

# Management Consulting Report

City of Tukwila



**Fire Station Location Study**

**Condensed Report – June 2017**

**FACETS Consulting**  
**PO Box 30146**  
**Flagstaff, AZ 86003**

## Introduction

This condensed report supports the full report and the recommendations for fire station locations in the City of Tukwila.

On November 8, 2016, the voters of Tukwila approved a public safety bond to fund a Public Safety Plan developed by the City of Tukwila in 2016. The City's Public Safety Plan included:

- A voter-approved **Public Safety Bond** to pay for three fire stations, guaranteed funding for fire equipment and apparatus for the life of the 20-year bond and the construction of a Justice Center to house the City's Police Department and Municipal Court.

The primary reason for this study is to provide the City with information and recommendations for the location for two of three new fire stations funded by the Public Safety Bond. These potential locations are determined through a geographical information system (GIS) analysis process. This GIS analysis takes into consideration response times based on national standards, historical response data, street and road access and speed limits, topography, and barriers to response, i.e. bridges, railroad tracks, etc.

In addition to the fire station locations, FACETS was asked to provide input on the size of the fire stations and the appropriate location for fire headquarters.

The City of Tukwila contracted with FACETS Consulting to identify the proper sites for the relocation of Fire Stations 51, 52 and 54; to study deployment of fire apparatus for appropriate and effective response to emergencies; and to identify other opportunities based on best practices.

The City of Tukwila's passage of the Public Safety Bond obligates the City to build three new fire stations. Three of the four current fire stations will be replaced. The stations that are being replaced are:

- Station 51 – 444 Andover Park East
- Station 52 – 5900 South 147<sup>th</sup> Street
- Station 54 – 4237 South 144<sup>th</sup> Street

This study was conducted to determine the most appropriate locations for one or two new fire station locations based on an objective analysis of GIS data and five years of CAD data. Based on this analysis, maps were developed illustrating apparatus travel times of four-minutes for engines and eight-minutes for ladder trucks. Additional maps were developed to illustrate the deployment of an effective firefighting force based on current and potential fire station locations. Several scenarios were developed and maps were created for each scenario. Many of them are included in the full report.

Based on this GIS analysis the locations with the best coverage related to equitable response times citywide and effective firefighting forces are:

- Fire Station 51 – 180<sup>th</sup> St. and Southcenter Blvd.
- Fire Station 52 – 65<sup>th</sup> Ave. S., N. of Southcenter Blvd.
- Fire Station 53 – 4202 South 115<sup>th</sup> Street
- Fire Station 54 – 4237 South 144<sup>th</sup> Street (Current site)

It should be noted that alternative locations within one-quarter of a mile of those listed above would have no or minimal impact on the travel times throughout the City.

The question of the appropriate location for fire department headquarters is a policy question for the City. The consultants believe that headquarters should be near City Hall at the new Station 52 location.

In addition to the GIS analysis over 70 individual stakeholders were interviewed and over 20 documents or reports were reviewed. The interviews are summarized in the full report. Some of the same questions were asked by many individuals and they are also addressed in the full report. Included in the full report are concerns related to the size of the new fire stations and potential ladder truck locations.

### **Geographical Information System (GIS) Analysis**

The FACETS GIS Analyst encountered issues with the Computer-Aided Dispatch (CAD) data provided and the City street network data. With the assistance of TFD members with GIS experience, the FACETS GIS Analyst corrected all five years (2012 – 2016) of the incident response (CAD) data as well as the street network data. The clean data is available to the City of Tukwila to use as needed. Steps should be taken to eliminate the data inaccuracies/errors from the data bases for future GIS related studies.

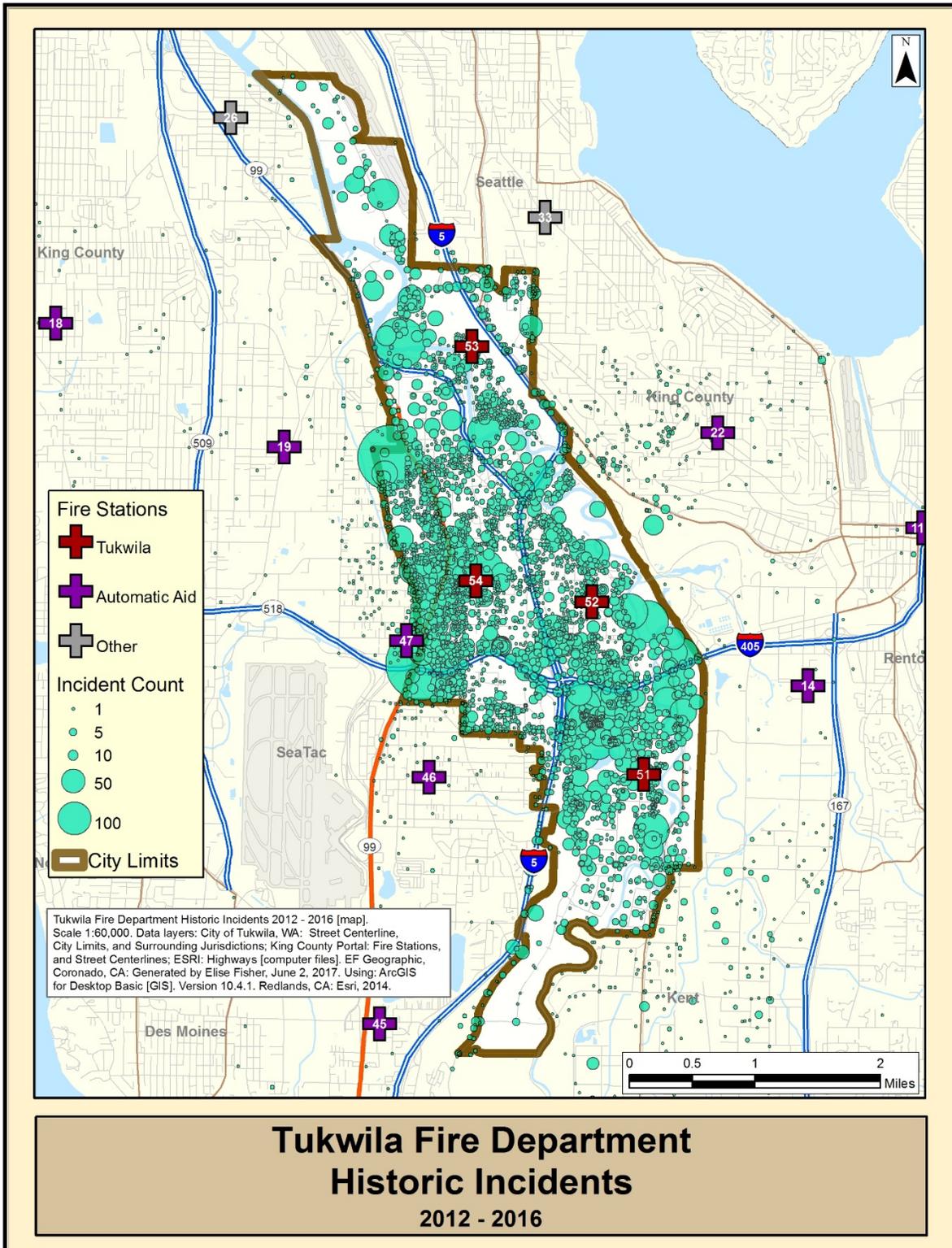
### **Fire Station Location Recommendations**

Several scenarios for fire station locations were calculated and over 200 maps were created. Maps were developed for daytime, night time and combined day and night times. The locations for fire stations shift between day and night because of incident volume and traffic considerations. Recommendations for fire stations for this study are based on the combined day and night call volume and traffic.

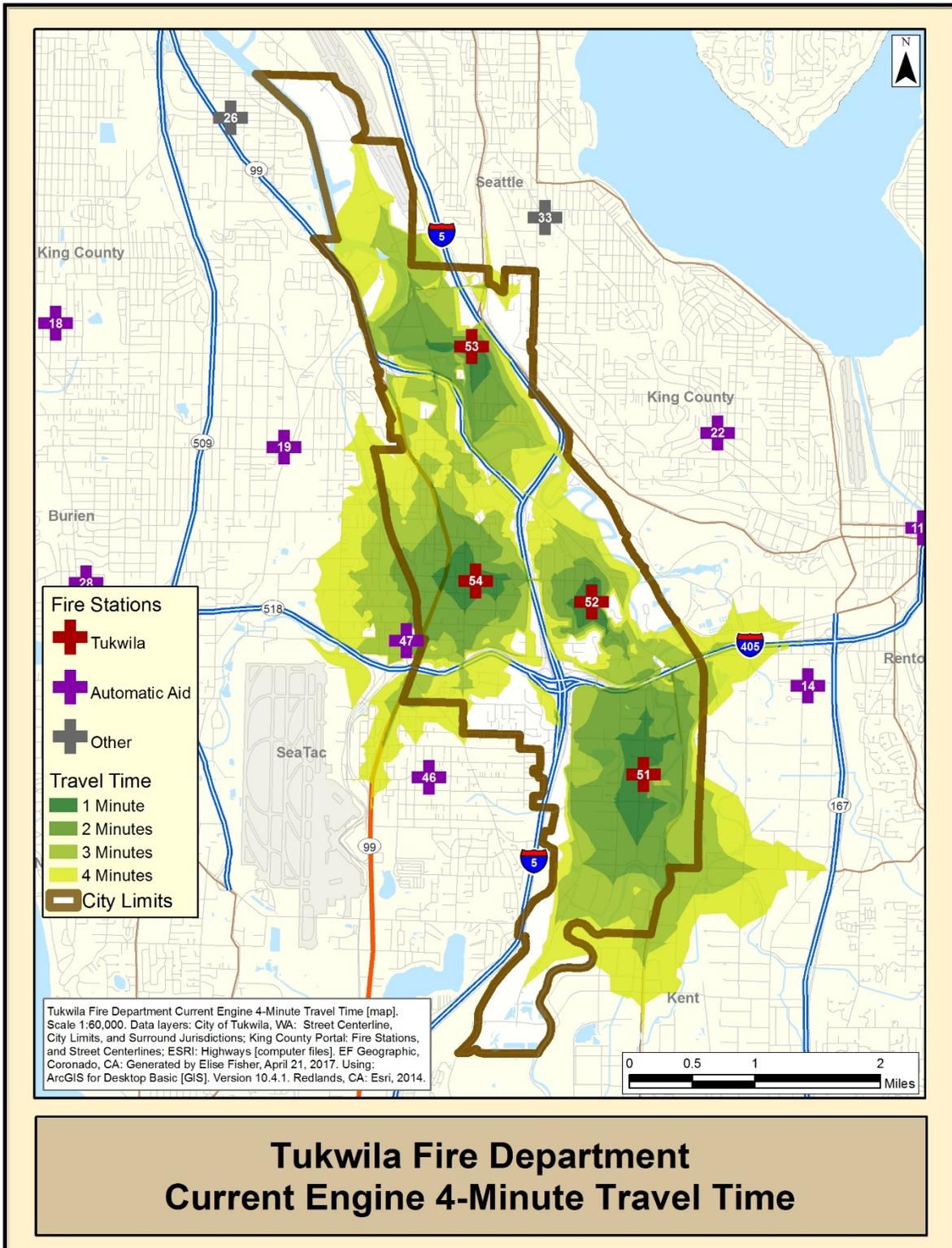
The locations recommended provide equitable response times and effective firefighting forces on a citywide basis to mitigate all-hazards incidents.

See the full report for the maps created for this study. Three of the maps were selected for this condensed report.

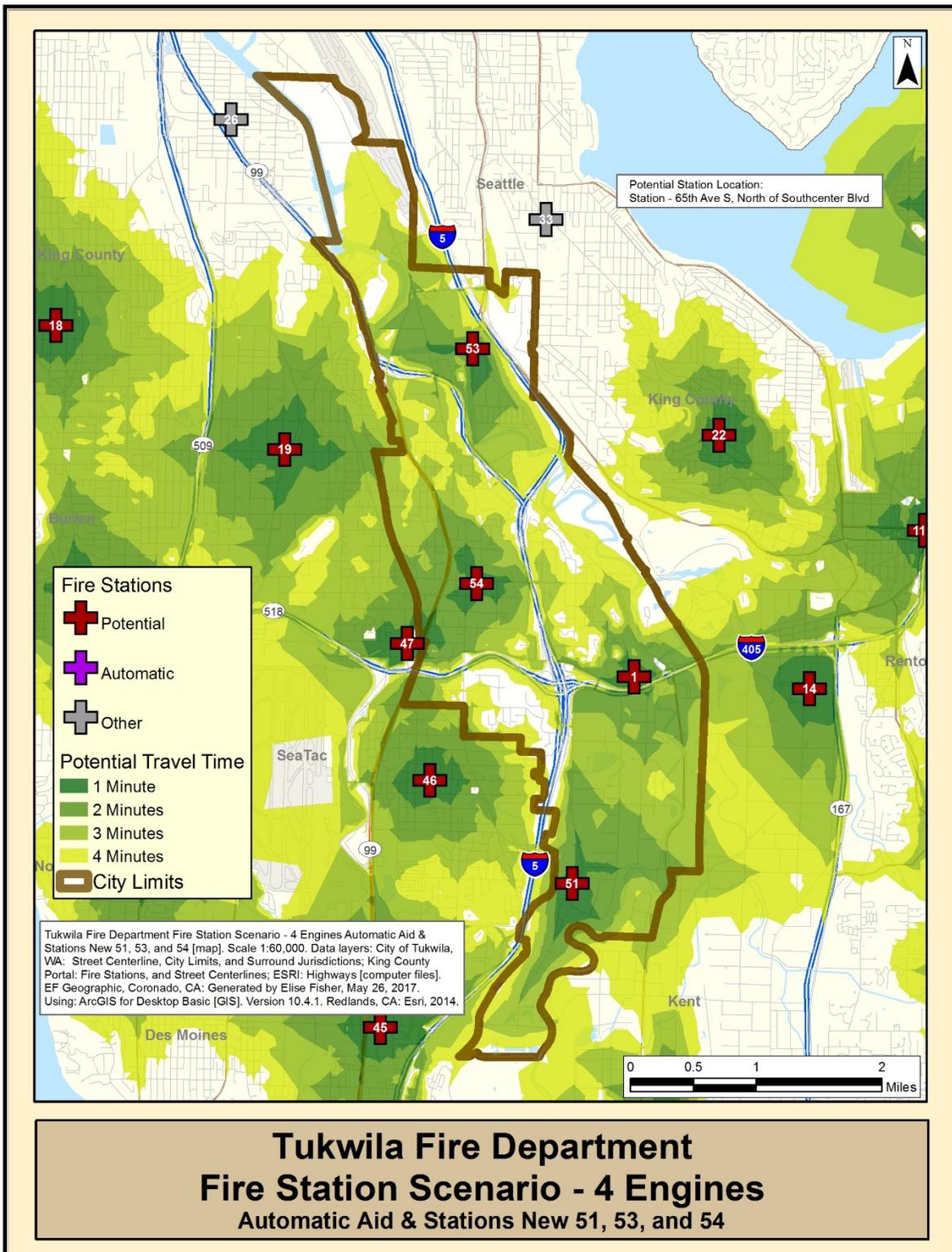
Map 3 – All Emergency Response Incident Locations: 2012 – 2016



Map 4 – Current Four-Minute Travel Time from Existing Fire Stations for Engines



Map 19 – Existing sites: Station 51, 53 & 54 – Potential New Site for Station 52



## Conclusion

The point of this study is to identify the strengths and weaknesses of Tukwila Fire Department station locations and deployment and identify directions that will enable it to improve, not only in customer service, but also as a growing, learning community of firefighters dedicated to the safety of the city and its citizens. Both the FACETS team and TFD command staff recognize that improvement is a continuous process. As goals are achieved, new ones are established and managed through the strategic planning process. As the community grows and changes and as technology evolves in ways that impact fire risk, such as new forms of energy for vehicles and buildings, there will always be something new to prepare for.

The FACETS team found the City of Tukwila and TFD to be a progressive organization open to positive change. The Mayor, elected officials and the City Administrator are extremely supportive of the TFD and committed to the public safety of Tukwila residents and visitors.

The observations of the FACETS team, both staff and facilities and of the relevant documents, lead to the conclusion that TFD provides excellent value in services but is facing increased growth resulting in additional demand for services. The City can meet the challenges related to the increased demand for services through appropriate locations for fire stations related to equitable response times and effective firefighting forces to mitigate all-hazards incidents citywide.