

EMS Transport Feasibility Study for the Fire Rescue Department

CITY OF WINTER GARDEN, FLORIDA

FINAL REPORT



201 San Antonio Circle, Suite 148
Mountain View, California 94040

March 2015

TABLE OF CONTENTS

	Page
1. INTRODUCTION AND EXECUTIVE SUMMARY	1
2. EXISTING OPERATIONS	5
3. COMPARATIVE ASSESSMENT	17
4. ANALYSIS OF THE FEASIBILITY OF PROVIDING TRANSPORT SERVICES	21

1. INTRODUCTION AND EXECUTIVE SUMMARY

The Matrix Consulting Group was retained by the City of Winter Garden to conduct a study of the feasibility of providing ambulance transport service to the community through internal, Fire Department, resources. The first chapter of this report provides an introduction to this Emergency Medical Services (EMS) Transport Feasibility Study. The focus of the study was on the following areas of interest for the City and the Winter Garden Fire and Rescue Department (WGFRD) and the City:

- To evaluate the existing conditions related to providing EMS services in the city.
- To evaluate the staffing model and approach for assuming transport services from the current private provider.
- Evaluate predicted system performance based on performance indicators such as turnout times, response times, etc.
- To evaluate the provision of equipment and supplies needed to assume EMS transport responsibility.
- To evaluate local policies and practices to ensure the WGFRD is capable of being an EMS transport agency.
- To compare the current practices of surrounding agencies as it relates to EMS transport to include billing, collection rates and ambulance deployment.
- To evaluate potential cost savings and overall cost effectiveness of providing EMS transport services.

The next section provides a summary of the project team's methodology for this study.

1. INTRODUCTION

In order to conduct analyses and to achieve the objectives identified by the Fire Rescue Department and the City, the project team performed the following actions during the course of the study:

- Conducted extensive interviews both within the Fire Department and with a wide range of stakeholders. Interviews were conducted with the following:
 - City Manager
 - Fire Chief
 - Finance Director
 - Battalion Chiefs
 - Other members of the Fire Department
 - Current Assistant Medical Director
 - Line staff, including Paramedics, EMTs, and company officers
 - Representatives Rural Metro Ambulance Company
- The project team collected data from the following sources to enable us to conduct our analyses:
 - Management plans, strategic plans, memos and other sources of internal information were collected and reviewed by the project team.
 - Computer Aided Dispatch and Records Management System (CAD/RMS) data were extracted to enable the project team to evaluate the distribution of calls for service, the times associated with calls, etc.
- The project team also worked closely with a steering committee comprising the City Manager, Fire Chief, and Finance Director. This group reviewed interim documents and provided the project team with feedback and guidance throughout the project

The project team also worked with the Fire Rescue Department to develop an understanding of the community that Winter Garden currently serves – including touring the jurisdiction and observing current target hazards.

2. EXECUTIVE SUMMARY

This section of the introduction provides an Executive Summary of our findings and recommendations. These relate to the delivery of pre-hospital emergency medical care and whether the Winter Garden Fire Rescue Department should assume responsibility for patient transport services. Key findings included:

- Staff interviewed were very supportive of the idea of assuming EMS transport responsibility and believe it is a nature progression for the WGFRD.
- Orange County has an excellent system of EMS Medical Control and well documented and detailed emergency medical directives. The EMS Director and his team take an active role in the delivery of continuing education, paramedic training, and quality assurance and control. There are no issues from a Medical Control perspective related to the WGFRD assuming transport responsibilities.
- The WGFRD is implementing an electronic patient care reporting system (EPCR) to automate the documentation of patient care, improved the efficiency of the EMS billing, and has begun to develop performance metric to assess EMS delivery and performance.

The project team has made recommendations related to the assumption of EMS transport responsibility. These are summarized in the table below:

Page	Findings	Primary Recommendations	Fiscal Impact
41	The current organizational structure does not provide appropriate oversight of EMS if the department were to assume transport responsibility	Fill the current authorized Deputy Chief position to ensure appropriate managerial oversight of EMS services.	\$0

Page	Findings	Primary Recommendations	Fiscal Impact
33	<p>Winter Garden is experiencing growth in the southwest portion of the city. Currently, there is minimal call volume associated with development in this area.</p> <p>The location of Station 23 is not optimal for providing coverage to the areas experiencing the highest demand for EMS services.</p>	Develop a facility plan for the Fire Rescue Department which includes relocating Station 23 and Constructing a fourth station in the southwest portion of the city – regardless of the decision to assume EMS transport responsibility.	\$1.9 – \$2.1
45	The staffing of a second ambulance would be needed to ensure the WGFRD is able to respond to EMS calls effectively.	The department should staff an additional ambulance on a 24-hour basis to ensure adequate coverage for Emergency Medical Responses if WGFRD assumes EMS transport responsibility. This will require hiring six (6) additional Firefighter Paramedics.	\$395,418
46	Assuming transport responsibility will result in revenue for the City above the costs associated with providing the extra service.	The City should consider assuming EMS transport responsibility to increase revenue generation for the City.	An average of \$306,122 – \$730,270 in net revenue per year over five years, depending on the collection rate experienced.
49	The existing automatic aid agreement in place between Winter Garden and Orange County allows the Fire Chiefs to develop and revise operational plans to provide immediate automatic aid between the agencies.	If Winter Garden Assumes EMS transport responsibilities the Chief should immediately work with Orange County to develop operational plans to have an immediate EMS available in the event all Winter Garden ambulances are occupied on emergency calls	None

The next chapter provides a descriptive profile of the WGFRD illustrating the existing operations of the Fire Rescue Department.

2. EXISTING OPERATIONS

This chapter of the report provides a profile of the current organization and operation of the Winter Garden Fire Rescue Department (WGFRD). This profile serves as the factual context for the EMS Transport Feasibility study. The various data were developed through interviews with WGFRD management and personnel, tours of the Fire Rescue Department's response area, review of available documents and records, and access to computerized records and data sets. This profile provides information that the project team used to analyze workloads, organization, management, and service levels provided by the WGFRD. The organization of this profile is as follows:

- Organization and Staffing
- Department Budget
- Emergency Operations Daily Staffing
- Personnel Costs and Overtime Utilization
- Fire Department Roles and Responsibilities
- Fire Department Workloads and Response Times

The first section provides the general overview of the Winter Garden Fire Rescue Department, including its organization and authorized staffing.

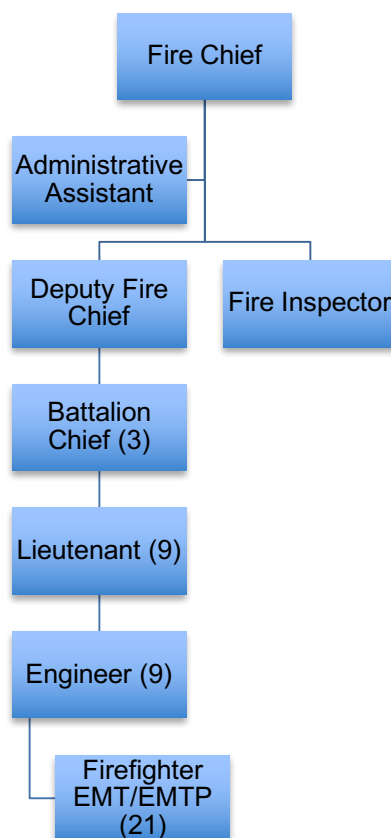
1. ORGANIZATION OF THE WINTER GARDEN FIRE RESCUE DEPARTMENT

The Winter Garden Fire Rescue Department provides response to fires, emergency medical emergencies, hazardous materials incidents, natural and man-made disasters, mutual aid assistance to neighboring departments and related emergencies, in an effort to reduce life and property loss. In addition, the Fire

Department inspects businesses and properties, assists with code enforcement (weed abatement affecting fire control equipment or vegetation constituting a fire hazard), and conducts public education programs. These functions are performed with an authorized staffing of 46 full-time personnel. There are three functional areas in the Fire Department: Emergency Operations, Fire Prevention and Administration.

The organization chart below shows the current structure of the Winter Garden Fire Rescue Department when all 46 authorized full-time positions are filled:

Organizational Chart
Winter Garden Fire Rescue Department



The following table shows the average number of personnel staffing each of the three shifts for calendar year 2013:

**Winter Garden Fire Rescue Department
Average Staffing by Shift CY2013**

Shift	Total Annual Staff	Average Daily Staff
A	1,683	13.8
B	1,634	13.4
C	1,657	13.6
Grand Total	5139	13.6

The following points highlight the information in the table:

- The current number of authorized full-time positions for daily staffing of apparatus, including the Battalion Commander is 14.
- The overall average daily staffing on shift is 13.6.
- A shift has the highest average staffing at 13.8 personnel per day, while B shift has the lowest at 13.4 personnel per day.

The next section provides information on the WGFRD's current budgeted and projected expenditures.

2. DEPARTMENT BUDGET

The Winter Garden Fire Rescue Department operations are primarily funded through the City General Fund. The table beginning on the following page illustrates the WGFRD budget for FY 2011 - FY 2014:

CITY OF WINTER GARDEN, FLORIDA
Final Report: Emergency Medical Services Transport Feasibility Study

Winter Garden Fire Rescue Department 4-Year Combined Budget Summary					
FISCAL YEAR	2011	2012	2013	2014	Change 11-14
REVENUES					
CHARGES FOR SERVICES	\$15,521.00	\$14,406.00	\$45,138.00	\$37,702.00	142.91%
MISCELLANEOUS REVENUE	\$1,350.00	\$1,596.00	\$1,431.00	\$1,350.00	0.00%
TOTAL REVENUE	\$16,871.00	\$16,002.00	\$46,569.00	\$39,052.00	131.47%
EXPENDITURES					
PERSONNEL					
Salaries	\$2,163,402.00	\$2,179,185.00	\$2,250,396.00	\$2,354,798.00	8.85%
Overtime Salaries	\$225,000.00	\$187,300.00	\$187,300.00	\$182,300.00	-18.98%
Special Pay	\$114,739.00	\$144,059.00	\$150,800.00	\$180,260.00	57.10%
FICA Taxes	\$174,429.00	\$176,391.00	\$173,107.00	\$207,877.00	19.18%
Retirement	\$515,674.00	\$275,141.00	\$314,250.00	\$377,984.00	-26.70%
Life & Health Insurance	\$347,324.00	\$379,978.00	\$396,186.00	\$391,458.00	12.71%
Workers Comp	\$83,630.00	\$46,435.00	\$60,027.00	\$71,808.00	-14.14%
Unemployment Comp	\$2,434.00	\$2,434.00	\$2,190.00	\$2,190.00	-10.02%
Other Postemployment Benefits	\$15,500.00	\$15,250.00	\$15,000.00	\$12,500.00	-19.35%
OPERATING					
Professional Services - Misc.	\$1,400.00	\$1,225.00	\$-	\$-	-100.00%
Professional Services - Legal	\$2,650.00	\$1,000.00	\$1,000.00	\$5,000.00	400.00%
Professional Services - Medical	\$14,160.00	\$11,880.00	\$14,880.00	\$14,880.00	4.86%
Contractual Services - Misc.	\$162,710.00	\$163,942.00	\$181,901.00	\$185,090.00	13.75%
Travel Expense	\$1,400.00	\$1,400.00	\$1,400.00	\$3,025.00	116.07%
Communications - Cable	\$2,160.00	\$1,050.00	\$1,380.00	\$1,485.00	-31.25%
Communications - Telephone	\$18,303.00	\$14,650.00	\$14,000.00	\$12,900.00	-29.52%
Communications - Radio	\$660.00	\$220.00	\$750.00	\$750.00	13.64%
Communications - Internet	\$22,085.00	\$26,921.00	\$22,000.00	\$27,950.00	41.78%
Communications - Postage	\$750.00	\$750.00	\$1,000.00	\$1,000.00	33.33%
Utility Services	\$57,513.00	\$53,800.00	\$50,550.00	\$57,980.00	0.22%
Rentals & Leases	\$6,390.00	\$7,350.00	\$7,500.00	\$8,900.00	36.92%
General Insurance	\$48,071.00	\$45,773.00	\$44,087.00	\$44,087.00	-8.29%
Repairs/Maintenance - Misc.	\$450.00	\$450.00	\$450.00	\$450.00	0.00%
Repairs/Maintenance - Equipment	\$17,542.00	\$38,478.00	\$29,693.00	\$27,940.00	59.27%
Repairs/Maintenance - Vehicles	\$33,259.00	\$23,800.00	\$13,000.00	\$55,000.00	105.99%
Repairs/Maintenance - Computer Software	\$100.00	\$1,000.00	\$1,000.00	\$1,000.00	0.00%
Repairs/Maintenance - Computer Hardware	\$1,500.00	\$1,500.00	\$1,500.00	\$1,500.00	0.00%

Winter Garden Fire Rescue Department 4-Year Combined Budget Summary					
FISCAL YEAR	2011	2012	2013	2014	Change 11-14
Repairs/Maintenance - Building	\$11,131.00	\$7,740.00	\$7,740.00	\$17,000.00	52.73%
Printing & Binding	\$1,000.00	\$1,000.00	\$1,875.00	\$3,375.00	237.50%
Advertising	\$200.00	\$200.00	\$200.00	\$200.00	0.00%
Promotional Items	\$4,000.00	\$4,000.00	\$4,500.00	\$5,000.00	25.00%
Other Charges - Misc.	\$-	\$-	\$-	\$-	0.00%
Other Charges - Licenses/Taxes	\$4,100.00	\$6,050.00	\$3,205.00	\$5,300.00	29.27%
Office Supplies	\$5,575.00	\$5,125.00	\$6,095.00	\$6,050.00	9.50%
Operating Supplies - Misc.	\$100,598.00	\$108,191.00	\$145,167.00	\$97,425.00	-6.86%
Operating Supplies - Gas & Oil	\$46,599.00	\$49,400.00	\$49,400.00	\$57,000.00	46.91%
Operating Supplies - Uniforms	\$33,025.00	\$39,800.00	\$54,960.00	\$57,655.00	74.58%
Dues & Subscriptions	\$9,610.00	\$8,560.00	\$4,945.00	\$9,232.00	-3.93%
Seminars & Courses	\$2,575.00	\$4,945.00	\$32,245.00	\$5,020.00	94.95%
Other Educational	\$29,180.00	\$28,245.00	\$4,700.00	\$49,000.00	67.92%
OTHER					
Buildings		\$16,000.00	\$38,500.00	\$22,143.00	
Capital Equipment	\$8,270.00	\$10,451.00	\$525,463.00	\$472,683.00	5615.63%
TOTAL EXPENDITURES	\$4,289,098.00	\$4,091,069.00	\$4,818,502.00	\$5,037,195.00	17.44%

As shown above, the FY 2014 amended budget totals approximately \$5.04 million when capital expenditures are included. This is approximately 4.5% higher than the amended expenditures budget for FY 2013 and a 17.4% increase over FY 2011 expenditures.

3. OPERATIONS DAILY STAFFING

The Winter Garden Fire Rescue Department currently operates from three fire stations located within the city limits. The fire administration offices are located in a separate facility.

The following table shows the locations of the Winter Garden facilities. There is also an Orange County Fire Station and Rural Metro EMS station located in Winter Garden:

Agency	Facility	Street Address	City	Equipment/Apparatus
Winter Garden	Fire Rescue Station 22	13521 Foxcrest Blvd.	Winter Garden	Tower 22, Brush 22, Battalion Chief (Nighttime)
Winter Garden	Fire Rescue Station 23	1029 Fullers Cross Road	Winter Garden	Engine 23
Winter Garden	Fire Rescue Station 24	131 E. Palmetto Street	Winter Garden	Engine 24, Medic 24
Winter Garden	Administration	1 East Cypress Street	Winter Garden	Chief, Fire Prevention, Battalion Chief (Daytime)

The current daily staffing of fire and EMS apparatus is shown in the table, below:

City of Winter Garden
Shift Unit Assignments and Minimum Staffing

Units	Scheduled Staffing	Minimum Staffing
Engines	7	6
Tower	4	3
Ambulance	2	2
Total	13	11

As shown above, a total of 13 line personnel, not including the Battalion Chief are scheduled each day to staff units with minimum staffing being 11.

Personnel work 24-hour shifts on a rotating basis with 48 hours off after each 24-hour shift worked. The rotation results in a 56-hour average FLSA workweek for shift personnel. The table below illustrates the number of shifts worked during the month of May 2014. All shifts are indicative of the oncoming shift at 7:00 a.m.:

Winter Garden Fire Rescue Department
Pro Forma Shift Schedule by Group May 2014

Sun	Mon	Tues	Wed	Thu	Fri	Sat
				A	B	C
A	B	C	A	B	C	A
B	C	A	B	C	A	B
C	A	B	C	A	B	C
A	B	C	A	B	C	A

The next section provides information on positions in the agency and their roles and responsibilities.

4. FIRE RESCUE DEPARTMENT ROLES AND RESPONSIBILITIES

This feasibility study needed to be conducted in the context of the ongoing responsibilities of staff in the Department. The following table describes the key roles and responsibilities of personnel within the Winter Garden Fire Rescue Department. The table is intended to show the general responsibilities of each position, but does not go into the detail of a job description or cover all possible duties and job tasks performed:

Position/ Classification	Authorized	Current	Key Roles and Responsibilities
Fire Chief	1	1	<ul style="list-style-type: none"> Provides the executive management to the Fire Rescue Department, which includes tasks such as: developing policies and procedures, providing leadership for future services, developing the budget, identifying service gaps, and working with the elected officials and City management to ensure that the WGFRD interests are considered. Provides education regarding how the WGFRD operates, what its services are, what the resource needs are. Supervises the Deputy Chief, Fire Inspector and Administrative Assistant. Responds to critical incidents and assumes command. Oversees fire prevention activities for the Department. Assumes the role of Fire Marshal for the AHJ.
Administrative Assistant	1	1	<ul style="list-style-type: none"> Reports to the Fire Chief. Prepares payroll for the Department, maintains files, and provides general administrative support. Processes RFPs and Department Purchase Orders. Serves as the Records Manager for the department. Maintains Injury Report Logs. Assists Chief with budget development and maintenance.
Deputy Chief	1	0	<ul style="list-style-type: none"> This position is currently vacant. Reports to the Fire Chief. Oversees Departmental fire and EMS operations and training. Completes and submits monthly NFIRS report. Serves as initial point of contact for citizen issues. Responds to all critical incidents and assumes command in absence of the Fire Chief. Conducts quality assurance reviews of fire incidents and emergency medical services. Conducts new hire interviews, promotional assessments and employee evaluations.
Battalion Chief	3	3	<ul style="list-style-type: none"> Report to the Deputy Chief. Serve as the Shift Commander on each fire shift. Supervise personnel assigned to their shift. Ensure minimum staffing levels are maintained. Serve as incident commander on emergency incidents. Each Battalion Chief has an ancillary responsibility <ul style="list-style-type: none"> Apparatus, Equipment and Protective Gear. Station and Facility Maintenance. EMS Supplies, Quality Assurance.

Position/ Classification	Authorized	Current	Key Roles and Responsibilities
Lieutenant	9	9	<ul style="list-style-type: none"> • Report to the Battalion Chief • Serve as the first line supervisor in the station. • Supervise personnel assigned to their station. • Ensure daily duties are completed and order maintained. • Ensure safe operation of personnel at emergency scenes. • Run incident command on scenes with two and fewer units.
Engineer	9	9	<ul style="list-style-type: none"> • Report to assigned Shift Lieutenant. • Inspect apparatus to ensure operation readiness. • Drive apparatus to emergency scenes. • Respond to emergency calls for service. • Comply with training requirements. • Conduct company inspections as scheduled. • Conduct public education events as scheduled.
Firefighter/ Paramedic Firefighter EMT	21	21	<ul style="list-style-type: none"> • Report to assigned Shift Lieutenant. • Work on either the ambulance, engine or tower company. • Respond to emergency calls for service. • Comply with training requirements. • Conduct company inspections as scheduled. • Conduct public education events as scheduled.
Fire Inspector	1	1	<ul style="list-style-type: none"> • Reports to the Fire Chief. • Conducts fire inspections of existing and new commercial occupancies. • Conducts plan reviews. • Inspects fire sprinklers. • Inspects fire alarms. • Inspections fire suppression systems. • Oversees fire prevention scheduling and large scale public relations events.

5. FIRE RESCUE DEPARTMENT EMERGENCY RESPONSE

The Winter Garden Fire Rescue Department is an all-hazard response agency. The Department responds to calls for service from a three fire stations, and provides advanced life support (ALS) first responder services from all apparatus and ALS ambulance service for initial patient care. Rural Metro Ambulance provides patient transport services.

The following call for service (CFS) data was obtained by the agency records management system and shows the calls for service responded to by WGFRD during the 2013 calendar year:

Calls For Service by Type – CY 2013

Incident Type	#
Fire Call	135
Rescue/EMS Call	3,216
Hazardous Condition Call	104
Service Call	186
Good Intent Call	363
False Alarm/False Call	255
Special Incident Type	1
Total	4,260

As shown, Winter Garden Fire Rescue Department responded to a total of 4,260 CFS during 2013. Approximately 75% of the calls WGFRD responded to were emergency medical calls. The data indicates that WGFRD typically responds to approximately 11.7 calls for service per day, of these approximately nine of these are EMS related. It is important to note that several calls require more than one apparatus respond to handle the emergency nature of the call.

The table below shows the emergency calls by apparatus type for WGFRD during 2013:

Response by Apparatus

Unit	Count	Percent	Daily Avg.
B-24	224	3.1%	0.61
BR-22	26	0.4%	0.07
CART-24	6	0.1%	0.02
E-23	1,097	15.4%	3.01
E-24	2,217	31.0%	6.07
M-24	2,780	38.9%	7.62
RS-24	9	0.1%	0.02
TW-22	787	11.0%	2.16
Total	7,146	100%	19.6

As shown, the ambulance is by far the busiest apparatus, with Medic 24 accounting for approximately 39% of the unit responses in CY 2013. Engine 24 is the busiest fire apparatus, accounting for just over 31% of the unit responses in 2013. In total, there are approximately 20 unit responses on average per day to the 11.7 incidents.

The following table shows the calls by hour of day and day of week in 2013 for the Winter Garden Fire Rescue Department:

Calls by Hour/Day 2013

Hour	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
0	21	17	24	15	12	15	26	130
1	22	13	9	13	11	13	9	90
2	22	10	15	10	10	10	15	92
3	12	7	16	15	7	7	11	75
4	21	11	14	14	16	7	8	91
5	10	15	14	8	17	14	9	87
6	9	15	14	17	16	17	9	97
7	14	28	25	28	33	24	8	160
8	19	23	25	27	25	27	22	168
9	29	26	19	27	31	30	28	190
10	27	36	32	49	39	35	35	253
11	34	29	32	33	22	47	31	228
12	31	41	37	26	24	48	46	253
13	24	34	34	34	40	41	34	241
14	36	32	29	43	32	35	33	240
15	26	25	38	36	29	34	26	214
16	24	41	33	31	34	39	28	230
17	29	26	31	39	34	33	37	229
18	29	35	49	26	31	34	40	244
19	33	29	36	36	29	38	46	247
20	29	23	26	31	37	38	44	228
21	31	23	24	23	31	26	30	188
22	27	22	20	18	17	28	17	149
23	21	22	17	11	21	19	25	136
Grand Total	580	583	613	610	598	659	617	4260

As shown above, the Winter Garden Fire Rescue Department is busiest on Friday and Saturday, and slowest on Sunday (in terms of calls for service). The hours

between 10:00 a.m. and 11:00 a.m., and noon and 1:00 p.m. are the busiest hours of the day, and between 3:00 a.m. and 4:00 a.m. is the slowest period of the day.

In terms of emergency medical responses, the following table illustrates the EMS calls by hour of day and day of week for 2013:

Emergency Medical Calls by Hour/Day 2013

Hour	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
0	19	10	20	13	7	12	18	99
1	17	8	7	10	7	11	6	66
2	17	9	14	8	6	4	12	70
3	9	6	15	10	6	5	9	60
4	18	9	9	12	12	5	7	72
5	7	14	11	6	15	14	8	75
6	6	12	12	13	13	10	6	72
7	11	24	17	18	26	16	7	119
8	14	19	21	18	23	21	11	127
9	13	21	15	21	22	23	21	136
10	19	28	24	33	31	31	30	196
11	28	22	28	23	16	34	24	175
12	21	35	25	19	22	34	40	196
13	21	27	25	28	29	28	27	185
14	21	25	19	36	26	29	25	181
15	19	18	28	26	23	25	23	162
16	14	33	26	22	25	25	16	161
17	22	23	21	27	19	21	31	164
18	24	26	35	19	19	27	30	180
19	23	25	28	29	22	29	35	191
20	19	15	19	25	26	24	32	160
21	27	21	17	18	24	22	25	154
22	21	18	14	13	12	22	11	111
23	16	19	13	9	19	11	17	104
Grand Total	426	467	463	456	450	483	471	3,216

As shown above, Friday and Saturday are also the busiest days for EMS calls, with Sunday being the slowest. The hours between 10:00 a.m. and 11:00 a.m., and noon and 1:00 p.m. are the busiest hours of the day, and between 3:00 a.m. and 4:00 a.m. is the slowest period of the day when only EMS calls are examined.

3. COMPARATIVE ASSESSMENT

As part of the larger scope of work for the Winter Garden Fire Rescue Department, the Matrix Consulting Group conducted a survey of fire departments in comparable cities in central Florida. The purpose of this survey was to determine the staffing and service levels and billing practices of fire departments in comparable municipalities – particularly for EMS functions.

Five fire departments responded to the project team's request for data. These included Apopka, Maitland, Ocoee, St. Cloud, and Winter Park. The population, area, and density of each of these departments, as well as statistics about their fire stations, can be found in the table below:

FD	Population (2012)	Area	Population Density	Number of Stations	Sq. Miles per Station	Population per Station
Apopka	44,474	31.2	1,424	4	7.8	11,119
Maitland	16,337	5.3	3,100	2	2.6	8,169
Ocoee	38,354	14.7	2,607	4	3.7	9,589
St. Cloud	39,171	17.8	2,206	3	5.9	13,057
Winter Park	28,924	8.7	3,332	3	2.9	9,641
Average	33,452	15.5	2,534	3.2	4.6	10,315
Winter Garden	37,063	15.6	2,376	3	5.2	12,354

As shown above, the average population for the comparative cities is 33,452 with 3.2 fire stations serving the communities. This compares well to the estimated 2012 population for Winter Garden of 37,063 and 3 fire stations serving the community.

2. RESULTS OF THE COMPARATIVE SURVEY

The following sections outline the results of the comparative survey. The responses of each fire department were grouped by points of comparison. If a

department did not provide data for a particular point, or if data could not be found, the project team excluded them from the comparison for that data point.

(1) Staffing

The following table shows the number of staff in each comparable fire department. Staff are broken down by fire suppression, fire prevention, EMS, civilian support, and sworn administrators. The table also shows which departments have an EMS manager, and the rank of the EMS manager.

Fire Department	Staffing						EMS Mgr.?	Rank of EMS Manager
	Total	Fire Suppression	Fire Prevent.	EMS	Civilian Support	Sworn Admin.		
Apopka	84	75	2	52	2	5	Yes	Asst. Chief
Maitland	45	43	2	43	2	4	Yes	Deputy Chief
Ocoee	51	45	2	45	2	2	No	N/A
St. Cloud	72	39	1	21	4	5	Yes	Division Chief
Winter Park	78	69	4	69	3	3	Yes	Captain
Average	66	54.2	2.2	46	2.6	3.8	-	-
Winter Garden	46	42	1	39	1	2	No	N/A

As shown, the average personnel staffing the comparable departments are 66, with four of the five agencies having a dedicated EMS Manager. This position varies in rank from Captain to Assistant Chief in the agencies.

(2) EMS Services

The following table shows whether each fire department responds to EMS calls and/or provides EMS transport, as well as the number of EMS responses and EMS transports for the year. It also indicates the number of ambulances staffed on a daily basis, and whether the department staffs additional ambulances at peak hours:

Fire Department	EMS Response?	# EMS Calls	EMS Transport?	# EMS Transports	Ambulances Staffed Daily	Peak Ambulances Staffed?
Apopka	Yes	4,335	Yes	2,625	4	No
Maitland	Yes	2,907	Yes	1,215	2	No
Ocoee	Yes	3,100	Yes	16	1	No
St. Cloud	Yes	4,500	Yes	2,800	3	No
Winter Park	Yes	3,117	Yes	2,482	2	No
Average	Yes	3,592	Yes	1,828	2.4	No
Rural Metro in WG	Yes	3,324	Yes	2,503	1 - 2	No

As shown above, each of the cities surveyed provide some form of EMS transport services. The City of Ocoee only transports City employees, which is why the transport figure is low. In terms of annual EMS calls for service, the comparative cities average 3,592 EMS calls annually, very similar to the 3,324 calls responded to by Rural Metro in Winter Garden.

(3) Billing Statistics

The following table shows the collection rate for EMS transport billing of each comparable fire department, as well as the annual revenue from EMS transport billing. The table also includes departments' billing rates for various modes of transport, as well as their per-mile rate:

Fire Department	Transport Billing Collection Rate	Transport Billing Revenue	Billing Rate			
			BLS Transport	ALS (1) Transport	ALS (2) Transport	Per Mile
Apopka	68%	\$1,096,565	500 City \$575 Non-City	600 City \$675 Non-City	\$700 City \$775 Non-City	\$10
Maitland	71%	\$512,857	\$799	\$799	\$799	\$8.50
Ocoee*	N/A	N/A	N/A	N/A	N/A	N/A
St. Cloud	78%	\$1,123,689	\$475	\$475	\$675	\$9
Winter Park	71%	\$864,864	\$720	\$925	\$1,028	\$12
Average	72%	\$899,494	\$624	\$700	\$801	\$9.88
Rural Metro	38%	-	\$625	\$755	\$817	\$17

*Ocoee FD only provides EMS transport to city employees.

As shown above, the average collection rate for EMS transports is 72%, with a low collection rate of 68% in Apopka, and a high of 78% in St. Cloud. The billing rates for the agencies vary greatly.

The following table shows whether each comparable fire department handles EMS transport billing internally or uses an external billing agency, and which agency they use (if applicable). The table also shows which agencies do itemized billing for the use of EMS supplies:

Fire Department	Internal Billing or Agency	Billing Agency Used	Itemized Billing for EMS Supplies
Apopka	Agency	NEB Group	No
Maitland	Agency	ADPI	Yes
Ocoee	Agency	RMA	No
St. Cloud	Internal	N/A	No
Winter Park	Agency	ADPI	No
Rural Metro	Internal	N/A	No

As shown above, all of the agencies, with the exception of St. Cloud, use an outside billing agency. It is important to note that Ocoee only transports City employees and does not charge them for the transport. None of the agencies, with the exception of Maitland, itemize billing for EMS supplies used to treat patients.

4. ANALYSIS OF THE FEASIBILITY OF PROVIDING TRANSPORT SERVICES

This chapter provides the project team's evaluation of the feasibility of the Winter Garden Fire Rescue Department assuming the responsibility for EMS transport services in the city. Issues discussed include the organization of functions that support Emergency Medical Services (EMS), appropriate levels of supervision and management for EMS, as well as the appropriate staffing and required apparatus and equipment.

1. WINTER GARDEN FIRE RESCUE CURRENTLY RECEIVES MEDICAL CONTROL AND DIRECTION FROM ORANGE COUNTY.

The EMS Office of the Medical Director provides central medical direction and control services for EMS service providers in Orange County. All Winter Garden Fire Rescue Paramedics are currently part of the Orange County system, and are trained and determined to be proficient by the Orange County Medical Director to assume patient care and transport services.

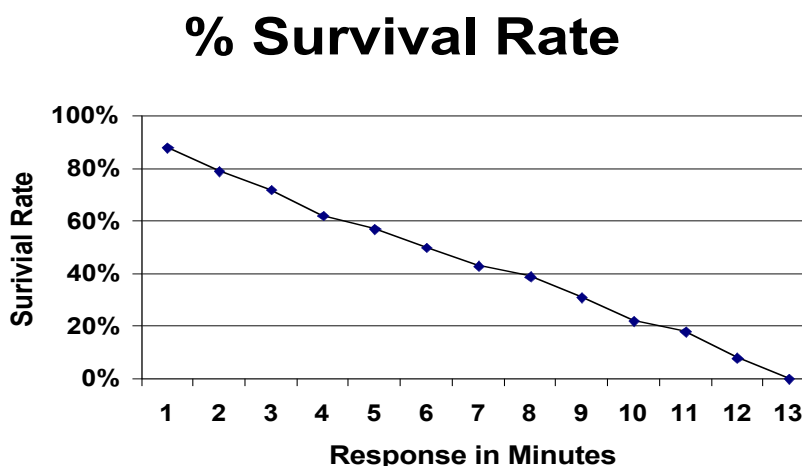
The Department also currently meets all equipment standards for both state and local medical requirements.

Winter Garden is also part of the current Quality Assurance/Quality Improvement process in the county, and is considered to be functioning well by the Medical Director. There are no issues from a medical direction and control standpoint related to Winter Garden Fire Rescue assuming transport responsibilities in the city.

2. THERE IS EXTENSIVE DEBATE REGARDING THE MOST APPROPRIATE APPROACH TO DEFINING EMS SERVICE LEVELS IN THE FIRE SERVICE.

This section provides a summary of the various “standards” that have been developed for the evaluation of fire and rescue staffing and deployment. These represent efforts to scientifically identify critical points in the combat of structure fires, as well as the need to intervene in medical emergencies. While these neither cover every eventuality nor cover each community’s special needs, they serve as an important starting point for conducting such analyses.

The delivery of cardiac and other emergency medical first response is the main focus to consider in delivering pre-hospital emergency care and transport services. The exhibit below demonstrates the survivability of cardiac patients as a timeline:



This graph shows the results of extensive studies of the survivability of patients suffering from cardiac arrest. This is the most-often studied issue due to the ease of evaluating the outcome (a patient either survives or does not) from a cardiac arrest. This research results in the recommended standard of provision of basic life support (BLS) within four minutes of notification, and the provision of advanced life support (ALS) within eight minutes of notification.

The Center for Public Safety Excellence (CPSE) has developed standards based on the population and density of the service area protected. For the purposes of being a credible organization according to CPSE, Winter Garden is considered an urban setting in that the population is 30,000 or higher and/or the population density is 2,000 or more per square mile. Winter Garden meets both of these criteria. In this category, CPSE has established four minutes as the benchmark performance goal of the first responding unit, with five minutes and 12 seconds being an acceptable baseline performance for the first arriving unit.

3. COMPARISON OF FIRE AND EMS STANDARDS WITH ACTUAL PERFORMANCE IN WINTER GARDEN.

The table below provides an overview of the discussion about emergency medical service goals provided in the preceding subsections and compares them to the current system performance in Winter Garden:

Target Area	Service Target	Performance in Winter Garden
Response Time to Medical Calls	<ul style="list-style-type: none">• Best practice for turnout times to EMS incidents is 60 seconds or less 90% of the time.• National Standard is the ability to respond to EMS calls in four minutes travel time for 90% of calls in urban areas at a BLS level.• National Standard is the ability to respond to EMS calls at an ALS level within eight minutes 90% in urban areas.	<ul style="list-style-type: none">• The Department is slightly above best practice for turnout times. Current performance is 1:13 seconds 90% of the time.• The Department is unable to meet the best practice standard for the initial BLS response to EMS incidents of 4 minutes travel time.• The Department is able to meet the best practice standard for ALS response times to EMS incidents of 8 minutes.• The Department has an overall travel time of 6 minutes 30 seconds to all EMS calls regardless of location at the 90th percentile.

Improving turnout times in the WGFRD on EMS calls to the best practice of 60 seconds 90% of the time will result in improved overall response times of approximately

13 seconds, and is something the agency can control by closely monitoring turnout times and requiring documentation by company officers when turnout time exceed the goal by 10 seconds or more. It is important to note that these turnout times are related to EMS calls, and current best practices for fire turnout is 90 seconds 90% of the time.

All the WGFRD units responding to incidents are all ALS service level providers. There are a number of conclusions to be drawn from the chart above. These are summarized in the following points:

- The above comparison chart indicates that the Winter Garden Fire Rescue Department is effective in meeting response time targets of 8 minutes related to delivering ALS care, but is unable to consistently arrive to begin BLS patient care in four minutes.
- The Department slightly exceeds best practice turnout times of 60 seconds or less for EMS calls at the 90th percentile.

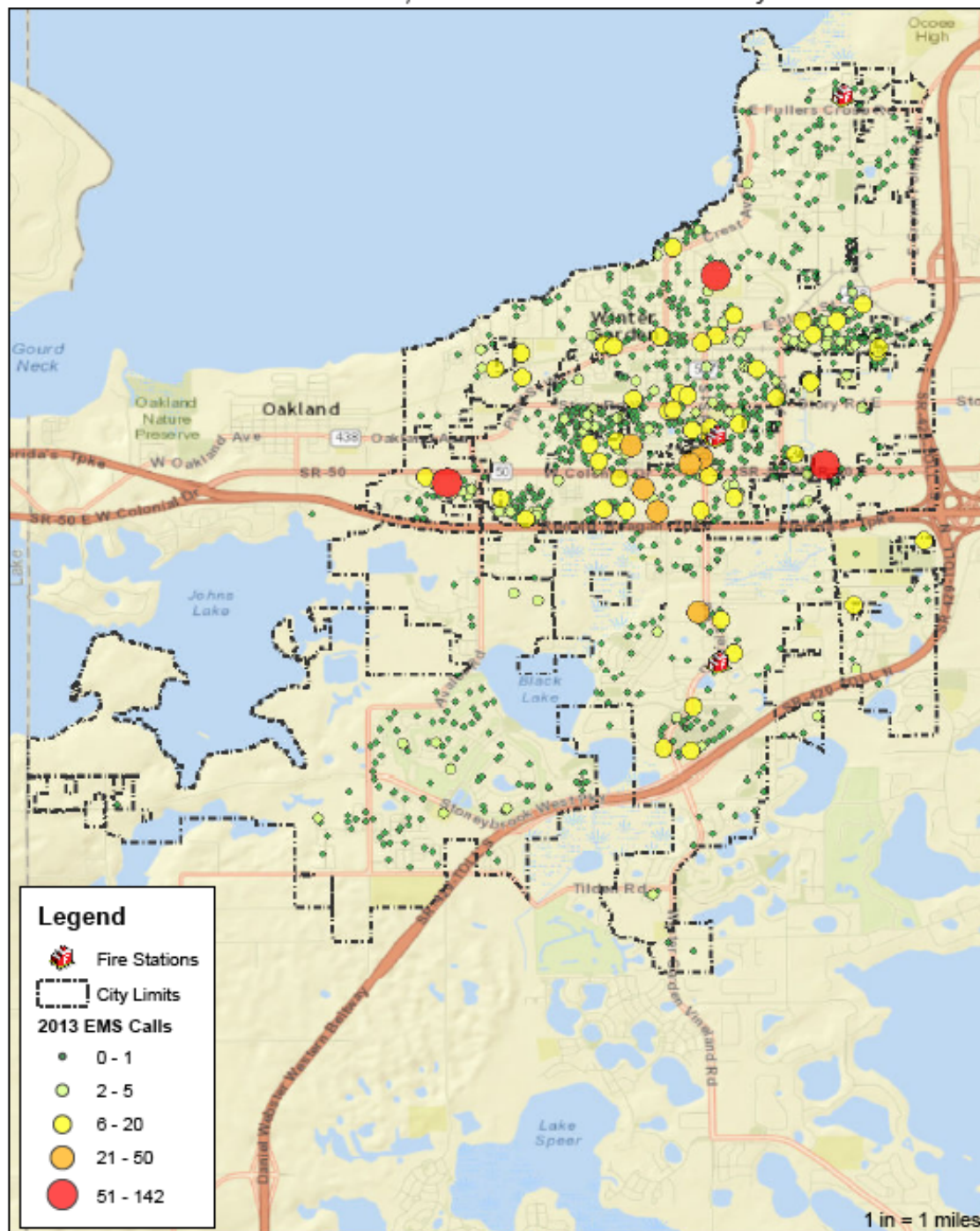
These issues will be more fully explored in conjunction with the development of the analysis of fire and emergency medical service needs.

4. CURRENT EMS SYSTEM DESIGN PROVIDES A LARGE NUMBER OF PARAMEDICS IN A SHORT AMOUNT OF TIME.

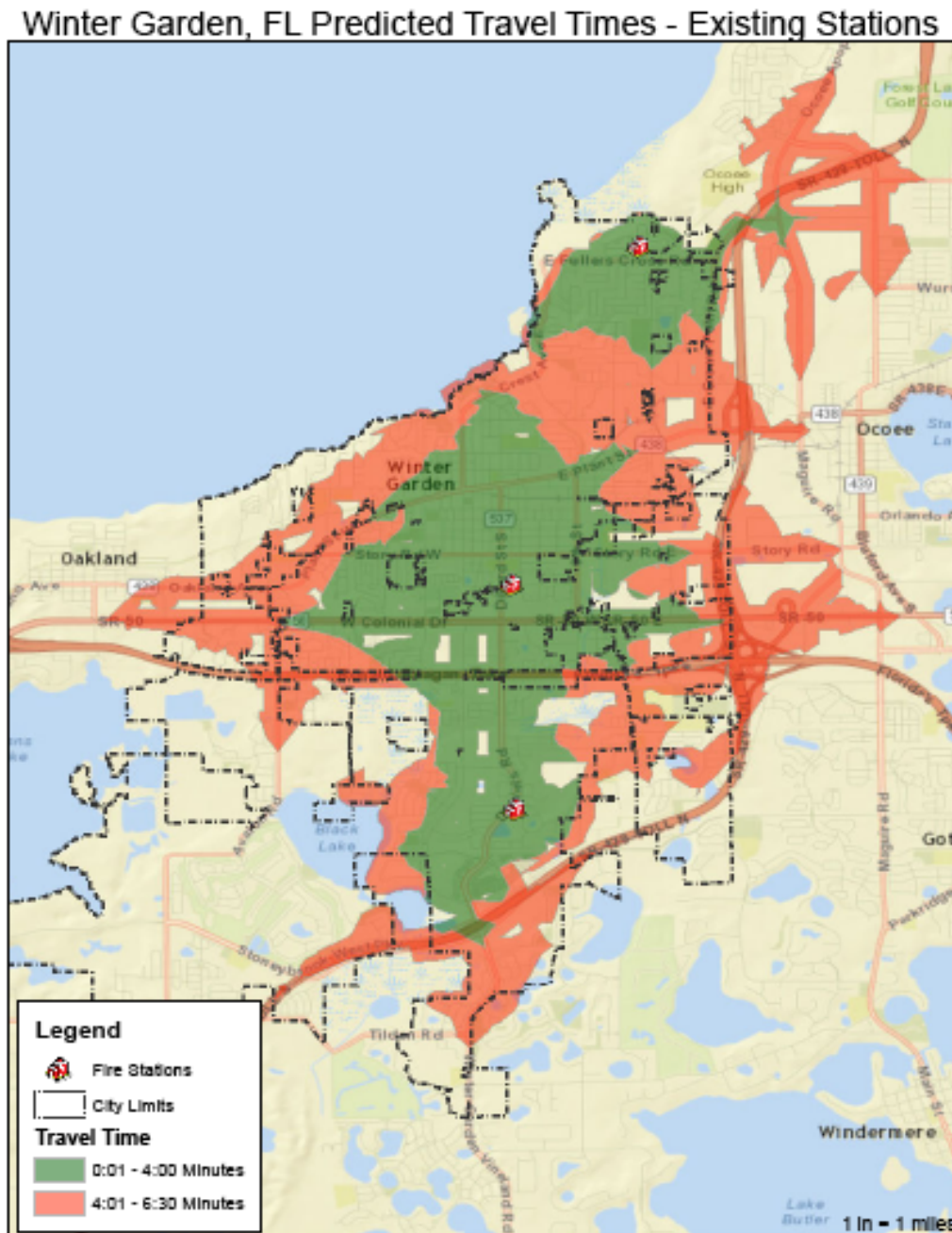
The project team evaluated the current response “coverage” based on the current deployment of personnel and resources within the City of Winter Garden. Using the recommended performance measures for initial response and ALS response, the project team evaluated the level of resources capable of responding in each area of the City. The project team utilized GIS software to estimate the ability of department personnel to respond within targeted response times to actual call for service locations. In addition, CAD data was collected to document actual response locations of EMS incidents. By comparing the results of the GIS analysis to the locations documented in CAD, the project team was able to identify potential response time issues.

The map on the following page shows the distribution of EMS calls for service throughout the City of Winter Garden. An EMS call density map was developed to show the clustering of calls throughout the City. As illustrated on the map, the majority of calls currently occur in the center of the city, north of the Florida Turnpike, in the response area of Station 24. This makes the placement of the current EMS unit appropriate to ensure the timeliest response:

Winter Garden, FL 2013 EMS Call Density

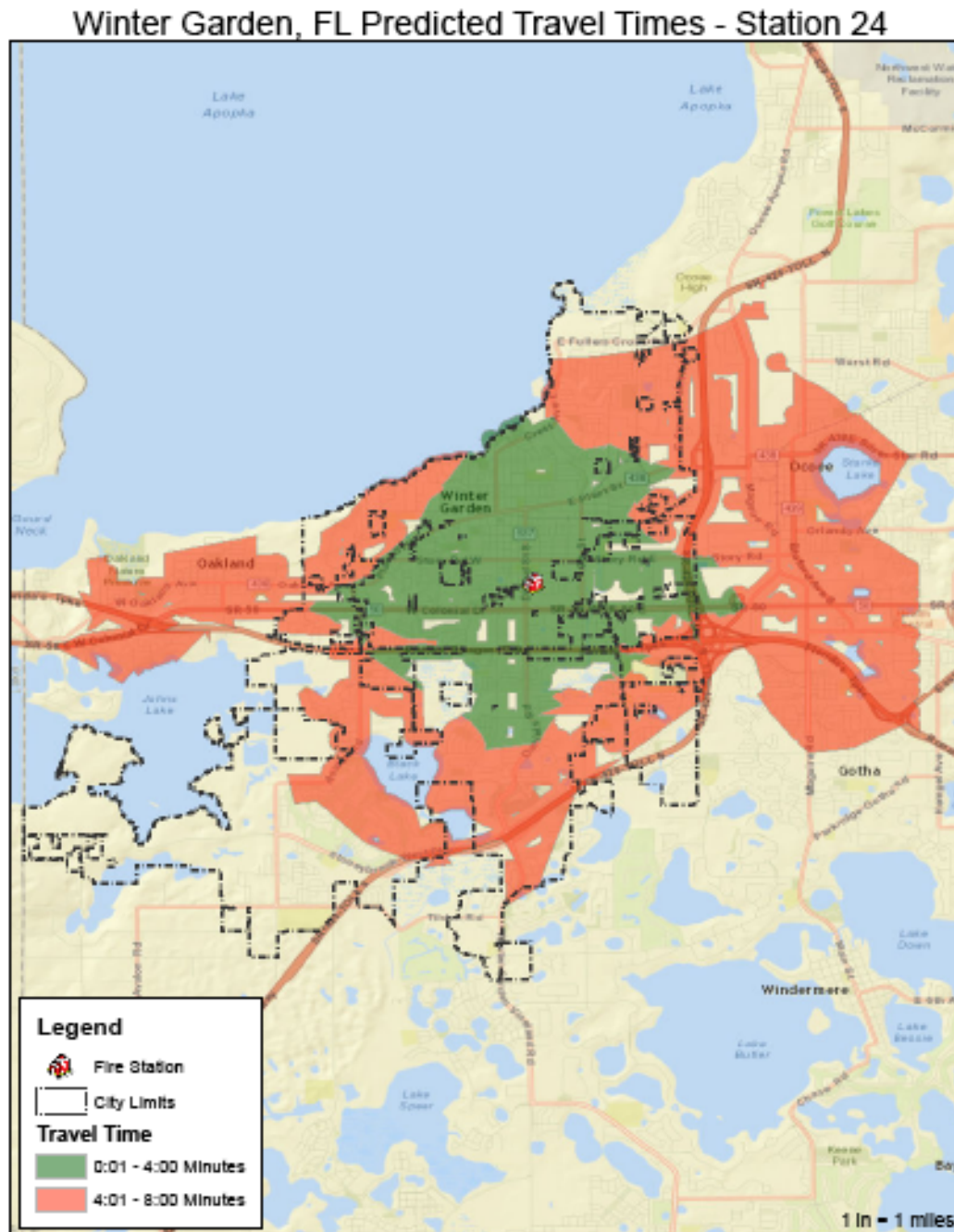


The next map illustrates the predicted travel times for the engine and truck companies from current station locations:



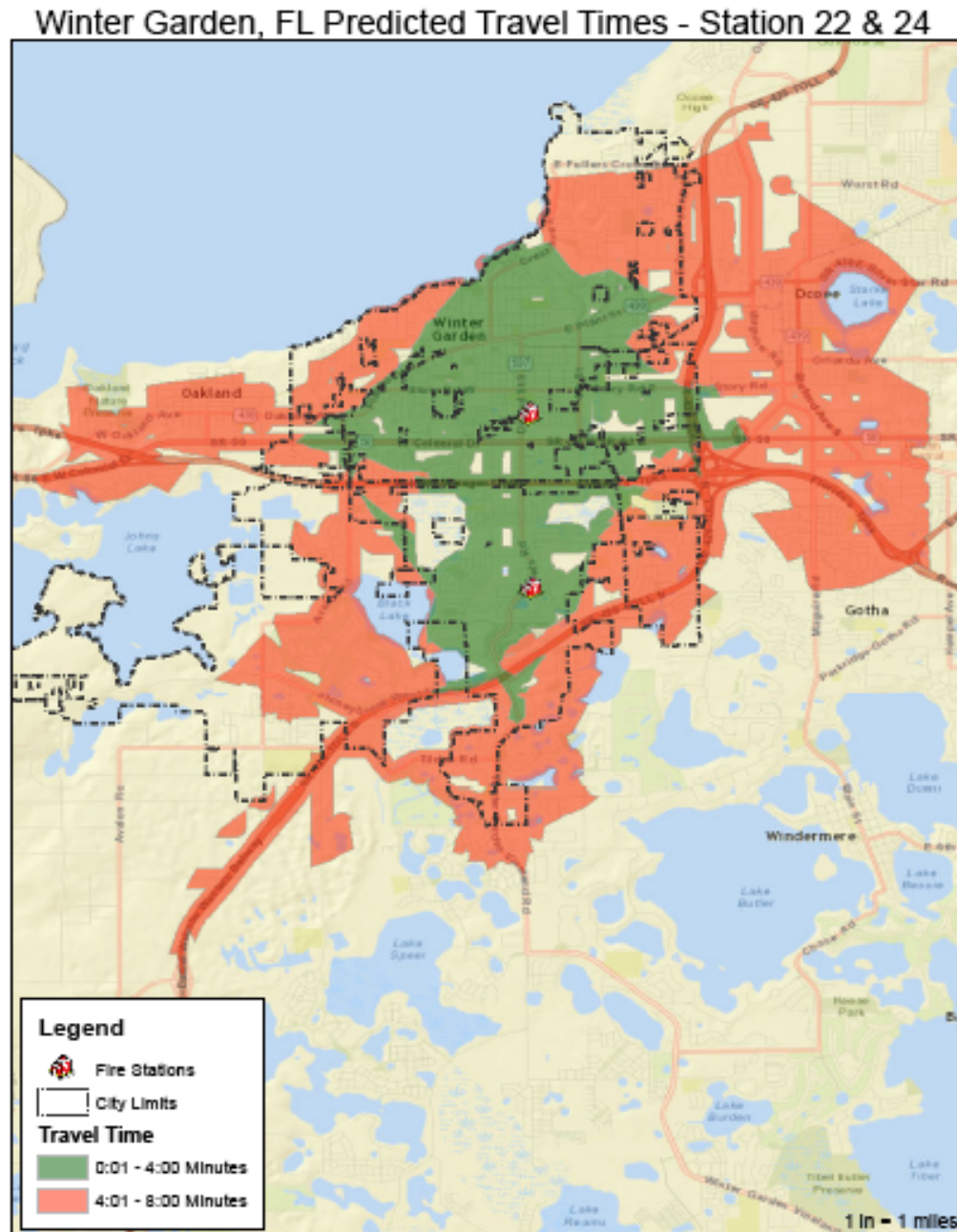
As shown above, the current deployment of engine and truck companies provides a significant amount of coverage, but does not adequately cover the areas in the growing western portions of the town.

The next map, below, shows the current predicted travel time for the ambulance located at Station 24:



As shown, the ambulance is able to provide effective response to the central area of the city, but unable to respond effectively to the southern and western portions of the city.

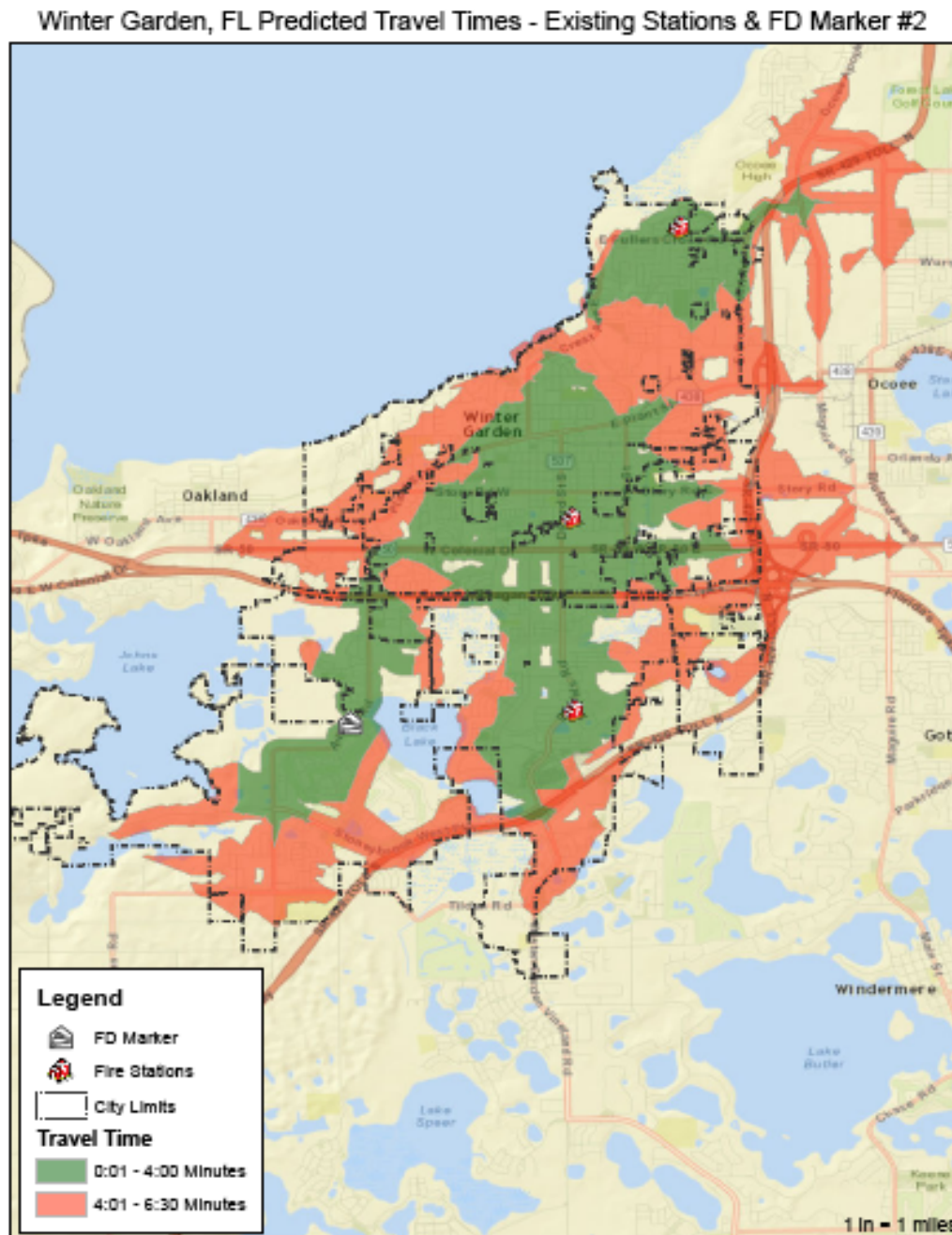
The project team also evaluated the predicted response times if an additional ambulance were located at Station 22:



As shown above, the Department can deliver one or more ambulance units to the majority of the city within eight minutes of drive time with a second ambulance. Again, the western portion of the city is not effectively served with this approach.

The next set of maps illustrate various scenarios brought to light during the study related to possible location and relocation of fire stations in the city. The first map shows

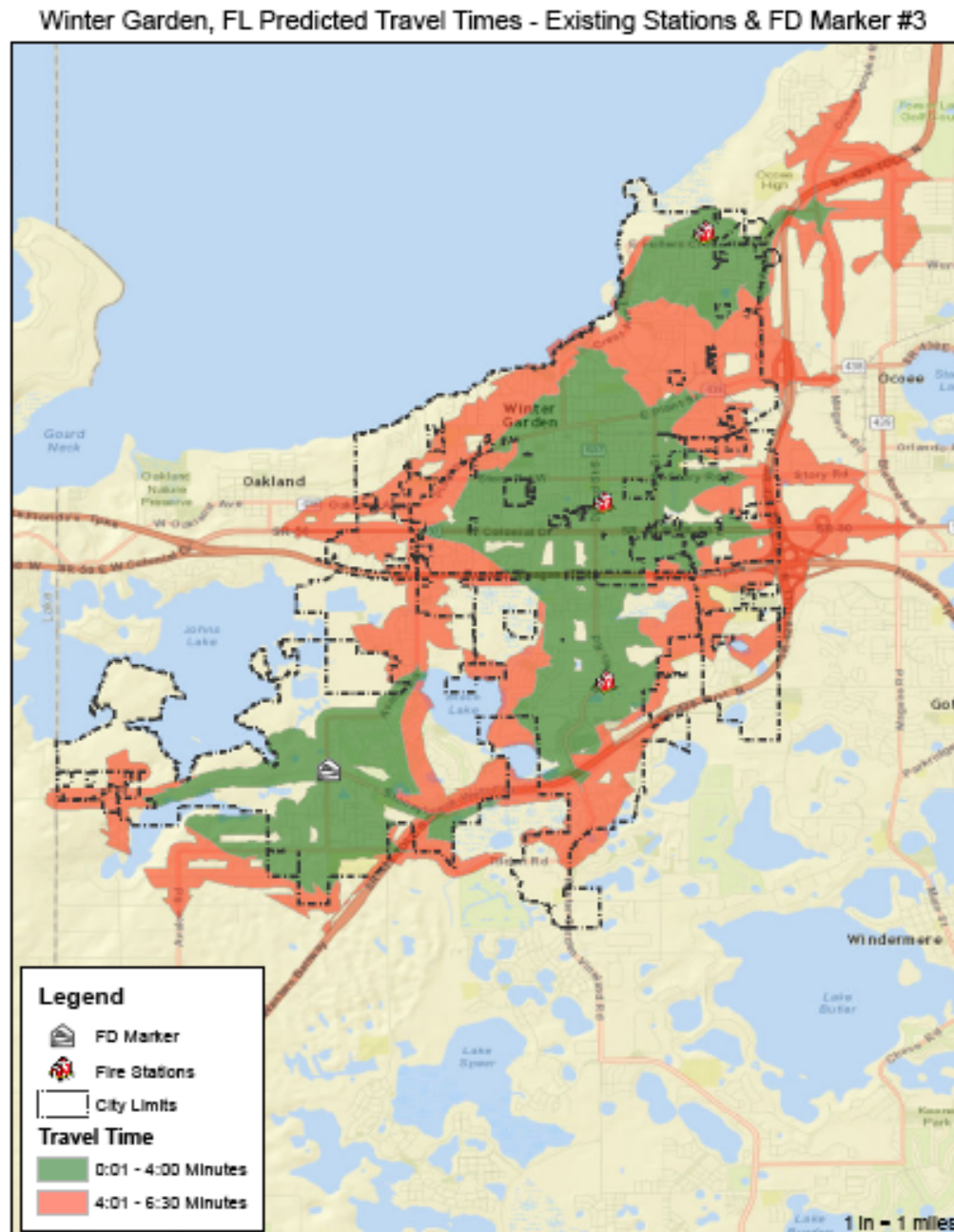
the projected travel time impact of a fourth station located at 902 Avalon Road:



As shown above, the addition of this station does improve coverage to the western portions of the city.

The next map examines the impact of an alternate location for the fourth station to cover the southwestern portions of the city. This marker is located at the Intersection

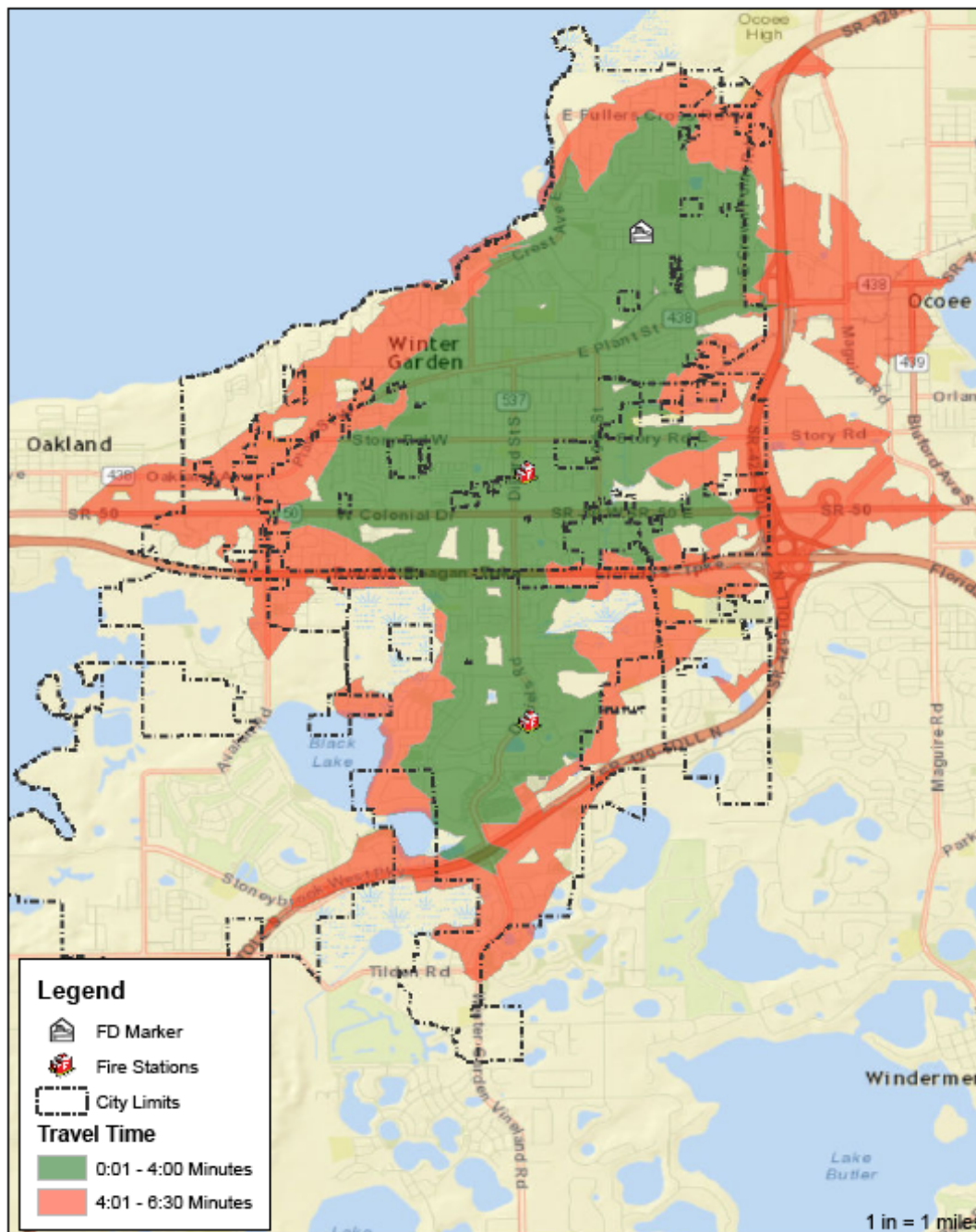
of Avalon Road and Marsh Road:



As shown, this location provides for improved response coverage in the southwestern portion of the city when compared to the preceding map.

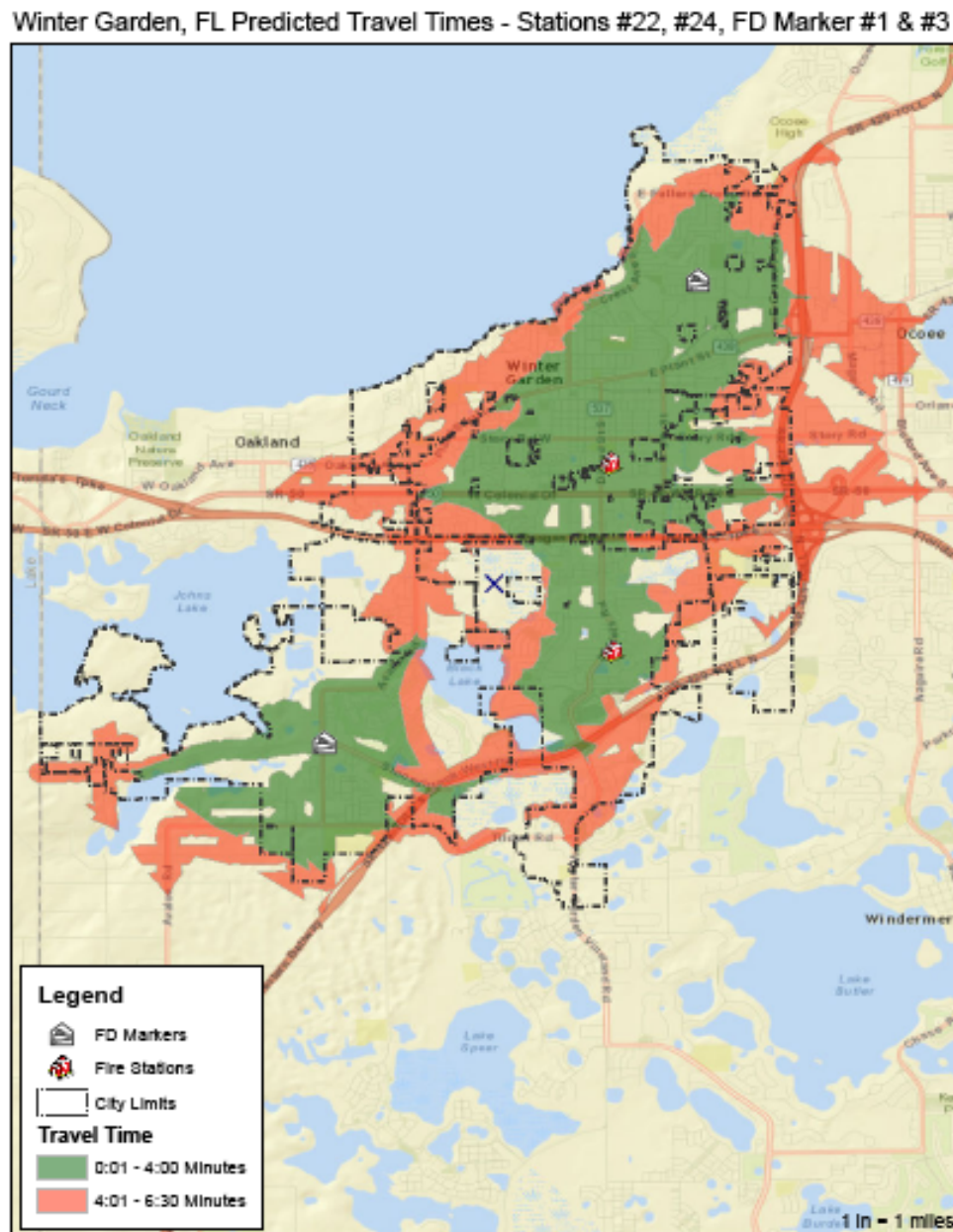
The next map illustrates the impact of relocating the existing Station 23 to 715 Hennis Road:

Winter Garden, FL Predicted Travel Times - Stations #22, #24 & FD Marker #1



As illustrated above, relocating the existing Station 23 a little further south greatly improves the overall coverage in the busiest areas related to current demand for EMS service and will result in a greater percentage of patients receiving initial care in four minutes or less.

The final map illustrates the impact of relocating the existing Station 23 and constructing an additional station at the intersection of Avalon Road and Marsh Road:



As illustrated above, this station configuration provides optimal coverage for fire and EMS response in Winter Garden.

Recommendation: Develop a long range facility plan for the Fire Rescue Department which includes relocating Station 23, and constructing a fourth station in the southwest portion of the city.

5. THERE ARE TRIGGER POINTS FOR WHEN THE CITY SHOULD PLAN AND CONSTRUCT NEW FIRE FACILITIES.

As illustrated on the call density map on page 25, the majority of EMS calls are currently occurring in the center and northern portions of the city, and receive an adequate response from the Department. However, response time analysis did indicate that there is a gap in response reliability in the area between station 23 and 24 and relocating station 23 further south would close this gap in service delivery. The analysis also indicated that existing stations did not adequately serve the most southern and western portions of the city. This area is currently experiencing residential development, but is not yet developed to the point that warrants the immediate construction of the fourth station.

The table below quantifies the trigger points for opening a new fire station in a developing community. These triggers serve as a good indicator of when to construct a new facility, whether or not calls for service increases are experienced as growth occurs in accordance with the City's Comprehensive Plan. Given the timeframe required to design and construct a new facility, it is important for these decisions to be properly anticipated with good planning:

Action	Travel Distance	Response Time	Percent of Calls	Building/Risk Inventory
Maintain Status Quo	All risks within locally adopted distance.	First due unit is within locally adopted standards.	Low percentage of current out of district calls.	Low local building/risk inventory.
Temporary facilities and minimal staffing	Risks 1.5 to 3.0 miles from existing station.	First due unit exceeds five minute travel time 10% of the time, but does not exceed eight minutes.	More than 10% of calls are out of district.	New area has 25% of the same risk distribution as in initial area of coverage.
Permanent Station Needed	Risk locations exceeding four miles from the station.	First due company exceed five minute travel time 20 – 25% of the time. Some calls over eight minutes.	More than 20 – 25% of calls in outlying areas.	New area has 35% of same risk distribution as in initial area of coverage.
Permanent Station Essential	Outlying risk locations exceed five miles from station.	First due unit exceeds five minute travel time 30% of the time. Some calls over ten minutes.	More than 30% of calls are in outlying area.	New area has 50% of same risk distribution as in initial area.

As shown in the earlier response maps, Winter Garden is in need of a permanent station to serve the southwestern portion of the city. While Winter Garden is at the stage that indicates a permanent station is needed, it has not yet reached the essential point of requiring station construction, as the new development in the area is in the early stages, and call volume is still relatively low in the area. It is important that the City beginning planning for the construction of this station in the next few years as development continues, new residents occupy the area, and emergency calls increase.

The relocation of station 23 provides the most immediate impact on EMS response times where calls are occurring and should be the first priority, while the construction of the fourth station can be delayed until the need becomes essential, as shown in the above table. Based on current construction figures for fire stations, the City of Winter Garden should expect to expend approximately \$1.9 - \$2.1 million dollars for

an 8,500 square foot station needed to house an engine company to provide first responder EMS services. A station this size will be adequate to add an additional ambulance to the station if the long-term growth in Winter Garden necessitates the addition of a third ambulance at some point in the future.

5. ANALYSIS OF DEPLOYMENT OPTIONS INDICATES THAT NINE ADDITIONAL SHIFT POSITIONS ARE NEEDED UNDER THE RECOMMENDED APPROACH TO PROVIDE EMS TRANSPORT SERVICES.

As discussed earlier, the WGFRD current has daily staffing of 14 personnel assigned to emergency operations. The following table illustrates the current staffing philosophy of the Department related to emergency response apparatus:

**City of Winter Garden
Shift Unit Assignments and Minimum Staffing**

Units	Scheduled Staffing	Minimum Staffing
Battalion Chief	1	1
Engines	7	6
Tower	4	3
Ambulance	2	2
Total	14	12

The project analyzed the number of transport ambulances required to effectively provide services to the city. The following analysis is related to the staffing required to effectively staff and manage an EMS transport service based on system demand in 2013. This analysis incorporates a number of assumptions and data elements including:

- Average EMS calls demand by hour – 2013 calls for service data were utilized.
- Average time needed to handle an EMS call by ambulance units. The project reviewed the 2013 data and found the average time related to handling EMS calls was 51 minutes 30 seconds. It is important to note that this does not include time for transporting and transferring care of the patient to the hospital. Therefore, the project team is utilizing the assumption that an average call handling time of 1 hour 30 minutes will occur. The extra will allow for transport and time needed for decontamination, clean up, and re-supply of medical equipment and supplies.

- Variance in hourly ambulance workload: The project team applied two standard deviations of hourly call demand to the average time needed to handle workload within a given hour. Applying this figure ensures that 95% of the variations in EMS workload can be handled.

The WGFD utilized several units to respond to the 3,216 EMS calls for service last year, with Medic 24 responding to 2,780 calls. These data and assumptions were utilized to evaluate ambulance workload demand in the City, as shown below:

**Winter Garden Fire Rescue Department
Ambulance Unit Demand Analysis**

Hour	CFS	Avg/Hour	Handling	Units Req.
0000	99	0.27	0.41	0.81
0100	66	0.18	0.27	0.54
0200	70	0.19	0.29	0.58
0300	60	0.16	0.25	0.49
0400	72	0.20	0.30	0.59
0500	75	0.21	0.31	0.62
0600	72	0.20	0.30	0.59
0700	119	0.33	0.49	0.98
0800	127	0.35	0.52	1.04
0900	136	0.37	0.56	1.12
1000	196	0.54	0.81	1.61
1100	175	0.48	0.72	1.44
1200	196	0.54	0.81	1.61
1300	185	0.51	0.76	1.52
1400	181	0.50	0.74	1.49
1500	162	0.44	0.67	1.33
1600	161	0.44	0.66	1.32
1700	164	0.45	0.67	1.35
1800	180	0.49	0.74	1.48
1900	191	0.52	0.78	1.57
2000	160	0.44	0.66	1.32
2100	154	0.42	0.63	1.27
2200	111	0.30	0.46	0.91
2300	104	0.28	0.43	0.85
Total	3216	8.81	13.22	1.10

The following points summarize the information in the table above:

- As shown, more than one ambulance is required to handle the overall current EMS workload over the 24-hour period.

- The number of ambulance units needed per hour varies – from 0.5 units needed during the hour of 0300 to 0400 to 1.6 units needed during the hours from 1000 to 1300. In fact, most hours of the day will require more than one ambulance to be deployed to ensure appropriate levels of service.
- Between the hours of 8:00 a.m. and 9:00 p.m., the demand for ambulances exceeds the current deployment of ambulances in Winter Garden.

As shown above, if Winter Garden assumes responsibility for EMS transport services, an additional ambulance is required to be deployed.

The following table illustrates the required staffing for two (2) engines, one (1) tower and two (2) full-time transport ambulances:

Staffed Apparatus	Minimum Staffing	Minimum Hours Required	Total Hours Available per Employee (86%)	Total Personnel Required
5	13	37,856	2,504	15.1

As shown above, adding an additional transport ambulance will require a daily staffing of 15 personnel. This will require the addition of six additional shift personnel (2 per shift) to ensure minimum staffing levels can be maintained.

Recommendation: Staff two ambulances on a 24-hour basis to ensure adequate coverage for Emergency Medical Responses if WGFRD assumes EMS transport responsibility.

6. THE PROJECT TEAM ESTABLISHED CRITERIA FOR THE EVALUATION OF THE EMS PROGRAM WITHIN THE WGFRD.

In order to assess the overall organizational structure of the WGFRD as it relates to providing EMS services, the Matrix Consulting Group developed several criteria. These criteria can be applied to almost any organizational structure – not simply this department. These criteria include:

- **Program Oversight** – Is the program large enough or of a critical nature so as to warrant stand-alone management? Could these management tasks be handled through some other organizational approach? Does the organizational structure negatively impact overall program delivery?

- **Operational Oversight** – Are direct services managed and supervised on a day-to-day basis in a manner that ensures effective service delivery? Are the programmatic elements fully integrated into operations? Does the organizational structure negatively impact operational oversight?
- **Quality Control and Accountability** – Does the department provide for effective quality improvement for the services provided by the program? Can oversight, accountability, training and discipline be effectively utilized to ensure that the services are provided at the highest possible levels? Does the current organizational structure interfere with holding staff accountable?

The project team provided an assessment of the current organizational structure of the EMS functions in the WGFRD using these criteria. These analyses are presented in the following sections – the first focusing on the administrative oversight element and the second focusing on the way in which EMS is managed in the field.

7. THE CURRENT ORGANIZATIONAL STRUCTURE OF THE EMS DIVISION IS NOT APPROPRIATE FOR PROGRAM OVERSIGHT.

The WGFRD currently provides oversight of EMS as an ancillary duty of a shift Battalion Chief. This equates to the EMS system receiving managerial attention every third day as the Battalion Chief is assigned to A-shift and rotates according the shift schedule shown in the Descriptive Profile. Effective oversight of an EMS agency that provides patient care and transport service should include ensuring that sufficient paramedics are available and well trained, that paramedics maintain their certifications through attainment of sufficient continuing education credits, and that the overall quality of pre-hospital medical care provided by the WGFRD meets the standard of care expected by the community, City government, staff and the County Medical Director. The person in this position should also be tasked with reviewing patient care reports to ensure the appropriate information is included on reports prior to the information being sent to the billing agency. The following exhibit provides the project team's assessment

of the current administrative oversight team's organizational structure:

Criteria	Findings
Program Oversight	<ul style="list-style-type: none"> The current organizational structure provides indirect oversight of the EMS programs in the Fire Department. Emergency medical service is the single-most frequent service provided by the WGFRD – and represents the majority of the person-hours dedicated to service delivery by the Fire Rescue Department. The Battalion Chief is splitting attention between the EMS program, shift duties and other ancillary duties assigned to this position, allowing for approximately a quarter of time allocated to EMS oversight. The Battalion Chief provides direct program management for EMS. This includes interaction with other command staff in the Operations Division regarding specific paramedics or systemic issues.
Operational Oversight	<ul style="list-style-type: none"> This is split from the Battalion Chief assigned to EMS and is handled by command staff in the Operations Division of the Fire Rescue Department. This provides for effective separation of responsibility for overseeing the program and for ensuring that paramedics are held accountable and that they maintain certifications necessary to practice pre-hospital medicine. The division of labor between the EMS and Operations Divisions also provides some separation in terms of narcotics, drugs, and other supplies – thereby providing checks and balances on these items. The EMS Battalion Chief has no responsibility for field oversight except on his assigned shift or for the utilization of paramedics as operational assets. These decisions are made by the shift commanders (Battalion Chiefs).
Quality Control and Accountability	<ul style="list-style-type: none"> While the Operations Division is responsible for staffing, deployment and day-to-day service delivery, of EMS, the medical control director and the continuing education staff working for the director is responsible ensuring that paramedics (individually and as a group) are providing the highest level of service possible. The organizational structure also provides checks and balances here with the Operations Division command structure. The Operations Division does not currently have a methodology nor the resources to directly participate in the assessment of EMS quality department, this is a function of the Medical Director's office. Both the department and the Medical Director work closely with one another to hold paramedics and EMT's accountable for service issues, to ensure that training is provided to all personnel on a timely basis and to address any necessary modifications to services, service delivery approaches or deployment. The current organizational structure of the EMS contributes to the success of this approach.

The project team's assessment of the current organizational structure for EMS raises the following points:

- The division has one position supporting the needs of EMS as an ancillary duty.

- The current organizational structure would not be able to provide an overall, institutional focus on this critical program if the department were to assume transport services, full time managerial oversight would be needed.
- The current approach provides for effective checks and balances between EMS oversight and operational concerns.
- The current structure does not provide for dedicated field supervision for emergency medical services.

Given our findings, the Matrix Consulting Group recommends that if the WGFRD were to assume transport responsibilities the existing, but vacant, Deputy Chief position be filled and be assigned to oversee the daily operations of both fire and EMS and the direct management of EMS operations. This position would serve as a liaison to the Medical Director and Billing Agency as part of the general duties, and would be assisted by the current Battalion Chief. Enhancing the current structure provides clear benefits to the organization and to the overall delivery of pre-hospital services in the City of Winter Garden.

Recommendation: Fill the vacant Deputy Chief position and include management of overall EMS operations in the job description if the WGFRD assumes transport responsibility.

8. THE COST / BENEFIT ANALYSIS SHOWS PROVIDING EMS TRANSPORT SERVICES WILL RESULT IN AN APPROXIMATE AVERAGE OF \$306,122 ADDITIONAL REVENUE ON AN ANNUAL BASIS IN WINTER GARDEN.

An important factor in considering whether or not to assume responsibility for EMS transport services is the determination of whether the cost will be equal to or less than the cost of using a third party to provide transport services.

Currently, the City of Winter Garden does not subsidize Rural Metro for providing ambulance transport services, but does have the expense related staffing and operating an ambulance that does not transport patients or collect the revenue associated with

patient care and transport.

The following table illustrates the proposed rates for transporting patients to the hospital:

Proposed Transport Rates

Service	BLS	ALS 1	ALS 2	Per Mile
Rate	\$650	\$700	\$800	\$10

Rural Metro reported transporting a total of 2,503 patients from 3,324 patient contacts in Winter Garden during the 2013 calendar year. This equates to a patient transport rate of 75%. Utilizing the above information and the assumption that 30% of all transports will be BLS, 50% ALS 1, and 20% ALS 2 with an average transport mileage of ten miles per transport and assuming a population growth rate of 1.5% annually, the following revenue will be realized by the WGFRD for transporting patients over the next five years:

Revenue Estimates for EMS Transport by Year at 60% Collection

Year	2015	2016	2017	2018	2019
# Transports	2,541	2,579	2,617	2,657	2,697
Revenue	\$2,058,210	\$2,088,990	\$2,119,770	\$2,152,170	\$2,184,570
Collection Rate	60%	60%	60%	60%	60%
Total Revenue	\$1,234,926	\$1,253,394	\$1,271,862	\$1,291,302	\$1,310,742

As shown above, the City of Winter Garden can expect to collect total revenue of approximately \$1.2 - \$1.3 million annually over the next five years. The following section examines the current and additional costs associated with providing EMS transport services. This is the high end of revenue estimates, as it utilize the results of the comparative survey to determine collection rates.

Utilizing a collection rate factor of 40%, more in line with that reported by Rural Metro will result in lower projected EMS revenue:

Revenue Estimates for EMS Transports by Year at 40% Collection

Year	2015	2016	2017	2018	2019
# Transports	2,541	2,579	2,617	2,657	2,697
Revenue	\$2,058,210	\$2,088,990	\$2,119,770	\$2,152,170	\$2,184,570
Collection Rate	40%	40%	40%	40%	40%
Total Revenue	\$823,284	\$835,596	\$847,908	\$860,868	\$873,828

The overall budgetary impact of each of the above projected collection rates is illustrated in a later section of this report.

(1) Winter Garden Will Require an Ambulance Replacement Program to Ensure a Reliable Fleet of Ambulances is Maintained.

Currently the WGFRD has two ambulances, which are designated as transport Units. The following table illustrates these units:

Type	Make	Model	Year	Status	Reserve	Replace
Transport	Pierce-Medtec	GMC 5500	2008	Front-Line	2015	2018
Transport	Wheeled Coach	Freightliner FL-60	1999	Reserve	Current	2009

As shown above, the current front-line ambulance should be placed into reserve status in 2015, while the current reserve ambulance should be replaced. The City will also require the purchase of an additional transport ambulance to ensure they maintain two front-line and one reserve ambulance in inventory at all times. This will require an initial purchase of two ambulances, and the placement of the current front-line ambulance in reserve status. The current estimated total cost for a fully equipped Type I ambulance is approximately \$195,000. The following table illustrates the annual financial impact of purchasing the ambulances on a seven year payment term, utilizing current interest rates for this type of purchase. The information was obtained from a company specializing in financing government equipment, including fire and EMS:

Ambulance Purchase Finance Cost

Unit	# Needed	Useful Life	Total Cost	Finance Rate	# of Payments	Annual Payment
Type I Medium Duty	2	10 Years 7 Years Front Line	\$390,000	3.9%	7	\$59,327

There would be a final nominal payment to purchase the ambulances in 2021. To equalize the replacement of ambulances, the City should consider altering the replacement schedule for these new units to six and eight years to allow the purchase of a new ambulance to occur every three to four years.

(2) Additional capital expenditures will be required to purchase capital equipment required as part of the protocols.

In order to meet the dual service environment of providing fire-based EMS services, the City will be required to purchase advanced life support equipment, radios and self-contained breathing apparatus. There are also some local upgrades such as battery operated stretchers and stair chairs that will need to be purchased. The total capital outlay associated with the purchase of the second ambulance is approximately \$60,000.

(3) Additional Staff to Provide Emergency Response and Transport Services will Cost an Estimated \$395,418 Annually including Salaries and Benefits.

As shown earlier, the project team is recommending an additional six (6) positions related to the staffing of the EMS transport service and filling the existing Deputy Chief position to ensure appropriate management of EMS. The following shows a breakdown of these positions using current salaries, a benefit factor of 50% and annual salary increases of 2%:

Position	Number	Annual Salary	Benefits Cost	Total Annual Cost
Firefighter/Paramedic	6	\$43,935	\$21,968	\$395,418

As shown above, the annual salary and benefit costs to staff the additional recommended personnel is \$395,418. The following table illustrates the personnel costs over a five-year period:

Year	2015	2016	2017	2018	2019
Firefighter/Paramedic	\$395,418	\$403,326	\$411,393	\$419,621	\$428,013

(4) Additional Costs Required for Supplies, Fuel, and Maintenance Will Be Between \$55,841 and \$62,850 Annually.

Currently, Rural Metro provides the WGFRD with replacement supplies for those used in providing patient care prior to the arrival of the Rural Metro transport unit. If Winter Garden were to assume the responsibility for transporting patients, this practice would come to an end, therefore additional medical supply costs, maintenance costs, and fuel costs would need to be factored into the cost analysis. The following table illustrates the assumptions for added costs associated with providing EMS transport services. These costs are broken out by broad category and do not represent line items used by the WGFRD:

Expenditure	2015	2016	2017	2018	2019
Fuel	\$12,500	\$12,875	\$13,261	\$13,659	\$14,069
Maintenance	\$13,656	\$14,066	\$14,488	\$14,922	\$15,370
Supplies	\$25,500	\$26,265	\$27,053	\$27,865	\$28,700
Other	\$4,185	\$4,311	\$4,440	\$4,573	\$4,710
Total	\$55,841	\$57,516	\$59,242	\$61,019	\$62,850

As shown above, the additional maintenance, fuel, and supply costs associated with providing EMS transport services will range from \$55,841 to \$62,850 over the five-year period. The following section provides a pro-forma budget with all revenue and additional cost factors presented for the five-year period.

(5) Factoring All Revenue and Expenses Results in Positive Cash Flows Over the Five-Year Budget Period Depending on the Collection Rate.

The following budget illustrates the financial impact to the City of Winter Garden related to assuming EMS transport services. It is important to note that the current expenses related to providing EMS services are not included in this budget, as the City currently budgets for and expends funds related to using a third party for EMS transport services:

Pro-Forma Five-Year Budget at 60% Collection

Account	2015	2016	2017	2018	2019
Revenue					
EMS Transport Fees	\$1,234,926	\$1,253,394	\$1,271,862	\$1,291,302	\$1,310,742
Expenses					
Salaries and Benefits	\$395,418	\$403,326	\$411,393	\$419,621	\$428,013
Operating Costs	\$55,841	\$57,516	\$59,242	\$61,019	\$62,850
Ambulance Lease	\$59,327	\$59,327	\$59,327	\$59,327	\$59,327
Capital Equipment	\$60,000	\$0	\$0	\$0	\$0
Net Income (Loss)	\$664,340	\$733,225	\$741,900	\$751,355	\$760,552

As shown above, the City of Winter Garden could expect to realize an average net increase of approximately \$730,270 annually by assuming EMS transport services and cumulative net revenue of \$3.65 million over 5 years. It is important to note that the revenue estimates are based on the comparative survey and a conservative estimate based on collection rates of surrounding communities.

Rural Metro reported a much lower collection rate for Winter Garden. If the collection rate were reduced to 40%, more in line with the collection rate reported by Rural Metro, the following would result:

Pro-Forma Five-Year Budget at 40% Collection

Account	2015	2016	2017	2018	2019
Revenue					
EMS Transport Fees	\$823,284	\$835,596	\$847,908	\$860,868	\$873,828
Expenses					
Salaries and Benefits	\$395,418	\$403,326	\$411,393	\$419,621	\$428,013
Operating Costs	\$55,841	\$57,516	\$59,242	\$61,019	\$62,850
Ambulance Lease	\$59,327	\$59,327	\$59,327	\$59,327	\$59,327
Capital Equipment	\$60,000	\$0	\$0	\$0	\$0
Net Income (Loss)	\$252,698	\$315,427	\$317,946	\$320,901	\$323,638

As shown above, even with a greatly reduced assumption in collection rates, the City of Winter Garden would still realize a cumulative increase in net revenue of \$1.53 million over the five-year period or an estimated average of \$306,122 annually. For purposes of budgeting, the project team recommends using the more conservative collection figure of 40%.

9. WINTER GARDEN HAS AN ESTABLISHED AUTOMATIC AND MUTUAL AID AGREEMENTS IN PLACE FOR INSTANCES WHEN UNUSUALLY HIGH CALL VOLUME EVENTS OCCUR.

As shown earlier in the report, the typical hourly EMS call volume for Winter Garden requires 1.1 ambulances to handle the workload. Peak call times, require approximately 1.6 ambulances in the hours between 7:00 and 8:00 pm. It is not fiscally responsible for the City to staff above typical service needs as the daily staffing of two ambulance will be sufficient unless unusually high call demand occurs. The current deployment of two ambulance by Rural Metro and one ambulance by Winter Garden does allow Winter Garden to transport in the event a 3rd ambulance is needed due to all Rural Metro units being occupied on emergency calls.

To plan for these unusual events, Winter Garden has established automatic and mutual aid agreements in place with Orange County.

The automatic aid agreement with Orange County allows the Chiefs of each department to meet to draft and revise written operation plans for the provision of automatic aid. If the City were to assume transport responsibilities, the Chiefs should meet to revise the current plan to allow the immediate dispatch of an Orange County ambulance in the event both Winter Garden ambulances are occupied on other

emergency calls. This will allow Orange County to place their closest EMS unit on notice that is now first due in Winter Garden so that a timely response is possible.

Recommendation: If Winter Garden Assumes EMS transport responsibilities the Chief should immediately work with Orange County to develop operational plans to have an immediate EMS available in the event all Winter Garden ambulances are occupied on emergency calls.