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February 28, 2003

Mr. Darnell Earley
City of Flint Administrator
1101 S. Saginaw Street
Flint, MI 48502

Dear Mr. Earley:

We are pleased to provide the results of our study of the Flint Fire Department. As you know, Dorsey-Pages LLC was engaged to assess various Fire Department functions in light of Flint's need to conduct budget and financial reviews of all City departments. We assisted the City by reviewing key assets of the Flint Fire Department (FFD) such as staffing, stations, and apparatus, and services such as Fire Prevention, Suppression, and EMS, and helped determine which services and resources are most important. As anticipated in our proposal, our principal areas of analysis included:

- Staffing
- Stations
- Apparatus
- Training
- Administration
- Budget
- Contract

Additionally, at the request of the administration, we expanded our review of the Emergency Medical Services (EMS) function provided by the Fire Department.

To perform this project we utilized the services of three very experienced professionals: James Grigsby, a Virginia Fire Chief and former Michigan Deputy Chief; Michael Holland, a former Florida Fire Chief, and John Dorsey, a long-time management consultant to public safety organizations.

Drawing upon the sixty years of collective experience that Dorsey-Pages' associates have in fire department operations and management, we used a proven methodology of on-site interviews, key areas-of-concern benchmarking by comparing FFD's current service levels against similar sized cities and against professional standards, and

drawing conclusions and developing recommendations based upon this analysis, to conduct the engagement.

The recommendations contained in this report are not based primarily upon the City of Flint's cash resources, nor do they take into account the issues before the City in its current 312 arbitration with Flint Firefighters Union Local 352. The overriding basis for the recommendations contained in this report is the need to provide a high level of Fire and Emergency Medical Service (EMS) to the citizens and visitors to the City of Flint, and to protect the safety of the FFD firefighters.

Summary of Recommendations

Based upon our investigations, and the analysis described below, we have developed several key recommendations for provision of Flint fire services. These are as follows:

- Implement a 56-Hour Firefighter Workweek
- Restore 9 Firefighter Positions
- Upgrade the Station Maintenance Program
- Conduct a Station Location Study
- Adopt a Fleet Maintenance Schedule
- Contract out Vehicle Maintenance Services
- Strengthen the Department's Training Schedule
- Implement a Public Education Program
- Employ a Civilian Fire Marshall
- Strengthen Arson Investigations
- Rewrite the Contractual Binding Agreement
- Contract for Ambulance Services
- Strengthen the ALS Service

Areas of Analysis

Several critical components must be present in a department to provide quality fire suppression and emergency medical services:

- Early notification of the incident and timely processing of the call by the 9-1-1 dispatching center

- An adequate number of fire stations located in critical areas near the population protected
- The proper mix and quality of fire apparatus and medic units
- An adequate number of trained personnel with the right skill set
- Training and teamwork of service providers
- Salvage and overhaul capability

In addition to the emergency response components, a comprehensive system will also have:

- Quality public education program
- Code compliance, fire safety inspections, and pre-fire planning
- Cause and origin (i.e., arson) investigation capability
- Complete ongoing training program
- Quality control (critical to EMS)
- Well-educated professional administrative staff
- Appropriate technology
- Regional perspective where feasible

Every community approaches providing the above resources in a manner unique to its needs, demographics, size, service demands, and community priorities. The City of Flint has several of these key components in place and they work well; several are noticeably absent.

For this engagement we assessed these issues through activities oriented to providing an overview and recommendations in eight (8) major operational areas:

(1) Staffing: The department's ability to meet its core mission;

(2) Stations: General overview of condition and location;

(3) Apparatus: Status of the current fleet, replacement and fleet support;

(4) Training: FFD ability to meet department training needs;

(5) Administration: FFD ability to provide proper planning and supervision;

(6) Budget: Current budget expenditures benchmarked against similar-sized cities/workloads, and

(7) Contract: Overview of the current union contract with general comments and recommendations.

(8) Emergency Medical Services (EMS): Past, present, and proposed future services.

Our reviews are provided in the following sections.

Findings and Conclusions

Staffing

The FFD fiscal year 2003 staffing summary shows a total complement of 133 personnel, 7 of whom are in fire administration and 126 of whom are in fire and EMS operations. The operational personnel are assigned to one of three shifts (platoons) which work a 24-hour shift, equating to a 50.4-hour workweek. These personnel are assigned to one of six fire stations located throughout the city, and perform all the standard tasks associated with structural firefighting and pre-hospital emergency medical care, except for transporting of patients to hospital.

Each firefighting platoon is assigned a complement of 42 personnel to staff the fleet of six (6) fire pumpers, two (2) squad units, one (1) aerial ladder truck, one (1) command vehicle, and one (1) advanced life support (ALS) unit. The presently-required personnel for staffing each unit is three (3) per fire pumper; two (2) each per squad; and one (1) per aerial ladder, command, and ALS unit, for a total of twenty-five (25) required on-duty personnel. While 25 is the minimum required daily staffing, this number will fluctuate upward, depending on the number of personnel on vacation, assigned Kelly days, sick leave, etc. Given this variability, the average daily staffing will exceed the required 25, but rarely exceeds 30 personnel. It is our understanding that the threshold number of 23 triggers overtime, with squad staffing dropping to one person to avoid overtime (but this is rarely the case).

This complement of personnel and fire apparatus provide structural firefighting, first responder (basic life support or BLS), and paramedic (ALS) services for the 124,000 Flint citizens in a geographical area of 26 square miles. The FFD and the 911 Dispatch variously estimate that the number of calls Flint responds to range from 19 - 24,000 calls per year, with a structure fire call experience estimated from 435 to 591 to 791 per year (the latter of which represents an average of 2.17 per day). The former figure comes from a report generated by 9-1-1 Communication (Table I). This table depicts both first and successive engines responding to a call. Note that reported fires may not actually be working fires that would require additional time and resources to extinguish.

While not unique to Flint, the FFD experiences a high volume of daily working structural fires, many of which are attributed to arson associated with the many vacant

structures throughout the city. This high number of structural fires plays a major role in the modus operandi of the FFD when responding to simultaneous or sequential working fires. It is not uncommon for FFD personnel to engage in two or three structural fires per shift. A good deal of stress results from this level of workload.

Table I: Engine 2002 Fire Calls-for-Service Statistics

Unit	Call Type	Response Times (Minutes)	Fractional Minutes	No. of Calls
EN11 (Sta #1)	All Calls	8:31	8.52	605
	Structure Fire	4:56	4.93	56
EN31 (Sta #3)	All Calls	6:06	6.10	508
	Structure Fire	3:44	3.73	132
EN41 (Sta #4)	All Calls	7:45	7.75	203
	Structure Fire	4:41	4.68	45
EN51 (Sta #5)	All Calls	8:11	8.18	431
	Structure Fire	4:44	4.73	82
EN61 (Sta #6)	All Calls	6:24	6.40	459
	Structure Fire	4:00	4.00	85
EN81 (Sta #8)	All Calls	8:16	8.27	283
	Structure Fire	4:26	4.43	35
Total Engine Calls				**2,489**
Total Structure Calls				**435**
Average Engine Response in Fractional Minutes			**7.48**	
Average Engine Response to Structure Fire			**4.28**	

The FFD has a very well-defined emergency dispatching protocol for responding to residential structural fires (since the residential structural fire is every fire department's standard type of fire response, we will use that type of response here to compare and contrast service levels). FFD responds with three (3) fire pumpers, two (2) squads, and one (1) command unit for a total on-scene complement of 14 personnel. Additional resources can be dispatched (e.g., the aerial ladder) if called for by the on-scene incident commander.

Staffing Comparisons

The eighteenth edition of the National Fire Protection Association (NFPA) Fire Protection Handbook, Chapter 10, "Organizing for Fire Protection," provides some guidelines

related to urban fire suppression staffing. Note that fire suppression in an urban setting involves the accomplishment of at least the following tasks:

- Command of the incident
- Application of water in appropriate quantities
- Water supply
- Forcible entry
- Ventilation
- Search and rescue
- Utilities
- Salvage and overhaul

"The number of personnel and equipment necessary to accomplish the above will vary within a number of factors. Hence, it is difficult to determine a minimum number of firefighters or equipment required without careful objective planning, and without considering the important variables."

"The critical number for policy makers to use in planning related to staffing of shifts and apparatus crews - sometimes termed 'minimum manning' - are those that describe how many trained personnel can arrive within a stipulated initial attack time period."

"Fewer than eleven firefighters would be most hard pressed to accomplish safe, effective, initial interior fire attacks in a timely manner at a detached single-family dwelling, not including an incident commander."

NFPA considers a detached single-family dwelling a "low-hazard occupancy" which requires a staffing complement of 12 firefighters and one chief officer assigned on the initial response; so according to NFPA, Flint should have a base line of 13 personnel assigned to a residential structural fire. A medium-hazard occupancy (apartments, offices, etc.) should have 17 personnel assigned and a high-hazard occupancy (schools, hospitals, etc.) require 26 assigned.

The much-debated NFPA 1710 (Standard for the Organization and Deployment of fire Suppression Operations, Emergency Medical Operations, and Specials Operations to the Public by Career Fire Departments) is more exact in outlining staffing and response time standards for initial response to a reported structural dwelling fire - requiring that the first unit arrive 4 minutes 90% of the time with a four (4) person crew; and the initial full-alarm assignment arrive 8 minutes 90% of the time with a total staffing complement of 14 - 15 personnel. While we don't have precise numbers in this format for Flint, the response times indicated on Table I for 2002 suggest that Flint may not be too far off. What must be remembered here is that these numbers relate to dis-

patching and staffing of a reported structural fire; a more accurate means to compare a community's overall fire suppression/EMS capability is the total complement of on-duty personnel who are capable of responding to a service call or series of service calls.

Nationwide (Phoenix) Study

In 1999 the City of Phoenix, AZ conducted a nationwide benchmark study of fire department staffing. Included among the respondents were 27 cities with a population of 90,000 to 110,000 and 22 cities with a population of 140,000 to 160,000. To draw comparisons with FFD, we have combined the 49 cities (population 90,000 to 160,000) to compare averages against Flint's current department-wide staffing and resources.

Table II: Phoenix Fire Study

FLINT VS OTHER CITIES FIRE PARAMETERS	City Average	Flint	Difference	Percentage Difference
Total # Suppression Personnel	196.5	126	-70.5	-36%
Average firefighter per capita	1.57	1.02	-0.55	-35%
# Personnel on duty per shift	51	25	-26	-51%
# Stations	7.5	6	-1.5	-20%
# Engines	8.5	6	-2.5	-29%
# Ladders	2.5	1	-1.5	-60%
Dwelling Response	14.5	14	-.5	-.3.5%
High Rise Response	18.5	Unk.		
Average Response Time	3.36	Unk.		

A much broader base research paper produced by NFPA, "U.S. Fire Department Profile through 2000," utilizes information collected from thousands of fire departments nationwide (including many of the 215 departments which serve populations of 100,000 to 249,999), and reflects the same trend of the Phoenix study when comparing the City of Flint Fire Department to similar-sized population areas.

Table III: NFPA Fire Study

FLINT VS NFPA CITIES FIRE PARAMETERS (Per 1,000 population)	NFPA	Flint	Difference	Percentage Difference
# Pumpers	.081	.048	-.033	-41%
# Aerials	.014	.008	-.006	-43%
# Stations	.076	.048	-.028	-37%
Career Firefighters per Capita[1]	1.65	1.02	-0.63	-38%

[1] Based upon a 46-51 hour workweek.

To tailor a benchmark study particular to Flint, Dorsey-Pages LLC conducted a survey of several Michigan fire departments: Saginaw, Ann Arbor, Grand Rapids, and Detroit.

Table IV: Michigan Fire Study

FLINT VS. MICHIGAN CITIES								
FIRE PARAMETERS	**Ann Arbor**	**Sag-inaw**	**Detroit**	**Grand Rapids**	**Aver-age**	**Flint**	**Differ-ence**	**% Differ-ence**
Population	115,000	61,000	900,000	202,000	N/A	124,000	N/A	N/A
Total Personnel / 1,000	109/0.94	84/1.37	1400/1.55	269/1.33	1.3	1.07	-0.23	-18%
Personnel on Duty / 1,000	20/.017	21/.34	289/.32	59/.29	0.28	25/..2	-0.08	-29%
Stations / 1,000	6/.052	4/.065	35/.038	11/.054	0.052	6/.048	-0.004	-8%
Engines / 1,000	3/.026	4/.065	40/.044	12/.059	0.048	6/.048	0	0%
Ladders / 1,000	2/.017	2/.033	24/.026	4/.019	0.023	1/.008	-0.015	-65%
Work Week	50.4	54	56	50.4	52.7	50.4	-2.3	-4.4%
Ambulance Transport	No	No	Yes	No	N/A	No	N/A	N/A
Vehicle Maintenance Contract	No	Yes	Yes	Yes	N/A	Yes	N/A	N/A
Ladder Testing Contract	Yes	Yes	Yes	Yes	N/A	No	N/A	N/A
Prevention Bureau	Yes	Yes	Yes	Yes	N/A	No	N/A	N/A
Training Bureau	Yes	Yes	Yes	Yes	N/A	No	N/A	N/A

As can be determined by the above three studies, the City of Flint's fire service has fewer available resources than many of its professional counterparts. Compounding Flint's fire problem is the structural firefighting workload which, in many cases, exceeds the workload of the cities included in these studies.

This negative ratio of available resources to high workload has far-reaching implications for Flint citizens' fire safety and the health and safety of FFD personnel.

Staffing Recommendations

FFD administration, working with IAFF Local 352, needs to develop short, intermediate, and long-range strategic business plans that address the critical issues facing it, including the relatively low staffing ratios.

A critical factor is the expansion of personnel from the current level of 133 (42 per shift / 25 per day required minimum staffing) to a level that would permit the following resources to be available on a daily basis:

Table V: Staffing Requirements

Calculation	Staffing Requirement
• 6 Engines x 4 =	24
• 2 Aerial Ladders x 3 =	6
• 2 Squads x 2 =	4
• 1 ALS x 2 =	2
• 1 Command x 1 =	1
• **Total On-Duty Staffing =**	**37**

This level of daily required minimum staffing would afford Flint the ability to fight two simultaneous residential structural fires while adhering to sound firefighter safety principles. It will also lessen the detrimental effect of weary firefighters responding to sequential fires during their 24-hour shift. Additionally, this basic level of available resources will provide for simultaneous firefighting operations and provide uncommitted resources as a safety net for Flint's citizens.

Currently FFD has 126 FTE's assigned to fire/EMS operations. The recommended required daily level of staffing would require an increase from 126 to 148 (37 [required staffing] x 4 [constant ratio] = 148). The staffing to ratio number is derived by the number of shifts each firefighter is assigned to work, minus their total leave for vacation, sick, Kelly days, and military, etc. which equals approximately 30 work shifts per employee per year. Thus, 365 (days in a year) divided by 3 (number of work platoons) = 121.66 assigned platoon shifts, minus 30 (average leave) = 91.66 (average work shift per employee) divided into 365 = 3.98 rounded to 4.

This constant ratio of 4 is the second critical element that needs addressing if Flint is to increase its available on-duty resources. FFD's workweek of 50.4 hours and its generous leave policies driven by the current CBA should be adjusted to more closely reflect national averages. Many fully paid fire departments work a 53 to 56-hour week (5% and 11% above FFD's workweek) compared to Flint's 50.4. Increasing the average workweek by these small amounts greatly impacts the FFD's ability to maintain a higher level of on-duty staffing, and requires fewer FTE's to do so. This adds to citizen fire protection and firefighter safety.

Increasing the workweek from 50.4 to 53 (5.6 work shifts year) changes the staffing ratio number from 4 to 3.85. Further increase to a 56-hour work week (which will increase 12 work shifts per year and require a FLSA overtime threshold of 53 hours per week or 204 hours in a 27-day work cycle) changes the staffing ratio number to

3.65 (requiring employees to actually work approxitmately100 work shifts per year). The hourly workweek affects needed FTE's as follows:

Table VI: Additional Staffing Requirements

Calculation	Required Personnel	Additional Personnel
• Current 50.4 hour work week ration = 4 x 37 =	148 FTE	22
• Preferred 53 hour work week ration = 3.85 x 37 =	142.45 FTE	16
• Recommended 56 hour work week ration = 3.65 x 37 =	135 FTE	9

The cost of the latter option would be the wages and benefits for 9 staff[2], which is $752,352 per year at present pay and benefit levels (See Table XII), plus required overtime costs[3] of $133,000 to gain the equivalent of an additional 12.6 full time equivalent staff[4].

Because of City financial concerns, phasing in the needed staffing can be accomplished in the following fashion:

Table VII: On-Duty Staffing Plan

Short Term Staffing Calculation (Phase I)	Short Term Staff	Source of Additional Personnel	Long Term Staffing Calculation (Phase II)	Long Term Staff	Source of Additional Personnel
• 6 Engines x 3 =	18		• 6 Engines x 4 =	27	
• 2 Ladders x 3 =	6	56 - Hour Work Week	• 2 Ladders x 3 =	6	9 New and/or Re-called Staff
• 2 Squads x 2 =	4		• 2 Squads x 2 =	4	
• 1 ALS x 2 =	2		• 1 ALS x 2 =	2	
• 1 Command x 1 =	1		• 1 Command x 1 =	1	
• **Total On-Duty Staff**	**31**		• **Total On-Duty Staff**	**37**	

[2] The cost would be for 3 Operators and 6 Firefighters.

[3] This cost impact is an additional ½ hour of pay for hours over 53, or 1.5 hours per pay period. These hours are, through an offset allowable by FLSA, typically reduced by leave time (for which overtime is not paid). As a result the paid overtime per pay period, resulting from the 56-hour work week, averages 1.09 hours per employee (based upon leave averages of 27.5% of potential work time). At the present top pay of $50,720, or hourly rate of $17.42 based upon 2,912 hours, this results in additional pay per firefighter of $987 per year. With 126 firefighters being complemented by an additional 9, the total cost per year would be $133,000.

[4] Staff gain is based upon an additional 5.6 hours per firefighter per week for 126 firefighters (36,691.2 hours) divided by 2,912 hours per year (52 x 56).

Upon completion of both the Phase I and Phase II staffing plans, we recommend conducting a comprehensive review and study of staffing needs for operating under the Phase II staffing levels for a period of time long enough to develop and determine pragmatic service needs; normally a year's worth of run data would suffice upon which to base long-term recommendations. Other options may include:

- A "Power Shift," a concept that deviates from traditional constant staffing models employed by most fire departments by adding resources during the most critical service demand times. This concept is simple, less costly, and has an immediate impact on citizen service and firefighter safety. As an example, an additional five (5) person squad could be deployed Thursday through Monday, 8 p.m. to 4 a.m. (40 hours per week) with full time or part time personnel at a cost of 6 FTE's. While this is not as complete a solution as the staffing expansion described above, it may serve as an interim solution.
- The "paid on-call" option used by many part-paid, part-volunteer organizations; this concept uses a cadre of trained firefighters who are available and respond to emergency calls on a per diem, per call basis. This concept is less reliable, but also less costly than the previous two recommendations.

Stations

The Fire Department presently operates six fire stations throughout the city, as described in the following paragraphs, and depicted on Exhibit A.

Station 1

This is the City's main station. Station 1, located at 310 E. Fifth Street, houses a first run Engine (pumper), a Ladder truck, a Squad truck, the Echo unit and the Battalion Chief (shift commander). This facility also houses the fire administration and the 911 Communications Center, and is adjacent to the City Hall complex. The size of this station currently meets the needs of the Department, and the facility is reported to be well maintained. There has been major maintenance work done within the last three years, including items such as a new roof, heating system repairs and the installation of an apparatus exhaust system. There is an on-going maintenance program in place, including door replacement, floor work and a renovation plan for the kitchen area.

Station 3

Station 3, located at 1525 Dr. Martin Luther King Ave., is a combination location of two older stations, former stations 2 and 3. It houses an Engine. The size of this station currently meets the needs of the Department. The station has recently received a new H.V.A.C. unit (Heating, Ventilation, and Air Conditioning), insulation work and a new

fence around the building. The proposed maintenance work includes an exhaust system, which should be accelerated to an emergency purchase status.

Station 4

Station 4, located at 4309 Industrial Ave., houses an Engine. The size of this station meets the needs of the Department. The overall condition of this facility is poor. This facility is in need of paint, electrical work and plumbing repairs. The station has recently received work on the windows and a new boiler system. The needed repairs have fallen behind, and major work is needed for upgrades: H.V.A.C. units, doors and snowstorm damage from 2001 are some of the concerns. This station does not have an apparatus exhaust system, which needs to be addressed as soon as possible. It is likely the oldest station.

Station 5

Station 5, located at 3402 Western Rd., houses an Engine, as well as the community service "Smoke House." The size of this newer station currently meets the needs of the Department. This station is considered a new station by the Fire Department and has not received much maintenance other than preventive and routine repairs. Respect for this facility by the employees has kept it in good condition. Scheduled maintenance work is considered minimal, but should be continued to prevent the facility from deteriorating. The exhaust system connection to the apparatus has not been completed and is not in service, due to minor repair work needed.

Station 6

Station 6, located at 716 W. Pierson Rd., houses an Engine. The size of this station currently meets the needs of the Department. Maintenance items such as new doors, new boiler, a garage door upgrading and new windows have been completed within the last year. The installation of an apparatus exhaust system was also recently completed and is in proper working order. Items on the maintenance schedule include repairing snowstorm damage from 2001 and wall heating units. The roof should be studied as soon as possible, as its near-term replacement may prevent other damage and expense in the near future.

Station 8

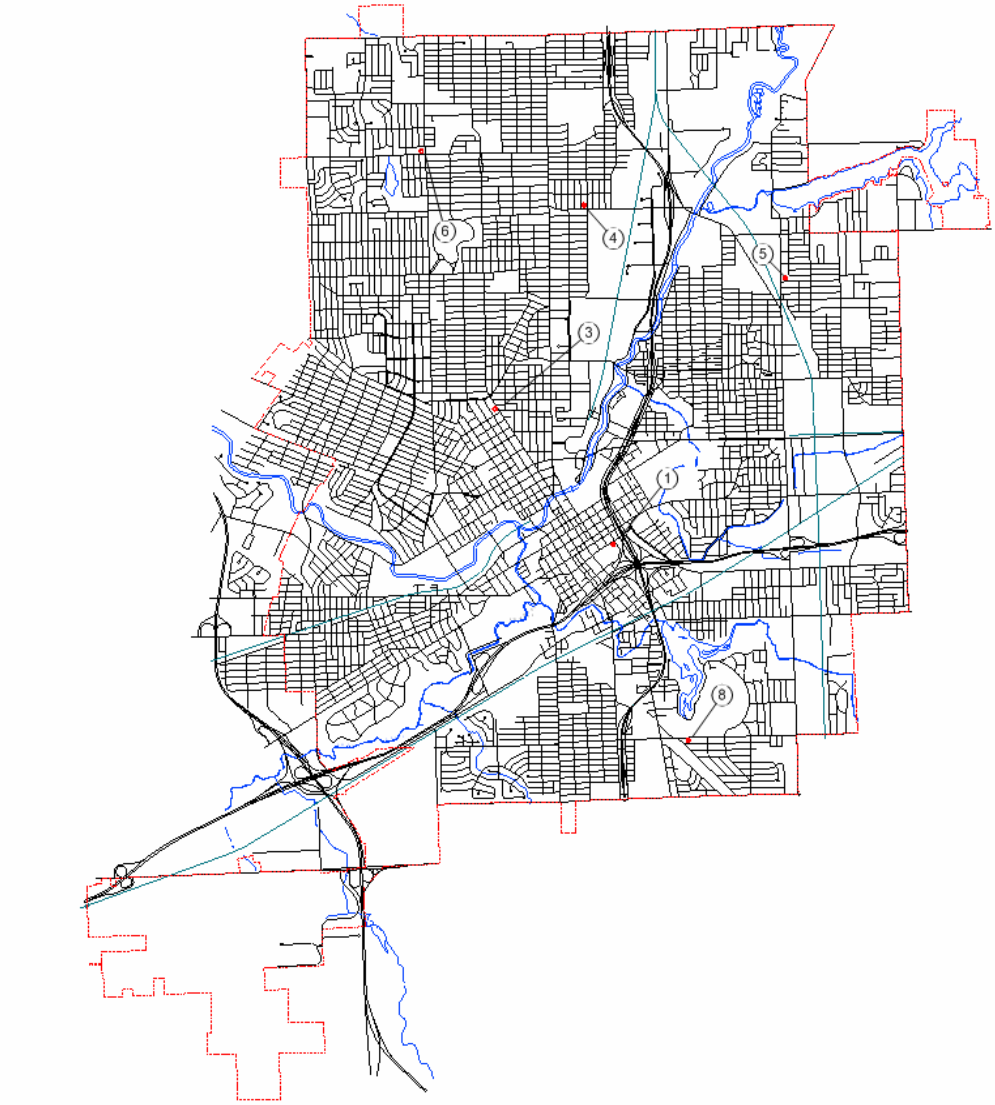
Station 8, located at 202 E. Atherton Rd., houses an Engine. The size of this station currently meets the needs of the Department. The station has recently received a new boiler, new windows and an apparatus exhaust system. The exhaust system, which recently cost the City upwards of $40,000 to install, has never worked. It was apparently installed to remove the exhaust from the wrong side of the apparatus, and was

never corrected. This station also has had some snowstorm-related damage that is planned for repair, along with heating units, doors and living area needs. The roof also should be studied for possible replacement.

Station Locations

Another dimension of fire stations is location, and how well service is provided to the primary run district. Present station locations are as indicated in Exhibit A.

Exhibit A: Flint Fire Station Locations



Directly related to station location is the ability to meet service response goals and the city's Insurance Service Organization (ISO) rating. ISO uses a general rule of thumb to have a structure within 1.5 miles of it's primary fire station. In a perfect response world, a station would theoretically be able to cover an area of 7 square miles. Cities are not designed using fire stations as their hubs with roads emitting in perfect lines from the station. Therefore, the 1.5 miles is determined by drawing lineal 1.5 road miles from the station. This will then provide planners with a very general picture of proper station locations within any given area, and a service level of a four-minute travel time.

Applying this concept to Flint depicts an area that has very good core city coverage, but is lacking a little coverage to the east/northeast section. The most underserved area of the city is the southwestern section, as can be seen on Exhibit A. Station 7, which was recently closed, provided good coverage to a large portion of this currently underserved area. However, there is a great degree of overlapping of districts to the east from that location.

Once the department has stabilized, and a rebuilding effort is undertaken, the response coverage into the southwest should be reconstituted. A comprehensive station location study should be undertaken to determine the optimum station site(s); it would require all present run data, which we were unable to obtain. One option, which cannot be confirmed without such a study, may be to replace the present older Station 4, whose response area is considerably redundant with stations 3, 5, and 6, with a new station in the southwestern section. Note that the elimination of this station will only place a burden of 10.3% of calls to be picked up by other stations, based upon the figures in Table I. The 911 Communications Center, in cooperation with the Fire Department has, over the years, developed a response plan that currently takes advantage of the station/apparatus locations.

Facility Recommendations

In addition to conducting a comprehensive station location study, the maintenance program should be reassessed. While the overall condition of the facilities seems acceptable, maintenance has faltered, perhaps due to the Fire Building maintenance person being transferred to Parks and Recreation and his duties being divided between both departments. The maintenance and condition of the stations appears to have been better run previously. A return to the former preventive maintenance program should be considered, as it would assist the City in keeping all stations in service for a longer period of time. The Fire Department does not presently have an employee assigned to coordinate the maintenance efforts of its facilities. Such a person, main-

taining contact with the Finance and Budget Department, could keep records of the conditions of the stations, the services requested, and those completed. These records would help Fire Administration avoid legal questions as to the safety of these facilities in the future.

Apparatus

Fleet Maintenance

The purpose of this section of the study is to review the quality and service levels of the Flint Fire Department's vehicle maintenance program, including but not limited to the fire service apparatus and support/service type vehicles. Fire service vehicles must go from a cold start to full throttle in less than 30 seconds, and continue to perform under stressful conditions. The maintenance of fire service vehicles is considered vital to providing emergency services.

Due to the importance of fire service apparatus maintenance and safety, the National Fire Protection Association has produced Standard 1915, "Standard for Fire Apparatus Preventative Maintenance Program." This first edition of NFPA 1915 was developed to provide the minimum requirements for a preventative maintenance program for fire apparatus. Implementation of the requirements in the standard should improve the safety and reliability of fire apparatus and support the requirements in other NFPA standards dealing with emergency vehicle maintenance programs. NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, also requires fire departments to establish a preventative maintenance program for their apparatus and equipment.

The Flint Fire Department vehicle maintenance program has gone through several major transformations over the last few years. The City's Central Garage performed some of the repair and service for the Department until last year. The exception to this was specialized fire service work such as fire pump maintenance, which was let out to a third party fire service maintenance facility. Additional special maintenance work, such as air conditioning, was also contracted. Basic service was performed by two vehicle mechanics employed by the Fire Department, but doing their work at the Central Garage. That service has been reported to have been somewhat ineffective by many whom we interviewed on this matter.

The estimated number of Fire Department vehicles as of this writing is: 8 Engines, 1 Ladder Truck, 3 Squads, 2 Command units, 1 Echo (ALS/Paramedic) unit, 5 Ambulances and a small number of cars, vans and a pick up truck. The term "estimated" is

being used, as several vehicles are in the process of being eliminated due to age, and several are being used or are allocated to other Departments. The 5 ambulances are presently scheduled to be placed on the auction block pending the direction taken by the City. There are 3 engines out of service, one of which is scheduled to be disposed of in the near future. The average age of the engine fleet is 11 years. There are 2 new Engines on order that are expected to be placed into service within two months, giving the Department a full Engine complement and some maintenance relief.

Current Maintenance Program

It appears that maintenance of the Department vehicles is being done in a haphazard manner. There is no person within the Department assigned to manage and monitor the maintenance of the vehicles. As a result, there is little preventative maintenance being performed and almost no maintenance records can be found. All maintenance is being scheduled as repairs come due, typically waiting until the equipment breaks down. In at least one case, no repair work had been done to place an apparatus back in service. An example of this problem is cited in the Department of Consumer & Safety Industry Services' report of an unsafe rust condition affecting the safety of one of the engines.

The lack of preventative maintenance has reduced the service level of the existing apparatus to low levels. Several interviewed firefighters could not state when their trucks had service or when the oil was last changed. The records of any service, including oil changes, transmission service, other fluid services, battery testing, etc., could not be located. In fact, the Chief advised that the last preventative maintenance service performed on most of the apparatus, in July, 2002, was a band-aid response from R & R Fire Truck Maintenance to get vehicles up and running. The Central Garage Manager mentioned that several thousand dollars worth of fire vehicle parts are still sitting in an old parts room going unused since the Fire Department mechanics program was eliminated last year.

There are no written SOP's (Standard Operating Procedures) or SOG's (Standard Operating Guidelines, per the FFD terminology) to give employees direction in handling vehicle maintenance problems. In addition to the lack of guidelines for reporting problems to responsible parties, there is no method or procedure to properly track or monitor the work being done. An example of the seriousness of this dilemma is the fact that several warrantee-covered repair items have gone un-repaired for many years. In one case it has gone on for the 12-year life of the truck.

As of the date of our on-site visit, Station 4 was operating without an engine. There were only 5 available first due engines stationed in the 6 stations. Also at this time, an engine was sitting in the rear of a station out of service for several months due to a pump transfer unit problem. Both R & R and the Central Garage stated that this was a quickly repairable item that could have permitted placing the truck back in service in a few days.

The maintenance work is presently being divided among three outside vendors, each of whom is doing different work with no communication among them. The largest of these vendors is R & R Fire Truck Maintenance Inc. of Northville, MI. They are presently assisting with emergency repairs even though they claim to be owed a little over $60,000 by the City. The R & R management seems to be aware of the City's financial situation, but is continuing to supply the repair work and parts on an emergency basis to keep the FFD operational. Doc's Auto Electric of Flint, MI is in a similar situation, with only a small amount owed, but emergency work is still being offered. Work is still being performed by Graff's GMC of Flint, MI, which has their accounts paid up. The Central Garage is also doing a small amount of work.

The Fire Department Apparatus Operators do not receive in-service training by certified mechanics for the equipment they operate, as their training stops after the basic driver program. As a result, many operators are not properly attending to their assigned equipment. Evidence of this is that the engine that was out of service with the pump transfer unit problem mentioned above, was out of service due to lack of oil in the transfer case, according to R & R. Thus, an unnecessary repair of several thousand dollars may have been avoided. Firefighters should be trained and re-certified periodically in the proper operation of their units. The work of the operator starts with the proper checking of his/her equipment prior to start up, then continuing throughout regular operation. The lack of preventative maintenance and driver training could reduce the two new arriving engines from new vehicle condition to the condition of the rest of the fleet within a short period of time, even within the warrantee period.

Additional portable equipment needed by the fire service to perform fire scene duties is also an issue, along with apparatus. This would include, but not be limited to: portable generators, smoke ejector fans, SCBA (Self Contained Breathing Apparatus) units and extrication tools. The Fire Department has recently experienced the same lack of service due to maintenance of these tools as they have with their vehicles. Due to the fire station maintenance crew being reduced and the last service technician playing a split role with Parks and Recreation duties, these repairs and service are not being done. An example of this problem is the fact that two relatively new smoke ejector fans have been sitting idle at Station 1 for several months waiting for repair, while two

older, unreliable units are in service on the squads. The experience of the City with the Department of Consumer & Industry Services over the last two years concerning such items should stand as a warning that these problems can be very serious.

A problem noted in this research is that all of the SCBA service is being done by an outside service vender located some distance from the city, apparently causing a slight delay in returning units to service. The lack of record keeping of this service was noted in the Department of Consumer & Industry Services review last year.

Maintenance Cost to the City

In determining the cost of fleet maintenance we reviewed the records that were available in the Fire and Finance Departments, which information was minimal. We relied on interviews of the Finance and Budget personnel, Fire Department personnel, the Central Garage Manager and the outside maintenance vendors. Thus, the conclusions we reached for this report must be qualified by this limitation.

It was estimated by the Finance Department that the vehicle maintenance cost to the City was approximately $150,000 for 2002, up from $90,000 in 2001.

R & R estimated that $110,000 was spent for their services alone during that same period of time. Graff's reported that $27,283 was spent with them and Doc's services were reported to be at $7,137. The cost from the City Central Garage for 2002 was not known, but was believed to be minimal, as they have performed strictly emergency repair work. The total cost for repair services for 2002 appears, therefore, to be between $144,420 and $150,000.

No records were found at the Fire Department pertaining to any service done, by whom, or the resulting cost. In interviewing the Fire Department personnel, it appears that the City's slow payment history to the outside vendors has affected the relationship between the Fire Department and its outside maintenance sources needed to maintain the fleet. Who and when to call has become a major decision affecting service to the community. The claim was made by firefighters on several occasions that they were paying for small minor repairs and parts out of their pockets rather than waiting for the arrival of an unknown maintenance service. The cost of maintaining any vehicle is usually proportionate to the preventative maintenance being performed. In this scenario, the costs may be much higher than they should be.

If the present cost estimates hold true, the average repair cost for the apparatus is at least the $18,000 figure spent with outside contractors last year, which figure may

have only been $11,000 the year before. This would assume that most of the maintenance work involves the 7 serviceable engines and the ladder truck. These figures are shown in Table VIII below.

Table VIII: Present & Projected Maintenance Costs[5]

Apparatus	Age	Present Average Annual Cost	2003 - 2004 Cost
1986 E One Engine (Dispose)	17 years	$11 - 18,000	
1990 E One Engine (Reserve)	13 years	$11 - 18,000	$6,000
1991 E One Engine	12 years	$11 - 18,000	$12,000
1991 E One Engine	12 years	$11 - 18,000	$12,000
1991 E One Engine	12 years	$11 - 18,000	$12,000
1995 KME Engine	8 years	$11 - 18,000	$12,000
1996 KME Engine	7 years	$11 - 18,000	$7,500
2003 KME Engine	0 Years		$2,100
2003 KME Engine	0 Years		$2,100
1988 Grumman ladder	15 years	$11 - 18,000	$8,000
Totals		**$88,000 - 144,000**	**$67,700**

The final column in the table results from our discussions with R & R, the outside vendor with the most experience with Flint fire apparatus. They estimated that if the Fire Department placed their vehicles under a proper maintenance program they could reduce the annual cost of maintenance by as much as 50% percent. R & R, which has experience in providing service to over 250 fire departments across the state, indicates that a new vehicle's maintenance should remain below $1,400 for the first year.

Apparatus with an age of 1 to 7 years old should average $5,000 per year. Older units over 7 years old should be able to be maintained for $8,000 yearly. Based upon receiving the new equipment and even increasing R & R's estimates by 50% as we did in the table above, maintenance under a full preventative maintenance program might be reduced by half or more in future years. Note that a full year may be needed in order to return apparatus to their required service level.

[5] The managers of the Central Garage and R&R Fire Truck Maintenance Inc. provided helpful information for this chart.

Vehicle Maintenance Requirements

The following Table IX shows the levels of service that are considered to be a minimum for fire maintenance. In viewing it, and the tables above, it is evident that a professional fleet service company, specializing in fire apparatus, could raise the level of service and reduce the overall cost to the City.

Table IX: Fire Apparatus Maintenance Requirements[6]

Maintenance Service Provided	Presently Done	Available at Central Garage	Available Out-Sourced
Maintenance technicians Emergency Vehicle Certification	No	No	Yes
Warranty service	No	Yes	Yes
Apparatus/Operator training	No	Yes	Yes
Preventive maintenance on preset schedule	No	Yes	Yes
Portable equipment maintenance	Little or not at all	Yes, possibly using present building maintainer	Yes
24 hour vehicle and equipment support	By calling different services not under contract	Yes, by rotating pager response	Yes, by contract with on duty technicians
Maintenance turnaround	Poor, in some cases not at all	Will give priority to fire service	Contracted turnaround time
Vehicle basic maintenance	Emergency service only	Most in house, outsource for brakes, A/C, transmissions	Yes
Fire service related work (pumps, valves, ladder, etc)	Emergency service only, no preventive work	No	Yes
Truck fabrication work	Some work done by building maintainer as time allows	No	Yes
Maintenance/Fire department liaison	None	Would appoint building maintainer	Appoint service manager or local technician
Maintenance records management	None	Would keep track on present garage software	Would keep full records
Pump and ladder testing	No	No	Yes

[6] The managers of the Central Garage and R&R Fire Truck Maintenance Inc. provided helpful information for this chart.

The Fire Chief should be instructed to appoint an employee to become the maintenance "officer" with authority to deal directly with a liaison from the vendor.

The maintenance officer, answering through the chain of command from the Chief, would work directly with the shift officers and the vendor. He or she would coordinate the scheduled preventive maintenance and repairs, keeping records of all apparatus service. Coordination with the Finance Department and provision of their required documentation will be paramount. Emergency repairs should be governed by a Department SOG created by Fire Administration. This SOG would empower shift officers to make the decision to notify the vendor of the nature of the emergency and determine the required response time. The maintenance officer will maintain reserve apparatus to be placed in service immediately during these situations.

Vehicle Maintenance Recommendations

In order to perform the required duties of the fire service, the apparatus driven, engines pumped and equipment used must remain available, in working order and safe to use under emergency conditions. For the Fire Department to continue on the path of poor maintenance, a continued decline of services to the community will exist.

To return to the Central Garage for service would require the hiring of two certified mechanics. The estimated basic salary would be $37,713 each. Adding the present matching costs, including the fringe benefits for that unit of 101.33%, brings the grand total to $147,829 for two mechanics. The overtime required cannot be added into this scenario, as it is not known how much it would be needed. However, as preventative maintenance improves and reserve units are added, the overtime would be reduced. However, these costs will be in addition to some of the work being sourced out to other vendors, as indicated in the table above.

We believe that the apparatus maintenance program for the City of Flint Fire Department can best be managed both operationally and financially by contracting with a professional fire apparatus maintenance service. The City should, under the direction of their Finance/Purchasing Department, initiate a Request for Proposal for fleet maintenance, including preventative maintenance for the Fire Department vehicles as soon as possible.

The continued maintenance of the ancillary vehicles such as cars, vans and pick up trucks should continue to be handled by local dealers. The emergency service aspects of their maintenance, such as warning lights, sirens, etc., should be assigned to the Central garage. This would be a similar program to that of the Police Department.

It is highly recommended that the Chief appoint at least three members of the department assigned to three different shifts to maintain the basic service of the S.C.B.A. units. These personnel would have to train and be certified by the S.C.B.A. manufacturer and a complete "test kit" parts and workbench arrangement would have to be purchased to service these units. The cost of this program has been determined by fire departments across the country as paying for itself. The end result would be units being returned to service more quickly. Some major work requiring vendor facilities would still be sent out for service, including the re-certification of S.C.B.A. bottles. The compressor units used to fill the S.C.B.A units located at two of the fire stations would still have to be serviced by the outside vender as has been done in the past, but record keeping would be increased by the fire department technicians. This too was pointed out in the Department of Consumer & Safety Industry Services report.

Fleet Replacement Schedule

In conjunction with apparatus maintenance, it is imperative that the City, through its Fire Administration, establish a professional vehicle replacement schedule. This would include putting a program in place to accomplish this task. The present purchase of two new engines from the KME fire apparatus company was done under trying conditions with a close deadline for the use of the funds. There was no planning or control over the specifications for this purchase which, fortunately, was made through grant funds acquired by the City.

The replacement schedule should start with the inspection of the present fleet. The Fire Department Maintenance Officer, along with the maintenance organization, should prepare a report as to the age and operational conditional of the existing fleet. This should include any needed repairs and upgrades to maintain their service ability. The replacement schedule should then be established, using the current operational conditions of the department. This would include the number and type of alarms responded to yearly, including the expected mileage over the life of the first run units. The city road conditions and the weather must also be taken into consideration.

The average vehicle life expectancy for Flint can be obtained by comparing the replacement schedules of other cities in the Flint area. The largest of these are the City of Detroit and the R & R Maintenance Company serving many fire departments across the state.

A schedule follows.

Table X: Fire Apparatus Life Expectancy

Vehicle	Schedule
Engines	10 years, plus 5 additional years as a reserve unit
Ladder trucks, Tower Ladders, other aerial devices	12 years, plus 8 additional years as a reserve unit.
Quint trucks (Engine, Ladder/squirt combinations operating as an engine)	10 years, plus 5 additional years as a reserve unit
Squad trucks (other first run service vehicles)	6 years, plus 4 additional years as a reserve unit
Squad trucks (running as a second alarm response type unit)	10 years, plus 5 additional years as a reserve unit
Ambulances	3 years, plus 2 additional years as a reserve unit
Cars, pick-up trucks, vans	5 years, plus 2 additional years as a reserve unit

There are a myriad of other types of fire service vehicles. Note that the use of a Hazardous Material vehicle is not addressed here, as the Department's continued cooperation with the County Haz/Mat team is recommended. The need for an air-service vehicle was looked at and determined not to be needed at this time. The use of the Squad Trucks and their present portable air supply seems to be meeting the Department's needs.

The purchase of the two new engines due for delivery will place two apparatus into reserve. One of them, a 1986 model with over 100,000 miles, should be immediately placed on the replacement schedule for this coming year. The second unit would most likely be a 1991 model and should, with proper maintenance, be serviceable in this position for another three years.

In our opinion, the purchase of fire vehicles should be done by Committee. By this we mean that each person or group of persons having any responsibility for the purchase of and /or operation of the vehicle should have input in that purchase. The committee should consist of the Finance and/or Budget Departments, Fire Administration, Fire Department Maintenance Officer, apparatus operators and the maintenance depart-ment liaison. This method should be used to purchase vehicles, equipment or tools for the service. The end result is the purchase of equipment that is appreciated and that will be treated correctly and last longer.

We have prepared Table XI, below, to guide the Department until a Committee can be properly constituted.

Table XI: Tentative Fleet Replacement Schedule

Apparatus	Age in 2003	Replacement Year	Estimated Replacement Cost[7]
1986 E One Engine	17 years	2003	Retire This Year
1990 E One Engine	13 years	2004	$300,000
1991 E One Engine	12 years	2004	$300,000
1988 Grumman Ladder[8]	15 years	2005	$750,000
1991 E One Engine	12 years	2006	$300,000
1991 E One Engine	12 years	2007	$300,000
1995 KME Engine	8 years	2008	$300,000
1996 KME Engine	7 years	2009	$300,000
None		2010-2112	$0
2003 KME Engine	0 Years	2013	$300,000
2003 KME Engine	0 Years	2014	$300,000
Totals:			**$3,150,000**

Training

Training is a core task that all fire departments must perform. In the fire service, the training function is not a luxury to be conducted when time permits; it is as essential to a comprehensive fire suppression delivery system as responding to a second-alarm fire. There are no good fire departments without good training programs.

Fire service training can be broken down into several categories:

1. Basic Candidate Training
2. In-service Training
3. Company Evolutions
4. Officer Development
5. Required Continuing Education Units, which are needed to maintain certain certifications; e.g., CPR/EMT

[7] Costs are in 2003 dollars.

[8] We recommend starting a Ladder replacement program this year, placing this unit in reserve. Consider purchasing "Quint" type Engine/Tele-squirt apparatus at lease one every other Engine purchase until three are stationed around the city. This could reduce the future higher cost purchases of Ladder equipment. Quints will cost approximately $500,000 vs. the $750,000 cost of a Ladder.

6. Specialized Classes, e.g., Hazardous Material or Heavy Tactical Rescue (HTR)

While we were interviewing FFD personnel, one ranking chief officer described the Department's training program as "a joke." While we would not use the same terminology, we did find a lack of a sustainable training program to meet the department's needs.

To FFD's credit, they are moving forward with developing ongoing fire training programs within their operations division. The assistant chief and one department instructor are helping develop a station-based training program. However admirable these efforts are, they are woefully inadequate to develop and maintain the needed training program for FFD. We recommend that it be a requirement for all captains and above to become certified fire instructors, Level 2, within one year. These individuals will be used as a core to conduct some of the daily training classes.

We also recommend that a training division be established, staffed with an adequate number of personnel to insure that all the certified and continuing education hours needed to maintain the skills of FFD personnel be established. Three (3) individuals, an officer in charge, and two (2) instructors who are qualified in both fire and EMS should be adequate to develop and initiate a comprehensive training program. The estimated annual cost is $325,836 in salary and benefits[9], plus $30,000 in miscellaneous travel and material.

Administration

Flint Fire Department (FFD) administration is staffed with seven positions (chief, assistant chief and five clerical staff, who are charged with providing all the support functions to the department. These functions include, but are not limited to, administrative oversight, supervision and leadership, budget, payroll, purchasing, research and development, labor relations, contract management, prevention, training, and the staffing functions of hiring and promotions.

Each fire organization structures its department in such a manner as to best serve the needs of its particular community. While some general comparisons can be drawn, there are no hard and fast rules nor yardsticks to make meaningful comparisons; e.g., one government may perform the code enforcement/permitting function from the fire department, while another may opt to have their building department perform all code and permitting tasks.

[9] Cost for a Captain and 2 Lieutenants.

Regardless of its organizational structure, each fire administration should ensure that the core functions which are outlined in the introduction of this report are performed in an efficient and professional manner. To that end, we find the FFD administration lacking in ability and resources to provide a quality public education program, and perform code compliance and fire safety inspections, perform cause and origin (i.e., arson) investigation with proper follow-up through the Flint Police Department, and provide a comprehensive fire/EMS training program to maintain and upgrade the skill, knowledge, and abilities of its personnel. It should be a high priority for the FFD to develop long-range plans that address each of these weaknesses.

Administrative Recommendations

1. *Public Education Program*. Two groups of citizens are disparately impacted by the ravages of fire: the very young, and the elderly. To reach youth we recommend that the RISK WATCH program be adopted by the FFD administration. This program is NFPA approved, and partners with the local school administrations. It is a comprehensive program that can be utilized to reach children K-12, but can be tailored to community needs. In Flint's situation, we would recommend a K-5 pilot program. The major advantage to Flint in adopting the RISK WATCH program is that once the school systems adopt it, the schoolteachers themselves instruct the children in all aspects of fire and other safety lesson plans. These plans cover the more traditional stop, drop, and roll; EDITH fire related programs; plus incorporate other non-fire related safety messages to Flint's children. The estimated annual cost is $5,000 for 25 classrooms, part-time participation (staff time of 100 hours), transportation, and materials.

To reach Flint's elderly, we recommend exploring hiring part-time instructors or developing a cadre of retired citizens who can visit nursing homes and adult daycare centers and attend local neighborhood meetings to provide fire safety messages. This program would specifically target those hazards particular to the elderly, e.g., smoking in bed, use of breathing oxygen, etc. The estimated annual cost is $18,328 for part time involvement of 16 hours per week[10], printed material, and transportation.

2. *Code Compliance and Fire Safety Inspections*: As stated earlier, the City of Flint has options regarding how to perform fire safety inspections and code compliance / permitting relating to Fire Marshall functions. These functions are presently performed by the building department. If that is the approach the City of Flint wishes to take, it should ensure that fire prevention and code enforcement receive adequate priority and follow-up within the Building Department. It is our recommendation that Fire Marshall

[10] Estimated at $15 per hour.

functions be reconstituted within the FFD. The most cost-effective methodology to achieve citywide fire safety inspections is to hire one civilian Fire Marshall with the appropriate amount of part-time NFPA 1031 certified fire inspectors. The Fire Chief's office should establish citywide goals for the number and quality of annual fire inspections to be performed. These goals would then drive the estimated cost of this operation; e.g., if 8,000 fire safety inspections were to be performed annually, with each inspector inspecting 1.5 structures per hour, with a part-time salary of $15/hr., the entire program, including transportation, civilian fire marshal, and part-time salaries could be initiated for approximately $180,000. A major advantage to this approach is the potential availability of firefighters who would be willing to perform fire inspections in a part-time capacity.

3. *Cause and Origin Investigations*: Fire investigation should be a natural task for the FFD to perform as part of bringing closure to each fire scene. We recommend that parameters be established by fire administration (e.g., amount of dollar loss, fire death, civilian/firefighter injury) that trigger a quality cause and origin investigation for each incident that rises to the parameter's benchmark. We further recommend that the skills needed to perform cause and origin investigation be developed within the FFD's fire suppression operation division.

By providing an adequate stipend (e.g., $2,000 per annum) and training to NFPA 1033 standards, each fire incident needing a cause and origin investigation could be duly performed. This recommendation would maintain an adequate number of available investigators on duty at any given time. We would recommend that four (4) investigators be trained by platoon for a total of twelve (12) department-wide. There would be an initial start-up cost, the establishment of a cause and origin van for evidence collection and storage, and stipend cost. Estimated start-up cost is $55,000, with an annual ongoing expense of $30,000.

Secondary to this recommendation is the criminal and follow-up with the Flint Police Department (FPD). We recommend that the FFD team up with the FPD to have monthly meetings and review of the status of each investigation and the successful prosecution of criminal cases for those incidents deemed arson where a suspect has been identified.

Budget

FFD's currently authorized budget is $12,848,350 for a per capita expenditure of $103.61. The 1999 Phoenix benchmark study shows a per capita mean expenditure of $109.57 (adjusted for 2% inflation) for cities of 100,000 to 499,999 populations.

This places Flint's per capita cost for fire protection at 5% less than similar-sized cities, but FFD has 36% fewer personnel. Given that career fire departments are labor-intensive organizations with 88% to 92% of all costs attributed to personnel expenditures, this leads to the conclusion that this disparity (i.e., 5% lower cost vs. 36% fewer personnel) is driven by the high per-unit cost of FFD personnel.

Depicted below in Table XII is a chart showing the actual gross pay (taken from employees' W-2 forms, which include overtime) for top-ranked FFD personnel. Added to each group is an administration-estimated 60% benefit package (health/retirement) to attain a true per-unit cost for the average top seniority employees per rank.

Table XII: Average FFD Top Salaries

RANK	Actual 2002 Wages	60% Benefit Factor	Total Wage/Benefit Package
ACTING CHIEF	$93,372	160%	$149,395
PROVISIONAL ASSISTANT FIRE CHIEF	$81,453	160%	$130,325
CAPTAIN	$75,508	160%	$120,813
LIEUTENANT	$64,070	160%	$102,512
SERGEANT	$56,477	160%	$90,363
APPARATUS OPERATOR	$55,300	160%	$88,480
SECOND DRIVER	$52,358	160%	$83,773
FIREFIGHTER	$50,720	160%	$81,152

Contract

The purpose of labor management contracts is to provide employees with a competitive salary and benefit package which includes well-defined leave, retirement, and working conditions. For these stipulated benefits, the employer seeks a well-regulated, dependable workforce which is capable of performing all the critical tasks and functions required by the employer.

The current Contractual Binding Agreement (CBA) between the City of Flint and the Firefighters Union Local 352 (7/1/97-6//30/00) is a product of years of negotiated incrementalism. When interviewing Flint union representatives, they were straightforward in their belief that they were compensated in a competitive nature with other

firefighters throughout the state, but on the low side of the equation. As we examine the existing contract, it is our opinion that the current contract is extremely generous to Flint Fire Department employees in salaries and benefits. When drawing a comparison, the starting salaries and stated pay grades should not be the only benchmark used; the totality of pay and benefits is a much better method to make actual comparisons. We found it extremely difficult to extract all the nuances of the CBA and to clearly quantify those for this report. The CBA is a lengthy document compounded by multiple MOU's, supplements, and appendices. Some of the more glaring contract articles and stipulations we note below for your consideration, with comments where appropriate:

Article 2, Section 2

The CBA provides for a total of 27 positions and classifications which includes firefighters, officers, fire alarm dispatchers, mechanics, etc. It seems impractical to have the same CBA cover employees and their supervisors. The supervisors will find it extremely difficult to perform their duties to the highest ethos of professionalism when directing and correcting their brother and sister union members. It also seems unreasonable for one CBA to cover the extreme range of duties and tasks which are included in the current document. We question the validity of IAFF as the proper bargaining unit for many of the listed positions. It seems that AFSCME or other bargaining units may be more appropriate.

Article 5 – Union Business

This article provides for union representatives to be released from their assigned tasks to perform union business, which has a couple of negative consequences: 1) A loss of a productive person to tasks not associated with the goals and mission of the FFD; 2) Lack of clarity as to whether the union representative when acting in that capacity is counted as part of the daily required staffing; and 3) An unreasonable requirement for an employer to pay funds in direct wages, and to incur lost productivity, to support the goals and objectives of a labor association.

Article 6 - Definitions

The work week for fire suppression employees is defined as 50.4 hours per week. This standard work week of 50.4 hours, when compared to national averages, is 5% below a 53-hour work week and 10% below the norm of the 56-hour work week. As recommended in other sections of this report, we see increasing the average work week to a

53- or 56-hour work week as critical to providing additional resources for service delivery and firefighter safety.

Article 7 – Part-Time Employees

This section provides pro-rated benefits to part-time employees. One of the advantages of hiring part-time employees is to reduce the employer's liability associated with benefits. The City of Flint may find itself utilizing part-time employees on a more regular basis to provide emergency services. To facilitate this approach, we would recommend eliminating this clause requiring benefits for part-time employees.

Article 10 - Section 6 – Special Assignments

Seniority becomes the sacred cow in most labor organizations. This section typifies that approach by the union. However fair and equitable this may seem to the rank and file, it minimizes FFD's ability to control department activities and to precept, develop, and motivate employees. A special assignment should be the sole prerogative of FFD's Fire Chief. Lacking that authority, it becomes a union bid, not a special assignment.

Article 11 - Section 1 – Kelly Days

Kelly days are a mechanism used to reduce firefighters' average work week. We would question the practice of assigning and then allowing employees to "trade" Kelly days, trade in less than 24-hour increments, and the benefit that FFD derives from permitting union representatives to float their Kelly days.

Article 12 – Salary and Wages

Salary ranges as outlined in the CBA have extreme spreads. For example, from hiring date to the fourth year of employment, firefighter salaries increase 75%. The City is embracing false economy by trading a low starting wage for high-end salaries, which all employees rapidly matriculate to. During contract negotiations, the total cost of salaries and stipends, and the impact these have on total unit cost, must be identified; e.g., Article 14 - Food Allowance - provides for 2.5% of a fifth-year firefighter's ”base salary for each employee assigned to the 50.4-hour work week." This equates to a little over $1,000 per employee. Would employees not eat if they aren't assigned to work? The FFD provides kitchen accommodations and the opportunity for employees to prepare food in their own individual stations. We would simply have to ask, why provide a food allowance? Total savings for this change will be $126,000 per year.

Article 13 – Automatic Cost of Living

This article provides for an automatic cost of living increase. We would question the negotiating strategy to set salary ranges, provide for incremental salary increases, and provide cost of living increases within the same contract body. This places the City at a tremendous disadvantage during the contract negotiating session, due to the fact that all these pay increases are rolled into the employees' base salaries. It seems that negotiating should be just that - negotiating, where both parties put something on the table to further their goals and objectives. If the City participates in a system that permits the labor organization to come to the table with past salaries already adjusted for inflation, it is perpetuating salary range creep at accelerated rates.

Article 17 - Night Bonus

Another such stipend provides for a 7% bonus from the hours of 4:00 p.m. to 8:00 a.m. (16 hours per 24-hour shift). This night bonus, coupled with the food allowance, is approximately a 7% per employee cost that is hidden in the contract and not accounted for in the salary range. To further compound these hidden costs, the stipends are rolled into the overtime and holiday rates. What justification does the City of Flint have for providing an incentive to employees which, in theory, is for the least productive time; i.e., downtime, food preparation time, sleeping time, etc.? Savings for this change are estimated at $297,948 for avoiding the 7% bonus on two-thirds of firefighter work hours.

Article 19 - Standby

We recommend this section be reviewed and adjusted to provide for standby stipends only when those standbys restrict or impose on major life functions or lifestyles. Technology as simple as issuing a pager should meet the needs of both parties without imposing on one or costing the other.

Article 22 – Snow Emergency

It is incredulous that the City of Flint would agree to pay emergency workers additional compensation to come to work and perform their jobs during their normally assigned work shifts.

Articles 23, 24, and 25

These articles all deal with leave benefits: holiday, annual and sick. While a couple of these areas have policies that permit generous benefits, how sick leave and vacation are deducted must be clearly defined and adjusted if those deductions are made in 12-hour increments for a 24-hour shift worked.

An area of major concern is sick leave, the sick leave bonus, and the selling back of sick leave. It seems that the City of Flint gives additional sick leave hours to employees who do not use sick leave (over a stipulated time period), and then purchases that same sick leave back from the employees. In addition, sick leave payout can be added to the final average compensation for purposes of calculating retirement, thereby, artificially inflating retirement benefits.

Article 25 - Section 4 – Extended Leave

We recommend that the wording be removed and federal FMLA language be inserted, plus elimination of trade time under this section.

Article 31 – Military Service

It is common practice for local governments to provide for benefits above and beyond what the law requires for those individuals who are serving in the U. S. armed services in a reserve capacity. In many cases, these provisions permit the employees to pyramid their benefits. To that end, we would recommend removing the language that provides for annual leave for time spent in the armed services.

Article 38 – Grievance Procedure

It is standard and customary for all contracts to provide for means of redress. As a general observation, there has been a lack of contract management and prudent oversight of the CBA. The number of grievances filed annually and the time and effort required for dealing with these grievances, unfair labor practices, and master contract negotiations have placed an extreme burden on FFD's administration and the City of Flint's labor negotiators. To help rectify this area of labor relations, we recommend that the wording in the contract which provides for splitting the cost of these grievances, arbitrations, etc., be removed, and language inserted that provides for the loser to pay the full cost of proceedings. To make this a successful strategy for both parties, only those critical issues needing to be addressed would be processed through the system. City administration would need to carefully define each issue prior to pro-

ceeding through the process and to have agreement between the human resources, legal department and FFD administration as to what the proper course of action is, and to maintain that course.

Article 39 – Work Rules

We recommend eliminating this entire section and removing work rules as an issue to be negotiated with the union. One interesting item under this article states, "Either the city or the union may invoke the grievance and arbitration procedure." Just as a historical question: has the City ever invoked the grievance procedure?

Article 41 – Uniforms and Clothing

We recommend that the dollar amount stipulated under this article be reviewed and pro-rated according to the current number of employees.

Article 44 – On-the-Job Injury

We recommend that the current wording be eliminated and that state workers compensation laws be inserted. Additionally, we highly recommend that all individuals who are assigned to light duty and currently are on the 50.4-hour work week have their work week adjusted to the Monday through Friday, 40-hour work week.

Article 59 - Promotions

As a general comment, we feel this section should be reviewed and methodologies established that promote the most qualified individuals. Items like Section 3d limit the Department's ability to promote the brightest and the best and perpetuates the seniority-driven system. Also, once a qualified list of chief officer candidates is established through agreed-upon means, a selection of chief officers should be the sole discretion of FFD's Fire Chief.

In conclusion, in addition to the CBA, there are a multitude of MOU's, Letters of Understanding, supplemental agreements, and arbitration rulings that drive employee/employer interactions. Flint firefighters and their relationship with the City of Flint is viewed through these prisms of legal and contractual documents. The mission, vision, and values of FFD are found nowhere in these legal parameters. Also lacking is language which speaks to leadership, dedication to duty, employee motivation and morale, and a fair day's wage for a fair day's labor. Given these legal handcuffs, no fire chief can provide inspiring leadership and be a change agent to improve the

firefighters' work environment and service delivery to Flint's citizens. Every initiative can be challenged and bogged down in grievances, arbitrations, and court rulings.

We would hope that rectifying the years of contractual incrementalism contained in the current CBA does not require similarly protracted efforts. Failing to obtain a fair contract and as a final recourse the City may, if the opportunity presents itself, have to seek to replace the current CBA, and develop an employee relationship based upon the City's providing a fair wage and benefit package in return for a dedicated motivated workforce.

EMS

Flint Ambulance Service

The purpose of this section is to examine the Emergency Medical Services within the City. We began by assessing the existing system, looking at the recent history, including how the present system was initiated. The Flint Fire Department had been operating a two-tier EMS system for many years. The first tier of this system was the first responder level. This consisted of a Basic Life Support (BLS) response using the primary Fire Department engine companies. The Fire Department formerly had 4 ambulance transport units in service with an additional unit in reserve. Recently, only the Fire Department's Advanced Life Support (ALS) unit, known as the Echo unit, is in service (ALS is commonly known as the Paramedic level of EMS service).

In the past the Fire Department first responder engine would respond and start initial patient assessment and treatment. If medically necessary, the Fire Department Echo unit would also respond and initiate ALS treatment. The Fire Department ambulance would transport the patient to the hospital and the City would bill for that service. Two ambulances were ALS certified and two were BLS.

The private ambulance services within the Flint and Genesee County community during this time were doing non-emergency transportation to and from local hospitals and other medical facilities. During high emergency activity periods, they would assist the Fire Department with the overflow of emergency calls. Some of these private units offered ALS and others BLS services.

Because of City financial difficulties the staffing levels within the Fire Department were reduced during July, 2001. As a result, the Fire Department eliminated 2 of the 4 ambulances covering the City, with private ambulance companies picking up the overflow of emergency calls. In April 2002, the City elected to stop the transport

service altogether and allow the private ambulance services to do this work. The Echo unit and the engine companies continued to provide the first response service. The Fire Department ambulances were placed in storage. Under the present system, the Fire Department responds as first responders and the private ambulance companies do the patient transporting, and bill (Patients or insurance companies) for that service. There are no contracts in place controlling the services.

The cost of the service under the past system with both tiers being performed by the Fire Department is not available. There are no records within the Fire Department or the Finance Department to review. The savings to the City after April of 2002 would be the savings of Fire Department personnel, maintenance to the ambulances and ancillary equipment and supplies. This savings, which would be partially offset by the lack of collection of ambulance patient bills, have already been realized by the City in the overall Fire Department budget.

There are presently 6 first response engine companies stationed at the 6 fire stations. A single Echo unit responds from Station #1 downtown. There are 6 private ambulance companies presently servicing the city in different levels and capacities. All of these companies combined have approximately 23 ambulances serving the Flint and Genesee County area.

There are three basic patient transport scenarios that occur under the present system, depending primarily on the patient's medical condition as determined by the paramedic. The following chart shows these operationally. Note that the BLS patient can be transported by a BLS or ALS ambulance, but an ALS patient must be transported in an ALS ambulance with a paramedic attending to the patient. This can be the paramedic assigned to the ambulance or the Echo paramedic.

Table XIII: Basic Patient Transport Scenarios

Patient Medical Level	Ambulance Staff Level	Patient Transported by:	Fire Department Status
BLS	BLS	Ambulance	FD returns to service
ALS	ALS	Ambulance	FD returns to service
ALS	BLS	Ambulance with Echo unit attending	Engine company returns to service

Future EMS Considerations

One option available to the City is to reestablish ambulance service under the auspices of the Fire Department. The first consideration we looked at is the start-up costs. These consist of EMS certified personnel (hired or transferred from fire suppression and replaced), ambulances, medical equipment and supplies. Another requirement would be to reestablish services with a medical billing company to collect patient revenues. Some cities have the staff and the capability to do the EMS billing through their accounts receivable department.

Funding for this service is a consideration. Aside from tapping the city coffers, the transporting agency has the ability to bill for several of its services, including ambulance mileage to the receiving hospital and medical supplies, including bandages and the like. Medical equipment such as splints and defibrillators are also billable. Administered drugs, medications and oxygen can be billed in most locations. Sometimes the actual work performed by the personnel, such as doing CPR is a billable item. Some items are replaced by the transporting agency, the receiving hospital or the Genesee County Medical Control Authority as part of the countywide EMS program.

Consideration for Restoring Fire Department Ambulance Services

In order for the City to reestablish the Fire Department as the sole provider of EMS and Ambulance services, the Department would need to generate the following functionalities to be able to take on the additional responsibility of patient transport.

The possible goal of restoring 4 ambulances to on-duty service throughout the city would require a minimum of 5 vehicles with one unit in reserve. If an attempt is made to use the existing units for patient transport, the units must receive full maintenance service, including any upgrading required. They must also go through the required EMS certification inspection process. At this point in time, all 5 of these ambulance units have reached or have gone past a reasonable fleet replacement time period. According to the best records available, their ages range from 3 to 5 years old, having been placed in service in 1997, 1998, 1999 and 2000. The mileages on these units are believed to be as high as 175,000 miles. The best-case scenario would be to trade in and replace these units according to the vehicle replacement schedule. The minimum action required would be to put them on an accelerated replacement schedule, changing out the two least serviceable units within the first year. This would cost $100,000 per unit.

At the current employee position ratio of 4 firefighters to fill 1 full time position, the Department would need 32 fire/EMS qualified personnel to operate 4 ambulance units within the city. These can be new hires or existing certified personnel transferred internally. The needed funds would then be for their replacements in the fire suppression division. At the salary rate of $81,152 yearly, the firefighter wage and benefit rate, the total funds needed for 32 staff for the EMS division would be $2,596,864.

An option to the cross-trained firefighter/paramedic model is to develop the division using civilian personnel at a much lower salary rate. The main drawback in using civilian personnel is the loss of these cross-trained personnel as additional staffing in fire suppression incidents.

Restoring services would necessitate that the Fire Chief appoint, or hire, an EMS Director to coordinate the division. Some fire departments share EMS responsibilities with that of another fire officer such as the Training Officer. This was the case in Flint until 2002.

It is believed by the Fire Department Administration that the medical equipment needed for start up is, for the most part, still in storage. Most of it is in usable condition and only a minor increase in expendable supplies would be needed, plus any upgrading that might be required because of lack of use over the last year.

Operational costs could be estimated by determining the mileage and idle times of the vehicles during medical emergencies. Fuel and maintenance of older model ambulances are a considerable amount more than units properly maintained and on a replacement schedule. Each unit has a history of traveling over 30,000 miles per year, according to department estimates. Comparable fuel cost for these units would be $5,625 per unit per year at today's fuel prices. Using the estimated maintenance costs determined within the apparatus section of this report the yearly maintenance on these vehicles, if under five years of age, might be $5,000. Maintenance of the ancillary equipment can be estimated by reviewing their previous history. These numbers could not be determined with the data obtained during this research project.

The analysis of the funds available to either the fire department or the private ambulance company showed that they are almost the same, although public agency ambulance collections have historically been lower then those of private firms. One reason for this is that fire departments have to return to service to be ready for the next alarm. This means in many cases traveling back to their static locations to be available to the taxpaying public in those districts. Thus, they spend less time in the hospital environ-

ment where the collection of detailed patient information, including billing information, is done.

Some progressive departments use a form of System Status Management that will return the unit to an active location during certain times of the day and days of the week. The more common terminology for this function is move-ups. Private ambulances have more leeway in their unit locations, so they can respond from hospitals and other facilities, in addition to move-up points. The Genesee County Medical Control Authority (GCMCA) has rules pertaining to these areas that should be considered.

In order to determine the amount that can be collected if the City decides to reestablish the Fire Department as the EMS transport provider, we evaluated the collections over the last few years. These amounts can be stated in dollars or percentage rates compared to total dollars billed out to patients. We interviewed the ambulance billing company used by the City of Flint (which also handles 80 other Michigan fire departments). AccuMed of Riverview, MI, provided us with the most recent data available. They collect patient revenues for an 8% service fee. There were no revenue records available from the Fire Department or the Finance/Budget Departments to use in comparison.

The following chart shows two years of AccuMed collections for the Fire Department. This was the only accurate data available for our research.

Table XIV: Ambulance Cost Recovery[11]

Dates of service	Jan 2000 / Dec 2000	Jan 2001 / Dec 2001
Ambulance runs billed	10,884	9,080
Dollars billed	$3,778,837	$3,057,501
Revenue collected	$1,705,571	$1,381,158
Collection rate from billed out	45.13%	45.17%
Flint disbursement at 92%	$1,569,125	$1,270,665
Collection rate disbursed	41.52%	41.55%

The first year is the calendar year 2000 and the second year, 2001. The service was discontinued in April of 2002. The actual collections for 2002 include follow up collections from previous years, so they cannot be used to determine a yearly number. The collection rates, as measured in percentages, can be reported two ways. The first is

[11] These figures provided by AccuMed Billing Inc.

the collection rate of the funds for the amount billed out. The second percentage rate is that received by the city after the fees for billing services are deducted. These figures take into consideration the allowable write/offs that cannot be collected. Some accounting services for emergency medical organizations track the allowable write/offs as revenue collectables. This can create the local misconception that collection rates for the city of Flint are in the 60 to 70 percent range. The average collection rate for the two full years is 41.535%. The higher of the two years billed out was 2000, the year when all four Fire Department ambulances were in service.

A return to a full two-tier system might result in costs for City as shown in Table XV.

Table XV: Net Projected Ambulance Cost

Key Annual Cost/Revenue Elements	Cost / Savings
32 Line Personnel[12]	*$2,596,864*
Vehicle maintenance (4 ambulances and 1 reserve	*$25,000*
New Ambulance each year[13]	*$100,000*
Fuel costs (4 in service units at $5,625 each)	*$22,500*
Total Operational Costs	***$2,744,364***
Expected Patient Revenue	-$1,514,993
Net Cost to the City	***$1,229,371***

The expected revenue of $1,514,993 was derived from an analysis developed by AccuMed Billing, Inc., the City's former billing agent, which developed a Flint Billing and Collections Forecast based upon presently projected recovery amounts for BLS, ALS, and Mileage charges. Their analysis, which is provided on Exhibit B, reflects more aggressive Fire Department billing and collections activity, but a very conservative cost recovery forecast. The company notes that their average recovery rate has been closer to 50%. Note that the first year of startup collections would be reduced by the ramping up of the billing process.

The Revenue would partially offset the projected expense of $2,744,364 for restoring a service consisting of four ambulances, resulting in a balance of $1,229,371 to be funded by the City. This amount would be affected by such factors as population changes, patient insurance coverage changes, and by modifications to the plan to utilize fewer units.

[12] Staffing is based upon 2 persons per ambulance, times 4 positions that are required to staff a job 7 x 24, times 4 ambulances; thus, 32 medics. Many of these positions may be filled by the 24 existing ALS-trained/-certified firefighters, but utilizing them will create job openings on the engines than will need to be filled.
[13] The City may require 2 new ambulances the first year, at a cost of $200,000.

EXHIBIT B

AccuMed Billing, Inc.

2/25/2003

CITY OF FLINT FIRE DEPARTMENT

EMS TRANSPORT BILLING/COLLECTION FORECAST

TRANSPORTS BILLED		9,000
70%	BLS RUNS	6300
30%	ALS RUNS	2700

	ESTIMATED FEES			
	BLS $300	**ALS** $500	***MLG** $6	
PERCENT BILLED TO PAYER				**TOTALS**
30% MEDICARE/BCBS RUNS				
	1890	810		**2,700**
ESTIMATED REVENUE BILLED	$567,000	$405,000	$81,000	**$1,053,000**
MEDICARE PAYMENT RATES (80% of approved amounts)	$173.69	$297.03	$3.22	
ESTIMATED REVENUE COLLECTED	$328,274.10	$240,594.30	$43,470	**$612,338**
ALLOWABLE WRITE/OFFS**	$156,662.10	$104,255.10	$26,595	**$440,661**
15% COMMERCIAL (AUTO,HMO)				
	945	405		**1,350**
ESTIMATED REVENUE BILLED	$283,500	$202,500	$40,500	**$526,500**
COLLECTION RATE 80%				
ESTIMATED REVENUE COLLECTED	$226,800	$162,000	$32,400	**$421,200**
25% MEDICAID (WELFARE)				
	1,575	675		**2,250**
ESTIMATED REVENUE BILLED	$472,500	$337,500	$67,500	**$877,500**
CURRENT MEDICAID PAYMENT RATES	$119.25	$217.35	$3.70	
ESTIMATED REVENUE COLLECTED	$187,818.75	$146,711.25	$41,625	**$376,155**
ALLOWABLE WRITE/OFFS**	$284,681.25	$190,788.75	$25,875	**$501,345**
30% PRIVATE PAY				
	1,890	810		**2,700**
ESTIMATED REVENUE BILLED	$567,000	$405,000	$81,000	**$1,053,000**
AVERAGE COLLECTION 10%				
ESTIMATED REVENUE COLLECTED	$56,700	$40,500	$8,100	**$105,300**

ESTIMATION SUMMARY

BLS REVENUE BILLED	**$1,890,000**
ALS REVENUE BILLED	**$1,350,000**
MILEAGE REVENUE BILLED	**$270,000**
TOTAL BILLED:	**$3,510,000**

BLS REVENUE COLLECTED	**$799,592**
ALS REVENUE COLLECTED	**$589,805**
MILEAGE REVENUE COLLECTED	**$125,595**
TOTAL COLLECTED:	**$1,514,993**

ALLOWABLE WRITE-OFF: **$942,006

PERCENT OF COLLECTED REVENUE **43%**

PERCENT OF RUNS BILLED AND COLLECTED **70%**

* Mileage based on 5 mile average

** **Allowable write-offs** equal the portion of Medicare, BCBS and Medicaid that, by law, can not be billed to any payor.

*** **Commercial Ins. and Private Pay** collection based on client historical data.

THE ABOVE INFORMATION IS AN ESTIMATION AND IS NOT INTENDED TO BE USED AS FACT

Note that our survey found that few fire departments in Michigan provide ambulance service (See Table IV).

Private Ambulance Companies as a Consideration

The six ambulance companies serving the Flint/Genesee County area were contacted to be interviewed to determine what levels of service are presently available in the City. Five of these companies responded in a positive manner and assisted with our research. The following information is provided by these five companies. Together they provide approximately 23 ambulance units in the area; ten are reported to be ALS certified. There are 7 static ambulance stations located in or near the city. All certified ambulance services meet the same medical and operational standards required of the Fire Department. None receive public funds.

The present ambulance environment does not allow for proper communications with the City 911 Center, as interagency communications is performed by telephone. There is also no direct communications between the Fire Department units and the ambulances. The medical radio channel provided for this purpose is cumbersome to use, and therefore ignored by most units involved with the emergency.

The companies that have stations located within the city claim response times of 5 to 7 minutes on average. The others who respond from outside the city claim 5 to 11 minutes, depending on the location within the city. The lack of communications between the City 911 Center and the ambulance companies was stated to be the main deterrence to better response times. All ambulance companies contacted were interested in continuing their relationships with the City.

EMS Conclusions and Recommendations

It is recommended that the City work to enhance the present EMS system; this is a low cost option for the City. It would provide for letting a Request for Proposal under the direction of the Finance/Budget Department that would dictate a full ambulance service contract. This would give the City full control over the ambulance service being provided. Several ambulance providers stated that they would be interested in a full contract or even a contract dividing up the service between several providers. One provider felt capable of responding to a contract for full service citywide. There are also a number of state-wide certified vendors who would consider bidding on such a proposal. One ambulance company or several, the contract with the City for these services is the key. A sample of required information to be included in an RFP for ambulance services is included in this report as Attachment A.

The Fire Department has two or three complete ALS equipment packages in storage, left over from the transport units, plus the package presently on the Echo unit. The Medical Authority provides the drug boxes and some of the expendable supplies. The City should consider placing these units in service with the 24 paramedic certified firefighters presently employed, on several of the engines. The Chief and the Fire Department EMS Director would determine which engine companies would best serve the public as ALS first responders. The outlying stations that are a greater distance from the downtown Echo unit would get first consideration. The use of "ALS Engines" is quite common throughout the state, according to the State EMS office. The Flint engines respond as first responders presently and raising the service level to ALS would enhance the patient care considerably by reducing the ALS response times. The additional cost of this service is minimal, considering that the engines already respond as BLS first responders. As the City is already paying stipends for 16 ALS Responders, it should incur little additional cost.

The 911 Communications center would also play a key part in this system, as they would have to establish a better and closer relationship with the ambulance service chosen to fulfill the EMS contract. Direct communications among all parties of the system is paramount to its success.

Other Issues

In addition to the findings and conclusions related to the aspects of fire services that were the subject of this report, we have developed the following additional list of recommendations for the City:

- Employ a permanent Fire Chief who has the interest and capability to satisfy the goals stated in this report.
- Evaluate and upgrade the Computer Aided Dispatch system which, while supplied by a leading CAD vendor, appears not to be satisfying the requirements of the City.[14]

[14] While conducting interviews we become aware of the weak reporting capabilities of the present computer system. According to the State Fire Marshal's Office, NFIRS section, the Flint Fire Department has not reported any incidents for 2002. Neither the Fire Department nor 9-1-1 Communications could readily gather accurate data regarding the number of incidents that are responded to each year. As stated in the 9-1-1 Administrator's November, 2002, report, "The Flint 9-1-1 Dispatch Center has the appearance of a "state of the art" operation. In reality a significant portion of available technology is not being used or is underutilized." Among issues are the lack of routine call reporting, disuse of the digital mapping system, and lack of computer prompting for Emergency Medical Dispatch protocols. Moreover, the Fire Department cannot generate NFIRS reports which, alternatively, might be generated for the short term through a free State software package.

- Consider a second Ladder unit, and or Quint Service, as footnoted on Page 22. Adoption of the Quint combined-unit approach can save the City hundreds of thousands of dollars in fleet replacement costs.

Cost Issues

Adoption of the project recommendations will not be without cost. Table XVI presents our estimates of the principal costs the City will incur in adopting our recommendations.

Table XVI: Summary Costs and Benefits

Recommendation	One-time Cost or (Savings)	Annual Cost / (Savings)	*Other Benefit(s)*
Change 50.4 to 56 Hour Workweek	N/A	$133,000	*Gain the equivalent of 12.6 staff, and improve citizen and firefighter safety.*
Add 9 Firefighters	N/A	$752,352	*Improve coverage and citizen and firefighter safety.*
Station Maintenance Program	N/A	N/A	*Better Preventative Maintenance (PM).*
Station Location Study	$75,000	N/A	*Improve coverage.*
Fleet Maintenance Program	N/A	N/A	*Improve PM.*
Fleet Maintenance Contract	($25,000)	($50,000)	*Improve Maintenance, PM.*
Training Program	N/A	$355,836	*Improve Quality.*
Public Education	N/A	$23,328	*Safer City.*
Code Enforcement / Fire Marshall	N/A	$180,000	*Safer City.*
Cause & Origin Investigation	$55,000	$30,000	*Improve Enforcement.*
Food Allowance	N/A	($126,000)	
Night Bonus	N/A	($297,949)	
Contracted Ambulance Service	N/A	N/A	*Improve Ambulance Control and Performance.*
EMS ALS Engine Expansion	N/A	N/A	*Expand EMS Services.*
Total	**$105,000**	**$1,000,567**	

ISO & Summary Comments

Based upon all of the above discussion, we suggest implementing the recommendations described above and summarized at the beginning of this report.

At present the City enjoys a good grade from the Insurance Services Office because of meeting standards in the Fire Service, and because of having a good water supply. The station locations and the areas of the city which are underserved, coupled with the other issues raised in this report such as staffing, training, maintenance, and prevention, if left unimproved, will drive the ISO grade to a less desirable net score. On a scale of 1 to 10 with 1 being the best rating available and 10 having no fire service at all, the current Flint ISO score is a grade 3; any one of the above-mentioned areas may cause a worse rating in the next ISO review if left uncorrected.

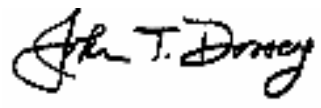
This could have an impact to the overall insurance cost for the Flint commercial and residential community. Program corrections, as indicated above, should be made and a comprehensive station location study undertaken in order to provide a high level of Fire and emergency medical service (EMS) to the citizens and visitors to the City of Flint, and to protect the safety of the FFD firefighters.

We believe that factors that hamper Flint and other cities from making money on EMS and Ambulance services include: (1) higher compensation paid to City employees vs. those of the private sector; (2) private sector firms benefiting from "co-lateral transports," transports to doctors office and to and from hospitals or other medical facilities, while cities only perform emergency-related work; and (3) greater private sector use of "unit staffing," as these firms typically do not use a constant staffing model, but rather assign people as they are needed.

We would like to express our appreciation for your help and the support of Emergency Financial Manager Edward Kurtz, and for the high cooperation of staff such as Labor Relations Information Analyst Jill Ghattas, Acting Fire Chief Dandre Williams, and IAFF President Mark Kovach.

Please let us know if you have any questions about our findings and recommendations.

Very truly yours,



John T. Dorsey, CMC

ATTACHMENT A
SAMPLE CONTRACT FOR PARAMEDIC AMBULANCE SERVICE FOR THE CITY OF FLINT[i]

This Agreement is entered into by and between _____, d/b/a _____ Ambulance Service (Contractor) and the City of Flint, Michigan, (City), a municipal corporation in Genesee County, Michigan, for the provision of paramedic level (ALS) ambulance service.

OVERVIEW

The City desires to ensure that quality advanced life support services are available within its boundaries and that quality ambulance transportation is available to the residents.

This contract shall establish an advanced life support ambulance service system that can provide ambulance patients with state-of-the-art, clinical quality of care, and with reasonable, reliable response time standards, with a goal of furnishing the best possible chance of survival, without disability or preventable complication, to each patient.

The parties to this Agreement are committed to jointly providing an effective and efficient pre-hospital care service for the betterment of the quality of life in Flint.

SCOPE OF SERVICE

1. The Contractor agrees to provide advanced life support services within the City in accordance with Federal and Michigan laws, including rules regulating emergency ambulance services.

2. The Contractor agrees to meet or exceed response time standards of _____ minutes, _____% of the time as calculated on a monthly basis for life-threatening emergency calls (Priority One Responses). These are based on dispatch priority protocols endorsed by the Genesee County Medical Control Authority (GCMCA). The Contractor will also respond within _____ minutes, _____% of the time, as calculated on a monthly basis for life-threatening calls within each separate ward (as defined on attached maps) within the City.

3. The Contractor agrees to meet or exceed response time standards of _____ minutes, _____% of the time as calculated on a monthly basis for Priority Three Responses. These are based on the dispatch priority protocols endorsed by the Genesee County Medical Control Authority.

4. Response Time Measure: Response time to emergency requests within the City shall be calculated as the actual elapsed time in minutes and seconds from the moment the call-back number, nature of request, and location of the patient are known to the Contractor's dispatch system, to the moment the Contractor's first paramedic ambulance arrives at the scene. Where multiple ambulances are sent to the same emergency incident, only the response time of the first ambulance to arrive at the scene will be counted. Where the patient is located in a residential, commercial, or industrial building the response time will be calculated to the time the Contractor's ambulance arrives at the specified building or entrance. Not less than 50 runs will be used to calculate response time

performance. If less than 50 calls occur within an area in a given month, successive calls from the following month will be included to reach a total of 50 calls.

5. Change in Priority Status: Where the priority code of an emergency call is changed en route to a call as a result of additional information received by the dispatcher prior to the arrival of the ambulance, the response time standard will be calculated for the latest assigned priority code.

6. Response Time Exemptions: The Contractor is exempt from response time requirements under the following situations:

a. Severe weather conditions that would provide reason to believe that attempting to comply with response time performance would have been hazardous to the responders or others, or where road or weather conditions did not allow safe driving.

b. During a disaster situation within the primary service area or neighboring community.

c. During system overload or unusually high system demand where more than three requests for service are occurring simultaneously. If this should occur, only the first three requests for service within the City will be subject to meeting response time standards.

d. When, in the sole discretion of the City's EMS Coordinator, road construction or repairs interfered with Contractor's ability to respond within response time standards.

e. All exception requests will be submitted to the City's designated EMS Coordinator for determination.

7. Disaster Preparedness: The Contractor has created an EMS Disaster Plan. Upon review by the City, this Plan, with modification if necessary, will be integrated into the City's Emergency Operators Plan (EOP). The Contractor will appoint a representative to work with the Emergency Services Coordinator or his designee to review and/or upgrade this Plan on an annual basis. The Genesee County Medical Control Authority (GCMCA) will appoint an individual to represent and direct pre-hospital care from the City's Emergency Operations Center in the event of a local disaster, or an individual as stated in the current EOP.

8. HAZMAT Team: The Contractor will designate a paramedic to work with the City/County HAZMAT team to deal with patient care issues and to act as liaison between the HAZMAT team and pre-hospital care providers.

9. System Coordination: The City and the Contractor agree to integrate EMS dispatching with police and fire 9-1-1 communications center operations as much as possible.

10. Emergency Medical Dispatchers: The Contractor will provide an individual to work with the management of the City's 9-1-1 Center to provide suggestions for improving the medical aspects of the dispatch operation and for improving the integration of EMS dispatch service with the police and fire dispatch operations.

PERSONNEL REQUIREMENTS

11. Courteous Service: The Contractor and its employees will conduct themselves in a professional and courteous manner at all times and will address and correct any occasional departures from this standard.

12. System Status Controllers: At a minimum, system status controllers will be trained and certified as emergency medical dispatchers. Such training and certification shall, at a minimum, meet the standards promulgated by the National Academy of EMD, Salt Lake City, Utah.

13. Paramedics: At least one paramedic on each advanced life support unit will be licensed by the State of Michigan, certified in Advanced Cardiac Life Support by the American Heart Association, certified in Basic Trauma Life Support by the American College of Emergency Physicians (or recognized equivalent) and be authorized to practice as a paramedic by the Genesee County Medical Control Authority or recognized equivalent training.

QUALITY ASSURANCE

14. Recordings and Audits: Telephone and radio communications will be recorded to allow review for quality assurance. The Contractor will work with the City to define an acceptable reporting mechanism and audit process to verify performance. The City will also allow the Contractor to verify compliance with contract performance by the City. The Contractor will provide quarterly reports to the City regarding contract compliance.

15. Meetings: Quarterly meetings will be held between the Contractor and the City for problem resolution and to identify options for further system development. These meetings will include the Fire Chief, 9-1-1 Director and those designated by the Contractor.

16. Q.A. System: The Contractor will maintain an in-house quality assurance program, including regular chart audits, to monitor quality of care, as approved by GCMCA.

17. Personnel Certification: Paramedic personnel shall be reviewed and certified by GCMCA.

INSURANCE COVERAGE

18. _____ Ambulance shall, within five (5) days of execution of this Agreement, file with the City a Certificate of Insurance which shall cover all of its insurance as required herein. The Certificate shall be satisfactory to the City and shall provide that the City shall be given thirty (30) days notice, in writing, of failure to renew, reduction in coverage, or cancellation. Nothing contained in these insurance requirements shall be construed as limiting the extent of _____ Ambulance responsibility for payment or damages resulting from its operations under this Agreement.

19. Public Liability and Property Damage Insurance: _____ Ambulance shall take out, pay for and maintain until completion of this Agreement public liability and property damage insurance (except automotive equipment) as shall protect it from claims for personal injury and property damage which may arise because of the nature of the

work or from operations under this Agreement. Coverage shall include personal injury and contractual liability endorsements.

Both personal injury and property damage insurance must be on an occurrence basis.

Each of said policies of insurance shall name the City as an "Additional Insured" and provide coverage in the following minimum amounts: For personal injury, $500,000 each person, $1,000,000 each occurrence and $1,000,000 aggregate limit; property damage, $500,000 on account of any one occurrence with an aggregate limit of not less than $1,000,000.

20. Comprehensive Automobile Liability: _____ Ambulance shall also take out, pay for and maintain until completion and acceptance of the work required by this Agreement, automobile public liability and property damage insurance which shall protect it from claims for bodily injury or property damage which may arise from the use of motor vehicles engaged in various operations under this Agreement.

The policy or policies of automobile insurance shall provide coverage in the following minimum amounts: For bodily injury, $500,000 each person, $1,000,000 each occurrence and property damage, $500,000 each occurrence.

21. Medical Malpractice: _____ Ambulance shall take out, pay for and maintain until completion of this Agreement paramedic and ambulance attendance service medical malpractice including loading and unloading of automobiles.

The policy or policies of medical malpractice insurance shall name City as an "Additional Insured" and provide coverage in the minimum amount of $1,000,000 combined single limit for bodily injury including personal injury. Coverage shall be subject to not less than $1,000,000 annual aggregate.

22. Worker's Compensation Insurance: _____ Ambulance shall furnish to the City satisfactory proof that it has taken out, paid for, and will maintain for the duration of this Agreement, full worker's compensation insurance for all persons which it may employ directly or through this Agreement, and Employer's Liability Insurance.

23. Notification of Insurance Companies: _____ Ambulance shall advise all insurance companies to familiarize themselves with all of the conditions and provisions of the Agreement, and insurance companies shall waive the right to special notification of any change or modification of this Agreement or of extension of time, or of the cancellation of the Agreement by the City or its authorized employees and agents, under the terms of this agreement except for notification of changes or modifications in the insurance requirements; however, failure to so notify the aforesaid insurance companies of changes shall in no way relieve insurance companies of their obligation under this Agreement.

24. Hold Harmless Agreement: _____ Ambulance shall defend, indemnify and save harmless the City, all of its offices, agents and employees from any suits, actions or claims of negligence brought for or on account of any person, persons, or property resulting from the negligent operations of _____ Ambulance or any of its subcontractors that are providing ambulance service under this Agreement. It is understood

and agreed that _____ Ambulance is an independent contractor with respect to the services governed by this Agreement.

25. Waiver of Rights: The City and _____ Ambulance waive all rights against each other for damages caused by fire or other perils to the extent covered by insurance.

ADDITIONAL COMMITMENTS

26. Membership Service: The Contractor will continue to offer, at its sole discretion, a membership program that will allow individuals to subscribe in order to "fix price and prepay" the co-insurance portion of their bill.

27. Non-Discrimination: The Contractor agrees not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, veteran status, or non-job related handicap.

28. Assignment: The Contractor agrees not to assign, transfer, or convey this Agreement, or any of the rights or privileges contained and granted in this Agreement, without prior written approval of the City. Any attempt at assignment or transfer shall be void and at the option of the City may be deemed sufficient grounds for cancellation and termination of this Agreement.

29. Collections: The collection procedures of the Contractor shall be humane and designed to maximize reimbursement through Medicare, Medicaid, and third-party payers.

30. Accreditation: Contractor shall maintain accreditation with the Commission on Accreditation of ambulance services.

CITY COMMITMENT

31. EMS Coordinator: The City agrees to appoint an individual with appropriate authority as the person responsible for overseeing the provision of emergency medical services in the City to work directly with the Contractor toward mutual resolution of patient and service complaints and to identify areas for improvement within the pre-hospital care system. The City Manager shall notify the Contractor of the appointment in writing. In addition, the Contractor will forward all communications system comments and/or concerns to the Contractor.

32. First Responders: The City agrees to provide medical "first response" for medical emergencies but only as defined in the approved medical priority dispatch protocols or as otherwise agreed by the City, Contractor, and Medical Control Authority. All responses will occur with individuals trained and annually recertified at the level of the Department of Transportation Medical First Responder level at the minimum. The City will continue to provide an automatic defibrillator on all medical responses with individuals trained and certified to defibrillate cardiac arrest victims under a program approved by the State of Michigan on units assigned first response duty.

33. Communications Center: Within twelve (12) months of hire, the City will train communications center staff in the use of medical priority dispatch protocols and medical pre-arrival instructions as defined by the Genesee County Medical Control Authority.

34. Standard of Care: The City recognizes the importance of the standards as defined in this Agreement and their potential impact on the mortality and morbidity of patients. Therefore, the Contractor will be required to meet the conditions of this Agreement only so long as the City has in place an Ordinance which states: The City agrees to require all ambulance service providers desiring to provide ambulance service within the city limits of Flint to meet, at a minimum, equal standards as those set forth within the ALS Ordinance as shown in Exhibit _____ and to allow the City's EMS Coordinator to audit that performance to assure compliance. The City will make part of its regular Commission Agenda periodic reports on ambulance service performance.

35. Access to Facilities: The City will consider access to all City buildings by the Contractor for use as post locations. Any building will be identified by the Contractor and limitations of that access will be determined by the City prior to the initiation of the use of any building. The City's EMS Coordinator's decision on which building, if any, may be used by the Contractor is final.

36. Referrals: The City agrees to give all referrals or requests for ambulances within the City to the Contractor, except as otherwise requested by the caller.

37. Quality Assurance and Verification: The City agrees to implement and maintain a quality assurance program for City EMS activities that meets with the approval of GCMCA and will make records available to the Contractor for verification of performance.

38. Indigent Care: The City recognizes that a significant amount of service provided under this Agreement is provided for indigents.

39. Attendance At City Events: City may from time to time desire the attendance of ambulance service for City events. If City decides that it desires required stand-by or normal stand-by service as hereinafter defined, it shall grant to _____ Ambulance the right-of-first-refusal to provide such service. The service to be defined is defined as: Required Stand-By is a staffed ambulance on location dedicated to a particular event or situation. Contractor will receive no compensation for the first hour of attendance, but City shall pay Contractor at the rate of $60.00 per unit per hour after the first hour. Normal Stand-By is a staffed ambulance situated at a particular event or situation which may be released if dispatched to respond to a call. No charge for normal stand-by service will be incurred by City.

PENALTIES

40. Contractor:

A. Definitions: "Priority One" - Life-threatening or potentially life-threatening emergency; "Priority Three" - Immediate response, non-emergency.

B. The Contractor will pay the City penalties as follows:

1. Priority One - The Contractor will pay the City a penalty fee of $500.00 per month, for each percentage point in response time performance below _____%, with a minimum monthly penalty of $1000.00 if response time was less than _____%.

2. Priority Three - The Contractor will pay the City a penalty fee of $200 for any month with a response time performance below _____%.

41. City: The City agrees to take prompt corrective action in event of notification by the Contractor of any areas where the City has failed to meet the provisions of this Agreement.

TERM OF CONTRACT

42. This Agreement shall be a _____ year Agreement with one _____ year extension based on good performance. It will be open to both parties for review and amendment as mutually agreed upon during a thirty-day period at the end of each anniversary date of the Agreement. Any amendments to this Agreement shall be set forth in writing and executed in a like manner as the original Agreement.

TERMINATION

43. Termination: The City agrees not to terminate the contact unless that termination is a result of a failure to meet the criteria set forth in paragraphs 2 and 3 for three consecutive months or for some other major or chronic default of the conditions of this Agreement. Either party can terminate this Agreement if both parties are in agreement; notice of the desire to terminate the Agreement must be provided in writing to the other party at least 60 days prior to termination, and acceptance by the other party must be returned in writing to validate the termination.

44. This contract replaces in its entirety all similar contracts between the parties of whatever date.

EXECUTION

This Agreement is entered into by the parties by the express approval of the City Council of the City of Flint through approval of Resolution _____ adopted _____ 2003.

WITNESS: CITY OF FLINT

_____ _____
BY:

WITNESS: _____ AMBULANCE,

_____ _____
BY:

[i] Document adapted from one in use in Battle Creek and Calhoun County, MI.