Appendices

APPENDIX A: Complete Streets Needs Assessment Matrix

COMPLETE STREETS & CORRIDORS																								
	LIMITS		MOBILITY CONTEXT																	LAND USE CONTEXT	PLANNING			
CS CORRIDOR/STREET BY PRIORITY AREA	1	2	DISTANCE (MI)	Daily Traffic	Functional Classification	# of Lanes	Speed Limit	Signalized Intersections	Four Way Stop	Signal Synchronization	Block Length (ft)	Poor Pavement Condition	On-Street Parking (type)	Traffic Calming Devices	Truck Route	Quality Transit Corridor (2035)	Bike Route	SRTS	Wayfinding Signage/ Traveler Information	PLACE TYPES SERVED	COMPLETE STREET TYPE	ISSUES	RECOMMENDED SOLUTIONS	COMMENTS
Pleasure Point																								

PEDESTRIAN NEED/FACILITIES																										
			CONNECTIVITY & COMFORT			CROSSINGS															SAFETY	GAPS	PLANNING			
STREET	Limit 1	Limit 2	Sidewalks	Paved Sidewalk Width	Buffer	Cross Street	Signalized Intersections	Audible Countdown	Walk Phase Timing	Uncontrolled Crossing	Crossing Distance	# Lanes	Median	Crosswalk Signage	Crosswalk Visibility	School Crossing	ADA Ramps	Detectable Warning	Curb Extensions	Lighting	Collision History	Sidewalk Gaps	Proposed Facilities	ISSUES	RECOMMENDED SOLUTIONS	Comments
																									New sidewalks on southside of Brommer. New connections between 38th and 41st	
																							Sidewalk buffer needed	Overall pedestrian environment could be more attractive.		

BICYCLE NEED/FACILITIES

			CONNECTIVITY & COMFORT				CROSSINGS		SAFETY	GAPS	PLANNING			
Street	Limit 1	Limit 2	Bicycle Facility Type	Bicycle Lane Width	Bicycle Parking	Route Signage	Bicycle Detection (Signalized Intersections)	Uncontrolled Crossings (Class I)	Collision History	Bikeway Gaps	Proposed Facilities	ISSUES	RECOMMENDED SOLUTIONS	COMMENTS

TRANSIT NEED/FACILITIES

	CONNECTIVITY & COMFORT											GAPS	PLANNING			
	STOPS & STATIONS							SERVICE								
Street	Cross Street	ADA Access	Bicycle Racks	Distance to Marked Pedestrian Crossing	Shelter	Lighting	Amenities	Routes	Peak Hour Headways	Existing Transit Capacity (along corridor)	Link to Key Destinations	Transit Travel Speeds	Transit Gaps	Proposed Facilities	ISSUES	RECOMMENDED SOLUTIONS	COMMENTS

APPENDIX B: Sample Goals & Policies

Communities may include the entire sample complete streets policy in the general plan circulation element as a complete policy package, or may selectively adopt specific objectives or policies. Communities are encouraged to tailor the policy and implementation measures to local needs, concerns, and conditions, and to identify the local agency or department responsible for implementation. Most circulation elements already include goals, objectives, and policies addressing the needs of motorists and movers of commercial goods, so the package below focuses on other types of users. In tailoring the package for your jurisdiction you may wish to include the entire package as a separate policy set with cross-references to other pre-existing provisions of the circulation element, or you may choose to use some or all of the goals, objectives, and policies below for amendments to existing provisions.

Goal C1: Provide streets that are safe, comfortable, and convenient routes for walking, bicycling, and public transportation to increase use of these modes of transportation, enable active travel as part of daily activities

Objective C1.1: Integrate Complete Streets infrastructure and design features into street design and construction to create safe and inviting environments for people to walk, bicycle, and use public transportation.
"The City will promote context-sensitive streets (i.e., by designing transportation projects within the context of adjacent land uses to improve safety and neighborhood livability, promote transportation choices and meet land use objectives), consistent with the City's Urban Street Design Guidelines." – City of Charlotte

Implementing Policies:

C1.1.1. In planning, designing, and constructing Complete Streets:
o Reference existing planning documents such as the Monterey Bay Area Complete Streets Guidebook and Checklist, local bicycle and pedestrian master plans, specific plans, transit master plans and neighborhood traffic calming plans.
o Include infrastructure that promotes a safe means of travel for all users along the right of way, such as sidewalks, shared use paths, bicycle lanes, and paved shoulders.
o Include infrastructure that facilitates safe crossing of the right of way, such as accessible curb ramps, crosswalks, refuge islands, and pedestrian signals; such infrastructure must meet the needs of people with different types of disabilities and people of different ages.

o Ensure that sidewalks, crosswalks, public transportation stops and facilities, and other aspects of the transportation right of way are compliant with the Americans with Disabilities Act and meet the needs of people with different types of disabilities, including mobility impairments, vision impairments, hearing impairments, and others. Ensure that the [Jurisdiction] ADA Transition Plan includes a prioritization method for enhancements and revise if necessary.
o Prioritize incorporation of street design features and techniques that promote safe and comfortable travel by pedestrians, bicyclists, and users of public transportation, such as traffic calming circles, additional traffic calming mechanisms, narrow vehicle lanes, raised medians, dedicated transit lanes, transit priority signalization, transit bulb outs, road diets, high street connectivity, and physical buffers and separations between vehicular traffic and other users.
o Ensure use of additional features that improve the comfort and safety of users:
☐ Provide pedestrian-oriented signs, pedestrian-scale lighting, benches and other street furniture, bicycle parking facilities, and comfortable and attractive public transportation stops and facilities.
☐ Encourage street trees, landscaping, and planting strips, including native plants where possible, in order to buffer traffic noise and protect and shade pedestrians and bicyclists.
☐ Reduce surface water runoff by reducing the amount of impervious surfaces on the streets.

C1.1.2. In all street projects, include infrastructure that improves transportation options for pedestrians, bicyclists, and users of public transportation of all ages and abilities.

COMMENT: This provision, which requires that all street projects on new or existing streets create complete streets, is a fundamental component of a commitment to complete streets.

o Ensure that this infrastructure is included in planning, design, approval, construction, operations, and maintenance phases of street projects.
o Incorporate this infrastructure into all construction, reconstruction, retrofit, maintenance, alteration, and repair of streets, bridges, and other portions of the transportation network.
o Incorporate multimodal improvements into pavement resurfacing, restriping, and signalization operations where the safety and convenience of users can be improved within the scope of the work.
o Develop systems to implement and monitor incorporation of such infrastructure into construction and reconstruction of private streets.
o Allow exclusion of such infrastructure from street projects only upon written approval by [the City Manager or a senior manager of an appropriate agency, such as the Department of Public Works], and only where documentation and supporting data indicate one of the following bases for the exemption: (a) use by a specific category of users is prohibited by law; (b) the cost would be excessively disproportionate to the need or probable future use over the long term; (c) there is an absence of current and future need; or (d) significant adverse impacts outweigh the positive effects of the infrastructure.

> COMMENTS: This provision provides crucial accountability in the exceptions process by requiring documentation, a transparent decision-making process, and written approval by a specified official. Other exceptions can also be included in this list.
>
> In evaluating whether the conditions of (b) and (c) are met, a jurisdiction may need to conduct latent demand studies, which measure the potential level of use by bicyclists, pedestrians, and others should appropriate infrastructure be provided. Such projections should be based on demographic, school, employment, and public transportation route data, not on extrapolations from current low mode use.

o Provide an annual report to the [City Council/Board of Supervisors] listing the street projects undertaken in the past year and briefly summarizing the complete streets infrastructure used in those projects and, if applicable, the basis for excluding complete streets infrastructure from those projects.

C1.1.3. Develop policies and tools to improve [Jurisdiction]'s Complete Streets practices:
o Develop a pedestrian crossings policy, addressing matters such as where to place crosswalks and when to use enhanced crossing treatments.
o Develop policies to improve the safety of crossings and travel in the vicinity of schools and parks.
o Consider developing a transportation demand management/commuter benefits ordinance to encourage residents and employees to walk, bicycle, use public transportation, or carpool.
o Develop a checklist for [Jurisdiction]'s development and redevelopment projects, to ensure the inclusion of infrastructure providing for safe travel for all users and enhance project outcomes and community impact.
o As feasible, [Jurisdiction] shall incorporate Complete Streets infrastructure into existing public [and private] streets to improve the safety and convenience of Users, construct and enhance the transportation network for each category of Users, and create employment.

C1.1.4. Encourage transit-oriented development that provides public transportation in close proximity to employment, housing, schools, retailers, and other services and amenities.

C1.1.5. Change transportation investment criteria to ensure that existing transportation funds are available for Complete Streets infrastructure.

C1.1.6. Identify additional funding streams and implementation strategies to retrofit existing streets to include Complete Streets infrastructure.

Objective C1.2: Make Complete Streets practices a routine part of [Jurisdiction]'s everyday operations.

Implementing Policies:

C1.2.1. As necessary, restructure and revise the zoning, subdivision, and [insert by name references to other relevant chapters of the city or county code such as "Streets and Sidewalks" or "Motor Vehicles and Traffic"] codes, and other plans, laws, procedures, rules, regulations, guidelines, programs, templates, and design manuals, including [insert references to all other key documents by name], in order to integrate, accommodate, and balance the needs of all users in all street projects on public [and private] streets.

C1.2.2. Develop or revise street standards and design manuals, including cross-section templates and design treatment details, to ensure that standards support and do not impede Complete Streets; coordinate with related policy documents [such as Pedestrian/Bicycle Plans, insert other relevant documents].

Assess current requirements with regard to road width and turning radii in order to determine the narrowest vehicle lane width and tightest corner radii that safely balance other needs; adjust design guidelines and templates to reflect ideal widths and radii.

C1.2.3. Make training available to planning and public works personnel and consultants on the importance of Complete Streets and on implementation and integration of multimodal infrastructure and techniques.

C1.2.4. Encourage coordination among agencies and departments to develop joint prioritization, capital planning and programming, and implementation of street improvement projects and programs.

C1.2.5. Encourage targeted outreach and public participation in community decisions concerning street design and use.

C1.2.6. Establish performance standards with measurable outcomes to assess safety, functionality, and actual use by each category of users; include goals such as:

- By [2020], facilitate a transportation mode shift so that [20] % of trips occur by bicycling or walking.
- By [2015], reduce the number of injuries and fatalities to bicyclists and pedestrians by [__]%.
- Reduce per capita vehicle miles traveled by [__]% by [insert year].
- Provide a high proportion of streets ([__]%) with sidewalks, low design speeds, tree canopy, and street furnishings.
- Increase the miles of bicycle lanes and other bikeways by [__]% by [insert year].
- Increase the miles of sidewalks by [__]% by [insert year]

COMMENT: Other standards could include user satisfaction, percentage reductions in greenhouse gas emissions, and reduction in gaps in the sidewalk network.

C1.2.7. Establish measures of effectiveness for the performance of the circulation system and the effects of new projects on the system, taking into account all modes of transportation including walking, bicycling, and public transportation. Ensure that measures address relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and public transportation; use these measures for planning and in lieu of automobile level of service standards for environmental review.

C1.2.8. Collect baseline data and regularly gather follow-up data in order to assess impact of policies.

- Collect data for each category of users regarding the safety, functionality, and actual use of the neighborhoods and areas within [Jurisdiction].
- Track public transportation ridership numbers.
- Track performance standards and goals.
- Track other performance measures such as number of new curb ramps and new street trees or plantings.
- Require major employers to monitor how employees commute to work.
- All initial planning and design studies, health impact assessments, environmental reviews, and other project reviews for projects requiring funding or approval by [Jurisdiction] shall: (1) evaluate the effect of the proposed project on safe, comfortable, and convenient travel by bicyclists, children, persons with disabilities, pedestrians, users of public transportation, seniors, youth, and families, and (2) identify measures to mitigate any adverse impacts on such travel that are identified.

Objective C1.3: Plan and develop a comprehensive and convenient bicycle and pedestrian transportation network.

COMMENTS: Jurisdictions with existing bicycle or pedestrian plans may have already addressed the policy/action items under this objective. In such jurisdictions, it is not necessary to restate these policy and action items verbatim. Such plans should be reviewed, and, if necessary, revised to complement the complete streets approach. If existing plans address this objective sufficiently, a jurisdiction may incorporate its bicycle and pedestrian plans with language such as: "The provisions set forth in the [Pedestrian/Bicycle Plan] are incorporated into this plan." If this approach is used, be sure that the incorporated plan is internally consistent with the remainder of the general plan.

For jurisdictions that have not developed a detailed bicycle or pedestrian plan, the policies and actions in this section provide a good way to begin addressing those needs in an integrated fashion.

Implementing Policies:

C1.3.1. Develop a long-term plan for a bicycle and pedestrian network that meets the needs of users, including bicyclists, children, persons with disabilities, pedestrians, users of public transportation, seniors, youth, and families.

- Conduct a demand analysis for each category of user, mapping locations that are already oriented to each mode of travel and type of user and those for which there is latent demand.
- For each category of user, map out a preferred transportation network with routes that will enable safe, interconnected, direct, continuous, and efficient travel from each major origination area to each major destination area.
- Encourage public participation in community decisions concerning the demand analysis, preferred route network, and street design and use to ensure that such decisions: (a) result in streets that meet the needs of all users, and (b) are responsive to needs of individuals and groups that traditionally have not participated in public infrastructure design. Include bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, seniors, youth, families, low-income communities, communities of color, and other distinct social groups, and their advocates. Establish ongoing advisory committees and public feedback mechanisms.
- Identify and prioritize necessary changes in order to implement the preferred network; prioritize neighborhoods with the greatest need and projects that significantly alleviate economic, social, racial, or ethnic inequities.
- Ensure that the networks provide ready access to healthy sources of nutrition.
- Explore the use of non-standard locations and connections for bicycle, pedestrian, and public transportation facilities, such as easements, restored stream corridors, and railroad rights-of way.

C1.3.2. Evaluate timeline and funding of the plan.

- Assess the degree to which implementation of the plan can be coordinated with planned reconstruction of streets, development projects, utility projects, and other existing funding streams.
- Develop funding strategies for addressing additional needs; actively pursue funding from state, federal, and other sources.
- Explore imposing development impact fees and dedication requirements on new development to create paths and other Complete Streets infrastructure.

C1.3.3. In collaboration with [appropriate local agencies and regional transportation planning agencies/metropolitan planning organizations], integrate bicycle, pedestrian, and public transportation facility planning into regional and local transportation planning programs and agencies to encourage connectivity between jurisdictions.

C1.3.4. Develop programs to encourage bicycle use, such as enacting indoor bicycle parking policies to encourage bicycle commuting, or testing innovative bicycle facility design.

Objective C1.4: Promote safety of bicyclists, pedestrians, and public transportation.

> COMMENT: As noted for the previous objective, jurisdictions with existing bicycle or pedestrian plans may also choose to omit these items if already addressed in those plans and instead reference those plans.

Implementing Policies:

C1.4.1. Identify physical improvements that would make bicycle and pedestrian travel safer along current major bicycling and walking routes and the proposed future network, prioritizing routes to and from schools.

C1.4.2. Identify safety improvements to pedestrian and bicycle routes used to access public transportation stops; collaborate with [public and private transit agencies operating within Jurisdiction] to relocate stops where advisable.

C1.4.3. Identify intersections and other locations where collisions have occurred or that present safety challenges for pedestrians, bicyclists, or other users; consider gathering additional data through methods such as walkability/bikeability audits; analyze data; and develop solutions to safety issues.

C1.4.4. Prioritize modifications to the identified locations and identify funding streams and implementation strategies, including which features can be constructed as part of routine street projects.

C1.4.5. Collaborate with schools, senior centers, advocacy groups, and public safety departments [insert additional specific departments as appropriate] to provide community education about safe travel for pedestrians, bicyclists, users of public transportation, and others.

C1.4.6. Use crime prevention through environmental design strategies to increase safety for pedestrians, bicyclists, and other users.

C1.4.7. As necessary, public safety departments should engage in additional enforcement actions in strategic locations.

Objective C1.5: Make public transportation an interconnected part of the transportation network.

Implementing Policies:

C1.5.1. Partner with [public and private transit agencies operating within Jurisdiction] to enhance and expand public transportation services and infrastructure throughout [Jurisdiction] and the surrounding region; encourage the development of a public transportation system that increases personal mobility and travel choices, conserves energy resources, preserves air quality, and fosters economic growth.

C1.5.2. Work jointly with [public and private transit agencies operating within Jurisdiction] to provide destinations and activities that can be reached by public transportation and are of interest to public transportation-dependent populations, including youth, seniors, and persons with disabilities.

C1.5.3. Collaborate with [public and private transit agencies operating within Jurisdiction] to incorporate infrastructure to assist users in employing multiple means of transportation in a single trip in order to increase transportation access and flexibility; examples include, but are not limited to, provisions for bicycle access on public transportation, secure bicycle racks at transit stops, access via public transportation to trails and recreational locations, and so on.

C1.5.4. Ensure safe and accessible pedestrian routes to public transportation stops; relocate stops if safe routes are not feasible at current location.

C1.5.5. Work with [public and private transit agencies operating within Jurisdiction] to ensure that public transportation facilities and vehicles are fully accessible to persons with disabilities.

C1.5.6. Explore working with [public and private transit agencies operating within Jurisdiction] to provide travel training programs for seniors and persons with disabilities, and awareness training for vehicle operators.

C1.5.7. Explore creation of public transportation priority lanes to improve travel time.

C1.5.8. Partner with [public and private transit agencies operating within Jurisdiction] to collect data and establish performance standards related to these steps.

i. Note that many types of accommodations for people with disabilities are mandated by federal law under the Americans with Disabilities Act.

ii. A road diet is a transportation technique in which the number or width of lanes dedicated to motor vehicle traffic is decreased, often by combining the two central lanes into a single two-way turn lane, in order to create additional space within the right of way for features such as bicycle lanes, sidewalks, or buffer zones.

iii. Connectivity describes the directness of routes and density of connections in a street network. A street network with high connectivity has many short links, numerous intersections, and few dead-end streets. As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations.

iv. Crime prevention through environmental design (CPTED) involves designing the built environment to deter criminal behavior. CPTED aims to create environments that discourage the commission of crimes by influencing offenders to not commit a contemplated crime, usually due to increased fear of detection.

APPENDIX C: Multimodal Network Quality Analysis

MULTIMODAL NETWORK QUALITY ANALYSIS

Some communities are not pursing new Multimodal Level of Service measures as defined in the Highway Capacity manual because collecting the new data required can be resource intensive. Instead, some communities are choosing more qualitative measures of multimodal effectiveness. The Santa Cruz County Regional Transportation Commission rested tested a Multimodal Network Quality of Service measure to evaluate how transportation investment affected the quality and convenience of bicycle, and pedestrian trips. The methodology used was developed as a cooperative effort with the Sustainable Transportation Council, the agency responsible for developing the Sustainable Transportation Analysis and Rating System. The analysis methods used are based on the multimodal network quality of service measures applied in Burien, Washington.

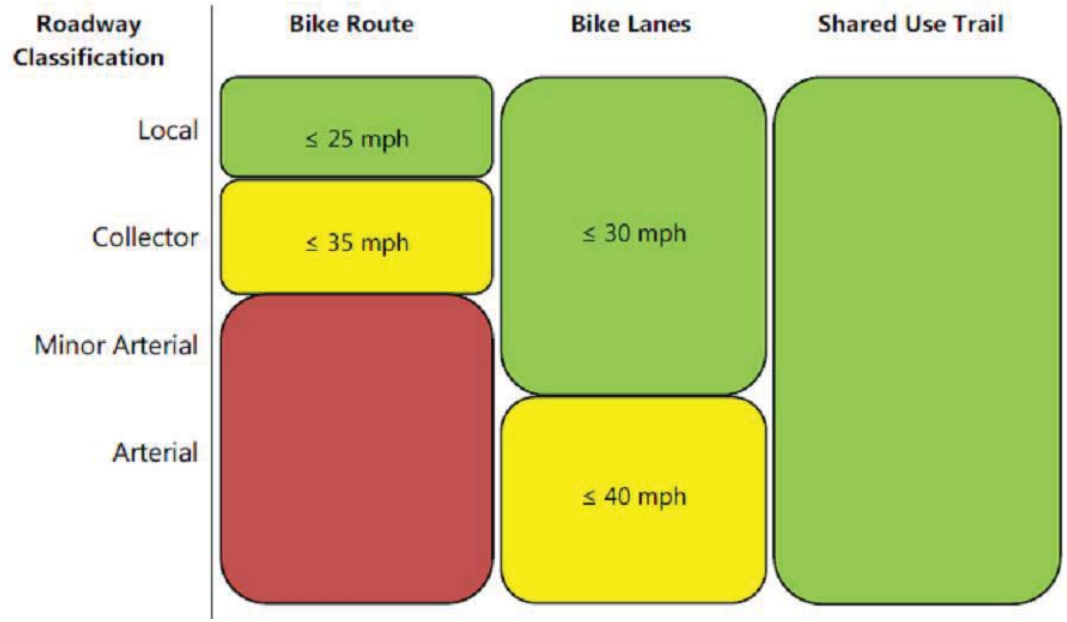
PEDESTRIAN SYSTEM SCORE METHODOLOGY

Pedestrian network quality standards utilize scoring criteria for sidewalks/paths. The criteria focus on the factors that make a good pedestrian environment based on the character of the street. Therefore there are different thresholds for arterials/collectors and local roads. The service score designations are show as green, yellow, and red. A green score is defined as a high quality pedestrian route. A yellow score indicates acceptable conditions, while a red score would not be attractive to many potential pedestrians (Table 1).

Table 1. Pedestrian MMNQ Score

Network Score	Along Arterials and Collectors	Local Roads
	6′ Sidewalk and 3′ buffer or tree wells on both sides	Sidewalks on both sides
	Sidewalk on both sides	Sidewalk on one side
	No Sidewalk on one or both sides	No Sidewalk

Table 2. Bicycle MMNQ Score



The scoring system for the bicycle network depends on the type of bicycle facility provided: bike route, bike lane, or shared use trail. As shown in Table 2, roadway classification and speed are intended to guide the determination of which bicycle facility type is most appropriate for a given roadway. Unlike with the pedestrian MMNQ analysis, bicycle MMNQ analysis is not performed on every street. Only the streets identified as having a facility are included in this analysis, since some streets may not be appropriate for cycling.

DATA REQUIREMENTS

Data related to roadway functional class, sidewalk width, presence of buffer, bicycle facility type (route, lane, path) and roadway speed were all taken into account when evaluating the MMNQ score.

APPENDIX D: Complete Streets Action Plan Template

NAME: [Jurisdiction] DATE:

COMPLETE STREET ACTION PLAN				
IMPLEMENTATION ACTION*	TIMELINE			LEAD DEPARTMENT
	Short	Long	Ongoing	
General Plan Vision				
General Plan Policy & Goals				
Transportation Plan Policy & Goals				
Performance Measures				
Planning Guidance Manual				
Street Design Standards & Specifications				
Transportation Analysis/ Impact Guidelines				
Maintenance Manuals				
Funding Guidelines				
Training Standards				

*Titles and actions may vary by jurisdiction. This list is meant to serve as an example only.

APPENDIX E: Legal Standing of Street Manual

Note: The discussion included in this Appendix was adopted from the Los Angeles County Model Design Manual for Living Streets, 2011.

Local jurisdictions generally follow some established standards for designing streets. Much confusion exists as to what they must follow, what is merely guidance, when they can adopt their own standards, and when they can use designs that differ from existing standards. The text below untangles the myriad of accepted design documents. It is critical for cities and counties to understand how adopting this manual meshes with other standards and guides. The most important of those standards and guides are the following:

- The American Association of State Highway and Transportation Officials' (AASHTO) A Policy on Geometric Design of Highways and Streets (the "Green Book")
- The California Highway Design Manual
- Local manuals or street design standards
- The Manual on Uniform Traffic Control Devices (MUTCD)
- The California Fire Code
- The California Streets and Highways Code and California Vehicle Code

A discussion of the federal-aid roadway classification system helps to frame the requirements of each of these documents. Local governments that wish to use certain federal funds must use a street classification system based on arterials, collectors, and local streets. These funds are for streets and roads that are on the federal-aid system. Only arterials and certain collector streets are on this system. In Chapter 3, "Street Networks and Classifications," this manual recommends an alternative system. To maintain access to these federal funds, local jurisdictions can use both systems. The federal aid system encourages cities to designate more of these larger streets, and to concentrate modifications along these larger streets. Nevertheless, for the purposes of understanding design standards and guides, this is the existing system of street classification for federal funding.

AASHTO GREEN BOOK

The Green Book provides guidance for designing geometric alignment, street width, lane width, shoulder width, medians, and other street features. The Green Book applies only to streets and roads that are part of the National Highway System (NHS). These are Interstate Freeways, principal routes connecting to them, and roads important to strategic defense. These streets and roads comprise about 14 percent of all federal-aid roadway miles in California, and about 4 percent of all roadway miles (Urgo, J., Wilensky, M., and Weissman, S., Moving Beyond Prevailing Street Design Standards, The Center for Law, Energy, and the Environment at the Berkeley Law School, 2010). Although the Green Book's application is limited to these streets, some cities apply its recommendations to all streets.

Further, the Green Book provides guidance that cities often unnecessarily treat as standards. The Green Book encourages flexibility in design within certain parameters, as evidenced by the AASHTO publication A Guide to Achieving Flexibility in Highway Design. For example, 10-foot lanes, which cities often shun out of concerns of deviating from standards, are well within AASHTO guidelines.

CALIFORNIA HIGHWAY DESIGN MANUAL

The California Highway Design Manual (HDM) applies only to State Highways and bikeways within local jurisdictions. If cities deviate from the minimum widths and geometric criteria for bikeways spelled out in Chapter 1000 they are advised to follow the exemption process or experimental process as applicable. The HDM does not establish legal standards for designing local streets. However, like the Green Book, some cities apply HDM guidance to all streets.

As of the writing of this manual, Caltrans is in the process of revising the HDM to meet Caltrans' commitment to Complete Streets in Deputy Directive 64-R1.

LOCAL STREET MANUALS

Local jurisdictions follow the Green Book, the HDM, or design guidance from organizations such as the Institute of Transportation Engineers (ITE) out of liability concerns. Neither federal nor state law mandates adoption or adherence to these guides. However, municipalities often adopt them to protect themselves from lawsuits. Further, many don't have the resources to develop their own standards and practices, so they adopt those in the Green Book, the HDM, or another previously adopted manual, or those of other cities,

A question often posed by plaintiffs' attorneys in traffic-related crashes is, "Did they follow established or prevailing designs, standards, and guidance?" If the attorneys can prove that the local jurisdiction deviated from these, they enhance their chances of winning a judgment against the jurisdiction. Therefore, protection from liability is paramount.

Cities are authorized to adopt or modify their own practices, standards, and guidelines that may reflect differences from the Green Book and the HDM. If these changes generally fall within the range of acceptable practice allowed by nationally recognized design standards, the adopting agencies are protected from liability to the same extent they would be if they applied the Green Book or the HDM. Most changes to streets discussed in this manual fall within the range of the guidelines or recommended practices of nationally recognized organizations such as AASHTO, ITE, Urban Land Institute (ULI), and Congress for the New Urbanism (CNU).

Working within previously established regional guidelines generally should result in a design that is protected from liability. The Green Book and the HDM are silent on many design features, and do not consider the needs within unique contexts. In these cases, cities can develop their own guidelines and standards and incorporate international equivalents or practices from other cities. Cities may adopt the guidance in this manual, which compiles best practices in creating living streets. This manual could, in effect, become the legal prevailing standard by which liability would be assessed.

Cities can also utilize designs that fall outside the ranges specified by nationally accepted guidelines and standards, but these practices can potentially increase liability unless done with great care. When agencies elect to utilize designs that fall outside the guidelines of nationally recognized documents, they need to use additional care to ensure they do not expose themselves to liability.

To minimize liability, local jurisdictions either need to adopt their own standards (which should be based on rationale or evidence of reasonableness), or they can conduct an experimental project. When conducting an experimental project, agencies need to show that they are using the best information that is reasonably available to them at the time, document why they are doing what they are doing, use a logical process, and monitor the results and modify accordingly. This is because the agency may be required in the future to show that its design is reasonable, and the agency may not be able to cite a nationally published guideline or recommendation to support its local action. Often, these experimental projects are conducted because the design engineer has reason to believe that the new or evolved design will be safer or otherwise more effective for some purpose than if the project had prevailing standards and guides been used. These reasons or rationales are based on engineering judgment and should be documented to further minimize exposure to liability.

Unless otherwise noted, everything in this manual can readily be adopted and incorporated without fear of increased liability. In addition, this manual carries the credibility of the many top-level experts who produced it.

In some cases, AASHTO design guidelines may not provide information on innovative or experimental treatments that have shown great promise in early experiments and applications. Since AASHTO is a design guide, agencies have some flexibility to use designs that fall outside the boundaries of the AASHTO guide. Deviation from the range of designs provided in the AASHTO guide requires agencies to use greater care and diligence to document their justification, precautions, and determination to deviate from the guidelines. In California, the precautions to establish

"design immunity" should be followed. These include consideration/analysis and approval by a registered engineer qualified to sign the plans, and certification by the city council or reviewing body clearly indicating the agency's intent. This process documents the engineering judgment that went into the design.

Many cities today use various traffic calming measures to slow traffic and to improve neighborhood livability. Traffic calming measures are not traffic control devices and therefore the state exercises no jurisdiction over them.

Local agencies may currently use many other reports and documents to guide their roadway design and transportation planning. Other documents provide valuable procedure and reference data, but they do not set standards. They can be referred to and defined as standards by local agencies, but the local authority often has the flexibility to selectively endorse, modify, or define how these informational documents can be used or incorporated into its engineering and planning processes. Also, newer versions of these documents have additional information that can conflict with the local historical approach.

The expected results of the design approaches presented in this document are generally intended to improve safety and/or livability. As a result, implementation of these features should generally reduce liability and lawsuits. There is no way to prevent all collisions or lawsuits, but adopting policies, guidelines, and standards and doing experimental projects with reasonable precautions is a defensible approach.

MUTCD

The MUTCD provides standards and guidance for the application of all allowed traffic control devices including roadway markings, traffic signs, and signals. The Federal Highway Administration oversees application of the MUTCD. California cities must follow the California MUTCD, which generally mirrors the federal MUTCD, but not always.

The rules and requirements for the use of traffic control devices are different than for street design criteria. Local agencies have limited flexibility to deviate from the provisions of the California MUTCD in the use of traffic control devices due to the relationship between the MUTCD and state law. The California MUTCD does provide flexibility within its general provisions for items such as application of standard traffic control devices, use of custom signs for unique situations, traffic sign sizes, and sign placement specifics. In contrast, agencies do not generally have the flexibility to

develop signs that are similar in purpose to signs within the manual while using different colors, shapes, or legends. Agencies are also not authorized to establish traffic regulations that are not specifically allowed or are in conflict with state law. The provisions of the California MUTCD and related state laws thus make it difficult to deploy new traffic control devices in California. This can result in complications, especially in the areas of speed management, pedestrian crossings, and bikeway treatments.

The State of California and the Federal Highway Administration have procedures that allow local agencies to experiment with traffic control devices that are not included in the current MUTCD. Such demonstrations are not difficult to obtain from the Federal Highway Administration for testing of new devices, especially as they relate to pedestrian and bicycle facilities, but the requesting agency must agree to conduct adequate before-and-after studies, submit frequent reports on the performance of the experimental device, and remove the device if early results are not promising. The State process can be more difficult for obtaining approval. Federal approval must be obtained first. The California Traffic Control Devices Committee advises Caltrans, which must then agree to allow the experiment to be conducted and determine that the experiment is not in conflict with State law. Once approval is granted for the experiment, the city has been given some legal immunity from liability suits. Since the California Vehicle Code is written to mirror the MUTCD, provisions within the Vehicle Code may not allow the experiment to proceed. The need to modify the Vehicle Code can complicate obtaining State permission to experiment.

Both the federal and California MUTCD are amended through experimentation. After one or more experiments have shown benefit, the new devices are sometimes adopted into these manuals. In California, the Vehicle Code must be changed first if the Vehicle Code prevents use of the new device.

The federal MUTCD and California MUTCD establish warrants for the use of some traffic control devices. For example, stop signs, traffic signals, and flashing beacons are expected to meet minimum thresholds before application. These thresholds include such criteria as number of vehicles, number of pedestrians or other uses, distance to other devices, crash history, and more. These warrants often prevent local engineers from applying devices that, in their opinion, may improve safety. For example, trail and/or pedestrian crossings of busy, high-speed, wide arterial streets may need signals for user safety, but they may not meet the warrants.

As with street design guidelines, cities may establish their own warrants or modify those suggested by the California MUTCD to suit their context in order to use some traffic control devices. In special circumstances that deviate from their own warrants, cities need to document their reasons for the exception. For example, they may say the trail crossings or school crossings qualify for certain traffic control devices.

CALIFORNIA FIRE CODE

The California Fire Code can impede street design in limited circumstances. The state legislature has adopted the National Fire Code. The National Fire Code is written by a private agency and has no official legal standing unless states or municipalities adopt it, as has been done in California. The primary barrier caused by this adoption is the requirement for a minimum of 20 feet of an unobstructed clear path on streets. To comply with this, streets with on-street parking on both sides must be at least 34 feet wide. This prevents municipalities from designing "skinny" and "yield" streets to slow cars and to make the streets safer, less land consumptive and more hospitable to pedestrians and bicyclists.

There are ways around this requirement. If the local jurisdiction takes measures such as installing sprinklers and adding extra fire hydrants, or the adjacent buildings are built with fire retardant materials, it may be able to get the local fire department to agree to the exception.

Alternatively, the state legislature could repeal its adoption of the 20-foot clear path requirement due to

- The arbitrary and unresearched nature of the provision
- The safety problems associated with the resulting excessively wide streets
- The contradiction that this provision causes with properly researched guidelines and standards by ITE, CNU, AASHTO, and others for streets under 34 feet wide
- The potential liability that the 20-foot clear provision creates for designers who maintain, modify, or design streets that do not provide 20-foot clear paths

It is likely that the state legislature was unaware of these issues when it adopted the code in its entirety.

CALIFORNIA STREETS AND HIGHWAYS CODE AND CALIFORNIA VEHICLE CODE

The California Streets and Highways Code and the California Vehicle Code include laws that must be followed in street design. These are embodied in the California MUTCD. Changes to the Streets and Highways Code and the Vehicle Code may cause the California MUTCD to change.

APPENDIX F: Land Use Place Type Matrix

Urban Place Types

	Intensity	General Characteristics		Examples
		Land Use	Transportation	
U-1 Urban Single-Family Residential 	Low to Medium Intensity (6 to 18 units per acre)	Single-family homes in close proximity to urban centers, typically laid out in a grid block pattern. Includes occasional duplexes, accessory units, and/or small multi-unit buildings. Compact development pattern with small lots, limited setbacks, and close proximity of structures.	Short blocks, grid street pattern, and proximity to destinations support non-motorized modes of transportation. Complete sidewalks and bicycle infrastructure typically present. Neighborhoods served by bus service with typical 30-minute headways; occasional proximity to multi-modal, regional, or intercity transit stations.	Chestnut Street, Santa Cruz Hellam Street, Monterey
U-2 Urban Multi-Family Residential 	Medium Intensity (12 to 30 units per acre)	Small and large apartment buildings, duplexes, accessory units, and limited single-family homes in close proximity to urban centers. Well-integrated into the surrounding urban fabric. One- to five-story residential buildings on small to medium lots with minimal setbacks from property lines and adjacent structures. Building entrances typically oriented to the street.	Short blocks, grid street pattern, land-use diversity, and proximity of destinations support non-motorized modes of transportation. Complete sidewalks and bicycle infrastructure typically present. Neighborhoods served by bus service with typical 30-minute headways; occasional proximity to multi-modal, regional or intercity transit stations.	Clay Street, Monterey 3rd Street, Santa Cruz
U-3 Urban Commercial 	Low Intensity (FAR 1.0 or less)	A high concentration of retail, service, and office uses organized in a grid block pattern. A pedestrian-friendly environment supported by active ground floor building frontages, entrances oriented to the street, parking located to the rear of lots, and buildings placed at or near property lines.	Short blocks, grid street pattern, land-use diversity, and proximity of destinations support non-motorized modes of transportation. Wide sidewalks support pedestrian circulation; motorists frequently park once to visit multiple destinations. Multiple bus routes typically with 30-minute headways; occasional presence of multi-modal, regional or intercity transit stations.	Downtown Santa Cruz Downtown Monterey

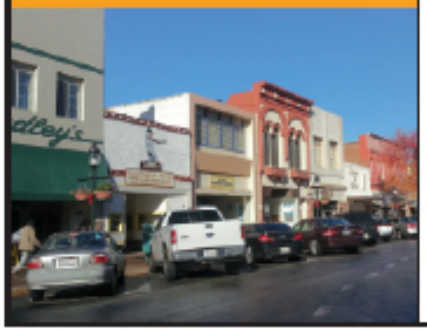
U-4 Urban Mixed Use 	Medium to High Intensity (FAR greater than 2.0)	Commercial, office, and residential uses in medium- to large-scale buildings. Vertical mixed use with residential or office above ground floor retail is typical. A pedestrian-friendly environment supported by active ground floor building frontages, entrances oriented to the street, parking located to the rear of lots, and buildings placed at or near property lines.	High-quality pedestrian infrastructure supports pedestrian circulation. Short blocks, grid street pattern, land-use diversity, and proximity of destinations support non-motorized modes of transportation; motorists frequently park once to visit multiple destinations. Transit typically includes modest to robust bus service, with headways averaging 15 to 30 minutes.	Downtown Santa Cruz Downtown Monterey

Suburban Place Types				
	Intensity	General Characteristics		Examples
		Land Use	Transportation	
S-1 Single-Family Residential 	Low Intensity (3 to 8 units per acre)	Single-family homes in self-contained residential neighborhoods. One- to two-story buildings typically on 5,000 to 15,000 square foot lots with moderate to large setbacks.	Automobile-oriented with resident-serving local, collector, and occasionally arterial streets. Limited local transit service and park-and-ride lots. Sidewalks and bicycle facilities for recreational use.	Cliffwood Heights neighborhood, Capitola Deer Flats neighborhood, Monterey Hillcrest neighborhood, Hollister
S-2 Multi-Family Residential 	Low to Medium Intensity (10 to 25 units per acre)	Duplexes, apartment complexes, subdivided houses, and mobile home parks in a generally low-density setting. Generally one- to four-story buildings on lots of varying sizes, often inward-oriented.	Automobile-oriented, most often found along collector or arterial streets. Limited local transit service and park-and-ride lots. Sidewalks and bicycle facilities for recreational use.	Bay Tree Apartments, Scotts Valley Capato Court, Hollister Footprints on the Bay, Monterey

S-3 Neighborhood Commercial 	Low Intensity (FAR less than 0.5)	Stand-alone retail buildings, strip malls, local-serving big-box stores, and smaller-scale offices or office parks. Usually one story buildings occupying low proportion of total lot area; offices in some instances are multi-story. Typically set far back from street.	Automobile-oriented with large parking areas and limited pedestrian access; usually found along arterial streets. Limited local or, in rare instances, intercity transit service. Sidewalks and bicycle facilities usually absent or limited.	Forest Ave-Fairway Shopping Center, Pacific Grove McCray-Meridian Shopping Center, Hollister Kings Village Shopping Center, Scotts Valley
S-4 Regional Commercial 	Low Intensity (FAR less than 0.5) or occasionally Moderate Intensity (FAR 1.0 to 2.0)	Large-scale retail or entertainment uses with a regional draw, including shopping malls, national-chain big-box stores, and tourist destinations. Most frequently occurs as large retail stores with substantial surrounding parking areas, but may also include more pedestrian-oriented or urban forms, especially for tourist destinations.	Automobile oriented, with most shoppers or visitors arriving by car; usually found along arterial streets or in core commercial areas. Transit access varies by setting, but in most instances includes only limited local or, in rare instances, intercity transit service. Except when located in core commercial areas, pedestrian and bicycle access and amenities tend to be limited or absent.	Capitola Mall Cannery Row, Monterey Airline Highway Shopping Center, Hollister Sand Dollar Shopping Center, Sand City
S-5 Employment Center 	Low to Medium Intensity (FAR from less than 1.0 to 2.0)	Office and research-oriented industrial land uses with medium to high employment densities. Buildings typically have low to moderate lot coverage; may have multiple stories or higher lot coverage. Suburban-style office parks, with multi-story office buildings and large parking lots are typical, as are stand-alone office buildings with surrounding parking.	Usually auto-oriented with large areas of surface parking, or occasionally parking garages. May in limited instances include internal pedestrian-oriented features. Transit service is reflective of surrounding place types, but is typically similar to other suburban place types, with limited service and frequency. Larger employment centers may feature private shuttle services.	Tres Pinos Road and Rancho Drive, Hollister Ryan Ranch Office Park, Monterey
S-6 Neighborhood Mixed Use 	Medium Intensity (25 or more units per acre; FAR usually 2.0 or greater)	Multi-family, mixed-use developments with ground-floor, neighborhood-serving retail or office uses. Usually found in newly built traditional neighborhood developments or as infill along existing commercial corridors. Buildings usually have high lot-coverage, with no setbacks and pedestrian-oriented entrances directly fronting the street.	Pedestrian, bicycle, and transit oriented with bicycle parking, limited or tucked-away car parking, and pedestrian amenities. Transit service typically similar to other suburban place types, but with greater potential for increased transit service and facilities.	Capitola Beach Villas Greenfield Village

Town Place Types

	Intensity	General Characteristics		Examples
		Land Use	Transportation	
T-1 Town Single-Family Residential 	Low to Medium Intensity (6 to 15 units per acre)	Single-family homes in close proximity to town centers or pedestrian-oriented commercial corridors, typically laid out in a grid block pattern. Includes some duplexes, accessory units, or small multi-unit buildings. Compact development pattern with small lots, limited setbacks, and close proximity of structures.	Short blocks, grid street pattern, and proximity to destinations support non-motorized modes of transportation. Complete sidewalks often present; bicycle infrastructure typically limited. Neighborhoods served by bus service with 30-minute or more headways; occasional proximity to regional or intercity transit service.	Jewel Box, Capitola Maple Street, Salinas 6th Street, Hollister
T-2 Town Multi-Family Residential 	Medium Intensity (12 to 30 units per acre)	Combination of apartment buildings, duplexes, accessory units, and some single-family homes. Usually located in areas with traditional street patterns. One- to three-story residential buildings, typically with small setbacks from the street and property lines.	Short blocks, grid street pattern, and proximity to destinations support non-motorized modes of transportation. Complete sidewalks often present; bicycle infrastructure typically limited. Neighborhoods served by bus service with 30-minute or more headways; occasional proximity to regional or intercity transit service.	Laine Street, New Monterey Neighborhood East Riverside Drive, Watsonville
T-3 Town Commercial 	Low Intensity (FAR 1.0 or less)	Pedestrian-oriented commercial uses in town core commercial areas or along commercial corridors. Usually in areas with traditional street patterns. One-story buildings, often with no setbacks and sometimes with full lot coverage. Entrances usually face the street. Lots occasionally include parking, usually located at rear.	Short blocks, grid street pattern, and nearby residential uses support non-motorized modes of transportation. Complete sidewalks often present; bicycle infrastructure typically limited. Transit typically includes limited local service, with headways as short as 30 minutes. Many visitors arrive by car, particularly when traveling long distances.	Bay and Misstion Street, Santa Cruz Downtown Carmel

T-4 Town Mixed Use 	Low to Medium Intensity (FAR 1.0 to 3.0)	Small-scale, mixed-use buildings typically in core commercial areas or along commercial corridors. Usually in areas with traditional street patterns. Vertical mixed use buildings common with residential and office above ground-floor commercial. Buildings typically built to property lines; parking may be included, usually to the rear of buildings.	Short blocks, grid street pattern, and nearby residential uses support non-motorized modes of transportation. Complete sidewalks often present; bicycle infrastructure typically limited. Transit typically includes limited local service, with headways as short as 30 minutes. Many visitors arrive by car, particularly when traveling long distances.	Capitola Village 5th Street, Hollister Lighthouse Avenue, Pacific Grove

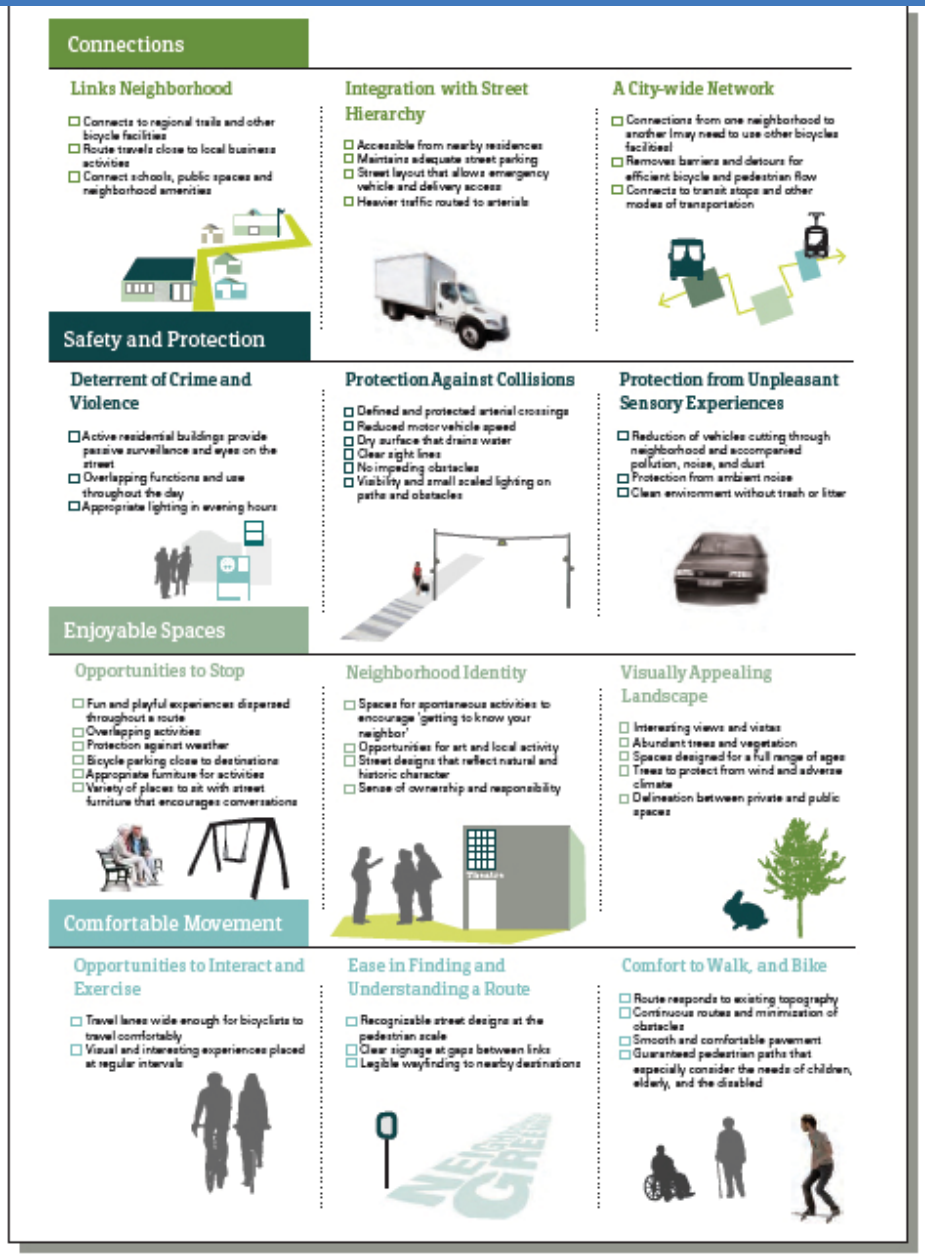
Non-Urban Place Types				
	Intensity	General Characteristics		Examples
		Land Use	Transportation	
NU-1 Agriculture and Rural Residential 	Very Low Intensity (1 unit per acre or less)	Isolated single-family homes, farm houses, and other agriculture-related structures in an agricultural or rural setting. Various building heights and sizes, frequently 2-stories or less, often with expansive setbacks from roods and property lines.	Automobile dependent with widely-spaced, generally rectilinear road patterns. Transit absent or restricted to limited and infrequent regional or inter-city service. Sidewalks and other pedestrian/bicycle infrastructure usually absent.	Outlying portions of Greenfield Outlying portions of San Juan Bautista
NU-2 Rural-Town Commercial 	Low Intensity (FAR usually less than 1.0, up to 2.0 in rare instances)	Variety of small commercial buildings usually located in centers of compact, rural towns. Buildings usually one-story with parking at front or rear. In some cases may not include parking and may include second story with upstairs use.	Mixture of pedestrian- and automobile-oriented. Short blocks, grid street pattern, and nearby residential uses support non-motorized modes of transportation; however, cars may be more commonly used, especially by visitors traveling regionally. Transit absent or restricted to limited and/or infrequent regional or inter-city service. Sidewalks generally present, but may be absent in some cases. Dedicated bicycle infrastructure usually absent.	3rd Street, San Juan Bautista Merritt Street, Castroville Alta Street, Gonzales

NU-3 Rural-Town Residential 	Low Intensity (3 to 8 units per acre)	Single-family homes in areas with grid street patterns; close proximity to central areas of compact, rural towns. May include small multi-family buildings such as duplexes or homes with accessory units. One- or two-story buildings on small- to medium-sized lots. Homes have variable setbacks from property lines and other buildings.	Short blocks, grid street pattern, and proximity to local destinations support non-motorized modes of transportation for intracity trips; however, cars may be more commonly used, especially for regional trips. Transit absent or restricted to limited and infrequent regional or inter-city service. Sidewalks may be absent, but generally low traffic may promote non-motorized transportation. Dedicated bicycle infrastructure usually absent.	6th Street, San Juan Bautista Scott Street, Chualar 9th Street, Gonzales
NU-4 Exurban Residential 	Very Low to Low Intensity (usually 1 unit per acre or less, on rare occasions up to 6 units per acre)	Single-family homes located in neighborhoods on urban fringe. Usually characterized by non-grid street patterns and relatively long distances to noncontiguous urban or town centers. One or two story buildings on large lots with deep setbacks. In rare instances may include smaller "suburban" style lots located far from central areas of towns or cities.	Automobile oriented, often with long distances separating different land uses. Non-grid, typically low-connectivity street patterns discourage non-motorized transportation for non-recreational trips. Transit absent or restricted to limited and infrequent express or regional service; park-and-rides occasionally present. Sidewalks and dedicated bike paths typically for recreational use.	Pasadera Neighborhood, Monterey Fairview Road, Hollister Crescent Drive, Scotts Valley

Other Place Types				
	Intensity	General Characteristics		Examples
		Land Use	Transportation	
IND Industrial and Manufacturing 	Various Intensities (FAR from less than 1.0 to 4.0 or higher)	Various industrial and manufacturing uses, including factories, storage facilities, industrial and commercial suppliers, and some research and development uses. Street patterns and building forms vary, ranging from traditional blocks and pedestrian-oriented configurations to isolated facilities inaccessible by non-motorized transportation.	Transportation characteristics vary, with both pedestrian- and auto-oriented development patterns Availability of transit, pedestrian access, and bicycle infrastructure vary depending upon setting.	Industrial Drive, Hollister Los Coches Road, Soledad Estates Drive, Aptos

AT Airport 	N/A	Airports.	Transportation characteristics vary.	Monterey Peninsula Airport Hollister Municipal Airport
INS Institutional 	Various Intensities (FAR from less than 1.0 to 4.0 or higher)	Various institutional, civic, public, educational, hospital, and utilities uses located in various settings. Built forms vary by specific use and location.	Transportation characteristics vary, with both pedestrian- and auto-oriented development patterns Availability of transit, pedestrian access, and bicycle infrastructure are all variable, depending upon setting.	UC Santa Cruz Salinas High School Public Libraries Wastewater Treatment Plants
OSR Open Space / Recreation 	N/A	Open space and recreational uses, including local and regional parks, nature preserves, and beaches.	Transit characteristics highly variable. Isolated regional parks or wilderness areas may lack transit connections and pedestrian/bicycle access. Parks in urban centers may have frequent transit service and complete bicycle/ pedestrian infrastructure.	Village Green, Greenfield Ramsay Park, Watsonville Calaveras Park, Hollister

APPENDIX G: Greenway Quality Criteria



Green Futures: Research and Design Lab, Scan Design Foundation ,GEHL Architects. *Seattle Neighborhood Greenways: Seattle Tool Kit 2012*

COMPLETE STREETS PROJECT REVIEW CHECKLIST

Purpose

This checklist was developed to assist project sponsors in defining and developing projects and local plans using the Monterey Bay Area Complete Streets Guidebook. The checklist is a mechanism for incorporating the perspectives of all stakeholders into the planning and design process for projects. Use of the checklist will result in projects that are consistent with local, regional and state complete street policies, consider adjacent land uses and meet the needs of all users of the roadway.

How to Use the Checklist

The checklist enables project sponsors to document how each existing and future roadway user was considered and accomodated throughout the project development process. Project sponsers are encouraged to reference the Monterey Bay Area Complete Streets Guidebook while going through the checklist for complete streets applications and roadway design ideas.

Public Works and Planning departments should use the checklist to review projects within or affecting the public right-of-way. If projects do not incorporate complete streets design treatments, project sponsors should document why not and what accomodations will be provided for pedestrians, bicyclists and/or transit users unless the project is exempt (**see Guidebook Chapter 6 for exceptions**).

Threshold Requirements

The Complete Streets Checklist should be used to review the following types of projects:

1. Street improvements requiring permits or approvals by the Department of Planning and/or Public Works which requests a change of the public right of way ; or

2. Public Works Department capital projects that alter or maintain the public right of way prior to the issuance of any permit or approval

Such that any one or more of the following apply:

- A traffic study is required
- A signalized intersection is affected
- Repaving/restriping needed
- Rehab/maintenance needed

CHECKLIST - Exemptions

Projects Exempt from Using the Complete Streets Checklist

* Roadways that restrict bicycle and pedestrian access (ex//Freeways)

* Documented absence of current and future need

Projects in which it is not appropriate to accomodate all users but may be appropriate to accomodate more than one user group should use the checklist to identify which users should be considered in the project design.

Projects Exempt from CEQA

Some complete streets projects may be exempt from the provisions of the California Environmental Quality Act. The following exemptions may apply:

**** Projects that are built within the existing right-of-way 15301(c)***

**** Re-striping projects (per Section 15282(j))***

If the project is exempt from CEQA further explaination and documentation is needed to comply with California law. The project sponsor should draft a memo describing why the project is exempt and file a notice of exemption.

CHECKLIST - General Project Information

Date

1. Project Title

Project Description

Project Location

Department Review Only

Project #:

2. Contact Information

Implementing Agency

Contact Person

Phone

Fax

Email

3. Project Schedule (**Circle** Current Project Phase)

Project Milestone	Date Started/Anticipated End
Planning	
Preliminary	
Final Design	
Construction	

PHOTO

CHECKLIST - Existing Conditions

4. Existing Land Uses (check all that apply)

Residential (Low Density)	☐	Civic/Public	☐
Residential (Med-High Density)	☐	Park/Open Space	☐
Mixed Use (w/residential)	☐	Visitor-Serving	☐
Commercial (office/retail/mixed)	☐	Senior Housing	☐
Institutional/School	☐	Rural/Agricultural	☐

5. Safety (***See Complete Streets Needs Assessment Matrix & http://tims.berkeley.edu/***)

Are there percieved safety/speeding issues in the project area? ☐ Yes ☐ No

Is there a history of collisions in the project area?

☐ Pedestrian ☐ Bicyclist ☐ Motorist

6. Congestion

Does the roadway experience congestion? ☐ Yes ☐ No

If so, at what time(s) is it congested? ☐ AM Peak ☐ PM Peak

7. Existing Roadway Conditions/Context

Functional Classification	
ROW Width	Ft
Roadway Width	Ft
# of Lanes	NB/EB: SB/WB:
2-Way Center Turn lane	☐ Yes ☐ No
Sidewalk Width	Ft
Landscaping/Parking	☐ Yes ☐ No
Shoulder Width	Ft
Bike Lane Width (<5')	☐ Yes ☐ No
Intersection(s)	☐ Signalized ☐ Unsignalized
Pavement Condition	
Posted Speed Limit	
Traffic Volumes (AADT)	
Transit Route/Stops	☐ Yes ☐ No
Truck Route	☐ Yes ☐ No

CHECKLIST - Future Conditions

8. Future Roadway Conditions

Are there planned transportation & land use projects that could affect circulation in the project area? ☐ Yes ☐ No

If so, please list the project(s)

Are planned projects anticipated to increase travel demand in the area?
(mark yes or no for each mode)

	Car		Transit		Bicycle		Pedestrian	
	Yes	No	Yes	No	Yes	No	Yes	No
	☐	☐	☐	☐	☐	☐	☐	☐

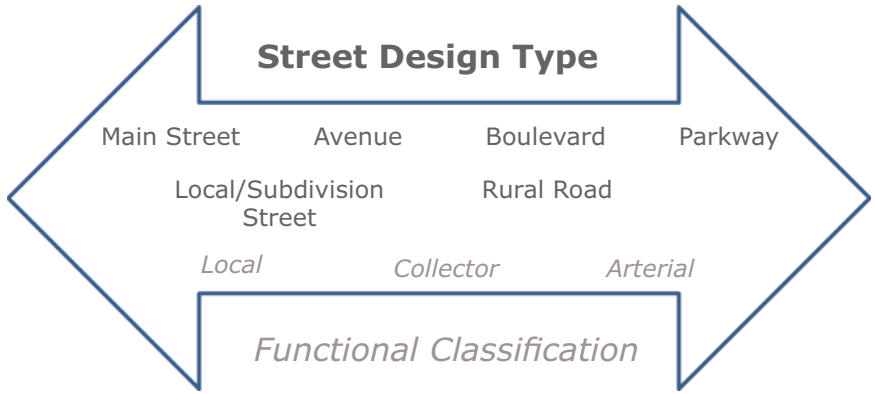
9. Stakeholder Outreach (check all that apply)

Please indicate which stakeholder groups provided input on project scope and design:

Neighborhood Group	☐	Bicycle Committee	☐
Business	☐	Pedestrian Committee	☐
School	☐	Senior Group	☐
Property Owners	☐	Transit Agency	☐
Environmental Group	☐	Transportation Disadvantaged	☐

Specific changes requested by stakeholders? ☐ Yes ☐ No

10. **Circle** the Complete Street Design Type - (***See Table 3 of Guidebook***)



11. Transportation Network Deficiencies (Refer to Existing Conditions)



Lacking/Insufficient Facilities	☐	☐	☐
Lacking/Insufficient Network Connectivity	☐	☐	☐
Insufficient accomodations for seniors	☐	☐	☐
Insufficient accomodations for disabled	☐	☐	☐
Insufficient accomodations for students/youth	☐	☐	☐

Given the Existing and Future Conditions the project area is a candidate for:

Road Diet (Road width≥56'; AADT<20,000; bike/ped supportive land use; safety)	☐ Yes	☐ No
Traffic Calming (speeding; collision history; local street)	☐ Yes	☐ No
Roundabout	☐ Yes	☐ No
Transit-Oriented Development/Transit Corridor (15 min headway)	☐ Yes	☐ No
Neighborhood Shared Street	☐ Yes	☐ No
Pedestrian Place	☐ Yes	☐ No
Transit/Bicycle/Pedestrian Prioritization at Intersections	☐ Yes	☐ No

CHECKLIST - Design

The purpose of this section is to ensure all users have been considered in the design of the project. Complete street design is context-sensitive and a complete street in a rural area may look different than one in an urban area. Refer to safety and special user needs identified in the Existing and Future Conditions sections. The Monterey County Complete Streets Guidebook Chapter X contains design best-practices and sample accomodations for these users.

12. Pedestrian Design (Guidebook Ch 5)

Which, if any, of the following is provided or improved through the project design?

Minimize Driveways	☐ Yes	☐ Existing
Sidewalk/Path	☐ Yes	☐ Existing
Landscaping/Parking Buffer	☐ Yes	☐ Existing
ADA Access	☐ Yes	☐ Existing
Street Trees	☐ Yes	☐ Existing
Crossing Treatments	☐ Yes	☐ Existing
Traffic Calming	☐ Yes	☐ Existing
Wayfinding Signage	☐ Yes	☐ Existing
Audible Countdown	☐ Yes	☐ Existing
Other (Describe)		

13. Bicycle Design (Guidebook Ch 5)

Which, if any, of the following is provided or improved through the project design?

Bicycle Lanes	☐ Yes	☐ Existing
Shared-Lane Markings	☐ Yes	☐ Existing
Multiuse Path	☐ Yes	☐ Existing
Route/Wayfinding Signs	☐ Yes	☐ Existing
Bicycle Parking	☐ Yes	☐ Existing
Bicycle Detection	☐ Yes	☐ Existing
Bicycle Box	☐ Yes	☐ Existing
Color-Treated Bike	☐ Yes	☐ Existing
Floating Bike Lanes	☐ Yes	☐ Existing
Other (Describe)		

CHECKLIST - Design

14. Transit Design (Guidebook Ch 5)

Which, if any, of the following is provided or improved through the project design?

Priority Bus Lane	☐ Yes	☐ Existing
Bus Bulbs/Pull-Outs	☐ Yes	☐ Existing
Shelter	☐ Yes	☐ Existing
Real Time Bus Arrival Info	☐ Yes	☐ Existing
ITS/Signal Priority	☐ Yes	☐ Existing
Transit Service (15 min headways)	☐ Yes	☐ Existing
Wi-Fi	☐ Yes	☐ Existing
Stop/Station Amenities	☐ Yes	☐ Existing
Other (Describe)		

CHECKLIST - Trade-Offs & Exceptions

15. Project Trade-Offs

Is the recommeneded complete street cross section/design supportable? ☐ Yes ☐ No

If not, explain why:

Lack of ROW width ☐ Existing Structures ☐ Other_____

Trees/Environmental Features ☐ Insufficient Funding ☐ Other_____

Have alternative designs been considered? ☐ Yes ☐ No

What refinements to the cross section were needed?

Removed/partial zones for: Pedestrians ☐ Bicyclists ☐ Landscaping ☐ Vehicles ☐

Considered alternative routes/locations for Pedestrians ☐ Bicyclists ☐ Landscaping ☐ Vehicles ☐

16. Exceptions (Refer to Ch 6 of the Guidebook)

Is the project exempt from accomodating certain users? ☐ Yes ☐ No

Cost of accomodation is excessively disproportionate to the need or probably use? ☐ Yes ☐ No

Documented absence of current and future need? ☐ Yes ☐ No

Other_____

APPENDIX I: Questions to Support Six-Step Process

APPENDIX- QUESTIONS FOR SUPPORTING SIX-STEP PROCESS

Si x Steps

Step 1: Define the Existing and Future Land Use and Urban Design Context

- What does the area look like today?
- What are today's land use mixtures and densities?
- What are the typical building types, their scale, setbacks, urban design characteristics, relation to street, any special amenities, etc...?
- Are there any particular development pressures on the area (the nature of this may vary
- according to whether the area is a "greenfield" versus an infill area and this type of information
- is particularly important in the absence of an area plan)?
- What are the "functions" and the general circulation framework of the neighborhood and adjacent areas?
- Is there a detailed plan for the area?
- If so, what does the adopted, detailed plan envision for the future of the area?
- Does the plan make specific recommendations regarding densities, setbacks, urban design, etc.?
- Are there any other adopted development policies for the area?
- If so, what do those policies imply for the area?

Step 2: Define the Existing and Future Transportation Context

- What is the character of the existing street? How does the street currently relate to the adjacent land uses?
- How does the street currently function? What are the daily and hourly traffic volumes? Operating and posted speeds? What is the experience for pedestrians? Cyclists? Motorists?
- What are the current design features, including number of lanes, sidewalk availability, bicycle facilities, traffic control features, street trees, etc.?
- What, if any, transit services are provided? Where are the transit stops?
- What is the relationship between the street segment being analyzed and the surrounding network (streets, side walks, transit, and bicycle connections)?
- Are there any programmed or planned transportation projects in the area that would affect the street segment?
- Are there any other adopted transportation policies that would aff ect the classifi cation of the street segment?

Step 3: Identify Deficiencies

- Gaps in the bicycle or pedestrian network near or along the street segment;
- Gaps in the bicycle or pedestrian network in the area (which may increase the need for facilities on the segment, because of the lack of alternative routes);
- Insufficient pedestrian or bicycle facilities (in poor repair, poorly lighted, or not well buffered from traffic, e.g.);
- Gaps in the overall street network (this includes the amount of connectivity in the area, as well as any obvious capacity issues on other segments in the area);
- Inconsistencies between the amount or type of transit service provided along the street segment and the types of facilities and/or land uses adjacent to the street;
- Inconsistencies between the existing land uses and the features of the existing or planned street network.

Step 4: Describe Future Objectives

- What existing policies might or should influence the specific objectives for the street?
- What conditions are expected to stay the same (or, more importantly, what conditions should stay the same)?
- Would the community and the stakeholders like the street and the neighborhood to stay the same or to change?
- Why and how would the community and the stakeholders like the street and the neighborhood to change?
- Given this, what conditions are likely to change as a result of classifying the street (exactly how will the street classification and design support the stakeholders' expectations)?

Step 5: Recommend Street Classification and Test Initial Cross-Section

- What is the recommended cross section?
- Is the cross section supportable considering:
    * right-of way,
    * Existing structures,
    * Existing trees or other environmental features,
    * Topography, and
    * Location and number of driveways.

Step 6: Describe Tradeoffs and Select Cross-Section

- Where alternative design scenarios considered?
- What refinements to the cross section were needed ?
- What was the justification for selecting the final design scenario?

APPENDIX J: Economics of Complete Streets

Summary of Economics of Complete Streets

An important question about complete streets is, Are the benefits greater than the costs; are complete streets a good investment? The economic impact of transportation project is particularly important in an environment where regions are pursuing a variety of economic development strategies to improve the quality of life for residents and resources for transportation investments are scarce.

Careful evaluation of the benefits of costs can reveal some of the downstream effects complete streets haveon economic activity. However, isolating the economic impacts of a concept as broad and indefinite as complete street makes simple conclusions difficult. The diversity of complete street types and specific implementations suggests a diversity of effects. Moreover, the effects depend on the development, market, and socioeconomic environment in which a complete street is implementing.

The White Paper on the Economics of Complete Streets, prepared by ECONorthwest a consulting firm specializing in economics, finance, and planning, presents a framework for evaluating the economic impacts of complete streets. ECONorthwest's findings acknowledge that complete streets are a relatively new concept in transportation and the rigorous evaluation and longitudinal studies is limited. ECONorthwest's research relies heavily on case studies rather than controlled time-series or cross-section studies. While case studies are excellent tools to confirm or challenge theory, to generalize their results into implementable policies comes with risk because one case study's conditions may or may not be comparable to another.

Approach to Evaluating Economic Benefits of Complete Streets

Transportation systems should aim to do an efficient job of getting people and goods to many desired places safely and quickly. The efficiency of the system is typically evaluated in terms of congestion. Although complete streets investments may address congestion in some instances, through managing demand and better use of the existing system, determining the economic impacts of complete streets must go beyond looking at its impacts on congestion. Furthermore, secondary economic impacts can result from transportation investments, which should be considered when evaluating the potential economic impacts of complete streets. The findings reported in ECONorthwest's research regarding the economic impacts of complete streets focuses on cost and benefits of direct transportation impacts including: trip volume, trip duration, trip quality, safety and construction and maintenance cost, and indirect transportation impacts including: access to amenities, health, and transportation costs, in additional to congestion. These impacts are organized by impacts on investments, business activity, property values, and government fiscal health. ECONorthwest recognizes that other factors such as existing conditions, transportation geography, time period, perspectives, distribution of impacts, and exogenous trends should be considered when applying the economic framework. In addition, the transportation and non-transportation effects of complete streets will "depend" on the details of complete street implementation and on which modes are influenced.

Before coming to final conclusions about the results of an economic analysis using the economic framework prepared by ECONorthwest, the results should consider that the advantages of complete street will not be uniform across mode or traveler and that a shift in investment to complete street may shift economic activity from one area to another.

Economic effects of Complete Streets

Given the transportation effects and the non-transportation effects of complete streets, what are the likely effects on economic activity (employment, output, value added, sales, payroll/income, and property values) when measured through investment, business activity, property values and fiscal impacts?

There are some good theoretical reasons for believing that complete streets can have positive effects on the regional or local economy. The literature supports that there is a correlation between where complete streets have been implemented; various measures of economic activity have improved. Because conclusion based on the literature

is limited, due to the limited empirical work on the topic, the anecdotal nature of the work, little known about the distributional impacts it does not support unambiguous statements like, "If complete streets are buile, the net economic effects will be x."

Investment
Do the levels and composition of public and private investment change with the introduction of complete street?

Transportation investments play an important role in the redevelopment of a center or corridor. Some research suggests that complete street accompany increases in investment for an area. It is reasonable to presume that as as a street's safety, health, and amenities improve, private and public entities will be more willing to invest in the area. But complete street may be part of braoder redevelopment efforts that included other public invesmtne, which makes it difficult to separate out the unique effects of complete streets. For instance, it is possible that decisions to invest in complete streets makes areas more competitive for the awarding of such development funds. On the other hand it may be true for any type of transportation project. Theory and case studies support the conclusion that complete street can be an important part of a public investment policy that can change the distribution of economic activity within a region.

Business Activity
Do measures of business activity (e.g., business creation, employments, wages/income, sales, revenues) change around complete streets? Do consumes spending patterns change because of complete streets?

Complete streets have been shown to be part of development initiatives that have ultimately led to more economic activity around them. However, an increase of jobs and businesses after the implementation of complete streets does not, by itself, give any indication of how much of that increase is attributable to complete streets. For example, other market forces and location, the amount of new public investment, or pre-development losses such that any new development would have increased measures of business activity.

Consumption patterns could be impacted by a change in the total number of consumers, the cost of goods to consumers, and a change in land values as a result of complete streets. One should expect more economic activity the denser the housing and the better the access. Although the number of consumers may increase due to a potential for a growth in trip volumes and proximity, cost of goods may decrease because the transportation cost to the consumer

may decrease, and the higher densities and land values may result in higher rents and higher prices, none of these factors are expected to be affected in a big way. It is unlikely that complete streets decrease consumption. Research reveals that non-motorized consumers are competitive consumers. Although case studies suggest that complete street-type policies may improve bottom lines, it is possible that these kinds of changes will be primarily distributional. A possible exception to the distribution issues is the case where more isolated cities in recreational areas could increase the regional economic activity if they can create "Main Street" environments that are attractive to tourists.

Property Values

Do property values change with the introduction of complete streets?

People choose to live in a certain area, in part, because of the amenities it offers. If people value the effects of complete streets they are more likely to choose to live in or near complete street areas. The findings demonstrate that in the event that complete streets increase amenity and travel by non-auto modes, and do not penalize through auto trips and the ability to park too much, then when coupled with redevelopment, complete streets could be correlated with increased property values. The role of improving walkability on increasing property values is depending upon densities and destinations. For example, making a five-lane road servicing commercial strip complete and walkable may have little effect on walking, transit and auto travel, while making a desirable shopping district more walkable cold raise property values.

If complete streets provide more safety, amenity and modal diversity, such as those found in areas that are walkable, low-traffic, quiet and have bicycle infrastructure, without costing much more or decreasing the effectiveness of the automobile, many people will pay more for housing in a location that provides those benefits. However, even if traffic calming features reduce vehicle volume, several studies show property values still increase. Social engagement would be increased if complete streets lead to more people use alternative modes of transportation and allowing users to interact more, which may also affect property values.

Increased property values would likely be a benefit to landowners, as their incomes would increase. Increased property values could be a cost to businesses and residents already operating and living there, as the increase could make the area unaffordable to them.

Government Fiscal Health
What is the net fiscal effect of complete streets on local governments and agencies?

In terms of revenues, while there are certainly some solid theoretical arguments and some empirical work for specific cases which explain why complete streets as a type of smart growth policy, could improve fiscal health due to increase sales tax, there is no way to tell that other factors aren't responsible for the increase in tax revenue and sales tax alone do not tell the story of fiscal health.

As a type of transportation investments, complete streets will involve expenditures in public and private funds. Complete streets may increase the up-from implementation costs since they may be above and beyond existing project design improvements. In a 2012 analysis, City of Charlotte Department of Transportation staff found that complete street components, specifically bike lanes and sidewalks, only slightly increase the cost of a project (on the order of 3-5%). In cases where complete street design elements replace larger automotive infrastructure requires, the cost may remain constant or decrease.

If complete streets cause users to shift away from cars, then complete streets could have some maintenance cost savings, however the savings may be minimal because heavy vehicles cause a disproportionate share of road ware. On the other hand, complete street may create a more complicated environment to maintain and higher standards for maintenance, which would generate a higher maintenance cost.

Effects of Health on Economic Growth
Complete streets design frequently incorporates some element of traffic calming. Through traffic calming, complete street can reduce the number of collisions. Though the safety impacts are worth pursing for their moral merits alone, reducing the number of deaths and injuries have tangible economic benefits. Given the documented potential for complete streets improvements to reduce the number and severity of crashes, it is possible that the safety benefits alone justify complete streets as a policy.

Beyond improvements resulting from gains in safety, complete street could facilitate other health improvements by increasing activity levels, and health effects of reducing noise. If complete streets contribute to healthier people, the economic benefits of that improved health could be measured as longer life expectancy, improved productivity and reduced costs for health care. Complete streets impact on health may be economically advantageous if externalities

are small and whether a new policy is offering opportunities that people do not now have, want or are willing to pay for. Although, complete streets could improve health outcomes for some, it could worsen health outcomes for those who remain automotive uses and are whose trip times could increase and for those who experience injuries, such as a sprained ankle from switching to other modes.

Economic Framework for Evaluating Complete Streets

Economic Activity Category	Factor Effecting Economic Activity	Relative Impact
Business Activity	Access*	↑↑ to ↑
Business Activity	Trip volume	↑ or ▭
Business Activity/Investment	Trips duration**	↑ to ↓
Fiscal Impact	Construction***	↑↑ to ↓
Fiscal Impact	Maintenance	▭ or ↑
Property values/Investment	Amenities	▭ or ↑
Economic Growth	Health****	↑↑ to ↑

* New facilities for non-automobiles are likely to have a larger positive impact on economic activity that improving existing facilities.

**An increase in trip duration for automobiles may negatively impact economic activity, while a reduction in trip duration for non-automobiles may result in a postive impact on economic activity.

***Construction of new facilities may have significant economic impacts, while adding new elements may have not to little economic impacts.

****If complete streets contribute to healthier people by encouraging regular physical activity,complete streets could postively impact the economic activity by longer life expectancy, improved productivity and reduced costs for health care. Economic impacts of improved safety such as a reduction in the fatal and injury collisions is measurable.

Legend

- ↓ may negatively impact economic activity
- ▭ likely no impact on economic activity
- ↑ could positively impact economic activity
- ↑↑ likely has measurable impact on economic activity

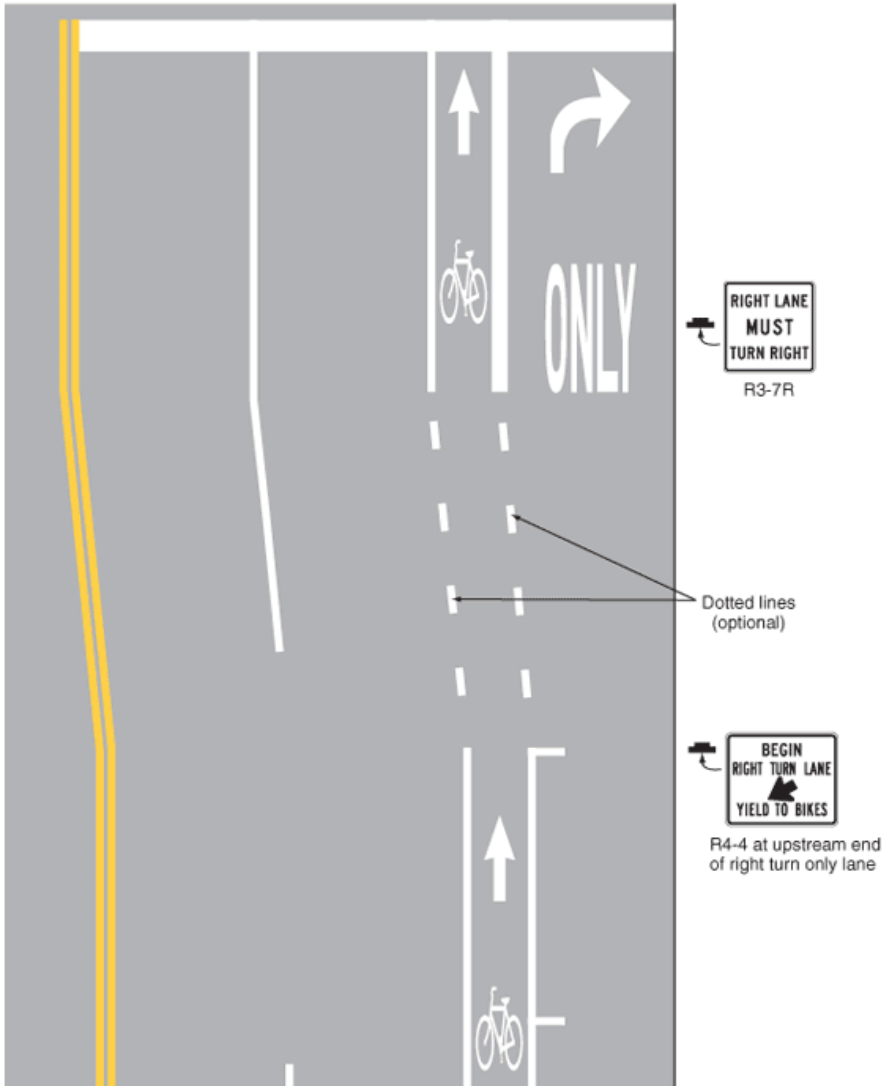
APPENDIX K: Bicycle Facility Treatments

INTERSECTION TREATMENTS

Bike Box

Bike Signal

Figure 9C-5. Example of Bicycle Lane Treatment at Parking Lane into a Right Turn Only Lane



Right Turn Lane Treatment, MUTCD

BICYCLE DETECTION

Video Camera

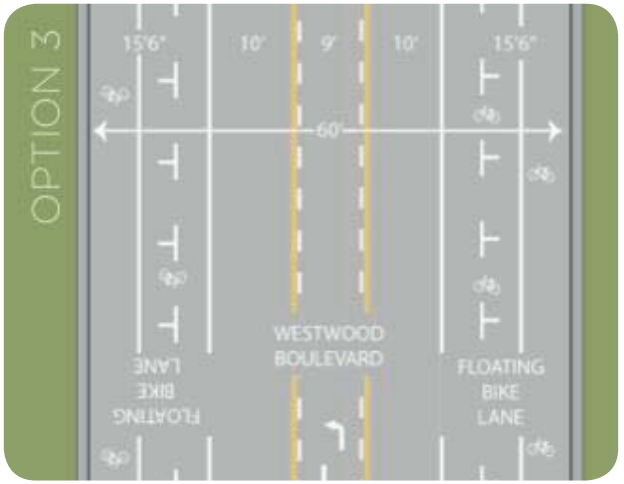
Inductive Loop

ROADWAY TREATMENTS

Green Lane

Buffered Bike Lane

Cycle Track



Floating Bike Lane

BICYCLE AMENITIES

Wayfinding Signage

Fix-it Station

Angled Parking

Racks on Transit