

Village of Pinecrest, Florida

REVIEW OF FIRE/RESCUE
SERVICE DELIVERY OPTIONS

FINAL REPORT

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EXECUTIVE SUMMARY

TriData, a division of System Planning Corporation (SPC), based in Arlington, Virginia, was contracted to analyze the situation regarding fire and EMS services for the Village of Pinecrest. Miami-Dade Fire Rescue (MDFR), a legal tax district under the Florida State annotated code, is the current provider of these services. At issue for Pinecrest are the costs for service by MDFR, long response times, and coverage to southeast Pinecrest. MDFR is one of the largest and most effective fire departments in the U.S. Its personnel are well trained and professional.

The purpose of this study was to examine the options available to the Village Council, which was to include starting a new Pinecrest Fire Department, or contracting service from another agency. A previous Village Council reached agreement with neighboring Coral Gables to provide service in 2007. An agreement was never finalized.

In agreeing to conduct this study the Pinecrest Village Council has not decided to change service providers – it wants this study for informational purposes to better understand the situation and possible options. As this study is for informational purposes, and there are policy issues associated with any future decision the Council may make, there are no recommendations as to the best way forward for the Village.

The Village accesses MDFR services approximately 1,300 times per year with the majority of calls being medical. There are few fires in the Village, only 26 incidents over the three-year period of 2011-2013, and losses for those fires was just over \$79,000. “Motor Vehicle/Auto/Passenger Vehicle Fires” generated the most dollar loss at \$60,000.

Four MDFR stations provide most of the service to Pinecrest. Station 23 (Suniland - 7825 SW 104th Street) and Station 49 (Pinecrest - 10850 SW 57th Avenue) are the closest stations and handle 84 percent of the calls in Pinecrest. Station 4 (Coral Reef - 9201 SW 152nd Street) and Station 14 (South Miami - 5860 SW 70th Street) are the next closest.

Response travel times from the four stations were analyzed using Geographic Information System (GIS) software. Also analyzed were the actual incidents occurring over the three-year period (2011-2013). The analysis shows that travel times are very good when calculated using averages and not very good when the national standard for the 90th percentile of calls. Incident data travel times provided by MDFR was not very good, so the 90th percentile analysis, in our opinion, is incomplete. The GIS analysis does show a gap in coverage in southeast Pinecrest, which would cause longer response travel times.

MDFR staff acknowledges that southeast Pinecrest and neighboring Cutler-Palmetto Bay have longer response times and is making plans to add a new station. Three sites are under consideration: two sites near SW 152 Street and & SW 67th Avenue and one at the U. S. Department of Agriculture (USDA) site in southeast Pinecrest. A new station is expected to be constructed within the next two to three years. The USDA property is best in terms of coverage for Pinecrest, though either site fills the gap in coverage for southeast Pinecrest.

From 2009-2013, Village residents paid a total of \$41.4M for emergency services from the County, an average of \$8.3M per year. If the contract arrangement with Coral Gables, which offered service at \$26.0M over five years, had been formalized, the Village would have saved approximately \$15.4M.

The tax-levy formula used by the County includes only property assessed value in determining the fire tax. For Pinecrest, which is mostly residential and has high-value residential homes, property owners pay a relatively high amount for service because of that formula. This study analyzed the cost for service paid by Pinecrest as compared to Miami Lakes, which is much larger in population. The average cost per homeowner in Pinecrest is much higher than Miami Lakes.

The Village does have options concerning its future fire/ rescue service. In addition to continuing service with MDRF, one option is for the Village to begin its own fire department. The estimated first-year cost, including capital purchases, is \$16.0M. Of this amount, \$6.25M is needed for the development and construction of a fire station. Following the first year the estimated annual cost is \$6.0M.

In addition to possibly operating its own fire department, other options available to the Village are:

- **Continuing with Miami-Dade Fire Rescue** – This is the least difficult option and the service provided by MDRF is excellent. The County has plans to add a new station, which will also improve coverage and response times for Pinecrest.
- **Continuing with Miami-Dade Fire Rescue but Revise the Fire-Tax Formula** – The current fire-tax formula based solely on assessed valuation could be revised to include other factors such as demand, or place limits on the amount charged by capping the single-family home assessed value.
- **Contracting for Service from Coral Gables** – The contract presented to Pinecrest in 2007 was good. Over five years Village taxpayers would have saved approximately \$15.0M, if the agreement had been implemented. Coral Gables may be interested in revisiting the possibility of a partnership again.
- **Contracting for Service with Another Government Entity** – The Village could contract with another fire department – it does not have to be contiguous with Pinecrest. Key Biscayne contracts with the city of Miami for support services such as training and fleet management. By agreement, Miami also provides automatic aid to Key Biscayne by sending fire apparatus and personnel on the initial alarm, when the incident type dictates it.
- **Contracting for Administration and Other Non-Emergency Support Services with Another Government Entity** – Pinecrest could start its own fire department and have its own firefighters and paramedics, but contract for administration and support. Fire departments are consolidating administration and support activities to save money and the Village could do the same.

- **Creating a Pinecrest Fire Department but Having a Single Fire/Police/Public Safety Structure** – Similar to the previous option, Pinecrest could merge the administrative functions of its police department and a fire department with one official in charge of both departments. There is ample capacity in the police department to handle the administrative workload for police and a new fire department.

ACKNOWLEDGEMENTS

We wish to thank the officials and staff of the Village of Pinecrest for their assistance and cooperation during this study. Village Manager Yocelyn Galiano Gomez and others were gracious in assisting us during our initial site visit to the Village and providing the necessary background information. We also want to thank Chief Dave Downey of Miami-Dade Fire/Rescue. In addition to meeting with us to explain the situation with Pinecrest and the Districts’ plans going forward concerning service for the Village, his staff provided much of the data necessary to complete this study.

The following individuals were also important contributors to this study.

Village of Pinecrest

Cindy Lerner	Mayor
Joseph M. Corradino	Vice Mayor
Jeff Cutler	Councilmember
Bob Ross	Councilmember
James McDonald	Councilmember
Yocelyn Galiano Gomez	Village Manager
Gary Clinton	Director of Finance
Samuel Ceballos	Police Chief
Mayra Sauleda	HR Manager

Miami-Dade Fire Rescue

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Coral Gables

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Key Biscayne

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FOREWORD

TriData, a division of System Planning Corporation (SPC), is based in Arlington, Virginia. SPC is a 200-employee defense and national security contractor specializing in high-level systems engineering and national security.

Over the past 32-plus years, TriData has completed over 300 fire and EMS studies for communities of all sizes. In addition to local government consulting, TriData undertakes research in a wide range of public safety issues, including research for the United States Fire Administration (USFA), Department of Homeland Security (DHS), and other Federal and state agencies, as well as the private sector. TriData also conducts international research on emergency response topics and has conducted extensive research on effective fire prevention strategies in Europe and Asia.

INTRODUCTION

The Village of Pinecrest contracted TriData to analyze the alternative options for fire and EMS services which, at the time of this study, were provided by Miami-Dade Fire/ Rescue (MDFR). MDFR is a legal tax district under the Florida State annotated code. At issue for the Village is the response time by MDFR to southeast Pinecrest and the high cost for service.

The purpose of this study was to examine the options available to the Village Council of contracting fire/ rescue service from another agency, or possibly starting their own fire department. The Council has not decided that it wants to pursue another service provider, or add a new service; however it decided this study was necessary so as to be informed about the possibilities, potential costs, and savings of various options for the future. This study assessed the options for the Village and estimated the cost to start a fire department for the Village. The study also estimated the cost savings, if the Village had contracted service from its neighbor, Coral Gables. In 2007, the Village Council considered such a contract but it was never finalized. The current Coral Gables city council, which has several new members since 2007, is believed to be interested in revisiting the possibility of contracting service to the Village.

In addition to the options of contracting with Coral Gables, or starting its own fire department, the Village also has the option of contracting service from another department that is not contiguous with the Village. Key Biscayne, which operates its own fire department and is separated by unincorporated portions of Miami-Dade County, has an agreement where Miami provides support services such as training and fleet management as well as automatic aid. The inter-local agreement between Key Biscayne and Miami has been in place since the incorporation of Key Biscayne and the arrangement works very well. It is possible that Pinecrest and the City of Miami could have a similar agreement. Pinecrest could also contract with Miami, Key Biscayne (or any other service provider) for the full array of emergency services it desires.

Some of those we interviewed believe that Pinecrest would need two fire stations to provide adequate coverage to the Village. Our analysis shows that one station, properly located, would provide adequate coverage. However, with one fire station and a minimum number of fire suppression resources, the Village would need to enter into an automatic-aid agreement with another jurisdiction, because it would not have enough fire units to handle a structure fire itself. Coral Gables is the most likely automatic-aid partner because of the location of its stations. If the Village opted-out of its arrangement with MDFR, the County could also enter into an automatic-aid agreement with the Village.

A blueprint the Village could use if it decides to organize its own fire department or contract with another agency is Key Biscayne. At the outset of starting its own fire department, Key Biscayne housed its personnel in trailers for many years until a fire station could be erected. The temperate weather of south Florida makes this a possibility. The primary consideration for the Village if it were to organize its own department or contract with another jurisdiction is to provide security for the apparatus and work space for the crew until a permanent facility is planned and constructed. Another advantage for Pinecrest is that a number of the key players

involved when Key Biscayne organized its department are still in the area and they understand the process involved.

Cost aside, the primary issue for a few councilmembers is the long response times to southeastern portions of Pinecrest Village. The County has plans to add a new station, either in Pinecrest or nearby in Palmetto Bay. The analysis shows that response times in Pinecrest would improve with either location. The County is presently in negotiations to acquire the property needed for the new station and anticipates that a new station could be on-line within two or three years.

I. BACKGROUND AND SITUATION

Fire and EMS services are currently provided to Pinecrest by Miami-Dade County as part of the fire district. Created initially to serve mostly the unincorporated areas of Miami-Dade County, MDFR is a well-trained and progressive department. In addition to the unincorporated areas of the county, MDFR serves several municipalities, including Pinecrest.

In 2007, Coral Gables presented a five-year contract offer to provide fire and emergency services the Village. The contract provided for the full array of emergency services needed by the Village to include fire suppression, advanced life support (ALS) emergency medical services, and services such as trench, confined space, and other specialized services.

General terms of the agreement presented to the Village by Coral Gables were to provide:

- Fire suppression
- Heavy rescue and extrication
- Basic and Advanced Life Support (BLS and ALS) pre-hospital care and transport
- Fire prevention, public safety education, fire code plans review and permits
- Fire investigation
- Dive rescue

Coral Gables would provide service 24/7, 365 days/ year for the duration of the agreement with:

- One ALS engine staffed with four firefighters/ paramedics
- One ALS rescue/ transport vehicle with three firefighters/ paramedics
- Locating these vehicles during peak operating hours near the intersection of 112th Street and US 1

Under the agreement, Coral Gables was to hire 28 firefighters/ officers and one fire prevention inspector at a proposed first-year cost of \$6.0M. This amount included approximately \$.8M for the purchase of one new engine and one rescue truck. Service to Pinecrest for years two through five would be provided at an annual cost of \$5.25M.

The agreement received a favorable vote from the Pinecrest Village Council and appeared to have the necessary votes in Coral Gables. However, at the last minute the agreement was nixed by the Coral Gables City Commission, presumably because of pressure from the County.

Only one commission member remains from those in office in Coral Gables at the time of the previous vote and it is not known how the current council would vote if a similar contract arrangement with Pinecrest were introduced. As part of this study we had informal discussion with Coral Gables' city manager and fire chief. They expressed interest to revisit a cooperative

arrangement, though making no firm commitment. Among the points made during the discussion concerning the possibility of partnering with Pinecrest on an inter-local service agreement:

- The Village has not yet decided to change service providers
- The Village has opt-out rights under a previously litigated case with MDRF
- This study is only to provide information to the Village concerning future options for fire and rescue service
- A recommendation as to the preferred action by the Village concerning emergency service is not being made by this study
- Coral Gables would consider relocating Station 3 located at Old Cutler Road and 57th Avenue to a site with better access to Pinecrest and Coral Gables, if a suitable site were found
- The proposal by Coral Gables included a provision to “provide secure facilities on US 1 for a peak-hour staffing.” Coral Gables said that this provision in the agreement was to provide a ‘storefront’ site for emergency crews from which to conduct routine business, primarily during daylight hours.
- Coral Gables would be only minimally interested in a hybrid arrangement where Pinecrest hired and managed its own fire and EMS response personnel, though it would be considered under the right agreement

If another attempt were made by the Village to opt out of the MDRF District and contract services from and Coral Gables, it can be anticipated that political pressure would again be exerted to nix any agreement.

Miami-Dade Fire Rescue

Miami-Dade County encompasses 1900 square miles and has a population of almost two-million residents. Fire and rescue services are provided by an all career service comprised of 2341 personnel, of which 1964 are uniformed responders. MDRF provides its services from 67 stations and is one of the largest county fire departments in the U.S. Supported by tax district revenue, operating and capital budgets are \$370M and \$13M, respectively.

Minimum staffing for MDRF is four personnel on engines and ladders, and three on each medical rescue. In addition to the engines, ladders and rescues, the department operates several helicopters and fire rescue boats. Staffing of EMS units with three personnel is considered a higher level of service than most jurisdictions, which staff EMS units with only two personnel. Each suppression and medical unit is supervised by an officer.

A majority of MDRF personnel are certified as paramedics (1680 of 1964 personnel or 86%) and the remainder as emergency medical technicians (EMT). In addition, the typical staffing arrangement is for at least two certified paramedics to be on each suppression unit. This

is an important distinction since paramedics are able to treat more serious injuries and life-threatening situations such as cardiac arrests, strokes, and diabetic coma patients, even before a medical transport unit arrives. Because most units are staffed by paramedics, drugs and medical equipment are available on all MDFR fire units.

A typical structure fire response by MDFR is three suppression units, one rescue unit, and one battalion chief (the incident commander). The initial response is 16 personnel. If a “working fire” in a residence is confirmed, an additional suppression unit (4 personnel), rescue (3 personnel), and battalion chief (1 person) are dispatched for a total of 24 personnel.

Operating from 67 stations, MDFR has excellent depth and is able to backfill its stations when they are vacant because of simultaneous calls or a large incident, or are out training. Decisions about station coverage are made by a battalion chief in the dispatch center. In addition to covering its response areas, MDFR provides backup coverage to other jurisdictions in the metropolitan area under a mutual aid agreement.

MDFR offers a variety of specialized teams to handle unique incidents. These services are provided to every jurisdiction in the county at no charge, regardless of whether they are covered by the fire tax district or a government entity with their own fire service. In meetings with us, MDFR officials indicated that they would likely re-evaluate the no-charge policy for these services if communities begin to opt out of the fire district. Specialized services currently provided by MDFR include:

- Helicopter medical rescue
- Marine division with fire/rescue boats
- Hazardous material response
- High-rise operations
- Dive rescue
- Collapse/ technical rescue
- Anti-venom response team

The overall training level of MDFR fire and EMS personnel is excellent. Standards required by the state of Florida are met, and all officers must be paramedic certified. Firefighters must possess a minimum of an EMT, which includes basic first aid, cardio pulmonary resuscitation (CPR), and recognition of symptoms for heart attack, stroke, and other medical emergencies. Officers must also complete basic tactics and incident command training of 80 hours and have a minimum of five-years of service.

II. INCIDENT DEMAND, RESPONSE TIMES, AND STATION LOCATION ANALYSIS

In considering the possible options available to Pinecrest it is important to consider the scope and level of service available now and compare it to that which the Village might have under an alternative model. Cost aside, the existing stations and units of MDRF provide good coverage to Pinecrest. If a new station were added somewhere near southeastern Pinecrest or Cutler – Palmetto Bay, coverage would be even better. Likewise, if the Village were to contract with Coral Gables, coverage would also be good albeit not as robust as the level of service provided by MDRF. The decision point is whether the lower cost potentially offered by Coral Gables, or another option, justifies making a change.

Pinecrest Incident Demand and Response Time Analysis

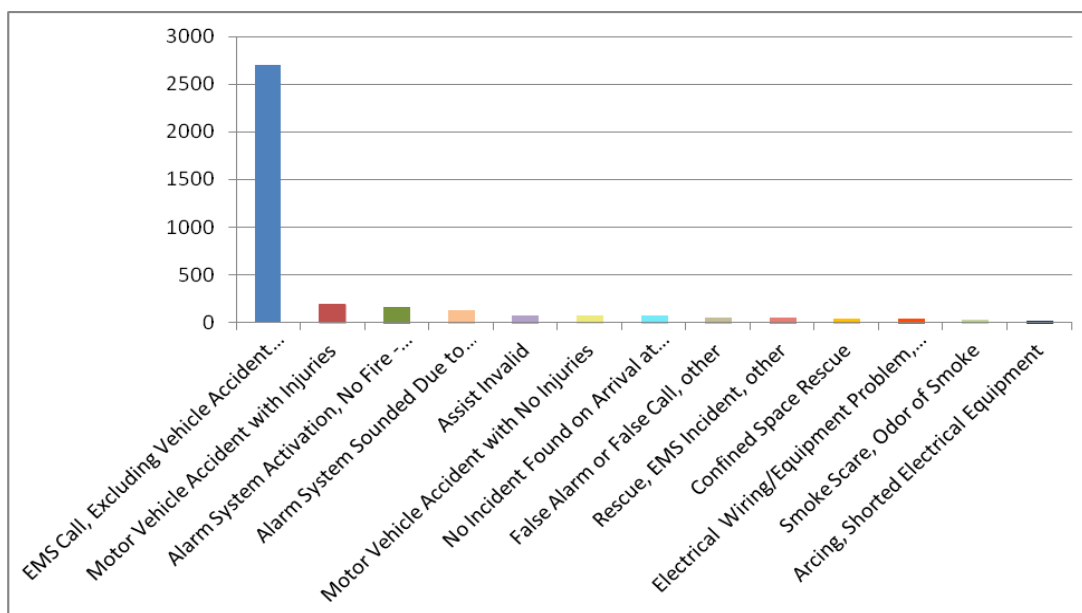
Important to the decision-making process is to understand incident types that historically occur in Pinecrest as well as the response times for those incidents by MDRF. For this study we analyzed response-time data provided to by MDRF. Fortunately, few fires occur in Pinecrest and most of the demand is for medical calls.

According to the MDRF's annual report dated January 31, 2014, during calendar years 2012 and 2013, MDRF dispatched 4,143 units to 2,659 emergency calls in Pinecrest, an average of 1,330 calls/ year. Usually for each 911 call, the closest available unit will be dispatched with additional units based on the type of emergency. For example, on a medical call if an engine is dispatched, based on the nature of the call the closest rescue (ambulance) may also be dispatched. For a structure fire, several engines along with a ladder, rescue and chief officer units would be dispatched. This is known as a dispatch complement.

Data provided to us by MDRF for calendar years 2011 to 2013, shows there have been 3,967 emergency calls in Pinecrest—again, about 1,300 calls/ year. To determine the extent of services provided to the Village by MDRF, data for these years were analyzed to understand the demand for services and to assess the level of service needed, if the Village were to have its own department, or contract from another provider.

Demand is the number and types of calls for service provided by the entire fire rescue department. Of the 3,967 incidents, 72 percent were EMS calls, 2 percent were fire calls, and 26 percent were for other calls (i.e., false alarms, unintentional alarm, malfunctioning automatic alarms). Figure 1 shows the breakdown of these calls by specific incident type.

Figure 1. Incident Types, CY2011-CY2013



Clearly, most of the demand in Pinecrest is for EMS service. EMS calls far exceeds all the other call types in Pinecrest by a wide margin. Motor vehicle accidents and alarm activations (unintentional or malfunction) were the next highest; each generating just under 200 incidents over the three-year period. To understand a more specific or secondary demand for services, Table 1 shows the call types and the specific number of incidents generated by each within the three year period.

Table 1. Incident Types, CY2011-CY2013

Incident Type	Number of Incidents
EMS Call, Excluding Vehicle Accident with Injury	2702
Motor Vehicle Accident with Injuries	194
Alarm System Activation, No Fire - Unintentional	161
Alarm System Sounded Due to Malfunction	129
Assist Invalid	77
Motor Vehicle Accident with No Injuries	77
No Incident Found on Arrival at Dispatch Address	71
False Alarm or False Call, other	46
Rescue, EMS Incident, other	46
Confined Space Rescue	36
Electrical Wiring/Equipment Problem, other	35
Smoke Scare, Odor of Smoke	31
Arcing, Shorted Electrical Equipment	22

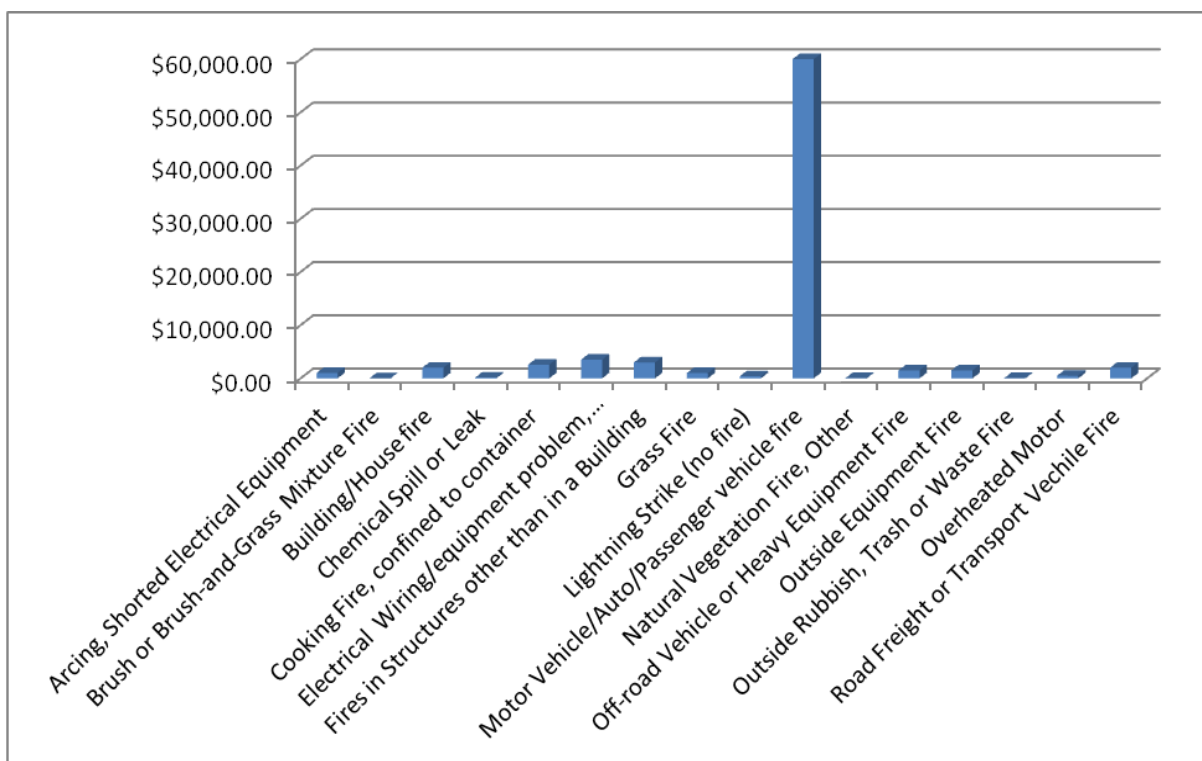
Below is a list of all 73 call types reviewed (CY2011 to CY2013).

1 Alarm system activation, no fire - unintentional	38 Lock-out
2 Alarm system sounded due to malfunction	39 Malicious, mischievous false call, other
3 Animal Problem/Animal Rescue	40 Motor vehicle accident with injuries
4 Arcing, shorted electrical equipment	41 Motor vehicle accident with no injuries
5 Assist invalid	42 Motor vehicle/Auto/Passenger vehicle fire
6 Assist police or other governmental agency	43 Motor vehicle/pedestrian accident (MV Ped)
7 Brush or brush-and-grass mixture fire	44 Natural Vegetation Fire, Other
8 Building/House fire	45 No incident found on arrival at dispatch address
9 Carbon monoxide detector activation, no CO	46 Off-road Vehicle or Heavy Equipment Fire
10 Central Station, Malicious False Alarm	47 Outside equipment fire
11 Chemical Spill or Leak	48 Outside rubbish, trash or waste fire
12 CO detector activation due to malfunction	49 Overheated motor
13 Confined space rescue	50 Police Matter
14 Cooking fire, confined to container	51 Powerline Down
15 Cultivated trees or nursery stock fire	52 Public Service
16 Cultivated vegetation, crop fire, other	53 Public service assistance, other
17 Defective Elevator, No Occupants	54 Removal of victim(s) from stalled elevator
18 Direct tie to FD, malicious false alarm	55 Rescue, EMS incident, other
19 Dispatched & canceled en route	56 Ring or Jewelry Removal
20 Dumpster or Other Outside Trash Receptacle Fire	57 Road Freight or Transport Vehicle Fire
21 Electrical wiring/equipment problem, other	58 Service Call, other
22 Electrocutation or Potential Electrocutation	59 Smoke detector activation, no fire - unintentional
23 EMS call, excluding vehicle accident with injury	60 Smoke or odor removal
24 EMS call, party transported by non-fire agency	61 Smoke scare, odor of smoke
25 Extrication of victim(s) from machinery	62 Special outside fire, other
26 False alarm or false call, other	63 Special type of incident, other
27 Fire, other	64 Sprinkler activation, no fire - unintentional
28 Fires in Structures other than in a Building	65 Threat to burn
29 Forest, Woods or Wildland Fire	66 Unintentional transmission of alarm, other
30 Gas leak (natural gas or LPG)	67 Unauthorized Burning
31 Gasoline or Other Flammable Liquid Spill	68 Vehicle accident, general cleanup
32 Good intent call, other	69 Vicinity Alarm (Incident in other Location)
33 Grass fire	70 Water or Steam Leak
34 HazMat Release Investigation w/no HazMat	71 Water Problem, Other
35 Lightning strike (no fire)	72 Wrong location
36 Local Alarm System, Malicious False Alarm	73 "Call Type Not Listed"

There were few structure fires and those that did occur had only minor losses of \$5,000 for two incidents. The total dollar loss for the three-year period was \$79,231, incurred from 26 incidents. This is an average loss of \$3,047 per incident. "Motor Vehicle/Auto/Passenger Vehicle Fires" generated the most dollar loss at \$60,000.

Figure 2 shows the specific call type and the associated dollar loss.

Figure 2. Dollar Loss Associated with Each Call Type



Below is a list of all call types which generated a dollar loss and the amount.

Call Type	Associated Dollar Loss
Motor Vehicle/Auto/Passenger Vehicle Fire	\$60,000
Electrical Wiring/Equipment Problem, Other	\$3,500
Fires in Structures other than in a Building	\$3,000
Cooking Fire, confined to container	\$2,580
Building/House Fire	\$2,000
Road Freight or Transport Vehicle Fire	\$2,000
Off-road Vehicle or Heavy Equipment Fire	\$1,500
Outside Equipment Fire	\$1,500
Arcing, Shorted Electrical Equipment	\$1,000
Grass Fire	\$1,000
Overheated Motor	\$500
Lightning Strike (no fire)	\$400
Chemical Spill or Leak	\$150
Natural Vegetation Fire, Rubbish, Brush	\$101

Miami-Dade Fire Rescue Response Times – The most important consideration for most residents is how fast responders can reach the emergency when called. National standards recommend a four-minute travel time to the emergency 90 percent of the time, after the unit leaves the station.

Using a 90th percentile formula allows 10 percent of the calls to have longer response travel times. Many communities use the 80th percentile parameter for the reason that some undeveloped or rural areas may have only a few calls, and it does not make sense to provide the same level of coverage. It is also acceptable to consider the average, though a few very long response times can skew the average time.

TriData analyzed the incident responses for Pinecrest over the three-year period of 2011 to 2013, to determine the 90th percentile and average travel times for incidents occurring in Pinecrest. MDRF provided the incident data, which included the travel times for the first unit to arrive at an incident. The data contain a large number of incidents with 0:00 travel times. There were also a number of travel times so long as to be unrealistic. These are probably recording errors and distort the profile. We also reviewed the annual report provided to Pinecrest by MDRF for data reported to the Village, to determine if the results of our analysis corresponded to the response times in the report, but there were no response times in the annual report – which is unusual. Still, we did the best one could and analyzed the data provided by MDRF to determine how well response travel-time standards are being met.

NFPA 1710 provides generally accepted response time standards for career fire departments. Although a single set of nationally accepted response time standard does not exist, most fire rescue departments use the NFPA 1710 standard as a reasonable goal, though in reality few departments can achieve the 90 percent goal established by the standard.

MDRF has trouble meeting the 90th percentile standard for a four minute travel time. When an average is used, times are much better. Table 2, which follows, shows the average, median, and 90th percentile travel times based on the data provided by MDRF.

Table 2. Pinecrest Incident Response Travel Times, 2011-2013

Year	Incidents	Average	Median	90th Percentile	<Four Minutes
2011	1235	4:32	4:20	7:35	454
2012	1359	5:10	4:55	8:18	865
2013	1370	5:10	4:53	8:30	883

As can be seen in Table 2, the number of calls in Pinecrest increased slightly over the three-year period of 2011-2013. Incident travel times also increased. The reason for the increase in travel times is unknown, though it is probably related to higher call volumes in other areas around Pinecrest which result in a unit further away from the Village being sent to a call. Travel times have only been collected by MDRF since late 2011, so the new procedures could also be resulting in data anomalies.

For the Village, it is suggested that as part of the annual reports provided by MDR that response times be included in the report. It is also a good idea to get quarterly reports as these can be easily generated from dispatch data.

Fire Station Locations and Units

For this project we analyzed the station and unit locations using GIS. GIS can be a better way to visualize the existing coverage by MDR and the options available to the Village. The analysis included the emergency services as they are currently provided by the MDR. Also analyzed was the GIS response time for Pinecrest by Coral Gables based on the location of the current stations in Coral Gables. We also analyzed travel times, if the Village had its own fire station. For the analysis we analyzed the location of services using the address of the station and the service provided by those stations, which are:

Miami-Dade Fire Rescue – There are four primary MDR stations covering Pinecrest. Only one station is located within Pinecrest: Station 49, located at 10850 SW 57th Avenue. This facility was formerly a private residence and was converted by MDR to a fire station. It is only large enough to house one unit. Major modifications would be needed to expand the facility to house a second unit.

Figure 3. Miami-Dade Station 49 (Pinecrest), 10850 SW 57th Avenue



Units: 1 ALS Rescue

Station 49 is not large enough to be converted to a full-service fire station with an engine.

Figure 4. Miami-Dade Station 49, 10850 SW 57th Avenue



Units: 1 ALS Rescue

Station 23 is not located within Pinecrest, but on its border along Dixie Highway.

Figure 5. Miami-Dade Station 23 (Suniland), 7825 SW 104th Street



Units: 1 ALS Ladder
1 ALS Rescue

MDFR Station 4 is south of Pinecrest and is also along Dixie Highway.

Figure 6. Miami-Dade Station 4 (Coral Reef), 9201 SW 152nd Street



- Units: 1 ALS Engine
- 1 ALS Rescue
- 1 Command Unit (Battalion 9)
- 1 EMS Supervisor (EMS 9)

Also providing service to Pinecrest is Station 14, located in South Miami.

Figure 7. Miami-Dade Station 14 (South Miami), 5860 SW 70th Street



- Units: 1 ALS Engine
- 1 ALS Rescue
- 1 Command Unit (Battalion 8)

In addition to the four primary stations closest to Pinecrest, there are two other MDRF stations that can also serve Pinecrest with very good response times: Station 3 (Tropical Park) and Station 13 (East Kendall). Station 3, located at 3911 SW 82nd Avenue has one ALS engine and one ALS rescue. Station 13, located at 6000 SW 87th Avenue, has one ALS aerial ladder truck and an air unit used to fill self-contained breathing apparatus (SCBA). Pictures of these stations were not taken.

Coral Gables Fire Rescue – Coral Gables has three fire stations. While none of the stations are located within the Village of Pinecrest, Coral Gables Station 3 is only .5 miles from the easternmost border of Pinecrest near 57th Avenue and Old Cutler Road.

Following are the Coral Gables fire stations.

Figure 8. Coral Gables Station 1 (Headquarters), 2815 Salzedo Street



- Units: 1 Command Unit
- 2 ALS Engine's
- 1 ALS Rescue
- 1 Air Unit

Figure 9. Coral Gables Station 2, 525 South Dixie Highway



Units: 1 ALS Engine
1 Elevated Platform
1 ALS Rescue
1 ALS Squad

Figure 10. Coral Gables Station 3, 11911 Old Cutler Road



Units: 1 ALS Engine
1 ALS Rescue

MDFR and Coral Gables have similar types of apparatus. Pictured below is the engine and rescue assigned to Coral Gables Station 3 on Old Cutler Road.

Figure 11. Coral Gables Rescue 3



Figure 12. Coral Gables Engine 3



GIS Analysis

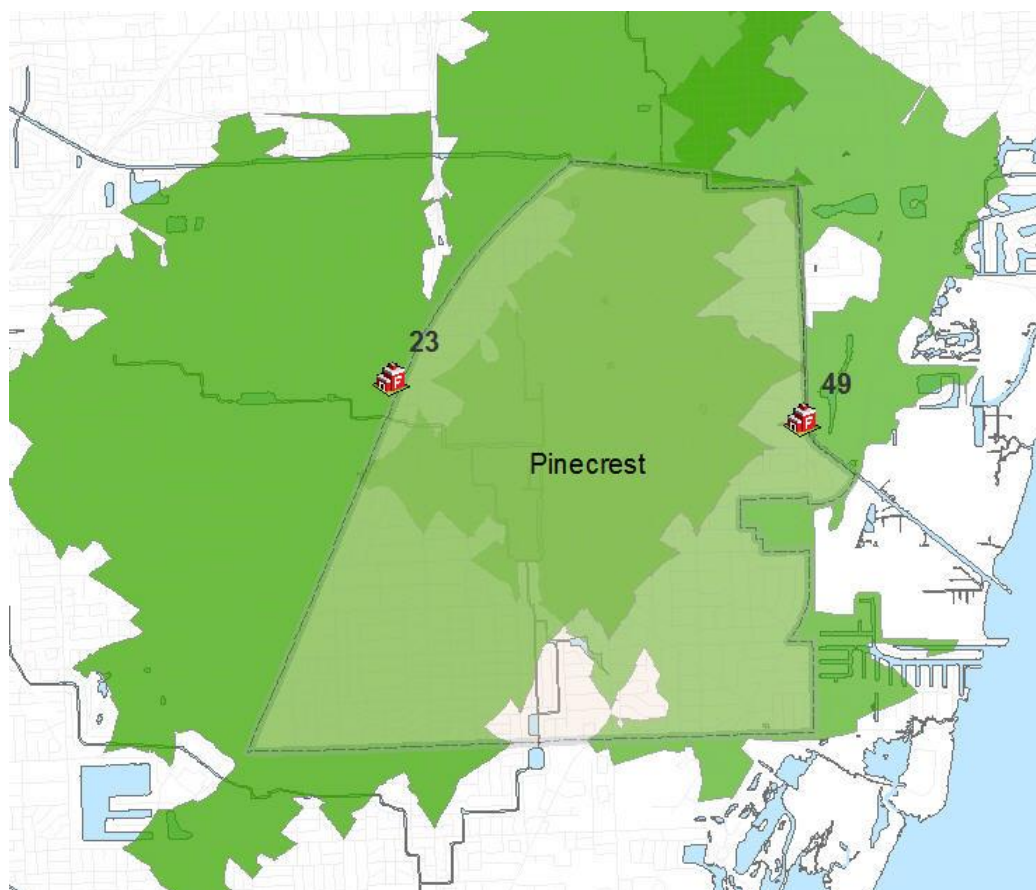
The project team was able to obtain data from Miami-Dade County and other sources to include in our review and analysis of current and proposed service coverage options. These data include:

- Current station locations
- Current apparatus deployment
- Miami-Dade street network (including the Village of Pinecrest)
- Jurisdictional boundaries

Fire Station Location Analysis—An analysis of fire rescue station locations and their coverage of Pinecrest was done by modeling travel time using Geographic Information System (GIS) software. Response time is defined as the time from someone calling 911, to emergency units and personnel arriving on the scene. Response time is the most common performance measure used by fire rescue services because it is understood by citizens, easy to calculate given the data, and useful in evaluating the performance of a department. Response time contains three parts: call processing; turnout (or reaction) time; and travel time. Because this study was limited to the analysis of service delivery options and station/ unit locations, the analysis here was limited to travel time.

The response time goals established by 1710 states that first arriving engine companies for structure fires, and first responder units for medical calls should arrive in four minutes (travel time). A full alarm assignment for a structure fire or an Advanced Life Support (ALS rescue) unit for a high priority medical call such as a cardiac arrest should arrive in eight minutes (travel time), according to national standards. Using GIS we analyzed the four and eight minute travel times from stations into Pinecrest.

Miami-Dade Fire Rescue Coverage— In calendar years 2012 and 2013, MDFR's Suniland Station 23 and Pinecrest Station 49 provided 84 percent of the responses into the Village of Pinecrest. Figure 13 shows the four-minute travel times and overlapping coverage from these stations.

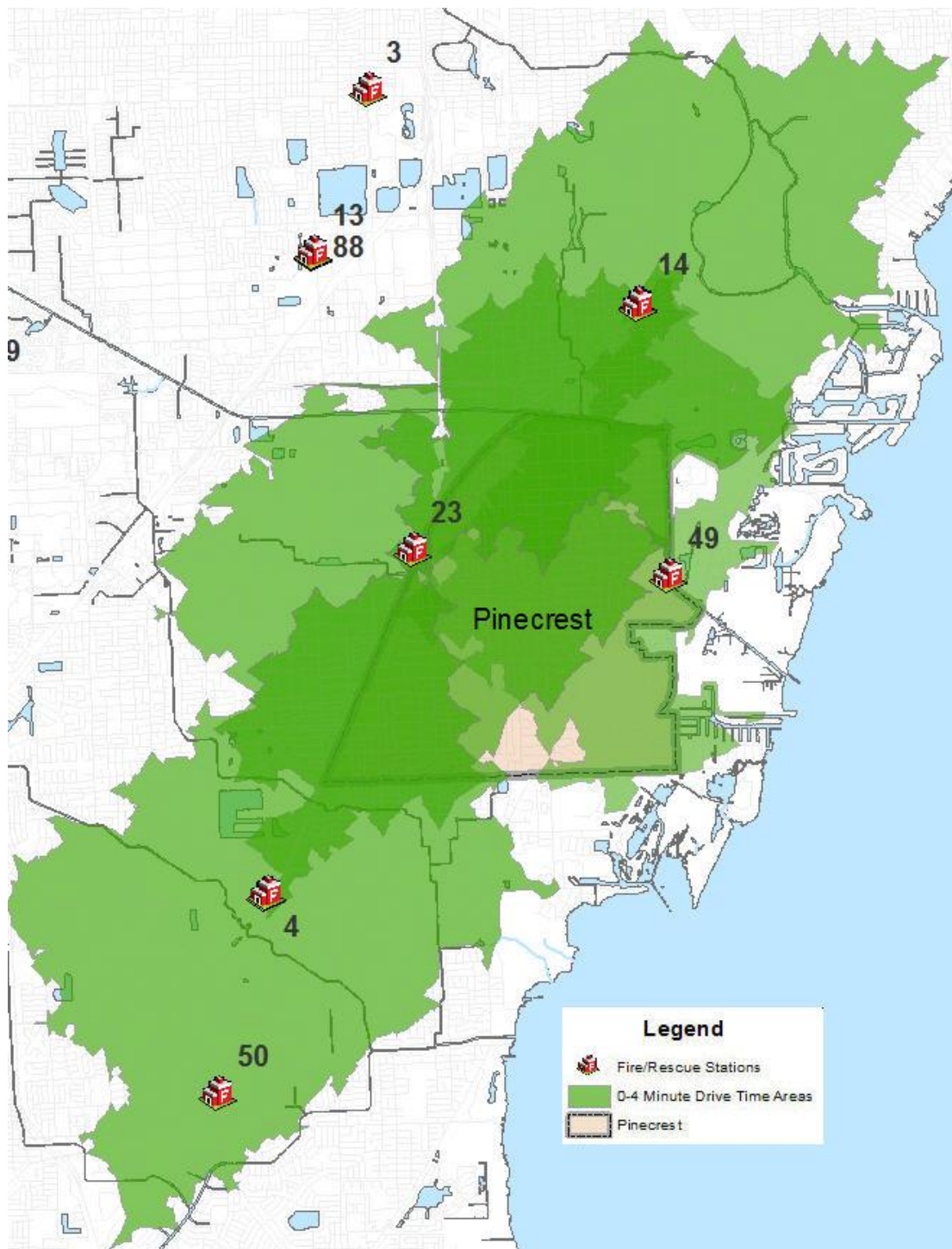
Figure 13. Four-Minute Coverage (Stations 23 and 49)

Station 23 and 49, those in closest proximity to Pinecrest provide excellent four minute coverage of Pinecrest, the exception being a small area at the very south end. There is a considerable amount of overlap within the jurisdiction's center, which increases unit availability should one of the station's units already be out on an incident when a call is made in Pinecrest, or when multiple units are needed. Unit availability is important. It ensures that there may be a unit available to respond to a call when the first-due unit is unavailable. In as much as the majority of calls in Pinecrest are medical, the four-minute travel time coverage provided by Stations 23 and 49 are very good.

We then reviewed the existing four-minute coverage of additional MDFR Stations 14 and 4, which provided the remaining sixteen percent of responses into Pinecrest for that same time period.

Figure 14 shows the coverage of Pinecrest using the four minute travel-time threshold.

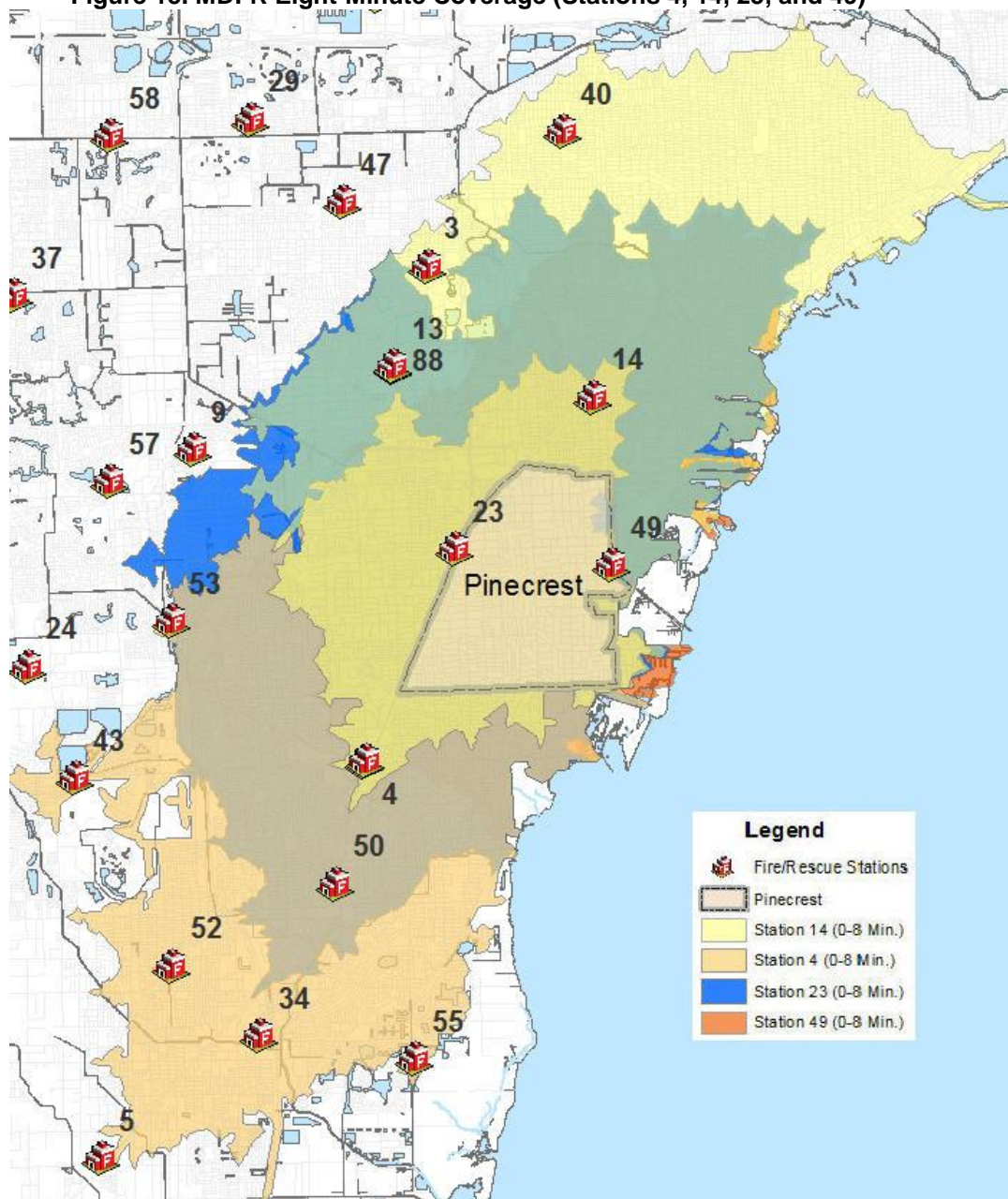
Figure 14. MDRF Four-Minute Coverage (Stations 4, 14, 23, and 49)



These added stations provide additional four minute first response overlap in the north and southwestern parts of the area, increasing unit availability there. The south and southeastern parts of Pinecrest still lacks four minute coverage and overlapping coverage respectively even with the additional Miami-Dade Stations 4 and 14.

We then analyzed the eight-minute coverage and the overlap from MDRF stations shown in Figure 15, to see how a full alarm or ALS coverage would be.

Figure 15. MDRF Eight-Minute Coverage (Stations 4, 14, 23, and 49)

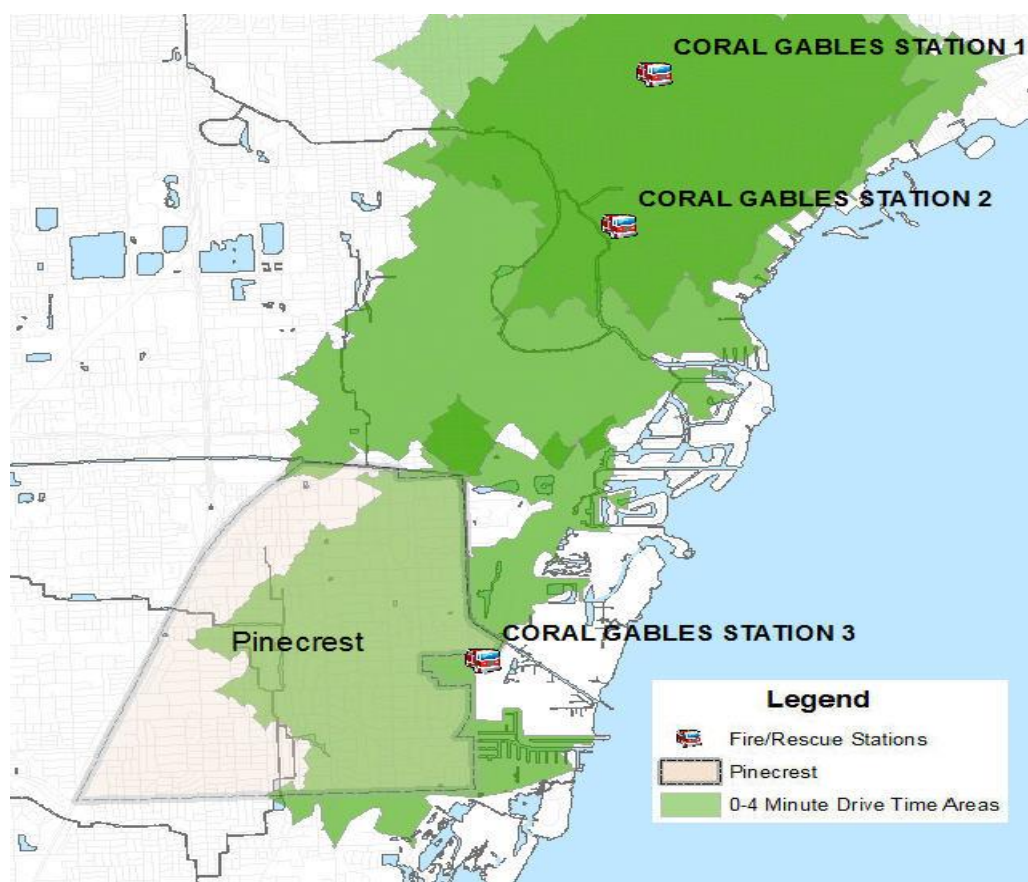


The areas in the south and southeast of Pinecrest are covered adequately based on the eight-minute travel time analysis. There is also considerable overlap in coverage for much of Pinecrest, which is good. So if a fire incident happened in Pinecrest requiring a response of multiple units for example, most should arrive from their stations within eight minutes or less.

Coral Gables Coverage– The current location of fire stations and units in Coral Gables does not provide the four-minute travel time coverage received now by MDRF. Under the 2007 proposal by Coral Gables, a new engine and rescue would be provided. The units were to be housed in temporary quarters somewhere along Dixie Highway. If this were to occur, four minute coverage would be achieved.

Figure 16 and Figure 17 depict the travel-time coverage to Pinecrest, without the proposed new engine and rescue. Later we show the coverage with the addition of a station and units within Pinecrest, if the Village were to contract services to Coral Gables.

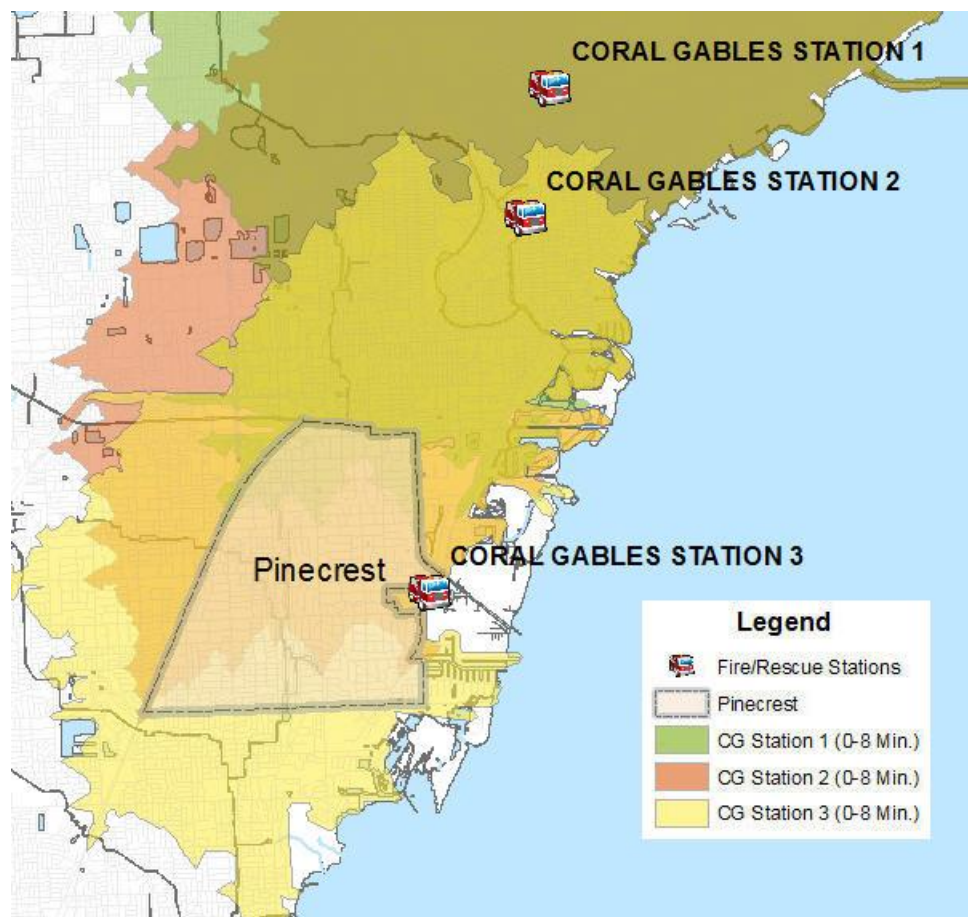
Figure 16. Coral Gables Four-Minute Coverage (CG Stations 1, 2, and 3)



As the map shows, a little more than half of Pinecrest (eastern portion) would have coverage within four minutes by Coral Gables Station 3. The remaining areas would have longer response times. Although most of the southern portion of Pinecrest would be covered, there is no overlapping first response coverage from Coral Gables Stations 1 or 2. Coral Gables Station 1 is further north and cannot reach Pinecrest within four minutes. The problem for Pinecrest as it relates to most calls, which are medical in nature, is that if Station 3 units are not available, Stations 1 and 2 are unable to reach all of Pinecrest within the four minute travel-time parameter. By adding a new station in Pinecrest, Coral Gables could reach almost the entire area of the Village within four minutes.

Using the eight-minute standard for structure fires and ALS medical calls, all three stations in Coral Gables can reach the northern portions of Pinecrest. Station 2 can reach the majority of Pinecrest within eight minutes, while Station 3 can reach all of Pinecrest within the time parameter.

Figure 17. Coral Gables Eight-Minute Coverage (CG Stations 1, 2, and 3)



Emergency Service Duplication – In reviewing the stations and services provided by MDRF, Coral Gables, and other departments serving Pinecrest and surrounding communities in the region, there is clearly duplication of service. Among the duplications is the overlap of MDRF’s Rescue 49 and Coral Gables Rescue 3.

In the case of MDRF and other departments in the County, the most common agreements are mutual aid upon request with the exception of automatic aid agreements between the City of Miami and the Village of Key Biscayne and the City of Miami Beach and Miami-Dade Fire Rescue for response to Fisher Island. Duplication of service is not necessarily bad when demand and service levels require it. Overlapping services and duplication can benefit communities, if there are automatic-aid agreements amongst the various departments. It is a common occurrence in Miami-Dade that fire and rescue units pass neighboring fire stations, sometimes even long distances, to handle a call instead of allowing the closest unit (which may be from a neighboring department) to handle the incident.

Especially concerning as it relates to Pinecrest is emergency medical service. The closest MDRF Rescues are 23 and 49, which if unavailable for a medical call, the next closest rescue from Miami-Dade is dispatched (probably 14 or 4), even if Coral Gables Rescue 3 is available. Rescue 3 is only .5 miles from MDRF Station 49 and its coverage four-minute travel-time area includes most of Pinecrest.

From the perspective of public-safety policy, the absence of an effective automatic-aid agreement between Coral Gables and MDRF for Pinecrest makes no sense, and the public should expect that the situation be addressed.

Miami-Dade Fire Rescue Plans for a New Facility – MDRF staff recognizes there are service-level deficiencies in parts of Pinecrest and neighboring Cutler-Palmetto Bay. Plans are under way to add a fire station to reduce response times and improve service. During our meetings with the county Fire Chief it was reported that funds are already budgeted for the personnel, land acquisition, and construction for a new station that would improve coverage to Pinecrest. Three sites are presently under consideration:

- **SW 152 St. & SW 67 Avenue** – “MDRF officials have met with attorneys representing the property owners of a site near this intersection and a portion of the property is for sale. Bids are being evaluated and the property owners have agreed to allocate land for the fire station. MDRF officials remain in contact with the attorney in order to verify the status.”¹
- **SW 152 St. & SW 67 Avenue (Vacant Property)** – “Privately-owned property also near the same intersection, the property owner have discussed purchasing a portion of the 6-acre parcel but the initial asking price is excessive based on the purchase price. Efforts are underway to evaluate the purchase process and MDRF intends to discuss the selling price further with the owner.”²
- **USDA Property** – “MDRF continues to consider the option of identifying a two-acre parcel on the USDA property, located in southeastern Pinecrest. Recent discussions between MDRF and officials in Washington, DC have been generally favorable. Needed are favorable responses from the various home-owner associations in Pinecrest.”³

Note: As this report was being completed, MDRF reported that a “contract has been placed on a piece of property in Palmetto Bay directly across from the USDA property, located at 67th Ave and Farmers Road.”⁴

¹ Email response from Chief Downey to a follow-up inquiry by TriData based on our on-site meetings conducted at MDRF headquarters.

² Ibid.

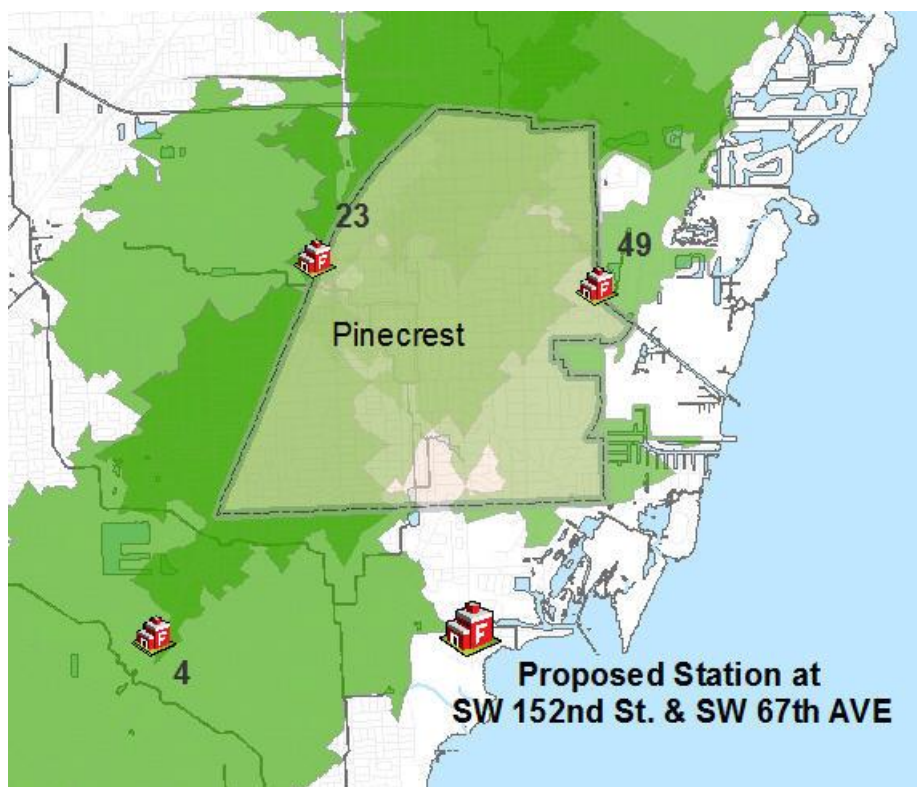
³ Ibid.

⁴ Email from Chief Downey.

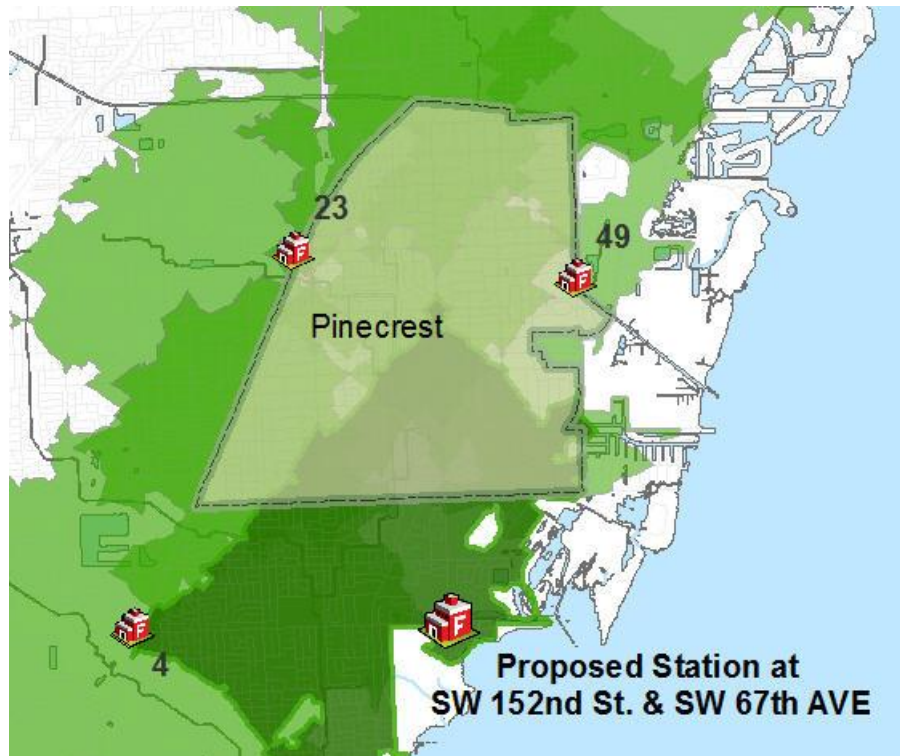
“The estimate for seeing a new fire station at any of the above-mentioned sites is three years, which includes 6-12 months for land acquisition and 2 years for design, permit, and construction.”⁵

The sites under consideration were analyzed as to how they might improve coverage for Pinecrest. Two locations under consideration are both near the intersection of SW 152 St. & SW 67 Ave. Coverage from those sites will be almost identical, so the GIS analysis for this location results in one map to model the proposed station location. From this location, the four-minute coverage would vastly improve the coverage in south Pinecrest, where there is concern about coverage now. Eight-minute travel times are also improved, as can be seen in the following maps.

Figure 18. MDRF Four-Minute Coverage Before Proposed Station



⁵ Ibid.

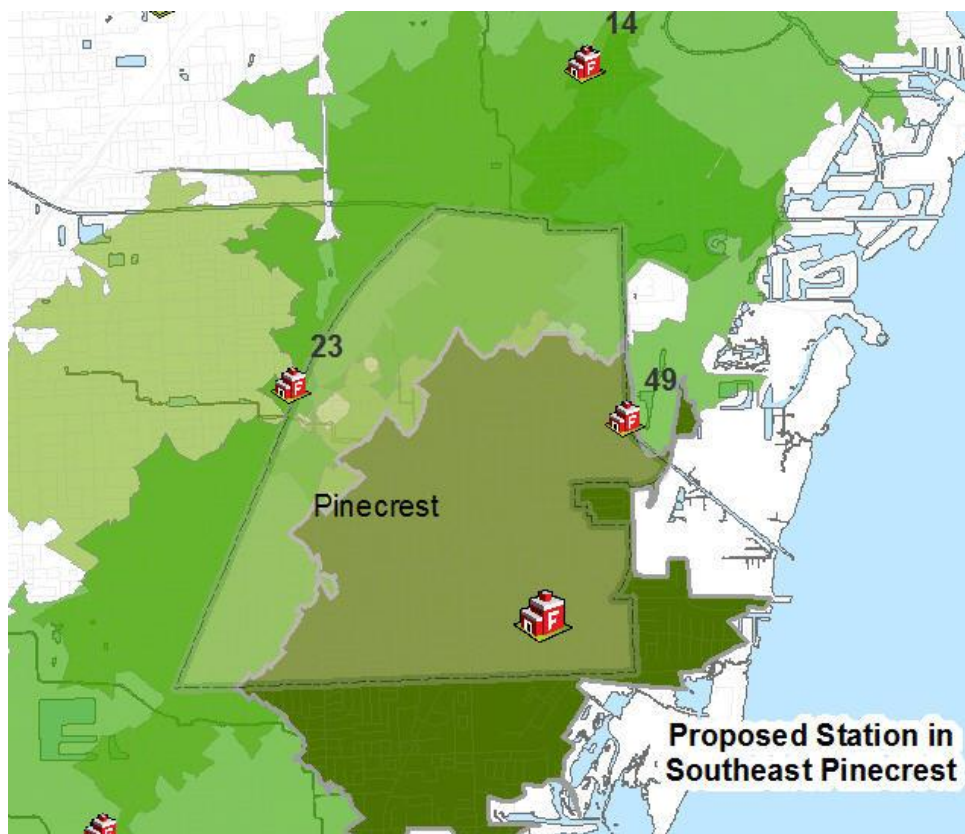
Figure 19. Four-Minute Coverage Improvement - Station at SW 152 St. & SW 67 Ave.

Clearly the proposed station at SW 152nd St. & SW 67th Avenue would close the gap of four minute first responder coverage in south Pinecrest. It also adds the additional overlap in coverage increasing unit availability. Eight-minute coverage of the new station would also improve the coverage overlap for Pinecrest with the other MDRF stations.

The second site under consideration is on property of the U.S. Department of Agriculture (USDA) in southeastern Pinecrest. This site also improves coverage for Pinecrest and is better for Pinecrest than is the site at 152nd St. and SW 67th Ave.

Figure 20 shows the four-minute travel time from the USDA site.

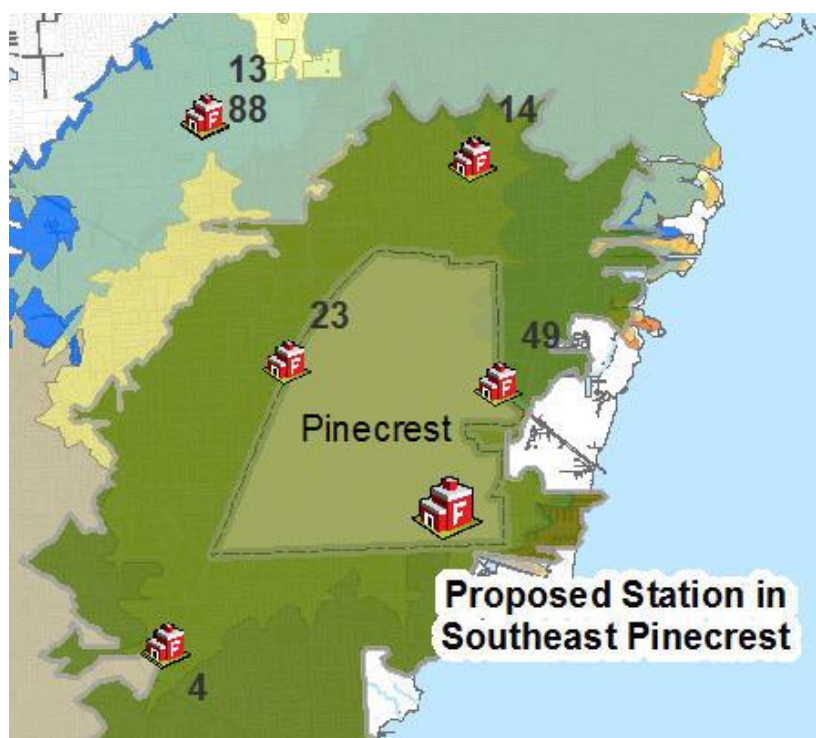
Figure 20. Four-Minute Coverage Improvement - USDA Property



As Figure 20 shows, a response from the USDA site can reach the entire southeastern portion of Pinecrest and much of the other areas of the Village within four minutes.

Within eight minutes, which is the standard for an ALS unit or structure fire response, the entire area of Pinecrest can be reached from a station at the USDA site.

Figure 21 shows the coverage of Pinecrest with the overlap of MDFR Stations 4, 14, 23, and 49. The overlap of Pinecrest by these stations, plus a new facility at the USDA site, greatly improves coverage for Pinecrest.

Figure 21. Eight-Minute Coverage Improvement - USDA Property

Of the two sites under consideration by MDRF, the USDA site is better for Pinecrest; however, either site can work as they both improve coverage for southeastern Pinecrest, which is of most concern.

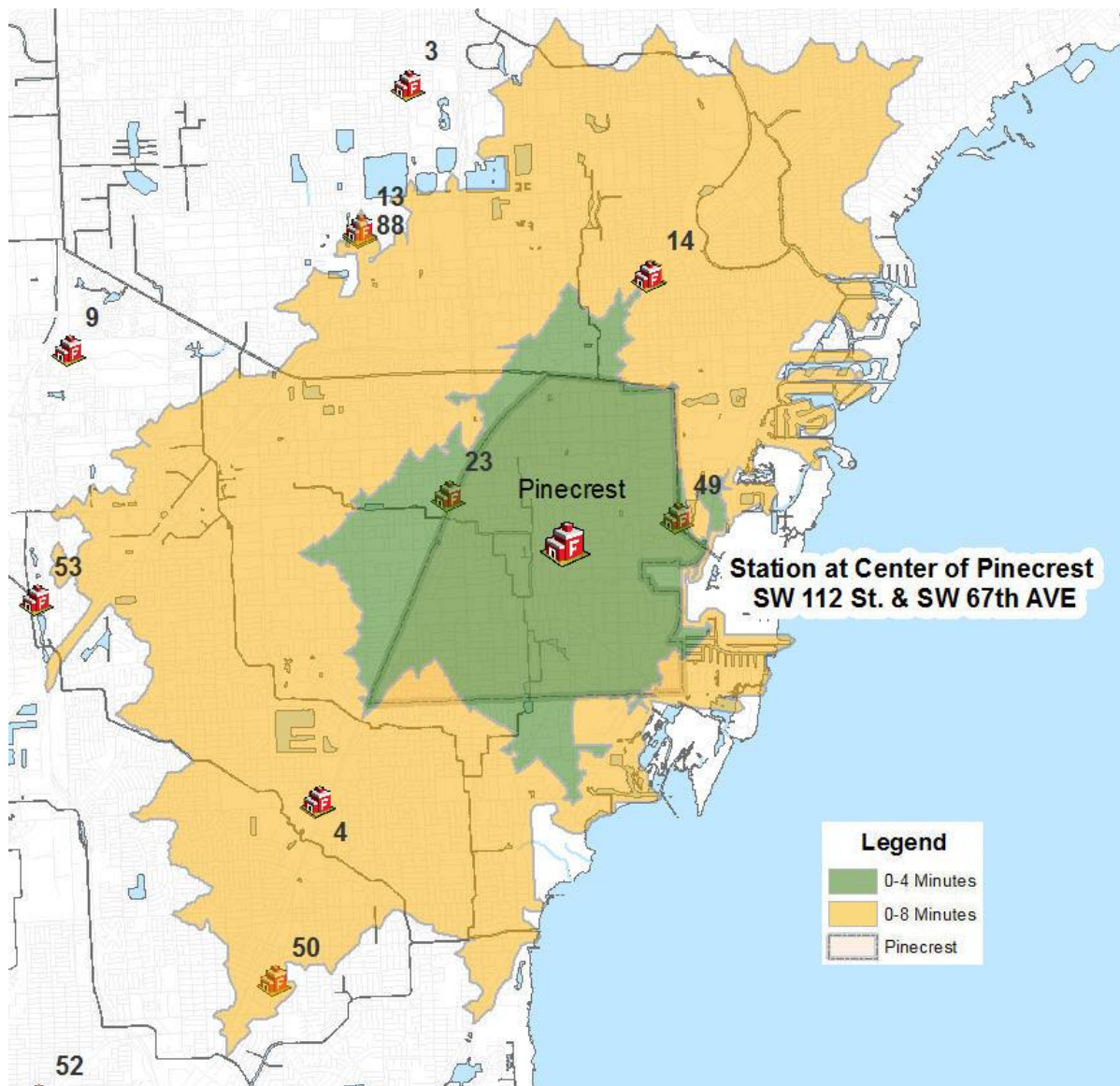
New Pinecrest Station – If Pinecrest were to start its own fire department a new fire station would be needed. A new fire station would also be needed, if the Village were to contract services from Coral Gables, or another agency.

There is concern that a suitable site for a fire station may not be available in Pinecrest. Land costs are high and the primary arterial of US 1 (Dixie Highway) is mostly commercial with few open spaces. Other areas of Pinecrest are almost entirely residential and already built upon. It is possible that land in a residential area would be available, and a central location is the best as far as coverage is concerned.

Our analysis shows that Pinecrest could be covered adequately, if the station were located near the center of Pinecrest. An arbitrary site was selected at SW 112 St. and SW 67th Ave.

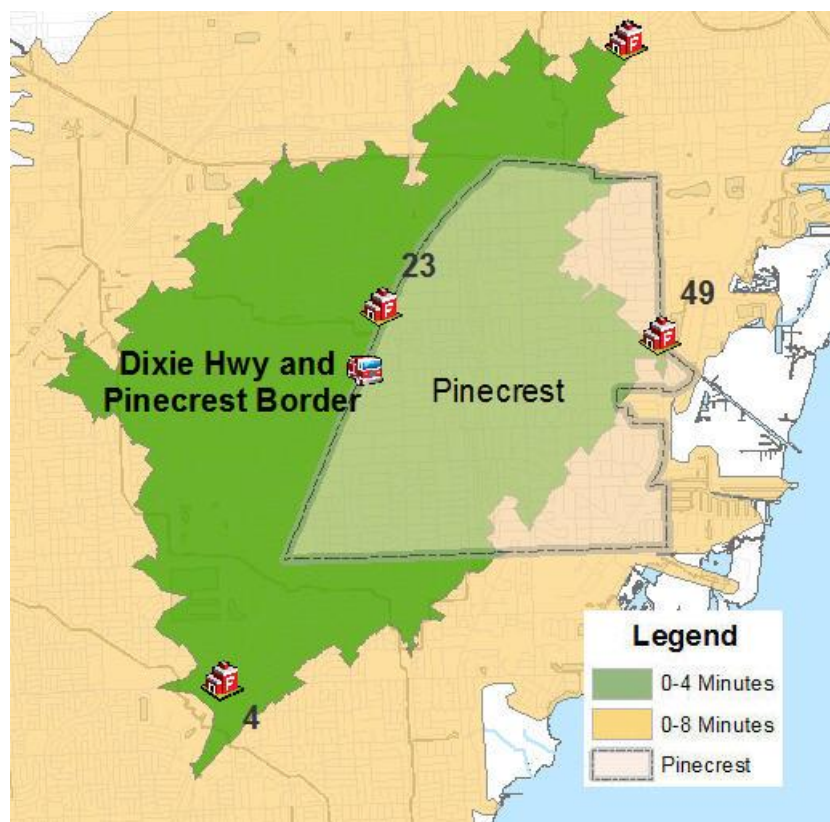
Figure 22 shows that four minute travel-time coverage can be achieved throughout Pinecrest, the exception being a small area in southwest Pinecrest. Again however, central portions of the Village are mostly residential and a site near this location may not be available.

Figure 22. Central Pinecrest Fire Station



Also analyzed was a location along Dixie Highway, since a suitable site is more likely to be found along this route. An arbitrary location near the mid-point of the Village border and Dixie Highway shows that Pinecrest would not be covered in four minutes.

Figure 23. Pinecrest Fire Station - Dixie Highway



Whether a new fire station is constructed in the center of Pinecrest, or along Dixie Highway, the Village would still need an automatic-aid agreement with Coral Gables or MDRF under any circumstance where the Village operates its own fire department. With such an agreement in place, Pinecrest would easily be covered by the new station and Coral Gables Station 3. The Village would eventually need the new station (in either location), if the Village was to contract services from Coral Gables.

Should Pinecrest have its own fire station, the analysis shows that the best location would be as close to the center as possible to provide the best first response four minute coverage. With one station there can be an overlap in coverage, so long as there are multiple units at the station – which we propose in the model for a new Pinecrest Fire Department. Pinecrest would still need to have an automatic-aid agreement with Coral Gables or MDRF for the initial response on incidents such as a structure fire. Without automatic aid, Pinecrest would not have enough personnel responding on the initial call to meet NFPA standards.

Emergency Medical Service

As with fire suppression, EMS is also provided to Pinecrest. The closest stations to Pinecrest (Station 23 and 49) both have Advanced Life Support (ALS) medic units staffed with three personnel, including a Lieutenant. Most communities, including many in Florida, do not

staff medic units with three personnel, but MDRF does. The most common staffing arrangement is two responders – one paramedic and one emergency medical technician (EMT). Departments in Florida and elsewhere that staff ALS rescues with two responders include:

- Davie
- Orange County
- City of Orlando
- Brevard County
- Seattle
- Baltimore
- Houston
- Montgomery County, MD

A study conducted in 2001 by a Division Fire Chief in Boca-Raton found that only 25 percent of the then 84 departments licensed to provide fire-based ALS service in Florida were staffed by three responders. The reasons to staff rescue units with three responders reportedly were to improve service and reduce the number of medical calls responded to by engine companies.⁶ Not surprisingly, the majority of fire departments with rescues staffed by three responders were located in southeast Florida.

To our knowledge there is no evidence that patient care is greatly improved when rescues are staffed by three responders. One of the arguments for staffing with three, according to the study, was to improve service and reduce the number of occurrences where engine companies are dispatched to assist the rescue crew with patient care. In Miami-Dade, dispatching protocols require dispatching an engine company on the initial call for a serious medical emergency, even when the first-due rescue is available to respond.

There are three receiving hospitals near Pinecrest where patients transported by ambulance are taken: 1) Jackson South, 2) Baptist, and 3) South Miami. One of the considerations about EMS service in addition to the call volume is the turnaround time to transport a patient to the hospital and then return to the ambulances coverage area. In situations where transport times are long, gaps in coverage can occur, even when call volumes are low. Turnaround times are not an issue for Pinecrest, thus the decision about how many EMS units are needed is one of demand, since any unit transporting a patient to the hospital would generally be back in the first-due area very quickly.

With slightly fewer than 1,000 medical calls/ year in Pinecrest and the proximity of medical care facilities, the Village could be served by one ALS rescue, with a second unit available when back-to-back calls occur. The model developed for Pinecrest for a start-up fire/rescue service provides for one rescue, plus a squad to handle a second ALS call, if it were to occur.

⁶ <http://www.usfa.fema.gov/pdf/efop/efo32433.pdf>

Patients in Pinecrest receiving medical aid from MDFR are presently billed depending on the services provided and whether the patient was transported. The County's billing policies and the amounts charged to Pinecrest residents was not within the scope of this project, and thus not analyzed. It is known that there are Medicaid and Medicare allowances for the amounts paid for services; however, the County, like other jurisdictions, is free to charge any amount for medical service. Most patients receiving bills for medical service turn the invoice over to their insurance company, which makes a determination on the allowable payment.

If Pinecrest were to contract with another agency for service, or start its own department, it could choose not to charge residents for medical service. Some communities still do not charge for EMS care, though the numbers are dwindling.

III. FIRE/ EMS SERVICE COST ANALYSIS

A contributor of significant tax revenue to MDR, a decision by the Village to contract for fire/ rescue services elsewhere, or to stand up its own fire department can be expected to cause great concern to the County because of loss revenue.

From 2009 to 2013, Village of Pinecrest residents paid a total of \$41.8M for emergency services from the County, an average of \$8.4M per year. The total fire tax, which includes the cost of fire protection, rescue, and debt service, increased a modest 5.9 percent over the five-year period. The highest year, tax-wise, was 2013 when property owners paid \$8.7M in fire taxes, due primarily to an increase in assessed property values.

Table 3. MDR Millage Rate History, 2009-2013⁷

Year	Fire/ Rescue Service	Debt Service	Total	Increase (Decrease)
2009	2.1851	.0420	2.2271	-
2010	2.1851	.0200	2.2051	(.022)
2011	2.5753	.0131	2.5884	.3833
2012	2.4496	.0131	2.4627	(.1257)
2013	2.4496	.0127	2.4623	(.0004)
Average	2.36894	.02018	2.38912	.0588

The assessed valuation for Pinecrest in 2013 was \$3.74B, slightly lower than the \$3.9B in 2009. Using the millage collection rates charged by MDR, the total cost to Pinecrest property owners from 2009 to 2013 averaged \$8.4M.

⁷ <http://www.miamidade.gov/pa/library/adopted-millage-chart.pdf>

Table 4: Village of Pinecrest Fire Service Costs, 2009-2013

Year	Assessed Real Property Value	Fire Service Cost	Debt Service Cost	Total Cost
2009	\$3,901,885,281	\$8,099,709	\$163,879	\$8,263,588
2010	\$3,682,575,404	\$7,644,456	\$73,652	\$7,718,107
2011	\$3,510,202,226	\$8,587,833	\$45,984	\$8,633,816
2012	\$3,601,059,193	\$8,380,097	\$47,174	\$8,427,271
2013	\$3,737,105,393	\$8,696,692	\$47,461	\$8,744,153
Total	\$18,432,827,497	\$41,408,787	\$378,149	\$41,786,936
Average	\$3,686,565,499	\$8,281,757	\$75,630	\$8,357,387

Note: The calculation for fire service costs were calculated at 95 percent of value to account for early payment discounts and appeals of proposed valuations, as per state law. Debt service is calculated at full value.

Fire Service Cost for Single-Family Dwelling

In 2013, Village property owners paid a total of \$8.74M to the County Fire District. By comparison, Miami Lakes, another municipality covered by MDRFR paid \$5.84M, even though its population is significantly greater than Pinecrest (18,300). In 2012, the population of Miami Lakes was 30,400 with a mean property value of \$385,000.⁸ Pinecrest, by comparison, has a mean property value of \$865,000.⁹ Both are primarily residential communities, though Pinecrest is more affluent and property values are much higher.

Pinecrest is 7.6 square miles compared to Miami Lakes, 6.4. The key difference in these communities is the residential makeup with Pinecrest primarily being single-family homes on larger estate lots and Miami Lakes mostly multi-family, e.g., 9,000 housing units in Miami Lakes versus 6,016 in Pinecrest.¹⁰ Using the current MDRFR tax rate and the assessed valuation figures provided by Miami Lakes, we were able to calculate the fire tax millage charged to Miami Lakes. The cost per capita for service in Miami Lakes, not including capital millage, was \$192 and the average cost per property \$943.

Based on the current fire tax rate, including debt service and using the average cost of a single-family detached house, the cost for service comparison for Pinecrest and Miami Lakes is:

- Pinecrest: Average single-family home cost \$903,667/1000 times millage rate 2.4623 x .95 = \$2,114.
- Miami Lakes: Average single-family home cost \$443,183/ 1000 times millage rate 2.4623 x .95 = \$1,037.

⁸ <http://www.city-data.com/city/Miami-Lakes-Florida.html>

⁹ <http://www.city-data.com/city/Pinecrest-Florida.html>

¹⁰ Wikipedia, the free encyclopedia.

However, it is important to remember that Pinecrest and Miami Lakes are different communities, financial wise. The median household income for Miami Lakes in 2011 was \$58,850 versus \$100,000 for Pinecrest.¹¹ The average number of occupants per household is about the same, 2.9 in both communities.¹²

The question for Pinecrest officials is whether fire and emergency services could be provided at a significantly lower cost to justify making a major change. Another question is whether a new system would be as effective.

Questioning the Fire Tax Rationale

As with other municipal taxes, assessing fire district taxes based on property valuations is common practice. The cost is easy to calculate and it assumes properties of higher value should assume more of the burden to pay for services.

However, a major problem occurs when one community pays appreciably more when the services are used less, and where the risk is much lower. Using the example of Pinecrest and Miami Lakes, it is questionable whether a community of 30,000 residents should pay 30 percent less than a community of 19,000, when the higher populated community accesses the services much more frequently. In addition to Pinecrest, other communities such as Indian Creek and Surfside have questioned the tax issue as well.

As an alternative to the ‘nuclear option’ of opting out of its County service, an alternative solution for Pinecrest (and other communities in a similar situation) should be to find a way to reduce the tax burden on mostly residential communities whose property values are very high and use the services very little. One way to do this is to cap the assessed value at a particular level such as the fire tax cannot be more than x percent higher than the average assessed value of single-family homes in the County.

For example, if the assessed property values for a single-family home were capped at 2x the assessed value of the average single-family home in Miami-Dade, the cost for fire/ EMS service would not exceed a certain amount; in this case \$1,664. The average homeowner in Pinecrest pays \$2,114/ year now.

The change in formula can be calculated as:

Average single-family home price in Miami-Dade County:	\$355,762 ¹³
Fire-levy cap @ 2x the average home price, or:	\$711,524
\$711,524 x 2.4623 x .95:	\$1,664
Current fire-service cost of average home in Pinecrest:	\$2,114
Annual Savings:	\$450

¹¹ www.city data

¹² Ibid.

¹³ http://www.city-data.com/county/Miami-Dade_County-FL.html

Based on the formula, if 33 percent of the homes in Pinecrest were to see the decrease based on the formula above, the savings to the entire set of single-family homeowners would probably be close to \$1.0M, making the Village's cost closer to \$7.7M, based on 2013 property values. Obviously, those with the most expensive homes would see the largest decrease in fire tax. Predicated on the low demand for fire service in Pinecrest where few fires occur and EMS demand is low too, this option does have considerable merit.

While a solution such as just presented would reduce the revenue generated for MDFR, it might prevent the total loss of revenue should Pinecrest (and other municipalities) opt out of the current service agreement. A solution such as this might be difficult to achieve politically since the County may not want to consider an alternative that reduces revenue for such an important service. However, it may be the preferable option to that where communities like Pinecrest and others opt out of the County's fire service, altogether.

The potential savings of contracting service from Coral Gables is substantial. The question for officials is whether the savings is in the best interest of Pinecrest taxpayers and residents. Also to be considered is whether opting out of the County service is in the best interest of the Village and its relationship with the County. Opting out would create another duplication in a County that already has multiple agencies responsible for emergency services.

The question of high fire taxes is an issue not likely to be remedied soon, and the Village Council is wise to at least look at the issue and consider its options.

Coral Gables Proposal – A five-year proposal from Coral Gables structured in 2007 for fire and EMS service included an initial cost of \$6.0M for year one and \$5.0M for years two through five. If Pinecrest and Coral Gables had reached agreement (and the service started in 2009), the total cost for service from Coral Gables would have been \$26.0M. Under its present agreement with the County, Pinecrest property owners paid \$41.8M or \$15.8M more for service from the County during the five-year period. The average savings per year, if Coral Gables had provided services, is \$3.2M. Considering there are approximately 6,000 residential units in Pinecrest, the average savings per residential property would have been \$533/ year or \$2,665 per residential unit over the five-year period.

IV. SERVICE DELIVERY OPTIONS FOR PINECREST

In addition to understanding the current situation regarding the services and cost under the current arrangement with MDFR, Pinecrest officials wanted to know whether there are other options such as having their own fire/ rescue service.

Considering the Village's situation and the availability of service in the region, seven possibilities are considered plausible. Other options might be available, though these are the most realistic.

- **Continue With Miami-Dade Fire Rescue** – MDFR already provides excellent service and the Village would continue to receive quality service in the future. The cost for service is high and there are no guarantees that costs will not increase in the future. MDFR does have plans to improve service by adding a new station at the USDA or Cutler-Palmetto Bay sites and this station will improve service to Pinecrest. Cost aside, this option is the easiest since the Village does not need to make any changes.
- **Continue with Miami-Dade Fire Rescue but Revise the Fire-Tax Formula** - If continuing MDFR service is preferred, the Village should at a minimum work with other, high-value communities and the County, to alter the fire tax levy formula. In our opinion, the formula which is calculated solely on assessed valuation is not a good one. It is understood that high-value communities are 'donor communities', however, there should be a mechanism where other attributes such as service demand (call volume) are factored into the formula. Some communities use a formula where the cost of service from a particular fire station is divided based on demand to the various customers (fire district and municipalities). High property values work against the Village in the current cost formula, even though the services received from MDFR (in terms of demand) are very low.
- **Contract for Full Service from City of Coral Gables** – The contract presented to Pinecrest by Coral Gables in 2007 was a good one. It contained the essential services needed by the Village and at an acceptable level. The Village stood to save millions had the agreement been approved by Coral Gables. Our conversations with Coral Gables officials suggest there is renewed interest in revisiting a contract arrangement with Pinecrest. The sticking point may be the location of a temporary site to house fire/ rescue personnel until a permanent fire station can be constructed. Finding a suitable site for the permanent station is also a concern. If this option is pursued the County may again exert political pressure to stop the agreement from becoming a reality.
- **Contract for Service with Another Government Entity** – There are no laws that we are aware of prohibiting Pinecrest from contacting for fire service from a jurisdiction not contiguous with its borders. Key Biscayne and Miami have a contract

that includes automatic aid on the initial response, even though separated by almost seven miles of the Causeway and a County fire station (on the Causeway) is much closer. The possibility does exist that Pinecrest could expand the contract to include a full array of emergency services and contract these from Miami, Key Biscayne, or any other provider deemed adequate by Village officials. We did not estimate the potential cost savings for this option, though it could be significant.

- **Contract for Administration and Other Non-Emergency Services with Another Government Entity** – As communities face greater financial pressures contracting for fire/ EMS service is becoming more prevalent. Following a review of its fire/ EMS situation a previous client (in California) determined it best to contract with a neighboring fire department for administration, code enforcement, training and other support activities and hire their own firefighters and officers. The benefit of this option is the savings realized by not duplicating the administrative and support elements necessary to manage a fire department. The proximity to other fire departments in the region makes this option a possibility for Pinecrest.
- **Create a New Pinecrest Fire/ Rescue Department** – The option of opting out of service from MDRR and starting a new fire department is clearly possible. There are cost savings to be realized and the Village would have greater control over the operation. The downside is the creation of another fire department in a region which already has too much duplication. If this option were selected the Village would need to have an automatic-aid agreement with Coral Gables – or possibly MDRR. The cost savings for this option are similar to that realized by contracting with Coral Gables. However, implementing this option, which would take at least two years, is much more difficult. The Village’s experience of starting its own police department does work in its favor, as does the experience of Key Biscayne which has been through the process before and could likely offer advice.
- **Create a New Fire Department with a Singular Fire/ Police/ Public Safety Structure**¹⁴ – A hybrid of the previous option is to start a new fire department with fire and police under the same administrative structure. This option would provide that the same administrative structure currently managing the police department could also be used for the administrative and support functions of the fire department. Pinecrest Police have a well-functioning organization with the necessary personnel to manage budgets, time/ attendance, and other support activities and there is ample capacity within these sections to handle more work, according to the Chief. Under this arrangement, police and fire would be under the same executive leader, possibly referred to as Chief of Public Safety. Under the Chief of Public Safety would be the Chief of Operations (one each for police and fire). These individuals would be

¹⁴ The option described here is not the same as a ‘Public Safety Organization’ where firefighters and police officers are cross-trained as Public Safety Officers.

responsible for the day-to-day operations within their respective departments. For dispatching fire units, the police dispatch operation is already functioning well and it has the capacity to handle fire/ EMS calls without adding more personnel.

Approximately \$300K in savings from the \$6.0M annually needed for a new fire department would be saved, if this option were implemented.

In the section which follows are the startup and annual costs for a Village of Pinecrest Fire Department.

Starting a New Fire/Rescue Department – For this project Pinecrest elected officials wanted an idea of how much it would cost, if the Village had its own fire/ rescue department. The first years' cost, which included capital monies to purchase land and build a fire station, is about \$16.0M. Of this amount, the largest expense is the estimated \$6.25M required to construct a fire station.

After the first year the annual cost for the Village is approximately \$6.0M. This amount includes annual salaries, benefits, and recurring costs for operational expenses, plus an annual amount to fund the fleet replacement program so money is available when the apparatus purchased initially can be replaced.

Assumptions as to the type of units and personnel deployed, the work schedule for fire personnel, and other factors such as the estimated salary and benefits are provided first, followed by the staffing calculations and employee costs, and the equipment needed for the department. In developing the personnel costs we used salary information from the Village and for surrounding fire departments. Salary and benefit cost assumptions were also reviewed by us with the Village's HR Director.

Assumptions:

- 1 fire station
- 1 Quint (75') staffed at 4 personnel
- 1 Rescue staffed at 3 personnel¹⁵
- 1 Squad (EMS transport capable) staffed at 3 personnel
- 1 Battalion Chief (BC) staffed at 1
- 1 Reserve engine
- 1 Reserve rescue
- 1 Reserve squad

¹⁵ Because of local tradition the rescue is staffed at three. However, the Village could provide effective service with two responders.

- 56 hour work week
- All units and BC are ALS qualified
- Three response units 24/7: 1 quint/ engine, 1 rescue, 1 squad
- Minimum on-duty staffing is 11: 1 BC, 1 Captain, 2 Lieutenants; 1 Engineer (driver/operator); 6 FF/PMs
- New employees – all earn 112 hours/year (PTO and holidays)
 - Loss time due to work-related injuries, sick, FMLA, jury duty, etc. = +/- 7.5 percent, or 2400 hours/ year (32,000 X .075)
 - 11 on-duty x 56 hours/ week x 52 weeks = 32,032 hours/ productive staffing needed/ year
- Staffing Factor:
 - $56 \times 52 = 2912$ hours/ ear, firefighter
 - $2912 - 112$ hours PTO – 218 hours sick, accident, etc. = 2582 hours/ year
 - $2582 / 52 = 49.7$ hours week productive time/ firefighter
 - $168 / 49.7 = 3.4$ staffing factor per position
 - $3.4 \times 11 = 37.4$ FTE positions needed (rounded to 39, or 13 on each of three shifts)
- Administrative Staffing:

Position	Annual Salary
1 Fire Chief	\$120,000
1 Deputy Fire Chief / Fire Marshal	\$100,000
1 Training Officer (Captain)	\$80,000
1 Fire Inspector	\$50,000
1 Plans Reviewer (contract)	\$50,000
1 Public Education Specialist	\$50,000
1 Fire/ EMS Dispatcher ¹⁶	\$40,000
1 Administrative Assistant	\$40,000
Benefits @ .35	\$200,000
8 Positions	Year 1 Cost \$730,000

¹⁶ Included though probably not required.

- Capital Expenditures (one-time costs):

Fire Station (3 bay facility @ 8K square feet (\$500 square foot)	
Land Acquisition	\$1,500,000
Architectural & Engineering	\$750,000
Construction	\$4,000,000
Sub-Total	\$6,250,000
Radios, computers, telephones	\$500,000
Office equipment/ supplies	\$250,000
Hose, appliances, SCBA, Tools & Turnout Gear	\$1,000,000
Contractual Services (fuel, maintenance)	\$500,000
Communication & IT Upgrades	\$500,000
Sub-Total	\$2,750,000
Vehicles	
1 Quint	750,000
1 Reserve Engine (used)	200,000
1 Rescue	200,000
1 Squad (transport capable)	200,000
1 Reserve Rescue	100,000
1 Reserve Squad	100,000
Sub-Total	1,550,000

- Operational Positions:

Rank	FTE Positions
Battalion Chief	3
Captain	3
Lieutenant	6
Operator/ Engineer	3
Senior Firefighter/ Paramedic ¹⁷	6
Firefighter/ Paramedic	18
Total	39
Assigned Each Shift	13

¹⁷ Senior Firefighter/ Paramedic is qualified to act as a first-line supervisor in the absence of a Captain or Lieutenant.

- Cost:

Position	FTE	Estimated Salary	\$\$ Benefits @ .35	Total
Battalion Chief	3	\$90,000	\$31,500	\$364,500
Captain	3	\$80,000	\$28,000	\$324,000
Lieutenant	6	\$70,000	\$24,500	\$567,000
Engineer	3	\$65,000	\$22,750	\$263,250
Sr. FF/PM	6	\$65,000	\$22,750	\$526,500
FF/PM	18	\$60,000	\$21,000	\$1,458,000
Total	39	--	--	\$3,503,250

- Annual Salaries/ Benefits:

Operations	\$3,503,250
Administration	\$730,000
Salaries/ Benefits/ Year	\$4,233,250

- Other Costs:

Recurring Operational Costs/ Year	\$1,500,000
Capital Replacement Fund/ Year	\$250,000
Sub-Total	\$1,750,000
Total Annual Cost	\$5,983,250

- Other Costs TBD:

- Recruitment, testing and selection
- Legal expenses
- Utilities (water, sewer, electricity)
- City services