



FEDERAL HIGHWAY ADMINISTRATION SERVICE PATROL HANDBOOK



November 2008



U.S. Department of Transportation
Federal Highway Administration



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16. Abstract This Handbook provides an overview of the Full-Function Service Patrol (FFSP) and describes desired program characteristics from the viewpoint of an agency that is responsible for funding, managing, and operating the services. Presented guidelines and rules of thumb illustrate operational characteristics, sponsorship, level of service, number of vehicles needed, vehicle types and equipment, patrol frequency, operator and manager training, and services provided. The primary audience for the Handbook comprises State department of transportation (DOT) decision-makers, managers, operators, and practitioners who are responsible for, or are considering, implementing an FFSP program as part of a strategy to reduce congestion.			
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Dear Transportation Professionals and Traffic Incident Management Partners:

Highway incidents cause about 25 percent of the total congestion on roads. Every minute that an Interstate lane remains blocked during peak congestion translates into many more minutes of travel delay. And, lane blocking incidents affect traffic flow in a manner disproportionate to the number of lanes blocked. One blocked lane out of three will reduce traffic flow by 50 percent; two blocked lanes will reduce it by 80 percent. For this reason, the Federal Highway Administration (FHWA) has become very active in the area of Traffic Incident Management programs. Incident-related congestion not only affects the economy, wastes fuel, and contributes to excess amounts of greenhouse gases, but also puts motorists and those that respond to the incident at risk of injury or death. One tool used by many jurisdictions to help reduce incident-related congestion is the service patrol.

On the most congested roads, service patrols play an important role patrolling areas to quickly and safely remove minor obstructions before they create a more serious impact. Service patrols often independently handle less complex incidents or participate with other public safety organizations—including law enforcement, fire, emergency medical services, and towing and recovery professionals—to rapidly and safely address more complex traffic incidents. However, the capabilities of these service patrols vary among the major metropolitan areas.

The FHWA encourages the largest metropolitan jurisdictions and their States to establish or upgrade their service patrols. To assist in these efforts, FHWA develops guidelines and planning tools to aid jurisdictions in improving the quality, number of miles covered and consistency of Service Patrols throughout the country. While they may be called by various names such as Road Rangers or Coordinated Highways Action Response Teams, every service patrol should be prepared to handle all contingencies, thus the term “*full-function*” service patrols used in the following document.

As such, it is with great pleasure that FHWA introduces this document, ***Service Patrol Handbook***. A companion document, ***Service Patrol Field Operations Guide***, provides a tool to Service Patrols as they operate on the Nation’s highways and byways.

We encourage comments and contributions to this and other FHWA Traffic Incident Management documents. Please feel free to contact our Emergency Transportation Operations Team at ETO@dot.gov with suggestions for future revisions.

Sincerely,



Jeffrey A. Lindley
Associate Administrator for Operations



PREFACE

This Handbook provides an overview of the Full-Function Service Patrol (FFSP) and describes desired program characteristics from the viewpoint of an agency that is responsible for funding, managing, and operating the services. Presented guidelines and rules of thumb illustrate operational characteristics, sponsorship, level of service, number of vehicles needed, vehicle types and equipment, patrol frequency, operator and manager training, and services provided. The primary audience for the Handbook comprises State department of transportation (DOT) decision-makers, managers, operators, and practitioners who are responsible for, or are considering, implementing an FFSP program as part of a strategy to reduce congestion.

The Federal Highway Administration (FHWA) encourages the largest metropolitan jurisdictions and their States to establish or upgrade service patrols to the standards outlined in this Handbook and to establish an FFSP program to provide a frequency of coverage that supports statewide incident clearance goals. This includes integration of the FFSP with regional traffic management center (TMC) operations so the patrol can be readily dispatched to incident locations as needed. The FFSP program functions will also include typical services currently provided in many programs today, such as providing minor repairs and motorist assistance, debris removal, providing fuel, providing first aid, pushing vehicles out of travel lanes, and assisting emergency services at crash scenes. An FFSP program is anticipated to reduce traffic congestion, improve travel time reliability, and improve safety on freeway and arterial systems in support of the U.S. Department of Transportation's (U.S. DOT's) National Strategy to Reduce Congestion on America's Transportation Network (Congestion Initiative). Also, the program is expected to be consistent with the objectives of the National Traffic Incident Management Coalition's (NTIMC's) National Unified Goal (NUG) for Traffic Incident Management (TIM).



CHAPTER 1. OVERVIEW

This Handbook describes the desired characteristics of a Full-Function Service Patrol (FFSP) program from the viewpoint of an agency funding, managing, and operating the program. It provides an operational concept for FFSPs, describes key characteristics and presents concepts, information, and guidance for deploying an FFSP. The Handbook's intended audience includes State department of transportation decision-makers, managers, operators, and practitioners who are responsible for an FFSP; are considering implementing an FFSP program; or are contemplating upgrading an existing service patrol to full-function capabilities.

This Handbook contains the following chapters:

- **Chapter 1, Overview** – describes the approach used to develop the FFSP Handbook.
- **Chapter 2, Current Service Patrol Situational Analysis** – identifies current programs in the United States and provides an overview of the objectives of and services provided by existing service patrol programs.
- **Chapter 3, Full-Function Service Patrol Program Justification and Nature of Changes** – provides justification for and the nature of changes needed to transition from a baseline service patrol to an FFSP, prioritizes those changes, and identifies potential constraints.
- **Chapter 4, Full-Function Service Patrol Concept** – discusses the FFSP program concepts and describes how it works, operational policies and requirements, agency roles and responsibilities, and support and maintenance of the concept.
- **Chapter 5, Service Patrol Telephone Survey Results** – provides a summary of telephone survey data collected as part of this project.
- **Chapter 6, Glossary** – includes commonly used acronyms and definitions of terms related to service patrols.
- **Chapter 7, Referenced Documentation** – lists the reference documents and resources to develop the Handbook.

Handbook authors gathered information via a high-level literature search and telephone interviews with 24 existing U.S. service patrol programs to identify the current state of the practice. Through this information gathering process, authors defined typical capabilities and identified those practices that characterize effective FFSPs to meet the intent of the U.S. Department of Transportation's (U.S. DOT's) Congestion Initiative for reducing congestion on the Nation's highways.

An FFSP program comprises the necessary funding, personnel, training, equipment, operations, maintenance, and business practices that enable agencies to reduce traffic incident duration and thereby reduce traffic congestion on freeways and arterials in their jurisdiction. An effective FFSP program requires highly trained personnel who use specially equipped vehicles and tools to systematically patrol congested highways searching for and responding to traffic incidents. An ideal FFSP provides incident response services, clear-

ance resources, and free motorist assistance services 24 hours, 7 days-a-week. Specially trained and highly skilled service patrol operators readily provide emergency temporary traffic control (TTC) at incident scenes. The FFSP vehicle contains equipment to fully remove a stalled or abandoned automobile or light truck from a highway to a safe location. The FFSP program also provides a frequency of coverage to support statewide incident clearance goals to ensure that roadway incidents are detected and removed quickly. The FFSP is fully integrated with regional traffic management center (TMC) operations, and the patrol can be readily dispatched to incident locations as needed. Other FFSP functions include performing minor repairs, assisting motorists, removing debris, providing fuel, providing first aid, pushing vehicles out of travel lanes, and assisting emergency services at vehicle crash scenes. Throughout this Handbook, reference to service patrols applies to those operating in the 50 States and U.S. territories.



Florida Department of Transportation Road Ranger service vehicle

CHAPTER 2. CURRENT SERVICE PATROL SITUATIONAL ANALYSIS

2.1 **Background, Objectives, and Scope**

In one form or another, service patrols have been operating in the U.S. for more than 40 years. The first freeway service patrol (FSP) with continuous regular operations started in 1960 in Chicago, Illinois. In 1998, the Texas Transportation Institute (TTI) conducted a study of 54 freeway service patrols in the U.S. and found that approximately 64 percent came into being since 1990. Many of these programs started out as Motorist Assistance or Courtesy Patrols and focused on assisting stranded motorists. Over time, some of these programs expanded their focus to include the safe and quick clearance of traffic incidents and became actively engaged incident response partners with other public safety agencies. These expanded service patrol programs are also referred to as Incident Response Patrols or Teams. In 2006, the U.S. DOT Federal Highway Administration (FHWA) Intelligent Transportation System (ITS) Joint Program Office (JPO) conducted a survey regarding service patrols in 106 metropolitan areas. Of the 99 areas that responded, 73 areas had a service patrol in operation.

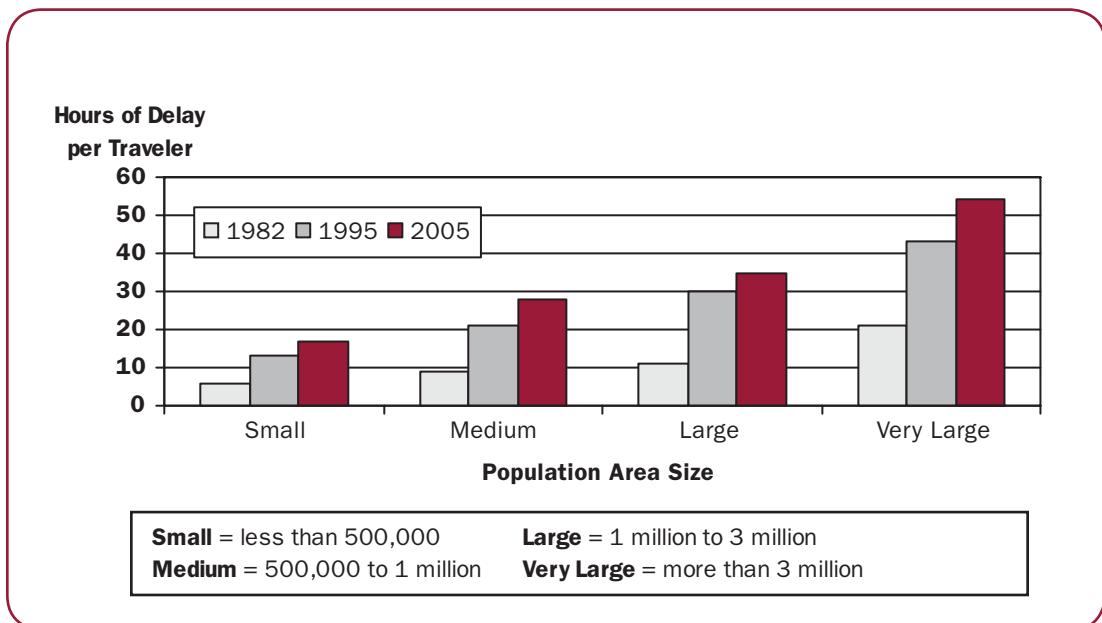
Current service patrol programs generally consist of trained personnel who use specially equipped vehicles to systematically patrol congested highways searching for and responding to traffic incidents. Program services vary across the United States; however, service patrols typically render assistance to motorists when needed and can push vehicles off the road, provide gasoline, and change flat tires or provide minor repairs to help motorists safely drive the vehicle from the highway. More robust programs provide additional functions such as clearance and recovery services, emergency TTC¹ and management, and assistance with emergency services. State and local sponsoring agencies are using service patrols as a strategy to reduce traffic congestion, improve travel time reliability, and improve highway safety. The many benefits attributed to service patrol programs, including their cost effectiveness, make them a fundamental element of traffic incident management programs and a key tactic in dealing with traffic congestion.

2.1.1 **Traffic Congestion Trends**

Traffic congestion, measured by travel times experienced by highway users, has grown substantially in cities across the United States. Figure 1 illustrates the traffic congestion trends in U.S. cities over the past 23 years. While the largest cities are the most congested, increases in traffic congestion also occurred in small and medium-sized cities.

¹ TTC is explained in the Manual on Uniform Traffic Control Devices (MUTCD) as “providing continuity of safe and efficient traffic flow, to the extent interruptions in normal flow are necessary for temporary traffic control operations or other events that must temporarily disrupt normal traffic flow.”

Figure 1. Congestion Trends in U.S. Cities



Source: The 2007 Urban Mobility Report, Texas Transportation Institute, September 2007

The TTI estimated that in 2007 Americans experienced 4.2 billion vehicle hours of delay, resulting in 2.9 billion gallons in wasted fuel and a congestion cost of \$78 billion. Traffic volumes and freight movements are projected to continue growing. As a result, congestion extends across greater portions of the day, and impacts travel on more highways in more cities adding to the time Americans spend traveling.

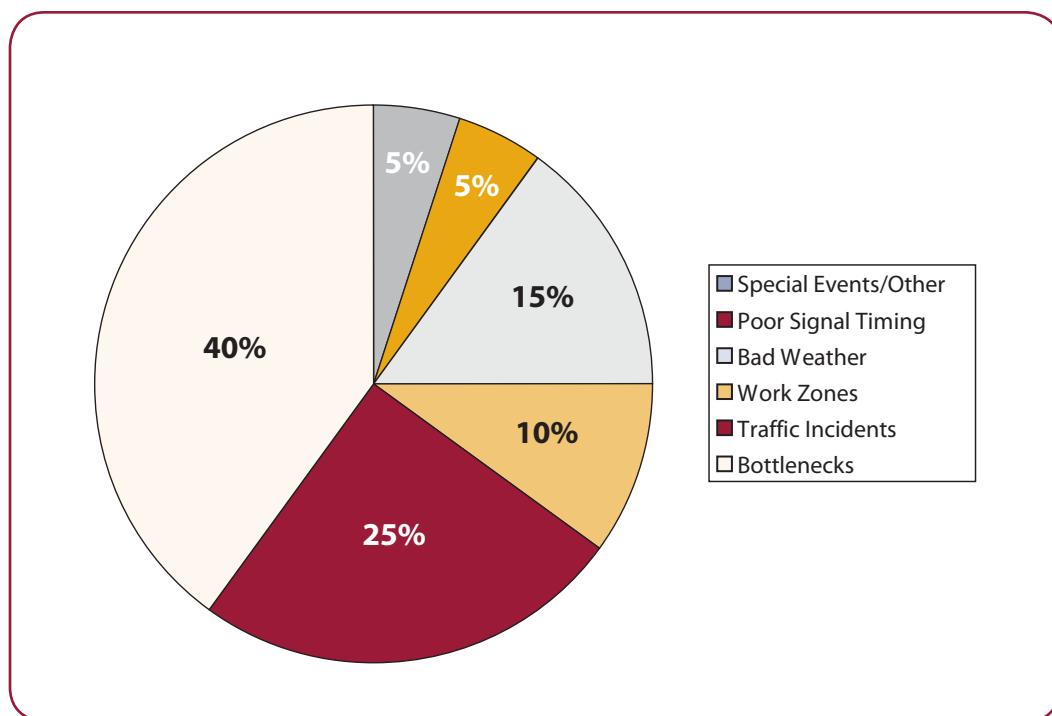
According to the FHWA's *Traffic Congestion and Reliability: Linking Solutions to Problems*, the seven root causes of congestion that interact with one another are—

1. Physical bottlenecks (capacity) – physical characteristics of the system such as number of lanes, alignments, and interchanges
2. Traffic incidents – crashes, breakdowns, and debris impeding travel lanes disrupting the normal flow of traffic
3. Work zones – construction activities that may reduce the number or width of travel lanes
4. Weather – environmental factors affecting driver behavior and traffic flow
5. Traffic control devices – railroad grade crossings and traffic signals
6. Planned special events – surges in travel demand for an event can overwhelm the transportation system
7. Fluctuations in normal traffic – day-to-day variability in travel demand resulting in variable and unreliable travel times.

Since local conditions can vary widely, Figure 2 illustrates only the national estimates of congestion sources.

Figure 2. The Sources of Congestion – National Summary

Source: Traffic Congestion and Reliability: Linking Solutions to Problems, FHWA, July 2004



The U.S. DOT's Congestion Initiative outlines a blueprint to reverse the upward trend of congestion. Achieving an actual reduction in congestion will require action and cooperation from government officials at the Federal, State, and local levels; from those in the private sector; and from the users of the highway systems. While adding capacity is one strategy in the congestion reduction toolbox, the focus of the Congestion Initiative is to leverage technologies and innovative operational strategies that are more effective and efficient in congestion relief than current practices.

In support of the Congestion Initiative, FHWA developed six high-priority efforts and strategies recommended for implementation. One of FHWA's six congestion relief strategies is Traffic Incident Management (TIM), which according to FHWA's TIM Handbook², incident management is defined as "the systematic, planned and coordinated use of human, institutional, mechanical, and technical resources to reduce the duration and impact of incidents, and improve the safety of motorists, crash victims, and incident responders. These resources are also used to increase the operating efficiency, safety and mobility of the highway by systematically reducing the time to detect and verify an incident occurrence; implementing the appropriate response; and safely clearing the incident while managing the affected flow until full capacity is restored."

² FHWA Traffic Incident Management Handbook, November 2000

2.1.2 *Growth of Service Patrol Programs*

The number of service patrol programs and the percentage of freeway miles covered by service patrols has grown in the United States. Based on a national summary of deployment statistics that the ITS JPO collected in 2006, over 94 agencies provide service patrols on freeways and 46 percent of freeway miles are covered in the 106 most populated metropolitan areas. Arterial miles covered by service patrols are also on the rise. In 1997, no service patrols were reported operating on arterials. In 2006, service patrols covered 11 percent of arterial miles in the 106 largest metropolitan areas.

2.1.3 *Benefits and Services of Service Patrols*

Benefit/cost studies and qualitative evaluations document that service patrols are one of the most effective elements of a TIM program. Some of the fundamental benefits and core services of service patrols cited by various studies include:

- Reduced incident duration (because of decreased detection, response, and clearance times)
- Quicker debris removal
- Assistance to stranded motorists and crash victims
- Traffic control and management
- Ability of service patrol operators to provide real-time updates on traffic conditions that enable more accurate traveler information about freeway conditions.

Secondary benefits also can be gained from the direct services that patrols provide:

- Improved traffic flow as a result of reduced incident duration and better traffic control
- Reduced travel time, fuel costs, and vehicle emissions
- Improved travel time reliability
- Improved motorist and TIM responder safety
- Enabled fire and rescue staff and equipment to be used for their original purposes rather than blocking lanes for traffic control
- Reduced number of lanes closed for an incident
- Reduced secondary crashes
- Provided relief to law enforcement personnel to focus on other law enforcement duties or remain on their patrol
- Reduced TIM responder personnel and resources unnecessarily dispatched to incidents that service patrols can handle (e.g., stalled vehicle).

2.1.4 *Fundamental Components of a Service Patrol*

The management and operational characteristics of service patrols can vary greatly between programs. However, many service patrol programs have integrated their operations with a TMC and are a key component of many TIM programs. Fundamental attributes that define an overall service patrol program include the following:

- Agency sponsorship
- Funding sources
- Method of operation – agency operated or contracted

- Coverage area
- Frequency of coverage
- Hours of operation
- Operators qualifications and training requirements
- Patrol vehicles
- Special equipment
- Services provided.

A review of current service patrol programs operating in the U.S. revealed widely varied approaches to operational hours and services provided. For example, some service patrol programs focus on motorist assistance, while others also provide roadway clearance services. Other programs have taken an additional step to train operators in TTC procedures and standards so that service patrol operators can help secure incident scenes and manage traffic during emergency responses.

2.1.5 *Need for Consistency*

The FHWA develops and maintains regulations and standards to provide consistency in designing highways and bridges, enhancing traffic control devices, establishing proper speed limits, and choosing other highway features. These standards ensure safety and provide consistency in driver expectations for the design and operation of the highway system as they move from one State or locality to another. Similarly, providing consistency in service patrols from one locale to another allows motorists to know what services to expect from a service patrol, thereby increasing their confidence in service patrols.

With the number of programs and the percentage of freeway and arterial miles patrolled increasing, functional variability among service patrols has also increased. Some programs focus on motorist assistance and minor repairs. Oftentimes, the patrol vehicles are not equipped, or operators are not trained, to provide clearance and recovery assistance to fully remove the vehicle from the roadway. Operational procedures may require the service patrol vehicle to abandon an assist after 15 minutes and return to its routine patrol. In these cases, the program relies on assistance from a private towing company to remove the vehicle from the roadway. This reliance can lead to a delay in removing the vehicle, increased frustration of motorists, and increased congestion. The possibility of a secondary crash also increases the longer a vehicle remains on a roadway shoulder.

Because service patrol programs have matured, public safety and emergency service agencies are now more aware of the types of services and benefit these patrols can provide. Service patrols can assist them in effectively securing an incident scene by providing emergency TTC and help manage traffic around the incident scene. This assistance allows law enforcement and emergency services to focus personnel and resources on enforcement or emergency aid functions. As service patrol programs evolve into providing these emergency TTC services, operators must be trained and well-versed in TTC procedures and standards. Following standardized emergency TTC procedures is an important step to ensure motorist, service patrol operator, and other TIM responder safety, in addition to

help meet driver expectations. Standardized emergency TTC procedures will result in better driver behavior and compliance.

There is wide variability in the hours during which service patrols operate. Of the 24 service patrols surveyed for this Handbook, only three operated their patrols 24 hours, 7 days-a-week, with the remainder primarily focused on rush hours. These results are generally consistent with the U.S. DOT's 2004 service patrol deployment statistics that revealed 40 percent of programs operate during peak hours, 20 percent operate 24 hours, 7 days-a-week, and 40 percent operate on "other" defined hours. Patrols that do not operate 24 hours, 7 days-a-week generally focus their service hours on the high volume, high congestion, and high incident times on a normal day when an incident can cause the biggest travel delays. The National Highway Traffic Safety Administration's (NHTSA) trend analysis of crashes by day of week between 1975 and 2002 reveals that fatal crashes are highest on Friday, Saturday, and Sunday. In 2006, NHTSA reported that more than half of highway fatalities occur during nighttime hours between 6:00 p.m. – 6:00 a.m. While partial-day and peak-hour service patrols may cover the most heavily congested periods, they may disregard important nighttime and weekend hours when severe crashes occur. If service patrols are providing TTC services, it is important that they operate during the high crash hours.

Service patrol programs currently in place were developed with variability in the services and functionality provided, service hours covered, vehicle and equipment specifications, and operational and administrative policies. While these programs have been largely successful, guidelines are needed to support future development of service patrols, enhance existing patrols, and provide design consistency on critical program elements.

2.2 Description of Current Service Patrols and Operational Constraints

As service patrol teams throughout the country work to detect, respond to, assist in, and clear various types of incidents, the overall goal of restoring traffic capacity as safely and quickly as possible remains common among all programs. Coordinated and systematic approaches to solving TIM challenges have been the necessary ingredients for service patrol programs to remain successful in the communities they serve.

Service patrols offer a range of services depending on budgets, the needs of the communities they serve, and their governments' organizational structure. Patrol areas range from just 3 miles on a given highway to spanning several miles on a number of different roads within a defined geographic area. Service capabilities can range from a few vans in Washington, D.C., to a fleet of more than 150 vehicles in Los Angeles. Hours of patrol service range from rush-hour coverage to 24 hours, 7-days-a-week service for locations like the Illinois Department of Transportation (IDOT), Florida's Turnpike, and Florida Department of Transportation (FDOT) Districts 3 through 7.

2.2.1 *Typical Services*

Despite offering a variety of services, hours, and capabilities, service patrols tend to perform similar functions that remain consistent despite their budgets and location. In general, service patrols offer the following standard services:

- Move disabled or abandoned vehicles
- Provide fuel
- Provide water
 - For overheating
 - To person(s) being assisted
- Change flat tires
- Provide mechanical assistance
 - Jump starts
 - Minor mechanical repairs
 - Tire air
- Assist stranded motorists
 - Cell phone service
 - Safe place to wait if vehicle is disabled
- Remove obstacles and objects
 - Debris (roadway hazards)
 - Spilled items
- Arrange for towing
 - Call commercial towing provider
 - Provide towing services to point of safety
- Share information
 - Requests for emergency services
 - Driver information
 - On-site information to the TMC
- Assisting other responding agencies
 - Law Enforcement
 - Fire and rescue
 - Emergency Medical Services (EMS).

2.2.2 *Examples of Service that Range Beyond the Typical*

Today's service patrols offer a broad range of services, some that require specialized training. Highly involved training programs can require significant time and funding, but they offer a wide range of tools and resources that the operators and departments of transportation can provide. In addition to the typical services listed above, localities have either incorporated other services that are best suited for their areas or have enhanced existing services within their operation that includes the following:

Defibrillators – The Freeway Incident Management Safety Team (FIRST) in Minnesota outfits its vehicles with defibrillators. Using this equipment enhances the operators' first-aid service already provided as part of their program. The October 2004 TIM Operational Guidelines, issued by the Incident Management Coordination Team of Minnesota, states that Freeway

Incident Response Safety Team (FIRST, formerly known as Highway Helpers) provides “emergency medical aid until help arrives.” Service patrol operators need specialized training to use the defibrillators.

First aid – Some jurisdictions offer first-aid training at the awareness level, while others like the Samaritan program in Boston offer it at the responder level. On the Pennsylvania Turnpike where the Pennsylvania Turnpike Commission oversees the State Farm Safety Patrol, service patrols provide no first-aid services; contract services such as EMS or fire departments handle first aid. An example of the more common standard is the Metro Police Department in Houston, Texas, which provides basic first aid—and its staff is “by no means medically trained.”

Hazardous materials (HAZMAT), fires, and blood-borne pathogens – Georgia’s transportation incident response units, known to the public as Highway Emergency Response Operators (HERO), trains personnel to carry equipment to handle HAZMAT, fires, and blood-borne pathogens. This is a unique example of operations service patrol programs can provide. However, the equipment and the required training to be able to use it are not common in many jurisdictions. Personnel in the Tennessee and Washington State highway incident management programs are trained in fire eradication. Boston reports that its CVS Samaritan Van Program deploys operators trained in areas such as paramedics, EMS, animal control, and firefighter level 1. A firefighter level 1 certification can include an Emergency Medical Technician (EMT) certificate, Paramedic license, Firefighter 1 State certification, Firefighter Academy certification, and Cardiopulmonary Resuscitation (CPR) for the professional rescuer. Requirements may vary with locality.

Defensive driving – This skill set is not common to most service patrol programs.

Chainsaw operation – The Roadway Operations Patrol (ROP) in Washington, D.C., and the FIRST program in Minnesota train their personnel on how to operate chainsaws for quick clearance of trees that may come down in roadways.

High Occupancy Vehicle (HOV) gate operation – Some jurisdictions with HOV lanes use the service patrol to operate lane gates (e.g., the FIRST program).

Infrastructure checks – Other variable and nonstandard service patrol duties include service patrols performing infrastructure checks (drains, lights, etc.) and, if possible, offering assistance to solve minor infrastructure problems.

Towing – A survey of service patrol programs showed that some operations provided towing; however, the services varied in the distance to which a vehicle would be towed. Some services towed to safe areas while others towed to designated lots.

Vehicle repair – Samaritan program staff are National Institute for Automotive Service Excellence (ASE)-certified in motor vehicle repair and can make numerous on-site repairs. This certification and experienced first responder-level training exceed the services that most departments of transportation programs currently provide.

2.2.3 *Most Common Hours of Operation*

Many jurisdictions restrict the number of hours that service patrols operate often due to personnel or financial limitations. The most commonly patrolled times fall between 6:00 a.m. to 10:00 a.m. and 3:00 p.m. to 7:00 p.m. Service patrol programs focus their resources primarily on the rush-hour period when vehicle travel is at its highest and incidents most often occur, resulting in severe congestion. On average, service patrols provide weekend coverage between 10:00 a.m. and 7:00 p.m. Some programs, like the Pennsylvania Turnpike Commission's State Farm Safety Patrol, FDOT Districts 3 through 7, and Indiana DOT's Emergency Traffic Patrol (known as "Minutemen"), may provide 24 hours, 7-days-a-week service, but the majority of programs do not. Tennessee, Washington State, and the Maricopa Association of Governments provide a 24 hours, 7-days-a-week service patrol but as an "on-call" service or ready for immediate action if activated, normally outside the traditional service times or in specific locations. HERO in Georgia advertises 24 hours, 7-days-a-week service, but patrols are "on-call" on weekend nights. Many programs, such as the Wisconsin Department of Transportation's (WisDOT) Gateway Service Patrol, will serve special event operations, while other programs simply assist with events if they fall within existing hours of operation.

2.2.4 *Resources Typically Found with Current Service Patrols*

Limited resources, including funding, trained staff, equipment, or support may affect the service patrol's ability to respond adequately to some or all incidents. Equipment varies as much as the size and budgets of the programs themselves. The amount of equipment any one service patrol carries depends on the program budget on the vehicles the program uses, and on the training level of staff using that equipment. Programs that use towing vehicles alone often cannot provide as many types of services as programs using other vehicles that can carry more supplies and equipment. Alternatively, programs with no towing capability are limited to using soft bumpers for moving a vehicle or calling for a towing vehicle to assist in vehicle removal.

Service patrols that were surveyed for this Handbook carry some of the following standard equipment:

- Traffic control equipment
- First-aid equipment
- Vehicle-mounted variable message signs
- Gas
- Air compressors
- Communications equipment
- Basic tools.

The equipment available to the responders dictates the services that can be provided to motorists. For example, the Pennsylvania Department of Transportation (PennDOT) District 11 Expressway Service Patrol does not carry vehicle-mounted variable



*Pennsylvania Department of Transportation
Freeway Service Patrol truck*

message signs or air compressors. Similarly, the Pennsylvania Turnpike Commission's State Farm Safety Patrol does not carry air compressors, gas, or basic tools, according to their survey responses. Maryland's Emergency Traffic Patrol carries gas on its tow trucks and only has diesel when it is requested. The Massachusetts Highway Department's CaresVan program carries equipment in its vans to change flat tires, to partially fill empty gas tanks, to clear roadway debris, and to offer stranded motorists use of a cell-phone.

Of those service patrols surveyed, the programs have different equipment and thus provide differing services including:

- Water/antifreeze
- Oil and power steering fluid
- Spill containment supplies
- Fire, animal, and HAZMAT supplies
- Defibrillators and medical supplies
- Laptop computers
- Diesel fuel and fuel transfer kits
- Maps, phone books, and HAZMAT guide
- Salt and sand
- Cleaning products
- Public address system with an external speaker
- Tow chains
- Battery booster boxes and jumper cables
- Hydraulic jacks and pillars
- Fire and law enforcement scanner
- Two-way communications with public safety dispatchers.

2.2.5 Personnel Found on Today's Service Patrols

People constitute the greatest resource in any service patrol program. The ability to recruit, train, and properly pay people willing to fill service patrol positions impacts and may limit a jurisdiction's ability to expand service patrol programs to cover more hours and areas. Most service patrol programs focus their service times on the rush-hour period. This time can be managed by using split shifts, unless an operator has other duties or functions after the patrol period is completed and works a "traditional" 8-hour shift. Often, a service patrol's work is done in an environment, being both dangerous and stressful, that poses a high level of risk to the service patrol operator. Finding talented individuals who are qualified and willing to work in this environment can be challenging.

2.2.6 Public Private Partnerships

More States are exploring the benefits of entering into Public Private Partnerships (PPP) to supplement government funding for service patrols. However, jurisdictions report mixed results when engaging in PPPs or corporate sponsorships for service patrols. Entering into these partnerships can greatly benefit programs where funding may be tight or there are staffing limitations. The Motorist Assistance Program (MAP) in Houston, Texas, operates as a result of a PPP among the Metropolitan Transit Authority (Metro) of Harris County, Texas

Department of Transportation (TxDOT), Harris County Sheriff's Office, Houston Automobile Dealers Association, and Verizon Wireless. The State Farm Safety Patrol on the Pennsylvania Turnpike represents another PPP example. The Pennsylvania Turnpike Commission funds the program, but the State Farm Insurance Company provides \$1.4 million toward the service patrol operation over a 3-year period. In return, the service patrol vehicles display the State Farm Insurance Company and the Pennsylvania Turnpike Commission logos.

Other examples of PPP efforts include:

- According to its Web site, the Massachusetts Highway Department's CaresVan program receives \$2.8 million over 5 years from the Commerce Insurance Company for its CaresVan program operated by Export Enterprises.
- Georgia is currently exploring the possibility of selling advertising space on its service patrol vehicles to help fund the 20 percent of the 80/20 Federal-to-State cost sharing.
- North Carolina is also exploring the possibility of attracting corporate funding.

Many other programs surveyed reported that they had either explored corporate sponsorship and found problems or had programs in place that were discontinued for reasons such as the private sponsor stopped providing funds, sponsorship, or other support. The Minnesota DOT (MnDOT) considered placing corporate sponsorship logos on service patrol vehicles, but found that this would have required new legislation.

The CVS Samaritan van program is an example of a corporate service patrol program working with local jurisdictions to provide service patrols. The Samaritan program has been operating for 30 years and patrols highways around nine major U.S. cities. The white vans with the red "CVS/Samaritan" logo operate in Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Indianapolis, Providence, and Washington, D.C. The Samaritan program works in cooperation with local transportation departments, metropolitan traffic centers, law enforcement, and other TIM responders.

An alternative to PPPs is using contract services. Examples of PPPs and contract services follow.

- The FDOT Road Rangers represents a successful contract-service patrol program.
- In PennDOT's District 6, when the private partner discontinued service, contracting for services was a proven solution.
- Washington State tried contracting its towing functions but stopped the program after Federal funding was discontinued and other funds were unavailable.



Massachusetts Highway Department CaresVan

Massachusetts Highway Department

- In Maryland, officials determined that only government personnel were authorized to perform certain tasks. Since the program was part of its customer service program, officials decided agency staff would perform the tasks, not contractors.

2.2.7 Limitations

Annual operating budgets for service patrol programs can range from \$275,000 for District 5 in Pennsylvania to \$19 million covering several urban areas in Florida. Funding can affect service areas, hours of operation, training, staffing, and equipment. These resources are all essential when trying to deploy a properly equipped program to provide a safe and efficient service that meets the needs of the community and successfully achieves the agency's service objectives.

Operating a stand-alone program is a challenge for smaller jurisdictions trying to start a service patrol program. The challenge is also real for existing service patrol programs trying to move toward being a full-function operation. Splitting responsibilities between the service patrol program and other tasks can limit a program that must share both people and other resources.

A lack of communications and/or memorandums of understanding (MOU) with local law enforcement, fire and rescue, EMS, emergency management agencies, and the Federal government, among others, can affect the ability of programs to coordinate efforts. Communications and MOUs help bring service patrol operations into the Incident Command System (ICS). Programs that face these limitations cannot cross-share critical knowledge, data, and lessons learned. Consequently, program staff cannot develop stronger ties, build trust, nor create effective coordination efforts during incidents.

The common goal among all programs is to restore traffic capacity safely and quickly. This goal is achieved by first addressing the state of the existing program and the operational constraints it faces. A service patrol program first needs a well-defined scope of operations, proper funding, a dedicated operation, well-trained staff, minimum response times, the necessary equipment to manage each incident, established MOUs, and both the trust and support of the community and partner agencies—before it can look ahead to becoming an FFSP.

2.3 User Profiles/Classifications

Service patrols are typically one of several responder groups comprising the incident command structure. The ability to detect, respond, assist, and recover relies on the cooperation of, and the communication among, many different entities. But most importantly, each agency must understand the capabilities, limitations, and responsibilities of the other response partners. These relationships require constant attention and resource sharing to build bonds of trust and cooperation. Failing to recognize and make full use of all available resources will result in failure to resolve incidents in the safest and most efficient way possible.

With the majority of the service patrol programs starting in the 1990s, the list of users has expanded as the services that transportation agencies can provide are recognized. Service patrol programs have contact with many users; however, each has its own individual needs when interacting with the program. Service patrol operators are asked, as well as trained, to work in situations that, in the past were considered outside the traditional scope of services transportation agencies provided.

Many agencies can be involved when an incident occurs, including:

- State and local transportation agencies
- State and local law enforcement
- Fire and rescue services (HAZMAT, including clean-up and removal as needed)
- Towing and recovery companies
- Public and private information services
- Travelers and others using the affected system.

2.3.1 State and Local Transportation Agencies

State and local transportation agencies with service patrol programs are often first on the scene for roadway incidents. Closed-circuit television (CCTV), other traffic monitoring technology, roving patrols, and 911 calls are aids transportation agencies use to restore normal traffic flow and minimize delays. Early detection through these methods gives TMCs the ability to provide notification to travelers through dynamic message signs (DMS) and public and private information services. These travelers can then seek alternate routes, minimizing their delays and not adding to the congestion at the incident scene. TMCs also can assist law enforcement and fire and rescue services by either notifying them of an incident or offering guidance on the least congested means to access incident locations as they deploy to a scene. The primary purpose of a service patrol at an incident scene is traffic control. This function relieves other responders from this responsibility.

2.3.2 State and Local Law Enforcement

State and local law enforcement agencies generally have the ability to communicate and coordinate with TMCs through service patrol programs present at an incident. Local law enforcement programs that have MOUs with FFSP programs can contact TMCs directly to obtain information such as the exact location and the nature of the incident. On-scene command and control is enhanced when local law enforcement is coordinated with transportation agencies. A service patrol operating within a specified geographical area can relieve law enforcement personnel of having to respond to disabled vehicles or other minor highway obstructions. Law enforcement personnel can then concentrate on other urgent duties.

2.3.3 Fire and Rescue Services

Fire and rescue services have not used service patrols as much as law enforcement, according to an FHWA study done in 2000. However, just as with law enforcement, fire and rescue services can benefit from the technology and operations of a service patrol program. Communications with the TMC, either directly or through the service patrol at the incident,

can only improve responses and advance the treatment and transport of the injured. When service patrols arrive on the incident scene before fire and rescue personnel, they can relay valuable information such as the nature and severity of injuries, and the number and age of any victims.

HAZMAT response is typically the responsibility of the fire department; however, removing HAZMAT can sometimes fall to private services or even service patrols. For incidental HAZMAT incidents like a small gasoline spill, properly trained and equipped service patrol operators can manage the incident. However, larger events, where fire and rescue are present, can require road closures, detours, and even evacuations. For such events, transportation agencies and service patrols are responsible for traffic control. As service patrol programs become increasingly involved in all types of incidents, knowledge of the ICS is essential when interacting with fire and rescue personnel.

2.3.4 *Towing and Recovery Companies*

Towing and recovery companies are usually involved in clearing and removing impacted vehicles, spilled loads, and other debris. Often, local governments enter into agreements with towing companies to assist with highway incidents. Each agency involved in an incident must agree when towing and recovery can begin. Providing access to incident scenes and providing information on the best approach and right equipment need to be coordinated among all parties at the incident. It is important to keep in mind that full traffic flow cannot be restored until a scene is cleared. Towing and recovery companies are the providers of this service and often interact with on-scene service patrols to coordinate access and reopen the roadway.

Once vehicles are removed from the crash site, roadway repairs may be required. Service patrols are often responsible for communicating information back to a TMC about the condition or status of the infrastructure following an incident. Heavy equipment may be needed to restore roadway conditions when pavement is damaged. This equipment may be available through transportation agencies or may need to be contracted. The recovery process can take time, depending on the severity of the incident.

2.3.5 *Public and Private Information Services*

For the roving service patrol operator, it is possible to detect incidents from radio traffic reports or even Web sites (if mobile access capabilities exist within the vehicles). Public and private information services work with service patrols and their TMCs to get updates and clarify information on incidents. Fire departments, local law enforcement, and transportation agencies work through public information officers (PIO) to provide messages to the public. When an incident occurs, the public desires information to assist in their decision making.

2.3.6 *Travelers and Other Users*

Travelers and other users of the transportation system, such as roadway construction personnel and maintenance crews, also may interact with service patrols. When a motorist breaks down, service patrols provide that needed assistance. As incidents occur, the trav-

eling public and others turn to public and private information services for the information they need on congestion and road conditions. In addition, if an incident involves them directly, they rely on the service patrols, the law enforcement community, and fire and rescue services to provide assistance for their particular situation. Because there are more travelers and other users on the road, they can interact with law enforcement, fire and rescue, and transportation to assist when incidents occur. Construction or maintenance crews—either contracted or public employees—are also familiar with the system and can provide useful information on what they observe during their routine activities.

2.4 Support Environment

This section discusses the typical supporting environment of an FFSP program that can directly affect the range of capabilities provided.

2.4.1 Oversight

Of the programs surveyed for this Handbook, State and local transportation or public safety agencies oversee about 50 percent of the current service patrol operations. Transportation agencies that manage service patrol programs operate out of several different responsibility centers, including TMCs, ITS offices, and incident management offices. The Roadway Operations Patrol (ROP) in Washington, D.C., operates out of the TMC, which is part of the Traffic Operations Administration within the District Department of Transportation. The Chief of ROP oversees the TMC operations as well. In Washington State, Florida, and Pennsylvania, service patrol programs are managed by the district within which they operate. However, in Pennsylvania, the PennDOT District 5 ITS staff manages the daily oversight of contracted activities. In PennDOT District 11, the TMC manager and the tunnel manager provide oversight. The TMC manager oversees contractor services and the tunnel manager manages PennDOT staff. Though the CaresVan service patrols on Massachusetts highways are supervised by the contractor, the State department of transportation monitors them using global positioning systems (GPS). New York operates its service patrol program from the TMCs within each regional office. Depending on the size of the regional office, there might be a manager specifically for the service patrol and, depending on the size of the contract, that manager might be a contractor. Local law enforcement manages the Motorist Assistance Program (MAP) in Houston and the Dallas County Courtesy Patrol. In Houston, the Harris County Sheriff's Office operates MAP using its own deputy sheriffs. Daily oversight of the San Diego Freeway Service and the Kansas Department of Transportation's MAP are managed by their respective State Highway Patrols. The difference between these two programs is that the San Diego Freeway Service is a cooperative effort between the California Highway Patrol (CHP), the California Department of Transportation (Caltrans), and the San Diego Association of Governments (SANDAG), while the Kansas MAP is sponsored by the Kansas DOT but run by the Kansas Highway Patrol.

In each case, program oversight was determined by the current structure of the organization. The home of the service patrol can be affected by the agency that introduced the concept of the service patrol and where the program funding was the strongest. Those

organizations that have created service patrol programs have done so in an effort to address the causes of non-recurring congestion due to highway incidents.

2.4.2 *Facilities and Equipment*

Surveys showed that the agency providing the service was generally responsible for maintaining the facilities and equipment. In most of the survey responses, equipment was classified only as vehicles, one of the more costly parts of a program budget. However, equipment such as message boards, cones, flashing lights, flares, wheel jacks, safety vests, air compressors, CCTV cameras, and TMC systems, to name a few, are all part of the service patrol program that will also require repair or replacement at some point.

Where contracted service patrols were utilized, such as PennDOT's District 6, Wisconsin's Gateway Patrol in Racine and Kenosha counties, and in the metropolitan areas of Boston, Worcester and Springfield, Massachusetts, the contractor was responsible for servicing the equipment and providing the vehicle maintenance facilities. In Pennsylvania Districts 5 and 11, the contractor is responsible for just overall maintenance. When law enforcement has oversight of the service patrol program, such as in Maricopa's Association of Governments and in Harris County, Texas, they are able to provide facilities and maintain the equipment themselves. Agencies can handle maintenance of their vehicles in-house, send them out for repair, or a combination of both. This determination is based on the size of the agency and how it is structured to handle maintenance issues.

The Pennsylvania Turnpike Commission provides sheds for equipment and vehicles and has an in-house maintenance department that performs vehicle repairs. The Washington State Department of Transportation (WSDOT) has facilities for its own fleet but will contract the maintenance or, when possible, provide its staff training from the State Highway Patrol to perform work on service patrol vehicles. In Oregon, the Incident Response program's maintenance facilities use strategic staging areas for their Incident Response trucks. Instead of having one centrally located facility where all the trucks are staged, Incident Response vehicles are strategically placed at the maintenance facility closest to the responders' home address (within the metropolitan area). This approach will decrease response time when responding to emergencies outside of normal working hours or when reporting to their corridors for day-to-day operations.

2.4.3 *Communications*

Of the service patrols surveyed, nearly every program outfitted its vehicles with cell phones and 800 MHz radios. Where transportation agencies had their own communications system and radios, the service patrols were equipped with these devices. The state of Maryland's Emergency Traffic Patrols are outfitted with the Capital Wireless Information Net (CapWIN). CapWIN is a partnership between the state of Maryland, the Commonwealth of Virginia, and the District of Columbia that provides an interoperable first responder data communication and information-sharing network. CapWIN was awarded \$3.2 million in grant funding to implement an ITS solution for first responders in the National Capital Region. This grant includes funding from FHWA as well as matching contributions from the Virginia Department of Transportation and the Maryland State Highway Administration.

Other communications options include law enforcement radios and scanners, Nextel, and CB radios. The District of Columbia, San Diego, Oregon, and Minnesota all use laptops in their service patrol vehicles. The portable laptop provides extra capabilities when it comes to reports, maps, data, access to traffic cameras, etc. Tennessee identified its cameras and traffic surveillance equipment as part of its overall communications package that supports the service patrol program.

2.4.4 *Funding*

Of the 24 service patrols surveyed for this Handbook, most receive funding from State funds, Federal funds, a combination of the two, and/or in rare cases, private funding through a PPP. For the service patrols that receive both Federal and State funding, the contributions are 80 percent and 20 percent, respectively. In Dallas, patrols benefit from additional funding from tolls. Where only State funds are used, such as in Florida, PennDOT's District 11, and Minnesota, traffic operations and maintenance or traffic operations and safety have specific budgets from which funding was provided. In San Diego, the State provides funding to the localities and they, in turn, match that funding. Louisiana has a similar program to support its service patrols that includes contributions from local metropolitan planning organizations (MPOs) in addition to Federal and local funding. The Maricopa Association of Governments and the state of Maryland are using Federal funding through the congestion mitigation and air quality (CMAQ) fund.

According to the FHWA, CMAQ funds are available to a wide range of government and non-profit organizations, as well as private entities contributing to PPPs, but the local MPO and the state department of transportation controls these funds. Often, these organizations plan or implement air quality programs and projects and provide CMAQ funding to others to implement projects. The Harris County, Texas, Metro Police Department controls the budget for its service patrol program; therefore, it does not rely on Federal or State funds. The Pennsylvania Turnpike Commission uses money out of its operating funds as well as money from the State Farm Insurance Company. For its service patrol programs, Massachusetts Highway receives money from a private insurance company and from Federal and state funds. Maricopa Association of Government's FSP program states on its Web site that, "due to the clear demonstration of benefits in improving safety on the freeway system, the [FSP] program was incorporated in the 20-year Regional Transportation Plan (RTP) that was approved by voters in Maricopa County in November 2004. The FSP program is currently fully funded through the year 2026 with RTP funds that total nearly \$21.5 million."

2.4.5 *Contracting Mechanisms*

Contracting mechanisms for service patrol programs are handled in many ways depending on the jurisdiction. In cases where local transportation districts oversee the programs, such as in Florida, contracting is handled at the district level. Sometimes contracts are awarded to those operations that can provide expertise or services that the service patrols are unable to handle. In San Diego and in District 8 in Pennsylvania, for example, towing services are contracted.

2.4.6 *Standard Operating Procedures and Guidelines*

Responses varied in this Handbook's survey on guidelines or standard operating procedures (SOPs). Most of the respondents either had SOPs or procedural guidelines or followed some sort of operations policy. The Florida Road Rangers cited the Open Roads Policy and the Mitigation Spill Policy for their guidelines. Georgia also has a similar Open Roads Policy in place. Washington State follows a Joint Operations Policy, while the Pennsylvania Turnpike Commission follows a Unified Command protocol. The Wisconsin Gateway Patrol, a contracted service, follows specifications set forth in its contract with WisDOT. A few programs, like MAP in Harris County, Texas, and the Emergency Traffic Patrol in Maryland, currently have SOPs or guidelines under development.

Programs that did not have SOPs were, in some cases, under the jurisdiction of law enforcement. Service patrol programs that were contracted out typically had specific terms written into their contracts that served the purpose of an SOP. Performance was measured against the terms of the contract, and oversight was handled by the awarding agency. Outreach, in some instances, added feedback into contract performance.

While training can offer guidance on how to handle service patrol operations in the field, it is important to have SOPs and guidelines. Because service patrol programs have expanded in size and the services they provide, responsibility is placed on the agency with oversight of the service patrol program to provide this guidance for the protection of the operators and the overall organization.

2.4.7 *MOUs and Mutual-Aid Agreements*

Very few agencies reported the existence of an MOU or mutual-aid agreement. Of the MOUs and mutual-aid agreements that did exist, many were between law enforcement and transportation agencies. For example, HELP, in Tennessee, noted that law enforcement agencies are total partners and that they see the value in service patrol programs. It has taken a year to build the relationship, and HELP is now working toward an MOU or other type of interagency agreement. The Oregon Department of Transportation (ODOT) Incident Response program has been recognized by many of their external partners as a first responder agency. This recognition is because ODOT Incident Response staff are responding to incidents in much the same manner as their external partners and typically before them, allowing them to focus on the specific duties of their profession. However, ODOT's Incident Response program does not have any MOUs.

When the Emergency Traffic Patrol in Maryland started, the patrols had to determine where they fit into the first responder picture and how to interact with law enforcement and fire departments. Now, Maryland State Police use the Emergency Traffic Patrol because patrols can handle many tasks that previously were the responsibility of law enforcement. CapWIN is an example of a partnership among areas (Maryland, Virginia, and the District of Columbia) that provides an interoperable first responder data communication and information-sharing network.

The North Carolina Incident Management Assistance Patrols (IMAP) have an MOU with the Greensboro Police Department to remove abandoned and disabled vehicles. IMAP

is currently working toward an MOU with the State Highway Patrol to do this statewide as well. North Carolina also has quick clearance legislation (GS 20-161) to clear roads, which extends liability protection to department of transportation and law enforcement personnel who keep roads open. Other states with MOUs with state highway patrols include Washington and New York. In San Diego, the CHP, SANDAG, and Caltrans entered into interagency agreements that provide for the annual funding for the service patrol from Caltrans to CHP and SANDAG. An additional provision of the interagency agreement is a Joint Operational Policy Statement that details the individual and joint responsibility of Caltrans, CHP, and SANDAG. In Georgia, HERO also has an incident management task force made up of many different agencies across responding areas. HERO reports benefits related to enhanced training and better ideas through this relationship.

2.4.8 *Outreach and Calling for Service*

Nearly all service patrols offer some form of outreach to the community to publicize their availability, hours of operation, and services, although it has been reported that many travelers are still not aware of the service. Most programs will offer a survey card or brochure to the motorist after service has been provided. This form of outreach gives the users an opportunity to rate the service patrol and provide feedback to the agency operators and is often a key component in evaluating the program. Most respondents are relieved and pleased with the service provided to them in a time of need.

Some service patrol programs attend community events to raise their exposure to the public off the roadway. In Washington, D.C., ROP can be seen at the end of the July 4th parade every year as the DC DOT showcases its vehicles in the final element of the parade. In New York, HELP will attach "sorry we missed you" tags on abandoned vehicles to let drivers know that they are available and could have offered services had the driver been with the vehicle. Florida's Road Rangers advertise their Florida Highway Patrol (FHP) numbers to the public, while other service patrol programs use Web sites to post their information. Transportation agency PIOs are to inform the public of the service patrol programs whenever possible. The Maricopa Association of Governments arranged a media ride-along to foster publicity for the program. In Georgia, training officers and supervisors exercise another form of outreach by going to police stations and fire stations to inform them of the advantage of using service patrol programs.

Several service patrols advise motorists needing assistance to call their State Highway Patrol number such as *FHP or *THP, 911, or 511 to request service. Generally, no other phone number is advertised for the public to call. If such a request is received, the dispatcher contacts the service patrol vehicle to direct the operator to the location where service is needed. Many service patrol vehicles drive along the highways to identify motorists who may need assistance. In addition, TMCs equipped with surveillance cameras can observe stranded motorists and request the service patrol to respond.

2.4.9 *Summary*

Support for service patrols includes elements from facilities, maintenance support, equipment, communications, mutual-aid agreements and MOUs, as well as outreach. It is

important to keep in mind that the funding provided to the program directly affects the range of capabilities and services that service patrols are able to provide. The ability of the program determines its usefulness to the sponsoring agency and, more importantly, the public. Because users of the service patrol program depend on the service patrols, it is even more important that properly supported programs enter the field each day. Adequately supported service patrol programs in the field mean earlier incident detection, quicker response, expedited removal of incidents, and faster restoration of traffic flow for motorists using the transportation system.



Minnesota Department of Transportation FIRST truck

CHAPTER 3. FULL-FUNCTION SERVICE PATROL JUSTIFICATION AND NATURE OF CHANGES

3.1 Justification

3.1.1 *The Congestion Initiative*

In 2006, the U.S. DOT announced its Congestion Initiative, which provides an outline for Federal, State, and local officials to consider as they work together to reverse the trend toward increasing congestion. Major components of the initiative include (1) congestion relief programs, (2) PPPs, (3) corridors of the future, (4) implementing technological and operational improvements, and (5) increasing aviation capacity. The Congestion Initiative is based upon using existing innovative and demonstrated strategies that more efficiently and effectively provide relief to traffic gridlock than the current practice. These options include technologies such as congestion pricing and high-speed open road tolling and the billions of dollars in private capital available for investment in public infrastructure. Service patrols are one tool in aiding state and local governments in their efforts to reduce congestion.

3.1.2 *How Service Patrols Aid Transportation*

Service patrols throughout the U.S. offer a varying range of services depending on budgets, the needs of the communities they serve, and their governments' organizational structure. Service patrols yield significant benefits to the transportation agencies and communities through reductions in vehicle delays, vehicle emissions, and gasoline consumption, as well as provide greater overall safety to travelers. These benefits are achieved through earlier detection, quicker responses, expedited removal of incidents, and faster recovery times. Before service patrols, transportation agencies relied on other responders such as law enforcement to clear congestion problems caused by incidents. Service patrols allow transportation agencies to control and respond to problems on their own systems with their own assets. Service patrols working with TIM responders can assist in the overall safety of incident scenes. Transportation agencies now have a direct impact on other TIM responders and play a role in preventing secondary incidents. Transportation agencies are more involved during on-site incidents and have become an important part of the incident management system. Service patrols give transportation agencies their own asset on-site to provide real-time information as an incident progresses. In addition, many incidents cause damage to the transportation infrastructure. Service patrols can provide information on such damage, thereby allowing repairs to proceed more quickly and recovering the cost of repairs from the person who caused the damage. The support environment for service patrols varies across a broad spectrum. The ability of the program to meet its intended mission determines its usefulness to the agency and, more importantly, to the public.

3.1.3 *Measuring Performance - Service Patrol*

Service patrols are often part of an overall TIM program, and while there are no required performance measures, many programs have adopted some performance measures. FHWA's study on TIM performance measures showed that while many agencies measure performance related to TIM, the definition of the measures is inconsistent across transportation and public safety disciplines. Most agencies measure what is important to them—with little coordination on measurement with other agencies in the same region.

The most common measures for TIM are:

- Number (or frequency) of incidents
- Detection time
- Response time
- Clearance time.

All these types of measures have some relevance to service patrols. The majority of programs surveyed as part of this Handbook reported using some combination of statistics gathered from each service call. Some of the statistics mentioned include the number of calls, response time, clearance time, type of incident, duration of incident, and congestion levels. The remaining surveys reported using customer satisfaction, or comment cards, to measure the performance of the program.

The Boston service patrol program reports that all vehicles have a mobile data computer that allows real-time reporting of specific incident information during service calls. This data is then used to evaluate operational functions and routes. If the data shows that a service patrol vehicle is not meeting program standards, operations and routes are reevaluated. The Florida Road Rangers carry comment cards to provide to assisted motorists. The Rangers request that the motorist fill out the card and mail it (postage is paid for by FDOT) to the central office. The comment cards are reviewed and scanned for data, which is then provided in summary form to the appropriate FDOT district. Massachusetts Highway Department's CaresVan uses both comment cards and statistical analysis to assess the performance of its program.

The San Diego FSP uses a combination of statistical analysis, driver inspection, and comment cards. The FSP program coordinator inspects each truck and driver each month. Each is graded on the following criteria: needs improvement, meets the standard, exceeds the standard, or is outstanding. Every quarter, an award is given to a driver that is based on monthly inspections, customer comment cards, no complaints, no accidents, and no need for counseling for the 3-month period. In addition, a driver-of-the-year award is presented to one of the four quarterly award recipients.

3.1.4 *Measuring Performance - Contract Service Patrols*

Of the surveys completed that report measuring contractor performance, approximately half used customer satisfaction surveys/comment cards. The District 6 Expressway Service Patrol in Pennsylvania provides these comment cards at the end of each call. If a service patrol operator receives more than one unfavorable card in the last six shifts, counseling

is required. A second such situation will result in a warning, a third in a suspension, and a fourth in a dismissal. The other half of the agencies surveyed reported using statistical analysis, inspections, or a combination of the two. Massachusetts Highway reports that its contractor, CaresVan, submits reports on all of its operations. Massachusetts Highway will also send out its own inspectors to evaluate contractor performance. They also rely on State Police feedback. The Florida Road Rangers gauge their contractors by the number of trucks on the road, the number of stops, and the types of services they provided. FDOT district supervisors review and inspect the contractor vehicles for proper equipment. In 2000, Marquette University formally evaluated WisDOT's Gateway Patrol program. The evaluation showed that a 52 percent reduction in minor incident clearance time was realized because of the presence of the Gateway Patrols. This reduction resulted in significant improvements in motorist delay. In addition, a 14 percent reduction was achieved in downstream secondary incidents. These reductions significantly improved safety.



*Wisconsin Department of Transportation
Gateway Patrol tow truck*

3.1.5 Benefit-Cost Ratio

Very few of the programs surveyed reported having an official benefit-cost ratio analysis. Currently, no national standard exists for measuring the benefit-cost ratio of service patrol programs. The San Diego FSP reports one of the most comprehensive benefit-cost assessments. The effectiveness of the FSP program is assessed by calculating the annual benefit-cost ratio of each FSP beat. First, the annual savings in incident delay, fuel consumption, and air pollutant emissions due to FSP service are calculated based on the number of assists, beat geometries, and traffic volumes. The savings are then translated into benefits using monetary values of \$10 per hour for delays and \$2 per hour for fuel consumption. The costs include the annual capital, operating, and administrative costs for providing FSP service. The FSP evaluation methodology is incorporated into an Excel spreadsheet. Input data requirements consist of beat geometries (such as number of lanes, presence of shoulders, etc.), traffic volumes, and the number and characteristics of FSP assists. A recent study by the University of California, Berkeley calculated the statewide average benefit-cost ratio was 8.3:1.

The Florida Road Ranger program completed a benefit-cost analysis in November 2005. The overall benefit-cost ratio was 25.8:1. This ratio represents the benefits based on the average incident delay and fuel savings indicated by the Road Ranger program. The 2005 report indicated that the program produces significant benefits in all five districts and the Florida Turnpike. The range of the benefit-cost ratio is from 2.3:1 to 41.5:1. Road Rangers assist with an average of seven incidents per hour in any given district with the exception of the Turnpike where they assist with nearly 18 incidents per hour.

In Minnesota, FIRST reports a benefit-cost ratio of 15.8:1. A 2003 Minnesota report on benefit-cost stated that while the total cost of the program increased 69 percent compared to the fiscal year 1999 estimate, the benefit estimation included additional factors that caused a six-fold increase for the fiscal year 2003 analysis. Net benefits were reported to be seven times greater, and the benefit-cost ratio was revised up from 4:1 to 16:1. Factors included in this analysis were reduced traffic delays, fewer secondary crashes, less fuel consumption, and lower emissions. The magnitude of this ratio reflects a significant public benefit for the investment.

Benefit-cost ratios from the reduction in delay between 3:1 and 10:1 are common for FSPs. Perhaps the most aggressive program in the United States, Houston's SAFEclicar consists of tow trucks that respond within 6 minutes of notification. Quick removal of stalled vehicles and crashes, combined with the MAP, has reduced collisions by more than 10 percent in the first 2 years of operation, saving \$70 million in collision costs.

In a September 2007 draft report for the North Carolina Department of Transportation (NCDOT) titled, *The Economic Impact of Traffic Incidents on North Carolina's Interstate Facilities*, modeling results of various case studies showed that deployment of either IMAPs or Advanced Traveler Information Systems (ATIS) would return significant monetary savings. The report also stated that a higher level of service/deployment would also bring more economic benefits to the overall transportation system. The Pennsylvania Transportation Institute completed a benefit-cost ratio evaluation 1.5 years after the onset of the parkway service patrols that included the benefits of having the service patrol. However, the evaluation was never matched against the costs associated with having the patrol.

3.1.6 *Strategic Highway Safety Planning and Other Initiatives*

The American Association of State Highway and Transportation Officials (AASHTO) created the Strategic Highway Safety Plan (SHSP) in 1997. The most recent update was in December 2004. The objective of this document is to provide a comprehensive plan to substantially reduce vehicle-related fatalities and injuries on the nation's highways. The SHSP does not focus on the contribution that service patrols can provide in this area, but the report highlights the significant promise that ITS holds for improving safety above and beyond the goals of the SHSP. The report points out that while some ITS programs will see immediate results, others will see results as large-scale deployment of new vehicles and technologies occur. One of the 16 ITS programs that help departments of transportation reach their mission and work toward meeting the Congestion Initiative, as well as the SHSP, is a TIM system. The SHSP can be the foundation upon which to build other interagency operations such as a TIM system. A TIM system can reduce the effects of incident-related congestion by decreasing the time to detect, respond, and return traffic to normal conditions. Incident management systems use a variety of technologies, including service patrols, to facilitate coordinated responses to incidents.

The U.S. DOT's Emergency Transportation Operations (ETO) initiative is designed to foster the development of tools and processes that support transportation system operators during a wide range of emergencies. The ultimate goal is to promote faster and better-prepared responses to major incidents and evacuations. The Research and Innovative

Technology Administration (rita) ITS Web site reports that more than 400 tropical storms, hurricanes, tornadoes, and highway HAZMAT incidents require evacuation each year in the U.S. These incidents, combined with winter weather, wild fires, multi-vehicle crashes, and security incidents, require the U.S. to be prepared for any eventuality. It is important that responders reach each scene, victims are evacuated from the danger zone, and clearance and recovery resources arrive on time. The ETO initiative has identified that effective real-time management of transportation during major incidents results in more timely responses to highway and HAZMAT incidents and shorter incident durations. The initiative is achieved by improving all forms of transportation emergencies by applying ITS technologies. Using FFSPs is one of these real-time ITS technologies.

3.1.7 *Department of Homeland Security Mandate*

Homeland Security Presidential Directive 8 “*National Preparedness*” (HSPD-8), issued in December 2003, establishes policies for strengthening the preparedness of the U.S. to prevent and respond to threatened or actual domestic terrorist attacks, major disasters, and other emergencies. The directive stated that this approach could be achieved by requiring a national domestic, all-hazards preparedness goal; establishing mechanisms for improved delivery of Federal preparedness assistance to State and local governments; and outlining actions to strengthen preparedness capabilities of Federal, State, and local entities. The National Preparedness Goal, established in March 2005, called for the creation of a fully integrated, adaptable, all-hazards preparedness system. The result was the Target Capabilities List (TCL) published in September 2007. As part of the “Response Mission Area,” the TCL addressed on-site incident management, which is defined as “the capability to effectively direct and control incident activities by using the ICS consistent with the National Incident Management System (NIMS).” Many service patrol programs currently use ICS. According to the TCL, the event is managed safely, effectively, and efficiently through the common framework of the ICS. The TCL goes on to state that all Emergency Support Functions (ESFs) are coordination functions (e.g., providing resources). ESFs can be involved in on-scene command and work in Emergency Operations Centers (EOCs), as required, to provide the incident management organization with the resources it needs. Transportation is ESF 1. Command is usually a local/county or state responsibility. A department of transportation’s TMC can work in concert with EOCs to coordinate assets before, during, and after an event. Or, for smaller events, departments of transportation can work directly with other TIM responders, using their service patrol program, to aid in quickly clearing an incident.

The National Response Framework (NRF), effective March 22, 2008, clearly states that the responsibility for responding to incidents, both natural and manmade, begins at the local level—with individual and public officials in the county, city, or town affected by the incident. The NRF also reports that any incident can have a mix of public health, economic, social, environmental, criminal, and political implications with potentially serious long-term effects. The NRF declares that the primary role of State government is to supplement and facilitate local efforts before, during, and after incidents.

Service patrols fit in the framework of the NRF and TCL by the nature of the services they offer and their function as a TIM responder. As a part of the incident management system

in ITS, service patrols provide departments of transportation with an operational capability that fixed assets are not able to provide. The on-scene presence of the service patrol helps the departments of transportation increase their reach either through the TMC during more localized incidents or through the EOCs during large-scale incidents.

3.1.8 Other Functions or Needs Service Patrols Fill

Because of their mobility and training, service patrols can provide assistance. One service patrol program surveyed reported that it will engage in checking vehicles stopped on or under critical infrastructure and encourage drivers to move along. In Boston, for example, CVS Samaritan vans were sent to Florida after a recent hurricane to assist in recovery efforts. Road Rangers, HERO, and HELP are used to coordinate various aspects of evacuations and provide support to motorists. Maryland's Emergency Traffic Patrol is used for signal operations to re-time signals along alternate routes as needed. The Houston Metropolitan Police Department's MAP vehicles worked during Hurricane Rita to escort field trucks and offer cases of water. MAP also escorted fuel tankers and provided much-needed assistance to the public. The Incident Response Units (IRU) in Washington State reported they can assist the State Patrol or National Guard as needed. Since the IRU service patrols are trained in

the NIMS, they can provide services during all types of incidents.



*Coordinated Highways Action Response Team (CHART)
emergency response vehicle*

Most service patrol programs that responded to the survey did not work outside their regular patrol services. Since incident responses are not just limited to vehicle assistance, service patrols with proper training are able to go beyond traditional roadside services and deliver support to any incident that may strike a community. This ability is an important asset to any department of transportation and the community during times of crisis.

3.2 Changes Required for Migration to Full-Function Service Patrol

3.2.1 Overview of Baseline, Mid-level, and Full-Function Service Patrols

This Handbook provides guidance to decision-makers and operators of service patrols to identify features of service patrols that will make them most effective. Many agencies are already operating service patrols and may want to compare their current services against the features of a baseline, mid-level, and FFSP. The primary features of these three service patrol levels are outlined below and more fully described in the remainder of the Handbook.

BASELINE SERVICE PATROL

A baseline service patrol will:

- Provide incident response services, clearance resources, and free motorist assistance services on a peak hour basis, 5 days a week
- Provide operators that are specially trained to safely provide limited emergency TTC at incident scenes
- Be trained in the ICS, specifically IS-100 and IS-200 level courses
- Design baseline service patrol vehicles to push a stalled or abandoned automobile or light truck out of the highway travel lane
- Provide a frequency of coverage to respond to a stranded motorist/vehicle within 1 hour of notification of its location
- Be in contact with a regional TMC if one exists
- Participate in incident debriefs or after-action reviews
- Be dispatched to incident locations as needed by the TMC or State/local law enforcement
- Include typical services provided in many service patrol programs today:
 - Provide minor repairs and motorist assistance
 - Remove debris
 - Provide fuel
 - Relocate vehicles out of travel lanes
 - Assist emergency services at vehicle crash scenes
- Include the following equipment:
 - Traffic control items
 - Gasoline
 - Communications equipment
 - Basic tools
- Establish methods for quantifying customer feedback.

MID-LEVEL SERVICE PATROL

A mid-level service patrol will:

- Provide incident response services, clearance resources, and free motorist assistance services on a peak hour basis, 5 days a week, plus on-call service 24 hours, 7 days-a-week and for special events coverage as required
- Provide operators that are specially trained and highly skilled in emergency TTC standards and procedures and readily available to provide TTC at incident scenes
- Be trained in the ICS, specifically IS-100 and IS-200 level courses

- Design mid-level service patrol vehicles to push a stalled or abandoned automobile or light truck out of the highway travel lane and/or relocate a vehicle to a safe location using either a wrecker, flat-bed car carrier, or towing contractor
- Provide a frequency of coverage to respond to a stranded motorist/vehicle within 30 minutes of notification of its location during peak hours and within 1 hour during on-call services
- Have direct communication with a regional TMC if one exists and/or State/local law enforcement
- Participate in incident debriefs or after-action reviews
- Include typical services provided in many service patrol programs today:
 - Provide minor repairs and motorist assistance
 - Remove debris
 - Provide fuel
 - Provide first aid
 - Relocate vehicles out of travel lanes
 - Assist emergency services at vehicle crash scenes
- Include the following equipment:
 - Traffic control items
 - First-aid items
 - Vehicle-mounted arrow board
 - Gasoline
 - Communications equipment
- Supply basic tools
- Establish methods for quantifying customer feedback.

FFSP

An FFSP will:

- Provide incident response services, clearance resources, and free motorist assistance services 24 hours, 7 days-a-week
- Provide operators that are highly skilled and specially trained in the following:
 - NIMS/ICS – IS-100, IS-200, and IS-700
 - ATSSA – Traffic Control Technician
 - Red Cross – First Aid and CPR
 - Wreckmaster – Towing and Recovery Operations Specialists
- Provide emergency TTC at incident scenes
- Design and equip FFSP vehicles to fully relocate a stalled or abandoned automobile or light truck from a highway to a safe location
- Provide a frequency of coverage to support statewide incident clearance goals

- Be fully integrated with regional TMC operations
- Participate in incident debriefs or after-action reviews
- Be readily dispatched to incident locations as needed
- Include typical services provided in many service patrol programs today:
 - Provide minor repairs and motorist assistance
 - Remove debris
 - Provide fuel
 - Provide first aid
 - Relocate vehicles out of travel lanes
 - Assist emergency services at vehicle crash scenes
- Include the following equipment:
 - Traffic control items
 - First-aid items
 - Vehicle-mounted variable message signs
 - Gasoline
 - Air compressors
 - Communications equipment
 - Basic tools
- Consider including advanced optional equipment such as:
 - Defibrillators and medical supplies
 - Fire, animal, and HAZMAT supplies
 - Public address system with an external speaker
 - Automatic vehicle location (AVL)
- Establish methods for quantifying costs and benefits, including customer feedback and operational information such as clearance times (integrated with other first responders)
- Conduct public outreach
- Use the FFSP program to reduce traffic congestion, improve travel time reliability, and improve safety on freeway and arterial systems.



*Minnesota Department of Transportation
operator assists motorist*

Minnesota Department of Transportation

3.2.2 *Fundamental Functional Needs*

The 2000 FHWA report *Incident Management Successful Practices: A Cross-Cutting Study* refers to incident management as the process of managing multi-agency, multi-jurisdictional responses to highway traffic disruptions. To address congestion issues that traffic incidents cause, service patrol programs must take an efficient and coordinated approach. One of the fundamental functional needs of service patrol programs is to establish MOUs and mutual-aid agreements. Universally, the service patrol programs surveyed discussed creating stronger relationships with law enforcement and other TIM responders. As service

patrols become a routine part of the first response landscape, a need to formalize agreements and set service scopes exists among agencies involved in incident response. From a technological standpoint, service patrol programs with MOUs, which are supported by ITS technology within their TMC, are better able to exchange information with law enforcement departments and EOCs during an incident. The ability to share and request any resource enables the FFSP program to not only assist other responders but also request and receive assistance when needed.

A dedicated program is a fundamental, functional need when moving a service patrol program to an FFSP. A robust FFSP is tasked strictly with only a service patrol assignment. One way to achieve this is through dedicated funding and training. Every program surveyed was able to either show a sound benefit-cost ratio or show customer feedback that was extremely positive toward the service patrol program and the department or agency responsible for it. Dedicated programs do not have to split priorities, fight for resources, or share personnel. Without these constraints, programs can focus on coverage areas and expanding existing services. Transitioning from a program that responds after notification to one that is proactive in its response is a move toward being a dedicated program.

3.2.3 *Personnel Needs*

Most service patrols surveyed said they need more personnel. In many cases, more people were needed to keep up with the demands of an expanding program. However, problems with turnover and retention were identified as limiting service patrols. Temporary staffing was considered as a poor solution to this problem. To migrate toward an FFSP program, service patrols need to invest in individuals that have the skills and aptitude for this type of service. For example, the Illinois DOT (IDOT) Emergency Traffic Patrol (Minutemen) program and the Illinois Department of Veteran Affairs teamed up in 2007 to make veterans aware of the opportunities available as service patrol operators.

Supervisors and operators need to be fully trained and training needs to be ongoing. A well-informed, well-paid, and well-trained operator is a service patrol's best investment. Retaining people who have experience and are able to work in the incident management environment is an important part of the service patrol program. Many of those surveyed stated that if more funding were available, they would also increase the salary paid to service patrol operators as a way to retain drivers and protect the investment made in them.

3.2.4 *Operations Needs*

For many of the programs surveyed for migration to FFSPs, expanding service hours and service areas was the primary need. Seven of the surveyed programs only operate during weekday rush-hour periods and only cover specified geographic areas. Several other programs operated during the rush hours and during the daylight hours between the morning and afternoon rush hours. Expanding the hours of coverage to 24 hours, 7 days-a-week and increasing the geographic area served offers the public a complete full-service program. This ability to provide 24 hours, 7-days-a-week service over a larger service area will aid in congestion mitigation over the entire transportation system. Special event coverage by service patrols was not a common function for all service patrol programs.

Special event traffic operations can put an additional strain on the transportation system, and a service patrol operation can assist with incidents that may occur during the special event, thereby improving traffic conditions.

FFSP programs must be supported by a comprehensive communications network and equipment and the TMC. The network allows these full-function programs to reach out quickly to other stakeholders and request resources in real time. The ability to share and receive timely information only increases a service patrol's effectiveness when facing a myriad of incidents. The ability to share real-time information allows the TMC to provide better information to motorists about the roadway conditions and potentially hazardous locations.

3.2.5 *Support Needs*

FFSP programs must engage in outreach that spreads awareness of the program and provides safety education to the community and other stakeholders. Conferences and working groups provide awareness between other service patrol programs and stakeholders, respectively. FFSP programs work with local partners to build awareness and coordinate training and exercises, review lessons learned, and create a better understanding of everyone's role during an incident. Likewise, outreach to the community about the service is also an essential function. Motorists should be aware of the program, its services, and methods so they may request service when required. Motorist awareness also enables the public to report incidents they observe. Part of public awareness is easily recognizable service patrol vehicles and uniformed drivers. Motorists must feel confident that the vehicles and the drivers stopping to assist them are part of an official program and present no danger to them.

Migration to an FFSP should include training on specific incidents, communications equipment, and the tools used daily on the job. As service patrol equipment and services are expanded, training must also expand, evolve with the program, and be regularly updated. Awareness of and/or practical training in various areas of incident management are characteristics of an FFSP. Training with other first responders can only enhance skills and awareness of everyone's role during an incident.

Updating fleets and equipment is essential when considering a move to an FFSP. Having the right equipment for the service provided and having the support behind the program to expand services are important considerations. Continued maintenance of the fleet and the ability to update and upgrade as required is another function of an FFSP.

However, expansion, outreach, and training can be achieved only when properly funded. FFSP programs require dedicated funding and the ability to use that funding to improve and expand the service patrol program. FFSPs also perform measurements of their progress. Through comprehensive analysis and evaluations, an FFSP can determine the program's value and justify the services they provide, hours of operation, and geographic areas of service. These measurements aid the full-function program in providing the most cost-effective and efficient services to its community and demonstrates the program's value to decision makers and the public.

3.3 Change Priorities

3.3.1 Essential Features

Essential features of an FFSP program are proper funding, a dedicated program, and establishing MOUs to define roles and responsibilities. In addition to funding, an institutional-related priority includes FFSPs being a major component of an ongoing, sustained TIM program. In this context, FFSPs should be regular participants in incident debriefs. Also, a TIM program can serve as the foundation for developing a methodology for regularly assessing and measuring FFSP performance.

For an FFSP, it is essential to have 24 hours, 7-days-a-week coverage that includes support for special events and evacuations. It also is essential that service patrol programs have a comprehensive training program, reliable communications, and a notification system for incident recognition and response. In addition, service areas must be determined through proper analysis and areas of coverage and service must not be limited by lack of personnel. A TMC is an essential element for supporting service patrol programs. Service patrol programs that wish to be considered FFSP programs must have either operational guidelines or SOPs or both. Both contract and in-house operations staff must be trained in the ICS, emergency TTC, equipment and tools use, HAZMAT assessment, and basic first aid. Supportive legislation and policies, such as open roads and safe, quick clearance, must also be in place to allow service patrols and incident responders to focus on their primary mission. Some level of background checks on drivers should be required to ensure that those interacting with the public are not a safety risk. A method to measure benefit-cost is also essential.

The services of FFSPs should include the following baseline features:

- Recognizable vehicles
 - Tire air
- Uniformed drivers equipped with safety vests
 - Stranded motorist assistance
 - Providing cell phone service
 - Offering a safe place to wait if vehicle is disabled
 - Object removal
 - Debris (roadway hazards)
 - Spilled items
 - Ability to tow vehicles
 - Call commercial towing provider
 - Provide towing services to point of safety
- Ability to move disabled or abandoned vehicles
 - Fuel provision
 - Water provision
 - For overheating
 - To person(s) being assisted
 - Ability to change of flat tires
 - Mechanical assistance
 - Jump starts
 - Minor mechanical repairs
- Information provided
 - Request emergency services
 - Provide driver information
 - Give TMC on-site information
 - Standard form for documenting driver / vehicle information and services provided
- Redundant communications methods
- Assistance to other agencies
 - Law Enforcement
 - Fire
 - EMS

The equipment that FFSPs should have includes:

- Basic tools
 - Tow hitch and tow hooks
 - Hammer
 - Jumper cables
 - Fuel siphon
 - Mallet
 - Pliers
 - Ratchet wrench set
 - Screwdriver set
 - Battery brush
 - Broom
 - Lug wrench
 - Funnel
 - Flashlight
 - Wrench set
 - Vise grips
 - Tire gauge
 - Shovel
 - Tire sealant
 - Garbage bags
 - Pry bar
 - Duct tape
 - 5-gallon containers
 - Paper towels
 - Assorted fuses
- Electric tape
- Electric multimeter/wiring tester
- Gloves
- Portable flood light
- Marking paint
- Jack
- Wheel chocks
- Quick entry tool
- Safety goggles
- Safety mask
- Rags
- Rain jacket and pants
- Traffic control items
 - Safety vests
 - Traffic cones
 - Fluorescent traffic control flags for flagging operations
 - Flares
 - Sign stands
 - Traffic control signs (in compliance with MUTCD Chapters 6F and 6I)
 - Arrow board
- Stop/slow paddle
- First-aid items
- Fire extinguisher
- Digital camera
- Vehicle-mounted message boards
- Gas
- Air compressors
- Communications equipment
- Push bumper
- Flashing light bars on vehicles
- Feedback mechanism to measure service provided

3.3.2 Desired Features

Once the essential features are in place, expanding specific services that service patrols can provide is a desired second step. For example, through proper training, service patrol programs may administer standard first aid and CPR. All FFSPs should have the ability to communicate directly with law enforcement to provide assistance to incidents where needed. Having mobile laptops installed in service patrol vehicles can facilitate reporting, communications, and monitoring capabilities.

All FFSPs must be able to tow vehicles, primarily through in-house operations as part of their own fleet or, secondarily, by contracting. This feature would include having all forms of towing capabilities from heavy-duty towing vehicles to standard towing vehicles.

Some additional desired equipment could include:

- Antifreeze
- Oil and power steering fluid
- Spill containment supplies
- Fire and basic HAZMAT supplies
- Binoculars that can be used to view HAZMAT placards from a distance
- Medical supplies
- Laptops
- Diesel fuel and fuel transfer kits
- Maps, phone books, and HAZMAT guides
- Salt and sand
- Cleaning products, including hand cleaner
- Public address system with an external speaker
- Tow chains
- Battery booster boxes
- Hydraulic jacks and pillars
- Fire and law enforcement scanners
- Child safety seat
- AVL for service patrol vehicles

When considering outreach, another highly desirable feature of an FFSP is public education on roadway incident safety (in the event that motorists find themselves involved in some type of incident), as well as public awareness. Providing information about the FFSP program through a Web site should be an essential part of outreach and awareness.

3.3.3 *Optional Features*

Optional features for service patrol programs include using advanced equipment or training that goes above and beyond traditional services provided by service patrols during incident response. For example, training service patrol operators to be paramedics, EMTs, or level 1 firefighters is an optional feature. Also, defibrillators are considered optional; though using them can enhance the lifesaving training techniques that service patrol programs employ.

3.4 Changes Considered but not Included

Requiring a standard vehicle for all service patrols in the U.S. is not essential to successfully implementing FFSPs across the country. However, when the operating agency selects a vehicle, it is essential that the vehicle accommodate the defined service patrol functions and the required equipment.

Requiring in-house staff to operate the service patrol was not considered because contract services can provide resources to run a service patrol program that could not otherwise be operated by an agency. Contracted services, however, must be well defined in the contract and monitored to ensure compliance.

The organizational structure of the program is also not a feature that should be mandated. The survey found a variety of organizational structures and agencies that are successfully providing service patrol functions. In addition, a number of successful funding models are being used around the country. The funding stream must be adequate, reliable, dedicated,

and long term to allow sufficient planning for services and fleet expansion and replacement needs. Each jurisdiction should determine what organizational and funding structure works best for its area to support the services they want to provide as part of an FFSP.

Another consideration was having the service patrol operate as a PPP. While a PPP may provide resources to support the capital and operational cost of a program, it is not a requirement for success. In fact, in some states, legislation to allow a PPP may be a difficult measure to pass. Therefore, it is a consideration, not a requirement.

Finally, a standard name for a service patrol is not required for success. The survey found a variety of names to describe a service patrol. While some benefit to motorist awareness is gained throughout locales offering service patrols, a common name is not a requirement for success. As long as the service is easily recognizable to the public and is marketed consistently to the public under a particular name, the name of the service can vary to meet local needs.

3.5 Assumptions and Constraints

It is assumed that operations carried out by FFSP programs can be performed without danger to the driver, equipment, and traveling public. An FFSP assumes that dedicated funding is available and used to support the program entirely. Also, it is assumed that governmental support is available to operate the program and that participating agencies are cooperative and supportive of the service patrol function. Finally, it is assumed that service patrols are a benefit to traffic congestion and do not add to the problem.

Constraints to service patrol programs are inadequate funding, training, and resources. Service patrols normally work in heavy traffic conditions and are impacted by human factors that affect the ability of the service patrol operators to safely and efficiently do their jobs.



Tennessee Department of Transportation Highway Incident Response Unit with tools

CHAPTER 4. FULL-FUNCTION SERVICE PATROL CONCEPT

4.1 Background, Objectives, and Scope of an FFSP

Section 2.1 provided the background on existing service patrols while Section 3.1 discussed justification for changes to an FFSP. FHWA is anticipating that this Handbook for an FFSP will provide a model for uniform service across the U.S. and provide additional benefits in reducing congestion.

An FFSP program is an essential component of a regional TIM program and serves to reduce congestion and enhance highway safety. FFSP services should aim to reduce the impact of traffic incidents by minimizing the duration of incidents, restoring highways to their full capacity, and applying proper emergency TTC to enhance safety of other TIM responders and motorists involved in incidents. An FFSP supports traffic incident response and provides motorist assistance free of charge. Essential FFSP objectives are defined in priority order:

1. Traffic incident clearance
2. Traffic control and scene management
3. Incident detection and verification
4. Motorist assistance and debris removal
5. Traveler information.

A trained FFSP operator uses fully equipped vehicles capable of clearing an automobile or light truck to a safe location without having to wait for a wrecker. When vehicle crashes or stalls occur because of a weather event, the clearance functionality is especially beneficial because private towing company and automobile club response times can take several hours. The cleared vehicle presents a significantly reduced hazard at the safe location, allowing a towing wrecker to pick up the vehicle without further incident. By quickly removing the hazard from the highway, the FFSP minimizes potential disruptions to other motorists and reduces the risk of secondary incidents.

The FFSP operator is also sufficiently trained to provide emergency TTC at incident scenes. This function enhances the safety of responders at the incident scene and protects motorists passing through the scene. The traffic control function can also include setting up, maintaining, and removing emergency detour or alternate routes.

By patrolling the service area, the FFSP can help detect and verify traffic incidents quickly and initiate a clearance response to motorists requiring assistance.

The FFSP assists disabled motorists by providing gas or water, changing tires, performing minor vehicle repairs, or by towing and/or pushing vehicles off the roadway. The FFSP also assists motorists by providing directions, tagging abandoned vehicles, removing debris

from the roadway, providing rides to individuals stranded on the highway, and assisting in spill clean-up.

With direct two-way communications, FFSP operators can provide updates on traffic and roadway conditions to TMC operators as input into traveler information systems such as 511 and/or DMS.

4.2 Operational Policies and Constraints

Funding and other political, administrative, and institutional constraints are issues that agencies must overcome and address before implementing an FFSP program. Specific examples include:

- Program administration
- The role and legal limits that an agency, such as a department of transportation, has in responding to freeway incidents
- Various roles and responsibilities of stakeholder agencies
- Opposition from stakeholder agencies
 - Commercial concerns from private enterprise (towing companies, mobile tire repair centers)
- Performance objectives and policies
 - Quick incident clearance policies
 - Open roads policies
- Operational policies and associated program costs
 - Size of the program
 - Hours of operation
 - Service area/number of miles covered
 - Number of trucks and operators needed
 - Fuel costs
 - Types of trucks and equipment
 - Types of communications equipment
 - Operator qualifications, training, and certifications
 - Dispatcher qualifications, training, and certifications
- Political concerns
 - Legislative approval
 - Union concerns
 - An agency's traditional road-building needs versus operational performance.

4.2.1 Funding

Officials at existing programs routinely acknowledge identifying funding sources as the biggest challenge in implementing an FFSP. On freeways and other non-toll highways, service patrol programs typically have been funded through a State's transportation funding, from the general fund of tax- and transportation-related fee revenue (e.g., fuel tax, vehicle registration fees), and, when applicable, with some Federal funding split. On tollways and turnpikes, funds for service patrols are generated from the tolls collected on the facility it serves. In most cases, funding and spending for service patrol programs competes

with other transportation spending within the agency sponsoring the service patrol. Typical transportation budgets may include major capital improvements, rehabilitations, operations, maintenance, transit, and other initiatives. When tax or toll revenues stagnate or decline, agencies are forced to reduce spending and cut programs. As a result, service patrol programs are constrained not only by Federal and State budgets but also by tax and toll revenue collections. Traditional funding mechanisms for an FFSP can include:

- State legislative appropriations
- State operations and maintenance funds
- State traffic and safety funds
- State general revenue funds
- State highway trust funds
- Public safety funds
- Toll revenues
- MPO funds
- Federal surface transportation funds
- CMAQ funds
- National Highway System (NHS) funds.

4.2.2 *Public Private Partnership*

As public agency dollars are stretched and budgets are cut, PPPs can provide an alternative to funding mutually beneficial programs. Because FFSP programs are free of charge to motorists and they do not compete with established towing businesses, it is not feasible to establish a fee-based system for services FFSP provides. Rather, private companies that benefit from exposure to motorists, fewer crashes, and open highways will benefit from sponsoring an FFSP. Private sponsorship of a program can expand service hours, frequency of coverage, coverage area, and/or services provided. An example of this benefit is State Farm Insurance Company's 2-year sponsorship of the Road Ranger program on the Florida Turnpike. This PPP promotes highway safety through State Farm Insurance Company and provides free 24 hour roadside assistance along Florida's Turnpike. In 2004 State Farm pledged \$850,000 to the Road Rangers program to support motorist assistance. Other private funding source examples include pharmacies, motor clubs, and wireless telephone carriers. An agency should check State and local rules and laws to determine whether private advertising or PPP programs are allowed to partially or fully fund an FFSP and if not, explore options to allow such assistance.

An agency developing major transportation-based PPP programs such as high occupancy toll (HOT) lanes or new tollway facilities often develop specific contract terms for the financing, management, operations, level-of-service, and maintenance of the facility for a period of time. Contract terms within these major PPP programs should also include requirements for the developer or concessionaire to provide an FFSP program on the facility. The result is that the FFSP cost is enveloped in the overall program financing. This method will benefit the public by providing the service and benefit the private company by keeping facility traffic moving, potentially increasing toll collection revenues from motorists using the facility because of reliable trip times.

4.2.3 *Educating Decision-Makers and Stakeholders*

Benefit and cost evaluations of service patrols have consistently shown positive returns on the investment. However, some decision-makers often view these programs as a value-added service to the basic mission of a transportation or public works agency. As a result, funding for FFSPs can be constrained by the support of decision-makers within the agency and by the operational mission of the agency. Agencies attempting to implement an FFSP program should be prepared to explain to decision-makers the benefits of quick clearance and how FFSP programs can reduce congestion and improve safety.

4.2.4 *Institutional Coordination*

An important aspect in the success of an FFSP program is the involvement of and the relationship between the TIM and traffic operations stakeholders. Agencies should develop a multi-agency coalition and institutional framework to support, protect, and fund the program. The coalition should include stakeholders such as:

- State and local law enforcement
- Fire services
- EMS personnel
- Departments of Transportation
- MPO or Association of Governments
- Local highway/maintenance departments
- TMCs
- Media personnel
- Towing and recovery companies.

Because FFSP programs can provide positive impacts beyond their jurisdictional boundaries, stakeholder agencies outside the service area or operational responsibility should also be included. For example, safety and efficiency improvements from an FFSP on a freeway can positively impact an arterial network. Establishing the coalition and identifying the stakeholders should begin in the early stages of planning an FFSP program so that each of the stakeholder's unique needs can be addressed. The performance of the FFSP and partnership of the stakeholder agencies can bolster decision-making support for the program and in turn influence decision-makers and protect program funding. In many cases, these agencies can formalize their coalition by creating an MOU, interagency agreements, endorsement letters, partnering agreements, or joint operations policy statements.

Multi-agency partnerships can also provide an opportunity for agencies to pool funding across jurisdictions to provide an FFSP. While one agency may not be able to afford a stand-alone unit, cost sharing and oversight responsibilities may provide enough resources for an FFSP across the jurisdictions.

4.2.5 *Operational Policies and Program Cost*

The operational policies of a TIM program or an FFSP program can affect the overall budget. In basic terms, an overall program performance goal for traffic incident clearance can drive the frequency of coverage desired, the number of hours covered, the total service area, and

the extent of the services provided. These factors affect the overall cost of the program and needed funding.

The following constraints and operational policies affect FFSP programs:

- Program funding
 - Sponsoring agencies' budgets and programs (Federal, State, local)
 - Tax, toll, or fee collections
 - PPPs
- Support from agency decision-makers
- Performance goals for quick incident clearance and associated program costs
 - Service area and number of miles covered
 - Number of vehicles and operators
 - Number of backup vehicles maintained
 - Hours of operation
 - Frequency of coverage
 - Fuel costs
 - Types of service provided
 - Type of vehicle and equipment
 - Operator qualifications, training, and certifications.

4.2.6 *Program Administration and Operational Roles*

FFSP programs can be agency operated or privately contracted. When an agency operates the program, the agency employs the service patrol operations, and the vehicle and equipment is either leased or procured. Some advantages of an agency-operated FFSP include:

- Having direct control of operations and staff performance to support policies such as open roads and quick clearance
- Changing operational policies to be executed without contract modifications
- Developing and maintaining staff skills within agency (whereas in a contracted service, a change in contractor may cause the program to lose experience and training developed over time)
- Providing a mechanism to promote department of transportation customer service
- Avoiding a contract review and approval process through multiple departments and divisions of an agency.

A second alternative for implementing an FFSP is for an agency to hire a contractor to provide patrol services. Agencies typically use their established bidding or request for proposal (RFP) process to select a private contractor or towing company to provide the patrol vehicles, equipment, drivers, and service. The contract must clearly define the operational characteristics of the program. Typically, the contract is written for bid by vehicle/service hour. Some advantages of a contracted FFSP include:

- An agency is not required to procure vehicles, hire personnel, procure special insurance, or have any special resources to operate the service
- The contractor handles the vehicle fleet and equipment maintenance
- Potential cost savings for training can be realized if the contractor has previous service patrol related experience.

Contracts for FFSPs should include fuel cost clauses to protect both the vendor and agency from rising fuel costs.

4.2.7 *Towing Company Constraints*

An agency's operational policy for an FFSP, whether provided in-house or by private contractor, needs to prevent conflict with established private towing industry businesses. Operational policies need to emphasize that the objective of the FFSP is to clear vehicles from the highway to a safe location and not to a service station. Furthermore, FFSP programs strictly prohibit operators from recommending a secondary tow provider. The motorist should choose an operator or decide from an enforcement agency's established rotating lists. This approach will prevent potential civil lawsuits and liability issues. An agency can prevent misconceptions of the FFSP program by working to establish a relationship with the local towing industry.

4.3 Description of Full-Function Service Patrols

The following subsections describe the major elements, services, and capabilities of an FFSP.

4.3.1 *Hours of Operation*

Consistent with the National Unified Goal (NUG) for TIM, developed through the National Traffic Incident Management Coalition (NTIMC), the FFSP should be operated 24 hours, 7-days-a-week within the defined service area. The majority of existing service patrols operate peak periods of 5:00 a.m. and 10:00 p.m. on weekdays, or during special events. These programs typically have focused on the highest congestion periods and the times with the highest crash rates. However, this focus can leave large portions of the traveling public unserved during nonpeak hours and can sometimes be confusing for motorists expecting service during a disablement. The 24 hours, 7-days-a-week availability of FFSP resources will ensure that traffic incident responders can promptly and effectively manage emergency incidents occurring on roadways regardless of time of day or day of week.

If 24 hours, 7-days-a-week service cannot be achieved because of resource limitations or other constraints, an agency should assess the service hours carefully in relation to crashes, severe crashes, and recurring congestion periods and deploy the service across the most crucial hours. The agency should also identify what additional funding resources would be required to provide 24 hours, 7-days-a-week service and determine whether those additional resources are obtainable. Another option is for agencies to develop an on-call system to provide services during major incidents that occur outside normal operating hours.

4.3.2 *Service Area*

From a macro perspective and consistent with the Congestion Initiative, FFSPs should be provided in each of the top 40 urban areas of the U.S. From a State, regional, or local perspective, the FFSP service area should be clearly defined and communicated to stakeholders and the public. Determining the service area is based on traffic volumes, recurring congestion areas, number of traffic incidents, calls for service, and crash frequency. The

service area should focus on high traffic volume corridors that experience a high number of traffic incidents that increase the magnitude of congestion. Another factor in determining the service patrol service area is the absence of freeway shoulders where hazards are exacerbated when crashes or stalled vehicles occur. An example of this situation is a bridge or tunnel with limited shoulders.

4.3.3 *Frequency of Coverage*

The frequency of coverage is a function of the total miles patrolled in the service area and the number of FFSP vehicles traveling the area at a given time. Existing programs have a patrol frequency over each segment that ranges from every 10 minutes to 1 hour. The frequency of patrols provided should support adopted performance goals. A common TIM performance measure is incident clearance. For example, several states have 90-minute incident clearance goals. Alternatively, performance goals can be categorized by incident severity. In Utah, for example, minor fender-benders have a 30-minute clearance goal while injury crashes are 60 minutes. An FFSP program should continually patrol the service area at a frequency that supports the performance goal and can realistically detect and clear an incident within the clearance goal.

4.3.4 *Guidelines for Developing Vehicle Requirements*

Since one of the primary objectives of an FFSP is quickly clearing vehicles, the service patrol vehicle should be capable of, or designed for, towing vehicles. These vehicles should be flat bed models; be specially designed and equipped with a tow sling, tow bar, tow plate or wheel lift apparatus, attached to the rear of the vehicle; or have a crane or hoist that is attached to the bed or frame of the vehicle. The vehicle should meet State vehicle code requirements for light-duty tow trucks to perform accident recovery work and have all necessary permits to operate the service. The gross vehicle weight rating should be at least 10,000 pounds and have a manufacturer rating of one ton or more. The FFSP vehicle capabilities are identified so that an automobile or light truck that presents a hazard on the roadway may be moved carefully and quickly to a safe location. This service does not provide a tow to a garage or repair station. Quickly removing the vehicle from the incident area will restore the roadway to its full capacity and reduce the risk of secondary crashes. Motorists can choose a private towing company to move their vehicles from the safe location to a service station for repair.

Requirements for FFSP vehicles should be developed depending on the needs of the particular region. Guidelines and considerations for developing these requirements include:

- Storage facilities for FFSP vehicles and equipment
- Four-speed transmission or equivalent
- Power-assisted service brake system
- Parking brake system
- Dual rear wheels and tires
- Crane specification – boom capacity of at least 4 tons
- Car carrier specification (if used) – bed assembly of at least 3/16-inch steel plate and at least 15 feet in length and 7 feet in width

- Push bumper
- Identification markings
- Amber warning lights and lamps; no red lights should be visible
- Work lamps
- Portable tail, stop and signal lamps
- Reflectors
- Splash guards
- Attachment chains.

4.3.5 Guidelines for Developing Equipment Requirements

To assist motorists with minor vehicle disablements and to provide emergency TTC at incident scenes, FFSP vehicles should be equipped with an assortment of tools and supplies to support key functions.

The following is a recommended list of equipment and supplies to carry on the FFSP vehicle:

- Communications
 - Two-way radio
 - CB radio
 - Law enforcement radio
 - Public address system
 - Cellular telephone
- Mechanical
 - Air compressor
 - Car jack
 - Power-operated winch
- Tools
 - Booster cables
 - Tire gauges
 - Wrench sets
 - Socket sets
 - Hammers
 - Screwdrivers
 - Pliers
- Wire cutters
- Pry bars
- Brooms
- Shovels
- Flashlights
- Electrical multimeters/wiring testers
- Fluids
 - Gasoline
 - Oil
 - Transmission fluid
 - Starter fluid
 - Water
 - Anti-freeze
- Supplies
 - Electrical tape
 - Duct tape
 - Wire
- Absorbent material
- Hand cleaner
- Paper towels
- Safety
 - First-aid kit
 - Fire extinguisher
 - Gloves
 - Safety goggles
 - HAZMAT guide book
- Traffic Control
 - Vehicle-mounted variable message or arrow sign
 - Cones
 - Flares
 - Traffic control signs

Another piece of important equipment for an FFSP is identifiable uniforms for operators. A uniform will establish confidence from other TIM responders, law enforcement, and the public that the operator is an authorized official or representative of the agency. Operators should also be equipped with an official, openly displayed credential to show to motorists who are hesitant or fearful to accept the services of an FFSP.

4.3.6 FFSP Operator Visibility Requirements and Apparel

The FHWA has established a rule in Title 23 of the Code of Federal Regulations (CFR) titled, “Part 634 Worker Visibility.” The rule requires that all workers within the right-of-way of a Federal-aid highway wear high-visibility safety apparel when they are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area. The rule defines workers as people on foot whose duties place them within the right-of-way of a Federal-aid highway. This worker definition encompasses all first responders, including FFSP operators. Part 634 also defines high-visibility safety apparel as personal protective safety clothing that is intended to provide conspicuity during daytime and nighttime usage, and that meets the Performance Class 2 or 3 requirements of ANSI/ISEA 107-2004. ANSI/ISEA 107-2004 is the American National Standard for Highway Visibility Safety Apparel and Headwear. This standard provides uniform guidelines for the design and use of high-visibility safety apparel such as safety vests, rainwear, outerwear, trousers, and headwear to improve worker visibility during the day, in low-light conditions, and at night. ANSI/ISEA 207-2006 is the American National Standard for High-Visibility Public Safety vests. This standard establishes design and use criteria for vests to make public safety workers highly visible to motorists.

4.3.7 Procedural Development Guidelines

Each agency has unique procedures and techniques that will require clarification in operating an FFSP. An agency should develop procedural and operational guidelines to clarify and document those preferences and establish a baseline performance expectation so that all operators provide a uniform and consistent service. The guideline will also provide stakeholder agencies with a clear illustration of the FFSP-provided services and how interactions between the agencies and the FFSP will occur. For a privately contracted service, the operational guidelines should be used as part of the contract documents. Guidelines should cover the following FFSP topics:

- Mission, objectives, roles, priorities, and functions of the program
- Contract provisions
 - Termination criteria
- Operational procedures
 - Duties, job description, conduct
 - Response priorities
 - Routes, vehicle positioning, staging, leaving a scene
 - Dispatching
 - Communications
 - Safety
 - Emergency TTC
 - Dealing with motorists
 - Dealing with motor clubs and towing companies
 - Relationships with the TMC and stakeholders
- Safety and response procedures

- Disabled vehicles
 - Abandoned vehicles
 - Relocating vehicles
 - Traffic crashes
 - HAZMAT
 - Vehicle fires
 - Debris removal
 - Weather
 - Construction
- Applicable laws, administrative policies, agreements
 - Open roads policy
 - Move it law
 - Liability
 - ICS
 - Emergency operations plans
 - Evacuation
 - Interagency cooperation, commitments, and relationships
- FFSP policies
 - Facility
 - Shift change
 - Phones
 - Parking
 - Ride-along
 - Record keeping.

4.3.8 Initial Operator Qualifications

One of the biggest challenges that FFSP programs face is driver rotation and turnover. Large driver turnover rates will increase costs to the program as it increases the amount of time devoted to driver training and reduces the time drivers are operating a vehicle on the program's service routes. FFSP programs can reduce driver turnover and overall program cost by paying competitive wages and hiring qualified and skilled drivers. In many cases, skills will need to be developed through training programs; however, drivers may already have some important skills if they have previous background in towing, automobile repair, emergency medical services, or highway maintenance. Hiring individuals with existing skills in automobile repair or EMS may be cost probative since these candidates may command salaries outside the FFSP program's budget.

Initially, drivers should have the following minimum qualifications:

- 18 years of age
- High school diploma or General Equivalency Diploma (GED)
- Clean criminal background
- Applicable Commercial Driver License (CDL)
- Clean driving record

- Ability to work independently
- Ability to lift 50 pounds.

4.3.9 *Operator Certifications and Training*

After the initial hiring, an FFSP program should require and provide training for patrol operators before they begin service. Training should involve a combination of classroom style and on-the-job training to demonstrate and describe the typical functions, responses, and services that the operator will be providing. As a guideline, the program should provide annual refresher training to emphasize new policies, procedures, or performance concerns. Common training elements include:

- TIM program overview, goals, and objectives
- FFSP operating guidelines
- Vehicle and equipment use and maintenance
- Safety policies
- Radio and communication procedures
- Defensive driving
- Ride-along with multiple shifts
 - 50 to 200 hours
- First aid
- CPR
- Public relations/customer service
- Maintenance of traffic/emergency TTC
- Vehicle recovery procedures
- Work site protection
- Extinguishing vehicles fires
- Minor vehicle repair
- ICS consistent with NIMS
- Disaster preparedness/evacuations
- HAZMAT response including the Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) administered by the Occupational Safety and Health Administration (OSHA).

Depending on the operational policies and the overall goals of the FFSP program, the following formal certifications may further develop highly skilled and trained operators.

These certifications typically require ongoing refresher courses and tests, and can be used to train drivers externally rather than relying on internally developed training materials:

- International Municipal Signal Association (IMSA), Work Zone Traffic Control Safety
- American Traffic Safety Services Association (ATSSA), Traffic Control Technician
- Red Cross, First Aid
- Red Cross, CPR
- Department of Homeland Security, Highway Watch
- Wreckmaster, Towing and Recovery Operations Specialist

- National Automotive Technicians Education Foundation, National Certified Automotive Technician
- State certified, Emergency Medical Technician
- State certified, Fire Fighter
- State certified, Animal Control Officer
- Federal Emergency Management Association, National Incident Management System ICS-100
- Federal Emergency Management Association, National Incident Management System ICS-200

4.3.10 Costs

As previously mentioned, the size of the program and operational policies will drive the overall cost and annual budget. Existing service patrol programs using private contractors range in cost per service hour from \$35 to \$98, depending on the area and service vehicle used. Individual factors that influence the overall program cost include:

- Operator wages
 - Qualifications
- Operator benefits
- Operator training and certifications
- Vehicle procurement
- Vehicle maintenance
- Fuel
- Equipment procurement
- Equipment maintenance and replenishment
- Administrative cost.

4.3.11 Communications and Dispatching

FFSP communications and dispatching should be closely integrated with TMC operations. This is best accomplished with two-way radios, but cellular telephones can also be used as a communication tool. Although an FFSP is routinely patrolling the highway system, it is not reasonable to expect that the patrol vehicle will detect all incidents. Some incidents will be detected by law enforcement, TMC operators, or by other motorists reporting an incident to a 911 operator. As a result, the FFSP operator will typically rely on a dispatcher to report incident locations and details to aid in quicker response. In turn, the FFSP dispatcher will need close and convenient communications with the TMC operators and with public safety and 911 operators. Depending on the anticipated workloads of the TMC and public safety operators, these individuals could also serve as the FFSP dispatcher.

Consistent with NIMS/ICS protocol, using common plain language is preferred when communicating between the operator and dispatcher and between operators. Communications should be limited to incident-related details and focus on the who, what, and where of the incident. When the FFSP operator has direct linkage to the TMC, incident situations and impacts such as lane closures can be disseminated quickly onto DMS to

provide real-time traveler information and safety messages to motorists approaching the incident.

The close coordination required between the FFSP operator and law-enforcement agency personnel requires two-way communications with law enforcement. This requirement can be fulfilled by having the FFSP operator carry a law enforcement radio. The radio may be preprogrammed with only car-to-car channels to allow the FFSP to listen to information relayed about highway incidents but eliminate law enforcement concerns about private communication. More importantly, it will allow the FFSP operator to have on-scene communications with law enforcement personnel to coordinate emergency TTC with on-scene law enforcement officers to coordinate traffic flows and emergency TTC. The law enforcement officer may require a shift in the emergency TTC or may want to indicate that the scene is clear and the roadway should be opened to traffic. When the incident scene is large, personnel may be spread out over an extended area, and the emergency TTC may be set for an extended period of time. Consequently, communications may not be as efficient for both parties without two-way radios.

To further aid in communication, the FFSP cellular telephone should be preprogrammed with important telephone numbers of potential responding agencies, emergency management personnel, local transportation personnel, on-call supervisors, and managers.

4.3.12 *Automatic Vehicle Location*

As an option, the FFSP vehicles may be equipped with an AVL system to help inform dispatchers of the FFSP vehicle location, status, and speed. This information can help dispatchers identify the closest and most appropriate FFSP vehicle to respond to an incident location.

4.3.13 *Record Keeping*

FFSP activity should be well-documented to help identify total assist records, driver performance, quality control, and incident reviews. The information used to establish performance measures will help support funding and provide key information to decision-makers.

Each FFSP operator should have log sheets and document information related to each assist and incident. The following information should be recorded on an activity/log sheet:

- Dispatch time
- Arrival time
- Departure time
- Incident type or nature
- Location (mile marker, cross street, or landmark)
- Vehicle identification number
- License plate number and state
- Vehicle make
- Vehicle model
- Vehicle year
- Vehicle color

- Services rendered.

Another alternative is for operators to use laptop computers similar to a law enforcement mobile data terminal to record logs and transmit the activity to a central database. These systems can be set up to transmit the data in real-time and catalog entries without manual data entry.

FFSP managers should place activity logs into a database to document and record overall program statistics. This information can be used to create annual reports, determine trends in activity, determine activity in specific service areas, and provide valuable information about the performance of the overall program.

Another FFSP program record-keeping activity involves reviewing and logging comment cards received from assisted motorists. This information can be used to support funding, gauge public support for the service, and assess driver performance. The comment cards require no return postage and request basic information: the name and contact information of the assisted motorist; the services provided to the motorist; the day, time, and location of the assist; the general performance of the FFSP operator; and room for general comments.

4.3.14 Emergency Temporary Traffic Control

The vast majority of traffic control operations that FFSPs provide are in emergency or short-term situations in response to traffic incidents. MUTCD Chapters 6G and 6I address controlling traffic for TTC zone activities and incident management areas. Because major incident durations may exceed more than 1 hour and FFSP operations may extend into nighttime hours, the MUTCD requires using retroreflective and illuminated devices.

The MUTCD Chapter 6I states that, *"The primary functions of TTC at a traffic incident management area are to move road users reasonably safely and expeditiously past or around the traffic incident, to reduce the likelihood of secondary traffic crashes, and to preclude unnecessary use of the surrounding local road system."* FFSP operators should be trained in safe practices for accomplishing TTC. At incident scenes, FFSP operators should also:

- Be aware of their own visibility to oncoming traffic
- Move traffic incidents as far off the traveled roadway as possible
- Provide appropriate warning to oncoming traffic
- Estimate the magnitude and duration of the traffic incident
- Estimate the expected vehicle queue length
- Set up appropriate TTC.

As guidance, the MUTCD states that warning and guide signs used for TTC incident management situations may have a black legend and border with a fluorescent pink background. As a basic guideline, the FFSP should carry a truck-mounted arrow board, retroreflective cones, flares, and retroreflective signs to set up short-term emergency shoulder or lane closures.

In emergency situations, the FFSP should use "on-hand" TTC devices for the initial response, and the TTC devices should not create an additional hazard. Typical applications of TTC are found in the MUTCD's Chapter 6H and represent a variety of conditions used for temporary

work zones and maintenance operations. It is not reasonable to expect the FFSP to be able to store and carry the types and numbers of TTC devices (such as barriers, barrels, flashers, signs, and arrow panels). These devices may be required for a longer-term situation on a high-volume, high-speed facility to set up appropriate advance warnings, tapers, or closures within the traveled way to provide an appropriate TIM responder work space. Many of the TTC applications for shoulder, lane, etc., closures in Chapter 6H can be emulated for long-term major incidents, but are not reasonable for shorter-term emergency situations because the set up time of the TTC will take longer than the clearance time of the incident. Because of the number and types of devices required for intermediate- or long-term closures, an FFSP should consider contacting department of transportation maintenance or other traffic control support personnel to set up TTC that is more appropriate for major incidents that generate longer vehicle queues. FFSP should seek additional TTC assistance for traffic incidents that have durations estimated as greater than 2 hours.

4.3.15 Suggested Emergency Traffic Control Procedures

4.3.15.1 Vehicle Placement

When the FFSP first arrives at a scene, the vehicle should be positioned to protect the incident scene and prevent additional crashes. Using warning lights and, if available, a dynamic message or arrow sign, will help establish better visibility of the FFSP vehicle. After assessing the scene, establishing the appropriate response, and arranging for appropriate emergency services if needed, the FFSP should implement the on-hand traffic control devices. In cases where no injuries have occurred and the vehicle can be moved, at the direction of law enforcement, the FFSP should mark the vehicle(s) final resting positions for future traffic crash investigation and relocate the vehicle to the shoulder or another safe area.

When the FFSP is a secondary responder, similar procedures are followed, but the FFSP operator should report to the Incident Commander (IC) and assess the situation to determine the appropriate TTC procedures.

In most situations such as a shoulder assist or when a lane is blocked, the FFSP should position the vehicle about two or three car lengths behind the site and at a location that provides adequate visibility and warning to approaching vehicles. The FFSP should take extra care not to block emergency vehicles from maneuvering in, around, or away from the incident scene. As part of an FFSP program, basic diagrams should be developed to illustrate the



Minnesota Department of Transportation arrow truck diverting traffic around incident

preferred placement of the vehicle to be consistent with procedures and preferences of TIM responder and law enforcement agencies.

4.3.15.2 Emergency Lights, Arrow Boards, Cones, and Signs

MUTCD Section 6I.05 supports using emergency vehicle lighting as an essential action for the safety of TIM responders and persons involved in the traffic incident. However, emergency lighting should only be considered as a warning because it does not provide positive and effective traffic control. Furthermore, emergency lights at night can often confuse and distract motorists. If effective positive traffic control is established with appropriate traffic control devices, the use of emergency lights can be reduced. When appropriate, forward-facing emergency lights should be turned off once on scene. Despite the guidance provided by the MUTCD, a vehicle with emergency lights is commonly considered a traffic control device; however, a more effective and positive traffic control procedure is to use a truck-mounted dynamic message or arrow sign. A dynamic message or arrow sign aids in communicating the direction road users need to take to maneuver around the incident scene more safely and expeditiously. Using on-hand cones and signs can provide additional advance warning, tapers, and positive traffic control in advance of the FFSP vehicle and around the incident scene. Typically, an arrow will indicate a positive direction away from a blocked lane while a straight line or caution mode would indicate a shoulder closure.

When a lane is closed, vehicles in the blocked lane will need to merge with adjacent lanes, causing disruption. Cones placed several hundred feet upstream of the FFSP vehicle and incident scene can help move this traffic disruption away from the immediate scene and away from TIM responders, the FFSP, and persons involved in the incident. Traffic cones placed in a taper alignment also help to provide positive TTC to motorists to maneuver around the scene safely and expeditiously. In combination with traffic cones, placing warning signs will also help emphasize the closure, provide positive guidance to motorists, and secure the incident scene. Correctly placing cones and TTC devices is critical in providing motorists sufficient visibility and warning to react without creating a danger to other traffic, to TIM responders at the scene, and to the scene itself.

After the appropriate TTC devices have been placed, the FFSP should determine the value of providing additional positive manual traffic control at the scene by flagging traffic around the scene. The FFSP should be trained and qualified to provide flagging operations.

In addition to the incident scene itself, the FFSP operators should pay attention to the back of the queue. If possible, more TTC or FFSP vehicles can be positioned in advance of the back of the queue to provide advanced warning to approaching vehicles. This action helps prevent secondary crashes.

4.3.15.3 Typical Emergency Traffic Control Plans

An FFSP operator should be trained and capable of quickly and safely setting up the emergency TTC for traffic incident scenes likely to be encountered. An FFSP should develop typical diagrams to illustrate the preferred placement of vehicles, cones, signs, arrow boards, and flagging operations in relation to the incident scene. The following list of typical incident situations should be used as a guide to develop local procedures for TTC:

- Disabled vehicle on shoulder/shoulder assist
- Single lane closure (right or left lane)
- Center lane blocked
- Two lanes blocked
- All lanes blocked
- All lanes blocked with detour.

To quickly set up these typical closures, the FFSP should be equipped with the following:

- Truck-mounted dynamic message or arrow sign
- Minimum of 16 retroreflective traffic cones
- Flares
- Flags for flagging operations
- Retroreflective traffic vests.
- If space is available on the FFSP vehicle, it would assist in providing positive traffic control by having several traffic incident management area signs as illustrated in the MUTCD, Figure 6I-1.

4.3.16 National Incident Management System / Incident Command System

The FFSP should follow the NIMS and use the ICS for activities associated with traffic incidents. The National Fire Service IMS Consortium published the *Model Procedures Guide for Highway Incidents*, which offers an initial design document in which an FFSP agency can work with other regional organizations to develop and build on joint operating procedures. The procedures should apply to routine incidents and large, complicated, and unexpected major disasters. The FHWA has also published the *Simplified Guide to the Incident Command System for Transportation Professionals*. This guide introduces ICS to those who must provide specific expertise, aid or material during highway incidents but who may be unfamiliar with ICS organization and operations. FFSP operators, supervisors, managers, and administrators should be trained in using NIMS, the organizational structure, and the unified approach concept at the core of the command and management system. The Federal Emergency Management Agency's (FEMA) NIMS provides a template for governments to work together to prepare for, prevent, respond to, recover from, and mitigate the effects of incidents.

Under ICS, the IC is responsible for managing all incident operations. The first arriving unit assumes command and identifies an IC until a higher ranking officer arrives on scene and assumes command. As such, if an FFSP is the first arriving unit, it should assume command. Upon arrival, the law enforcement or other TIM responder will typically assume command. The transfer of command is announced and the former IC is reassigned to other responsibilities. Typical responsibilities assigned to the FFSP will be traffic control duties in support of the incident operations. When the FFSP responds to an incident as a secondary responder (e.g., not the first arriving unit), the FFSP should follow standard procedures in arriving at the scene and then report to the IC.

The organizational structure of ICS is modular in nature and can expand as the complexity of the incident escalates. In more complex cases, sections and branches may be implemented within the command organization structure, and the FFSP may find itself reporting

to a Section Chief or Branch Director rather than directly to the IC. An FFSP operator should be prepared to be a group leader assigned to a specific functional assignment. In most cases, the assignment will be traffic control in and around the incident scene or on emergency alternate routes for diverted traffic. In complex or longer duration incidents, the FFSP operator should be prepared to elevate the situation to a supervisor or manager and be prepared to request, organize, and assemble additional traffic control resources.

4.3.17 *Program Performance Monitoring*

Measuring program performance is a critical step in monitoring its progress and overall success. It is also critical to measure the program so agencies can communicate the benefits and successes of the program to decision-makers, policy-makers, sponsoring agencies, and the public.

FFSP programs should gather and record data about the number and type of services that each service patrol operator delivers. In this manner, statistical analysis can be used to develop trends and comparisons about service areas, service hours, types of services rendered, times of the year, etc. When tracked properly and linked with a dispatch center such as a TMC, statistics should also be kept about response times, incident durations, incident clearance times, lane blockages, and incident severity. This data will help identify the program performance relative to its impact on quick clearance and congestion. Lastly, the condition of the FFSP vehicles should also be monitored by monthly inspections and data collected about vehicle miles, maintenance needs, fuel efficiency, and equipment used.

The agency can use the compiled program data to evaluate its performance and identify performance gaps. This data can also be used to quantify the benefit relative to its cost in bolstering support for its continued or expanded funding.

A basic, but important, way to monitor and track program performance is by using comment cards/survey forms. At the end of each service call, an FFSP should provide the assisted motorist with a self-addressed, stamped feedback/ survey card. The FFSP should maintain a record of the returned cards to gauge and track customer satisfaction with the program. Motorists' comments and suggestions can be used as supporting documentation concerning the benefits of the FFSP program and can also be used to evaluate individual drivers. Negative comments about FFSP drivers should be investigated and, if found to be valid, result in performance reviews, warnings, suspensions, and dismissals if continued negative reviews are received. The survey responses should also be used to award drivers for superior performance. In addition to citizen feedback, driver performance should also be tracked based on monthly inspections, crash history, and number of service calls performed.

4.4 *Modes of Operation*

4.4.1 *Disaster Preparedness*

Section 4.1 discussed the standard day-to-day operational FFSP objectives. While current programs have different procedures and policies in place for responding to natural disas-

ters, an FFSP should be a key component of a region's overall emergency response plan relative to traffic control assistance within the framework of the NIMS/ICS. For example, a disaster happens and an evacuation route is implemented so keeping the route cleared of incidents becomes even more critical than during the FFSP's standard operating hours.

In the case of a disaster, natural or otherwise, the FFSP should maintain its overall operational objectives and perform its normal services to keep highway traffic moving. As part of a region's overall plan, the FFSP should be prepared to:

- Perform its normal services along an evacuation route
 - May require expanding the FFSP program service area
- Assist motorists with fuel, water, and minor repairs along an evacuation route
- Add vehicles to facilitate traffic control
- Assist highway patrols and public safety
- Implement alternate route or emergency detour plans
- Assist with contra flow traffic operations
- Block roadway entrance and exit ramps
- Assist with equipment support and equipment routing
- Manually operate traffic signals.

4.4.2 *Planned Special Events*

Similarly, FFSP programs can facilitate traffic control and clear incidents for planned special events. This approach may require the program to expand its service area and service hours to provide assistance during the event.

4.5 User Involvement, Interaction, Roles, and Responsibilities

FFSPs have contact and interact with many users on the highway system. During normal operations or major unexpected incidents, an FFSP will interact with TIM responders from law enforcement, fire and rescue, EMS, departments of transportation, towing and recovery companies, the media, public information officials, travelers, and road users. Section 2.3 detailed these interactions. In an ideal situation, an FFSP is a major component of an ongoing, sustained TIM program. In this context, FFSPs should be regular participants in incident debriefs and after-action reviews. Also, a TIM program can serve as the foundation for building relationships between stakeholder agencies involved in highway incident response and interactions with an FFSP. Other key FFSP interactions are its communication with a regional TMC and its integration within defined procedural guidelines of a regional TIM program. The following list explains the general roles and responsibilities of FFSP users. Note that some roles and responsibilities can be combined into one overall position.

- FFSP Operator (Driver) - Serves as the frontline contact to deliver the services, activities, and functions of an FFSP. Operates the vehicle, patrols the highways, coordinates with other on-scene TIM responders, and provides service and assistance to motorists.
- FFSP Dispatcher - Communicates incident information to the FFSP operators. Some of this information is likely to be relayed from other sources such as law enforcement personnel, other motorists, or the TMC operator.

- TMC Operator - Monitors and operates the traffic management system. Incident information requiring an FFSP response is relayed to the FFSP dispatcher. Similarly, the FFSP relays information to the TMC Operator who collects traveler information and coordinates traffic management actions.
- FFSP Supervisor - Administers and develops operator schedules to deliver the services across the prescribed service area and service hours. Supervises and monitors daily operations. Provides quality control checks, provides operator performance reviews, and is prepared to call-in additional operators for major incidents. Maintains employee files, training records, and activity logs.
- FFSP Fleet Maintenance Manager - Administers and maintains the service patrol fleet of vehicles. Can provide vehicle and equipment inspections.
- FFSP Trainer - Coordinates the implementation of operator orientation and training. Ensures that each operator complies with the training and certification requirements.
- FFSP Hiring Manager - Interviews candidates and ensures potential candidates meet minimum qualifications. Ensures that agency hiring procedures are followed. Ensures that necessary background checks are performed concerning driver and criminal records.
- FFSP Manager - Supervises overall day-to-day operations and oversight of an FFSP. Manages the FFSP vision, direction, goals, functional description, policy, procedural guidelines, and performance. Key participant in the overall integration of an FFSP into a comprehensive TIM program. Establishes and maintains partnership agreements with stakeholder agencies about operational guidelines. If the FFSP is contracted to a private operator, this position is likely to remain staffed by the funding agency to oversee contractual obligations and overall program performance.
- Law Enforcement and Emergency Services - Works closely with law enforcement and emergency services to assist them in making the incident scene safe and provides positive TTC to move motorists expeditiously around the incident. Responds and assumes command of the scene when property damage and injuries have occurred. FFSPs should be prepared to implement emergency TTC activities as part of the overall scene management, but also provide the IC updates about the status of activities and suggestions for keeping traffic moving.
- Towing and Recovery - Required in cases where the FFSP is not able to remove vehicles from the traveled way to a safe area. Most regions have a rotating list of pre-qualified towing companies for specific service areas. Transportation or law enforcement agencies maintain these lists, and the FFSP should contact these agencies to dispatch the towing agency when appropriate.
- All FFSP operators and personnel shall display professional and courteous conduct at all times. The FFSP should not accept gratuities or fees for services rendered to motorists. FFSPs should have procedures to handle FFSP cell phone use by motorists and guidance for transporting motorists.

4.6 Support Environment

A department of transportation, a law enforcement agency, or a privately contracted service with a private corporation can operate an FFSP. Regardless of the administrative mechanism for operating the FFSP, a support environment will need to be created and maintained to ensure continued overall success.

- Funding - Identifying the funding sources and programming money to meet anticipated capital and operations costs is fundamental to starting, sustaining, or enhancing a program. Section 4.2 provides guidelines for funding sources and overcoming this constraint.
- Oversight - FFSP oversight responsibility can vary depending on the agency leading the program and the unique organizational structure of that agency. Nonetheless, FFSP Manager oversight will be required for an in-house or contracted service. As part of the oversight support environment, a clear set of goals, performance measures, procedural guidelines, training requirements, and operator qualifications should be established to ensure sustainability and consistency of the FFSP. Section 4.3.7 contains suggested procedural guidelines and performance measures.
- Facilities, Equipment, and Maintenance - An agency operating an FFSP should anticipate ongoing operational costs related to the maintenance and replacement of vehicles and equipment. Section 4.3.4 addresses the vehicle and equipment guidelines.
- Communications - Another fundamental support system for an FFSP is the communications link between the FFSP operator/driver and dispatcher, TMC operator, law enforcement personnel, or other TIM responder agency. Section 4.3.11 details the two-way radios, cellular telephones, and computer-aided-dispatch system for FFSP communications.
- Partnerships - An FFSP will have many interactions with other stakeholder agencies when responding to highway incidents. These agencies are instrumental in keeping highway traffic moving and incident-free to fight congestion. An FFSP will be more successful when it has the collaborative support of law enforcement and TIM responder agencies. This support environment can be formalized with a partnering agreement, MOU, or even a mutual aid agreement. Section 2.4.7 discusses these interactions.
- Contracting Mechanism - When a private company provides services on behalf of an agency sponsoring the program, the sponsoring agency will need to solicit and procure services through a binding contract. When developing a specific contract, the focus should be on the type of services required, goals of the program, procedural guidelines, service area, service hours, operator and company qualifications, experience, training, interaction with stakeholder agencies, and equipment maintenance and replacement.
- Outreach - A basic form of outreach is to provide assisted motorists with a comment card or brochure. This method provides direct contacts with more information on the service and obtains feedback from those the FFSP directly affects. With much variation between programs in the U.S. and to a lesser extent within a region, motorists may be

easily confused by the types of services to expect, when services are provided, and on the congestion relief benefit gained from the program. An FFSP should develop and implement an outreach and public information campaign to make the public aware of the program. The more aware the public is about the program service and its benefits, the more likely the public is to voice support and influence decision-makers to identify funding sources for an FFSP.

4.7 Incremental Priorities

As discussed in Section 4.2, overcoming the constraints would largely be attributed to having more funding available to the FFSP program. Assuming the existing program already provides the basic services, additional funding will be used on the following priorities to evolve incrementally into an FFSP over time:

- Expand service area, increase mileage, add routes
 - Incorporate all freeway or turnpike miles
 - Increase support to major arterials
- Expand service hours in existing operational service areas
 - Increase the total service hours of operation
 - Add shoulders of peak periods
 - Implement a night or weekend shift
 - Operate 24 hours, 7-days-a-week
- Additional operator capabilities and pay levels
 - Improve operator qualifications, training, certifications, and pay levels (see Sections 4.3.7 and 4.3.8)
 - Provide advancement opportunities for personnel
 - Improved skill and education levels
 - Increase number of positions for additional operators and mechanics
- Update fleet and equipment
 - Improve fleet equipment
 - Improve radio communication
- Increase patrol frequency
 - Increase service for an existing patrol area to reduce time for incident detection and clearance
- Other priorities
 - Establish outreach and marketing programs
 - Establish regional TIM teams to support local programs.

CHAPTER 5. SERVICE PATROL TELEPHONE SURVEY RESULTS

5.1 Introduction

As part of the project to produce a Full-Function Service Patrol Handbook, a telephone survey was conducted to gather information from a variety of agencies around the United States that operate service patrols. As part of the survey, additional documentation on procedures was requested and supplied by many of the agencies who participated. Twenty-seven agencies were contacted and requested to participate in the telephone survey. Eighteen agencies completed surveys including the Pennsylvania Department of Transportation that completed four separate surveys for each of its districts with service patrols in place, so there are 24 completed surveys.

Program Name and Primary City	Organization Sponsor
Cares Vans/Samaritan (Boston, Worcester, Springfield)	Massachusetts Highway Department
Courtesy Patrol (Dallas)	Texas Department of Transportation (TxDOT)
CVS Samaritan Van Program (Boston)	Mass Highway/Samaritania, Inc.
Emergency Traffic Patrol (Baltimore, MD; Washington, DC; Frederick, MD)	Office of CHART (Coordinated Highways Action Response Team), Maryland Department of Transportation
Expressway Service Patrol (Allentown, Philadelphia, Harrisburg, Pittsburgh)	Pennsylvania Department of Transportation (PennDOT)
Freeway Incident Response Safety Team (FIRST) (Minneapolis – St. Paul)	Minnesota Department of Transportation (MnDOT)
Freeway Service and Safety Patrol	Wisconsin Department of Transportation (WisDOT)
Freeway Service Patrol (Phoenix)	Maricopa Association of Governments, Arizona Department of Transportation (ADOT), Arizona Department of Public Safety (DPS), FHWA
HELP (Nashville, Knoxville, Chattanooga, Memphis)	Tennessee Department of Transportation (TDOT)
HERO – Incident Response Units (Atlanta)	Georgia Department of Transportation (GDOT)
Highway Emergency Local Patrol (HELP)	New York State Department of Transportation (NYSDOT)
Incident Management Assistance Patrol (IMAP) (Raleigh, Durham, Greensboro, Winston Salem, Charlotte, Asheville, I-40 in Pigeon River Gorge)	North Carolina Department of Transportation (NCDOT)

Program Name and Primary City	Organization Sponsor
Incident Response Units (Seattle, Tacoma)	Washington State Department of Transportation (WSDOT)
Minutemen (Emergency Traffic Patrol)	Illinois Department of Transportation (IDOT)
Motorist Assistance Patrol (Baton Rouge, New Orleans, Shreveport, Lake Charles)	Louisiana Department of Transportation and Development (DOTD)
Motorist Assistance Program (Kansas City, Topeka, Wichita)	Kansas Department of Transportation (KDOT)
Motorist Assistance Program (Houston)	Houston Metro Police Department
Region 1 Incident Response (formerly COMET- Corridor Management Teams)	Oregon Department of Transportation (ODOT)
Road Ranger Service Patrol (all major urban areas)	Florida Department of Transportation (FDOT)
San Diego Regional Freeway Service	California Highway Patrol
State Farm Safety Patrol (PA Turnpike – 530 miles)	Pennsylvania Turnpike Commission

The following pages present the survey questions and a high-level summary of the responses received. Note that all responses shown below are individual, but if the same response appeared more than once, the number of such responses is shown in parentheses after the response. Some similar responses have been grouped together.

5.2 Program Initiation and Funding

1. How was the program initiated?

- Program initiated by:
 - DOT headquarters and/or district incident management (7)
 - DOT construction project (2)
 - DOT special event (Olympics)
 - DOT coordinating with towing contractors and police departments
 - DOT Intelligent Transportation System (ITS) Plan
 - Highway Patrol and DOT joint project
 - Highway Patrol, DOT, transportation authority
 - Local police department
 - Metropolitan planning organization (MPO) (2)
 - Pilot program expanded after an evaluation
 - Private sector converted to public sector
 - Private sector
 - Sheriff and tollway authority joint venture
 - Turnpike Commission

What institutional issues had to be addressed prior to the program starting?

- Available permanent DOT positions (temporary positions initially funded through federal construction funds)
 - Definition of what good incident management looks like
 - Funding
 - Hours of operation
 - Legal limits of responding to incidents as a DOT
 - Legislative approval for new positions for operators or shifting them within the agency
 - Quick clearance of incidents
 - Number of miles covered
 - Number of trucks needed
 - Obtaining concurrence from DOT union representatives
 - Overcoming traditional role of road-building agency to be multi-dimensional
 - Political concerns
 - Program administration
 - Role of DOT in response to freeway incidents
 - Size of the program
 - State patrol opposition (2)
 - Traffic Management Center (TMC) operators for dispatch
 - Towing company opposition (3)
 - Understanding various agency roles and responsibilities
 - Working with other first responders.
2. **Who funds/sponsors the service patrol (public agency, private agency, multiple agencies, etc.)?**
- Sponsoring agency:
 - DOT (12)
 - Sheriff and tollway authority
 - DOT and MPO
 - MPO
 - Sheriff, Houston Automobile Dealers Association, Houston Metro, TxDOT, Verizon Wireless
 - Private sector – CVS Pharmacy
 - Turnpike maintenance budget
 - Funding:
 - Congestion Mitigation Air Quality (CMAQ) funds (2)
 - Department of Public Safety
 - Federal highway funds (4)
 - Federal surface transportation funds (STP)
 - MPO
 - State legislative appropriations
 - State operations and maintenance funds

- State traffic, safety and operations funds
 - Turnpike funds
- 3. **Does the sponsoring agency operate the service patrol or are the services contracted?**
 - Operators:
 - Contracted out (7)
 - Sponsoring agency (7)
 - Some in-house, some contracted
 - California DOT (Caltrans), California Highway Patrol (CHP), San Diego Association of Governments (SANDAG)
 - Contracted out with private companies and sheriff's office
 - Department of Public Safety
 - Highway patrol
 - Sheriff's office
 - Sometimes contracted out as part of a construction project

How was this decision made?

- Contracted because it was the only way to get the program going at the time
 - Cost to operate the service (i.e., who could do it less expensively?)
 - Could not add DOT staff
 - In-house since had funding and positions
 - In-house since private companies don't have same interest in getting roads opened after incidents as DOT does
 - In-house trained maintenance technicians can do the job
 - MPO decision
 - Private, non-profit stopped operating service so DOT contracted it out to a new operator
 - Saw service patrol as an advertising mechanism for DOT customer service so operate in-house
 - Sponsoring agency had insufficient resources to operate the service
- 4. **Who is responsible for day-to-day oversight of the patrols (comments noted as sub bullets below each category as needed)?**
 - DOT (7)
 - DOT TMC Manager/Supervisor (3)
 - 100 percent of our program is currently run with either permanent or temporary NCDOT employees. We do not contract any of our programs, but are investigating this practice along with public-private partnerships. NCDOT is broken into 14 Divisions, of which 7 Divisions currently have service patrols. The Division's staff is directly responsible for day-to-day activities.
 - One person manages the program statewide, and each region has a regional Incident Response (IR) supervisor.

- Each district has a program manager that supervises the contract and works with the contractor and supervisory personnel are included in the contract. FDOT management personnel are not.
 - State operated – Person oversees state, each of four cities has own coordinator.
- Contractor (2)
 - Contractor supervisor
 - Samaritania, Inc. has operations oversight but work together with patrolling authority, DOT, or other transportation authority
- Public Safety Agency (5)
 - CHP is responsible for the day-to-day oversight of the tow trucks. Each contracted tow company has a lead driver that is used as a go between for the companies
 - Department of Public Safety
 - Kansas Highway Patrol (KHP) is responsible for day-to-day operations and the KHP provides supervisory personnel
 - Metro Police Department
 - Sheriff's Office
- Other
 - Pennsylvania Turnpike Commission (PTC) Maintenance Section Foreman supervises the service patrol personnel

If contracted, are supervisory personnel accounted for in the contract?

- Consultants under contract dispatch/log contracted out service patrol activities
- Contact DOT TMC operator to check in at start of shift—paid for hours worked
- Contractors supervise; DOT spot checks
- DOT
- Supervisory personnel are accounted for in the hourly rate bid/contract for the service (2)
- Supervisory personnel are not specifically accounted
- Project engineers inspect the vehicles

5. A: How is the program funded? What sources of funding are used (federal, state, local, etc.)?

- Federal and State funds:
 - 80 percent Federal, 20 percent State (6)
 - 80 percent Federal Surface Transportation funds, 20 percent general State highway fund; CMAQ was 90 percent of start-up money
 - Federal and State funds (2)
 - Federal Funds (R-4049)
 - CMAQ grants were used for the first 2 years. After the 2nd year, the State started paying for another 3 years. Funded 100 percent of the cost, 2004—developed a regional transportation plan, included 20 years of funding, part of regional funding (mix of federal and state)

- Federal funds (CMAQ) have been used to expand the program. Otherwise, it is mostly funded with state funds.
- National Highway System (NHS) funds
- State funds:
 - 100 percent State funds (4)
 - 100 percent State general revenue funds
 - State operations budget
 - The program is funded through State revenues out of the DOT trust fund. These costs are shared primarily through the Traffic Operations and Maintenance sections.
- Other funds:
 - 80 percent Federal, 20 percent State, \$500,000 from private insurance company
 - 80 percent Federal, 16 percent State, 4 percent North Texas Tollway Authority (NTTA)
 - All the sponsors including METRO police department
 - Federal, State, and local MPO
 - State and local 25 percent match
 - PTC funded

B: What is the annual operating budget? How many vehicles and personnel (service patrol operators and/or administrative support) does this budget cover?

Annual Budget	Number/Types of Vehicles	Number of Personnel	Comments
\$275,000, plus \$85,000 for consultant dispatchers (one per shift)	2 vehicles and 1 spare vehicle	2 drivers	Operates M-F, 6-9 am and 3-7 pm
\$375,000	3 trucks for 7.5 hours per day		
Annual budgets are between \$400,000 and \$2 million (in various states)	6 vehicles 15 – 20 vehicles	8 – 12 operators	Hours are a big part of the cost. Can reduce costs by having people work less days but longer days, a little overtime saves some money, textbook is 6am-6pm = 2 operators and 2 vehicles. People in the private sector are much more dedicated to their job.
\$450,000 (budget for new trucks every 3 years @ \$150,000)			

Annual Budget	Number/Types of Vehicles	Number of Personnel	Comments
Annual operating budget varies depending on vehicle replacement schedules has been approximately \$1 million in recent years. Budget for FY 2008 is \$1.3 million due to vehicle replacement.	18 vehicles	18 SP operators on 3 area patrols and 2 Traffic System Operators located at KC Scout TMC	
\$1.2 million	6		
Approximately \$1.2 million			Costs are rising because still building road miles, so have to expand service
\$1.3 million	13 trucks including 2 spares	18 drivers, 2 supervisors, 1 manager	Fully staffed would be 20 drivers
\$1.61 million + \$1.58 million for the TMOC	11 trucks	9 full time responders + 10 full time dispatchers for TMOC	
\$1.7 million	18 trucks	18 deputies drive the trucks	
\$1.89 million	9 vehicles, 3 @ rate of \$52 per hour and 6 @ rate of \$98.90 per hour		Contracts bid at different times, expect future bids to be at higher rate
\$2.2 million	22 routes with 26 vehicles		Van on call on each route + 4 extra
About \$3.06 million	21 first responder vehicles	85 employees	Operate 24/7
\$3.25 million	19 trucks (F-350 trucks, utility trucks, equipped with various items)	45 personnel	
\$3.5 million plus \$250,000	10 vehicles plus 2 vehicles	10 operators plus 2 operators	Baton Rouge, New Orleans, Shreveport, and Lake Charles
About \$7 million	Approximately 50 vehicles	72 drivers and 4 supervisors	3 shifts
About \$7.5 million	Approximately 80 vehicles	Approximately 80 staff	
Just over \$8 million			Including maintenance, ITS devices, vehicles, and salaries
\$8 million +/-	6 supervisors trucks, and 6 other trucks (spares, sand truck, traffic control vehicle)	54 permanent drivers, 16 temporary drivers, 14 supervisors, 58 IMAP (Incident Management Assistance Patrols) trucks	Supervisory positions include 3 Incident Management Engineer positions
\$9.5 million	55 vehicles	Fully staffed is 55	Close to 50 staff right now
Last year's budget was approximately \$19 million	Currently have 126 vehicles. This may change because a new contractor is coming on board	We have 200 Road Rangers, 6 defined supervisors, and a limited (undefined number of clerks/admin support staff) working under several different contractors	

Annual Budget	Number/Types of Vehicles	Number of Personnel	Comments
In fiscal year 2006/07, the state allocated \$25.5 million to the 13 locally run FSP programs and \$4.0 million to CHP for field supervisors and training activities. Local transportation agency partners that run each program are required to provide 25 percent matching funds.	In fiscal year 2006/07, the State's 13 FSP programs operated 149 beats with 351 trucks (during the pm peak period) over 1,650 centerline freeway miles.	CHP has 23 full-time dedicated officers assigned to the FSP program and 6 part-time officers. Administrative staff support includes 2 sergeants, 15 public safety dispatchers, 2 associate governmental program analysts, and 1 staff services manager.	

C: Has a public private partnership (PPP) ever been pursued to fund, partially fund, or sponsor the program? Why or why not? Are there restrictions within your agency that preclude you from pursuing a private partnership? If you have a PPP, what does the private sector provide and what recognition do they receive (e.g., logo on vehicle, mention on Web site, etc.)?

- No (11):
 - A public private partnership has not been pursued to my knowledge.
 - Don't think so/don't know. (2)
 - No guidance from the State DOT on how to do that.
 - Previous public private partnership failed, did not want to do that again.
 - Questions have come up recently. Main understanding is that we cannot mix private dollars with national highway funds. So it's never been pursued. Now, it is kind of changing, and we may be looking at ways to do PPP as far as advertising on trucks to help fund the 20 percent of 80/20 match. But, this is in the early stages of discussion.
 - Restrictions within agency. They are currently talking to legislative party to do this, but nothing is in writing.
 - Since legislation provided funded positions for the operations of the program, external funding was not required.
 - Wanted service to begin soon and did not want lengthy negotiations and contract approval.
- Yes, at some point:
 - AAA was a partner in the building (for the pilot project); no involvement now.
 - Renegotiations underway; had difficulty getting funds funneled to them.
 - We contracted with the tow industry before (towing courtesy service patrols). We received federal funds to do this, but we don't have the funds now to continue. So, we're not currently doing it. We're providing morning and afternoon patrols in Tacoma and Seattle, but federal source has dried up. We put our logo on their vehicles, with signs on front that said DOT service patrol, but only when working in service patrol capacity.

- We specialize in providing public sector sponsorship of our programs (from a private provider).
- We have a public private partnership with SANDAG, Caltrans, and CHP. The SANDAG logo is used on all of the trucks along with a sign that says Freeway Service Patrol only during FSP service hours. Inside of the FSP sign, the CHP, Caltrans, and SANDAG logos are used.
- We currently have entered into a P3 with State Farm Insurance in which we received \$1.4 million over a 3-year contract with a renewal after that point. The 1st responder vehicles have been wrapped with the State Farm and the PTC logos.
- WisDOT is currently considering pursuing a PPP. Funding levels for the program have remained constant and a PPP provides one potential avenue to expand the program. Thus far, WisDOT has not identified any restrictions that will preclude us from pursuing a PPP. If WisDOT moves forward, it has been determined that a RFP for sponsorship would have to be issued to ensure fair opportunity.
- Considered it:
 - Analyzed it and decided government employees had more authority to do things.
 - Analyzed it and decided State Patrol and other responders were more effective.
 - Considered allowing advertising on trucks but would require state legislation to allow it.
 - Currently, do not have PPP but are entertaining the idea. We have nothing restricting this program currently.
 - Received one proposal; however, consideration of the proposal is currently on hold. Additionally, the FDOT Executive Board believed that the amount offered was not in our best interest.

D: What is the contracted hourly rate for service?

Hourly Rate	Comments
Roughly \$13 per hour	Pay will increase to \$15 per hour in 2008
Range is \$20 to \$27 per hour	Hourly rate depends on the level of each deputy
Varies among the district from \$35.00 per hour to \$45.00 per hour for the service contracts	
Varies from \$47.00 per hour to \$80.00 per hour	
\$ 50 per hour	Includes maintenance, operations, fuels, and supervisor costs
\$52 to \$98.90 per hour	
\$61.27 per hour	
\$62 per hour	
\$64.45 per hours	
\$65 in Seattle, and \$54.19 in Tacoma per hour in around 2002 or 2003	Done some recent things in conjunction with construction projects. Last summer, we did a few short projects in Tacoma for \$75 per hour

Hourly Rate	Comments
\$69 to \$79 depending on area and vehicles	
\$69.94 per vehicle	Consultant dispatcher is \$13 to \$14 per hour
	In San Diego County, we use two tow companies and the hourly rate is negotiated upon renewal of the contract

6. A: What are the institutional relationships of the service patrols with other responding partners?

Key to table: Strong relationship shown as full dark circle; no relationship is an open circle; co-ordination relationship is partially full circle; no comment made on survey is no circle.

DOT/ Service Patrol	EMS	Fire	Local Police	MPO	None	State Police	PTC TMC	Toll firms	Comments
●		○				●			Have State Police radios and dispatch (may switch to GPS)
●		●	●			●			DOT relieves some burden from state police
●						●			
●	●	●				●			Know scene is controlled by others and offer assistance
●	●	●	●			●			Also towing companies. Normally provide traffic control for the State Patrol and remain there until the incident clears or, for major incidents, until Metro Maintenance arrives to take over traffic control. We are working on "tow authority" legislation so we can call for tows on abandoned vehicles
○				●		●			Coordinate with DOT
●			●			●			Excellent, total partners; they see the value—right equipment, traffic control, philosophy of quick clearance, on the scene quickly, alternate routes, etc. Took a year to build that relationship
●			●			●			We have a strong relationship with the State Highway Patrol. They assist in training our drivers and we coordinate with them and other local law enforcement agencies with calls for disabled motorists, traffic control, and incident clearance. We also work closely with other agencies to assist in response, traffic control and incident clearance.

DOT/ Service Patrol	EMS	Fire	Local Police	MPO	None	State Police	PTC	TMC	Toll firms	Comments
●						●				Our people are dispatched with the Washington State (WS) Patrol, governed by our joint operations policy statement. The WS Patrol is our primary partner, statewide. We work with fire and tolling and EMS, but they're local entities. But they're no statewide agencies. We deal with them the best we can. They have roughly 2,000 employees. There is no centralized command and control for fire, so that's the complication we deal with. We have local teams to work on those local partnerships because we're so dependent on them.
●	●	●			●		●			
●	●	●	●		●					Service patrols have good relationships with Highway Patrol and other emergency responders. We are continuing to better relationship between road rangers and highway patrol personnel. Road rangers support highway patrol with traffic control. Road rangers are dispatched to disabled vehicles in their service areas.
●						●				Each partner has a well-defined role in the program. The California Department of Transportation (Caltrans) is responsible for the administration of funding, statewide planning, and program coordination. Caltrans is responsible for state allocation of invoicing and monitoring freeways to ensure FSP resources are deployed in an efficient manner. Caltrans is also responsible for conducting special studies in support of local FSP programs. The California Highway Patrol is generally responsible for individual tow operator training and supervision of the day-to-day FSP field operations. In addition, the CHP is responsible for dispatching FSP tow drivers. CHP Headquarters (Commercial Vehicle Section) has co-responsibility for statewide planning and coordination. The local agencies are the regional (multiple counties) or individual county transportation entities. They are responsible for contracting with tow service providers and with other consultants and contractors that may be necessary for the successful implementation of the project. They are also responsible for generating local matching funds, preparing annual program budgets, and coordinating service expansions and changes with partner agencies.
●						●				Direct contact with our PTC TMC Operations center. Follow the Unified Incident command protocol

DOT/ Service Patrol	EMS	Fire	Local Police	MPO	None	State Police	PTC TMC	Toll firms	Comments
●									Efforts are made to foster relationships between the service patrols and other responding partners. In each FSP service area, WisDOT facilitates regular stakeholder meetings with the FSP contractor and local response partners. These meetings are used to discuss both issues specific to the FSP and general traffic incident management issues. Many areas have come to rely heavily on the FSP and frequently request their support.
●									Incident Response (IR) has been recognized by many of our external partners as a first responder agency. Typically ODOT IR arrives before our service partners allowing them to focus on their specific duties of their profession.
									Service patrols provide traffic control and assist incident command with clearing highway. Service patrol works within ICS
									Good relationship; they would like to see 24/7 service
									We have an open roads policy that we're trying to get signed by the governor now. We have a traffic incident management task force that is made up of all different agencies across responding areas
									An informal cooperative relationship
									Work together on scene to resolve incidents

B: Are there any written plans, operational policies, and mutual-aid agreements between responding partners? If so, can we obtain copies of the plans/policies?

- Yes (10)
 - All ideas and documents can be found on timetaskforce.com.
 - As requested by KHP officers.
 - Contract documents define operational policies. Accepted by responders without issues.
 - FIRST has some policies and guidelines. There is a document "Traffic Incident Management Recommended Operational Guidelines" dated October 2004 that was developed with the MN Metro Fire Chiefs, the MN Towing Association, the MN State Patrol, and MnDOT. We have no written agreements with other partners—generally follow the incident command structure.
 - Have a contract and standard operations procedures (SOPs). No agreement between partners.
 - Memorandum of understanding, interagency agreements, or just endorsement.
 - Open Roads Policy/ Mitigated Spill Policy.
 - Operational policies and joint operations policy statement provided already.

- The CHP and Caltrans enter into interagency agreements, which provide for the annual funding from Caltrans to CHP. An additional provision of the interagency agreement is a Joint Operational Policy Statement, which details the individual and joint responsibilities of Caltrans and the CHP.
- The operational policies of the Service Patrol Vehicles (SPVs) are outlined on the contract documents. The SPVs have been accepted by the responders without any issues.
- There is an agreement written up every 2 years; however, could not provide a copy.
- We have a formal agreement with Greensboro PD to remove abandoned/disabled vehicles. We are in the process of preparing an MOU with State Highway Patrol to do this statewide. We also have Quick Clearance legislation (GS 20-161) to clear roads without liability with DOT and LE concurrence.
- No (9)
 - Pilot project was based on a contract between MAG and DPS. Now, just a fiscal relationship. Did have an interagency review team; will come back soon.
- Unknown/Not Applicable/No answer (3)

5.3 Functions and Field Operating Characteristics

7. A: What functions are currently provided by the service patrol? Are the operators able to provide first aid?

Functions	Response
Provide gas/fluids	11
Change flat tires	16
Provide first aid	Yes (11) All operators are state-certified EMTs or Paramedics. Basic first aid Considering suspending this due to time it takes. Medical first responders (delivered 9 babies) are trained in hazmat. We are a traffic incident management operation. We're DOT, we're not police, fire, or EMS, but we've had enough training that we know enough about all. Usually, we are the first on scene, and we are trained to stabilize situations until other responders arrive. Then we go do traffic control. Provide minimal first aid assistance however it is standard practice to allow emergency services personnel to treat all injured patients. Red Cross or approved equal course certification in first response first aid and CPR. Trained in first aid and CPR (not primary function). No (1)
Patrol highway and service roads	2

Functions	Response
Service overheated vehicles	4
Provide jump start/battery boost	6
Move disabled/accident vehicles	13
Arrange towing/tow	5
Provide traffic control (including some CMS)	10
Provide debris removal (small, non-hazardous)	11
Provide disabled vehicle assistance	3
Provide delay/traffic information	2
Provide incident quick clearance/management	7
Provide minor mechanical repairs	11
Assist police	6
Assist motorist (use of cell phone)	1
Check abandoned vehicles	3
Deploy gate arms on HOV and reversible roadway	1
Provide traffic management and mitigation	1
Communicate with TMCs & other agencies	1
Assist in incidences where they transport motorist to the airport in case they are late	1
Provide medical, fire, animal incident response	1
Warn motorists of hazards	1

B: Does the service patrol provide traffic control functions at highway incident scenes?

- No
 - Currently not - the ability to provide traffic control functions is a requirement within the new contract (RFP is out) and the vehicles are to be equipped with corresponding traffic control equipment.
- Yes (15)
 - Yes, minimal. (2)
 - Yes, as requested by KHP officers.
 - Yes, each IR vehicle is equipped with automatic vehicle location (AVL) that allows ODOT personnel to determine its proximity to any current incident, a laptop computer, cellular and radio communication capabilities, and on-board variable message signs.

- Yes, they do provide emergency traffic control, but guideline is if incident is going to go beyond 60 minutes, then call out full traffic control truck to set up full emergency incident response. Transition to full Manual on Uniform Traffic Control Devices (MUTCD) traffic control. This improves safety and alerts motorists to incident ahead. Our maintenance is not included in the IR budget. That program is huge, and we would not be where we are without it. Try to back bill for the services.
- Yes, they do provide traffic control functions at highway incident scenes in collaboration with other agencies. Their main priority is to get traffic moving after a wreck.
- Yes, they provide traffic control using flares, cones, and hand signals.
- If and when requested by patrolling authority or DOT.

C: Are there functions not currently being provided but under consideration or desired?

- No (13)
- Yes, expand hours of operation/service areas
 - Add a midnight shift
 - Expand length of rush hour service
 - Expand service hours of some shifts
 - Expanding coverage areas outside the Portland Metropolitan area to include rural areas
 - There's expanded zones, more coverage, and expanded hours that could be desired, but we are satisfied with the functions being provided
 - Would like 24 hour service but money is a factor
 - Would like to expand the area into neighboring communities that are also high volume—wherever congestion is; can't reach because of funding limitations
- Yes, expand services offered
 - Ability to tow disabled vehicles being considered but requires legislative change (Towing Association likely to oppose)
 - We are discussing carrying defibrillators (AEDs)
 - Would like to add more tow trucks
- Yes, other
 - Would like to have a more direct communications channel between DPS service patrol and dispatch
 - Yes, just to keep up with the current federal standards. However, we're probably the elite service patrol in the country because we cover over 1,800 lane miles. We have three shifts around the clock, 24 hours, 7 days-a-week.

8. What are the hours and days of the week of operation? Do these change for weekends, holidays or planned special events? If so, how do they change?

General Hours and Days of Operation

Hours	Operating Hours	Extended on Call	Days per Week	Sat/Sun	# Agencies Responded
24 hours			7		2 + FDOT operates 24/7 in large urban areas and FL Turnpike only
24 hours			5	May be on call	1
Various shifts	3:30 am to 9 pm		5	10 am to 8 pm (Sat) and 9 am to 7 pm (Sun)	1
	5 am to 9 pm	Yes (24/7)	5	On call	1
	5 am to 10 pm (Mon & Fri); 5am to 8 pm (Tues – Thurs)		7	7 am – 11pm (Sat –Sun)	1
	Varies by county segments (9) and 20 subsegments – primarily peak hours 6 am – 9 am & 2 pm – 6pm. One segment is 6 am – 6 pm.		5	Generally 10 am – pm (Sat – Sun)	
8 – hour shifts	5 am to 11 pm		5	7 am to 11 pm	1
	5:30 am to 7 pm	Yes	5	5:30 am to 7 pm (Seattle only)	1
Work 2 shifts	6 am to 2 pm and 2 to 10 pm		5		1
	6 am to 7 pm		5	10 am to 6 pm (weekends)	1
	6 am to 9 pm		5	Weekends in Charlotte only and 24/7 on 20 miles of I-40	1
	6 am to 10 pm		5	8 am to 8 pm (weekends)	2
10-hour shifts	6 am to 12 am		5	12 pm to 10 pm (weekends)	1
Daytime hours	8 hours		5	10 am to 7 pm (Sat) and 9 am to 7 pm (Sun)	

Hours	Operating Hours	Extended on Call	Days per Week	Sat/Sun	# Agencies Responded
Daytime hours	8 hours		5	0	1 (3 service patrol vehicles)
	14 hours		5	14 hours (weekends)	
	16 hours		5	0	1 (service patrol vehicles)
Rush hours	AM/PM rush hours		5	0	2 (One is looking to expand hours 6am 10 am and 3 pm to 7 pm)
Rush hours	5:30 am to 9:30 am and 3 pm to 7 pm		5	0	1
Rush hours	6 am to 9 am and 3 pm to 6 pm		5	0	1
Rush hours	6:30 am to 9 am and 3 pm to 6 pm		5	On call	1
Rush hours	6 am to 9 am and 3 pm to 7 pm		5	0	1
Rush hours	6 am to 9 am and 2 pm to 6:30 pm		5	0	1

- Other Operating Hours Notes:
 - 3 shifts: 5 am to 1:30 pm, off on Sat/Sun; 11 am to 7:30 pm, off on Tues/Wed (cover the weekend); 1 pm to 9 pm, off on Sat/Sun (1 response)
 - Hours and days of the week vary by district, highway segment, and time of day (District 1: 5 am to 9 pm, Monday to Friday; 7 am to 11 pm, Saturday and Sunday. 16 hours a day, 7 days a week, 365 days a year. District 2: 6:30 am to 6:30 pm, Monday to Friday. Districts 3 through 7 and FL Turnpike: 24 hours a day, 7 days-a-week, 365 days a year)
 - On weekdays, there are three morning shifts: 3:30 am to 11:30 am, 4:30 am to 12:30 pm, and 5:30 am to 1:30 pm. There are two afternoon shifts: one from 12:15 pm to 8:15 pm and another from 11:00 am to 9:00 pm.
 - The decision to only cover certain hours of the day is a monetary one. We would like to have all 24 hours covered—perhaps by having SPVs on standby for the night shift and extending the coverage hours of the six SPVs to 16 hours a day.
 - The Freeway Service Patrol operates during the morning and evening commute hours, 5:30 am to 9:30 am and 3 pm to 7pm, 5 days a week, 52 weeks a year (excluding specified holidays). San Diego County FSP hours coincide with the commute traffic times of San Diego County, and they operate on all major freeways that have congestion only within San Diego County.

Holiday, Weekend, and Special Event Information

Holidays	<p>Can change for holidays and special events</p> <p>Cover approximately 50 hours per year in RFP. If additional hours are required, 24 hours notice must be given to the contractor.</p> <p>Extend hours for heavy holiday traffic (2)</p> <p>Holidays are modified depending on demand</p> <p>Holiday patrols may extend patrol hours from 7 pm until midnight</p> <p>May have skeleton crew, and we have people on call</p> <p>Most holidays except Memorial (1), Independence Day (1), Labor Day, Thanksgiving (4), Christmas (5), and New Year's Day (3)</p> <p>Some/limited holiday coverage (2)</p> <p>The hours of operation are often expanded for holidays and planned special events</p> <p>We schedule for holiday coverage</p>
Weekends	<p>As warranted</p> <p>Some weekend coverage in busy areas like Cape Cod</p> <p>Weekends on call unless working a special event</p> <p>We don't normally have weekend coverage anywhere but in Seattle (because of traffic conditions)</p> <p>Weekends 10 am to 6 pm</p>
Special events	<p>As warranted</p> <p>Extend hours events or incidents past normal shift hours</p> <p>Extended for weather events</p> <p>Hours change for special events as requested by KHP or KDOT</p> <p>May extend hours for weather events</p> <p>Modify coverage for major construction projects</p> <p>No special event coverage (2)</p> <p>Schedule for special events as needed</p> <p>Special events are on a pre-determined basis or as traffic dictates in emergency situations</p> <p>Special event coverage on request on an overtime basis</p> <p>Special event support may extend patrol hours from 7 pm until midnight</p> <p>Specifics in proposed RFP for coverage for scheduled sports events and community events. If additional hours are required, 24 hours notice must be given to the contractor.</p> <p>The only other time the schedules may change is during inclement weather events where the Incident Responders revert to a 12 hour schedule without a day off until the termination of the event. During this time the shifts are 3am – 3pm – 3am.</p> <p>We schedule if there are major events such as weather, football games, etc.</p> <p>14 hours per day, 7 days-per-week. These change for planned events (football games, etc.). Project Engineer can authorize additional hours.</p>

9. **What are the service areas? What criteria were used to select the service area or beats? Were other government agencies or executives consulted in choosing the service area?**

- Service Areas:

- All major freeways in Harris County.
- All major freeways that have congestion only within San Diego County.
- Baltimore metropolitan area, Washington metropolitan area, and Frederick metropolitan area. During the summer months, we also serve the Eastern shore routes of Maryland on weekends.
- Baton Rouge area, New Orleans area, Shreveport/Bossier City Motorist, and Calcasieu Parish.
- Busy roads in the metro area, some routes in the mid area, less in the west, expanding to cover most of busy corridors in the states. Some revisions for next contract.
- Cover the entire freeway region in Maricopa County.
- Covers specific interstates and U.S. routes in 9 counties in Milwaukee region. Divided into 9 segments and 20 subsegments.
- Dallas County, parts of Denton and Collin counties—mostly Dallas because Dallas County personnel, but state would like to expand to other counties, which are in the process of doing. Trying to get assistance from other sheriff department, highways and service roads—major roads and some highways have service roads that we also cover. Don't cover local streets.
- Entire PTC system – 21 responders 24-7 covering approximately 25 miles each.
- Interstate 78 and Route 22 in the Lehigh Valley.
- Link to web page. 80percent of coverage is on I-5 Puget area; most coverage is in Seattle/Tacoma metropolitan areas.
- Major metropolitan areas.
- On part of I-95 and all of I-76 (three SPV), 16 hours a day; the other six operate 8 hours a day.
- Our Incident Response Program covers 3 Districts divided into 4 patrol regions. Freeways include Interstates 5, 84, 205, 405 and State routes 217, 26 and 30.
- Service areas focus on high congestion corridors around four major cities in Tennessee.
- Service areas vary by FDOT district, highway segment, and time of day.
 - *District 1:* Interstate 75 – Collier, Lee, Charlotte, Sarasota, Manatee Counties; Interstate 275 – From the I-75 Interchange (exit 228) over the Sunshine Skyway Bridge to the North Rest Area; Interstate 4 – Polk County;
 - *District 2:* Interstate 10 – From SR 200 (US 301) to San Marco Blvd.; Interstate 295 – From Old St. Augustine Road north to Pulaski Road; Interstate 95 – From San Marco Road north to Pecan Park Road and from Old St. Augustine Road north to College Street. J. Turner Boulevard (SR 202) from I-95 east to SR A-1-A;
 - *District 3:* I-10 from mile marker 195 - 203 (Construction area) Tallahassee; I-10/Escambia Bay Bridge – I-10, from Exit 13 (SR 291 to Davis Hwy) to Exit 22 (SR 281 to Avalon Blvd); 1 truck (24 hours per day) and a second truck for 14 hours per day (6:00 am to 8:00 pm); I-10/I-110 – I-10 (Exit 11to Exit 13) and I-110 (Exit 3 to Exit 6); 1 truck working 6:00 am to 8:00 pm (Monday to Friday), 7:00 am to 7:00 pm (Saturday), and 9:00 am to 5:00 pm (Sunday);

- *District 4:* Broward County – Interstate 95 from Ives Dairy Road to Palmetto Park Road; Interstate 75 – From Miami Gardens Drive north to Sunrise Boulevard (SR 838); Interstate 595 – From Eller Drive to Alligator Alley Toll Plaza; Palm Beach County – Interstate 95 from Hillsboro Road (SR 810) north to County Road 708 in Martin County;
- *District 5:* Interstate 4 – From County Rd. 532 (Polk/Osceola County Line) to I-95 (Volusia County);
- *District 6:* Interstate 75 – From SR 826 north to the Miami-Dade/Broward County Line; Interstate 95 – From US 1 north to the Miami-Dade/Broward County Line; Interstate 195 – From I-95 east to Alton Rd; Interstate 395/MacArthur Causeway – From I-95 east to Alton Road; State Road 826 – From US 1 north to the Golden Glades Interchange; State Road 5/ US 1 – From SW 112 Street north to I-95; MDX: State Road 112 – From LeJeune Road east to I-95; State Road 836 – From Florida's Turnpike east to I-95; State Road 874 – From Florida's Turnpike north to SR 826; State Road 878 – From SR 874 east to US 1; State Road 924 – From SR 826 east to NW 27 Avenue;
- *District 7:* Interstate 4 – From I-275 (MP# 0) in Hillsborough County, east to milepost 25 (County Line Road) at the Polk County Line; Interstate 75 – Hillsborough County, from the Leroy Selmon Expressway north to Bruce B. Downs Boulevard Selmon Expressway (full length); Interstate 275 – From the rest area north of the Sunshine Skyway Bridge (milepost 12.1) in St. Petersburg, Pinellas County, north to milepost 61 (I-75/I-275 apex) in Hillsborough County; Leroy Selmon Crosstown Expressway – Full length/14.2 miles; FL Turnpike: All of Florida's Turnpike (including the Homestead Extension) from Mile Post 0 to Mile Post 309 and the entire Sawgrass Expressway.
- The PennDOT personnel patrol the Parkway North (Ft. Duquesne Bridge to Camp Horne on I-279). The contracted service personnel patrol the Parkway East (I-376), Parkway West (Pittsburgh International Airport to Fort Pitt Tunnels on I-279), and I-79 from Exit 55 (Bridgeville) to Exit 73 (Wexford).
- The service areas are the freeways within the 8-county metropolitan area (Minneapolis).
- Varies by state of operation. Service areas selected primarily based on patrolling authority recommendations.
- We currently cover 500 of our 1,100 miles of interstate system. The areas are Raleigh, Durham, Greensboro, Winston Salem, Charlotte, Asheville, and I-40 in the Pigeon River Gorge. The areas were based on urban congestion demands, but we now look at other things, such as 1500 vehicles/hour/lane as a warrant.
- We patrol seven major expressways around the metropolitan Chicago area. Also expanded into Indiana recently as well (southeast), a 2-mile stretch. May average 70 assists in Indiana jurisdiction.
- We use (3) patrol zones to cover 45 miles of interstate around the capital beltway.
- Within the metro Atlanta area.
- Criteria used to select areas:

- Areas were selected based on volumes of traffic and number of incidents, and experience knowing the area. Mainly, the whole metro area needs to be covered due to sheer volume of traffic. As we expand operations, we know which areas are worse than others, just by experience and data, and traffic cams.
 - Because the program was developed 20 years ago, they are not familiar with criteria, etc.
 - Coverage area was based on the Tri-County area around the beltway and its major feeders.
 - Criteria used to select the routes included mileage, congestion, and number of incidents.
 - Higher volume interstates received the first vehicles and the service is expanding to the expressways as the interstate coverage becomes more complete. The higher volume roadways receive the highest priority.
 - Limitations on coverage area were based on the boundaries of the Portland Metropolitan Area.
 - Traffic volumes, crash history, and incidents covered by the FSP such as disabled vehicles and roadway debris.
 - We worked with the patrol and local jurisdictions. They are based on calls for service and data (traffic volume and calls for service).
 - When service areas are selected both AADT and crash rates are considered.
- Other agencies consulted in service area definition:
 - Yes, all of them
 - Atlanta Regional Commission, the Governor, and GA Regional Transportation Authority were consulted. They had information that we were seeking.
 - DOT and other transportation authorities provide input (from a private provider).
 - Initially input from other agencies was considered, however once funding was found determination on the corridors managed by ODOT were determined by the agency.
 - Regional response stakeholders are also consulted when service areas are selected.
 - State patrol was involved in choosing the service area.
 - There is an Incident Management Task Force group representing many agencies that had an influence in deciding the coverage area.
 - We worked with the patrol and local jurisdictions. Sometimes, it's political with local politicians. Also, we have a small program in Spokane and Vancouver, and seasonal truck at Steven's Pass on Highway 2, and full-time truck that operates year round. We had requests to have incident response, but don't have funding. Always ask for more when we go through legislative process.
 - No
 - I do not believe that other agencies were consulted in choosing the service areas.

10. A: What type of vehicle does the service use? Were there specific reasons for picking this vehicle over others? Could you provide a copy of the vehicle specifications?

Vehicle Type	Description	Comments/ Reasons for Choosing This Vehicle Type(s)
Mixed Fleet	We run four types. Light-duty tow trucks, custom response vehicles (modified box truck), pick-up trucks, and vans. Supervisors use the pick ups.	The light-duty trucks have ability to pick up, push, and drag large vehicles and debris. Custom response vehicles carry equipment, tanks, lighting, cones, and equipment needed for incidents. Vans (which we started with) can hold more equipment and people.
Mixed Fleet	Four ramp tow trucks (areas without a break-down lane, and critical choke points). Rest of fleet is vans.	Vans – easier for storage of equipment (especially in bad weather). Vans are less expensive and easier to get operators. Not convinced sponsors like the room for ads on a van.
Mixed Fleet	We use from one-ton pick-ups to light, medium, and heavy trucks. We use a combination. Lightest are one-ton. Heavies have capability to pump diesel, carry 100 gallon tanks. With price of gas trying to maintain a few heavies. Six tow trucks in Seattle area strategically assigned to floating bridges. Our IR trucks are identified as authorized IR vehicles so we have lights, sirens, etc.	Price of fuel has caused us to expand use of lighter vehicles. We can respond to minor stuff, which saves troopers from having to respond.
Mixed Fleet	The FSP program uses flat bed tow trucks and wheel lift tow trucks. The new addition to our fleet is regular extended cab pickup trucks.	Regular extended cab pickup trucks to assist the tow trucks with extra passengers and to assist with service calls when a tow truck is busy on another call or is not required.
Mixed Fleet	The current vehicles in operation are 1-ton tow trucks. The recent purchase of three new vehicles for operation will include 2 tow trucks and 1 one-ton crew cab truck equipped with push bumper.	The reason for using a crew cab instead of a tow truck is that most of the vehicles are pushed from the roadway. There are only a few times a year vehicles need to be towed from the roadway.
Mixed Fleet	Typically, three-quarter-ton truck, but some districts use wrecker type medium-duty trucks.	Cost, functionality, and durability are primary considerations for the vehicles chosen.
Tow Trucks	A 16,500 GVW wrecker is used.	Needed a tow vehicle to get disabled vehicles off the highway and transported to a safe drop-off area.
Tow Trucks	The service patrol vehicle that we use is a 16,500 GVWR class Expressway tow truck equipped with a 3-foot high by 6-foot wide arrow panel with a raise and lower mechanism.	

Vehicle Type	Description	Comments/ Reasons for Choosing This Vehicle Type(s)
Tow trucks	Tow trucks are utilized to allow for clearing incidents.	
Wreckers/ Flat beds	Per the proposed RFP for contracted service: The primary service vehicles shall consist of a car carrier with a minimum gross vehicle weight rating of 14,500 pounds, dual wheel chassis, and four (4) ton recovery equipment rating. The backup vehicle may be another car carrier with the same specifications as described above or a tow truck/wrecker with a minimum gross vehicle weight rating of 10,000 pounds. The model year of each FSP vehicle is 2005 or newer. Both types of vehicles are able to safely and legally transport three people, including the driver and two passengers, in the cab.	Support quick clearance and facilitate vehicle removal.
Trucks	F-350 trucks	Low bid
Trucks	We currently have ¾ ton Fords and Chevys with extended cabs. We also have three V-10s (Fords). All are outfitted with CMS, an arrow stick, rotating beacons, and blue strobes.	
Trucks	Have moved to large trucks that have more equipment.	Started with minivans (phased out). Trucks are more functional.
Trucks	F-350s with emergency unit, F-250 open bed pick up – cones, jacks, fuel – for better movement. Durangos – for supervisors. All are 4wd.	Fords are the most functional – saw from other agencies and was impressed with them.
Trucks	Ford F450, Dualies, 4-wheel drives have big box containers on back, and look like an ambulance. 2 wheels on each side of the rear axle.	F450 was more of a contract deal. We had a low-bid situation; Ford came in with low bid. Body was developed/ designed for protection of equipment and visibility.
Trucks	We use a medium-duty chassis with a tow-recovery boom.	It's a good size vehicle to relocate cars and tow cars.
Trucks	Three-quarter-ton vehicle is currently being used but would like to switch to a 2-ton truck.	

Vehicle Type	Description	Comments/ Reasons for Choosing This Vehicle Type(s)
Trucks	Chevy pickup trucks. Full size. 1500 model.	Originally started with Astro vans but that didn't work well. Deputy actually got injured so they changed this around. They carry a lot of chemicals and equipment in the car that wasn't good with the Astro. Fumes from carrying all these chemicals and equipment are much safer with the current truck.
Trucks	1st responder vehicles (F-150 4 door crew cab)	
Trucks	Pickup truck (4-door crew cab allowing transport of 4 adults)	
Trucks	Standard vehicle is a Ford 1 ton heavy duty. Currently we have three 2004's, one 2005, two 2006's, and four brand new 2008 1 ton Super Heavy Duty's.	Torque, work load potential along with industrial strength led to the purchases.
Vans	Ford, E-350 diesel vans	Most efficient in resolving incidents.

B: What type of equipment is carried on-board the vehicle? Check all that apply.

Traffic Control Equipment	Yes (20) • Cones (2) • Flares (3)
First Aid Kit	Yes (21)
Message Board Mounted On Vehicle	Yes (19) • Arrow boards, vehicle message boards for text messages. VMS cost more, so have combination of both • Vehicle mounted VMS with 99 preprogrammed messages
Gas	Yes (19) • Diesel • Spare gas only on tow trucks, no diesel unless requested
Push Bumper	Yes (21)
Air Compressor	Yes (18)

Communication Equipment	<p>Yes (18)</p> <ul style="list-style-type: none"> • CB radios (4) • Cell phone (9) • County city radios (1) • Nextel (8) • Onboard computer tapped into responder network (2) • Police radio (7) • Scanner (5) • State highway/turnpike radio (13) • Two-way radio (2)
Basic Tools	<p>Yes (18)</p> <ul style="list-style-type: none"> • Broom/ Whisk broom (3) • Hydraulic jack (4) • Pillars • Pry bars • Shovels • Wrenches (3)

Other	<ul style="list-style-type: none"> • Amber and red warning lights meeting the requirements of Wisconsin statute 347.26(6) (b). • Antifreeze (2) • Arrow board on vehicle (2) • Bags of salt and sand • Battery buster box • Blanket • Booster/jumper cables (3) • Chains (2) • Child safety seat in case a child needs to be transported in the service patrol vehicle • Defibrillator • Diesel recovery system • Direct oil attack pack to absorb spills/ Oil dry (2) • Duct tape • Emergency phone numbers • Extensive automotive, medical, fire, HazMat, and animal control equipment and supplies • Fire extinguisher (2) • Fuel transfer kits to pump diesel from leaky tanks • Funnels • Fuses • Hand cleaner • Hazardous material guide book • Highway maps • Local phone book • Minor spill containment supplies (3) • Oil (2) • Paper towels • Pen and paper • Power outlets, front and rear mounted, with outlets compatible to 12-volt booster cables with a minimum length of 15 feet. • Power steering fluid • Public address system with an external speaker • Pump to off load diesel/fuel out of a subtank (can of load about 100 gallons) • Rear work lights • Spotlight capable of directing a beam centered in any direction of a 360-degree horizontal arc around the truck • Traffic control equipment • Trailer hitch (2) • Vests • Water for cooling system (3) • Wheel lift • White and amber emergency lights • Winch cables
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11. What are the personnel qualifications/training requirements for service patrol operators? Do you have position descriptions or a current training syllabus you could share?

- All carried out by DPS are civilian employees of DPS. Backgrounds checks similar to officers; DPS has a training program.
- All FSP Drivers/Operators are required to have a valid Wisconsin driver's license and other appropriate licensing for operating the FSP vehicle. All operators are 18 years of age or older. Prior to the contract start date, the Contractor must submit a list of all potential FSP Drivers/Operators to the Contract Administrator. Contractor must certify that all Drivers/Operators have a good (clean) driving record and have no felony convictions. The Contractor will perform background checks and obtain the driver's permission to submit background results to the Contract Administrator. All FSP Drivers/Operators are approved at the sole discretion of the Contract Administrator prior to performing any services for the FSP Contract. Within sixty (60) calendar days from the date of contract award, all FSP Drivers/Operators, shall complete level one of the National Driver Certification Program at the Contractor's expense. This training includes education on customer service, roadside service safety, attitude, appearance, incident management, vehicles, and equipment. Each FSP driver must be certified within one year of employment in the following: National Institute for Automotive Service Excellence (ASE) Automotive Technician, National Emergency Vehicle Operators Course, Occupational Safety and Health Administration (OSHA) HAZMAT First Responder Program, CPR and Basic First Aid Certification.
- Check oil, radiator overheating, change a tire, lift at least 50 lbs. Don't need a CDL; provide training for them—have on-the-job training where they are matched with a training coordinator, also have formalized training with formalized training for 3 days, an incident management course, have to do ride alongs with experienced operators.
- Do training and ride-alongs; 50 hours of training required in new contract. They receive training in CPR first aid, methods of operation, portable highway operation, hazmat response, customer service, traffic control, work zone safety. All drivers come from our maintenance facilities, and we train them to our specifications.
- For qualifications, we look for someone who can work independently, prefer some type of emergency background to work in stressful conditions. They have to be 18 with high school education or GED. For training system, 300 hours of in-class training and 200 hours of ride time for training are required. Training stuff can be found at <ftp://dot.state.ga.us> user name "hero", password "hero\$"—to download our training specs, SOPs.
- FSP operators are State Certified EMTs or Paramedics, National Certified Automotive Technicians., State Certified Fire Fighter Level I or equivalent, National Certified Animal Control Officers.
- Full-time employees of TDOT. Training program includes first aid and emergency medical care, hazardous materials, traffic control, radio communications, highway

incident management, diversity, extinguishing vehicle fires, using emergency equipment. See operations guide.

- Maintenance Utility Worker – job description attached
- Minimum Qualifications for the positions are: Two years of public contact experience, which included gathering, relaying and providing information to others; and evaluating activities or incidents and determining an appropriate course of action. One year of this experience must have included roadway/highway, bridge, sign or drawbridge maintenance operations or Public Safety work such as police, fire, emergency medical, incident responder, hazmat responder or towing.
- Motorist Assistant Technician (MAT) – \$12.66/hour. Duties: Assist motorists with vehicle and travel problems by fixing tires; providing basic temporary mechanical assistance; providing directions; providing gasoline; providing water/antifreeze; calling for wrecker service; etc. Knowledge of mechanical structure of vehicles; area and services available; repair procedures; and Highway Patrol policies and procedures. Assist motorist at traffic crashes by calling for law enforcement officers; service vehicles or emergency vehicles by providing emergency first aid/CPR to victims. This is done through knowledge of first aid and CPR; when to move or not move crash victims; safety procedures; and priorities at a crash scene. Observe suspected criminal activity or hazardous drivers reporting incidents and remaining at a safe distance until law enforcement officers arrive. Knowledge of Highway Patrol policies and procedures; criminal activity; and ability to properly describe and locate vehicles geographically. Minimum Requirements: High school diploma or GED equivalent and a valid driver's license. Training program for MAT is in the process of being reviewed and revised.
- Must have a valid driver's license, be at least 18 years of age, no moving violations in past 6 months, have a high school diploma, no DWI arrests, must be familiar with the use of the radio and the "10 code language" and pass a criminal background check (more details in attachment). Must have Red Cross or approved equal course certification in first aid and CPR.
- Not currently. We are in the process of standardizing our training. It varies in each area covered.
- Wreckmaster certified or equivalent, clean driver's record, background check, class C driver's license.
- SPV operators shall have a basic knowledge in the tasks of tow truck operations to provide safe and proper service and must be capable of demonstrating their operational abilities prior to beginning their first day of work. They are required to have a current PA class C driver license and pass a course detailing the Expressway Service Patrol program, minor vehicle repair, customer service, and roadside safety. The training material include work zone traffic control, tow truck operators manual, proper tow truck maintenance, all towing safety procedures, driver vehicle daily inspection report be in truck with driver, tow truck preventive maintenance

procedures, proper tow truck and equipment pre-operation inspection procedures, lubrication procedures, control/gauges, proper start up, use of transmission, backing procedures, over the road techniques, proper shot down, air tank drain, proper setting of brakes, cleaning of equipment, post inspection of tow truck and equipment, proper connection of towed vehicles, equipment being towed, securing towed vehicle, emergency warning lights, towing of vehicle, parking of towed vehicle, securing towed vehicle, American Red Cross first aid (or equivalent), knowledge of the geographic area to be covered.

- The operators attend an initial 16-hour training course put on by the California Highway Patrol. Every 3 months, they have to attend refresher training put on by the California Highway Patrol to remain certified in the FSP program.
- The operator qualifications require a safe driving record and they must be 18 years of age. They are also required to attend a Wreckmaster or similar hands-on training at the expense of the contractor.
- The service patrol operators must be a minimum of 18 years old, have PA Class C driver's license and a safe driving record, be sufficiently experienced in tow truck operations, and have Wreckmaster or similar training, American Red Cross First Aid or CPR and attend the contractor's Freeway Service Patrol training program. We utilize the Department's Traffic Control Technician 2 (TCT 2) and Traffic Control Technician 1 (TCT 1) positions for the TMC dispatchers.
- Their training comes when they trained as deputies and were on patrol. Not specialized in patrol service.
- They receive training in CPR, first aid, methods of operation, portable highway operation, hazmat response, customer services, traffic control, and work zone safety. All drivers come from our maintenance facilities, and we train them to our specifications.
- Training requirements vary slightly by district with Road Rangers receiving 72 to 80 hours of initial training with 32 to 40 hours of the initial training taking place in the field.
- We hire highway maintainers, and train them in Emergency Traffic Patrol in house. We keep staff updated with all training and have refresher courses that we give to current employees as well. We have guidelines that we follow (federal and state), and we have classroom and on-the-job training for 12 weeks before they go out on their own.
- We hire them as maintenance technicians. Normally, we like them to have highway maintenance experience, and then they are eligible to get in response program. A few we hire directly into Incident Response.

12. Are the service patrols/operators dedicated solely to the program?

- Yes
 - Contractors have at least 2 spare operators.

- During peak hours, we have additional vehicles we bring out from the maintenance shop. Staff are on an overtime basis to increase our size during peak hours.
- Yes, but the PennDOT personnel also work in the tunnels performing various duties.
- Yes, it is a specialized position. Some drivers also plow snow (overtime).
- 10 on staff [8 on road], it is their only function.
- Yes, dedicated solely to program. (6)
- Yes. We have seasonal patrol on Highway 2. Would be a part of another maintenance crew, but from November 1 through April 15 (on Stevens Pass), they are dedicated solely. But other times available for call out.

If not, what other duties are they expected to perform?

- Being that services are contracted, it is not expected that operators be solely dedicated to the program, except during the hours of operation.
- Janitorial functions
- Other things – dispatch trucks out there, program manager, supervisor, and 3 shift leaders, also have a maintenance technician
- The operators are allowed to work for their companies as tow operators during non FSP hours if the company decides as long as they do not go over their required federally mandated driving hours in a day.

13. A: What type of communications capabilities with transportation agencies, specifically Traffic Management Centers, and/or other responders, does the service patrol have?

CB radio	4
CCTV – ITS cameras	1
Cell phone (some GPS/AVL equipped)	10
County/city radios	1
Media-Affiliate 2-way radio	1
Nextel phone	9
Onboard wireless laptop	2
Police dispatch radios	7
State highway/turnpike radios (most 800 MHz)	14
Scanner	5
2-way radios	2
VHF highband radios	1

- Other comments regarding communications:

- Cell phones and 800 MHz Radio. Use a stop time and service time to locate vehicle and dispatch to closest located vehicle.
- Co-housed with TMCs – constant 2-way radio communication, cameras and traffic surveillance in Nashville, Knoxville, and Chattanooga TMC is closely monitoring them and their action via GPS, etc
- Communicate directly via CapWIN system (onboard wireless laptop), state highway radios. We communicate with TMCs and other agencies in the field.
- County and city radios in the trucks. Talk to Transstar. TxDOT picks that stuff up.
- Drivers use radio procedures such as 10-8 (in service) at the beginning of the shift and 10-10 (off duty) at the end of the operation. Drivers need to advise the COMM Center whenever their status changes and should monitor their CHP frequencies. Drivers also use text messaging features of the mobile data terminal (MDT) such as the on-board computer.
- Initially, when we launched in 2000, we envisioned that this would be an integral part of ITS system. Wanted to alert TMC about traffic, etc. via DOT radios – didn't happen. Instead use DPS radios to talk with TMC.
- Use a Nextel phone to communicate with dispatch. Trying to get for all the trucks (have some) – radio system to communicate with sheriff and police.
- Service patrols use different systems. Some use 800 MHz state law enforcement radio systems (SLERS) telephones, others are getting radios that communicate with DOT maintenance offices and maintenance yards, and all have cell phones.
- We have our own Main channel between the FIRST units and dispatch; FIRST units monitor the State Patrol Main channel and Maintenance Main channel; FIRST units and beat troopers can communicate via talkgroups on the 800 MHz radio. We also have Nextel cell phones with AVL and are soon going to be having shared CAD/AVL in laptop computers in all the trucks so FIRST will be able to communicate directly with SP via text messaging with regard to location, incident status, etc. The biggest advantage we have is that all dispatchers (FIRST, MnDOT Maintenance, and State Patrol) are all housed in the same room in the RTMC, and we all have the capability to look at the same camera monitors and hear each other over the radio.
- 800 MHz radios that communicate directly with our TMC, cell phones, and state patrol radio communications. We are dispatched by the state patrol, so we can talk to troopers directly.

B: Does the service patrol provide the TMC with traffic updates?

- Yes (12)
 - All the time. They let the dispatcher know.
 - Communications – Verbal 2-way, also have police scanners.
 - If they respond to an accident or come across an unusual occurrence like an object blocking the traffic lanes they shall report it to dispatch. If they encounter heavy traffic and it is just congestion, no need to tell dispatch.
 - Incident Responders relay information from the specific corridors they are patrolling when encountering any incidents impacting the transportation system.

- Some info provided to 511 operator. Some info provided, not too much. No cameras in vans.
- They provide updates on their location, incident status, etc. Traffic is continuously updated through an extensive network of detection on the freeway system.
- Yes, as requested.
- Yes – dispatch, TMC in same building as dispatch. Motorists and patrols can call in and then info is given to the media and info posted on Internet.
- Yes, they relay everything from center to the field and vice versa.
- Yes, the patrol operators are in constant communications with the TMC and the local State Police Barracks to ensure everyone is up to speed on any situation.
- No (2)* [* One has added it as a requirement in their new RFP for contract services]

C: What notification procedures and dispatch procedures are used?

- Cell phones and 800 MHz radio.
- Dispatch radio room in Schaumburg, IL, dispatches us to the locations/incidents.
- If we know that there is a disabled vehicle, we dispatch. There is a number, but we don't respond to calls all day.
- Just a drive by.
- No, can only call dispatch and can be patched through. Dispatch center number is public. Emergency response number on the back of every driver's license. 70 percent of incidents we just drive up on it and 30 percent of people get in touch with us. Can give out the cell phone number of the truck.
- Notification comes from the TMC or State Police directly. The TMC has provided the State Police with an 800MHz radio as well that can communicate directly to the service patrol vehicles. The service patrol numbers are located on the side of the vehicle along with a PennDOT symbol and "Freeway Patrol."
- Notification/dispatch procedures may be either an Incident Responder who comes across an incident (be it debris, stalls, or accidents) and relays that information back to the TMOC or the TMOC being called by a civilian or a police agency, who will then dispatch an Incident Responder to confirm the incident with eyes on scene.
- Number for general public to call.
- Our people are dispatched by Washington State Patrol. So our people respond like their troopers do.
- Our TMC is a 911 dispatch center and a traffic management center with State Police presence. All information on the system and off the system is reported to the operations center.
- Road Rangers are dispatched by the Traffic Management Centers, the contractor, or via self dispatch when they observe a motorist in distress or when they observe an incident such as debris on the highway or an accident that has just occurred.

- Sign in and sign off. They use unique numbers to locate staff. They use push cards, tear out numbers and *67.
- SP Dispatched by TMC, PA State Police, and self.
- SPVs will communicate and take orders and directions from the Department. At the beginning of each service, or upon finding any disabled vehicle, the SPV operator will notify the TMC of location model, color, and plate number of disabled vehicle. At the end of each service call, the SPV operator will notify the TMC and will fill out an incident information form and submit these to the Department on a weekly basis. If a repair will take more than 10 minutes to complete, the vehicle is relocated to a safe location off the interstate and the motorist is provided with a cell phone to use in order to obtain further help.
- The FSP is a roving service and this is how they locate the majority of the stops they make. At this time local law enforcement partners also have the ability to dispatch the FSP when needed.
- The service patrol calls in to the TMC dispatcher at beginning and ending of shift. For each motorist assisted, the FSP contacts the TMC dispatcher upon arrival, during the service and at the end of the service to log times, location of service, vehicle information, and services provided. The TMC phone number is available to the public.
- We have a large paging system for a multitude of state and federal agencies. State police are required to call and notify us of anything they know. We also monitor on our own using scanners.
- We have a navigator system, called call takers. We find out about accidents by driving up on it or being notified by the TMC. The TMC houses our dispatch operation. Call takers manage 511 system and take calls (from 911, the public, police, etc.).
- We typically receive calls for assistance from law enforcement. The number for our program is not advertised. Dispatch is either directly with law enforcement, through the TMC, or they self dispatch when incidents are discovered along their routes.
- 2-way radio, Nextel Direct Connect, cell phone dispatch to support roving service patrol service.
- 10-10, 10-8, 10-7, etc.

Kansas Motorist Assist Vehicle Kansas Department of Transportation **Is the service patrol number available/advertised to the general public for roadside assistance?**

- Yes
 - Advertised as calling *FHP for roadside assistance.
 - Motorist may call *99 for roadway assistance.
 - Number for general public to call operated by local law enforcement and can call *THP and *847.

- To advertise to the public, they use key chains, pencils, go to the auto shows and go to booths to advertise programs. Sheriff just did a commercial for their anniversary as a public announcement.
 - 511 is the service patrol number.
- No
 - No, not directly. But, the public can dial #77 for state police or 911 to get through to the local dispatch center.
 - No patrol number is available/advertised to the general public.
 - No release of Incident Response numbers occurs to the general public, these identification numbers are used solely in house for identification purposes.
 - No, service patrol number direct communication by the public is not available.
 - No, the number is not published.
 - Public can't call, can only call 911. No one knows the other number.
 - Public is directed to call 911 for roadside assistance and then the state patrol can dispatch our folks.
 - The service patrol number is not advertised to the general public, we advise the general public to call 911.
 - There is no one dedicated service patrol phone number and therefore nothing is available/advertised to the general public.
 - There is no present advertising of the service.
 - We do not provide motorists with a number to call for roadside assistance.

14. Describe any other support elements to the service patrol program, such as:

- Vehicle maintenance:
 - Done by our Maintenance Department
 - Done within DOT by our office of equipment management. We handle the normal routine. We have the ability to use our state/fuel express cards to get oil changes. Basic maintenance is done through our Office of Equipment Management.
 - Handled by DPS
 - Incident Responders work hand in hand with maintenance crews to mitigate an accident or provide traffic control. Typically IR is the first on scene and establish temporary traffic control until maintenance shows up. Once maintenance crews arrive they take over long term traffic control and the Responders are released to resume patrols of his corridor.
 - Sheriff's department handles maintenance and the facilities—they own trucks and operate
 - Provided by our Equipment Unit
 - TDOT maintenance centers, on same campus, dedicated mechanic or 2
 - Used by Harris County. Take care of all the maintenance
 - We maintain our own vehicles
 - Contractor responsible:
 - All of the tow trucks are taken care of by the individual companies.

- By contractor.
- Contractor provided.
- Contract out vehicle maintenance or use state highway facilities for vehicle maintenance. Our maintenance vehicles may be overburdened so we go outside for quicker service to ensure vehicles are on the road.
- Drivers are contracted, so most of the elements are the responsibility of the contractor.
- FSP vehicle maintenance is the responsibility of the FSP contractor.
- It is part of the contract for the contractor to provide.
- The contractor is responsible for the vehicle maintenance during non-patrol hours.
- Combination services:
 - In-house and outside vendors to repair our vehicles. Three mechanics on one shift working together. Major repairs go to outside vendors.
 - Varies by contract and city. Guys are responsible for maintaining their own vehicles (to an extent), monthly service coupon (brakes). Dealership does major work (mostly are still under warranty).
- General comments on maintenance:
 - Regular oil changes, fluid changes, etc. Each truck puts on about 65,000 to 70,000 miles per year, and each truck is replaced approximately every 3 years (200,000 miles). Snow tires are used in the winter.
- Maintenance facilities:
 - In-house/DOT/city/county/law enforcement facilities used:
 - All trucks are maintained at a MnDOT maintenance facility.
 - Handled by DPS.
 - Maintenance facilities are used as strategic staging areas for the Incident Response trucks. Instead of having one centrally located facility that all the trucks are staged at, we have strategically placed Incident Response trucks at the nearest maintenance facility closest to the Responders home address (within the Metropolitan area) to decrease response times when responding to emergencies or when reporting to their corridors for day to day operations.
 - Park at state police/highway patrol barracks. Don't have much tied up in the overhead of maintenance facilities. Try not to put money into the program into items that don't add to service.
 - PTC maintenance sheds.
 - We call out maintenance when we need them. We have a partnership with the state patrol where they provide training to our people.
 - Work with TDOT Maintenance.
 - Contractor responsible:
 - By contractor.

- Contractor provided.
 - Drivers are contracted, so most of the elements are the responsibility of the contractor.
 - The contractor provides as part of the contract.
- Other:
 - Numerous facilities in our area that we go to.
 - Trucks are taken to downtown facilities.
- Outreach and awareness:
 - Yes
 - At the end of the service call.
 - By DOT.
 - FTOs (field training officers) within the unit and supervisors go out on shifts in different areas and do outreach to different fire/police departments to let them know what our capabilities are, let them see trucks, go to roll calls, etc.
 - In the beginning when the FSP service first started, there was a press conference held to inform the public about the service.
 - Instant management committee around the state, public affairs office, communicate and development relationship with radio and TV traffic reported – cheerleaders, operators go to community events and schools.
 - MAG Web site—that's the only place with an update. Also, show off vehicles at events; well recognized; lots of support from public; 12,000 motorists were helped last year.
 - Media outreach (ride along with the Service Patrol).
 - Most recently a public awareness campaign was held referencing the "Move Over Law" that has been recently approved and released within Oregon. During this campaign it was identified that the Incident Response trucks performing motorist assists on the side of the highway are also certified emergency vehicles that fall under the category of this law.
 - Only do if there is a request. TxDOT is looking into this; no plan yet.
 - Our people to call in and update the TMC and that information gets put out via web site, etc., and released to public
 - Probably not enough of this done. A few years ago, due to budget shortfalls, the legislature and MnDOT were looking at ways to reduce costs and they considered eliminating this program. After much education effort, we were able to convince them that the FIRST program is a vital component of our Incident Management program and has many benefits to the public including congestion reduction and crash reduction.
 - Public Affairs department that handles that.
 - Talk to Exxon, have booths at conferences, speak to citizen's groups.
 - We promote the program through brochures and posters.

- WisDOT has developed a brochure describing the service and FSP operators hand the brochure out at each assist they make.

Standard Operating Procedures/Guidelines - Yes/No, if yes may we have a copy?

- Yes
 - A copy of the contract can be made available upon request.
 - Being reviewed and updated. We keep up on everything from state and federal.
 - DPS has them.
 - Guidelines are included in the FSP contract language and the draft RFP for contract services (copy provided).
 - Our current Standard Operating Guideline is being revised (copy provided).
 - Pretty standard. Didn't feel comfortable giving the SOP Guidelines as they are in the midst of updating. Will be out shortly.
 - Under redevelopment at this time.
 - We have guidelines for the service patrol vehicles in the contract, but there are no Standard Operating Procedures.
 - Yes, Unified Incident Command plan.
- No
 - Not yet developed.
 - There are no written standard operating procedures; the contract indicates how the FSP are to operate.

15. In this era of National Preparedness for disasters, how is the service patrol/personnel anticipated to be used during a major disaster?

- Add vehicles as necessary to facilitate traffic.
- Any motorist that stops on the highway or on top or under structures is checked and encouraged to move on as a normal part of business. Removing incidents quickly and helping keep motorists moving during any type of evacuation by opening the lanes with either providing fuel or fixing minor issues or towing vehicles is an asset besides the normal elements of protecting the scene by blocking lanes in a very expeditious way until additional help arrives.
- Assistance to highway patrols, both PSP and local police, for disabled vehicle removal and for assistance with traffic control.
- By DOT or patrolling authority as requested. All depends on the agency. For example, hurricane in Florida—sent a bunch of trucks down there, vans are there to be used as needed, but not part of a plan or a first responder list, no MOU.
- During Hurricane Rita it was a big deal. They were escorting field trucks and offering cases and cases of water. Fuel was also provided. Escort of fuel tanks. Whatever they could help with for people.

- If a disaster happens, FSP is not allowed to go outside their scope of work. Based on the type of and seriousness of disaster, the FSP program will be suspended for that day.
- In accordance with UIC, evacuation, and detour plans.
- Incident Response and the TMOC would perform their duties as they do on a day to day operation. Both crews are fluent in the Incident Command System and its intent. Specific guidelines are referenced out of our Emergency Operations Plan that outlines specific procedures above and beyond current day to day operations.
- It is anticipated that the FSP would operate during a disaster - i.e. if there was an evacuation the FSP could provide a valuable service in quickly assisting/removing stalled vehicles, which could have significant impact on traffic flow.
- Not part of a formalized plan—in the process of formalizing. Are responsive to the sheriff's department. Have the capability to call people, though not in contract.
- Provide traffic control assistance.
- Road Rangers provide evacuation support for motorists. Beats can be expanded, and can be augmented with emergency contracts to function on short notice once a state of emergency is declared.
- They are all ICS 100 & 200 certified. The supervisors are kept up to date on Hurricane routes that they will patrol and other disaster-related information that is shared with NCDOT by State Emergency Management through regular meetings.
- They will be used as they are during normal rush-hour operations unless called upon to provide traffic control at a specific location, e.g., a ramp to the interstate, etc.
- Use them like we would use for any major emergency, have the ability to call them in to keep the roads open with tow trucks. No disaster training being done.
- We have held meetings with the MnDOT Director of Homeland Security and are part of the established metropolitan evacuation plan. We will follow the incident command structure in any major incident. We are generally used to provide traffic control and block ramps, etc.
- We help with evacuations in times of contraflow. Our role is to assist in helping to keep roads open during an evacuation.
- We do a variety of things. We act as state highway liaison; provide traffic control, clearance support, and equipment support; act as liaison for equipment routing; and serve as a conduit to signal operations to retime signals along alternate routes.
- We would do the same as we do now, respond to highway emergency initially and then assist state patrol or National Guard as needed. We are support to Wisconsin patrol or National Guard. We would be involved in wind storms, for example. We would shut down roads and put traffic control in place. Once situation is stabilized, assist with traffic control. Our function at a big emergency is the same, but the scale is

larger. Our people are all trained in NIMS and know their role in terms of assisting and supporting that system.

- Work with other agencies as needed and provide support to homeland security, etc.
- Work with TEMA, employee staffed with them that coordinates management of activities, included in state disaster plan, part of Nashville downtown evacuation planning. Value is traffic control; constantly in training.

5.4 Benefits and Lessons Learned

16. **A: How is the general performance of the program measured? (NOTE: Some service patrols use more than one method to measure performance so those were separated into the categories below.)**
- Comments cards/survey forms:
 - An FSP Assisted Motorist Survey Form has been developed to collect information. It is included as a component of the FSP Program Brochure. The driver distributes a copy to each party they assist.
 - By motorists feedback, immediate contact evaluations.
 - Public comments.
 - Public feedback—comment card, often via email.
 - Push to have comment cards that they give to the motorists. Most are very positive.
 - Self addressed/postage paid survey cards are provided to every motorist assisted.
 - The operators are also required to distribute motorist comments cards to each motorist they assist. These cards are sent directly back to WisDOT and are regularly reviewed.
 - Visibility on the roadway and a State Farm customer satisfaction reply card
 - We get comment cards, letters, number of stops, and types of service provided information from the districts. Rangers carry comment cards with them. The comment cards are provided to the motorist, and it is requested that the motorist fill out the card and mail (postage is paid by FDOT) them to the central office. We review and scan for data and provide summary back to districts.
 - Program Statistics:
 - By number and type of assists. This year, TMC is dispatching so response time and incident duration will be measured.
 - Contractors are required to maintain detailed service logs, which are used to identify simple performance measures such as number of motorist assists and type of service provided.
 - Currently, the program is measured only by the number of incidents removed, type, and duration.
 - Have them report on activities, daily, weekly, and monthly reports. Record successful assists.

- Incidents can be queried to determine response, clearance and reporting times for local agencies to determine the efficiency of the program and identify improvement areas during lessons learned debriefs.
 - Measured by the number of calls received.
 - Patrol statistics (specific incident info). All vehicles have mobile data computer that is entered in real time—know what happened during all calls. If there is a vehicle that isn't meeting standards, need to reevaluate operating and/or route.
 - Performance of the program is measured by how many motorists are assisted each year and how quickly vehicles are removed from the roadway.
 - Statistics. How many contacts are made on the street with other motorists. Statistics that are generated based on work being done. Collect info on amount of work being done. Comment sheet from public, 15-20 responses/month – mostly positive.
 - We have a gray notebook, quarterly reporting of performance throughout agency. We also participate in the government accountability program, and partner with patrols to report performance, response times, and clearance times with Governor's GMAP program.
 - We have performance goals in business plan that we try to meet every year as far as response times, etc.
 - We have only been using number of stops. We are changing to a more performance-based management and will grade the program based on response times, clearance times, and congestion levels. This is under development.
 - We look at the number of assists, clearance times, travel lanes broken down into commercial incidents vs. incidents that don't have commercial vehicles involved. We look at time frames as far as roadway clearance and incidence clearance, and the time it takes to get all responders off scene. We look at response times to get all equipment off scene.
 - We measure incident clearance times including interim measures of FIRST arrival, State Patrol arrival, tow arrival, lanes clear, etc. We also document numbers of incidents we respond to and type of incident (stall, stall blocking, crash, debris, etc.).
 - We measure performance based on the number of motorists that have been helped. Get a break down of how many and circumstances.
- No real measurement:
 - Hard to measure; didn't do a lot of pre-program analysis. Don't have a cost-benefit, just use TTI figures. They project savings of \$15, keep count of traffic of numbers—biggest challenge.

B: Has a benefit/cost ratio been determined? If so, does a report/document exist that summarizes how the ratio was calculated and what assumptions were made and may we obtain a copy?

- No (7):
 - If it has, I don't remember. Not sure.
 - No, wish there was a national standard for cost benefit.

- Not been attempting yet, thinking about getting some.
 - Not to my knowledge. But University of Washington Research Center has a program to do a benefit/cost study. Should be available in 2008/09.
 - Thought about it, but thought it was a waste of time. Other studies indicate better than 1:35; not a danger because funded for 20 years.
 - Unknown.
- Yes:
 - A B/C ratio has not specifically been determined, although a formal evaluation of the program was conducted by Marquette University and the University of Wisconsin in 2000.
 - A cost benefit analysis was completed in November of 2005. The overall cost benefit ratio for the Florida Road Ranger Program is 25.8 to 1. A summary of the report has been attached.
 - Customer service value and P3 offsetting costs.
 - In some markets, yes.
 - The effectiveness of the FSP program is assessed by calculating the annual benefit/cost ratio of each FSP beat. First, the annual savings in incident delay, fuel consumption and air pollutant emissions due to FSP service are calculated based on the number of assists, beat geometries and traffic volumes. The savings are then translated into benefits using monetary values for delay (\$10/hr.) and fuel consumption (\$2/gal.). The costs include the annual capital, operating and administrative costs for providing FSP service. The FSP evaluation methodology is incorporated into an Excel spreadsheet. Input data requirements consist of beat geometries (number of lanes, presence of shoulders), traffic volumes, and the number and characteristics of FSP assists. The statewide average benefit/cost ratio for fiscal year 2006/07 was 6.3-to-1.
 - There was an evaluation completed by the Pennsylvania Transportation Institute 1 ½ years after the onset of the Parkway Service Patrols. This report included the benefits of having the service patrol. It was never matched against the costs associated with having the patrol.
 - We have a cost-benefit ratio study done every year by the University of Maryland. Ours is one of the premier benefit-cost ratios in the country, along with Washington State. Older studies also on www.chart.state.md.us Reading room.
 - Yes, attached (NCDOT).
 - Yes, 15.8:1.
 - Yes, in 2004 Portland State University Center for Transportation Department of Civil & Environmental Engineering Center for Transportation Studies created the document titled *Using Archived Data to Measure Operational Benefits of ITS Investments: Region 1 Incident Response Program*.

C: How is contractor performance measured?

- Comments cards/surveys
 - At the end of each service call, the motorist is provided with a self-addressed stamped post card evaluating the service he received. If an operator receives more

than one unfavorable review in the last six shifts he worked, he will be counseled, a second such situation will result in a warning, a third will result in a suspension, and a fourth will cause a dismissal.

- It is measured on the responses we get from the traveling public. At the onset, there were pre-paid post cards that were given to motorists on the service they were provided. These cards were sent to the TMC Manager and tracked.
- Public comments are the best indicator.
- Survey cards.
- The operators are also required to distribute motorist comments cards to each motorist they assist. These cards are sent directly back to WisDOT and are regularly reviewed.
- Through the use of the Survey Cards.
- Statistics and public comment
 - By number and type of assists and customer survey cards.
 - Contract compliance, patrol statistics, patrolling authority and public feedback.
 - Contractors are required to maintain detailed service logs, which are used to identify simple performance measures such as number of motorist assists and type of service provided.
 - There are regular employee evaluations. Performance based on number of contacts per day. As individuals, they've helped on the road to fill out a survey. They receive hundreds of thank you letters that they also use as a performance measure.
- Statistics/contract requirements/inspections
 - Contractors are gauged by number of trucks on road; trucks are reviewed and inspected for proper equipment by district supervisor.
 - Every month, the truck and driver is inspected by a FSP coordinator and they can receive a grade of needs improvement, meets, exceeds, and outstanding. Every 3 months, we give an award for driver of the quarter. Driver of the quarter is based on the monthly inspections, citizen write-ins, no complaints, no accidents, and not being counseled for the 3 months. Once a year, we give an award for driver of the year. The driver of the year is picked from the four drivers of the quarter.
 - Submitting reports, close handle on it so we are very in the loop. Send out own inspectors. Hear from State Police.
- Other comments
 - Partnering with other agencies to help growth. Active participants in FHWA; would like to see a national coalition.

17. A: From your experience what are your top lessons learned?

- Coordination/relationships with other agencies:
 - Effective communications with all the partners is key to clearing incidents quickly and safely.

- Getting agency (and the right agencies) so that it can be sustained. Lucky to get with the MPO without having to dance around for funding. If you are doing this, look at integration into overall transportation planning process.
 - Incident response is part of overall traffic incident management program within the state. It's bigger than just Washington patrol and DOT. It is a true partnership with other agencies. And trying to maintain partnerships is cost intensive and time intensive, with all the counties and personnel. So it's a challenge. Also, dealing with local agencies that don't have centralized command and control. So it's a challenge to reach out and touch all the people in all the areas that you need to partner with.
 - It is all about the relationships; most traffic incident management problems can be handled through communications and relationship building. If there's a need to spend money on equipment training, the biggest bang for buck is developing relationships and everyone working together. Goes a long way. When those relationships get built, we are able to discuss the real issues out there in a non-confrontational manner and start discussing solutions. We work together as a group to get those things done.
 - It is very important to establish positive relationships with law enforcement and the towing industry before implementing a freeway service patrol program. Convincing everyone that a service patrol is an integral part of an Incident Management Program and getting support from all involved will make for a smooth transition.
 - When we first began program, there was a lot of interaction with law enforcement, but not much with fire department. We needed to have more with fire department. And we have been working on building that relationship and coordinating with them.
- Funding:
 - Funding—not that high. Can't hire auto mechanics; get people who are interested in autos and trucks.
 - Insure the portion of program funding dollars is directed towards program operation rather than administration of the program.
 - One of the challenges is the higher fuel costs. Fuel is such a huge part of what we do. Trying to absorb cost of higher fuel is impacting our program.
- Incident management:
 - Incident response is more than just incident response trucks. We have agreements with 14 counties to haul vehicle/body and do extrication there and reduce exposure of responder. Incident response is just one piece of incident traffic management. It involves a lot of different players, so we have to work with them.
 - In minor incidents where vehicles could be moved from the roadway, their quick removal by the FSP has allowed us to restore traffic flow more quickly and reduce the traffic queuing (observations made during events by watching the CCTV cameras in the area).
 - The effectiveness of the VMS boards on the FIRST trucks is invaluable in helping to direct traffic and slow motorists down.

- The program is needed for both managing traffic congestion, providing customer service, and assisting with NIMS. With three service vehicles, we had been helping 8,000 motorists a year, and since we contracted out six more at reduced hours, we are up to 14,000 assists. The emergency responders love the service and continuously ask to increase the hours of coverage.
- Outreach:
 - A lot of motorists aren't aware the service is available, so we need to make sure motorists are more aware.
 - Provide Community Safety Education and event support.
 - There is public education and outreach. Folks out there that know about us are the ones that see and use us, but we need to reach out more to those who haven't yet used our services.
 - We are also providing more public information on the Move Over law that is in effect in Florida as well as other states.
- Personnel:
 - Biggest challenge is turnover of personnel within the contractor; his was the low bid so quality can be marginal, because he is just squeaking by. Trying to establish a minimum wage to the drivers. If I had it my way "take a serious look at making it state employees because you can give them more experience and responsibility;" states would take over all together. Also, would like to have at least 16 hours a day coverage; would be easier to get with state workers.
 - Expanding a program with temporary employees minimizes growth. Turnover and retention is a constant issue. Constant retraining of new employees is also an issue. With experience comes the benefits of added safety (with additional knowledge) and efficiencies in clearance techniques with the added skills learned over time.
 - From the contracting side, make sure the hours of operation equals a full shift for each driver to enable each driver a 40-hour work week (you will end up paying the same amount for a 6-hour day as you would for an 8-hour day).
 - Managers deal mostly with personnel. Get qualified people who are interested in doing the work.
 - Match personnel training to incidents expected to resolve. Hire and support the best people as operators.
 - More positions are needed to effectively mitigate traffic in the upcoming future. Traffic congestion will only increase with more vehicles on the road and with limited construction capabilities we will be forced to find unique ways to manage incidents thru contra-flow during big incidents, most efficient access points for emergency services, etc.
- Public Benefit:
 - Has always been a great benefit to our customers.
 - I've learned this is a great program and it is a great benefit to the public.
 - Public has embraced the service.

- The MAP program has been received well by the public and provides an opportunity to foster good will and to increase mobility on the transportation system.
 - The program is very beneficial to traveling motorists, and the majority of people sincerely appreciate service when received.
 - The public is appreciative of the service, but holds very high expectations of PennDOT for this. If a motorist is in distress during times when the service patrols are not active, they asked about it and wanted to know why they were not assisted as others have been. These times show that through the expansion of the service patrol, more motorists would be assisted.
 - The public survey cards returned indicate very positively that the public likes and approves of the service.
 - Very valuable tool for the taxpayers. They are pleased with the service and how fast we react and respond to calls for help. Supervisors and staff do a great job.
- Safety/training:
 - Any program that deals with highway safety can always do better at providing more training. We want to have as many patrols on the road as possible. Maximizing service is the goal, so training is hard to coordinate because we have to pull patrols off the road. Priorities are making sure they focus on safety and providing continuing education for the operators.
 - “Don’t turn your back to traffic” – training is important. Have to be aware of environment because it’s dangerous out on the road. Safety is important.
- Other lessons:
 - Always stock up on water and always be prepared.
 - Implement web-enabled systems to monitor personnel attendance and performance.
 - Provide public safety level AVL/GPS systems. Design, build, and equip service vehicles to address a wide variety of incidents.

B: What has been your biggest challenge and what lessons learned can you offer from your experience administering the program?

- Contracting:
 - Progressing through the contract process with all the different departments/divisions that need to assist, review, and approve the contract documents. Insuring that the payments to the contractor are processed in the system in a timely manner for the services that have been rendered.
 - WisDOT has found that it is very important to have dedicated staffing for contract administration when services are contracted out. Additionally, a comprehensive contract with clear, strong contract language is invaluable. Finally, one of the biggest challenges has been ensuring that contractors follow driver training requirements and hire good, well qualified operators for the service.
- Explaining the benefits/quick clearance:

- Balancing our IMAP program with our ITS program. For a long time, we focused on traveler information and installed message boards, detection and cameras to tell the public what was in the road. Explaining the benefits of actually clearing the road has been difficult. Without proper reporting, expanding our program has been difficult.
 - Biggest challenge is communicating and demonstrating to ITS managers and consultants the value of implementing public safety level freeway service patrols and why they meet the needs of the motoring public and patrolling authorities alike.
 - Even with the assistance of the service patrols, we still have to coordinate better with our local partners to build an understanding of “quick clearance.” We communicate that through our service patrols, but since we do not have control of the incident, it is impossible to clear in an efficient manner.
 - We are working hard to provide better communication between the program and other emergency responders.
- Funding:
 - Funding is always an issue. Fuel costs and such make it tough to expand program.
 - This has been the most positive program implemented. However, we would like to see more patrol services and our own department personnel, instead of having to contract out. The biggest challenge is identifying money to support the program.
- Other challenges:
 - AVL tracking is a good way to monitor the daily operation and having a good database helps to manage the program.
 - Expansion is a challenge because the personnel that work in Dallas County live there, makes getting around a challenge. Might have to get people and trucks from the other counties. Frustration for motorists—get a call at 8:45pm, but can't help people because trucks have to be back by 9pm.
 - They have not yet encountered any major challenges and the program is currently running very smoothly.
- Qualified personnel:
 - As populations increase so too will traffic. Without the appropriate level of positions that will increase at an equitable rate with the population growth, the traffic situation will far outweigh the staffing agencies will have to combat the growing problem.
 - Keeping qualified personnel. Currently union personnel at a low rate. Personnel tend to be up out of the position.
 - The biggest challenge to our FSP program is the rotation of the drivers. New drivers constantly need training on radio procedures and how to respond to calls.

**18. If more funding was to become available, how would it best be spent?
(Some had several priorities so these have been split into the categories below.)**

- Expand service areas/hours

- Add more patrols and mileage to be able to assist on the side of the road for minor incidences. More coverage to expand to the highway and not only the interstate.
 - Expand and increase our patrol.
 - Expand to York and Lancaster metropolitan areas (add 5 to 6 more trucks).
 - Expanding the coverage area to incorporate all of the freeway miles in the Lehigh Valley, which would require more FSP vehicles as well as expand the hours of operation to cover the portion of the day that carries the majority of the traffic (currently Monday to Friday 6 am to 9 am and 3 pm to 7 pm, consider Monday to Friday 5 am to 10 pm).
 - Have a night shift and weekend shift.
 - I would increase the service.
 - I would like to expand our coverage on I-79 to the north and south, and I would include major arterials that lead into the City of Pittsburgh. These facilities are very narrow and any incident causes major motorist delay. With the help of service patrols in these areas, I believe we would be able to assist more motorists and clear smaller incidents more quickly.
 - Increase hours and service areas.
 - Increase the hours of operation, would be good to expand to the shoulders areas of the peak periods. Extra special event coverage.
 - Increased patrols would provide more public benefit.
 - More coverage, additional routes and expanded hours (2nd more important).
 - Probably to expand coverage (add routes).
 - Provide additional service vehicles to patrol roadways and extending patrol hours of existing routes.
 - Right now, we've got a lot of funding coming our way because we're expanding our operation and the program even more. So that would be the biggest thing. Expanding the area, more trucks, and more territory.
 - Then consider expanding the patrols.
 - We also would like to have 24/7 patrols.
 - We would extend the hours of coverage in some existing areas, and add new coverage areas.
 - WisDOT would expand the hours of operation and possibly the areas of service. Specifically, services would be expanded to further support seasonal and special event traffic demands.
 - Would like a 24/7 operation
- Additional staffing/contracting/increase pay levels:
 - Change salary and allow for advancement for the personnel.
 - If acquiring permanent positions remains as it is now, the money would be spent contracting our additional patrols and looking into putting a skeleton patrol out for a 24/7 response. We are still a response agency after notification. We need to become an emergency response agency that is more proactive in clearing lanes. Expanding this program is the best, most cost effective way to bridge the gap to having NCDOT become a truly proactive response agency.

- Increasing positions for the Incident Response Program since we will never be able to build ourselves out of congestion, we will have to mitigate incidents thru effective and efficient traffic management of which the Incident Responders are an integral piece of a successful program.
 - More positions would be great to expand program.
 - Most important, would like to give pay increases to employees to hire additional people who have the education and skill level to do the job right.
 - We are interested in pay incentives to heavy truck tows to clear traffic.
- Update fleet/equipment:
 - Equipment and more training to begin with. Funding priorities right now are to ensure all rangers have the best equipment, provide more training, and expand program. We want to make sure the guys out there right now have the best equipment they can have.
 - If more funding was available, it would best be used for newer radios.
 - Update our fleet and add more trucks and equipment. Hire more employees and mechanics. Purchase more equipment that is needed to update the fleet.
 - Upgrade equipment (including cameras, detection, etc. in addition to equipment in and on the trucks).
- Additional priorities:
 - Additional detection on system to monitor things and react electronically.
 - Do more outreach and marketing.
 - Interested in having regional traffic incident management teams to support local programs. We would also like to continue and expand a statewide traffic management conference. We had the first conference last year on a shoestring budget. Need 400 or 500 people there to do something.
 - Interested in traffic incident management training at fire academies and schools.
 - We could use more funding for tow-away zones in metro areas.
 - We would like to have funding for rural fire departments. Complaints that they have to come out on state highway and get no revenue for that.

Washington State Department of Transportation



WSDOT Incident Response Team truck

CHAPTER 6. GLOSSARY OF ABBREVIATIONS AND TERMS

AADT – Annual Average Daily Traffic

AASHTO – American Association of State Highway and Transportation Officials

ADOT – Arizona Department of Transportation

AED – Automated External Defibrillator

ATIS – Advanced Traveler Information Systems

AVL – Automatic Vehicle Location

Caltrans – California Department of Transportation

CapWIN – Capital Wireless Information Net

CCTV – Closed Circuit Television

CDL – Commercial Driver's License

CDOT – Colorado Department of Transportation

CHP – California Highway Patrol

CMAQ – Congestion Mitigation and air Quality

Congestion Initiative – The National Strategy to Reduce Congestion on America's Transportation Network. Announced initiative and plan by U.S. DOT to reverse trends of congestion.

ConOps - Concept of Operations. A formal document that provides a user-oriented view of a proposed new system. (Source: IEEE Guide for Information Technology-System)

DDOT - District Department of Transportation

DHS – Department of Homeland Security

DMS – Dynamic Message Sign also referred to as a Variable Message Sign (VMS)

DOT – Department of Transportation

DOTD – Louisiana Department of Transportation and Development

DPS – Arizona Department of Public Safety

DWI – Driving While Intoxicated

EMS – Emergency Medical Services

EMT – Emergency Medical Technician

EOC – Emergency Operations Center

ESF – Emergency Support Function

ETO – Emergency Transportation Operations

FDOT – Florida Department of Transportation

FFSP – Full-Function Service Patrol

FHP – Florida Highway Patrol

FHWA – Federal Highway Administration

FSP – Freeway Service Patrol

FTO – Field Traffic Officer

GDOT – Georgia Department of Transportation

GED – General Equivalency Diploma or General Educational Development

GPS – Global Positioning System

HAZMAT – Hazardous Materials

HAZWOPER - Hazardous Waste Operations and Emergency Response Standard

HOT – High Occupancy Toll

HOV – High Occupancy Vehicle

HSPD – Homeland Security Presidential Directive

IC – Incident Commander

ICS – Incident Command System

IDOT – Illinois Department of Transportation

IMAP – Incident Management Assistance Patrol

IR – Incident Response

IRU – Incident Response Unit

ITS – Intelligent Transportation Systems

ITS JPO – ITS Joint Program Office

KDOT – Kansas Department of Transportation

KHP – Kansas Highway Patrol

MAG – Maricopa Association of Governments

MAP – Motorist Assistance Program

MDOT – Michigan Department of Transportation

MDX – Miami-Dade Expressway Authority

MnDOT – Minnesota Department of Transportation

MoDOT – Missouri Department of Transportation

MOU – Memorandum of Understanding

MPO – Metropolitan Planning Organization

MUTCD – Manual on Uniform Traffic Control Devices

NCDOT – North Carolina Department of Transportation

NDOT – Nevada Department of Transportation

NFPA – National Fire Protection Agency

NHS – National Highway System

NHTSA – National Highway Traffic Safety Administration

NIMS - National Incident Management System. "The National Incident Management System provides a systematic, proactive approach guiding departments and agencies at all levels of government, the private sector, and nongovernmental organizations to work seamlessly to prepare for, prevent, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life, property, and harm to the environment." (Source: National Incident Management System, FEMA 501, Draft August 2007)

NRF - National Response Framework

NTIMC – National Traffic Incident Management Coalition

NTTA – North Texas Tollway Authority

NUG – National Unified Goal. Established by the NTIMC, the NUG is: responder safety; safe, quick clearance; and prompt, reliable, interoperable communications.

NYSDOT – New York State Department of Transportation

OSHA - Occupational Safety and Health Administration

ODOT – Oregon Department of Transportation

PennDOT – Pennsylvania Department of Transportation

PIO – Public Information Officer

PPP – Public-Private Partnership

RITA - Research and Innovative Technology Administration

ROP – Roadway Operations Patrol

RTMC – Regional Traffic Management Center

SANDAG – San Diego Association of Governments

SHSP – Strategic Highway Safety Plan

SLERS – State Law Enforcement Radio System

SOG – Standard Operating Guideline

SOP – Standard Operating Procedure

SPV – Service Patrol Vehicle

TCL - Target Capabilities List

TCT – Traffic Control Technician

TDOT – Tennessee Department of Transportation

TEMA – Tennessee Emergency Management Agency

TIM – Traffic Incident Management. Defined as “the systematic, planned, and coordinated use of human, institutional, mechanical, and technical resources to reduce the duration and impact of incidents, and improve the safety of motorists, crash victims, and incident responders.” (Source: Traffic Incident Management Handbook)

TIM Responder – Personnel responding to an incident that mitigate its effects. May include personnel from law enforcement, fire service, emergency medical services, HAZMAT, emergency management and public works

TMC – Traffic Management Center, may also be known as a Traffic Operations Center

Traffic Control Device – “All signs, signals, markings, and other devices used to regulate, warn, or guide traffic placed on, over, or adjacent to a street, highway, pedestrian facility, or bikeway by authority of a public agency having jurisdiction.” (Source: MUTCD)

Traffic Incident – “An emergency road user occurrence, a natural disaster, or other non-recurring or unplanned event that affects or impedes the normal flow of traffic” (Source: MUTCD); or “Non-recurring event that causes a reduction of roadway capacity or an abnormal increase in demand” (Source: Freeway Management and Operations Handbook)

TTC - Temporary Traffic Control. In the context of the Service Patrol Handbook, TTC services are used in emergency or traffic incident situations. TTC devices, equipment, and personnel are implemented in response to an unplanned traffic incident. Typically includes resources that are “on-hand” and readily available to TIM responders and the FFSP. Should not be

confused with TTC imposed in response to highway maintenance, highway work zones or planned major events with longer durations.

TxDOT – Texas Department of Transportation

U.S. DOT – United States Department of Transportation

WSDOT – Washington State Department of Transportation

WisDOT – Wisconsin Department of Transportation



Florida Department of Transportation radio truck

CHAPTER 7. REFERENCED DOCUMENTATION

The following sections list the resources, documentation, interviews, and research used to support the development of the Service Patrol Handbook.

7.1 Interviews, Questionnaires, and Research

Using a standard questionnaire, 24 existing service patrol programs (listed below) were surveyed from across the United States. In many cases, the programs supplied supporting documents such as training materials, vehicle specifications, presentations, and SOPs for review. Chapter 5 contains the results of the interviews with these agencies.

- Boston Samaritan Program, Samaritan
- California Highway Patrol, San Diego Freeway Service
- Florida Department of Transportation, Road Ranger Program
- Georgia Department of Transportation, HERO – Incident Response Units
- Houston (City of) Metro Police Department, Motorist Assistance Program
- Illinois Department of Transportation, Emergency Traffic Patrol (Minutemen)
- Kansas Department of Transportation, Motorist Assistance Program
- Louisiana Department of Transportation, Motorist Assistance Patrol
- Maricopa Association of Governments (MAG), Freeway Service Patrol (Arizona)
- Maryland Department of Transportation, Emergency Traffic Patrol
- Massachusetts Highway Department, CaresVan/Samaritan
- Minnesota Department of Transportation, Freeway Incident Response Safety Team (FIRST)
- New York Department of Transportation, Highway Emergency Local Patrol (HELP)
- North Carolina Department of Transportation, Incident Management Assistance Patrols
- Oregon Department of Transportation, Corridor Management Team (COMET)
- Pennsylvania Department of Transportation (Engineering District 5-0), Expressway Service Patrol
- Pennsylvania Department of Transportation (Engineering District 6-0), Expressway Service Patrol
- Pennsylvania Department of Transportation (Engineering District 8-0), Expressway Service Patrol
- Pennsylvania Department of Transportation (Engineering District 11-0), Expressway Service Patrol
- Pennsylvania Turnpike Commission, State Farm Safety Patrol
- Tennessee Department of Transportation, HELP
- Texas Department of Transportation, Courtesy Patrol
- Washington State Department of Transportation, Incident Response Units
- Wisconsin Department of Transportation, Gateway Service Patrol.

7.2 Service Patrol Ride-Along

A researcher also conducted a ride-along with the Florida Department of Transportation (District 5) Road Ranger program, operated by the Central Florida Regional Transportation Authority (dba LYNX), the region's public transit agency. The researcher accompanied the service patrol operators during their daily routine to experience the patrols' duties first hand.

7.3 Resources and Documentation

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