



SOUTH LYON FIRE DEPARTMENT

Manual of Procedures 412

ROADWAY SAFETY

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Approved: Chief Mike Kennedy

I. SCOPE

This procedure applies to all employees when working in or near moving traffic, regardless of the municipality in which the work is being performed. It is intended to establish operational practices for fire department vehicles and personnel that will provide maximum protection and safety for personnel operating in or near moving traffic.

II. POLICY

It shall be the policy of SLFD to operate and position emergency vehicles at any incident on a street, road, highway, or expressway in a manner which best protects the personnel and work area. Such operations and positioning shall afford protection to fire department personnel, law enforcement officers, EMS providers, tow service operators, and the motoring public from the hazards of working in or near moving traffic.

If at any point during an incident it is determined that traffic has become hazardous to personnel despite control measures, it shall be the policy of SLFD to close the entire roadway and gradually re-open it once the traffic has stopped, and once there is adequate personnel on-scene to sufficiently control it. It is permissible to open some of the roadway provided it does not jeopardize emergency personnel or the incident scene.

III. TERMINOLOGY

The following terms shall be used during incident operations, post-incident analysis, and training activities related to working in or near moving traffic:

- A. Advance Warning: Notification procedures that advise approaching motorists to transition from normal driving status to that required by the temporary emergency traffic control measures ahead of them.
- B. Downstream: The direction the traffic is moving as it travels away from the incident scene.
- C. Fend-Off (Block): The positioning of a fire department vehicle on an angle to the lanes of traffic, creating a physical barrier between upstream traffic and the work area. Further broken down as:
 - i. Fending Left (Blocking to the Left): The apparatus is turned to the left (looking from rear of apparatus) at an angle across one or more lanes of traffic.
 - ii. Fending Right (Blocking to the Right): The apparatus is turned to the right (looking from rear of apparatus) at an angle across one or more lanes of traffic.



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- D. High Hazard Transition Zone: The lanes of a roadway where approaching motorists change their speed and position to comply with the traffic control measures established at an incident scene. Note: This is an extremely hazardous area, and should be avoided by personnel whenever possible.
- E. Hot Zone (activity area): The physical area of the roadway where the emergency personnel perform their fire, EMS, and rescue tasks at a roadway incident.
- F. Inside/Outside: Terms given to the sides of a divided highway. Inside refers to the middle or median portion of the roadway, and outside refers to the lateral or outside shoulder portion of the roadway.
- G. Lane Numbers: Lanes of traffic identified by numbers, e.g., #1 lane. Due to the ambiguity and potential for confusion when using this system, SLFD personnel shall refer to the lanes by position in normal English (right lane, left center lane, northbound lane, center turn lane, etc.) Left and Right are determined from an approaching motorist's point of view.
- H. Shadow: The protected work area at a roadway incident that is shielded by the block from apparatus and other emergency vehicles.
- I. Spotter/Safety Officer: A fire department member assigned to monitor approaching traffic and to activate an emergency signal if the actions of a motorist or motorists do not conform to the established traffic control measures in place at the roadway scene.
- J. Taper: The action of merging several lanes of moving traffic into fewer moving lanes over a set distance.
- K. Termination Area: The area downstream of an incident sufficiently marked to allow traffic to resume normal operation.
- L. Upstream: The direction that traffic is traveling from, as vehicles approach the incident scene.
- M. Warm Zone (Buffer Zone): The space between personnel and vehicles in the protected work area and nearby moving traffic.

IV. APPARATUS AND EMERGENCY VEHICLES

Listed below are procedures for safe parking of emergency vehicles when operating in or near moving traffic.

- A. Position first-arriving fire apparatus to protect the scene, patient(s), and emergency personnel.
- B. Provide a work area protected from approaching traffic in at least one direction
- C. Angle emergency vehicles in a fend-off position to create a physical barrier between the scene and approaching traffic, approximately 100 feet from the scene, in order to provide a safe work zone.
- D. Establish an initial block of the lane(s) occupied by the incident plus one additional traffic lane, or close the roadway to the flow of traffic to provide appropriate safety.
- E. Consider cab ingress/egress, pump operator and panel positions, equipment access, and roadway configuration when positioning vehicles.
- F. Turn the front wheels of any parked emergency vehicle away from the incident.



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- G. The ambulance should be positioned within the shadow/protected area, in a manner that positions the rear patient loading doors away from the nearest lanes of moving traffic. Note: Be sure to leave room for other inbound apparatus to perform fire or rescue procedures.
- H. Stage unneeded emergency vehicles off the roadway and return these units to service as soon as possible.
- I. At intersections, or where the incident may be near the middle lane of the roadway, two or more sides of the incident will need to be protected. The sequential blocking of the work area must be prioritized, from the most critical or highest-volume of inbound traffic flow to the least critical direction. Request law enforcement assistance to expand the initial work area for traffic approaching from all directions.
- J. If possible, during nighttime operations or inclement weather, turn off white flashing lights and headlamps (unless headlamps are providing scene lighting). Raise floodlights and angle them such that they point downward. Turn on apparatus ground lights and compartment lights.
- K. Traffic cones shall be deployed along the incident location for both daytime and nighttime operations. Cones may be spaced up to 25 feet apart on a roadway.
- L. Traffic cones should be used to establish a taper whenever possible, when it is safe to do so. Tapers should be 100 feet long, and cones may be spaced up to 25 feet apart.
- M. Flares should be used in conjunction with cones during nighttime operations, or during inclement weather.
- N. For all tapers, personnel shall deploy cones and flares from the outside edge inward, e.g. from the base to the end of the taper, in that order. Removal shall be in the opposite order (starting from the end of the taper).
- O. Personnel shall only deploy and remove cones and flares while facing oncoming traffic.

V. INCIDENT COMMAND

Listed below are the procedures that the Incident Commander (IC) must complete to assure that a safe and protected work environment for emergency scene personnel is established and maintained:

- A. Establish command
- B. Advise the law enforcement agency having jurisdiction of concerns regarding traffic control. Request assistance if necessary.
- C. Consider assigning a Spotter/Scene Safety Officer
- D. If the incident is expected to require that one or more lanes be closed for a significant period of time (usually greater than one hour), the Incident Commander should request assistance from the South Lyon Department of Public Works and/or the Oakland County Road Commission in establishing a temporary traffic control area with advanced warning sign(s).



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VI. EMERGENCY PERSONNEL

Reflective Safety Vests:

Federal Highway Final Rule on Worker Visibility (Federal OSHA Regulation 23CFR 634) states "All workers within the right of way of a federal-aid highway who are exposed to either traffic or to construction equipment within the work area shall wear high-visibility safety apparel." This apparel must meet or exceed ANSI 107 Class 2 or Class 3, or an ANSI 207 Vest.

All SLFD personnel, while working on any roadway, highway right of way, or parking lot, shall don their department-issued compliant reflective vest. These vests shall be worn over their turnout coat unless they are involved in fire suppression or vehicle extrication activities. Additionally, occasions may arise where it is appropriate to wear the reflective vests over a duty uniform, provided turnout gear is not needed.

Listed below are procedures for safe actions of personnel when operating in or near moving vehicle traffic:

- A. Personnel shall don high-visibility reflective personal protective equipment prior to exiting an emergency vehicle or as soon as possible after arrival on scene.
- B. Personnel arriving in fire apparatus that allow ingress/egress from either side of the apparatus should exit and enter the apparatus from the protected downstream side, away from moving traffic.
- C. Personnel should look before opening doors and stepping out of emergency vehicle into any moving traffic areas. They shall maintain an acute awareness of the hazards associated with working in or near moving traffic.
- D. Personnel, equipment, and patients should be moved well away from any roadway, or kept within the shadow/protected area created by blocking apparatus.

VII. SAFE PARKING QUICK REFERENCE

- A. Establish Unified Command.
- B. Fend-Off (Block) with first-arriving apparatus to protect the scene, patient(s), and emergency personnel.
 - i. Fend-Off from the incident lane plus one additional lane, or close entire roadway.
 - ii. Fend-Off considering pump panel and operator location, equipment access, and roadway visibility.
 - iii. Fend-Off most critical or direction of highest inbound traffic volume first.
 - iv. Consider requesting additional assistance from law enforcement.
- C. Crews
Remain Vigilant. Wear proper PPE (including reflective vests) at all times.
- D. Establish adequate advance warning
 - i. Deploy traffic cones 100 feet upstream, at maximum 25-foot intervals.
 - ii. The South Lyon Department of Public Works or the Oakland County Road Commission should be requested to provide assistance and/or advance warning sign(s) when one or more lanes will be closed for a significant period of time (1 hour or more).



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- iii. Consider hills, curves, bridges, and lanes with obstructed vision.
- E. Secure Safe Work Area
 - i. Use designations such as center lane, left lane, or right center lane from an approaching motorist's point of view.
 - ii. Assure that ambulances park in a protected area away from moving traffic. Direct ambulance crews upon arrival, or ask dispatch to relay positioning information to the ambulance crew prior to their arrival.
 - iii. Continue cones along the incident location at a maximum distance of 25 feet apart.
- F. Command Considerations
 - i. Consider assigning a Spotter or Safety Officer.
 - ii. Request the South Lyon Department of Public Works or the Oakland County Road Commission to provide assistance if the incident will last a significant period of time.
- G. Nighttime Operations or Reduced Lighting Conditions
 - i. Turn off unnecessary lights which may cause glare to oncoming vehicles (headlamps).
 - ii. Turn on compartment, ground, and elevated scene lighting (aim downward).
 - iii. Use flares in conjunction with cones.
 - iv. Consider additional apparatus for additional upstream block.
- H. Limited Access, High-Volume Highway Incidents
 - i. Establish initial Fend-Off 50 feet upstream of the incident.
 - ii. Deploy cones along incident location, up to 25 feet apart.
 - iii. Initiate taper with cones 100 feet upstream of apparatus if it is safe to do so.
 - iv. Additional apparatus should establish advance warning.

Approved by
/s/ Chief Mike Kennedy