



RAIL-WITH-TRAIL DESIGN GUIDELINES

1.0 INTRODUCTION

1.1 Purpose

- 1.1.1 The Southern California Regional Rail Authority (SCRRRA) Board Members have asked its staff to develop Rail-with-Trail Design Guidelines to provide uniform and consistent standards for Rail-with-Trail design, construction and maintenance on the commuter and/or freight railroad right-of-ways. SCRRRA staff worked together with the Member Agencies staff in preparing and finalizing these guidelines. The proposed guidelines are intended to provide minimum standards and general requirements for the design, construction and maintenance of Rail-with-Trail in a manner compatible with safe operation of railroad corridors and with the rail capacity expansions envisioned for most corridors.
- 1.1.2 When a Rail-with-Trail is considered for joint use in an operating right-of-way, it should be considered in the context of the important priority role of a safe, maintainable rail transportation and freight corridor. Rail-with-Trail may affect SCRRRA's ability to provide commuter rail transportation and its obligation to the freight railroads under the Purchase and Sale and Shared Use agreements. However, Rail-with-Trail could be a community asset and when designed properly it can benefit SCRRRA, Member Agency and the communities where they are located. Rail-with-Trail can reduce nuisance problems, trespassing, dumping and vandalism; reduce illegal track crossings through channelization of pedestrians and bicyclists to grade-separated or other designated crossings; increase public awareness of the important service commuter and freight rail provide; increase property values; improve access to transit and transit stations; increase community aesthetics and provide alternative transportation options. These guidelines seek to balance SCRRRA's and Member Agencies' mandate to provide safe and efficient transportation to the public and the ability to meet interstate freight obligations.
- 1.1.3 SCRRRA is the designated track owner of the Metrolink railroad system under the Code of Federal Regulations (CFR), Title 49 "Transportation", Subtitle B "Other Regulations Relating To Transportation", Chapter II "Federal Railroad Administration, Department of Transportation", part 213 "Track Safety Standards", Section 5 "Responsibility of Compliance" (49 CFR 213.5). As per part 213, SCRRRA is required to provide minimum safety requirements for operation and maintenance of railroad tracks that are part of the general railroad system of transportation. The minimum requirements include roadbed, track geometry, track structure, track-related devices and inspection. These guidelines are meant to be consistent with these requirements.

1.2 Scope

These guidelines apply to the SCRRRA and its Member Agencies operated and maintained right-of-ways that are owned wholly or in part by the county transportation Member



Agencies. These guidelines do not apply to right-of-ways fully owned by the Burlington Northern and Santa Fe Railway or Union Pacific Railroad, where SCRRA has entered into joint use agreements to operate Metrolink commuter rail service.

1.3 Definitions

- 1.3.1 **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 Rail-with-Trail project.
- 1.3.2 **Member Agency** - any specific county transportation agency(s), whose Property is directly affected by this project. The SCRRA Member Agencies are the Los Angeles County Metropolitan Transportation Authority (METRO), the Orange County Transportation Authority (OCTA), the Riverside County Transportation Commission (RCTC), the San Bernardino Associated Governments (SANBAG), and the Ventura County Transportation Commission (VCTC).
- 1.3.3 **Rail-with-Trail** - a marked or established shared use path used by bicyclists, pedestrians, wheelchair users, joggers and other non-motorized users that is located on or directly adjacent to an active railroad corridor.
- 1.3.4 **Setback** - the distance between the centerline of the nearest railroad track (existing or planned) and the closest edge of the Rail-with-Trail.

1.4 Referenced Standards

Rail-with-Trail shall also comply with the current editions of the following referenced standards:

- 1.4.1 Right-of-Way Preservation Guidelines adopted by the specific Member Agencies.
- 1.4.2 The California Department of Transportation's (Caltrans) "Highway Design Manual", Chapter 1000, "Bikeway Planning and Design".
- 1.4.3 The California Department of Transportation's (Caltrans) "California Manual on Uniform Traffic Control Devices (CA MUTCD)".

1.5 Other References

The following reports, which can provide valuable information on the planning, design, maintenance and operation of the Rails-with-Trails shall be referred to in the development, construction and operation of Rail-with-Trail:

- 1.5.1 "Rails-with-Trails: Lessons Learned", prepared by U.S. Department of Transportation.
- 1.5.2 "Guide for Development of Bicycle Facilities", prepared by the American Association of State Highway & Transportation Officials (AASHTO).
- 1.5.3 "National Bicycle and Walking Study – Current Planning Guidelines and Design Standards Being Used by State and Local Agencies for Bicycle and Pedestrian



Facilities”, prepared by the Federal Highway Administration.

2.0 REAL ESTATE REQUIREMENTS

2.1 Existing Facilities

2.1.1 The Public Agency should design the project in a manner that avoids any displacement of existing billboards, bus stops, leases and licenses on the right-of-ways. If the Member Agency agrees that the displacement is unavoidable, the Public Agency shall coordinate proper disposition, including associated costs to be incurred by the Public Agency, with the affected Member Agency and in accordance to the applicable conditions contained in the existing real estate agreements.

2.2 Proposed Agreement

2.2.1 Public Agency shall obtain a license or easement agreement for the Rail-with-Trail from the Member Agency whose right-of-way is directly affected by the project. The license or easement agreement shall include requirements, terms and conditions related to indemnification, license fees and compensations, assumption of risk and waiver, insurance, tests and inspections, maintenance and repair, breach, abandonment, reimbursement, construction, relocation, payments, hazardous/toxic materials, compliance with laws etc. The Public Agency shall contact the affected Member Agency to request all information related to the real estate agreement. The Member Agency will be the sole authority on the fees and compensations due from the Public Agency for the rights granted.

2.2.2 License or easement agreement shall also include requirements that provide for the removal and modification of the Rail-with-Trail to meet SCRRA's and Member Agency's mission to provide passenger rail transportation and their obligations to the freight railroads to provide rail freight service. At the request of SCRRA or Member Agency, the Public Agency shall remove, relocate, or modify, at its own expense, the Rail-with-Trail to accommodate additional track or tracks or other railroad related facilities in the right-of-way.

2.3 Permits

Public Agency shall obtain and comply with any and all approvals, permits, licenses and other authorizations required by applicable laws, regulations, rules and ordinances for Rail-with-Trail project within the right-of-way.

3.0 PLANNING

3.1 Feasibility Study

Public Agency is encouraged to undertake a comprehensive feasibility analysis of the project. The feasibility study should describe the setting, the relationship to local planning documents, need for the project, land ownership, railroad activity present or future, and other information necessary to determine the feasibility. As a part of the



feasibility study, environmental concerns should be analyzed pursuant to local, State, and Federal environmental laws. The Public Agency should, early in the process; involve affected stakeholders such as freight railroads, utility companies, law enforcement officials, adjacent landowners, Rail-with-Trail user groups, transportation, public transit, park and recreation departments. The feasibility study should include viable alternatives to any Rail-with-Trail that are proposed within an active right-of-way. The Public Agency is encouraged to identify and evaluate multiple alternative alignments, including at least one that is not on the railroad right-of-way.

3.2 Safety Plan

Public Agency is encouraged to develop a public safety plan that includes engineering, maintenance standards, trespassing and crime prevention strategy; appropriate damage-resistant construction materials; landscaping; provide secure access areas, barrier systems, video monitoring; coordinated and responsive patrol service, designating and enforcing rules and regulations; employing crime prevention strategies, such as education, informal signage, incident management; provide fire and police department with map of the system detailing access points and implementation schedule.

4.0 DESIGN

4.1 Submittal

After review and approval of the feasibility report and safety plan by SCRRA and affected Member Agency, the Public Agency should submit two sets of design drawings each to SCRRA and Member Agency for review and approval. Any and all changes or modification during the design and construction that affect the rail right-of-way should also be submitted to SCRRA and Member Agency for review and approval.

4.2 Design Standards

- 4.2.1 Rail-with-Trail widths, clearances, sight distances, signs, markings, drainage grates, manhole covers etc. shall be selected as per Caltrans "Highway Design Manual", Chapter 1000, "Bikeway Planning and Design". MUTCD guidelines shall also be referred to in the selection of signs, markings and signals.
- 4.2.2 If the Rail-with-Trail project creates an adverse impact at a grade crossing that did not previously exist, the Rail-with-Trail project shall include mitigation as part of the design. The Rail-with-Trail design should acknowledge any future rail and highway improvements; and safety requirements, including but not limited to, turning radii for design vehicles, preemption timing, street profiles and rail and traffic signals at grade crossings. The Public Agency shall work with SCRRA, affected Member Agency and regulatory agency so as not to hamper or preclude such improvements and requirements.

4.3 Clearances

- 4.3.1 Rail-with-Trail shall be designed along the outer edges of the right-of-way adjacent



to the property line, to the extent feasible.

- 4.3.2 Rail-with-Trail shall be designed so as to maximize the Setback between the centerline of the nearest track (existing or future) and the closest edge of the Rail-with-Trail to the extent feasible. The Setback clearance shall take into consideration the type, speed and frequency of trains; separation technique, topography; sight distances; and SCRRRA's maintenance requirements.
- 4.3.3 The recommended minimum Setbacks are 45 feet of any main line track where the train speeds exceed 90 mph; 40 feet where main line speed is between 90 mph and 79 mph; 35 feet where main line speed is between 78 mph and 60 mph; 30 feet where main line speed is between 59 mph and 40 mph; and 25 feet where mainline speed is below 40 mph.
- 4.3.4 It may not be possible to provide recommended minimum Setbacks at certain points. While a railroad right-of-way may be sufficiently wide, the tracks may be within a narrow cut or fill section or adjacent to bluffs making placement of Rail-with-Trail very difficult. Safety shall not be compromised at such points. Additional barriers, vertical separation or other methods shall be employed.

4.4 Highway-Rail Grade Crossings

- 4.4.1 California Public Utilities Commission (CPUC) approval is necessary for the construction of a new highway-rail grade crossing. Public Utilities (PU) Code Sections 1201-1220 require that no public road, highway, or street shall be constructed across the track of any railroad corporation at-grade without having first secured the permission of the Commission. Rail-with-Trail shall be designed such that Rail-with-Trail users are routed to an existing signalized grade crossing.
- 4.4.2 SCRRRA has established Highway-Rail Grade Crossings Recommended Design Practices and Standards Manual. This Manual has requirements for safe construction and maintenance of grade crossings and includes SCRRRA policy, regulatory responsibility, approval process, design criteria and other important requirements. Rail-with-Trail design and construction should meet the requirements shown on this Manual.

4.5 Surface

If the Rail-with-Trail is the only access for SCRRRA and emergency response vehicles, the Rail-with-Trail surface and bridges shall be designed and constructed to accommodate heavy railroad trucks and equipment. When access for SCRRRA and emergency response vehicles is available from an existing street, the Rail-with-Trail shall be designed and constructed with curb ramps and pavement surface to accommodate heavy railroad trucks and equipment at pre-selected access points only. Choice of Rail-with-Trail pavement material and depth of sub-base, base and pavement shall be determined by the Public Agency based on sound engineering design and judgment.



4.6 Utilities

- 4.6.1 Public Agency shall locate the existing SCRRA signal and track facilities on their plans during the design phase at Public Agency costs and expenses. The project should be designed to avoid any relocation of the existing SCRRA facilities.
- 4.6.2 After the acceptance of plans by SCRRA and Member Agency, the Public Agency shall submit and obtain written approval of design drawings from telecommunications, fiber optic, gas, oil or other companies that have prior use of the right-of-way under easement or license agreements. The design and construction of the Rail-with-Trail may affect the existing utilities and may require the Rail-with-Trail to be changed to accommodate utilities.
- 4.6.3 The existing utilities shall be located prior to commencing any excavations. Approval of the project by SCRRA does not constitute a representation as to the accuracy or completeness of location or the existence or non-existence of any utilities or structures within the limits of this project. The appropriate regional notification center [Underground Service Alert (USA) at (800) 227-2600], railway companies, and utility companies shall be notified prior to performing any excavation close to any underground pipeline, conduit, wire, or other structure. Refer to SCRRA's website www.metrolinktrains.com to ensure proper contracts and phone numbers. SCRRA is not a member of USA and the Public Agency shall request locations of SCRRA utilities from SCRRA. It is therefore necessary to call SCRRA's signal department phone number (refer to SCRRA's website) to mark, at the Public Agency(s) or Contractor's expense, signal and communication cables and conduits; in case of signal emergencies or Highway-Rail Grade Crossing problems, the Contractor shall call SCRRA's 24-hour signal emergency number. If utilities cannot be located, potholing shall be done to locate the utilities. SCRRA and appropriate utility owners shall be notified immediately when utility lines not known or indicated on the drawings are encountered. No service shall be disrupted until the utility owner and SCRRA have determined the required action on such lines.

4.7 Landscaping

Landscaping, shall meet the requirements included in "Landscaping Design Guidelines" published by SCRRA and guidelines published by Member Agencies.

4.8 Fencing

- 4.8.1 If there is no existing fence, the Public Agency, at its sole cost and expense, shall install tubular steel fencing or welded wire mesh fencing as per SCRRA Engineering Standard ES5104 or ES5105 respectively. The fence shall be located at the edge of the Rail-with-Trail. Exceptions may be granted by SCRRA, if the Rail-with-Trail design includes mitigation measures that include best practices to ensure safe trail use and rail operations, as per Section 8.0 of these guidelines. Public Agency shall install gates having SCRRA locks to access the right-of-way for maintenance purposes at locations provided by SCRRA. Public Agency should install "No Trespassing" warning signs as per SCRRA Engineering Standard



ES5214.

4.8.2 A three rail split-rail fence in combination with landscaping which can serve both as a visual and physical barrier between the track and the Rail-with-Trail may be used in a rural or environmentally sensitive areas if approved by SCRRA and Member Agency. Since newly planted landscaping may take a few years before they become effective barriers, suitable temporary measures may be required until the landscaping have sufficiently matured.

4.8.3 The height of the fence within 150 feet of at-grade crossings shall be four (4) feet. The height of the fence in the balance of the right-of-way shall be at least six (6) feet.

4.9 Lighting

Public Agency should provide lighting for the Rail-with-Trail if required by the local, state or federal guidelines, rules and regulations.

4.10 Drainage

4.10.1 Public Agency, at its sole cost and expense, shall provide and maintain suitable facilities for draining the Rail-with-Trail area and shall not permit storm and irrigation water to flow or collect upon the right-of-way. The Public Agency should not have the sole responsibility to correct any existing drainage deficiencies on the right-of-way, however, the Public Agency shall not make the conditions any worse than existing prior to the Rail-with Trail construction on the right-of-way.

4.10.2 The Rail-with-Trail and the area located between the Rail-with-Trail and the nearest railroad track should be graded to flow over the curb and onto the street, when the railroad track is at the higher elevation than the surrounding ground and the street. When the railroad track is at a lower elevation than the surrounding ground and the street, a flat bottom swale (ditch) properly sized and flowing towards existing or proposed stormwater facilities, such as inlet, underground pipe, swale, creek, wash or channel shall be constructed.

4.10.3 Mounding of earth on the right-of-way may be permitted only if it shall not adversely affect access, railroad maintenance activities, visibility and drainage on the right-of-way. The Public Agency should submit drawings showing the existing and proposed contour elevations to SCRRA and Member Agency. The final contour elevations shall be approved solely by SCRRA and Member Agency. If allowed, imported soil shall meet the Member Agencies' specifications for clean backfill material.

4.11 Access

4.11.1 SCRRA and Member Agency must be able to readily access, inspect, repair and maintain drainage systems, bridges, tie and track replacement, tunnel and trestle, signal and communications equipments and grade crossing equipments from



existing roadways. Utility companies must be able to readily access their facilities for maintenance and operation purposes.

- 4.11.2 The use of motorized vehicles is prohibited on the Rail-with-Trail, except for authorized emergency and maintenance vehicles including SCRRA and Member Agency maintenance vehicles. Horses and other animals are not permitted, except for guide or service dogs. Appropriate signage shall be placed at all entrances to the trail designating restricted use not foreseen in the design of the Rail-with-Trail.
- 4.11.3 The Rail-with-Trail shall be subject to and subordinate to the rights of all current and future tenants and licensees of Member Agencies, including the rights of reasonable access over the Rail-with-Trail project.

5.0 CONSTRUCTION

- 5.0.1 Public Agency shall comply with the rules and regulations contained in the current editions of the following SCRRA documents during the construction of the project: (i) Temporary Right-of-Entry agreement (SCRRA Form No. 6), (ii) Rules and Requirements for Construction on Railroad Property (SCRRA Form No. 37), (iii) General Safety Regulations for Third Party Construction and Maintenance Activity on SCRRA Member Agency Property, and (iv) Applicable SCRRA Engineering Standards.
- 5.0.2 SCRRA and Member Agencies do not allow any approved parties to cause or permit any hazardous materials to be brought upon, stored, used, generated, or treated on or about the right-of-way. The Public Agency shall not bring in or use any imported soils unless it has been tested.

6.0 MAINTENANCE

- 6.0.1 Public Agency shall maintain the Rail-with-Trail, fence, gates, signs, landscaping, and any other improvements that are part of the licensed Rail-with-Trail project area, in good order and condition to the satisfaction of SCRRA and Member Agency, at its own cost and expense.
- 6.0.2 Public Agency shall notify SCRRA five (5) working days in advance of any construction or maintenance activity that shall occur within the right-of-way. Public Agency shall be responsible to reimburse SCRRA the actual cost and expense incurred by SCRRA for all services and work performed in connection with the project including a computed surcharge representing SCRRA's costs for administration and management.
- 6.0.3 Public Agency shall insure that warning signs, which explain the importance of staying on authorized Rail-with-Trail only, and off railroad property, are prominently displayed and regularly maintained. SCRRA and Member Agency will rely on the Public Agency to enforce trespassing and vandalism laws. Public Agency Police shall provide patrols, respond as needed and issue citations and warning as appropriate.



7.0 FUNDING

SCRRA does not provide funding for Rail-with-Trail projects on the right-of-way.

8.0 EXCEPTIONS

8.0.1 Topography, environment, right-of-way widths, obstructions, utilities etc., may make it difficult to follow all the requirements of these guidelines. In order to strike a balance between SCRRA and Member Agencies' mandate to provide safe and efficient transportation to the public and the ability to meet interstate freight obligations and aesthetic benefits offered by the Rail-with-Trail, SCRRA may grant deviations or variances from these guidelines provided that the project as a whole is consistent with the overall intent of the guidelines.

8.0.2 The Public Agency shall prepare an engineering report showing in precise details the changes and deviations and provide support for their position.

8.1 Minor Deviations

The SCRRA Director of Maintenance and Engineering may permit minor deviations from these guidelines. Minor deviations, which would be considered, are as follows:

- Vertical separation between the tracks and the Rail-with-Trail, which could enhance safety and railroad operations, maintenance and construction issues and activities.
- Locations where a minor deviation granted for a short segment or segments of the Rail-with-Trail would enable successful development of a lengthier segment of the Rail-with-Trail in accordance with these guidelines.
- Circumstances where short or minor deviations from the guidelines would produce significant benefits for the Rail-with-Trail.
- Other approved measures, which could enhance safety and railroad operations, maintenance and construction issues and activities.

8.2 Major Deviations

SCRRA Chief Executive Officer with affected Member Agency concurrence on a case-by-case basis may permit major deviations consistent with the overall intent of these Guidelines. Major deviations are those that require the entire Rail-with-Trail to deviate from the most important safety and rail related requirements of these guidelines.