Section B
Guidelines For Bicycling

Bicycle Facilities & Shared Use Trail Definitions:

Bikeway – Any of a number of facilities designed, constructed and operated for support of bicycling. Bikeways can be either on-road or off-road facilities. In California bikeways are referred to as Class I (Bike Paths), Class II (Bike Lanes) and Class III (Bike Routes) bicycle facilities. For added clarity, we will identify all treatments by their more universal term. Thus a Class I bikeway will be referred to as a shared use trail.

Shared Use Trail – A pathway fully separated from a highway right-of-way traveled by pedestrians, bicyclists, inline skaters and other non motorized vehicles and devices. In California this type of facility is often referred to as a Class I bikeway.

Bike Lane – An exclusive lane of a roadway fully dedicated for bicycling and sometimes other non motorized vehicle movement, such as inline skaters. In California a bike lane is referred to as a Class II bikeway.

Wide Curb Lane – Many of California's roadway lanes are wider than the standard 12 foot lane width. Many are as wide as 20 feet. When wide lanes are used to support bicycling they are often signed as bike routes. A minimum width for a wide curb lane is 14 feet.

Paved Shoulder – On highways in many suburban and rural areas paved shoulders of 4 or more feet are added to each side. These are either left unmarked, or may be marked as bike lanes or bike routes.

Bike Route – Bike routes are travelways shared by bicyclists and motor vehicles that are signed as a navigational aid for bicyclists. Generally bike routes should have a secondary sign such as, "To downtown." In California, Bike Routes are referred to as Class III bikeways

Bicycle Boulevard – Bicycle boulevards are generally a single or a series of local streets that are connected to form a throughway for bicycling and walking. These boulevards often include tree canopies, occasional diverters to keep motorists from using them for direct travel, and some connectors, bridges and other methods to provide trip continuity.

Greenway –A wide corridor of open space traversing long sections of land. Often multi-use trails are built in greenway systems to help protect and preserve them and to allow bicyclists and pedestrians to enjoy their features.

General Strategies for Improving Bicycling

This Plan calls for making bicycling safer, more convenient and more enjoyable for all types of bicyclists — transportation and recreation-related — with a goal to increase bicycle use by 100% by the year 2010.

This is readily achievable, since many collectors and arterials are overly wide and can easily be re-striped with bike lanes. Critical connectivity issues can also be addressed by providing a few low cost links between critical neighborhoods. Specific objectives of this plan are to:

- Integrate the City's bicycle-friendly roads and bikeways with surrounding bicycle-friendly roads and bikeways to maximize connectivity.
- Develop bicycle-friendly roads and bikeways that serve the full spectrum of bicyclists.
- Provide clear bike route information to bicyclists by installing adequate signs along bikeways and by publishing bikeway system maps. Signage will be specific. A route numbering system will be used, and signs will guide cyclists to key locations such as "downtown."
- Build new bicycle paths on separate rights-of-way where it can be done, with convenience to bicyclists and in a cost effective way.
- Plan and configure undeveloped land to maximize bicycle transportation and recreation.
- Each time arterial and collector streets are resurfaced they will be re-striped to add Class II bike lanes where there is enough width. Travel and turn lanes will be narrowed to as little as 10 foot widths in order to make these accommodations.
- When any road work repairs are done by the City or other agencies such as utilities, the road shall be restored to its original quality, with particular attention to surface smoothness and re-striping suitable for bicycling.

Bicycle Lanes

Bike lanes are generally needed on most streets where motorist speeds are likely to be 30 mph or higher and where traffic volumes exceed approximately 2,000 vehicles per day. Bike lanes are not needed in some portions of the emerging town center, once speeds drop below 25 mph. Until actual speeds are dropped to 25 mph bike lanes should be installed and maintained.

In general, bicycle lanes should be provided on all Avenues and Boulevards (collectors and arterials). In some cases, where existing streets are too wide and there is need for traffic calming, bike lanes can be considered as a measure to reduce speeding and create a pleasant walking and bicycling area. There are many benefits of bike lanes to other road users – a complete list is included at the end of this chapter.

One of the many benefits of bike lanes is the creation of a buffer to sidewalks. This plan requires that the width of all plan designated roads be narrowed, helping better organize traffic, parking and bicycling. This treatment will also be evaluated to see if motorist speeds are brought down to safer speeds.

Bike lanes add border width to roadways, and further separate motorists from sidewalks. Bike lanes also help people enter and exit driveways and narrow streets by adding more effective turning radii.

In some locations, bike lanes can be built out of distinct paving materials. For instance, if the roadway is asphalt, bike lanes can be constructed out of concrete and created at the same time as, and along with, the gutter pan. This has the advantage of making the roadway visually narrower. Smooth, seamless joints for bicyclists are achieved by saw cutting joint lines. These treatments can be reserved for new roadway construction projects.

Bike Lane Dimensions
Standard bike lane widths should be 6 feet (with at least 4 feet clear of any gutter pan). 5 feet is the minimum width adjacent to curbs, and 4 feet is the minimum width when no curb exists. More detailed bike lane standards information can be found in Caltrans Highway Design Manual, Chapter 1000.

Bike Lane Markings
Bike lanes should be marked with 6-8" stripes of durable materials for long life. Eight inch stripes should be used on arterial streets, while 6" stripes should be used on collector streets. Both bike lane signs and bike lane markings should be used. Markings and signs will be in compliance with Caltrans Standards or the Manual on Uniform Traffic Control Devices, Part 9. Parking lane lines should be marked with 4" stripes. Under California law, motorists will be permitted to enter bike lanes when they are about to make a right turn to enter a driveway or an intersection. Bike lanes should be dashed approaching all intersections and dropped through intersections.

Bicycle Lanes Help Calm Traffic
Note the light colored area in the photo at right. The 36 foot wide street was so wide that motorists were driving 30-40 mph most of the time in a 25 mph zone. By adding bike lanes and painting them, speeds dropped 7 mph. Costs for adding the line and paint came to $17,000 per mile.

Intersection Treatments
Bike lanes will be carried up to intersections to the left of right turn lanes when they exist, or to the left of curb extensions (see photo to right) when curb extensions are used. On side streets or low volume roadways, special loop detectors that detect the presence of bicycles should be used.

Roundabouts
Bike lanes are dropped at roundabouts and re-emerge on the departure. Roundabouts are designed to bring motorists down to bicyclist's speed. Confident bicyclists generally merge with autos and circulate at the same speed. Novice riders and many families will prefer to use the adjacent sidewalk system.

On-Street Parking
Bike lanes will need to be used in conjunction with on-street parking in many locations. In these locations bike lanes should be six feet wide, while parking can be narrowed to seven feet. Travel lanes next to six foot bike lanes can be ten feet wide.

Shared Use Trails

Trails should be developed that are comfortable, safe and convenient. Trails should be planned in consideration of preservation lands, wetlands, coastal and other environmental issues.

Trail art and trail interpretive programs should be developed to take advantage of the arts community, the need to develop an interpretive program, and other community needs.

Trails should be designed to maximize bicycle travel connecting activities, resources and lifestyles relating to campus, technology park, hospitality industry and related land use development visions and practices.

Trails should be designed, built and maintained following current versions of the AASHTO Guide for the Development of Bicycle Facilities, the Manual on Uniform Traffic Control Devices, and Caltrans Highway Design Manual, Chapter 1000.

Trails should generally be 10 feet wide, but 8 feet is acceptable in areas where very low use levels are expected. In areas with heavy use, trails should be at least 12 feet wide. Trails should have a flat recovery area for the first 5 feet adjacent to the trail to buffer from vertical obstructions. Where fences or walls must be located adjacent to the trail, they should be placed at least 2 feet from the trail allowing for "shy" distance so the full width of the trail can safely be used.

Transportation and Land Use Planning

The City of Marina will develop a formal alternative transportation program and include bicycle programs with ongoing planning. Given the high levels of auto dependency, a reasonable percentage of the city budget will be dedicated to supporting walking, bicycling and transit in locations where it is most practical.

The Pedestrian and Bicycle Master Plan will be supported by:

- Hiring or appointing a full- or part-time Pedestrian and Bicycle Transportation Coordinator to plan and implement the Pedestrian and Bicycle Master Plan.
- Creating a Pedestrian and Bicycle Advisory Committee comprised of local pedestrians, bicyclists, City staff and other key employers and stakeholders.
- Evaluating the need to update the Pedestrian and Bicycle Master Plan every two years.
- Preparing and submitting to the City Council an annual Pedestrian and Bicycle Master Plan implementation report.

A bicycle and pedestrian advisory committee should be formed to review, evaluate and implement all phases of this plan. Observations and studies of the effectiveness of plan implementation will allow Marina to fine tune the plan.

Maintenance and Monitoring

Ensure ongoing efforts that support the Pedestrian and Bicycle Master Plan in relation to maintenance and monitoring.

All new capital improvement projects shall go through a review process to ensure consistency with the Pedestrian and Bicycle Master Plan.

Implement a surface management system to maintain a smooth riding surface. Surfaces should be maintained at least as close as one foot from the curb which may require the use of alternative materials other than concrete or asphalt.

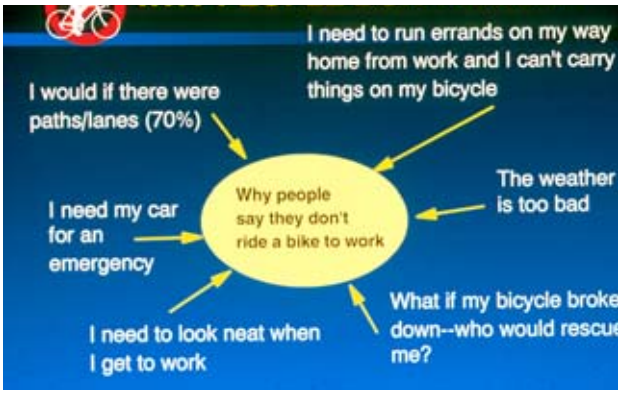
- Provide an accelerated surface maintenance schedule for all designated bikeways.
- Develop a maintenance program to sweep streets and designated bikeways on a regular basis.
- Expand the maintenance program to keep bikeway signage and paint in good condition.
- Establish a baseline of bicycle counts and then continue to count the progress of bicycle use on a regular basis, especially on recently installed bike lanes or paths.
- Continue to monitor bicycle accidents and their locations.
- Initiate a maintenance improvement program which would allow bicyclists to report hazards and inconveniences, and have concerns addressed in a timely manner.
- Establish a bicycle hotline to report safety hazards, other problems or suggestions by telephone, fax, e-mail and other new technologies.

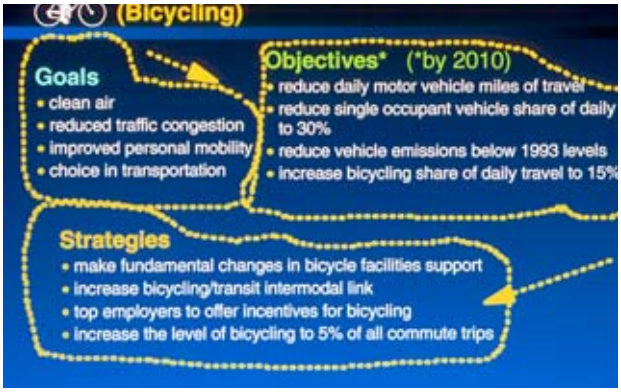
Support Facilities

The City of Marina will develop comprehensive support facilities for bicycling. The City shall ensure that bicycle support facilities are provided throughout Marina, and especially to all popular destinations of significant housing, work, shopping, civic and recreational uses.

Provide convenient and secure bicycle parking at public buildings and parks. Employers employing more than 25 workers shall provide secure bicycle parking and convenience parking. The City shall:

- Require the use of quality bicycle racks that are attractive and functional, support bicycles well and are easy to lock a bicycle to.
- Develop and distribute a manual with a set of standard design and location details for bicycle racks and lockers. The design manual should be used as a guideline for developers and building owners who will be providing bicycle parking at their sites.
- Strengthen the Zoning Code and Congestion Management Ordinance to expand the requirements for buildings in new commercial, retail, industrial and multiple dwelling residential projects to provide safe, convenient and secure bicycle parking.
- Develop an ordinance requiring showers and clothing lockers in new commercial, retail and industrial developments.
- Develop standards allowing reductions in auto parking as a trade-off for the provision of bicycle parking and other bicycle amenities such as shower and changing facilities.
- Develop a program to assist businesses in installing bike racks in retail districts.
- Add amenities such as restrooms, benches, drinking fountains, shade facilities, emergency call boxes and waste receptacles along Class I bikeways where they are appropriate and cost effective.





Connections to Other Transportation

- Develop and enhance opportunities for bicyclists to connect with other forms of transportation.
- Encourage and support the use of bicycles in conjunction with other forms of transportation.
- Add bicycle lockers at park and ride facilities so that bicyclists can transfer to transit, carpools and vanpools.
- Develop a program to install bike racks on all Marina regional transit buses.
- Initiate a bicycle planning awareness program for all City staff who may take actions that affect bicyclists.

Staff and Public Awareness

- Support a public relations campaign to make cyclists aware of the importance of proper riding behavior, wearing helmets, using lights, and other bicycle safety issues.
- Support a public relations campaign for motorists that helps them understand the rights of bicyclists.

Promotion

- Promote bicycling activities for work, shopping and leisure.
- Actively encourage City staff, employees, residents and visitors to use bicycles as often as possible. The City of Marina should establish a pool of bicycles for official city business.
- Encourage City officials and employees as well as other employers to participate in "Bike to Work Week" every May.
- Develop and provide a local bicycle map with promotional and safety information.
- Coordinate with the Marina and regional convention and visitors bureaus and the chambers of commerce to encourage bicycling.

Funding

- Identify and pursue potential funding sources. Make active use of the grants coordinator's skills, links and sources to apply for all appropriate grants.
- Prioritize projects to best use available funds.
- At a minimum, fund bicycle projects at a level commensurate with the practical number of trips that can be made by bicycle (20%).
- Follow all federal, state, county and local funding source guidelines and prepare projects to meet these guidelines.
- Coordinate with neighboring cities and counties to apply for regional funds.
- Provide funding for the construction of new bicycle facilities and/or bicycle-friendly improvements in conjunction with new development.
- Provide traffic mitigation funds for bicycle projects and/or bicycle-friendly improvements.
- Seek additional funding which can be generated from other sources, programs, or organizations as they become available.

Benefits of Urban Bike Lanes to Other Road Users

(Courtesy of the Oregon Department of Transportation)

Urban streets have to satisfy many needs: various modes use them, and they provide local access to a community as well as mobility for through traffic. Many of the benefits of shoulders also apply to bike lanes in urban areas, whether they were created by restriping or by widening the road. Some street enhancements cannot be measured with numbers alone, as they offer values (e.g. trees) that simply make a community better. The following discussion should be viewed in this context. Bike lanes can provide the following benefits:

For Pedestrians:

- Greater separation from traffic, especially in the absence of on-street parking or a planter strip, increasing comfort and safety. This is important to young children walking, playing or riding their bikes on curbside sidewalks.
- Reduced splash from vehicles passing through puddles (a total elimination of splash where puddles are completely contained within the bike lane).
- An area for people in wheelchairs to walk where there are no sidewalks, or where sidewalks are in poor repair or do not meet ADA standards.
- A space for wheelchair users to turn on and off curb cut ramps away from moving traffic.
- The opportunity to use tighter corner radii, which reduces intersection crossing distance and tends to slow turning vehicles.
- In dry climates, a reduction in dust raised by passing vehicles, as they drive further from unpaved surfaces.

For Motorists:

- Greater ease and more opportunities to exit from driveways (thanks to improved sight distance).
- Greater effective turning radius at corners and driveways, allowing large vehicles to turn into side streets without off-tracking onto curb.
- A buffer for parked cars, making it easier for motorists to park, enter and exit vehicles safely and efficiently. This requires a wide enough bike lane so bicyclists aren't "doored."
- Less wear and tear of the pavement, if bike lanes are restriped by moving travel lanes (heavier motor vehicles no longer travel in the same well-worn ruts).

For Other Modes:

- Transit: A place to pull over next to the curb out of the traffic stream.
- Delivery vehicles (including postal service): a place to stop out of the traffic stream.
- Emergency vehicles: Room to maneuver around stopped traffic, decreasing response time.
- Bicyclists: Greater acceptance of people bicycling on the road, as motorists are reminded that they are not the only roadway users;
- Non-motorized modes: An increase in use, by increasing comfort to both pedestrians and bicyclists (this could leave more space for motorists driving and parking).

For the Community (Livability factors):

- A traffic calming effect on arterials when bike lanes are striped by narrowing travel lanes.
- Better definition of travel lanes where road is wide (lessens the "sea of asphalt" look).
- An improved buffer to trees, allowing greater plantings of green canopies, which also has a traffic calming effect.