3. SETTING A COURSE

INTRODUCTION

Given its existing bike enthusiasts and community support, the City of Santa Monica is poised to become a great bicycling city. But in order to resonate with a broader number of Santa Monicans, the City must develop a forward-thinking action plan that fosters connections for current and future cyclists of all skill levels, makes bicycling fun for all, and encourages bicycle travel using a variety of events, campaigns, and amenities.

The Santa Monica Bike Action Plan, backed by the policy framework established in the Land Use and Circulation Element (LUCE), positions bicycling as an integral component of the city's broader multimodal transportation system. Developing a dense network of low stress and high quality bikeways is one element of creating a world class bicycling city. Another way to effectively improve the bicycling environment and engrain bicycling in Santa Monica's culture is through education and encouragement initiatives, enforcement procedures, and supporting infrastructure. Santa Monica will attract citizens and visitors to bicycle en masse if it invests in a network that is appropriately complemented by programs and supporting amenities.

The Bike Action Plan focuses on Programs and Bikeways. Included in this chapter is a 20-year bicycle program toolkit, along with phased recommendations for 5-year implementation and a 20-year vision. The recommendations help to realize Santa Monica's aspirations to increase bicycling numbers, make bicycling fun for all, and make bicycling convenient and comfortable.

Santa Monica Festival Bike Learning Area.

ACTION PLAN STRUCTURE

Bicycling can be a more powerful tool for access and mobility in Santa Monica if it becomes more convenient, comfortable, and fun for all Santa Monicans. This chapter lays out specific recommendations for achieving those goals. The recommendations are based upon community-based prioritization exercises and vetted through technical input. They provide a broad strategy for implementing programs and supporting facilities like parking and signage in addition to bikeway facilities. The recommended 5-year action plan includes both projects that can be implemented with minimal additional process and a few that will require additional community process or detailed environmental review.

Public workshops sparked lively discussion and generated a wealth of ideas.

ESTABLISHING THE ACTION PLAN

Bicycling emerged as a critical issue during the extensive public process that produced the Land Use and Circulation Element (LUCE). Many people spoke of the need to improve access, reduce impacts of auto congestion, and relieve neighborhood streets. In response, the City aims to achieve No Net New PM Peak Auto Trips, embraced the complete streets concept and developed a broad set of goals and policies for a future bicycle network within a multimodal street network.

Building on the LUCE, the first Bike Action Plan Workshop was held on December 13, 2010 to discuss elements of the plan. In addition to advertising the workshop in the local newspaper, City staff, residents, and other e-mail groups developed during the LUCE process were used to get the word out. The workshop included numerous stations that allowed people to break out into groups and discuss some of the major components of the bike plan like encouragement and education programs, bicycle parking and bicycle facility improvements. To accompany the first workshop, the City released a bicycle plan survey to broaden its outreach approach. This survey included questions on which streets should be prioritized for bicycle travel, how streets should be designed and signed for cyclists, and which programs the City should invest in and promote.

In Spring 2010, the City's Planning Commission heard presentations on the programs and detailed bikeway projects that were emerging from the workshop and public outreach. A second public open house style workshop was held on May 16, 2011. Several stations were set up to capture background information on existing cyclists, roll out programs and proposed bikeway corridor projects as well as how to monitor future progress on the plan. The community participated in a round table activity to help prioritize future projects and programs.

Throughout the winter, spring and summer of 2011, staff attended more than 10 other meetings where feedback and input was gathered at local existing commissions such as the Planning Commission, Recreation and Parks Commission, Task Force on the Environment and other subcommittees focused specifically on bicycle and pedestrian issues. Additionally, staff attended regularly-held Santa Monica Spoke meetings—a sub-chapter of the Los Angeles County Bicycle Coalition.
All comments from these meetings, workshops, and the survey were reviewed and taken into consideration during the next phase of drafting the Bike Action Plan. Refining bikeway alignments, developing cost estimates for route and infrastructure improvements, developing prioritization criteria to be used to rank bike improvement projects, and developing bicycle safety education and promotion programs continued to take place until the Plan was released.

PROGRAMS: GETTING PEOPLE ON BIKES

Great bikeways alone are not enough to get people on bikes. Complementary programs build upon the bicycle network by enticing new riders and supporting a vibrant bicycling culture. This plan includes programs that encourage ridership, provide information, build awareness, celebrate events, provide education and enforcement, and create supporting facilities for people who bicycle in Santa Monica. Programs target everyone: committed cyclists, occasional cyclists, potential cyclists, as well as pedestrians, motorists and transit riders who share the streets with bicyclists. Many of the program ideas come from engaged stakeholders throughout the community and reflect ideas shared at bicycle workshops and the extensive LUCE discussions.

Each program helps achieve the Plan's goals of:

- Getting more people to bicycle;
- Bringing out the fun in bicycling; and
- Improving bicycling's convenience and comfort.

The following principles apply to programs:

- Collaborate with community partners
- Engage people of all ages and abilities
- Respect all road users
- Support the whole trip

A basic bicycle road skills course can be included in City sponsored events to improve skills and bring out the fun.

Programs stimulate the creativity and awareness that encourage people in Santa Monica to use streets in a new way. They engage community groups and institutions that share an interest in healthy, sustainable transportation. Collaboration with community partners extends the strength and reach of all programs and leverages our community-wide energy and resources. Partners are diverse and numerous and are critical for effective implementation (see list of partners on following page).

This toolbox of bicycle programs addresses the needs of everyone, including people who might be less likely to consider bicycling because of age or ability. By enabling bicycling to compete favorably on convenience and comfort relative to driving, programs promote a culture of bicycling within a complete street system that also serves drivers, transit and pedestrians. The shared complete street system relies upon the respect for all road users that is fostered by these programs. Bicyclists will be aided by supplemental infrastructure programs that support the whole trip from start to finish.

The toolbox of bicycle programs includes seven categories: Events, Awareness, Information, Education, Encouragement, Enforcement, and Supporting Infrastructure. Each provides a range of programs appropriate for Santa Monica, acknowledging that new and creative ideas are always being generated that can be added to the list. Programs highlighted by BIKE santa monica indicate programs that are existing, but open to change over time.

PROGRAM PARTNERS

To implement effective programs that appeal to current and future bicyclists, the City must develop partnerships with local organizations, cities, and advocacy groups. Partners help bicycle programs that meet the needs of Santa Monicans. Some keys partners include:

- Arts and cultural organizations
- Bike Center
- Buy Local
- C.I.C.L.E.
- Cities of Los Angeles, Beverly Hills, Culver City, West Hollywood, Burbank
- Downtown Santa Monica Inc.
- Employers
- Local Bicycle Shops
- Los Angeles County Bicycle Coalition
- Main Street Merchants Association
- Metro
- Montana Avenue Merchants
- Pico Improvement Organization
- Pier Restoration Commission
- Recreation groups
- Santa Monica Chamber of Commerce
- Santa Monica College
- Santa Monica Convention and Visitors Bureau
- Santa Monica Farmers' Markets
- Santa Monica Malibu Unified School District
- Santa Monica Spoke
- Sustainable Streets
- Teacher Associations
- Transportation Management Associations
- Westside Cities Council of Governments

Los Angeles County Bicycle Coalition helped staff the bike valet pilot project at Main Street Farmers' Market.

Events

Bicycle-focused events, bicycle elements in other events, and bicycle rides and tours raise the profile of bicycling in Santa Monica. Events bring people together to share in bicycling's camaraderie, fun, and awareness. They can reach a wide range of residents, employees, students, and visitors and engage with Santa Monica's business community, non-profits, and arts and cultural groups. Larger events are effective ways to reach significant numbers of people and raise awareness among people who are not currently bicyclists. They also provide excellent opportunities to showcase advantages of bicycling, and to raise awareness of new bicycle programs and bikeways. Through a combination of bicycle special events and bicycle elements incorporated into other events, Santa Monicans can enjoy events throughout the calendar year with both general and targeted audiences for continuous encouragement of bicycling. Successful events will:

- Make positive contact with as many people as possible to increase awareness of bicycle programs and facilities;
- Share meaningful information and resources to encourage bicycling; and
- Showcase the bicycle as a time-competitive transportation choice.

Some examples of bicycle events may include openings and tours of new bicycle programs and facilities, participation in National Bike-To-Work Month, events for key groups like the Bike It! Day for students, car-free street events similar to Ciclovia, and bicycle rides and tours such as the Santa Monica Museum of Art's bike tour, Tour da Arts.

EVENTS TOOLBOX

Bike to Work Month/Week/Day

Bike Month is a great opportunity to promote bicycling and bicycling safety. Each year the City has celebrated Bike Month with a range of awareness, events and promotions that are continuously expanding, and always feature Bike to Work Day. Expanded programs from other jurisdictions include pancake breakfasts at bike shops, bike ambassador programs, organizing a bike buddy program, and selecting a day each month for highlighting and celebrating bike to work.

Bike to Work Day in Santa Monica.

Bike It! Day

Encourage new ridership among students and young people in order to foster a new generation of bicyclists by designating a specific day to bicycle. Work with PTSAs, students, and schools to expand participation in the event.

Car-Free Street Events

Car-free street events are high-profile happenings that encourage people to reinvent their use of the streets, have fun and feel comfortable riding. Examples include Los Angeles' CicLAvia which creates a network of public space for walking, bicycling and other community events and works with local businesses. Car-Free events can be linked with other street closure events like the Marathon or parades in order to leverage marketing and

CicLAvia has been a major success story with several CicLAvia events being held each year. Source: CicLAvia

management efforts, or be special events that occur in small or large areas. There are opportunities to coordinate these events with other jurisdictions to foster regional bicycle and pedestrian awareness.

Bicycle Presence at City Events

Bicycle elements in other events can reach even more people, at times when congestion and parking challenges highlight the advantages of bicycling. City-sponsored events with a high bicycle profile and preferential access for bicyclists include GLOW, LA Marathon, Cirque du Soleil, Santa Monica Festival, Santa Monica Pier Twilight Dance Series, Santa Monica Pier Drive-In Movie Series, Santa Monica Farmers' Markets, and National Night Out.

Bicycle Rides and Tours

Promote, coordinate, and support bike themed tours like Santa Monica Museum of Art's bike tour, Bike Local Buy Local events, city tours by bicycle, tours highlighting new bike facilities, or others in partnerships with bicycling, businesses, arts, recreation and other organizations.

Success Celebrations

Hold opening events, ribbon cuttings, and rides to celebrate new facilities and programs that support bicycling.

Competitions

Promote bicycle competitions and events sponsored by cycling groups, non-profits, employers and educational institutions.

Awareness

Awareness is the first step towards change. Awareness is built by a combination of visible riders and facilities in the community, conversation, marketing, and promotional programs. In addition to increasing ridership, awareness supports respect among all roadway users and fosters safety. As a first step, visible and well-designed bikeways, racks, signs, and facilities elevate bicycling's presence as a viable option for transportation. Awareness programs help people take notice of bikeways and facilities and reach broadly to engage people who have not considered riding a bicycle themselves but who regularly share the road with cyclists. They help people to appreciate the perspective and needs of cyclists, the bicycle design elements that are necessary for complete streets, and the contributions of bicycling to a balanced and sustainable transportation system.

Awareness programs include collaborative efforts with partners including bicycle advocates, transit agencies, employers, business and tourism groups, and government agencies at the local and regional level. These programs try to reach everyone—children, adults, motorists, recreational and commuter cyclists, educators, students, public agencies, employers, service providers, etc. Awareness lets people know that bicycle resources and facilities are available and gives them access to information, education and encouragement resources. Successful awareness programs will:

- Allow as many people as possible to be aware of bicycle rights, resources, needs, and facilities.

Public roundtables on bicycling, a bicycle network showcase, campaigns, celebrity public service announcements and promotional give-aways are potential awareness programs. Work is already underway on bicycle awareness campaigns that create a unified Bike Santa Monica identity, promote the understanding of shared lane markings through bus tail cards, and produce a video spot for City TV.

The City has developed bus awareness campaigns to educate motorists about shared lane markings and to pass bicyclists with care.

AWARENESS TOOLBOX

Reach out to drivers. Awareness targets not just cyclists, but all road users, to encourage respect and safe behavior.

Regularly-Held Cycle Talks
Hold regular, informal public roundtables on bicycling in Santa Monica to share information and use public input to enhance activities. Hosted at local businesses, bike shops, or government offices.

Santa Monica Bike Network Showcase
Design bike tours of varying lengths and skill levels that highlight new and existing bicycle amenities and infrastructure around the City.

Printed Material Campaigns
Printed information such as bus tailcards, banners, brochures, and maps can be used to broadcast a range of messages to cyclists and other road users including safety reminders, announcing new facilities and resources, and promoting events. A unified look and logo system helps to build consistent awareness.

Promotional Giveaways
Distributing bike aids such as lights and reflective stickers at community events builds awareness to provide necessary support for bicycling and highlights bikability to promote ease of bicycling to tourists, shoppers, and residents.

Rules of the Road for Everyone
Bicycle safety includes looking out for pedestrians, motorists, and bicyclists. Knowledge of rules of the road help people share streets safely.

City Media
Publicize events and campaigns on local city TV and in newspapers like *Seascape*—a City publication produced six times per year to inform residents about City programs.

Information

Timely, accurate, and educational information about bicycle news, resources, facilities, events, regulations, and meetings supports all types of bicycling activities. Since bicycling is a time-competitive transportation option in Santa Monica, information may be the catalyst that gets people on bikes, or encourages casual cyclists to ride more often. Information programs are critical in facilitating route planning, accessing educational materials, finding out what is going on, and getting ideas about places to ride. For visitors, information is key to quickly understanding local bike facilities and resources that support car-free travel. The use of web-based tools and social media help provide an easy and convenient two-way conduit for information and can be used for education, awareness and encouragement programs. Partnerships with Metro, Westside Cities Council of Governments and public search engines and mapping resources can also improve the availability of information and ease of its use. A combination of web-based resources, printed materials, and in-person exchanges can put information in everyone's hands, with a target to:

- Provide bicycle information to as many people as possible, in a variety of forums and applications.

Bicycle information programs include efforts such as an updated and branded website, a City Request System, printed and on-line bike maps, local and regional trip-planning services, self-guided city bike tours, directions to major destinations via bicycle, the incorporation of bicycle information at events and information outlets, and information about bikes on buses.

The Convention and Visitors Bureau promotes green business and getting around by bicycle. Source: Santa Monica Convention and Visitors Bureau

INFORMATION TOOLBOX

Updated and Branded Website

Improve the BIKE Santa Monica website with regularly updated resources and information such as calendar of events; information about current projects and how to get involved; a comprehensive list of bicycling groups and relevant contact information for pothole repair, parking enforcement, and bike rack installation.

Santa Monica Request System

Enable the City's mobile application and website known as the Go System to accept more details on bike infrastructure and programmatic needs from citizens and the bicycle community. Applications should strive to be integrated with popular webpages like Google Maps to see other reports in the area.

Source: City of Santa Monica

Printed Bicycle Maps

Maintain an up-to-date printed bicycle map that shows designated bicycle paths, lanes, and routes; local bike stores; bicycle rental locations; large bicycle parking facilities; and shower and storage facilities. They can also be available online for home printing, at bicycle shops and rental centers, and at major destinations.

Online Maps: Google Maps and Local and Regional Trip Planning

Provide up-to-date information to internet content providers and promote mapping trips on the City's website not only within the city but also those beyond municipal boundaries. Safe Routes to School and Parks provide information on the best bicycle routes to local schools, libraries, and parks.

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INFORMATION TOOLBOX (cont'd)

Self-Guided City Tour Routes

Publish a guide of routes of interest that include themed self-guided (or formally guided) journeys such as garden tours, cultural resource sightseeing, historical exploration, art tours, food excursions, and local and green business tours. Tours are targeted to tourists, but are appropriate for residents and students as well.

Directions to Major Destinations

Incorporate bicycle directions into major destinations' websites such as local museums, shopping centers, or other attractions like the Pier, Downtown, the Civic Auditorium, Samohi, Annenberg Community Beach House, etc. Include map or description of where short- and long-term bicycle parking facilities are located.

Most Big Blue Buses have front-loading bicycle racks. Because using these racks are not intuitive, instructional information should be provided.

Bicycle Information at Other Events

Incorporate bicycle information into existing and future popular events such as Farmers' Markets, GLOW, the Los Angeles Marathon, and others to make bicycling resources present at non-bicycling events, integrating cycling with community culture.

Bicycle Information at City Information Outlets

Include bicycle information in existing city information outlets like those found on the Pier, in Downtown and at bus stops. Include brochures and maps on how to get around Santa Monica on a bike, comprehensive information on rules of the road, and information on bicycle parking and other supporting facilities.

Transit Connectivity – Bikes on Buses

Create printed material and videos, plus hands-on training on how bikes and buses work in tandem for bicyclists and transit riders.

Participation

Track and provide information on mode-split, especially at schools, including participation in events including Bike-It Day and Bike to Work Day.

Safety

Provide information on safe riding and how to follow rules of the road and avoid crashes.

Big Blue Bus is integrating bikeways into their map/schedule signage located at bus stops. Source: Big Blue Bus

Education

Education programs give people the skills, knowledge and understanding to feel comfortable on and along-side a bicycle. Handling skills and knowing how to share the road safely with other road users reduces risk for everyone. With knowledge comes a level of comfort and familiarity that makes bicycling fun. Education also motivates people by explaining the many personal and community benefits of bicycling. Bicycle education training and materials can be developed by qualified bicycle instructors for the general public as well as for target groups. Different learning styles can be accommodated by providing education materials online, in-person, through signage, and at a dedicated bicycle campus in order to:

- Provide bicycle education to as many people as possible; and
- Communicate the responsibilities of all road users and the many benefits of bicycling.

Collaborative partnerships, including with schools, advocacy groups and other community stakeholders, extends the reach of available bicycle education programs available. Education programming includes bike rodeos, student-led bike education mobile classrooms, all levels of bicycle training, commuting 101 classes, bicycle repair training, and the creation of a Beach Bicycle Campus, which can be used for instructor-led bicycle classes as well as self-guided practice.

EDUCATION TOOLBOX

Bike Rodeo
Work collaboratively with Santa Monica Malibu Unified School District or local professional bicycle instructors to create bike rodeos that teach younger children how to safely ride a bike while simultaneously easing parental concerns.

"B.E.": Bike Education
Work with student groups to host and teach younger cyclists the rules of the road, how to properly lock a bike, and learning where the best places to ride are located. Create a "mobile classroom" with a fleet of bicycles for students currently without bicycles.

Bicycle Training
Offer League Certified Instructor (LCI) courses through existing organizations and City Bike Centers to encourage more people to be knowledgeable of cycling skills, bike repair and maintenance. Offer tailored classes to varying ages from the elderly to adults and younger cyclists at regular intervals throughout the year.

Employee Training
Teach people who conduct street maintenance or work on street related construction projects about the rules of the road, needs of bicyclists, and how to improve bicycle safety. Use training to inform others who use a bike while working.

Transit Connections
How to bring bikes on buses and trains, get to stops and stations, and find parking.

Commuting 101
Provide a crash course on commuting to work—including etiquette, seeing what it is like to ride on a busy street with traffic, and learning about amenities when you reach the office—either web- or class-based through existing organizations or the City's Bike Center.

Sustainable Streets provides bicycle training courses – from the basics to vehicular cycling.
Source: Sustainable Streets

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EDUCATION TOOLBOX (cont'd)

Bicycle Repair Skills

Encourage development of local non-profit groups like Bikerowave and other similar groups that provide a drop-in location for information on bike maintenance staffed by volunteers that encourage people to maintain their bikes in an affordable way to allow them to rely on their bicycle for transportation. Work with non-profit groups to co-host mobile repair workshops at existing events and schools.

Bicycle Campus

Install a Bicycle Campus to teach bike skills to all riders using the LCI training model. Incorporate bike skills and typical bicycle road treatments. Design the Campus course for group and self-guided instruction incorporating signage descriptions and details that include Quick Response codes that link to videos of how to use the course and its facilities.

Source: Bikerowave.org

Bicycle Curriculum

Create and collect resources that can be used with or tailored to community groups interested in bicycle safety.

The future Bike Campus will feature a skills course and actual pavement markings seen on Santa Monica's streets.

Encouragement

People enjoy bicycling in familiar and social settings and will increase their frequency of riding if they are given the proper incentives. Schools, employers, businesses and various non-profit entities are powerful partners in the effort to get more people to bicycle. Encouragement programs target and support these groups by providing resources, information, education and facilities that are designed specifically for the needs of each group. Encouragement programs use many resources developed for other programs – these programs are called out separately because they include major partnerships with important community stakeholders in order to leverage support for getting more people to ride bicycles. Partnership and collaboration will also advance regional, state, and national bicycling goals, that compete well for grant funding and shape larger bikeway projects. Successful encouragement programs will:

- Increase the number of people who use bicycles for school, work, shopping, and entertainment trips.
- Ensure that students, employees, and customers can access schools and employment on good bikeways and know how to find and use them.

School-based encouragement can include organized bike-pooling, Santa Monica College programming, Safe Routes to School efforts to develop classroom curricula, work with parents and administrators to improve bicycle access, create

wayfinding, add parking, provide bicycle training and education, host awards and contests, and sponsor events such as Bike It! Day.

Various Transportation Demand Management (TDM) strategies exist to help employers encourage the use of bicycles by their employees. On the most fundamental level, this includes the provision of physical end-of-trip amenities such as racks, lockers, showers and changing facilities. Employers can go further by providing Bike@ Work fleets, sponsoring bicycle training and maintenance seminars, and incentivizing bicycle use through contests and participation in Bike to Work Day or similar events. Policies employers can implement include parking cash-out, flextime, and guaranteed rides home. In combination, these programs can increase the percentage of employees who commute by bicycle.

Business encouragement can include a Bicycle Friendly Business recognition program, local business-oriented bike events and tours, local bicycle craftsmanship, marketing opportunities, and discounts for customers that arrive by bike.

The City can also provide support for other bicycle-related campaigns, such as the Santa Monica Convention and Visitor Bureau's ongoing effort to promote green and eco-tourism or future car-free efforts, and special events like the Green Apple Festival, which celebrates and honors Earth Day.

ENCOURAGEMENT TOOLBOX: BICYCLE-FOCUSED DEMAND MANAGEMENT

Business Partnerships

Bicycle-Friendly Promotion and Businesses Recognition

Encourage businesses and restaurants, for example, to promote cycling by providing discounts to those who arrive by bike. Recognize these businesses that give discounts to riders who arrive on bicycles or provide amenities such as covered parking, lockers, and/or shower and changing facilities through a "Bicycle Friendly Business" program.

Businesses that support bicycling are an important part of developing a bicycle culture. Source: League of American Bicyclists

Buy Local Bike Local

Encourage employers and groups to create regular rides to local business districts that incorporate a "buy local bike local" aspect. Work with businesses to provide incentives to those participants.

Local Bicycle Craftsmanship

Support bike craftsmen to manufacture specialty bicycle parts and components in Santa Monica to support local business and the bicycling community and promote bicycle culture.

School Partnerships

Safe Routes / Smart Ways to School

Provide technical assistance and maintain a support role for local schools. As funding becomes available formalize the Safe Routes to School Program by integrating more education, encouragement, and enforcement programs. Actively apply for grants and procure consultants to manage programs in partnership with SMMUSD, PTSAs, and students. Work with School District to identify and improve good bicycle routes to each school and to provide information about these routes to school communities and neighbors of schools.

Bike-pooling to school or work makes bicycling a fun and social activity. Source: Bike Train PDX

Santa Monica College Programming

Collaborate with Santa Monica College's transportation coordinator, Center for Environmental and Urban Studies, and Sustainable Works program staff to host awareness events providing information to new students on bicycle facilities, safety, and resources. Include food and give a ways (e.g. bike lights) and used bike sales.

Bike-Pooling

Support and encourage the formation of bike-pooling where more experienced riders help others feel more comfortable on the road, commuting to work, school or other destinations. Facilitate the program through human resource departments, neighborhood associations, an online ride-sharing program, or free online message boards and social networking sites.

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ENCOURAGEMENT TOOLBOX (cont'd)

Employer Partnerships

TDM Programming

Working with employers to incorporate and provide physical amenities and offer policy incentives such as:

- Monthly commuter bicycling benefits;
- Parking cash-out, where employees who do not use an automobile parking space receive a monthly cash pay-out;
- Information for employees about biking;
- Coordinated bicycle buddy programs, where employees ride to work together (and assist novice bicyclists);
- Corporate challenges with prizes, including websites where employees can log their miles and compete with other companies (usually sponsored by large employers);
- Employee bike share (have full-size or foldable bikes available to check in/out for work and personal use during the day);
- Organized recreational rides for socializing, exercise, and fresh air;
- Flextime or alternative work hours for those commuting by bicycle;
- Hosted bicycle repair clinics and information about bicycle do's and don'ts; and
- Training on bicycle maintenance and repair.

Recognizing employers that offer incentives to their employees and assist employers to offer these benefits to their employees. Recognition can include:

- Being featured in the local media;
- Receiving praise from the Mayor; and
- Bicycle-Friendly Santa Monica or sustainable business certification.

Assistance can include:

- Information and best practices on how to determine and implement these benefits;
- Financial and/or staffing support to implement programs; and
- Assistance with bike parking.

Council member Kevin McKeown - Santa Monica's Bicycle Friendly Community Award Ceremony.

Non-Profit Partnerships

Los Angeles County Bicycle Coalition (LACBC), Santa Monica Spoke, Sustainable Streets, and others

Continue to work with and acknowledge LACBC, Santa Monica Spoke, and Sustainable Streets as joint partners in various programs. Continue to work with regional partners to help integrate bicycle planning and connections throughout the region. Co-host events with LACBC, Santa Monica Spoke, and Sustainable Streets to target active bicyclists in Santa Monica who are interested in advocacy and organized rides.

Transportation Management Associations

Encourage and support formation of Transportation Management Associations, or TMAs, which are often non-profit, member-controlled organizations that provide a one-stop resource for green commuting materials, coordinate carpools/bike pools, or help employers offer incentives to employees.

Bicycle Ownership

Offer incentives to own a bike in Santa Monica, such as providing refurbished bicycles at a discounted price to schools and employers in the area.

New Resident Outreach

Provide comprehensive information on bicycle commuting, safety, promotional materials, and resources in new resident outreach packets.

Education For All

Provide bicycle education materials, including on-line curriculum for encouragement partners, including schools, students, employees, and visitors.

Enforcement

Enforcement programs encourage bicyclists, motorists and pedestrians to understand and follow basic rules of the road that promote safety for all road users. These programs rely on coordination between law enforcement, transportation agencies, neighboring Cities, the State of California, and bicycling organizations. Enforcement programs reinforce positive behavior, correct behavior that can lead to conflict and crashes, improve understanding of rules of the road, and encourage constructive communication between bicyclists, motorists, and police. Successful enforcement programs will:

- Increase compliance with traffic regulations and reduce the percentage of bicycle-related accidents;
- Increase the proportion of bicyclists that use appropriate safety equipment (lights, reflectors, and helmets);
- Reduce pedestrian and bicycle conflicts by enforcing sidewalk laws and keeping walkways safe and comfortable for pedestrians;
- Create an urban environment where all road users know how to share the road safely and respectfully;
- Emphasize speed enforcement as lower speeds make streets safer for all users;
- Promote respectful behavior on streets and sidewalks through anti-harassment rules; and
- Increase visibility of enforcement and consider campaigns and enhanced levels of enforcement, especially if grant-funded.

ENFORCEMENT TOOLBOX

Bicycle Ambassadors

Establish a Police Department Bicycle Ambassador to facilitate communication on enforcement and safety and develop best practices.

Ticket Deferments

Implement a program in conjunction with the Police Department that permits participation in a bicycle safety course in exchange for a ticket dismissal for bicyclists. Defensive bicycling classes could be taught at other organizations or City Bike Centers.

Agency Coordination on Rules and Rights of the Road

Create and share information on rules and rights of the road. Include all agencies and departments that work with cyclists such as those that repave and restripe the roadways, bus drivers that must share the road, and those that enforce the laws. Incorporate others outside of the city including the Westside Cities Council of Governments and City of Los Angeles.

Enforcement programs include options such as a Police Bicycle Ambassador, a ticket deferment program including the creation of the necessary educational content for bicycle-related violations, the review and revision of local regulations that conflict with State or regional regulation, and efforts to address regional cooperation and consistency in the application of rules for bicycling.

Give me 3 Campaign - City of Los Angeles
Source: LA County Bike Coalition

RULES OF THE ROAD

Safety is Everyone's Responsibility

Santa Monica's streets are shared, so people who use them all share responsible for safety. Cyclists must be aware of and respect pedestrians, motorists and other cyclists. Pedestrians and motorists have the same responsibility. Although bike lanes are for cyclists, and sidewalks and crosswalks are for pedestrians, these zones also function as parts of complete streets. Everyone using the street crosses paths and interacts with others. Staying alert, being respectful and following rules of the road create a safe environment for all road users.

Traffic Lanes are for Bicycles and Vehicles

Bicyclists have all the rights and responsibilities of motorists, including the right to ride on the roadway. When travel lanes are too narrow for a vehicle and a bicycle side by side, and there is no appropriate bike lane, a bicyclist may ride in the center of any lane. Sharrows are installed on some streets to indicate that the best place for a bicycle is in the travel lane.

Bike Lanes and Bike Boxes are for Bicycles

Bike lanes and bike boxes are zones on the street reserved primarily for cyclists. Cyclists should use bike lanes when they are available, but they should also leave the lanes, using due caution, to achieve proper positioning at intersections, avoid hazardous conditions or overtake slower traffic. People entering or crossing a path or lane from a sidewalk, parked car, parking lane or travel lane, should look for, and yield to bicyclists already in the lane or path.

Sidewalks and Crosswalks are for People Walking

People with bicycles must respect the comfort of people walking on sidewalks and paths. In busy areas, even children should walk bicycles on sidewalks. When bicyclists need to cross sidewalks or to use crosswalks they should be alert and always yield to people walking. Complete streets need safe, comfortable places for people walking.

Shared Paths and Trails are for Bicyclists and Pedestrians

Shared use paths and trails allow bicyclists and pedestrians to travel exclusive of vehicles. On paths and trails, people walking and riding should look out for each other, yield when crossing or entering, pass with caution, and move aside so as not to block the way of others when they stop.

Stop Signs, Signals and Roadway Direction Apply to Bicycles as well as Vehicles

Bicycles in the roadway should act as vehicles. Bicyclists should always stop at stop signs, obey signal indications and ride as indicated by roadway signs and markings. Following roadway indications, such as following the direction of the roadway and not riding through any intersection from the right side of a right –turn only lane, helps bicyclists stay safe because they are more visible and predictable to others sharing the street.

Pass only with Care

Drivers and riders may only overtake another vehicle or driver when they can do it safely. If they are in a travel lane, bicyclists have the same rights and responsibilities as slow vehicles. On a two-lane road, slow vehicles must use turnouts or safely pull over when five or more cars are behind. Passing a cyclist safely means passing only with at least three feet between the car and the bicyclist.

Distractions

Everyone can be distracted when traveling, whether by changing the radio station, talking on the phone, or texting while walking. Road users should minimize distractions by eliminating the ones they create themselves and devoting their full attention to safety.

See and Be Seen

Cyclists, pedestrians and motorists all have responsibilities to be visible to others traveling on the streets. Motorists should use their turn signals and turn on headlights at night. Cyclists should use front and rear lights and always have reflectors. Pedestrians should wear light or reflective clothing when it is dark.

Riding side-by-side

In addition to being social and aerodynamically efficient, riding in a pack increases visibility to drivers—the number one factor in preventing collisions. As we covered above, bicyclists are allowed to ride in the center of a narrow lane at their discretion. Once a bicyclist is in middle of the lane, there is no difference under the law between riding side-by-side and single-file. Either way, a driver will have to change lanes to pass legally and safely.

Source: Adapted from "Bicycles and You on PCH" by Susan Tellem (Malibu Patch)

SUPPORTING FACILITIES: MAKING CYCLING CONVENIENT

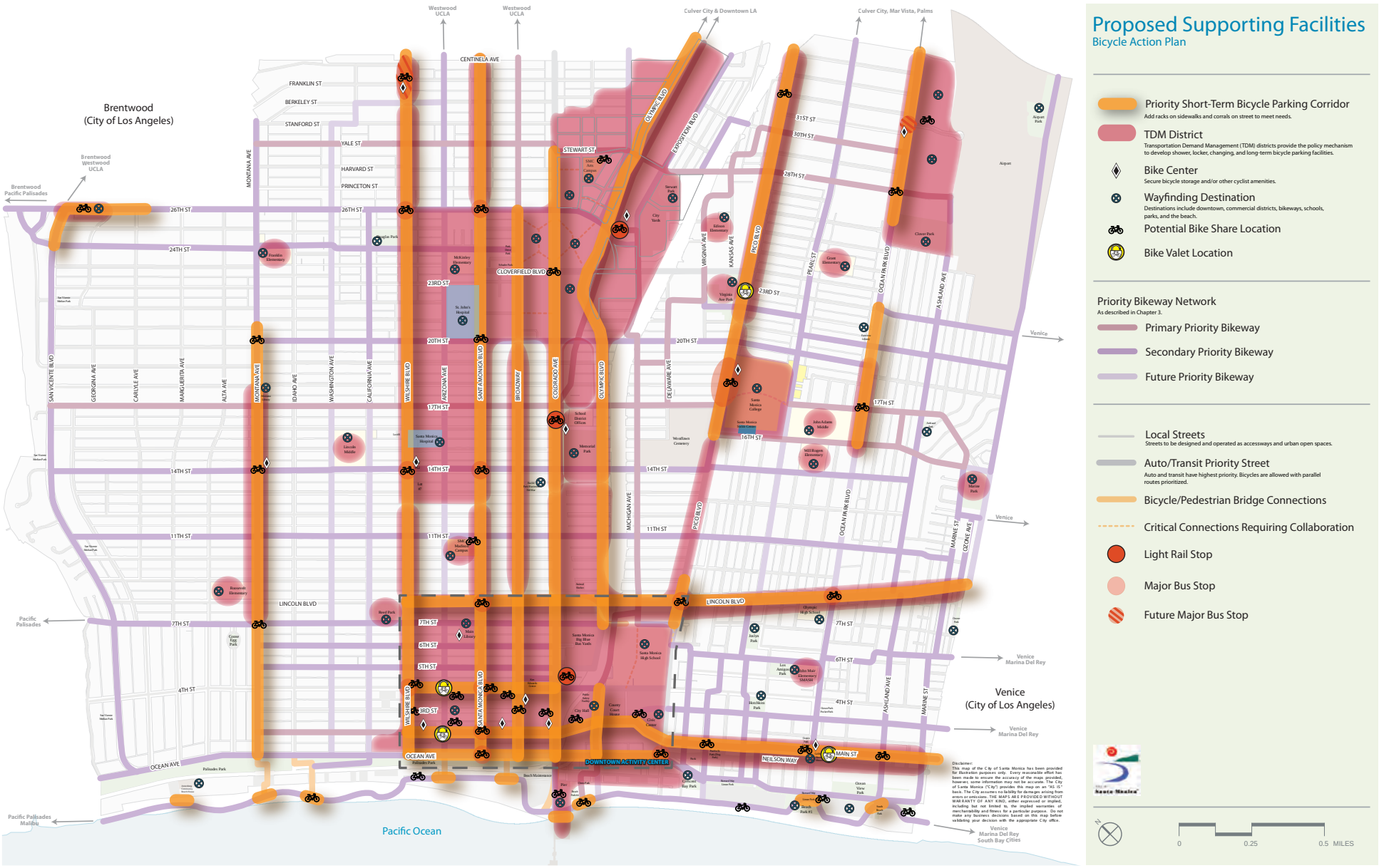
Supporting facilities give people access to essential resources such as parking, bicycles, related services, help cyclists find their way on bikeways, and enable easy connections to regional transit. When good supporting services are available, bicycling can be the fastest, cheapest and most convenient option for most trips in Santa Monica. As more people bicycle, additional investment in supporting facilities is needed. The supporting facilities program provides for initial and continuing development of bike parking, wayfinding, bike centers, transit connections, and bike sharing. The main goal for supporting facility investments is to:

- Get more people on bikes by providing highly attractive, easily accessible, and visible supporting bicycle facilities

The convenience of supporting facilities such as bike valet encourages more people to bike to events and popular destinations.

Supporting facility investment is coordinated with public and private improvements. New development will be required to incorporate more short-term and long-term bike parking and amenities like showers and lockers. Investments can be targeted towards major destinations and transit centers initially and expanded as demand increases. Figure 3-1 illustrates proposed supporting facility locations in relation to Exposition Light Rail Stations, schools, future transportation management districts, major destinations, priority bikeways, transit connections, and commercial corridors.

Figure 3-1 Proposed Supporting Facilities



Bike Sharing

Providing publicly accessible bicycles around the city gives more people the opportunity to ride, even for just one trip leg. Publicly available bikes encourages visitors to choose Santa Monica over other destinations, and to feel welcome in Santa Monica without a car. Bike sharing will facilitate connections to Exposition Light Rail or Rapid Bus stops by bicycle. The City recently received grant funds, available in July 2016, to support a bike sharing program. The long-term goal is to create a comprehensive system of bike share stations in visible, on-street and off-street locations dispersed throughout the city. This grant-funded system could include 25 stations and 200 - 250 bicycles. Providing helmets and transit subsidy incentives to new users to incentivize trial use of both bike sharing and transit could be explored. Bike sharing is a critical program element because it appeals to residents and visitors, raises the level of awareness of cycling, and provides opportunities for everyone to experience the joy and convenience of bicycling in Santa Monica. The City will encourage early adoption and expansion of the bike share program for which grant funding is secured.

Proposed bike sharing locations include:

- Each Exposition Light Rail station;
- Major bus stops along Wilshire, Santa Monica, Pico and Lincoln Boulevards (Rapid Bus corridors);
- Santa Monica College main, Academy of Arts and Technology, and Madison campuses;
- Santa Monica Downtown core, in public parking structures;
- Santa Monica Civic Center, possibly in public parking lots or structures;
- Santa Monica Pier;
- Montana Avenue commercial district;
- Brentwood Country Mart commercial area;
- Main Street commercial area;
- Pico Boulevard commercial areas;
- Hospitals;
- Ocean Park Boulevard commercial areas;
- Santa Monica Business Park (adjacent to SM Airport and SMC Bundy campus)

Minneapolis' bike share system, Nice Ride, has been a major success with over 100,000 trips in its first 6 months of operation. Of those trips, 19% replaced auto trips. Source: Nelson\Nygaard

Santa Monica's existing wayfinding signs.

Bike@Work

Bike@Work and similar programs provide pools of bicycles to employees of companies of all sizes. They allow work-related and personal trips to be made by bicycle and support employee commute programs. By making bicycles and supporting services available, these programs can encourage people to take up bicycling again. Bike Center programming and other City initiatives can encourage more groups to create or join bicycle pool programs.

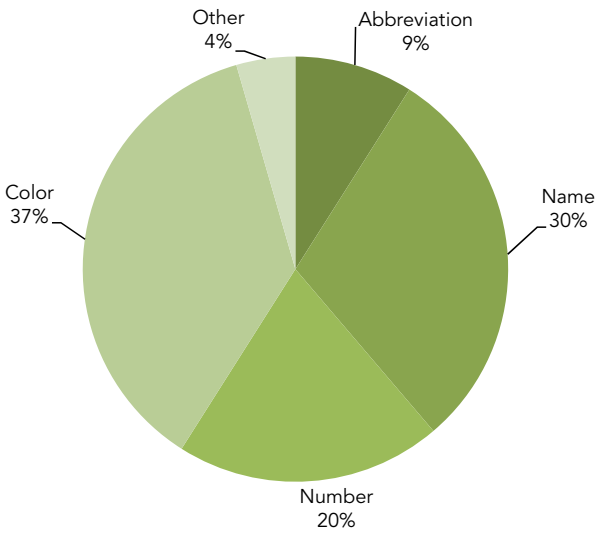
Bike Rentals

Bike rentals are available through local bike shops. Short-term rentals, including one-way bike rentals between the Bike Center (discussed later) and affiliated businesses along the beach bike path will be available during Bike Center operating hours.

Wayfinding

A bicycle wayfinding system identifies key destinations and bikeways, enabling people to navigate the city as they ride. Wayfinding helps cyclists find supporting facilities (parking, bike centers and transit connections) and regional connections to Los Angeles. Where trails and paths are provided off of the street network, wayfinding integrates those bikeways and trails with the on-street bikeway network. Key wayfinding destinations are identified on the map of Proposed Supporting Facilities.

Figure 3-2 Bikeway Wayfinding Elements Valued by the Community



Bikeway signage can be identified by number, name, color, etc.
Source: Bike Action Plan Survey

Bicycle Parking

Every bicycle trip begins and ends with parking. It is important to provide easy to use, secure, and convenient parking that is highly visible and close to popular destinations. Secure parking with commuter amenities (such as shower facilities) are also needed near transit stations and employment centers. The Bike Center, Expo Line stations, and new public parking facilities would be complemented by long-term secure bicycle parking, and where possible, air pumps and repair stands. The number and location of bike parking spaces should be enough to meet observed needs, or to accommodate a shift of 15-25% from current auto parking rates, whichever is greater. The City continues to honor cyclist and merchant requests for rack installations whenever possible.

Bike Corrals

As necessary, the City should retrofit auto parking facilities and provide bike parking corrals in popular commercial areas to meet bicycle parking needs.

Private Property Bike Parking

Private property developers and new City projects will be required to build bicycle parking. Bicycle parking and facility requirements should be revised and enhanced. A proposed expansion of bicycle parking requirements is detailed in Appendix F of this document. Bicycle rack standards are included in Appendix G. Standards and installation guidelines for parking and amenities may be revised as bicycle parking innovation develops.

Bike Valet

Bicycle valet at regular and special events significantly reduces congestion associated with events and also allows bicyclists to get improved access to event locations. Bicycle valet is an excellent tool for expanding the supply of convenient bicycle parking to meet peak needs. Permanent or ongoing bicycle valet destinations could include areas with high bicycle parking demand, such as the beach, the Pier, the Promenade, and Santa Monica Place.

The City is committed to installing more bike parking in commercial districts like downtown either curb-side or in-street.

Source: BerettaRose Photography

Bike Centers

A Bike Center is a one stop park, shop, and clean-up facility designed to make biking an easy choice. A well designed and located facility can promote and celebrate cycling. Also, Bike Centers promote bicycle-focused transportation demand management efforts by providing information, motivation, and support to people making bicycle trips. Bike Centers provide locker, shower and repair facilities and access-controlled bike parking. Bike Centers can also manage access-controlled bicycle parking at additional locations including reconstructed parking facilities. Efforts to expand the network of access-controlled parking should work with business districts and neighborhoods with the support of transportation management associations, merchant groups and businesses.

Shower, Changing, and Locker Facilities

Shower, changing, and locker facilities will support employee and transit cyclling. The City works with employers, Bike Center providers, institutions, employer groups, and transportation management associations to create partnerships to expand the number of facilities and increase the number of employees and students that have access to them.

A rendering of the Bike Center on the corner of Colorado and 2nd.

Transit Connections

Bicycle parking and services located at transit stations serve the transit user and the nearby neighborhood. Bike parking will allow commuters to combine a short bike ride with a trip on transit to get to their final destination. When bicycling is easily combined with rapid bus or light rail for a regional connection, more people, especially commuters, choose bicycling for longer trips. People are much more likely to use transit if they do not have a long walk to or from the station, or a wait for a transfer. The City aims to incorporate Bike Centers at each Expo Light Rail station, and to provide secure long-term parking and amenities for Expo riders and people in the surrounding transit and bike-friendly districts.

BIKEWAYS

Making Bicycling in Santa Monica Appealing

The general theme of the Santa Monica Bicycle Action Plan's bikeway recommendations is to *make bicycling appealing*. The recommendations set forth in the following sections are intended to attract and serve a wide range of Santa Monicans including novice, intermediate, and experienced cyclists as well as the City's youth and senior residents. The proposed bikeway network will provide an attractive transportation option for the area's established creative and professional populations. In order to attract such a wide range of users, the Bike Action Plan's priority bicycle network and facility recommendations aspire to develop the following features:

- **A legible and uninterrupted bicycle backbone and regional spine.** The backbone of this plan is the network of high quality bicycle facilities including the regional spine (east-west and north-south bike paths), and internal connectors (enhanced bicycle corridors and neighborhood greenways). The Plan calls for the development of at least two new separated bikeways - one east-west and one north-south.
- **A density of connections.** As a cyclist travels east-west and/or north-south throughout the city, the proposed network offers myriad perpendicular connections and parallel route alternatives suitable for all skill levels.
- **A diversity of facility types for a diversity of users.** The City of Santa Monica recognizes the need to accommodate different types of cyclists in order to fulfill its trip reduction and climate change goals. Commensurate with this need, the Bike Action Plan incorporates facility recommendations suitable for a diverse cycling population taking into account age, skill level, and trip type.
- **Direct, low stress and comfortable bicycle connections.** This plan strongly emphasizes effortless and worry-free cycling that gets people to destinations as quickly as possible. This ideal state of travel will be accomplished via the network of bike paths, side path connections, bikeways with additional buffers from parking, low volume streets, and neighborhood greenways.
- **Few barriers to bicycling and reduced conflicts at key junctures.** The geography of Santa Monica currently presents cyclists with a variety of considerable barriers to widespread bicycle travel. These include limited access points across the I-10 freeway, grid interruptions spanning east-west throughout the heart of the city, and difficult or uncomfortable arterial crossings at Wilshire, Santa Monica, Olympic, Pico, and Lincoln. This short-list of barriers is largely addressed in this plan through a variety of proposed crossing enhancements, connectivity improvements, and wayfinding to facilitate paths of least resistance.

One of the many cyclists who use Main Street during their commute. Main Street will serve as a key north-south connection to several proposed bikeway corridors. Source: Nelson\Nygaard

The recommended bikeways are prioritized into 5-year and 20-year implementation phases that build in flexibility. The 5-year recommendations are ambitious yet attainable and represent a broad range of bikeway types that require varying levels of effort and investment. The 20-Year Vision represents longer term corridor development that may be high cost or take more time for implementation and design. If funding becomes available or if a reconstruction or repaving project comes forward for one of the 20-year bikeways, these projects may come to fruition sooner than expected.

Bikeway Selection Process

This Plan represents six years of planning and coordination. The process allowed for the development of a plan that closely aligns with the goals and principles outlined by the Land Use and Circulation Element (LUCE). These goals and principles ensure that bicycling seamlessly integrates into the broader multimodal transportation system and reflects the needs of the current and potential cycling population. The bikeway recommendations contained in this Plan were carefully developed using the iterative LUCE process of gathering critical information about the existing bicycle environment, introducing that information in public meetings and evaluating feedback, and applying technical inputs. This layered approach to corridor and bikeway selection is summarized by the following three sections.

First bike workshop in March 2005.

Bicycle Network Development

The initial step to develop the Bike Action Plan's recommended bikeway network was established during the LUCE planning process. The LUCE identifies a preliminary bicycle network and designates general bikeway classifications including paths, lanes, and bicycle boulevards. Slow streets, shared streets, and auto/transit priority streets are also designated.

Figure 3-3 displays the LUCE bicycle network, including bikeway designations, activity centers, bike transit centers, key connections, and priority investment zones for non-motorized transportation. The bicycle network and its designations were refined through an extensive public involvement process that allowed members of the community, including many bicycle enthusiasts and key cycling organizations, to submit their suggestions and concerns for the future system.

Public outreach at the 2005 Santa Monica Festival - "A pedestrian and bike friendly place" was one of the themes to receive a high number of dots.

Figure 3-3 LUCE Bicycle Network

Priority Bikeway Development

Informed by two extensive public workshops, Planning Commission meetings, and a public survey, a clear set of priorities for the bike network emerged. These priorities include:

- Building upon and expanding the current bike network;
- Providing excellent connections to the existing Marvin Braude Bike Trail and planned Expo Bike Path;
- Providing at least one very high quality east-west and north-south separated bikeway;
- Enhancing existing heavily used bicycle corridors;
- Connecting all of Santa Monica's neighborhoods to schools, each other, Downtown and Expo stations;
- Providing excellent bike connections in areas where change is concentrated, particularly around the three new Expo stations;
- Ensuring that the bike network feels inviting to a broad array of existing and potential cyclists;
- Connecting to existing and planned bikeways in surrounding communities; and
- Providing new recreational trails where feasible.

Santa Monicans voiced their priorities for bikeway development at community meetings.

Taking these priorities and considering characteristics such as street widths, other modal priorities, and motor vehicle traffic volumes, the City developed the bikeway priority map shown in Figure 3-4. Corridors include three levels of priority:

- **Primary Priority Bikeways –** Major connectivity improvements to the existing bicycle network
- **Secondary Priority Bikeways –** Enhancements to increase the number of bikeways and provide better connections to key destinations including schools
- **Future Priority Bikeways –** Bikeways that need long-term planning or connections that will fill gaps

Figure 3-4 Priority Bikeway Network

Selection and Phasing of Bikeway Recommendation

Once the priority bikeways were identified, extensive field work was conducted to develop a range of potential recommendations for each corridor (*see the sidebar for technical inputs that informed bikeway facility choice)*. The field work produced a better understanding of:

- The bicycle environment relative to current infrastructure and potential improvements;
- Physical challenges; and
- Potential alternatives for recommended facilities.

The recommendations that emerged through preliminary field work were introduced to the community at the first Bike Action Plan workshop on December 13, 2010. The community's input was incorporated and the recommendations were modified and organized into two phases: a 5-Year Implementation Plan and a 20-Year Vision.

As a result of the field work and phasing process, the Santa Monica Bike Action Plan identifies 33 priority corridors encompassing a broad diversity of facility recommendations. These corridors are further broken down into 65 segmented projects. Projects are disaggregated from their corresponding corridors using repaving timelines, conceptual construction cost estimates, and implementation challenges. This is explained in further detail in Chapter 4.

The bikeway recommendations set forth in this Plan offer significant improvements to the bicycling environment with innovative treatments and more extensive facilities. This expansion both serves and promotes the rise in bicycle ridership anticipated and desired. As this plan is implemented, the City expects to rival bicycle mode share seen in some of North America's elite bicycling cities. Over the next 20 years, implementation of the proposed bikeway network and programs aspires to achieve a bicycle mode share of 14-35%. Figure 3-5 displays the anticipated increase in bikeway mileage relative to expected mode share increase.

TECHNICAL INPUT FOR PROPOSED FACILITY SELECTION

- Network connectivity
- Regional connectivity
- Current and anticipated changes to bicycle trip patterns
- Curb-to-curb width
- Physical constraints
- Posted vehicle speeds
- Traffic volumes
- Existing traffic calming features
- Designated freight and transit routing
- Number of driveway, alley, and intersection interfaces
- Topography
- Corridor trip types (regional, local, recreational)
- Sightline quality
- Land uses and destinations
- Availability of funding
- Annual street repaving programs
- Location of future transit facilities (including Phase II Expo light rail and future major bus transit centers)

Figure 3-5 Anticipated Shift in Bikeway Mileage and Mode Share, 2010–2030

	Baseline (2010)	5- Year Implementation Plan (2015)	20-Year Vision (2030)
Bikeway lane mileage	37.0 miles	69.0 miles	88.7 miles
Commute mode share	3.4%	12%	25%

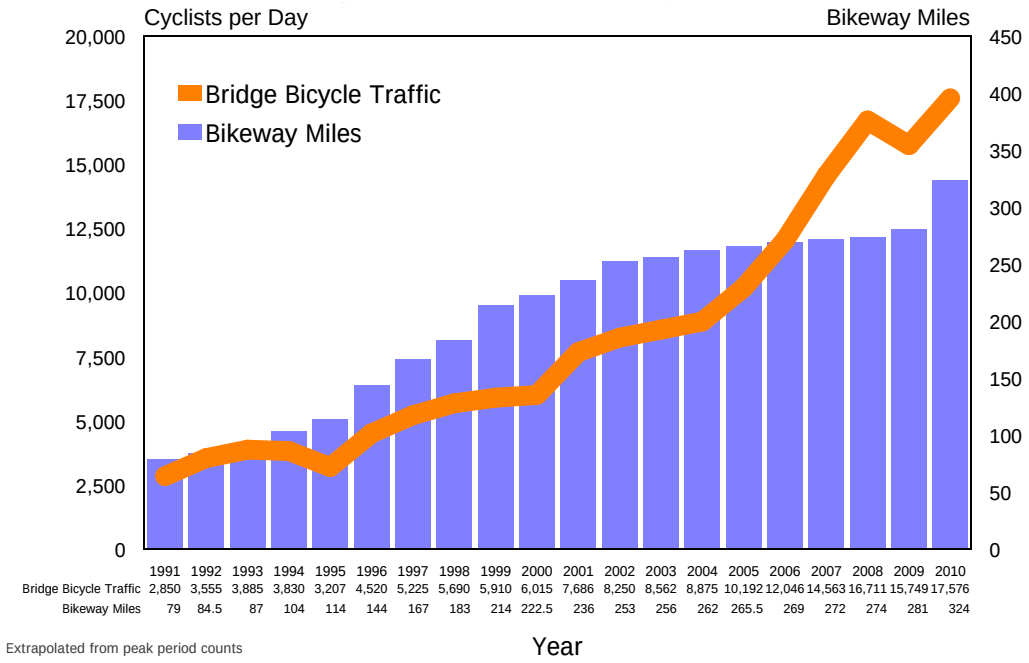
Bikeway Recommendations

The credo "if you build it, they will come" is continually validated in the world's great bicycling cities. Cities like Portland, Davis, Minneapolis, and Copenhagen all demonstrate that growth in bicycle trips corresponds to bicycle network expansion, higher densities of connections, and reducing barriers to bicycling. Locally, the restriping of Ocean Park Boulevard east of Lincoln with bike lanes demonstrated a 95% increase in cyclists using the street. The following sections develop a roadmap to achieving a substantial increase in bicycle travel for all trip types over the next 20 years. Projects in this plan include those located within *and* outside of the existing curb-to-curb right-of-way, those that merely restripe travel lanes, those that rededicate street space, and those that considerably re-structure the lane configuration. Very low volume streets (particularly the residential streets north of Montana Avenue) are not designated as bikeways, in general, because bicyclists can safely and comfortably make connections without a dedicated bicycle facility. The Bicycle Facility Toolbox, located immediately after the bikeway recommendations, is intended to be used as a companion piece to better conceptualize bicycle facility applications as they are drawn on the maps. The toolbox provides detail on a variety of facilities including design considerations.

The plan's bikeway recommendations are organized into two phases: the 5-Year Implementation Plan and the 20-Year Vision. Projects are prioritized into these phases respecting various known implementation considerations such as funding, cost, publicly-endorsed priorities, and gaps in the existing bicycle network. Although the 20-Year Vision consists of some projects that require significant public processes, planning, design, environmental review, and engineering study, several high quality, high cost marquee projects have been selected by City staff for near-term implementation. These can be pilot or demonstration projects.

Bikeway recommendations in the 5-Year Implementation Plan and the 20-Year Vision are organized from north to south and then from west to east.

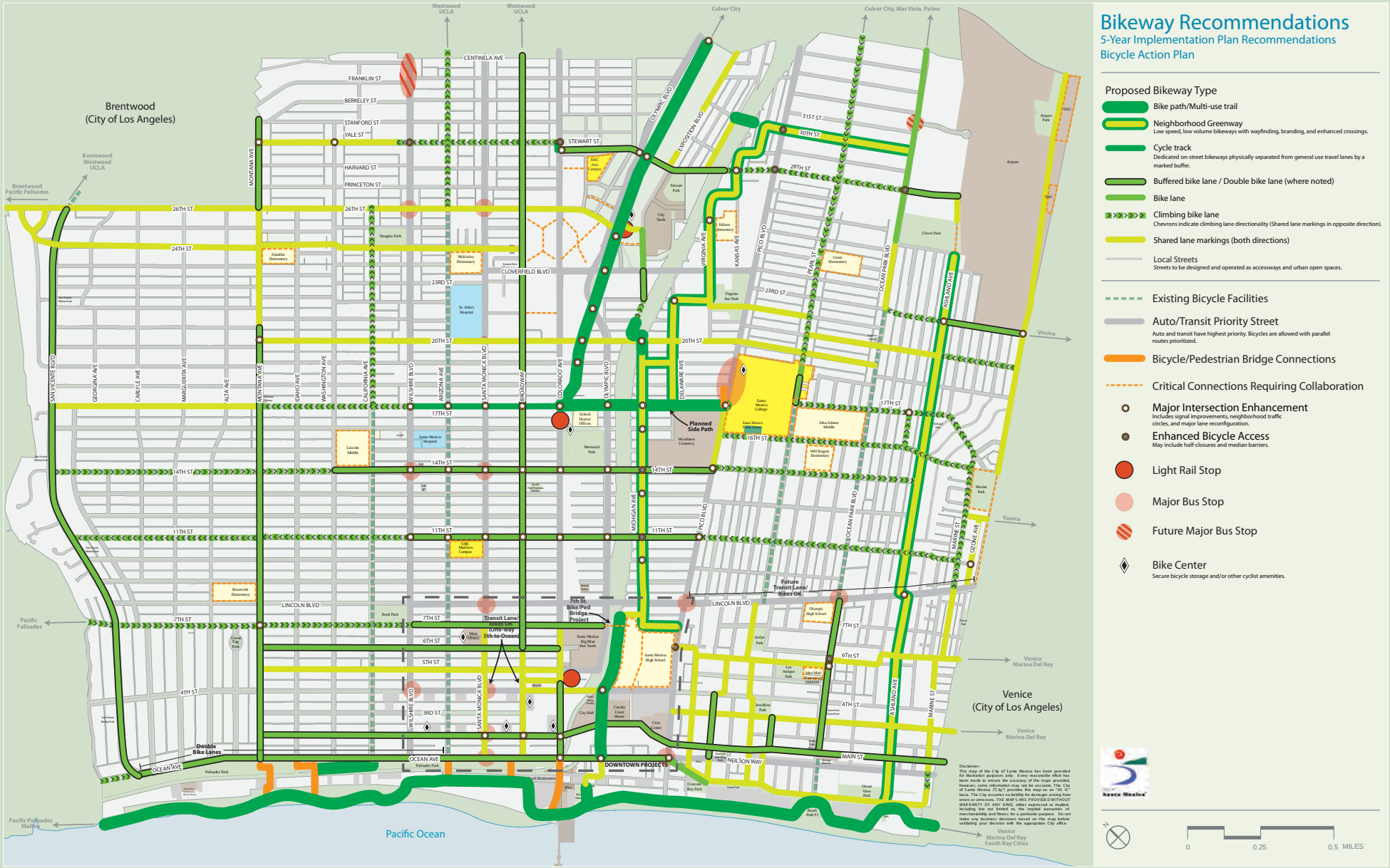
Figure 3-6 Bicycle Traffic across Four Main Portland Bicycle Bridges Juxtaposed with Bikeway Miles



Portland's bicycle traffic increased proportionately to its increase in bikeway development.
Source: City of Portland, 2010 Bicycle Count Report

5-YEAR IMPLEMENTATION PLAN

Figure 3-7 5-Year Implementation Plan



Bikeway Descriptions

The bikeways shown in Figure 3-7 are described below. The descriptions first indicate **what** types of facilities are recommended on the various segments that make up each corridor, and then describe **why** the bikeway is important within the bicycle network of Santa Monica. Less detail is provided for existing bikeways. Facility types are explained in the Bicycle Facility Toolbox later in this chapter and more detail on each bikeway can be found in Appendix B.

SAN VICENTE BIKEWAY (OCEAN AVENUE TO 26TH STREET)

San Vicente Boulevard between 21st and 22nd

WHAT:

- Ocean Avenue to 26th Street: Restripe to provide a buffered bike lane.

WHY:

- Enhances existing bike lanes to provide more space for cyclists and reduce the likelihood of collisions between bicyclists and car doors.
- Offers an enhanced connection between Brentwood and Ocean Avenue with connections to several planned north-south bikeways.
- San Vicente is an important east-west cross-town commute and recreational bike route and is currently the best connected route in the northern part of the city.
- Los Angeles plans to extend bike lanes along San Vicente through Brentwood toward Westwood.

5-YEAR IMPLEMENTATION PLAN

MONTANA AVENUE BIKEWAY (OCEAN AVENUE TO STANFORD STREET)

Montana Ave

Montana Avenue between 22nd and 23rd

WHAT:

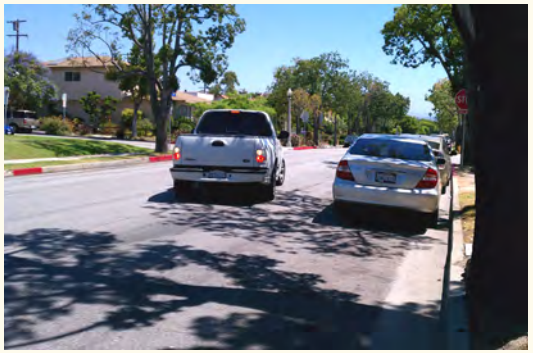
- Ocean Avenue to 7th Street: Restripe with buffered bike lanes; requires reconfiguration of turn lanes and/or parking at intersection of 7th Street.
- 7th Street to 21st Street: Convert existing bike lanes to buffered bike lanes by narrowing travel lanes and parking lanes; requires reconfiguration of turn lanes at 20th Street.
- 21st Street to 26th Street: Install shared lane markings.
- 26th Street to Stanford Street: Install buffered bike lanes.

WHY:

- Fills key gaps along the existing Montana bikeway by providing bike lanes eastward to Stanford Street and westward to Ocean Avenue.
- Enhances existing bike lanes to provide more space for cyclists and reduce the likelihood of collisions between bicyclists and car doors.
- Connects Brentwood and Ocean Avenue to Montana Avenue commercial district and ties into network enhancements on virtually all of the north-south bikeways in the city.

CALIFORNIA AVENUE BIKEWAY (OCEAN AVENUE TO 26TH STREET)

California Ave



California Avenue between 22nd and 23rd

WHAT:

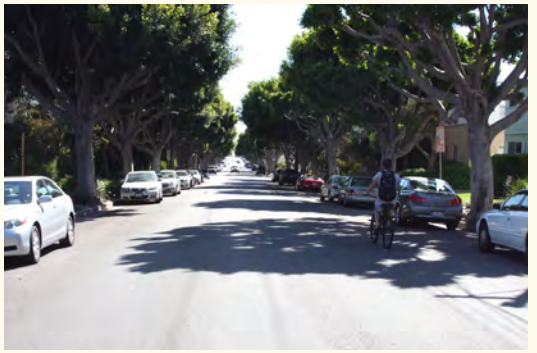
- Construct path to serve cyclists along the California Incline from the pedestrian bridge to Ocean Avenue.
- 17th Street to 26th Street: Restripe to place a buffered climbing bike lane in the uphill (eastbound) direction and shared lane markings in the downhill (westbound) direction.

WHY:

- Provides a facility with a manageable grade from the beach to the core of the city.
- Continues existing bikeway further east into additional neighborhoods.
- Narrower vehicle lanes will encourage slower vehicle speeds.
- The reconstruction of the California Incline, slated for 2013, provides an ideal opportunity to develop a high-quality bicycle connection to the beach.

ARIZONA AVENUE BIKEWAY (26TH STREET TO CENTINELA AVENUE)

Arizona Ave



Arizona Avenue between Stanford and Berkeley

WHAT:

- 26th Street to Centinela Avenue: Restripe to place a buffered climbing bike lane in the uphill direction (eastbound) and shared lane markings in the downhill direction (westbound).

WHY:

- Provides a continuous bikeway on Arizona Avenue to connect Downtown Santa Monica with West Los Angeles; also provides connections to McKinley Elementary School and the St. John's and Santa Monica UCLA Health Centers. Includes several design features that encourage safe auto speeds.

BROADWAY BIKEWAY (OCEAN AVENUE TO CENTINELA AVENUE)

Broadway's character is very different at its west and east ends.
Source: City of Santa Monica

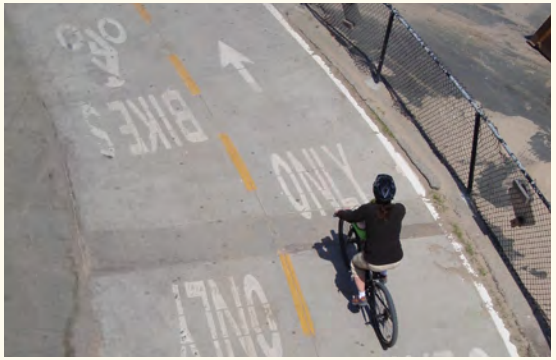
WHAT:

- Broadway from Ocean Avenue to 6th Street: Install shared lane markings in the existing westbound transit-only lane to clarify that bicyclists are allowed to share the bus lane as permitted by state law. Install shared lane markings in the eastbound through travel lane – consider "super-sharrow" design with green pavement in combination with shared lane markings.
- Santa Monica Boulevard from Ocean Avenue to 7th Street (couplet with Broadway bus lane): Install shared lane markings in the existing eastbound transit-only lane to clarify that bicyclists are allowed to share the bus lane as allowed by state law. Install shared lane markings in the westbound through travel lane – consider "super-sharrow" design with green pavement in combination with shared lane markings.
- Broadway from 6th Street to Centinela Avenue: Restripe existing bike lanes to green buffered bike lanes by narrowing travel lanes and parking lanes.

WHY:

- Provides bikeway continuity all the way to Ocean Avenue for Santa Monica's most heavily traveled on-road bicycle corridor with connections to every existing and future north-south bikeway corridor in the city.
- Enhances existing bike lanes to provide more space for cyclists and reduce the likelihood of collisions between bicyclists and car doors.
- Provides connection to Downtown, the Bike Center, the 17th Street/Memorial Park Expo Light Rail Station, the Expo Bike Path, and Culver City via the Expo Path at 17th Street.

SANTA MONICA PIER IMPROVEMENTS



Looking down from the Santa Monica Pier Bridge.
Source: City of Santa Monica

WHAT:

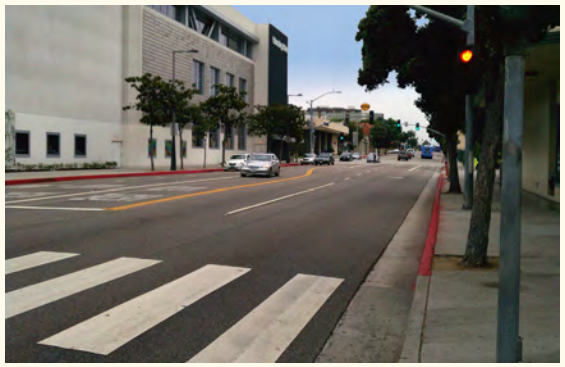
- Include bicycle facilities in the reconstruction of the bridge connecting Downtown with the Santa Monica Pier which is anticipated within the next several years.
- Provide a ramp from the Pier to the Beach Bike Trail.

WHY:

- Provides more room for bicyclists and potentially reduces the steep grade to access the pier and the Beach Bike Trail. Access to the path at this location is important since it is intuitive to cyclists that they should be able to access the path at the pier.
- Provides access from the Beach Bike Trail to the Downtown Expo Light Rail Station.

5-YEAR IMPLEMENTATION PLAN

COLORADO ESPLANADE AND SHARED LANE MARKINGS (OCEAN AVENUE TO 7TH STREET)



Colorado Avenue's future Esplanade just west of 4th

WHAT:

- Ocean Avenue to 4th Street: The Colorado Esplanade will convert the western portion of Colorado Avenue to increase space for pedestrians and bicyclists, including green buffered bike lanes or other high-quality bicycle facilities.
- 4th Street to 7th Street: Install shared lane markings, or lanes where feasible pending Expo final design.

WHY:

- The Esplanade provides a connection from the Downtown Expo Light Rail Station to the bicycle transit center, 2nd Street, Ocean Avenue, the Santa Monica Pier, and the Beach Bike Trail.
- Provide a connection from the Downtown Expo Light Rail Station to bike lanes on 6th Street and 7th Street, which provide connectivity to other bikeways for access to all parts of the City.

EXPOSITION BIKE AND PEDESTRIAN PATH (17TH STREET TO CENTINELA)

WHAT:

- 17th Street to Centinela Avenue: Separated bike and pedestrian paths will be built adjacent to the Exposition Light Rail line. The project includes signalized at-grade crossings at 17th Street, 19th Street, 20th Street, Olympic Boulevard, 26th Street, Stewart Street, and Centinela Avenue.

WHY:

- Provides a high-quality facility that will be comfortable for cyclists who prefer paths and quiet streets.
- The Santa Monica segment is the final link of this path that connects downtown Los Angeles to the ocean. Although the path ends at 17th Street, connectivity to the ocean is provided via the Broadway Bikeway (one block north at the path terminus), and the Michigan Avenue Neighborhood Greenway (two blocks south) connects to the Expo Path at Bergamot Station.
- Provides connections to the Exposition Light Rail stations at Bergamot and 17th Street as well as Memorial Park, and high quality bike corridors such as Yale, Stewart, 28th, and 17th Streets and the Michigan Avenue Neighborhood Greenway.

Expo bikeway rendering. Source: Friends4Expo

VIRGINIA AVENUE SHARED LANE MARKINGS (STEWART STREET TO DORCHESTER TUNNEL)

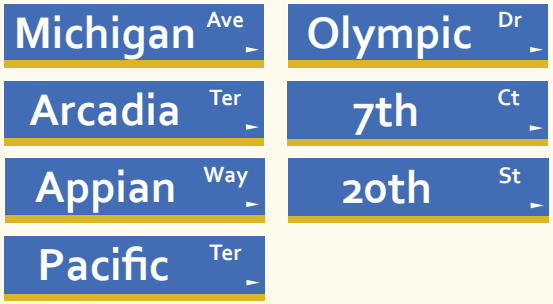
WHAT:

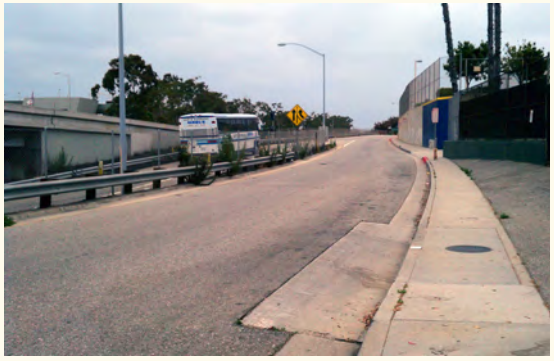
- Stewart Street to Dorchester Tunnel: Install shared lane markings and wayfinding signs.

WHY:

- Creates a legible connection to an otherwise hidden inter-neighborhood linkage across the I-10 freeway footprint.
- Wayfinding would inform cyclists of the connection to the Michigan Neighborhood Greenway.

MICHIGAN NEIGHBORHOOD GREENWAY (BEACH BIKE PATH TO CENTINELA)





Eastbound Olympic Boulevard between 4th and 7th Court

Michigan Avenue between 21st and 22nd

WHAT:

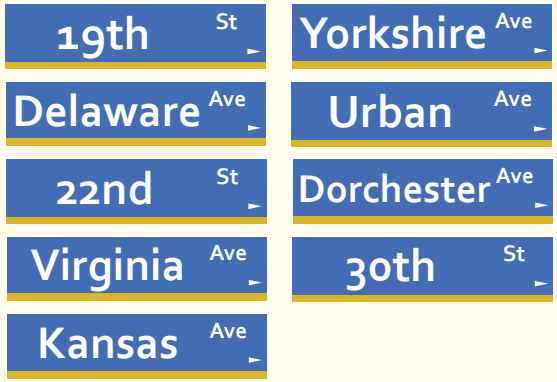
- Arcadia Terrace, Appian Way, and Pacific Terrace from Ocean Front Walk to Ocean Avenue: Install shared lane markings.
- Olympic Drive at Ocean Avenue: Construct new intersection to include separate signalization and other facilities to connect bicyclists from Pacific Terrace across Ocean Avenue.
- Olympic Drive from Ocean Avenue to Avenida Mazatlan: Construct shared use path on the north side.
- Olympic Drive at 4th Street: Revise signalization to enable bicycle connection from the west.
- Eastbound Olympic Boulevard from 4th Street to 7th Court: Construct two-way shared use path on the south side.
- 7th Court from Eastbound Olympic Boulevard to Michigan Avenue: Install shared lane markings.
- Michigan Avenue from 7th Court to 19th Court:
  - Install shared lane markings;
  - Construct neighborhood traffic circles at the intersections of Michigan Avenue with 10th Street, Euclid Street, 16th Street, and 17th Street;
  - Install intersection of enhancement measures at the intersections Michigan Avenue with 11th Street and 14th Street; install other measures on Michigan as needed.
  - These revisions will require a significant public involvement process in the neighborhood.
- Michigan Avenue from 19th Court to 20th Street: Construct pathway connection.
- Intersection of 20th Street with I-10 eastbound off-ramp: Add pedestrian and bicycle signal on the south side of the intersection.
- 20th Street from the I-10 eastbound off-ramp to the I-10 Westbound on-ramp: Construct shared use path on the east side of the freeway overcrossing structure.
- I-10 right-of-way from 20th Street to 21st Street: Construct shared use path.
- Michigan Avenue from 21st Street to 22nd Street: Convert Michigan Avenue to one-way westbound and 21st Street to one-way northbound, and install contra-flow climbing bike lane eastbound.
- Michigan Avenue from 22nd Street to Cloverfield Boulevard: Install buffered bike lanes.
- Michigan Avenue from Cloverfield Boulevard to Bergamot Station: Install bike lanes.
- Bergamot Station parking lot: Install shared lane markings in parking lot from Michigan Avenue to the Exposition Line light rail station.
- Exposition Boulevard from Stewart Street to Centinela Avenue: Install shared lane markings.
- Wayfinding signs and neighborhood greenway branding will be included throughout the corridor.

WHY:

- Formalizes, enhances, and extends a popular low traffic volume east-west route; provides connectivity across I-10 and through the 20th Street interchange.
- Includes several design features that encourage reduced motor vehicle speeds and volumes, to create a true neighborhood greenway to encourage bicycle use by residents who prefer paths and quiet low-volume streets.
- Provides street enhancements that benefit the neighborhood.
- Critical east-west connection to major destinations including the Marvin Braude Beach Trail, Civic Center, Downtown (via Main Street), Santa Monica High School, Santa Monica College (SMC), Bergamot Station, the Bergamot Exposition Line station. Critical links to north-south bikeways include Beach Bike Path, Ocean Ave., Main/2nd, 6th/7th, 11th St., 14th St., 17th St., and Yale/Stewart/28th.

5-YEAR IMPLEMENTATION PLAN

MICHIGAN WIGGLE NEIGHBORHOOD GREENWAY (MICHIGAN AVENUE TO OCEAN PARK BOULEVARD)



30th Street between Pico and Pearl

WHAT:

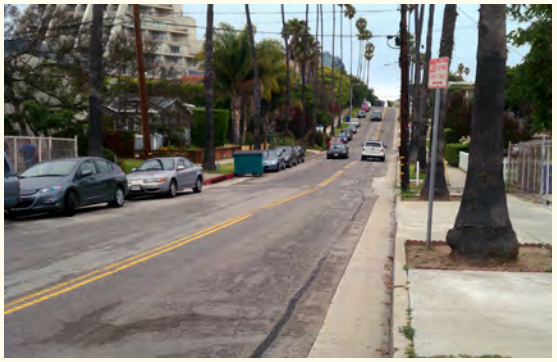
- This is an additional leg of the Michigan Avenue Neighborhood Greenway following a route that "wiggles" southeasterly from Michigan at 19th Street to Pearl Avenue and Ocean Park Boulevard.
- Install shared lane markings, wayfinding signs, and neighborhood greenway branding on:
  - 19th Street from Michigan Avenue to Delaware Avenue;
  - Delaware Avenue from 17th Street to 22nd Street;
  - 22nd Street from Delaware Avenue to Virginia Avenue;
  - Virginia Avenue from 22nd Street to 27th Street and only 27th Street to Kansas Avenue;
  - Kansas Avenue from 27th Street to Yorkshire Avenue;
  - Yorkshire Avenue from Kansas Avenue to Urban Avenue;
  - Urban Avenue from Yorkshire Avenue to Dorchester Avenue;
  - Dorchester Avenue/30th Street from Urban Avenue to Ocean Park Boulevard.
- Construct neighborhood traffic circles or other intersection improvements at the following intersections:
  - Delaware at 22nd Street;
  - Virginia Avenue at Frank Street;
  - Kansas Avenue at 28th Street;
  - 30th Street at Pearl Street
- 30th Street at Pico Boulevard: Install median diverter with bike refuges in the center of Pico Boulevard.

WHY:

- Includes several design features that encourage reduced motor vehicle speeds and volumes, to create a true neighborhood greenway to encourage bicycle use by residents who prefer paths and quiet low-volume streets.
- Critical connections to north-south bike corridors at 20th Street and 28th Street and east-west corridors at Pearl Street and Ocean Park Boulevard.
- Creates a low stress, low volume, and low speed bicycle facility that (along with the Michigan Avenue Neighborhood Greenway) provides a connection between Downtown and the Ocean Park neighborhood in southeast Santa Monica.

PEARL STREET AND SOUTH BEACH ACCESS BIKEWAY (BARNARD WAY TO CENTINELA AVENUE)

Pearl between 32nd and 33rd



Bay Street between 4th and 5th

WHAT:

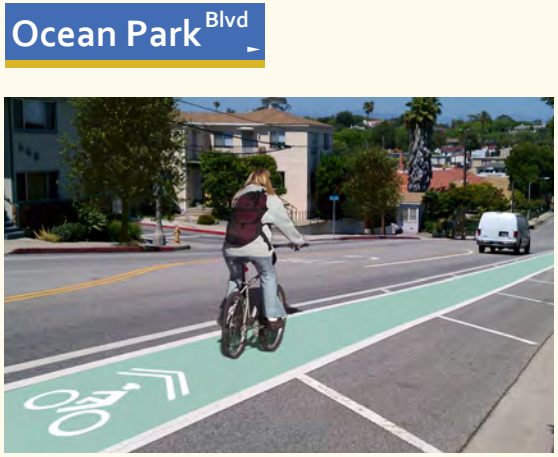
- Install shared lane markings on the following Ocean Park Neighborhood east-west streets that connect Ocean Avenue and Barnard Way to 6th Street and Pearl Street:
  - Bay Street from Ocean Avenue to 6th Street;
  - Bicknell Avenue from Barnard Way to 6th Street;
  - Pacific Street from 4th Street to 6th Street;
  - Strand Street from Ocean Avenue to Lincoln Boulevard; also consider placing "Except Bicycles" signs on the ONE WAY and DO NOT ENTER signs to allow two-way bike traffic on the following portions of this quiet street:
    - » Strand Street from Ocean Avenue to Neilson Way, currently one way westbound.
    - » Strand Street from Main Street to 3rd Street, currently one way eastbound.
  - Hollister Avenue from Ocean Avenue to 3rd Street
- Pearl Street from 17th Street to crosswalk for parking lot: Restripe to create buffered bike lanes.
- Pearl Street from crosswalk for parking lot to 19th Court: Restripe to create bike lanes.
- Pearl Street from 19th Court to Centinela Avenue: Restripe to place a buffered climbing bike lane in the uphill direction and shared lane markings in the downhill direction. The slope varies along this street so the buffered bike lane should be placed in both directions depending on the specific grade of each block.

WHY:

- Shared lane markings on streets in the Ocean Park Neighborhood provide multiple route choices on quiet streets for bicyclists to get from the beach to Pearl Street to access neighborhoods to the east.
- Enhances access to Grant Elementary School, Will Rogers Elementary School, John Adams Middle School, and Santa Monica College.
- Climbing lane design encourages slower motor vehicle speeds.

5-YEAR IMPLEMENTATION PLAN

OCEAN PARK BOULEVARD BIKEWAY (BEACH BIKE TRAIL TO CENTINELA AVENUE)



Ocean Park between 6th and 7th

Ocean Park between 29th and 30th

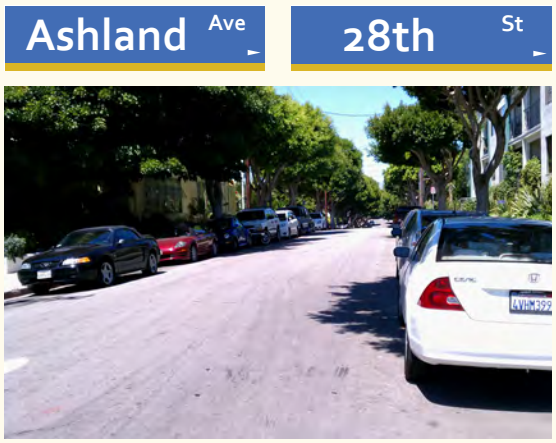
WHAT:

- Main Street to Lincoln Boulevard: Restripe the existing bike lanes to create green buffered bike lanes.
- Cloverfield Boulevard to 25th Street: Install shared lane markings.
- 25th Street to Centinela Avenue: Restripe for bike lanes. Interim lanes eastbound and shared lane markings westbound.

WHY:

- Provides bikeway continuity on the majority of Ocean Park Boulevard and connects cyclists between Santa Monica and the Mar Vista neighborhood.
- Provides a connection to Santa Monica Business Park, Clover Park, and commercial retail on Ocean Park Boulevard.

ASHLAND AVENUE NEIGHBORHOOD GREENWAY (BARNARD WAY TO 28TH STREET)



Ashland Avenue between 4th and 5th

WHAT:

- Ashland Avenue from Barnard Way to 25th Street: Install shared lane markings, wayfinding signs, and neighborhood greenway branding.
- 28th Street from Clover Park to 28th Street/ Donald Douglas Loop: Install shared lane markings, wayfinding signs, and neighborhood greenway branding.
- Intersection of Ashland Avenue and Lincoln Boulevard: Develop an intersection enhancement at this off-set intersection to facilitate through bicycle movements on Ashland Avenue. This can be accomplished in several ways, including constructing a two-way median bike-only turn pocket or providing short segments of cycle tracks or sidepaths.
- Intersection of Ashland Avenue and 23rd Street: Construct intersection improvements with advisory signage.

WHY:

- Provides a direct low speed and low volume east-west connection between the Marvin Braude Bike Trail and Santa Monica Business Park, Clover Park, and commercial retail on Ocean Park Blvd.
- Connects into several planned north-south bikeways.

MARINE/NAVY/OZONE/FREDERICK/DEWEY/AIRPORT BIKEWAY (BARNARD WAY TO BUNDY)

Marine St | Navy St | Ozone Ave | Frederick St | Dewey St | Airport Ave

Marine Street between Main and 3rd

Marine Street between 11th and Frederick

WHAT:

- Marine Street from Barnard Way to 6th Street: Install wayfinding signs and shared lane markings with a short segment of climbing lane.
- Navy Street from 6th Street to Lincoln Boulevard: Install wayfinding signs and shared lane markings.
- Marine Street from Lincoln Boulevard to 17th Street: Restripe to create a buffered climbing bike lane in the uphill direction (eastbound) and shared lane markings in the downhill direction (westbound).
- Ozone Avenue from Lincoln Boulevard to Frederick Street: Install wayfinding signs and shared lane markings. This will require construction of curb ramps and signage allowing bicycles to connect through the existing cul-de-sacs.
- Frederick Street from Marine Street to Dewey Alley: Install shared lane markings.
- Dewey Street from street closure at Marine Park to 23rd Street: Install wayfinding signs and shared lane markings.
- Airport Avenue from 23rd Street/Dewey Street to Bundy Drive: Install wayfinding signs and shared lane markings.

WHY:

- Creates internal neighborhood connections between the City of Los Angeles and the Main Street commercial corridor and Marvin Braude Bike Trail.
- Connects cyclists to several north-south bikeways including Main Street, 6th Street, 11th Street, 14th Street, and 17th Street.
- Routes are on quiet neighborhood streets, as preferred by some bicyclists.

5-YEAR IMPLEMENTATION PLAN

MARVIN BRAUDE BIKE TRAIL (NORTH CITY LIMIT TO SOUTH CITY LIMIT)

Pedestrian bridge and stairs at the California Incline

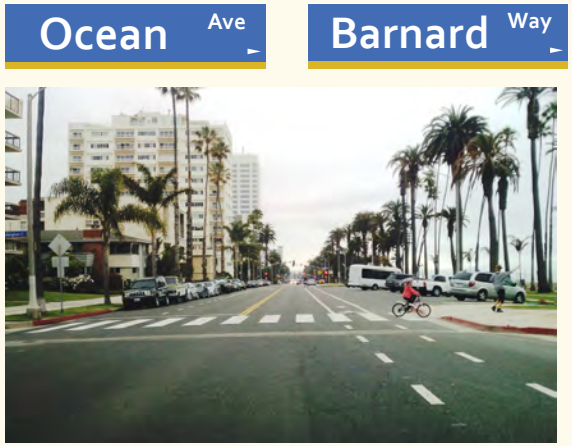
WHAT:

- Regulatory signs and markings to clarify which types of users should use separated paths and portions of paths.
- Wayfinding signs to direct users to various destinations.
- Modifications to the PCH overcrossings at the Montana Avenue, California Incline, Arizona Avenue, and Broadway to provide a trough for pushing bicycles and otherwise improve access for bicyclists.

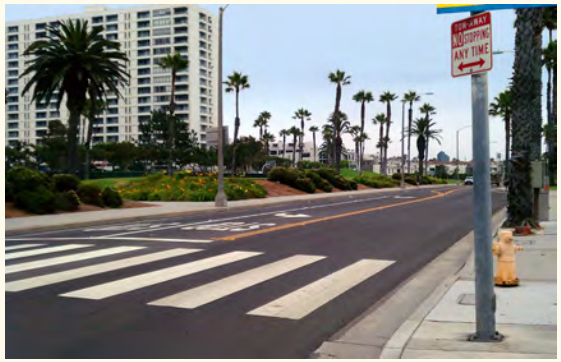
WHY:

- Reduces the potential for user conflicts.
- Provides guidance to trail users to assist in wayfinding and reduce confusion.
- Improve access to the Beach Bike Trail for cyclists.

OCEAN/BARNARD WAY BIKEWAY (NORTH CITY LIMIT TO NIELSON WAY/MARINE STREET)



Ocean Avenue at Idaho



Barnard Way between Ocean Park and Ashland

WHAT:

- Ocean Avenue from North City Limit to San Vicente Boulevard: Restripe to create a buffered climbing bike lane southbound.
- Ocean Avenue from San Vicente Boulevard to California Avenue: Restripe existing bike lanes to create double bike lanes by narrowing travel lanes.
- Ocean Avenue from California Avenue to Pico Boulevard: Restripe existing bike lanes to create buffered bike lanes by narrowing travel lanes and parking lanes.
- Ocean Avenue from Pico Boulevard to Bicknell Avenue: Restripe to create a southbound bike lane; Install shared lane markings northbound between Bay Street and Bicknell Avenue.
- Ocean Avenue and Barnard Way between Bicknell Avenue and Neilson Way: Install shared lane markings; install westbound climbing bike lane immediately east of the median approaching Neilson Way (approximately the last 220 feet).

WHY:

- Provides a bicycle passing lane on a portion of one of the streets most heavily used by recreational "road" cyclists, allowing these and other cyclists to overtake slower cyclists without entering adjacent general use travel lanes.
- Enhances existing bike lanes to provide more space for cyclists and reduce the likelihood of collisions between bicyclists and car doors.
- Provides improved access from Downtown to the beach, the beach bike path, and Venice. Improving beach access is a key priority of the Santa Monica Bicycle Action Plan. Guidelines for beach access improvements are summarized in the following call out box.

BEACH ACCESS

Beach access routes, such as Hollister Avenue and Strand Street, should provide easy connections to the local and regional bicycle network. Source: Nelson\Nygaard

Stair troughs will greatly facilitate access to the beach at various bridge connections. Source: Nelson\Nygaard

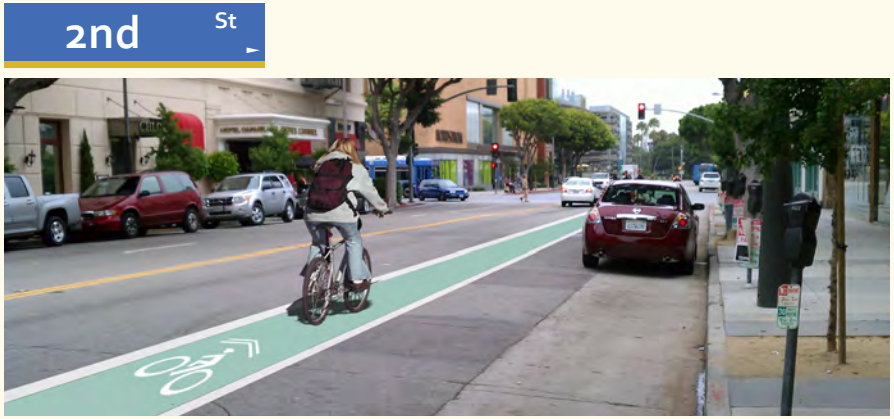
Separated walkway north of the city could reduce the potential for conflicts between people walking and bicycling.

A key priority identified in public workshops and commission hearings is improved bicycle access to the beach. This could be accomplished in several capacities, including:

- **Signage.** Wayfinding signage should be strategically located at beach portals and direct cyclists from everywhere in the city to the beach, from the beach to adjacent commercial districts like Main Street and the 3rd Street Promenade, as well as to the Expo light rail station at 4th Street and Colorado. In addition, advisory and warning signage directed towards motorists should signal the presence of cyclists and indicate their requirement to share the road.
- **Bicycle accommodations at stairways.** Installing bicycle stair troughs, or wheel gutters, are a commonly utilized strategy to improve bicycle connections where stairs are required to directly access a destination. Stair troughs will enable users to roll their bicycles up and down steps easily. These stairway enhancements will be installed at each of the four stair connections between Montana Avenue and Broadway where beach access is disconnected by the Pacific Coast Highway and steep cliffs.
- **Bridge improvements.** The City should retrofit all non-motorized bridges crossing the Pacific Coast Highway to accommodate pedestrians and bicycles. Part of this strategy is enhancing connections to bridges—especially at the California Incline—and retrofitting staircases for bicycles (as noted above). Once each of the bridge connections are retrofitted, cyclists should be allowed to ride their bicycles across bridges guided by the appropriate pavement markings and warning signage.
- **Separated walkway.** Marvin Braude Bike Trail north of the city should include a separated walkway to reduce the potential for conflicts between people walking and bicycling and to create additional bicycle capacity.
- **Beach access and destination facilities.** Beach bikeway connections should be developed to connect to the Marvin Braude Bike Trail. Several potential connections are identified on the Action Plan maps. All bicycle connections that provide perpendicular linkages to the Marvin Braude Bike Trail should integrate seamlessly into the broader bicycle network supplemented by wayfinding signage. Moreover, beach access is only as effective as the presence of high quality bicycle parking. Bicycle parking at the beach should provide security and coverage in areas where ocean views will not be restricted. Bicycle parking should offer peace-of-mind to beach-goers that seek rest and relaxation.

5-YEAR IMPLEMENTATION PLAN

2ND/MAIN BIKEWAY (MONTANA AVENUE TO SOUTH CITY LIMIT)



2nd Street between Santa Monica and Broadway

WHAT:

- Montana Avenue to Wilshire Boulevard and Colorado Avenue to South City Limit: Create new and restripe existing lanes with green buffered bike lanes by narrowing travel lanes and parking lanes.
- Wilshire Boulevard to Colorado Street: Create green buffered bike lanes by implementing a road diet:
  - Most of this road diet would be a 3-lane cross section with one through lane and each direction, and left turn lanes serving the intersections (or a two-way left turn lane).
  - The block between Santa Monica Boulevard and Broadway is too narrow for a 3-lane cross section, so northbound left turns at Santa Monica Boulevard and southbound left turns at Broadway could be handled in one of 3 ways:
    - » Allow left turns, knowing that this will block some through-movements;
    - » Ban the left turn movement, at least during some times of day;
    - » Offset the centerline to widen the approach lane to about 18 feet, providing a de facto left turn lane.
- Intersection of Colorado Street with Main Street and 2nd Street: As part of the Colorado Esplanade project, reconfigure this intersection to enhance through bicycle movements on Main Street and 2nd Street. This can be accomplished in several ways, including using a curvilinear street to create a single intersection, reconfiguring the lane configuration on Colorado, or providing short segments of cycle tracks or sidepaths.

WHY:

- 2nd Street and Main Street are an extremely important bicycling connection in Downtown Santa Monica, connecting to Santa Monica Place, the 3rd Street Promenade, other downtown destinations, the Bike Transit Center at 2nd/Colorado, City Hall, County Courthouse, Civic Center, and Main Street businesses.
- Although there are bike lanes a block away on Ocean Avenue, Ocean is a comparatively high-volume, high-speed road that can be discouraging to many cyclists. 2nd Street and Main Street provide a more comfortable ride for many cyclists.

3RD STREET BIKEWAY (PICO BOULEVARD TO SOUTH CITY LIMIT)

3rd Street, south of Pico

WHAT:

- Between Pico Boulevard and South City Limit: Install shared lane markings.

WHY:

- Connects downtown and the Civic Center to Ocean Park neighborhood, Main Street business, the Ocean Park Bikeway, and Venice.
- Route is on a quiet neighborhood street, as preferred by some bicyclists.

4TH STREET AND 5TH STREET SHARED LANE MARKINGS (DOWNTOWN AREA)

4th Street between Broadway and Colorado

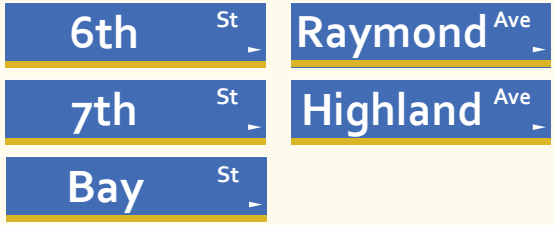
WHAT:

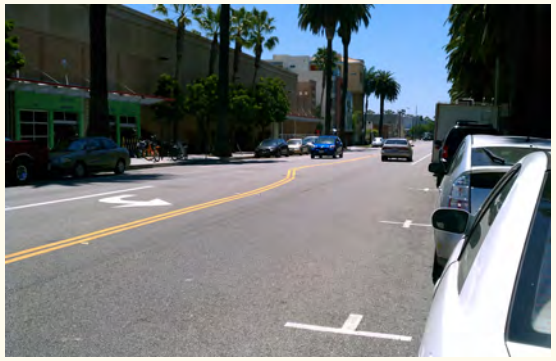
- 4th Street from Broadway to Olympic Boulevard: Install shared lane markings.
- 5th Street from Montana Avenue to Colorado Avenue: Install shared lane markings.
- 4th Court between Broadway and Colorado Avenue: Install wayfinding signs and shared lane markings.

WHY:

- 4th Street and 5th Street provide direct connectivity to the downtown Exposition Light Rail station. Providing shared lane markings will help indicate to motorists that bicyclists will be using these high-volume streets.
- 4th Court will provide a direct connection from the Downtown Expo station and the Colorado Esplanade to Broadway on a low-volume alley, which may be preferred by come cyclists. Broadway then provides connectivity to much of the rest of the city and the City of Los Angeles.

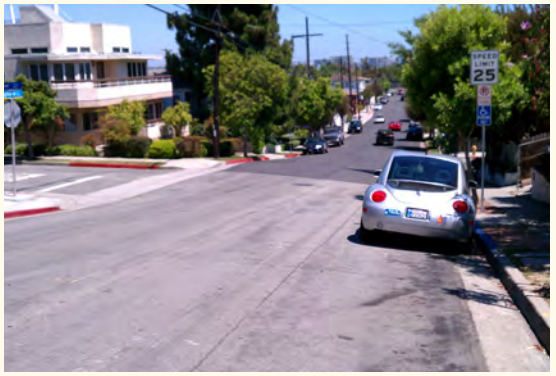
6TH STREET / 7TH STREET BIKEWAY (NORTH CITY LIMIT TO SOUTH CITY LIMIT)





7th Street between Broadway and Colorado

6th Street between Strand and Hollister



Highland Avenue Street between Pier and Marine

WHAT:

- 7th Street from North City Limit to Wilshire Boulevard: Restripe to place a buffered climbing bike lane in the uphill direction (northbound) and shared lane markings in the downhill direction (southbound).
- 6th Street from Montana Avenue to Colorado Avenue: Restripe to create buffered bike lanes by narrowing travel and parking lanes and eliminating the two-way center turn lane.
- 7th Street from Wilshire Boulevard to Olympic Boulevard: Restripe to create buffered bike lanes that are continuous to intersections, by reducing travel and parking lane widths as well as eliminating left turn lanes at intersections.
- 7th Street from Michigan Avenue to Pico Boulevard: Install shared lane markings.
- Intersection of Pico Boulevard and 6th Street: Provide new bicycle signalization to serve both northbound and southbound cyclists; may include diversion to eliminate left or right turn movements for motor vehicles from 6th Street to Pico.

5-YEAR IMPLEMENTATION PLAN

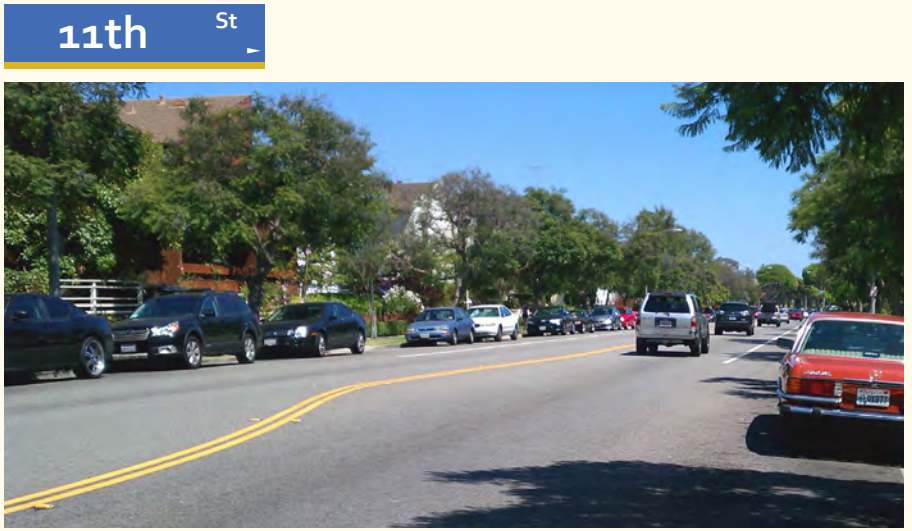
6TH STREET / 7TH STREET BIKEWAY (CONT'D)

- Between Pico Boulevard and South City Limit: Install shared lane markings on the following street segments:
  - 6th Street from Pico Boulevard to Bay Street;
  - Bay Street between two legs of 6th Street;
  - 6th Street between Bay Street and Raymond Avenue;
  - Raymond Avenue between 6th Street and Highland Avenue;
  - Highland Avenue between Raymond Avenue and South City Limit.
- Intersection of 6th Street and Ocean Park Boulevard: Intersection improvement to allow northbound cyclists on 6th Street to make a left turn onto Ocean Park Boulevard and a right turn onto 6th Street, likely through the use of a raised median; may also include diversion to eliminate some turning movements between Ocean Park Boulevard and 6th Street.

WHY:

- North of I-10 creates a bikeway with ample space for cyclists away from car doors, that connects from downtown to neighborhoods north of downtown, San Vicente bike lanes, and City of Los Angeles.
- 7th Street is one of a few streets that create a connection north of San Vicente to the City of Los Angeles.
- South of I-10, creates a low volume, low speed north-south bikeway between the Borderline neighborhood and Santa Monica HS, avoiding more high-volume streets such as 4th Street and Lincoln Boulevard. Includes several design features that encourage safe auto speeds and volume management.

11TH STREET BIKEWAY (SAN VICENTE BOULEVARD TO MARINE STREET)



11th Street between Michigan and Pico

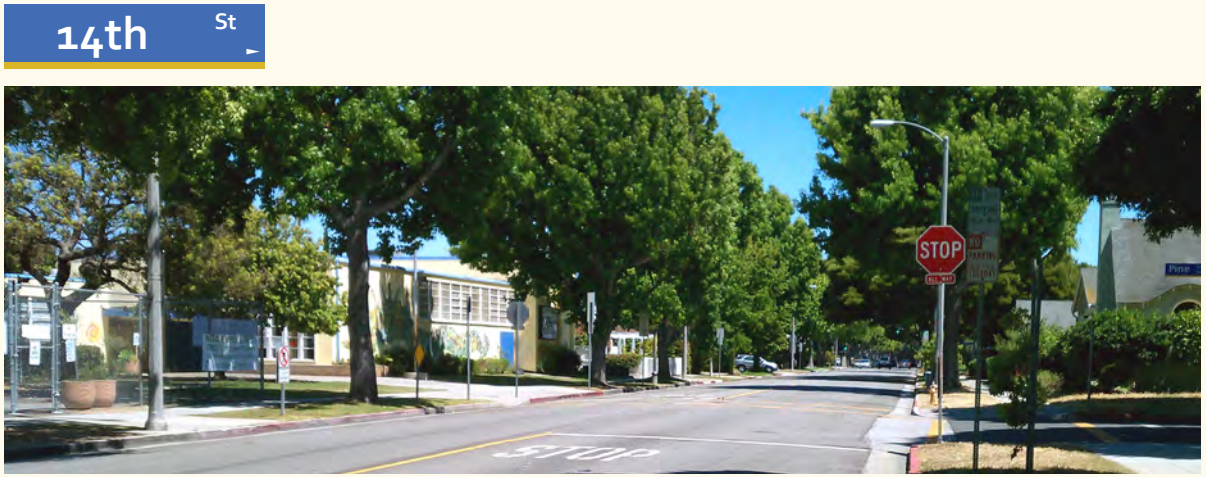
WHAT:

- San Vicente Boulevard to Wilshire Boulevard: Restripe to create a buffered climbing bike lane in the uphill direction (northbound) and shared lane markings in the downhill direction (southbound).
- Wilshire Boulevard to Pico Boulevard: Restripe to create green buffered bike lanes by narrowing travel and parking lanes. This will require reconfiguring turn lanes and/or parking lanes on 11th Street at Wilshire Boulevard, Arizona Avenue, Santa Monica Boulevard, Broadway, Colorado, Olympic Boulevard, and Pico Boulevard to allow for merge lane treatments and through bike lanes.
- Pico Boulevard to Marine Street: Restripe to create a buffered bike lane northbound and shared lane markings southbound. Except for the last few blocks between Ashland Avenue and Marine Street, this street is relatively flat – the bike lane placed in the northbound direction here is the opposite of the bike lane southbound on 14th Street two blocks away.
- Buffered bike lanes should be extended to the intersection at all intersection approaches using merge lane treatments where appropriate.

WHY:

- Develops high quality bike connection between south and north Santa Monica.
- Major linkages include the Montana commercial district, downtown adjacent retail, and various priority bikeways.
- Chosen because of its direct routing and connections to east-west bikeways that feed into Downtown.

14TH STREET BIKEWAY (SAN VICENTE BOULEVARD TO ASHLAND AVENUE)



14th Street between Cedar and Pine

14th Street, south of Ocean Park

WHAT:

- San Vicente Boulevard to Washington Avenue: Restripe to create a buffered climbing bike lane in the uphill direction (southbound) and shared lane markings in the downhill direction (northbound).
- Washington Avenue to Pico Boulevard: Restripe to create green buffered bike lanes by narrowing travel and parking lanes. This will require reconfiguring turn lanes and/or parking lanes on 14th Street at Wilshire Boulevard, Arizona Avenue, Santa Monica Boulevard, Broadway, Colorado, Olympic Boulevard, and Pico Boulevard.
- Pico Boulevard to Ashland Avenue: Restripe to create a buffered bike lane southbound and shared lane markings northbound. This street is relatively flat – the bike lane placed in the southbound direction here is the opposite of the bike lanes northbound on 11th Street two blocks away and 16th Street one block away.

WHY:

- Develops high-quality bike connection between south and north Santa Monica on 14th between Ashland and the existing shared lane markings at Washington.
- Chosen because of its direct routing and connections to east-west bikeways that feed into Downtown.
- Major linkages include the Montana commercial district, Santa Monica College, Lincoln Middle School, Will Rogers Elementary School, Memorial Park, Santa Monica Hospital, and various priority bikeways. This corridor is considered a primary school access route and great care should be taken to encourage student bicycle travel. Guidelines for school access improvements are summarized in the following call out box.

5-YEAR IMPLEMENTATION PLAN

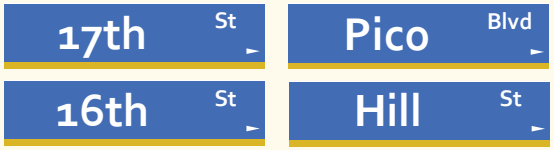
SCHOOL ACCESS

The City should enhance school access for bicycles. The City provides protected lanes during BikeIt! Day events to prevent right hooks. Other engineering and educational strategies could be employed as well.

Improving school access for a range of ages will require more than bicycle network improvements and facility design. In order to encourage bicycle travel by Santa Monica's youth, the City will need to embark on a range of planning, engineering, and programmatic efforts that work with the school district to improve good bicycle routes to each school and ensure that students and their families know where they are and how to use them. These include:

- **Education.** As discussed earlier, education and encouragement are critical components of improving access to school campuses. Education and encouragement programs should encompass a host of incentives, route planning services, "bike pooling" and bike buddy matching, as well as providing bicycle skills training and in-class courses on the rights and responsibilities of bicycling. For more information, see the Programs section of Chapter 3.
- **Safe Routes to School (SRTS) planning.** This includes a range of strategies, but should specifically focus on detailed facility and crossing improvements with emphasis on specific treatments at identified conflict zones. Dignified bicycle parking that is covered, visible, and secure should signal to other students that bicycling to school is acceptable and even preferred. SRTS plans should provide procedures and baselines to evaluate program and network improvement effectiveness in increasing the bicycle mode share of school children and elimination of traffic incidents.
- **Bike parking.** Bike parking at schools provides safe and convenient parking for everyone who bicycles to school.
- **Signage and wayfinding.** Wayfinding signage should be directed at schoolchildren, including listing schools as key destinations.
- **Enforcement.** Increase sting operations in the vicinity of schools to reduce reckless driving behavior (speed hump avoidance, speeding, rolling stops, proper yield compliance to pedestrians and bicyclists).
- **Drop-off/Pick-up procedures.** Coordinate with each school's respective Parent Teacher Association to develop drop-off and pick-up procedures that reduce parking search, door zone, and double parking conflicts in the immediate vicinity of school sites. These procedures should focus pick-ups and drop-offs along one street segment in order to eliminate conflicts along three-quarters of the school boundaries.

17TH STREET / 16TH STREET BIKEWAY (SAN VICENTE BOULEVARD TO MARINE STREET)



WHAT:

- 17th Street from San Vicente Boulevard to Montana Avenue: Install shared lane markings.
- 17th Street from Montana Avenue to Wilshire Boulevard: Restripe to create a buffered climbing bike lane in the uphill direction (northbound) and shared lane markings in the downhill direction (southbound).
- 17th Street from Wilshire Boulevard to Colorado Avenue: Reconstruct roadway to install cycle tracks between the parking lane and the curb. This will require reconfiguring turn lanes and/or removing a few parking spaces on 17th Street at Wilshire Boulevard, Arizona Avenue, Santa Monica Boulevard, Broadway, and Colorado Avenue.
- 17th Street from Colorado Avenue to Pico Boulevard: Construct two-way sidepath on the west side of the street. This will require reconfiguring the intersections of 17th Street at Olympic Boulevard, Michigan Avenue, and Pico Boulevard.
- Pico Boulevard from 14th Street to 17th Street: Install shared lane markings.
- 16th Street from Pico Boulevard to Marine Street: Restripe to create a climbing buffered bike lane northbound and shared lane markings southbound. The bike lane on this segment travels in the opposite direction from the bike lanes on 14th Street and 17th, Street, each one block away.
- 17th Street from Pearl Street to Ashland Avenue: Restripe to create a climbing buffered bike lane southbound and shared lane markings northbound. This segment is relatively flat – the bike lane placed in the southbound direction here is the opposite of the bike lane northbound on 16th Street one block away.
- 17th Street from Ashland Avenue to Marine Street: Restripe to create a climbing buffered bike lane northbound and shared lane markings southbound.
- Hill Street from 16th Street to 17th Street: Restripe to create a climbing buffered bike lane eastbound and shared lane markings westbound.

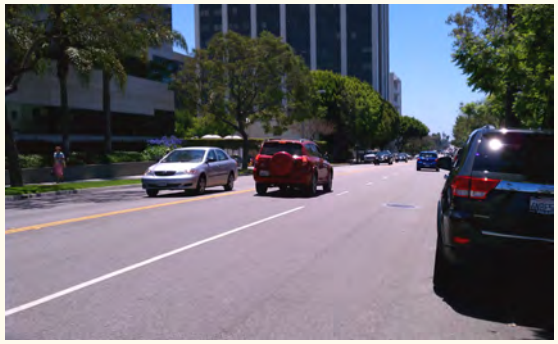
16th Street between Arizona and Santa Monica

WHY:

- Creates a high quality North/South priority bike corridor along the 17th Street corridor with occasional alternate routing on 16th Street and other connecting streets. Most of the corridor includes facilities that have more separation from motor vehicle traffic, or are located on quiet streets.
- Provides connections to major destinations like Santa Monica College, John Adams Middle School, Will Rogers Elementary School, Marine Park, Memorial Park Expo station, and Downtown via the Michigan, Broadway, or Arizona Bikeways.
- Improves inter-neighborhood and regional bicycle connectivity by linking to the Expo Bike Path. High-quality facilities would attract greater demand for bicycle travel.
- 16th Street and Hill Street provide a less steep alternative for cyclists to access 17th Street and Santa Monica College from Marine Street.

5-YEAR IMPLEMENTATION PLAN

20TH STREET BIKEWAY (MONTANA AVENUE TO OCEAN PARK BOULEVARD)



20th Street between Arizona and Santa Monica

WHAT:

- Montana Avenue to Ocean Park Boulevard: Install shared lane markings.

WHY:

- Creates a shared use facility where bike lanes are not feasible in the near term.
- Provides connections between Santa Monica College and major facilities such as the Broadway Bikeway and the Expo Bike Path which connects to the light rail stations at 17th Street and Bergamot Station.
- Helps with wayfinding and better recognition of cyclists' presence on the road.

22ND STREET AND 21ST STREET SHARED LANE MARKINGS (VIRGINIA AVENUE TO DEWEY STREET)

21st Street between Marine and Navy

WHAT:

- 22nd Street from Virginia Avenue to Pearl Street: Install shared lane markings.
- 21st Street from Pearl Street to Ashland Avenue: Install shared lane markings.
- 21st Street from Ashland Avenue to Dewey Street: Stripe a climbing buffered bike lane northbound and shared lane markings southbound.

WHY:

- Provides an alternate route to busier 23rd Street.
- Connects the Michigan Wiggle Neighborhood Greenway with Virginia Avenue Park to neighborhoods on the south side of town and bikeways on Ocean Park Boulevard and Ashland Avenue.
- Climbing buffered bike lanes between Ashland Avenue and Dewey Street offer a more convenient bicycle facility on a street segment exhibiting up to a 10% grade.

23RD STREET BIKEWAY (OCEAN PARK BOULEVARD TO DEWEY STREET)

23rd Street between Marine and Navy

WHAT:

- 23rd Street from Ocean Park Boulevard to Ashland Avenue: Restripe to create a climbing buffered bike lane northbound and shared lane markings southbound.
- 23rd Street from Ashland Avenue to Dewey Street: Stripe buffered bike lanes. No restriping is necessary.
- Intersection of 23rd Street and Dewey Street: Construct an intersection improvement to improve sightlines and enhance bicycle and pedestrian crossings between Dewey Street and Airport Avenue.

WHY:

- Provides more comfort on a steep section of 23rd Street where none currently exists.
- Buffered climbing bike lanes provide a connection to the Ocean Park Bikeway and offers perceived safety and comfort.
- Identified by students and residents as a key connection to Santa Monica College.

24TH STREET SHARED LANE MARKINGS (26TH STREET TO BROADWAY)

24th Street between Carlyle and Marguerita

WHAT:

- La Mesa Drive/Way from 26th Street to 24th Street: Install shared lane markings and wayfinding signs.
- 24th Street from La Mesa Drive to Montana: Install shared lane markings and wayfinding signs.
- 24th Street Alley from Montana Avenue to Washington Avenue: Install shared lane markings and wayfinding signs.
- Chelsea Avenue/Park Drive from Washington Avenue to Broadway: Install shared lane markings and wayfinding signs.
- Opening the 24th Street alleyway connection will require collaboration with the Santa Monica-Malibu School District, and will require re-establishing 2-way traffic operation, potentially for bicycles only.

WHY:

- Provides a low stress alternative route to 26th Street.
- Creates clear bicycle connections to Franklin Elementary, McKinley Elementary, Douglas Park, and a large concentration of employment sites south of Broadway.

26TH STREET SHARED LANE MARKINGS (NORTH CITY LIMIT TO EXPOSITION BIKE PATH)

26th Street between Marguerita and Alta

WHAT:

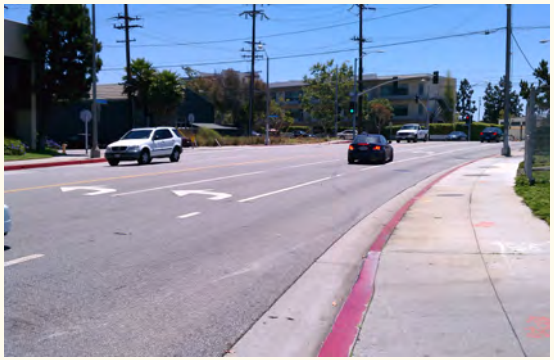
- 26th Street from the North City Limit to the Exposition Bike Path/Olympic: Install shared lane markings and wayfinding signs.

WHY:

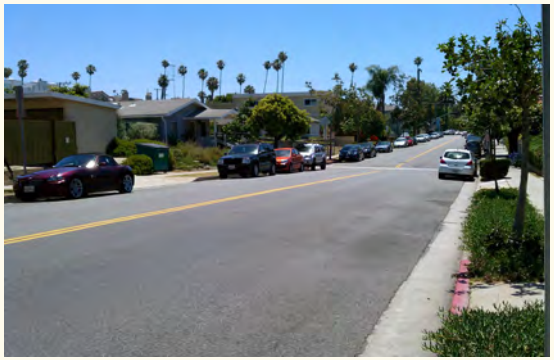
- 26th Street provides one of only three direct on-street bicycle connections to the Pacific Palisades.
- Shared lane markings will provide greater bicycle visibility along this high volume street and direct cyclists out of the door zone especially near the commercial centers at San Vicente Boulevard.

5-YEAR IMPLEMENTATION PLAN

YALE/STEWART/28TH BIKEWAY (MONTANA AVENUE TO SANTA MONICA AIRPORT)



Stewart Street between Pennsylvania and Nebraska



Yale Street between Arizona and Santa Monica

WHAT:

- Yale Street from Montana Avenue to just north of Wilshire Boulevard: Install shared lane markings; install intersection improvement at Montana Avenue; install neighborhood traffic circle at intersection with Washington Avenue.
- Yale Street from just north of Wilshire Boulevard to Colorado Avenue: Restripe to create a buffered climbing bike lane in the uphill direction (northbound) and shared lane markings in the downhill direction (southbound); Develop plan for traffic diversion at Wilshire Boulevard.
- Intersections of Colorado Avenue with Yale Street and Stewart Street: Construct intersection improvement that provides bike lanes and cycle tracks to accommodate through movements on Yale Street and Stewart Street across Colorado Avenue; will likely include a turn restriction from eastbound Colorado Avenue to northbound Yale Street.
- Stewart Street from Colorado Avenue to Kansas Avenue: Implement a road diet to reduce the number of travel lanes and create buffered bike lanes.
- Stewart Street from Kansas Avenue to Pico Boulevard: Restripe to create a buffered climbing bike lane in the uphill direction (southbound) and shared lane markings in the downhill direction (northbound).
- Intersection of Stewart Street, Pico Boulevard, 28th Street: Construct a median diverter or otherwise implement turn restrictions.
- 28th Street from Pico Boulevard to Ocean Park Boulevard: Restripe to create a buffered climbing bike lane in the uphill direction (northbound) and shared lane markings in the downhill direction (southbound).
- 28th Street at Ocean Park Boulevard: Maintain existing through travel restriction for northbound motor vehicle traffic at this intersection, but design to allow through bicycle travel by placing a bike lane northbound between the left turn lane and the right turn lanes (develop right turn lanes to the right of the bike lane on the approach).
- 28th Street between Ocean Park Boulevard and Santa Monica Airport: Restripe to create buffered bike lanes.

WHY:

- Fills north-south network gap in the eastern portion of the city.
- Provides connections to Montana business district, Bergamot Station, the Expo Bike Path, Pico Blvd. business district, Santa Monica Business Park, eastern Ocean Park Blvd. retail, and Clover Park.
- Links into various priority bikeways (e.g. Montana, Arizona, Broadway, Michigan Wiggle, and Ocean Park).
- Includes several design features that discourage high-speed through motor vehicle traffic.

DORCHESTER TUNNEL IMPROVEMENTS (STEWART STREET TO URBAN AVENUE)

Dorchester Street tunnel under I-10 freeway

WHAT:

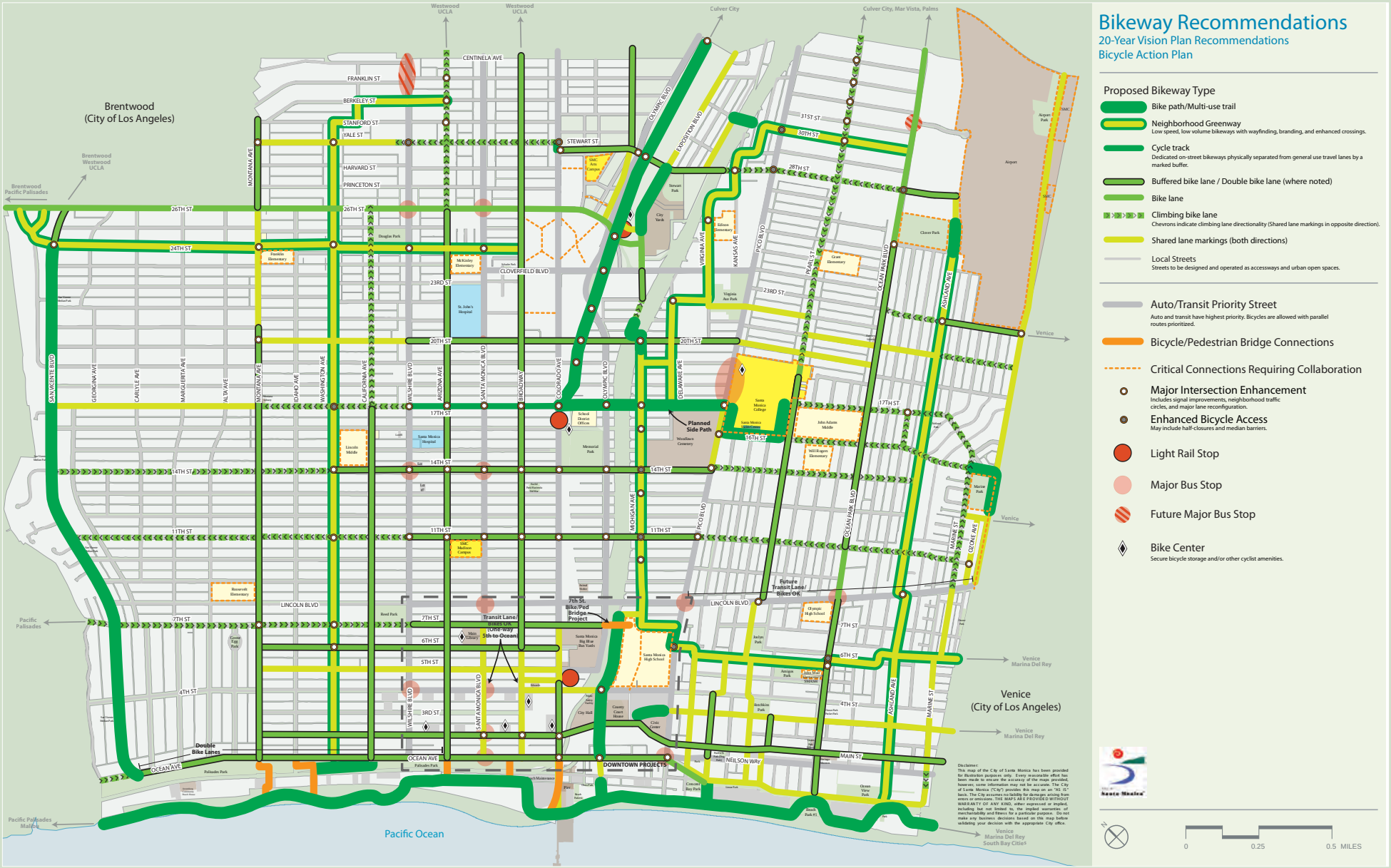
- Enhance the existing tunnel under I-10 at Dorchester Street: Add curb ramps to provide access to and from the streets, move garbage cans and bollards that hamper access, and provide better lighting.

WHY:

- Enhances the existing pedestrian tunnel to provide a better connection for bicyclists between the neighborhoods north (along Yale and Stewart) and south (the Pico and Ocean Park neighborhoods) of Interstate 10. Also connects to the Yale/Stewart/28th Bikeway and the Michigan Wiggle Neighborhood Greenway.

20-YEAR VISION

Figure 3-8 20-Year Vision Plan



Bikeway Corridor Descriptions

The bikeway corridors for the 20-Year Vision shown in Figure 3-8 are described below. The descriptions first indicate what types of bikeways are recommended on the various segments that make up each corridor, and then describe why the corridor is important within the bikeway network of Santa Monica. Facility types are explained in the Bicycle Facility Toolbox in the next section.

SAN VICENTE BIKEWAY (OCEAN AVENUE TO 26TH STREET)

San Vicente, south of 4th Street

WHAT:

- Ocean Avenue to 24th Street: Construct two paths in the median (one-for bicycles, one for pedestrians) by taking the following actions:
  - Widen the existing raised median on both sides into the available roadway space by eliminating each median curb lane;
  - Place a two-way bike path on one side of the median, with the normal minimum 5-foot separation from the roadway;
  - Place a soft surface jogging/walking path on the other side of the median;
  - At intersections, bring the two paths together to cross in the middle of the median area; the intersections should be reconfigured to have small corner radii and/or a median refuge to improve the safety and usability of these crossings; and
  - Maintain enough roadway space to preserve the buffered bike lanes proposed in the 5-year plan.

WHY:

- Provides a separated bike facility, which is preferred by many users.
- The bike path will serve slower cyclists on this corridor, while faster cyclists will continue to use the bike lanes.
- The jogging/walking path will serve the existing joggers on this corridor.
- Crossings will be far enough from either roadway to function much like mid-block crossings, thereby mitigating many of the typical problems associated with median paths.
- Except at 26th Street, there are no signalized or stop controlled intersections that currently have multiple through travel lanes, making this a likely candidate for a successful road diet. A road diet could be implemented here without a significant reduction in capacity.
- Current travel volumes suggest that four lanes are not needed on San Vicente, and that the excess lanes contribute to speeding along the road.
- San Vicente is an important cross-town commute and recreational bike route and is currently the best connected route in the northern part of the City.
- Los Angeles plans to extend bike lanes along San Vicente through Brentwood toward Westwood.

20-YEAR VISION

WASHINGTON AVENUE NEIGHBORHOOD GREENWAY (OCEAN AVENUE TO ARIZONA AVENUE)

Washington between 22nd and 23rd

WHAT:

- Install shared lane markings, wayfinding signs, and neighborhood greenway branding on:
  - Washington Avenue from Ocean Avenue to Stanford Street;
  - Stanford Street from Washington Avenue to Lipton Avenue;
  - Lipton Avenue from Stanford Street to Berkeley Street; and
  - Berkeley Street from Lipton Avenue to Arizona Avenue.

WHY:

- Formalizes a neighborhood bike corridor on a street that is already heavily used by bicyclists to connect from Downtown Santa Monica to the Northeast neighborhood in Santa Monica and West L.A.
- Provides numerous connections to north/south bikeways providing connectivity across the city.
- Route jogs south to connect to the Wilshire/Centinela business district and the Arizona Avenue bikeway that provides a direct connection into Los Angeles.

CALIFORNIA AVENUE BIKEWAY (OCEAN AVENUE TO 26TH STREET)

California between 12th and Euclid

WHAT:

- Ocean Avenue to 17th Street: Restripe existing bike lanes to buffered bike lanes by narrowing travel lanes and parking lanes.

WHY:

- Enhances existing bike lanes to provide more space for cyclists and reduce the likelihood of collisions between bicyclists and car doors.

ARIZONA AVENUE BIKEWAY (OCEAN AVENUE TO CENTINELA AVENUE)

Arizona between Stanford and Berkeley

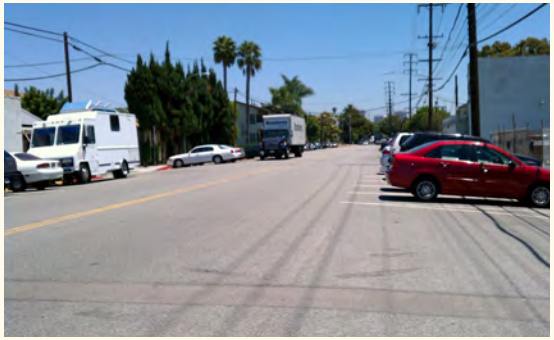
WHAT:

- Ocean Avenue to 26th Street: Convert existing bike lanes to buffered bike lanes by narrowing travel lanes and parking lanes.
- 26th Street to Centinela Avenue: Improvements from 5-year priorities remain in place.
- Construct neighborhood traffic circles at the intersections of Arizona Avenue with Stanford Street, Berkeley Street, and Franklin Street.

WHY:

- Improves a heavily traveled existing bicycle corridor that recently was striped with bike lanes in downtown.
- Connects to new priority north-south bikeways in downtown and throughout the city.

NEBRASKA AVENUE BIKEWAY (26TH STREET TO CENTINELA AVENUE)



Nebraska between Berkeley and Franklin

WHAT:

- 26th Street to Stewart Street: Install shared lane markings.
- Stewart Street to Centinela Avenue: Stripe buffered bike lanes by narrowing travel lanes and parking lanes, or other bicycle improvements in coordination with roadway treatments in Bergamot Plan.

WHY:

- Buffered bike lanes provide safer bicycle operation in an area with potentially high parking turnover.
- Creates new bicycle connection between the City of Los Angeles, employment sites, and the Bergamot Expo Light Rail Station.
- Any improvements will require collaboration with adjacent property owners.

MICHIGAN AVENUE NEIGHBORHOOD GREENWAY

WHAT:

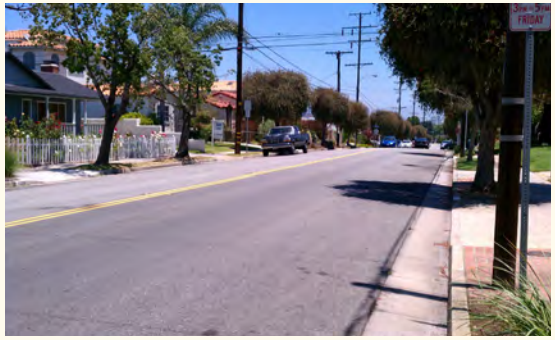
- Construct new dedicated bike path from the beach path to the intersection of Pacific Terrace and Appian Way. This will require reconfiguration of the existing parking lot at this location.
- Edge of City yard from Bergamot Station parking lot to Stewart Street: Construct shared use path.

WHY:

- The new bike path connection from Pacific Terrace would create a more direct connection to the beach and the Marvin Braude Bike Trail. Policy must be developed that allows bicyclists to cross the pedestrian path without dismounting off of their bicycles.
- A new shared use path would create better station area access for cyclists originating from the east. Construction is contingent on collaboration with adjacent property owners.

20-YEAR VISION

PEARL STREET BIKEWAY (BARNARD WAY TO CENTINELA AVENUE)



Pearl between 32nd and 33rd

WHAT:

- Lincoln Boulevard at Pearl Street and Strand Street: Construct intersection improvement at this double intersection to provide a refuge area and/or special left turn lanes to make it easier for bicyclists to cross Lincoln Boulevard.
- Pearl Street from Lincoln Boulevard to 17th Street: Restripe existing bike lanes to create buffered bike lanes by narrowing travel lanes and parking lanes.
- Construct neighborhood traffic circles at the intersections of Pearl Street with 30th Street, 31st Street, 32nd Street, 33rd Street, and 34th Street.

WHY:

- Enhances existing bike lanes to provide more space for cyclists and reduce the likelihood of collisions between bicyclists and car doors.
- Additional markings associated with buffered bike lanes may reduce the use of the existing bike lane for double parking adjacent to Santa Monica College.
- Neighborhood traffic circles encourage slower motor vehicle speeds.
- Intersection improvement at Pearl/Strand will facilitate safe and comfortable crossings for bicyclists and pedestrians.

OCEAN PARK BOULEVARD BIKEWAY (BEACH BIKE TRAIL TO CENTINELA AVENUE)

Ocean Park between 14th and 15th

WHAT:

- Barnard Way to Main Street: Restripe existing bike lanes to create buffered bike lanes by narrowing travel lanes and parking lanes.
- Lincoln Boulevard to 14th Street: Restripe existing bike lanes to create wider bike lanes.
- 14th Street to Cloverfield Boulevard: Restripe existing bike lanes to create buffered bike lanes.
- Cloverfield Boulevard to 25th Street: Restripe to create buffered bike lanes by removing one of the westbound travel lanes. This will require reconfiguring the intersection of Ocean Park Boulevard and 25th Street to extend the existing raised median to the intersection and restripe the left-most westbound through lane on Ocean Park Blvd. so that it becomes the new left turn lane.

WHY:

- Provides a continuous bikeway for the entire length of Ocean Park Boulevard.
- Enhances existing bike lanes to provide more space for cyclists and reduce the likelihood of collisions between bicyclists and car doors.

ASHLAND AVENUE NEIGHBORHOOD GREENWAY (BARNARD WAY TO 28TH STREET)

North end of the existing Clover Park path

WHAT:

- Clover Park Pedestrian Path from 28th Street to the south most Clover Park parking lot adjacent to the airport: Realign existing pedestrian path to create a direct pathway through Clover Park; Construct a new curb ramp for bicycles at 25th Street; Stripe multi-use trail markings to allow for bicycle use; Install wayfinding signs.

WHY:

- Wayfinding signs, a new curb ramp at 28th Street, and pavement markings formalize the Clover Park Path as a bicycle connection.

MARINE/NAVY/OZONE/ FREDERICK/DEWEY/AIRPORT BIKEWAY (BARNARD WAY TO BUNDY)

The Dewey Street alley

WHAT:

- Dewey Street alley from Lincoln Boulevard to Frederick Street: Re-pave the existing Dewey alley and install shared lane markings and wayfinding signs.
- Dewey Street alley from Frederick Street to Marine Street: Construct a shared use path along the south- and east-side of Marine Park.
- Improvements along the Dewey Street alley require collaboration with the City of Los Angeles as it is partially located within its city limits.

WHY:

- Provides an off-street connection to Marine Park, Airport Park, and the City of Los Angeles via Dewey Street and Airport Avenue.
- Establishes a strong inter-jurisdictional relationship with the City of Los Angeles for future regional bikeway projects.
- Any improvements will require collaboration with adjacent property owners.

MARVIN BRAUDE BIKE TRAIL (NORTH CITY LIMIT TO SOUTH CITY LIMIT)

Marvin Braude Bike Trail. Source: Art Cueto

WHAT:

- North City Limit to 1200 Ocean Front Walk: Construct an additional path adjacent to existing path to allow for a separation between pedestrians and bicyclists as well as other users traveling at higher speeds.

WHY:

- Improves the highly traveled recreation and commuter trail to reduce the potential for user conflicts.

20-YEAR VISION

3RD STREET BIKEWAY (MAIN STREET TO SOUTH CITY LIMIT)

This section of the existing Civic Center parking lot is proposed to develop into a bike path connection between 3rd and Main

WHAT:

- Main Street to Pico Boulevard: Construct bike path along the east edge of the Civic Center building. If Civic Center Plan implementation is fast-tracked within the next five years, then construction of the bike path will occur in the Bicycle Action Plan's 5-Year Implementation phase.

WHY:

- Provides a more legible linkage into the Civic Center and a safer connection to and from Main Street.
- Creates a physical and civic symbol that the City of Santa Monica is a true bicycle city.

6TH STREET / 7TH STREET BIKEWAY (SAN VICENTE BOULEVARD TO SOUTH CITY LIMIT)

6th Street between Strand and Hollister

WHAT:

- 7th Street at I-10 Freeway: Construct bike and pedestrian overpass of I-10 and Olympic Boulevard eastbound.
- 6th Street from Michigan Avenue to South City Limit: Provide wayfinding signs and neighborhood greenway branding on the streets identified for shared lane markings in the 5-year priorities.
- Pico Boulevard from 7th Street to 6th Street: Construct a protected median running cycle track/bike path with continental crosswalk markings and yield signs on the east end. This requires redesign of the existing raised median and narrowing of the travel lanes.

WHY:

- The 7th Street bridge project will complete north-south connectivity in this corridor, providing a critical bicycle connection between areas north and south of the City, downtown, Santa Monica High School, and many neighborhoods within the City.

17TH STREET / 16TH STREET BIKEWAY

Pearl between 16th and 17th

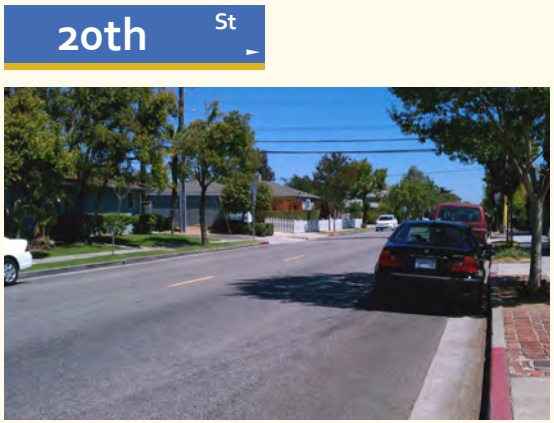
WHAT:

- Install a side path along the following streets adjacent to Santa Monica College:
  - South side of Pico Boulevard from 17th Street to 16th Street.
  - East side of 16th Street from Pico Boulevard to Pearl Street.
  - North side of Pearl Street from 16th Street to 17th Street.
- As an alternative to the above path, future collaboration with Santa Monica College may allow for a bike path to be built through Santa Monica College roughly along the 17th Street alignment, from Pico Boulevard to Pearl Street.

WHY:

- Closes the last gap in the corridor by providing high-quality facilities that are comfortable for cyclists who prefer more separation from motor vehicle traffic.

20TH STREET BIKEWAY (WILSHIRE BOULEVARD TO PICO BOULEVARD)



20th Street between Pico and Pearl

WHAT:

- Wilshire Boulevard to Pico Boulevard: Implement a road diet in order to stripe buffered bike lanes.

WHY:

- Improves upon the shared use facility in the 5-Year Implementation Plan by reallocating road space to allow for dedicated bicycle lanes.
- Enhances the connections between Santa Monica College and major facilities such as the Broadway Bikeway and the Expo Bike Path, which connects to the light rail stations at 17th Street and Bergamot Station.
- Provides more space for cyclists and reduces the likelihood of conflicts between bicyclists and car doors.

20-YEAR VISION

24TH STREET NEIGHBORHOOD GREENWAY (26TH STREET TO BROADWAY)

24th Street between Alta and Montana

WHAT:

- La Mesa Drive/Way, 24th Street and alley, Chelsea Avenue, and Park Drive: Install neighborhood greenway branding, and wayfinding signs.
- Intersection of 24th Street at San Vicente Boulevard: Construct a bicycle and pedestrian only crossing with new curb ramps, continental crosswalks, and yield signage. Any improvements should be designed to accommodate any future changes to the San Vicente Median Park.
- Install intersection treatments that facilitate bicycle and pedestrian crossings at Montana Avenue, Wilshire Boulevard and Santa Monica Boulevard.
- Redesign intersection of 26th Street and La Mesa Drive to allow for two-way bicycle traffic.
- Redesign geometry of 24th Street and La Mesa Drive intersection to provide additional landscaping and slow traffic.

WHY:

- New intersection enhancements, branding, and signage transform the 5-year corridor improvements (shared lane markings) into a neighborhood greenway.
- Wayfinding will direct bicycles to nearby schools, parks, major activity centers, and connections to other bikeways.

26TH STREET BIKEWAY (NORTH CITY LIMIT TO OLYMPIC BOULEVARD)

26th Street between Marguerita and Alta

WHAT:

- 26th Street from North City Limits to Olympic Boulevard/Expo Bike Path: Redesign 26th Street to provide green buffered bike lanes. This would require reconstruction/removal of the raised medians on the north end of 26th Street and potential parking removal and/or turn lane removal between Wilshire Boulevard and Olympic Boulevard. Any redesign will require further study and a substantial public process.

WHY:

- A high quality bikeway would create an enhanced connection to the Pacific Palisades and offer a north-south connection to the Bergamot Expo Light Rail Station.
- A redesign of 26th could incorporate design features that manage vehicle speeds along the corridor.

Bicycle Facility Toolbox

The bikeway recommendations provide a big picture view of the bicycle network, but what do the bikeway recommendations look like on the ground? The following section addresses this question by describing the facility types that are recommended for application in the Bike Plan. This toolbox is intended to guide City staff through implementation considerations while informing Santa Monicans of the benefits and operating details of specific bicycle investments. Several innovative treatments are highlighted in this toolbox including neighborhood greenways, cycle tracks, double bike lanes, contra-flow lanes, and the use of colored pavement. This section is a detailed reference guide for facility types cited in the next chapter. Figure 3-9 connects these potential bikeway facilities with the Caltrans bikeway designations.

Figure 3-9 Connecting Caltrans Bikeway Designations to the Proposed Facility Types

Caltrans Designation	Facilities Proposed in the Bicycle Action Plan
Class I	Bike paths, side paths
Class II	Bike lanes, Buffered bike lanes, Climbing bike lanes, Cycle tracks
Class III	Neighborhood greenways, streets with bi-directional shared lane markings

Bicycle Lanes

Bike lanes are the most visible means of encouraging cycling on-street, and they are relatively easy and inexpensive to implement. Marking bicycle lanes on roadways defines visible space for bicyclists separate from motor vehicles and allows users of either mode to make more predictable movements with respect to each other. Bike lanes should generally be considered for streets with over 5,000 average daily traffic (ADT) and average travel speeds of 30 mph or higher. Some streets with wide curb lanes that do not meet these thresholds should be considered for bike lane striping as wide lanes encourage higher speeds and can decrease safety. Bike lanes should be a minimum of five feet wide. Bike lanes may also need additional width as a buffer from raised medians, curbs, or poor roadway conditions. Where space is available, a buffer should be placed between bike lanes and on-street parking in order to mitigate conflicts with car doors as discussed below. When striping bike lanes, the City should consider the wheel path of buses and trucks, which may impact lane marking life span and create pavement drift in the path of cyclists.

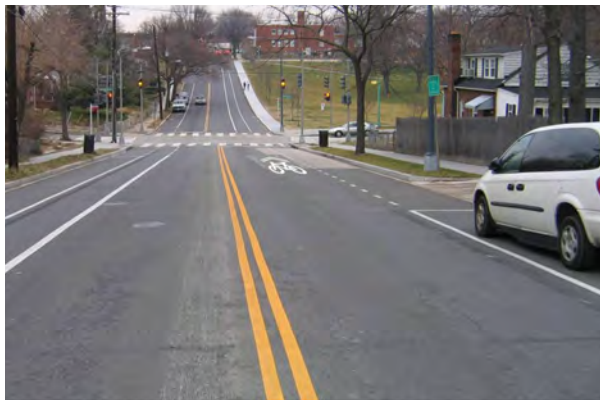
Outside of conventional bike lanes, four types of enhanced bike lanes are proposed in this plan—Buffered, Climbing, Contra-Flow, and Double Bike Lanes.

Bike lane with buffer from parked vehicles. Source: Cyndi Marshall/Steve Tracy

Buffered Bike Lanes

Buffered bike lanes operate as standard bike lanes but are enhanced with buffers of various widths. The benefit of adding a buffer zone to a bike lane is to provide additional separation from the "door zone" of parked vehicles and, in some cases, travel lanes or edge conditions. Buffered bike lanes are proposed along numerous street segments, including many that experience high parking turnover and/or possess excess general purpose travel lane width. The minimum dimensions for this type of design should be a 4-foot bike lane, 2-foot buffer, and 7-foot parking lane (as shown above). Where feasible, the buffer and bike lane width should be increased. The above photo shows a buffered lane similar to short segments of existing lanes on Broadway. This treatment is proposed to be extended for a

larger part of Broadway and on a variety of other streets such as Ocean Park Boulevard, Main Street, and Montana Avenue. The City of Santa Monica is proposing to adopt a new bike lane striping standard for buffered bike lanes including filling in a 3′ to 4′ strip of green paint within a bike lane that may be 5′ to 7′ wide creating an unpainted 2′ to 3′ wide buffer defined by the inner strip of green pavement.



Climbing bike lanes: In Santa Monica, these would be enhanced with shared lane markings in the opposite direction. Source: Michael Ronkin

Climbing Lanes

The bulk of Santa Monica's neighborhood streets have 40′ curb-to-curb widths. This is not sufficient width to stripe bike lanes in both directions while retaining parking on both sides of the street. Climbing bike lanes are proposed in these cases and where hills are present. Climbing bike lanes consist of a bike lane marked in the uphill direction and shared lane markings in the downhill direction. This provides bicyclists riding uphill room to travel at slower speeds, and encourages downhill bicyclists to use proper positioning in the travel lane away from the door zone. In most cases these treatments are supplemented with a 2-foot marked buffer and Santa Monica's green pavement standard for bike lanes applies. Wherever climbing lanes are proposed in the Bike Action Plan, it is assumed that shared lane markings will be installed in the opposite direction of the climbing lane. The Bike Action Plan recommends this treatment in several areas such as on Yale, 11th Street and California east of 17th Street.

Any proposed climbing lane application in the 5-Year Implementation Plan should be upgraded to buffered bike lanes in the 20-Year Vision. Where climbing bike lanes are proposed on streets with 40′curb-to-curb widths, public outreach and parking occupancy studies can be conducted to determine feasibility of further enhancing these streets with conventional or buffered bicycle lanes in both directions.

Contra-flow bike lane. Source: Michael Ronkin

Contra-flow Bike Lanes

Contra-flow bike lanes allow bicycles to travel in the opposite direction of motor vehicle traffic. Contra-flow lanes operate the same way as conventional bike lanes except that there is no adjacent vehicular lane in the same direction. Markings should include a yellow centerline along with standard bike lane symbol markings to indicate to motorists that bicycles operate in the opposite direction and to eliminate wrong-way riding. Contra-flow lanes could be installed with green pavement treatments. In Santa Monica contra-flow lanes are proposed for the portion of Michigan Avenue between 21st and 22nd Streets which is anticipated to be converted to a one-way street.

Double Bike Lanes

Double bike lanes, also known as passing lanes, should be striped along corridors that have excess width or that currently have or are anticipated to have high volumes of bicyclists such as Ocean Avenue (especially on the weekends). Double bike lanes are typically striped as a minimum 8-foot bike lane with standard striping and bicycle symbol pavement marking conventions, but are bisected by a 4-inch dashed lane marking (as displayed above) to create two 4-foot bike lanes.

There are several benefits of using this type of bike lane application including increasing comfort for novice cyclists (especially along higher speed and higher volume streets), providing additional buffer distance from the travel lane, creating a de facto speed management measure, and focusing additional capacity along popular utilitarian and recreational cycling corridors to allow for safer passing maneuvers. Double bike lanes are proposed along portions of San Vicente Boulevard and Ocean Avenue—two popular active recreation and transportation corridors.

Double bike lanes provide additional capacity for cyclists, specifically where bicycle demand is high and pavement is underutilized. Source: Flickr user Jason McHuff, Creative Commons License 2.0 (left) and Nelson\Nygaard (right).

Neighborhood Greenways

Neighborhood greenways, commonly known as bicycle boulevards, are low stress bike routes geared toward riders of all ages and skill levels. The neighborhood greenway concept is a livable street environment for pedestrians, bicyclists, and vehicles as well as for active and passive recreation for people of all ages.

Range of Features

Neighborhood greenways utilize a range of treatments in order to establish bicycle priority and manage vehicle speeds and volumes. These treatments can include: signage, bicycle priority and pavement markings, intersection treatments to assist with crossing major streets, speed and volume management and traffic diversion. Shared lane markings, the most common pavement marking used along neighborhood greenways, and intersection treatments, will be explained further in later sections.

Neighborhood greenways typically feature physical improvements that effectively reduce vehicle speeds and sometimes reduce unwarranted traffic volumes. The types and cost of design features vary, and can range from simply painting lines, colors, and patterns on street surfaces to more prominent strategies such as installing speed humps, traffic circles, and curb extensions. Examples of successful calming strategies applied in Santa Monica include the bulb outs installed on the eastern end of Pearl Street and traffic circles located on 26th and 4th Streets. In addition to providing opportunities for neighborhood beautification, neighborhood traffic circles have proven to improve traffic movement and pedestrian safety, while reducing vehicle speeds on average by 11 percent.

Traffic circles help to reduce neighborhood speeding. Source: Nelson\Nygaard

Curb extensions minimize crossing distances for pedestrians and visually reduce the road width, encouraging motorists to slow down. These extensions allow pedestrians and approaching drivers to see each other when vehicles parked in a parking lane would otherwise block visibility. Curb extensions should extend no further into the roadway than the width of the parking lane.

Evaluating Trade-offs

Difficult trade-offs are often evaluated before implementation including on-street parking removal and increased maintenance costs, especially if facilities are landscaped. Although these types of measures are commonly used on neighborhood greenway environments, they should be considered for widespread application throughout Santa Monica's bicycle network.

Intersection improvements should be considered where neighborhood greenways intersect boulevards or major avenue intersections or neighborhood streets. Typical bicycle access enhancements include median treatments (see image below) which prohibit entry of cars from the major avenues or force cars to turn left or right, but allow bicycles to pass through the intersection. These features effectively reduce cut-through traffic to destinations outside of the neighborhood, while providing additional entry points for local access.

Santa Monica's densely interconnected street network generally helps distribute traffic evenly throughout the City, so no street is overburdened with traffic in order to benefit another street. There are cases in the City where high volumes of vehicle cut-through traffic could be reduced to make the street welcoming to other modes of travel. Whenever these measures are used, care should be taken to make certain the problem is not just pushed somewhere else. Measures for one street may warrant evaluation and complementing measures for adjacent streets.

Crossing Treatments

Neighborhood greenways are often on neighborhood streets that don't have priority over major avenues. Therefore, specific intersection treatments should be considered to assist bicyclists when crossing major and secondary avenues. The median closure shown in the picture is one of the most common types of intersection treatment for neighborhood greenways. The median provides the dual

Traffic diversion (median barrier, shown above) is a common feature of neighborhood greenways. Source: Nelson\Nygaard

benefit of reducing motor vehicle volume and providing a refuge for bicyclists and pedestrians, making it easier and safer to cross major avenues. Raised medians provide dedicated channels that allow for two-stage bicycle crossing—both for through movements and left turns.

Other methods used to improve neighborhood greenway crossings of major avenues are curb extensions and signalized intersections with dedicated bicycle phases, sometimes with turn restrictions for motorists.

Branding

Branding is an effective way to facilitate visual identification of neighborhood greenways. Neighborhood greenways are often branded with unique naming (such as the Michigan Wiggle), applying specific colors and patterns to wayfinding or street signs. Some cities integrate bicycle art into neighborhood greenways to communicate that those streets are prioritized for bicycles.

Bicycle wayfinding with destinations, distances, and approximate travel times. Source: Flickr user Richard Durdl, Creative Commons 2.0

Wayfinding

Neighborhood greenways typically include wayfinding to identify and help cyclists navigate connections, routes, and destinations. Recently some cities have begun installing bicycle-scaled signage to supplement and identify their networks of bicycle facilities. Since cyclists travel at lower speeds, smaller and more detailed signs can be used avoiding visual clutter. While these signs can warn of an upcoming intersection or similar changes, they are particularly useful for wayfinding. These signs typically include elements of bikeway identification, direction (arrows), destination (place names), and distance (miles or time to destination). Building on standard sign designs in the Manual on Uniform Traffic Control Devices (MUTCD), many communities have developed custom wayfinding branding strategies that allow them to enhance aesthetics and celebrate sense of place as they provide spatial orientation and guidance to visitors.

Cycle tracks offer cyclists protection from traffic with marked buffers and on-street parking. Source: Nelson\Nygaard

Cycle Tracks

Cycle tracks are exclusive bicycle facilities located parallel to the roadway but physically separated from motor vehicle traffic. Cycle tracks can be bi-directional or one-way facilities and can be located on either one or both sides of a street. The preferred application in Santa Monica is in the form of dedicated on-street bikeways that are separated from general use travel lanes by a marked buffer, raised median, or traffic separator. Cycle tracks

Marvin Braude Bike Trail.

are typically configured between the parking lane and the sidewalk. The parking lane acts as a buffer from vehicular traffic, while the cycle track itself offers increased perceived safety and comfort. A key concern with cycle tracks is how to mitigate turn conflicts at intersections and driveways. Two common intersection treatments include dedicated bicycle signals and removal of parking prior to the intersection to improve bicycle visibility. Left-turn box facilities provide opportunities for "Copenhagen-style" left turns out of the cycle track and on to connecting perpendicular streets (see photo on page 3-66). Left-turn box facilities are explained in greater detail later.

Bike Paths

Not all cyclists are comfortable using on-street facilities for bicycle trips. Bike paths, also known as shared-use paths or side paths if located parallel to a roadway, allow cyclists to enjoy an off-street cycling experience. Santa Monica's Marvin Braude Bike Trail is a high quality and well-used bike path that serves as a critical north-south transportation and recreation corridor for bicyclists and pedestrians. The future Expo Bike Path will travel along the Expo Light Rail alignment and will provide an important inter-neighborhood and regional transportation function. Future nonshared bike paths should be developed in accordance with Federal Highway Administration guidelines. The City must strive for 14 foot width in order to maximize user comfort and reduce bicycle-pedestrian conflict. Width of shared use paths depend on their proximity to the vehicle travel lane. Key elements such as well-designed intersection crossings and adequate wayfinding signage are integral to the success of off-street facilities and help connect users to on-street facilities or other bicycle connections. These considerations are critical in achieving a successful biking network.

Intersection Treatments

Several intersection treatments are proposed in this Plan in order to reduce conflicts with motor vehicles and improve user convenience. Typical treatments for cyclists at intersections include through bike lanes, merge lane treatments, bike boxes, and left turn box facilities (also known as two-stage left-turn queue boxes).

Through Bike Lanes and Merge Treatments

Bicycle and motor vehicle interactions are most complex at intersections. In many cases, Santa Monica's bike lane striping does not completely extend to the intersection. The lane instead drops in advance of the intersection in order to accommodate on-street parking and/or a turn lane. As shown in the Manual on Uniform Traffic Control Devices (MUTCD), where right-turn lanes are present at intersections

with bike lanes, a through bike lane should be placed to the left of the right turn lane, and a merge treatment should be used so that dashed bike lane striping continues across the area where the right turn traffic merges into the right turn lane. The photo on this page shows this application on Main Street where it intersects with Colorado Avenue. This treatment should be supplemented with the "Begin Right Turn Lane - Yield to Bikes" sign (R4-4). Green colored paving in the conflict area is an optional treatment for intersections with high right turn volumes. A recent study found that motorists are 12 percent more likely to yield to bicyclists in conflict if the green pavement marking is applied (87% versus 99% yield rate).[1] The images at right display the proper signing and marking standards for a through bike lane between a general use lane and a right-turn lane. This treatment has the following advantages:

- The crossing conflict occurs away from other conflicts at the intersection;
- The difference in speeds enables a motor vehicle driver to pass a bicyclist rather than ride side-by-side; and
- All users are directed to follow the rules of the road–through bicyclists proceed to the left of right-turning vehicles, and right turning vehicles yield when moving laterally to cross the bike lane.

At intersections without right turn lanes, bike lanes should continue to the intersection with a dashed treatment to allow for right turning motor vehicles to merge before turning. Proposed improvements in the Bike Action Plan include accommodations to carry bike lanes all the way to the intersection.

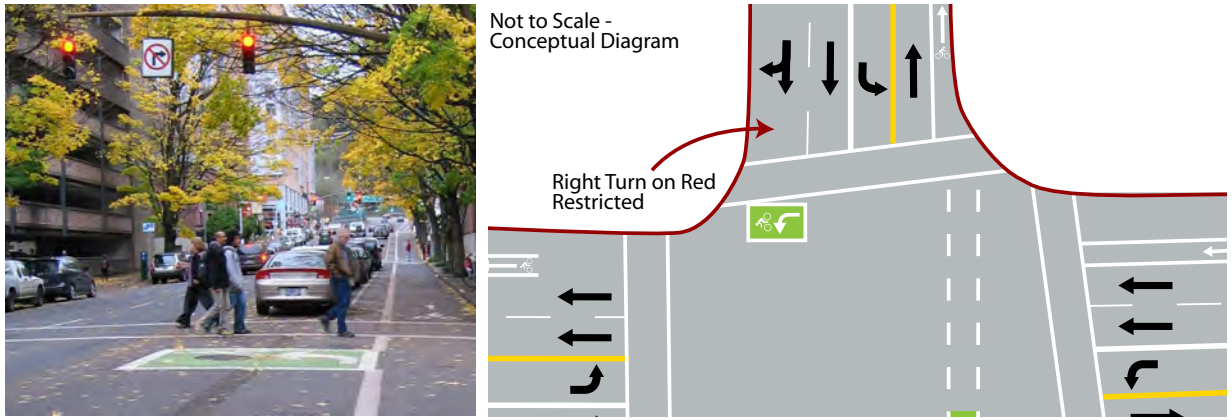
Bicycle Detection

Signalized intersections recognize when bicyclists are waiting and provide sufficient time for them to cross. The City will provide pavement markings and signs to alert bicyclists where to wait for a green light or an extended signal phase when needed.

Left image: Right turn merge lane treatment where Main Street intersects with Colorado Avenue. The conflict zone between the dashes can be colored green for additional visibility. Right image: The MUTCD provides guidance on bike lane design at right turn lanes. Source: City of Santa Monica (left), MUTCD Figure 9-C4 (right)

1 Hunter, William W., Raghavan Srinivasan, and Carol A. Martell (2008). Evaluation of a Green Bike Lane Weaving Area in St. Petersburg, Florida. FDOT Contract BA784, Final Report, University of North Carolina Highway Safety Research Center.

Bike boxes and colored bike lanes through intersections should be focused at high turn volume intersections. Source: Nelson\Nygaard (left) and Flickr user Cheryl & Rich, Creative Commons License 2.0 (right)



Left-turns off of cycle tracks can be facilitated by box turn facilities. Right turns off of connecting streets should be limited to the green phase only. Source: Nelson\Nygaard

Bike Boxes

Bike boxes are experimental intersection facilities that are intended to reduce conflicts with right-turning vehicles and offer bicycle priority at intersections. Cyclists using a bike box first pass queued motor vehicles on the right using a bike lane, then enter the bike box directly in front of waiting cars. Because bike boxes span the width of the entire travel lane, these facilities are also useful at intersections where significant bicycle queuing occurs. Bike boxes should be combined with right turn on red (RTOR) restrictions to reduce vehicle encroachment into the facility.

Left-Turn Box Facilities

Left-turn box facilities, also known as two-stage left-turn queue boxes or box turn facilities, facilitate left turns off of a cycle track facility at signalized intersections where merging to a left turn pocket is difficult. Because right-side cycle tracks disallow merging to left turn pockets (due to their physical separation), left-turn box facilities are used to assist two-stage left turns. These facilities can be applied with conventional bike lanes when making left turns at multi-lane signalized intersections. When left-turn box facilities are applied at a four-way intersection, right turn on red restrictions should be instituted for traffic on the perpendicular intersection leg. Although these are experimental treatments in California,

Bicycle signal head. Source: Nelson\Nygaard

the City hopes to explore them to facilitate left turns for cyclists.

Leading Bicycle Intervals and Dedicated Bike Signals

Signal timing for bicycles is an important component of improving crossing safety and convenience at major intersections. Leading bicycle intervals (LBI) offer cyclists a 2 to 6 second head start at crossings with high turn volumes. These are typically used at freeway ramps as well as in downtowns and commercial districts. The preferred application is to install a separate bicycle signal head that clearly identifies signal priority. LBI could potentially be installed at cycle track intersections.

Dedicated bicycle signals (see photo above) should be considered at intersections with high right turn volumes, high bicycle through volumes, or at bike path termini or path connections. Portland, Oregon has recently installed bicycle signals at high risk intersections where bicycle facilities cross freeway on-ramps.

Green Wave

A simple yet effective strategy to improve the bicycling environment is to develop integrated signalization that ensures consistent and predictable signal phases for cyclists, while managing vehicle speeds. This is done by calibrating all lights in phase to create a propagating "green wave" of signals along several blocks. Variables that need to be considered include block lengths, velocity, and timing for approaching vehicles. For example, Downtown Santa Monica's east-west blocks are roughly 320 feet long, which is more suitable for "green wave" application than the 650-foot north-south block faces. Signal progression could be varied by time of day as well. The intended benefits of improving signal phasing is that cyclists are offered a "green wave" if traveling at or around 15 to 17 miles per hour and traffic flow is made more efficient, while requiring cars to drive at slower and more livable speeds. This practice has been implemented in San Francisco, Portland, Copenhagen, and Amsterdam.

Shared Lane Markings

Shared lane markings, often referred to as "sharrows," direct cyclists out of the "door zone" and inform motorists to share the road. The chevron design also provides a wayfinding and directional function that identifies connections and proper travel direction. Streets that use these pavement markings may also be supplemented by "Bicycles May Use Full Lane" signage (sign R4-11 in the MUTCD). Shared lane markings are permitted on local low-volume Neighborhood Streets, Avenues, Boulevards, Highways and roadways with up to a 35 mph speed limit. Shared lane markings can be useful to fill short gaps

Shared lane markings installed on 14th Street in Santa Monica.

between sections of bicycle lanes along a roadway—a valuable approach to filling gaps in Santa Monica's bike network. Bicycle lanes are generally preferred but may not always be feasible on all streets due to street dimensions and character. In these cases, shared lane markings are the most feasible treatment and complement the on-street bicycle lane network. While a useful motorist education tool, shared lane markings on high motor vehicle volume or high speed streets are unlikely to attract significant numbers of cyclists. Consideration should be given to use a "Super Sharrow" which includes a wide strip of green paint forming a lane between the sharrows.

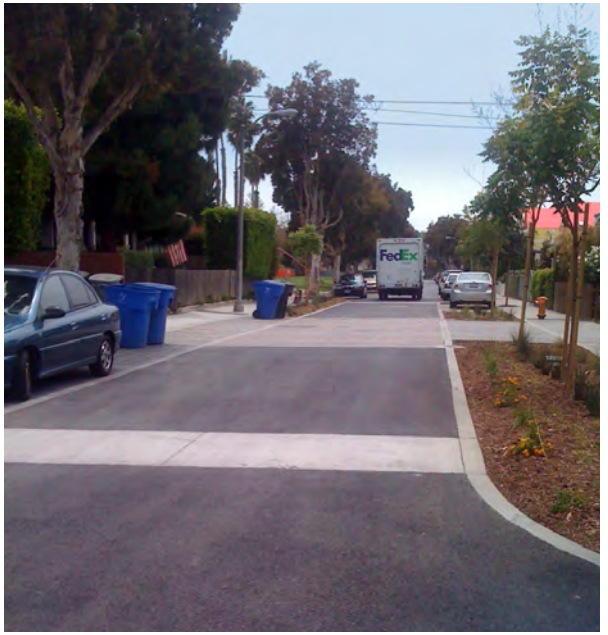
Local Streets

The Santa Monica Bike Action Plan aims to allocate experiential investments such as street trees, lighting, and stormwater design toward streets designated as Local Streets. Local Streets are low speed neighborhood streets to be designed and operated for the dual purpose of access and as urban open space. This designation primarily uses the neighborhood streets identified in the LUCE and other streets that are comfortable for walking and bicycling without specific, dedicated facilities. To reinforce the comfort and perceived safety of non-motorized users, the City should enhance these neighborhood assets by focusing investments in pedestrian-scale lighting, green infrastructure and landscaping, and shade tree planting. Examples of Local Streets include Marguerita Avenue and Oak Street.

General Conventions for Striping and Pavement Marking Application

Constructing a bikeway is not as simple as casually striping bike lanes. Roadway conditions should be thoroughly investigated prior to installing pavement markings or striping lane markings. The City should generally consider the following design issues for bikeway construction and installation in order to ensure facilities operate as intended and cyclists can ride worry-free.

- **Lane striping and gutter pans.** Bike lane widths should be adjusted according to the presence of the gutter pan. Cyclists tend to ride outside of the gutter to avoid debris and maintain control without riding directly on top of the gutter's lip. If additional space is not provided through the use of a wider bike lane or a limited buffer, cyclists may perceive the facility to be uncomfortable.
- **Lane striping and bus pads.** Any bicycle facility, whether it is a shared lane marking or bike lane, should be applied so that bicyclists are directed away from bus pad seams. Because the weight of bus transit vehicles cause asphalt to drift, bicycle wheels can become lodged into the seam between the concrete bus pad and the street's asphalt. Striping location and pavement maintenance can alleviate this issue.



Local streets such as Ozone Avenue could be further enhanced with additional trees, lighting, and landscaping. Source: Nelson\Nygaard

- **Buffered bike lane design options.** There are several alternatives to striping buffered bike lanes; however, the preferred application in Santa Monica depends on several variables. When on-street parking is present, the buffer is applied to the right of the bike lane to reduce conflicts with the door zone. The buffer effect will be achieved by marking the 7-foot parking bays, leaving a 2- to 3-foot unmarked buffer and adding a 4-inch inner-lane marking to the right of the bike lane. If no parking is present, the buffer will be applied between the bike lane

and the travel lane with a 2- to 3-foot buffer delineated by hatch markings.

- **Colored bike lane.** As a supplement to the standard buffered bike lane design options, any buffered bike lane application using green colored pavement treatment will shape a de facto buffer without striping the inner 4" bike lane stripe. For example, the most typical buffered bike lane configuration provides a 4-foot bike lane with a 2-foot buffer. The City of Santa Monica is adopting a new buffered bike lane striping standard that includes a conventional 6-inch bike lane stripe, a green bike lane (roughly 3-foot 6-inch) and an unmarked buffer with no inner stripe. Seven-foot on-street parking bays will be marked to reinforce the buffer and signal to cyclists to avoid the door zone.
- **Bike lane striping at intersections.** The majority of bike lanes in Santa Monica currently drop as they approach the intersection. As new bike lanes are installed, they should be striped to the intersection. This will require the use of merge lane treatments and through bike lanes when the bike lane approaches an intersection with a right turn lane.

In addition to these striping considerations, pavement preservation, restriping, routine cleaning, and debris removal are essential tasks needed to ensure bikeways maintain their quality and appeal. Additional bikeway maintenance guidance is provided in Chapter 4.

Applying lane striping (left) closer to the gutter seam effectively reduces the bicycle lane to 3-feet. The weight of buses at bus pads (right) can cause asphalt to drift creating obstacles for bicycles. Sources: City of Santa Monica (left) and Flickr user Steve Vance, Creative Commons 2.0 (right)