



TEMPORARY TRAFFIC CONTROL GUIDELINES FOR HIGHWAY-RAIL GRADE CROSSINGS

1.0 INTRODUCTION

1.1 Purpose

The Southern California Regional Rail Authority (SCRRA) is the designated track owner of the Metrolink railroad system under the Code of Federal Regulations (CFR), Title 49, Subtitle B, Chapter II, and part 213. As per these regulations, SCRRA is required to provide minimum safety requirements for railroad tracks that are part of the general railroad system of transportation. As part of these requirements, SCRRA also provides safety services for construction and maintenance activities in the vicinity of highway-rail grade crossings. This includes the review and approval of temporary traffic control measures at or in the vicinity of the crossings.

Safe and effective traffic control zone near a highway-rail grade crossing should be an integral and high-priority element of every project from planning through design and construction. Every effort should be made to provide safe conditions for drivers, bicyclists, pedestrians, employees, public, trains and vehicles. Location and duration of temporary traffic control, protection or lack of protection by railroad crossing warning system in both directions, type of rail and highway traffic and flagging can affect the selection of temporary traffic control, signs, signals, markings, lighting devices, barricades, hand signal devices, etc. These variable factors should be carefully studied prior to designing and implementing Temporary Traffic Control Zones. These guidelines provide acceptable methods of providing temporary traffic control measures at the highway-rail grade crossings that enhance the railroad crossing warning system for Road Users and trains.

The primary function of temporary traffic control is to provide for the safe and efficient movement of the roadway users and to provide protection to individuals and equipment within the activity area that has interrupted the normal use of the highway. These guidelines will provide acceptable alternatives and procedures to prescribe the appropriate temporary traffic control measure at highway-rail grade crossings.

The information provided in guidelines will be useful to consulting engineers and Public Agencies in planning, designing and implementing Temporary Traffic Control Zones within or in the vicinity of Metrolink System highway-rail grade crossings.

1.2 Scope

These guidelines are requirements for safe traffic conditions at or in the vicinity of highway-rail grade crossings. The requirements are not intended to be a substitute for engineering knowledge, experience or judgment, nor are these guidelines intended to establish a legal standard. It is expected that the railroad professionals and traffic engineers will review other documents for more detailed information. The material presented herein is not intended to serve as a statement of a standard or recommended practice in traffic engineering.



1.3 Definitions

Contractor	An individual, firm, partnership, corporation, or combination thereof, private, municipal or public, including joint ventures, who are referred to throughout this document by singular number and masculine gender. Contractor includes any sub-contractor, supplier, agent, or individual entering on or in the vicinity of the highway-rail grade crossings.
Intermediate-term Stationary	Work that occupies a location for more than one daylight period up to three (3) days, or nighttime work lasting more than one (1) hour.
Law Enforcement Officer/ Flagger	A person who provides temporary traffic control for the Road User.
Long-term Stationary	Work that occupies a location more than three (3) days.
Public Agency	The federal government and any agencies, departments or subdivisions thereof; the State of California; and any county, city, city and county district, public authority, joint powers agency, municipal corporation, or any other political subdivision or public corporation therein, requesting and sponsoring the temporary traffic control.
Road User	A vehicle operator, bicyclist, or pedestrian within the highway, persons with disabilities, including workers in Temporary Traffic Control Zones.
SCRRA Employee in Charge (EIC)	A Southern California Regional Rail Authority employee (SCRRA General Code of Operating Rules and territory qualified) providing warning to Public Agency or Contractor personnel of approaching trains or on-track equipment and who has the authority to halt work and to remove personnel from the railroad right-of-way to assure safe work.
Short Duration	Work that occupies a location up to one (1) hour.
Short-term Stationary	Work that occupies a location for more than one (1) hour, but less than 12 hours.
Traffic Control Device	A sign, signal, marking, and other device used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or shared-use path by authority of a Public Agency having jurisdiction.
Temporary Traffic Control Zone	An area of a highway where Road User conditions are changed because of a work zone or an incident by the use of temporary traffic control devices, Flaggers, police or other authorized



personnel.

2.0 REFERENCED STANDARDS

Temporary traffic control will comply with the current editions of the following referenced standards:

- “California Manual of Uniform Traffic Control Devices” (CA MUTCD) issued by the California Department of Transportation (Caltrans).
- “Work Area Traffic Control Handbook” (WATCH) published by Southern California Chapter of the American Public Works Association.
- “Temporary Traffic Control Work at or near Grade Crossing”, SCRRRA Engineering Standard ES4301.

3.0 TRAFFIC CONTROL PLANS

The traffic control plan should include the following information:

- Any necessary traffic control devices, such as signs, barricades, cones/delineators, flashing arrow signs (arrowboards), changeable message signs (CMS), temporary striping, and k-rail
- Locations of flaggers;
- Existing conditions and facilities such as roadway and lane dimensions, sidewalks, curbs, driveways, medians, parking conditions, existing striping and pavement markings, traffic signals, posted speed limits, and existing signs, as well as track location, right-of-way limits and property lines;
- Location, dimensions, and limits of the work area in the public or railroad ROW;
- Proposed work hours.

The traffic control plan should take into consideration all provisions for adequate clearances, lane closures based on traffic volumes, duration of traffic control, type of traffic affected, time of day, material and technique of repair, inconvenience, delay and accident potentials. Traffic control plans should be signed and stamped by a registered Professional Engineer (civil or traffic) licensed to practice in the State of California.

Every effort should be made to have in place emergency traffic escape routes on the downstream side of the highway-rail grade crossing. As many lanes as possible will be provided for traffic movement in each direction.

A visit to project site to study traffic conditions, traffic controls, traffic lane requirements, physical features, visibility, bicycle traffic and pedestrian traffic should be considered a part of the traffic control plan.

4.0 SUBMITTALS

Traffic control plans shall be submitted to SCRRRA for all activities located within or in the vicinity of highway-rail grade crossings. A written approval of the traffic control plan from SCRRRA and appropriate local statutory authority is required prior to initiating any construction activity. It will also be necessary to obtain SCRRRA’s written approval for any changes in traffic control plan.



SCRRA Engineering Standard ES4301, “Temporary Traffic Control Work at or near Grade Crossing” shall be consulted prior to preparing and finalizing traffic control plans. This standard shows a typical application and it should be modified to meet the needs of changing condition in the Temporary Traffic Control Zone. This standard is shown at the end of these guidelines. This standard is also available on our web site at www.metrolinktrains.com.

5.0 TRAFFIC CONTROL ELEMENTS

As mentioned earlier in Section 1.1, the location and duration of temporary traffic control, protection or lack of protection by railroad crossing warning system in both directions, type of rail and highway traffic and flagging can affect the design and selection of temporary traffic control plan. These variable factors should be carefully studied prior to designing and implementing Temporary Traffic Control Zones. The following are our requirements to integrate the various factors affecting the temporary traffic controls at or in the vicinity of highway-rail grade crossings. Refer to a flow chart that provides a quick reference to the relationship between railroad crossing conditions and traffic control requirements. The flow chart is shown at the end of these guidelines.

5.1 Work within Railroad Right-of-Way

An EIC and Law Enforcement Officer(s)/Flagger(s) will be present at all times at the crossing if all of the following conditions are met:

- Queuing of vehicles across the track(s) can not be avoided.
- Highway-rail grade crossing warning signal assembly with flashing-light signals and automatic gates are present in both directions at all times.
- The work is of Intermediate-term Stationary, Short-term Stationary, or Short Duration.

The highway-rail grade crossing will be completely closed to Road Users if all of the following conditions are met:

- The work is of Long-term Stationary duration.

The highway-rail grade crossing will be completely closed to Road Users if all of the following conditions are met:

- The work is of Intermediate-term Stationary, Short-term Stationary, or Short Duration
- Highway-rail grade crossing warning signal assembly with flashing-light signals and automatic gates are **not** present in both directions at all times.

The highway closure should be as illustrated on the WATCH manual and as illustrated on Part 6 of CA MUTCD. Additional traffic control measures, such as custom advisory signs, temporary striping, surface mounted channelizers, and other traffic control equipment will be provided for Long-Term Stationary work as required by Public Agencies and SCRRA. Temporary railings (type K) as per Caltrans Plan No. T3 to stop vehicle access across the railroad track(s) will be provided. The temporary railings should be a minimum of ten feet from the nearest rail and should be in addition to the “ROAD CLOSED AHEAD” (W20-3) signs and barricades.



The “DO NOT STOP ON TRACKS” (R8-8) should be prominently displayed on all approaches to a highway-rail grade crossing within the limits of a Temporary Traffic Control Zone.

SCRRA Form No.6 (Temporary Right-of-Entry agreement) will be executed and submitted when the construction activity or when Traffic Control Devices are located within the railroad right-of-way. Form No. 6 can be accessed through SCRRA’s website www.metrolinktrains.com.

5.2 Work in the Vicinity of Railroad Right-of-Way

A Law Enforcement Officer(s)/Flagger(s) will be provided at the crossing to prevent vehicles from stopping on the track(s) if all of the following conditions are met:

- Highway-rail grade crossing is within or in the vicinity of a Temporary Traffic Control Zone, lane restrictions, flagging, or other operations.
- Queuing of vehicles across the track(s) can not be avoided.
- Highway-rail grade crossing warning signal assembly with flashing-light signals and automatic gates are present in both directions at all times.

An EIC and Law Enforcement Officer(s)/Flagger(s) will be present at the crossing to prevent vehicles from stopping on the track(s) if all of the following conditions are met:

- Highway-rail grade crossing is within or in the vicinity of a Temporary Traffic Control Zone, lane restrictions, flagging, or other operations.
- Queuing of vehicles across the track(s) can not be avoided.
- Highway-rail grade crossing warning signal assembly with flashing-light signals and automatic gates are **not** present in both directions at all times.
- The work is of Intermediate-term Stationary, Short-term Stationary or Short Duration.

A Law Enforcement Officer(s)/Flagger(s) will be provided at the crossing to prevent vehicles from stopping on the track(s) and the active highway-rail grade crossing warning signal assembly with flashing-light signals and automatic gates must be temporarily relocated or installed, at Public Agency’s cost and expense, if all of the following conditions are met:

- Highway-rail grade crossing is within or in the vicinity of a Temporary Traffic Control Zone, lane restrictions, flagging, or other operations.
- Queuing of vehicles across the track(s) cannot be avoided.
- Highway-rail grade crossing warning signal assembly with flashing-light signals and automatic gates are **not** present in both directions at all times.
- The work is of Long-term Stationary duration.

The “DO NOT STOP ON TRACKS” (R8-8) should be prominently displayed on all approaches to a highway-rail grade crossing within the limits of a Temporary Traffic Control Zone.

SCRRA Form No. 5 (Indemnification and Assumption of Liability agreement) will be executed and submitted when highway-rail grade crossings exist within or in the vicinity of a Temporary Traffic Control Zone, lane restrictions, flagging, or other operations and queuing of vehicles across the track(s) cannot be avoided. This form can be accessed through SCRRA’s website www.metrolinktrains.com.



6.0 RESPONSIBILITY/AUTHORITY

6.1 Public Agency

Traffic control plans and devices are the responsibility of the Public Agency having jurisdiction for guiding Road Users.

Temporary traffic control planning and design shall be coordinated with SCRRA since Public Agencies and SCRRA are obligated to coordinate all installation, operation, maintenance, use and protection of grade crossings activities under the California Public Utilities Commission. In order to assure no degradation of the safe operation of grade crossings and to provide safe and efficient movements of trains, vehicles, bicyclists, and pedestrians, SCRRA must approve any and all temporary traffic control plans and devices.

The Public Agency shall reimburse SCRRA for all cost and expenses related to an EIC services.

If the Public Agency itself does the construction within or in the vicinity of the highway-rail grade crossings, the Public Agency will be responsible for all the requirements mentioned in Section 6.2.

6.2 Contractor

The Contractor shall obtain all necessary permits, provide timely notifications and coordinate the work with all affected Public Agencies. The Contractor shall submit and obtain written approval of the temporary traffic control plans from the Public Agency and SCRRA for all activities located within or in the vicinity of highway-rail grade crossing.

The Contractor will submit SCRRA Form No. 5 or Form No. 6 prior to any activities at or near highway-rail grade crossings as per requirements shown in Sections 5.1 and 5.2. SCRRA shall be notified in writing at least five working days in advance of any work on the temporary traffic control at the highway-rail grade crossings.

The Contractor will train all Flaggers in the proper fundamentals of flagging traffic before being assigned as Flaggers because the Flaggers are responsible for Road Users safety and because they make frequent contact with the public.

The temporary traffic control will be performed as per California State License Board rules and requirements.

Temporary Traffic Control Zones will be inspected regularly to check that applicable traffic control signs, signals, markings, lighting devices, barricades are effective, visible, clean, and in compliance with the approved traffic control plan. All temporary traffic control devices will be removed as soon as possible when they are no longer needed.

The Contractor shall cancel the temporary traffic control at the highway-rail grade crossing if requested by SCRRA for the conditions mentioned in Section 6.3 below.



6.3 SCRRA

SCRRA will review, comment and approve the temporary traffic control plans, SCRRA Form No. 5 or Form No. 6 submitted by the Public Agencies or the Contractors.

SCRRA will provide the services of an EIC, at the Public Agency's or Contractor's cost.

SCRRA will ask the Public Agency or the Contractor to cancel the temporary traffic control under any one of the conditions:

- The Public Agency or Contractor activity does not meet CA MUTCD Part 6 requirements,
- In the opinion of SCRRA the work interferes with or endangers the movement of Road Users and train traffic,
- Law Enforcement Officer(s)/Flagger(s) are not present at the highway-rail grade crossing, or
- The Flagger qualifications, clothing, hand-signaling devices, Flagger procedures and Flagger stations does not meet the SCRRA, CA MUTCD, WATCH or Caltrans requirements.

If any of the above unsafe conditions exist, the traffic control will be terminated immediately or as soon as practical and work may be resumed at a later date after approval has been granted by SCRRA.

6.4 Law Enforcement Officer/Flagger

Flagger qualifications, clothing, hand-signaling devices, Flagger procedures and Flagger stations shall meet the requirements as stated in the CA MUTCD, WATCH or Caltrans manuals.

A Flagger shall provide temporary traffic control, in conjunction with the required traffic control devices, such as warning signs, cones/delineators and barricades.

Flagger should familiarize themselves with the traffic conditions, traffic controls, traffic signals, physical features and visibility prior to performing temporary traffic control duties.

Flagger shall prevent vehicles from stopping within the highway-rail grade crossing, considered as being 15 feet on either side of the closest and farthest rail.

6.5 EIC

An EIC is referred to as providing "Flag" protection against trains. EIC have been trained and qualified in SCRRA's General Code of Operating Rules. EIC will provide selected training, job briefings and flag protection to assure both Public Agency's or Contractor's safe work environment and the safe passage of trains. EIC will provide warning to the Pubic Agency or Contractor personnel of approaching trains or on-track equipment. EIC will conduct job briefing at the start of the job and again as the conditions, job tasks and/or locations change. A job briefing will include information on type of track protection, limits of protection, time limits of the protection, how to clear



for trains and responsibility of each employee. EIC has the authority to halt work and to remove personnel from the right-of-way in order to assure safe work.

7.0 PEDESTRIAN AND BICYCLE TRAFFIC

Special consideration should be given to pedestrians and bicyclists safety when the work area encroaches upon a sidewalk, walkway, crosswalk, or bikeway within or in the vicinity of a grade crossing.