TITLE 21. PUBLIC WORKS
DIVISION 2. DEPARTMENT OF TRANSPORTATION

Chapter 23. Adopt-A-Highway Program

Technical, Theoretical, and/or Empirical Study, Reports, or Documents:

1. California Department of Transportation, DD-36-R1, Deputy Directive on Adopt-A-Highway Contributions (Rev. 07/09)
2. *California Department of Transportation Maintenance Manual*, Volume One, Chapter 8. Protection of Workers (Rev. 07/06), Sections: 8.00 (B), 8.02, 8.14, 8.18, 8.21, 8.23, 8.30, and 8.32
3. U.S. Department of Transportation Federal Highway Administration Policy Memorandum, Information: Optional Use of Acknowledgment Signs on Highway Rights-of-Way (Rev. 08/05)
4. 42 U.S.C. §12132, Americans with Disabilities Act of 1990, as amended
5. 42 U.S.C. §2000d., Title VI of the Civil Rights Act of 1964
6. International Adopt-A-Highway Survey, 2008
7. California Department of Transportation, DD-39-R1, Deputy Directive for Graffiti Prevention and Removal (Rev. 07/09)

Deputy Directive

Number:	DD-36-R1
Refer to Director's Policy:	DP-06 Caltrans Partnerships
Effective Date:	July 2009
Supersedes:	DD-36 (01/25/95)

TITLE Adopt-A-Highway Contributions

POLICY

The California Department of Transportation (Department) supports and encourages Adopt-A-Highway Program contributions for roadside maintenance or enhancement activities, including litter removal, graffiti control, vegetation control, wildflower planting, and tree and shrub planting. Contributions for other maintenance activities, equipment, supplies, or services will also be considered on an individual basis.

The Department assigns a high priority to adopting litter removal sites along State highway segments adjoining storm drains, streams, rivers, waterways, beaches, lakes, the ocean, or other environmentally sensitive areas.

The Department provides assistance to its partners and acknowledges their contributions with courtesy signs. A fee is not charged by the Department for Adopt-A-Highway permits.

DEFINITION/BACKGROUND

The Department established the Adopt-A-Highway Program in October 1989.

Section 91.5 (a) of the Streets and Highways Code authorizes the Department to enter into an agreement to accept funds, materials, equipment, or services from any person for maintenance or roadside enhancement.

Section 91.5 (b) states that the Director may authorize a courtesy sign to recognize contributions. These courtesy signs shall be consistent with existing code provisions, as well as Department rules and regulations concerning signs.

Section 91.6 states that the Department shall, within its maintenance program relating to litter cleanup and abatement, assign a high priority to litter deposited along State highway segments adjoining storm drains, streams, rivers, waterways, beaches, the ocean, and other environmentally sensitive areas. The Department may use litter traps in drains and any other effective technology in carrying out these responsibilities.

RESPONSIBILITIES

Chief, Division of Maintenance:

- Directs the Adopt-A-Highway Program.
- Assigns a statewide Adopt-A-Highway Program Coordinator.
- Develops and maintains Adopt-A-Highway Program regulations and procedures.

District Directors:

- Assign a District Adopt-A-Highway Program Coordinator whose primary responsibility is to administer and promote the district Adopt-A-Highway Program with support of staff as needed.
- Ensure that their staff complies with Adopt-A-Highway Program safety provisions and other program policies.
- Commit sufficient resources to the Adopt-A-Highway Program to ensure prompt, courteous, and professional response to the public.
- Ensure timely installation of Adopt-A-Highway Program courtesy signs to recognize program participants.
- Provide informational and statistical reports as may be requested by internal and external entities.

Deputy Director, External Affairs:

- Assists the Division of Maintenance and the Districts in coordinating statewide public relations activities that promote Adopt-A-Highway Program contributions.

Chief, Division of Traffic Operations:

- Develops and maintains standards and procedures for the issuance of encroachment permits and timely processing of installation orders for Adopt-A-Highway Program courtesy signs.

Principal, Landscape Architecture Program:

- Assists the Division of Maintenance in the development of guidelines for Adopt-A-Highway Program contributions affecting highway planting and vegetation control.

Chief, Division of Accounting:

- Develops and maintains guidelines and accounting procedures for accepting contributions from the Department's partners.

APPLICABILITY

All departmental employees who are involved in Adopt-A-Highway Program contributions and program activities.

Randell H. Iwasaki

RANDELL H. IWASAKI
Chief Deputy Director

July 31, 2009
Date Signed

CHAPTER 8

TABLE OF CONTENTS

8.00 Introduction

8.01 Managers and Supervisors Responsibilities

8.02 Individual Responsibilities

8.03 Responsible Person in Charge

8.04 Work Site Safety

8.05 Changing Chapter Standards

8.06 Relation of Chapter 8 to Manual of Uniform Traffic Control Devices (MUTCD) and California Supplement (Part 6)

8.07 Personal Protective Equipment

8.08 Emergency First Aid

8.09 Medical Treatment

8.10 Definitions

8.11 Protective Vehicles

8.12 MAZEEP (MAintenance Zone Enhanced Enforcement (Program)

8.13 Planning Work to Reduce Worker Exposure

8.14 Working Near Moving Traffic

8.15 Facing Traffic (Employees on Foot)

8.16 Crowding of Workers

8.17 Warning Systems-Lookouts

8.18 Parking

8.19 Signs

8.20 Flagging Operations

8.20.1 Handling Emergencies Within the Work Zone

8.21 Shoulder Closures

8.22 Moving Lane Operations/Closures

8.23 Lane Closures

8.24 Closing Auxiliary Lanes

8.25 Standard Exceptions to Lane Closure Procedures

8.26 Flashing Amber Lights and Rotating Amber Lights

8.27 The Use of the Flashing Arrow Sign (FAS)

8.28 Placing the Flashing Arrow Sign (FAS)

8.29 Working Equipment Against Traffic

8.30 Access to Median Work Zones

8.31 Maintenance Crews Working Across From Each Other

8.32 Picking Up Litter and Debris

8.33 Night Work

8.34 Transportation of Workers

8.35 Operating Maintenance Equipment

8.36 Backing of Vehicles and Equipment

8.37 Working on Machinery and Equipment

8.38 Tailgates of Trucks

8.39 Compressed Air

8.40 Work on Electrical Circuits

8.41 Working Near Utilities

8.42 Ladders

8.43 Confined Spaces

8.44 Trench and Excavation Safety

8.45 Use of Reclaimed Water

8.46 Handling Chemicals and Hazardous Substances

8.47 Radioactive Incidents

8.48 Explosives

APPENDIX T10 - Traffic Control System For Lane Closure on Freeways and Expressways

APPENDIX T10A - Traffic Control System For Lane And Complete Closures on Freeways and Expressways

APPENDIX T11 - Traffic Control System For Lane Closure on Multilane Conventional Highways

APPENDIX T12 - Traffic Control System For Lane Closure on Multilane Conventional Highways

APPENDIX T13 - Traffic Control System For Lane Closure on Two Lane Conventional Highways

APPENDIX T14 - Traffic Control System For Ramp Closures

APPENDIX T15 - Traffic Control System For Moving Lane Closure on Multilane Highways

APPENDIX T16 - Traffic Control System For Moving Lane Closure on Multilane Highways

APPENDIX T17 - Traffic Control System For Moving Lane Closure on Two Lane Highways

8.00 Introduction

It is Caltrans policy to conduct its business in the safest possible manner consistent with applicable law, policy, or rule.

This chapter of the Caltrans Maintenance Manual is a part of the Caltrans written Injury and Illness Prevention Program (IIPP). It provides detailed instructions for managers, supervisors, and employees. It is designed to help employees in their efforts to work safely. All employees are expected to follow these minimum guidelines.

Other employee safety subjects are covered in other chapters of this manual, the Maintenance Code of Safe Operating Practices, and in the Caltrans Safety Manual.

The most important part of our job is to protect ourselves from traffic, while getting our work done. We do this by:

(A) Letting the motorist know what's going on and where to drive.

For this we use signs, flags, barricades, cones, flashing amber lights, portable changeable message signs (PCMS) and flashing arrow signs (FAS).

(B) Avoiding the errant driver.

Face traffic, stay aware through your own eyes and ears or those of a lookout who will warn you. Plan your escape route.

(C) Using protective equipment.

Protective vehicles, headrests, seat belts/shoulder harnesses, and personal protective equipment as described in the Caltrans Safety Manual, Chapter 12.

(D) Planning the work to reduce employee exposure to traffic.

8.01 Managers and Supervisors Responsibilities

The following paragraphs summarize the basic elements of the Caltrans Injury and Illness Prevention Program and define who is responsible for enforcing the safety and health policies

and practices. For further information, consult Chapter 1, of the Caltrans Injury and Illness Prevention Program, in the Caltrans Safety Manual.

(A) Supervisors and managers are the responsible persons to implement, maintain, and enforce Caltrans safety rules and policies.

(B) Supervisors, in cooperation with training personnel, shall ensure that all employees receive safety related training to include:

(1) General training to cover hazards basic to all places of employment.

(2) Specific training to cover hazards that are unique to each employee's job assignment.

(C) Supervisors shall ensure that each employee is able to understand how to complete each assigned task safely.

(D) Supervisors shall ensure that each employee follows safe and healthy work practices and procedures, and shall initiate corrective action for non-compliance.

(E) Supervisors shall keep abreast of safety and health regulations affecting the operations they supervise.

(F) Supervisors shall ensure that each employee is provided with the equipment necessary to complete assigned tasks safely.

Supervisors or managers who observe an employee that appears to be unable to perform his/her assigned duties and have a concern about the safety of the employee or others, are responsible to prohibit that employee from continuing to work. The employee should be prohibited from working until a determination of the reason for the employee's behavior is made, or until a medical evaluation of the employee's fitness can be completed.

Any supervisor or manager who fails to enforce safety and health policies, procedures, regulations, laws, or rules shall be disciplined in accordance with the provisions described in the Guide to Employee Conduct and Discipline (Department of Personnel Administration).

Supervisors and managers shall ensure that employee safety and health issues are discussed and assessed with employees at least annually at the time of issuing an Individual Development Plan/Performance and Appraisal Summary, and/or at the time supervisors discuss employee probationary reports.

Supervisors in office work settings should include discussions about health and safety matters at routinely scheduled staff meetings, but at a minimum, shall have meetings with their employees at least quarterly to discuss safety and health issues.
Supervisors in field locations shall have tailgate safety meetings at least every ten (10) working days to be in compliance with the requirements of the Construction Safety Orders, CCR1509 (e), or when starting new work activity to comply with Code of Safe Operating Practices.

Supervisors shall also conduct pre-job/post-job meetings with employees whenever a new process, chemical, or procedure is introduced that contains a new or previously unrecognized hazard, or when a new or previously unrecognized hazard is identified.

Supervisors shall provide initial safety orientation to new employees including, but not limited to, the specific hazards of the job, required personal protective equipment, Chapter 8, and the Code of Safety Operating Practices.

8.02 Individual Responsibilities

Employees shall do everything reasonably necessary to protect their own safety and health and that of others by complying with all safety and health policies, procedures, laws, rules, or regulations. Employees shall report all injuries, illnesses, or unsafe conditions to their supervisor immediately or at least by the end of the work shift.

Employees are expected to report to work mentally and physically capable of performing all of their assigned duties without jeopardizing the safety and health of themselves, other employees, or the public. Employees shall be free from the effects of medication, controlled substances, alcohol, or the complications arising from illness or injury, which might impair their judgment and/or ability to perform their work.

Employees are responsible to notify their supervisor of any personal medical condition or prescribed medication use that might impair their ability to perform their assigned duties. Employees should also report to their supervisor any behavior by another employee that reasonably indicates that they are not fit for duty.

Any employee who violates any safety and health policy, procedure, regulation, law, or rule will be disciplined in accordance with the provisions described in the Guide to Employee Conduct and Discipline (Department of Personnel Administration).

8.03 Responsible Person In Charge

It is practice and policy that whenever two (2) or more employees are assigned to work together, one of the employees shall be placed in charge.

This responsibility is usually assigned to the designated supervisor or leadworker based upon his/her civil service classification. However, there may be occasions when these individuals are unavailable to direct the work for given periods of time, or where emergencies arise that require non-supervisory employees to direct the work of others.

Supervisors must always designate an individual to be in charge during any work assignment or absence, and identify the steps to be taken in the event of an emergency.

8.04 Work Site Safety

Managers and supervisors are responsible to:

(A) Routinely inspect all field and facility work areas under their jurisdiction to identify, document, and eliminate hazards that may contribute to injuries or illnesses. In order to accomplish this, Region Managers should do three (3) or more safety reviews per month, and Area Superintendents should do three (3) or more field or facility safety reviews per week. Supervisors should be routinely inspecting work sites and work areas and documenting/correcting any deficiencies.

(B) Ensure that employees are properly trained and equipped to do the job, and that they understand how to do it properly.

(C) Investigate every injury or illness and vehicle accident to: (For further information, refer to the Caltrans Safety Manual, Chapter 4).

(1) Determine contributing circumstances, and

(2) Develop information that leads to correcting unsafe conditions and unsafe acts.

(D) Establish and maintain codes of safe operating practices, or equivalent, which identify hazards specific to job assignments.

(E) Enforce all rules, laws, and policies that will promote, protect, and preserve employee safety and health.

8.05 Changing Chapter Standards

Chapter 8 requirements are intended for the usual situations. Unusual circumstances may call for greater or lesser protective measures than are described here as standard. It is not possible, or even desirable, that a manual such as this contain detailed rules for every possible situation. It is

up to the supervisor to exercise judgment in applying these measures. Supervisors should not, through the use of protective devices, create greater hazard to their crews by increasing the severity and/or duration of exposure. They should consider all factors, particularly the safety of their employees, when applying the requirements of this chapter.

Deviations from standard measures may be judged desirable by the supervisor for a variety of reasons such as sight distance, proximity of ramps or street intersection, restrictive width, short duration of job at one location, or minimal exposure because of volume, speed, and proximity of traffic. **Decisions to reduce standard measures must have the written approval of someone responsible for the work at the Area Superintendent level or higher.** This written approval shall describe the deviation and list the reason(s) it is needed. It shall be kept on file in the region office for three (3) years. This written approval is not needed in situations which develop suddenly and unexpectedly and demand immediate action to prevent injury or harm to workers or the traveling public. Operations should be brought up to standard as soon as resources become available. The supervisor may increase worker protection using standard devices without approval.

The standard lane closure plans, Standard Plan T10 through T17, are for normal work zones and conditions. In unusual situations, the Maintenance Engineer may request District Traffic Operations to authorize a deviation at a specific location, providing:

(A) The specific location is identified by county, route, and postmile.

(B) The deviation does not compromise the safety of workers.

(C) The deviation is not for general use throughout the district.

(D) The deviation and rationale are documented in district files.

The intent is to allow deviation at specific locations without creating individual district wide standard plans. A deviation could be allowed for an indefinite time at a specific location, if the special conditions remain unchanged.

8.06 Relation of Chapter 8 to Manual of Uniform Traffic Control Devices (MUTCD) and California Supplement (Part 6)

In 2004, Caltrans adopted the Manual of Uniform Traffic Control Devices (MUTCD) as amended by the MUTCD California Supplement (CA Supplement). Part 6 of each manual establishes standards for traffic controls in highway construction and maintenance work zones. The MUTCD is published by the Federal Highway Administration (FHWA), while the CA Supplement is published by the Division of Traffic Operations. In case of any inconsistency between the MUTCD and Chapter 8 of Maintenance Manual, Volume One, Maintenance forces are to follow Chapter 8 since, in certain instances, Chapter 8 requires more stringent measures. Signs referenced with (CA) in this chapter indicate a California sign code. Otherwise, the sign code referenced is a Federal sign code.

8.07 Personal Protective Equipment

Caltrans provides the personal protective equipment (PPE) employees will need to work safely. This equipment is for worker protection and they shall use it properly to prevent injuries/illnesses.

Personal protective equipment consists of many items. Hard hats, orange or yellow-green shirts, safety vests, safety glasses, earplugs or muffs, gloves, goggles, respirators, raingear, and foot protectors are some examples.

The supervisor should select and provide the proper equipment and ensure workers wear it.

Refer to Appendix C of the Code of Safe Operating Practices and Chapter 12 of the Caltrans Safety Manual for more information about personal protective equipment. Refer to Chapter 15 of the Caltrans Safety Manual for the requirements when using respiratory protection.

8.08 Emergency First Aid

All Maintenance employees should be trained in Standard First Aid during the first three (3) months of their assignment, and at least once every three (3) years thereafter. All Tree Maintenance Workers and related classifications, and all designated Electrical personnel shall be trained in Cardio Pulmonary Resuscitation (CPR) during the first month of their assignment, and then at least once a year thereafter. The training must be certified by the American Red Cross or other accredited organization.

An approved first aid kit shall be available at each work site. First aid kits and supplies shall be kept in sanitary and usable condition and inspected at least monthly. The Caltrans Safety Manual, Section 9.09 and 9.10, specifies size, location, and quantity of supplies for various categories of first aid kits.

For more information on first aid and emergency medical care see Chapter 9 of the Caltrans Safety Manual.

8.09 Medical Treatment

Supervisors are responsible to ensure that if an injured or ill employee needs medical attention he/she will be taken to the nearest approved medical clinic or hospital emergency room for treatment. Supervisors shall post the name and location of each approved medical service provider in a conspicuous place at each Caltrans work site. At a minimum, they shall be posted on designated bulletin boards in hallways or individual offices, and other appropriate locations, such as motor vehicles, to ensure every employee is aware of the locations. A list of approved medical service providers is also available at the Caltrans Intranet, Administration, Health and Safety Information web site.

If the injury is serious, an ambulance should be called.

A supervisor or designee shall always accompany the injured or ill employee to the medical facility.

As conditions warrant, the supervisor should talk with the attending physician to determine the extent of the injuries, the affected employee's recovery period, ability to return to work, and the employee's ability to perform the full range of duties upon release.

The supervisor must describe to the doctor what modified duty is available so that the employee can return to work as soon as possible.

Employees shall report any work-related injury to their supervisor immediately, or at least before the end of the work shift. They shall also report the injury to the supervisor before going to a doctor.

For more information on reporting personal injury accidents and illnesses see Chapter 10 of the Caltrans Safety Manual.

8.10 Definitions

Moving Operations	A moving operation is any work activity that moves along the traveled way or shoulder slower than the prevailing speed of traffic. Moving operations may also involve short and/or periodic stops. On-foot exposure (for example, to remove a large piece of debris in front of a sweeper) must be held to a minimum and physical protection from traffic is required. Some examples are striping, sweeping, spraying, raised pavement marker replacement, etc.
Short Duration Operation	In general it can be defined as any activity that can be performed in 20 minutes or less during light traffic volumes, without interfering with traffic or placing the employee in jeopardy. Short duration activities are those in which it takes longer to set up and remove the traffic control zone than to perform the work. Some examples are pothole patching, removing a large piece of debris, etc. A protective vehicle or lookout must be used.
Stationary Operation	A stationary operation is any work activity that includes workers on foot or equipment occupying any part of a paved shoulder or the traveled way at one location for more than 20 minutes.

8.11 Protective Vehicles

There are three (3) classes of protective vehicles: Shadow, Barrier, and Advance Warning.

(A) Shadow Vehicle

A shadow vehicle is used to protect the work vehicle in a moving operation. A shadow vehicle shall:

(1) Have a truck mounted attenuator (TMA) which softens the blow to our driver, and usually reduces the impact to the motorist. It does not reduce the distance a vehicle will roll ahead when hit.

(2) Must be equipped with Type II FAS.

(3) Be equipped with headrests or high back seats.

(4) Be equipped with seat belts and shoulder harnesses.

(5) Be equipped with a two-way radio.

The shadow vehicle's headrest/high back seat protects the driver's head and neck. The seat belt and shoulder harness prevent the driver from being thrown forward. Normally, the shadow vehicle shall be occupied by the driver only. However, if a passenger must occupy the vehicle while it is shadowing, the passenger seat shall also be equipped with headrests or high back seats and a seat belt and shoulder harness.

The purpose of a shadow vehicle is to provide physical protection for crews and their vehicles. The mass of the shadow vehicle is the most important factor in providing protection. The heavier the shadow vehicle, the better the protection that is provided.

The shadow vehicle shall be positioned upstream from the work vehicle between approaching traffic and the vehicle it is protecting. It should be positioned where it will provide the best protection; not too close, or not too far back. It must be positioned a sufficient distance in front (upstream) of the workers or equipment being protected to allow for appropriate vehicle roll-ahead, but not so far that errant vehicles will travel around the vehicle and strike the workers/equipment.

When making the decision as to how to position the shadow vehicle, you must use your best judgement. Because every situation will be different, you should take into consideration the following factors:

- Volume and speed of traffic—
  With higher speeds comes the potential for increased roll ahead if struck
  Will traffic volume affect the level of protection needed?

- Physical configuration of the roadway itself—
  Curves vs. straight sections
  Hills or dips that impair forward vision
  Super elevation of curves
  Width of improved/unimproved shoulders

- Sight distance—
  How much sight distance is available?

- Weather and pavement conditions—
  Dry, wet, icy
  Rough pavement

Discuss the above factors with your work crew prior to going out on the road. Maintain two-way radio contact with the work vehicle so that movements are coordinated.

(B) Barrier Vehicle:

A barrier vehicle is an unoccupied vehicle or piece of equipment used to protect workers from errant motorists. Any vehicle at a work site can be used as a barrier. However, workers shall use the heaviest vehicle reasonably available. In certain instances, more than one (1) barrier vehicle may be needed. A barrier vehicle does not require a TMA. However, if a TMA is available, it should be used.

Any vehicle that is used should be parked upstream from the work site between approaching traffic and the workers. It should be parked where it will provide the best protection; not too close to the workers, not too far back. It shall be carefully positioned so that it will intercept errant vehicles, but will not roll ahead into the work area. Always park the barrier vehicle with the emergency brake set and lower any attachments to the ground.

A barrier vehicle without a TMA can be parked a number of ways. It can be parked at an angle or even straight across the lane. If it is parked at an angle, the front of the vehicle should be pointed away from traffic. The wheels shall be turned away from the work zone and away from traffic, if possible. This will avoid motorist panic and prevent secondary collisions if the barrier vehicle is hit and pushed ahead. A barrier vehicle with a TMA should normally be parked parallel with the direction of traffic.

(C) Advance Warning Vehicle:

An advance warning vehicle is driven or placed upstream from a work zone (refer to the Moving Lane Closure Plans T15, T16 or T17). It alerts the approaching motorists of work being performed on or near the travel way.

On the shoulder of a two-lane highway, it shall display either a FAS in the caution mode, or a flashing amber light/rotating light. On the shoulder of a multilane highway, a FAS with the "Flashing Arrow" displayed shall be used if the work vehicle is on the traveled way. A changeable message sign may also be used.

If the vehicle encroaches into the traveled way, it shall be equipped as a shadow vehicle and operated in accordance with the guidelines in Section 8.11. If it encroaches into a freeway lane, the vehicle shall display a FAS in the arrow mode. If it encroaches into a two-way conventional highway, the FAS shall be in the caution mode, or display a flashing or rotating amber light.

8.12 MAZEEP (MAintenance Zone Enhanced Enforcement Program)

Caltrans coordinates with CHP to utilize officers on site at highway maintenance projects. MAZEEP is used to reduce the potential for traffic collisions, reduce traffic speeds to the posted speed limits, and to increase safety of the workers and motorists.

(A) **RESPONSIBILITIES**

- **Maintenance Area Superintendent -** or his/her designee, should make an assessment of the need for MAZEEP on projects that require the closure of traffic lanes with either cones or moving vehicles. The Superintendent may also identify specific Maintenance operations where the use of MAZEEP may be required.

- **Maintenance Supervisor -** is responsible to request MAZEEP services according to the interagency contract, and to provide clear and concise instruction/direction as to what duties the officer will perform and placement of CHP vehicle. These instructions will include worker and motorist safety concerns, traffic control procedures, and any anticipated traffic delays. This direction will be given prior to entering the work zone or at pre-job meeting.

  Working in conjunction with the CHP, supervisors should discuss a contingency plan to be placed in effect should traffic delays beyond reasonable limits occur.

  Supervisors are responsible for discussing, arranging, and/or providing communications with on-site officers. This may include hand-held radios, cellular phones, or the use of multi-agency scanners set to the appropriate frequencies.

  Supervisors will work cooperatively with on-site officers to mitigate traffic delays caused by maintenance operations. Decisions to abate or discontinue work for traffic considerations shall be made collaboratively. Considerations shall be given to the type of work being performed, length of time until probable completion, and potential/probable exposure to personnel and additional traffic delays caused by resetting the traffic control system and reopening the work zone.

  If the supervisor has made a timely request, and MAZEEP service is not available, the supervisor may use alternate methods to enable the work to proceed. Alternate methods may include additional advance warning signs/vehicles, changeable message signs, lookouts, and/or additional protective vehicles.

(B) UTILIZING MAZEEP ON FREEWAYS AND HIGHWAYS

Shall be requested for:

- All planned daytime or nighttime temporary closures of **ALL** lanes in the same direction of travel (full freeway closures).
- Planned night closures of two (2) or more lanes on a freeway with three (3) or more lanes of travel in the same direction.

Should be requested for:

- Any location/project that exposes workers on foot to moving traffic where escape routes are limited by median barriers, bridge rails, or similar structures and where additional physical protection is not deemed adequate.

May be requested for:

- Daytime closures of one (1) or more lanes on a full freeway or expressway
- Mobile work, e.g.; sweeping, striping, replacing pavement markers, etc.
- All other night work as deemed necessary by the supervisor.

(C) DETERMINING WHEN TO USE MAZEEP

Risk factors should be taken into consideration when determining when MAZEEP will be appropriate. Safety reviews conducted by the Superintendent and supervisor prior to the project (in the planning stages) may identify additional risks; if so, these risks must be considered in the decision making process. Some of these additional risk factors may include:

- Night maintenance activities that do not create an obvious work zone, such as replacing raised pavement markers or night sweeping operations.
- Maintenance activities that require a large number of vehicles or haul truck movements in and out of the work zone.
- Anticipated traffic queues that cannot be avoided.
- Working in locations where traffic has been flowing at high speed, free flow conditions for a significant period of time prior to the work zone (assistance may be required to reduce traffic speeds).
- Routes with high volumes of truck traffic and/or steep down grades.

When making the determination to use MAZEEP, be aware that overuse when conditions do not warrant may lessen its effectiveness in the future.

8.13 Planning Work To Reduce Worker Exposure

Supervisors shall plan work to minimize the amount of time employees are exposed to moving traffic. This can be done by choosing proper work methods, combining operations, avoiding high traffic volume periods, and utilizing MAZEEP (Maintenance Zone Enhanced Enforcement Program) and/or other devices designed to increase motorists awareness of the work zone.

Work methods and procedures should be designed to keep the amount of time workers are exposed to moving traffic to a minimum. For example, crews should be instructed to assemble in safe areas well away from the traveled way, convoy to the work site, and do their work expeditiously. Once work is completed, they should return immediately to a safe area.

In addition, when employees reach the work site, the work method should be designed to minimize the amount of time workers spend on foot near moving traffic. The first choice should be to use mobile power equipment to do the work. A worker in a piece of equipment is generally much safer than a worker on foot. The next choice of work methods would be to provide workers on foot with physical protection. For example, a barrier vehicle, guardrail, or some other obstacle can be used to provide physical protection. The last choice is to have workers on foot without physical protection. In this situation, the work method should be designed so that workers can face traffic whenever possible and can work apart as individuals and not in groups. If none of the above methods are possible, it may be necessary to have lookouts or a lookout alarm device or both. See Warning Systems - Lookouts, Section 8.17.

When a lane closure is planned, especially on freeways, managers and supervisors should contact all crews who could work within the closure. Good communication is a MUST in this situation. For example, along with roadway repair, stencil work, guardrail repair, electrical work, sign work, shoulder repair, sweeping, and landscaping can be completed. Not only will more work be completed, but also more protective vehicles may be available at the work site, providing workers with increased protection. In addition to Maintenance operations, managers should coordinate with District Traffic Operations, Surveys, and other district units for work needs within the closed lane. This approach will reduce employee exposure to traffic and the number of lane closures required for routine maintenance.

When planning combined operations, managers and supervisors shall also plan the work so that each employee has enough space to work safely. Refer to Crowding of Workers, Section 8.16.

Another opportunity to reduce worker exposure to moving traffic is to carefully plan work on the highway. When there are fewer vehicles on the traveled way, there are fewer vehicles with an opportunity to hit workers.

Managers and supervisors should consider reducing employee exposure by requiring an unconventional workweek or extended and/or multiple work shifts to take advantage of lower

traffic volumes. Managers should also review maintenance projects for opportunities to improve worker safety with a complete facility closure.

Before short-term tasks are assigned, the supervisor will determine if the task has to be done immediately, or if it could wait. He/she shall decide if it could wait until formal traffic control will be set up, and the job performed as a part of a combined operation. An example would be the removal of litter from a median area. If the debris is not a safety hazard, could picking it up wait until a lane closure is set for another reason?

Supervisors shall plan all work operations to minimize the need for the backing of equipment and vehicles at the work site.

Although it is not mandatory, supervisors should conduct a post-job meeting with the crew and discuss what went right during the most recent operation, what went wrong, and how as a team we could improve our work practices in the future.

8.14 Working Near Moving Traffic

When working on or near the traveled way for any amount of time, workers must be aware of the hazards from errant vehicles. If available, a vehicle, regardless of its size, shall be used as physical protection from traffic. Workers on foot shall face traffic whenever possible. Always be aware of potential protective barriers such as guardrails, trees, or other natural obstacles that could be used to shield you from errant vehicles. If physical protection is not available, a lookout may be necessary (Refer to Warning Systems - Lookouts, Section 8.17).

Working on the shoulder of a highway requires the utmost caution and awareness. Employees have been killed or seriously injured being struck by errant vehicles leaving the traveled way. It is every employee's responsibility to be aware and watchful while performing work on the shoulder of any highway.

While working on the shoulder, it is imperative that you keep a vehicle or other means of physical protection between yourself and approaching motorists. Keep to an absolute minimum the time you stand or work at the rear of your vehicle.

While working or retrieving debris near or within a gore point, you must be keenly aware of the dangers traffic poses while entering and exiting the highway. The gore areas are decision points where motorists are normally paying attention to the task of either exiting the highway or merging with traffic.

Hazards exist primarily at two specific points; at the off ramp gore itself and on the right side of the on ramp gore point where motorists are usually looking over their shoulder or in the rear view mirror, not necessarily looking forward while preparing to merge with traffic.

For stationary operations in gore areas, ramp closures and barrier vehicles should be placed to ensure worker safety in addition to required lane or shoulder closures on the through lane. On and off ramps should be closed per Plate T-14 in Chapter 8. Barrier vehicles shall be parked across the ramp(s) to prevent traffic from going around the cones and signs. Special instances may require a deviation. If a deviation is required, please see Section 8.05 Changing Chapter Standards.

If you must work in a gore area for a short duration task, you shall have a barrier or shadow vehicle equipped with a truck mounted crash cushion and have a lookout. For short duration tasks, it is recommended that you close the ramps and call for a California Highway Patrol traffic break before performing the work. Use your vehicle to protect yourself from oncoming from traffic.

Traffic on two lane conventional highways is often lighter than on freeways. Workers cannot let this fact lull them into a false sense of security.
When working on conventional two lane roads, employees shall be aware that errant vehicles can enter the work area from either direction. Many two-lane operations involve short duration work such as fixing guide markers, straightening signs, and litter removal. These operations involve workers on foot, often next to the traveled way. In these situations, employees must make sure that they use their eyes and ears to look and listen for danger signals to ensure their personal safety.

It is recommended that employees who need to be highly visible during the day should wear proper warning garments as described in the Caltrans Safety Manual, Chapter 12, Section 12.20. In addition to standard warning garments (vest, coveralls, etc.), employees who need extra visibility should wear white coveralls or ANSI Class III warning garments if necessary to increase their visibility.

8.15 Facing Traffic (Employees on Foot)

Supervisors shall plan and supervise the work to minimize the amount of time employees will have their backs to traffic. A lookout should be used during these times to protect the employees while their backs are turned to traffic.

Unless there is a clear reason for doing otherwise, employees shall continually face oncoming traffic while working on or near the traveled way. This is the personal responsibility of every worker.

Facing traffic is the most important thing you can do to protect yourself and your co-workers while working on or near the traveled way. Facing traffic gives you a better opportunity to see and hear errant vehicles. This allows you a chance to move out of the way and warn fellow workers.

8.16 Crowding of Workers

Supervisors shall plan work so that each employee has adequate space to work safely.

Supervisors shall ensure that employees know their responsibilities for positioning themselves so that each employee has enough work space to work safely and avoid being struck by flying material or another worker's tools.

Workers shall avoid "bunching up", which increases traffic exposure and causes public concern.

8.17 Warning Systems-Lookouts

While working on foot on or near the traveled way, employees should normally be protected by protective vehicles/equipment, guardrail, or other physical means. Where the absence of such physical protection exposes workers on foot to errant vehicles, a person shall be assigned as a lookout according to circumstances described below.

1. A lookout shall be assigned if **all** of these conditions exist:

   (A) Work occurs on a roadway with a posted speed limit of 55-mph or more.

   (B) Workers are without physical protection.

   (C) Two or more people working close to each other.

   (D) Working within 30 feet of moving traffic.

   (E) A person is on foot.

2. A lookout is required for short duration work if a protective vehicle or other physical barrier is not provided.

The lookout shall continually watch approaching traffic for errant vehicles that may hit workers on foot. If trouble is suspected, the lookout shall warn the workers by yelling, using a vehicle or warning horn, a portable lookout alarm device, or any system capable of communicating the warning message. This warning is intended to give workers the time to use a planned escape route to avoid the errant vehicle.

A lookout shall not be assigned any other duties.

Lookouts shall be rotated often enough to keep them alert.

The supervisor may use a crew lookout whenever he or she thinks it is needed. Even if workers are physically protected, using a lookout may be beneficial.

Electrical and mechanical detection systems may be used to supplement the human lookout.

Slope watchers shall be used when working under unstable slopes where rocks may fall and injure workers. These slope watchers shall not be assigned to watch the slope and to lookout for traffic at the same time. Refer to the Maintenance Code of Safe Operating Practices, Slope and Embankment Maintenance, and Appendix E, Cut Slope Safety and the Caltrans Safety Manual, Chapter 21, Cut Slope Safety.

8.18 Parking

Before a vehicle is parked, the driver shall consider if the vehicle will be needed to perform the work. If not, the vehicle should be used for the physical protection of workers. If it is used for protection, refer to Section 8.11, Protective Vehicles. If it will not be used for physical protection or for work, the vehicle shall be parked where it will not affect passing traffic or interfere with the maintenance operation.

All vehicles should be parked on the same side of the highway (see Section 8.31, Maintenance Crews Working Across From Each Other).

If a vehicle is parked on the shoulder within 6 feet of a traffic lane on a multilane highway with a paved shoulder 8 feet or more in width for more than 20 minutes, then the shoulder must be closed as shown in Standard Plans T10. This is not necessary on city streets where parking is expected.

Whenever possible, enter or exit your vehicle on the side away from traffic, even through it may be harder to do so. This will reduce worker exposure. Avoid standing or working near the back or along the traffic side of vehicles. Also, workers should avoid working directly in front of vehicles due to the danger of roll ahead if struck.

8.19 Signs

Advance warning signs shall be placed when a stationary operation is on the traveled way, or is on the shoulder within 6 feet of a traffic lane on a multilane highway with a paved shoulder 8 feet or more in width. Also, warning signs shall be placed well in advance of the work, when traffic slows, changes lanes, or moves from its normal course of travel because of the work. The standard signs shown in MUTCD and CA Supplement (Part 6) and in Standard Plans T10 through T17 shall be used.

Portable signs should be placed on sign standards with two (2) or more orange flags. The sign standard shall be in an upright position with the center of the sign panel a minimum of 5 feet above the pavement. A cone shall be placed next to each warning sign. If portable signs are displaced or overturned during the work, they shall be immediately replaced. Portable signs shall be held in position with approved weighing devices only.

Use your vehicle to protect yourself from traffic while setting and retrieving warning signs. A shadow vehicle should be used for setting and retrieving warning signs for freeway lane closures. A shadow vehicle shall be used as a protective vehicle during the installation and retrieval of traffic cones and signs in the taper and tangent sections of a lane closure.

When work is temporarily stopped or finished and traffic is not affected, all signs shall be promptly removed, dropped down, or turned away from traffic. Using signs when they are not needed reduces their effectiveness. In addition, installing them when they are not needed increases worker exposure to traffic.

Extra warning signs may be used when appropriate. For example, if queues are expected to develop in lane closures with reversible control, extra W3-4 “BE PREPARED TO STOP” signs can be used.

Placing an advance warning sign, such as a W20-1 “ROAD WORK AHEAD” sign, on the rear of a vehicle in the actual work area does not provide adequate warning to traffic, and is not permitted. However, an advance warning sign may be used on an advance warning vehicle.

Signs on vehicles with messages such as "WARNING – THIS TRUCK MAKES FREQUENT STOPS" are advisory only and do little to protect the workers. They should only be used on low speed roads or city streets. When this type of sign is used, an amber light or FAS in the caution mode shall be used along with it.

Signs, such as W8-7 "LOOSE GRAVEL", W21-2 "FRESH OIL", etc., may be placed on barricades. The barricades shall be ballasted either internally or by means of sandbags placed on the lower parts of the barricade frame or stays. The sandbags shall not be placed on top of the barricade or, over any retroreflectorized barricade rail facing traffic.

8.20 Flagging Operations

Any time two-way traffic must share the same lane because of work in the other lane; a flagging operation must be set up. See Standard Plan T13.

Flaggers shall receive on-the-job training before going on duty and shall follow the flagging procedures described in Chapter 6C Temporary Traffic Control Elements and Chapter 6E Flagger control of the MUTCD and the CA Supplement. Flaggers will receive training and instructions based on the MUTCD and the CA Supplement and work site conditions that also includes the following:

(1) Flagger equipment which must be used.
(2) Layout of the work zone and flagging station.
(3) Methods to signal traffic to stop, proceed, or slow down.
(4) Methods of one-way traffic control.
(5) Trainee demonstration of proper flagging technique and operations.
(6) Emergency vehicles traveling through the work zone.
(7) Handling emergency situations.
(8) Methods of dealing with hostile drivers
(9) Flagging procedures when a single flagger is used (when applicable).

The training needs to be documented.

Flaggers should be rotated and relieved periodically to maintain alertness.

In areas where flagger visibility is reduced, it is recommended that flaggers wear warning garments as described in the Caltrans Safety Manual, Chapter 12, Section 12.20. In addition to standard warning garments (vest, coveralls, etc.), employees should wear white coveralls or ANSI Class III warning garments if necessary to increase visibility. Additionally, flaggers shall stand where they are most visible to approaching traffic and avoid areas of shade, shadows, etc., whenever possible.

On some two-lane roads one flagger may be used to control traffic. Traffic volume must be light and the length of the one lane section should be short so that one end is visible from the other. The sight distance for approaching vehicles must be long enough that traffic can be safely controlled from one end of the work zone. This method must be approved by the supervisor.

The cones on the centerline shown in Standard Plan T13 may be eliminated at the supervisor's discretion if a pilot car is used or an approved deviation is in place (See 8.05). The pilot car shall have radio contact with personnel in the work area and the maximum speed of the pilot car through the traffic control zone shall be 25 miles per hour.

The minimum distance required between the flagger and the work area is listed in Table 1, Standard Plan T13.

Flaggers shall be used when the drivers vision is impaired because of smoke or dust in work zones. They shall also be used to protect trucks that must turn on the traveled way to load or dump. The flagging procedures in Chapter 6C Temporary Traffic Control Elements and Chapter 6E Flagger Control of the MUTCD and the CA Supplement shall be followed.

Where the end of a one-lane section is not visible from the other end, the flaggers shall use 2-way radios or other positive means to maintain control of traffic.

Except for unusual circumstances or emergencies, flaggers should not be used on freeways.

Traffic signals may be used to control traffic on two lane roads. The operation must conform to Chapter 4D Traffic Control Features of the MUTCD and the CA Supplement. Attention is directed to Figures 6H-12 and 6H-14 of the CA Supplement.

8.20.1 Handling Emergencies Within the Work Zone

Warning signal for crew at the work area

Prior to going out on the job, crews shall establish a warning signal for the work area crew in case of an emergency.

Emergency vehicles

Supervisors shall ensure that all crew members are aware of the procedures to be used whenever emergency vehicles approach the flagger's station. Supervisors should also discuss emergency procedures with local law enforcement agencies, ambulance services, and fire departments. When certain types of work, such as blasting or extensive excavation makes the roadway impassable, advance arrangements should be made with the local police agency who has jurisdiction over the roadway.

When informed in advance of an approaching emergency vehicle, the flagger should clear an unimpeded path for the emergency vehicle by stopping traffic from all directions.

When no advance notice is given, first stop the emergency vehicle, and then stop all traffic including construction equipment to provide a clear path for the emergency vehicle to pass.

Violations of traffic control and hostile drivers

Flagger should warn the workers that a driver has run the flagger station. Stop all vehicles entering the work area, but do not put yourself in an unsafe situation. Plan your escape route before an emergency occurs.

When dealing with hostile drivers, be courteous and professional. Do not get involved in an argument with motorists or pedestrians.

If a motorist fails to follow your instruction and threatens the safety of the work area, or is hostile, note the vehicle license number and description of the vehicle and driver. Report the information to your supervisor for the purpose of filing a police report.

Collisions in traffic control zone

Flaggers must know how to handle collisions in traffic control zone and be prepared for emergency flagging operations.

In the event of a traffic collision, notify your supervisor and call for help.

If a collision happens in the line of waiting traffic, stay at your station and continue to control traffic until you receive instructions from your supervisor or a police officer.

If a collision happens within the controlled area, hold approaching traffic and follow instructions from the supervisor, the leadworker, or from a police officer.

8.21 Shoulder Closures

Working on the shoulder of a highway requires caution and awareness. Employees have been killed or seriously injured being struck by errant vehicles leaving the traveled way. It is every employee's responsibility to be aware and watchful while performing work on the shoulder of any highway.

While working on the shoulder, keep a vehicle or other means of physical protection between yourself and approaching motorists. Do not stand or work at the rear of the vehicle at any time.

Shoulder closures are used to guide motorists around stationary operations on shoulders. A shoulder closure is optional on unpaved shoulders and two-lane roads. It must be kept in mind that shoulder closures provide no physical protection.

A shoulder closure is required for a stationary operation on a multilane highway with a paved shoulder 8 feet or more in width whenever vehicles or equipment are parked on the shoulder within 6 feet of a traffic lane. Shoulder closures are to be set up as described on Standard Plans T10.

For Short Duration shoulder operations of 20 minutes or less, signs/channeling devices may be eliminated if a protective vehicle with activated flashing amber light is used.

Shoulders used as part time lanes should be closed in the same way as lanes are closed.

A properly placed barrier vehicle shall be used with shoulder closures to protect workers.

8.22 Moving Lane Operations/Closures

Before employees work in a moving lane closure, a discussion shall be held so that all involved employees will know what their role in the operation is and how to proceed safely.

In any slow moving operation the first vehicle in the lane approached by motorists shall be a shadow vehicle.

For information on vehicle spacing, vehicle positioning, and signing, refer to the Traffic Control System For Moving Lane Closure On Multilane Highways (Standard Plans T15 and T16) and on Two Lane Highways (Standard Plan T17).

All vehicles used as shadow trucks shall be equipped as defined in Section 8.11, Protective Vehicles. Radio communication in all vehicles is required.

Other requirements for moving lane closures and shadowing moving operations, found in the Maintenance Code of Safe Operating Practices, shall be followed.

Exceptions to this rule are tow trucks and snow removal/de-icing equipment.

8.23 Lane Closures

A lane closure shall be set if a stationary operation takes more than 2 feet or reduces the width to less than 10 feet of an existing lane on a multilane highway. To take up to 2 feet of a lane on a multilane highway without a lane closure, a cone taper shall be installed that begins at least 300 feet upstream from the work area. The taper shall have 28 inch cones spaced 50 feet apart.

The lane of a two-lane highway shall be closed if work reduces the width of a lane to less than 10 feet. Traffic shall not be moved across the center stripe without a lane closure or other means of traffic control.

A space of 6 feet should be maintained, whenever possible, between moving traffic and the work area. When closing a lane, a barrier vehicle or a shadow vehicle shall be used for the installation of the signs and the FAS if they can be placed while off the traveled way on the shoulder or median. A shadow vehicle shall be used as the protective vehicle during the installation and retrieval of traffic cones and signs in the taper and tangent sections of the lane closure. All devices placed in areas with no shoulders from an open lane require the use of a shadow vehicle for protection.

Lane closures shall be placed according to the Standard Plan T10, Traffic Control System for Lane Closure on Freeways and Expressways or the Standard Plan T11, Traffic Control System for Lane Closure on Multilane Conventional Highways.

If a lane closure begins to cause traffic to back up (commonly called queuing), the advance warning signs shall be moved back in advance of queuing, or portable changeable message signing (PCMS) shall be placed and maintained in advance of the upstream end of queuing. If the signs cannot be moved back, or the use of a PCMS cannot be employed, the lane closure should be removed. If the lane closure results in a significant traffic delay, the closure may need to be removed.

A PCMS may also be used to redirect traffic and relieve queuing. The additional PCMS may be used at key interchanges and exit ramps and other locations where traffic queues may be expected due to maintenance activities.

If for some reason, a lane cannot be closed utilizing the requirements of this section, a deviation may be warranted. See Section 8.05, Changing Chapter Standards.

8.24 Closing Auxiliary Lanes

Work occurring at the beginning of an auxiliary lane such as a truck lane or lane added to increase capacity, will require as a minimum, the shoulder closure plan shown on Standard Plan T10 plus these additional requirements:

(A) A W20-1 "ROAD WORK AHEAD" sign instead of the W21-5b "SHOULDER WORK AHEAD" sign on the shoulder upstream from the beginning of the auxiliary lane.

(B) Cones on the shoulder stripe from the W20-1 sign continuously to the auxiliary lane line.

(C) A C30 (CA) "LANE CLOSED" sign in the closed lane about 100 feet from its beginning and every 2,000 feet after that.

If the work site is a considerable distance from the beginning of the auxiliary lane and the above method is not practical, the lane shall be closed according to the Standard Plan T10. If the auxiliary lane is located at an exit ramp or connector, the closure plan in Standard Plan T14 shall be used.

8.25 Standard Exceptions to Lane Closure Procedures

(A) Limited Work on the Traveled Way, Without Lane Closures.

Short-Duration operations may be conducted on the traveled way without using a lane closure or signs. Pothole patching and debris retrieval, are examples of brief operations. To use this method all of the following conditions must exist:

(1) The traffic volume must be light. This means the worker can walk from the shoulder to the site on the traveled way, do the job, and walk back to the shoulder without interfering with traffic.

(2) Sight distance shall be at least 500 feet in each direction. Where 500 feet of sight distance is not available at the work site, one or more lookouts should be posted to extend visual coverage if necessary.

(3) Vehicles must be parked completely off the traveled way.

If all three of these conditions exist, the supervisor may instruct workers to perform the work on a specified section of highway without a lane closure. All of the following work methods shall be used:

(a) When the crew consists of at least two (2) workers, one (1) of the workers shall act as a lookout. The lookouts exclusive duty will be to continually watch for approaching traffic and to warn the worker whenever trouble is suspected.

(b) The lookout shall not carry a flag or paddle and shall do nothing to control or influence traffic. All workers shall be off the traveled way when traffic passes.

(c) Only one (1) production worker shall be on the traveled way, unless more are needed to reduce the exposure time.

(d) Workers shall face approaching traffic whenever possible.

(e) Workers shall have a planned escape route.

(f) A FAS in the caution mode or a flashing amber light shall be operating.

(g) W20-1 "ROAD WORK AHEAD" signs are not required, since passing traffic is not to be affected.

(B) Pavement Marking and Relamping Operations

A supervisor may allow pavement marking and relamping operations on the traveled way without a lane closure. The posted speed limit must be less than 55 miles per hour and the work must take less than 20 minutes to complete. The supervisor may also use devices such as signs, barrier vehicles, and lookouts to increase worker protection.

(C) Chain Controls

Lane closures are not required in chain control operations. However, on multilane highways, they may be used to create a cushion between Caltrans workers and fast vehicles leaving the snow area. In addition, a supervisor may use lookouts and barrier vehicles to increase worker protection.

(D) Moving Shoulder Operations

The supervisor may allow moving shoulder operations next to the traveled way without a lane or shoulder closure. Shoulder grading, mowing, and spraying operations are examples of moving shoulder operations. The work must leave at least 10 feet of the lane next to the shoulder open to traffic. On two-lane conventional highways, traffic shall not be moved across the center stripe without a lane closure or other means of traffic control.

8.26 Flashing Amber Lights and Rotating Amber Lights

Amber lights shall be used to alert motorists to work activity near, but not on, the traveled way. Amber lights are not to be used while driving at prevailing speeds, when parked in an established lane closure, or when no danger to the employee or motorist exists.

Warning lights, to be effective, must only be used when they are needed.

Flashing Amber Light includes such devices as flashing lights, rotating beacons, or light/stick bars.

Flashing and/or rotating amber lights are to be used on motor graders, snow removal equipment,

and other specialized equipment that are operated on the traveled way at lower than prevailing traffic speeds.

Flashing amber/rotating lights are to be used on pilot cars not having a FAS. A flashing amber light should not be used at the same time as a flashing arrow sign because the arrow becomes more difficult to read. If the vehicles are equipped with both, do not use at the same time. During the hours of darkness, or during periods of inclement weather, amber lights should be used with discretion. At times, the vehicle emergency flashers may be more effective.

8.27 The Use of the Flashing Arrow Sign (FAS)

Arrow messages pointing left, right, or to both sides, are to be used as action messages. An arrow is to be used only when requiring the motorist to change lanes. An arrow message is not to be used when a vehicle is parked in a closed lane unless it is being used for the arrow closing that lane.

The terms "arrowboard" and "flashing arrow sign" are synonymous. The Type I is approximately 8 feet x 4 feet , trailer mounted FAS. The Type II is approximately 6 feet x 3 feet ,vehicle mounted FAS. Flashing Arrow Signs have several modes. The caution mode has four lights flashing and the arrow modes flash right or left.

A FAS in the arrow (ALL lamps forming the arrowhead and shaft shall flash on and off simultaneously) or chevron mode may be used for stationary or moving lane closures. During hours of darkness, the FAS shall be dimmed to prevent blurring of the arrow image.

To alert the motorist to work activity near, but not on the traveled way, the caution mode of the FAS is to be used.

Any shadow vehicle working on the traveled way of a multilane highway outside of a lane closure must be run with a FAS board in an arrow mode.

Work vehicles that are being shadowed should usually not display a FAS. Two partially superimposed FASs may not give a clear message.

8.28 Placing the Flashing Arrow Sign (FAS)

The flashing arrow sign (FAS) should be placed on the shoulder at the beginning of the taper as shown in Standard Plan T10. If there is no shoulder, the FAS should be placed as close to the beginning of the taper as possible. A minimum 1500 feet of sight distance shall be provided where possible for vehicles approaching the first FAS.

If the FAS cannot be located properly, consider placing the taper in a different or safer location.

In multilane closures on freeways and expressways (Standard Plan T10), one FAS must be used for each lane closed. The first FAS used should be a Type 1. The second and succeeding FAS may be either a Type 1 or Type 2.

8.29 Working Equipment Against Traffic

Operating equipment against traffic is permitted when working on the shoulder or within a lane closure. This may be desirable in some cases, such as during crack sealing operations, where employees would have the added protection of the work vehicle between themselves and approaching traffic. Headlights shall be turned on during the daylight hours when working against traffic. They should be turned off at night when working against traffic, because they might confuse motorists.

8.30 Access to Median Work Zones

(A) Workers should not walk across traffic lanes to work in median areas. They shall drive into the median area and park when possible. However, the width and condition of the median must be considered. If the area is too narrow, wet, sandy or is difficult to accelerate from, it should be avoided.

(B) If it is not possible to park in the median area and crossing on foot is necessary, the following rules must be followed:

(1) Workers shall not run. They shall wait for a break in traffic adequate to allow them to walk across the lanes.

(2) Workers shall not carry tools or items that would slow them down and make the crossing unsafe.

(3) If the traffic is too heavy and a traffic break is not available, workers shall wait for a safer time to do the job. If they must cross, they shall call for traffic control or ask for a CHP traffic break.

8.31 Maintenance Crews Working Across From Each Other

Maintenance crews shall not work on opposite sides of a highway, directly across from each other.

The intent of this guideline is to prevent the channeling of vehicles traveling in the same direction on a freeway or causing vehicles to cross the centerline of a two-lane highway.

Crews shall not perform work directly across from each other on opposite sides of a highway unless there is a median barrier or other divider. (For example, tree crew in shoulder closure working directly across from crew in the #1 lane). A distance of at least 2,000 feet must be kept between operations if work must be accomplished at the same time.

However, if flaggers, stop signs, or traffic signals positively control the traffic, the work sites can be closer.

NOTE: This applies to stationary operations and not when a moving operation, such as sweeping, striping, or spraying, temporarily passes a stationary operation.

8.32 Picking Up Litter and Debris

Normally, the safest way to pick up litter is to work individually and always face approaching traffic. Trucks should be parked away from the work area unless needed to provide protection from traffic. The workers may be dropped off and picked up later. The practice of employees walking beside a truck loading litter with a pitchfork or other hand tool should be avoided.

In narrow medians, protective vehicles may be necessary at both ends of the work area.

Litter bags should not be filled so full that they are too hard to lift. The bags should be placed where workers can easily pick them up with minimum exposure to traffic. When possible, the bags should be stockpiled to reduce the number of stops needed for bag removal.

Do not place hypodermic needles in litter bags. For more information, refer to the special instructions for the Disposal of Hypodermic Needles in the Maintenance Code of Safe Operating Practices. Other sharp objects, heavy metal objects, tire caps, or concrete chunks should not be placed in litter bags. These items could seriously injure the person who picks them up.

When retrieving debris from a freeway lane, workers shall wait for a break in traffic. A break in traffic is defined as all lanes clear of traffic long enough for the employee to walk out, retrieve the debris, and walk back to the shoulder. If no traffic breaks occur, contact the CHP to provide one.

Workers shall not try to flag traffic, use hand signals, or otherwise attempt to create a traffic break.

When debris is retrieved from the traveled way, workers shall follow these guidelines:

(A) Workers shall remain in the vehicle until the traffic break approaches.

(B) An escape route shall be planned before leaving the vehicle. The vehicle shall not be parked where it will block the workers' escape route.

(C) When workers are on foot, their vehicle shall be kept between themselves and approaching traffic. Workers shall walk on the outer edge of the shoulder, staying as far from moving traffic as possible.

(D) Workers shall always face approaching traffic.

The above procedures, except the traffic break, should be followed when removing debris from shoulders.

8.33 Night Work

Extra caution is necessary at night when both motorist and worker visibility is reduced.

Each employee must be informed about the hazards of working at night. Careful planning is necessary, and all the potential problems that may be encountered while working on or near the traveled way should be considered. The use of MAZEEP will enhance the protection of workers in lane closures.

During the hours of darkness, workers on foot must wear the proper warning garments as described in the Caltrans Safety Manual, Chapter 12, Section 12.20, which includes white coveralls with reflective striping, white coveralls with the standard reflective vest, or ANSI Class III vest and pants.

The rain gear jacket shall be reflectorized for nighttime wear. Reflective material may also be worn on hard hats.

Sufficient light should be provided at the work site. Light plants, floodlights, or work lights shall be mounted and directed in a manner to allow employees to work safely and to prevent glare to approaching traffic.

Because of the risk to workers, nighttime call outs should be kept to a minimum. If there is no danger to the public, environment, or roadway, repairs should wait until the next day. For example, if the damaged facility does not encroach on paved shoulder areas or is more than 3 feet from the traveled way in unpaved shoulder areas, there should not be a nighttime call out except to place barricades. It is up to the supervisor to decide when it is appropriate to call out a crew for quick, temporary repairs, or to wait until daylight.

Call outs should be made when warning or regulatory signs have been knocked down and pose immediate danger to the motorist. Also, supervisors should consider responding at night for broken water lines, damaged phone or electrical lines, or spills where environmental damage may occur.

Each district will advise all local law enforcement agencies of this call out policy.

During nighttime lane closures, all traffic cones shall be retroreflective as described in Chapter 6F of the MUTCD and the CA Supplement.

All warning signs used at night shall be made with high performance retroreflectorized sheeting.

During hours of darkness, the lights on the Flashing Arrow Sign shall be dimmed to prevent blurring of the arrow image.

8.34 Transportation of Workers

Workers shall be transported in vehicles equipped with seats and seat belts. Workers shall not be allowed to ride in the beds of dump trucks, buckets of loaders, on the sides or running boards of vehicles, or any other place on a vehicle or equipment that was not designed for driving or riding.

8.35 Operating Maintenance Equipment

Employees must be properly licensed, trained, and qualified prior to operating equipment unsupervised. META (Maintenance Equipment Training Academy) guidelines for the Qualification Program are available in the Division of Maintenance web pages. District META coordinators may be contacted for assistance in locating the nearest Qualifier or Trainer.

8.36 Backing of Vehicles and Equipment

Backing accidents have always been the most prevalent type of vehicle accident. Because so many of the tasks Maintenance employees perform involve the backing of vehicles and equipment, the potential for serious accidents exists, and extra emphasis must be placed on preventing their occurrence.

Methods to avoid backing accidents should be discussed at regularly-scheduled crew tailgate safety meetings. Any close calls that occur should be discussed, along with ways to prevent a recurrence.

A. Prior to Job/Planning the Work

1) Supervisors should plan work projects to minimize the need for backing of vehicles and equipment whenever possible. For example, the forward mode of cone retrieval should be utilized for retrieving lane closures.

2) Design the work space to eliminate or decrease backing and blind spots; when feasible pull trucks into the work zone and let the operation catch up to them.

3) At tailgate safety meetings, prior to the job, discuss how and when vehicles will be backing within the work zone and specific measures that will be taken to prevent an accident.

B. Safety at the Worksite

1) Workers on foot will be separate from equipment as much as possible: ensure that employees on foot stay out of the work area and in clear view of those who are operating equipment.

2) Minimize the distance heavy equipment needs to back up in order to gain access to the work area.

3) Employees should never move equipment without making positive visual contact with any workers on foot around or near the equipment.

4) In work zones where moving equipment has the potential to strike a worker on foot, employees shall not place themselves in or near the path of backing vehicles and should not enter the work area until it is clear for hand work. One person should be designated as a lookout while vehicles/equipment are moving within the work area.

5) Every backing situation is new and different. Even if you work at the same location several times a day, you should be watchful for changes and any new obstacles.

6) Use a spotter. The driver and spotter should use hand signals instead of verbal ones and make sure they understand each other's signals. Don't have the spotter walking backwards while giving instructions.

7) During shoulder or pavement rolling operations, make sure all workers on foot are clear of the work area before moving any vehicles/equipment.

C. Personal Responsibilities

1) Employees operating vehicles and equipment must be familiar with the blind spots for the particular equipment they are operating. Remember that mirrors can never give the whole picture while backing.

2) Train workers on foot and equipment operators in appropriate communication methods (e.g., using hand signals and maintaining visual contact) to be used when workers on foot are required to be in the same area as equipment.

3) Do a walk-around of your vehicle before entering. Check for obstructions, low-hanging trees and wires, and any other potential clearance-related problems.
4) On-foot personnel need to make sure they are a safe distance from vehicles in the work area. Do not stand where the operator cannot see you; a vehicle that has the potential to back up could run you over.

5) Although a flagger's primary job is to control traffic, they could assist workers on foot by acting as an additional lookout at the jobsite.

D. Working with Vendors/Contractors

1) When working with others who may not be a part of your crew, you must realize that their safety practices and procedures may be different than ours. This becomes especially important when vendor vehicles are backing within your work zone.

2) Discuss backing procedures and practices with the affected personnel/vendors before the job begins, if possible. If not, use extra caution when vendor vehicles enter the work area.

3) Make sure that vendor trucks and equipment operating in your work area have functioning back alarms. If they don't have a back alarm or it isn't working properly, tell your supervisor immediately, tell your co-workers, and also advise the driver.

4) If possible, designate a lookout to monitor vendor truck movements, especially if the task involves backing into an asphalt paver, backing from a staging position, or similar activity where employees are on foot in the work zone.

8.37 Working on Machinery and Equipment

Workers shall not work on electrical or mechanical equipment unless they are properly trained and authorized by their supervisor to do so.

Every power driven machine equipped with lockable controls or readily adaptable to lockable controls shall be locked out or positively sealed in the "off " position during repair, servicing or adjusting work. Machines not equipped with lockable controls or readily adaptable to lockable controls shall be de-energized or disconnected from its source of power. In all cases, accident prevention signs and/or tags shall be placed on the controls of the machines during repair work.

No one shall remove the tag or unlock the switch except the person who placed it.

During repair, machines or equipment shall be effectively blocked or otherwise secured to prevent accidental movement if such movement can cause injury to employees. For example, before working underneath any vehicle and/or equipment to adjust or inspect it, steps shall be taken to ensure that the vehicle cannot move. Shut off the engine, set the brakes, and physically block the wheels with wheel chocks before any work begins.

Remove the keys from the vehicle and place a "Do Not Operate" tag in the ignition switch, on the steering wheel or some other very visible location. When working on a motor grader or other equipment that has implements such as blades, plows or buckets attached, you must lower them to the ground or block and/or chain them up before working underneath them.

Never get under a vehicle or equipment supported only by a jack or held up only by the equipment's lifting system. Use an approved safety stand or other device designed to support the load. Do not use makeshift or homemade devices or unstable materials.

Do not work under a raised dump bed or other raised vehicle bed, unless the safety stand is in place. Raise the bed, place the stand in its holder and lower the bed onto the stand before beginning the work.

Depressurize air and hydraulic hoses before working on them. Do not search for hydraulic leaks with your hands; use a piece of wood or cardboard. Hydraulic fluid or air under pressure could enter your skin and cause serious injury.

Bleed pressure on spray tanks before opening or working on them. This includes chemical spray tanks, emulsion tanks on trucks or trailers, and even Hudson-type pump sprayers.

Before adjusting, cleaning, or repairing brush chippers, read the operators manual and take steps to ensure that all potential energized parts have been locked out. This includes the guillotine guards on those so equipped and all parts of the rotating drum.
Do not operate equipment or machinery without the required guards or shields in place.

During adjusting or cleaning operations, never reach into the operating equipment. Use an extension tool or other means of removal if necessary—not your hands.

This information is provided to help employees comply with the General Industry Safety Orders, Section 3314, Cleaning, Repairing, Servicing and Adjusting Prime Movers, Machinery and Equipment.

8.38 Tailgates of Trucks

Each year, employees are injured (smashed fingers) removing debris or rocks from dump truck tailgates. Do not use your hands or fingers to clear debris from the tailgates of dump trucks. Use a shovel, digging bar, or other tool to remove debris.

8.39 Compressed Air

When using compressed air, always wear safety glasses.

Never use compressed air to transfer liquids from one tank to another unless tanks are designed for such service.

At no time shall compressed air be directed toward a person. When compressed air is used, all necessary precautions shall be taken to protect persons from injury. Do not use compressed air to “blow down” clothing or skin. Compressed air nozzles must be of the safety type that limits pressures to 10 psi or less.

Tanks or drums not designed for use as compressed air tanks shall not be filled with compressed air.

Air hoses shall be checked regularly to ensure that they are in good condition. Cracked or leaking hoses shall be removed from service and replaced. Compressed air tanks should be checked and drained weekly or more often if conditions warrant.

Compressed air-tank operating permits should be conspicuously displayed and kept current. Air tanks shall be inspected as required by the Unfired Pressure Vessel Safety Orders, 8CCR Section 461.

All compressed air equipment and plumbing shall meet the requirements of the Unfired Pressure Vessel Safety Orders.

Compressors that start automatically require a warning sign.

8.40 Work On Electrical Circuits

Only qualified and trained persons shall work on electrical equipment or systems. All work performed directly on or in proximity to electrical installations, equipment or systems operating or intended to operate at 600 volts or less shall comply with the Low Voltage Electrical Safety Orders. All work performed on systems operating at more than 600 volts shall comply with the High Voltage Electrical Safety Orders.

The Codes of Safe Operating Practices for work performed on electrical equipment or systems contain more information on the specific hazards and on the proper safety procedures to follow while performing the work. Never work on energized electrical systems unless you are properly equipped and trained to do so.

This section does not apply to installations of conductors and equipment in vehicles operating at less than 50 volts, or to their ignition systems.

8.41 Working Near Utilities

(A) Overhead Utilities:

Workers shall not be required or permitted to perform any function in proximity to energized high voltage lines. Any activity where any parts of tools, machinery, or materials that an employee is touching or any part of an employee's body will come closer than the minimum clearances from energized overhead lines set forth in the following table is prohibited. Employees who work in proximity to or will come within the clearances of the table of any overhead lines will be trained in the hazards and identification of types of overhead lines. If lines are low voltage (less than 600 volts) a minimum clearance of 3 feet will be maintained at all times unless lines are de-energized and grounded. All overhead lines will be considered energized unless de-energized and grounded at the site by the utility operating the line.

Boom equipment must not be operated where the boom could come within the minimum required clearance set forth in this table. Hoisting over energized lines is prohibited.

Nominal Voltage (Phase to Phase)	Minimum Required Clearance (Feet)	Minimum Required Clearance (Meters)
600 50,000	10	3
Over 50,000 75,000	11	3.4
Over 75,000 ... 125,000	13	4
Over 125,000 …175,000	15	4.6
Over 175,000 … 250,000	17	5.2
Over 250,000 … 370,000	21	6.4
Over 370,000 … 550,000	27	8.2

Over 550,000…1,000,000	**42**	**12.8**

Figure 8-2: Overhead Utilities

If downed power lines are located, workers shall not try to move or repair them. They shall stay clear and call the experts; normally, the local power company will respond.

(B) Underground Utilities:

Before any digging or excavations are begun, the area shall be checked to determine if there are any buried utilities. Some examples of digging or excavations requiring checking would be installing a new sign post, guide marker, snow pole, shoulder grading or ditch/culvert cleaning.

Utility markers or buildings that have no above ground source of power can indicate underground utilities. If the excavation will be conducted in an area which is known, or reasonably should be known, to contain subsurface installations, only hand tools shall be used for digging.

The Superintendent or supervisor shall notify the appropriate Regional Notification Center for operators of subsurface installations at least two (2) working days, but not more than 14 calendar days, prior to commencing any excavation with power tools.

The Regional Notification Centers include but are not limited to the following:

NOTIFICATION CENTER	TELEPHONE
Underground Service Alert Northern California (USA)	1-800-642-2444
Underground Service Alert Southern California (USA)	1-800-422-4133

If the excavation will be conducted in an area which is known, or reasonably should be known, to contain Caltrans electrical facilities, the Superintendent or supervisor shall notify the Electrical Supervisor for the area, prior to commencing any excavation.

In all cases, location of underground utilities, or a clearance, will take place before excavation or digging begins.

8.42 Ladders

Ladders shall be maintained in good condition at all times. The joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.

Metal ladders shall not be used while working on electrical equipment. All metal ladders shall be marked with a sticker or stencil that clearly says: "Caution–Do Not Use Around Electrical Equipment."

Supervisors shall periodically inspect ladders for wear and damage. All ladders shall be cleaned of oil, grease, or slippery materials. Ladders which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as 'Dangerous, Do Not Use'.

When using ladders, always face the rungs and use both hands. Do not carry materials or equipment while using a ladder.

8.43 Confined Spaces

Workers need to be aware of confined spaces and their hazards.

A confined space is any enclosed location where:

(A) An employee can physically enter, **and**

(B) Has limited or restricted means of entry or exit, **and**

(C) Is not designated for continuous employee occupancy.

For Caltrans employees, confined spaces include enclosed locations such as tanks, sumps, drain inlets, bridge cells, shafts, pits, bins, tunnels, tubes, pipelines, trenches, vaults, vats, pump houses or compartments, sewage lift stations, culverts, or similar type enclosures. No person will be allowed to enter a confined space unless all workers involved have been trained in the hazards, operating and rescue procedures, the Caltrans Confined Space Program (Chapter 14 of the Caltrans Safety Manual), and the Maintenance Confined Space Entry Procedures (Appendix B in the Maintenance Code of Safe Operating Practices). Additionally, no entry will be permitted unless the necessary air monitoring has been done, and a "Confined Space Entry Form" (PM-S-0040) has been completed. Supervisors must ensure workers are properly trained, and that the confined space operating procedures are being followed.

NOTE: Caltrans employees will not enter confined spaces with known or expected hazardous atmospheres—such as oxygen < 19.5% or > 23.5%, LEL > 1%, Hydrogen Sulfide > 10 ppm, Carbon Monoxide > 25 ppm. If employees experience symptoms of over-exposure---GET OUT---then attempt to determine cause. Contact the supervisor and the Safety Office for assistance.

All employees who will enter a confined space or are involved with confined space operations must be trained in Confined Space Safety every two (2) years.

8.44 Trench And Excavation Safety

Employees shall review Appendix D "Trench and Excavation Safety Guidelines" in the Maintenance Code of Safe Operating Practices before digging, drilling, or working in or near trenches or excavations. Supervisors shall ensure employees understand and follow these guidelines.

Caltrans workers shall not enter any trench or excavation until a supervisor or Superintendent has inspected the trench/excavation and the surrounding area to identify and/or correct any hazards. The supervisor or Superintendent must be competent and knowledgeable about soil classification, shoring/sloping techniques and requirements, access requirements, and the hazards of underground work. The inspection will be documented.

All trenches/excavations 5 feet or more in depth must be shored or sloped. Shallower trenches/excavations must be shored or sloped if needed. Also, a proper means of access (ladder, ramp, etc.) is required for all trenches/excavations.

If there is any doubt about the safety of an excavation, DO NOT ENTER. Obtain an engineering opinion and/or safety review before any work starts.

All work in trenches/excavations shall comply with the Construction Safety Orders, Article 6, Excavations (8CCR Sections 1540-1543).

8.45 Use of Reclaimed Water

Before employees use reclaimed water, they shall be told about the potential health hazards involved with contact or accidental ingestion of reclaimed water. They shall also be trained how to properly clean up after using it.

Reclaimed water must meet applicable coliform and health standards before it can be used by Caltrans personnel for irrigation or dust control. The county health department shall be contacted for guidance.

Contact with reclaimed water shall be kept to a minimum. Workers shall use impermeable (rubber) gloves and appropriate protective clothing. Supervisors should contact the local supplier to determine what other specific precautions should be taken.

Employees must have clean water and soap available at the work site when using reclaimed water. Workers shall be instructed to wash their hands thoroughly before eating, drinking, smoking, or going to the bathroom.

More information on the use of reclaimed water is found in the Maintenance Code of Safe Operating Practices.

8.46 Handling Chemicals and Hazardous Substances

Employees handling or exposed to hazardous materials will be trained in the hazards, proper handling, use, and disposal of the material before use. The Material Safety Data Sheet (MSDS) shall be reviewed and readily available. See Chapter 16, "Hazardous Materials Communication Program" of the Caltrans Safety Manual for specific requirements.

Employees responding to highway spills will follow Chapter "D5" of the Maintenance Manual, Volume 1, the First Responder Operations Reference Manual, and the Emergency Response Guidebook.

All disposal and storage of waste will comply with the Maintenance Hazardous Waste Manual.

Use of pesticides/herbicides will comply with Chapter "C2", Vegetation Control, of the Maintenance Manual, Volume 1.

Contact the supervisor, safety office, Maintenance Hazardous Materials Coordinator, or Maintenance Landscape Specialist, for additional help or assistance.

8.47 Radioactive Incidents

See Chapter "D5" – "Spills of Substances on Highway Rights of Way" and the First Responder Operations Reference Manual.

8.48 Explosives

Care in handling and storing explosives are specified in Chapter 5 – Blasting.

The Standard Plans T-10 through T17 contained in this Chapter 8 booklet have been printed utilizing the English measurement system. Any questions regarding these plans shall be directed to Headquarters/District Traffic Operations.

APPENDIX T10 - Traffic Control System For Lane Closure on Freeways and Expressways

APPENDIX T10A - Traffic Control System For Lane And Complete Closures on Freeways and Expressways

APPENDIX T11 - Traffic Control System For Lane Closure on Multilane Conventional Highways

APPENDIX T12 - Traffic Control System For Lane Closure on Multilane Conventional Highways

APPENDIX T13 - Traffic Control System For Lane Closure on Two Lane Conventional Highways

APPENDIX T14 - Traffic Control System For Ramp Closures

APPENDIX T15 - Traffic Control System For Moving Lane Closure on Multilane Highways

APPENDIX T16 - Traffic Control System For Moving Lane Closure on Multilane Highways

APPENDIX T17 - Traffic Control System For Moving Lane Closure on Two Lane Highways

U.S. Department of Transportation
Federal Highway Administration

FHWA Home | Feedback

FHWA Policy Memorandums - Manual on Uniform Traffic Control Devices

Memorandum

U.S. Department of Transportation
Federal Highway Administration

Subject: **INFORMATION:** Optional Use of Acknowledgment Signs on Highway Rights-of-Way

Date: August 10, 2005

From: J. Richard Capka
Acting Administrator

Reply to Attn. of: HOTM-1

To: Associate Administrators
Chief Counsel
Directors of Field Services
Resource Center Director and Operations Managers
Division Administrators
Federal Lands Highway Division Engineers

It is the Federal Highway Administration's (FHWA) policy to allow the use of signs to acknowledge the provision of highway-related services. State and local programs for acknowledgment signs are growing in popularity because they can provide additional revenue for highway facility maintenance programs. Therefore, we are issuing this guidance memorandum to set forth the distinction between advertisement and acknowledgment signs, and provide guidance on the content and placement of acknowledgment signs. Although the information contained in this memorandum is considered policy guidance, the FHWA intends to propose these provisions in the rulemaking for the next edition of the Manual on Uniform Traffic Control Devices (MUTCD). The proposed rulemaking will more clearly identify standards, guidance, and options and the public will have an opportunity to provide comments.

This policy memorandum on acknowledgment signs replaces the previous policy memorandum dated October 29, 2003, and applies to both corporate and volunteer sponsorship programs. The term "highway" is used in a generic way throughout this memorandum to apply to all streets and roadways open to public travel. The guidance provided in this memorandum applies to new and modified installations and is intended to promote a degree of national uniformity and consistency. Existing acknowledgment signs already installed do not have to be changed. However, we encourage State and local highway agencies to consider the guidance provided in this memorandum when replacing or upgrading existing signs. While this guidance provides flexibility to the States and local highway agencies, attempts should be made to follow good, basic engineering practices such as simplifying sign message content, reasonable sign sizes, and minimizing driver distraction.

Acknowledgment signs are a way of recognizing a company or business, or a volunteer group that provides a highway-related service. Acknowledgment signs include sponsorship signs for adopt-a-highway litter removal programs, maintenance of a parkway or interchange, and other highway maintenance or beautification sponsorship programs. Acknowledgment signs should clearly indicate the type of highway services provided by the sponsor. The FHWA recognizes a distinction between signing intended as advertising and signing intended as an acknowledgment for services provided. Advertising generally has little if any relationship to a highway service provided. The advertiser basically wants to get its recognizable message, company emblem, or logo before the public, and if possible, information on how or where to obtain the company's product or services. In most cases, if the sign goes beyond recognizing the company's contribution to a particular highway service at a specific highway site or includes telephone numbers or internet addresses, the sign is more properly classified as an advertising sign and not an acknowledgment sign.

Use of highway right-of-way for advertising purposes is not allowed. This policy position is consistent with the principles and intent of several laws including 23 U.S.C. §1.23(b), 23 U.S.C. §109(d), and 23 U.S.C. §131. The MUTCD Section 1A.01 states that "Traffic control devices or their supports shall not bear any advertising

message or any other message that is not related to traffic control." This position is founded on safety and operational concerns, particularly as related to driver distraction. Highway signs and other traffic control devices convey crucial information. In order for road users to perceive and respond appropriately to critical information, we must make sure that its conspicuity is preserved so that the safe and orderly movement of traffic is not compromised.

If a State or local highway agency elects to have an acknowledgment sign program, then that agency should develop an acknowledgement sign policy. This policy should include requirements that eligible sponsoring organizations must comply with State laws prohibiting discrimination based on race, religion, color, age, sex, national origin, and other applicable laws. State or local agencies must also be aware of and comply with the general provisions for signs as covered in Chapter 2A of the MUTCD and sign design principles covered in the Standard Highway Signs Book. The acknowledgment sign policy should conform at a minimum to the considerations for sign design and placement covered below.

Sign Placement:

With respect to placement of traffic control signs, regulatory, warning, and guide signs have a higher priority than acknowledgement signs. In fact, acknowledgment signs are the lowest priority of information-type signs and may only be placed where adequate spacing between higher priority signs is available. In no case shall the acknowledgment sign be placed such that it obscures road users' view of other traffic control devices. The following minimum spacing is recommended:

1. On roads with speed limits of less than 30 mph, acknowledgment signs should not be placed within 150 feet of any other traffic control signs, except parking regulation signs.
2. On roads with speed limits of 30 to 45 mph, acknowledgment signs should not be placed within 200 feet of any traffic control signs, except parking regulation signs.
3. On roads with speed limits greater than 45 mph, acknowledgment signs should not be placed within 500 feet of any traffic control signs, except parking regulation signs.

Due to public safety concerns, acknowledgment signs shall not be allowed at the following locations:

1. On the front, back, adjacent to or around any traffic control device, including traffic signs, signals, changeable message signs, traffic control device posts or structures, or bridge piers.
2. At key decision points where a driver's attention is more appropriately focused on traffic control devices, roadway geometry, or traffic conditions. These locations include, but are not limited to exit and entrance ramps, intersections controlled by traffic signals or by stop or yield signs, highway-rail grade crossings, work zones, and areas of limited sight distance.

If the placement of an acknowledgment sign conflicts with newly installed higher priority signs, or traffic signals, or temporary traffic control devices, or other priority devices, the acknowledgment sign should be removed, covered, or relocated.

Sign Design:

State or local highway agencies may develop their own acknowledgment sign designs and may also use their own pictograph logo and/or a brief jurisdiction-wide program slogan as part of any portion of the acknowledgement sign. However, all such designs shall be consistent with the following provisions:

- Does not contain any contact information, directions, slogans (other than a brief jurisdiction-wide program slogan, if used), telephone numbers, and internet addresses.
- Use the Standard Highway Signs alphabet series fonts. This does not apply to the sponsor acknowledgment logo.
- Have a sponsor acknowledgment logo that is not more than 1/3 of the total area of the sign. The reason for this is to keep the main focus on the highway-related service and not on the sponsor logo. The sponsor

acknowledgment logo may contain text, a sponsor logo, or both.

- Does not contain any messages, lights, symbols, and trademarks that resemble any official traffic control devices.
- Does not contain any light-emitting diodes, luminous tubing, fiber optics, luminescent panels or other flashing, moving, or animated features.
- Does not distract from official traffic control messages such as regulatory, warning, or guidance messages.

Examples of design layouts (D14-1, D14-2, and D14-3) are included as an attachment for consideration by State and local agencies interested in developing acknowledgment sign designs. These examples are intended as a starting point for those agencies that may be developing a new or modifying an existing acknowledgment sign program. If there are any further questions about this issue, please contact Mr. Hari Kalla at 202-366-5915 or via email at hari.kalla@fhwa.dot.gov.

Attachment: (PDF 233KB)
Page 1 shows the first of 3 sample acknowledgement signs with appropriate sizes and dimensions.
Page 2 shows the second of 3 sample acknowledgement signs with appropriate sizes and dimensions.
Page 3 shows the third of 3 sample acknowledgement signs with appropriate sizes and dimensions.

You will need the Adobe Acrobat Reader to view the PDF on this page.

AMERICANS WITH DISABILITIES ACT OF 1990, AS AMENDED

TITLE 42 - THE PUBLIC HEALTH AND WELFARE

CHAPTER 126 - EQUAL OPPORTUNITY FOR INDIVIDUALS WITH DISABILITIES

SUBCHAPTER II - PUBLIC SERVICES

Part A - Prohibition Against Discrimination and Other Generally Applicable Provisions

Sec. 12131. Definitions

As used in this subchapter:

(1) Public entity

The term "public entity" means

(A) any State or local government;

(B) any department, agency, special purpose district, or other instrumentality of a State or States or local government; and

(C) the National Railroad Passenger Corporation, and any commuter authority (as defined in section 24102(4) of title 49).

(2) Qualified individual with a disability

The term "qualified individual with a disability" means an individual with a disability who, with or without reasonable modifications to rules, policies, or practices, the removal of architectural, communication, or transportation barriers, or the provision of auxiliary aids and services, meets the essential eligibility requirements for the receipt of services or the participation in programs or activities provided by a public entity.

Sec. 12132. Discrimination

Subject to the provisions of this subchapter, no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of services, programs, or activities of a public entity, or be subjected to discrimination by any such entity.

TITLE VI OF THE 1964 CIVIL RIGHTS ACT
42 U.S.C §§ 2000d - 2000d-7
TITLE 42 - The Public Health and Welfare
SUBCHAPTER V - FEDERALLY ASSISTED PROGRAMS

Sec. 2000d. No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

(Pub. L. 88-352, title VI, Sec. 601, July 2, 1964, 78 Stat. 252.)

International Adopt-A-Highway Association Survey 2008						
What is the minimum adoption length?						
	None	**½ mile**	**1 mile**	**2 miles**	**Other**	**Response Count**
Urban	5.1% (2)	15.4% (6)	12.8% (5)	61.5% (24)	5.1% (2)	39
Rural	5.9% (2)	2.9% (1)	17.6% (6)	70.6% (24)	2.9% (1)	34

One response was 3 kilometer.

Deputy Directive

Number:	DD-39-R1
Refer to Director's Policy:	DP-03- Safety DP-08-Freeway System Management
Effective Date:	July 2009
Supersedes:	DD-39 (01-27-95)

TITLE Graffiti Prevention and Removal

POLICY

The California Department of Transportation (Department) maintains an aggressive graffiti prevention and removal program that supports and enhances public safety and community values.

DEFINITION/BACKGROUND

Graffiti is a significant problem in California, draining scarce resources from State and local agencies.

A successful graffiti prevention and removal program depends on the cooperation of local agencies to pull together a multifaceted attack through prevention, education, removal, and enforcement activities. Multiagency graffiti intervention committees (MAGIC) provide the opportunity to focus local resources to wage successful campaigns against graffiti. Volunteer groups and special programs people (such as California Conservation Corps, probationers, inmates, court referrals, and others) provide economical alternatives to the Department's work forces for graffiti removal.

RESPONSIBILITIES

Chief, Division of Maintenance:

- Leads the Department's Statewide Anti-Graffiti Committee, which also has representatives from each appropriate division, program or office, including Engineering Services, Health and Safety Program, Design, Research and Innovation, Landscape Architecture, and Traffic Operations.
- Prepares and submits a fiscal year report of the Department's graffiti abatement effort to the Director by the end of September, following the close of the fiscal year.

Chief, Division of Engineering Services:

- Implements design changes to facilities in order to discourage graffiti and facilitate its removal.
- Appoints a representative to serve on the Department's Statewide Anti-Graffiti Committee.

- Identifies chemical removers and protective coatings for signs and structures and maintains a listing of approved and unapproved products.
- Tests and evaluates effectiveness of chemical and mechanical-based cleaning systems.
- Communicates information on approved products to the Chief, Division of Maintenance.

Chief, Division of Traffic Operations:

- Approves chemical cleaners and anti-graffiti coatings that ensure reflectivity of signage is maintained.
- Appoints a representative to serve on the Department's Statewide Anti-Graffiti Committee.

District Directors:

- Direct staff to remove graffiti from traffic control devices as soon as possible, when traffic safety is affected, or the graffiti is of an obscene nature, and otherwise within ten days, as specified in Streets and Highways Code section 96.
- Provide special graffiti crews if needed to maintain adequate levels of service.
- Encourage formation of and participation in local multiagency anti-graffiti groups; for example, MAGIC, by providing meeting space, assisting local governments in coordinating efforts of graffiti abatement, and offering technical assistance.
- Assist local law enforcement agencies by providing information that may be helpful in the apprehension and prosecution of graffiti vandals.
- Cooperate, when such programs exist, with law enforcement agencies seeking restitution from graffiti vandals and their families.

The Department's Statewide Anti-Graffiti Committee:

- Provides for the effective use of volunteers and alternative labor forces in graffiti abatement.
- Recommends changes to standards, design of facilities, and procedures to aid in graffiti reduction.
- Guides the development and application of protective coatings for signs and structures, develops barriers to deny access to graffiti vandals, and explores cost-effective and aesthetically compatible methods of graffiti removal.

APPLICABILITY

All departmental employees involved in graffiti prevention and removal.

Randell H. Iwasaki

RANDELL H. IWASAKI
Chief Deputy Director

July 31, 2009
Date Signed