



**FRANKLIN RESCUE 1  
2000 INTERNATIONAL/HORTON**

# **I M P R O V E M E N T P L A N**

Fiscal Year 2008

October 2007

**Franklin Fire Department  
Capital Improvement Program  
Fiscal Year 2008**

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INTRODUCTION

The Capital Improvement Program for the fire department is intended to assure timely replacement of capital assets to insure the safest delivery of professional services to the citizens of Franklin. This year the department has requested the replacement of vehicles and equipment totaling \$ 611,500. This amount also includes funding for a replacement of our aerial ladder vehicle, the purchase of a software system to replace the present paper based system, as well as several communications purchases for the King Street Fire Station needed to communicate with the updated Fire Headquarters Building.



For your convenience we have provided a brief definition for each type of asset referenced in the CIP. Further we have included a brief description of the needs for requested funding and the department's methodology for vehicle replacement and rotation.

Thank you for your continued support in aiding the safe and efficient delivery of emergency services to the citizens of Franklin.



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<b>Item</b>	<b>Item description</b>
<i>Brush Tanker</i>	Surplus military unit capable of 4-wheel drive; supplied with a 500-gallon water tank and a 100-gallon per minute pump. This vehicle is used to supply water at the scene of larger brush fires.
<i>Pumper</i>	Also known as a fire engine is supplied with a water tank of 500 or 750 gallons and a 1250-gallon per minute water pump.
<i>Rehab Unit</i>	This unit is used to bring portable generators to the scene of large incidents. In addition it contains a cascade system, which is used to supply breathing air to provide site service for self contained breathing apparatus at the scene of emergencies. The present vehicle is an old smaller school bus and provides
<i>Aerial</i>	This vehicle provides for access to upper stories of buildings with a 100-foot hydraulic ladder. Additionally, the vehicle carries the majority of the department's heavy tools and supplies to facilitate building ventilation.
<i>Brush fire 4x4</i>	This vehicle is used to wild land fires and is provided with 4-wheel drive to facilitate off-road use. The vehicle is primarily a heavy-duty puck-up style truck with a 150-gallon water tank and small fire pump.
<i>Rescue Ambulance</i>	An ambulance licensed by the Department oh Public Health. All ambulances are licensed at the Advanced Life Support Level and are purchased and maintained in accordance with the requirements of the Commonwealth of Massachusetts.
<i>Staff vehicles</i>	These are basically regular passenger vehicles with enhanced drive train capacities to accommodate emergency response service. Each station and the Deputy Fire Chief is provided with a 4-wheeled drive to facilitate better winter response capabilities. The Fire Chief and fire prevention vehicle are sedan type vehicles.
<i>Pick-up Truck</i>	Standard pickup truck used to transport various equipment and appliances for department business as well as hose and other equipment during fire emergencies.
<i>Copy Machine</i>	Standard office photo-copying machines
<i>Self Contained Breathing Apparatus</i>	Individual appliances used by fire fighters to breath clean air in toxic environments.
<i>Thermal Imaging Cameras</i>	Devices used by fire personnel to identify hidden fire as well as trapped victims in fire conditions.
<i>Building Roofs</i>	Replacement of roofing materials at department facilities.
<i>HVAC Systems</i>	Replacement and major repair of the heating, ventilation and air conditioning system at department buildings.
<i>Alarm Transceiver</i>	The receiving device for the Town's municipal fire alarm system.

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<b>Item</b>	<b>Item description</b>
<i>Breathing Air Compressor</i>	The unit used to fill reservoir bottles for the department's self contained breathing apparatus.
<i>Cardiac Defibrillator</i>	Portable electric cardiac devices used for cardiac monitoring and defibrillation by department paramedics.
<i>Computer Technology</i>	The replacement and enhancement of various computer peripheral devices such as monitors, printers, work stations, etc. This also includes the periodic replacement of the computer network hub controller for the department's computer system.
<i>Non Disposable Medical Equipment</i>	Various items used in conjunction with providing Emergency Medical Services (e.g. splints, backboards, stair chairs, etc,) which periodically wear out and require replacement.
<i>Base Station Radio</i>	Radio units at each of the department building that allow for communications with mobile and portable units.
<i>Radio Comparator</i>	This device is an integral part of the department's radio system which acts as a router among the various repeater sites throughout the Town. The comparator electronically selects the strongest repeater site and sends it to the receiver/transmitter device for broadcast throughout the system.
<i>Radio Repeater</i>	This device forms the core of the department's radio system which allows for proper coverage throughout the entire Town. Each of 3 repeater sites tends to boost the radio signal from mobile units for transmission to other mobile units or our base station.
<i>Portable Radios</i>	Hand-held radios used by personnel at emergency incidents.
<i>Radio Pagers</i>	Paging units used to recall off-duty personnel for larger emergency incidents and station coverage.
<i>Station Fixtures and Furnishing</i>	This includes various items such as furnishings, larger pieces of office furniture (e.g. desks, filing systems, etc.)
<i>Miscellaneous Equipment</i>	To identify every piece of equipment within the department would be prohibited. Thus we have created a miscellaneous grouping to provide for infrequent incidental equipment purchases/replacements. Examples of this type of equipment include ground ladders, ventilation fans, hand tools and equipment for testing and maintaining emergency supplies.
<i>Protective Clothing</i>	This category includes both structural firefighting and emergency medical service garments necessary to protect our personnel. Typically the life expectancy of these garments is 5 to 7 years.

*Traffic Pre Emption  
Devices*

This equipment is actually installed in the controllers of the traffic lights throughout the community and intended to allow emergency vehicles to more safely navigate through intersections. Each emergency vehicle is fitted with a transmitter – when within range of the traffic signal, the traffic signal in the direction of the emergency changes to green with all opposing traffic receiving a red signal. This clears the path for emergency vehicles and ensures opposing traffic remains stopped.

REPLACEMENT ROTATION

Over the past several fiscal years the department has developed a vehicle rotation program in an attempt to keep capital costs reasonable and insure citizens and fire fighters have access to the best technology available. Although this rotation strategy is consistent with all fleet vehicles, there are slight variations depending upon the type of vehicle within the fleet. For the sake of clarity, we will address vehicle rotation in terms of Fire attack vehicles, Emergency Medical Vehicles and Staff and Support vehicles. Forest Fire Vehicles are not included in a rotation process as they are retired upon replacement.

FIRE ATTACK VEHICLES

Of this classification of vehicle, the Pumper and (Rescue-Pumper) are the vehicles typically subject to rotation. Within the rotation program are three positions, the first is active duty; the department presently has two active duty pumpers – one at Headquarters and one at Station #2. The goal of the rotation program is to insure that active duty pumpers are not more than 10 years of age, with no pumper more than 20 years old.

The next position within the rotation program is known as an active reserve vehicle. This vehicle is placed into service when one of the active duty vehicles are not available for service due to mechanical problems or used by returning off duty personnel during times of multiple calls or major emergencies and housed at the King Street Fire Station. The goal of the rotation program is to provide one active reserve vehicle ranging in age between 10 and 15 years old.

The last position within the rotation cycle is known as non-active reserve. This vehicle is placed into active service only if multiple vehicles are out of service due to mechanical problems and may be placed into service at major incidents. The key difference between the non-active reserve and active reserve vehicles is the amount of equipment typically stowed on the vehicles. The active reserve vehicle is provided with a full complement of equipment and capable of instantaneous assignment. The non-active reserve vehicle is not as well stocked with equipment and must receive equipment, transferred from another vehicle, before being placed into active duty.

EMERGENCY MEDICAL VEHICLES

The department presently operates three Rescue Ambulances. Each vehicle is licensed through the Commonwealth of Massachusetts Department of Emergency Medical Services. With the present level of staffing, the department currently operates two rescues as active duty units providing daily transport services to the citizens of Franklin, with one unit at each fire station. The last is an active reserve unit, housed at the King Street Station, is placed into service when one of the active duty units is unavailable or placed into service during special events (e.g. 4<sup>th</sup> of July Celebration, LHS football games, etc.).

In previous years, the department used a seven year active life cycle for each rescue ambulance. Over the recent past however this rotation has not met our goal of insuring that active duty ambulances are technologically advanced vehicles maintained in a cost effective manner.

In order to address this concern we propose to implement a program of purchasing replacement ambulances every second year rather than every third year. This will reduce the active duty life cycle from five years to four years as well as reduce the age and previous wear on the active reserve unit which would be available when an active duty vehicle is out of service or at special events. We believe this slight acceleration in the replacement cycle will insure that vehicles enable our personnel to provide quality patient care in a cost effective fashion.

STAFF AND SUPPORT VEHICLES

The department uses staff and support vehicles for various functions including emergency response. Each station has a Ford Expedition which is used to conduct routine operations such as alarm disconnects as well as responding to emergency calls. The department also provides the Deputy Fire Chief and Fire Chief with vehicles to complete their responsibilities. Presently the Deputy Fire Chief is provided with a Ford Expedition, with the Fire Chief provided with a Ford Crown Victoria. The Deputy Fire Chief's vehicle is provided with 4-wheel drive to assist him in safe response to emergencies in all kinds driving conditions. The Fire Chief's vehicle is a sedan vehicle which is commensurate with the administrative functions of his role.

Additionally, the department maintains one vehicle used by the department's fire prevention officer for routine inspections, as well as one pickup truck used for the transport of various pieces of equipment. The fire prevention vehicle is replaced through rotation of vehicles from other positions (e.g. Station Cars or Chiefs Cars).

The department has developed a replacement program which exceeds the recommendations published by the National Association of Fleet Managers (NAFM).

<b>Vehicle Type</b>	<b>NAFM Age Standard</b>	<b>FFD Age Standard</b>	<b>NAFM Mileage Standard</b>	<b>FFD Mileage Standard</b>
Sedan	5.5 years	10 years	88,000 miles	100,000
Vans	7.5 years	10 years	88,000 miles	100,000
<b>Pick-up Trucks</b>	7.5 years	10 years	92,000 miles	100,000

The department attempts to replace staff and support vehicles as they approach the NAFM mileage standard, and then rotates the vehicle to the fire prevention role (non-emergency response) until the vehicle reaches the 100,000 mile standard. The fire prevention vehicle does not typically respond at an emergency rate during routine functions. In light of its primary non emergency role we attempt to extend the mileage beyond that recommended by NAFM. We do not however believe it

prudent or safe to use any vehicle with more than 100,000 albeit for limited emergency response.

Additionally, research on vehicle replacement programs throughout the country reveal that municipal best practice is to replace vehicles when mileage exceeds between 75,000 and 85,000 miles.

### FISCAL YEAR 2007 REPLACEMENT REQUESTS



### Rescue Ambulance

This year we are requesting funds to replace our Rescue 3 which was purchased in 2003. The vehicle presently has 70,418 road miles and 175,168 engine miles. In previous years the department used a replacement process of 7 years which required the purchase/replacement of a rescue vehicle every three years. Due to high demand usage, this replacement cycle yielded vehicles, past the mid point of their life cycle, which were unreliable and not conducive to a professional health care environment. We have altered our rescue replacement cycle to 6 years which requires the purchase/replacement of a rescue vehicle every two years. This is the first year of implementation of this new rotation system. Implementation this year will retire the present Rescue 3 on year before normal, but is necessary to implement the every-other year rotation cycle (the last replacement was purchased in 2006).



### **Staff Vehicle Replacement**

**Station Car** - This year we are requesting funds to replace one of the department's fleet of staff vehicles. The vehicle targeted for replacement is the Station Car for the King Street Station and was originally placed into service in 1997. This vehicle is actively involved in emergency response. The vehicle currently has more than 77,290 miles. Given this amount of mileage, we will then rotate the existing vehicle to the Fire Prevention Officer for non emergency use. Presently, the Fire Prevention Officer is using a former station car with has over 122,723 miles. You may recall in 2006, the Fire Prevention Officer was assigned a Crown Victoria sedan – this vehicle was removed from service with over 102,000 due to severe corrosion of various undercarriage components to include the frame. Thus the replacement of this vehicle will allow us to provide a contemporary vehicle for emergency services as well as provide a vehicle which meets our rotational goals (less than 100,000) for fire prevention use. This, combined with the demands for emergency response causes us safety and reliability concerns for department personnel. The vehicle currently responds to approximately 54 emergency calls per month.

Over the past several years there has been significant discussion regarding to the use of Sport Utility Vehicles (SUV) by the department, including the difference between the Ford Expedition and the Ford Explorer.

SUV's have become the industry standard for fire service vehicles throughout the country. Locally, the Milford Fire Department currently has three SUVs two are Expeditions the other is an older smaller Chevy Blazer. Because their vehicle replacement program is similar to ours the smaller SUV would be replaced with one of the current Expeditions when a new one gets purchased.

The primary reason for this is the need for proper stowage space. Greater carrying capacity is necessary due to the amount of equipment carried on these vehicles. The vehicles as configured carry command and accountability boards, fire extinguishers, a self-contained breathing apparatus and protective clothing for the

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supervisor. This does not include additional protective clothing that may be carried if more than one person is in the vehicle. Further, it does not include additional specialty items that may be carried from time to time dependant on the incident such as monitors, defibrillators, spare air cylinders etc. Presently these vehicles are required to carry two or more people. Specifications from the Ford Motor Company website's for both vehicles indicates that the Expedition has a twenty-five percent (25%) greater carrying capacity over the Explorer. The Expedition also has greater ground clearance over the Explorer. The higher ground clearance is beneficial in that the vehicle is less susceptible to damage to the undercarriage from foreign objects or from adverse and unreliable road/off road conditions.

Lastly, from experience the larger vehicles hold up better over time than the smaller vehicles, which tend to require more maintenance. The Ford Expedition comparatively equipped with emergency equipment is presently \$ 3,000 more than a Ford Explorer.

*Amount Requested - \$ 41,500*



**Deputy Fire Chief** – This year we are also requesting funds to replace the staff vehicle assigned to the Deputy Fire Chief. As indicated previously, the vehicle assigned to Fire Prevention was removed from service in late September 2006. This vehicle was removed from service by the Town's mechanic due to the complete corrosion of the main frame and various mechanical components. This vehicle also exceeded 100,000 miles as outlined in our vehicle rotation goals. Thus we are requesting replacement of this vehicle to prevent sudden failure and provide vehicle within the rotational goals as outlined.

*Amount Requested - \$ 41,500*



**All-Terrain Vehicle (New)** – We are requesting funds to purchase an all-terrain vehicle to assist personnel when required to provide services in off-road settings. Over the past several months we have had the occasion to affect several rescues from off-road settings beyond the reach of our 4-wheel drive vehicles requiring substantial time and resources to complete extrication. This type of incident is increasing in frequency throughout the Towns high tension line areas and State Forest.

The funds requested will allow the department the ability to purchase one all-terrain vehicle capable of carrying a stretchered patient and small enough to negotiate foot paths and trails to extricate the patient. Funds will also be used to purchase a trailer to allow for transport the scene.

*Amount Requested - \$ 12,000*



**Water Rescue Craft** – This year we are requesting funds to replace a severely out dated and ineffective boat used for water rescue. This current vehicle is a 14 foot aluminum fishing boat, manufactured on 1964. This boat was not constructed for rescue operations and is a hazard to rescuers and victims alike. The vehicle we are seeking funding for was designed for water rescue operations to include a forward platform to allow for easy exit and access during water operations and provides an extremely stable platform for water rescue operations.

Although we do not have frequent water rescue calls, those we have are typically life threatening and involve extremely time sensitive. Thus it is important to maintain apparatus for firefighters to use in water rescue emergencies.

*Amount Requested: \$ 20,500*

**Cardiac Defibrillators** – This year we have requested funds to replace our inventory of cardiac defibrillators. These machines are used by department Paramedics for various cardiac related events including heart attacks and cardiac arrest. These units see frequent use – sometimes as much as 20 times per day. Additionally, these units are heavily computerized and as such are updated frequently. Thus we have developed a five year rotation cycle to insure patients in Franklin have available the latest levels of technology and our Paramedics can provide the most contemporary levels of care.



The funds requested will allow us the ability to replace the 12-lead cardiac monitors used on the department's Rescue vehicles as well as the semi-automatic defibrillators carried on all other emergency vehicles. The funds request also allow for the trade-in value for the department's current inventory of defibrillation equipment.

*Amount Requested: \$ 145,000*

**Computer Technology** – This year we are requesting two pieces of technology to assist with our internal business systems and two pieces of technology intended to aid us in communicating emergency information with the public.

**EMS Report Writing Software:** This year we are requesting a total of \$ 80,000 for the purchase of hardware and software items necessary to facilitate digital reporting writing and data management for our emergency medical service functions. We presently operate a paper based system. Paramedics are by regulation required to leave a copy of their patient care report with the patient at the receiving hospital. As a result, they can spend as much as 15 to 20 minutes hand writing field reports – all the while they are unavailable for service. With the implementation of computer based patient reports it is possible for them to begin writing their patient report while in transit – reducing their out-of-service time at the end of the event. Computer based reports also have the added value of retaining patient data and information further enhancing the time savings for paramedic personnel.

In addition to the field advantages of computer based reporting, the system will also all allow the department to better statistically monitor our EMS operations to include skill usage; quality assurance and resource deployment.

The funds requested will provide for the main software package installed into the department's server as well as client software for field laptop computers. Requested funds will also provide field units required to operate the system to include laptops, field printers and wireless routers.

*Amount Requested - \$ 80,000*

**Personnel Management Software:** This year funds are requested to purchase software to assist department managers in managing absences and overtime. This software product, known by the trade name Telestaff, is widely used

throughout the country in fire and police organizations to automate the process for finding coverage required when employees are on leave as well as periodic needs to contact employees for immediate staffing needs.

Presently the system is managed by our Captains who, depending upon the season and activity level can spend as many as four hours attempting to fill vacant shifts. Time is consumed by contacting each employee via telephone for each individual shift vacant. Filling vacant shifts can last late into the nighttime during peak periods of emergency activity. This can ultimately lead to unnecessary use of mandatory overtime or worse – lack of sufficient coverage.

Additionally, provisions for calling personnel into work on short notices presently rests with our dispatcher. Typically however, the need to call personnel back into work is usually during a rash of operations – a time when the dispatcher may otherwise be occupied contacting other mission sensitive resources.

The Telestaff software system provides for automated telephone notification at predetermined hours based upon the vacancies anticipated for the day. The software accepts all local contractual provisions and constraints in the hiring of overtime and make employee notifications accordingly. The system works just as capably for scheduled absences as it does for immediate needs. In both cases however, it frees personnel to complete other mission critical task in times of peak system capacity.

This software package also automates the system for taking leave. The software is programmed with the leave accruals for each employee under a secured account. Employees can then access their account in order to schedule their leave time consistent with department practice and the terms of our collective bargaining agreements. This feature also allows for a more automated approach to leave management and ease in report development for administrative personnel as well as providing linkage to Munis financial package.

*Amount Requested: \$29,000*

**Computer Technology**: This request is a routine request to replace the department's computer server to insure uninterrupted service for our 24 by 7 operations. We have planned to replace the server on a regular basis to insure proper functioning as it serves as the foundation for our dispatch and records management system. Funds are also requested to purchase miscellaneous computer equipment and peripherals on a year-to-year basis.

*Amount Requested - \$ 5,000*

**Non Disposable Medical Equipment** – These funds are requested to replace miscellaneous non disposable medical equipment. This year's request will be used to replace spine immobilization boards.

*Amount Requested - \$ 5,000*

**Radio Comparator** – The funds requested in this account are required to update the department's radio comparator to insure compliance with FCC regulations. The present unit operated by the department was purchased in 1996 and is an analog device. In accordance with FCC regulations all public safety radio devices must be

upgraded to digital by 2007. The purchase of this unit will insure compliance with the FCC regulations.

*Amount Requested: \$ 24,100*

**Radio Repeaters** – In conjunction with the Radio Comparator, we are also seeking funds to upgrade and augment our series of Radio Repeaters to facilitate the conversion from analog radio signals to digital. This involve both hardware and software updates for the three repeaters (\$ 13,500) presently in use as well as the addition of a fourth Radio Repeater to be located at the Keller-Sullivan School (\$18,000). This also includes the labor necessary to complete this upgrade (\$ 4,250),

*Amount Requested: \$ 35,750*

**Mobile Radio Digital Conversion** – These funds are required to upgrade the department's mobile radios to accommodate the conversion from analog to digital. This conversion will require our radio repair vendor to remove, convert and reinstall all department mobile radios (19 in total).

*Amount Requested: \$ 56,000*

**Radio Pagers** – Funds are being requested to begin the replacement process for the department's radio pagers used to alert off-duty firefighters for response. In total we need to purchase approximately 50 units and intend to replace 25 this year and repeat the request next year; each unit cost \$ 400.



*Amount Requested: \$ 10,000*

**MCI Trailer** – This year we are requesting funds to purchase a small trailer and to store and carry stockpiled medical equipment for multiple casualty incidents. The need for this type of vehicle was brought to light this year with the crash of the MBTA commuter rail at the Fisher Street Crossing. With the funds requested we anticipate purchasing a 12 foot trailer and fill the trailer with sufficient supplies to manage 200 patients.

*Amount Requested: \$ 62,000*

**Fire fighting Protective Clothing** – These funds have been requested this year and subsequent fiscal years to begin replacing the protective clothing firefighters wear to protect themselves during fire combat operations. The replacement process is necessary since the outside (shell) material, while resistant to heat, denigrates over time due to exposure to the ultraviolet rays of the sun. This denigration combined with normal wear and tear of the garments; weaken the fabrics ability to provide reliable protection for firefighters. On average, these garments are anticipated to last about five years. The process of replacing 12 sets of garments this year and the subsequent three fiscal years will allow us to replace our older garments this year and the balance of the garments as they reach their anticipated life expectancy.

*Amount Requested: \$ 18,000*

**Station #2 Upgrades** – This year we are requesting funds necessary to provide a security system at the King Street Fire Station – Station #2. The security system

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will include a series of closed circuit cameras (6) designed to monitor the exterior of the building as well as security locks at each entrance door. The cameras will be monitored at the dispatcher's position at the Headquarters facility. Also the security locks will be compatible with the security system installed at our Headquarters facility.

Additionally, we are seeking funds to replace the hardware on the overhead doors at Station #2. The door hardware initially installed on these doors was not intended for heavy duty use. During the construction of the Headquarters building we discovered that more substantial door hardware will remedy the problems we have experienced, including doors becoming stuck and jammed.

*Amount Requested: \$ 46,000*

**Traffic Pre Emption** - This year we are requesting funds to provide traffic pre emption for the traffic signal at East Central and King Streets.

*Amount Requested - \$ 21,000*