

# **Osceola County Comprehensive Plan**

## **Fire Rescue Element**

### **Data & Analysis**

**FIRE RESCUE ELEMENT  
DATA AND ANALYSIS**

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## FIRE RESCUE ELEMENT DATA AND ANALYSIS

### A. INTRODUCTION

The purpose of the Fire Rescue Element is to acknowledge the current level of service being provided by Osceola County Fire Rescue, and to establish a terminal goal for the level of service which will be realized with the build out of the proposed 2040 Road Network in Osceola County. This Element will facilitate long range planning for adequate fire protection and prevention, public education, and emergency medical response. These activities contribute to the quality of life for those who live, work in or visit Osceola County.

The Osceola County Fire Rescue and Emergency Medical Service Department (“OSCFR”) was established by County Ordinance #89-19 by the Osceola Board of County Commissioners action in May of 1989. Said action united the various Volunteer Fire Departments in the unincorporated County together under one management umbrella. This action also established a County run Emergency Medical Services (“EMS”) system, provided full time fire protection to the West U.S. 192 corridor, and established the Municipal Services Benefit Unit funding mechanism for the service.

On October 1, 1989 the OSCFR department began providing service to the Osceola County community. At that time there were two full-time fire stations. The first fire station was located on Polynesian Isle, next to Indian Wells and provided an Engine and Rescue. The second fire station was located in a parking lot of the Main Gate Mall and provided an Engine. Both of these facilities were mobile homes. The remaining paid personnel staffed rescue units located in existing volunteer stations in Campbell City, Buena Ventura Lakes, and Deer Run. The remaining volunteer fire stations at the time were Intersession City, Poinciana, Kings Point, Holopaw, Narcoossee, Kenansville, and Yeehaw Junction.

In October of 1989 there were 12 locations from which OSCFR provided Fire and EMS services. The decision as to the locations of these fire stations was driven by the community’s desire to obtain Fire and EMS service, their willingness to participate, and the availability of donated land near the community. The establishment of service at that time was a community centered approach. This approach was appropriate when the annual call volume was less than 9,000 calls a year and almost half were on the west side of the County where volunteer and full time fire stations were more densely located.

Due to the fact that Osceola County began to experience rapid growth, urban sprawl began to encroach into the rural areas of the County. The population became denser in the existing urban cores, and as a result the annual calls for service increased. Therefore, a few calls for Fire and EMS service grew to become multiple calls for service per day in some areas. Initially the County tried to manage the increase in alarm volume by augmenting Volunteer fire stations with full-time personnel working 40 hours per week. Subsequently, the County decided to replace the 40 hour personnel with full time 24/7/365 Engine Companies in the some of the Volunteer fire stations.

In September of 2001, the Board of County Commissioners made the decision that the OSCFR become a full time professional, paid fire department. This decision greatly impacted OSCFR's budget and personnel. OSCFR transitioned into a professional service providing a community based service delivery model from 15 fire stations.

The current fire districts are almost identical to the fire districts established in 1989. Additionally, the OSCFR department currently operates from a 20 year old infrastructure that is community centered. The decision to place existing fire stations did not take into account the location based on their relationship to other fire stations, future County growth, development, alarm volume, or response times.

OSCFR would like to develop a plan which identifies the best location for fire stations based upon future growth. The key to establishing this plan is the establishment of a level of service. Without the adoption of a Level of Service Plan, the department is unable to properly evaluate its performance against an established expectation or develop a plan for smart growth.

As the demand for varied and complex emergency services grows, and greater emphasis is placed on prevention and public education, the need for more comprehensive regulations, standards and related enforcement efforts becomes apparent. The inclusion of a Fire Rescue Element in the County's Comprehensive Plan is one effort to address these needs. This Element documents the emergency and non-emergency functions of Osceola County Fire Rescue and examines efforts to match service demands with growth. It recognizes the need to maintain focus on essential services and to ensure these are managed in the most cost-efficient, effective way possible. Osceola County Fire Rescue also recognizes the service standards and requirements of various professional and regulatory agencies including the Insurance Services Office (ISO), and the National Fire Protection Association (NFPA). For regulatory purposes, only portions of these standards and requirements have been incorporated into the Land Development Regulations as appropriate to balance the effectiveness and cost of the requirements with the mandates for health, safety and welfare.

This document sets out the recommended standards, goals and objectives deemed to be necessary for the effective and efficient operation of the Osceola County Fire Rescue Department. It must be recognized, however, that in isolated cases, there may be deviations, or standards may be waived due to significant operational, financial, policy or other considerations.

## **B. CURRENT PROGRAMS AND CONDITIONS**

### **1. Services**

Osceola County Fire Rescue provides a variety of services to ensure the safety of citizens and visitors to Osceola County. These services include extinguishment, pre-hospital medical emergencies, water accidents, hazardous material incidents, response to natural and manmade disasters and other types of dangers.

In addition to responses to emergencies Osceola County Fire Rescue also conducts building safety inspections, reviews planned construction activities, provides public education and outreach, and administers other safety and preventative programs.

**Fire Rescue Emergency Response:**

- Advanced Life Support Response and Transport
- Structural Firefighting
- Vehicle Fires
- Brush Fires
- Rescue
- Technical Rescue (High Rise/High Angle, Trench/Cave-in, Confined Space)
- Response to Mass Casualty Incidents (MCI)

**Office of the Fire Marshal – Inspection and Prevention:**

- Plan reviews of new construction, interior alterations, fire protection systems, tents, trade shows, conventions, pyrotechnics, retail sales of fireworks, above and below ground storage tanks, site development plans, zoning changes, development regional, construction development plans, comprehensive plan amendments, conditional use plan impact, preliminary sub-division plans
- Code compliance with national, state and county codes, county ordinances and laws
- Life safety inspections on existing facilities
- New construction inspections, ensuring safe and timely occupancy of new structures
- Citizen Complaint Program
- Nuisance False Alarm Program
- Tent, burn, pyrotechnic, special event permitting
- Community Relations and Public Education Programs
- Safety Presentations, Visits, Displays, Events and Station Tours
- Smoke Detector Program, provided when needed
- Fire Extinguisher Use training and Evacuation Drills
- Diversion and Intervention Programs for juvenile fire setters
- Public Information program for the citizens and the media
- Growth Management Department
- ISO reviews

**2. Station and Equipment Distribution**

At the beginning of the FY13 budget, there were 15 stations located throughout unincorporated Osceola County. Equipment in service in those stations included:

- 13 Engines with Advanced Life Support (ALS)
- 2 Squads with Advanced Life Support (ALS)
- 11 Transport Rescues with Advanced Life Support (ALS)

- 3 Aerials with Advanced Life Support
- 5 Battalion Chiefs
- 11 Tankers
- 1 Air/Light Support Unit
- 15 Brush Tankers

In addition, Fire Rescue's reserve units include:

- 6 Reserve Engine
- 4 Reserve Rescue
- 4 Reserve Brush Tankers
- 1 Reserve Tanker
- 3 Reserve Battalion Chief

**Mutual Aid:**

Osceola County Fire Rescue has various arrangements for assistance with neighboring jurisdictions. These agreements are classified as Mutual Aid Agreements.

Mutual Aid – an understanding that assistance can be requested by a neighboring jurisdiction for a specific incident

Osceola County Fire Rescue has Mutual Aid Agreements with the municipalities of: Kissimmee, Saint Cloud, Orlando, Reedy Creek, Orange, Lake, Polk, Brevard, Okeechobee, and Indian River Counties.

**New Station Location Planning:**

The following criteria are considered optimal when planning and selecting fire station locations:

1. Location at or within approximately five road miles from an existing structure, except in rural and remote areas, or where a mutual aid agreement is not possible.
2. Location will help achieve the Osceola County identified response time for that area.
3. Demand in the proposed service area exceeds agency requirements for availability, reliability and concentration.
4. County response overlap, if any, will be minimal and maintain a distributed workload.
5. County and municipal station response overlaps will be minimal.
6. Potential for City annexation and growth will be considered to avoid future station relocation.

**3. Emergency Response**

According to the NFPA, the total Response Time consists of three basic components. The first part is the Call Handling Time. This is the time from when a citizen calls 911 and the dispatcher picks up the phone to answer the call through the point where the fire station is alerted to the incident. The second part is the Turnout Time. This time begins

when the crew in the fire station is alerted to the incident until they leave the station. The third part, which makes up the majority of the response time, is Travel Time. Travel Time is the time it takes to travel from the station to arrive on the scene of the incident. Response time does not include the time taken to detect an emergency and activate the 911 system. Since these times are outside the control of a fire rescue department, they are hard to impact and improve and do not reflect the agency's efficiency and effectiveness. There are several nationally recommended parameters for the delivery of emergency services. These recommendations take into account the need to rapidly reach a patient suffering from cardiac arrest to prevent brain damage and the need to reach the scene of a fire in time to rescue trapped victims and stop further property damage. The American Medical Association (AMA) recommends that Advanced Life Support should reach a patient in eight minutes or less. The National Fire Protection Association (NFPA) recommends that the first arriving fire suppression unit reach the scene of an emergency in six minutes or less.

Osceola County is divided by the Comprehensive Plan Future Land Use Element into two geographical divisions, the Urban Growth Boundary and the Rural Growth Boundary.

**Urban Growth Boundary:**

Osceola County establishes an Urban Growth Boundary (UGB) to provide a spatial framework within which urban scale development can occur and the location, capacity, and financing for the roads, schools, utilities, transit and other public facilities necessary to support development can be planned for and provided. The UGB is fundamental to the County's long-term growth strategy for achieving a compact urban area where a quality of life superior to that provided by a conventional suburban development pattern can be achieved. To that end, the County will use the UGB as the primary planning and management tool for identifying 20-year capital facility needs and the funding commitments required to support its future urban growth.

**Rural Area (Outside UGB):**

The Census Bureau has continued to define "rural" as all territory, persons, and housing units not defined as urban. In Osceola County this is the area which contains bona fide agriculture, wetlands, ranches, and groves.

**Distribution of Incidents Countywide**

Calendar Year 2012	Percent
Emergency Calls in Urban Growth Boundary	97%
Emergency Calls in Rural Growth Boundary	3%

**Distribution of Incident Types: Fire vs. Emergency Medical Calls**

Calendar Year 2012	Number of Incidents
Working Structure Fires Calls	357
Emergency Medical Calls	15,589
Other Emergency Fire Responses	3,753
Total Emergency Responses	19,699

**Current Level of Service**

Performance Measure	Performance Benchmark	2012
Call Handling Time	1:00	22%
First Unit Turn Out Time	1:00	33%
First Unit Travel Time	6:30	58%
Total First Unit Response Time	8:30	40%

**2040 Level of Service**

Performance Measure	Performance Benchmark	2040
Call Handling Time	1:00	90%
First Unit Turn Out Time	1:00	90%
First Unit Travel Time	6:30	70%
Total First Unit Response Time	8:30	70%

For Call Handling time, Turn Out Time, and Travel Time, OSCFRD has a four-part strategy for implementing the time savings:

1. Technology- software is under consideration which would more efficiently reduce the steps the 911 operator performs to effect the alert to the appropriate station.
2. An FTE (staffing full-time equivalency) study will be performed to determine the most efficient staffing for each shift providing this service. Some shifts at the 911 Communications Center may require an increase in personnel.
3. Station Locations- a study will be undertaken to determine the most efficient locations for existing and future stations (including equipment and personnel) to provide the most efficient and effective response for emergency calls. A Siting Plan will be developed to ensure the locations are reserved as development occurs, allowing the County to construct the stations and deploy equipment/personnel as warranted and within budget.
4. OSCFRD will monitor performance and provide recommendations toward increasing efficiencies at every step.

Water Supply is also an essential element in emergency response to fire incidents and OCFRD must depend on water utility operators to properly install, maintain and test their water distribution system. Water supply is also a function of public fire hydrants, private fire hydrants, dry (or drafting hydrants) and the agency's ability to draft water from an open source (e.g., lake, swimming pool, canal).

Currently the department has analysis tools and resources available to assist us in the planning process. These tools will allow the department to accurately depict our current



performance, predict impacts based on system changes, and determine future needs based on growth and population density.

First, Deccan International, Inc. provides the ADAM software application. This is a computer based planning tool which takes into consideration a system's existing deployment, road network, and alarm volume/workload. The applications then models what the expected level of performance will be as a result of fire station additions, fire station moves, or fire station eliminations.

Second, the department has access to Traffic Analysis Zones ("TAZ") data. TAZ allows us to consider future population densities and target hazards. As a result of the analysis, the department can accurately predict the impact that future growth will have on an area and the demand on the fire service delivery system as a whole.

OSCFR has successfully utilized these two applications over the past three years to; (1) describe the impact to the department's performance that various levels of budget reductions would have; (2) evaluate apparatus location and make apparatus moves to ensure that the department has the most efficient deployment of resources based around current fire station locations.

#### 4. Staffing

By January 1, 2013, the Fire Rescue Department had 340 authorized personnel positions in all divisions:

##### **Officer & Combat**

Fire Chief	1
Deputy Chief	3
Division Chief	1
Battalion Chief	15
Fire Lieutenant	66
Training Lieutenant	3
Fire Engineer	60
Firefighter	171
<i>Subtotal Officer &amp; Combat</i>	<i>320</i>

##### **Fire Marshal's Office**

Deputy Chief	1
Fire Inspector	5
Public Education Coordinator	1
Senior Plans Reviewer	1
<i>Subtotal Fire Marshal's Office</i>	<i>8</i>

**Administration**

Accounting	2
EMS Billing Technician	1
Planning Specialist	1
QA Review Officer	1
Secretarial	3
Support Services	4
<b><i>Subtotal Admin</i></b>	<b><i>12</i></b>

The majority of all agency personnel are assigned to the Fire Operations Division. Emergency service is managed through four battalions that are geographically divided across Osceola County. Minimum staffing for units are as follows:

- Engine – 3 personnel
- Truck/Ladder – 3 personnel
- Squad- 3 personnel
- Rescue – 2 personnel
- Operations Supervisor – 1 Battalion Chief

There are also brush trucks and tankers at stations, but there are no additional personnel required for this equipment.

**5. Training**

Training for Osceola County Fire Rescue encompasses several different yet distinct areas that have to be addressed. The first is in service training. In service training includes the deployment, use, and loading of fire hose. It includes drills that cover advancement of lines into structures, the deployment of ladders, the use of tools to force entry, the use of tools to ventilate, the practice of performing search and rescue in zero visibility, and it also includes the driving and operation of fire apparatus. Monthly each firefighter must complete 20 hours of in service training according to the Insurance Service Organization, ISO. In addition to achieve full credit in the ISO Schedule for Training each member must participate in 8 three hour drills per year, 4 of those drills must be multiple-company drills, and 2 must be night drills. Each year all officers must participate in 2 six hour training sessions, and all driver operators must participate in 4 three hour training sessions. In addition ISO requires that a department have, or have access to a Drill tower, burn building, combustible liquid pit, library and training manuals, AV equipment, a pump cutaway, and hydrant cutaway. Currently that part of the ISO schedule is being met by membership in the Central Florida Fire Academy. The importance of the ISO schedule is that failure to meet the training requirements outlined could result in a decrease in our overall ISO rating which will affect insurance rates.

The second is EMS training. Biennially the Florida Department of Health requires 32 and 24 hours of continuing education for the recertification of Paramedics and EMTs

respectively. In addition in an effort to improve service delivery, we as a department do multi company EMS drills which simulate real life scenarios that our EMS providers will face in the field. Also biennially all Paramedics are required to recertify their ACLS, and everyone is required to recertify their CPR.

The third area is specialized training. This training includes things that the departments is responsible for providing, but are of a low frequency. This includes Aerial Apparatus Operations, Truck Company Functions, Vehicle and Machinery Rescue, High Angle Rope Rescue, Trench Rescue, Confined Space Rescue, and Building Collapse Rescue. We have an Interlocal agreement with the State of Florida through UASI that requires us to provide a Type II Technical Rescue Team as part of State Emergency Response plan.

The final area is Officer Development, and career advancement. Currently we deliver in house the classes needed by our employees for Fire Officer I, Fire Officer II, Inspector I, Inspector II, and Safety Officer.

## 6. Office of the Fire Marshal

The Office of the Fire Marshal (OFM) Section consists of the Fire Inspections for both new and existing structures, Convention and Trade Show (Tourism), the Plans Review Section, Tasks include:

- Fire Inspection and Permitting of Buildings
- Fire Watches/Event Standbys
- Plans Review for Fire Codes
- New Construction Testing and Inspection
- Fire Protection System Testing and Inspection
- False Alarm Program
- Public Education Section
- Hydrant Maintenance
- Assistance to the State Fire Marshal with Fire Investigations (Cause and Origin)

**Plans Review Section:** This is the initial point of contact with the Fire Marshal's Office for the construction industry. New buildings and interior alterations must be permitted and inspected and related records maintained. The section seeks to ensure strict adherence to applicable fire codes at the construction stage. New construction plan reviews are conducted in a mandatory maximum turnaround time of 21 calendar days. Fire protection systems reviews are conducted in a turnaround time of 10 calendar days, and interior alteration reviews in a turnaround time of 7 calendar days. This section is also responsible for Fire Watches and Event Standbys.

**Fire Inspection Section:** This unit evaluates all fire protection and life safety systems that are installed in commercial and multifamily occupancies throughout Osceola County. A thorough inspection and function test is performed to ensure that the systems perform

in accordance with nationally recognized standards, as well as engineering designs. In addition to the inspection and function testing of their fire protection systems, these occupancies are evaluated to ensure that they conform to life safety and building codes. New construction inspections are conducted as requested through the IVRS call in system. These inspections are normally completed the next day (with-in 24 hours) after the initial request

This section is responsible for the state mandated re-licensing inspections and periodic fire inspections in existing buildings. Inspectors involved in the Code Enforcement process record violations and issue notices specifying a period, usually 30 days, for the violation to be corrected. When the re-inspection occurs, if the violation has not been fixed, but there is a reasonable explanation, additional time is given. If no effort has been made to gain compliance, the matter will be turned over to Osceola County Code Enforcement for resolution. County Code Enforcement can then prepare a case to take the property to Code Enforcement Board. This quasi-judicial Board has authority to levy a fine for each violation until compliance has been reached.

This section monitors Automatic Fire Alarm Ordinance and coordinating with field operations the repairs, flowing, and maintenance of private and public fire hydrants in unincorporated Osceola County. This section tracks and monitors false alarm calls annually.

This section is responsible for the code compliance of hundreds of special events, conventions, and trade show exhibits throughout the county. In addition, this section is responsible for working closely with the area tourism industry to assist them with their code and tourism related issues.

The Office of the Fire Marshal has on record a list of commercial inspected properties. This list continues to grow annually due to aggressive commercial development throughout the unincorporated area. The Bureau maintains a “lifetime” record of each property, including ownership, occupancy, location, use record, building construction data and inspection records. The Bureau conducts property inspections, records the results, schedules follow-ups and tracks cited deficiencies through to full correction. It also maintains inspection violation appeal records.

The process of classifying each property into an occupancy type and the prioritization of each occupancy type is also done. The purpose of this classification procedure is to group properties according to the potential risk for loss of life and dollar losses and to set appropriate inspection standards. Due to limited resources, the focus so far has been on Priority 1 properties. Priority classifications include:

**Priority 1 Properties:** These are occupancies and properties that are mandated to have specific inspections on an annual basis. The purpose of a Priority 1 designation is to identify properties where a fire could result in substantial loss of life and/or high dollar losses. These properties are targeted for inspection annually, semi-annually, on an as needed basis. Examples are:

- Plan Reviews and Inspections of New Construction, Interior Alterations, Fire Protection Systems
- Charter Schools
- Private Schools
- State of Florida Licensed Assisted Living Facilities
- Correctional Facilities
- Hospitals
- State of Florida Licensed Nursing Homes
- State of Florida Licensed Day Care Centers
- Residential Child Care Facilities
- Adult Family Care Homes
- Unlicensed (Exempt) Day Care Centers
- Residential Board and Care Facilities
- State of Florida Licensed Drug Treatment Centers
- State of Florida Licensed Crisis Centers
- State of Florida Licensed Facilities for the Developmentally Disabled
- Complaint Inspections
- Owner Requested Inspections
- Tent Permit Inspections
- Pyrotechnic Permit Inspections

**Priority II Properties:** Similar to Priority I properties, these properties also have a serious potential for loss of life or high dollar loss in the event of a fire. However, losses would not be of the same magnitude as in the case of Priority I properties. These properties are inspected by the Office of the Fire Marshal periodically. Examples are:

- Target Hazards as Identified by Fire Analysis
- Use Permits (Change of Occupancy)
- Apartment Buildings
- Hotels with more than 100 guest rooms
- Assembly occupancies with an occupant load greater than 1,000
- High-Rise Buildings (Greater than 75 ft high to the highest occupied level)
- Priority III Properties: These properties are inspected by the Office of the Fire Marshal periodically Examples are:
  - Assembly Occupancies with an occupant load greater than 300 but less than 1,000
  - Hotels with more than 50 guest rooms and less than 100 guest rooms
  - Hazardous occupancies
  - Flammable Liquid and LP Gas Bulk Plans and/or Storage Facilities

**Priority IV Properties:** Inspections of Priority IV occupancies are inspected by the Office of the Fire Marshal periodically Examples include:

- Hotels with less than 50 guest rooms
- Shopping Centers/Malls greater than 100,000 sq. ft. (Not tenant spaces)

- Mercantile Occupancies greater than 100,000 sq. ft.
- Business Occupancies greater than 100,000 sq. ft.
- Storage Occupancies greater than 100,000 sq. ft.
- Factory/Industrial Occupancies greater than 100,000 sq. ft.

**Priority V Properties:** Inspections of Priority V occupancies are inspected by the Office of the Fire Marshal periodically. Examples are:

- Shopping Centers/Malls less than 100,000 sq. ft. (Not tenant spaces)
- Mercantile Occupancies greater than 5,000 sq. ft. but less than 100,000 sq. ft.
- Business Occupancies greater than 5,000 sq. ft. but less than 100,000 sq. ft.
- Storage Occupancies greater than 5,000 sq. ft. but less than 100,000 sq. ft.
- Factory/Industrial Occupancies less than 100,000 sq. ft.

**Priority VI Properties:** Inspections of Priority VI occupancies are inspected by the Office of the Fire Marshal periodically. Examples are:

- Mercantile Occupancies less than 5,000 sq. ft.
- Business Occupancies less than 5,000 sq. ft.
- Storage Occupancies less than 5,000 sq. ft.
- Normally Unoccupied Buildings (i.e. Cellular Phone Sites, TV or Radio Transmitter Buildings, Telephone Relay Buildings, etc)
- Toll Booths, Guard Shacks, Construction Trailers
- Vacant Tenant Spaces in Multi-Tenant Buildings
- Pool Pump Houses not using gaseous chlorine
- Buildings used exclusively for restrooms and/or showers. (Typically found in campgrounds or parks.)

Complaint investigations also are the responsibility of the OFM Bureau. The Bureau investigates complaints of code violations received from the general public within two business days or sooner.

False Fire Alarm Tracking enables the Bureau to record false alarms and notify those occupancy owners that have exceeded two alarms during a twelve month period. They are required to have their systems evaluated, tested and inspected by their fire alarm servicing agency. The objective is to reduce false alarms each year.

The Office of the Fire Marshal receives feedback from industry sources through the regular meetings of the Central Florida Construction Industry Council (CFCIC) with which it has developed a sound relationship. The Council and OFM work together with regard to construction services rendered and appropriate fees for those services. Port facilities serving Osceola County, however, are a short distance away. The shipping and cruise ports of Cape Canaveral, Tampa, Jacksonville, and Miami offer a variety of choices for international shipping capabilities.

## 7. Budget

Osceola County Fire Rescue obtains its revenue from the following sources:

- Fire Rescue Municipal Services Benefit Unit (MSBU)
- Fire Rescue Municipal Services Taxing Unit (MSTU)
- Building Inspection, Plans Review, Permit Fees and other fees
- Emergency Medical Services (EMS) Transport and Related billings
- False Alarm
- Fire Impact Fee (restricted)
- Federal, State and Local Grants (restricted)

The greatest expense that Osceola County Fire Rescue has in its Operating Expenditures is in Personal Services. Annually the Personal Services budget is 76% of the expenditure, or approximately 28.3 million dollars. Operating costs account for 8.6 million dollars or 23%. Capital Outlay account for \$262,969 or .7% of the Operating Expenditure Budget.

### i. Costs

Currently we are estimating that 8 of the existing 15 fire stations are in need of replacement and possible relocation. These fire stations are either temporary fire stations or fire stations that have outlived their life expectancy and functionality.

Estimated Replacement or Relocation Cost per Fire Station .....	\$2,000,000
Total Estimated Replacement or Relocation Cost (8).....	\$16,000,000

Deployment of new service will be based on reaching the adopted Level of Service and proactively managing future growth. Deployment of new service will be accomplished in phases. Each phase will have established trigger points based on populations, call volume, and impact on system wide service delivery as determined by the adopted Level of Service.

Each new location of service delivery will begin with the construction of a fire station which will initially house an ALS Engine and crew. When service demand dictates it, that fire station will then have an ALS Rescue Truck and crew added. Based on the span of control and supervision the service delivery build out will establish for every 6 stations, one Battalion Chief position will be added to the most appropriate station. For the purpose of gathering the effective firefighting force on a scene, and to meet the special target hazard needs, for every 7 stations an ALS Aerial will be added to the most appropriate station.

**Phase I ALS Engine**

**Capital Costs**

Item	Cost
New Station	\$2,000,000
ALS Engine	\$500,000
Total Capital	\$2,500,000

**Annual Operating Costs**

Item	Cost
Personnel	\$947,000
Operating	\$500,000
Total Operating	\$1,447,000

**Phase II ALS Rescue Truck**

**Capital Costs**

Item	Cost
ALS Rescue	\$300,000
Total Capital	\$300,000

**Annual Operating Costs**

Item	Cost
Personnel	\$425,000
Operating	\$30,000
Total Operating	\$455,000

**Phase III Battalion Chief**

**Capital Costs**

Item	Cost
BC Vehicle	\$65,000
Total Capital	\$65,000

**Annual Operating Costs**

Item	Cost
Personnel	\$420,000
Operating	\$20,000
Total Operating	\$440,000

**Phase IV ALS Aerial**

**Capital Costs**

Item	Cost
Aerial	\$1,200,000
Total Capital	\$1,200,000

**Annual Operating Costs**

Item	Cost
Personnel	\$946,000
Operating	\$30,000
Total Operating	\$976,000

Based on the 2040 road network the department estimates that it will be responsible for providing fire protection and EMS services to an additional 51 square miles within the County. Of those additional 51 square miles, 48 square miles will fall within the Urban Growth Boundary. To meet what the department is recommending to the Board of County Commissioners as the Level of Service, it is estimated that the year 2040 OSCFR will have a total of 33 fire stations. The Urban Growth Boundary will have an estimated 30 fire stations total, and the Rural Area will have a total of 3 fire stations.

This calculation includes the replacement and relocation of 8 fire stations and the establishment 18 new fire stations (33 total stations – 8 replacement stations – 7 existing stations) within the County. One of the new fire stations is planned to be constructed within the Rural Area. This represents a comprehensive increase of 26 (33-7 existing stations) fire stations over 27 years.



**ii. Balancing Costs with Revenues**

**Balance**

Level of Service is established in such a manner that the proposed expenditures shall occur as matching revenues are recognized, with a target year of 2040 to achieve maximum efficiency.

**Estimated Revenue**

The following are a representation of how revenue can be generated for the construction, relocation and/or renovation of fire stations, as well as annual operating and equipment replacement, through the annual EMS Millage Rate (MSTU), annual Fire Special Assessment Fee (MSBU) and Fire Impact Fees. The analysis provided below includes projections and other predictive statements that represent assumptions and expectations in light of currently available information and current fee levels.

**Existing Residential/Commercial Revenue** (see Exhibit A)

The targeted Level of Service is a 8 minute and 30 second response time within the Urban Growth Boundary. The Level of Service can be represented as a five mile radius from a Fire Station. As an illustration to determine the approximate revenue generated annually for operational costs and equipment, an analysis was conducted first using existing residential dwelling units and commercial development within a five mile radius of Fire Station #43 (located at 1665 Broad Street). Within the radius, there are approximately 16,806 existing residential dwelling units (with a total taxable value of \$1,665,723,863) and 1,152,829 square feet of existing commercial development (with a total taxable value \$80,464,416) . Residential and commercial properties are assessed an EMS Millage Rate of 1.0682, generating approximately \$1,865,278 in annual revenue. A separate Non Ad Valorem Fire Assessment Fee is annually assessed. In 2013 the Fire Assessment Fee was \$158.64 for residential units and \$0.2692 per square foot of commercial property, together generating approximately \$2,976,444. In total, the existing development in this area generates approximately \$4,841,723 in annual revenue, fully funding the required operations.

**Minimum Residential/Commercial Projected Revenue** (see Exhibit B)

The intent of the service level being evaluated for a 2025 and 2040 target year is to allow for efficiencies to occur. A second analysis was performed to assess this with the selected service level, using the same assumptions and area (Station #43 service area) as for the existing scenario above. Based on the adopted Future Land Use Map, at buildout, the minimum projected residential dwelling units for this area, along with the projected commercial property square footage, would generate a total revenue of approximately \$20,381,875 in annual revenue, supporting the land use and service strategies adopted by the County.

**Annual Revenue Generated from 2040 Projected Residential and Commercial Development within the UGB** (see Exhibit C)

For an overall illustration of how much revenue could be generated within the Urban Growth Boundary in 2040, the County's projected population for 2040 was used to determine projected residential units (with an average household size of 2.82 persons, based on Census Bureau data available), and Future Land Uses to determine projected Commercial development for 2040. At buildout, the projected residential and non-residential development is projected to generate \$70,367,914 for annual fire expenditures (operational and equipment costs), supporting the required personnel and operations to meet the proposed service level at buildout.

**Capital Revenue Generated from Impact Fees for Projected UGB Residential and Commercial Future Land Uses 2040** (see Exhibit D)

Fire Impact Fees are intended for capital revenue. Within the Urban Growth Boundary, the County's population projection and nonresidential development total \$51,966,298 from impact fees by 2040. This analysis is a quick conservative estimate and will need to be analyzed more precisely.

Anticipating that by 2040, eight (8) of the existing fire stations will be in need of replacement and possible relocation, and 18 new additional fire stations to be constructed within the Urban Growth Boundary, requires a capital demand of \$52,000,000.

**Estimated Operating Costs**

Annual operating revenue for fire stations is generated through the annual EMS Millage Rate (MSTU) and annual Fire Special Assessment Fee (MSBU).

The annual cost required for one (1) station is \$1,447,000. As the alarm volume increases an additional cost of approximately \$455,000 will be added annually based upon the additional personnel required to staff an ALS Rescue Truck. For every grouping of seven (7) stations an additional cost of \$976,000 should be added annually to accommodate the necessity for an ALS Aerial Truck. And, for every grouping of six (6) stations an additional cost of \$440,000 should be added annually to accommodate the necessity for supervisory staff (Battalion Chief).

The anticipated annual operating budget would be approximately \$68,921,000 for the 33 stations annually. The annual projected revenue, as illustrated in Exhibit C, is \$70,367,914, which covers the anticipated annual operating budget for all 33 stations. This number however does not take into consideration the increase in property values nor increase in labor cost and the assumptions used (e.g., minimum densities and intensities of uses allowed rather than maximum, low MSBU rates utilized for nonresidential uses, valuations for existing development and new development maintained at current values) are considered conservative.

### **Estimated Equipment Costs**

Besides personnel cost, each of the new eighteen (18) stations will incur a \$500,000 cost for an ALS Engine. As alarm volume increases each station will incur an additional cost of approximately \$300,000 to include an ALS Rescue vehicle. The cost of equipment for all new eighteen (18) additional stations would total \$14,400,000.

For every grouping of approximately seven (7) stations out of the total 33 an additional cost of \$1,200,000 should be added to include an ALS Aerial Vehicle. And for every grouping of six (6) stations an additional cost of \$65,000 should be added to include a Battalion Chief Vehicle. The additional cost of equipment for these specific stations would total \$20,409,500. This number does not include basic equipment (e.g., tools, hoses, breathing equipment, etc.) costs.

Every 10 years, a station requires new equipment. For all 33 stations, every 10 years would require \$32,409,000 in equipment costs. **This would average an annual cost of \$3,240,950.**

### **Conclusion**

As illustrated above, the scenario for an individual service area and projected needs for the County at buildout are met within current fee structures. Based on the estimates of revenues and expenditures for the fire and emergency operations, as long as decisions for locating new stations are consistent with the service levels noted herein and new stations are brought on board as the revenues are realized to support operating and equipment costs, current revenue sources will allow for a sustainable operating system. Impact fees fall just short, however, and will need to be reevaluated to determine the appropriate level for capital improvements (buildings). The analyses performed with this document are not intended to track cash flows nor provide the basis for adjusted rates. The various funding mechanisms should be reevaluated at the detail required to establish rates every five to seven years in order to track assumptions and progress towards the buildout service level. Furthermore, the service levels will be assessed every three years with the Capital Improvements Element/Program updates to track progress based on actual station location decisions and implementation.



# Exhibit A: Annual Revenue Generated from Existing Development

## Residential Property (2013)

Total Dwelling Units: 16,806  
 Med. Taxable Value: \$66,700  
 Total Taxable Value: \$1,665,723,863  
 EMS Millage Rate: 1.0682  
 Fire Assessment Fee: \$158.64

## EMS Revenue (excluding City)

$(\$1,665,723,863 / 1,000) \times 1.0682$   
 = \$1,779,326

## Fire Assessment Revenue

$(16,806 \times \$158.64)$   
 = \$2,666,103

## Annual Fire/EMS Revenue

$\$2,666,103 + \$1,779,326$   
 = \$4,445,429

## Commercial Property (2013)

Total Properties: 97  
 Total Square Feet: 1,152,829  
 Total Taxable Value: \$80,464,416  
 Avg. Cost Per Sq. Ft.: \$70  
 EMS Millage Rate: 1.0682  
 Fire Assessment Fee: \$0.2692

## EMS Revenue (excluding City)

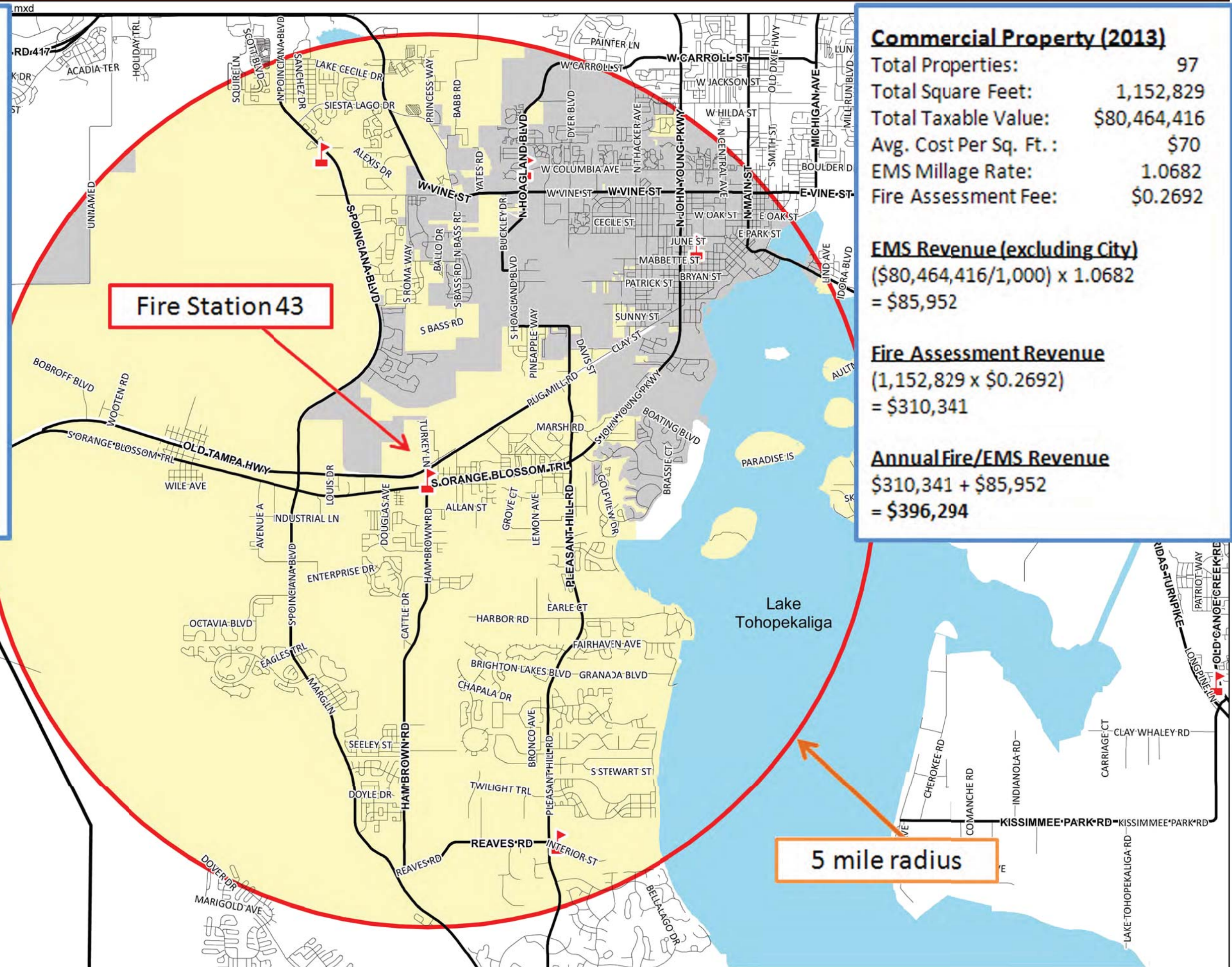
$(\$80,464,416 / 1,000) \times 1.0682$   
 = \$85,952

## Fire Assessment Revenue

$(1,152,829 \times \$0.2692)$   
 = \$310,341

## Annual Fire/EMS Revenue

$\$310,341 + \$85,952$   
 = \$396,294



**Legend**

- Fire Stations
- CITY LIMITS
- SUBJECT PARCELS

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 COMMUNITY DEVELOPMENT  
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 15 NOVEMBER 2013

0 0.5 1 1.5 2 Miles

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# Exhibit B: Annual Revenue Generated from Projected 2025 Future Land Uses

## Residential Property (2025)

Minimum Dwelling Units: 83,076<sup>1</sup>  
 Med. Taxable Value: \$66,700<sup>2</sup>  
 EMS Millage Rate: 1.0682  
 Fire Assessment Fee: 158.64

### EMS Revenue

$(83,076 \times \$66,700) \times .0010682$   
 = \$5,919,076

### Fire Assessment Revenue

$(83,076 \times \$158.64)$   
 = \$13,179,177

### Annual Fire/EMS Revenue

$\$13,179,177 + \$5,919,076$   
 = \$19,098,253

<sup>1</sup>FLU: LDR, HDR, MDR, TC and MXD  
<sup>2</sup>Held constant from 2013

## Commercial Property (2025)

Total Sq. ft. : 10,662,121  
 Min. (FAR 0.35) Sq. ft. : 3,731,742  
 Avg. Cost Per Sq. Ft. : \$70<sup>1</sup>  
 Total Taxable Value: \$261,221,940  
 EMS Millage Rate: 1.0682  
 Fire Assessment Fee: \$0.2692

### EMS Revenue (excluding City)

$(\$261,221,940/1,000) \times 1.0682$   
 = \$279,037

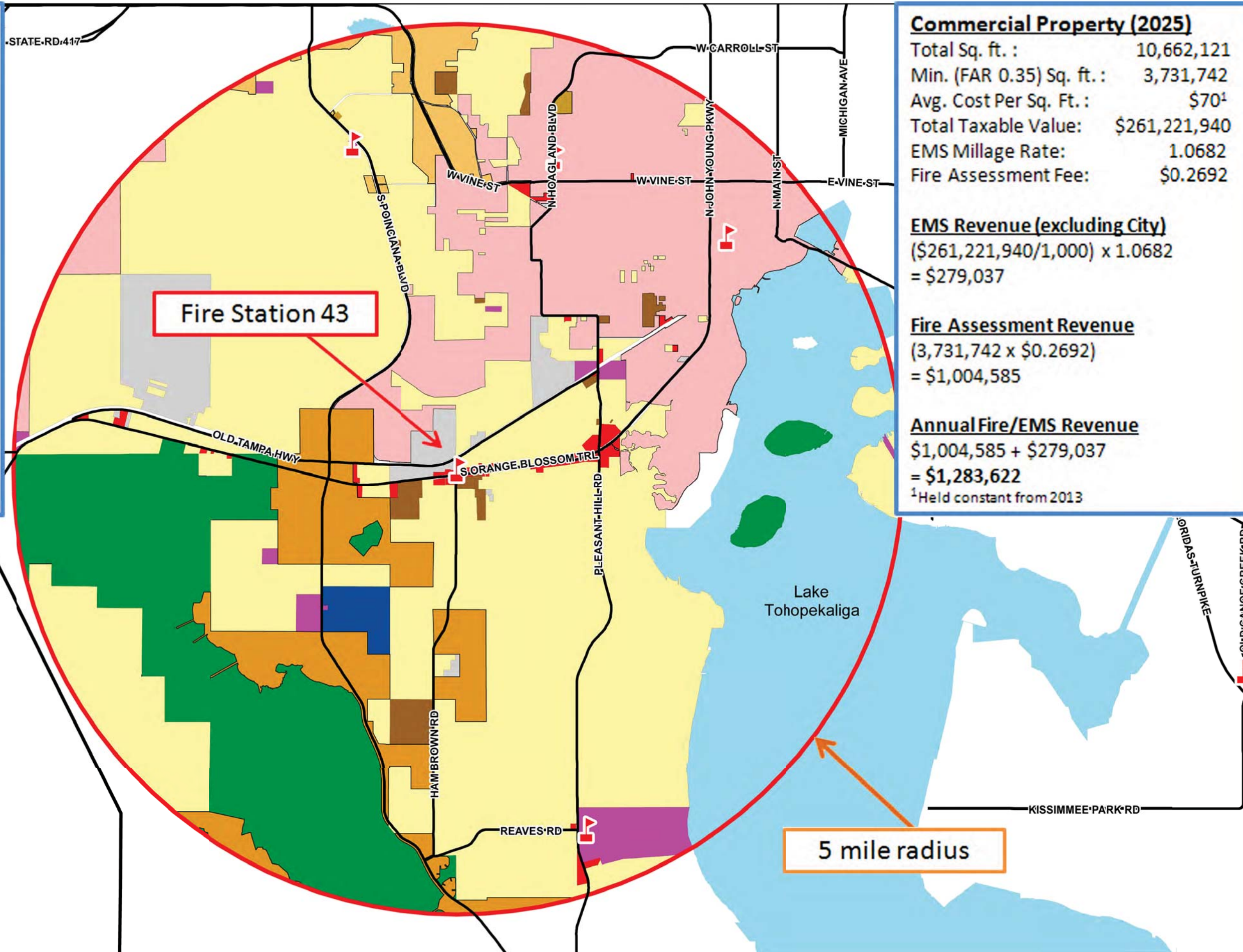
### Fire Assessment Revenue

$(3,731,742 \times \$0.2692)$   
 = \$1,004,585

### Annual Fire/EMS Revenue

$\$1,004,585 + \$279,037$   
 = \$1,283,622

<sup>1</sup>Held constant from 2013



Fire Station 43

5 mile radius

**Legend**

- Fire Stations
- Commercial
- Conservation
- High Density Residential
- Industrial
- Institutional
- Low Density Residential
- Medium Density Residential
- Mixed Use
- Poinciana
- Tourist Commercial
- Other Jurisdictions

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# Exhibit C: Annual Revenue Generated from Projected UGB Residential and Commercial Future Land Uses

**Residential Property (2025)**  
 Population (Medium): 347,278<sup>1</sup>  
 Dwelling Units: 123,148<sup>2</sup>  
 Median Home Value: \$145,200<sup>3</sup>  
 EMS Millage Rate: 1.0682  
 Fire Assessment Fee: \$158.64

**EMS Revenue**  
 (123,148 x \$145,200) x .0010682  
 = \$19,100,579

**Fire Assessment Revenue**  
 (123,148 x \$158.64)  
 = \$19,536,199

**Annual Fire/EMS Revenue**  
 \$19,536,199 + \$19,100,579  
 = \$38,636,778

<sup>1</sup>BEBR 2040 Medium Population Projection less the projected populations for the City of St. Cloud and Kissimmee  
<sup>2</sup>(Projected pop./2.82 persons per dwelling unit ) from US Census 2011  
<sup>3</sup>US Census 2011; includes \$25,000 Homestead Exemption

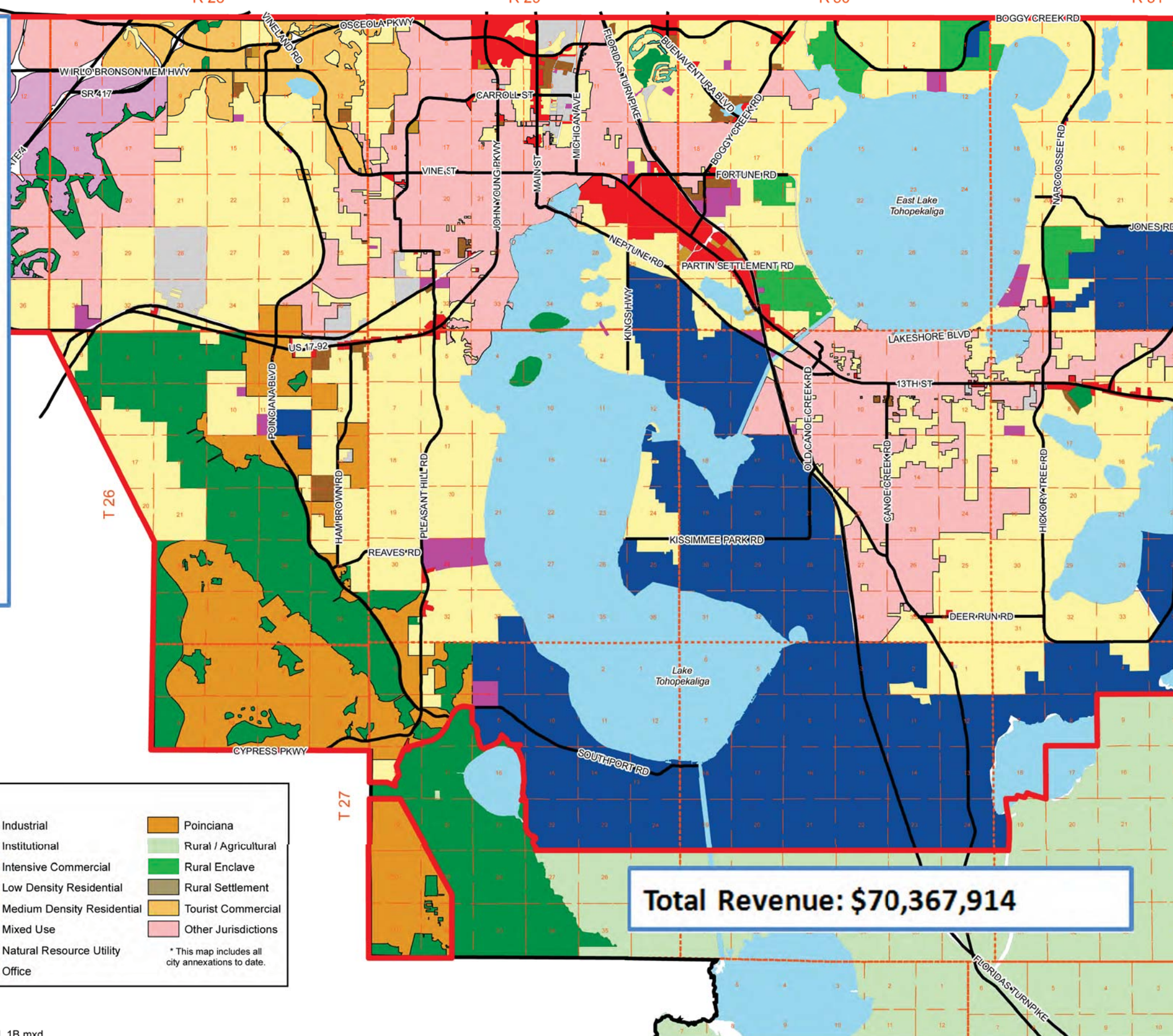
**Commercial Property (2025)**  
 Total Sq. ft. : 187,764,877  
 Min. (FAR 0.35) Sq. Ft. : 65,717,706<sup>1</sup>  
 Avg. Cost Per Sq. Ft. : \$70<sup>2</sup>  
 Total Taxable Value: \$13,143,541,390  
 EMS Millage Rate: 1.0682  
 Fire Assessment Fee: \$0.2692/sf

**EMS Revenue (excluding City)**  
 (\$13,143,541,390/1,000) x 1.0682  
 = \$14,039,930

**Fire Assessment Revenue**  
 (65,717,706 x \$0.2692)  
 = \$17,691,206

**Annual Fire/EMS Revenue**  
 \$17,691,206 + \$14,039,930  
 = \$31,731,136

<sup>1</sup>Minimum FAR from 2025 Comprehensive plan  
<sup>2</sup>Average cost held constant from Exhibit A



**Total Revenue: \$70,367,914**

**Legend**

Urban Growth Boundary	Industrial	Poinciana
Celebration	Institutional	Rural / Agricultural
Commercial	Intensive Commercial	Rural Enclave
Conservation	Low Density Residential	Rural Settlement
Dual Use/HDR and Commercial	Medium Density Residential	Tourist Commercial
Dual Use/Institutional and Commercial	Mixed Use	Other Jurisdictions
Harmony	Natural Resource Utility	
High Density Residential	Office	

\* This map includes all city annexations to date.

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