BIKEWAY DESIGN AND MANAGEMENT GUIDE

Contents

This Guide, developed by PARSAC in partnership with Alta Planning + Design and Rippetoe Law, is intended to provide general guidance only. Users are strongly encouraged to consult with professional design and engineering firms and legal firms with expertise in the relevant area and/or consider independent peer review. Additionally, consult with the City Attorney on inspection, maintenance and other suggested documentation.

1. ABOUT THE BIKEWAY DESIGN AND MANAGEMENT GUIDE

Loss prevention and controlling risk through training and information sharing are part of the important mission of PARSAC. PARSAC continually strives to identify initiatives that serve member agencies in terms of reviewing their municipal service practices, policies, and procedures with a focus on loss prevention and risk reduction. The *Bikeway Design and Management Guide* was developed in partnership with Alta Planning + Design and Liability Defense Panel attorney Gregory Rippetoe of Rippetoe Law, P.C. to create awareness and provide guidance relating to the design, inspection, and maintenance of trails and bikeways within the public right-of-way as well as public safety awareness.

The practices and statements contained in this guide are intended to provide general guidance on ***what*** an agency should be doing, not ***how*** it should be done. Information provided in this guide should not be used to create arbitrary standards. PARSAC recommends a non-prescriptive approach which allows each agency to tailor their practices and policies to meet their own local organizational, climatic, political, or community related conditions.

The *Bikeway Design and Management Guide* can be used to review operations and serve as a reference for recommended activities in each topic area. In the absence of an agency policy or procedure manual, it can serve as a resource in formulating an approach for dealing with identified gaps or deficiencies within current agency practices.

This guide is formatted to assist agencies in the development of formal written policies, practices, and procedures that will assist in improving the quality and effectiveness of service delivery. The goal of PARSAC in developing the Bikeway Design Guide is to:

- Provide a tool for evaluating and assessing current recreational and transportation needs of cyclists in relation to Agency operations and maintenance activities and protocols.
- Provide suggested maintenance activities (scheduled and unscheduled) which are compatible with industry accepted standards.
- Provide a template for the creation of checklists to allow agencies to perform a self-assessment of current policies, processes, and protocols.
- Provide guidance and technical assistance to identify necessary improvements to address organizational performance and effectiveness
- Provide guidance and understanding to perfect and protect immunities available to agencies to support both recreational and alternate transportation access for the public
- Provide resources and assistance for public education

2. BACKGROUND

The popularity of bicycles as an alternative means of transportation, along with scenic and recreational use, continues to increase in our communities due to various factors such as an increase in environmental awareness, emphasis on personal health, and persistent economic challenges. The increased presence of bicyclists on roadways creates significant exposure for cities and towns. The purpose of this guide is to assist members in identifying key areas of risk as well as methods for limiting this exposure.

According to data maintained by the National Highway Traffic Safety Administration (NHTSA), most accidents involving a bicycle vs. vehicle occur on urban arterial roads; those accidents are more likely to be fatal at or near an intersection. A majority of these accidents are attributed to driver error or inattention when driving on roadways with or without marked bike lanes. To address this serious safety issue, many communities are implementing various types of separated bicycle facilities, from bike trails to protected bike lanes. Preventing accidents not only improves public safety, but also reduces the cost of claims and lawsuits for the public entity.

In addition, communities that implement safer bicycle facilities ("bikeways") have experienced a positive impact on their local economy. According to recent studies, this is due in part to increased tourism but also because bicyclists feel more connected to their neighborhood and are more likely to stop at the businesses they pass than drivers. In addition, "Bicycle Friendly" communities have become attractive to businesses and individuals seeking to relocate, and typically report higher property values.

3. BIKEWAY DESIGN

Appropriate design, whether at the planning stage or as part of a redesign project, helps to create safer streets and mitigates exposure for the public entity. Various resources are available when determining appropriate bikeway design for your community:

- American Association of State Highway and Transportation Officials (AASHTO), 2012, *Guide for the Development of Bicycle Facilities*
- California Department of Transportation Highway Design Manual (Caltrans), Chapter 1000, *Bikeway Planning and Design*
- Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition Part 9, *Traffic Control for Bicycle Facilities*
- Federal Highway Administration (FHWA) provides the latest rulings on this rapidly advancing field on their website, with various bikeway design solutions categorized by "subject to experimentation", "available through interim approval", and "open to interpretation."
- The *California MUTCD* (CA-MUTCD) 2012 edition includes FHWA's MUTCD 2009 edition dated December 19, 2009, as amended for use in California.
- National Association of Transportation Officials (NACTO), *Urban Bikeway Design Guide* and the *Urban Street Design Guide*.
- Institute of Transportation Engineers (ITE) '*Designing Urban Walkable Thoroughfares'*.

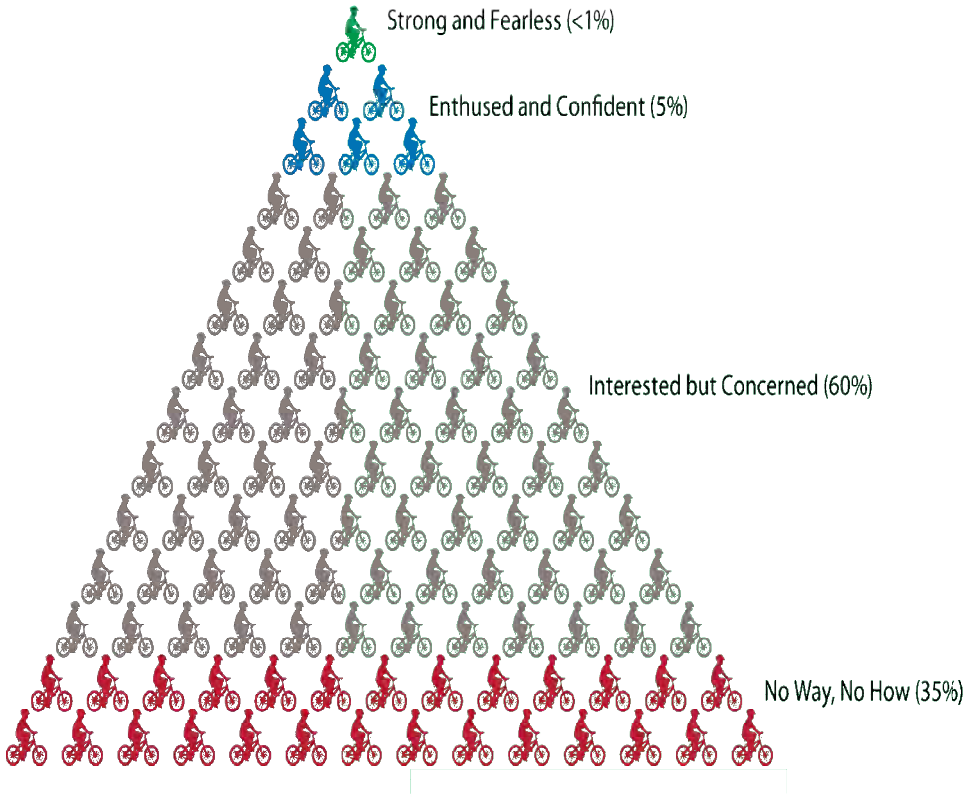
Prior to mid-2014, Caltrans policy stated that all city, county, regional and other local agencies responsible for bikeways, or roads where bicycle travel is permitted, must follow the minimum bicycle planning and design criteria contained in the manual (Refer to Streets and Highways Code §891). Significant changes occurred in 2014, first with Caltrans issuing its Design Flexibility in Multi-Modal Design, which acknowledges the use of the NACTO and ITE guides.

Further changes occurred with the passage of AB 1193, which created "The Protected Bikeways Act of 2014." This legislation statutorily "categorized cycle tracks or separated bikeways… as Class IV bikeways" and directed Caltrans to develop design guidance on Class IV bikeways by January 2015. In addition, AB 1193 allowed local agencies to utilize "guidelines established by a national association of public agency transportation officials," thereby permitting the use of the above NACTO and ITE design documents.

In all cases in which the public entity is considering planning or redesign involving its bikeway facilities, a transportation engineer or engineering firm should be involved to provide engineering study and judgment. In addition to providing design assistance to the master plan, the involvement of an engineer may assist to insulate the public entity from further claims as described in Section 9.C.v of this Guide. Further, documentation of the design process such as the analysis, guidelines and manuals used, and design decisions made is critical to the defense of the design in the event of a claim or lawsuit.

A. Types of Cyclists

In designing bikeways, it is important to understand the needs and preferences of all types of bicyclists. Needs and preferences vary between skill levels and their trip types. In addition, the propensity to bicycle varies from person to person, providing insight into potential increases in bicycling rates. Generally, bicycling propensity levels can be classified into four categories:



Typology of bicyclists (source: Dill and McNeil, 2012)

Strong and Fearless: will ride on almost any roadway despite traffic volume, speed, or lack of bikeways.

Enthused and Confident: will ride on most roadways, if traffic volumes and speeds are not high and are confident sharing roadways with motorists.

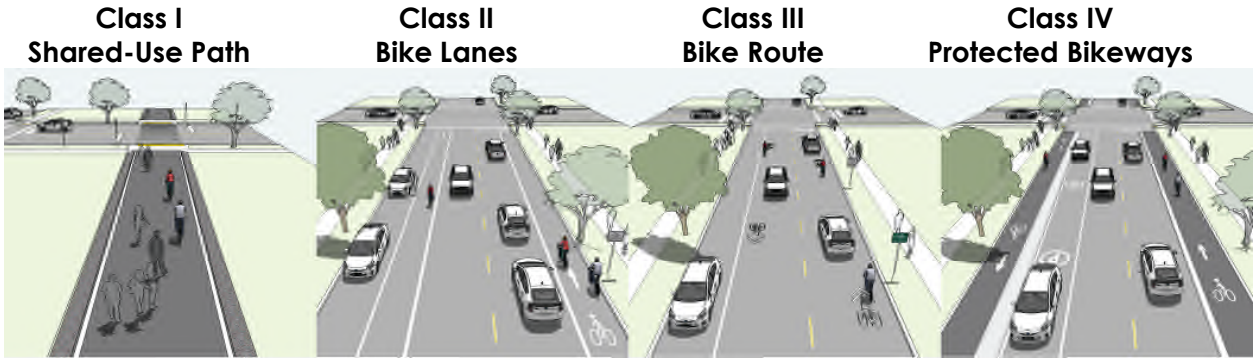
Interested but Concerned: will ride if bikeways are provided on roadways with low traffic volumes and speeds and are not confident riding with motorists. This is the majority of the public that will bicycle more if encouraged to do so through infrastructure and encouragement.

No Way No How: does not consider cycling as part of their transportation or recreation options.

Depending on the individual and the context, an additional group to consider is comprised of those who bicycle because they have limited transportation options. This may include those who cannot afford a car and live in a neighborhood with inadequate transit. Those in this group may fall into one or more of the above groups depending on their skills. However, they may be “no way/no how” if they had the money to live in a neighborhood with better transit and/or own a car.

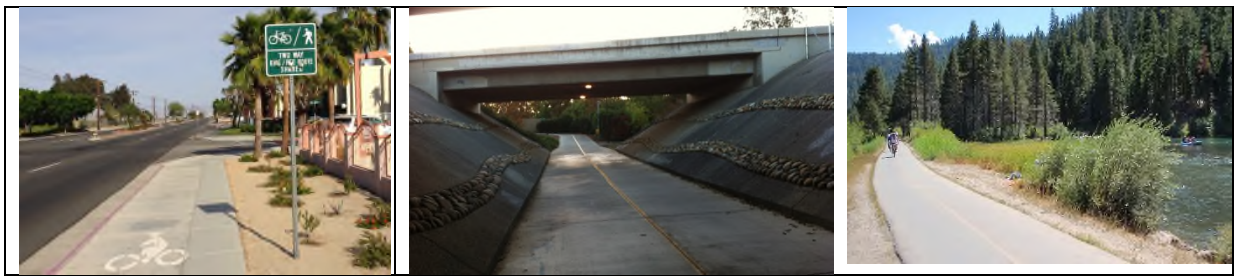
B. Types of Bikeways

Streets and Highways Code §890.4 defines a "bikeway" as a facility that is provided primarily for bicycle travel and are categorized into the four[1] classes described below. However, Section 890.4 emphasizes that each of these classifications has its appropriate application and should not be construed as one being better than another.



Each of these classes will be briefly described as follows. Readers should consult standards and guidelines for more detailed planning and design guidance.

Class I Bikeway (Shared Use Path):



A completely separated right of way for the exclusive use of bicycles and pedestrians with cross flow by motorists minimized. A frequent misnomer is “multi-use path”, a term that does not appear in any federal or state legislation, standards or guidelines. Recreational bike trails are also Class I bikeways.

[1] AB 1193 (Protected Bikeways Act of 2014) amended the Streets and Highways Code to add a Class IV to the original three classes (I, II, III). Caltrans is charged with providing design criteria by January 2016.

Class II Bikeway (Bike Lane):



Provides a striped lane for one-way travel on a street or highway, adjacent to vehicle traffic and established by placing "Bike Lane" signs along roadways. Bike lanes should be of adequate width to avoid placing bicyclists in the door zone of adjacent parallel-parked cars. A common enhancement is a buffer on the left, right or both sides of the bike lane. Buffer(s) minimize the risk of conflict with opening car doors in any parallel parking lane, provide shy space from overtaking vehicles in the adjacent traffic lane, and provides extra room for bicyclists to pass each other without entering traffic (refer to MUTCD Section 3D-01).

Class III Bikeway (Bike Route):



Provides for shared use with pedestrian or motor vehicle traffic. This type of bikeway is commonly found in residential neighborhoods and/or streets with low speed limits. Bike routes may have a wide travel lane and are established by placing “Bike Route” signs along the roadway (MUTCD sign D11-1). They may or may not have shared lane markings (“sharrows”) stenciled on the roadway.

Class IV Protected Bikeway (Cycletracks):



Protected bikeways are for the exclusive use of bicyclists (pedestrians have a separate sidewalk) and use items such as planters, curbs, parked cars or posts to separate users on busy streets. These facilities appeal to those wanting protection on major roadways.

Paved Shoulder (No Bikeway Designation):

	Caltrans points out that it may be inappropriate to designate a rural highway as a bikeway due to limited use and/or lack of continuity with other bikeways. However, they recommend development and maintenance of a 4-foot paved shoulder with a standard 4-inch edge line to significantly improve safety and convenience.

Regardless of available facilities, bicyclists are in your community. Care must be taken to identify popular routes of travel and ensure those areas are given priority for inspection and maintenance.

C. Development of a Master Plan

An interconnected network of bikeways improves safety and can have a positive effect on both bicyclist and driver behavior. When planning or reviewing the types of bikeways to implement within the community, consideration should be given to:

- Existing traffic levels and behavior
- Bikeway transitions at intersections
- Common routes of travel used by bicyclists
- Existing and proposed bicycle parking facilities
- Road conditions, uphill/downhill grades, and width of roadways
- Potential for vehicle and/or pedestrian obstruction or entering bikeway
- Bikeway interruptions caused by natural barriers or infrastructure
- Maintenance procedures such as snow removal and street cleaning
- Demographics of the community such as median age and rider ability

A comprehensive bicycle master plan (which may include trails and pedestrian transportation) should be adopted by the City or Town Council, and updated as necessary, to apply the public entity's immunities under Government Code 831.4 for Class I, Class II, Class III and Class IV bikeways. The plan should emphasize that bikeways are scenic and recreational trails for bicyclists and pedestrians, as well as providing an alternative mode of transportation. Further, a review and update of applicable ordinances should be included when considering a new or revised master plan. The plan should meet or exceed the requirements of an Active Transportation Plan, as part of the state's Active Transportation Program (ATP) (refer to Section 10).

While traditional recreational trails primarily provide recreational activities, it should be evaluated whether these trails could be connected to on-street bikeways to also support alternative transportation. This concept of mixed use could be argued to bring all bikeways firmly under the trail immunity. A well developed, articulated, and implemented master plan is a factor in establishing a basis to perfect design immunity, and may establish precedent for trail immunity not yet tested in court.

Class I bikeways should have full immunity under Government Code §831.4 (described below in Section 9) based on current case law; any Court determination to the contrary should be appealed. Consideration should be given to defending any Class II or Class III bikeway claim under Section 831.4 with the goal of obtaining a favorable determination from an appellate level California Court and perhaps establishing necessary precedent to defend future claims.

4. BIKEWAY MANAGEMENT

A bikeway management plan helps public entities proactively provide safer riding conditions, ultimately minimizing the expense of defending the public entity against claims and lawsuits. Practical measures are recommended in this Guide to reduce the risk of bikeway-related accidents. **THE GOAL IS TO MAKE IT RIGHT:**

A. Bikeway Riding Surfaces

A majority of bikeway claims are related to the condition of the riding surface. Claimants often reference a number of the published guidelines referenced in Section I in an effort to establish "standards" or "requirements" to support their claim.

Smoothness of riding surfaces affects the comfort, safety, and speed of bicyclists. Bikeway surfaces should be smooth, free from bumps and/or depressions, and pavement should be uniform in width. Precaution should be taken to prevent wide cracks, joints, or drop-offs at the edge of bikeways that are parallel to the direction of travel. Addressing irregularities in bikeway surfaces is necessary to minimize the potential for bicycle accidents.

The AASHTO bike guide provides guidance on appropriate bikeway surfaces, including smoothness, drop-offs, depressions and/or irregularities, and locations and types of utility covers and drainage grates. For rideability on new construction, the finished surface of bikeways should not vary more than 6 mm (1/4") from the lower edge of a 2.4 m (8') long straight edge when laid on the surface in any direction.

Caltrans also provides surface tolerances for Class II and III bikeways developed on existing streets as follows (outlined in Table 1003.6):

- **Groove**: Defined as narrow slot in the surface. A groove parallel to direction of travel should be no more than 12 mm wide (0.5 inch).
- **Step**: Defined as a ridge in pavement, commonly found between the pavement and a concrete gutter or manhole cover. A step parallel to direction of travel should be no more than 10 mm high (0.4 inch). A step that is perpendicular to direction of travel should be no more than 20 mm high (0.8 inch).
- **Grates:** Should be located away from areas where bicycles or pedestrians are anticipated, whenever possible. The grate types depicted on Caltrans standard Plan D77B must be used if bicycle traffic can be expected.

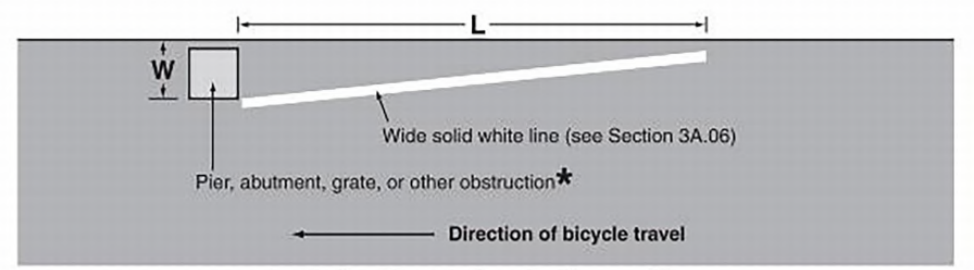
As pavements age, it is necessary to fill joints or cracks, adjust utility covers, or even overlay the pavement. Ongoing inspection and maintenance of bikeway surfaces is necessary to prevent injury, protect the public entity against claims and lawsuits, as well as to improve the longevity of the pavement.

B. Drainage Inlet Grates

Per AASHTO, "Bicycle-safe" grates and covers should be used in bikeways and should be located in a manner that minimizes the need for severe or frequent maneuvering by the bicyclist. Drainage inlet grates and utility covers should be placed or adjusted to be flush with the adjacent pavement surface. Even a bicycle-safe grate can create a hazard for the bicyclist when a gap is present between the frame and the grate, as illustrated at right. Bicycle tires can be as narrow as 1" wide and can drop into very narrow slots.

It is recommended that non-complying grates be replaced with bicycle-safe-hydraulically efficient versions. A temporary correction would be to weld steel cross straps or bars perpendicular to the parallel bars at 100 - mm (4-inch) center-to-center maximum spacing to provide a maximum safe opening between straps.

Consideration should also be given to identifying grates with pavement markings as indicated in the MUTCD (2009, Part 9 Figure 9C-8), shown below:



B - Obstruction at edge of path or roadway

L = WS, where W is the offset in feet and S is bicycle approach speed in mph

* Provide an additional foot of offset for a raised obstruction and use the formula L = (W+1) S for the taper length

C. Bikeway Signage

Appropriate bikeway signage should be in place per CA MUTCD Section 9B.21 to provide comprehensive guidance to both bicyclists and drivers. Signs are typically placed along bicycle routes at intersections and other decision points, such as where two different bikeways join or when directing to key locations.

Alternative or supplemental signage could emphasize the "recreational" or "scenic" aspects of bikeways with language such as "Scenic Bicycle Route" or to assist bicyclists in finding their way around the community. NACTO recommends signage may also be used to locate various destinations such as: on-street bikeways; commercial centers; public transit; schools; civic centers; parks; recreational trails; hospitals; and/or bridges.

There may be locations where the public entity considers signage to address a particular concern, such as steep down grades. However, according the MUTCD, the W7-5 sign shown at left "may be installed on shared-use paths to warn bicyclists of conditions not readily apparent"(i.e. deficient approach sight distance to the downhill). Signage such as SW4-1 "WATCH DOWNHILL SPEED" applies to all road users and hence should not be mounted on the same signpost as a sign with a bicycle symbol. Signage should be chosen based on applicable sections of the Streets and Highways Code, California Vehicle Code, and MUTCD.

If warranted by restricted visibility or constrained width on shared use paths with consistently high pedestrian volumes, public entities may consider establishing "dismount zones" identified with "WALK YOUR BIKE" or "BICYCLISTS MUST DISMOUNT" signs. Such signage may improve safety until the issue can be addressed through pathway alignment, widening, and/or separation of users, if possible. Such signs are advisory only

as these messages are not included in any approved regulatory sign covered by CVC 21461 that contain these legends, or any supporting codes.

As with all elements of the bikeway, signage should be periodically inspected to ensure they remain adequate and in good condition. It is recommended that a comprehensive inventory be maintained documenting the location and installation date for all signs to facilitate scheduling of inspections and replacement.

D. Pavement Markings

Per CA-MUTCD Section 9C, pavement markings are designed to indicate a roadway is shared, provide position guidance to bicyclists, and advance notice of upcoming changes in the bikeway such as turns or crossings. These markings also serve to differentiate bikeways from other local streets, encourage bikeway use, increase bicyclist confidence while riding, and encourage predictable bicyclist behavior.

The paint for pavement markings should be inspected regularly to confirm it remains clearly visible and complete. Areas with heavy traffic and/or snow plow use may find that more frequent repainting is necessary to maintain the integrity of the markings. Common materials used for pavement markings are:

Material	Recommended Use	Description
Paint	Corridor treatments; ideal for protected bicycle facilities like cycle tracks	Cost-effective; can be slick while wet.
Durable Liquid Pavement Markings (DLPM)	Corridor treatments	Composed of epoxy and MMA (acrylic-based resin). Long-lasting and can be cheaper than other materials; installation requires special equipment.
Thermoplastic	Spot treatments, particularly intersections	Relatively low-cost; quick drying time and easy maintenance.
Colored Pavement	Corridor treatments	Same longevity as standard pavement and requires little maintenance; installation requires special equipment.

E. Entry Treatments

Where a transition zone exists between a rural roadway and a developed area, a threshold treatment such as pavement markings, stampings, or vertical elements is a cost-effective method for reducing motorist speeds and can be used in conjunction with a reduced speed ahead sign. Treatments such as the stamped thermoplastic brick herringbone used along the shoulder at the entrance to Capay, CA (image at right) highlights the potential presence of people walking and cycling, prompting drivers to reduce their speed.

5. COMMUNITY EDUCATION & OUTREACH

Providing appropriately designed and implemented facilities is important to creating a great bikeway network. However, to ensure due diligence, it is vital to engage and educate the community throughout the process.

Involving members of the public throughout the bikeway planning, design and implementation stages helps build community support. Maintaining an open dialogue also helps to increase bicyclists, drivers, and pedestrians awareness of the types of bikeways, meanings of signs and symbols, and safe behavior. A positive, proactive approach to raising awareness helps to maintain a positive image of government, and serves to promote education and social events within the community. Educational materials and other resources are available through The League of American Bicyclists, America Walks, Association of Pedestrian and Bicycle Professionals and National Partnership for Safe Routes to Schools (refer to Section 10 below).

Various methods are available to interact with the public, and may include: entity website; social media sites; printed information; educational workshops; social events; and town hall meetings. Public entities may also wish to encourage volunteers that can spearhead events and organize support groups. In many communities, cycling teams and clubs, specialty stores, and/or neighborhood associations are excellent sources of support.

Social marketing is often used to promote bikeway safety with campaigns using public service announcements, direct mail, and local media such as billboards, television, and/or radio advertising.

Spokane, WA

Napa, CA

6. ENFORCEMENT

While education and outreach provide positive reinforcement for safe behavior, ordinances also need to be enforced through patrol and citation by law enforcement. Police officers could incorporate directed enforcement of bicycle-related traffic laws during their normal operations to raise awareness of these laws in a highly visible and public manner. Generally, enforcement improves bikeway safety by reducing violations, which in turn should reduce the frequency of collisions.

For motorists, an emphasis on parking enforcement may be considered as parking improperly next to bike lanes may create barriers to bicyclists' travel. Diversion classes may also be offered for first-time offenders of certain traffic violations in an effort to educate road users about rights and responsibilities. To encourage participation, classes could be offered in lieu of a citation and/or fine.

For bicyclists, on-bike officers may be used to monitor areas where only bicycles can go, such as overcrossings and separated bike paths. On-Bike officers undergo special training in bicycle safety and bicycle-related traffic laws and can encourage safe bicycle operation. For example, warning and/or ticketing bicyclists who are not using lights at night, which decreases their visibility and makes them more prone to collisions.

In addition, all employees should be advised to act as observers, empowered to warn citizens of unsafe conditions and document conditions needing correction. The use of 3-1-1 is a valuable tool that allows people to report non-emergency municipal services. Smart phone and/or web based applications, such as SeeClickFix or customized Geographic Information Systems (GIS), are becoming increasingly popular for reporting maintenance issues due to their ease of use, tracking tools, and automated record keeping.

7. INSPECTION & MAINTENANCE

The importance of a regular and ongoing inspection program cannot be overstated as it can reduce the frequency of claims for alleged dangerous condition of public property and aids in the defense of such claims when they do arise by providing an accurate picture of the scene. Once an inspection plan is established, adequate record-keeping is equally important to document the frequency and findings of the inspections. A well-documented inspection program can demonstrate the public entity's due care in preventing, discovering, and remedying dangerous conditions of public property. It is important to include bikeways on the entity's maintenance schedule or Asset Management Plan, treating them the same as other facilities within the public right-of-way.

A. Evidence of Due Care to Discover Dangerous Conditions

Public entities are responsible to maintain their public facilities, lessening the likelihood that incidents may occur. Government Code § 835(b) states that a public entity must have had actual or constructive notice of a dangerous condition with sufficient time prior to the injury to have taken measures to protect against the dangerous condition. Section 835.2 limits liability for constructive notice to those created by the Public Entity or those situations where a condition had existed for such a period of time and was of such an obvious nature that the public entity, in the exercise of due care should have noticed it.

i. *Evidence of Due Care by Public Entity:* Section 835.2(b) states that admissible evidence by a public entity to establish due care may include: (i) Whether the existence of a condition and its dangerous character would have been discovered by an inspection system that was reasonably adequate, considering the practicality and cost of inspection weighed against the likelihood and magnitude of danger; and (ii) Whether the public entity maintained and operated an inspection system with due care and did not discover the claimed dangerous condition.

ii. *Evidence of Prior Similar Claims/Lack of Regular Inspections:* Claimants will attempt to establish that a public entity had constructive notice by evidence that other persons have been injured on the same defect (prior claims). However, the absence of any regular inspection system is often cited by claimants in an effort to demonstrate a lack of due care or to argue that a public entity had "constructive notice" of an alleged dangerous condition based on the length of time that has passed without detection of the condition.

B. Frequency of Inspections

There are no inspection procedures or guidelines dictated by statute since the frequency of inspections vary depending on the public entity's available resources. The most common practice is to conduct monthly inspections for smaller facilities and annual or biennial surveys for larger areas. However, any regular and ongoing documented inspection process is better than none.

C. Elements of an Effective Inspection Program

i. *Inspections:* Employees conduct regular inspections to observe the condition of bikeways noting surface quality, signage, pavement markings, and issues such as maintenance required, debris, or other conditions needing correction. Depending on the size of the community, it may be helpful to coordinate inspections based on a grid system to be systematically completed.

ii. *Reporting Conditions:* Public entities should encourage citizens to report conditions needing correction and many do so through a well-maintained website, mobile application, or telephone hotline. In addition, employees should be instructed to observe their surroundings, beyond their normal job duties, and to notify the appropriate department when they observe a condition that appears to need correction.

iii. *Documentation:* Inspections and/or reports of conditions needing correction should be well documented and repairs prioritized based on frequency of use, potential for risk of injury, and available resources. Once repairs or maintenance have been completed, documentation should be updated to reflect the action(s) taken.

8. POST-INCIDENT RESPONSE

Regardless of the public entity's best efforts to minimize risks, injuries are bound to occur on recreational trails, including bikeways. Once notified of any serious casualty on their trails and bikeways, the following steps should be undertaken by the public entity.

A. Notification

PARSAC and/or George Hills Company should be promptly notified following any serious injury or fatality occurrence. Both can provide sound advice and determine whether to involve counsel to assist in any scene investigation. By involving counsel early, it may be possible to protect the contents of any investigation or reporting based on the potential that a claim may be filed and future litigation may ensue.

B. Investigate and Document

The location of the incident should be inspected as soon as possible after receiving notice of an incident. The site should be made safe by using temporary traffic management to divert other users and preserve the scene. It is imperative to fully document the scene of the incident, as this information will represent the public entity's position during a trial. The purpose of the inspection is to clearly establish the condition of the location at the time of the incident.

i. *Photographs:* The location and any apparent condition related to the incident should be photographed. It is imperative that photographs are taken prior to any repair or altering of the location. Photographs should be taken to reduce the likelihood of any argument being made that an improper camera angle creates an inaccurate measurement of the condition.

   If the incident appears to involve an uneven roadway, walkway, or trail surface, the dimensions and depth of that condition should also be documented. A hardware store level can be placed horizontally across any depression or uneven surface and a tape measure or ruler then placed against it in vertical fashion to document the height and/or angle of any uneven area or condition. If the incident appears to involve an eroded or deteriorated condition of asphalt or other surface, take several photographs from multiple angles, including from directly above. Attempt to include measurements of uneven surfaces to aid in a thorough investigation of the situation.

ii. *Maintenance Records:* Records of maintenance or repairs completed before and after the incident should be maintained and copies provided to George Hills. Documentation of post remedial repairs are generally inadmissible as evidence of a dangerous condition, so repairs to correct any condition needing repair should be made without regard to the incident.

C. Comments to the Public

It is natural to want to reassure the public by explaining the circumstances of an incident, especially when a serious injury is involved. It is recommended that only designated personnel respond to media inquiries and speak on behalf of the public entity. Further, caution is suggested when making any comments in an open forum, or in response to news inquiries. Never describe a particular location or condition as "dangerous" or use words to that effect. The public entity should also refrain from comments as to the accident history of any particular location since the circumstances of each incident are each dependent upon its own unique chain of events. The best approach is to simply state the public entity is looking into the circumstances of any accident and will prioritize any conditions found to need correction or repair.

9. LEGAL DEFENSE

In responding to claims involving conditions of bikeways and recreational trails, an initial assessment is made by counsel as to whether the claim involves a statutory or a common law basis of liability. Public entities may only be liable if a statute declares them to be liable (Government Code §815). Although other non-statutorily based claims are often presented to a public entity (such as a claim for general negligence), such common law claims are generally improper.

A. Elements of the Cause of Action for "Dangerous Condition of Public Property"

The most prevalent statutory claims involving trails and bikeways are those based upon "dangerous condition" of public property per Government Code §§830 and 835. In order to plead a cause of action for dangerous condition, a claimant must be able to establish:

- a dangerous condition existed on the public property at the time of the injury;
- the condition proximately caused the injury;
- the condition created a reasonably foreseeable risk of the kind of injury sustained; and,
- the public entity either created the condition or had actual or constructive notice of the dangerous condition in sufficient time to have taken measures to protect against it.

(Government Code Section 835(b);
Vedder v. County of Imperial (1974) 36 Cal.App3d 654, 659)

B. Substantial Condition v. Trivial Condition

Section 835 defines a "dangerous condition" as a condition of property that creates a substantial, as distinguished from a minor, trivial or insignificant, risk of injury when the public property or adjacent property is used with due care in a manner which is reasonably foreseeable that it will be used.

Section 830.2 states that "a condition is not a dangerous condition within the meaning of this chapter if the trial or appellate court, in viewing the evidence most favorably to the plaintiff, determines as a matter of law that a risk created by the condition was of such a minor, trivial or insignificant nature in view of the surrounding circumstances that no reasonable person would conclude the condition created a substantial risk of injury when such property or adjacent property was used with due care in a manner in which it was reasonably foreseeable that it would be used."

C. Potential Defenses to the Dangerous Conditions Claim

In addition to proving a "dangerous condition" as described above, a claimant must overcome the governmental immunities that exist in favor of public entities. Perhaps most daunting for a claimant, and most favorable to public entities, is the immunity afforded by Section 831.4. The various aspects of this Section are described below.

i. *Government Code §831.4 - Recreational Trail Immunity*

A public entity has absolute statutory immunity from liability for injuries sustained by users of paved or unpaved public recreational trails, which arguably include all bikeways. The immunity set forth in Section 831.4 provides:

> "A public entity... is not liable for an injury caused by a condition of: (a) Any unpaved road which provides access to... riding, including all types of vehicular riding... (b) Any trail used for the above purposes. (c) Any paved trail, walkway, path or sidewalk on an easement of way... granted to a public entity, which... provide access to any unimproved property..."

The Legislature, by enacting absolute immunity per Section 831.4, intended to ensure that a key policy of the State to encourage public entities to provide recreational trails could be carried out by public entities without the specter of liability for those trails. (See Id.; California Recreational Trails Act (Public Resources Code §§5070 - 5077.8)).

The Legislature sought to save public entities from the burden and expense of safeguarding the public trails and defending claims which could otherwise cause them to close the trails to public use (Refer to Legislative Committee Comment to §§831.2, 831.4).

ii. *Judicial Interpretation of the Recreational Trail Immunity*

Section 831.4 has been interpreted by a long line of cases which have held that the immunity is broad and absolute; it applies to both:

- ✓ TRAILS PROVIDING ACCESS TO RECREATIONAL ACTIVITIES; AND
- ✓ TRAILS USED FOR THOSE RECREATIONAL ACTIVITIES, INCLUDING CLASS I BIKEWAYS.

(Giannuzzi v. State of California (1993) 17 Cal.App.4th 462, 466;
Armenio v. County of San Mateo (1994) 28 Cal.App.4th 413, 416-417;
Carroll v. County of Los Angeles (1997) 60 Cal.App.4th 606; and
Farnham v. City of Los Angeles (1998) 68 Cal.App.4th 1097)

Over the last 20 years, the Courts have increasingly expanded the scope of this absolute immunity, consistently holding that Class I bikeways fall squarely within the immunity. The Court has held that Recreational Trail Immunity applies:

a) regardless of the condition of any trail used for recreational purposes

(1993, Giannuzzi, supra)

b) regardless of the nature of the trail surface used for recreational purposes; it does not matter whether the trail is paved or unpaved - - immunity still applies.

(1994, Armenio, supra)

c) despite physical defects of a trail; it is not limited to roads or trails providing access but extends to roads or trails used for the activities themselves.

(1995, State of California v. The Superior Court of Sonoma 32 Cal.App.4th 325)

d) to paved bicycle path (i.e. Class I Bikeway) and applies regardless of whether it is called a bike path or trail.

(1997, Carroll, supra)

e) to any trails designed and used for a recreational purpose, even if a trail is constructed pursuant to the Streets & Highways Code. The immunity applied and includes immunity for alleged statutory design defects and immunity for negligent inspection and repair.

(1998, Farnham, supra)

f) regardless of failure to warn of a dangerous condition of recreational public property.

(2005, Astenius v. The State of California 126 Cal.App.4th 472)

g) regardless of negligent maintenance, design and/or trail location used for a recreational purpose. The Court set forth a three-step analysis for determining whether the property is a "trail": (1) it fits within the accepted definition of the property; (2) its design and use is for a recreational purpose; and (3) it fulfills the purpose of the statute.

(2006, Amberger-Warren v. City of Piedmont 143 Cal.App.4th 1074 (Id. at 1085)

h) to exits and entries to a bike path and any duties created by other Code provisions, even if such duties could be construed as mandatory.

(2007, Prokop v. City of Los Angeles 150 Cal.App.4th 1332)

i) regardless of mixed use or dual purpose of a roadway used for both maintenance and recreation.

(2011, Hartt v. County of Los Angeles 197 Cal.App.4th 1391)

j) even if the trail is designed for one or more recreational purposes and was, in fact, in use for one or more of those recreational purposes.

(2013, Montenegro v. City of Bradbury 215 Cal.App.4th 924)

iii. *Application of Section 831.4 to Class II and Class III Bikeways:*

The judiciary has progressively expanded the scope of the trail immunity, from unpaved roadways providing access to recreational areas (Giannuzzi), extending it to paved roadways (Farnham, Carroll), to a Class I Bikeway (Farnham), to entry and

exit points to Bikeways (Prokop), and to "mixed use" trails providing access to both bicyclists and service vehicles (Hartt, Montenegro). The immunity is so broad that it applies regardless of negligent maintenance, negligent design, failure to warn, negligent location, and regardless of the presence of dangerous conditions (Astenius, Amberger-Warren). Further, the name given to a trail is not controlling as to whether the trail has a recreational purpose (Carroll, Farnham, Amberger-Warren).

However, there are no reported cases in California that have specifically addressed the issue of whether Class II or Class III Bikeways are subject to the absolute immunity of Section 831.4(b).

The trial court applied the recreational trail immunity and granted summary judgment. The Appellate Court concurred and held that a Class I Bikeway does not amount to a street or highway merely because it comes "under the broad brush of being part of the streets and highway system in general." Since a Class I Bikeway is not open to vehicular travel, it does not qualify as a street or highway.

Moreover, the Court opined that a Class I Bikeway had already been defined as a "trail" for the purposes of Section 831.4 immunity by Carroll, supra. The Court in Carroll also concluded that Section 831.4(b) applies to "any trail," paved or unpaved. The Farnham Court agreed with the holding in Carroll and concluded that trail immunity applied to the Sepulveda Basin Bikeway, resulting in City's immunity from liability for Farnham's claims.

Of particular note, the Farnham Court in a footnote to the opinion quoted Streets and Highways Code Section 890.4, which provides: "As used in this article, 'bikeway' means all facilities that provide primarily for bicycle travel. For purposes of this article, bikeways shall be categorized as follows... Class I... Class II..., and Class III." It agreed with Armenio and Carroll which held that "... a bicycle path (or bikeway) qualifies as a trail" under subdivision (b) of Section 831.4.

Plaintiff had argued that a public entity would have incentive to call anything it wishes a "trail" in order to qualify for immunity. However, the Court rejected this argument and held that Section 831.4(b) immunity applies to any trail used for access to any recreational or scenic area, stating:

> "An object is what it is. For example, an adjacent parking lot does not become a trail by the simple expedience of calling it a trail. Design and use will control what an object is, not the name."

iv. *Government Code § 831.7 - Hazardous Recreational Activity Immunity*

Consideration should also be given for the potential application for immunity provided by Section 831.7, as follows:

> "Neither a public entity nor a public employee is liable to any person who participates in the hazardous recreational activity... for any damage or injury to property or persons arising out of that hazardous recreational activity...

> "Hazardous recreational activity' also means... (3)... mountain bicycling... For the purposes of this subdivision, `mountain bicycling' does not include riding a bicycle on paved pathways, roadways or sidewalks."

In light of the specific exception for bicyclists using a paved roadway or sidewalk, it is unlikely that this provision would be of assistance in any instances involving a Class II or Class III Bikeway. Instead, the requirements of Government Code §§835 and 831.4 should be relied on.

v. *Government Code §830.6 – Design Immunity*

Section 830.6 confers broad immunity to public entities for discretionary decision-making in plans and designs of construction or improvement to public property. It is an affirmative defense to a claim of dangerous condition of public property. This Section provides that a public entity or its employee is not liable for injuries caused by a plan or design of construction/improvement where the plan or design was approved in advance of construction within the public entity's discretionary authority or if it is in conformity with standards previously approved if there is substantial evidence upon which:

> "...(a) a reasonable public employee could have adopted the plan or design or the standards thereof or (b) a reasonable legislative body or other body or employee could have approved the plan or design or the standards..."

vi. *Design Immunity Rationale*

"The rationale for design immunity is to prevent a jury from second-guessing the decision of a public entity by reviewing the identical questions of risk that had previously been considered by the government officers who adopted or approved the plan or design" (Cornette v. Department of Transportation (2001) 26 Cal.4th 63, citing Baldwin, supra at 432, fn. 7, 434).

> ". . .[t]his defense is predicated upon the concept of separation of powers-that is, the judicial branch through court or jury should not review the discretionary decisions of legislative or executive bodies, to avoid the danger of 'impolitic interference with the freedom of decision-making by those public officials in whom the function of making such decisions has been vested...judicial economy underlies design immunity- forbidding a jury from re-weighing the same factors considered by the governmental entity which approve[d] the design..." (Ramirez v. City of Redondo Beach (1987) 192 Cal. App. 3d 515, 524-525, citations omitted).

In order to establish design immunity, three essential elements must be satisfied:

a) <u>A causal relationship between the plan and design and the accident.</u> This is generally established by allegations that the injury occurred as a result of the plan or design. It is important to note that the immunity may be defeated if

the evidence shows that the damages were not caused solely by a design defect but were also partially caused by poor maintenance (Mozzetti v. City of Brisbane (1977) 67 CA3d, 565, 574).

b) Discretionary Approval of the plan or design before construction of improvement. The public entity must be able to establish that the plan or design was approved before construction by the "legislative body of the public entity or by some other body or employee exercising discretionary authority to give such approval." Generally, this can be established by showing that the plan or design was signed by someone acting in the capacity of City Engineer.

c) Substantial evidence supporting the reasonableness of the plan or design. The public entity must present "any substantial evidence" sufficient to satisfy the court that the plan or design, or the standards under which the plan or design was prepared, could have been adopted by a reasonable public employee or approved by a reasonable legislative body, or other body or employee. Generally, this is established by a showing that the plan or design was drawn up by a professional engineering firm. It is also important to note that this immunity is not perpetual and can be lost under various circumstances, including a change of physical circumstances that produces a dangerous condition.

D. Conclusion

Although a number of immunities exist in favor public entities in defense of claims involving trails, including bikeways, the immunities pertaining to hazardous recreational activity and design immunity require various conditions to be met, AND each can be lost through various circumstances.

Alternatively, the immunity provided under Section 831.4 for trails is considered "absolute" and "total" and is firmly established for Class I trails. For Class II and Class III trails, despite the expanding nature of the cases bringing various types of trails into the immunity, no appellate level court has yet considered the applicability of Section 831.4.

10. RESOURCES

Caltrans Active Transportation Program (ATP)

http://www.dot.ca.gov/hq/LocalPrograms/atp/

On September 26, 2013, Governor Brown signed legislation creating the Active Transportation Program (ATP) in the Department of Transportation (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program with a focus to make California a national leader in active transportation.

National Association of Transportation Officials (NACTO)

http://nacto.org/

NACTO is a non-profit, membership organization that represents large cities on transportation issues of local, regional, and national significance. As a coalition of city transportation departments, NACTO is committed to raising the state of the practice for street design and transportation by building a common vision, sharing data, peer-to-peer exchange in workshops and conferences, and regular communication among member cities. NACTO publishes the *Urban Street Design Guide (*http://nacto.org/usdg/) and the *Urban Bikeway Design Guide (*http://nacto.org/cities-for-cycling/design-guide/), both available online for free.

League of American Bicyclists

http://bikeleague.org/content/communities

The League provides information, advocacy, and promotion in the movement to create safer roads, stronger communities, and a bicycle-friendly America. The League produces report cards on cities and states progress towards levels of bicycle "friendliness" and promotes a bicycle traffic skills training program with a League Certified Instructor (LCI) designation. Their website is an excellent resource for education materials and tools for becoming recognized as a Bicycle Friendly Community.

Institute of Transportation Engineers (ITE)

http://www.ite.org/css/

ITE has a Pedestrian and Bicycle Standing Committee and produces several relevant design guides and recommended practices, including Context Sensitive Solutions appropriate to designing for bicyclists.

Association of Pedestrian and Bicycle Professionals (APBP)

http://www.apbp.org/

The mission of the Association of Pedestrian and Bicycle Professionals (APBP) is to grow the pedestrian and bicycle profession and its influence by facilitating the exchange of professional and technical knowledge, elevating practitioners' skills and defining the field. APBP now has over 1,300 members and provides numerous resources on best practices for non-motorized planning and design.

Alliance for Biking & Walking

http://www.bikewalkalliance.org

The Alliance is an advocacy group committed to providing resources, coaching, campaign support, and funding to thousands of leaders at state and local advocacy organizations. This organization offers training, benchmarking studies, research and other data to help communities plan and support safe biking and walking.

Advocacy Advance

http://www.advocacyadvance.org

Advocacy Advance is a partnership between the Alliance for Biking & Walking and the League of American Bicyclists to boost local and state bicycle and pedestrian advocacy efforts. Since 2009, Advocacy Advance has awarded over $800,000 to support startup, capacity building, and innovation to more than 40 organizations. These campaigns have contributed to dramatic increases in biking and walking around the country, leveraging a public investment of over $100 million for bicycle and pedestrian projects. Advocacy Advance has compiled a chart of potential grant funds for various types of bikeway projects, which is available on their website.

Pedestrian & Bicycle Information Center (PBIC)

http://www.pedbikeinfo.org

The PBIC is funded by the Federal Highway Administration and provides an online resource for crash data, sample municipal policies, reports, guides, case studies, as well as training and technical assistance to promote increased walking and bicycling in communities.

BIKESAFE

http://www.pedbikesafe.org/BIKESAFE/

BIKESAFE a FHWA approved crash countermeasures selection system that helps identify design and maintenance treatments applicable to location specific needs.

National Bicycle and Pedestrian Documentation Project (NBPD)

http://bikepeddocumentation.org/

NBPD is a nationwide effort to provide a consistent model of data collection and ongoing data for use by planners, governments, and bicycle and pedestrian professionals.

Glossary

AASHTO	Association of American State Highway Transportation Officials produces the Guide for the Development of Bicycle Facilities (4th Edition). (https://bookstore.transportation.org/item_details.aspx?ID=1943)
"Bicycle Friendly"	As defined by the League of American Bicyclists (see Resources), this means a community takes a comprehensive approach to welcoming and encouraging bicyclists by ensuring accommodations are well designed; education is provided to build skills and confidence; a strong bike culture is created through community involvement; and roads remain safe through enforcement and ongoing analysis.
Bikeway	All facilities that provide primarily for bicycle travel (SHC 890.4) including Class I paths or trails, Class II on-street lanes and Class III routes designated by signs and/or sharrows.
CVC	California Vehicle Code. As of 2014, relevant parts of the CVC to bicycling are found between sections 21200 and 21960.
Cycletrack	A protected bikeway for the exclusive use of bicyclists.
FHWA	The Bicycle & Pedestrian Program of the Federal Highway Administration's Office of Human Environment promotes bicycle and pedestrian transportation use, safety, and accessibility. It offers an extensive design guidance reference, including interpretations of the federal MUTCD (http://www.fhwa.dot.gov/environment/bicycle_pedestrian/ and http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/mutcd/)
Geographic Information System (GIS)	A computer system that allows you to map, model, query, and analyze large quantities of data within a single database according to their location. The leading source for GIS systems is ESRI (www.esri.com).
HDM	California Highway Design Manual previously contained all standards and guidelines for bicycle facilities within Chapter 1000; now this material is spread throughout the manual. Assembly Bill 1193 (Protected Bikeways Act 2014) requires Caltrans to develop new guidelines and permits local jurisdictions to use the NACTO guide (see Resources)
MUTCD	Manual of Uniform Traffic Control Devices. California's version (http://www.dot.ca.gov/hq/traffops/engineering/mutcd/) includes blue strikeouts and replacements showing differences from the federal version.
Rideability	Refers to smoothness, drop-offs, depressions, and/or irregularities in the riding surface, including grooves, steps and grates (refer to page 11-12)
Sharrow	Sharrows are shared lane markings indicating the recommended path of travel for bicyclists outside the "door zone" of adjacent parked cars or the position that reduces the risk of being squeezed by an overtaking motorist within a lane not wide enough for side-by-side travel.
SHC	Streets and Highways Code. As of 2014, relevant parts of the SHC to bicycling are found in 161 and 885 to 941.