2019 Bike Program Report

SFMTA

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INTRODUCTION

The 2019 SFMTA Bike Program Report summarizes:

- **Work the agency has carried out since the completion of the 2013 Bike Strategy**
- **What we plan to implement in the near-to-immediate future**
- **What we're doing to measure and report future progress**

Much has changed for bicycling in San Francisco since 2013, with both successes and challenges along the way. SFMTA is committed to improving safety, comfort and convenience for those choosing the get around by bike.

With the 2009 San Francisco Bike Plan as our foundational document, the SFMTA envisions San Francisco as a place where anyone feels able to safely and comfortably take a trip by bike for any reason, at any time, to any destination. Bicycling can increase access to opportunity for historically underserved communities, improve public health and reduce community transportation costs. Making streets safer for all users is an essential part of accommodating the transportation needs of a growing population.

Through our support of San Francisco's Transit First policy, the Citywide Climate Action Strategy and Vision Zero, the SFMTA is committed to planning, designing and implementing projects and programs that improve mobility and expand travel choices for all.

SUSTAINABLE STREETS DIVISION & PLANNING AT SFMTA

The passage of Proposition E in 1999 established the SFMTA in its current form, amending San Francisco's charter to combine Muni and the Department of Parking and Traffic into one Agency. The SFMTA then became responsible for the planning, design, management, and construction of projects supporting all elements of San Francisco's transportation infrastructure.

An urban environment like San Francisco, where street right-of-way is constrained, requires innovative solutions for transporting people around the city, while also improving the safety of our streets. In particular, with our goal of eliminating traffic deaths, it is more important than ever for thoughtful planning to inform every step of our capital investment process.

The purpose of this document is to summarize planning and programmatic efforts over the last 5 years. The 2019 SFMTA Bike Program Report also looks to the future, helping us evaluate our work and track progress towards meeting our goals. As our transportation landscape continues to change at an ever-faster pace, proactive planning and goal-setting will be critical to successful outcomes for bicycling in San Francisco.

Previous Publications

In 2013, the Planning Subdivision published its 2013-2018 Bike Strategy, with the goal of making bicycling a part of everyday life in San Francisco.

In 2017, the Livable Streets Subdivison released Pedaling Forward: A Glance at the SFMTA's Capital Bike Program for 2017-2021, providing a snapshot of the SFMTA's bike project implementation and future network workplan.

Who Wrote this Report?

Within the Sustainable Streets Division (SSD) of SFMTA is the Strategic Planning & Policy Subdivision. Known as the Planning Subdivision, this team is comprised of six sections, including the Complete Streets Section.

Complete Streets leads multi-modal, place-based planning studies which identify priorities and solutions to most effectively improve safety and accessibility of streets. In turn, these comprehensive, data driven planning efforts help inform work throughout the SFMTA, including SSD's Livable Streets Subdivision as they oversee the development and delivery of projects focused on creating safe and inviting streets.

2019 SFMTA BIKE REPORT ORGANIZATION

The 2019 SFMTA Bike Program Report defines bicycle-specific metrics the SFMTA will pursue between 2019 and 2022 and shares the direction of the SFMTA's workplan for the next three years.

This report documents today's trends in bicycling, what the SFMTA has done in the past to support bicycling and what is planned for the near-term. This document is organized around the following themes:

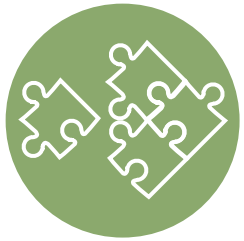
BICYCLE SNAPSHOT

What's bicycling like right now and how have we made progress since 2013

POLICIES & PROGRESS

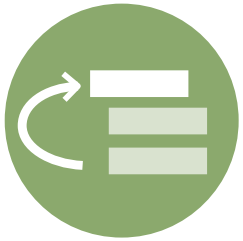
A review of the reports, policies and directives that inform our work

PLANNING & PROGRAMS



Planning & programmatic work to support bikes

PROJECT PROCESS



How we design, prioritize and implement bike projects

FUNDING

Short-term and long-term funding scenarios for bike projects

METRICS

What we measure to stay accountable

WHY A 3-YEAR OUTLOOK?

With the recent rise of personal mobility devices like e-bikes and e-scooters, San Francisco has experienced monumental and largely unforeseen shifts in the two-wheeled landscape. While we have previously looked ahead 5 years at a time in our bicycle planning, this 2019 SFMTA Bike Program Report focuses exclusively on the next three years. Since the pace of mobile innovation shows no sign of slowing down, a shorter envisioning time-frame allows us more flexibility as new and different technologies emerge.

SFMTA WORK PROGRAM GOALS & METRICS

SFMTA 3-year Workplan Goals

- **27 miles of protected bikeways**
- **15 miles of neighborways**
- **Equalize bike network quality across the city**
- **2,250 new bike rack work orders**
- **Bike education in 45 SFUSD schools**
- **$90,000,000 invested in bike projects**

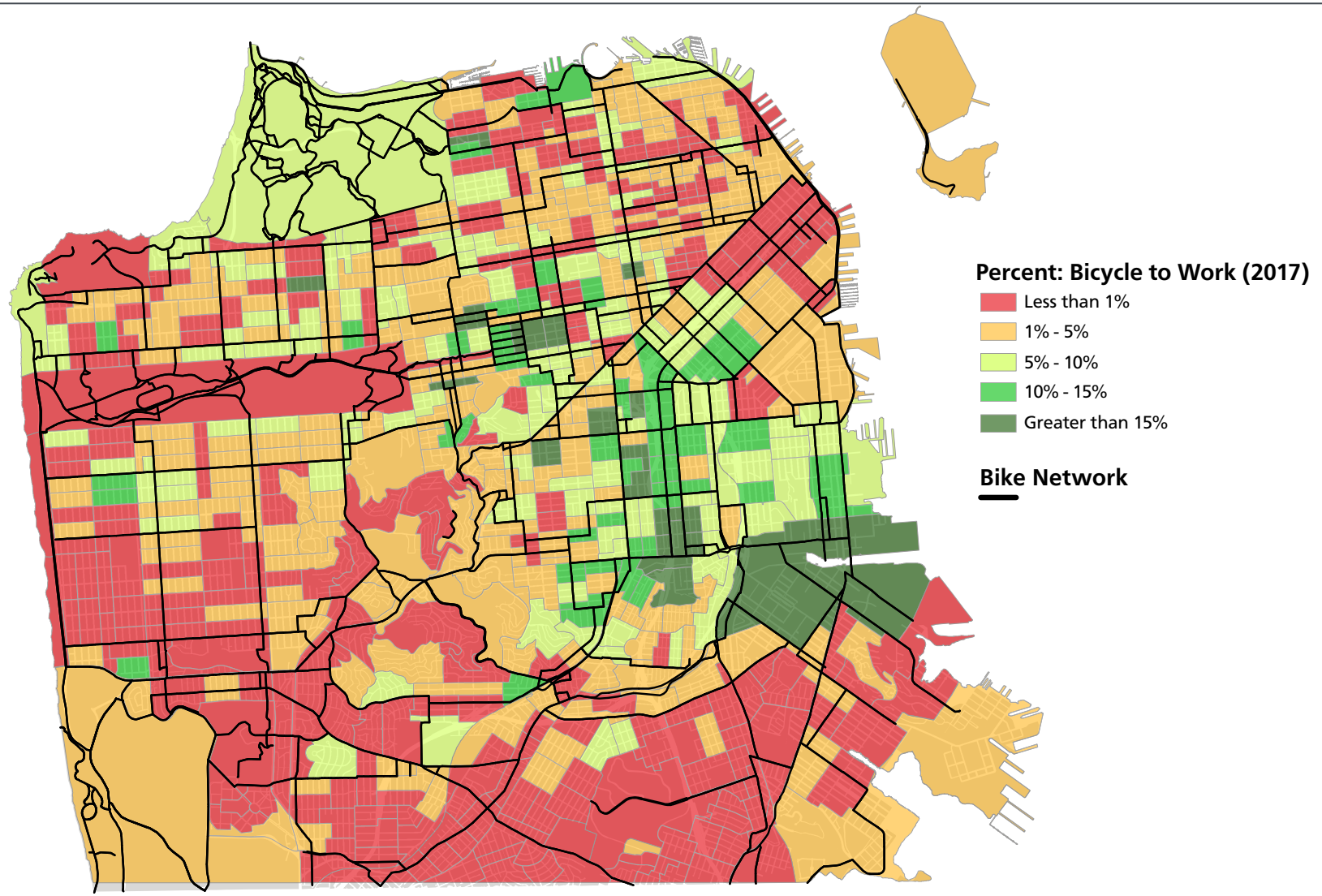
SFMTA Workplan Metrics

In the 2019 SFMTA Bike Program Report, we have identified four sets of metrics to help track progress against our workplan.

1. **Bicycle network mileage implemented**
2. **Bike parking implementation and utilization**
3. **Expand bike education and access**
4. **SFMTA project delivery, accountability, and transparency**

BICYCLE SNAPSHOT

What's bicycling like right now and how have we made progress since 2013



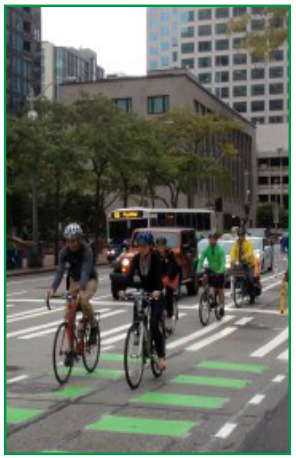
The most recent citywide data on bicycle mode share comes from the American Community Survey (ACS). Citywide, 3.1% of San Francisco residents commute to work by bicycle. Neighborhood-by-neighborhood, however, bicycle commuting patterns tell a much more complex story.

There are 59 census blocks in San Francisco where more than 10% of residents commute by bike, including the Western Addition, Islais Creek, Mission, and Haight-Ashbury neighborhoods.

Areas with higher bike mode share strongly correlate to areas with higher-quality and denser bike networks, flatter geography, and proximity to downtown job centers. As the network continues to grow, both in size and in quality, the SFMTA expects to see mode share increase citywide.

HOW DOES SAN FRANCISCO COMPARE TO PEER CITIES?

Below is a comparison between San Francisco and peer cities around the country selected for comparable size, density or regional significance.

SAN FRANCISCO	PORTLAND	SEATTLE	BOSTON	MINNEAPOLIS	CHICAGO
					
Population: 864,000	686,800	704,352	673,184	400,070	2,718,782
Density: 18,451 Persons Per Square Mile	8,198 Persons Per Square Mile	8,198 Persons Per Square Mile	13,909 Persons Per Square Mile	7,088 Persons Per Square Mile	11,977 Persons Per Square Mile
Percent Bicycle Commute: 3.1%	6.5%	3.7%	3.5%	4.1%	1.7%
Bike Share Program: Docked bikeshare and dockless pilot	Docked bikeshare and dockless	Dockless bikeshare	Docked bikeshare and dockless	Docked bikeshare and dockless	Docked bikeshare and dockless pilot
Length of Bicycle Network: 447 Miles (2018)*	350 Miles (2016)	260 Miles (2017)	135 Miles (2017)	253 Miles (2017)	248 Miles (2017)
Fatalities per 10,000 daily bicyclists: 1.4	1.6	1.9	3.4	2.0	3.6
Bicycle Friendly Community Status: Gold (2016)	Platinum (2017)	Gold (2016)	Silver (2017)	Gold (2015)	Silver (2015)

* San Francisco calculates bike network mileage on both sides of the street, e.g. 1 mile of bike lanes on a 2-way street is counted as 2 miles, 1 mile of bike lane on a 1-way street is counted as 1 mile.

PROGRESS SINCE 2013

Since launching the 2013-2018 Bike Strategy, San Francisco has experienced significant changes. The City's adoption of Vision Zero and the Citywide Climate Action Strategy radically changed the context of the SFMTA's work on the streets. Protected bike lanes went from a controversial, quasi-legal design to a streetscape element fully embraced and endorsed by Caltrans. Shared two-wheel transport went from a single limited bikeshare pilot program to include a variety of personal mobility devices (including e-bikes and scooters) serving the majority of City neighborhoods.

	2013	2014	2015	2016	2017	2018
Commute Bicycle Mode Share	3.8%	4.4%	4.3%	3.9%	3.1%	Data release in Sept 2019
Bike Counts	11,047	11,473	10,655	11,714	11,106	See Page 25
Bicycle Network Miles*	425	431	438	440	443	447
High Quality Bike Network Miles**	91	93	97	105	113	121
Bikeshare Stations	34	34	34	38	120	146
Bike Racks	3,381	3,702	4,673	5,085	5,556	6,057
Bike Education Classes	55	58	53	54	58	36
Bike Fatalities	4	3	4	4	2	3
Bike Serious Injuries	131	114	110	114	102	TBD

*Mileage counts for bike network are directional: a 1-way street is counted as 1 mile, a 2-way street is counted as 2 miles

** "High-quality Bike Network" includes bike paths, protected bikeways, neighborways, and buffered bike lanes

The impact of ridehailing on bicycling is twofold, as it both competes with bicycling as a mode of travel and the frequent use of bike facilities for loading increases real and perceived dangers for people riding bikes.

While the quality of the bike network has vastly improved over the last five years, bicycle mode share has dropped over the last three years. At the same time, the share of San Franciscans commuting via taxi, motorcycle, or ridehailing *more than doubled*, rising from 2.1% in 2014 to 4.4% in 2017. **Since bike count numbers have remained relatively stable during the same period, this suggests that just as many people in San Francisco are taking bike trips - though fewer as a commute choice in past years.** This is also borne out by our Safe Streets Evaluation Program, which has consistently shown increases in bike traffic after implementing protected bikeways.

The SFMTA is committed to increasing safety, comfort, and access to bicycle travel for everyone in San Francisco. As the mix of transportation options increases, we continue to adapt to this landscape in order to ensure bicycling is an attractive choice.

THE IMPACT OF RIDEHAILING ON BICYCLING IN SAN FRANCISCO

RECENT IMPROVEMENTS

Golden Gate Park cut-thru

7th Ave at Lincoln Way
A median installed with bicycle "cut-thru"s allow bike-only access to Golden Gate Park from 7th Avenue

Wiggle Neighborhood Green Corridor

Church St and Duboce St to Scott St and Fell St
Streetscape improvements, storm water management upgrades, intersection improvements, traffic diversion, and green paint treatments throughout the Wiggle

Upper Market Protected Bike Lane

Octavia Blvd to Guerrero St/Duboce Ave
Parking/loading-protected bikeway with improved intersection markings, revised signal phases, and limited curb separation from vehicle traffic

Division/13th Street Safety Project

9th St/San Bruno Ave to Folsom St
Protected bikes lanes, enhanced intersection treatments, and a protected intersection at 9th Street

7th/8th Protected Bike Lanes

Market St to Folsom St/ Townsend Street
Protected bike lanes, new transit boarding islands, intersection improvements, and traffic signal upgrades along this couplet of one-way streets

17th Street Bicycle Safety Project

Church St to Sanchez St
Protected bikeway featuring concrete islands, green paint, and flexible posts – improving safety around in-street rail

Valencia Green Gateway

Cesar Chavez St to Mission
Streetscape & storm water improvements, curb-protected raised bikeway, traffic diverters with bicycle-only cut-throughs

Ocean Ave Buffered Bike Lanes

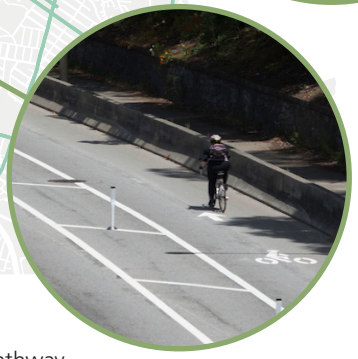
Sunset Blvd to 19th Ave
Buffered bike lanes paired with street resurfacing

Mansell Streetscape

Visitacion Ave to Brazil Ave
Repurpose one side of Mansell Street as a Class I shared path and separate pedestrian pathway

San Jose Ave Protected Bike Lane

Highway 280 to Cesar Chavez St
Physical separation of bike lanes in coordination with a Public Works paving project



POLICIES & PROGRESS

A review of the reports, policies and directives that inform our work

2015 BICYCLE USAGE AND AWARENESS SURVEY

51%

of SF residents enjoy biking. Just 15% do not.

1/3

residents can bike, but won't in San Francisco.

7 in10

people cite safety concerns as a major impact on their decision to bike.

59%

believe that bike lanes and paths should be separated from cars.

55%

don't feel safe riding a bike near traffic.

People know what improvements are effective.

- 64% say physically separated bike lanes are effective
- 61% wanted clearer markings to better separate bikes and cars
- 60% want more green-painted bike lanes

In 2015, the SFMTA commissioned an independent research study to better understand the attitudes San Francisco residents have towards biking. Included in the 2017 Pedaling Forward report, the results reflect surveys and interviews with over 600 San Francisco residents and two in-depth focus groups. The survey was designed to capture a demographically and geographically representative sample of San Francisco adult residents.

The survey provided the SFMTA with detailed information on resident access to bicycles, attitudes about bicycling, major barriers to bicycling, and what would encourage people to bicycle more often. Across all types of residents, the top concerns were related to safety for people on bikes, and the SFMTA has tried to incorporate the findings from these surveys into our project designs.

Top barriers to bicycling included access to secure bike parking, lack of protected/ separated bikeways, and fear of being hit by a car, bus or truck.

The findings from the survey can be found in the 2017 Pedaling Forward report.

BICYCLING & EQUITY

Equity in transportation is of critical importance to the SFMTA, the City of San Francisco, and all its residents and visitors. Historically, transportation inequities in San Francisco arose from many factors, including past prioritization of funding for private automobile travel, urban renewal, decisions in distribution of transportation service and the routing of the highway system primarily through communities of color. Equitable access to high-quality transportation affects housing security, retention of long-time residents, access to economic opportunities and the provision of essential services. For these reasons, equitable transportation access is especially critical to the most vulnerable: youth, low-income residents, residents with a disability, seniors and the unhoused.

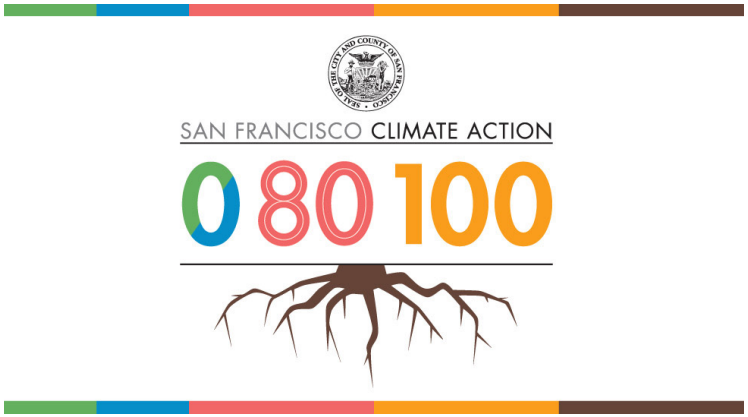
This legacy is reflected in today's bicycle network: Communities of Concern have 12% fewer high-quality bike facilities than the city average.

The SFMTA recognizes that equitable access to high-quality transportation options must be the lens through which all of our work is viewed, and that every decision must be intentionally made with the purpose of advancing that goal. In our newly adopted Capital Improvement Program, 52% of projects are located in Communities of Concern (as identified by 8 factors established by the Metropolitan Transportation Commission). At the same time, we recognize that streetscape investments (including bicycle infrastructure) in communities experiencing displacement pressures can bring unintended consequences for the very neighbors they are meant to serve.

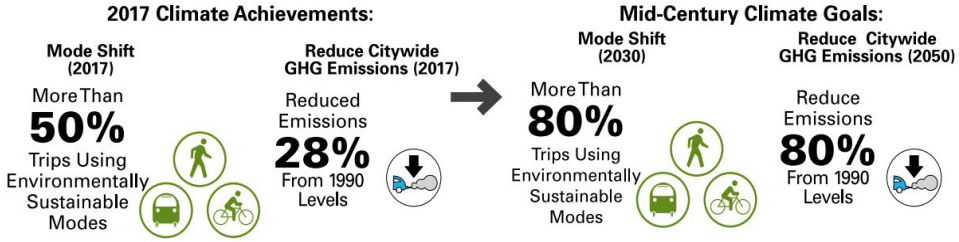
Initiatives undertaken by the SFMTA must not contribute to, or exacerbate, transportation inequities in their implementation. Recent agency commitments to equity include our Public Outreach and Engagement Team Strategy (POETS) program, our inclusion of a Government Alliance on Race and Equity (GARE) analysis for all new projects and our Muni Service Equity Strategy project.

CLIMATE ACTION AND SUSTAINABLE TRANSPORTATION

San Francisco has long been a leader in working to improve the quality of life and the environment of the City and region. The Citywide Climate Action Strategy commits the City to significantly reduce resource consumption and harmful emissions to address the challenges of climate change. Identified in the strategy, the 0-80-100 Roots framework is the city's call to action: committing to zero waste by 2020, shifting 80% of travel to sustainable trips by 2030, moving 100% of energy to renewables by 2030, and supporting urban green spaces and promoting biodiversity. Furthermore, in April 2018, San Francisco joined 25 other cities from around world by pledging to be net-zero greenhouse gas emissions by 2050.



In 2017 San Francisco realized two important climate goals: (1) citywide emissions were reduced by 28% from 1990 levels and (2) over half of all trips were made using transit, walking and bicycling. Nevertheless, the transportation sector still contributes approximately 46 percent of San Francisco's total emissions, with over 90% of emissions coming from private vehicles. Therefore, urgent climate action is needed to reduce emissions and meet mid-century climate goals. In December 2017, the SFMTA adopted the Transportation Sector Climate Action Strategy, which provides a framework that will both reduce harmful emissions and build a resilient transportation system in the face of a climate change. Among key actions identified in the strategy as crucial to helping San Francisco meet its climate goals are investments in projects that encourage shifting to sustainable modes of travel such as walking and biking, as well as improving safety and the public realm.

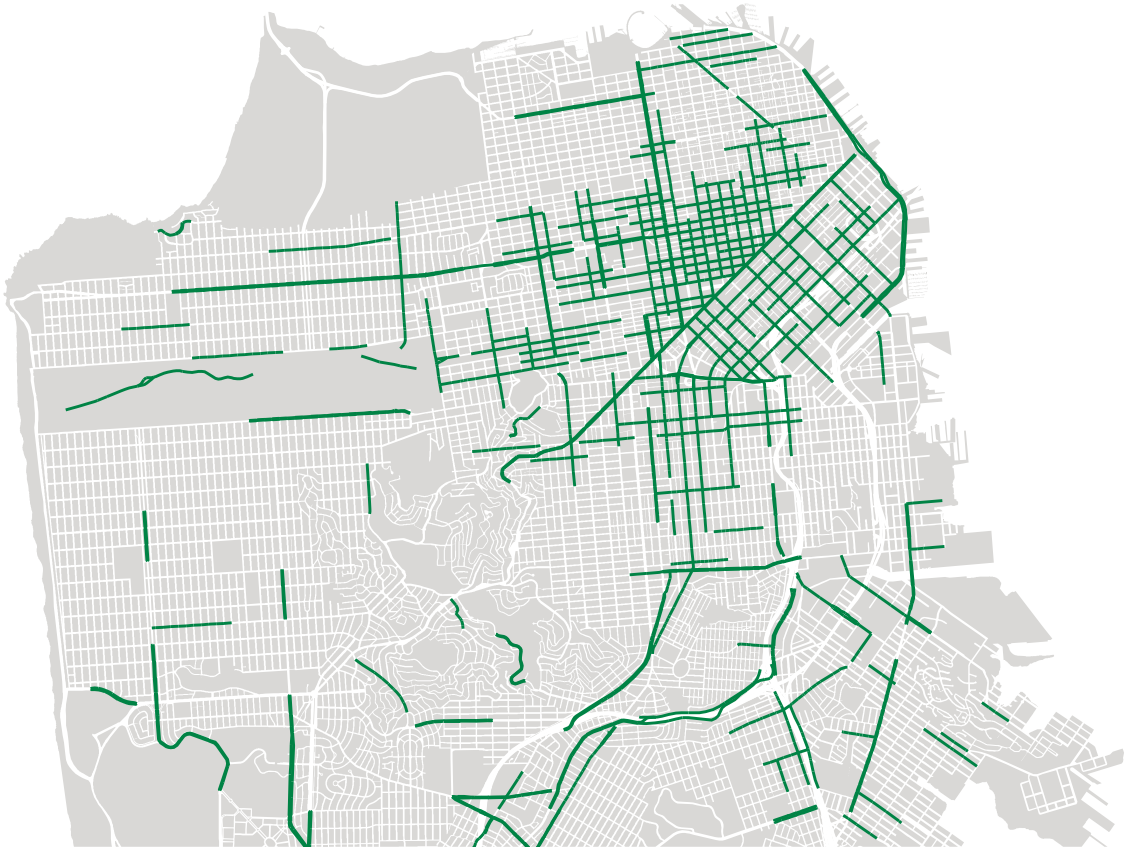


VISION ZERO PROGRAM

Vision Zero, a policy adopted in 2014, has the long-term goal of eliminating traffic fatalities and reducing severe injuries caused by traffic crashes. Every year, more than 20 people lose their lives traveling on San Francisco's streets and more than 500 people are severely injured. These deaths and injuries are preventable. San Francisco pursues this Vision Zero goal through building better and safer streets, educating the public on traffic safety, better enforcing traffic laws, and adopting policy changes that prevent fatalities by making streets safer for all users. Every two years, the City publishes a Vision Zero Action Strategy, examining progress made and adjusting the Vision Zero program to become more effective at preventing traffic deaths.

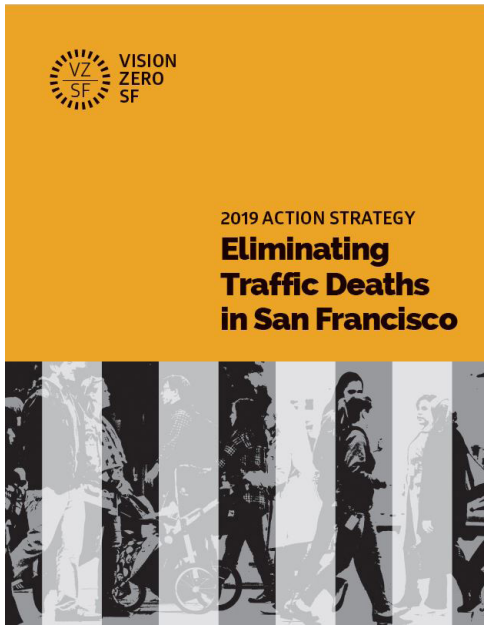
Adopting a data-driven approach to safety, Vision Zero SF applies years of information to identify the streets where investments will have the biggest impact in reducing fatalities and severe injuries. These roadways are identified as the Vision Zero High-Injury Network – a total of 125 miles of streets citywide.

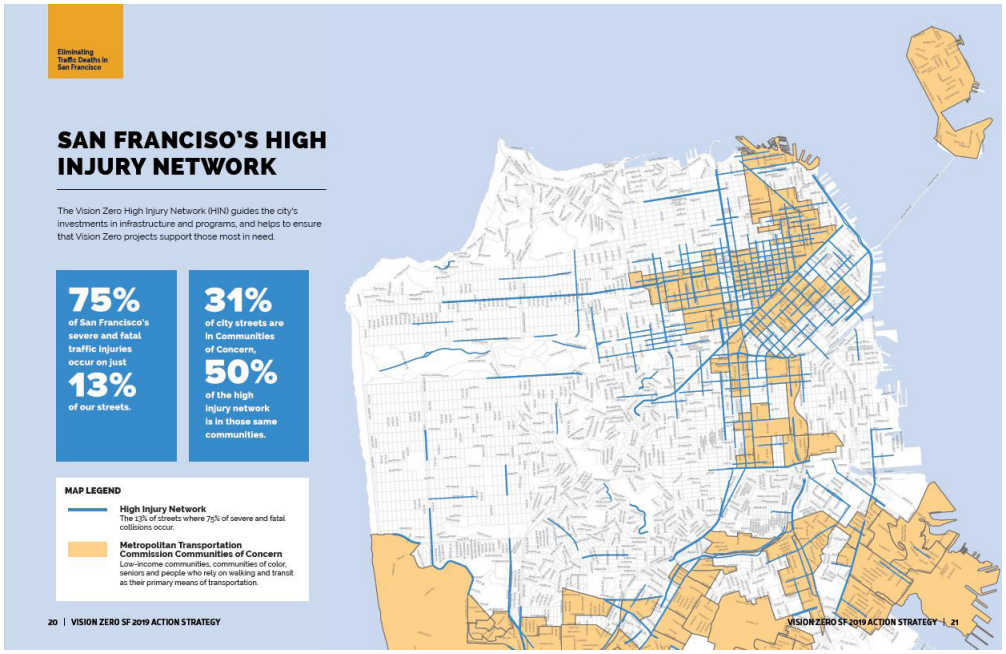
Through Vision Zero, we aim to complete more than 13 miles of safety treatments on the High-Injury Network each year. In the past three years, the SFMTA and city partners have exceeded that goal by implementing more than 20 miles annually of safety improvements on the High Injury Network, and more than 150 miles of improvements citywide. This work has contributed to a strong decline in the number of traffic fatalities in San Francisco over the last 5 years.



THERE ARE 125 MILES OF STREETS ON SAN FRANCISCO'S HIGH INJURY NETWORK.

VISION ZERO ACTION STRATEGY





The Vision Zero Action Strategy documents the initiatives city departments will take to advance Vision Zero. The Action Strategy identifies data-driven, ambitious initiatives to focus our efforts on eliminating traffic deaths. Organized on a foundation of advancing equity, the action strategy proposes three key focus areas:

STRATEGIC ACTIONS

Key actions valued at $65 million annually in investment for City agencies to commit to and act on to improve traffic safety outcomes within a Safe Systems Framework

TRANSFORMATIVE POLICIES

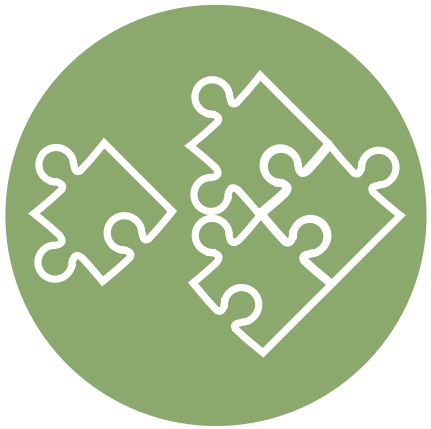
Four key legislative needs for San Francisco that have proven nationally and internationally to dramatically reduce crashes and save lives

COMPLEMENTARY GOALS

City policies that complement and advance Vision Zero by reducing vehicle miles traveled, a major predictor of crashes

The Action Strategy is a collaboration of the City and County of San Francisco, with input from the Vision Zero Coalition and other community members. The current Vision Zero Two-Year Action Plan is for 2019. More information is available here: http://visionzerosf.org/

PLANNING & PROGRAMS

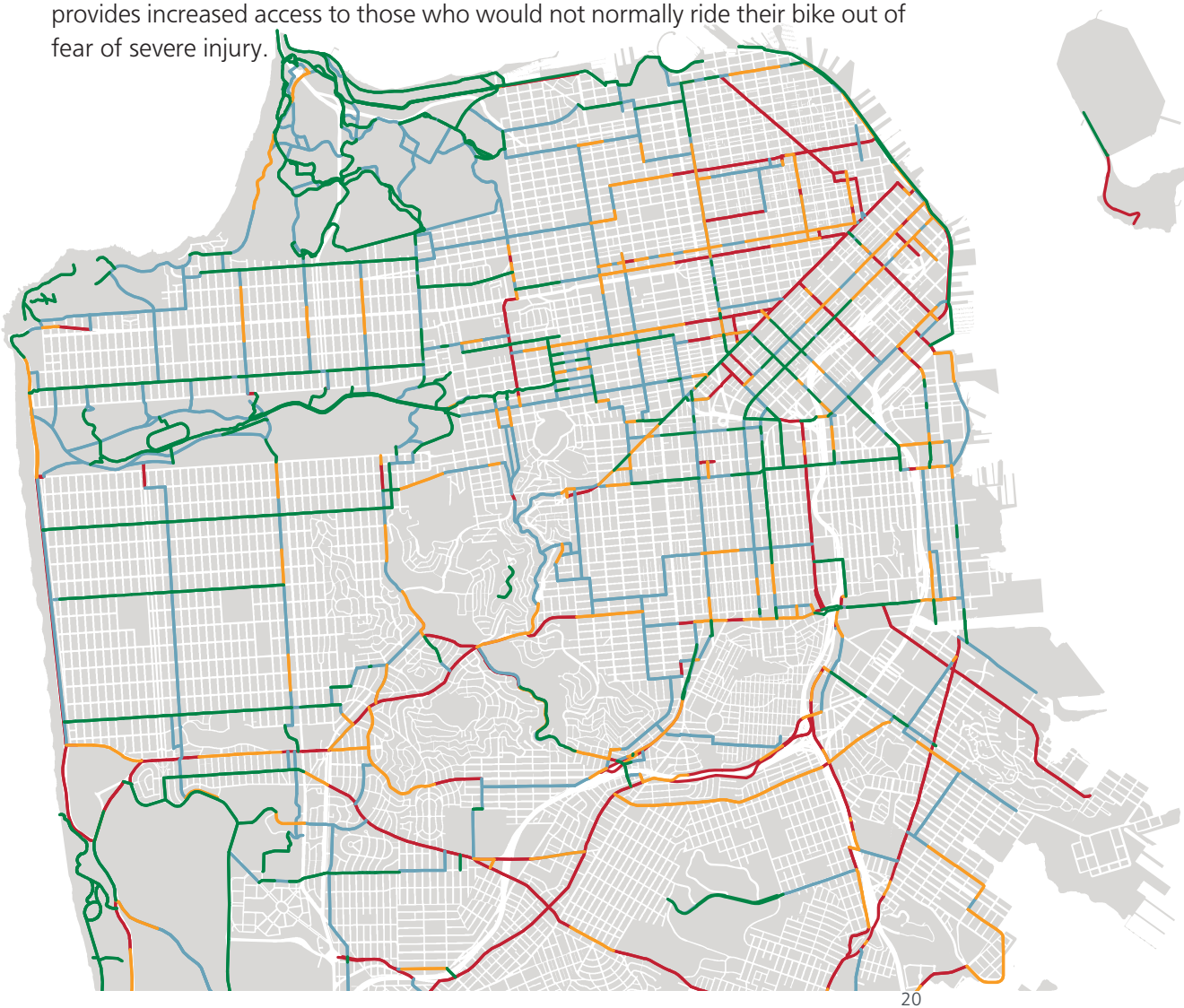


Planning & programmatic work
to support bikes

THE BICYCLE NETWORK COMFORT INDEX

The Bicycle Network Comfort Index identifies the perceived comfort a cyclist feels riding on a given bikeway, based on a four-tiered Level of Traffic Stress (LTS) score. A score of LTS 1 represents the highest level of riding comfort, while a score of LTS 4 indicates the least comfort. The more our network is scored LTS 1 or LTS 2, the safer and more comfortable our network becomes – which provides increased access to those who would not normally ride their bike out of fear of severe injury.

SFMTA staff created the Bicycle Network Comfort Index in 2014, with its most recent methodology update in 2017. The model uses existing infrastructure and traffic data that weighs positive and negative comfort factors, and is used to analyze current need and likely impact on the bike network of various potential bike projects.



BICYCLE NETWORK COMFORT INDEX AS OF 2017

LTS 1

The level comfortable for all user groups, including vulnerable users (children, youth, disabled persons, and seniors)

LTS 2

The level comfortable for most adults on bicycles, including beginning riders and seniors; experienced children and youth

LTS 3

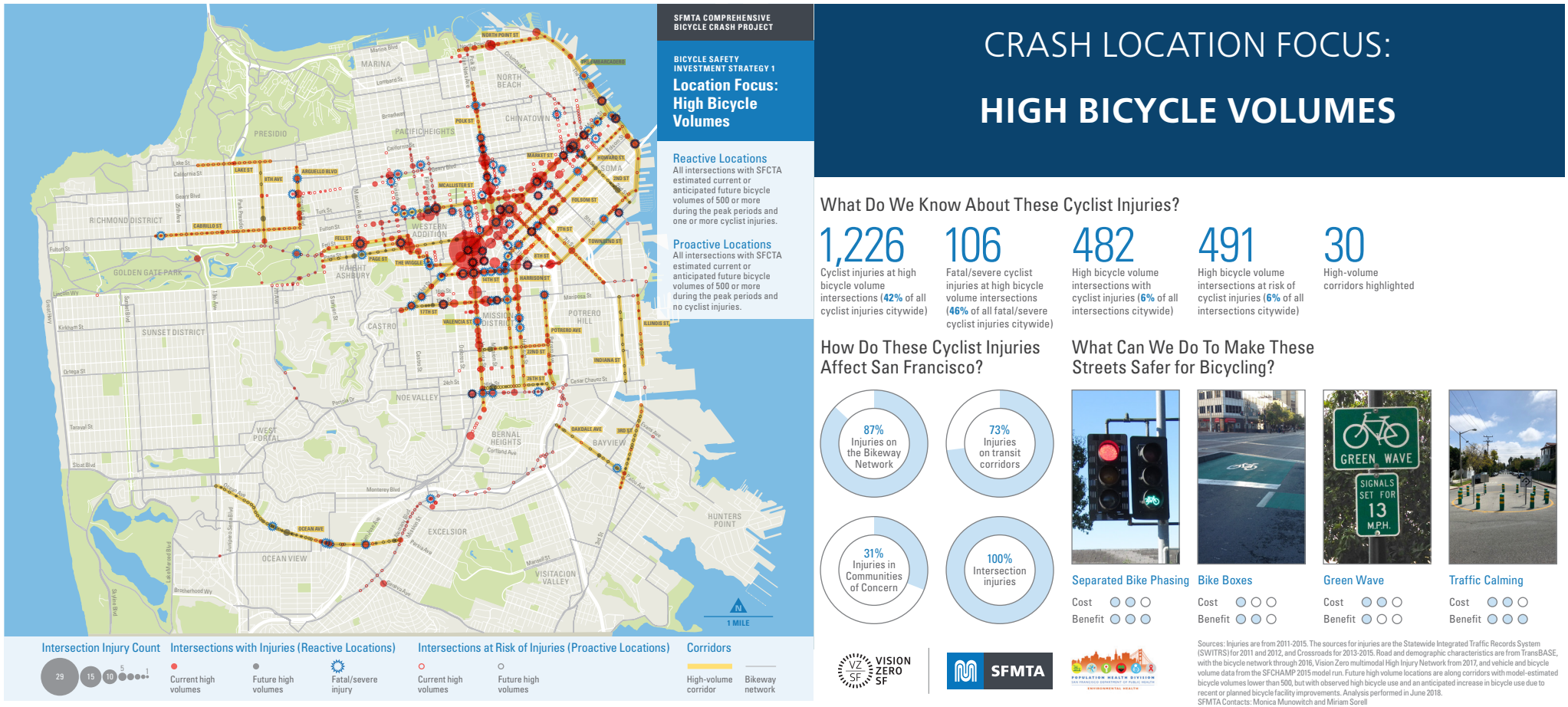
The level comfortable for most intermediate and experienced adult bicycle riders, e.g., the "enthusiastic and confident"

LTS 4

The level tolerated only by "strong and fearless" people on bicycles, typically shared travel lanes on high volume streets

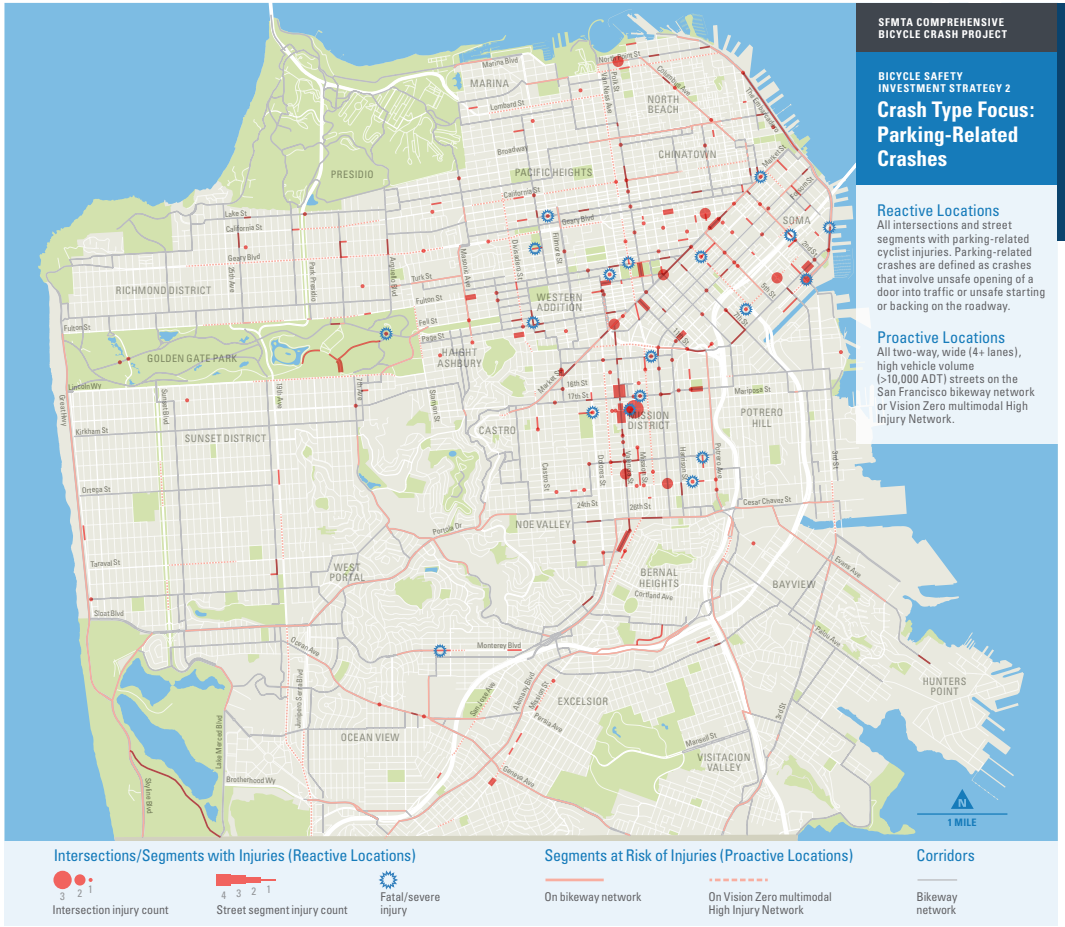
BICYCLE CRASH ANALYSIS

The SFMTA conducted a comprehensive study, completed in summer 2018, of crashes involving people riding bicycles in San Francisco to more directly inform bike network improvements. Using both reactive analysis (where collisions happened in the past) and proactive analysis (predicted sites of future collisions), this study helps ensure each project developed in the future will have a maximum safety impact.



Reactive Approach: All intersections with estimated current or anticipated future bicycle volumes of 500 people or more during peak periods and one or more recent fatal or severe collisions involving a person on a bicycle.

Proactive Approach: All intersections with estimated current or anticipated future bicycle volumes of 500 people or more during peak periods and no recent record of fatal or severe collisions involving a person on a bicycle.



CRASH TYPE FOCUS:

PARKING-RELATED CRASHES

What Do We Know About These Cyclist Injuries?

310 Parking-related cyclist injuries (**11%** of all cyclist injuries citywide)

19 Parking-related fatal/ severe cyclist injuries (**8%** of all fatal/severe cyclist injuries citywide)

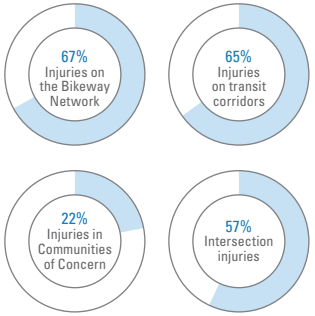
125 Intersections affected by parking-related cyclist injuries (**2%** of all intersections citywide)

14.4 Miles of streets affected by parking- related cyclist injuries (**2%** of all streets citywide)

66 Miles of streets at risk of parking-related cyclist injuries (**7%** of all streets citywide)

1,210 Total cyclist injuries on the Proactive and Reactive Networks (**42%** of all cyclist injuries citywide)

How Do These Cyclist Injuries Affect San Francisco?



What Can We Do To Make These Streets Safer for Bicycling?

Traffic Calming
Cost ○ ○ ○
Benefit ○ ○ ○

Buffered Bike Lane
Cost ○ ○ ○
Benefit ○ ○ ○

Separated Bike Lane
Cost ○ ○ ○
Benefit ○ ○ ○

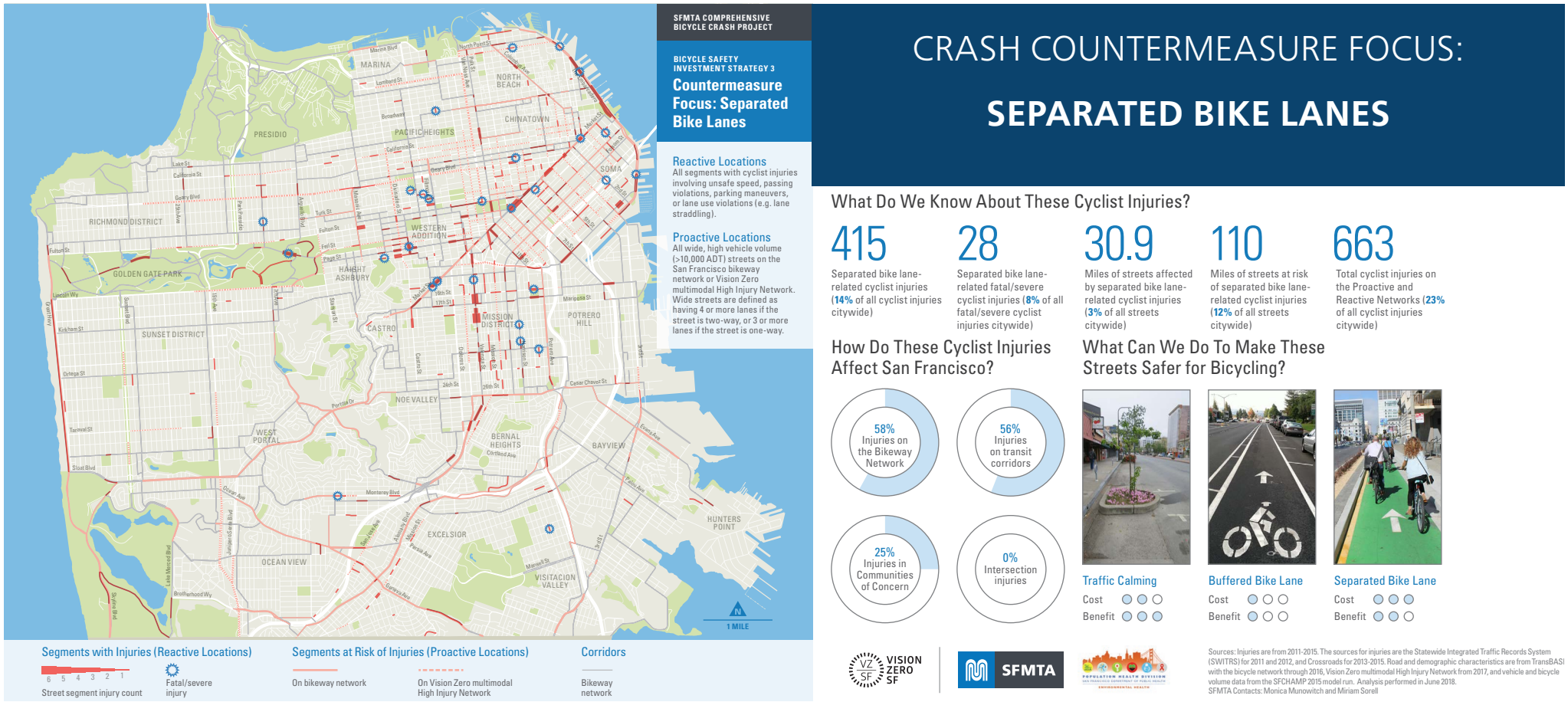
Door Zone Treatments
Cost ○ ○ ○
Benefit ○ ○ ○

VISION ZERO SF | SFMTA | POPULATION HEALTH DIVISION SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH ENVIRONMENTAL HEALTH

Sources: Injuries are from 2011-2015. The sources for injuries are the Statewide Integrated Traffic Records System (SWITRS) for 2011 and 2012, and Crossroads for 2013-2015. Road and demographic characteristics are from TransBASE, with the bicycle network through 2016, Vision Zero multimodal High Injury Network from 2017, and vehicle and bicycle volume data from the SFCHAMP 2015 model run. Analysis performed in June 2018.
SFMTA Contacts: Monica Munowitch and Miriam Sorell

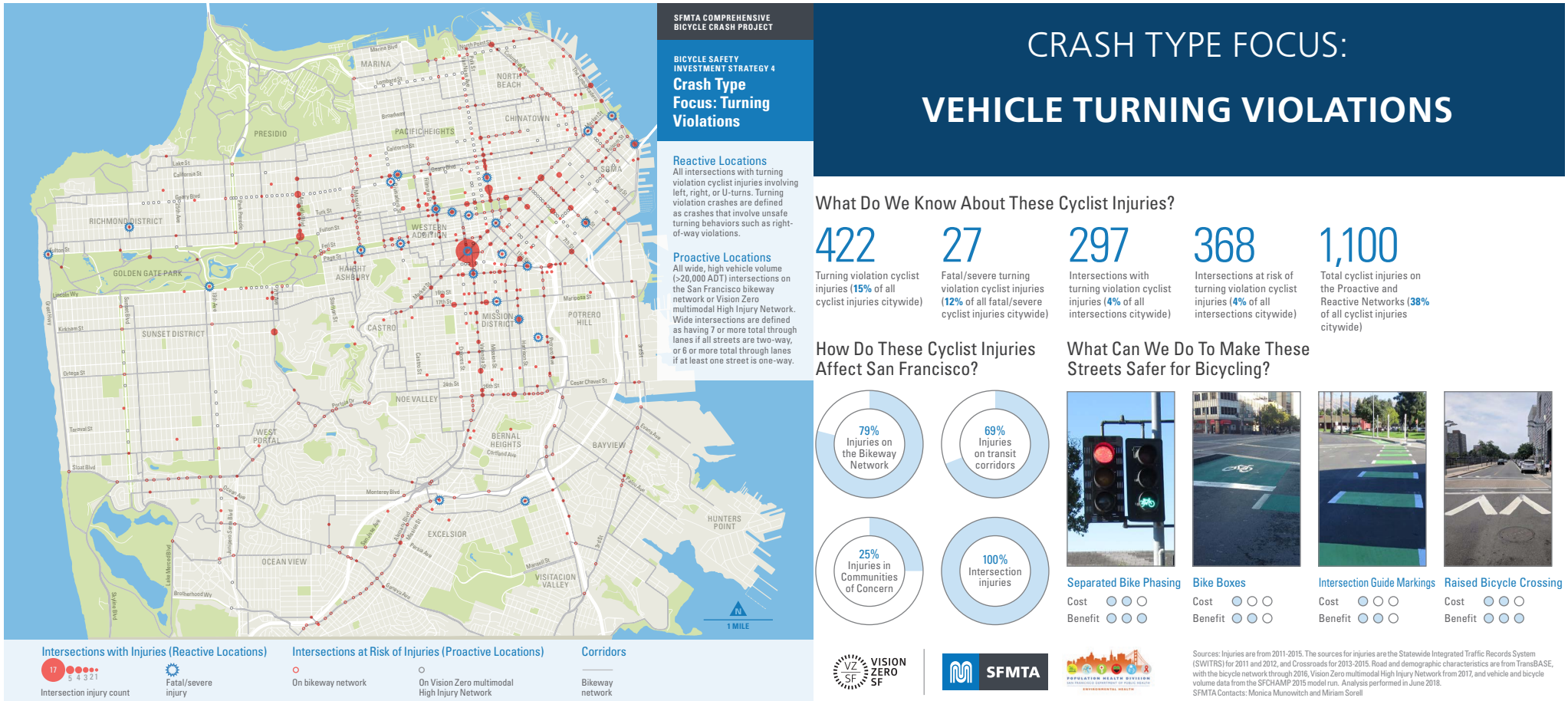
Reactive: All intersections and street segments with parking-related cyclist injuries. Parking-related crashes are defined as crashes that involve unsafe opening of a door into traffic or unsafe vehicle movement when entering or backing into the roadway.

Proactive: All two-way, wide (4+ lanes), high vehicle volume streets (more than 10,000 average daily trips) on the SF bikeway network or Vision Zero High Injury Network.



Reactive: All segments with cyclist injuries involving unsafe speed, passing violations, parking maneuvers, or lane use violations (e.g. lane straddling).

Proactive: All wide (4+ lanes if two-way; 3+ lanes if one-way), high vehicle volume streets (more than 10,000 average daily trips) on the SF bikeway network or Vision Zero multimodal High Injury Network.



Reactive: All intersections with turning violation cyclist injuries involving left, right, or U-turns. Turning violation crashes are defined as crashes that involve unsafe turning behaviors such as right-of-way violations.

Proactive: All wide (7+ through lanes if two-way; 6+ if at least one street is one-way), high vehicle volume intersections (more than 20,000 daily trips) on the SF bikeway network or the Vision Zero High Injury Network.

BIKE COUNTS PROGRAM

45,000
People counted riding bikes on a typical weekday

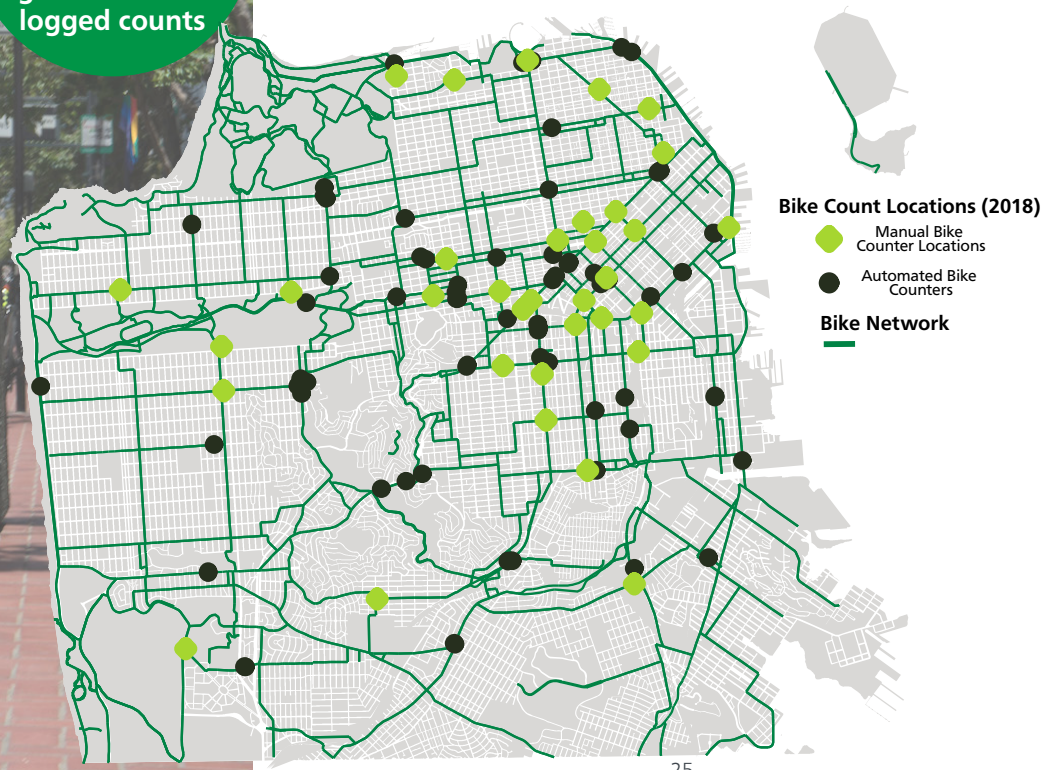
July
1,216,966 bikes counted
Busiest Month of the Year

Marina Bike Path
1,100,821 bikes counted
Highest number of logged counts

The SFMTA monitors bicycle volumes and commute trends citywide through three data collection methods: ACS Commute Data, annual bike counts collected manually at specified locations, and automated counters. Historically the SFMTA has used this data in annual Bike Count Reports with the goal of providing an update of the city's bike trends. You can find more information at www.sfmta.com/bikecount

The SFMTA has been collecting manual counts of bicycle trips since 1997. Starting in 2006 these counts were conducted during the evening peak period during the second week of September to analyze bike volume trends. More recently, SFMTA has also installed automated counters at specific locations throughout the city — now comprising a network of 74 counters that collect data daily instead of single week during the year.

Beginning in 2016 the SFMTA began publishing interactive bike count dashboards with the annual release of a fact sheet summarizing the state of bicycling trends. Corridors with high daily count averages include Market Street, the Panhandle, the Duboce Bike Path, the Marina Bike Path and Valencia Street. The ability of the automated counters to collect data throughout the year provides a clearer picture of how our investments in the bicycle network have a direct impact on ridership and mode share goals.



PROGRAM UPDATE

In 2018 the SFMTA revised the manual bike count program to improve effectiveness, efficiency, and quality of data captured. After 10 years of annual data collection, manual count locations were reassessed to collect data at intersections that better align with today's bike network.

By changing count locations this year, we are not able to compare count totals against previous years - but the quality of data collected has been greatly improved.

In addition, the bike count program is working to revise the methodology through which data is collected and used. We hope to balance the need for flexibility (moving count locations to adapt to rider patterns) and curating a consistent dataset (comparing trips over time).

EDUCATION PROGRAMS

The SFMTA supports a wide range of programming that supports travel by bicycle. Creating a culture where anyone feels able to safely ride a bike is accomplished through programs and partnerships with other City agencies, schools, neighborhoods, and advocacy organizations. In particular, education and encouragement programs complement our work to design safe streets.

IN-SCHOOL BICYCLE EDUCATION PROGRAM

The In-School Bicycle Education Program delivers basic bicycle handling and safety curriculum to students in the 2nd, 6th and 9th grades at San Francisco Unified School District (SFUSD) schools, first teaching students how to balance on a bike and then to safely ride on San Francisco streets. The 9th grade students are also taught basic maintenance skills. In addition to promoting lifelong fitness, the program builds a culture in San Francisco, beginning at a young age, which embraces sustainable transportation alternatives and understanding the rules of the road.

Since beginning our partnership with SFUSD in 2012, the SFMTA has worked with and trained over 75 PE teachers and served more than 6,750 students at 3 elementary schools, 16 middle and K-8 schools, and 13 high schools.

In this partnership we have begun working on a permanent in-school bike education program at all 72 elementary schools, 21 middle schools and 19 high schools in San Francisco within the next 5 years.

BICYCLE OUTREACH & ADULT EDUCATION

Through a partnership with the San Francisco Bicycle Coalition, the SFMTA offers bicycle safety classes and provides resources both in print and online about safe bicycle-riding practices. The program provides on-street bicycle riding and bicycle maintenance classes to adults and youth. All of the bicycle safety classes are free and open to the public, and all skill levels are welcome to attend.

Since 2007, over 10,000 youth and adults have attended one of nearly 400 events to learn about the rules of the road, and how to safely bicycle on the streets of San Francisco.

In 2018 we increased the size of our adult education classes while reducing their frequency, resulting in reaching over 750 individuals. In coming years, the SFMTA plans to focus on adult education in immigrant communities, with at least 5 non-English monolingual classes per year.

SUNDAY STREETS

Sunday Streets is a program of the nonprofit Livable City presented in partnership with the SFMTA, San Francisco Department of Public Health, and the City and County of San Francisco. During 10 annual events, Sunday Streets reclaims 1-4 miles of car-congested streets and transforms them into temporary open spaces filled with free recreational activities. With a focus on serving communities of concern throughout San Francisco, Sunday Streets encourages physical activity and community building to reduce health disparities citywide and inspire residents to think differently about how their streets can be used as public, community spaces for health and well-being.

Sunday Street's vision for next 3 years:

- Serve all current Sunday Streets communities with a minimum of 2 annual events by building capacity with community and city stakeholders
- Develop new Sunday Streets routes, with a focus on serving the Visitacion Valley and Chinatown communities
- Expand economic development programs, including:

  The *Event Ambassador* program that employs local residents in meaningful community engagement and event production work, many of whom are TAY (transition-aged youth, 18-24), seniors, or formerly homeless individuals

  Explore Local program that engages small businesses on struggling commercial corridors to partake in free shop local campaigns, site activations, and collaborations with neighborhood community-based organizations.

BIKE RACKS ACROSS THE CITY

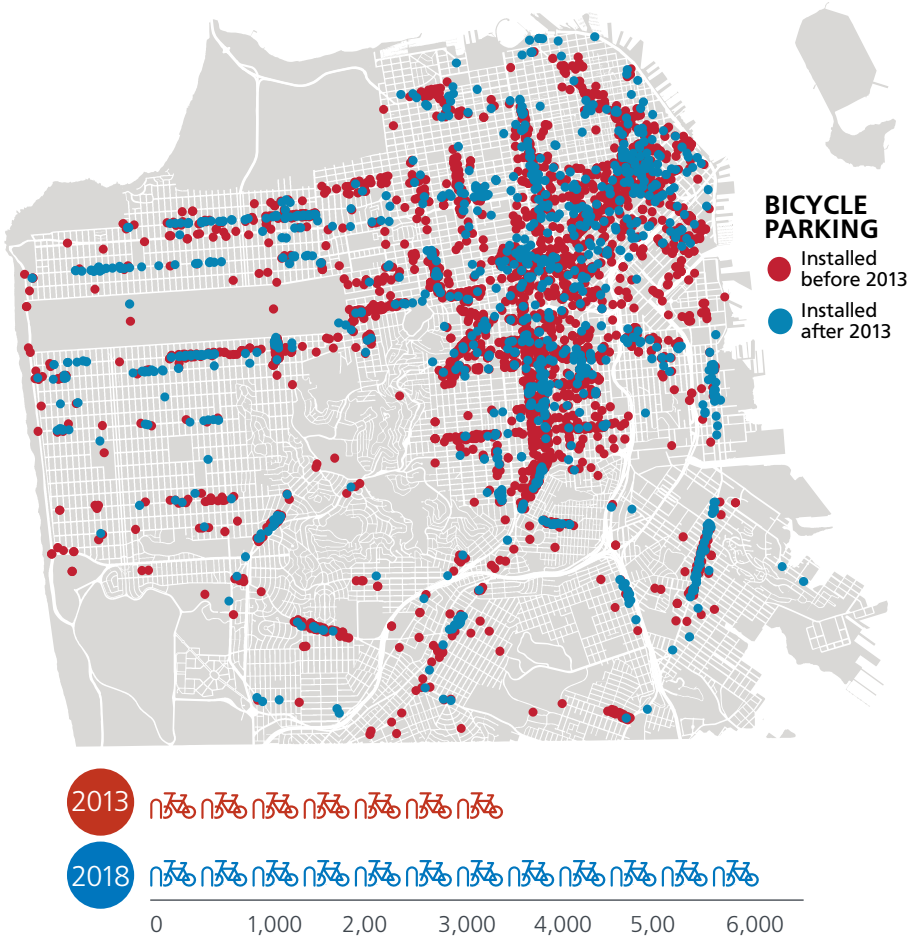
Having a safe, accessible and convenient place to park a bicycle is just as important as having a safe and comfortable route when getting there. Concerns about bike security and theft have a major impact on decisions to ride. As such, bicycle parking plays a key role in supporting San Francisco's bike network. To encourage more people to travel by bicycle and support those riding today, the SFMTA maintains over 6,000 bicycle racks, 70 on-street bicycle corrals, and 50 bike lockers. **The SFMTA plans to field up to 1,000 work requests for short-term bike parking installation in each of the next three years.**

BIKE PARKING & TRANSIT

In addition to bike parking maintained by the SFMTA, BART provides bike stations at their Civic Center and Embarcadero stations. Bike racks are maintained by BART at the Powell St, 16th St/Mission, 24th St/Mission, Glen Park, and Balboa Park stations. Caltrain also maintains long-term bike parking at their 4th & King terminal.

BIKE PARKING GUIDELINES

In 2017 the SFMTA released an update to their Bicycle Parking Guidelines, a resource for determining the spacing, materials, specifications, and overall best practices for building short- and long-term bicycle parking by either public agencies or private parties on both public and private property. The SFMTA also works with the City Planning Department to ensure planning code updates increase requirements for bike parking. The Transportation Demand Management program also provides extra incentives for developers to install bike parking for irregular bikes like cargo bikes or family cycles.



LONG-TERM BIKE PARKING STUDY

The SFMTA has recently completed the Business Plan for Long-Term Bicycle Parking, which identifies specific locations for meeting long-term bike parking demand. The study is focused on bike parking solutions in three high-demand areas: the Salesforce Transit Center neighborhood, the Mid-Market corridor, and the West Portal Muni Station area. The plan informs the SFMTA's next steps for bike station design and construction.

PERSONAL MOBILITY - BIKE SHARE & SCOOTERS

FORD GOBIKE

As of December 2018, Ford GoBike system operates 146 bikeshare stations in San Francisco serving the downtown, SOMA, Tenderloin, Mission Bay, Upper Market, Castro, Dogpatch, Bayview and Mission district neighborhoods. Phased expansion over the next two years will bring more bikeshare coverage to Dogpatch, the Bayview, NoPa, Haight-Ashbury, and Golden Gate Park. Bike share is a vital component in the citywide transportation system, extending the reach of existing transit lines, improving mobility options for short trips, and eliminating some pre-existing barriers to bike riding.

Bay Area Bike Share, the predecessor to Ford GoBike, launched as a pilot program in the San Francisco Bay Area in 2013. A subsequent seven-year agreement by the Metropolitan Transportation Commission (MTC), Motivate, and the Ford Motor Company will expand the system to a total of 320 stations. The SFMTA has recently engaged in closer collaboration with Motivate in an effort to better reach underserved communities; bike share is intended to serve, be convenient, and be easy to use for all of San Francisco's residents.

STATIONLESS BIKE SHARE

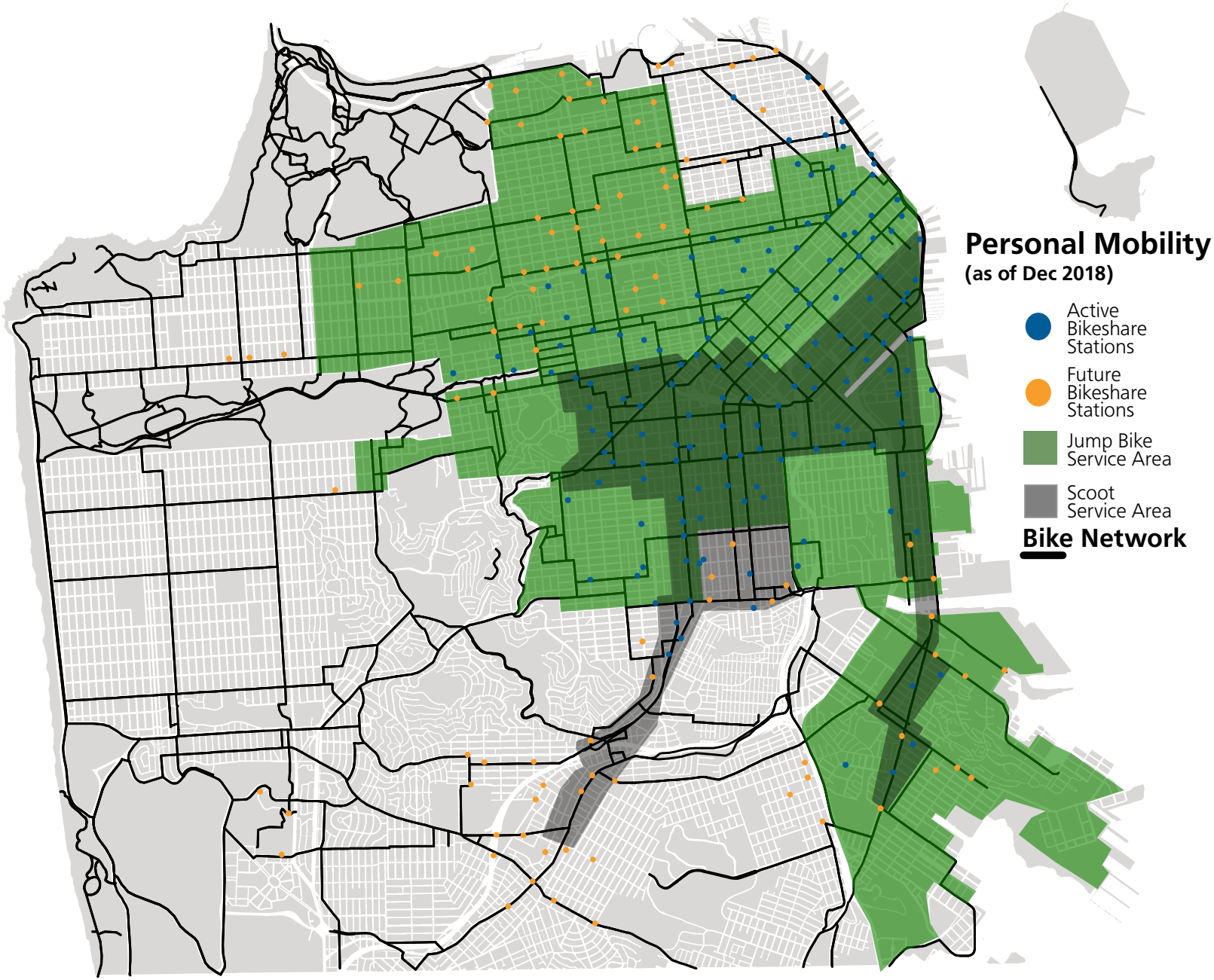
In January 2018, the SFMTA launched an 18-month electric bike (e-bike) pilot with JUMP Bikes. Under the 250-bike pilot period, the SFMTA is working with JUMP Bikes to study travel patterns, user behaviors, and other impacts which users of the system have on the existing mobility network. The data and findings will directly inform any permanent e-bike policies in the coming years.

SCOOTER SHARE

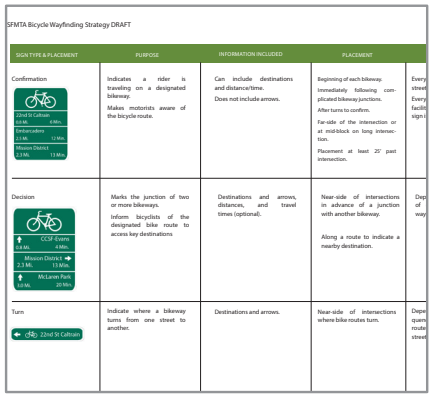
We established the Powered Scooter Share Permit and Pilot Program in June 2018 after the Board of Supervisors unanimously passed a city law requiring that any company operating a shared, powered scooter service in San Francisco must have a permit from the SFMTA to park their scooters on sidewalks and other public spaces. As part of the pilot, up to five permits were potentially available with a cap of 2,500 scooters total. In August 2018 after a thorough review of 12 applications, we approved two permits—one to Scoot and one to Skip—based on the applicants' responses to our stated requirements. Permits were issued on October 15th;each company was allowed a maximum of 625 scooters in the first six months, followed by a potential increase to 2,500 maximum by both companies during months seven to twelve.

More information can be found at https://www.sfmta.com/projects/powered-scooter-share-permit-and-pilot-program

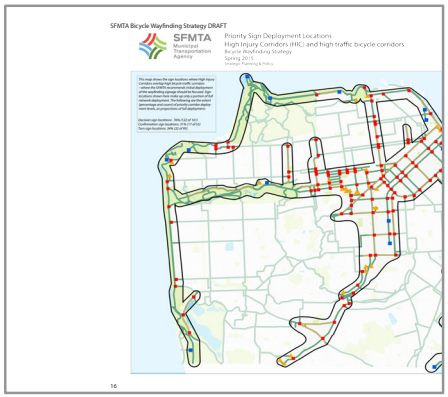
PERSONAL MOBILITY - BIKE SHARE & SCOOTERS



BICYCLE WAYFINDING PROGRAM


SFMTA Bicycle Wayfinding Strategy DRAFT

SIGN TYPE & PLACEMENT	PURPOSE	INFORMATION INCLUDED	PLACEMENT	
Confirmation 22nd St Caltrain 6 Min Embarcadero 12 Min Mission District 13 Min	Indicates a rider is traveling on a designated bikeway. Makes motorists aware of the bicycle route.	Can include destinations and distance/time. Does not include arrows.	Beginning of each bikeway. Immediately following complicated bikeway junctions. After turns to confirm. Far-side of the intersection or at mid-block on long intersection. Placement at least 25' past intersection.	Every street Every facili sign
Decision CCSF Events 4 Min Mission District 15 Min McLaren Park 20 Min	Marks the junction of two or more bikeways. Inform bicyclists of the designated bike route to access key destinations	Destinations and arrows, distances, and travel times (optional).	Near-side of intersections in advance of a junction with another bikeway. Along a route to indicate a nearby destination.	Dep of way
Turn 22nd St Caltrain	Indicate where a bikeway turns from one street to another.	Destinations and arrows.	Near-side of intersections where bike routes turn.	Depe quan route street



Wayfinding, a system of information signs along key bike routes, helps keep people on the right track when bicycling to their destination. Wayfinding improves safety, confidence and comfort for bicyclists, and encourages more people to bike by providing a visible reminder of just how easy and convenient it is to reach your destination on two wheels.

In 2014 the SFMTA adopted the Bicycle Wayfinding Strategy (BWS) to implement a new citywide bicycle wayfinding system in San Francisco. The BWS report provides a framework for understanding needs, best practice guidelines, and design recommendations for world-class wayfinding. Best practice design features from the National Association of City Transportation Officials Bikeway Design Guide were incorporated into the process and three final sign types were recommended for implementation.

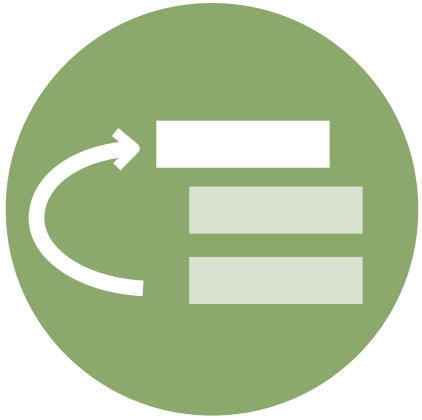
Placement of signs is a major factor in their usefulness and overall impact. When designing the placement of wayfinding signs, the following factors & destinations were considered:

- **Neighborhood Commercial Corridors**
- **Parks and Beaches**
- **Tourist Destinations and Museums**
- **Colleges and Universities**
- **Hospitals**
- **Transit Hubs**

The SFMTA piloted 100 new wayfinding signs, of all three sign styles, in the Sunset neighborhood in 2016. Input gathered from residents and bicyclists informed our adjustments to locations and improved final designs guidelines.

Full implementation of the bicycle wayfinding network, using the final design guidelines, is currently underway. By the end of 2019, the SFMTA will have installed approximately 1,200 new bike wayfinding signs Citywide.

PROJECT PROCESS



How we design, prioritize and implement bike projects

PROJECT DELIVERY & EVALUATION

The SFMTA has developed several different programs for bikeway project delivery & evaluation. This flexibility allows us to deliver projects where they are most needed, when they are most needed. Effective evaluation helps us understand the true impact of our work and refines our project approach for more successful project delivery in the future.

BIKE SAFETY & CONNECTIVITY SPOT IMPROVEMENT PROGRAM

Maintaining expectations of comfort and safety is important when designing and delivering bikeways. Equally important to the comfort of any given route is the consistency of that comfort through the network. This practice has evolved into the SFMTA's Bike Safety and Connectivity Spot Improvement Program, which implements specific localized solutions for promoting bicycle safety, comfort, and connectivity around the city. Specific locations are identified primarily through crash analysis, the Bike Strategy, and requests from stakeholders.

Potential improvements include: striping and signing changes, signal hardware or timing modifications, addition/modification of raised elements such as safe-hit posts and concrete islands, addition of colored markings, bike boxes, wayfinding, and bike turn lanes. Five to ten projects are designed and implemented each year.

CONSTRUCTION COORDINATION PROGRAM

Through the Construction Coordination Program,we work jointly with other agencies and utilities conducting construction on San Francisco's streets to improve walking, biking, traffic calming, and safety around schools. By coordinating with ongoing construction and paving projects, the SFMTA is able to deliver bike improvements more quickly and save money on construction costs. The program delivers 10-15 projects a year.

RESIDENTIAL TRAFFIC CALMING PROGRAM

Speeding motor vehicles are the chief cause of all roadway injuries in San Francisco. To address that concern, SFMTA's resident-directed, application based Residential Traffic Calming Program focuses on implementing strategies to reduce mid-block speeding on neighborhood streets. These interventions have the added benefit of improving safety and comfort for people on bikes. The program receives an average of 100 applications annually, and accepts and implements approximately 50 projects per year.

QUICK AND EFFECTIVE IMPLEMENTATION PROGRAM

Bike projects can sometimes take years between the planning stage and construction. The SFMTA is experimenting with ways to speed up the process: planning, design, approval, and environmental review are all run in tandem (where possible) to compress the delivery schedule. Decisions around materials used and flexibility in the initial design can also allow for the speeding up of projects. Through this program, the SFMTA delivered protected bike lanes and transit boarding islands on 7th Street and 8th Street in 9 months.

SAFE STREETS EVALUATION PROGRAM

The SFMTA is committed to understanding, evaluating and reporting on how projects affect neighborhoods. The Safe Streets Evaluation program takes a data-driven design perspective on street safety that engages the public and decision makers, and lays the groundwork for future projects through "proof of concept" projects. Since it was launched in early 2017, the program has completed evaluations and published findings for 15 projects. In addition, approximately twenty other project evaluations are currently underway. Evaluation includes monitoring project locations for changes in behavior, safety, and mode choices; community surveys and economic benefit analysis can also be a part of project evaluation.

The following toolbox shows popular examples of treatments and general technical guidance already in use around our city.

BIKE TRAFFIC SIGNAL

Bike traffic signals can be used in combination with protected intersections, when bike traffic flows need to be separated from turning movements, or to give bicyclists a leading interval when the lights change.

SIGNAL CHANGES – GREEN WAVE

Modified traffic signal timing along a street so that bicyclists get an uninterrupted series of green lights along a key bicycling corridor. This means fewer stops-and-starts for people on bikes, helping folks retain their momentum and cut their travel times.

SAFE HIT POSTS OR CONCRETE ISLANDS

Vertical separation between the bikeway and the rest of the roadway, giving bicyclists greater comfort and safety. Vertical separation comes in a wide range of treatments.

CONFLICT ZONE STRIPING

Additional bikeway striping at merging locations increases visibility of bicyclists, adds clarity to existing bicycle pavement markings, and clearly defines where vehicles should be expected to merge across the bike lane.

INTERSECTION GUIDE MARKINGS

Pavement markings to guide bicyclists through an intersection and make the presence of bicyclists more visible to drivers. This treatment is especially helpful when a bikeway shifts laterally between one side of an intersection and the other.

BIKE BOXES

A marked area on the far side of a crosswalk to facilitate safer left turns for bicyclists. It addresses turning conflicts, visibility issues, and prioritizes bicyclists' movement at the intersection. Works especially well for turning movements to, or from, a protected bikeway.

TRANSIT BOARDING ISLANDS

Boarding islands on corridors with both transit and bikeways help keep bicyclists safe and transit on-time. A transit boarding island eliminates the conflict of a bus pulling across a bike lane to reach the curb, and keeping transit in-lane for boarding speeds up their travel times.

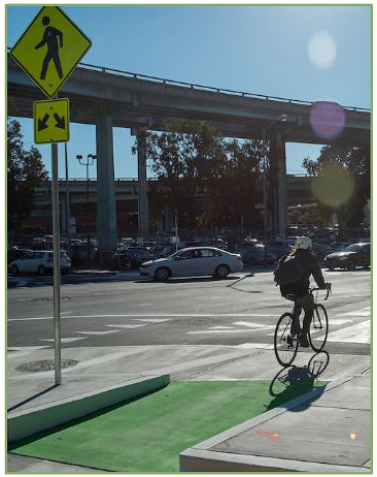
GREEN PAVEMENT

Green pavement is used in a variety of ways across San Francisco, usually to highlight the presence of bikes. It can be used to highlight bike lanes, striped through conflict points and intersections, or used to improve the visibility of sharrows.

TRAFFIC CIRCLES

Traffic circles improve safety at intersections without adding a STOP sign, slowing vehicle speeds and reducing the number of conflicts at an intersection. Too many STOP signs can reduce compliance; traffic circles allow a better flow of traffic while keeping vehicle speeds low – perfect for a Neighborway.

PROTECTED INTERSECTIONS



A suite of treatments meant to provide full separation of bicycles from vehicle traffic through an intersection. Additional curbing and bikeway alignment slows turning vehicles and makes bicyclists more visible to drivers before they make a turning movement.

RAISED CROSSWALKS

Similar to speed humps, but with a flat middle portion that can be used by pedestrians. Speed tables lower vehicle speeds to 15-20 mph, encouraging safer driver behavior on Neighborway streets with higher bicycle volumes.

DIVERTERS

Diverters close off automobile access to a street while allowing space for people on bikes to pass through. Neighborways are most comfortable and safe when speeds and volumes are lower, and diverters are useful tool for lowering traffic volumes on local streets.

METHODOLOGY

Prioritization for the 2019-2023 Capital Improvement Plan (CIP) starts with all potential bike projects: approximately 55 corridors identified by previous planning studies citywide. High-priority projects already underway (through either recommendation of the 2013 Bike Strategy, from a Supervisor's office or community support) make up nearly 70 percent of the programmed bicycle project funding in the CIP.

After these ongoing projects come those with significant citywide importance (e.g. locations on the Vision Zero High Injury Network), projects with strong community interest, projects where local development fees are specifically tied to bicycle improvement projects, and projects with recently completed planning studies. Projects identified in this stage account for approximately 15 percent of all bicycle funding in the updated CIP.

The remaining list of projects include remaining 2013 Bicycle Strategy corridors and new projects added due to community or Supervisor support. Projects chosen during this stage account for approximately 5 percent of all bicycle projects included in the upcoming 2-year budget cycle. The remaining 10 percent of bicycle projects are bundled small-scale projects and flexible funding for rapid-response projects not in the CIP, labeled as "Programmatic Projects".

STAGE ONE ANALYSIS

Stage One analyzes each potential project based on three separate categories:

1. Overlap with the Vision Zero High Injury Network
2. Bike Network Comfort Index scoring
3. Equity – scoring on equity was based off two separate factors.
    1) If the project corridor overlaps with MTC's communities of concern.[1]
    2) If there is an overlap with SFMTA's Equity Strategy Neighborhoods.[2]

STAGE TWO ANALYSIS

Stage Two analyzes corridors & projects based on factors critical to implementation that go beyond existing infrastructure and the physical space. Stage two utilizes three metrics:

1. Corridor overlap with Interagency Plan Implementation Committee (IPIC) neighborhoods [3]
2. Corridor overlap with the Department of Public Works paving schedule
3. Corridor overlap with commuter shuttle routes and stops (commuter shuttle fees provide additional funding for project implementation)

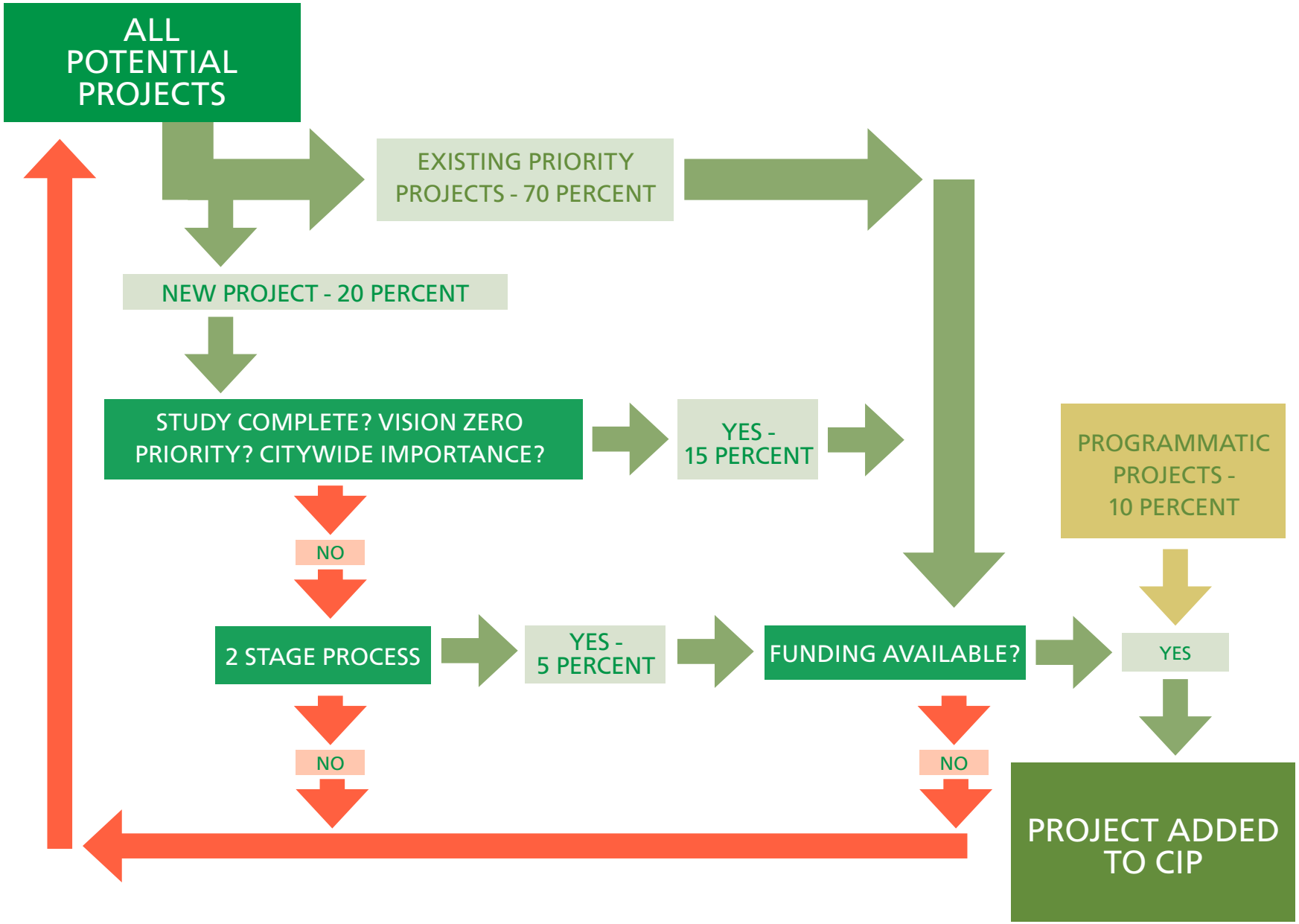
Stage two analysis can help identify modal conflicts (e.g., transit-only lanes may not mix well with bike lanes), funding constraints (e.g., special grants or opportunities available for specific neighborhoods), and existing city and county funding regulations (e.g., San Francisco cannot repave a road for a five years following a re-pavement effort by the Department of Public Works due to city Excavation Code).

1- Minority (70% threshold), Low-Income (less than 200% of Fed. poverty level, 30% threshold), Level of Eng. Prof. (20% threshold), Elderly (10% threshold), Zero-Vehicle Households (10% threshold), Single Parent Households (20% threshold), Disabled (25% threshold), Rent-Burdened Households (15% threshold). If a tract exceeds both threshold values for Low-Income and Minority shares OR exceeds the threshold value for Low-Income AND also exceeds the threshold values for three or more variables, it is a COC.

2 - The neighborhoods were selected based on the percentage of households with low incomes, private vehicle ownership and race and ethnicity demographics.

3 - Defined as the following districts: Balboa Park, Eastern Neighborhoods, Glen Park, Market and Octavia, Transit Center, Rincon Hill and Visitacion Valley

PRIORITIZING PROJECTS & FUNDING FOR THE CIP



FUNDING

Short-term and long-term funding scenarios for bike projects

CIP FUNDING SCENARIOS

While this report only covers the next three years, it's important to understand what type of funding is necessary to accomplish the agency's long-term goals for bicycling. The following five-year and twenty-year funding scenarios are based on current available funding sources and cost estimates derived from internal project manager estimates.

Two twenty-year funding scenarios are presented to contrast constrained or enhanced funding sources over the next twenty years. Both scenarios focus on expanding our bicycle network and improving overall comfort and safety, but do so at two different scales of implementation.
All scenarios retain 12 percent for maintenance and upkeep of the existing system.

5-YEAR FUNDING SCENARIO

$141.5 million

- Funding from federal, state, regional, and local sources

5-YEAR SCENARIO PROJECTS

33 miles of protected bike lanes
12 miles of buffered bike lanes
25 miles of neighborways
5 bike signals at heavily congested intersections
100 bicycle lockers and
3,000 bike parking spaces citywide

20-YEAR FUNDING SCENARIO - ENHANCED

$821 million

$542 million in continuation of all current fund sources at same rates, escalated annually
+$111 million in new sales tax measure revenue with same allocation to bikes as 2003 Proposition K
+118 million in anticipated vehicle license fee revenues
+25 million in RM3 revenues
+25 million in congestion pricing revenues

20-YEAR SCENARIO PROJECTS - ENHANCED

165 Miles of protected bike lanes
50 Miles of buffered bike lanes
100 Miles of neighborways
60 bike signals at heavily congested intersections
75 new automated bicycle counters
3 bike stations (600 bike parking spaces)
500 bicycle lockers and
10,000 bike parking spaces citywide

20-YEAR FUNDING SCENARIO - CONSTRAINED

$355 million

$542 million in continuation of all current fund sources at same rates, escalated annually
-$70 million reduction in Prop A funds
-$26 million reduction in EP39 funding
-$14 million reduction in ATP funding
-$28 million reduction in IPIC funding after 2026
-$49 million reduction in lost revenue bond funds

20-YEAR SCENARIO PROJECTS - CONSTRAINED

60 Miles of protected bike lanes
40 Miles of buffered bike lanes
60 Miles of neighborways
30 bike signals at heavily congested intersections
35 new automated bicycle counters
1 bike station (200 bike parking spaces)
250 bicycle lockers and
5,000 bike parking spaces citywide

FUNDING SOURCES

Most revenue for transportation projects is raised by fuel taxes, sales taxes and other fees. In the Bay Area, the largest share of this funding for projects is generated locally, with smaller portions coming from state and federal sources. The following is a list of funding sources identified for bicycle projects in the SFMTA FY 2019-2023 CIP:

SFMTA

- SFMTA Operating Funds
- SFMTA Revenue Bond
- Commuter Shuttle Revenue

CITY & COUNTY OF SF

- Proposition A General Obligation Bond
- Proposition B Population Baseline Funds
- Proposition K sales tax
- Transportation Fund for Clean Air, County Program Manager Funds
- Developer Contributions
- Development Impact Fees, Interagency Planning Implementation Committee
- Transportation Sustainability Fee

REGIONAL SOURCES

- Transportation Development Act – Article 3
- Transportation Fund for Clean Air, Regional Funds

STATE OF CALIFORNIA

- Caltrans Active Transportation Program Grant
- Strategic Growth Council/Housing and Community Development
- Affordable Housing and Sustainable Communities

POTENTIAL NEW FUNDING SOURCES

- Local and/or Regional Transportation Sales Taxes
- Local and/or Regional Congestion Impact Fees
- Property and other municipal taxes or fees
- Public Private Partnership financial packages
- Other State and Regional discretionary program

METRICS

What we measure to stay accountable

2019 SFMTA BIKE PROGRAMS REPORT - BENCHMARK METRICS

SFMTA developed four metrics related to our workplan, allowing us to measure year-over-year progress. This will provide the SFMTA and the public with a clear record of the agency's commitments and an accountability mechanism for our future work. These measurements can then reliably guide future project development and delivery for all users of San Francisco's streets.

METRIC 1: IMPROVE SAFETY, COMFORT & CONNECTIVITY FOR ALL PEOPLE TRAVELING BY BIKE

METRICS	MILEAGE AS OF 12/31/18	2019/20 TARGET	2020/21 TARGET	2021/22 TARGET
Total miles of protected bikeway installed	22	30	42	49
Total miles of neighborways installed	3	6	10	18

METRIC 2: BIKE PARKING IMPLEMENTATION & UTILIZATION

METRICS	2019/20 TARGET	2020/21 TARGET	2021/22 TARGET
Short-term bike parking installed	750 total work order requests	1,500 total work order requests	2,250 total work order requests
Increase utilization of existing long-term parking	15% increase over 2017/18	15% increase over 2018/19	15% increase over 2019/20
Implementation of Long Term Bicycle Parking Business Plan	Start of implementation	Substantial implementation of plan guidelines	Substantial implementation of plan guidelines

METRIC 3: EXPAND BIKE EDUCATION & ACCESS

METRICS	2019/20 TARGET	2020/21 TARGET	2021/22 TARGET
SFUSD schools receiving in-school bicycle education	20	22	45
Provide more bicycle education for monolingual communities	15% of classes provided in Spanish, Chinese and Filipino	15% of classes provided in Spanish, Chinese and Filipino	15% of classes provided in Spanish, Chinese and Filipino

METRIC 4: SFMTA PROJECT DELIVERY, ACCOUNTABILITY & TRANSPARENCY

METRICS	2019/20 TARGET	2020/21 TARGET	2021/22 TARGET
Planned Bicycle project initiation rate	95% of CIP projects active	95% of CIP projects active	95% of CIP projects active
Funding allocated to bicycling infrastructure	$20,000,000	$20,000,000	$50,000,000
Participation in outreach activities per year	4,500 people per year	6,500 people per year	9,000 people per year