

# Chapter 2 - Bikeway Network

## Goals of Bike Plan 2020

1. Complete 500 miles of bikeways
2. Achieve 5% bike mode share
3. Reduce bike collisions by 50%
4. Add 5000 bike parking spaces
5. Achieve Gold-level Bicycle Friendly Community status

## Bikeways

For definitions see *Plan Outline* sidebar.



**Trail or Path**  
(Class I Bikeway)



**Bike Lane**  
(Class II Bikeway)



**Bike Route**  
(Class III Bikeway)

A comprehensive network of bikeways provides safe and convenient corridors for bicyclists to travel. While bicyclists may legally ride on any city street, many streets don't provide a friendly bicycling environment. Streets with high volumes of faster traffic can be intimidating - particularly when no roadway space or bikeways are provided for bicyclists. Disconnected and incomplete facilities can suddenly strand bicyclists before they reach their destinations. Similarly, bikeways must connect across city borders to neighboring cities. Completing a connected cohesive citywide bikeway network will create a truly bicycle friendly community.

## Strategy 2.1

### Expand and connect the citywide Bikeway Network

Exhibit A defines an expanded 500 mile network of on-street and off-street bikeways. *Bike Plan 2020* focuses on implementing the 400 mile *on-street* portion of the 500 mile network so that it integrates with and connects to the 150 mile *off-street* network in the City of San José's Trails Master Plan.

	Existing	Planned	Total Bikeways
Bike Lanes & Bike Routes (On-street Bikeways)	197	203	400
Trails (Off-street Bikeways)	53	47	100
<b>Total</b>	<b>250</b>	<b>250</b>	<b>500 miles</b>

**Action 2.1.1 - Complete a network of Primary Bikeways.** Just as motorists use a backbone of freeways and expressways to travel, bicyclists need a system of enhanced cross-town bikeways collectively called Primary Bikeways. Primary Bikeways serve as key crosstown facilities and support higher numbers of bicyclists of various skill levels. Primary Bikeways include Trails and Enhanced on-street treatments (see page 2-2 sidebar) such as bike boulevards, colored bike lanes, sharrow, urban trails and physically separated bike lanes. Bike boulevards use less busy, calmer streets and prioritize bike traffic using features such as signs, pavement markings, and motor vehicle traffic diversion. Where feasible, streets with lower traffic volumes, lower traffic speeds, and fewer travel lanes are preferred. Primary Bikeways also better accommodate bicyclists of different skill levels (see Action 2.1.5). Primary Bikeways are identified in Map B.

**Action 2.1.2 - Connect on-street and off-street bikeways.** While many bicyclists prefer riding on trails, nearly all trips require bicycling on-street for at least part of the trip. To provide a functional bikeway network, on-street and off-street bikeways must connect. Providing on-street bikeway connections to off-street bikeways is critical. On-street connections to off-street bikeways can include bike lanes as well as the supplemental treatments referenced in Strategy 2.6. Where the connection requires traversing a curb or sidewalk, bike-specific ramps should be provided.

**Action 2.1.3 - Provide bikeways at least every half mile.** To make bicycling convenient, bikeways must be available throughout the city. Spacing bikeways no more than a half mile apart will insure an accessible route from any location. [See Maps x and y.](#)

**Action 2.1.4 – Implement a sign system that provides direction and distance information to common destinations.** Bicyclists need a consistent signage system guiding them to common destinations such as job centers, transit centers, and shopping. Signs inform bicyclists which way to turn and how far to travel to common destinations. Signs also help implement Action 2.1.2 (Connect on-street and off-street bikeways.) by telling bicyclist which way to turn when a trail ends at a road.

**Action 2.1.5 - Include Bikeways for bicyclists of different skills.** Not all bicyclists feel comfortable riding on busy streets with higher traffic speeds and volumes. Bikeways on calmer side streets must be part of the Bikeway Network. See also Action 2.1.1

**Action 2.1.6 – Use innovative designs to expand and enhance the bikeway network.** Where roadway constraints or other circumstances render traditional design inadequate, use innovative designs to accommodate bicyclists. Additionally, where enhancements are desired beyond traditional basic bikeways (such as on Primary Bikeways in Action 2.1.1), innovate designs are appropriate. See right column and Chapter 6 for images of innovative designs.

**Action 2.1.7 – Install bike lanes at locations not identified in this plan.** Opportunities may exist for bike lanes beyond those identified in this plan. Where appropriate, install properly located and designed bike lanes that will serve the needs of bicyclists.

## Strategy 2.2

### Eliminate barriers and remove gaps for bicyclists

To accomplish the Bike Plan 2020 Vision of becoming a city where bicycling is safe, convenient, and commonplace, barriers to bicycling and network gaps must be addressed. These barriers often exist in the first or last mile of a trip: for example, getting from home to a creek trail (first mile) and from a creek trail to work (last mile).

**Action 2.2.1 - Provide bike/pedestrian grade-separated freeway crossings every two miles.** Freeways create major barriers for bicyclists. They require bicyclists to take significant detours to find a crossing. Once a freeway crossing is reached, most include free-merging, high-speed on- and off-ramps that are extremely difficult to navigate by bike. These issues contribute to the two main reasons people don't bicycle – it's inconvenient and unsafe. To address these concerns, provide grade-separated, bicycle/pedestrian overcrossings of freeways every two miles.

**Action 2.2.2 - Improve signing and striping at Right-Turn-Only-Lanes and freeway on/off ramps.** Streets with right-turn-only-lanes and freeway on/off ramps present major challenges to bicyclists traveling straight. The weaving and merging motorist movements create conflicts and hazards for bicyclists. To help bicyclists navigate these areas, install bike lane markings and signage on streets approaching and through freeway interchanges. If space is insufficient for full bike lanes, use innovative treatments such as shared bike-straight/car-turn lanes.

**Action 2.2.3 - Improve private development standards to accommodate bicycles.** Trips by bike often include bicycling on private property such as shopping centers and multi-family housing developments. Where speed bumps are included, use gradually rising and falling (i.e.

## Bikeway Enhancements & Innovations



*Bike Box*



*Shared right-turn-only bike-thru lane*



*Buffered, colored bike lane*



*Multi-use wide sidewalk*



*Separated bikeway*

## Bike-Friendly Storm Inlets

San Jose streets include more than 29,800 storm inlets. While newer inlets incorporate bike-friendly features that prevent a bike tire from getting caught, many older models can pose a safety risk. Additional resources should be identified to retrofit old inlets.



Old storm inlet

## Bike-Friendly Signal Detection

Bike-friendly signal detection is one of the top three bike-facility requests San Jose receives. It allows bikes to be recognized by signals and receive a green. Detection devices, pavement markings and signs are cost-effective solutions to inform bicyclists where to stop to be detected.



sinusoidal) versions, which are called speed *humps*. This avoids the problem of abrupt speed bumps jarring a bicyclist steering and cause him to lose control. Also, see Action 3.1.1 regarding recommended improvements to bike parking requirements.

**Action 2.2.4 - Update requirements for yard waste, recycling, & refuse pickup to remove bicycling obstacles.** Require yard waste, recycling, and refuse to be placed outside bike lanes and shoulders for regular pickup.

**Action 2.2.5 - Revise traffic calming standards to improve bicyclist accommodation.** Insure that bulb outs are bike-friendly by either incorporating bike lanes or installing only on streets with posted speeds 25 mph or less (so bicyclists can merge with traffic where lane narrows)

**Action 2.2.6 – Retrofit non-compliant storm grates.** San José uses appropriate bike-friendly modern storm grates for new installations. However, older storm grates create obstacles for bicyclists. They often have significant gaps or rises that can catch or damage a bicycle wheel, potentially causing a crash. Address this legacy by retrofitting older storm grates with new ones meeting current safety standards.

## Strategy 2.3

### Provide bicycle-friendly signals and pavement markings

Bicyclists must legally follow the same rules of the road as motorists. This obligation includes the duty to heed traffic signals. Most traffic signals must detect a vehicle before they will turn green (i.e. “traffic actuated signal”). Signal detection devices easily detect cars (either by video or in-pavement metal detectors). However, because a bicycle is a much smaller object, most signal detection devices have difficulty detecting bicycles. In these instances, when no car is present, bicyclists will not receive a green. This significantly affects both the safety and convenience of bicycling in San Jose.

To address this issue statewide, California recently passed Assembly Bill 1581 (Fuller). This new law requires cities to make all new and modified signals bicycle-friendly. Bicycle-friendly signals will include both a signal device that detects bicycles and a pavement marking informing bicyclist where to stop to be detected. Caltrans is developing standards to guide cities on implementation. Education and outreach resources should be allocated to inform bicyclists how to appropriately use these devices.

**Action 2.3.1 – Proactively retrofit existing signal detectors along identified Bikeways.** All bikeways identified in this plan (versus streets without bikeways) serve as the principal bicycle corridors and attract the most bicyclists in San Jose. Traffic actuated signals along these corridors must receive first priority and will be upgraded proactively, rather than waiting for signal upgrades for other purposes.

**Action 2.3.2 - Install Bike Friendly signal detection at New Signals.** When new traffic actuated signals are installed, include bicycle friendly signal detection and pavement markings.

**Action 2.3.3 – When upgrading existing signals, install Bike Friendly signal detection.** When existing traffic actuated signals are upgraded, include bicycle friendly signal detection and pavement markings.

## Strategy 2.4 Maintain bikeways

Bicyclists often encounter obstacles such as broken glass, potholes, faded striping, and missing signs. These may seem trivial hindrances to motorists. But to a bicyclist on a 25 pound bike surrounded by fast-moving 4000 pound cars, these obstacles act as a disincentive to bicycling.

### Action 2.4.1 - Improve signing and striping maintenance and repairs.

Increase funding for city sign and striping maintenance programs. Improve dissemination of city contact information for bicyclist public requests of signing or striping repairs.

### Action 2.4.2 - Improve pothole repair and street sweeping.

Increase funding for city pothole repair and street sweeping programs. Improve dissemination of city contact information for bicyclist public requests of pothole repair and street sweeping.

### Action 2.4.3 – Accommodate Bicyclists in Construction Zones.

Both public and private construction can impact bicyclist mobility. When a construction project closes a bike lane or narrows a wide outside travel lane, bicyclists are forced to merge with other roadway traffic. This can be particularly difficult when roadway traffic is heavy and traveling at higher speeds. To address this issue, provide a temporary bike facility with temporary signage to accommodate bicyclists through the construction zone. If a temporary bike facility is not feasible on-street, include a wide outside travel lane so that motorists and bicyclists may ride side-by-side. Where neither a temporary bike facility nor a wide outside lane is feasible and a detour is required, post temporary signs to guide bicyclists in both directions through the detour.

## Bikes in Construction Zones



Construction zones often require the narrowing or closing of bike lanes or outside lanes where bicyclists ride. To help guide bicyclists through these challenging areas, temporary signs like the example above should be used.

## Sharrows



Shared Roadway Bicycle Markings (aka Sharrows) may be used on bike routes (Class III Bikeways) to remind motorists and bicyclists that the lane is too narrow to ride side-by-side. Bicyclists should ride clear of parked car doors. Motorists should yield and leave space when passing bicyclists.