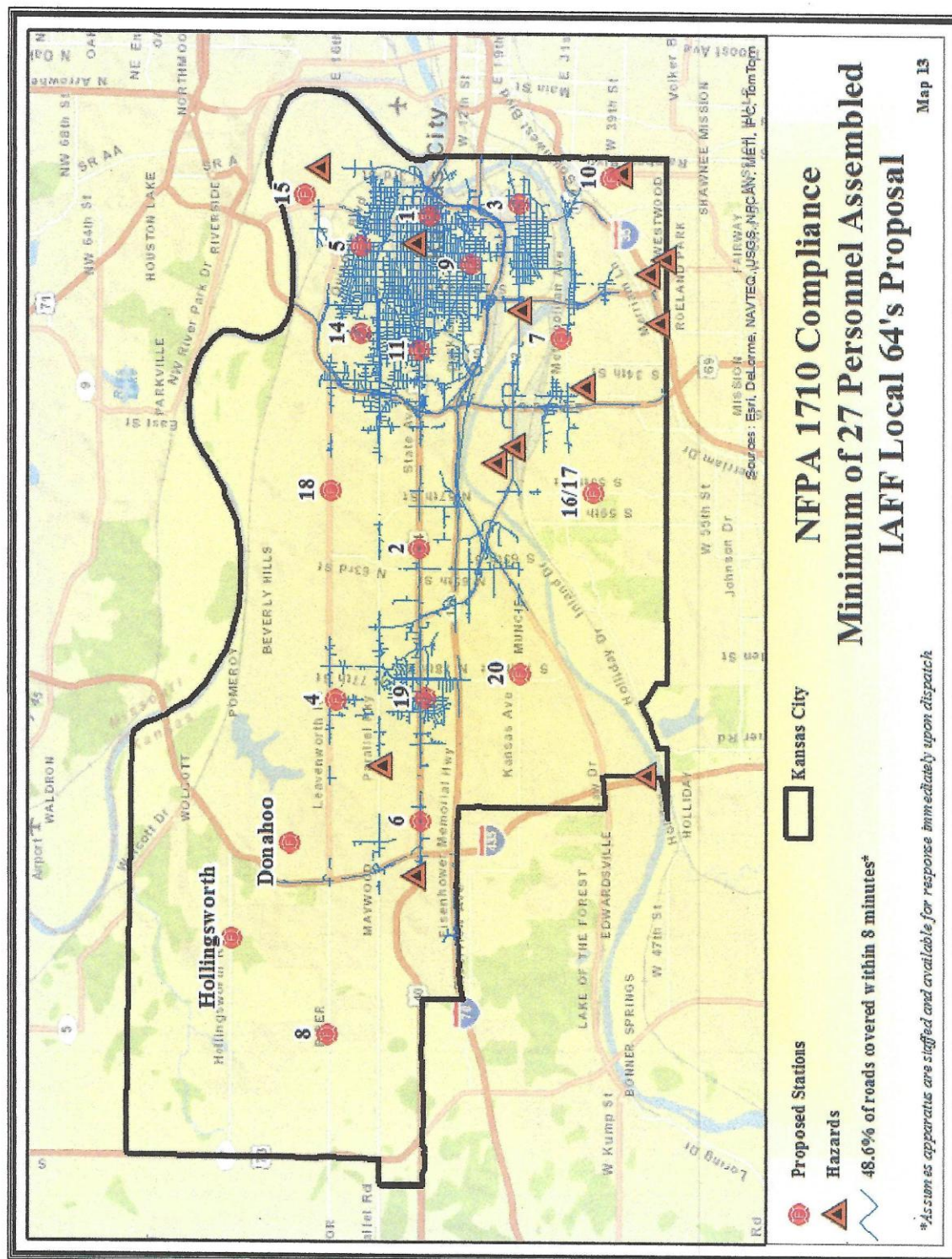




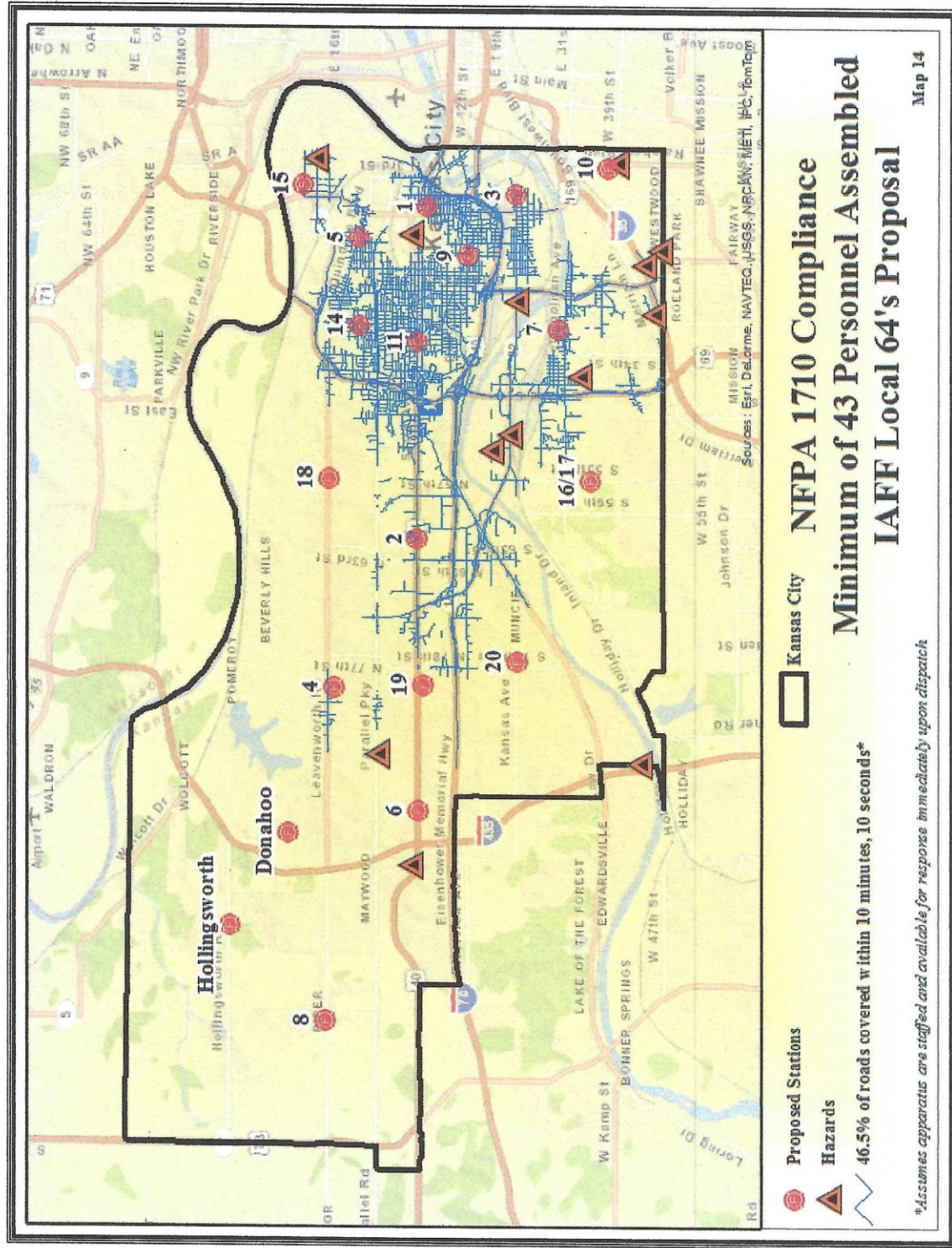




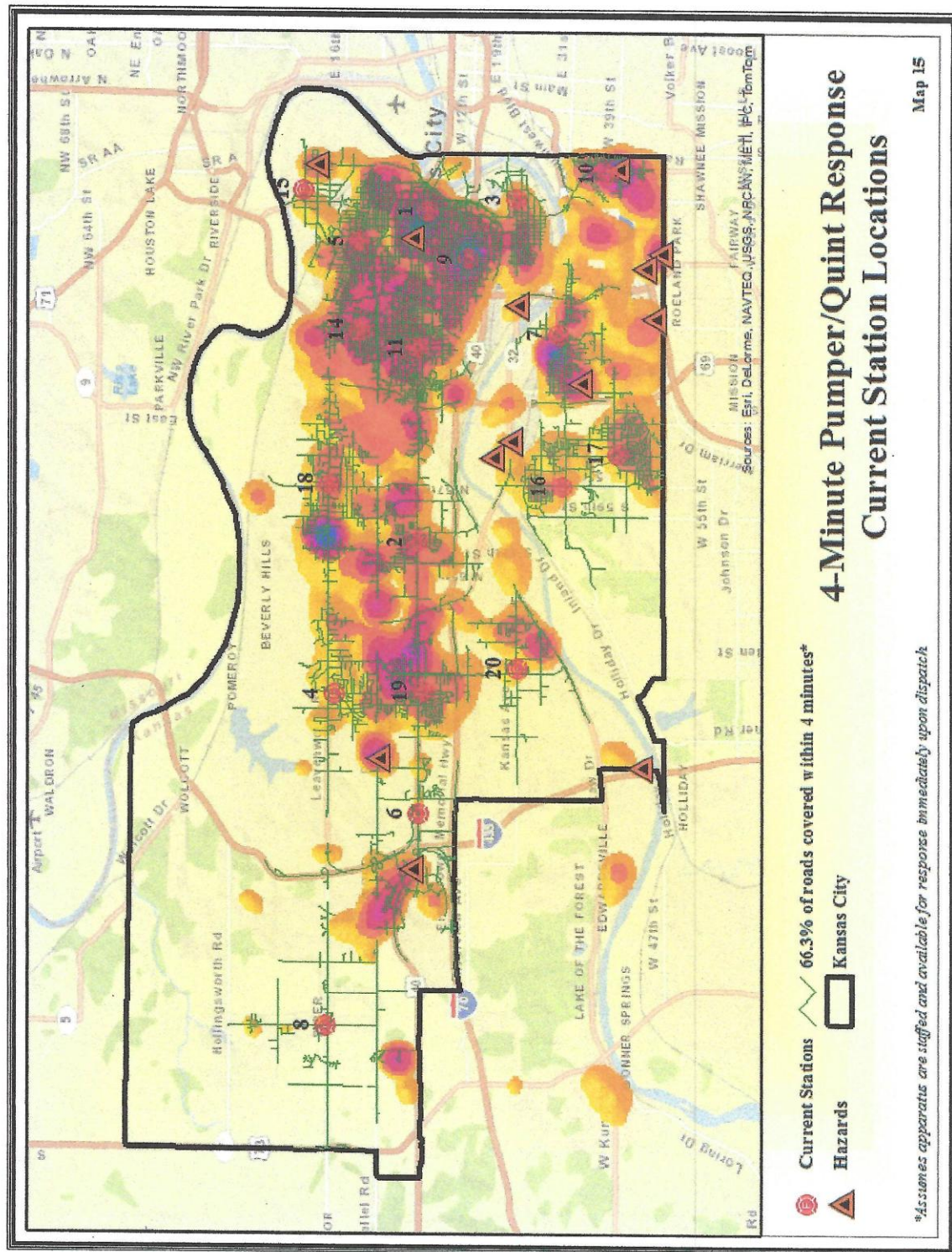




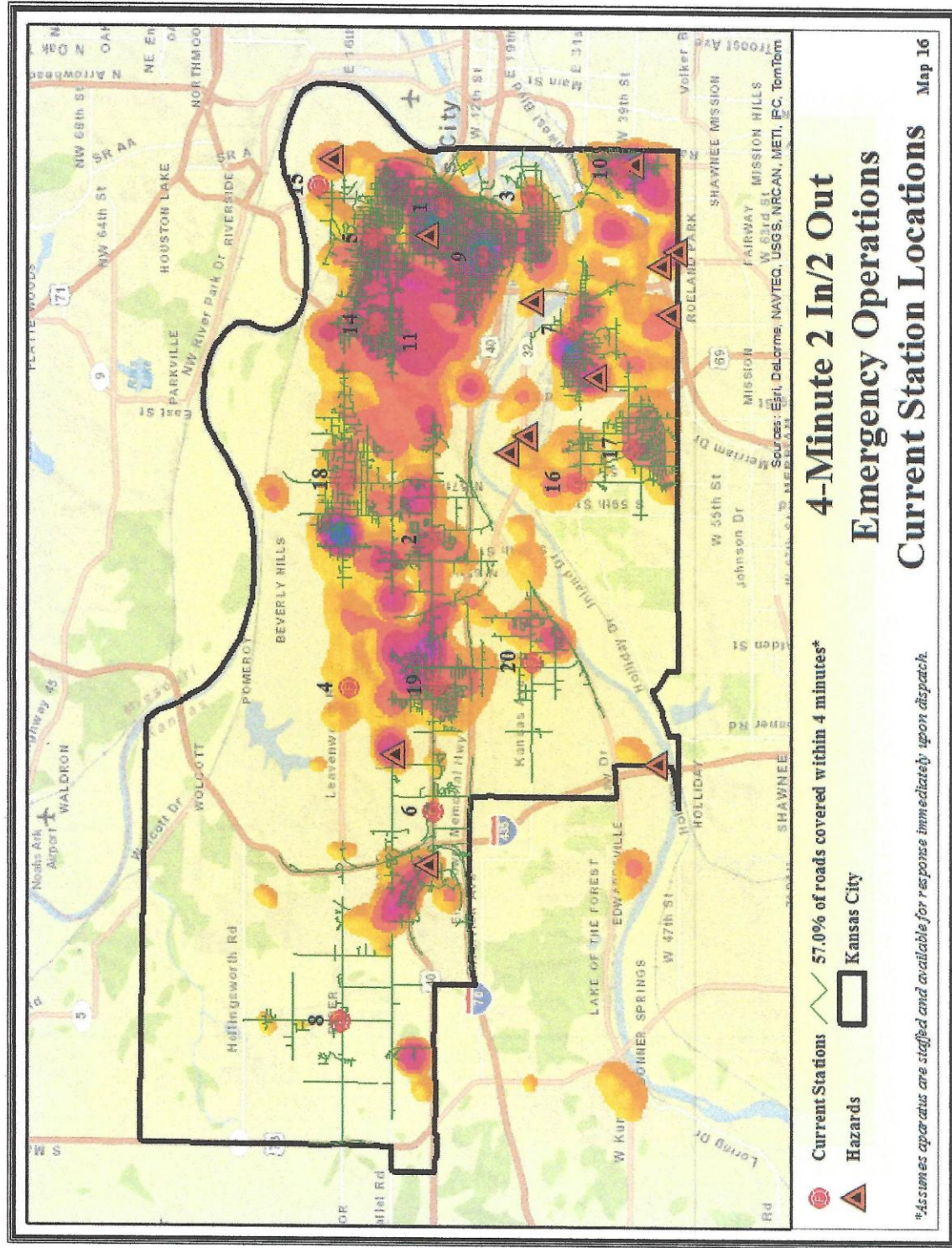




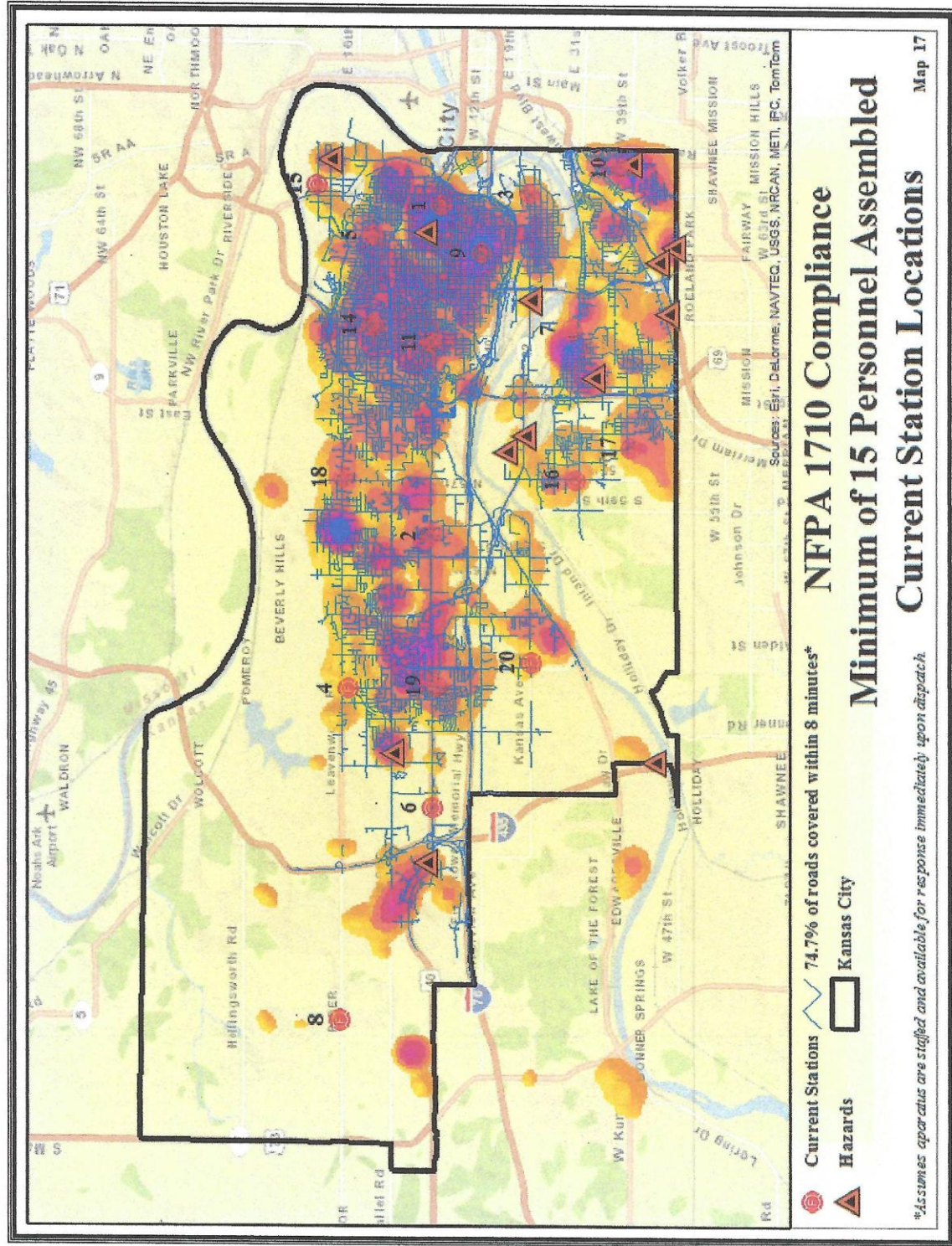






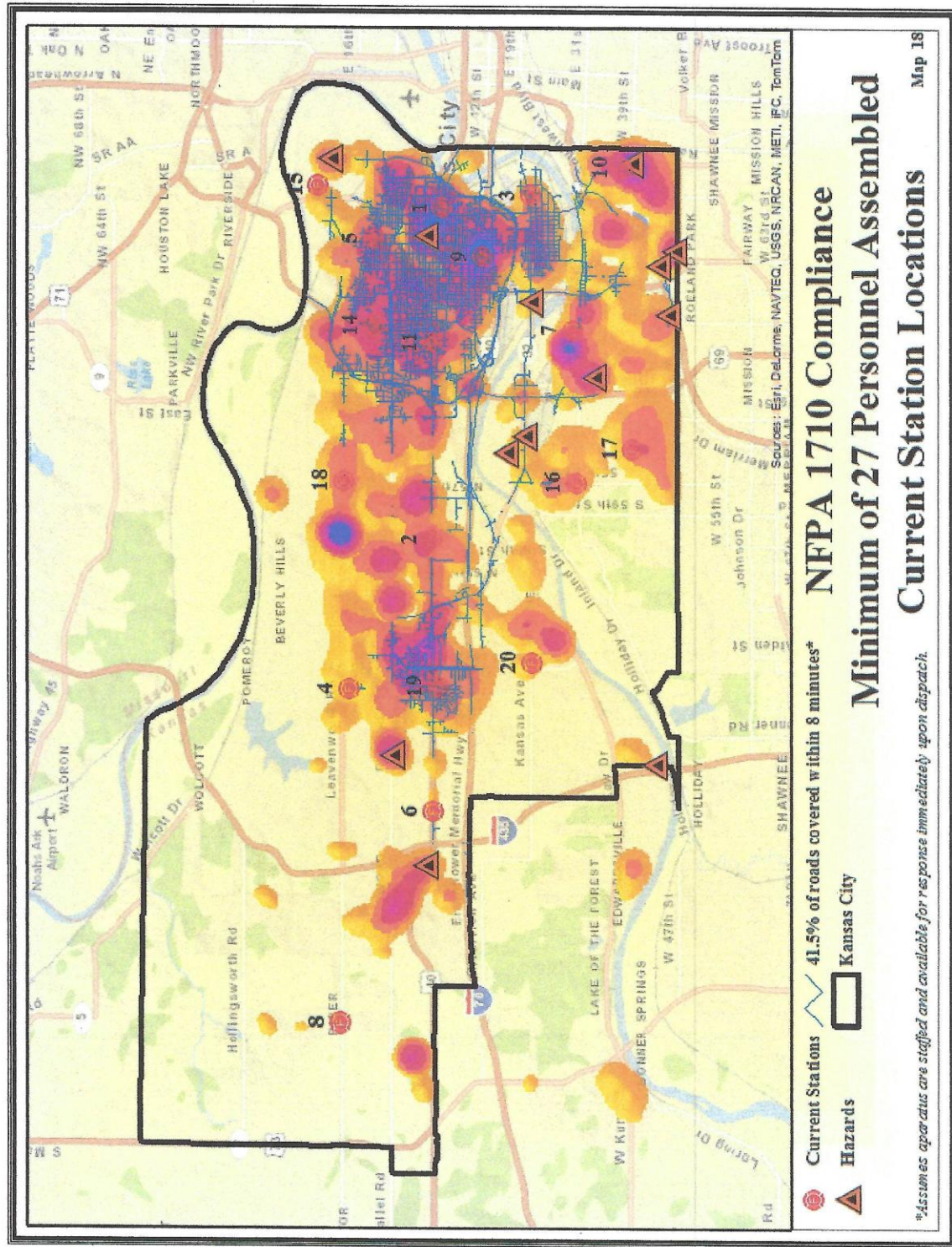




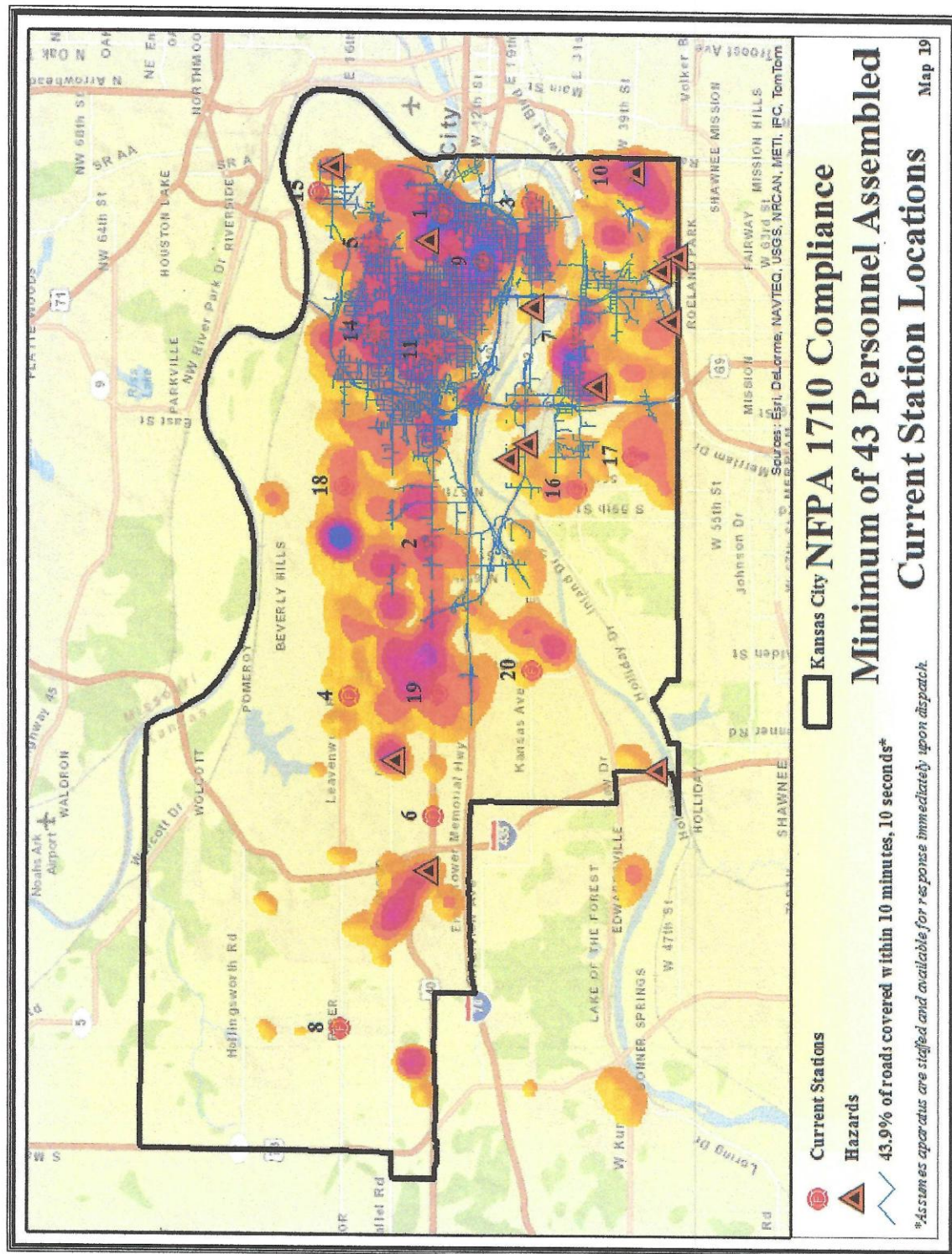


# **NFPA 1710 Compliance** **Minimum of 15 Personnel Assembled** **Current Station Locations**

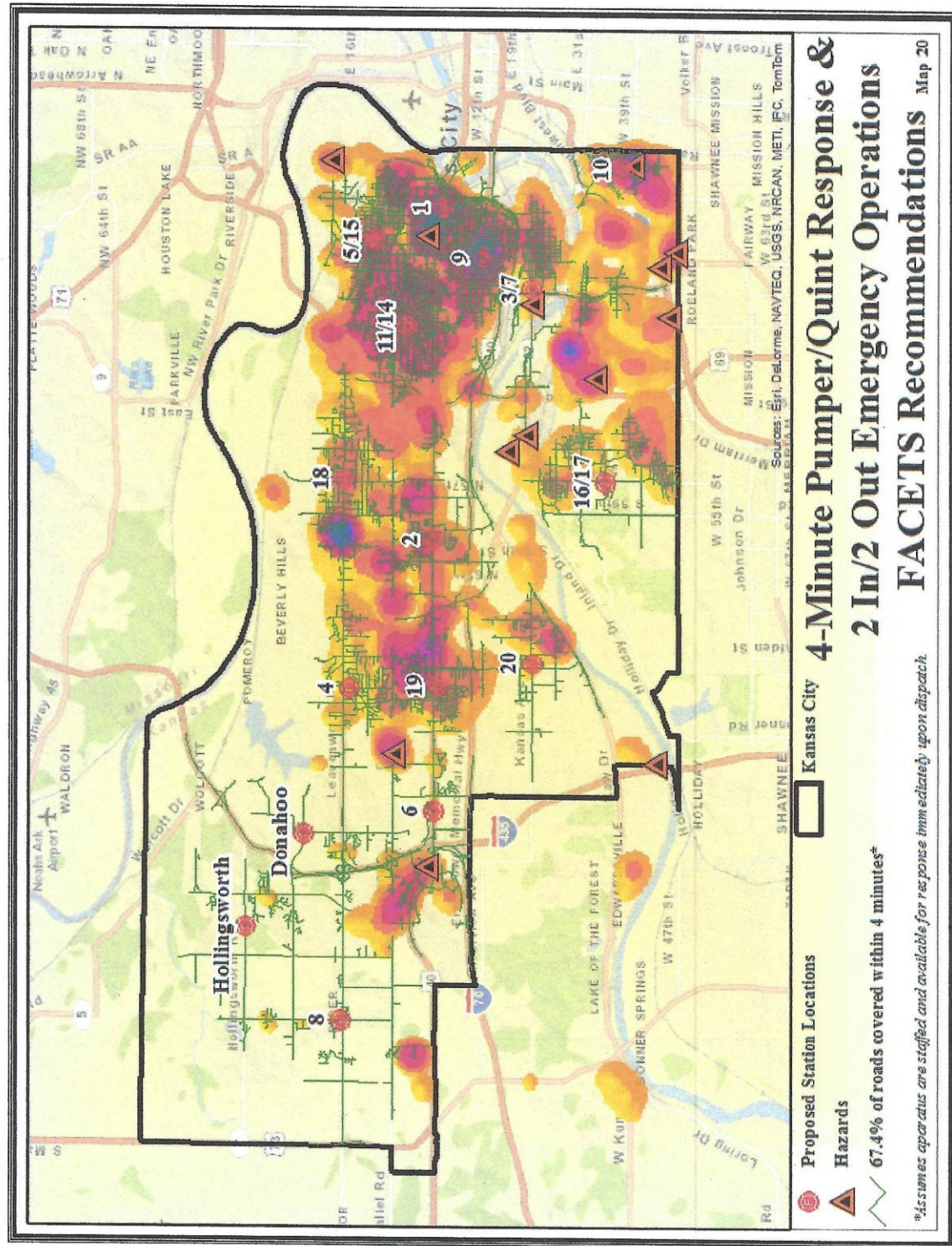




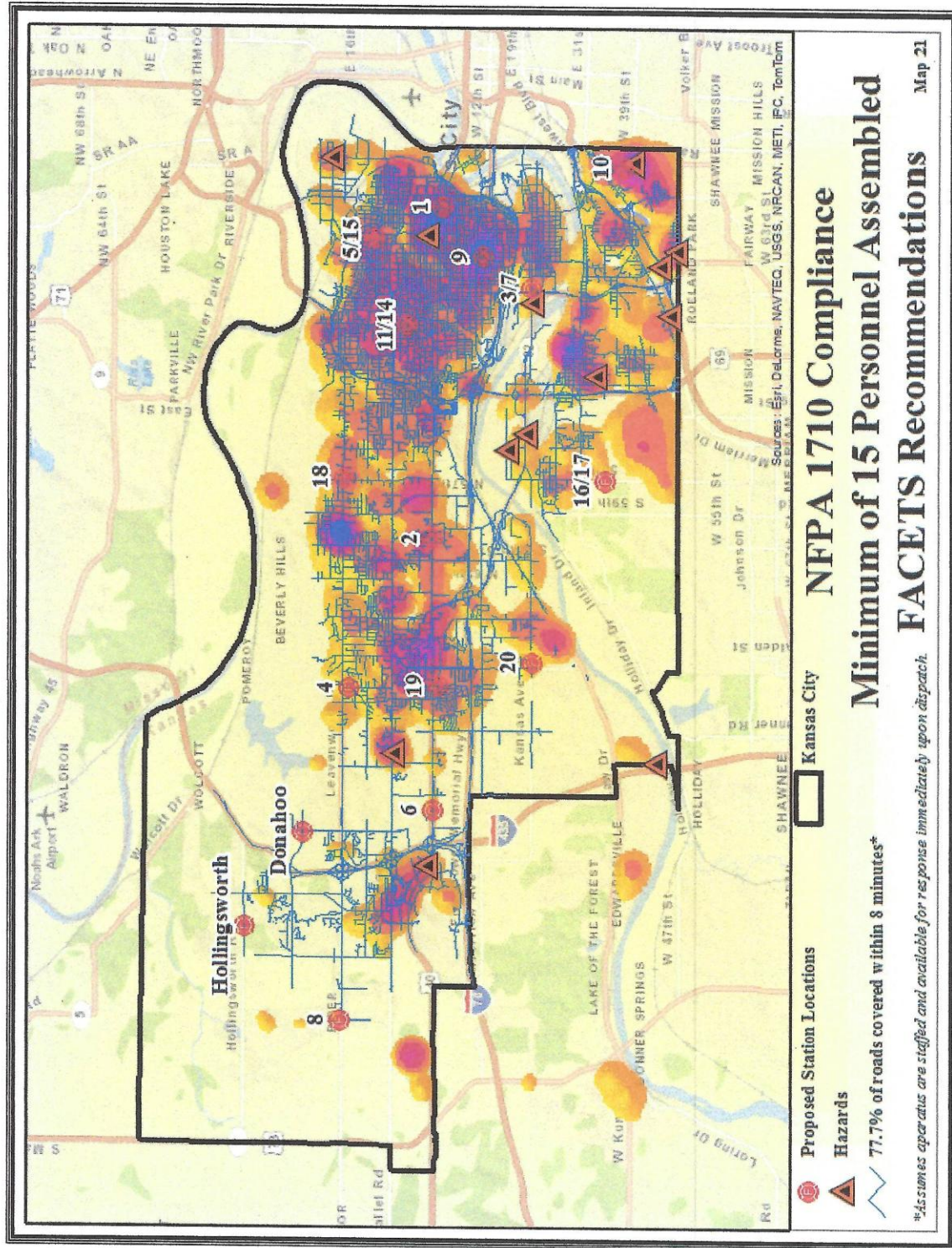




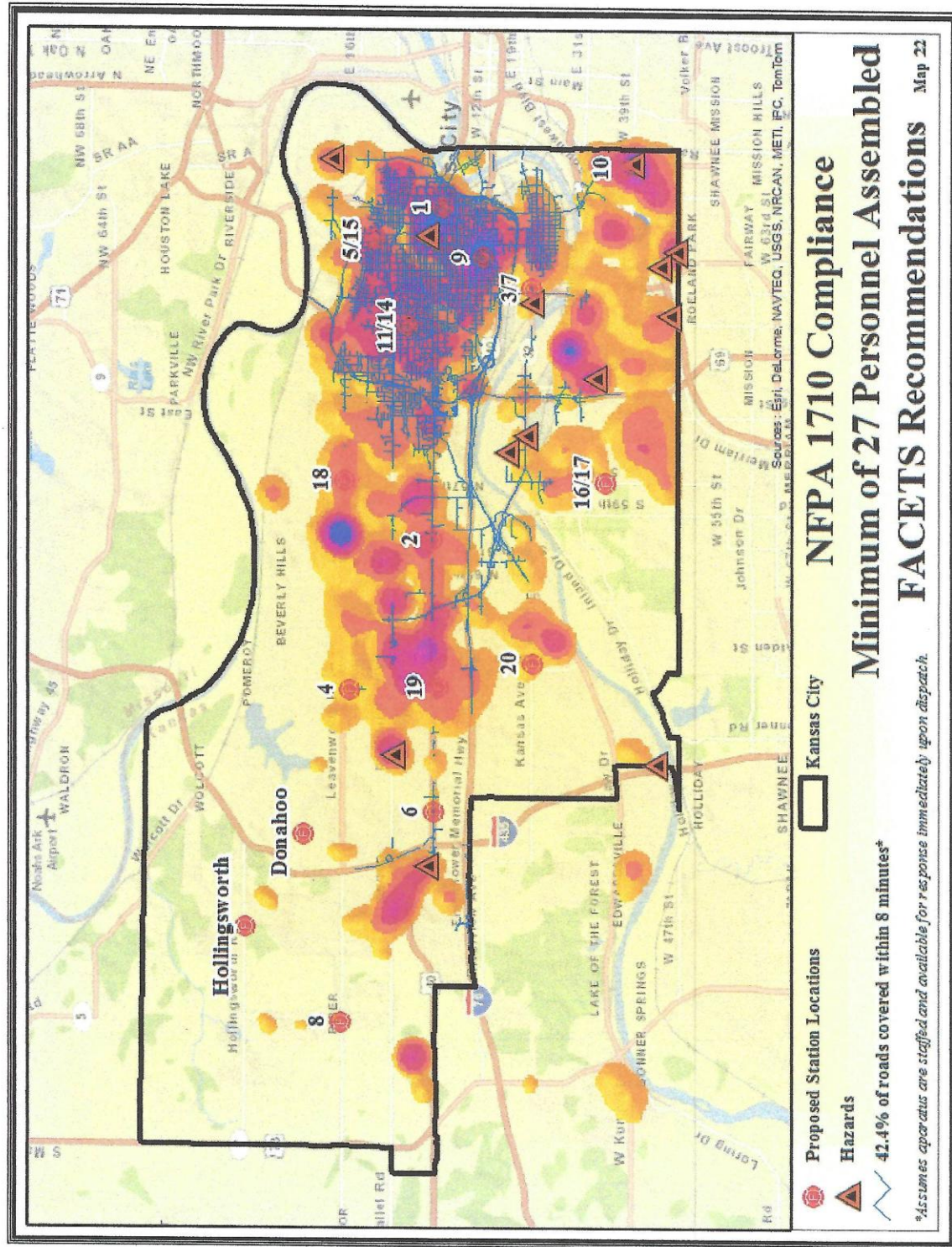




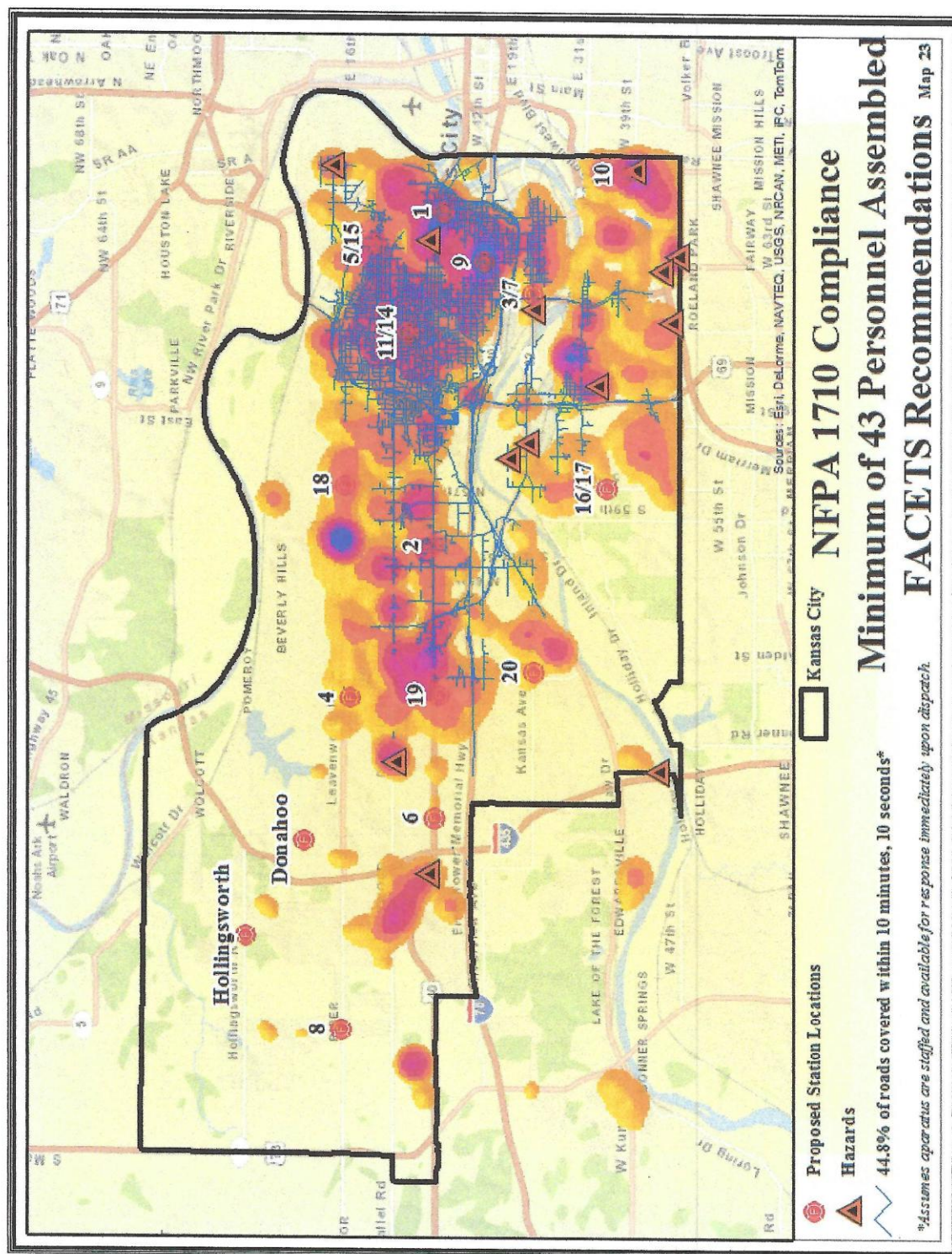




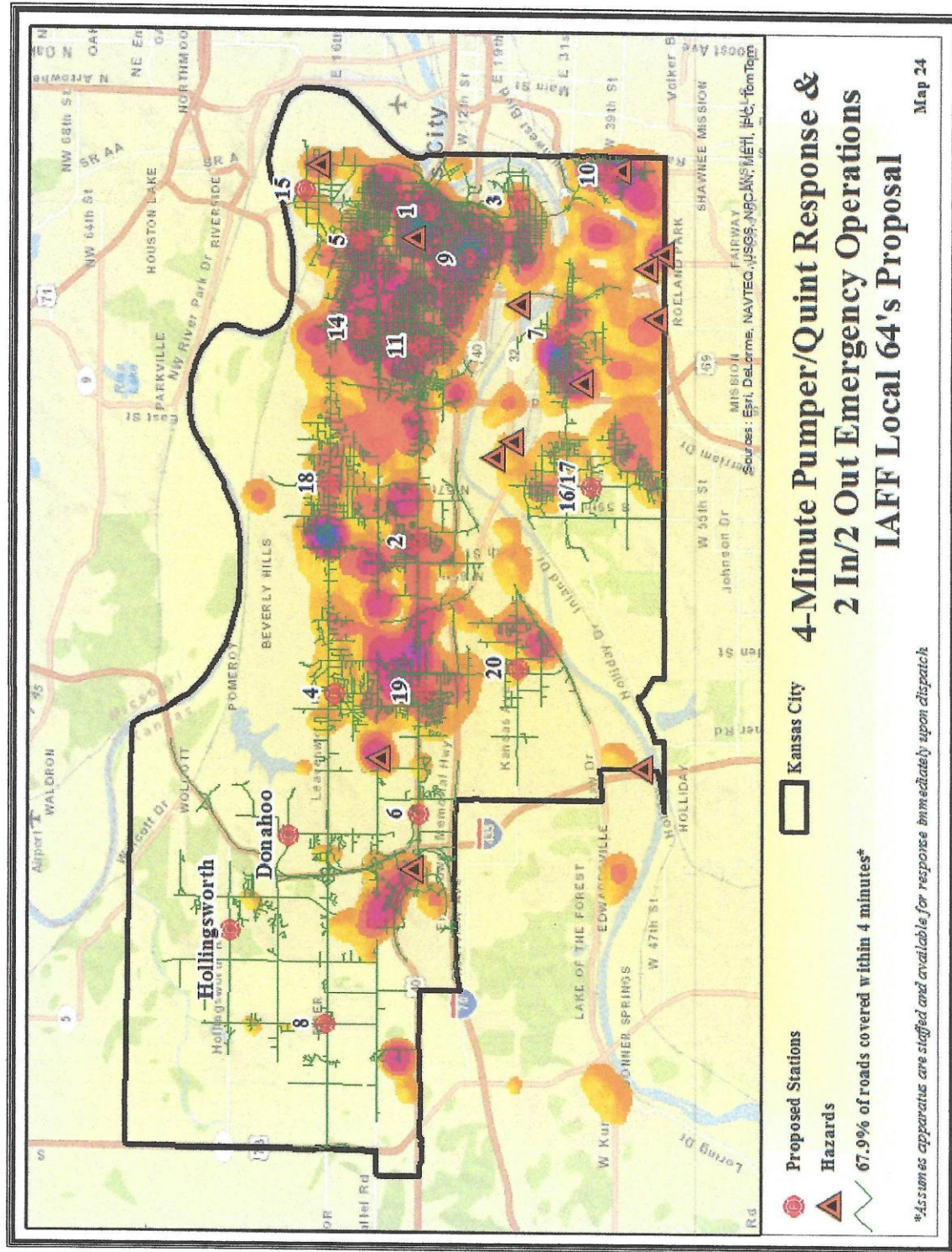




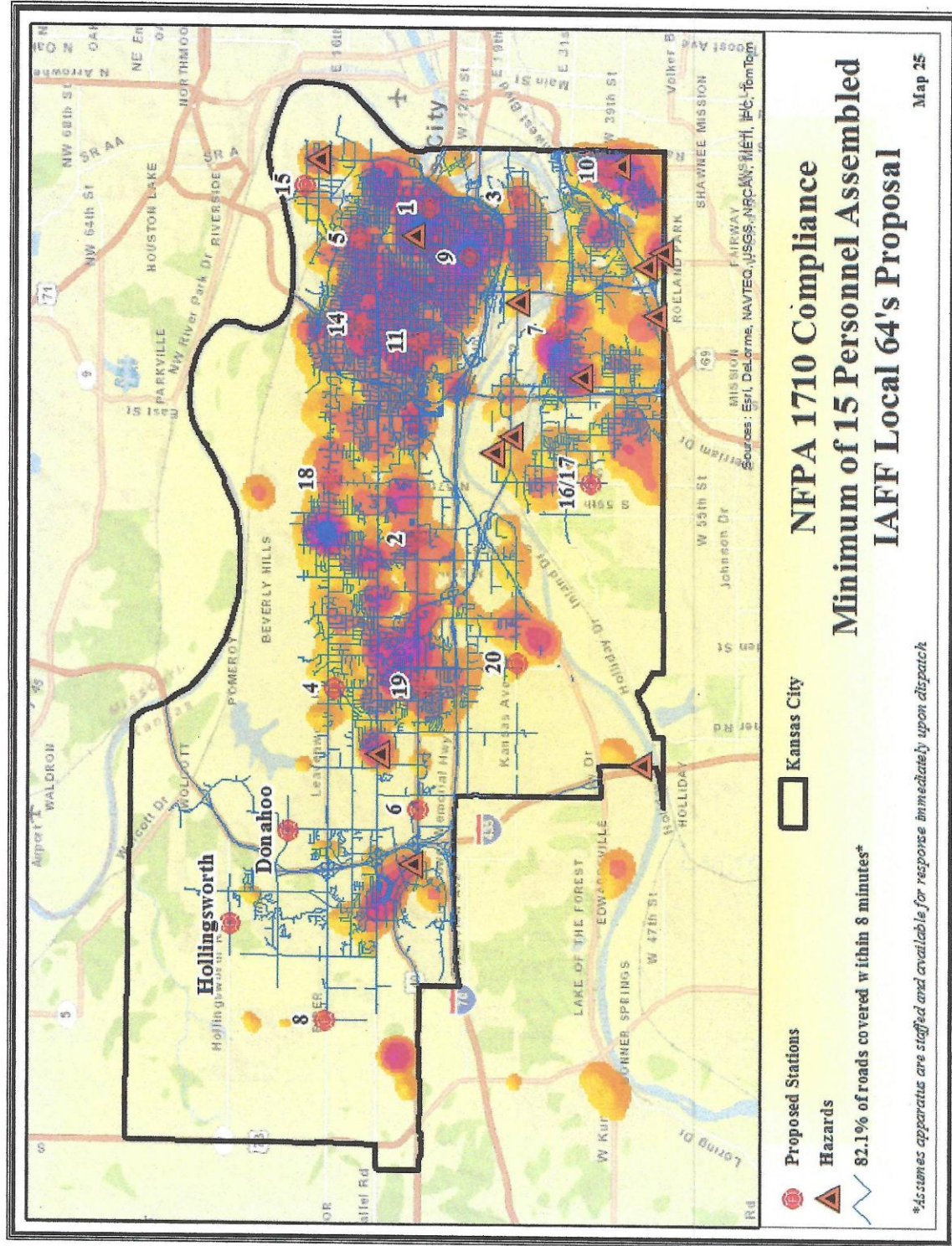




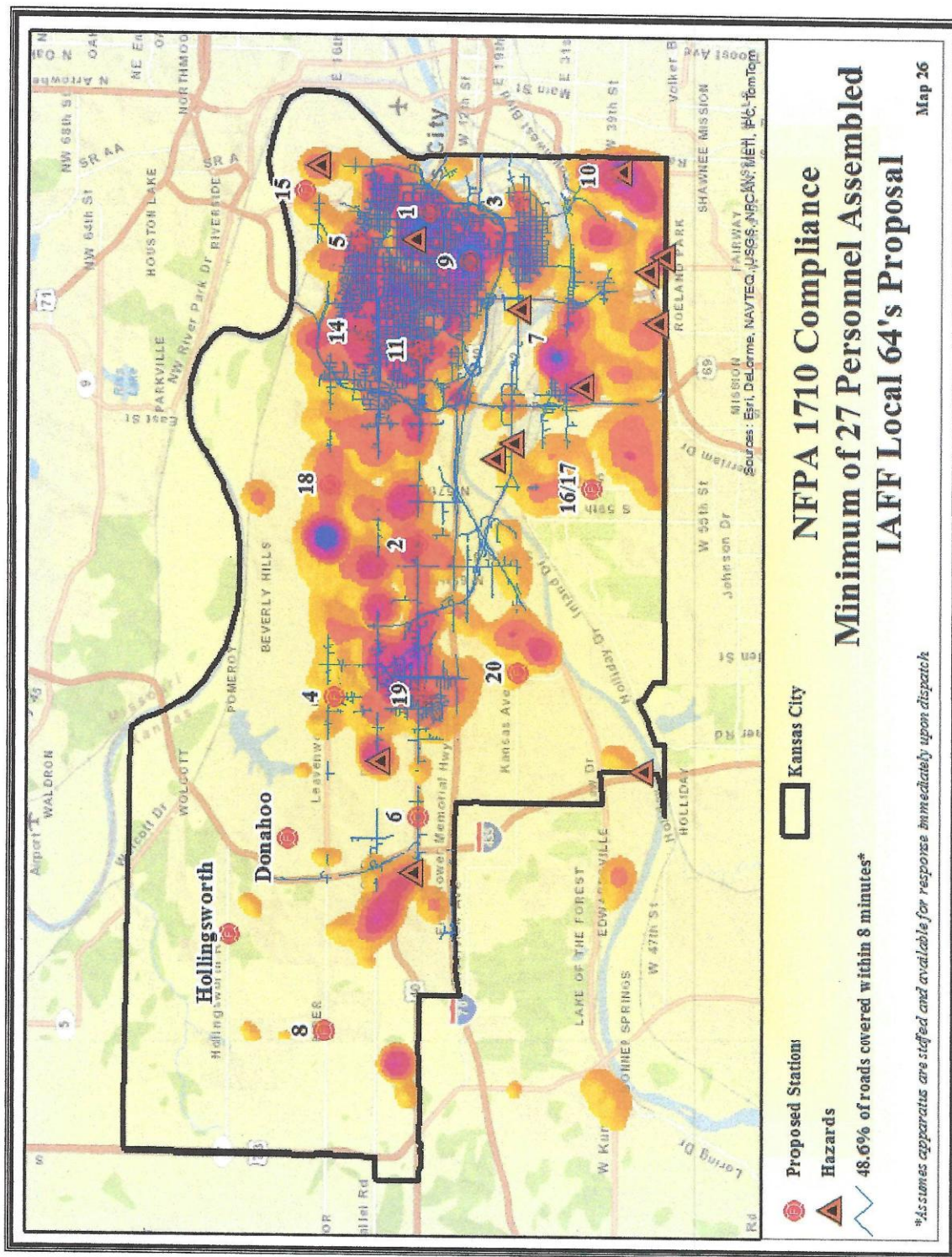




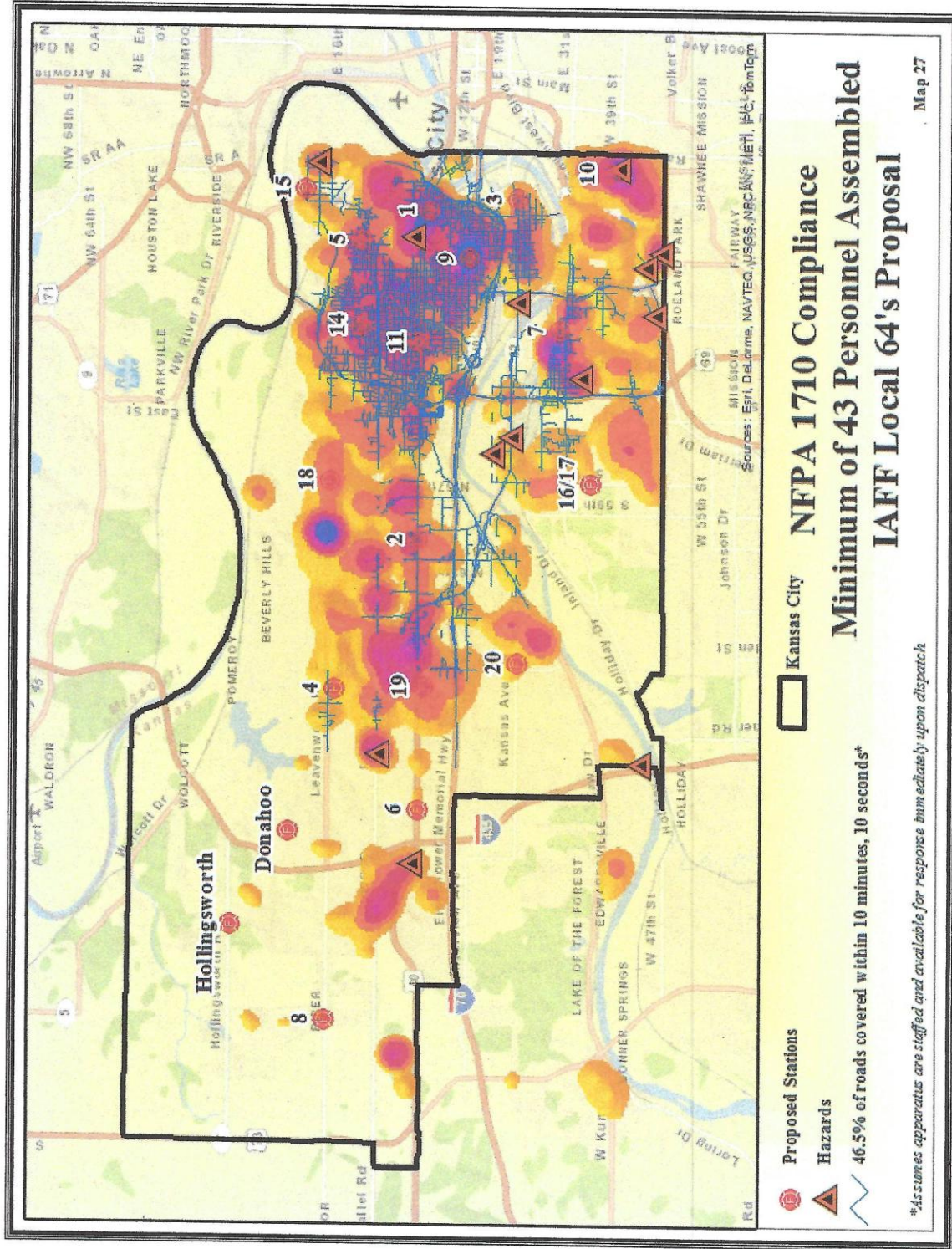














# APPENDIX B

Insurance Services Office, Inc., *Summary Report Kansas City Kansas*, February 22, 2012

# Public Protection Classification

## Summary Report

### Kansas City, Kansas

Prepared by

Insurance Services Office, Inc.  
111 North Canal Street, Suite 950  
Chicago, Illinois 60606-7270  
(312) 930-0070

February 22, 2012



Community Name: KANSAS CITY  
County: WYANDOTTE  
State: KS

Date: 02117111  
GIS Analyst: JESSICA

INTERNAL USE  
ONLY  
Field  
Representative  
output

|    |                                                                                                     |                |                   |
|----|-----------------------------------------------------------------------------------------------------|----------------|-------------------|
|    | Number of Existing Engine companies:                                                                | Enter#OfEn :   | 18                |
|    | Number of Applicable AA Locations:                                                                  | Enter # of AA: |                   |
|    | Number Of Existing Engine Companies & Applicable AA Locations:                                      |                | 18 510 2)         |
| b  | Number of Existing Engine Company Locations Not Needed:                                             |                | o 510<br>(28      |
|    | Number of Additional Needed Engine Company Locations:                                               |                | 4 510<br>(3)      |
|    | Number of Needed Engine Companies Needed for Distribution:                                          |                | 22 NE<br>(510     |
| e) | Total number of protected road mile segments within 5.0 miles of recognized stations & AA stations: |                | 1189.38 560 f     |
| f) | Total number of protected road mile segments within 1.5 miles of engine companies & AA stations:    |                | 741.50            |
| g) | Total number Of protected road mile segments beyond 1.5 miles of engine company stations:           |                | 447.87 560<br>(2) |

|                     |            |             |                 |                             |                                  |        |
|---------------------|------------|-------------|-----------------|-----------------------------|----------------------------------|--------|
| calculations for e) | 191410.606 | -1189.37505 | Automatic Aid C | Protected Roadbase (meters) | Areas over 5 miles Square Miles: | 128.04 |
|---------------------|------------|-------------|-----------------|-----------------------------|----------------------------------|--------|

Number of Streets Independently Covered for engine Service Area each

| Distribution S | Section                     | Independently Covered Protected Roadbase mile | Distance to FFA Boundary (miles) |
|----------------|-----------------------------|-----------------------------------------------|----------------------------------|
|                | protected Roadbase (meters) |                                               |                                  |
| O              | 15574167                    | 96.77                                         |                                  |
|                | 132881.56                   | 82.64                                         |                                  |
|                | 97683.67                    | 60.70                                         |                                  |
|                | 94790.61                    | 58.90                                         |                                  |
|                | 86455.27                    | 53.72                                         |                                  |
|                | 82800.16                    | 51.45                                         |                                  |
| FStg FS        | 79629.30                    | 49.48                                         |                                  |
| 18             | 65919.25                    | 40.96                                         |                                  |
| FS17           | 60963.68                    | 37.88                                         |                                  |
| FS7            | 57106.81                    | 35.48                                         |                                  |
| FS 10          | 50391.18                    | 31.31                                         |                                  |
|                | 45864.50                    | 28.50                                         |                                  |
|                | 40569.28                    | 25.21                                         |                                  |
| FS 20          | 38328.12                    | 23.02                                         |                                  |
| FS 14          | 33347.09                    | 21.03                                         |                                  |
|                | 29333.99                    | 18.23                                         |                                  |
|                | 22621.39                    | 14.06                                         |                                  |
|                | 18294.08                    | 11.37                                         |                                  |
|                |                             | 741.50                                        |                                  |
| FS 15          |                             |                                               |                                  |

#### SRD Calculations

Total protected road mile segments in all service areas I # of Fire Stations:

41.49

Total protected road mile segments in all service areas of Fire Stations 0 16%:

6.18

List or Existing Not Needed Engine Companies Locations RD less than or less than 3.0 miles or less than 8 hydrant 5

N/A

Total protected road mile segments in all service areas I # of Fire Stations; exclude a Fire Stations that do not meet the 15% requirement

SRO: 41.19

standard Response District 50%:

20.60

List of Proposed Needed Engine Company Locations \$RD equal to or greater than figure

|                 | Protected Roadbase PROP I | Protected Roadbase | Location meters                     |
|-----------------|---------------------------|--------------------|-------------------------------------|
| ST&KS-12        |                           | 60641.83           | 37.68 S 18 <sup>TH</sup>            |
| PROP 2 33347.32 | 20.72                     |                    | N 123 <sup>RD</sup> ST & HUBBARD RD |
| PROP 3 36864.71 | 22.91                     |                    | N 67 <sup>TH</sup> ST & KS-5        |
| PROP 4          | 45104.68                  | 28.03              | N 107 <sup>TH</sup> ST & HUTTON RD  |





# Appendix C

Memorandum of Agreement Between the Unified Government of Wyandotte County, Kansas  
City, Kansas and The International Association of Firefighters, Local 64, 2011-2013, Article 35  
Minimum Manning

MEMORANDUM OF AGREEMENT

2011-2013

Between

The Unified Government of Wyandotte County, Kansas  
City, Kansas

and

The International Association of Firefighters

Local 64



Therefore, UG and the Union, for the life of this Memorandum, agree that the other shall not be obligated to negotiate collectively, but may if mutually agreeable, with respect to any subject or matter referred to or not specifically referred to or covered in this Memorandum. Waiver of any breach of this Memorandum by either party shall not constitute a waiver of any further breach of this Memorandum.

## ARTICLE 34 - SAVINGS CLAUSE

If any provision of this Memorandum or the application of such provision should be rendered or declared invalid by any court action or by reason of any existing or subsequently enacted legislation, the remaining parts or portions of the memorandum shall remain in full force and effect,

## ARTICLE 35 - MINIMUM MANNING

a) The Department shall undertake a comprehensive Fire/EMS service analysis through a joint Union-Management process. Factors to be considered in the analysis and in the development of a comprehensive master plan for the Department shall include but not be limited to the following: station locations including potential new stations and renovation and expansion and/or closure of existing stations, deployment of manpower and apparatus, response times, and safety of fire personnel and consideration of the NFPA 1710 Standard. Upon completion the proposed Comprehensive Fire/EMS Master Plan shall be submitted to the Unified Government Commission for consideration and adoption. The use of an outside consultant agreeable to both the Union and Management is contemplated. Additionally, the Master Plan shall evaluate and make recommendations regarding minimum manning requirements that once adopted by the Commission shall become effective. Until such time as the Comprehensive Fire/EMS Master Plan is adopted, the following minimum requirements shall be maintained.

b) All fire suppression pumpers will be staffed with a minimum of three (3) employees in order to be considered "in service" and available for use. The Department will not operate a fire suppression shift with less than 73 bargaining unit suppression personnel except in cases of emergency. In no event will the Department operate a fire suppression shift with less than 69 bargaining unit suppression personnel. The Department will utilize overtime to insure that there will be at least 69 bargaining unit suppression personnel in emergency situations. All Fire Department aerials and quints will operate with four (4) employees except in cases of emergency at which time aerials and quints may operate with three (3) employees. "Emergency", for purposes of this section, shall include personnel absences due to unscheduled leaves. The Department will not operate less than twenty-two (22) companies during the term of this agreement.

c) Three safety officers shall be on duty at all times.