140423C

Fire Station Location and Staffing Study for the Gainesville Fire-Rescue Department

Table of Contents

FACETS CONSULTING

Preface

The proximate reason for this study was the interlocal agreement reached by the City of Gainesville and Alachua County on December 8, 2015 on providing fire rescue services in southwest Gainesville and the associated plan by Alachua County Fire-Rescue to relocate Fire Station 19. The station is currently located at 2000 SW 43rd Street in Gainesville and will be moved to the west, into the county. Gainesville Fire-Rescue (GFR) command staff realized that this move will cause a significant gap in fire protection coverage in southwest Gainesville, requiring additional resources. To determine what those resources should be and where they should be located, FACETS Consulting was selected to assist with this study.

As part of Gainesville Fire-Rescue's commitment to the City's customer service and Citizen-Centric initiative, command staff also asked FACETS to survey the Department's operations and make recommendations for improvements. The FACETS team found GFR to be a progressive, well-led, and professional organization, dedicated to serving the citizens of Gainesville. The team was also impressed by the City's customer service initiative as outlined in the Blue Ribbon Advisory Committee for Economic Competitiveness Final Report of December 3, 2015, which is innovative and forward-thinking. The services provided by Gainesville Fire Rescue are certainly an essential component of creating a vibrant, safe, competitive business community.

The importance of this study is that it identifies what Gainesville Fire-Rescue needs to continue to do to be a successful public safety organization. Safety is what drives GFR's needs: the safety of its customers and, equally as important, the safety of its employees. Fire and medical emergencies can quickly become worse in a matter of minutes, so it is vitally important to locate fire stations properly for rapid response. Equally important is the need to have up-to-date equipment and apparatus in these stations. But most important is the responsibility to have trained firefighters in the proper numbers to respond from stations with the equipment they need to deal with the emergencies they face.

Like the rest of the United States, Gainesville was negatively impacted by the Great Recession. Now that world economies are slowly improving, the time has come to assess what is needed to go forward. Gainesville Fire Rescue's emergency workload continues to grow, therefore the resources dedicated to responding must also grow.

The City of Gainesville contracted with FACETS Consulting to identify the proper site for projected Station 9; to study deployment of fire apparatus for appropriate and effective response to emergencies; to assess GFR's staffing; and to identify other opportunities based on best practices.

July 2016

Executive Summary

Fire stations are visible and potent symbols of a community's investment in the wellbeing of its citizens. They are strategically placed where anyone in need can access assistance and from which firefighters respond to emergencies at all times of the day, every day of the year. As such, fire stations must have space to perform many functions: office, dormitory, garage, equipment storage, decontamination, kitchen, living and dining, training, physical fitness, and citizen access. The community expects much of its firefighters and functional workplaces are needed to enable them to effectively respond.

If unabated, fires and medical emergencies tend to worsen and can become deadly in minutes. Thus, appropriate station locations are essential to the ability of firefighters to respond quickly and meet their primary goal of mitigating emergencies within survivable time frames.

Fire stations are long-term investments in the community and are expensive to staff and operate. Their staffing and correct placement in the community is most important for customer service and for efficiency.

The FACETS team found Gainesville Fire-Rescue to be a progressive organization open to positive change. GFR has received accreditation by the Commission on Fire Accreditation International (CFAI) and improved its Insurance Services Office (ISO) Public Protection Classification rating; both these achievements are the result of significant effort by GFR personnel who should be proud of what they have accomplished.

Gainesville Fire-Rescue is an all-hazards department, providing fire suppression, hazardous materials mitigation, technical rescue, aircraft rescue and fire fighting, and advanced life support services. GFR does not provide emergency medical transport (ambulance) services; Alachua County Fire-Rescue (ACFR) provides ambulance service from facilities throughout Alachua County and within the city limits.

Gainesville and Alachua County operate an automatic aid system for response to fire and medical emergencies. ACFR operates one fire station within the City of Gainesville. ACFR Fire Station 19 is located at 2000 SW 43rd Street. ACFR plans to relocate Engine 19 within the next two years and move to a new station to be built along SW 24th Avenue, perhaps as far west as Parker Road (122nd Street), within the next two years. For the purpose of this study, Engine 19 is assumed to be at this location.

GFR's Risk Reduction Bureau (RRB) provides fire and life safety code inspections, public fire and safety education programs, and construction plan reviews. RRB personnel also conduct fire cause and origin investigations and identify suspected arson fires.

GFR's Training Bureau provides recruitment services, new firefighter orientation, training for operational certifications and promotional testing and selection processes. Training personnel also partner with other local organizations to support community classes for CPR, basic lifesaving first aid, and first responder services.

GFR received accreditation in 2014. As part of that process, the Department created a Standards of Cover document that comprehensively identifies risks within the city and the resources GFR will use to meet them. In 2014, the Insurance Services Office (ISO) evaluated Gainesville and improved its rating from Class 3 to Class 2/2x. These are significant accomplishments that put Gainesville Fire-Rescue at the forefront of American fire departments.

In GFR, the FACETS team perceives an organization that has intelligently examined the risks the city faces and deployed its available resources to best advantage, given its limitations. At all levels, GFR members have cultivated good relations with the other public safety agencies with whom they work. That is important; not only to the members themselves but also to the community they serve. The Fire Chief has thoughtfully reorganized the command staff in 2016 to enable them to carry out essential functions effectively.

Up until this point, GFR has successfully provided emergency and public safety services with current resources. However, Gainesville is a dynamic and growing city, with a large university and three large hospital systems that are also growing. The FACETS team is concerned about the strain that an increasing workload will put on firefighters and their ability to provide adequate services. Without the addition of resources to GFR, service levels will be compromised and customer service negatively impacted from consequences such as increased travel times; reduced ability to assemble personnel on-scene of building fires; employee fatigue; and reduced time available to spend with customers at incidents.

The following recommendations build on Gainesville Fire-Rescue's strong base. They are intended to ensure that GFR can provide appropriate and effective services to all citizens and to close gaps where the resources needed are or will not be available. They look to current needs, both in emergency and public safety services, and encourage GFR to plan for future needs so that gaps are bridged before they become significant problems.

Our recommendations, in descending order of priority are:

Recommendation Summary

Near to Mid-Term

1. Build Gainesville Fire-Rescue Station 9 near the intersection of SW Archer Road and I-75 and staff the station with an engine company.
2. Continue the operation of Squad 2 in its current location or a suitable location nearby.
3. Establish a calculated staffing factor to guide hiring numbers and promotions for the most efficient staffing of all fire apparatus by rank, and update the calculation biennially.
4. Continue to invest in programs to hire and promote diversity among the GFR workforce including the Department's Diversity Initiative, mentorship, and cadet programs.
5. Add two fire inspector positions in the Risk Reduction Bureau. Explore funding options within the fire assessment to recover more incurred costs.
6. Create a structured demand reduction program, to lower the number of low acuity EMS calls at nursing homes, assisted living facilities, and for frequent system users.

7. Staff an Emergency Management position and seek additional resources to ensure the City's emergency management program is effective in the event of a large scale emergency.
8. Seek sufficient funding to provide a more supportable and comprehensive information technology system and staff to support Gainesville Fire-Rescue operations.
9. Investigate the implementation of a community paramedicine program, to improve emergency medical services to customers and reduce system demand costs.

Longer-Term Recommendations

10. Increase minimum staffing of all engine companies to ensure a complement of four, as is now required for towers and Quint 8, in accordance with national standards.
11. Relocate Station 3 further to the northeast, more proximal to NE Waldo Road and NE 39th Avenue.
12. Place an engine company in service at Station 8 and begin planning to relocate Station 7 to the northeast, along Route 441, as any increased development along that corridor will require a station in that area.
13. Replace Station 5 at the current location, and create a facility master plan for the remaining stations and fire facilities.

Methodology

Members of the FACETS team travelled to Gainesville three times, in early January, mid-February, and mid-May 2016. On these trips, team members met with Gainesville Fire Rescue (GFR) command staff. We also visited several key stakeholders including the Alachua County Combined Communications Center (CCC) and Alachua County Fire Rescue (ACFR) command staff. A team member also met with the Gainesville City Manager and an Assistant City Manager, to gather their thoughts on the process. To understand community growth, the team met with Gainesville planning and annexation staff and Alachua County planning personnel. Team members talked to Gainesville Public Works staff and the Gainesville Police Department (GPD), to discuss land and other facility needs. We also talked to IAFF Local 2157 board members and visited all of Gainesville's fire stations to conduct a facility assessment that is included as an addendum to this report.

GFR shared relevant documents and emergency response data throughout the process. For mapping, FACETS contracted with EF Geographic to produce the requested maps with Gainesville's response data. Accreditation documentation, staffing history, budget data, customer service initiatives, and mapping data were essential to understanding the issues GFR faces.

Standard of Response Coverage

An essential part of analyzing a fire department's performance is comparing its response experience and protocols against established response standards. There are, several ways to make such comparisons to identify a fire department's strengths and weaknesses.

- First is by using the National Fire Protection Association's Standard 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 establishes and periodically revises consensus standards on all aspects of fire department operations, including fire resource deployment, fire prevention, fire protection systems, personal protective equipment, apparatus, training, building construction and others. NFPA 1710 concisely defines the standard level of resources required and time frames for initial and full responses for successful mitigation of fires and other emergencies.
- Second is the Public Protection Classification (PPC) program administered by the Insurance Services Office (ISO). ISO evaluates a community's public fire protection capability and assigns a protection class rating from 1 to 10. Class 1 represents exemplary fire protection; a Class 10 designation indicates that a community's fire suppression program does not meet ISO's minimum criteria. ISO evaluates all aspects and resources needed for fire suppression to establish a rating, including available water supply, call taking and dispatching resources, response unit staffing, firefighter training, response capacity and coverage, and other factors. A key element of coverage evaluation is the location of engine and ladder apparatus in relation to the buildings within the jurisdiction.
- Third is NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, which sets forth minimum requirements for a fire service occupational safety and health program. This standard identifies what training, equipment, apparatus, physical fitness, etc, are required to ensure that firefighters can safely respond and mitigate emergencies.

- Finally, the Commission on Fire Accreditation International (CFAI) provides a self-assessment and evaluation model that enables fire departments to examine past, current, and future service levels and internal performance and compare them to industry best practices in order to:
  - Determine community risk and safety needs and develop community-specific standards of cover.
  - Evaluate the performance of the department.
  - Establish a method for achieving continuous organizational improvement.

CFAI does not set standards for fire department services but provides the tools for departments to assess their performance against national standards or locally adopted performance goals. A successful process leads to accreditation; compliance reports are then made annually and the process is repeated after five years.

City/Department Background Information

Gainesville Fire-Rescue protects an area of 63.75 square miles, a resident population of 127,488, and a college student population of almost 50,000 from eight strategically located stations with a total of 174 Full-Time Equivalent (FTE) positions (154 FTE staff emergency response vehicles on-shift and 20 FTE in command and support positions). In addition, over 60,000 additional population are subject to service provided by GFR within the urban unincorporated area outside of Gainesville covered under the automatic mutual aid agreement (FSAA). As with most fire departments in North America, the majority of GFR's responses are to medical emergencies. GFR also provides hazardous materials mitigation and Aircraft Rescue Fire Fighting (ARFF) services in addition to fire suppression and Emergency Medical Services (EMS).

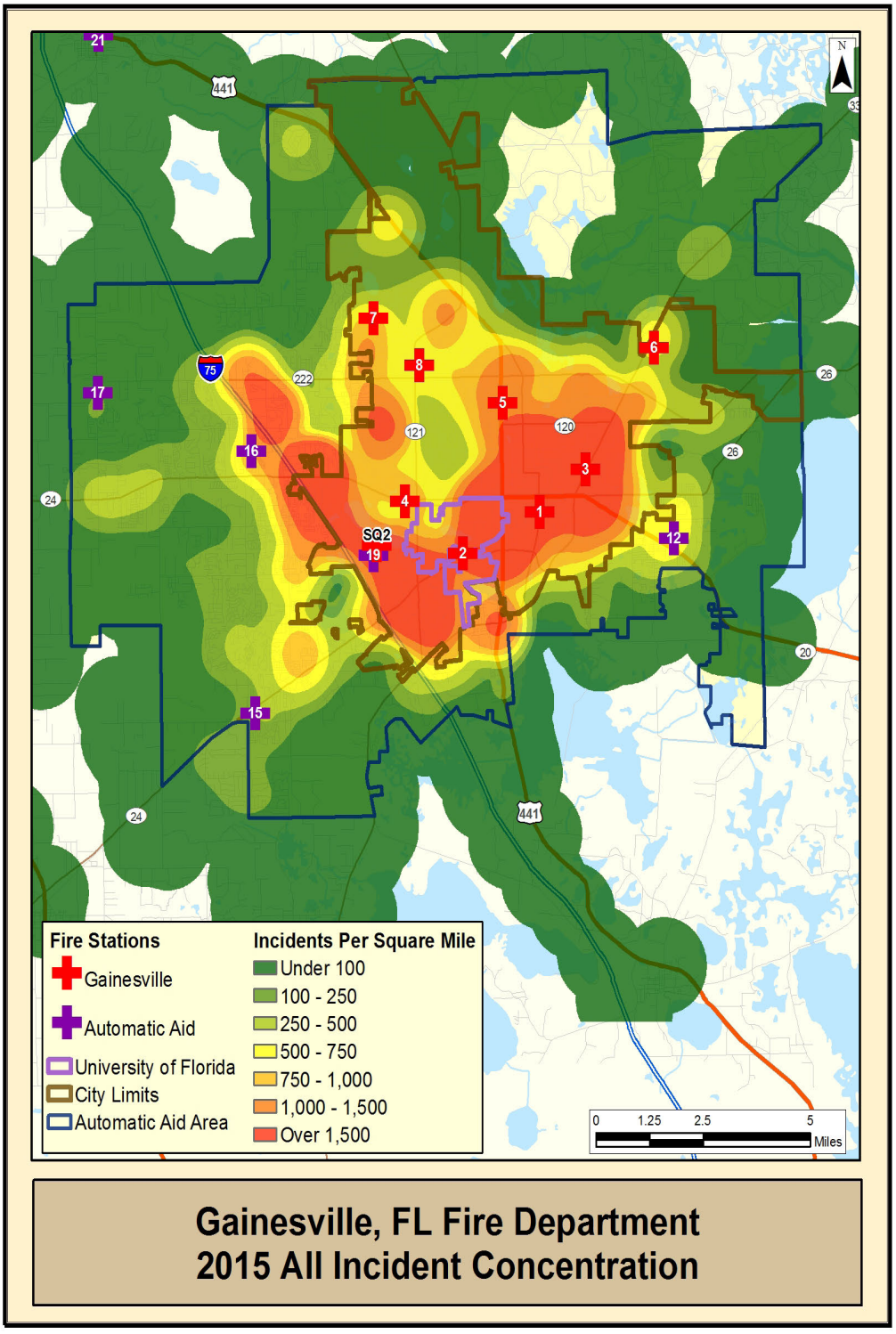
Over the past five years, Gainesville Fire-Rescue's emergency workload has increased, as shown in the following table:

Year	EMS	Alarms	Fires	HazMat	Service	Total	Increase Year over Year
2011	12,695	1,589	1,189	526	181	16,180	--
2012	14,012	1,464	1,123	549	172	17,320	6.6%
2013	14,010	1,557	1,092	600	201	17,460	0.8%
2014	14,763	1,626	1,104	663	225	18,381	5.0%
2015	15,167	1,778	1,170	708	250	19,073	3.4%

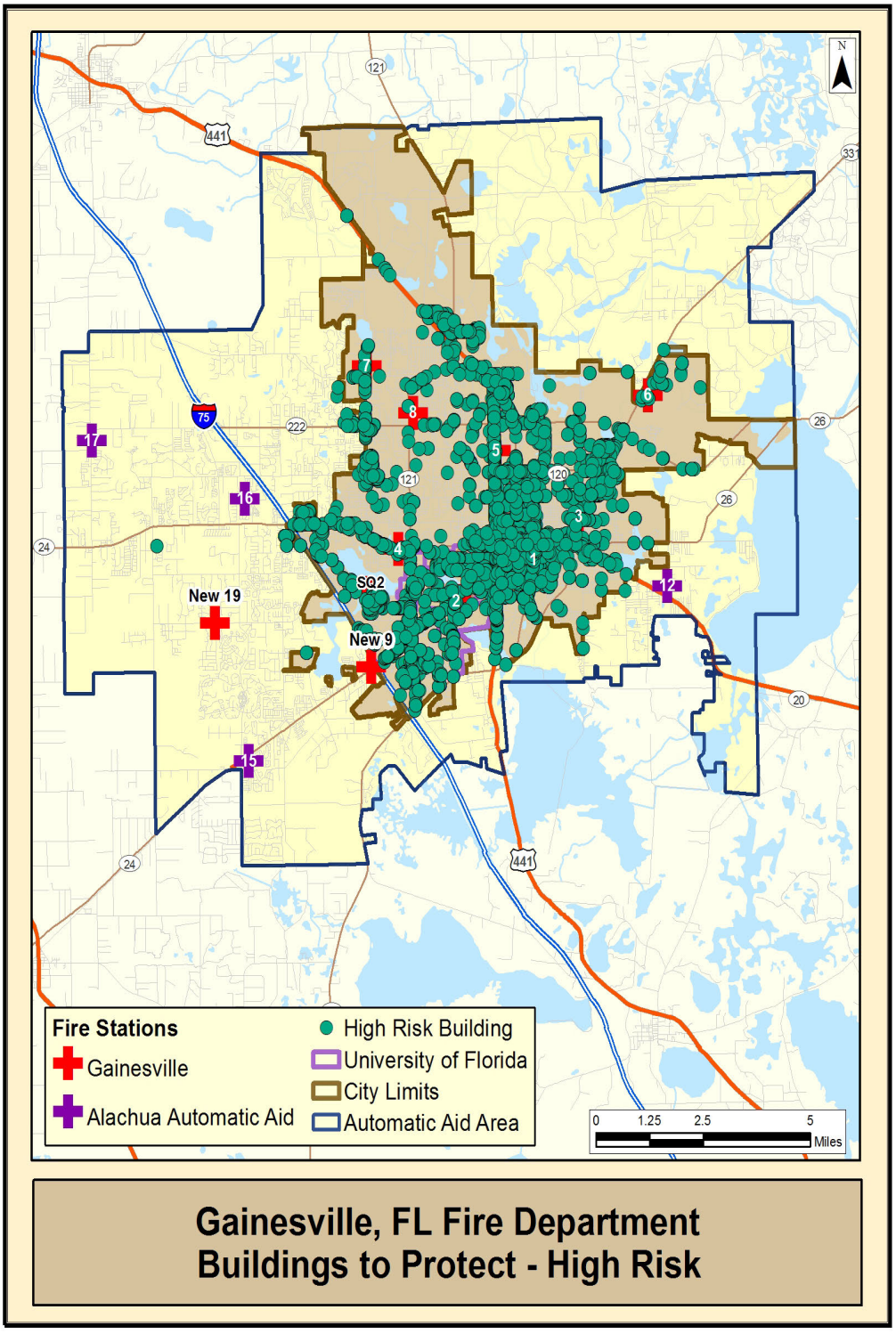
Total GFR responses in 2015 were 17.8 percent higher than in 2011. Most fire departments in growing areas such as Gainesville will see increases in activity, but increases at this level will have an impact on the ability of emergency responders to respond effectively. The increase is primarily driven by the growing number of medical emergencies, which have increased 19.5 percent from 2011 to 2015. The number of fires has remained fairly steady, decreasing 1.6 percent from 2011 to 2015. The number of automatic fire alarms has grown 11.9 percent, the hazardous materials responses have grown by 34.6 percent, and the service calls have risen 38.1 percent over the five-year period.

Map 1 depicts emergency response activity in Gainesville in 2015. It reflects the fact that a high level of emergency incidents are spread over a wide area of the City, with especially high levels of activity concentrated in the downtown area, eastern Gainesville, and along the I-75 corridor. Map 2 depicts high hazard buildings in Gainesville. These buildings include high rises buildings and other target hazards such as the O'Connell Center, University of Florida Stadium, and others.

Map 1 – Emergency Incident Density – 2015



Map 2 – High Hazard Occupancies and Target Hazard Buildings in Gainesville



A growing concern for GFR responses is the decreasing time its units are available for calls due to greater demand and longer on-scene times. One contributor to longer on scene times is the time waiting for an ACFR ambulance to arrive. GFR firefighters generally arrive on the scene of medical emergencies first due to the geographic coverage provided by current fire station locations. GFR firefighters begin medical assessment and treatment and then ready the customer for transport by ACFR ambulance, if appropriate. While GFR firefighters provide a high level of on-scene service, they often find themselves waiting on the scene for the arrival of an ACFR ambulance.

According to GFR data, there is a definitive trend of increasing on-scene ambulance wait time, increasing 8% since 2010. The number of incidents where no ACFR ambulance is available for immediate dispatch for an emergency has risen over five-fold since 2013. EMS incidents have increased significantly from 2011 levels and the effect on GFR's availability and EMS service will continue unless calls are reduced or more ambulances are available for emergency incidents.

GFR has responded to the increase in EMS activity through the use of two paramedic squads. One squad, located at Fire Station 1, was activated in 1992 and the other, Squad 2, activated in 2014, is based in an apartment complex near ACFR Station 19. In addition, ACFR has begun the process to place up to three peak-demand ambulances in service during more active parts of the week to attempt to address ambulance availability.

The Gainesville Fire-Rescue Operations Division staffs a total of fifteen pieces of fire and EMS apparatus (one of the units, Hazmat 2, is cross-staffed from Tower 2), for an on-duty strength of 38 firefighters and officers (including two personnel dedicated to the airport station). Fire and EMS companies are located in eight fire stations, as follows:

- Station 1, located at 427 South Main Street, houses Engine 1, Tower 1, Squad 1, and District 1. These are staffed as follows: Engine 1, one lieutenant, one driver operator and one firefighter; Tower 1, one lieutenant, one driver operator and two firefighters; Squad 1, one lieutenant and one driver operator; and District 1, a District Chief. This two-bay, two story building was constructed in 1962 and is at the end of its functional life. GFR has secured the property needed, at 525 South Main, and a building design for a new facility. The total funding required for the construction of the new Station is not yet available.
- Station 2, located at 2210 SW Archer Road, was built in 1976. This three-bay facility houses Engine 2, Tower 2, and Hazmat 2. Engine 2 is staffed by one lieutenant, one driver operator and a firefighter, and Tower 2 by one lieutenant, one driver operator and two firefighters. Firefighters assigned here are certified as hazardous materials technicians and comprise the regional hazmat team, cross-staffing the hazmat apparatus and providing response to the 11 surrounding Counties.
- Station 3, located at 900 NE Waldo Road, houses Engine 3, staffed by one lieutenant, one driver operator and a firefighter. This two-bay facility was constructed in 1960 and was extensively remodeled some time ago. Even so, overall the building is at the end of its functional life. ACFR also houses an ambulance at Station 3.
- Station 4, located at 10 SW 36th Street, was built in 1964 and houses Engine 4. Engine 4 is staffed by one lieutenant, one driver operator and a firefighter. This one-bay mid-century building was designed as a nuclear fallout shelter and has been renovated some but is too small to meet current needs.

- Station 5, located at 1244 NW 30th Avenue, was also built in 1964 and houses Engine 5, staffed by one lieutenant, one driver operator and one firefighter. It is a one-bay facility, and the apparatus floor has been lowered about four feet to accommodate current apparatus which creates flooding issues. Despite renovations, the building is at the end of its functional life.
- Station 6, located at 3681 NE 47th Avenue, is a two-bay facility at the Gainesville Regional Airport. It was built in 1979 and houses one lieutenant and one driver operator who provide Airport Rescue Fire Fighting (ARFF) services. The airport authority has plans to move the station to the east and other side of the runway, closer to the FAA tower. This will enable the firefighters to respond on the field more quickly. Unfortunately, the move would likely increase response times for any unit assigned at the new location to respond off of the airport, west of the airport entrance in the NE 39th Avenue/Waldo Road area for non-aircraft incidents.
- Station 7, located at 5601 NW 43rd Street, was built in 1980 and houses Engine 7, staffed by one lieutenant, one driver operator and a firefighter. It is a one-bay facility and, despite extensive renovations, is much too small for current operations.
- Station 8, located at 3223 NW 42nd Avenue, is a three double-bay facility built in 2011. It houses Quint 8 and District 2 and is a modern, well-designed fire station that will be functional for many years. Quint 8 is staffed by one lieutenant, one driver operator and two firefighters. District 2 is staffed with one District Chief.
- Squad 2 is located in an apartment at 4400 SW 20th Avenue, from which one lieutenant and one driver operator provide advanced life support services. This unit also responds on building fires and extrication incidents.

Fire Station Locations and Deployment Recommendations

As previously noted, appropriate fire station locations are necessary to ensure that firefighters can respond rapidly and mitigate emergencies within survivable time frames. As the city has grown, Gainesville has placed fire stations in places that have generally provided an acceptable level of service. GFR's automatic aid agreements with Alachua County Fire Rescue have benefitted both organizations by providing essential resources to assemble effective fire fighting forces and to provide emergency medical services.

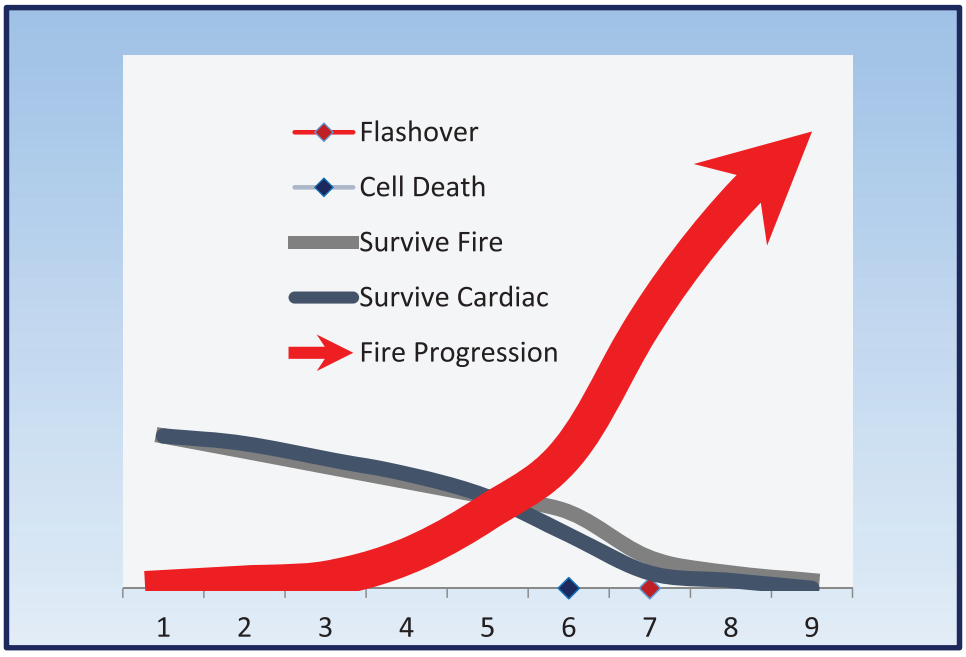
The key to the ability for firefighters to mitigate a fire or medical emergency is response time. Response time is the interval of time that is broken down into three components.

First is call receiving/dispatching time. This segment includes the time from when the telephone rings in the 911 center until dispatchers have gotten the information they need and notified the appropriate resources to respond. NFPA 1710 specifies that calls should be answered within 15 seconds 95 percent of the time and processed within 64 seconds for 90 percent of alarms.

Second is turnout time. This is the elapsed time between when firefighters are notified of an alarm, don their gear, and are on their truck moving out of the station. NFPA 1710 specifies that turnout time should be no more than 80 seconds for fires and special operations and no more than 60 seconds for medical emergencies.

Third is travel time. NFPA 1710 sets out a requirement that the first responding fire company should travel no more than 240 seconds to an emergency. This four-minute travel time for the first responding fire company is significant for two reasons. First, a person in cardiac arrest will suffer brain damage without intervention within four to six minutes after the heart stops. Second, a fire will reach flashover – when a room and its contents erupt into flames – within six to eight minutes after ignition. Firefighters must arrive quickly and be ready to act, to save lives.

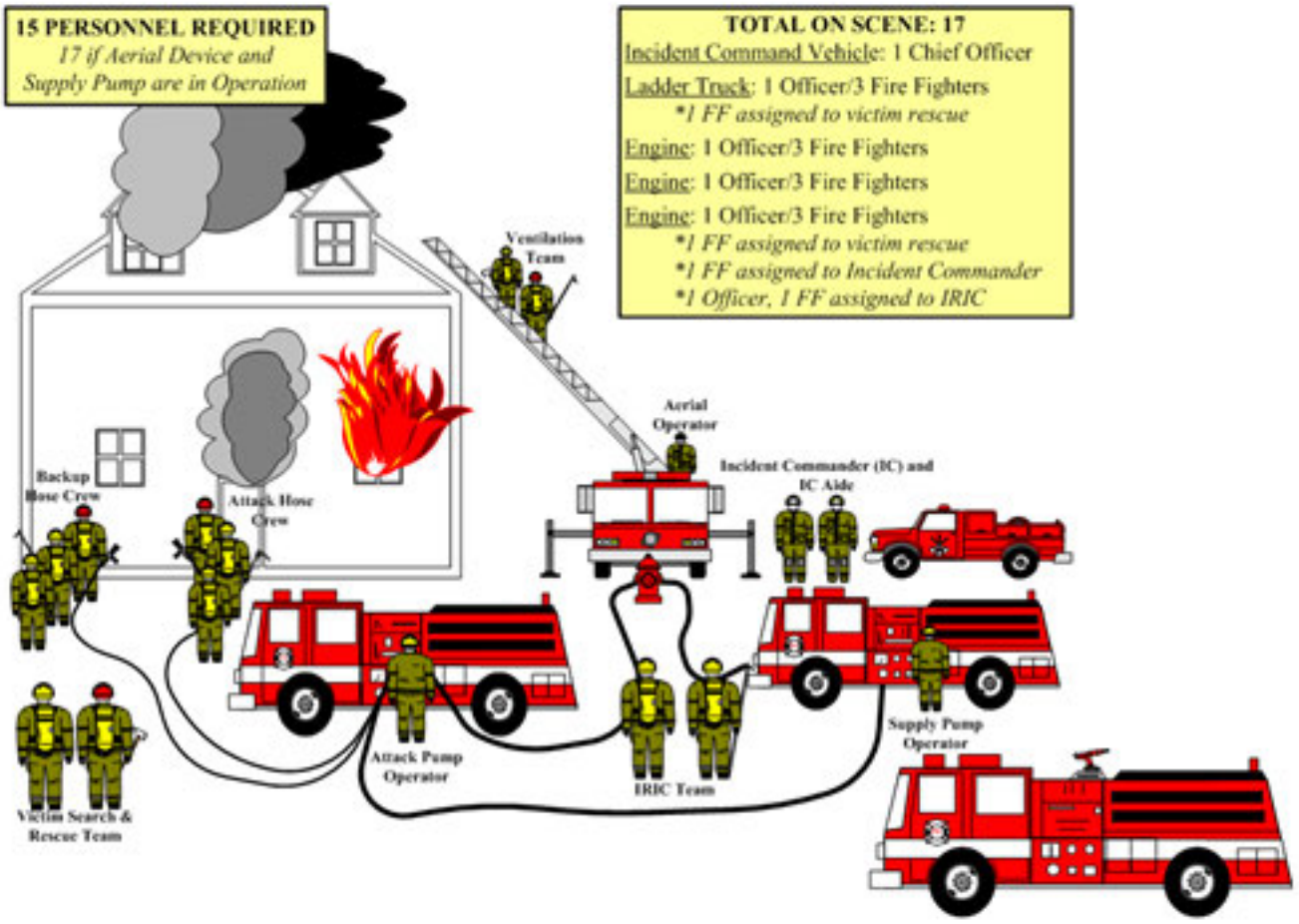
Figure 1 – Fire Development and Survival vs. Time



Source: Gainesville Fire-Rescue

Likewise, NFPA 1710 defines an effective fire fighting force as the firefighters needed on-scene in a reasonable timeframe to safely and successfully mitigate emergencies that cannot be handled by one fire company alone. Research on fire operations conducted by the National Institute of Standards and Technology (NIST), in partnership with several fire service organizations, determined that seventeen firefighters arriving within eight minutes of travel are the optimal force to effectively fight a structure fire in a 2000 square foot residential structure without exposures

Figure 2 – Fireground Staffing Requirements of NFPA 1710 – Effective Fire Fighting Force



Source: NFPA 1710 Implementation Guide – International Association of Fire Chiefs/International Association of Fire Fighters, 2002

A fire company consists of a piece of fire apparatus (heavy-duty vehicle) and the firefighters assigned to it, with the equipment they need to provide services. For effective services, there should be one lieutenant (an officer), a driver/operator, and two firefighters. All or several may be certified as emergency medical technicians or paramedics, if their department provides EMS. An effective fire fighting force for a fire in a 2000 square foot single family dwelling consists of four fire companies, each staffed with four fire personnel, and a command officer, for a total of seventeen firefighters and officers.

Differing situations require different effective fire fighting forces; for example, more than twice as many fire companies might be needed at a fire in a hospital, where there are non-ambulatory patients and oxygen piped to each room. Maps 3 and 4 depict current GFR capabilities in meeting the four and eight minute response criteria outlined in NFPA 1710.

The Insurance Services Office evaluates station locations based on the percentage of the city within a mile and a half of an engine company and percentage within two and a half miles of a ladder company. In their 2014 analysis, ISO awarded Gainesville 6.35 points out of a possible 10. This is an indication that improvements can be made in placing Gainesville's fire stations.

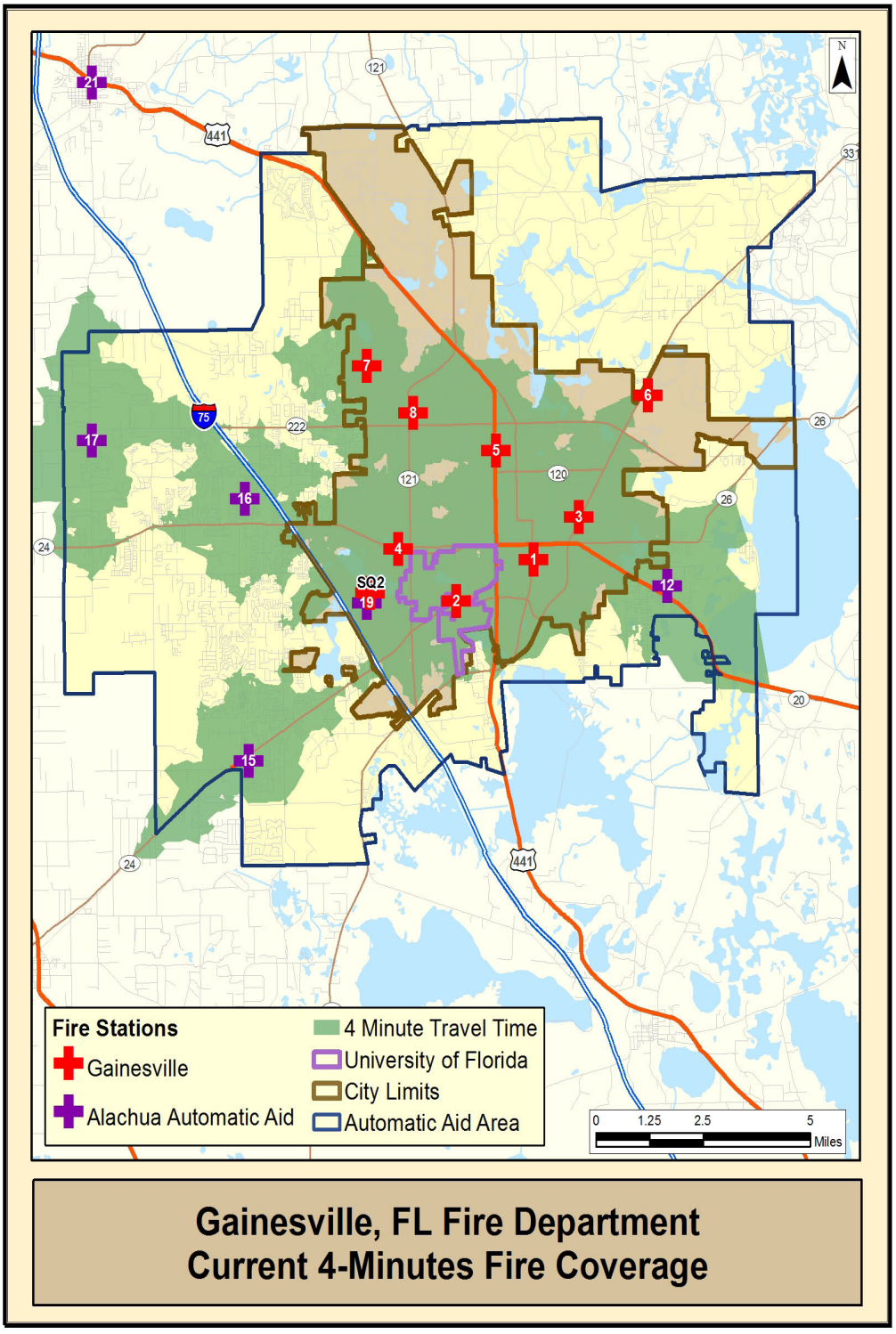
Fire departments send the closest available resource (engine, tower, quint, squad) to an emergency. If the closest resource is not available, the next closest resource is automatically selected by the dispatching system and sent. This creates a cascading effect in the community where busy areas of the community draw resources from slower parts of the community. Response times in a local area and in the entire community can be negatively impacted if adequate resources are not in place.

Fire stations are expensive to build and operate and their locations should be selected for long-term service. Spacing is important and should vary by population density. At a maximum, fire companies from two adjacent stations should travel four minutes before meeting. In a suburban setting, that might be a distance of four to five miles. In a more developed area, it might be as little as a mile. Travel time is also impacted by other factors such as traffic, natural and man-made barriers, and the street network. All of these considerations need to be addressed when assessing fire station locations.

The primary issue for GFR is the department's ability to provide commensurate services throughout the city. GFR needs to be able to respond with the same number of fire companies in the same time frame to similar areas. In other words, an effective fire fighting force should be identical for a single family house in northeast Gainesville as in southwest or downtown, or anywhere. When ACFR moves Engine 19, GFR will not have the firefighters it needs to respond with an effective fire fighting force in southwest Gainesville without additional resources.

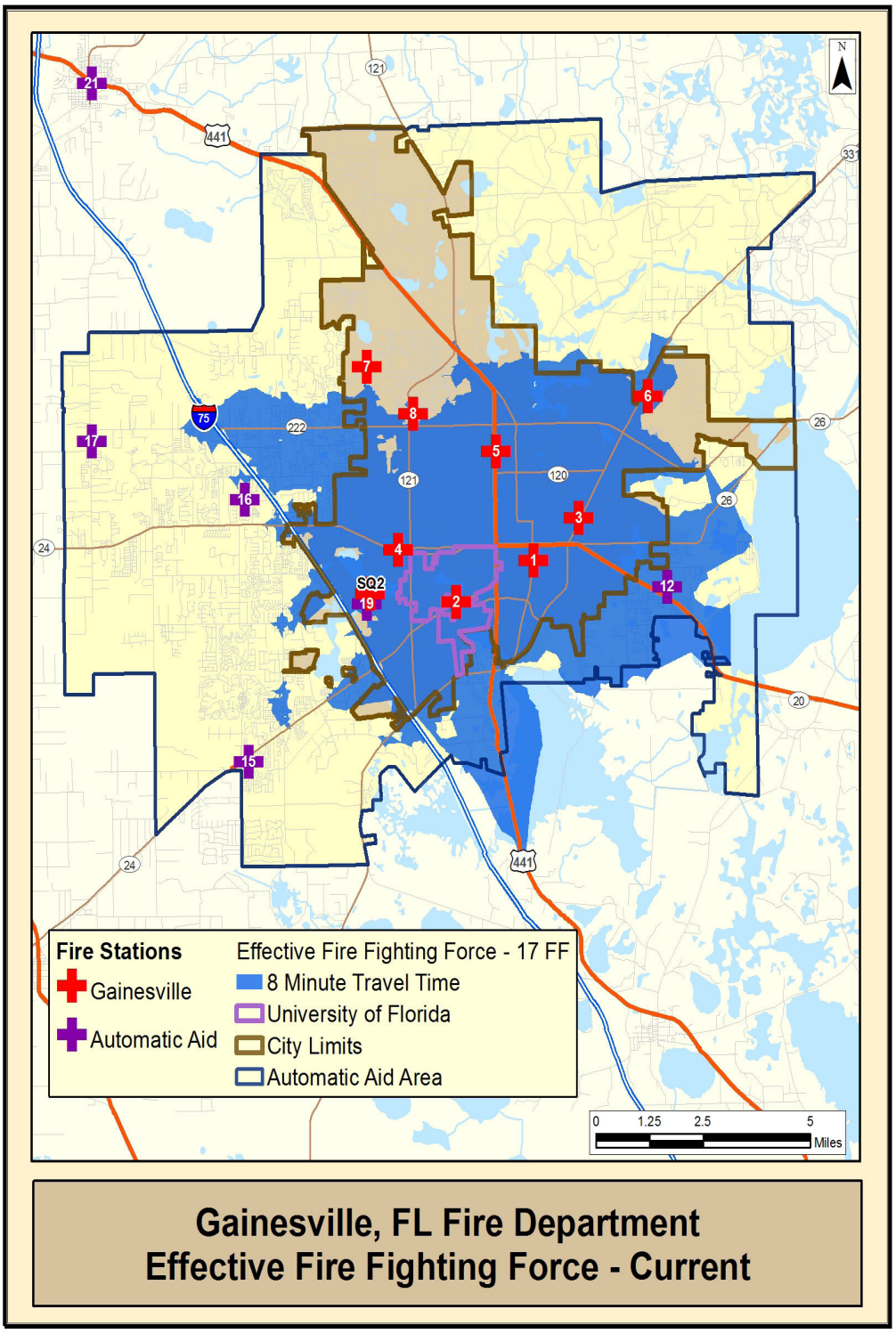
Map 3 shows the four-minute travel capabilities of current GFR stations including automatic aid from ACFR's urban area stations 12, 15, 16, 17, and 19.

Map 3 – Four-Minute Travel Time from Current GFR and ACFR Stations



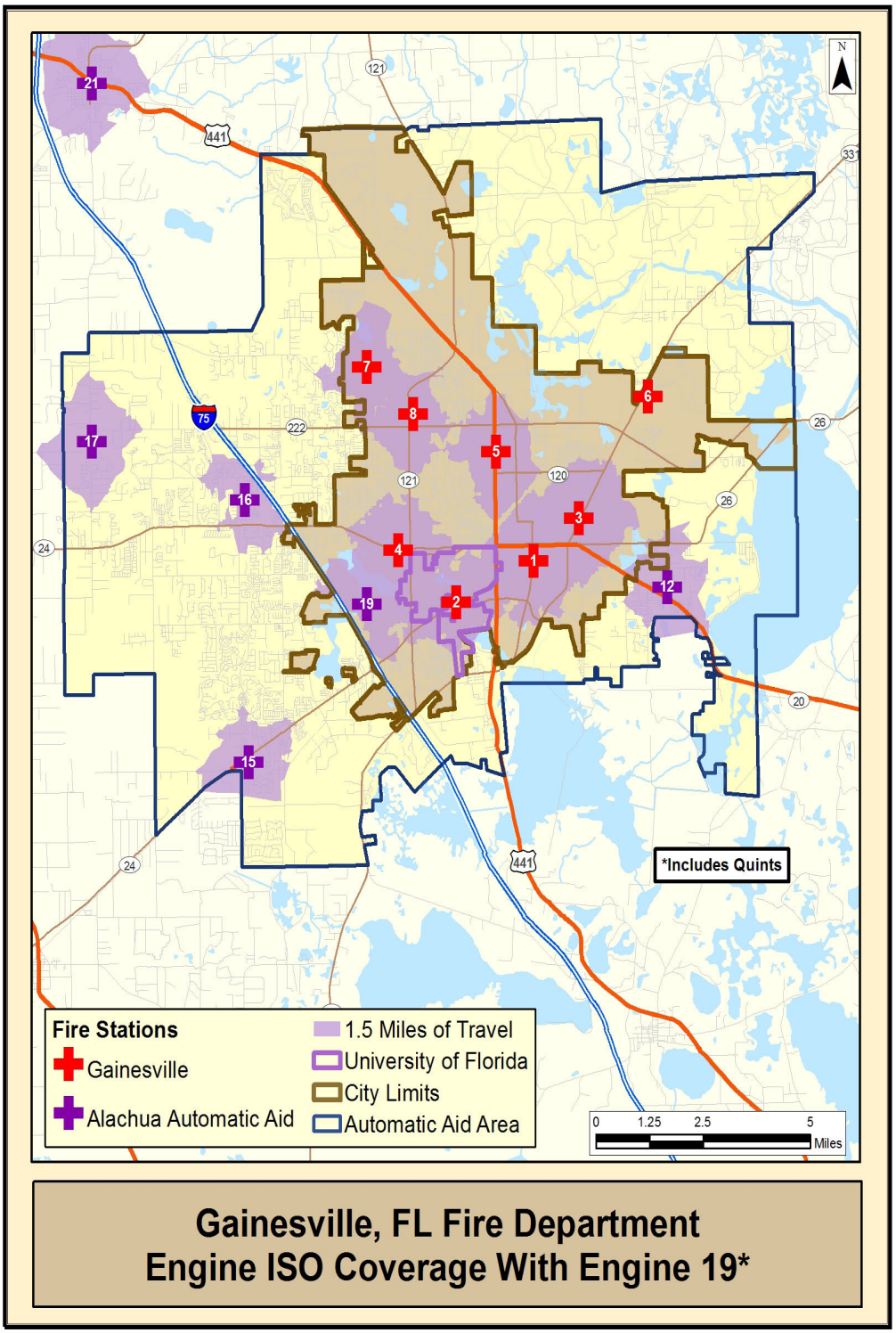
The following map shows that GFR and ACFR together can assemble an effective fire fighting force, necessary to mitigate fire and other emergencies within standard time frames, in the blue areas:

Map 4 – Effective Fire Fighting Force Assembling 17 Personnel Within 8 Minutes Travel from Current GFR and ACFR Stations



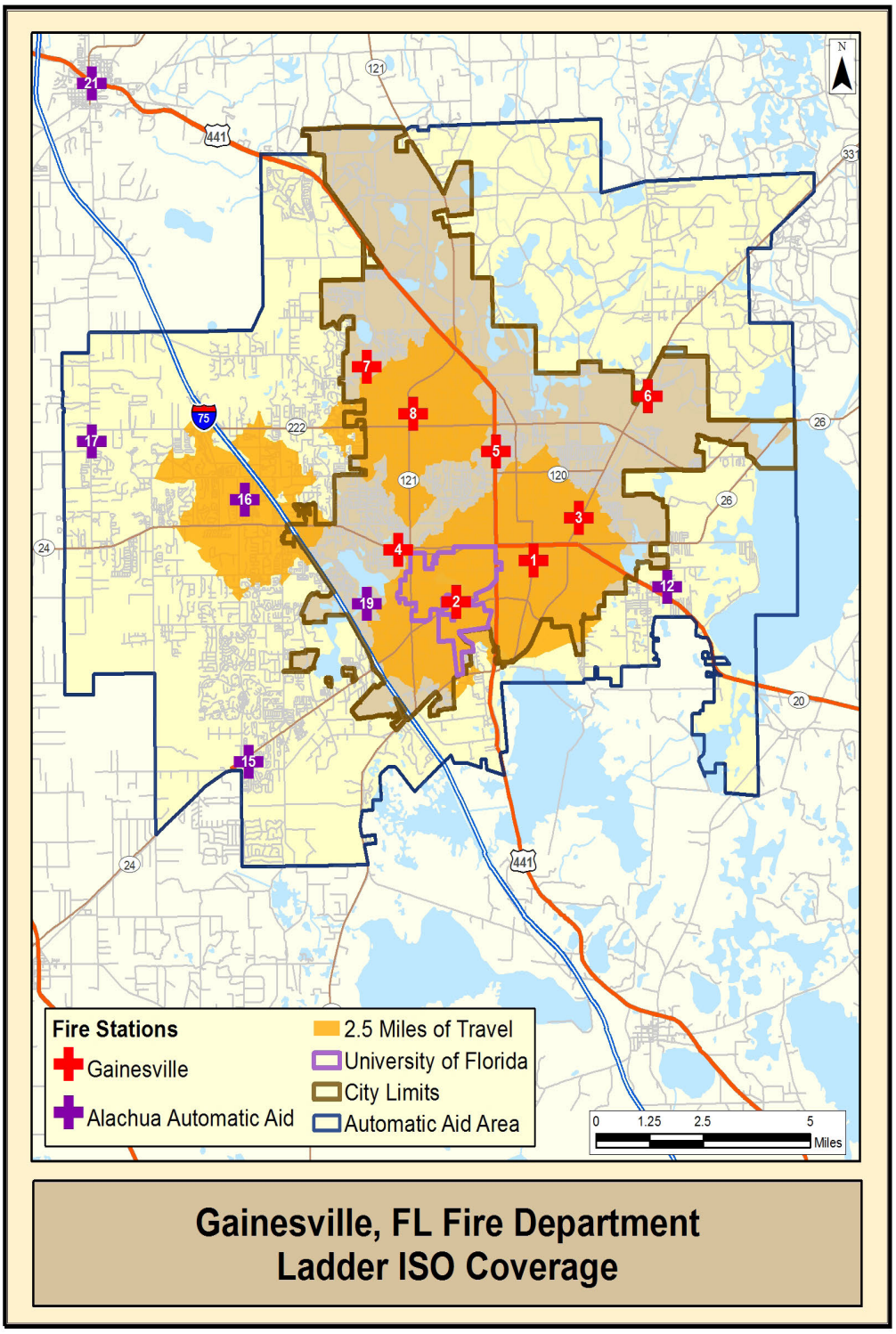
The following maps show Gainesville Fire-Rescue's current coverage for engine and ladders, based on ISO standards. Fire Station 6 is not depicted in this figure since firefighters assigned there do not routinely respond off-airport for non-ARFF emergencies.

Map 5 – Current ISO Engine Coverage, 1.5 miles – GFR and ACFR Stations



Likewise, Map 6 shows the 2.5 mile ISO response areas for GFR and ACFR ladder and quint companies:

Map 6 – ISO Ladder Coverage



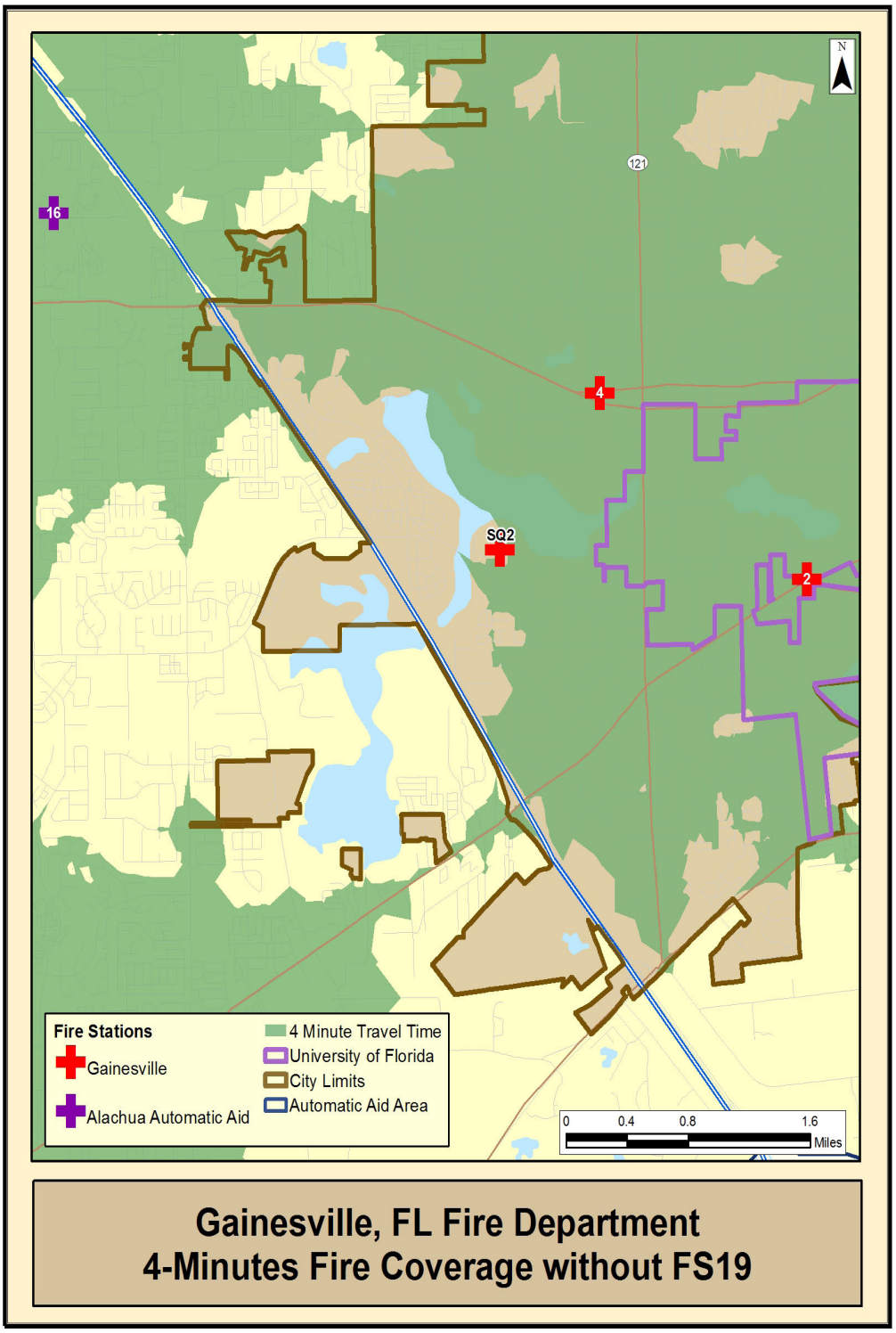
As is evident, there are large sections of Gainesville that GFR's ladders do not reach within a travel distance of 2.5 miles.

The Closure of Alachua County Fire-Rescue Station 19

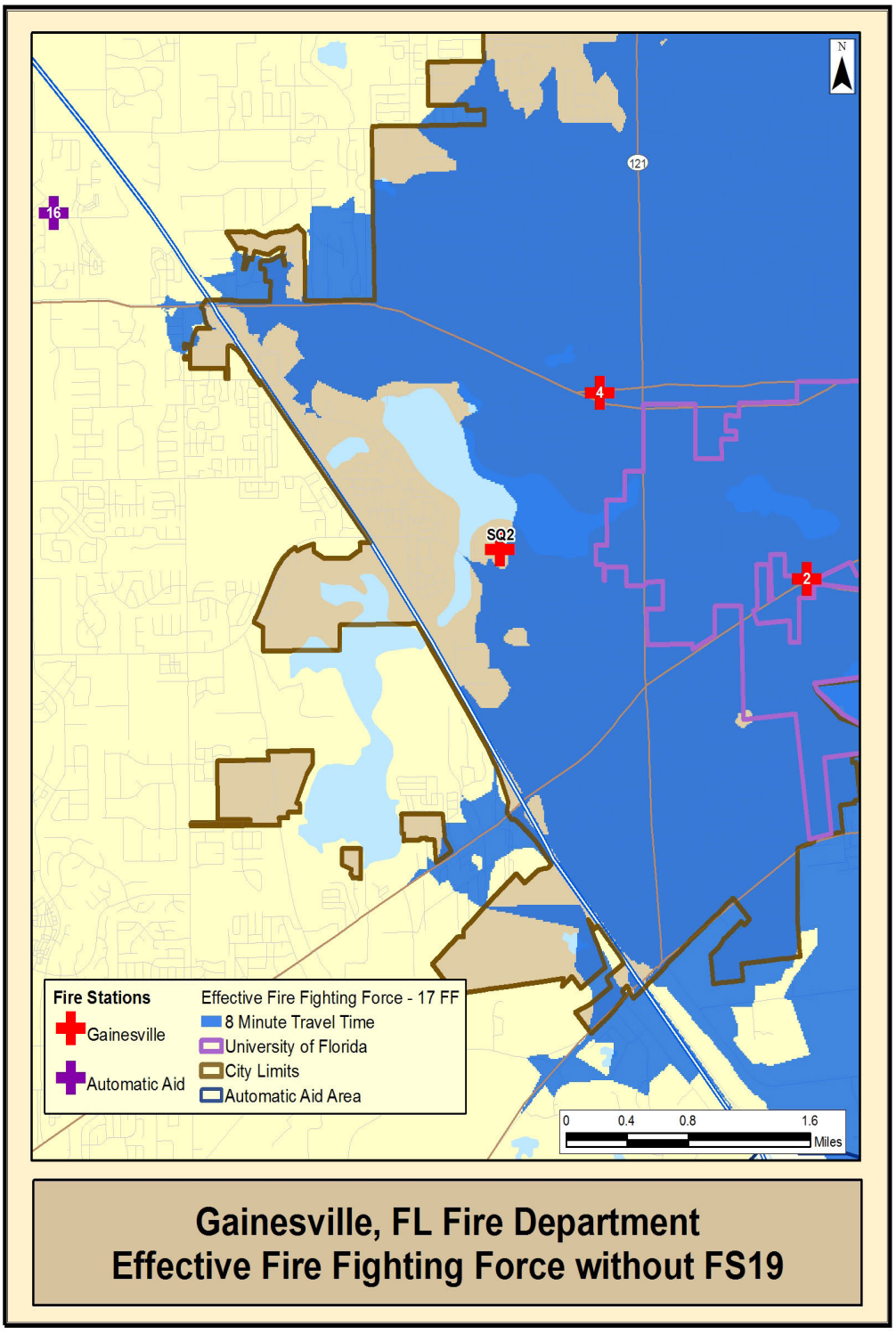
Alachua County Fire Rescue command staff indicated to the FACETS team that in accordance with the Interlocal Agreement, they intend to relocate Engine 19, moving it to a station to be built in the area of 9400 SW 24th Avenue. As Maps 7 and 8 show, this will create gaps in GFR's ability to respond to fires within a four minute travel and to assemble an effective fire fighting force in southwest Gainesville within an eight minute travel time.

Squad 2 is staffed with firefighters but cannot provide primary fire fighting services. SQ2 does not have a pump, water tank, or equipment that would allow firefighters assigned to it to initiate a fire attack. The unit is primarily utilized for the delivery of EMS. The firefighters that staff Squad 2 can contribute to the assembly of an effective fire fighting force.

Map 7 – Fire Coverage without ACFR Station19 in Southwest Gainesville



Map 8 – Effective Fire Fighting Force without ACFR Station 19



Southwest Gainesville

The FACETS team recommends that GFR locate a new fire station, housing an engine company, in the vicinity of SW Archer Road and Interstate 75. In accordance with national standards, we recommend that this company be staffed with a Lieutenant, a Driver/Operator, and two firefighters. We understand that this station will be designated as GFR Fire Station 9 and that the engine will be designated as Engine 9.

Recommendation:

Build Gainesville Fire-Rescue Station 9 near the intersection of SW Archer Road and I-75 and staff the station with an engine company.

A station in this area is supported by Alachua County's Fire and Emergency Medical Services Performance Update (2013), as well as its 2004 Master Plan, which recommended moving Station 19 to SW Archer Road and 45th Street. Since Gainesville has annexed Butler Plaza and the surrounding area, it makes sense for ACFR to move to the west and for GFR to locate Station 9 here.

The proposed location for Fire Station 9 would have good access to I-75 for quick response to emergencies on the interstate and in far western Gainesville. Such a site will need easy access to surrounding commercial and multifamily properties. To ensure flexibility in future deployment models, this station should include:

- At least three full-length drive-through apparatus bays to accommodate an engine and one squad
- Room for one reserve unit or future apparatus, such as the hazmat unit
- The ability to house a larger apparatus such as aerial device
- Provisions for associated living and storage space should be included in the design
- Provisions for the co-location of a Gainesville Police Department sub-station

The current street network limits access to SW 20th Avenue from the northeast and the south, making this area of limited value for the placement of a fire station to primarily serve the City of Gainesville. Future road network extensions and development may improve access to this area.

Unless annexations to the west create additional areas of Gainesville in need of service, the placement of a fire station on SW 20th Avenue is not optimal. Future annexations to the west, should they occur, may modify or enhance the need for a Gainesville fire station in this area.

While the area to be served does not necessitate a fire station, the need for a GFR presence in the area to handle EMS incidents remains.

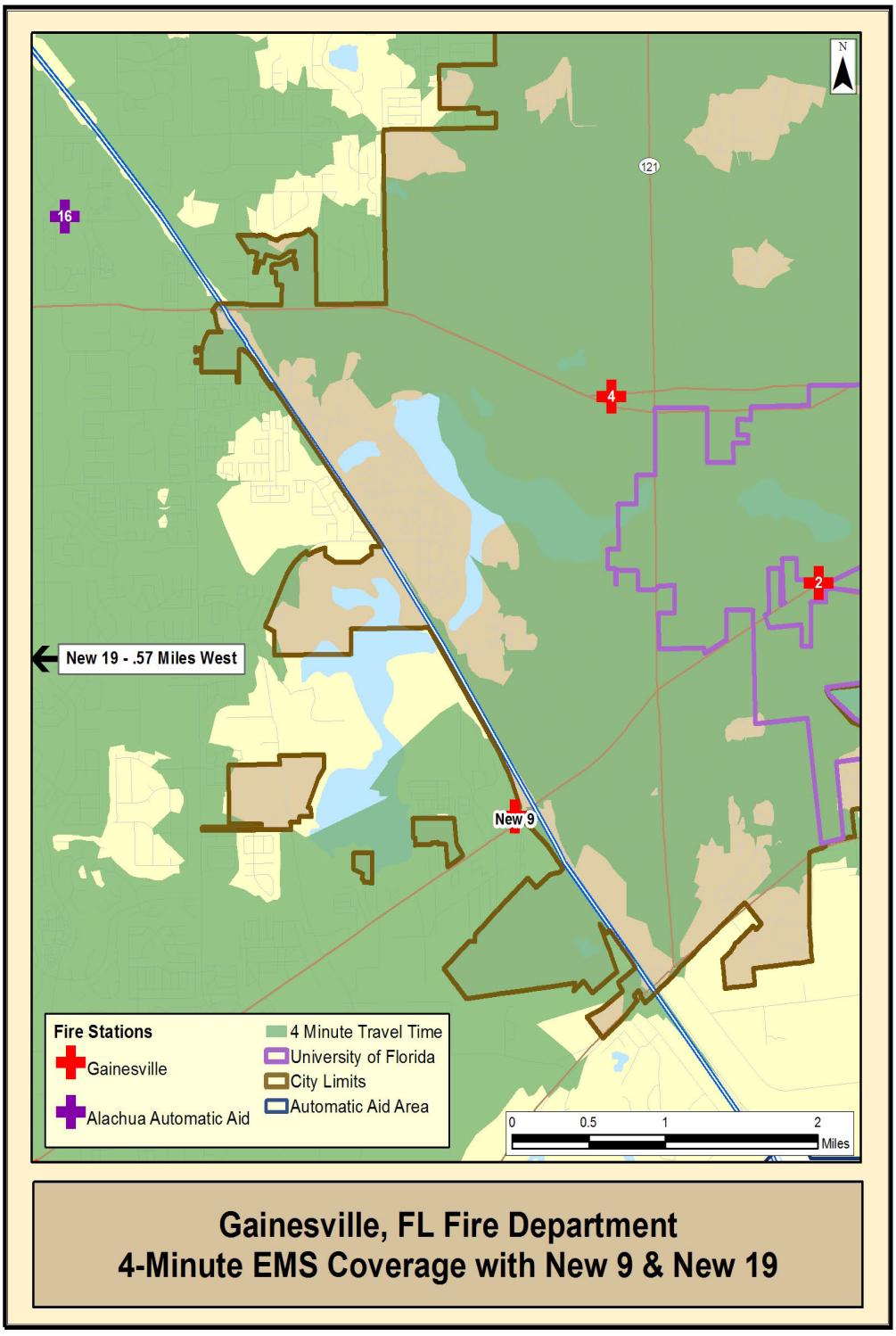
We recommend that Squad 2 remain in their current location or in a suitable facility nearby. ACFR should be consulted to determine if Squad 2 could be housed and operated out of old ACFR Station 19 once Engine 19 is relocated.

Recommendation:

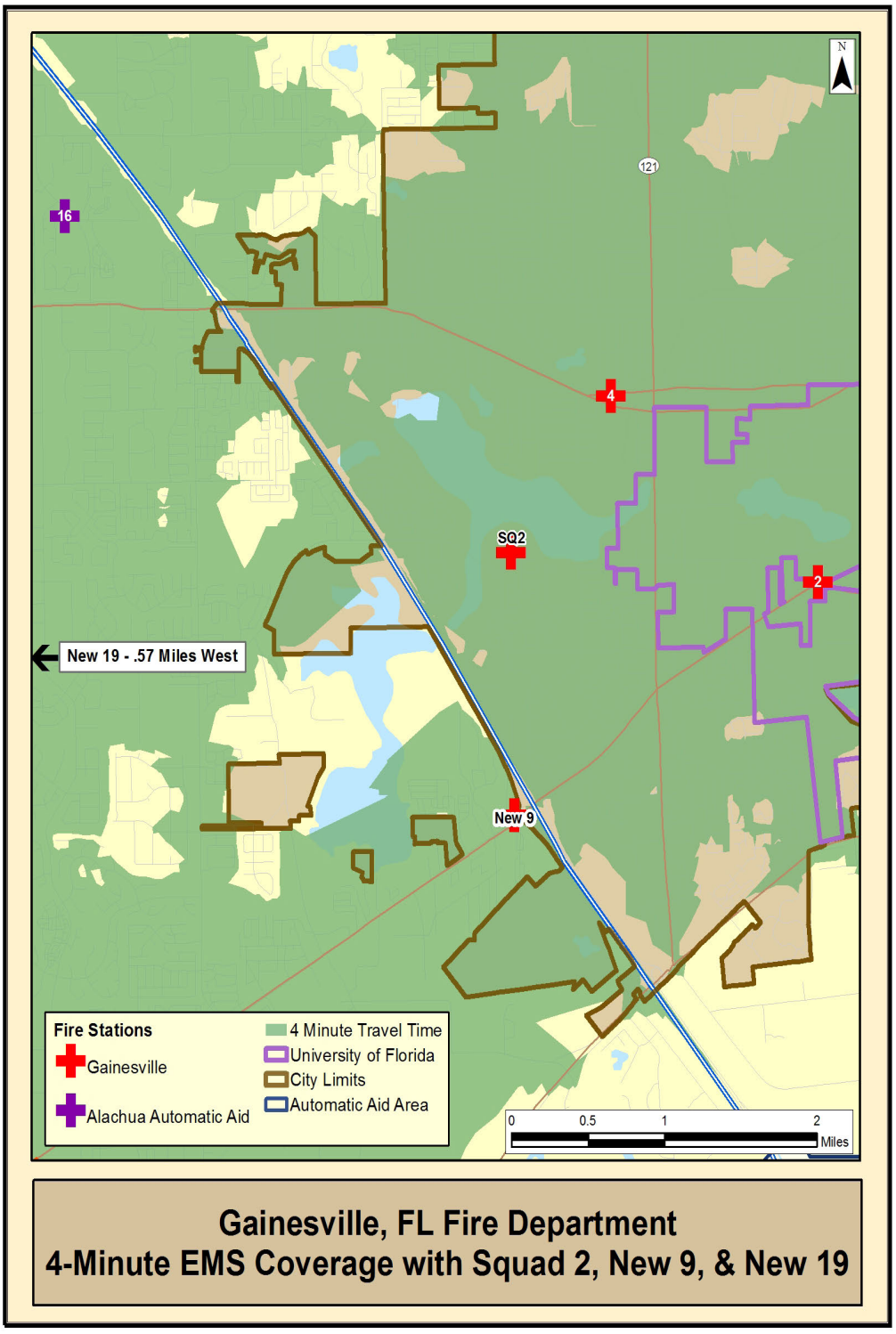
Continue the operation of Squad 2 in its current location or a suitable location nearby.

Map 9 depicts EMS coverage in Southwest Gainesville without Squad 2 in its current location. The absence of ACFR Station 19 and Squad 2 creates a lack of primary EMS coverage along Southwest 20th Avenue and areas of Gainesville west and north of the current location of Squad 2. This situation will lengthen response times in the area above acceptable levels. Map 10 depicts primary EMS coverage in the area if Squad 2 remains at or near its current location, as recommended.

Map 9 – Four-Minute EMS Coverage without Squad 2



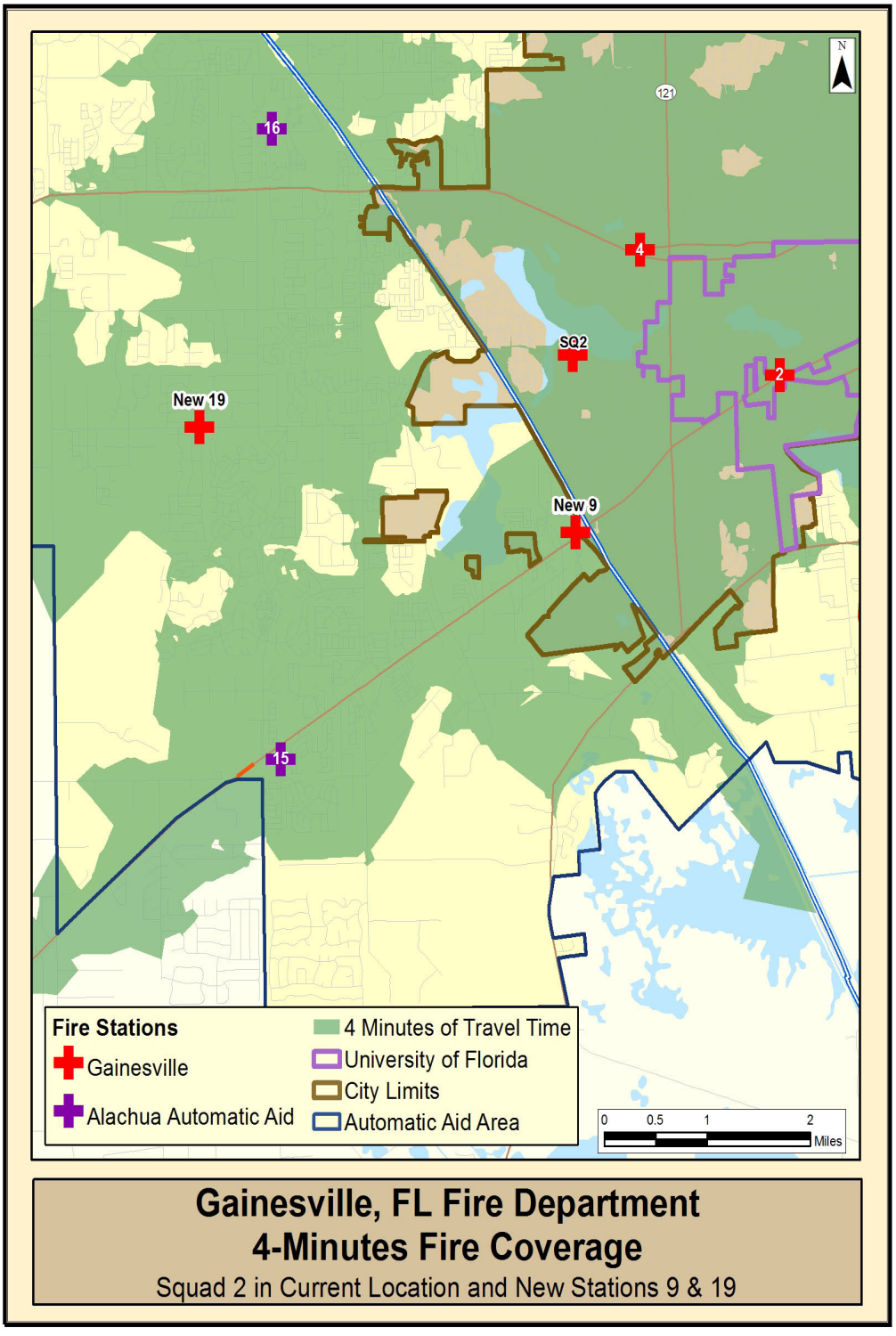
Map 10 – Four-Minute EMS Coverage with Squad 2



Southwest Gainesville, which is already classified as urban, is experiencing a building boom that shows no indication of abating in the near term. Butler Plaza continues its expansion plans, and infrastructure construction to support Celebration Pointe is under way. Much of this construction and associated growth is multi-family, multi-story, and commercial. There are also plans for several large assisted living/nursing home facilities to be built in this area, which GFR's reporting database indicates will be higher users of emergency services.

Butler Plaza and the surrounding area have experienced remarkable recent and continuing growth. Placing GFR Station 9 at I-75 and Archer Road will put it very close to the Gainesville City limits but in a good position to provide service to Butler Plaza, development in an area of Gainesville slated for major work, and in a position to serve an expanded city limits if future annexations spread west. The proposed location will also provide enhanced fire and EMS coverage for areas to the south of Butler Plaza, and Williston Road.

Map 11 – Four-Minute Fire Coverage with Proposed Location for Fire Station 9 and Relocation of ACFR Station 19

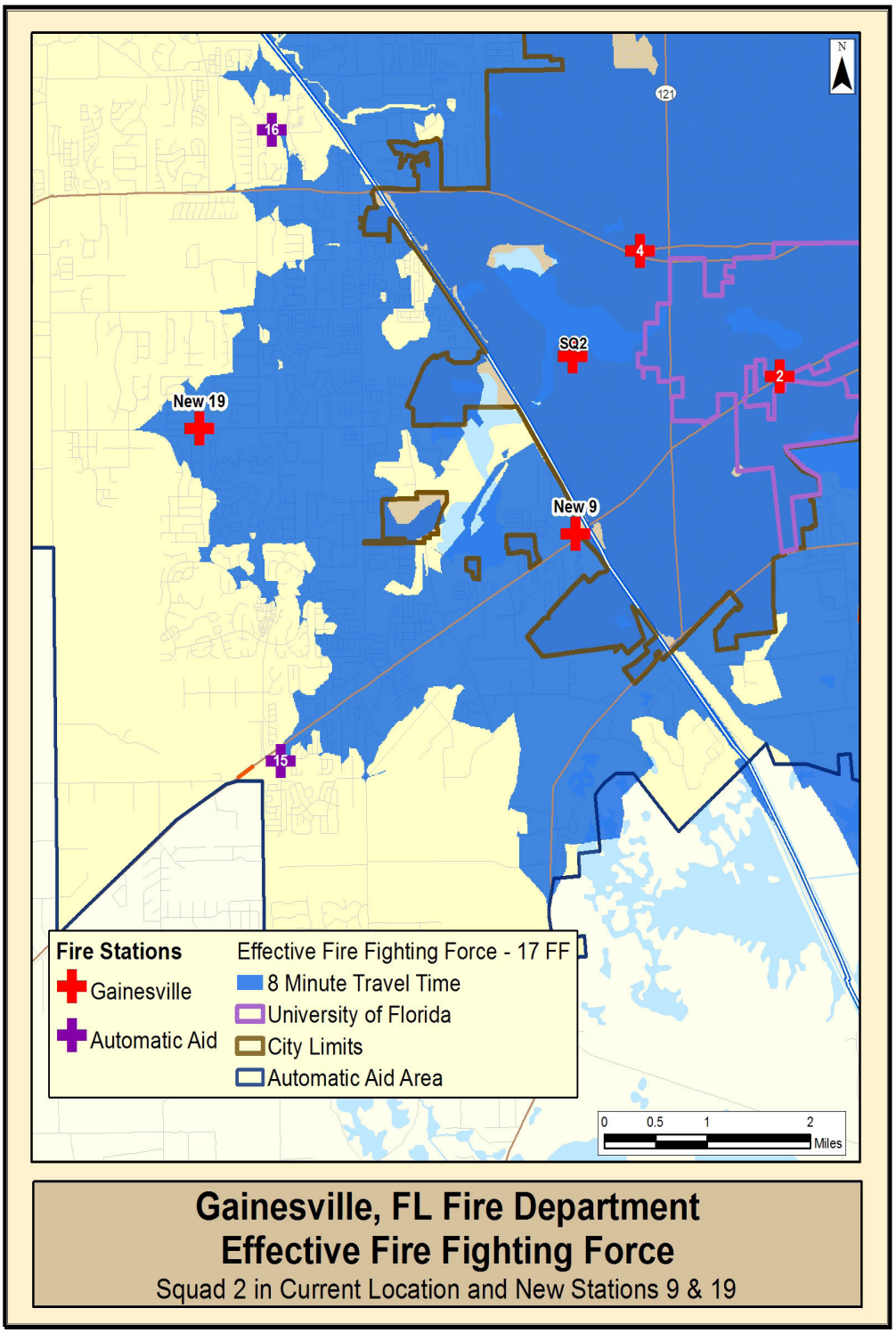


The Gainesville Police Department indicated to the FACETS team that they also have a need for a facility in the Butler Plaza area. According to GPD data, the number of incidents in the immediate area near the Butler Expansion has risen 17% since 2010 and calls for service in this same area exceeded 14,000 for 2015.

There are benefits and efficiencies to be found by co-locating the two departments in this area, given the combined demand for public safety services. The International Association of Police Chiefs has published information that supports shared-use facilities saying, “there are also many shared programmatic areas that several agencies in a public safety facility can potentially share, for example: vehicle storage/parking needs, training area, locker rooms, media and communications. Cost savings through common use can be substantial….” The City should consider a shared-use facility for the construction of Station 9 by ensuring the purchase of enough land and budgeting for a building that will meet both GFR and GPD needs.

If these recommendations related to Fire Station 9 and Squad 2 are implemented upon the movement of ACFR Station 19, fire protection and emergency medical coverage in Gainesville and the Gainesville urban area is markedly improved from the current coverage, especially in Southwest Gainesville. This coverage is depicted in Map 12 below.

Map 12 – Effective Fire Fighting Force with New Fire Station 9 and Relocation of Fire Station 19



Northeast Gainesville

The FACETS team proposes that GFR consider moving Station 3, located at 900 NE Waldo Road, to the vicinity of NE Waldo Road and NE 39th Avenue. In its current location, it is only 1.9 miles from Station 1, which means that Engine 1 and Engine 3 meet after an approximate two-minute response if both are available and in-quarters. There has been considerable development in the northeast quadrant of the city since the station was built in 1960. Furthermore, Engine 3 is currently first due at Dignity Village, whose inhabitants are frequent users of emergency medical services.

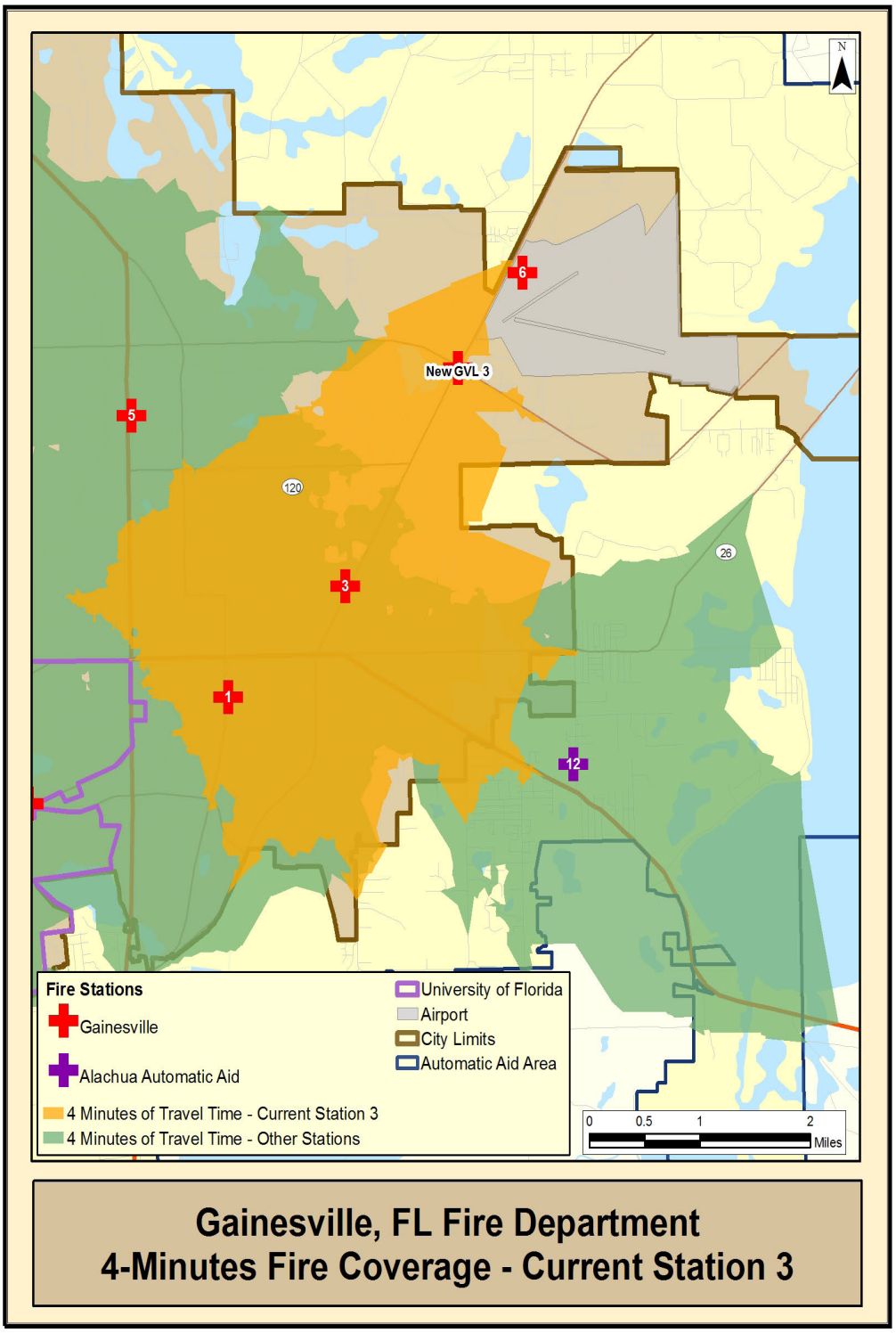
Recommendation:

Relocate Station 3 further to the Northeast, more proximal to NE Waldo Road and NE 39th Avenue.

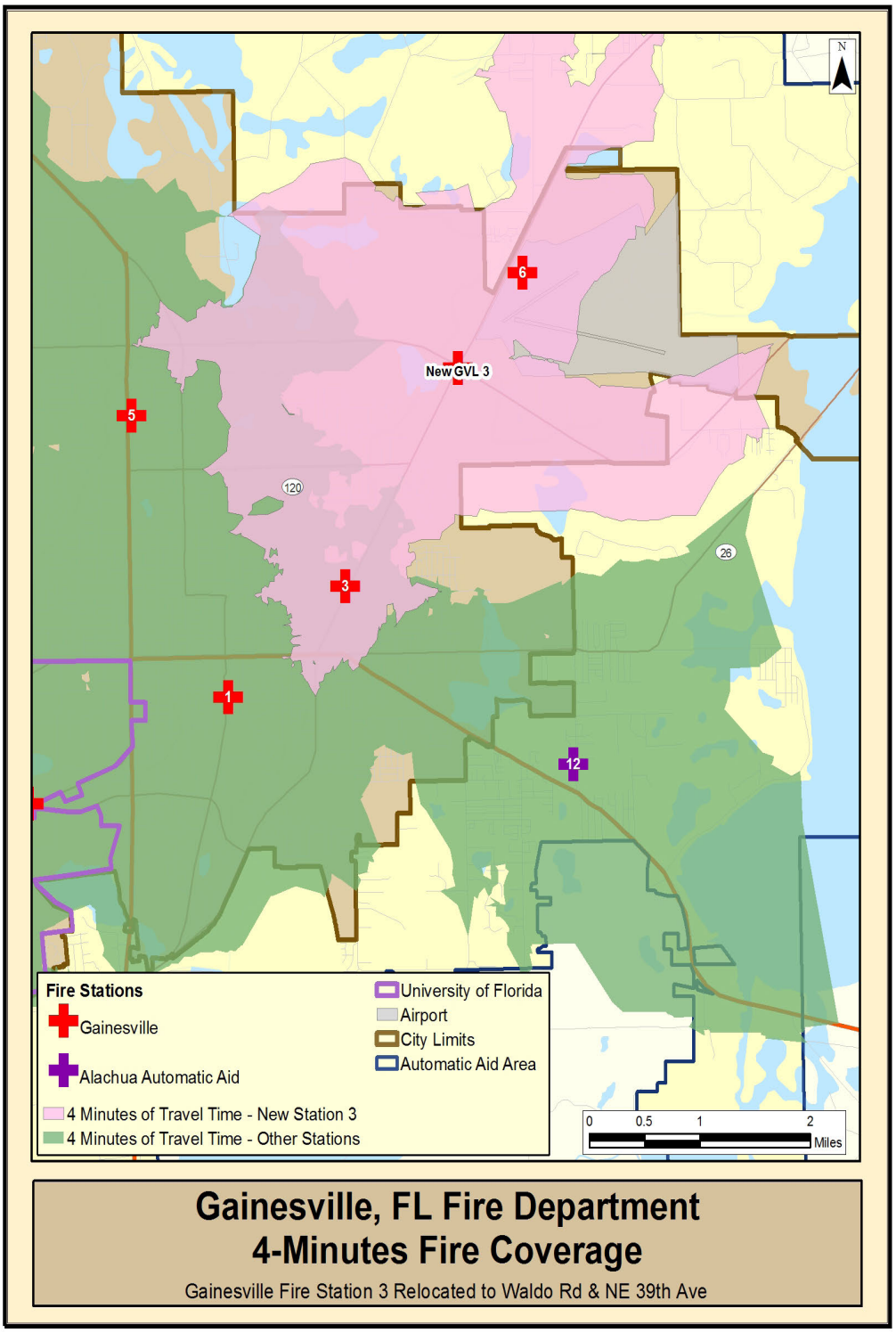
The current location of Station 6, at 3681 NE 47th Avenue, is close enough to Waldo Road that a fire company can easily access the road and respond to the surrounding area, including Dignity Village. However, the FACETS team understands that the Airport Authority plans to move Station 6 to the East and the other side of the runway, near the control tower. This location will provide challenges to response off airport property and would be less ideal as an alternate site. The City should consider purchasing the current location of Fire Station 6 for its future use in better serving the Northeast area.

The following map shows how the four-minute response area of a new Station 3 at NE Waldo and NE 39th Avenue will improve engine coverage in the northeast section of Gainesville.

Map 13 – Current Location of GFR Station 3



Map 14 – Coverage with Fire Station 3 at its Proposed Location



A station in the vicinity of this area will not overlap with Station 1 and will cover a much larger area of northeast Gainesville within four minutes.

Northwest Gainesville

The construction of Station 8 in 2011 shows the awareness of needs and the foresight of City of Gainesville leadership and GFR command staff. Quint 8 is staffed at four and is capable of performing engine or ladder tasks, but not both simultaneously. Engine 7 and Quint 8 are the two GFR resources available in North Gainesville. Together, they are not enough to assemble an effective fire fighting force, and ACFR does not have additional resources close enough to assist in the early stages of an emergency. Continuing development in the North and Northwest parts of Gainesville will increase the pressure on emergency services to respond in a timely manner. The FACETS team recommends that GFR place an engine company in service at Station 8.

Recommendation:

Place an engine company in service at Station 8 and begin planning to relocate Station 7 to the Northeast, along Route 441, as any increased development along that corridor will require a station.

The addition of an engine company at Fire Station 8 will assure the more timely deployment of an effective number of firefighters for a structure fire in North Gainesville and assure that sufficient capacity exists for future development and the associated higher levels of emergency activity in the area.

Since Station 7 was built in what was practically a rural area in 1980, the city has expanded significantly in that direction. Now the immediate area is classified as urban. The proposed 1800-acre Plum Creek development for senior citizens off Route 121 could increase the emergency workload, when it is built. There is likely to be more development in the district for years to come, which will also impact the emergency workload. Station 7 is 2.9 miles, or about five minutes travel time, from Station 8. At a maximum, stations should be about eight minutes travel time apart, so that fire apparatus will meet around four minutes travel for each.

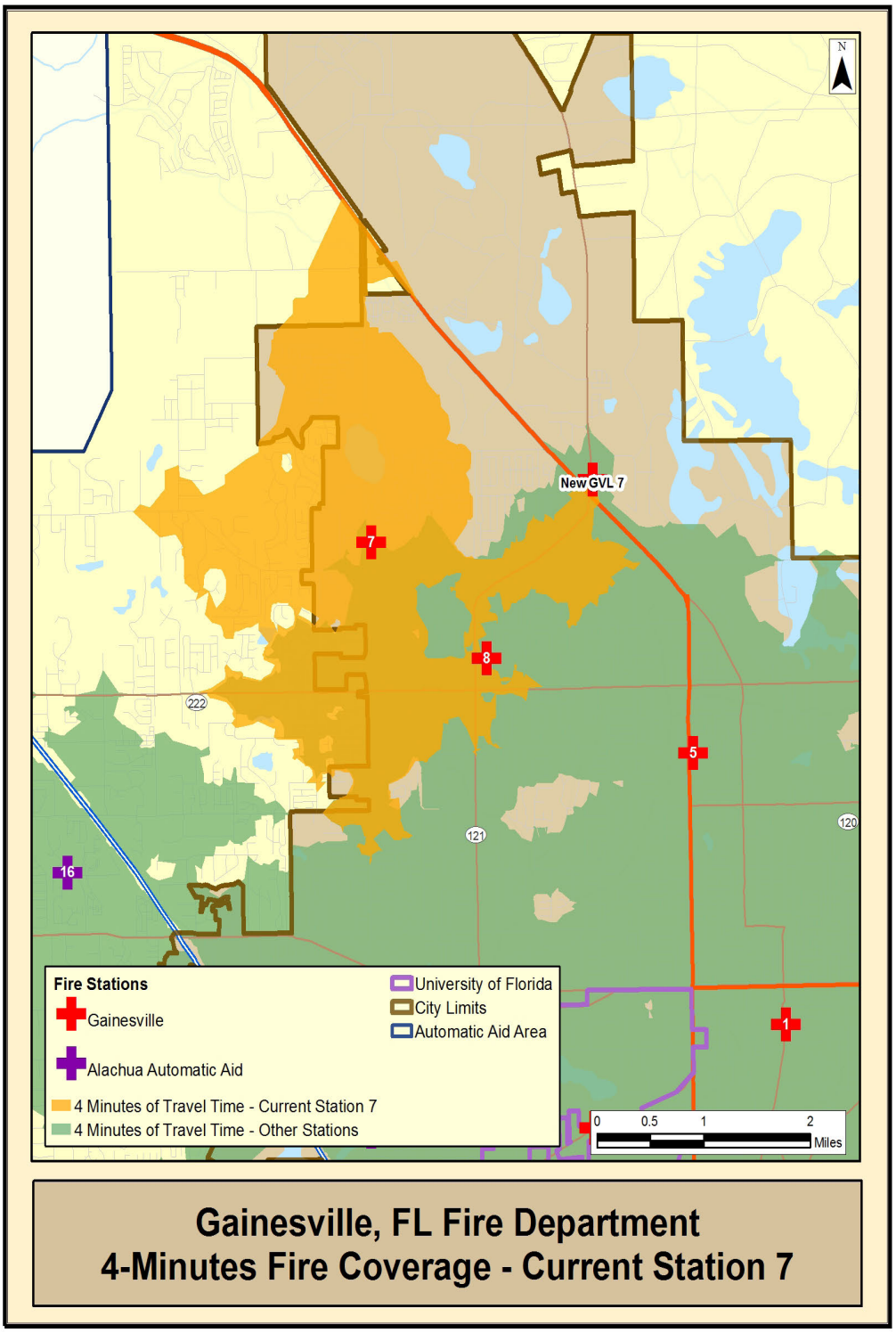
As Map 4 indicates, GFR does not have the resources to assemble an effective fire fighting force in the north part of Gainesville. ACFR's latest master plan identifies the need for a station in the vicinity of NW 63rd Boulevard and NW 71st Street. While a fire company located here will be useful in assembling an effective fire fighting force, when a station will be built and staffed is unknown and not expected in the near term.

In addition, Station 7 is an example of the constraints an inflexible building puts on fire service operations. It has been well maintained and remodeled to meet current needs, but it has only one apparatus bay and the lot is too small for the building to be expanded. This is the northernmost station in the area, so GFR needs the flexibility to move additional apparatus and staff but the space is not there. This station needs to be replaced. The FACETS team recommends that GFR plan to move Station 7 to the north and east, along Route 441, when development requires a station in the area.

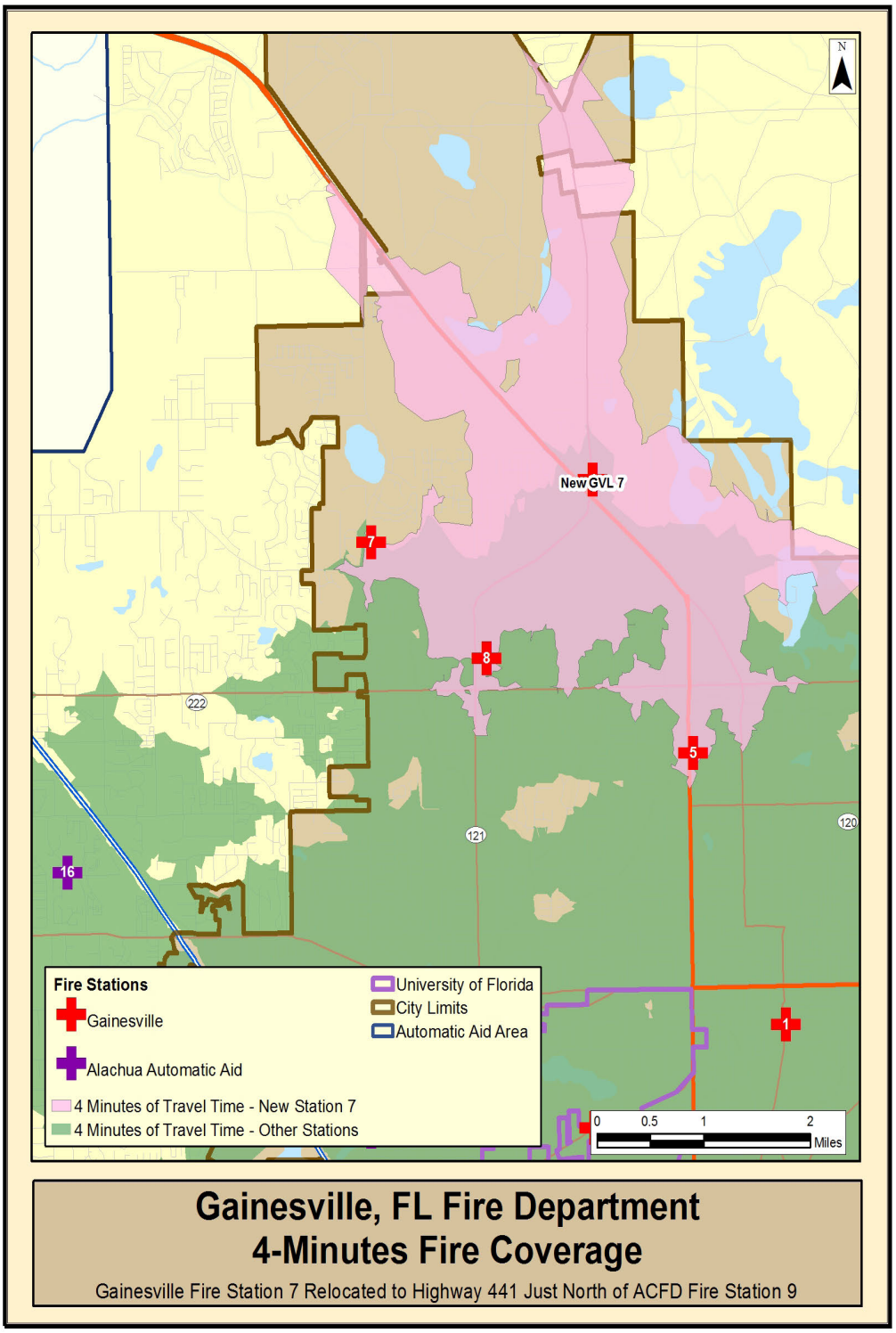
While this movement would expose some areas west of the current Station 7 location to slightly increased response times, the coverage of far Northern Gainesville would increase significantly.

The following map indicates the four-minute response area from Station 7 relocated to the northeast of its current location.

Map 15 – Coverage with Fire Station 7 in its Current Location



Map 16 – Coverage with Fire Station 7 in its Proposed Location



Southeast Gainesville

Fire Station 1 is the primary response station for southeast Gainesville and the downtown area. Currently housing one engine, a tower, a squad and a district chief, the two-story station was built in 1962 and has reached the end of its functional life. In 2011, funding was approved to replace it. Since that time property has been purchased and cleared at 525 S Main Street near the current property, and the station design is at the 30% mark. The old station is just over 15,000 feet square and the new station is designed at just under 22,000 square feet. The majority of the planned expansion has been designed in the addition of three double bays and two single bays, along with dorm space to allow for future expansion and the addition of another engine. This addition will allow for appropriate growth to respond to increased demand of the vertical growth of Gainesville in its downtown area.

The new facility will improve current conditions and provide for future expansion, the fire chief has thoughtfully increased the staffing capability with the purchase of a larger replacement Squad unit and recently received approval to place a lieutenant on this unit. This will increase the effectiveness of Squad 1 by providing unit supervision and, when staffed with three personnel, will reduce the time to reach the effective response force for fire incidents in the Southeast. In addition, a three person team is much more effective for responding to medical emergencies such as cardiac arrests.

Facilities Review

The normal expected life of a fire station and its systems is estimated at forty years. Certainly when a building reaches that age, upgrades are necessary for all building systems – HVAC, electrical, plumbing, mechanical – and at least cosmetic upgrades will be needed.

For fire stations, it is important to build in flexibility, by including the space to support changes in the number of personnel, the apparatus and equipment needed, and the services provided. Gainesville Fire-Rescue has done well in this regard with Station 8, constructed in 2011 with three double bays and effective living space. The FACETS team had only a preliminary view of the plans for new Station 1, but we believe this station will provide the needed flexibility.

A more complete review of the condition of current GFR facilities has been provided as an addendum to this study. It is our understanding that the City of Gainesville will undertake a review of all its facilities in the near future. The information from our subject matter expert will be of additional value in that undertaking.

More generally, our impressions and recommendations for GFR facilities are as follows;

GFR Station 2, located at 2210 SW Archer Road, Station 4, located at 10 SW 36th Street, and Station 5, located at 1244 NW 30th Avenue, were all built in the 1960's. They have been maintained and updated as necessary, but all three are nearing the end of their functional lifespan.

Recommendation:

Replace Station 5 at the current location, and create a facility master plan for the remaining stations and fire facilities.

Station 2 is well located, but its apparatus bay is not of sufficient size enough to readily accommodate current fire apparatus. This is a significant problem. Station 4 has only one apparatus bay and its living quarters and office space are limited. At Station 5, the apparatus floor has been excavated to accommodate current apparatus and is four feet lower than the rest of the station. Of the three stations, Fire Station 5 is the one most in need of replacement. The FACETS team recommends that it be replaced at its current site. Additional land at the Fire Station 5 site may be needed to accommodate a replacement fire station.

Operations Staffing

Fire fighting and the provision of emergency medical services are manual labor. The provision of an adequate number of firefighters and fire officers in a meaningful period of time is the key to a successful fire fight or the successful resuscitation of a customer in distress due to a medical condition or a traumatic injury. The sooner that firefighters arrive and the more hands that can be put to work, the better the outcome will be.

A number of studies have demonstrated the increased efficacy of four-person fire engine and ladder crews on fire fighting operations.[1] Simply, a person in cardiac arrest or a customer that is experiencing a house fire needs a lot of manual labor in the shortest period of time possible. If firefighters arrive in larger numbers, they can overcome the problem in a shorter period of time and facilitate more positive outcomes.

NFPA 1710, NFPA 1500, National Institute of Standards and Technology (NIST) reports, Occupational Safety and Health Administration (OSHA) policies, and other standards provide accepted standards for emergency operations, to protect those who need emergency services and to ensure that firefighters work safely and have what they need to be successful.

In addition to the standards outlined in NFPA 1710 for an effective fire fighting force, OSHA policy 29 CFR 1910.134(g)(4)(i) requires that firefighters never go into danger in a fire or rescue incident alone, and that there be two firefighters outside the hazard area to initiate rescue of inside firefighters, should they get into trouble, in the initial stages of an emergency operation where only one crew is working in the hazard area. Thus, this OSHA rule, known as two-in, two-out, requires four firefighters before interior emergency operations can begin

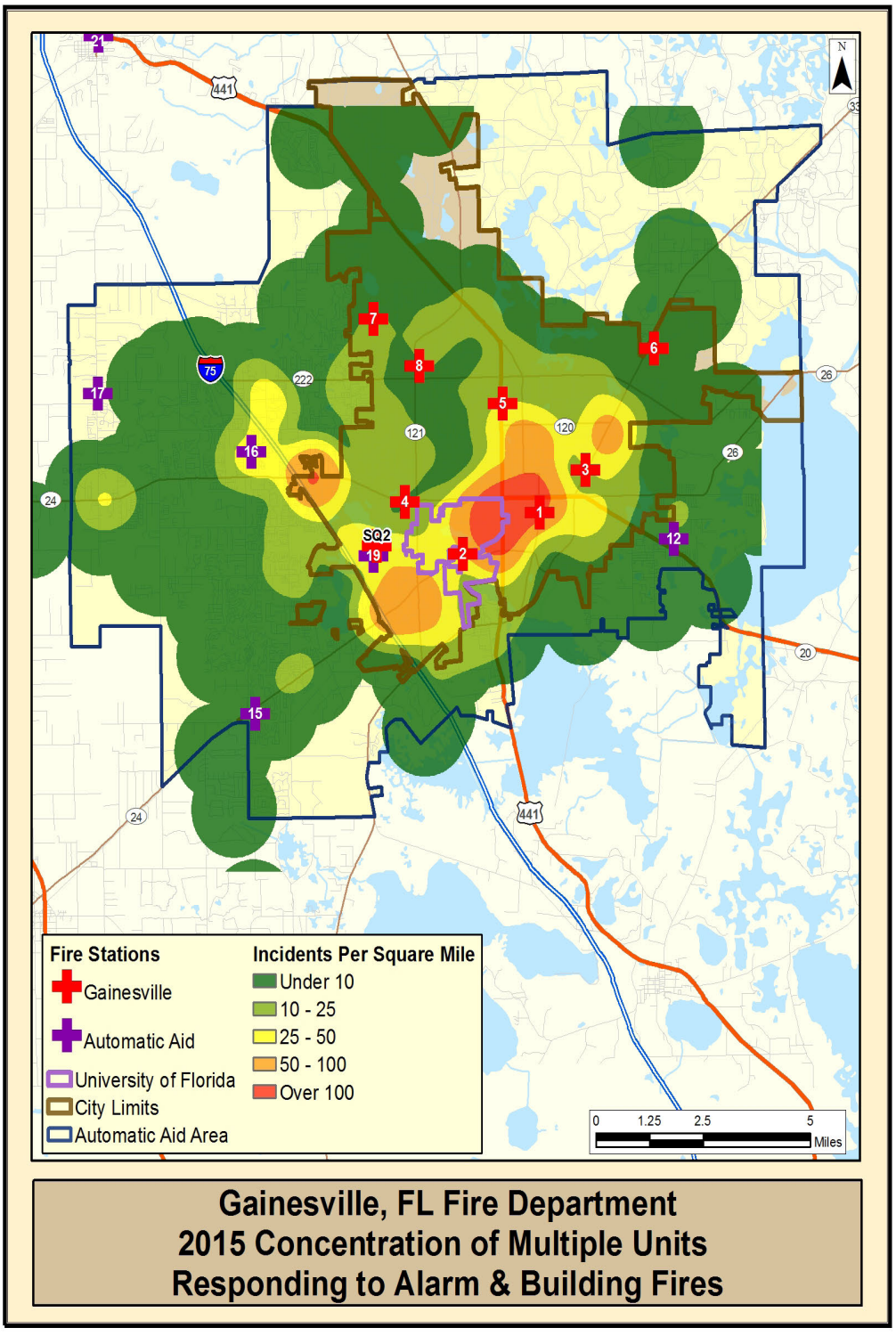
Additionally, NFPA 1710 establishes that an effective fire fighting force consists of 17 firefighters and officers who respond to an emergency within eight travel minutes of being dispatched. Gainesville Fire-Rescue has thoughtfully and carefully deployed its resources for maximum advantage, but those resources consistently fall below both the standard and the OSHA rule.

GFR's Standard of Coverage document is an impressive analysis of the risks to life and property the city faces. It shows that GFR will consistently assign 15 officers and firefighters to a structure fire or an emergency of a similar magnitude. This number represents 42 percent of the on-duty staff (excluding the airport staff), which means that only 58 percent of GFR resources are available to cover the rest of the city. Gainesville Fire-Rescue responds to an average of 52 incidents per day, of which ten will not be EMS calls and are likely to require response by more than one fire company. With two or more incidents requiring a first alarm assignment of fire companies at the same time, GFR does not have enough resources to adequately cover the rest of the city. By having four on each company, fewer companies will be needed to assemble an effective fire fighting force, thus ensuring more fire companies for protection in other areas.

[1] http://www.nist.gov/fire/staffstudies.cfm

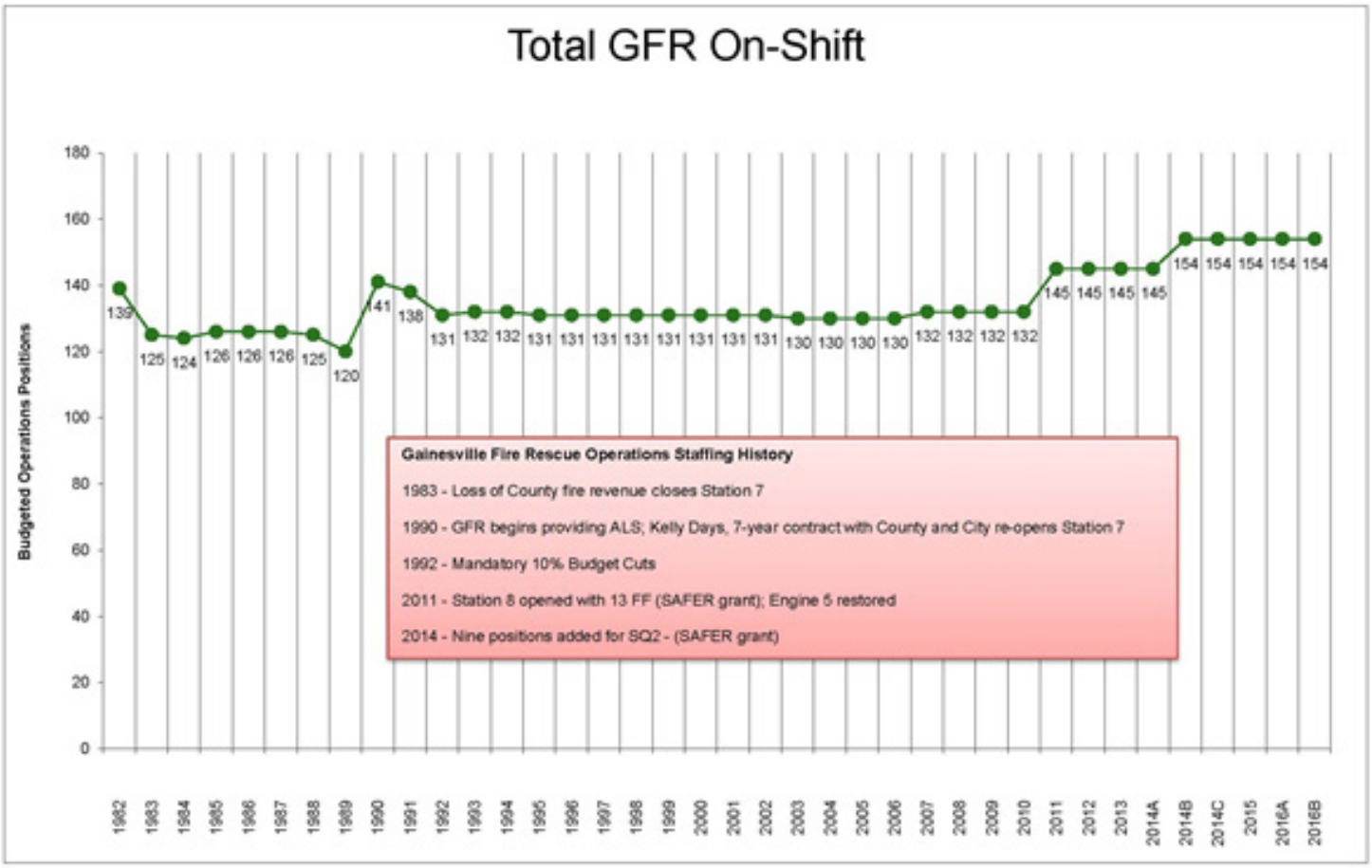
Map 17 below depicts areas of Gainesville where multi-unit responses were necessary for reported structure fires, including fire alarm activations.

Map 17 – Multi-Unit Response Density for 2015



As the following figure shows, GFR staffing has been stable for several years:

Figure 3 – GFR Staffing in Emergency Operations



In its 2014 review of fire protection capabilities, the Insurance Services Office awarded Gainesville 9.10 points out of a possible 15 for staffing. That GFR received 61 percent credit for staffing is not a failure, but it is an indication that there is room for improvement, to meet national standards and the need for additional on-duty staffing.

Recommendation:

Increase minimum staffing of all engine companies to ensure a complement of four, as is now required for towers and Quint 8, in accordance with national standards.

The FACETS team recommends that GFR continue to staff its tower and quint companies at four and upgrade its engine companies to four-person minimum on-duty staffing.

The most expensive part of a fire-rescue department operation is the firefighters and fire officers that staff an emergency response unit on a 24 hour basis. The full implementation of this recommendation should be thought of as a longer-term goal with incremental progress year over year. The full implementation of this recommendation on current GFR deployment would require six additional firefighter positions (one each for E1, E2, E3, E4, E5, and E7) on duty for each of three shifts, plus the staffing factor discussed below. It is not practical to expect that all of these positions would be added at the same time. The deployment and assignment of additional firefighters can be managed by the Fire Chief as additional positions are added.

Staffing Factor

A Staffing Factor simply identifies the actual number of firefighters who must be hired to ensure that there is a person in each full-time position on all emergency crews, 24 hours a day, 365 days a year. By identifying the number of shifts a firefighter can be expected to be on-duty, divided by the number of shifts required, the most efficient number of personnel needed can be determined. This number is used to determine how many personnel to hire in filling a new position.

Gainesville Fire-Rescue staffs a three-shift format that consists of three 24-hour shifts rotating sequentially, thus creating A-shirt, B-shift, and C-shifts. Each shift is divided into two districts with 4 or 5 stations per district.

In this format, firefighters are scheduled to work 121 (24-hour) shifts per year. This results in an average 56-hour workweek. In adherence to federal laws and exemptions and collective bargaining, the departmental schedule includes unpaid leave that reduces the average firefighter workweek to 52 hours.

GFR staffs a minimum of 38 positions in the Operations Division each day. As City employees, firefighters earn vacation and sick leave and may use educational and other forms of leave, which will lower the number of shifts they will be expected to be on-duty:

- Firefighters assigned to 24-hour shifts earn between 120 and 240 hours of vacation per year, based on longevity.
- Likewise, 144 hours of sick leave are accrued per employee per year.
- To reduce the average workweek, firefighters have a scheduled unpaid off-duty shift every sixth-week, approximately 9 per year.

Calculating the staffing factor by rank is more accurate than calculating it for the total number of positions. Having a firefighter out on extended sick leave or military leave, will upset the calculations and require overtime. Consideration of the historical impacts of line personnel working limited duty due to injury/illness recovery should be included to identify a consistently minimum annual value. Staffing is a dynamic process and requires managers and firefighters alike to be flexible and resourceful to ensure that the correct person is in the right assignment 24/7/365.

Recommendation:

Establish a calculated staffing factor to guide hiring numbers and promotions for the most efficient staffing of all fire apparatus by rank, and update the calculation biennially.

The FACETS team recommends that GFR establish the Staffing Factor for each rank in the Operations Division and use it to inform the hiring and promotional processes. As minimum staffing and vacancy variables change, the factor must be recalculated with updated data, preferably every two years or with any significant staffing changes.

Diversity

Communities expect that the emergency personnel who serve them look like the community that they serve. Diverse communities expect and deserve a diverse firefighter workforce. Diversity should be considered at many levels including but not limited to gender and ethnicity. Gainesville Fire-Rescue has historically done well in this regard, but now many minority and female firefighters are reaching retirement age.

Recommendation:

Continue to invest in programs to hire and promote diversity among the GFR workforce including the Department's Diversity Initiative, mentorship, and cadet programs.

Finding reliable statistics on minority firefighters is difficult; however, in 2004, US census data estimated that 7.9 percent of employed firefighters were classified as minorities by ethnicity. Currently, GFR has 41 minority members, or 25 percent of its uniformed personnel. GFR employs 11 female firefighter and fire officers. There are currently no minority female firefighters or fire officers employed by GFR.

Maintaining diversity in its workforce is a primary goal for Gainesville Fire-Rescue, as its 2016 diversity initiative shows. This initiative consists of a detailed plan, to be implemented by an identified workgroup, whose goal is to reach potential employees by a number of means.

The FACETS team recommends that GFR continue to invest in its programs to increase and maintain its diversity of uniformed personnel as attrition is a potential risk to its prior and current success.

Fire Prevention

Once a certificate of occupancy is issued for a building, fire inspectors routinely visit and check for safety issues in commercial, multi-residential, and office occupancies.

GFR's Risk Reduction Bureau can complete approximately 2,200 building inspections per year with current staffing. There are over 9,400 buildings in the city that require inspection for life safety under the existing inspection model. The annexation of Butler Plaza added approximately 86 businesses with over 1.1 million square feet of space, and the SW 20th Avenue annexation added many more businesses, with no additional fire inspection personnel.

Under ideal conditions, it will take four years to inspect every business in the city with current staffing. Currently, two-thirds of the buildings the Risk Reduction Bureau inspects have life-safety violations that require follow-up and additional workload. Since a staff specialist position was eliminated, follow-up and other duties have fallen to the fire inspectors, further reducing the number of new inspections that can be completed.

Over a five-year period, GFR reports there have been fewer than ten fires in the over 6,000 buildings the Risk Reduction Bureau inspected; nearly all of these fires occurred over a year after the inspection was made. The one exception was an arson fire; none of these fires was related to a problem found during an inspection.

Adding two inspector positions will allow the Risk Reduction Bureau to inspect businesses on a three-year rotation, thus increasing the life safety of employees, customers, and firefighters. Increases in inspections directly benefit business owners by reducing the risk of fire and subsequent losses and impact on business viability. Inspections also raise the level of safety for customers who

can visit these occupancies with the assurance that inspected businesses have been made aware of and addressed life safety issues.

Recommendation:

Add two fire inspector positions in the Risk Reduction Bureau. Explore funding options within the fire assessment to recover more incurred costs.

With the current cost recovery system, Gainesville Fire-Rescue estimates that an additional fire inspector will produce estimated revenue of approximately $30,000; however, the City, as part of its effort to enhance economic competitiveness, recently approved a revised fee structure whereby buildings that are in compliance on initial inspections will not be charged a fee. The goal is to encourage first time compliance and reduce time spent on return inspections so that more buildings can be visited. The overall goal is to reduce community risk rather than generate revenue

This limitation on fees makes recovery of the costs associated with these new positions impractical. The FACETS team recommends that GFR review its current structure and identify funding options within the fire assessment for the enhanced service to be provided by the Risk Reduction Bureau. The recovery of these costs from a wider base reflects the community-wide benefits to be realized from the provision of this enhanced level of service.

Community Paramedicine

Gainesville, Florida has a population of 127,488 of which 8.3 percent is over 65 years old. The latter group tends to have greater need for emergency medical services.

The Gainesville area has 500 physicians who specialize in general internal medicine, family medicine, or general pediatrics. Of these, only 249 accept Medicare and only 69 accept Medicaid. Gainesville has access to many more specialty physicians, with 54 gastroenterologists alone.

Access to primary care physicians (PCP's) may be difficult because specialty access is more prevalent; socioeconomic impediments may also preclude direct access to primary care. This has led to many patients using EMS or hospitals as primary care, due either to lack of education or lack of direct access.

Between 2011 and 2013, Gainesville Fire-Rescue responded to 37,699 EMS calls. Trends show that a disproportionately small number of 911 users account for a high number of total calls. Out of these calls, 342 individual patients used the 911 system more than six times in a 3-year period, resulting in 3,127 calls (8.29 percent of total calls), with an average of 10.9 calls per person. The top 59 patients called 911 12 to 65 times during this period, accounting for 1,036 calls for service. Such disproportionate usage can partially be attributed to:

- Patients leaving the hospital who do not understand their care plan.
- Care plan primarily includes follow-up with a PCP the patient does not have one.
- Patient lacks money or means to fill prescriptions.
- Patient has another unmet social need that exacerbates the medical condition, such as lack of access to food, poor housekeeping, or no transportation.

These in turn lead to the patient returning to the hospital for follow-up care because the initial care plan was not initiated, not completed, or not completed correctly due to poor patient compliance.

There have been times when no ambulances were available to transport people who needed care, because all on-duty units were already at the scene of other calls. That resources are not readily

available shows how stressed the emergency response system is. Alachua County Fire Rescue is in the process of putting peak-time ambulances in service to ease the stress, but it is never acceptable that legitimate needs cannot be met within reasonable response frames.

Recommendation:

Investigate the implementation of a community paramedicine program, to improve emergency medical services to customers and reduce system demand costs.

The impacts of this revolving cycle are apparent on the EMS and hospital systems and manifest in wear and tear on equipment, burnout of personnel, higher costs for services, and dissatisfaction and hopelessness on the part of the customer. Additionally, provisions in the Affordable Care Act will have serious financial implications for hospitals, which will no longer be reimbursed for readmissions of patients for the same complaints within 30 days.

Community paramedicine is a new concept of service that attempts to identify and meet the actual need efficiently. In such a system, paramedics are authorized to perform services that do not require physician care and/or refer patients to facilities other than emergency rooms. A child with an ear infection, for example, can be sent by taxi to an urgent care facility, rather than tie up an ambulance and create an expensive bill for transport and emergency room service. This benefits everyone: ambulances are not tied up for low acuity incidents, emergency rooms are available for high acuity patients, and the hurting kid gets the care needed more quickly and at lower cost.

Having enough ambulances in service is an issue for ACFR, as is managing the emergency workload of the two GFR squads who respond to calls for medical service. The FACETS team recommends that GFR investigate the possibility of implementing community paramedicine in Gainesville.

Structured Demand Reduction Program

Alachua County Fire Rescue and Gainesville Fire-Rescue respond to a high number of low acuity incidents at assisted living facilities. Many of these calls are made simply to lower or remove liability for the facility operators.

There are approximately 30 such facilities in Gainesville and in areas where GFR responds to provide primary service. In 2015, there were a total of 2,481 GFR emergency responses to these facilities. Over 75 percent of these responses were to just ten of the thirty and one facility generated over 300 emergency incidents that required a GFR response.

Taken together, these facilities accounted for approximately 16 percent of all emergency medical incidents that occurred in Gainesville in that year.

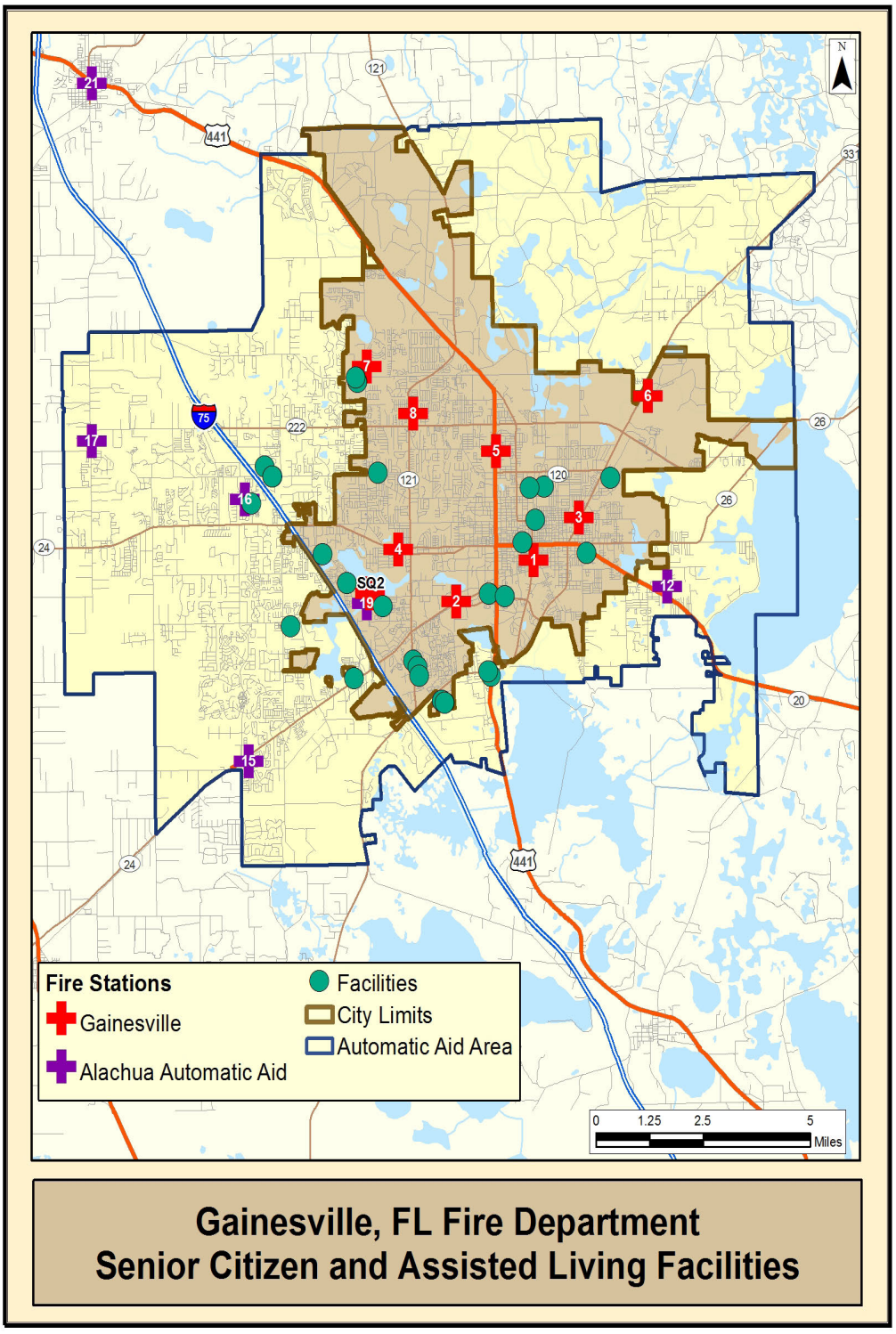
Recommendation:

Create a structured demand reduction program, to lower the number of low acuity EMS calls at nursing homes, assisted living facilities, and for frequent system users.

While all customer interactions are important, GFR crews spend an inordinate amount of time on these incidents, many of which occur with facility staff present and capable of providing care.

In many communities, fire departments have worked with the management and staff of these facilities to coordinate services. Information on what constitutes an urgent care situation versus a medical emergency are discussed as well as the responsibilities of facility staff and management to do their part. Often, just the opening of communication improves the situation.

Map 18 – Senior Citizen and Assisted Living Facilities



In addition, many communities have individuals that utilize emergency services at a high frequency. Many times these are individuals with other needs that turn to the emergency response system for help with food, shelter, and other common tasks. Working to connect these individuals to the appropriate social services can reduce the demand placed on the emergency response system.

The FACETS team can assist GFR to develop and implement a structured demand reduction program for assisted living facilities and other high volume, low acuity emergency medical system users.

Emergency Management

Recommendation:

Staff an Emergency Management position and seek additional resources to ensure the City's emergency management program is effective in the event of a large scale emergency.

Gainesville Fire-Rescue has assumed responsibility for the City's emergency management program, but no permanent resources have been dedicated to that effort. The FACETS team has seen good cooperation and relations among the various public safety agencies in Alachua County in day-to-day operations. However, in the event of a large scale emergency, plans and protocols need to be in place for effective response. Consider the impact of a storm of the magnitude of Hurricane Andrew or of a bomb detonation in the stadium during a University of Florida football game. Such events require a marshaling of resources and a level of coordination among first responders far beyond daily operations. The FACETS team recommends that additional staff resources of at least one member of GFR command staff be assigned to create and train the rest of city government on emergency management plans.

Information Technology

Gainesville Fire-Rescue command staff has articulated a goal of being a data-driven agency. That is commendable and certainly a proper goal for a well-managed and well-led fire department. It means, of course, that the department must have accurate and relevant data. GFR has been fortunate to have the services of a dedicated information technology officer, but he is approaching retirement.

This employee, we must note, performs the duties of system analyst, programmer, database administrator, and end-user technical support for 175 GFR personnel at eleven separate locations. He has developed from scratch all of the critical software applications GFR uses, including incident reporting and databases, fire inspection reporting and databases, training record reporting and databases, fire hydrant testing database; he also manages several commercial software packages.

The loss of this employee and his institutional knowledge represents a grave threat to the ability to manage data both for Gainesville Fire-Rescue and the City as a whole. In an effort to mitigate this risk, GFR has taken the following steps:

Recommendation:

Seek sufficient funding to provide a more supportable and comprehensive information technology system and staff to support Gainesville Fire-Rescue operations.

- Proposed additional IT staff (City of Gainesville commissioned the Lopez study in 2007 to examine all IT positions. Their recommendation was to add two additional personnel to GFR).
- Gainesville Regional Utilities-IT conducted a needs assessment and confirmed the earlier study and gave support for additional personnel and/or the purchase of commercial software. GRU has a systems study underway to increase its knowledge of GFR applications and analysis to confirm programs to more sustainable platforms.
- Performing a gap analysis of IT risks for the City Auditor's office.

The FACETS team recommends that GFR move forward as quickly as possible to fund GFR IT needs. This includes hiring additional IT personnel and funding the purchase of appropriate hardware and software to support its operations.

Benchmarking

As part of the contract for this report, GFR command staff asked FACETS for comparisons with other cities similar in size and composition to Gainesville. These cities were chosen because they were similar in size to Gainesville and were situated in a similar esponse resource situation as Gainesville (not surrounded by high levels of mutual aid or automatic mutual aid resources).

Seven identified fire departments responded to the request for data and the results are as follows:

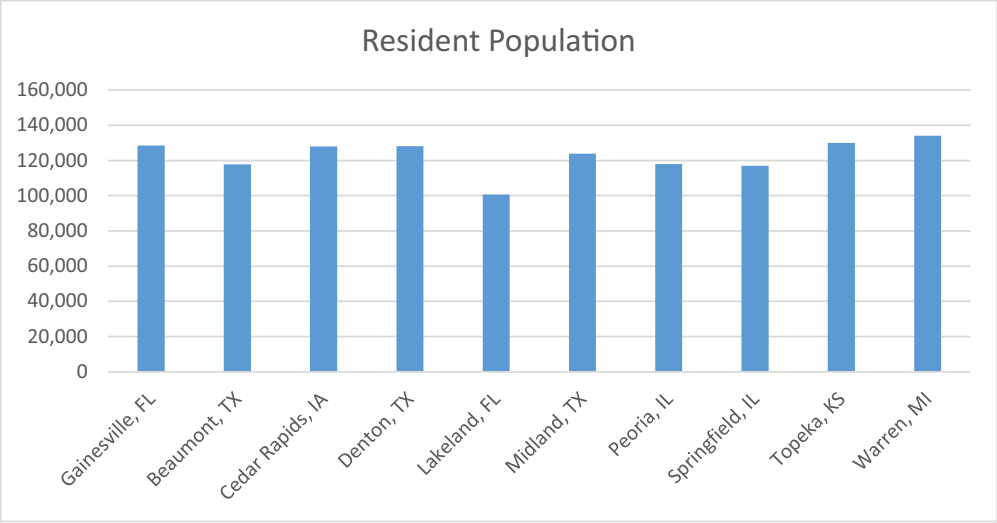
- Cedar Rapids, IA
- Denton, TX
- Lakeland, FL
- Peoria, IL
- Springfield, IL
- Topeka, KS
- Warren, MI

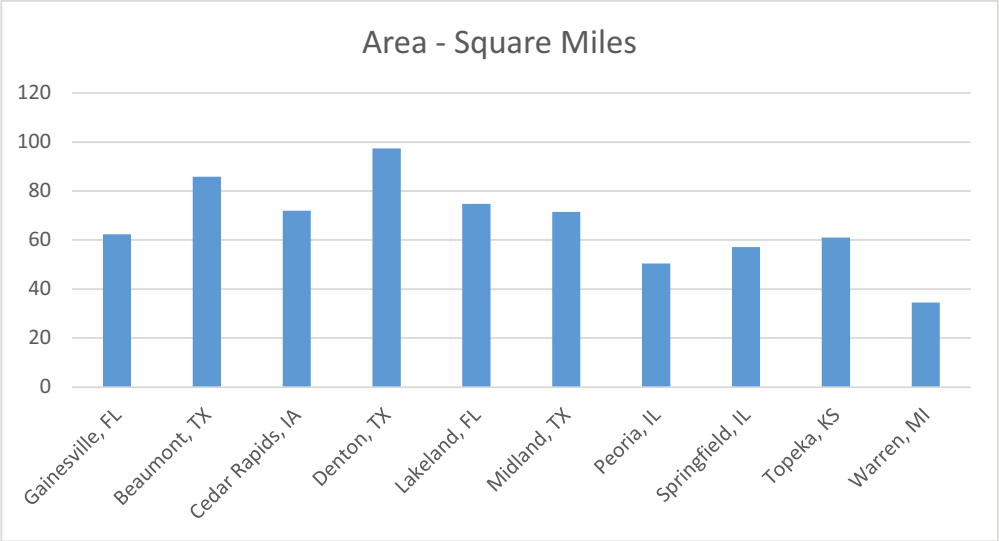
In addition, FACETS obtained some information from Beaumont, Texas and Midland, Texas, which is included where appropriate.

The data received is tabulated in Appendix A.

Size and Population

The population of the eight cities ranges from a low of 100,278 in Lakeland to a high of 134,056 in Warren. Gainesville's 127,955 put it right in the middle. The area of the cities ranges from 34.5 square miles in Warren to 97.411 in Denton. Again, Gainesville's 62.4 square miles put it right in the middle.





Services

All of the fire departments provide fire suppression, emergency medical services, technical rescue, and hazardous materials response/mitigation. Five of the eight provide EMS services at the advanced life support level; three provide it at the basic life support level. Only Gainesville, Cedar Rapids, and Denton provide aircraft rescue/fire fighting services. Denton provides bomb services; Topeka and Gainesville provide SWAT service; and Springfield and Peoria have dive teams. Springfield, Topeka, and Peoria have 12 stations each, compared to nine in Cedar Rapids, eight in Gainesville, seven in Denton and Lakeland, and six in Warren. Gainesville is a little under the average for number of fire stations for the population range.

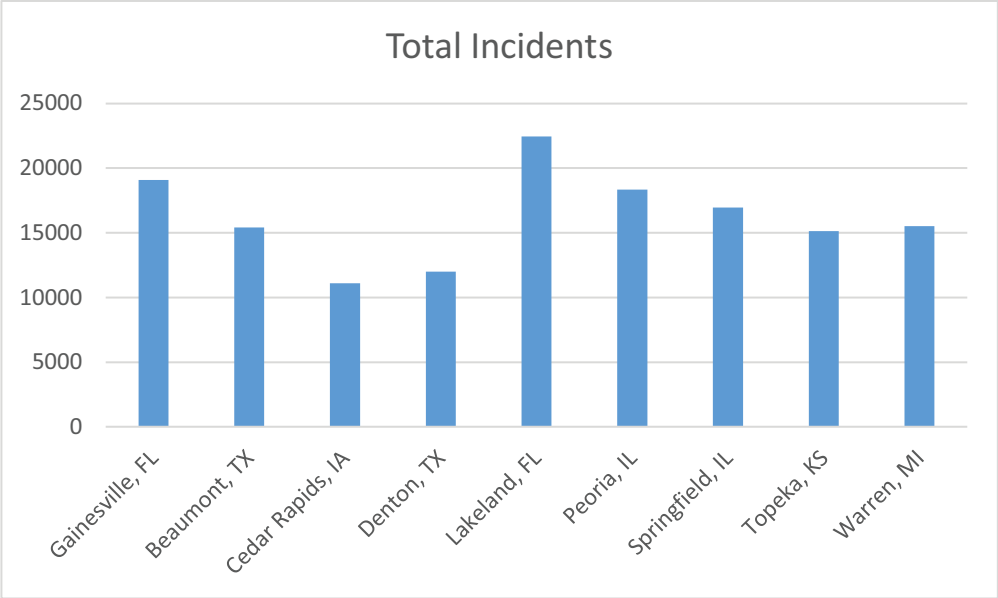
ISO Rating

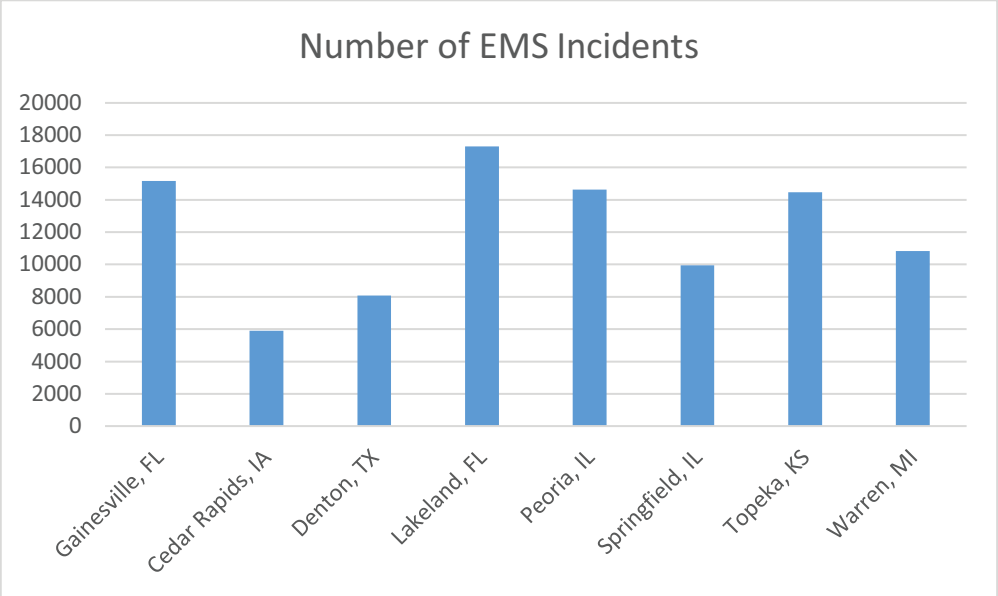
Gainesville	Beaumont	Cedar Rapids	Denton	Lakeland	Peoria	Springfield	Topeka	Warren
2/2x	2	3	3/10	1	2	3/9	2	4

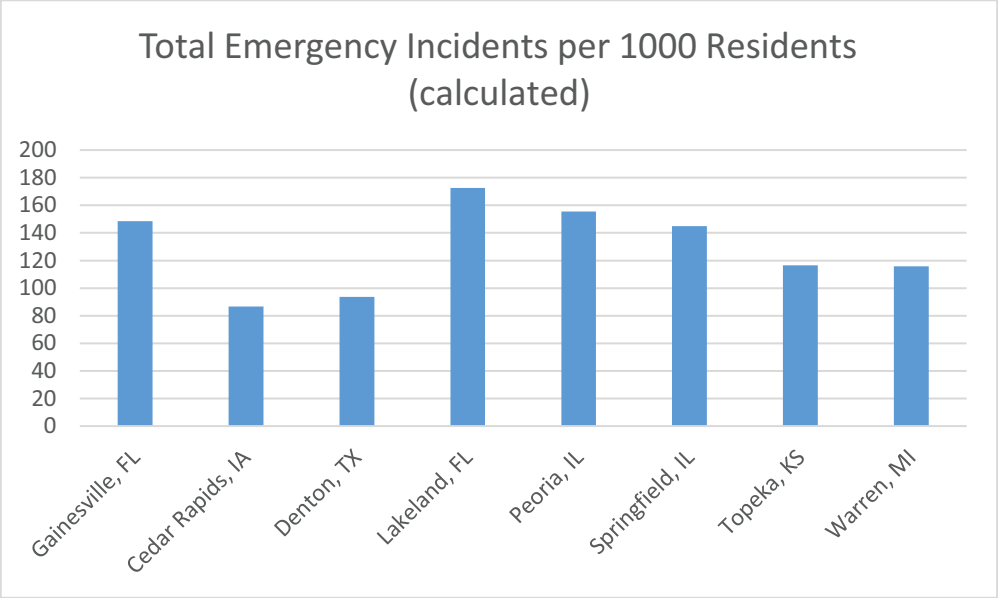
Accreditation

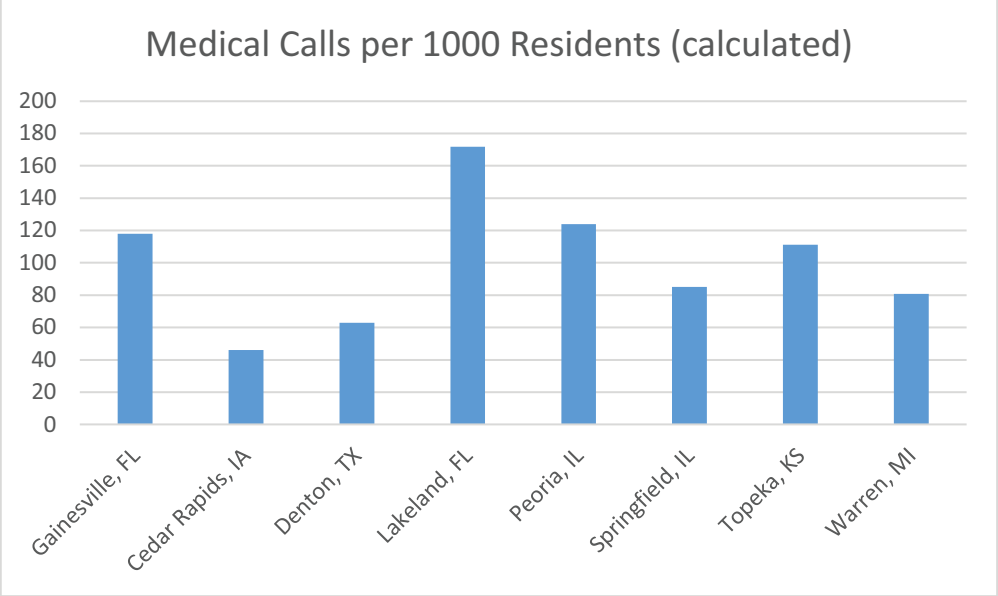
Gainesville is the only fire department that is accredited, although Peoria is in the process. Lakeland is the only one of the eight to have an ISO rating of 1; Gainesville, Topeka, and Peoria each has a rating of 2; the rest report ratings of 3 or 4. All the cities have mutual aid agreements with surrounding jurisdictions, but none reported automatic aid agreements such as the one Gainesville has with Alachua County Fire Rescue.

Incidents


Total Incidents
25000
20000
15000
10000
5000
0
Gainesville, FL
Beaumont, TX
Cedar Rapids, IA
Denton, TX
Lakeland, FL
Peoria, IL
Springfield, IL
Topeka, KS
Warren, MI

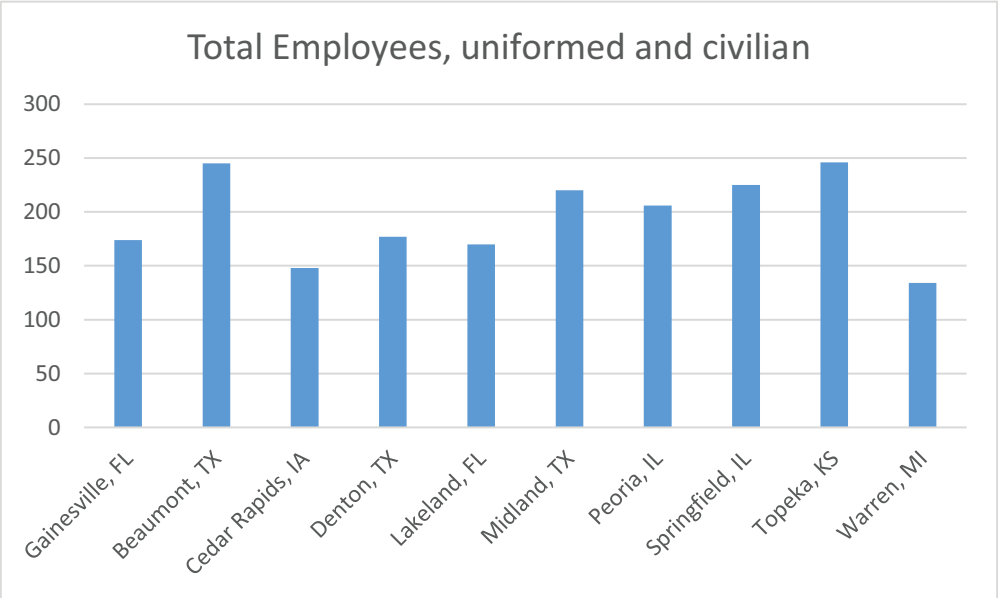

Number of EMS Incidents
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Gainesville, FL
Cedar Rapids, IA
Denton, TX
Lakeland, FL
Peoria, IL
Springfield, IL
Topeka, KS
Warren, MI





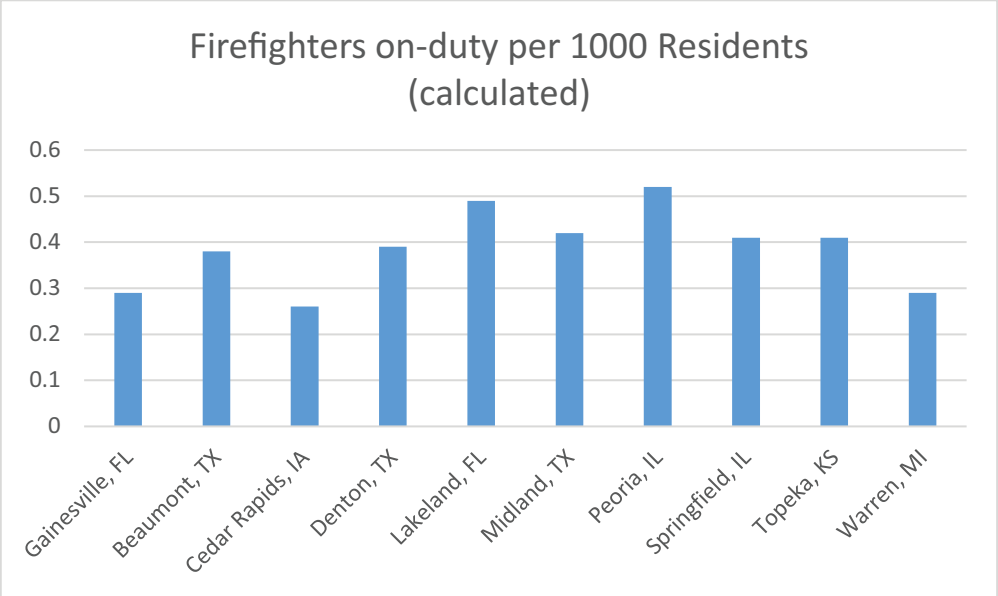
Gainesville Fire-Rescue reported the second highest number of total incidents, 19,073, after Lakeland's highest of 22,449. GFR's 15,167 EMS incidents were also second highest after Lakeland's 17,297. Total incidents per thousand population ranged from a high of 172.68 in Lakeland to a low of 86.69 in Cedar Rapids. At 148.47 per thousand, Gainesville was again in the middle. Total EMS incidents per thousand population ranged from a high of 171.71 in Lakeland to a low of 46.13 in Cedar Rapids. Gainesville was third highest with 118.06.

Personnel



Operations Division Minimum On-Duty Staffing

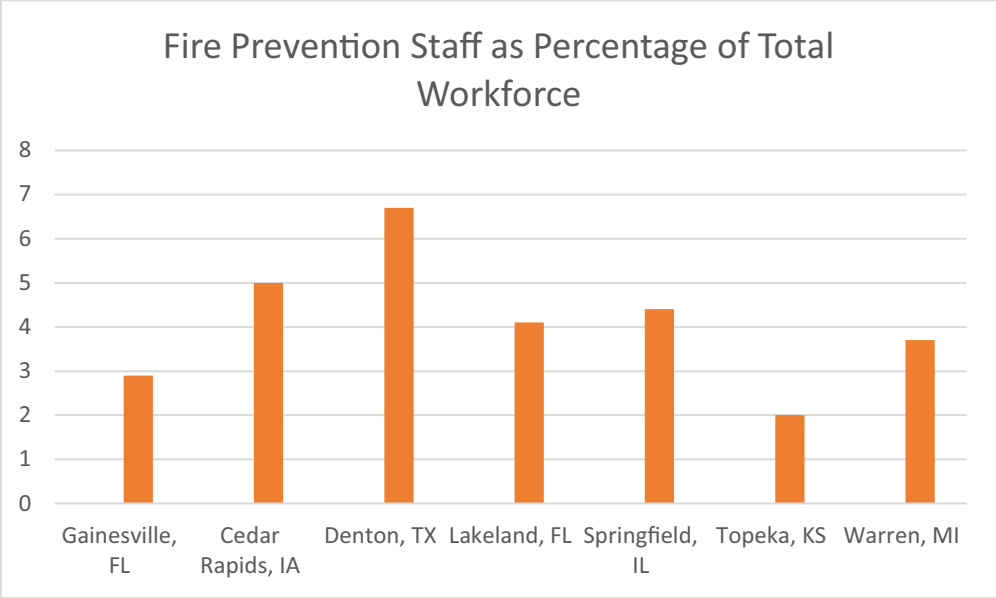
Gainesville	Beaumont	Cedar Rapids	Denton	Lakeland	Midland	Peoria	Springfield	Topeka	Warren
38	45	34	51	54	52	62	49	54	40



The number of total fire department employees ranged from 225 in Springfield to 134 in Warren. Gainesville was fourth from the bottom with 174. In their operations division, all the departments work a 24/48 schedule or a variation thereof. Generally, engine companies are staffed at 3 and some ladders at 4. Minimum operations division staffing ranged from a high of 62 in Peoria to a low of 34 in Cedar Rapids. Gainesville's 38 was second lowest. Firefighters on duty per thousand residents ranged from a high of .52 in Peoria to a low of .26 in Cedar Rapids; again, Gainesville was second lowest with .29.

Fire Prevention Staffing

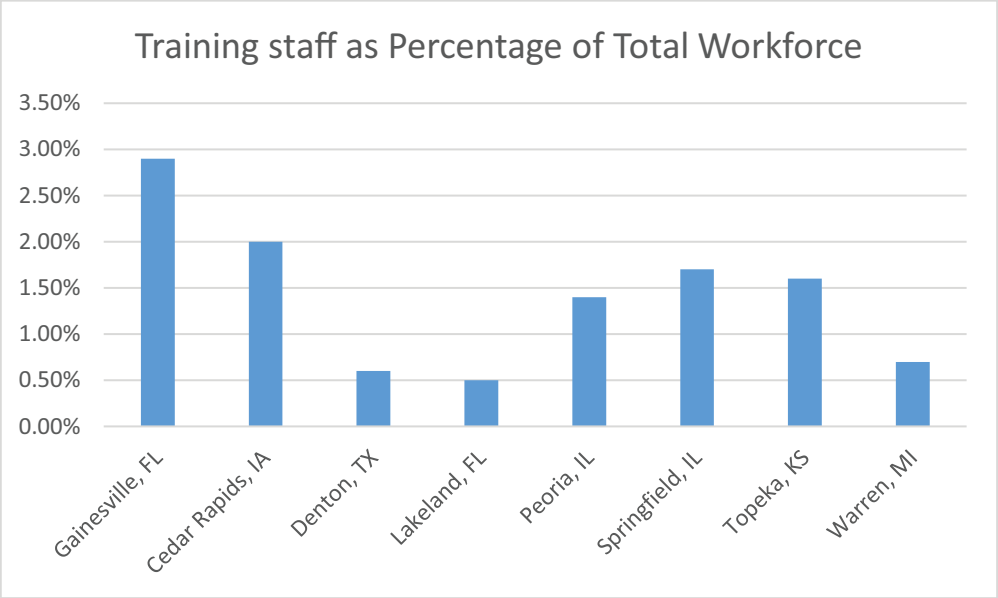
Gainesville	Cedar Rapids	Denton	Lakeland	Springfield	Topeka	Warren
5	8	12	7	10	5	5



In fire prevention, the number of employees ranged from a high of 12 in Denton to a low of five in Gainesville, Warren, and Topeka. However, at 3.2 percent, Gainesville is second from the bottom in fire prevention staff as a percentage of total employees. This metric ranges from a high of 6.7 percent in Denton to a low of 2 percent in Topeka.

Training Staff

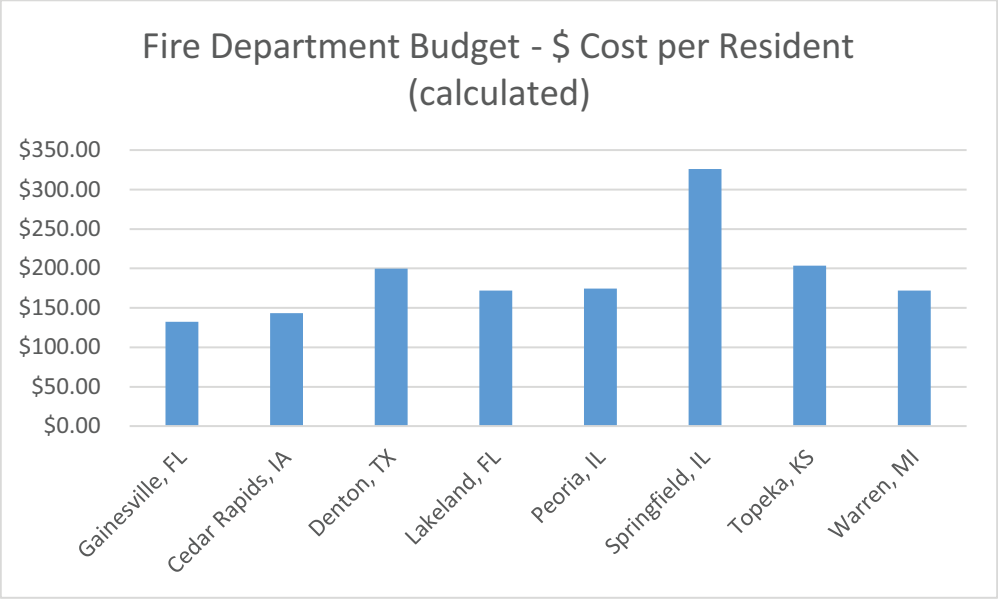
Gainesville	Cedar Rapids	Denton	Lakeland	Springfield	Peoria	Topeka	Warren
5	4	1	1	4	3	4	1



Staffing in the training division varies from a low of 1 in Warren, Denton, and Lakeland to a high of 4 in Gainesville, Cedar Rapids, Springfield, and Topeka. However, as percentage of total employees, Gainesville's 2.5 percent put it in the top of the range for all responding departments., Because minimum training requirements exist in all jurisdictions, where training staff is low, we can assume arrangements are made for other employees or instructors from the outside or they have absorbed these functions/positions in their Operations or other divisions.

Fire Department Budget

Gainesville	Cedar Rapids	Denton	Lakeland	Midland	Peoria	**Springfield**	Topeka	Warren
$16,977,629	$18,344,738	$25,621,420	$17,305,649	$20,536,182	$20,599,502	$38,152,644	$26,445,946	$23,038,571



Comparing budgets can be difficult, because it is hard to know what is included in the figures cited unless one is familiar with the organization. For example, are capital expenditures included with operating funds? How about maintenance costs for facilities and vehicles? However, looking at the data presented we can draw some general conclusions.

Fire department budgets ranged from a high of Springfield's $25,621,420 to a low of Gainesville's $16,977,629. The fire department budget cost per resident ranged from a high of $326.08 in Springfield to a low of $132.68 in Gainesville. Although Gainesville is average in size by square miles and population, and although Gainesville has a high number of incidents and incidents per thousand residents, it is dead last in funds budgeted and costs per resident.

Conclusion

In government services, as in life, we do not always get what we pay for. This is not the case for the citizens of Gainesville as they receive excellent service from Gainesville Fire-Rescue at very reasonable cost. Such a high ratio of cost-benefit cannot continue indefinitely. As demand for emergency services continues to increase, GFR will need additional resources to keep the current level of services.

The point of this study is to identify the strengths and weaknesses of Gainesville Fire-Rescue 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 GFR 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.

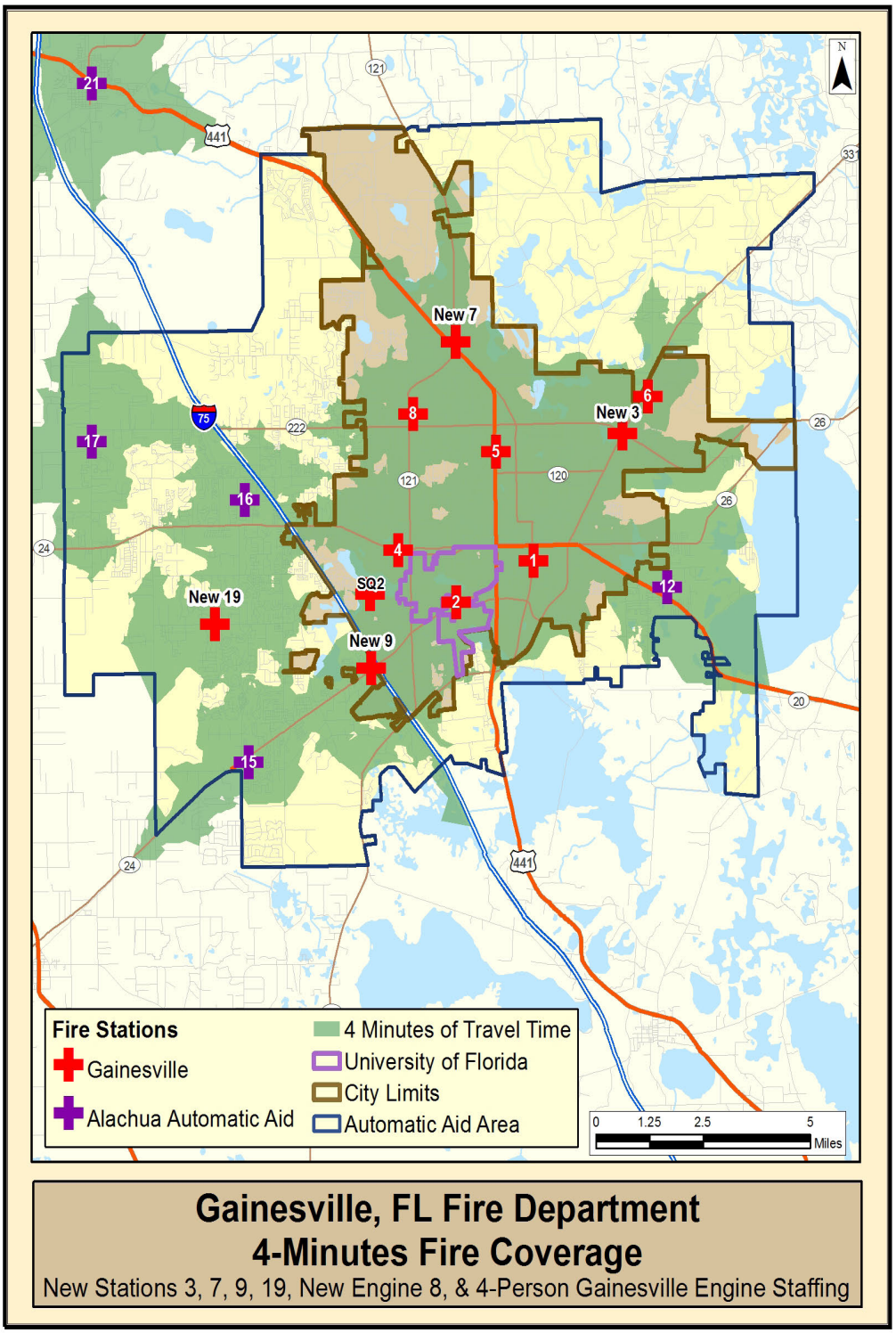
Based on its comprehensive review, the FACETS team perceives an organization that has intelligently examined the risks the City faces, and, given its limitations, has deployed its available resources to best advantage. At all levels, GFR members have cultivated good relations with the other public safety agencies with whom they work, to the betterment of not only the members themselves but also to the community they serve. The Fire Chief has thoughtfully reorganized the command staff to enable them to carry out essential functions effectively.

The FACETS team found GFR to be a progressive organization open to positive change. GFR has received Commission on Fire Accreditation International (CFAI) accreditation and improved its Insurance Services Office (ISO) rating. These are significant accomplishments that put Gainesville Fire-Rescue at the forefront of American fire departments.

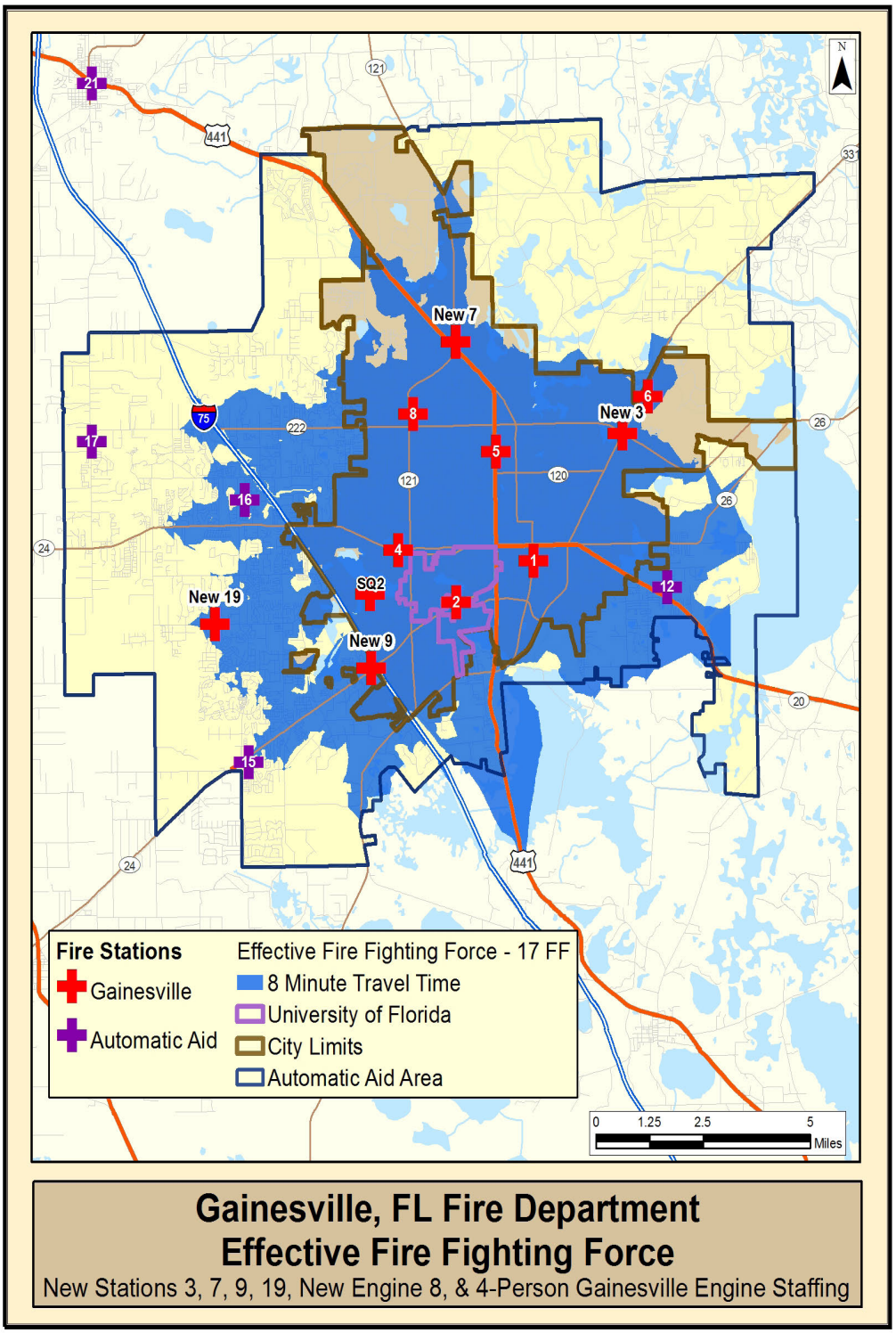
The observations of the FACETS team, both of the staff and facilities and of the relevant documents, lead to the conclusion that GFR provides excellent value in services but is becoming increasingly lean in resources relative to the demand for services. Coming out of the Great Recession, GFR has continued to deliver exceptionally high quality emergency and essential public safety services despite a relatively low level of funding. However, for the department to continue to function effectively, additional resources and greater support will be needed.

This report makes a number of recommendations for enhancements to the level of resources in the Gainesville Fire-Rescue Department. If implemented, these augmentations will provide the citizen of Gainesville with a high level of fire and emergency medical services.

Map 19 – Four-Minute Coverage if Study Recommendations – Fire Station Construction and Unit Staffing – are Fully Implemented



Map 20 – Effective Firefighter Force Coverage if Study Recommendations – Fire Station Construction and Unit Staffing – are Fully Implemented



Appendix A: Benchmarking Data

	Gainesville, FL	Cedar Rapids, IA	Warren, MI	Denton, TX	Springfield, IL	Lakeland, FL	Topeka, KS	Peoria, IL	Beaumont, TX	Midland, TX
Resident Population	128,460	128,000	134,056	128,205	117,003, with fire districts 141,200	100,728	130,000	118,000	117,798	123,933
Any Seasonal Population Changes?	Yes, University of Florida has 50,000 students	No, do have a university, college, and community college	No	No, approximately 40,000 students from 2 universities reside in City majority of year	No, do have A. Lincoln's sites	No	Seasonal no, but the daily population increases by 30,000 - Capital City	Bradley University - approximately 3500		
Emergency services provided – fire, EMS, technical rescue, hazmat, SWAT, ARFF, ambulance	Fire EMS, technical rescue, hazmat, ARFF	Fire, EMS, technical rescue, hazmat, ARFF augment (FD responds to the airport and assumes command of the incident)	Fire, EMS / ALS treatment and transport, Technical Rescue team, Hazmat team, Tactical Medical team	Fire, EMS, Tech. rescue, Haz-mat, ARFF, Bomb	EMS, Fire, Hazmat, Tech. Rescue, Dive	Fire, EMS, TRT, ARFF	Fire, EMS, technical rescue, hazmat, SWAT	Fire, EMS, technical rescue, hazmat, dive	Fire technical rescue, hazmat, first responder EMS	Fire, EMS, technical rescue, hazmat, SWAT
Area - Square Miles	62.4	72	34.5	97.411	57.17, with fire districts 115.2	74.83	61	50.5	85.9	
Number of Fire Stations	8	9	6	7	12	7	12	12	12	10
Availability of readily available automatic mutual aid and/ or mutual aid?	Automatic aid with Alachua County Fire Rescue	Mutual aid	No automatic aid, mutual aid agreements with all fire departments in Macomb County as part of County wide mutual aid agreement. Also mutual aid agreements with 3 other communities to provide County wide response for Hazardous Materials incidents and Technical Rescue incidents	Yes	Yes	Yes	No automatic aid, mutual aid to surrounding jurisdictions	Mutual aid		
Total Incidents	19073	11,097	15,512	12,012	16,966	22,449	15,139	18,344	15,411	

	Gainesville, FL	Cedar Rapids, IA	Warren, MI	Denton, TX	Springfield, IL	Lakeland, FL	Topeka, KS	Peoria, IL	Beaumont, TX	Midland, TX
Number of Fire Incidents	1170	5192	2772	3933 - 302 fires	7,012	5,152	675	3,719		
Number of EMS Incidents	15167	5905	10,828	8,079	9,954	17,297	14,464	14,625		
Total Employees, uniformed and civilian	174, 166 total sworn, 154 on shift	148; Uniformed - 143, Civilian - 5	134; Uniformed - 130, Civilian - 4	177; Uniformed - 172, Civilian - 5	225	170; Uniformed - 164, Civilian - 6	246, Uniformed - 242, Civilian - 4	206	245; 235 uniformed, 10 civilian	220
Where are non-operations uniformed and civilian employees?	Administration	Civilian: 1 public educator and 4 support staff	Civilian: 4 support staff	Civilian: Administration Division – non-operations civilian employees, 5 FTEs	Civilian; Admin, Fire Safety and Training, Buildings and maintenance	Civilian; fire administration	Civilian; Administration	Not provided		
Fire Prevention staff specifics, number of uniformed, number of civilians, any fp staff outside of fire?	Assistant chief as fire marshal; 2 inspectors, 1 plans review, 1 pub ed	8; Uniformed - 7, Civilian - 1	5; Uniformed - 4, Civilian - 1 (Fire Marshal and three Fire Inspectors, supported by one clerical employee)	12; Uniformed (Fire Marshal, Deputy Fire Marshal, Fire Protection Specialist, 2 Fire Inspector II, 6 Fire Inspector I, and Community Service Officer)	10; Uniformed - 9, Civilian - 1	7; Uniformed - 6, Civilian - 1	5; Uniformed - 4, Fire Marshal	Not provided		8
Training staff specifics, number of uniformed, number of civilians	Division chief, 3 captains, 1 staff specialist (civilian)	4; Uniformed - 4	1; Training Coordinator (uniformed) and no civilian support personnel. However each of the three line units have six unit trainers who receive out of class pay when teaching a class.	1 Battalion Chief	4; Uniformed - 3, Civilian - 1	1; Uniformed	4; Uniformed - 3, Chief of Training	3; Uniformed		4
Type of Shift - Firefighter workweek in Operations – 56 24/48, Kelly days?	24/48 52 hr workweek	24/48 with a Kelly Day, 53 hr/wk	3 shifts, modified Berkley - 1 on, 1 off, 1 on, 4 off, no Kelly Days, 56 hr/wk	24/48, 56 hr/wk	24/48, 50.4 hr/wk with a Kelly Day	24/48	Modified Berkley	24/48, 9-10 Kelly days		

	Gainesville, FL	Cedar Rapids, IA	Warren, MI	Denton, TX	Springfield, IL	Lakeland, FL	Topeka, KS	Peoria, IL	Beaumont, TX	Midland, TX
Firefighters and fire officers on-duty per shift – total minimum number	38	34; 2 Battalion Chiefs, 10 Officers, 22 Firefighters	40; minimum staffing is 29, 1 Battalion Chief, 2 Captains, 5 Lieutenants, 2 Sergeants, 7 Field Engine Operators (FEO) / Drivers and 23 firefighter/paramedics.	51; 39 minimum per shift, 1 Operations Shift BC, 8 Captains, 14 Drivers, 28 Firefighters	49 minimum staffing (contractual)	50; 42 minimum staffing	54 minimum staffing,	62	45 minimum staffing,	52 minimum staffing,
Engines and on-duty staffing	7, 3 minimum staffing; 1 quint, 4 minimum	8 and 1 quint, 3 minimum staffing	5; 3 minimum staffing	6; 3 person crew	12; 3 minimum staffing	8; 3 minimum staffing	12; 3 minimum staffing	11; 3 minimum staffing	10; 3 minimum staffing	9; 3 minimum staffing
Ladders and on-duty staffing	2, 4 minimum staffing	1, 4 minimum staffing	1; 3 minimum staffing	2; 4 person crew	3, 3 minimum staffing	1; 3 minimum staffing	2; 3 minimum staffing	4; 3 minimum staffing	5; 3 minimum staffing	1; 3 minimum staffing
Ambulances and on-duty staffing	2, 2 minimum staffing (non-transport)	N/A; provided by a 3rd party not for profit	6 EMS transport squads (medic units)	6	N/A	N/A	N/A; ambulance service provided by AMR	N/A	3 rescues (Suburbans); 2 minimum staffing	3 squads; 3 minimum staffing; 7 ambulances, 2 minimum staffing
Command officers and on-duty staffing	2, 1 minimum staffing	2 Battalion Chiefs	1 Battalion Chief	1 Battalion Chief	2; 1 Battalion Chief and 1 Safety Officer	2 Battalion Chiefs	3; 1 Shift Commander and 2 Battalion Chiefs	2 Battalion Chiefs	4; minimum staffing 1	1; 1 minimum staffing
Other staffed units and on-duty staffing	ARFF, 2 minimum staffing; 2 squad	1 Rescue Company, 2 minimum staffing	1 Rescue/Haz Mat Company, 3 minimum staffing	N/A	N/A	5 Rescue Squads; 2 minimum staffing	4 Trucks (rescues, no ladders); 3 minimum staffing			3 ARFF units; 4 minimum staffing
EMS level of service (1st responder, BLS, ALS)	ALS	ALS Conditional, no transporting	ALS; fire engines are all ALS non-transporting fire engines providing first response supported by ALS staffed EMS treatment and transporting units.	ALS	BLS/ILS; have 6 ILS engine companies	ALS Non-transport	BLS	BLS with 3 ALS engine companies	BLS	BLS
Fire Prevention Inspection Fees – get listing	yes	Attached	No, after hours inspections are billed at the OT rate.	Attached, pages 21-22 of the ordinance	No	Attached	N/A			

	Gainesville, FL	Cedar Rapids, IA	Warren, MI	Denton, TX	Springfield, IL	Lakeland, FL	Topeka, KS	Peoria, IL	Beaumont, TX	Midland, TX
Is the fire department currently accredited?	Yes	No	No	No	No	No	No	Currently in process		
What is the community's ISO rating?	2/2x	3	4	3/10	3/9	1	2	2	2	
Does the fire department manage Emergency Management for the jurisdiction?	Yes, but no current funding	Yes, the Fire Chief is the designated Emergency Manager	No, emergency management planning currently performed by the police department.	Yes	No	No	No	Yes		yes
Is there a report available that would describe the diversity of the uniformed force?		Yes	No, however there are currently 4 employees of African American decent as well as 3 women of European decent in the uniformed division of the department. The 3 civilian employees are also women of European decent and the appointed Fire Commissioner is of African American descent.	Attached	Yes, 7 African American males, 3 Hispanic males, 1 Asian male, 8 white females, 206 white males	Yes	No	Yes		
Fire Department Budget	$ 16,977,629	$18,344,738	$23,038,571	$25,621,420	$38,152,644	$17,305,649	$26,445,946	$20,599,502		$20,536,182
Overall city/ county budget	$ 854,159,965	$115,727,444	$103,446,728	$968,174,986	$276,204,574	$532,854,276	$256,735,507	$185,300,000		
Law enforcement budget for the community	$ 33,418,023	$35,457,360	$40,233,559	$29,492,173	$46,970,341	39,206,803	$37,647,372	Not provided		

	Gainesville, FL	Cedar Rapids, IA	Warren, MI	Denton, TX	Springfield, IL	Lakeland, FL	Topeka, KS	Peoria, IL	Beaumont, TX	Midland, TX
Sources of funding (city general fund, fire assessment, ambulance fees, fire prevention fees, others)	General Fund (property tax), GRU transfer, fire assessment	General Fund - property taxes, Fire Prevention Bureau fees (permits, plan reviews, etc.), special operations confined space standby rescue services $1300/hr, Tier II/EHS fees	Property taxes, user fees, state revenue sharing. It should also be noted that the Fire Department generates $2.75 million dollars in user fees for the General Fund through EMS treatment and transport services.	General fund and internal revenue sources – EMS fees, County fire and EMS contract, inspection fees, haz-mat fee, CPR classes, TASP reimbursement	General fund	General fund	General fund	General fund, fire/HAZMAT Permits, and prevention fees		
Firefighters on-duty per 1000 Residents (calculated)	0.29	0.26	0.29	0.39	0.41	0.49	0.41	0.52	0.38	0.42
Total Fire Department employees per 1000 Residents (calculated)	1.35	1.15	0.99	1.38	1.59	1.68	1.89	1.74	2.08	1.8
Fire Department Budget - $ Cost per Resident (calculated)	132.16	$143.31	$171.85	$199.84	$326.08	$171.80	$203.43	$174.57		
Total Emergency Incidents per 1000 Residents (calculated)	148.47	86.69	115.71	93.69	145.00	172.68	116.45	155.45		
Fire Incidents per 1000 Residents (calculated)	9.1	40.56	20.67	30.67	59.93	51.14	5.19	31.51		
Medical Calls per 1000 Residents (calculated)	118.06	46.13	80.77	63.01	85.07	171.71	111.26	123.94		
Training staff; Training staff % of workforce	5/174=2.9%	4/148 = 2%	1/134 = .7%	1/177 = 0%	4/225 = 1.7%	1/170 = .5%	4/246 = 1.6%	3/206 = 1.4%		
Fire Prevention Staff; FP Staff % of workforce	5/174=2.9%	8/148 = 5%	5/134 = 3.7%	12/177 = 6.7%	10/225 = 4.4%	7/170 = 4.1%	5/246 = 2.0%	Not provided		