

APPENDIX A

Plan Alignment with 2025 California Streets and Highways Code



Section 891.2 of the Streets and Highways Code (SHC) outlines the required elements that need to be included in a bicycle transportation plan to allow a county or city to apply for funding for bikeways and related facilities to implement the plan. This Plan's alignment with Section 891.2 of the Streets and Highways Code is outlined in the table below.

Table A-1: Bicycle Master Plan Alignment with SHC 891.2

SHC 891.2	Required Plan Element	Bicycle Master Plan
a	Estimate of existing bicycle commuters and estimate of increased bicycle commuters with implementation of plan.	The City of San Diego's Climate Action Plan annual monitoring reports reference data from the American Community Survey to report on commuter trips completed by bicycle. After the adoption of this Bicycle Master Plan, changes in commute behavior may be monitored.
b	Map and description of existing and proposed land uses: residential neighborhoods; schools; shopping center, public buildings, and major employment centers.	A map and general description of land uses in the City of San Diego are included in the City's General Plan, Blueprint SD . Blueprint SD establishes the long-term vision and framework that shape how and where the city grows. In addition, the City has 49 community plans, which cover 52 community planning areas. These community plans include detailed land use maps as well as community-specific policies on land use, mobility, urban design, public facilities and services, natural resources, historic and cultural resources and economic development that guide local growth and development.
c	Map and description of existing and proposed bikeways.	Refer to Figures 3-3 and 5-1 as well as associated text in this Plan.
d	Map and description of existing and proposed end-of-trip bicycle parking facilities.	Short-term and long-term bicycle parking for multi-family housing and non-residential uses are required per San Diego Municipal Code Chapter 14, Article 2, Division 5. This development regulation determines which land uses are required to install bicycle parking on private property. Additional information on existing bicycle parking facilities is included in the response to SHC 891.2 e, below.

SHC 891.2	Required Plan Element	Bicycle Master Plan
e	Map and description of existing and proposed bicycle transport and parking facilities for connections with and use of transportation modes. (e.g. mobility hubs, transit lockers, etc.)	The San Diego Association of Governments (SANDAG) manages bicycle parking at over 72 locations across the San Diego region. These locations have been established to align with critical transit hubs in the City of San Diego and surrounding jurisdictions. Additional information, including a map of bicycle facilities, can be found on SANDAG's Sustainable Transportation Services webpage. When budgeted, the City of San Diego Bike Program installs bike racks in the public right-of-way for businesses to encourage bicycling to daily activities such as shopping, riding to school and commuting. A number of these bicycle racks are located within close proximity to key transit stops. A map of existing bike racks located in the City of San Diego is available on the City of San Diego's Bicycling webpage.
f	Map and description of existing and proposed facilities for changing and storing clothes and equipment. (e.g. lockers, showers, etc.)	For non-residential uses, lockers and showers for biking commuters are required per City of San Diego Municipal Code (SDMC) 142.0530. Development projects subject the City's Mobility Choices regulations (SDMC Chapter 14, Article 3, Division 11) can provide lockers and showers above those required in SDMC 142.0530 (at least 10% more) to satisfy vehicle miles traveled (VMT) reduction measure points required by SDMC 143.1103(b)(3). Additionally, projects subject to Mobility Choices and/or Parking Standards Transit Priority Regulations (SDMC 142.0528(c)) can provide bike repair stations to satisfy requirements therein.

SHC 891.2	Required Plan Element	Bicycle Master Plan
g	Description of bicycle safety and education programs conducted in the plan area including efforts with local law enforcement and enforcement of provisions pertaining to bicycle operation and resulting effects on accidents involving bicyclists.	The City of San Diego's Police Department submits annual funding requests to the California Office of Traffic Safety grant program. A portion of these funds are allocated to bicycle safety and education programs in the City of San Diego. Example activities include walking audits, walk and bike to school days, safety presentations, and traffic safety fairs. Funding is also used for pedestrian and bicycle enforcement operations, which include highly publicized pedestrian and/or bicycle enforcement operations in areas or during events with a high number of pedestrian and/or bicycle crashes resulting from violations made by pedestrians, bicyclists, and drivers.
h	Description of the extent of citizen and community involvement in development of the plan with letters of support.	The City of San Diego received a Caltrans Sustainable Transportation Planning grant for the preparation of this Bicycle Master Plan. Letters of support for the grant application were received from: Circulate San Diego, Climate Action Campaign, San Diego County Bicycle Coalition, San Diego Regional Chamber of Commerce, San Diego Association of Governments, and Bike SD. In addition, the City hosted a number of Community Leader meetings throughout the preparation of the Bicycle Master Plan to ensure that community leaders were involved in the development of the Plan.

SHC 891.2	Required Plan Element	Bicycle Master Plan
i	Description of how the bicycle transportation plan has been coordinated and consistent with local/regional transportation, air quality, or energy conservation plans including incentives for bicycle commuting.	The City of San Diego has worked closely with staff from the San Diego Association of Governments (SANDAG) to integrate, build on, and connect to existing and planned regional bicycle network facilities. Chapter 6: Network Recommendations, provides additional details on regional coordination. SANDAG is responsible for regional air quality analysis and conformance with air quality standards through the preparation of the Regional Plan which is updated every four years. As such, the planned network's impact on active transportation use will be captured through a future update. The City of San Diego coordinates with SANDAG to offer free guaranteed rides home to City staff who commute to work by transit, bicycle, walking, carpooling, or vanpooling as part of the City's Transportation Demand Management (TDM) efforts.
j	Description of the projects proposed in the plan and their priority in implementation.	Refer to Chapter 6: Network Recommendations
k	Description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area	Table 10-2 in the Mobility Master Plan (MMP) includes prior year expenditures for mobility improvements including bicycle facilities from Fiscal Year 2019-2024. Future iterations of the MMP may include expenditures from additional years. Future financial needs for the bicycle network are included in the City of San Diego's 5-Year Capital Infrastructure Planning Outlook.

APPENDIX B

Phases I and II Engagement Summary





The City of
SAN DIEGO

Bicycle Master Plan Update

Engagement Summary

FEHR & PEERS | CityWorks
CR Associates



Funding for this study
provided by Caltrans' STPG program



Public Survey Results

Section Includes

Feedback Map

Trip Map

Long Form Survey

Three Survey Types Open from August to September 2024

	Survey Type	Total Contributions	Total Unique Contributors
Feedback Map	Spatial Survey	3423	697
Trip Map	Spatial Survey	1955	325
Long Form Survey	Long Form; 13 Questions	2912	2912

The BMPU project received a total of 8,290 total contributions across three surveys. This was the highest engagement of any Social Pinpoint site to date.

Feedback Map

Section Includes

Summary of Common Themes

Citywide Heatmaps of Feedback Map Data

Feedback Map Responses

Common Themes Across the Data

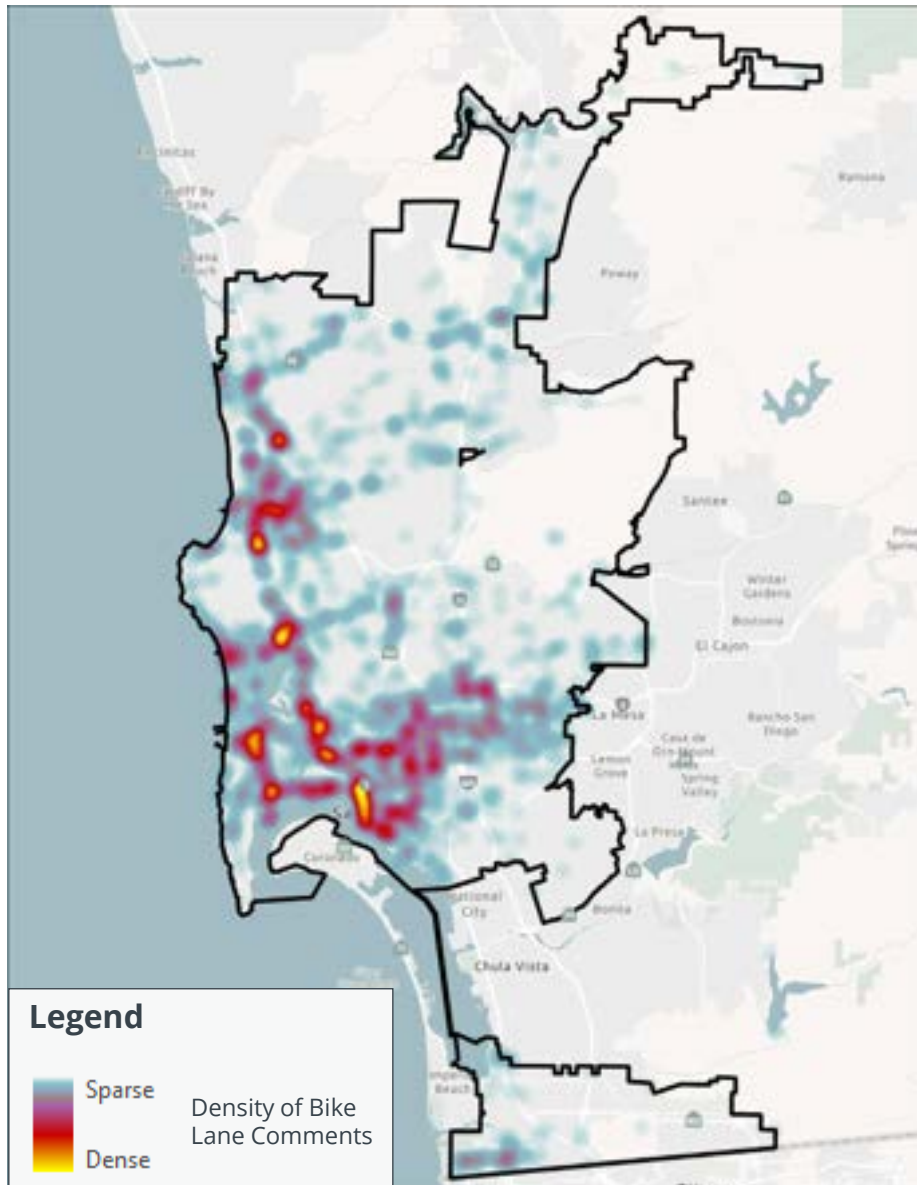
Note: Comments may be assigned to multiple tags

Tag	Key Words/Phrases from Responses	Count
Bike Lane	Protected, protection, protective, separated, separate, separation, bollards, barrier, barriers, pylons, dedicated, buffered, bike path, bike paths, path, bike lane, bike lanes, bikeway, bike way, bikeways, bike ways, bike route, bike routes, bicycle path, bike infrastructure, sharrow, greenway, bike use full lane, class I, bike street, bike boulevard, bike friendly, merge, merging, trail, bicycle infrastructure, bike track, modal filter, closing this road to motor, paint, place for bikes, bike lift, permanent infrastructure, bollard, bikelane, bicycle traffic, bicycle lanes	2,375
Unsafe Experience	Negative, horrible, unsafe, not safe, death trap, deathtrap, not welcoming, unpleasant, not good, dangerous, scary, frightening, hectic, no safe, fatalities, scariest, needs to be safer, needs to be safe, need a safe, miserable, safe way, insane, rough, terrifying, die, sketchy, make it safer, no go, no bueno, safe biking, safely, congested, feel safe, hard to	1,180
Protected Bike Lane	Protected, protection, protective, separated, separate, separation, bollards, barrier, barriers, class I, pylons, bollard, dedicated, buffered	998
Network Gap	Bike lane stops, bike lane ends, bikeway ends, need a bike lane, build a bike lane, no bike infrastructure, no bike lane, network gap, gap, connectivity, connect, disconnected, connected, bike lane disappears, randomly ends, path ends, track ends, just ends, ends abruptly, abruptly ends, it ends, lane ends, trail ends, closed, open the road, accessible, allow bikes, easily bike, bike line stops, bike bridge, state park, state parks, disappears, easier way, bike network, safe network, ferry, I want to go, I want to take my bike, I just want to get to the bike trail, detour, bridge, access the coast, by bike, public access, bike access, biking access	853
Freeway Crossing	Freeway, highway, freeway crossing, freeway crossings, cross freeway, freeway ramp, freeway ramps, interchange, onramp, on ramp, on-ramp, offramp, off ramp, off-ramp, off-ramps, I-5, the 5, 805, I-8, the 8, the 163, the 94, the 15, overpass, underpass	509
Vehicle Speeds	Cars speed, vehicles speed, speeding cars, high speed limit, posted speed, cars zooming, drivers speed, speed, drive very fast, too fast, fast traffic, speeding drivers, fast cars, hostile, dangerous driving, traffic calming, calm traffic, without caution, slow down traffic, slow cars down, road diet, heavy traffic, traffic will not stop, race track	508
Pedestrian	Pedestrian, crosswalk, walk, sidewalk, walkway, ped	507
Road Hazard	Potholes, pothole, pot holes, pot hole, glass, debris, gutter, garbage, litter, surface, pavement, bumpy, standing water, flooding, floods, flooded, re-pave, repave, re-paved, repaved, poor road, brush, erosion, rutted, branches, swept, door, doored, parked cars, hazard, road condition, diagonal parking, narrow road	411
Wayfinding	Wayfinding, way finding, signage, signs, sign, indication, flashing, vehicles aware	335
Transit	Transit, bus, train, trolley, Amtrak, Coaster	314
Near Miss	Near miss, near-miss, almost hit, was hit, nearly hit, been hit, sideswiped, merge, merging	160
Signal Detection	Signal, signals, timing, detection, detect, detector, detectors, sensor, sensors, recognize, button, trigger, traffic light, lights don't switch, activate, trip the light, responsive	140
Merging Conflicts	Merge, merging	131
Right on Red	Turn on red, right on red, turning right, turn right, right turn	124
Bike Parking	Bike parking, bicycle parking, bike rack, bike racks, bike locker, bike lockers, bike spots, bicycle storage, cycling storage, lock bikes, bicycle lockers, biking parking, park my bike	94
Youth	Youth, children, kid, schoolers	59
Inadequate Lighting	Lighting, dark, pedestrian light	45
Enforcement	Enforcement, enforce, enforced, ticket, violators, violate, police, rules, ticketing, officers	42
E-bike	E-bike, ebike, e-bikes, ebikes	41
Failure to Yield	Yield, right of way	33
Implementation Concerns	Bike lane not needed, taking away very needed parking spots, poorly thought out	4
No tag		135

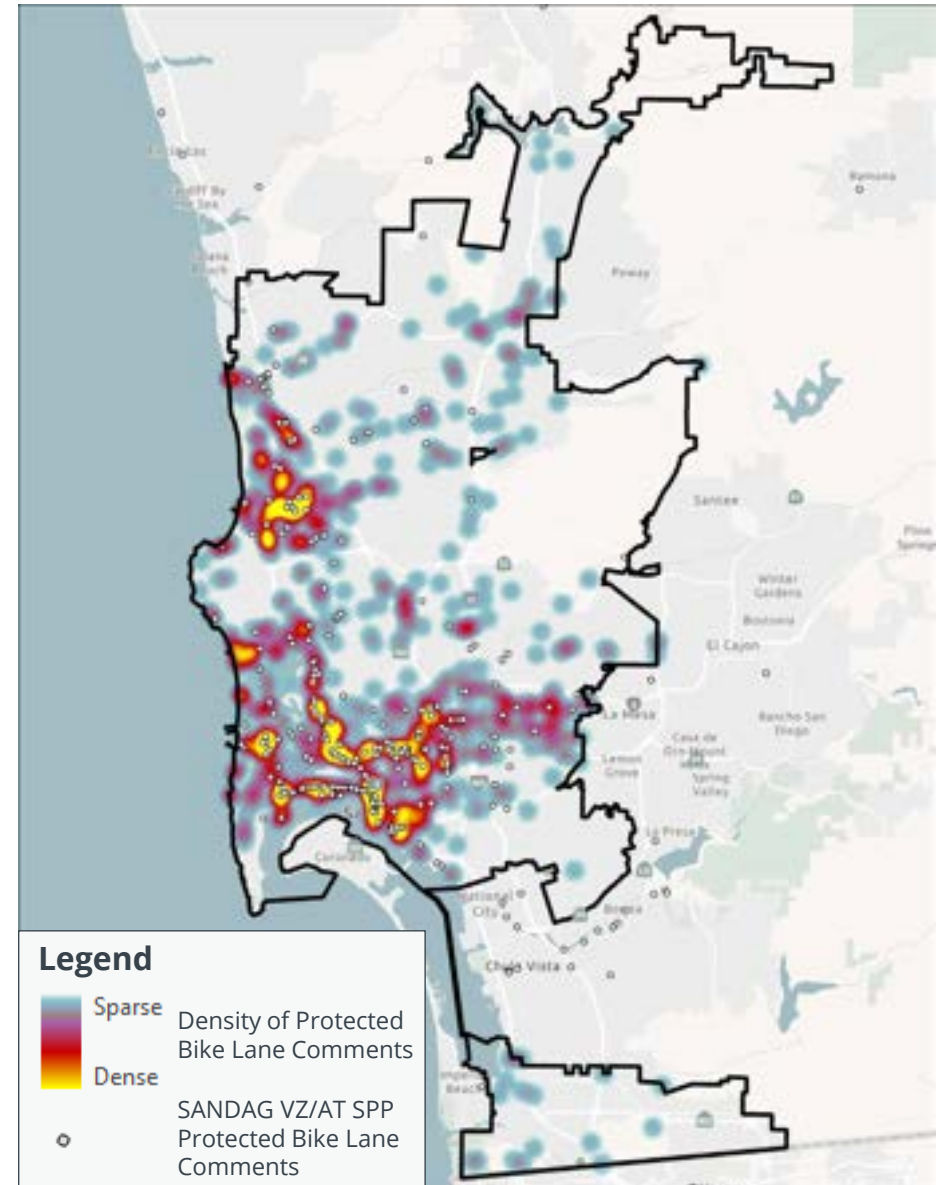
Feedback Map Responses

Heatmap of Bike Lanes Comments

Survey Tag: Bike Lanes



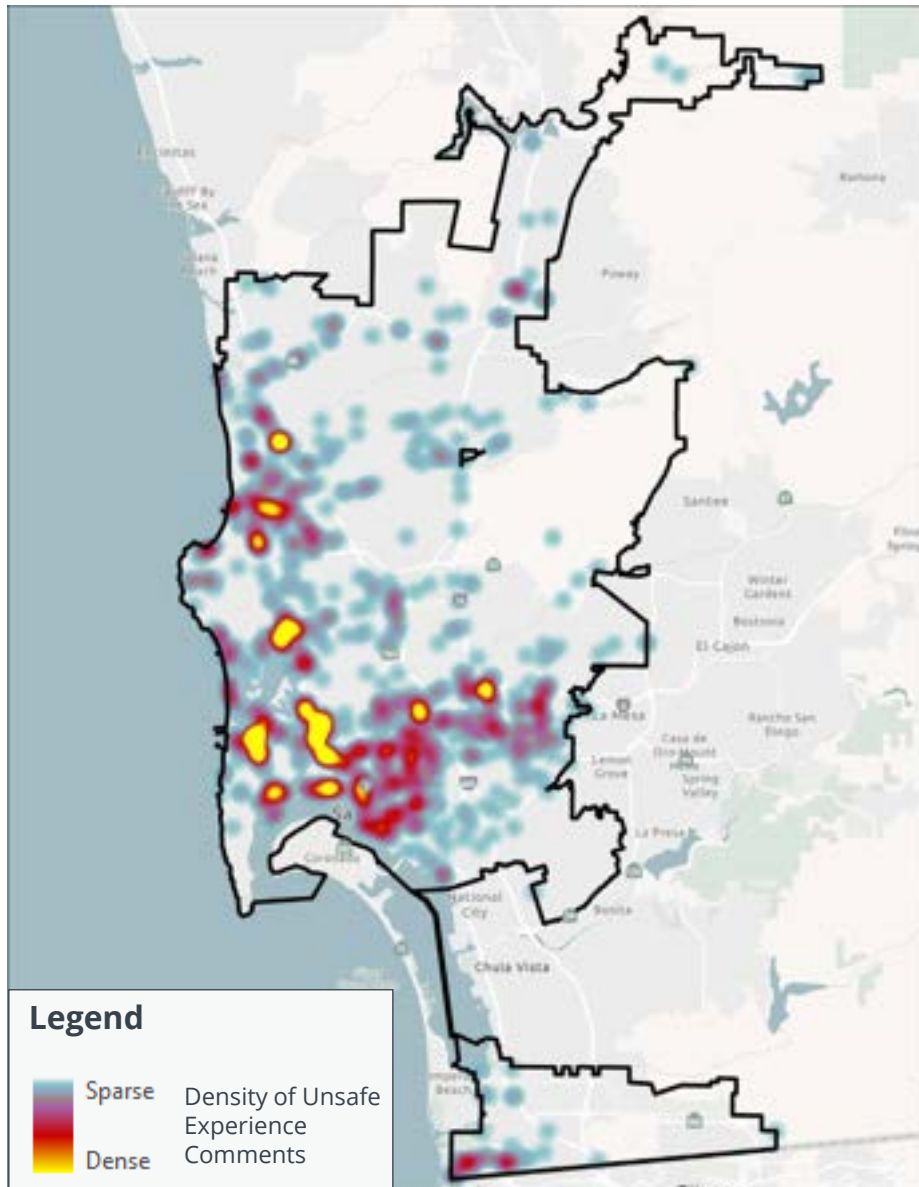
Survey Tag: Protected Bike Lanes



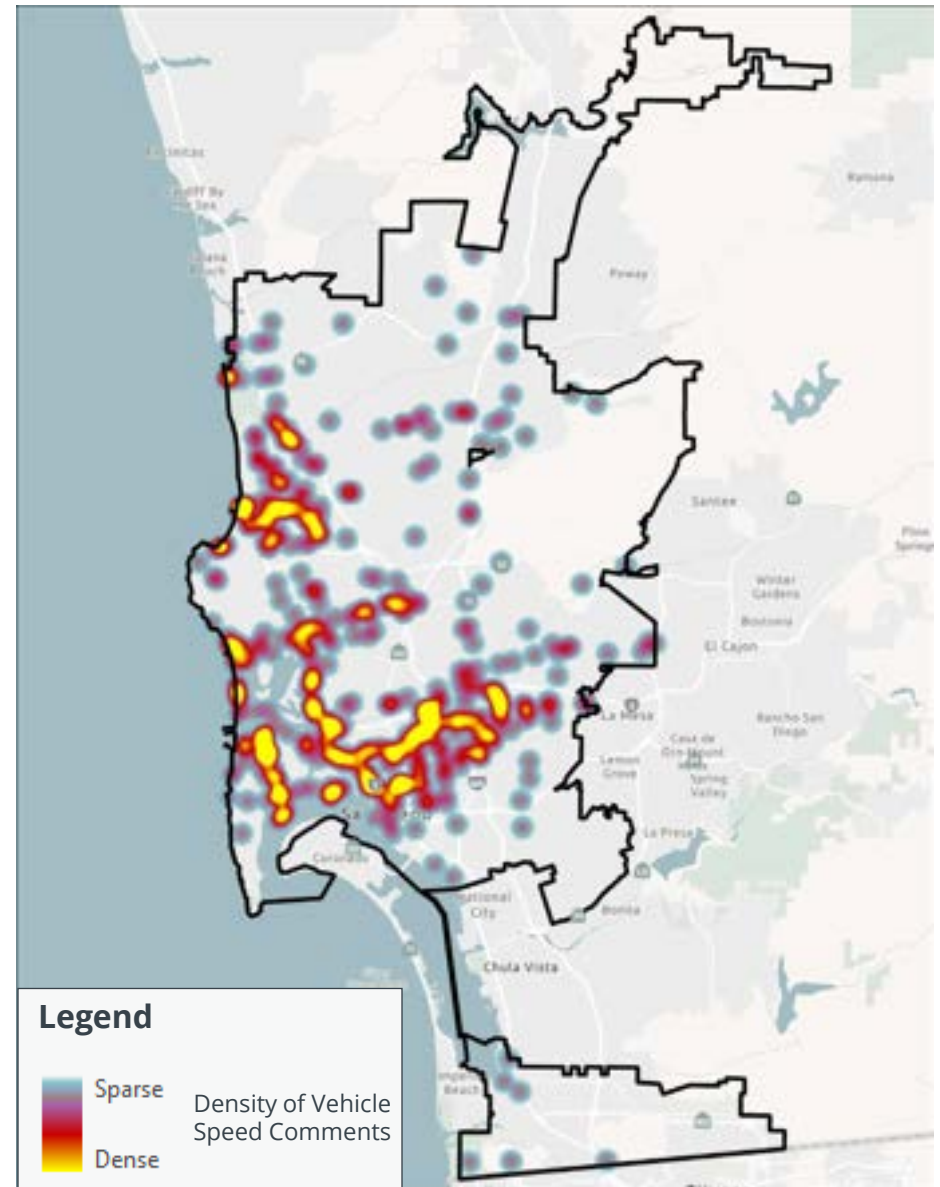
Feedback Map Responses

Heatmap of Unsafe Experiences and Vehicle Speeds Comments

Survey Tag: Unsafe Experiences



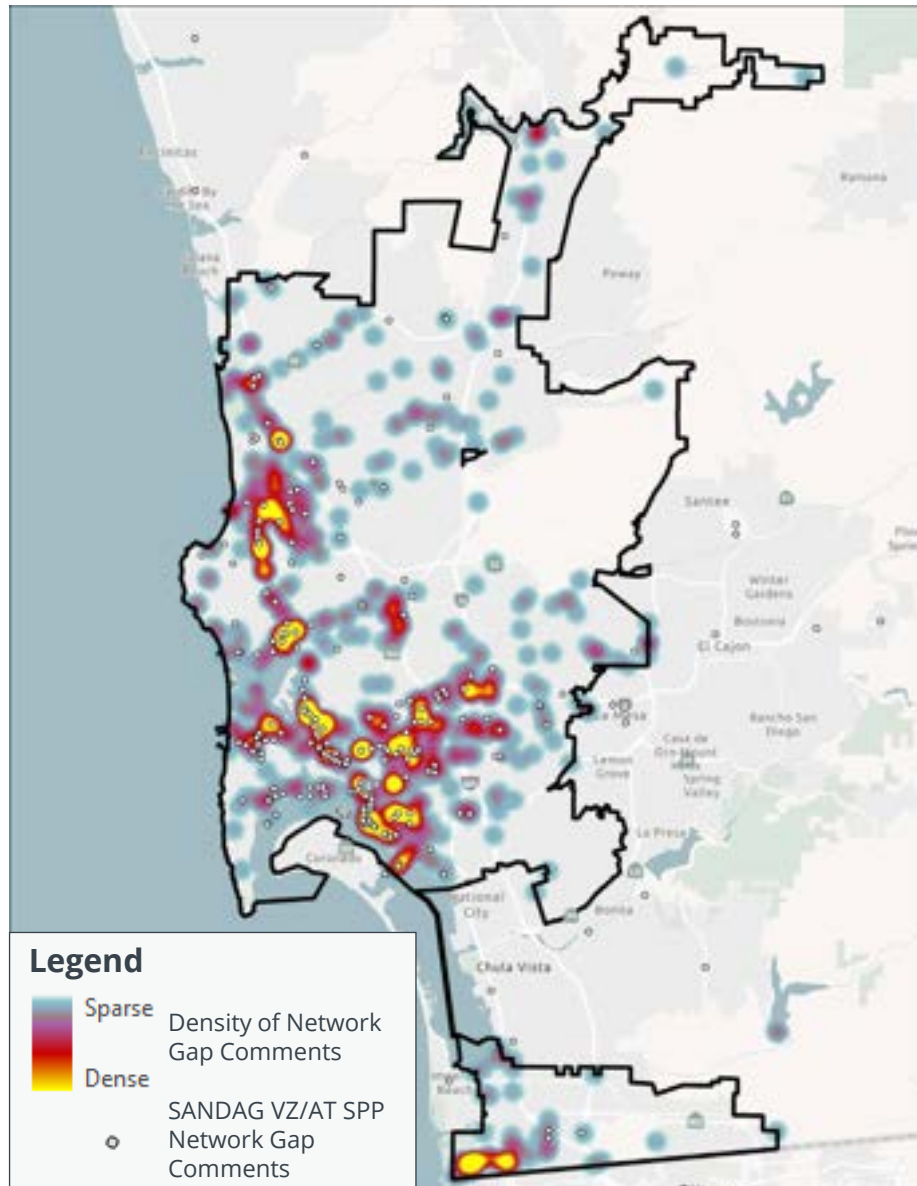
Survey Tag: Vehicle Speeds



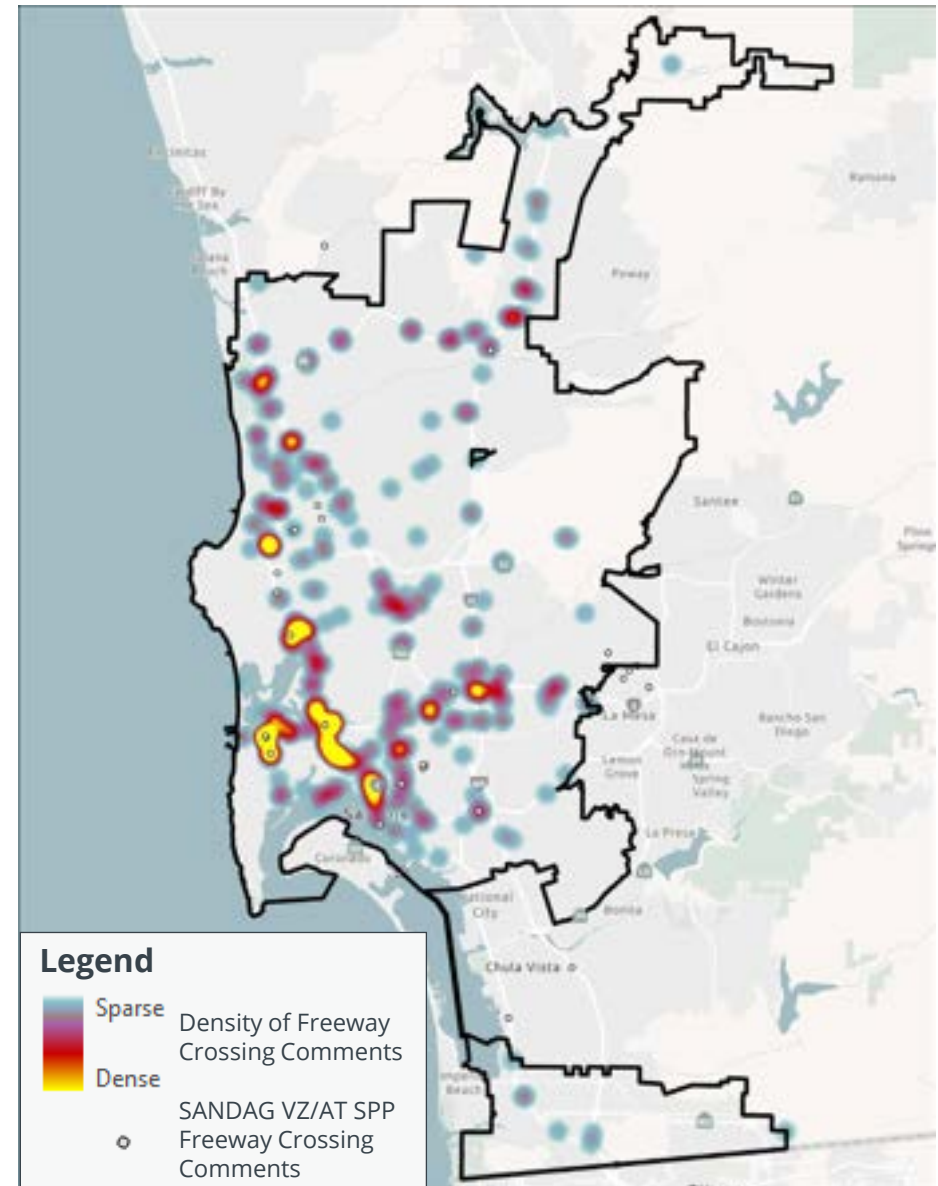
Feedback Map Responses

Heatmap of Network Gap Comments

Survey Tag: Network Gaps



Survey Tag: Freeway Crossings



Trip Map

Section Includes

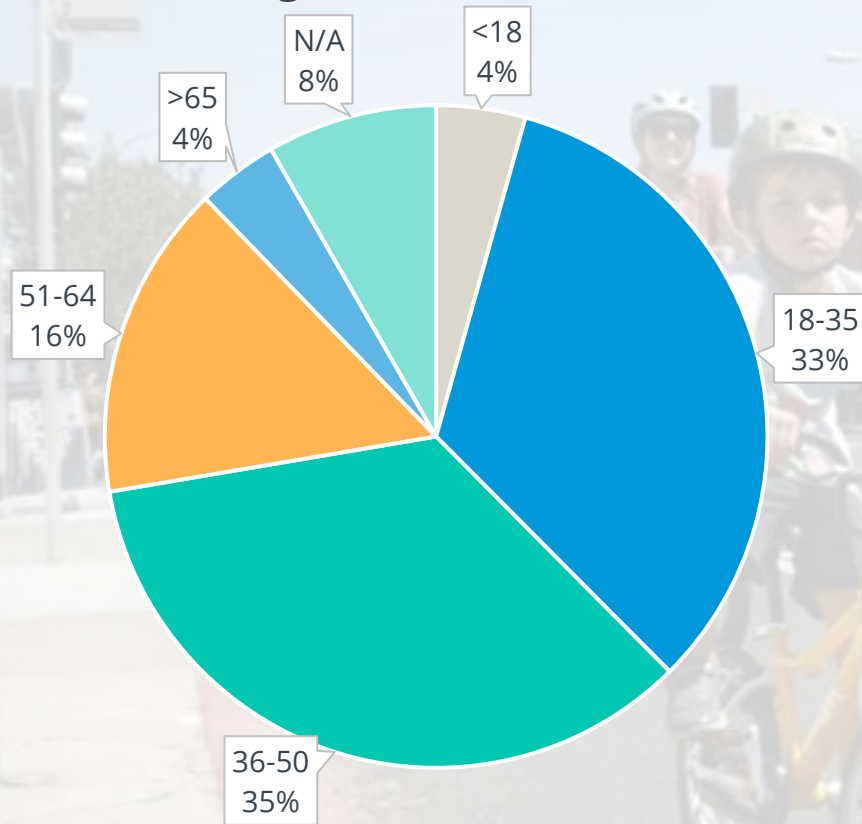
Survey Results Summary

Citywide Heat Maps of Trip Purpose

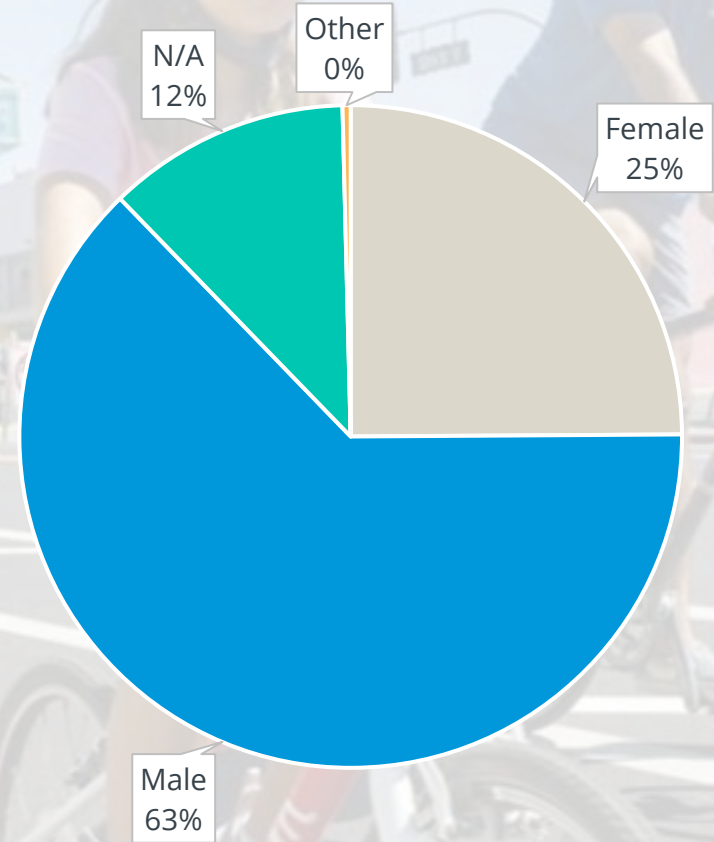
Trip Map Responses

Demographic Data by Response

Age of Contributors

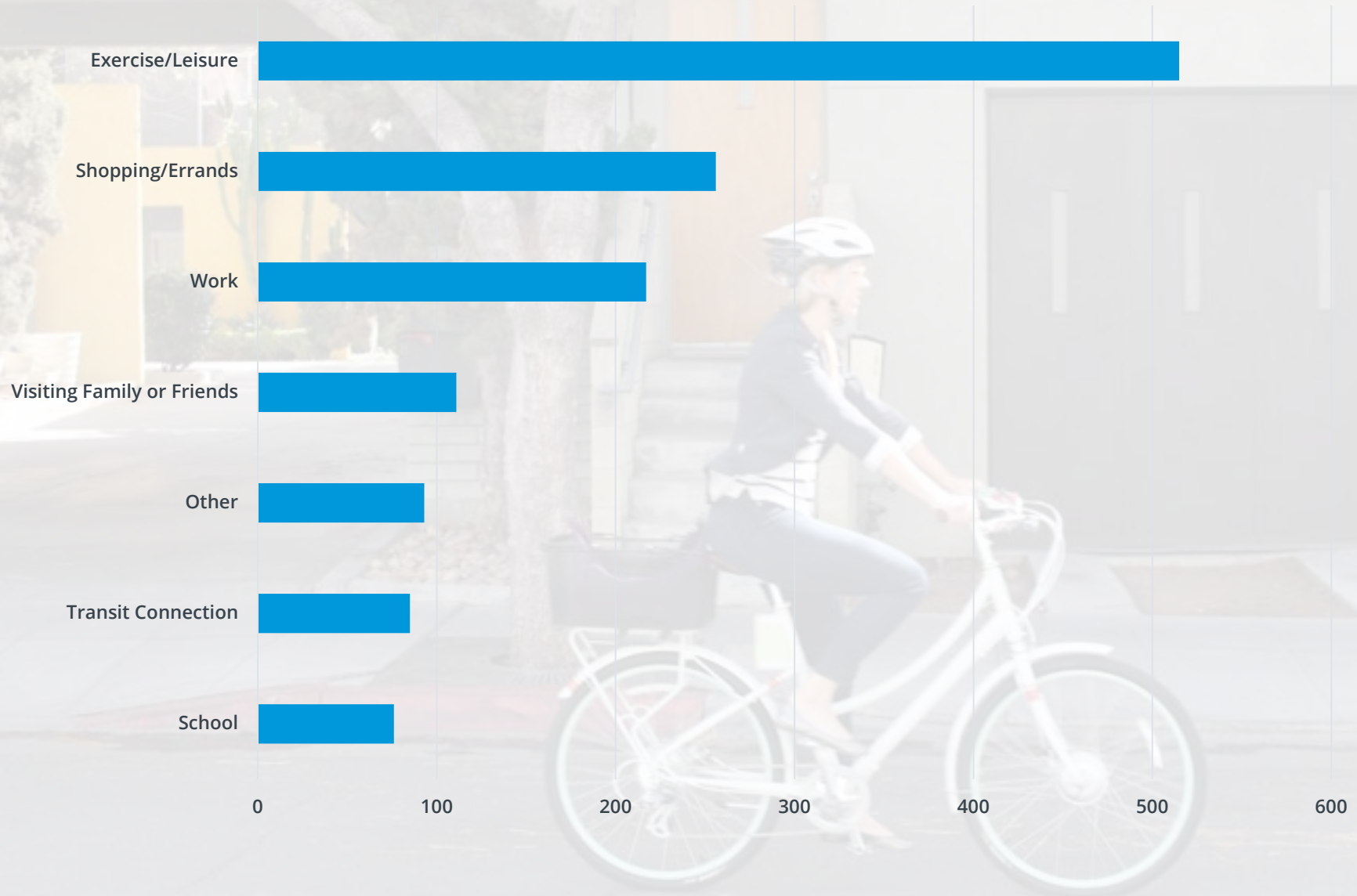


Gender of Contributors



Trip Map Responses

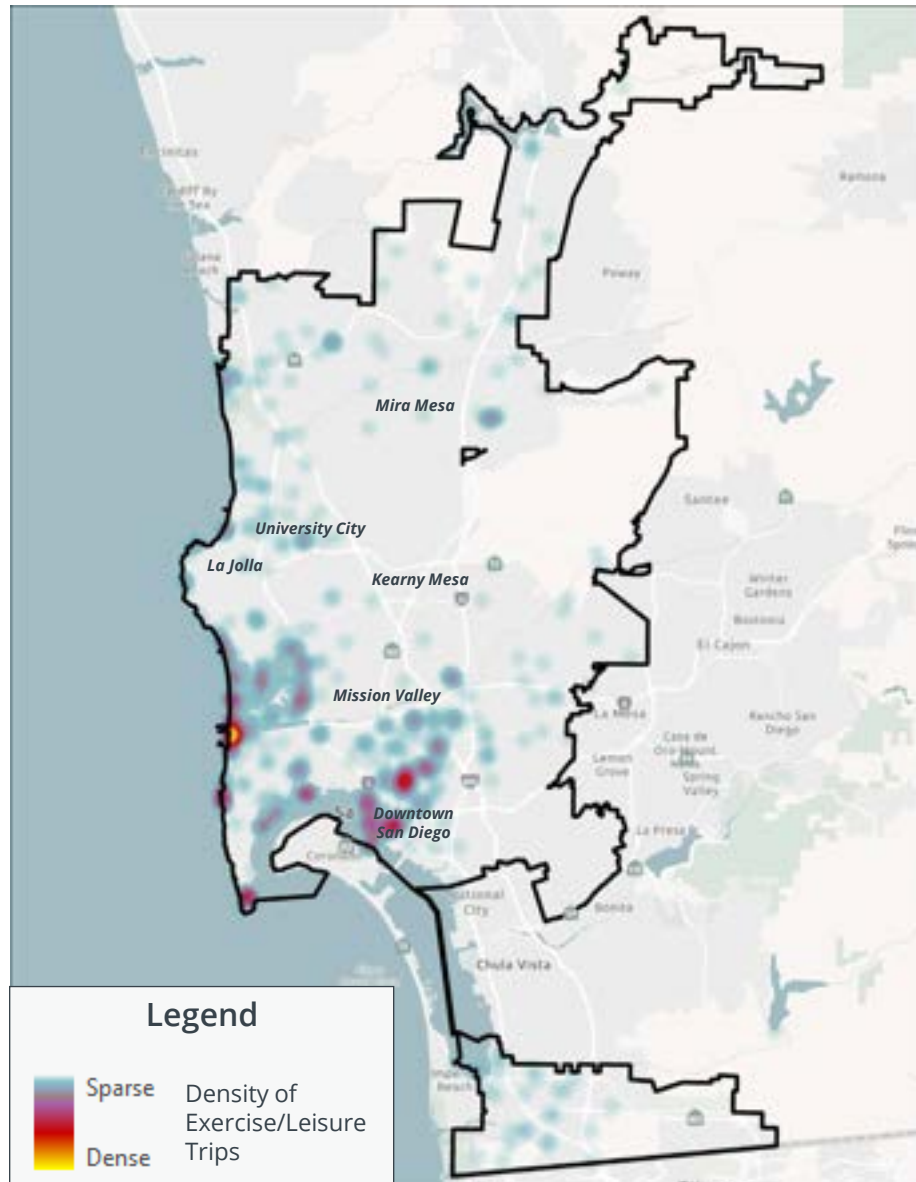
Primary Purpose of Bike Trips by Response



Trip Map Responses

Heatmap of Exercise/Leisure Trips

Trip Purpose: Exercise/Leisure



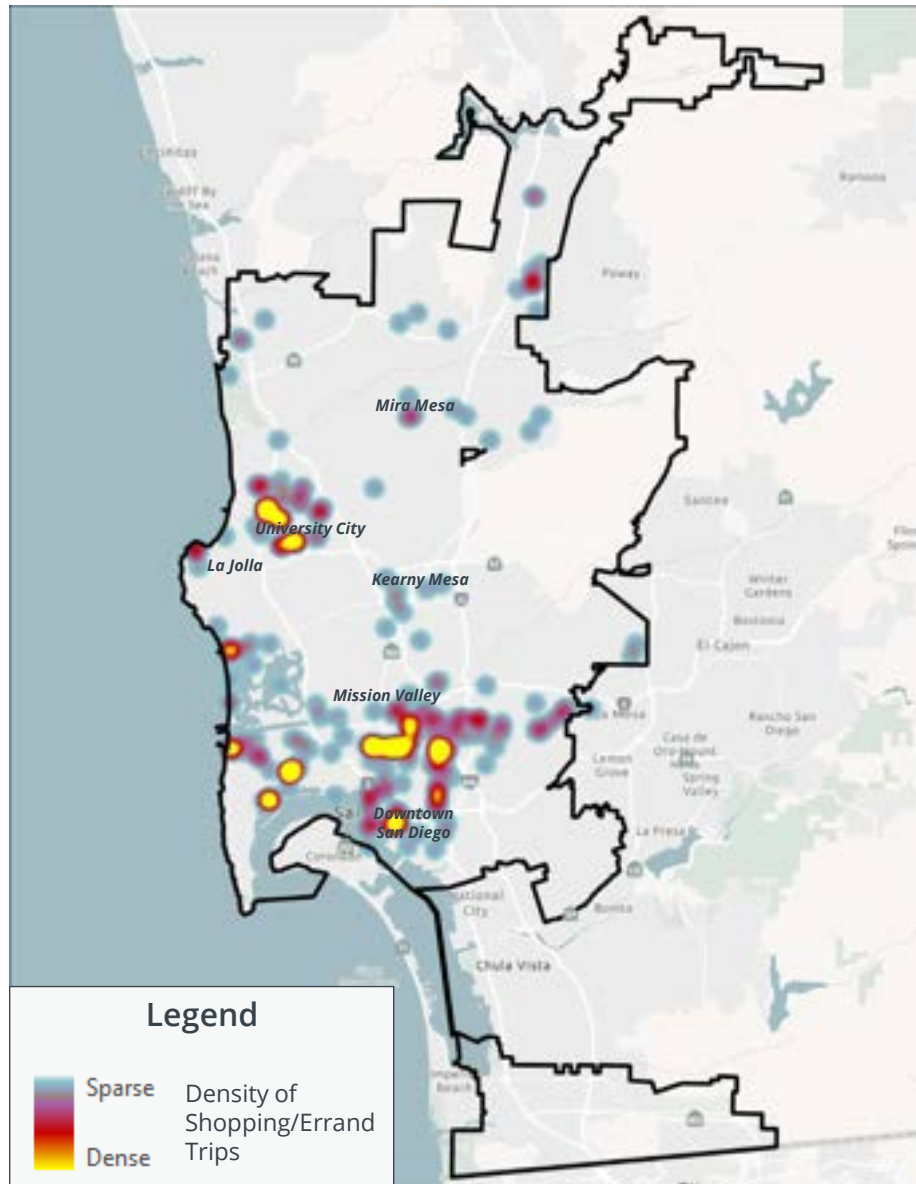
Key Takeaways:

- Exercise and leisure bicycle trips were dispersed across the City, with the greatest density occurring in the coastal areas of Mission Beach and Ocean Beach.
- There were significant clusters of exercise and leisure trips occurring around Balboa Park, Downtown, Point Loma, and Sunset Cliffs.

Trip Map Responses

Heatmap of Shopping/Errands Trips

Trip Purpose: Shopping/Errands



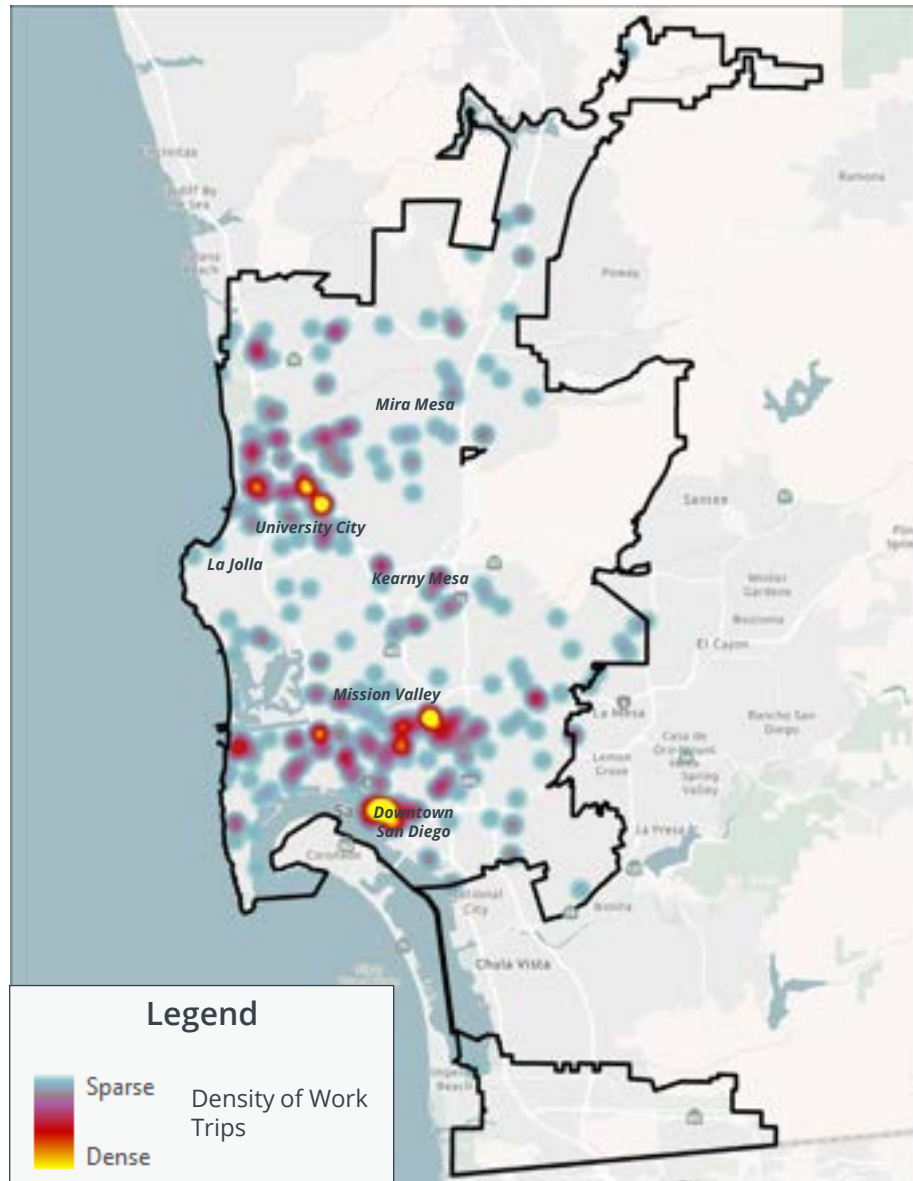
Key Takeaways:

- Shopping and errand trips were associated to areas with dense commercial land uses, such as Hillcrest's University Avenue, UTC and La Jolla Village, Liberty Station, and the central core of Ocean Beach
- These areas include a combination of power centers, lifestyle centers, and main street retail.

Trip Map Responses

Heatmap of Work Trips

Trip Purpose: Work



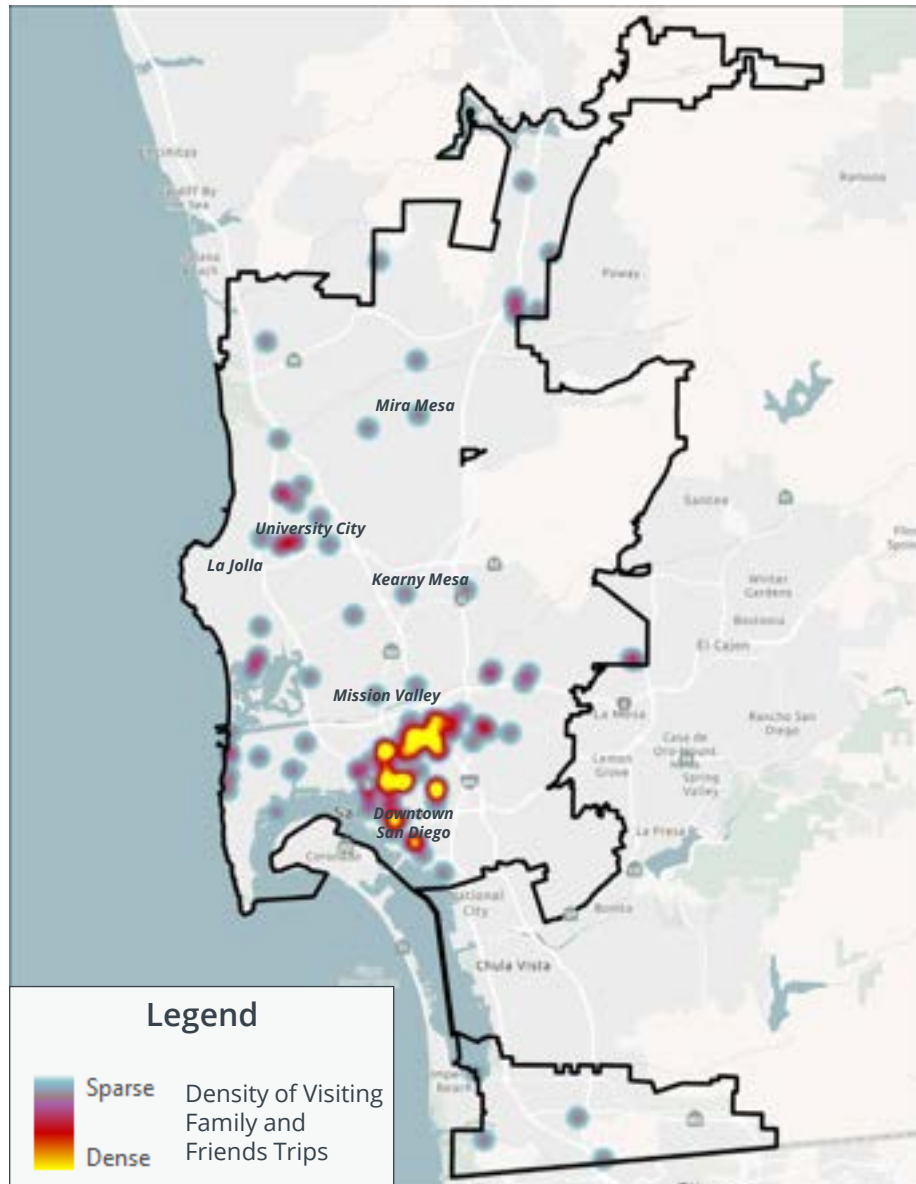
Key Takeaways:

- Work trips appear to be spread out among several neighborhoods in San Diego, with the highest density in Downtown, North Park, University City, and UCSD.
- The data includes both start and end points of a bicycle trip. A significant proportion of trips within Downtown and University City were identified as end points, while other high-density neighborhoods exhibited a more balanced distribution of start and end points. This suggests that Downtown and University City have a notable presence of bicycle commuters due to employment opportunities in these areas.

Trip Map Responses

Heatmap of Visiting Family and Friends Trips

Trip Purpose: Visiting Family and Friends



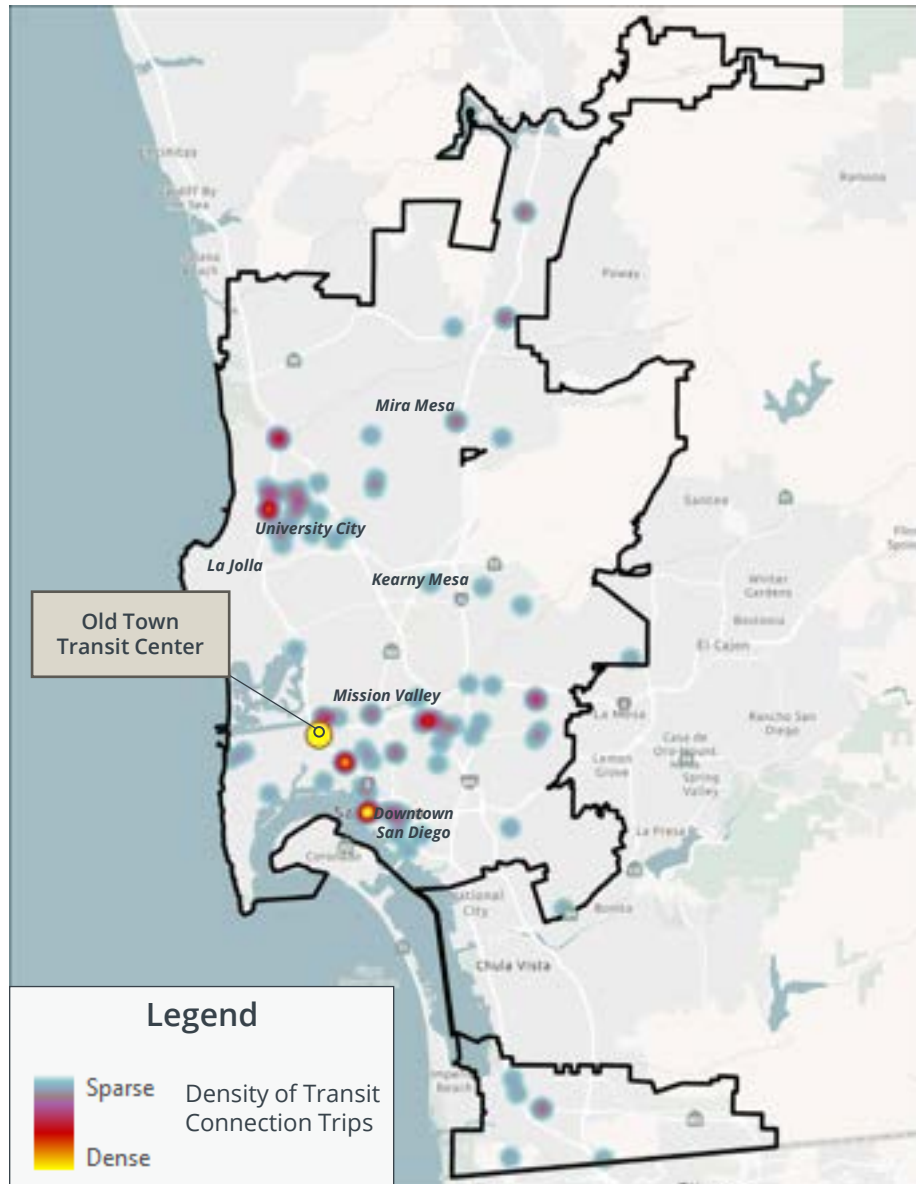
Key Takeaways:

- A large number of trips to visit family and friends were taken in the Uptown and North Park neighborhoods.
- Additionally, there was a cluster of trips within Downtown, specifically located in the Gaslamp and Little Italy neighborhoods.

Trip Map Responses

Heatmap of Transit Connection Trips

Trip Purpose: Transit Connection



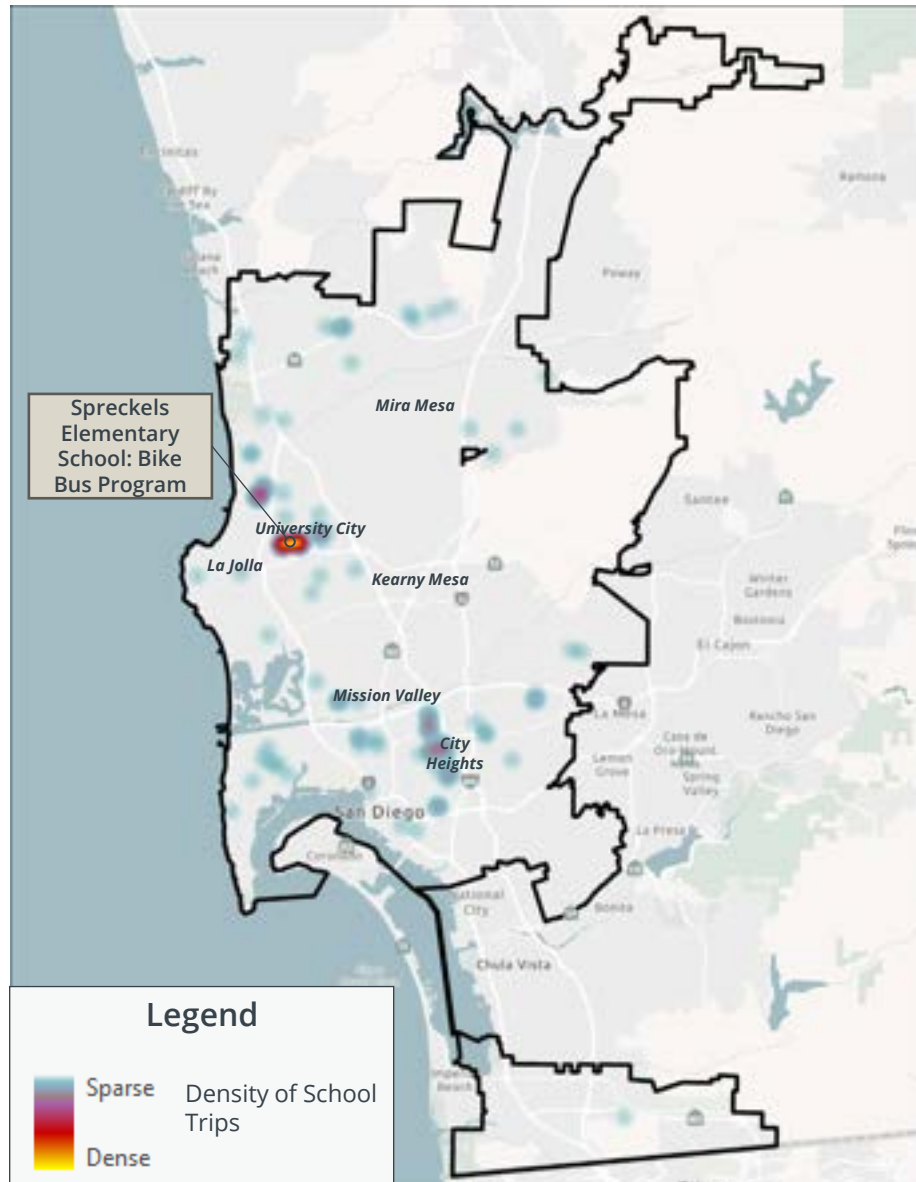
Key Takeaways:

- As the large yellow hotspot on the map indicates many bike trips starting and ending at the Old Town Transit Center.
- The second largest hotspot is located at the Santa Fe Depot in Downtown, and several other clusters around other key transit connections such as UTC Transit Center, Sorrento Mesa Transit Center, and in the North Park/Normal Heights neighborhood.

Trip Map Responses

Heatmap of School Trips

Trip Purpose: School



Key Takeaways:

- The largest density of school trips was in University City, where a Bike Bus program helps transport children to Spreckels Elementary School.
- School-related trips also occurred mostly near UCSD campus, as well as areas across the North Park neighborhood.

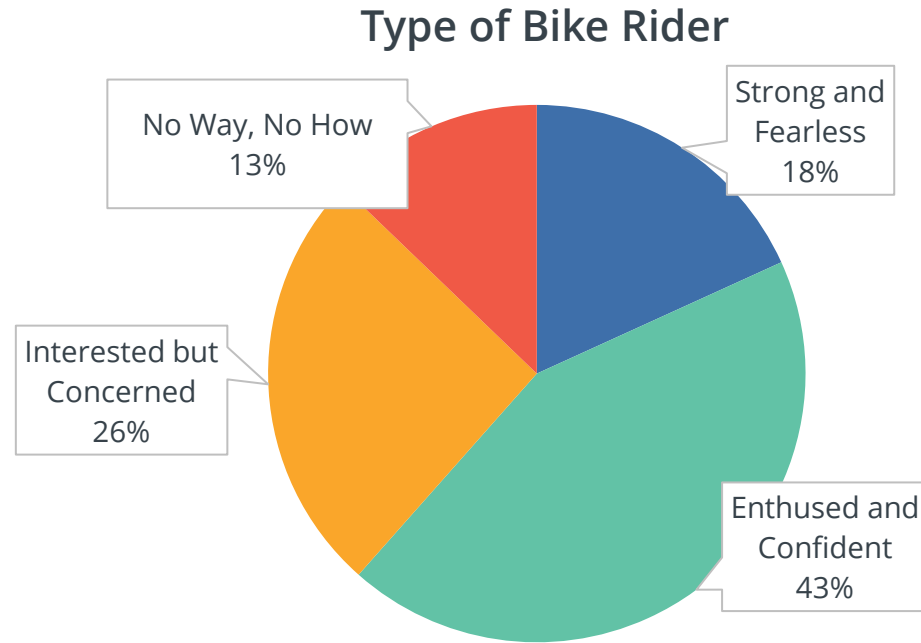
Long Form

Section Includes

Survey Results & Key Takeaways

Long Form Survey Responses

Contributions by Self-Identified "Rider Type"



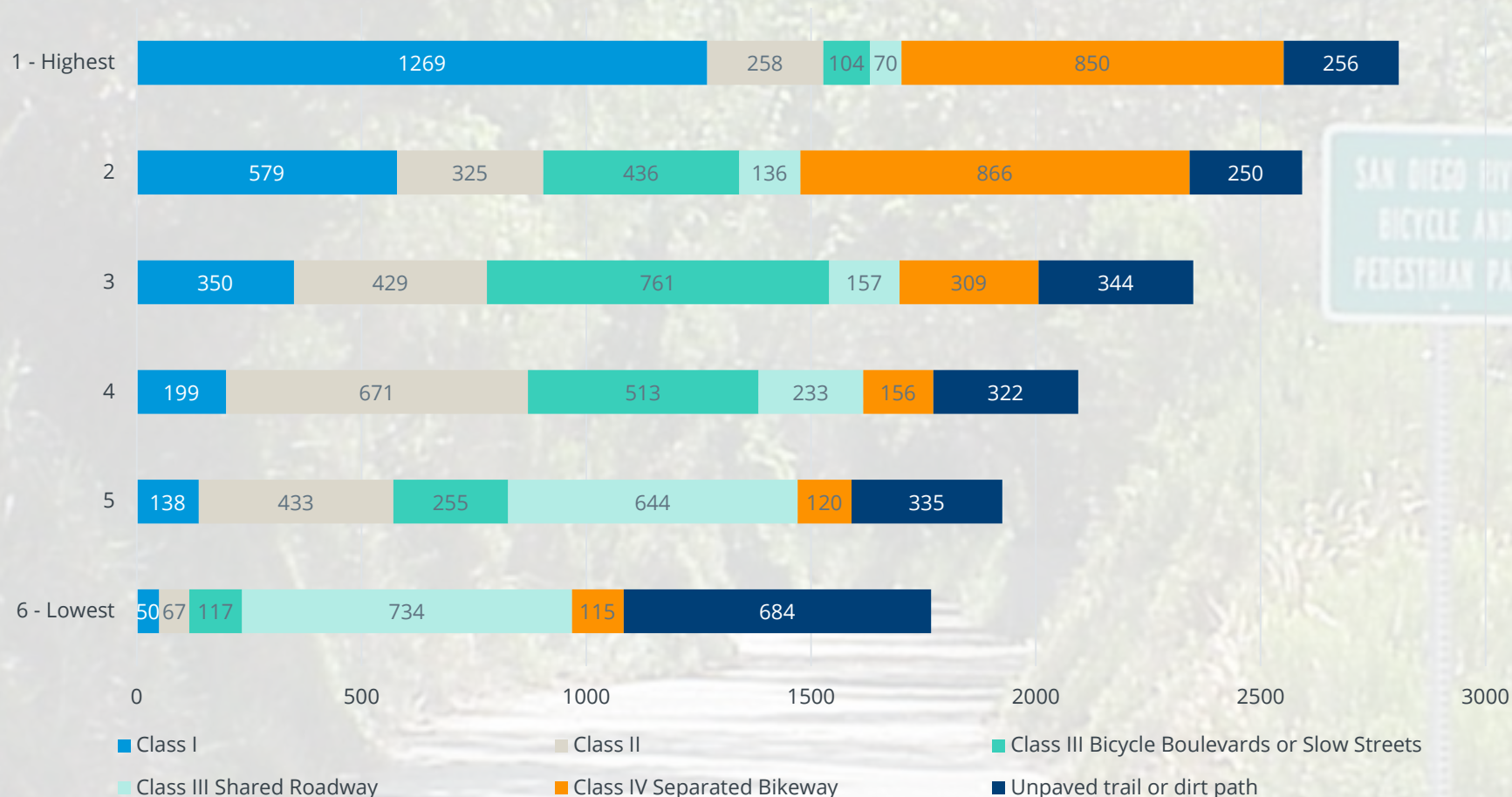
Key Takeaways:

All bike user groups participated in the survey, with the "Enthusied and Confident" and "Interested but Concerned" groups being the most prominently represented.

The significant proportion of "Enthusied and Confident" participants (43%) highlights both the popularity of cycling and a strong demand for safer bicycle infrastructure.

Long Form Survey Responses

Preferred Bicycle Facilities (Ranked Highest to Lowest Priority) by Response

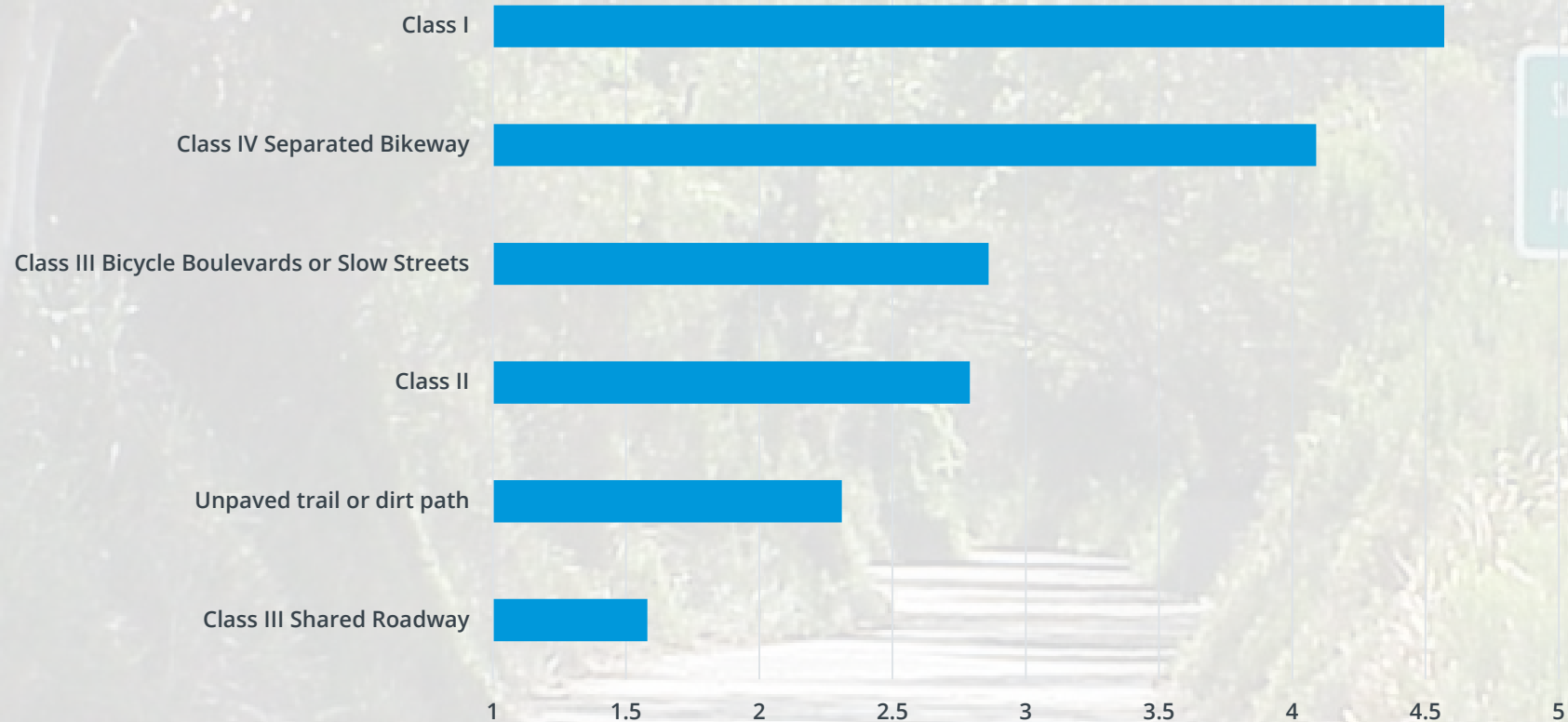


The above graph is a visualization of the responses received. It should be noted that respondents were not required to rank all six (6) facilities but at a minimum rank their highest preferred facility.

There were a total of 2807 responses for the highest preferred facility and of those responses 1269 (45%) preferred Class I Bike Paths followed by 850 (30%) who preferred Class IV Separated Bikeways.

Long Form Survey Responses

Preferred Bicycle Facilities (Ranked by Weighted Score*)



Key Takeaways:

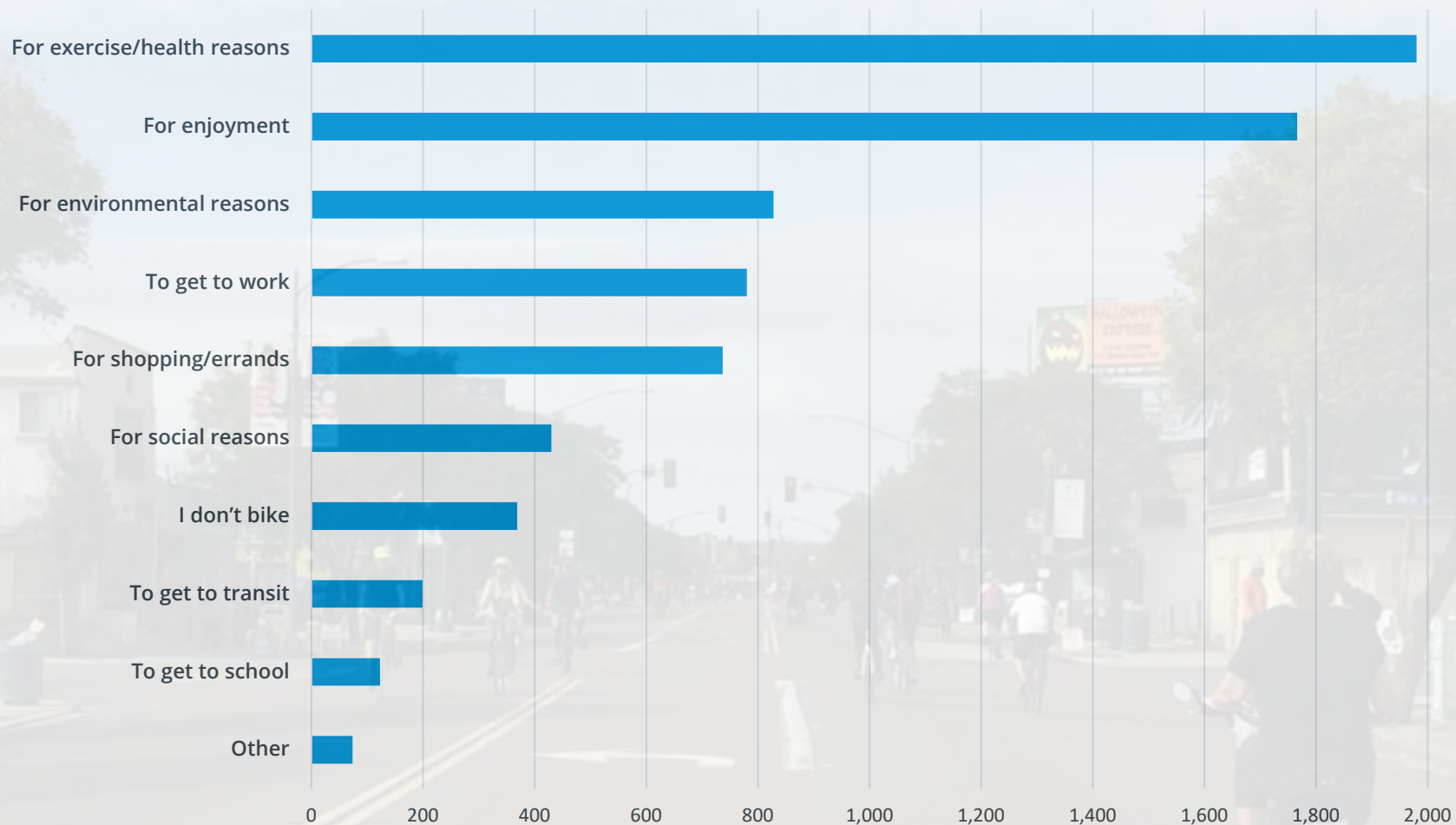
Separated bike facilities (Classes I and IV) are the two highest priorities, indicating a strong interest in safer bicycle infrastructure.

Class III Bicycle Boulevards and Class II were the next set of priorities, which indicates an interest in more defined bicycling spaces (e.g., painted lines).

**Score is determined by the sum of the weight of each ranked position, multiplied by the response count for the position choice, divided by the total contributions*

Long Form Survey Responses

Main Reasons for Bicycling by Response



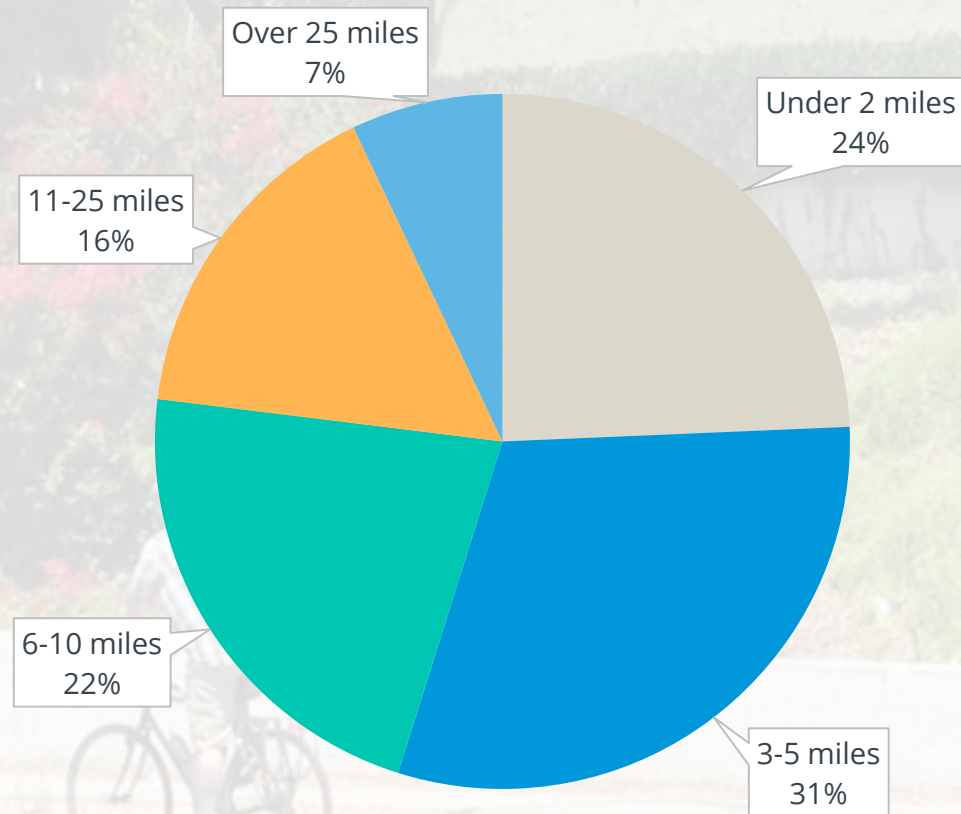
Key Takeaways:

Bicycling for exercise/health (1,980 people) and enjoyment (1,766 people) were the most popular reasons among respondents at 27% and 24% of responses, respectively. This indicates that biking is used for mental and physical health purposes.

Additionally, 780 (11%) respondents use a bike to get to work, 737 (10%) use a bike for shopping, and 123 (2%) use a bike to get to school.

Long Form Survey Responses

Typical Distance of Bike Trips by Response

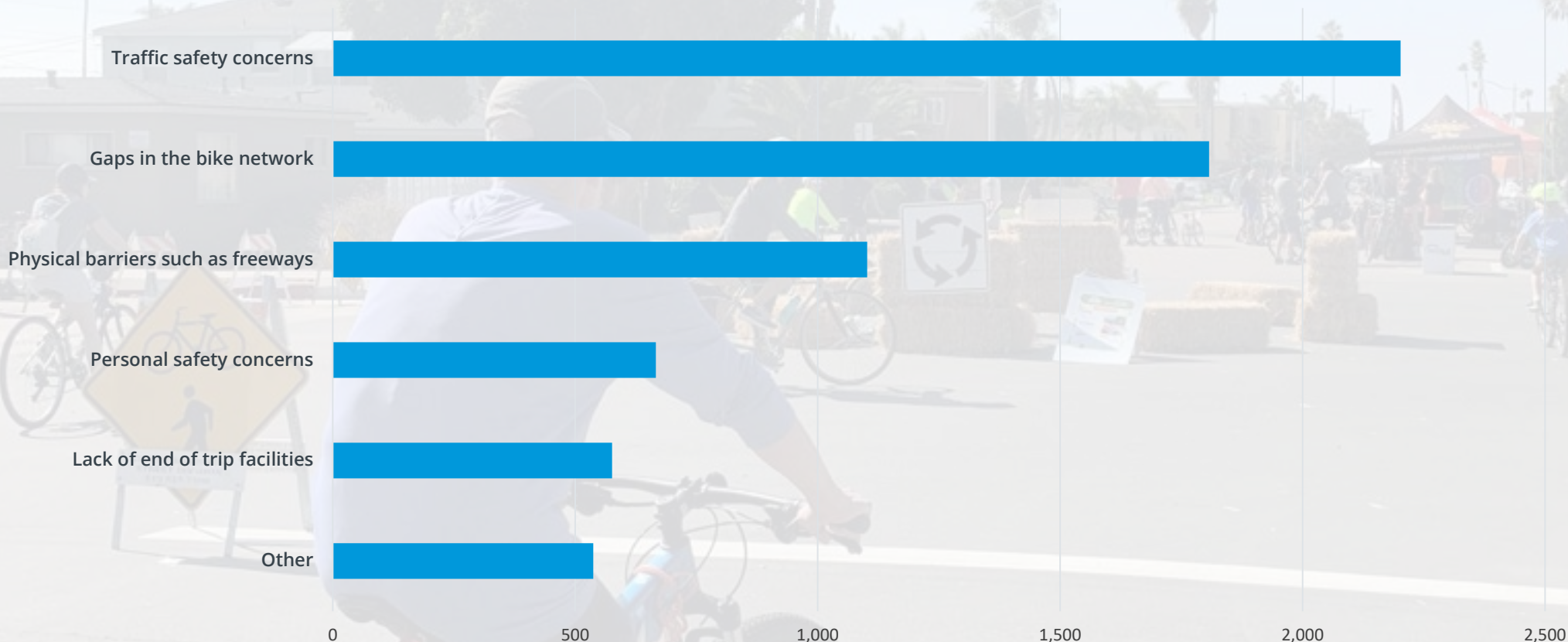


Key Takeaways:

More than half (55%) of one-way trips are 5 miles or less, highlighting a significant preference for shorter trips. Additionally, 22% of respondents typically ride 6-10 miles for a one-way trip. The remaining 23% of respondents ride over 11 miles, which may capture many recreational cyclists, including one respondent who is training for the Paralympics.

Long Form Survey Responses

Current Barriers to Bicycling by Response



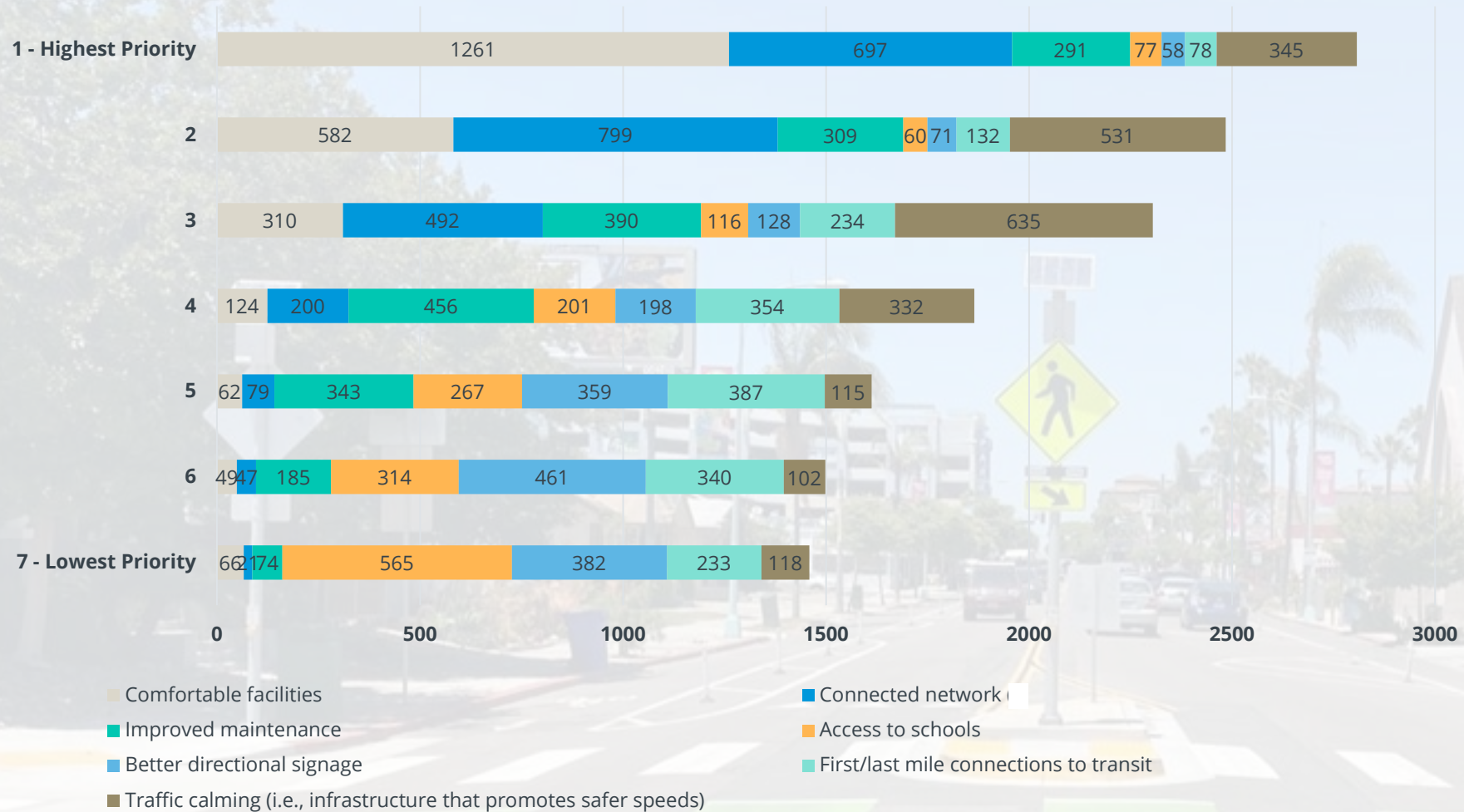
Key Takeaways:

Traffic safety concerns (e.g., proximity to moving vehicles and vehicle speed) were the most frequently cited barriers to bicycling among respondents. This suggests that respondents may favor measures aimed at enhancing cyclist safety, such as infrastructure that separates cyclists from motor vehicles or reduces bicycles kinetic energy.

The second largest barrier to bicycling was gaps in the bike network. A safer and more connected network would allow bicyclists to reach more destinations of interest, such as work, school, and shopping centers.

Long Form Survey Responses

Priorities for Improving Bike Facilities (Ranked Highest to Lowest Priority) by Response

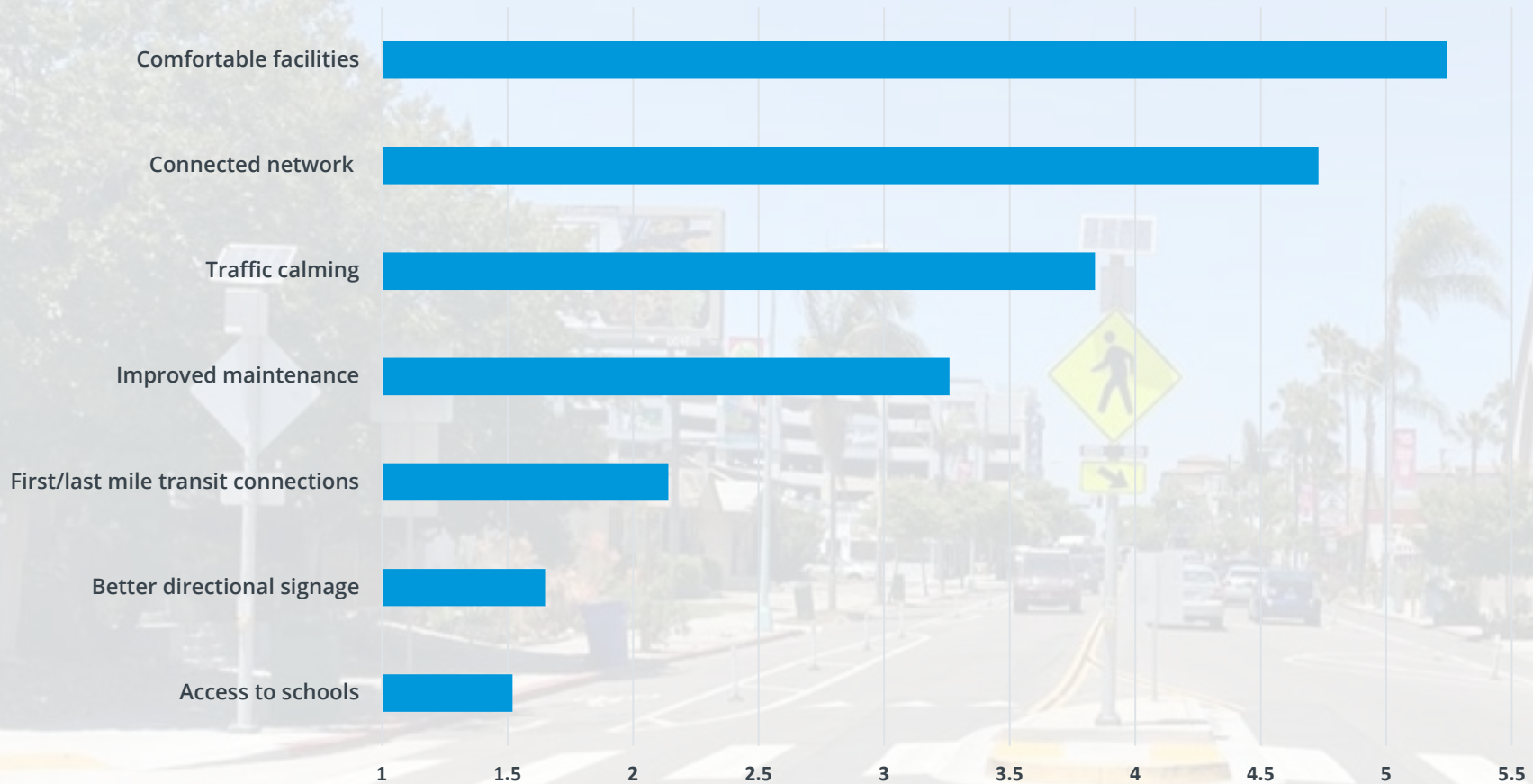


The above graph is a visualization of the responses received. It should be noted that respondents were not required to rank all seven (7) priorities for improvement but at a minimum rank their highest priority.

There were a total of 2807 responses for the highest priority for improvements and of those responses 1261 (45%) prioritized Comfortable Facilities followed by 697 (25%) who's highest priority is a more Connected Network (i.e. filling in perceived network gaps).

Long Form Survey Responses

Priorities for Improving Bike Facilities (Ranked by Weighted Score*)



Key Takeaways:

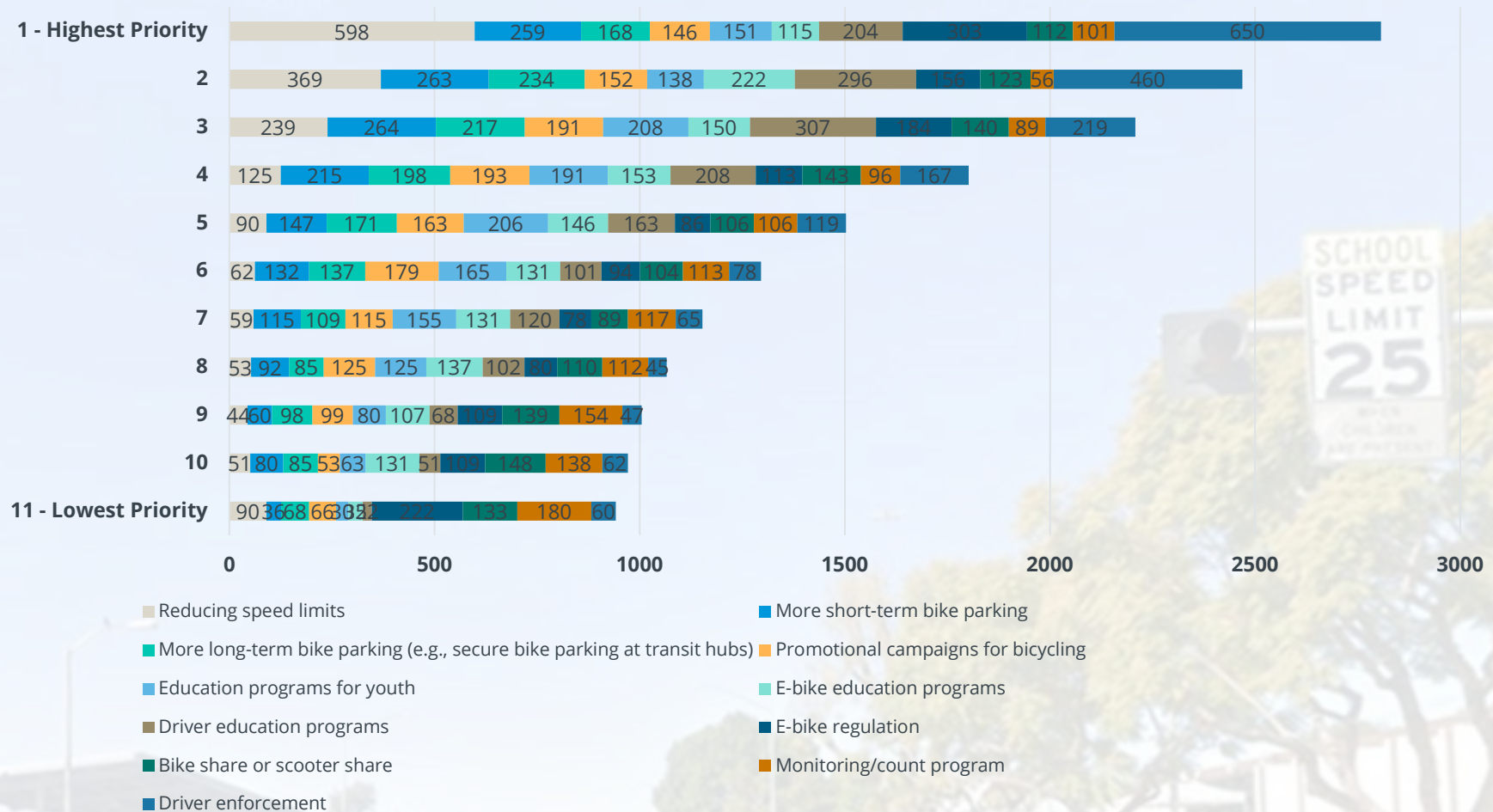
Comfortable facilities (e.g., separated bike lanes) are the greatest priority, indicating respondents value infrastructure that is safe for all ages and abilities.

The second priority, a connected network, demonstrates the importance of a seamless, cohesive network. Followed by priorities around calming traffic and improved maintenance, which demonstrate key elements of a safe bike experience.

**Score is determined by the sum of the weight of each ranked position, multiplied by the response count for the position choice, divided by the total contributions*

Long Form Survey Responses

Priorities for Bike Policy Adoption (Ranked Highest to Lowest Priority) by Response



The above graph is a visualization of the responses received. It should be noted that respondents were not required to rank all eleven (11) bike policy priorities but at a minimum rank their highest priority.

There were a total of 2807 responses for the highest priority bike policies and of those responses 650 (16%) prioritized Driver Enforcement followed by 598 (13%) who's highest priority is Reducing Speed Limits and 204 (11%) that prioritize Driver Education Programs.

Long Form Survey Responses

Priorities for Bike Policy Adoption (Ranked by Weighted Score*)



Key Takeaways:

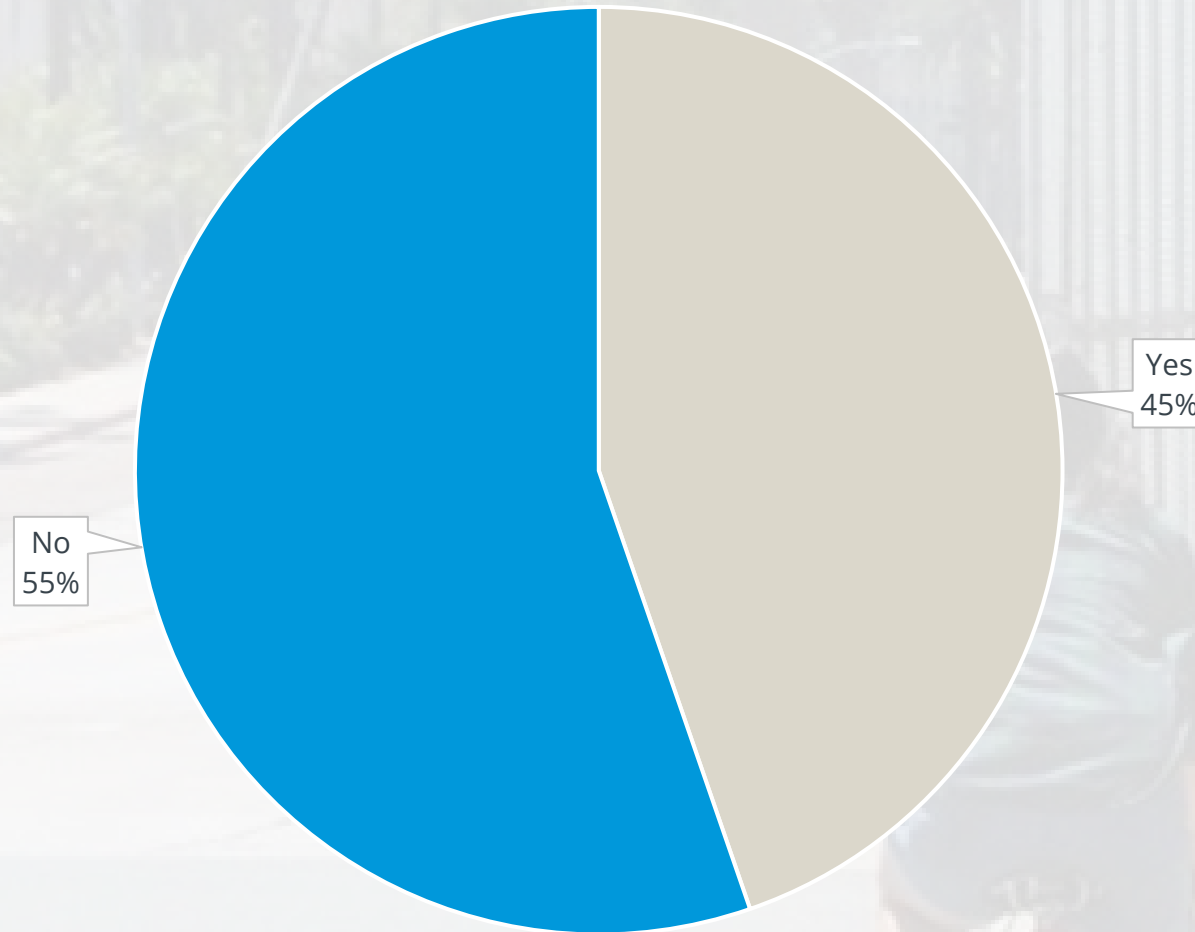
Respondents identified driver enforcement as the highest priority, highlighting a perceived gap in the enforcement of traffic laws intended to protect cyclists from violations by motorists.

Closely following was the priority to lower speed limits, reflecting a desire for safer streets where vehicles travel at reduced speeds. This suggests that respondents recognize the direct correlation between vehicle speed and the severity of collisions involving cyclists.

**Score is determined by the sum of the weight of each ranked position, multiplied by the response count for the position choice, divided by the total contributions*

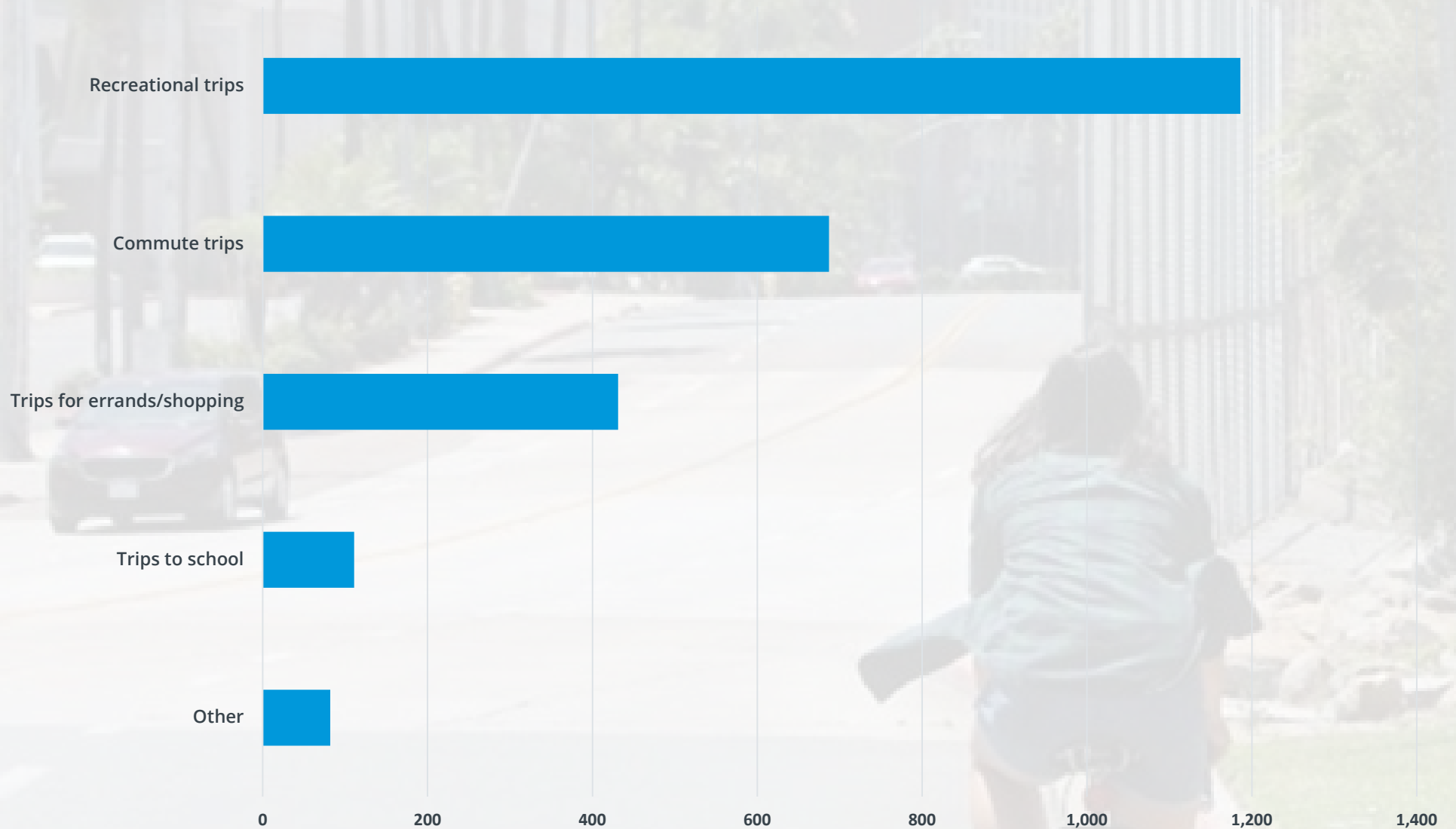
Long Form Survey Responses

Do you track your trips on an application such as Map My Ride, Ride with GPS or Strava?



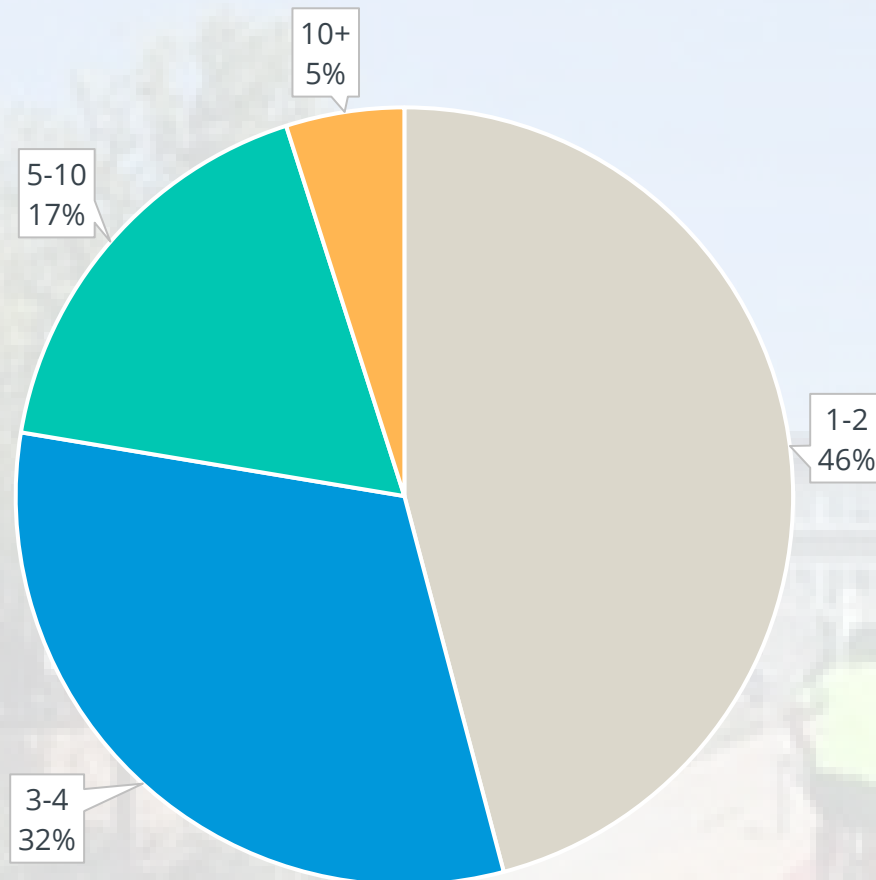
Long Form Survey Responses

What type of trips do you log using this application



Long Form Survey Responses

Weekly Frequency of Bike Rides

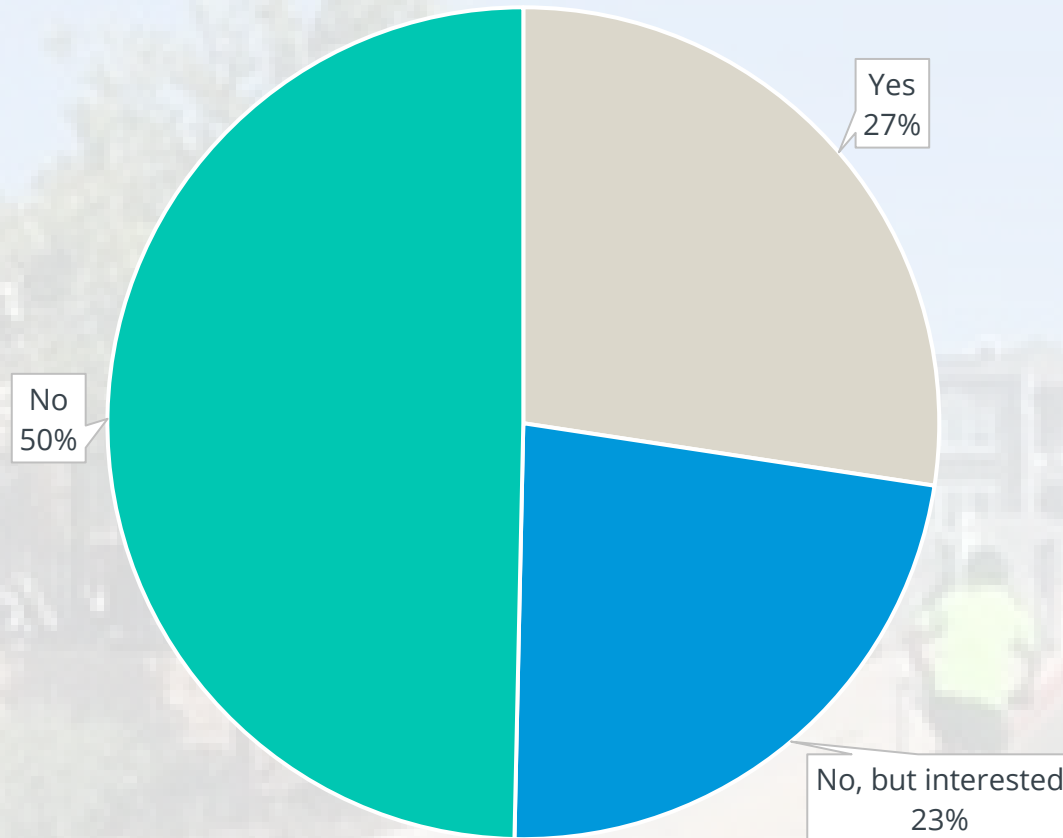


Key Takeaways:

46% of participants cycle 1-2 times per week, while an additional 32% ride 3-4 times per week. Furthermore, 17% of participants cycle 5-10 times a week, and 5% ride more than 10 times per week. These figures suggest that a significant portion of participants engage in frequent and consistent bicycling activities.

Long Form Survey Responses

E-Bike Ownership



Key Takeaways:

More than a quarter (27%) of participants own an e-bike, with a similar number (23%) interested in ownership. This demonstrates a potential increase in e-bike ridership in City of San Diego in the coming years and further demonstrates the need to plan for this ridership change as part of the BMPU.

Key Takeaways

Feedback Map

- Bike lane and protected bike lane desires generally follow along freeways and larger arterials across the City. Additionally, the results for these two categories are aligned with results from the recent SANDAG regional data collected.
- Responses for Unsafe experiences and vehicle speeds overlap each other in most locations across the City: Ocean Beach, Pacific Beach, Bay Ho, Mission Valley, University City, Torrey Pines, Kearny Mesa, College Area, City Heights, Uptown Neighborhoods, and Downtown.
- Participation was limited in some neighborhoods. Project team should consider engagement strategies for these areas in Phase II.

Trip Map

- Survey respondents overwhelming shared that their purpose for cycling was for exercise/leisure, with shopping/errands and work as the next most common purpose, respectively.
- While work trips are spread out across the City, trips to visit family and friends and shopping are mostly occurring in Uptown neighborhoods, commercial core of OB and PB, Downtown, and University City.
- Old Town Transit Center and several Blue Line stops appear to be key bike/transit connection points.

Long Form Survey

- Survey participants were mostly comprised of existing bicycle riders who identified with the “enthused and confident” or “interested but concerned” rider types. These riders likely are more recreational riders, as they mostly ride for exercise 1-2 times a week
- Separated and comfortable facilities was a top priority for these riders.
- Most trips are within the 3 to 5-mile range.





SHABU

The City of
SAN DIEGO

Bicycle Master Plan Update

Phase 2 Engagement Summary

Fehr & Peers



Contents

1. Pop-Up Event Summary
2. Digital Engagement Summary
3. Next Steps

Engagement by the Numbers



1,962 contributions from **363** individuals on the online map-based survey



Over **125** individuals engaged in 1:1 conversations through **4** community pop-up events



10 community-based organizations engaged through **4** community leadership meetings

Pop-Up Event Summary

Section Includes

UCP Transportation Justice Expo

Linda Vista Farmers' Market

UCP Transportation Justice Expo

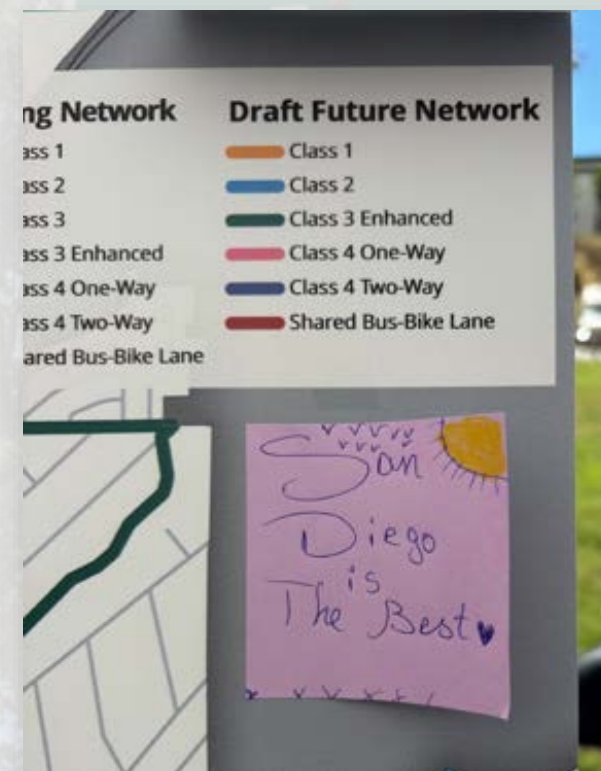
April 11, 2026

- > 100 people engaged
- > 24 markers placed



Key Takeaways

- Folks came from a wide mix of neighborhoods (not just Southeastern representation)
- Attendees reflected a broad range of racial backgrounds and ages
- Strong emphasis on **inter-neighborhood connectivity**
- General excitement for Chollas Creek bikeway



Linda Vista Farmers' Market

April 30, 2026

- > 25 people engaged
 - > 50 markers placed
-

Key Takeaways

- Many folks live in Linda Vista and nearby neighborhoods, mostly families with children
- Several families mentioned being pleased with Clairemont Dr class 4, wanted more protected facilities on Balboa Ave/I-5 overpass and Seaworld Dr, and were in favor of the Mission Blvd bikeway in Pacific Beach
- Families mentioned **wanting to have more comfortable facilities** to take them from their neighborhoods near Linda Vista to the bay and beach



Digital Engagement Summary

Section Includes

Social Pinpoint

Community Leader Meetings

Social Pinpoint Spatial Survey

Survey Overview

Purpose: Collect public input on the Draft Future Bicycle Network

Duration: March 31 – May 2, 2026

Reach: 1,962 contributions from 363 individuals

Terms Defined

Draft Future Bicycle Network: Citywide network which includes existing bikeways not slated for upgrade, upgraded existing bikeways, and new bikeways

Proposed: The upgraded existing bikeways and new bikeways

Existing to Remain: The existing bikeways not slated for upgrade

Outside of Draft Future Network: Roadways that are not on the Draft Future Bicycle Network

Help Shape the Future Network!

The City's Draft Future Bicycle Network recommends a total of nearly 2,500 miles of bikeways including almost 700 miles of new separated bikeways, over 600 miles of bicycle lanes, and over 600 miles of other bicycle routes and bicycle paths.

We want to know what you think:

- Does the draft bicycle network provide connections to key destinations?
- Were gaps in the network addressed?
- Are there any connections or gaps that we missed that you would like to see added?

The survey was open from March 31st to May 4th, 2026. Thank you to everyone who participated. This feedback will help inform the final Future Bicycle Network.

Close

Feedback on Draft Future Bicycle Network

To add markers: Click the "Add Marker" button at the bottom of the map. Next, drop the marker on the map or enter an address in the search area. Finally, a box will appear where you can select the type of marker (Green, Disagree, or Something Missing) and describe your comment. Add your information and click "Submit."

What do the colored lines represent? The colored lines on the map represent different bikeway types. To see what each color means, click the "Legend" button in the top left corner of the map. The legend will display the bikeway types and their corresponding colors (for example: Class I Shared Use Paths, Class II Bike Lanes, or Class IV Separated Bikeways, etc.). The dashed lines represent proposed bikeways, while the solid lines represent existing bikeways. You can toggle each bikeway type on or off to focus on the parts of the network that matter most to you.

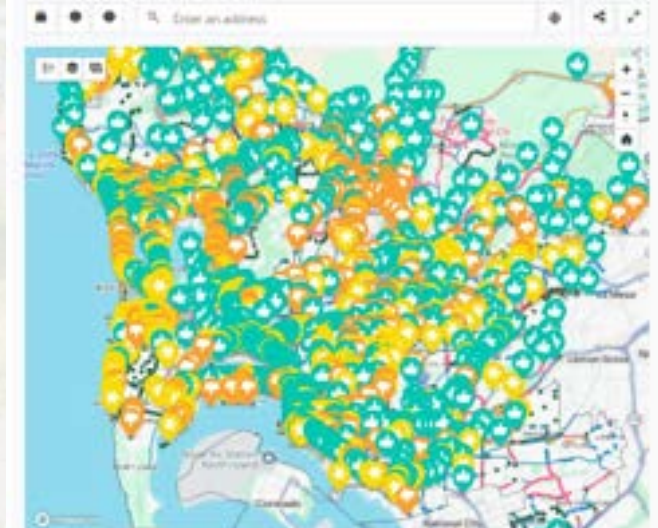
Want to learn more about the bikeway types? Scroll below the map for more information.

For help using the map, please see the instructions by clicking the "i" button below. Click the "?" button above the map for information about each marker type.

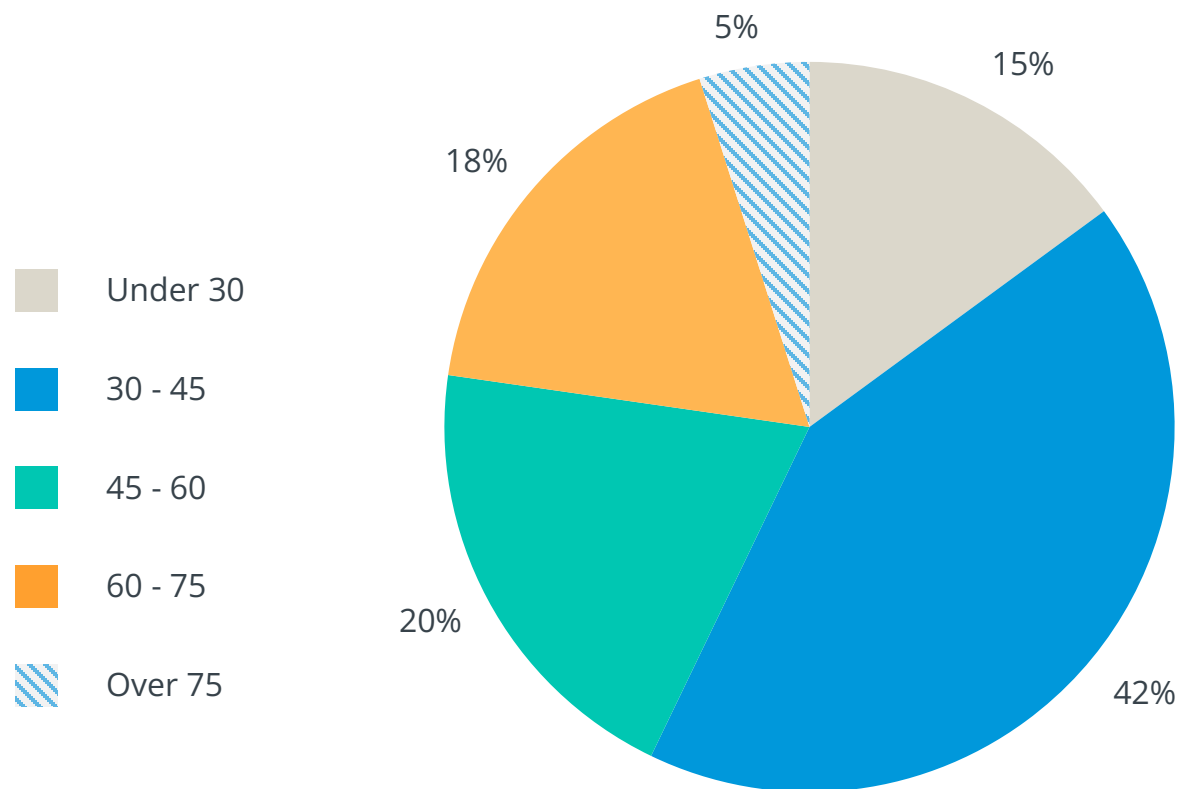
Next Steps

Your input will be used to help create the final future bicycle network and prioritization. The City will share this information with the community during the next phase of public outreach.

1,962 contributions



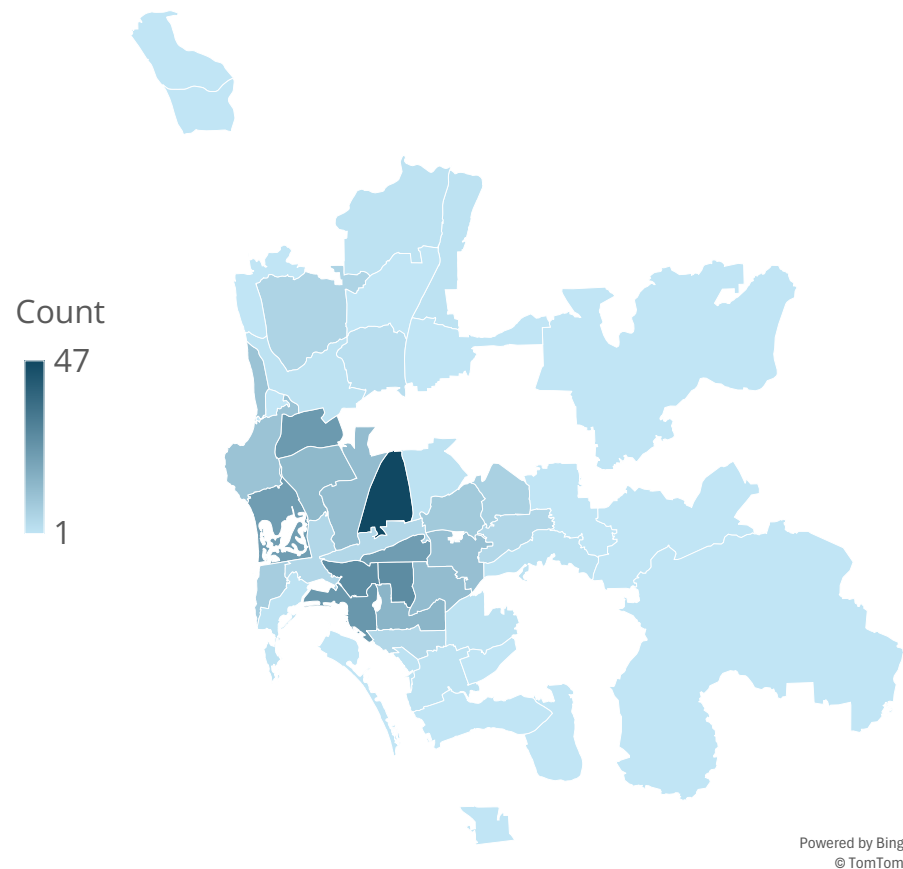
Contributor Demographics: Age



Key Takeaways

Nearly half (42 percent) of survey participants are between 30 and 45 years old. The next most represented group (at 20 percent) are those participants between ages 45 and 60.

Contributor Demographics: Zip Codes



Key Takeaways

The areas with the highest survey participation occurred in Serra Mesa, Kearny Mesa, Uptown, North Park, University Heights, South Park, and Downtown.

Top 10 Liked & Disliked Bikeways on the *Proposed* Network

Top Liked

Road Name	Class	Agree	Disagree
Pacific Hy	4 One-Way	36	0
North Harbor Dr	4 One-Way	35	0
Chollas Creek Bikeway	1	32	1
Gilman Dr	4 One-Way	18	0
Mission Bl	4 One-Way	17	0
Clairemont Dr	4 One-Way	16	12
Market St	4 One-Way	15	0
Genesee Ave	4 One-Way	14	1
N Torrey Pines Rd	4 One-Way	13	0
W Harbor Dr	4 One-Way	12	0

Top Disliked

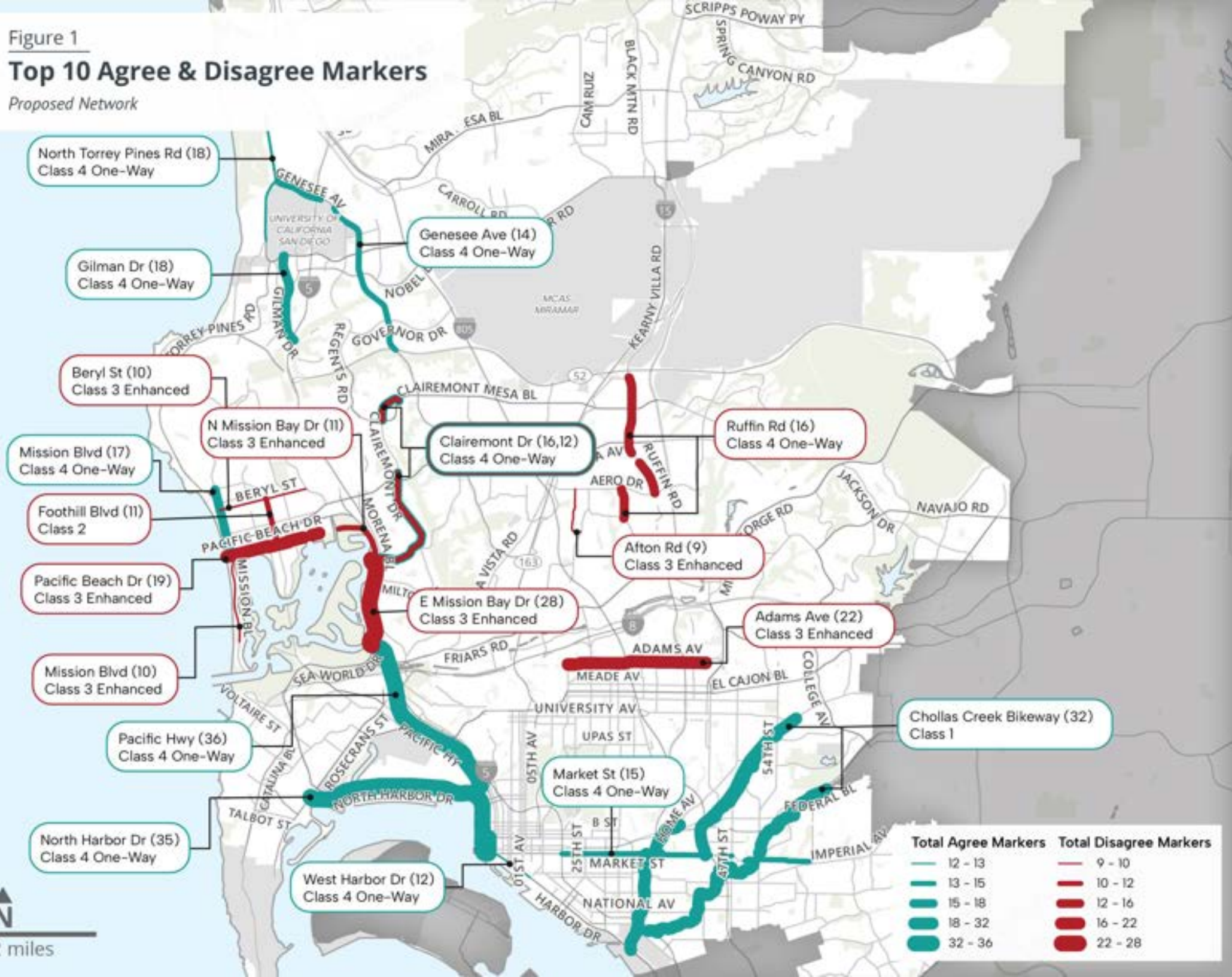
Road Name	Class	Agree	Disagree	Something Missing
East Mission Bay Dr	3 Enhanced	0	28	7
Adams Av	3 Enhanced	6	22	3
Pacific Beach Dr	3 Enhanced	7	19	2
Ruffin Rd	4 One-Way	8	16	1
Clairemont Dr	4 One-Way	16	12	2
Foothill Bl	2	0	11	1
North Mission Bay Dr	3 Enhanced	0	11	3
Beryl St	3 Enhanced	0	10	0
Mission Bl	3 Enhanced	2	10	8
Afton Rd*	3 Enhanced	3	9	0

*The prevailing reason for dislike was concerns of potential loss in parking. However, Class III Enhanced is a shared facility (not a dedicated bikeway) with minimal impact to roadway cross-sections and parking.

Figure 1

Top 10 Agree & Disagree Markers

Proposed Network



Top Liked & Disliked Bikeways on the *Existing to Remain* Network

Top Liked

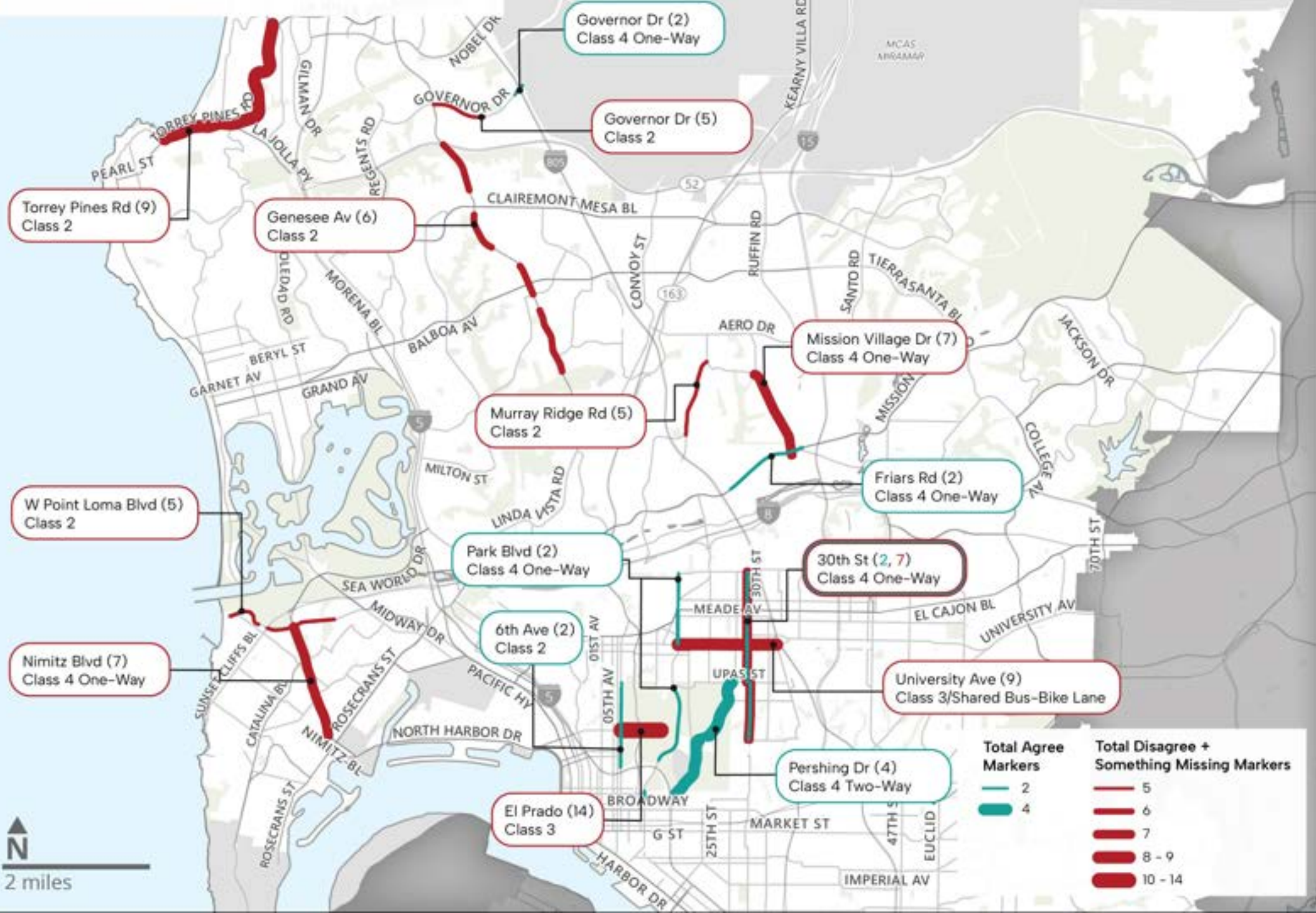
Road Name	Class	Agree	Disagree
Pershing Dr	4 Two-Way	4	2
06th Av	2	2	0
30th St	4 One-Way	2	3
Governor Dr	4 One-Way	2	2
Friars Rd	4 One-Way	2	1
Park Bl	4 One-Way	2	0

Top Disliked

Road Name	Class	Agree	Disagree + Something Missing
El Prado	3	0	14
Torrey Pines Rd	2	0	9
University Ave*	Class 3 & Shared Bus Bike	0	9
30th St	4 One-Way	2	7
Mission Village Dr	2	0	7
Nimitz Bl	4 One-Way	0	7
Genessee Av	2	0	6
Governor Dr	2	0	5
Murray Ridge Rd	2	0	5
W Point Loma Blvd	2	0	5

*Note: University Ave has a blend of existing and proposed bikeway types. When looked at together, this corridor received one of the highest number of disagree/something missing markers.

Figure 2
Top Liked & Disliked Bikeways
 Existing to Remain Network



Top Roadways *Outside of Draft Future Network*

Road Name	Something Missing	Up/Down Votes
Law St	6	3
Felspar St	3	1
Haines St	3	0
Gilman Dr*	3	14
Cass St	3	3
San Pasqual St	2	2
Tourmaline St	2	2
Van Nuys St	2	2
Redwood St	2	2

*Note: The indicated portion of Gilman Dr is located on UCSD's campus and is outside of the City's jurisdiction.

Figure 3
Top Something Missing Markers

Outside of Draft Future Network



Community Leader Meetings

Two community leader meetings were held for BMPU Phase 2 to review the **Draft Future Bicycle Network**.

The meetings covered how the network was developed, the six facility types proposed, and key corridors and connections across the city.

Community leaders provided input on equity gaps, facility design consistency, and specific corridor concerns in their neighborhoods. A significant portion of both meetings addressed the challenge of translating plans into built projects.

Organizations Engaged

CIRCULATE
PLANNING & POLICY

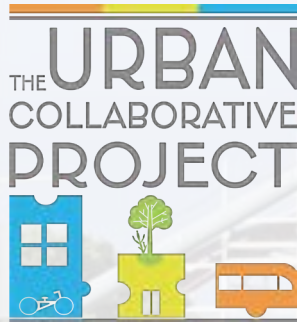
 **GROUNDWORK**
San Diego Chollas Creek

AARP[®]

D O W N T O W N
SAN DIEGO
P A R T N E R S H I P


Bike Coalition
SAN DIEGO COUNTY

 Casa
Familiar


THE **URBAN**
COLLABORATIVE
PROJECT

SDSU

BAYSIDE
Community Center

Key Conversations

Connection to Broader Goals

Call for explicit, measurable linkages between the BMPU and the Climate Action Plan, Complete Streets Policy, and Vision Zero

Outreach

Outreach without visible results risks reducing trust and participation.

Early local outreach is essential for community buy-in.

Parking Blocking Implementation

Concerns over examples of funded, safety-critical projects getting cancelled

Facility Type Selection

Questions around qualitative judgements in the planning process; potential to introduce bias

Facility Protection

Pushback on prevalence of painted lanes and sharrows, particularly for segments transitioning from Class IV

Next Steps

Section Includes

Draft Plan Development

Upcoming Events

Draft Plan Development



Upcoming Events

- **Community Leader Meeting #4** – Draft Plan (Implementation Chapter)/Prioritized Projects
- **Public Review** of Draft Plan/Prioritized Projects
 - Pop-Up #3
 - Pop-Up #4
- **Mobility Board Meeting** – Draft Plan/Prioritized Projects
- **SANDAG Regional Meeting**



APPENDIX C

Engagement Process



Engagement Process

Public engagement (summarized in **Table C-1**) occurred throughout the planning process, with each phase building on the previous one. Early outreach focused on understanding the existing riding experience. Later phases shared draft recommendations, which were refined based on public feedback.

Engagement was carried out through a variety of methods to reach as many people as possible, including in-person events, online surveys, and interactive mapping tools. The engagement also relied on partnerships with community-based organizations to reach people that are often underrepresented in traditional outreach efforts.

Cataloguing the Lived Riding Experience (Summer 2024)

The first phase focused on understanding where and why people currently ride their bikes and identifying barriers that discourage people from riding. Three online surveys during this first phase collected over 8,200 responses and provided insight into where and why people ride, network gaps, and community priorities. The surveys were open from August through September 2024.

Ground Truthing (Fall 2024 – Spring 2025)

The takeaways from the initial outreach were combined with technical analysis to develop a vision for the future bikeway network. During this phase, feedback was reviewed to ensure the network reflected real-world conditions and community experiences.

Network Refinement (Winter – Spring 2026)

A draft bikeway network was presented to the public for review through online mapping tools and community pop-up events. Nearly 2,000 survey responses and more than 125 in-person conversations helped identify missing connections, validate priorities, and refine project recommendations. The online survey was open from late March to early May 2026.

Priority Project Development (Summer 2026)

The final phase focused on identifying which projects would provide the greatest benefit to the community and should be prioritized for implementation. [Number of people engaged to be inserted following October/November events].

Engagement Snapshot

Table C-1. Engagement Activities

Engagement Activity	Purpose	Participation	Key Takeaways
SANDAG Regional Vision Zero Action Plan Feedback Map Survey (2023) ¹	Identify safety barriers and opportunities for improvements	716 of the 2,970 regional contributions were made in the City	People identified traffic safety concerns, network gaps, and physical barriers as major challenges to bicycling.
Feedback Map Survey (2024)	Identify barriers, gaps, and opportunities in the existing bikeway network.	697 people contributed 3,445 map comments	People identified traffic safety concerns, network gaps, and physical barriers as major challenges to bicycling.
Trip Map Survey (2024)	Understand where and why people ride their bike	325 people contributed 1,955 mapped trip locations	Transportation ² was the primary purpose of trips, with exercise and leisure trips as the second-most common trip purpose.
Long Form Survey (2024)	Understand where and why people ride their bikes, preferences, and barriers among cyclists and non-cyclists.	2,912 people	Separated bikeways and bike paths were the highest-priority bikeway types. Safety concerns and network gaps were the most frequently cited barriers to riding. Most trips are typically between 3 and 5 miles.
Draft Network Survey (2026)	Gather feedback on the draft future bikeway network and identify missing connections.	363 people contributed 1,962 map comments	People generally supported new bikeway proposals, particularly separated bikeways and off-street paths, while also identifying additional network gaps and desired connections.

¹ To supplement project-specific outreach, the City also leveraged data related to active transportation that was collected by SANDAG through its Regional Vision Zero Action Plan, which occurred during a similar timeframe, asked comparable questions, and collected feedback from many City residents. The data provided an additional source of information on bicycling behaviors, preferences, and barriers. Incorporating these findings helped build upon existing community input received, especially given that residents often view transportation agencies collectively rather than distinguishing their plans as separate efforts.

² Transportation trips include those taken for school, shopping/errands, transit connection, visiting family or friends, and work.

Engagement Activity	Purpose	Participation	Key Takeaways
Urban Collaborative Project Transportation Justice Expo (2026)	Present and solicit feedback on the draft future bikeway network.	Spoke with over 100 attendees	Attendees expressed strong support for the Chollas Creek Bikeway and emphasized the importance of connectivity between neighborhoods.
Linda Vista Farmers' Market (2026)	Share project information and gather community feedback.	Spoke with over 25 attendees	Attendees expressed a desire for comfortable bicycle connections to parks, beaches, and other everyday places.
Stakeholder Advisory Committee	Coordinate with regional agencies, advocacy organizations, and partner jurisdictions.	2 meetings	Helped align Bicycle Master Plan recommendations with regional bicycle planning efforts.
Community Leader Advisory Group Meetings	Gather input from community-based organizations and local leaders.	8 meetings	Helped refine engagement methods, performance measures, draft network recommendations, and project priorities.

Feedback

Feedback collected through surveys, community events, and advisory group meetings showed several consistent themes which helped to shape the Bicycle Master Plan.

Safety and Comfort Remain Primary Barriers to Bicycling

Across engagement activities, people consistently identified traffic safety concerns, gaps in the bikeway network, and physical barriers such as freeways as the most significant challenges to bicycling. Feedback received prioritized separated bikeways and off-street paths (Class I and Class IV bikeways), reflecting a desire for bikeways that provide greater comfort and separation from car traffic. People also identified the need to enforce the rules of the road for cars and lower cars speeds as top policy priorities, reinforcing the importance of creating a bikeway network that feels safe for people of all ages and abilities.

A More Connected Network

Feedback from participating people highlighted the importance of connectivity between neighborhoods and key destinations. Through the Feedback Map Survey (2024), 697 people identified barriers and opportunities throughout the City. Then, 363 people identified key network gaps that should be addressed in the Draft Network Survey (2026). During community pop-up events, feedback received emphasized the need for stronger connections between neighborhoods and more comfortable routes to everyday places, including schools, parks, beaches, and transit.

Bicycling Serves Both Everyday Travel and Recreation

Exercise and leisure were the most common individual trip purposes identified in the Trip Map Survey (2024) and Long Form Survey (2024). However, people that participated also reported riding bikes for commuting, shopping, school trips, and transit access. More than half (55 percent) of people reported typical trip lengths of five miles or less, suggesting significant potential for riding a bike to everyday places. The Trip Map Survey (2024) also revealed concentrations of bicycle activity around major employment centers such as Downtown and University communities, commercial districts including Hillcrest and University Towne Center, schools and universities, and regional transit centers like Old Town Transit Center and Santa Fe Depot.

Expanding the Bikeway Network

Nearly 2,000 map contributions were made by 363 people on the draft future bikeway network, demonstrating interest in bicycle infrastructure improvements. People that responded generally expressed support for projects that increased separation from car traffic, with separated bikeways and bicycle paths receiving the most favorable feedback. At the same time, feedback on some corridors was mixed, suggesting a need to balance bicycle improvements with other transportation needs and community priorities. These comments helped refine the planned network and identify locations where additional evaluation and community discussion may be needed.

APPENDIX D

Relationship with Other Plans and Policies



The Bicycle Master Plan plays a supporting role, alongside other planning documents and policies, guiding transportation, land use, safety, sustainability, and community development in San Diego. Together, these plans and policies establish the community priorities, policy direction, design standards, and implementation strategies that shape bicycle planning and investment. This Appendix outlines the main objectives of each of those documents and describes how they interact with this Plan.

Strategic Plan

- What it does: The Strategic Plan establishes a citywide vision and framework organized around five priority areas: creating homes, protecting and enriching neighborhoods, advancing mobility and infrastructure, championing sustainability, and fostering regional prosperity. Under the Advance Mobility & Infrastructure priority, the Strategic Plan calls for constructing and maintaining high-quality infrastructure for cyclists, pedestrians, transit, and cars across all communities, creating safer conditions for everyone traveling along a street, and expanding options for traveling that are efficient, sustainable, and equitable.
- Relevance to the Bicycle Master Plan: An update to the Bicycle Master Plan is explicitly referenced in the Strategic Plan as an implementing document under multiple outcome areas, including Infrastructure, Safety, Accessibility, and Performance & Mobility Options. In this way, the Plan is not only consistent with the Strategic Plan but serves as one of the primary vehicles through which these goals are achieved on the ground.

General Plan - Mobility Element

- What it does: The Mobility Element of the General Plan provides a citywide policy direction for a network of streets, routes, and trails that allow all San Diegans to safely, conveniently, and enjoyably walk, cycle, take transit, or drive between home, school, work, and places to play with an emphasis on equitable access in underserved communities.
- Relevance to the Bicycle Master Plan: The Bicycle Master Plan implements the bicycle-related goals and policies of the Mobility Element. In particular, the three goals outlined in the Mobility Element's Bicycling chapter provide the Bicycle Master Plan's foundation:
 - Establishing a city where bicycling is a safe, convenient, and enjoyable travel choice, particularly for trips under five miles
 - Developing a safe and comprehensive local and regional bikeway network
 - Advancing environmental quality, public health, recreation, and mobility benefits through increased bicycle ridership

Relevant policies from the General Plan's Mobility Element and other elements of the Plan are included in the table below.

Table D-1: Relevant General Plan Policies

Policy ID	Policy
LU-H.6	Provide linkages among employment sites, housing, and villages via an integrated transit system and a well-defined pedestrian and bicycle network.
LU-H.10	Foster inclusive neighborhoods that support families with children and intergenerational households, encourage community interaction, and provide safe, convenient, enjoyable and accessible public amenities. e. Accessible Parks: Provide safe and enjoyable parks that can be reached safely by walking/rolling and biking. j. Safe School Routes: Provide safe routes to schools so children and parents can walk/roll and bike to school.
UD-B.8	Design project circulation systems for walkability. f. Design new connections, and remove any barriers to pedestrian and bicycle circulation in order to enable people to walk or bike, rather than drive, to neighboring destinations (see also Mobility Element).
UD-C.5	Design or retrofit streets to improve walkability, strengthen connectivity, and enhance community identity. d. Emphasize the provision of high quality pedestrian and bikeway connections to transit stops/stations, village centers, and local schools.
ME-A.3	Engage in public education campaigns to increase drivers' awareness of pedestrians and bicyclists, and to encourage more courteous driving.
ME-B.1	Implement the Bicycle Master Plan and community plan bicycle networks with a 'Class 4 First' approach where appropriate and feasible a. Implement the Bicycle Master Plan and community plan bicycle networks with a 'Class 4 First' approach where appropriate and feasible b. Coordinate with other local jurisdictions, SANDAG, schools, and community organizations to review and comment on bicycle issues. c. Reference and refine the plan, as needed, in conjunction with community plan updates and proposed regional connections. d. Improve connectivity of the multi-use trail network, for use by bicyclists and others, as appropriate.

Policy ID	Policy
ME-B.2	Identify and implement a network of bikeways that serve bicyclists' needs, especially for travel to employment centers, village areas, schools, commercial districts, transit stations, and institutions. a. Develop a bikeway network that is continuous, closes gaps in the existing system, improves safety, and serves important destinations. b. Develop and maintain a comprehensive, integrated system of reduced stress bikeways to help encourage community members to cycle for commuting and daily needs. c. Implement bicycle facilities based on a priority program that considers existing deficiencies, safety, commuting needs, connectivity of routes, and community input. d. Recognize that bicyclists use all City roadways. 1. Design future roadways to accommodate bicycle travel; and 2. Upgrade existing roadways to enhance bicycle travel, where feasible
ME-B.3	Maintain and improve the quality, operation, and integrity of the bikeway network and roadways regularly used by bicyclists. a. Provide buffered or separated bikeways along major roadways where vehicle speeds and volumes are higher. b. Provide treatments such as wayfinding and markings, colored pavement, bicycle signals, bike boxes, and protected intersections to enhance safety, comfort, and enjoyability for all levels of bicycle riders. c. Implement high-quality bicycle facilities, treatments, and amenities as roadways are resurfaced and/or rights-of-way become available.
ME-B.4	Provide safe, convenient, and adequate short- and long-term bicycle parking facilities and other bicycle amenities for employment, retail, multifamily housing, schools and colleges, and transit facility uses. a. Continue to require bicycle parking in commercial and multiple unit residential zones. b. Provide bicycle facilities and amenities to help reduce the number of vehicle trips.
ME-B.5	Increase the number of bicycle-transit trips by coordinating with transit agencies to provide safe routes to transit stops and stations, to provide secure bicycle parking facilities, and to accommodate bicycles on transit vehicles.
ME-B.6	Develop and implement public education programs promoting bicycling and bicycle safety. a. Increase public awareness of the benefits of bicycling and the availability of resources and facilities. b. Increase government and public recognition of bicyclists' right to use public roadways.
ME-C.1	Support opportunities to encourage shared mobility services and programs throughout the City, including carshare, bikeshare, micromobility, and information technology resources such as "Mobility as a Service."

Policy ID	Policy
ME-E.1	Plan, design, operate, and maintain streets using the Complete Streets principles for all types of transportation projects within the City including new construction, retrofit/reconstruction, and maintenance projects. a. Repurpose roadway spaces (i.e., travel lane, underutilized right-of way, unneeded pavement) to implement active transportation or other multimodal improvements. Allow for flexible use of the public right-of-way to accommodate all transportation system users while maintaining safety standards. c. Coordinate with SANDAG, Caltrans, and adjacent cities on projects along shared facilities to ensure the application of the Complete Streets approach and implementation of multimodal facilities.
ME-E.2	Provide integrated transportation planning and land use decisions that enhance the City of Villages strategy and transit-oriented development with Complete Streets, which facilitate multimodal transportation opportunities.
ME-E.9	Improve operations and maintenance on City streets and sidewalks. d. When new streets and sidewalks are built and as existing streets and sidewalks are modified - design, construct, operate, and maintain them to accommodate and balance service to all users/modes (including walking/rolling, bicycling, use of shared mobility devices, transit, high occupancy vehicles, autos, trucks, automated waste and recycling collection vehicles, and emergency vehicles).
ME-H.6	Manage curb space in activity areas, coastal areas, transit-oriented developments, business districts, and corridors to balance the demands of all users or activities that occur within this public space, such as vehicle parking, bicycle and shared mobility device parking, delivery loading/unloading, rideshare pick-up/drop-off, transit service, streetaries/sidewalk cafes, parklets, emergency vehicles, etc.
ME-H.8	Acknowledge that curb spaces that are used by people to gather and enjoy public spaces contribute to increased use of the surrounding areas, including access to parks and recreation and enjoyment of shopping of restaurants, and increases the likelihood that people will want to walk/roll and bike to their desired destination in future plans and projects.
RE-F.8	Create or enhance open space multi-use trails to accommodate, where appropriate, pedestrians/hikers, bicyclists, and equestrians.

Climate Action Plan

- What it does: The Climate Action Plan focuses on meeting net zero greenhouse gas emissions by 2035. It details the strategies and actions the City will take to make San Diego a more sustainable, healthy, and thriving city.
- Relevance to the Bike Master Plan: Bicycling is identified in the Climate Action Plan's Mobility and Land Use strategy as a key step for reducing the number of miles people travel by car and shifting travel away from gasoline-powered vehicles to cycling. The Bike Master Plan

expands and improves the bikeway network, making cycling a more viable choice for everyday trips, and helping the City meet its climate goals.

Community Plans

- What it does: The City has 49 community plans that translate the General Plan's citywide policies into community-specific policies which covering land use, mobility, urban design, public facilities, natural resources, and economic development.
- Relevance to the Bicycle Master Plan: The Bicycle Master Plan includes the Bikeway recommendations from community plans. When a community plan is updated, it can include more recent, community-specific bikeway recommendations and is the primary reference determining the type and location of bikeways. In areas without more recent site-specific Community Plan recommendations, the Bicycle Master Plan serves as the primary reference for determining the type and locations of bikeways.

Mobility Master Plan

- What it does: The Mobility Master Plan helps guide decisions about projects, programs, and investments citywide for pedestrians, cyclists, and cars. It has a framework that evaluates and prioritizes all mobility improvement projects. It identifies projects that can help provide the greatest benefits and address the greatest needs more sustainably and equitably.
- Relevance to the Bicycle Master Plan: The Mobility Master Plan provides a framework identifying and prioritizing the construction of bikeway improvement projects.

Vision Zero Strategic Plan

- What it does: The Vision Zero Strategic Plan outlines the strategies and actions needed by the City to maintain meaningful progress toward meeting the goal of zero traffic fatalities and serious injuries.
- Relevance to the Bicycle Master Plan: The Bicycle Master Plan supports the Vision Zero goal by identifying bicycle improvements focused on meeting the goal of zero traffic fatalities and serious injuries. The two plans both focus on design principles that support safety and equitable distribution of improvements.

Complete Streets Council Policy 900-23

- What it does: The Complete Streets Council Policy 900-23 calls for designing streets for all users by including improvements for cyclists, pedestrians, transit, and cars into both public and private improvement projects. This includes adding street design features that help achieve the City's goal of eliminating severe injuries and fatalities, as well as a Citywide organizational structure to coordinate the implementation of bicycle, pedestrian, transit, and other street improvements.

- Relevance to the Bicycle Master Plan: The Complete Streets Policy reflects the City's approach to planning and including bicycle improvements as part of the overall transportation planning process.

Street Design Manual

- What it does: The Street Design Manual provides standards and guidelines for laying out and improving streets for all users, focusing on the General Plan and the Climate Action Plan. It provides for safer and innovative design options to help streamline the implementation of street improvements.
- Relevance to the Bicycle Master Plan: The Street Design Manual guides how bikeway recommendations in the Bicycle Master Plan are included in the design of street improvements.

APPENDIX E

State of the Network





The City of
SAN DIEGO

Bicycle Master Plan Update

State of the Network Report

FEHR & PEERS | CR Associates



Funding for this study
provided by Caltrans' STPG program

State of the Network Report

Biking in San Diego Today
Destinations & Connectivity
Bicycle Collisions
Gaps and Opportunities

Attachment A: Connectivity Analysis Memorandum
Attachment B: Collision Analysis Memorandum

The City of San Diego Bicycle Master Plan (BMPU) is a citywide effort to refresh the City's bicycle facility network recommendations and prioritize active transportation projects.

This State of the Network serves as an existing conditions report that lays the groundwork for understanding the City's greatest needs and opportunities to enhance bicycle facilities.

This report is broken into four key sections:

- **Biking in San Diego Today** presents an overview of existing and designed bike facilities within the City.
- **Destinations & Connectivity** provides an overview of key points of interest in the City and their accessibility via low-stress, comfortable bike facilities.
- **Bicycle Collisions** analyzes bicycle collision history in the City.
- **Gaps & Opportunities** highlights network gaps by geography and other opportunities for the BMPU.

Glossary of Terms

Structurally Excluded Communities: The City of San Diego's Communities of Concern and those priority areas identified in the EJ Element.

Existing Bike Facilities: Facilities in the ground as of November 2024.

Designed Bike Facilities: Facilities with 100% or near 100% designs with secured funding or pending allocation.

Level of Traffic Stress (LTS): Measures how comfortable and safe a roadway feels for cyclists, based on factors like traffic speed and volumes, and bike facility quality.

All Ages & Abilities: Design approach focused on safe, comfortable, and accessible networks for all ages, skill levels, and mobility needs.

Destinations: Defined as schools, parks, transit stops, libraries, shopping areas, and jobs.

Short Trips: Vehicle trips 3 miles or less.



The Bicycle Master Plan Update is guided by five project goals, which will improve and expand a safe, connected, and convenient network:

Safety: Prioritize separated bikeways, protected intersections, and other safety improvements to reduce fatalities and severe injuries.

Equity: Identify project opportunities in structurally excluded communities and to accommodate users of all ages and abilities.

Connectivity: Close existing gaps, improve access, and provide convenient connections within the City and beyond.

Best Practices: Maximize alignment with complete streets best practices and bicycle facility design guidelines.

Innovation: Encourage innovation in design, policy, and programs to optimize opportunities for implementation and increase cycling.

Mode Shift: Increase the number of biking and multimodal trips.

The Bicycle Master Plan Update is guided by the NACTO framework of prioritizing All Ages and Abilities. All Ages and Abilities bicycle facilities are safe, comfortable, and built to attract under-represented cyclist.¹

Who is the “All Ages & Abilities” User?

- Children
- Seniors
- Women
- People of Color
- Low-Income Riders
- People with Disabilities
- Anyone with the need and desire to ride a bicycle



¹ Urban Bikeway Design Guide (NACTO, 2024)

Biking in San Diego Today

Bicycle Facility Types
Existing and Designed Facilities

Biking in San Diego Today provides an overview of the existing and designed facilities in the City of San Diego. It defines bicycle facility types currently seen in the City of San Diego, associated lane miles of each facility, and recently completed bicycle infrastructure projects.



There are five bicycle facility classifications in the City of San Diego.

BIKE PATH



Class I: Off-street paths exclusively for non-motorized users, separated from vehicle traffic. These provide safe connections, within roadway right-of-way or an exclusive right-of-way.
Facility Location: San Diego River Trail

BIKE LANE



Class II: On-street striped lanes for one-way bike travel, adjacent to vehicle lanes. Often enhanced with markings or signage, they are suitable for lower-speed roadways.
Facility Location: Fenton Parkway

BIKE ROUTE



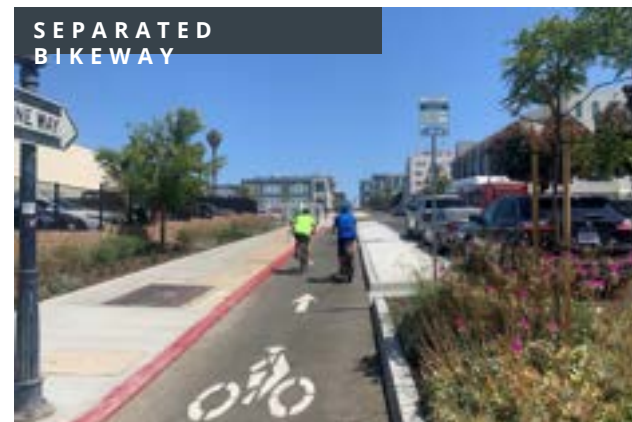
Class III: Shared roadways with motor vehicles, marked with sharrows and signage. Best for low-speed, low-traffic streets, connecting to parks, schools, or other bike facilities.
Facility Location: Fashion Valley Road

BIKE BOULEVARD



Class III - Enhanced: Shared streets with additional traffic-calming features like speed humps or diverters. Designed for safe and low-stress cycling on residential or low-speed roads.
Facility Location: Landis Street

SEPARATED BIKEWAY



Class IV: Protected bike lanes separated from traffic by physical barriers like curbs or bollards. They provide a safe, comfortable option for riders of all ages and abilities.
Facility Location: Fifth Avenue

The City of San Diego is expanding and investing in biking infrastructure across the City.



Doubling the separated bikeway network mileage between mid-2023 to early 2025



Over \$50M programmed towards cycling infrastructure Citywide since 2015



KEY TAKEAWAYS

1,287 miles of bike facilities

79 miles of Class I bike paths

759 miles of Class II bike lanes

137 miles of Class II bike lanes with buffer

251 miles of Class III bike routes

1 mile of Class III bike boulevards

59 miles of Class IV bikeways

180 miles of designed bike facilities preparing for implementation

Figure 1

**Existing and Designed
Bike Facilities**

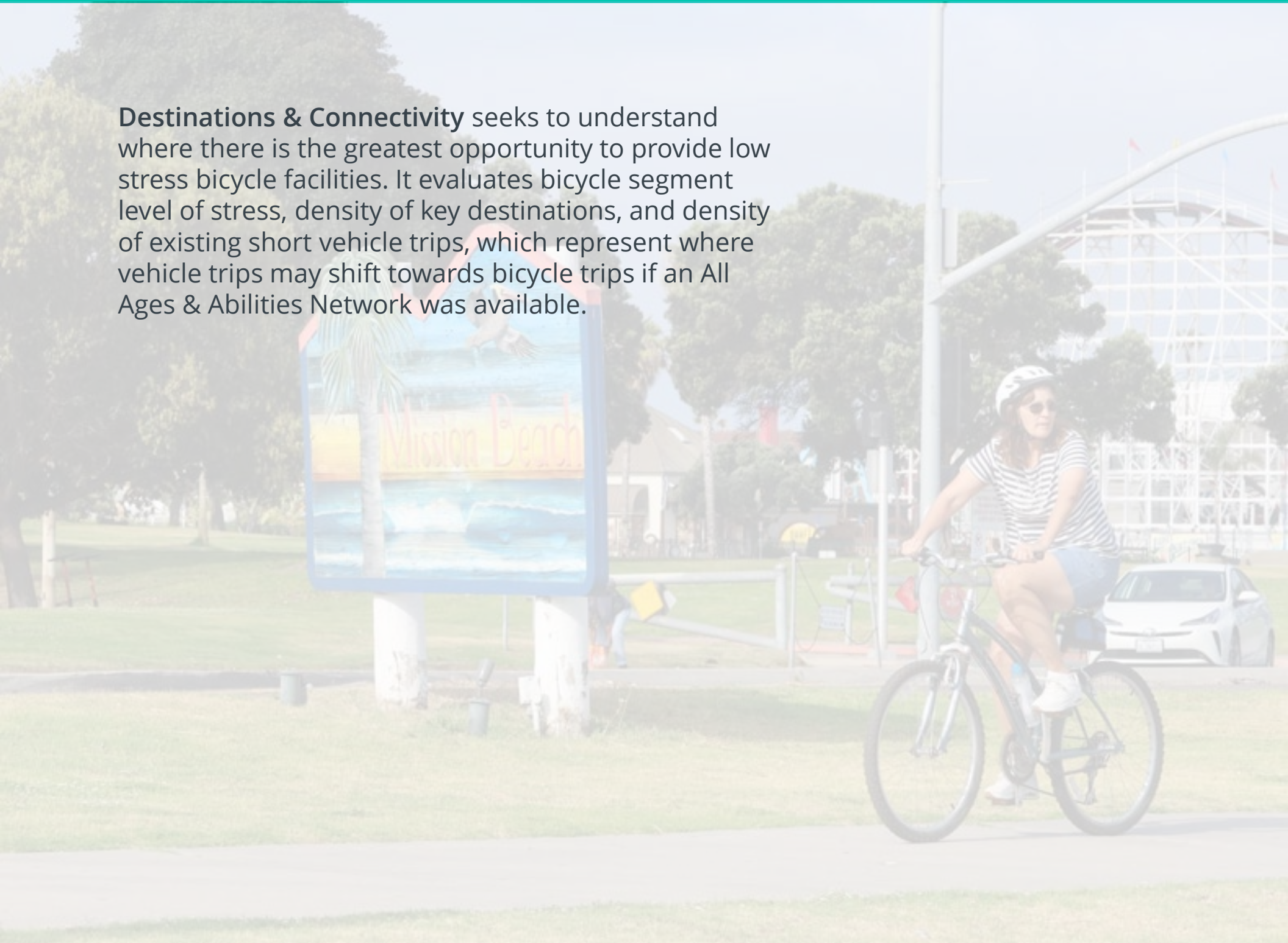
City of San Diego (November 2024)



Destinations & Connectivity

Bicycle Level of Traffic Stress
Stress & Connectivity
Short Trips & Destinations
Connectivity in Structurally Excluded Communities

Destinations & Connectivity seeks to understand where there is the greatest opportunity to provide low stress bicycle facilities. It evaluates bicycle segment level of stress, density of key destinations, and density of existing short vehicle trips, which represent where vehicle trips may shift towards bicycle trips if an All Ages & Abilities Network was available.



KEY TAKEAWAYS

68% of City's roadway network is considered low stress, with a low (≤ 2) Level of Traffic Streets score. This is mostly comprised of local streets with slow speeds and low volumes.

The following roadway classifications make up the largest share of high stress facilities, with a high (≥ 3) Level of Traffic Stress score:

12% Local collectors

5% Collectors

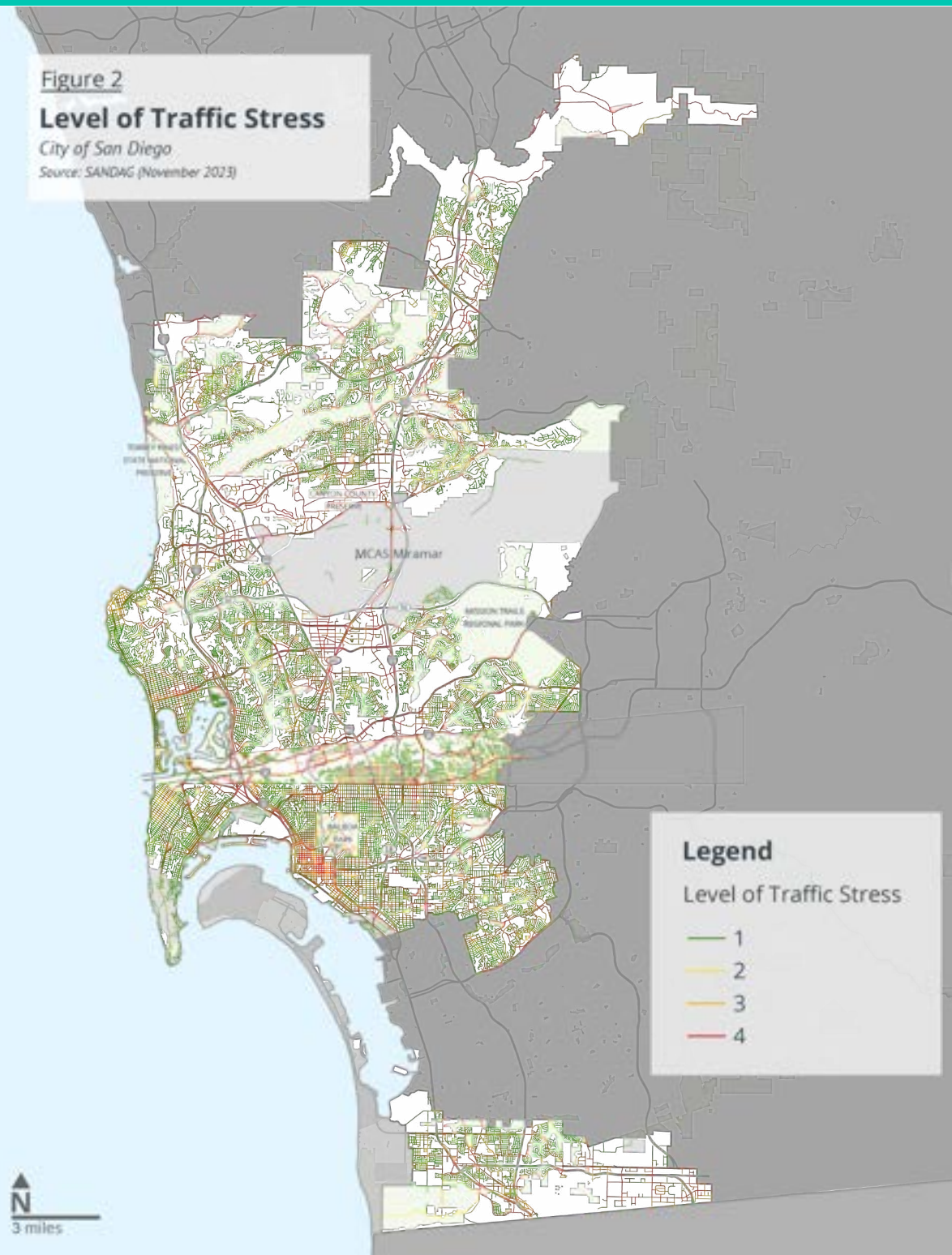
11% Major Arterials

Figure 2

Level of Traffic Stress

City of San Diego

Source: SANDAG (November 2023)



KEY TAKEAWAYS

The Connectivity Analysis considered how accessible key destinations are from the surrounding areas on a low stress network.

Roadways were categorized accordingly:

■ High Connectivity and High LTS:

Roadway segments where there are many destinations near the segment, but the route is considered high stress.

■ High Connectivity and Low LTS:

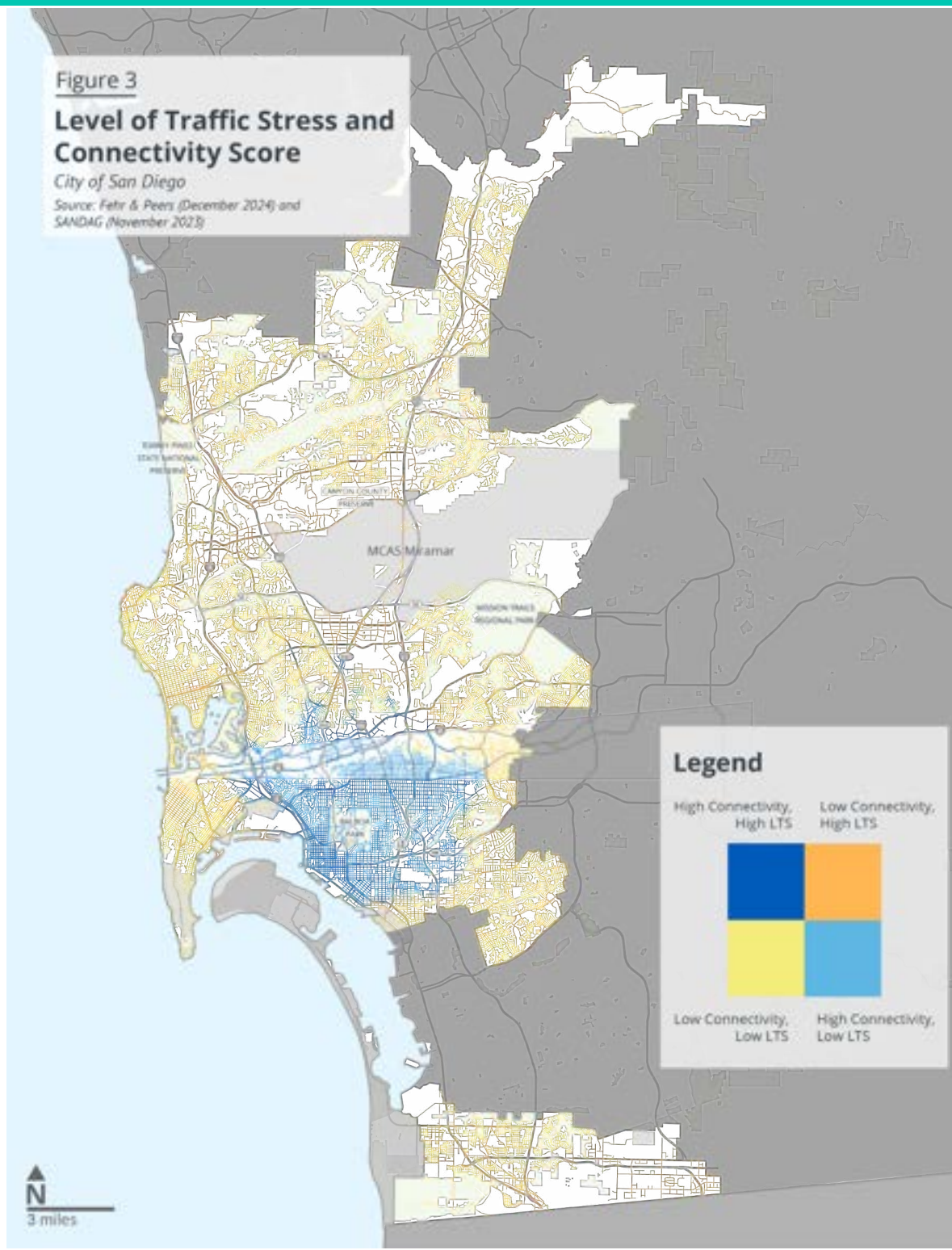
Roadway segments where there are many destinations near the segment, and the route is considered low stress.

■ Low Connectivity and High LTS:

Roadways where there are few destinations near the segment, and the route is considered high stress.

■ Low Connectivity and Low LTS:

Roadways where there are few destinations near the segment, but the route is considered low stress.



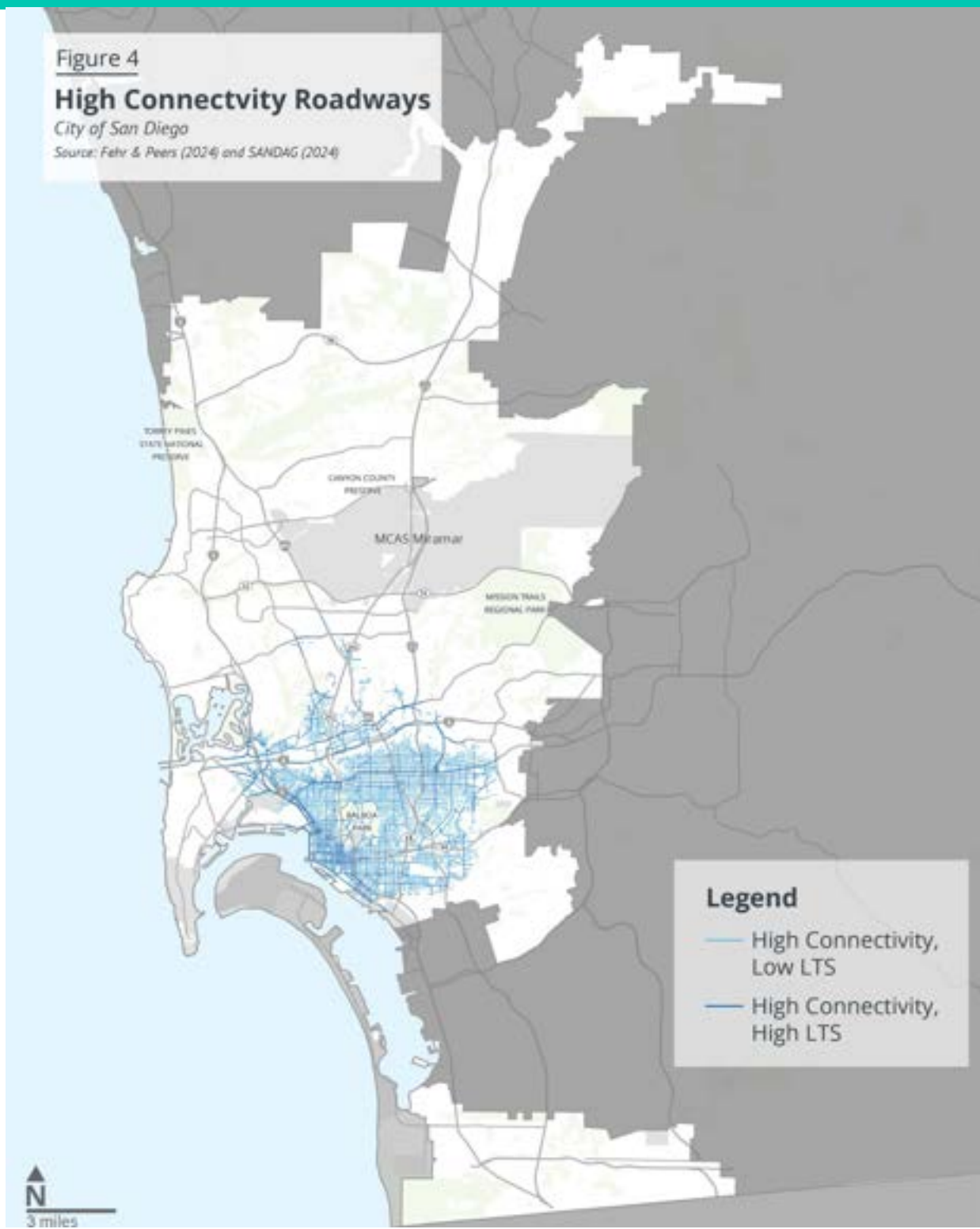
KEY TAKEAWAYS

High Connectivity, High LTS and High Connectivity, Low LTS roadways demonstrate the greatest opportunities to connect people to everyday destinations.

This highlights opportunities to enhance facilities on High Connectivity, High LTS segments or providing parallel facilities on low stress segments.

It also highlights where crossings of high stress streets may need additional traffic calming measures to ensure safety and comfort of a High Connectivity, Low LTS segment.

Figure 4
High Connectivity Roadways
City of San Diego
Source: Fehr & Peers (2024) and SANDAG (2024)



KEY TAKEAWAYS

Short Trips are defined as vehicle trips 3 miles or less.

Top 20% Weekday Short Trips illustrated on the right represents segments with the highest density of short vehicle trips.

These short vehicle trips **represent routes or areas with potential to become bike trips** with an all ages and abilities network.

Additionally, short vehicle trips represent key infrastructural needs within each community and in many cases represent short, intra-community trips.

Figure 5
Top 20% of Short Trips

City of San Diego

Source: Replica (Fall 2023), Fehr & Peers (December 2024), and SANDAG (November 2024)

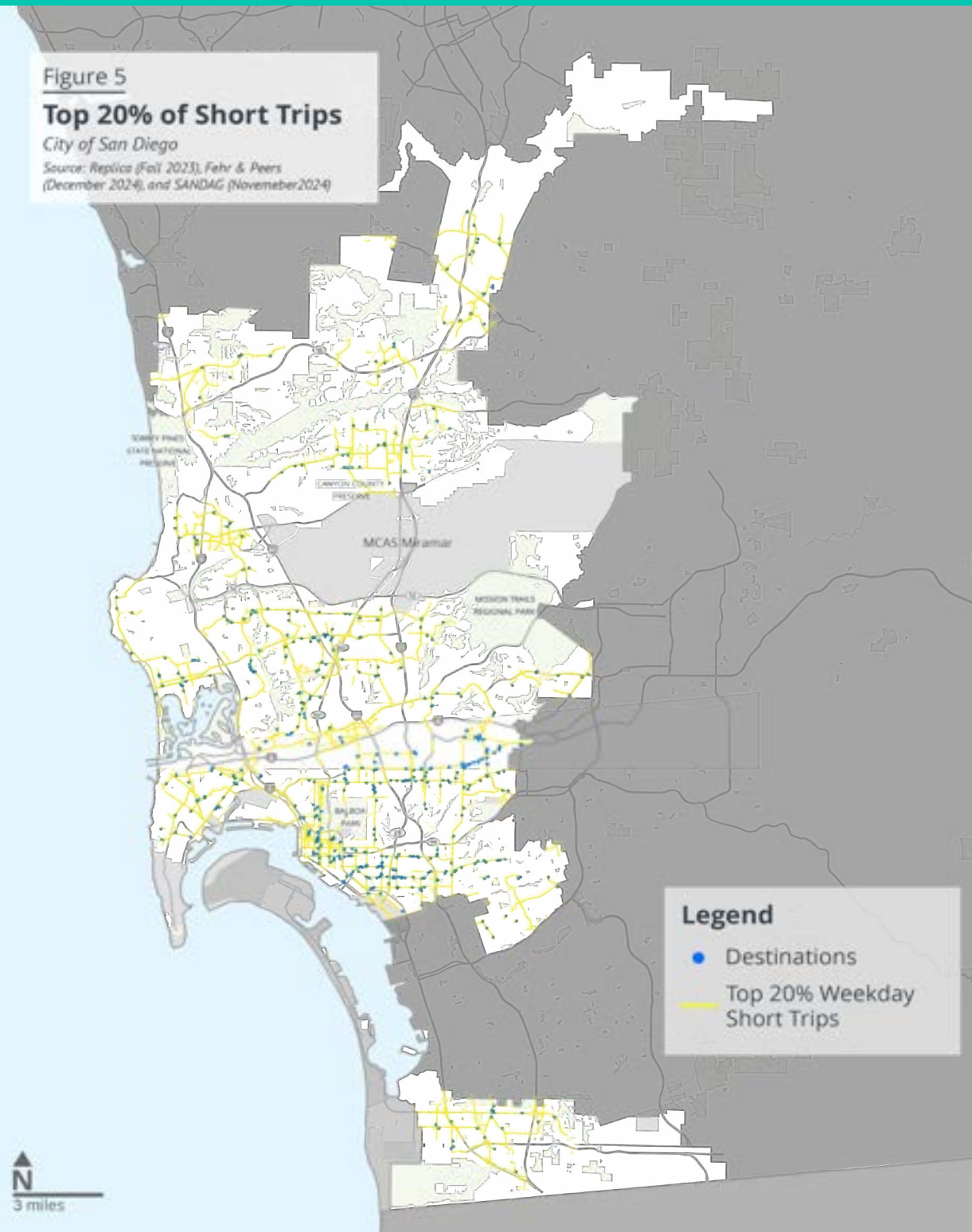
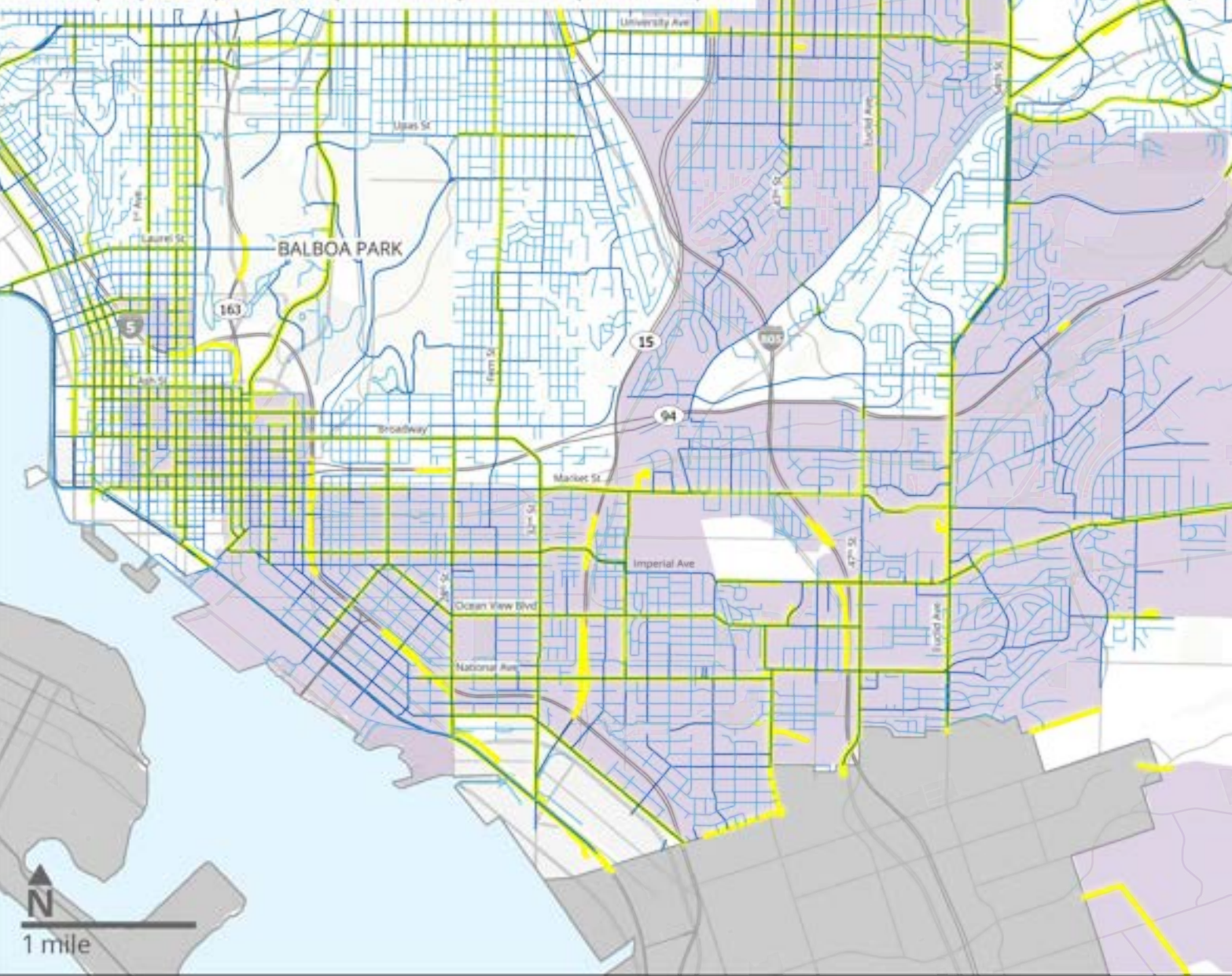


Figure 6

Structurally Excluded Communities with High Connectivity Segments and 20th Percentile Short Trips

City of San Diego

Source: Replica (Fall 2023), Fehr & Peers (December 2024), and SANDAG (November 2024)



“Structurally Excluded Communities” are defined as City of San Diego’s Communities of Concern and those priority areas identified in the EJ Element.

The map illustrates the greatest opportunity for bicycle facilities to connect Structurally Excluded Communities to everyday destinations on a low stress network and roadways residents are most frequently using in their communities.

Legend

- Top 20% Weekday Short Trips
- High LTS, High Connectivity
- Low LTS, High Connectivity
- Structurally Excluded Communities

Bicycle Collisions

Bicycle Collisions summarizes information from 92 bicyclist-involved collisions in City of San Diego which resulted in either a severe or fatal injury between 2019 and 2023.

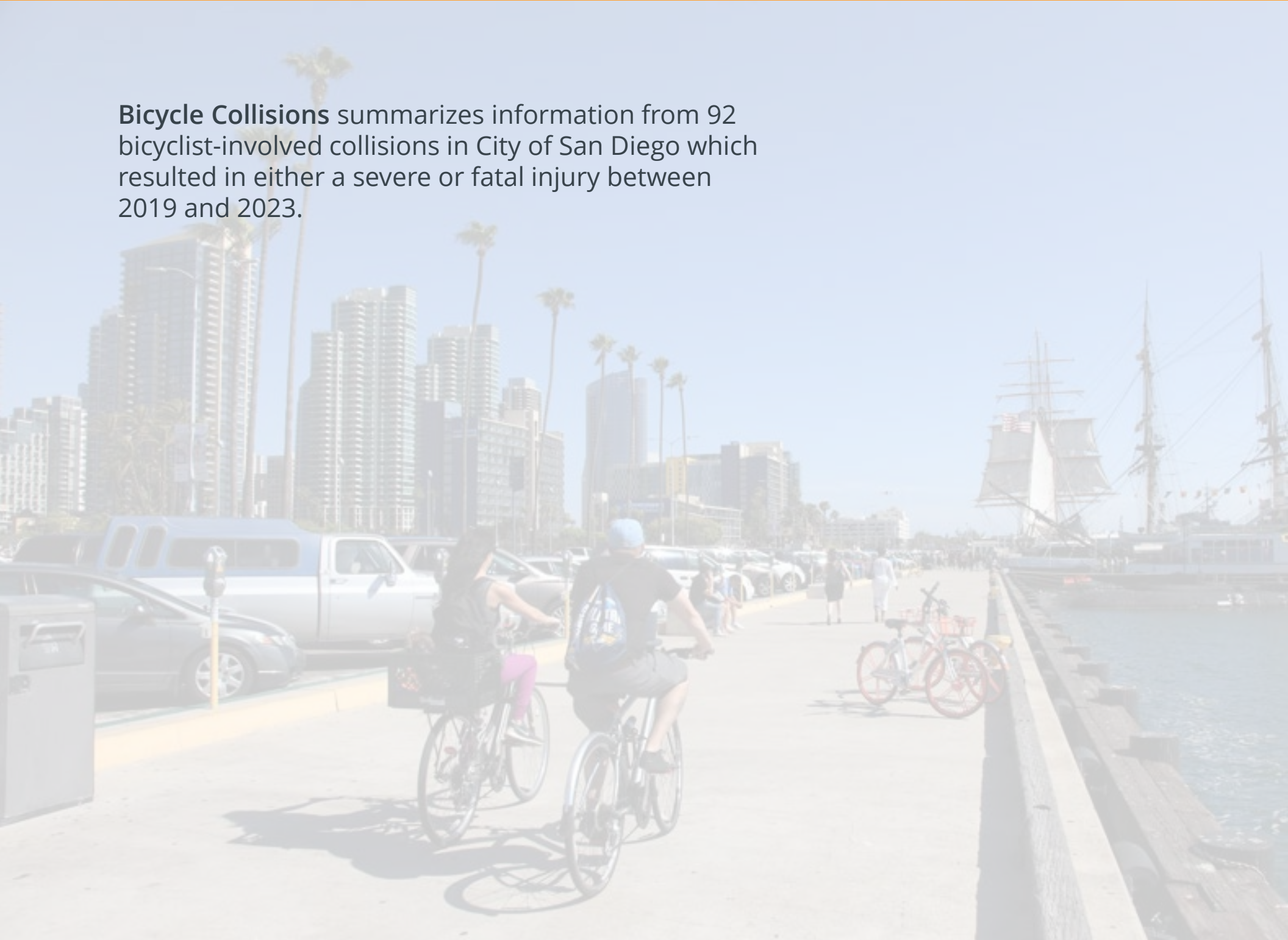


Table 1: Bicyclist-Involved Collisions per Year, 2019 to 2023

Year	Fatal Collisions ¹	Severe Injury Collisions ¹	Total Bicyclist Collisions ²
2023	3	19	365
2022	2	16	323
2021	6	12	325
2020	3	9	324
2019	4	18	356
Total	18 (1.1%)	74 (4.4%)	1,693 (94.5%)
Mean per Year	3.6	14.8	338.6

Source: City of San Diego (2024) ¹, SWITRS (2024) ²

Collision Injury Definitions:

Fatal Injury: Resulted in fatality within 30 days of collision.

Severe Injury: Resulted in broken bones, laceration, or other serious impairments.

KEY TAKEAWAYS

Broadside crashes occurred in most collisions with motorists when a cyclist was at fault (57.5%).

Rear end collisions were the most common type of collision when the motorist was at fault (13 out of 31 instances) and the second most common type of collision when a cyclist was at fault (8 of 40 instances).

Rear end collisions were by far the leading cause of a fatal bicyclist-involved collision when a motorist was at fault.

Table 4: Collisions by Type of Impact and Party at Fault (Non-Solo Bicyclist Collisions)

Type of Impact	Bicyclist at-Fault	Bicyclist at-Fault, <i>Fatal Only</i>	Motorist at-Fault	Motorist at-Fault, <i>Fatal Only</i>	No Fault	No Fault, <i>Fatal Only</i>
Broadside	57.5% (23)	33.3% (2)	25.8% (8)	9.1% (1)	-	-
Rear End	20.0% (8)	33.3% (2)	42.0% (13)	63.6% (7)	-	-
Other	2.5% (1)	-	16.1% (5)	9.1% (1)	100% (1)	100% (1)
Sideswipe	12.5% (5)	33.3% (2)	6.5% (2)	9.1% (1)	-	-
Head-on	2.5% (1)	-	6.5% (2)	9.1% (1)	-	-
Overtaken	2.5% (1)	-	3.2% (1)	-	-	-
Not Specified	2.5% (1)	-	-	-	-	-
Total	40	6	31	11	1	1

Bold values = modal category
Source: SWITRS (2024)

KEY TAKEAWAYS

Unsafe Left or Right Turns, Failure to Yield to Party with Right of Way, Unsafe Speeds, and Traveling on Wrong Side of Road are the most common violation types.

Unsafe Left or Right Turn is the most common violation category in fatal bicyclist involved collisions (33% of all fatal collisions).

Failure to Yield to Party with Right of Way is second most common violation category, though this type of violation was not present in any fatal collisions.

Traveling on Wrong Side of Road a common violation when a bicyclist is at-fault.

Table 5: Collisions by Type of Impact and Party at Fault (Non-Solo Bicyclist Collisions)

Violation Category	Combined Severe & Fatal	Bicyclist at-Fault	Non-Bicyclist at-Fault	No Fault	Fatal Collisions Only	Bicyclist at-Fault	Non-Bicyclist at-Fault	No Fault
Unsafe Left or Right Turn	19.4% (14)	17.5% (7)	22.6% (7)	-	33.3% (6)	33.3% (2)	36.4% (4)	-
Failure to Yield to Party w/ Right of Way	18.1% (13)	15.0% (6)	22.6% (7)	-	-	-	-	-
Unsafe Speeds	16.7% (12)	12.5% (5)	22.6% (7)	-	27.8% (5)	16.7% (1)	36.4% (4)	-
Traveling on Wrong Side of Road	16.7% (12)	25.0% (10)	6.5% (2)	-	5.5% (1)	16.7% (1)	-	-
Other Hazardous/Misc.	12.5% (9)	5.0% (2)	19.4% (6)	100% (1)	16.7% (3)	-	18.2% (2)	100% (1)
Disobeying Signals and Signs	11.1% (8)	17.5% (7)	3.2% (1)	-	-	-	-	-
Unsafe Lane Change	5.6% (4)	7.5% (3)	3.2% (1)	-	16.7% (3)	33.3% (2)	9.1% (1)	-
Total	72	40	31	1	18	6	11	1

Bold values = modal category
Source: SWITRS (2024)

KEY TAKEAWAYS

Midway-Pacific Highway and Kearny Mesa have the highest severe and fatal bicycling collisions per capita.

Balboa Avenue & Viewridge Avenue are the only locations with multiple severe injury collisions in the City.

Table 7: CPAs with the Most Fatal and Severe Bicyclist-Involved Collisions

Community Planning Area	Severe and Fatal Collisions	Severe Collisions	Fatal Collisions
Peninsula	9	9	0
Uptown	8	8	0
Downtown	6	4	2
University	5	4	1
Mid-City: Eastern Area	4	1	1
Skyline-Paradise Hills	4	2	2
Mission Bay Park	4	3	1
Linda Vista	4	3	1
La Jolla	4	3	1

Source: City of San Diego (2024) ¹, SANDAG 2023 Estimates (2024) ²

Gaps & Opportunities

Gaps & Opportunities identifies gaps between the existing and designed bicycle facility networks, highlighting key areas for new or enhanced facilities to make the most impact on the citywide network

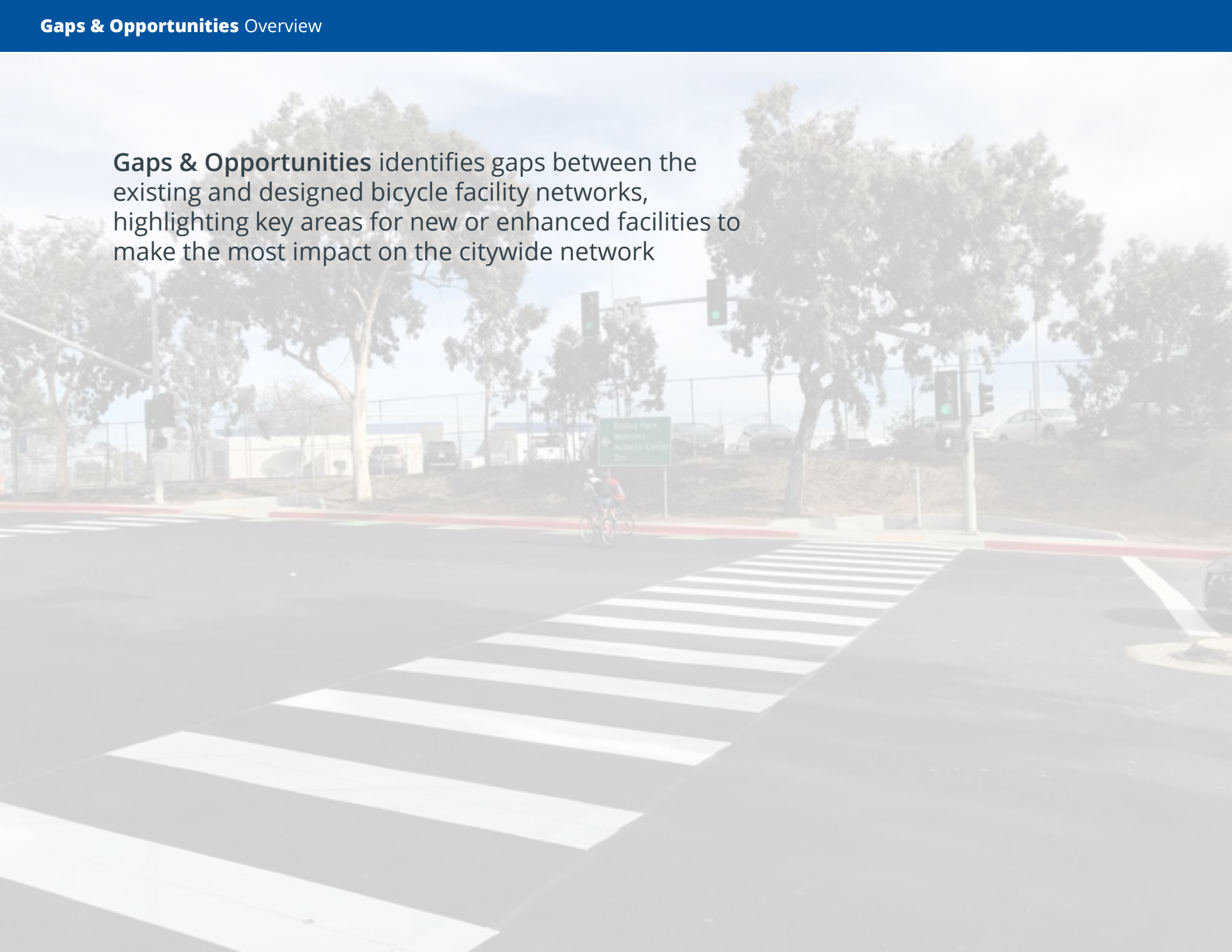


Figure 7

Gaps in Existing & Designed Bicycle Facilities Network

North City of San Diego (as of November 2024)

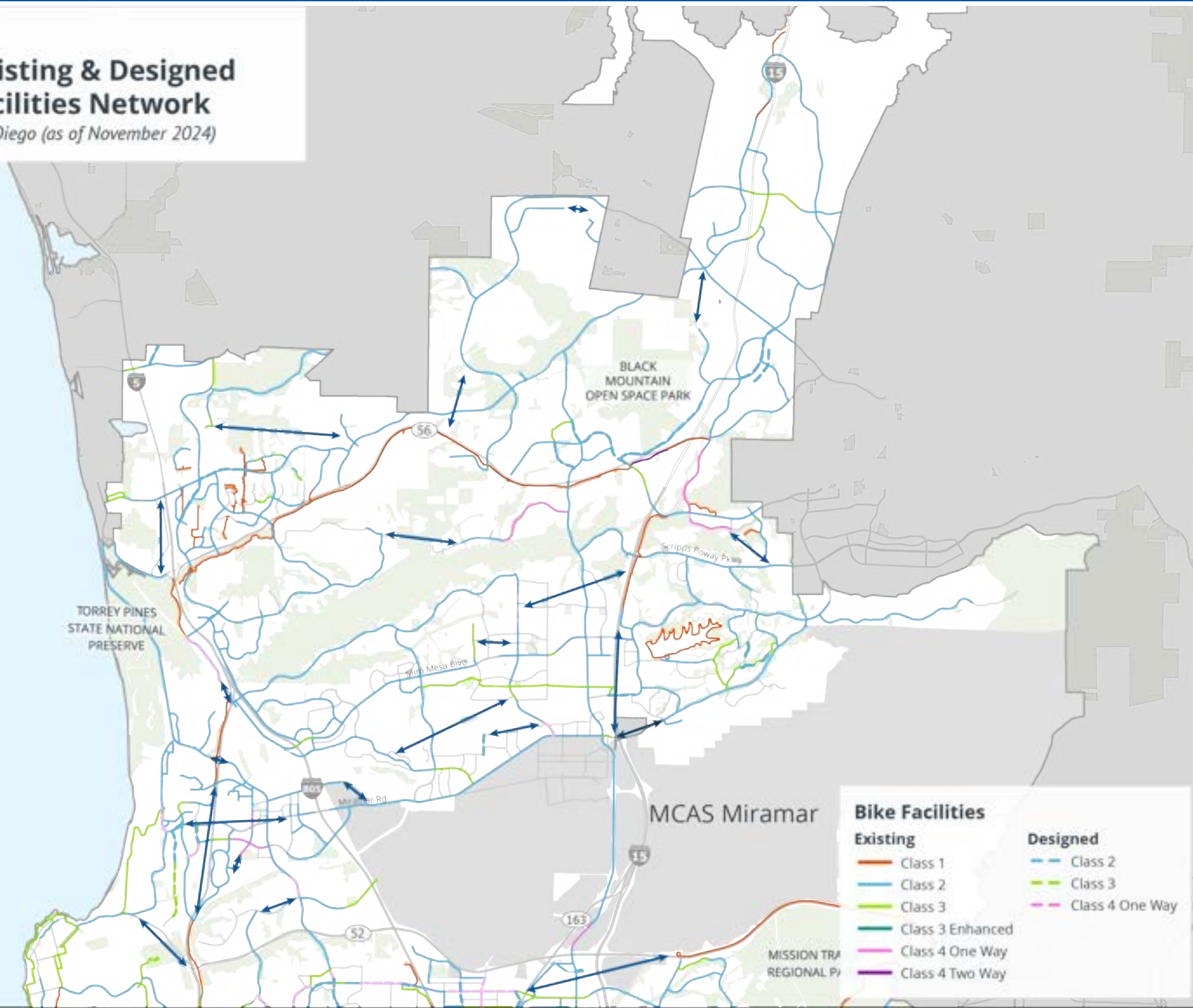


Figure 8

Gaps in Existing & Designed Bicycle Facility Network

Central North City of San Diego (as of November 2024)

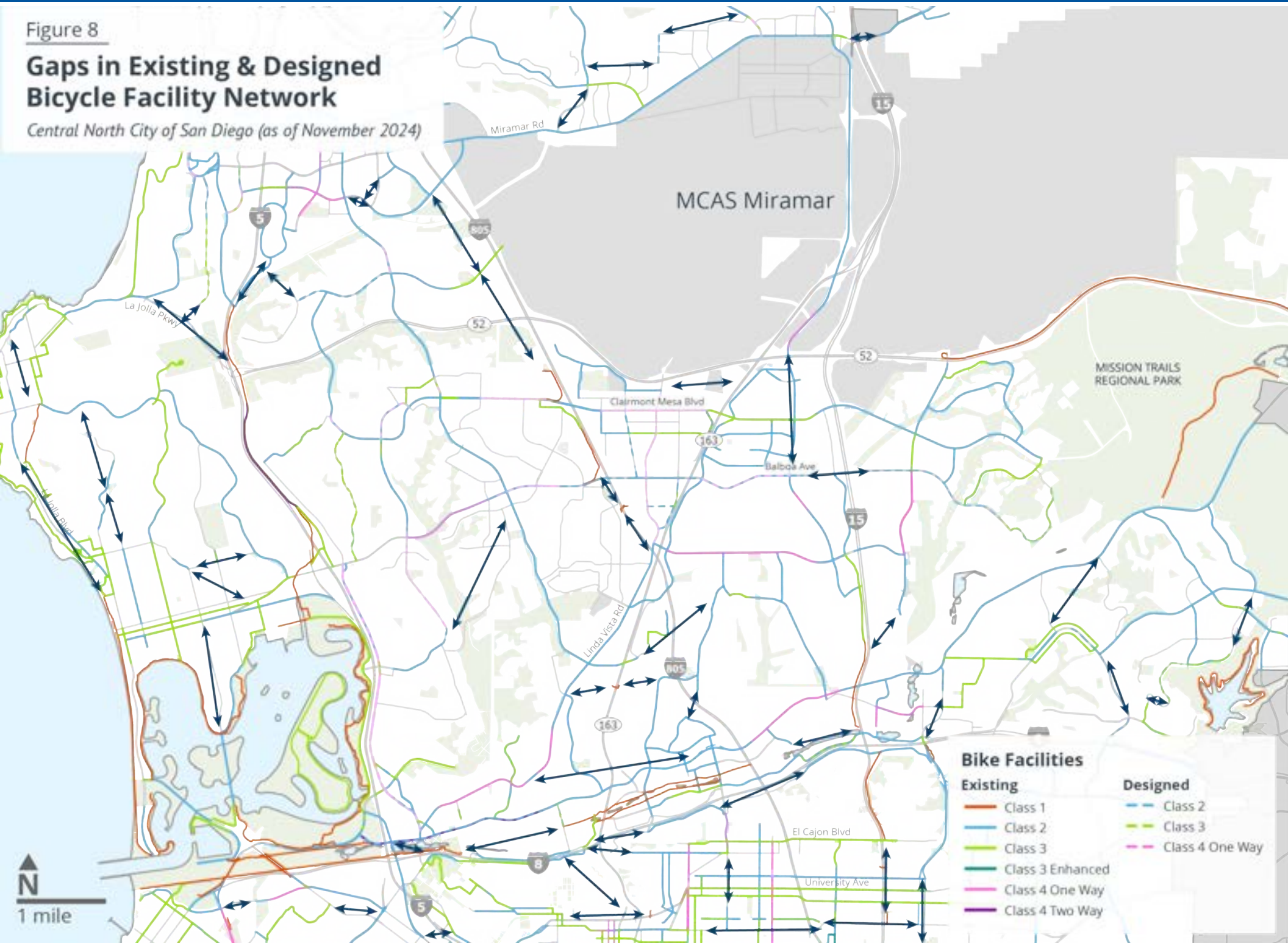


Figure 9
**Gaps in Existing & Designed
Bicycle Facilities Network**
Central South City of San Diego

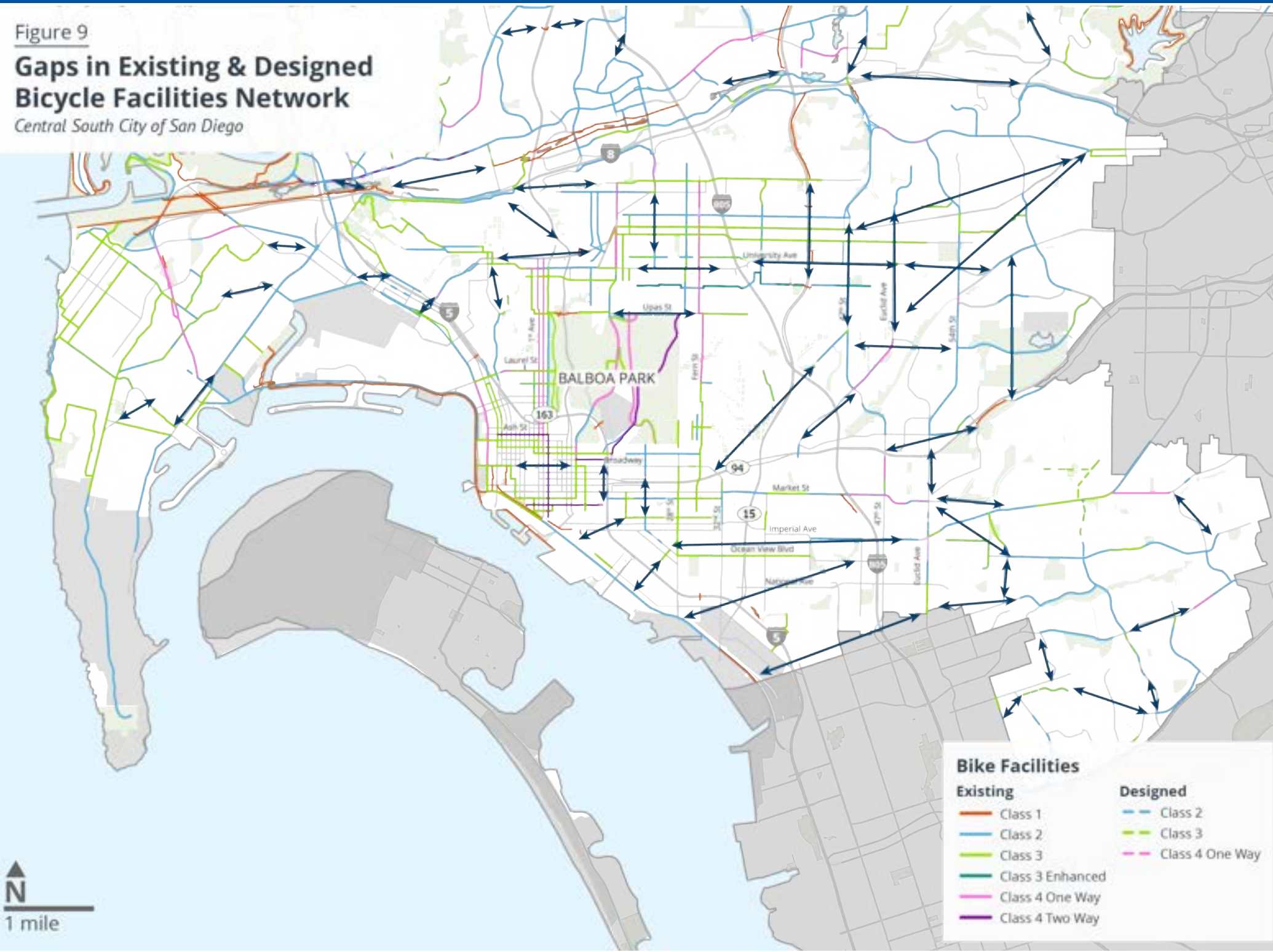
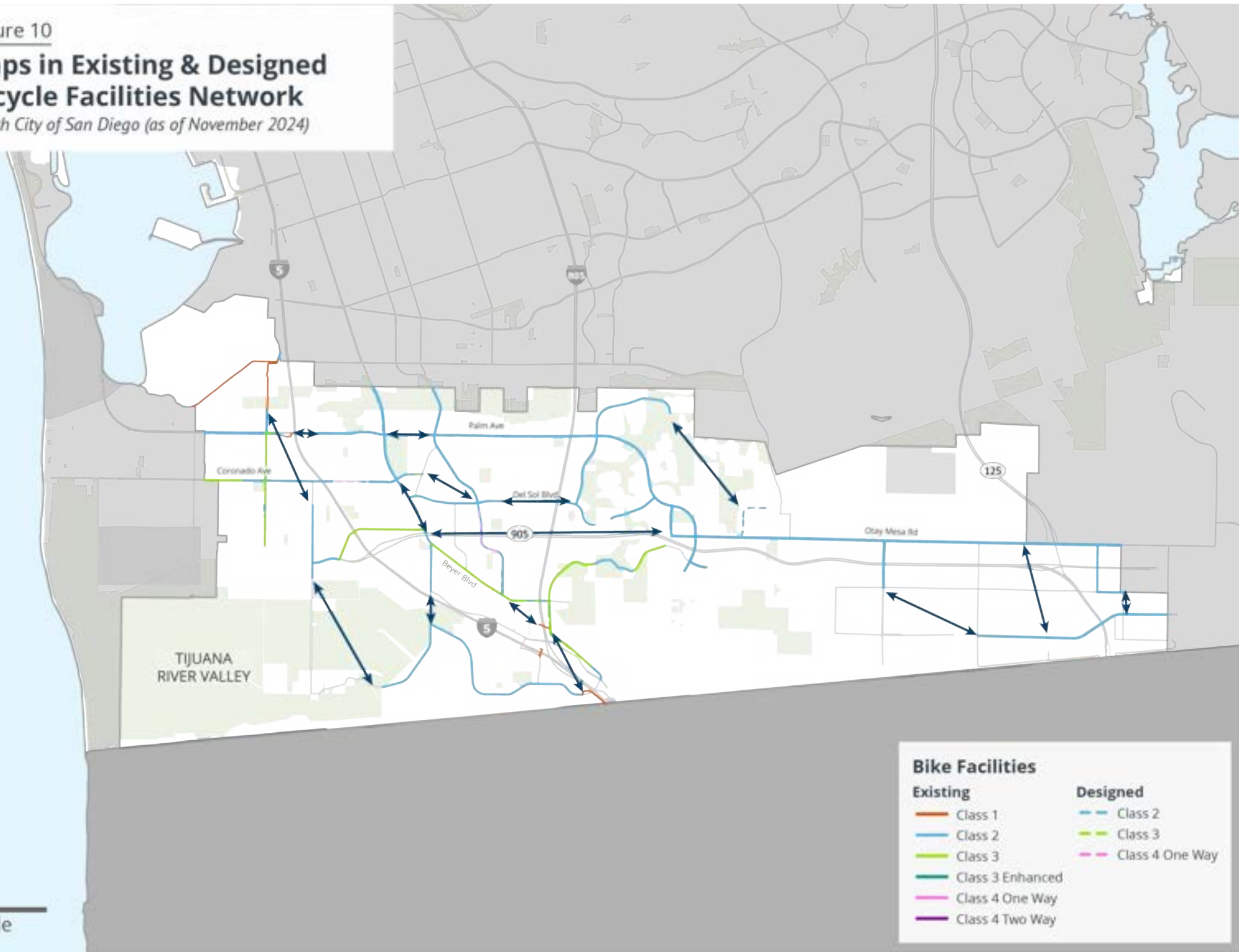


Figure 10
**Gaps in Existing & Designed
Bicycle Facilities Network**
South City of San Diego (as of November 2024)



Next Steps and Opportunities for the BMPU Bicycle Network

- **Milestone in BMPU Progression:** This State of the Network document builds on the Best Practices Report and serves as a foundation for network development and implementation, which will be guided by strong community input.
- **Data-Driven Project Identification:** By layering multiple data sources—trip activity, connectivity, and community needs—we can pinpoint high-impact projects that maximize return on investment. Identifying gaps in existing facilities strengthens the case for safety improvements where demand is highest.
- **Implementation-Focused Approach:** The City has many roadways and previously planned facilities. The BMPU approach will focus on streamlining the process from design to construction, by leveraging maintenance projects and other action-oriented implementation efforts.
- **Targeting Key Areas:** High-need areas, including Structurally Excluded Communities (SECs), can benefit from external funding sources such as the Caltrans Active Transportation Program. Using destination and demand data, we can clearly demonstrate the need for bicycle facility investments and bridge connectivity gaps.



APPENDIX F

Connectivity Analysis



Memorandum

Date: November 8, 2024 (*revised 2/4/2025*)
To: City of San Diego
From: Fehr & Peers, Angelica Rocha, Amir Sadeghi, Katy Cole, and Kendra Rowley
Subject: **City of San Diego Bike Master Plan Update (BMPU) - Connectivity Analysis Methodology**

SD24-0523

Introduction

As a part of the City of San Diego (herein referred to as “the City”) Bike Master Plan Update (BMPU), a connectivity analysis was conducted to identify locations within the City where bicycle facilities and network enhancement can provide the greatest connectivity to everyday destinations. The analysis results highlight segments with high levels of connectivity to a variety of destinations or attractions via low stress bicycling facilities, and parts of the City that may have high levels of destinations or attractions, but along high-stress facilities.

Based on feedback from the City Project Team and Technical Working Group, the connectivity analysis considered how accessible a variety of key destinations are from the surrounding areas (or travel sheds). The following destination types were used to understand where travel access and connectivity via low stress bicycle networks should be prioritized:

- **Schools:** Public and private grade schools as well as colleges and universities.
- **Parks:** Access points to neighborhood and regional parks, beaches, and amusement parks.
- **Transit Stops:** Bus, light rail, commuter rail, and regional rail stops.
- **Libraries:** Public libraries
- **Shopping Areas:** A group of stores (including grocery stores, convenience stores, drug stores, etc.) and services as well Business Improvement Districts.
- **Jobs:** Number of jobs per census block.

The connectivity analysis assumed an average biking speed of 10 miles per hour, meaning the analysis assumed the average person will travel five miles on their bicycle in 30 minutes. While



actual speeds may vary from person to person, this average was selected for planning purposes and aligns with best practices for considering all ages and abilities. For each destination type, three travel sheds were assessed and scored. Bike trips within each travel shed were assigned to all roads with or without bike facilities (since bicyclists could presumably share the road with vehicles).

Analysis Inputs

The analysis inputs included network features, destination types (represented by centroids/points), and Bicycle Level of Traffic Stress (LTS). Each data source is described below.

Network Features

The "Roads_All" layer network, downloaded from SanGIS, was used to create the bike traversable network. It was assumed that bicycles are allowed to traverse any road, with or without bike facilities. The network was set up to prohibit bicycles from traveling on roadways of the following functional classes:

- 1; Freeway to freeway ramp
- E; Expressway
- F; Freeway
- R; Freeway/expressway on/off ramp
- M; Military street within base

Destination Types

Destination Types are comprised of specific land uses or places that attract people and generate trips. See **Table 1** Table 2 for the destination types selected and their sources. Destination types were selected to represent everyday places where people may currently bike to or would more likely bike to if they could get to the destination on a low stress bicycle network.



Table 1: Data Sources for Destination Types

Destination Type	Layer Name	Source
Schools	Schools	SanGIS
	Colleges_SG	SanGIS
Parks	Park_Access_Points	City
	Places; Type field filtered to Amusement Park	SanGIS
Transit Stops	Transit_Stops_GTFS	SanGIS
Libraries	Places; Type field filtered to Library.	SanGIS
Shopping Areas	Places; Type field filtered to Shopping Center	SanGIS
	Two Manual Additions:* 1. One Paseo, 3275 Paseo Pl 2. 3239-45 El Cajon Blvd	Google and Fehr & Peers
	Business Improvement Districts**	SanGIS
Jobs per Census Block	OnTheMap (Census Blocks)	US Census Bureau

Source: Fehr & Peers (2024)

*Represents Shopping Centers not included in the SanGIS Database but are key neighborhood destinations for their communities. Centroids were manually added by Fehr & Peers Staff.

** In creating point features from the Business Improvement Districts polygon layer, one point of interest (POI) was assigned for every 2 million square feet of the polygons. This assignment approach was based on the approximate area of the Ocean Beach Business Improvement District, the smallest improvement district, ensuring the points accurately represent the size of each district.

Bicycle Level of Traffic Stress

Bicycle Level of Traffic Stress (LTS) is an analysis used to evaluate how comfortable and safe the transportation network feels for bicyclists. LTS maps the suitability of bicycles for streets and off-



street paths by assigning a score of 1-4 to all segments. The four-category scale ranges from LTS 1 (lowest stress) to LTS 4 (highest stress). See **Table 2** for more information on LTS scoring.

LTS data was provided by San Diego Association of Governments (SANDAG) who performed this analysis at the regional scale as part of the recent Regional Vision Zero Action Plan. The LTS analysis was completed in November 2023. The City conducted LTS analyses for recent Community Plan Updates, but had only analyzed select neighborhoods at the time of the BMPU. The Fehr & Peers Project Team spot-checked the City's community-specific LTS scores against LTS regional scores and found them aligned, confirming applicability of the SANDAG LTS data set for use at the City scale.

Variables used by SANDAG to define Bicyclist Segment LTS include:

- Annual Average Daily Traffic
- Posted Speed Limit
- Number of Lanes Per Direction
- Directionality (One-way vs. Two-way)
- Presence of Centerline Yes No
- On-street Parking (Presence and Width)
- Dedicated Facilities (Bicycle Facility Type and Width)

Table 2: Four-Category LTS Score and Supportive Descriptions

LTS Score	Description	Bicyclist User Type
LTS 1	Minimal traffic stress, suitable for nearly all ages and abilities, including children trained for intersections. Cyclists are physically separated from traffic or in an exclusive bike zone alongside slow, single-lane traffic. Shared roads feature occasional low-speed motor vehicles, and intersections are easy to navigate.	All Ages and Abilities
LTS 2	Low traffic stress, appropriate for most cyclists, but requires more attention than segments with LTS 1. Cyclists are separated from traffic, in exclusive bike lanes, or on shared roads with low-speed vehicle interaction. Crossings are straightforward, and bike lanes at right-turn areas provide clear priority for cyclists. Crossings are not difficult for most adults.	Interested by Concerned



LTS 3	Moderate traffic stress, acceptable to experienced urban cyclists. Cyclists have dedicated lanes next to moderate-speed traffic or share lanes on lower-speed, non-multilane streets. Crossings may be longer or involve mixing with vehicles operating at moderate speed, but still considered acceptably safe to most adults.	Enthusied and Somewhat Confident
LTS 4	High traffic stress, suitable only for a small portion of cyclists. This level involves riding alongside higher-speed, high-volume traffic with minimal or no separation, appealing mainly to highly experienced riders.	Strong and Fearless / Highly Confident

Source: Almdale, Schoner, and Sanders (2023) *Working toward an improved representation of Level of Traffic Stress, comfort, and systemic safety risk factors for people walking, biking, and rolling – Draft*, page 2

Analysis Process

The connectivity analysis was conducted using the following steps:

- **Step 1:** Develop bicycle travel sheds for all destinations by destination type
- **Step 2:** Calculate a "travel shed score" for each roadway segment within the travel shed of a destination, by destination type
- **Step 3:** Calculate a normalized segment score by destination type between 0-1
- **Step 4:** Combine each destination type's normalized segment score to arrive at the "connectivity score" for each segment. Since there are six (6) destination types, the maximum score for any segment is 6.¹

Steps 1 through 4 are described in detail in the sections below.

Step 1: Develop Travel Sheds for all Destinations

Three bicycle travel sheds for all destinations were developed using ArcGIS Pro, assuming a 10 mile per hour (mph) travel speed for bikes. The three travel sheds included: 0-5 minutes, >5-15 minutes, and >15-30 minutes. See **Figure 1** for an example travel shed developed for a library destination.

¹ Note that all roadway segments received a score for each destination type between 0-1. The scores are then summed up for the six (6) destination types. This process represents equal weight placed on each destination type. It is possible to weight destination types differently if community values indicate a higher emphasis is placed on a certain destination type.

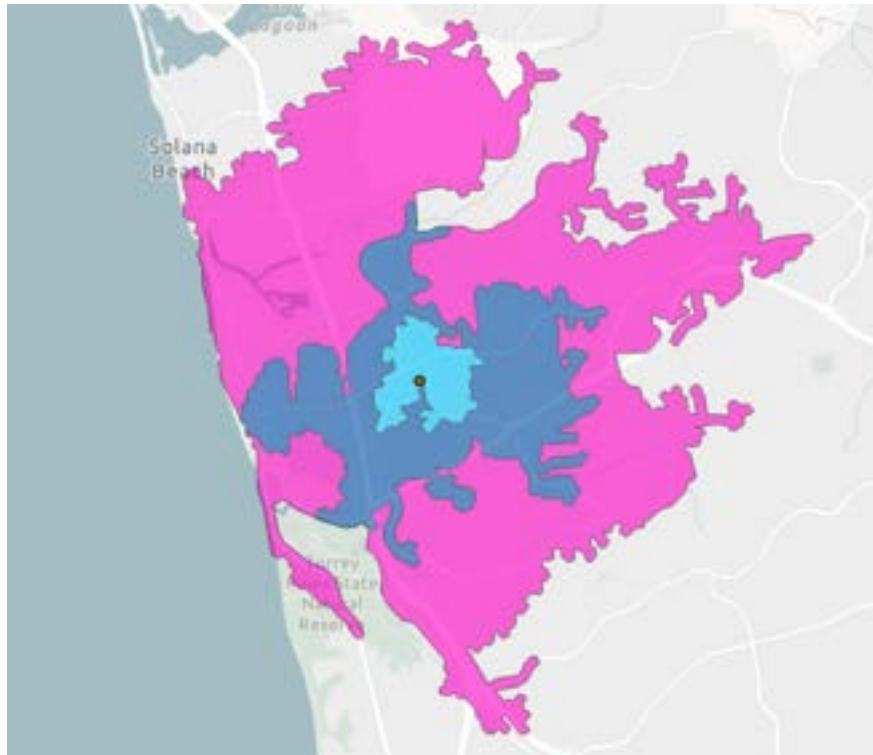


Figure 1: Example of the Bicycle Travel Sheds for Carmel Valley Library, Light Blue = 0-5 minutes, Dark Blue = >5-15 minutes, and Magenta = >15-30 minutes

The three travel sheds were developed for all destination points within each destination type. For destinations that are schools, parks, transit stops, libraries, and shopping areas, the travel sheds are drawn around the land use centroid. For jobs, the travel shed is drawn around any census block that contains at least one job. The number of jobs within the census block is also a critical input, and is accounted for in Step 2.

Step 2: Travel Shed Scores by Destination Type

The next step was performed for each destination type separately. Since there are many destinations for each destination type, there are many travel sheds that overlap one another.

For each individual destination (in the schools, parks, transit stops, libraries, and shopping area types), the roadway segments within that destination's travel shed were assigned a travel shed score as follows:

Travel Shed Score for Each Destination (except jobs):

- 0 – 5 minutes travel shed = All segments within a 5-minute travel shed are assigned a Travel Shed Score of 3



- >5 – 15 minutes travel sheds = All segments within the greater than 5 – 15-minute travel shed are assigned a Score of 2
- >15 – 30 minutes travel sheds = All segments within the greater than 15 – 30-minute travel shed are assigned a Score of 1

Travel Shed Score (for jobs):

For jobs, the travel sheds were drawn around any census block that has at least one job. The travel shed scores are weighted and assigned based on the number of jobs in the census block. A weighted connectivity score was calculated based on total employment of each census block. For example, a census block with 100 total jobs would be scored as follows:

- 0 – 5 minutes travel shed = All segments within a 5-minute travel shed are assigned a Travel Shed Score 300
- >5 – 15 minutes travel sheds = All segments within the greater than 5 – 15-minute travel shed are assigned a Score 200
- >15 – 30 minutes travel sheds = All segments within the greater than 15 – 30-minute travel shed are assigned a Score 100

In other words, the score reflects the number of jobs within the Census Block multiplied by 3, 2, or 1, for each respective travel shed.

Step 3: Calculate Normalized Segment Score

For each destination type, the travel shed scores were summed for each individual road segment in the network. Because there are numerous destinations within each destination type, an individual roadway segment likely falls into travel sheds for several destinations within the same destination type, receiving points for each travel shed.

For illustration, consider a segment near multiple shopping area destinations. Suppose that the segment is within travel sheds of 20 shopping area destinations, resulting in the following travel sheds:

- Within 0-5 travel sheds = 5 destinations
- Within >5-15 travel sheds = 5 destinations
- Within >15-30 travel shed for 10 destinations

The process of calculating the travel shed score for this segment is described in **Table 3**.



Table 3: Travel Shed Score for Process for Described Example

Travel Shed	Score for each Destination in Travel Shed		Quantity of Destinations within Travel Shed		Total Travel Shed Score
0-5 mins	3	*	5	=	15
>5-15 mins	2	*	5	=	10
>15-30 mins	1	*	10	=	10
Travel Shed Score					35

Source: Fehr & Peers (2024)

In this example, the segment would receive a shopping area destination type total travel shed score of 35.

Once this summation process is complete for all segments by destination type. The total score is normalized by dividing the total travel shed score by the maximum travel shed score for each destination type to arrive at a score between 0-1.

Continuing with the example above, suppose the highest individual segment travel shed score is 100 for the shopping area destination type, then the example segment above would have a normalized score of $35/100=0.35$. All segments are assigned a normalized score for each destination type.

Step 4: Calculate the Connectivity Score

To calculate the connectivity score for each roadway segment, the normalized travel shed scores for each destination type are summed. Since there are six (6) destination types, connectivity scores range is between 0-6. This process represents equal weight placed on each destination type. It is possible to weight destination types differently if community values indicate a higher emphasis is placed on a certain destination type, however, for this process each destination type was assigned equal weight and importance.

To understand how this process is applied to a segment, see example below:

For illustration, consider an individual road segment in the network may have received the following normalized scores by destination type:



Table 4: Normalized Score by Destination Type for Described Example

Destination Type	Normalized Score
<i>Schools</i>	0.1
<i>Parks</i>	0.1
<i>Transit Stops</i>	0.8
<i>Libraries</i>	0
<i>Shopping Areas</i>	0.25
<i>Jobs per Census Block</i>	0.5
Total Connectivity Score	1.75

Source: Fehr & Peers (2024)

In this example, the sample roadway segment has a connectivity score of 1.75 out of a total of 6.

Analyzing Connectivity By LTS

A primary purpose of developing connectivity scores for roadway segments is to understand which segments provide connections to high levels of (or many) everyday destinations and to what extent people can bicycle to those destinations. Bicycle LTS provides insight into how comfortable a roadway segment is to bicycle on. Ideally, roadways that have high levels of connectivity would also be comfortable to bicycle on. This combination of high connectivity and high comfort (LTS 1 or 2) results in bicycling being a viable travel option and encourages bicycling.

High LTS (or uncomfortable bicycle conditions) was defined as LTS greater than 2, and low LTS (comfortable bicycle conditions) was defined as less than or equal to 2.

High connectivity was defined as a connectivity score above average (3), and low connectivity as a score below average.

Segments were sorted into one of four categories:

- **High Connectivity and High LTS:** Roadway segments where there are many destinations near the segment, but the route is uncomfortable.
- **High Connectivity and Low LTS:** Roadway segments where there are many destinations near the segment, and the route is comfortable.
- **Low Connectivity and High LTS:** Roadways where there are few destinations near the segment, and the route is uncomfortable.
- **Low Connectivity and Low LTS:** Roadways where there are few destinations near the segment, but the route is comfortable.



In general, improving the LTS in the high connectivity/high LTS category would likely result in the greatest shift from driving to bicycling and elevate bicycling as a viable transportation option for the most people to reach everyday destinations.

Figures 2 through 4 illustrate citywide Connectivity scores, LTS scores, and LTS/connectivity score maps, respectively.

Next Steps

The purpose of this analysis is to identify locations in the City where bicycle facilities and network enhancements can provide the greatest connectivity to everyday destinations. The analysis highlights segments with high connectivity to destinations and identifies if there is a low stress network available to access these areas.

As part of the next steps, the Project Team will be evaluating the connectivity analysis with network facility layers, such as existing, designed, and planned, to understand gaps and opportunities in the current network. The primary intent will be to understand if areas with high connectivity are accessible via a low stress network, either along the high connectivity segment or via a low stress parallel street. A preliminary evaluation will be performed as part of the State of the Network, with a more formal process developed as part of the network development included as part of Phase 2.

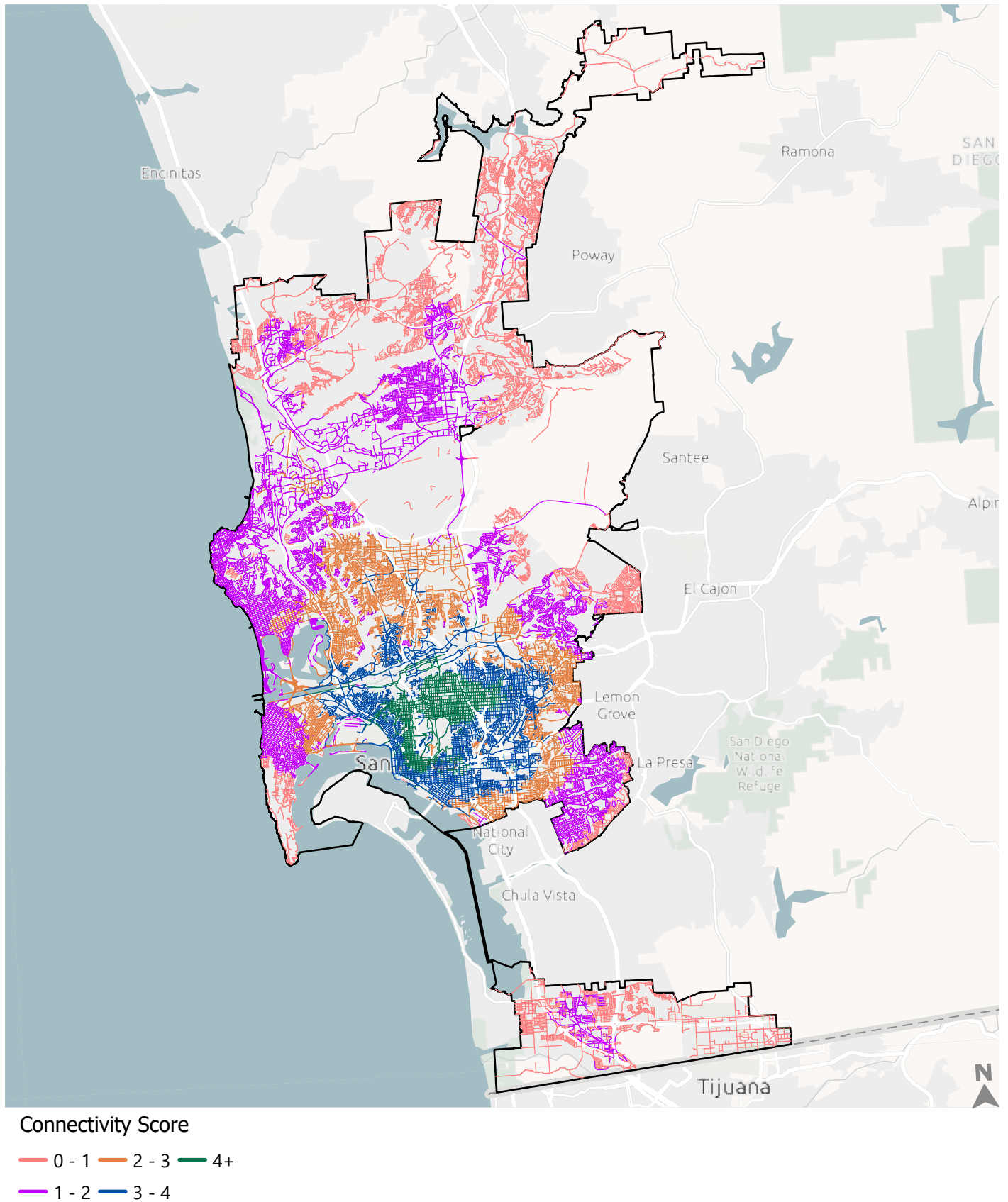
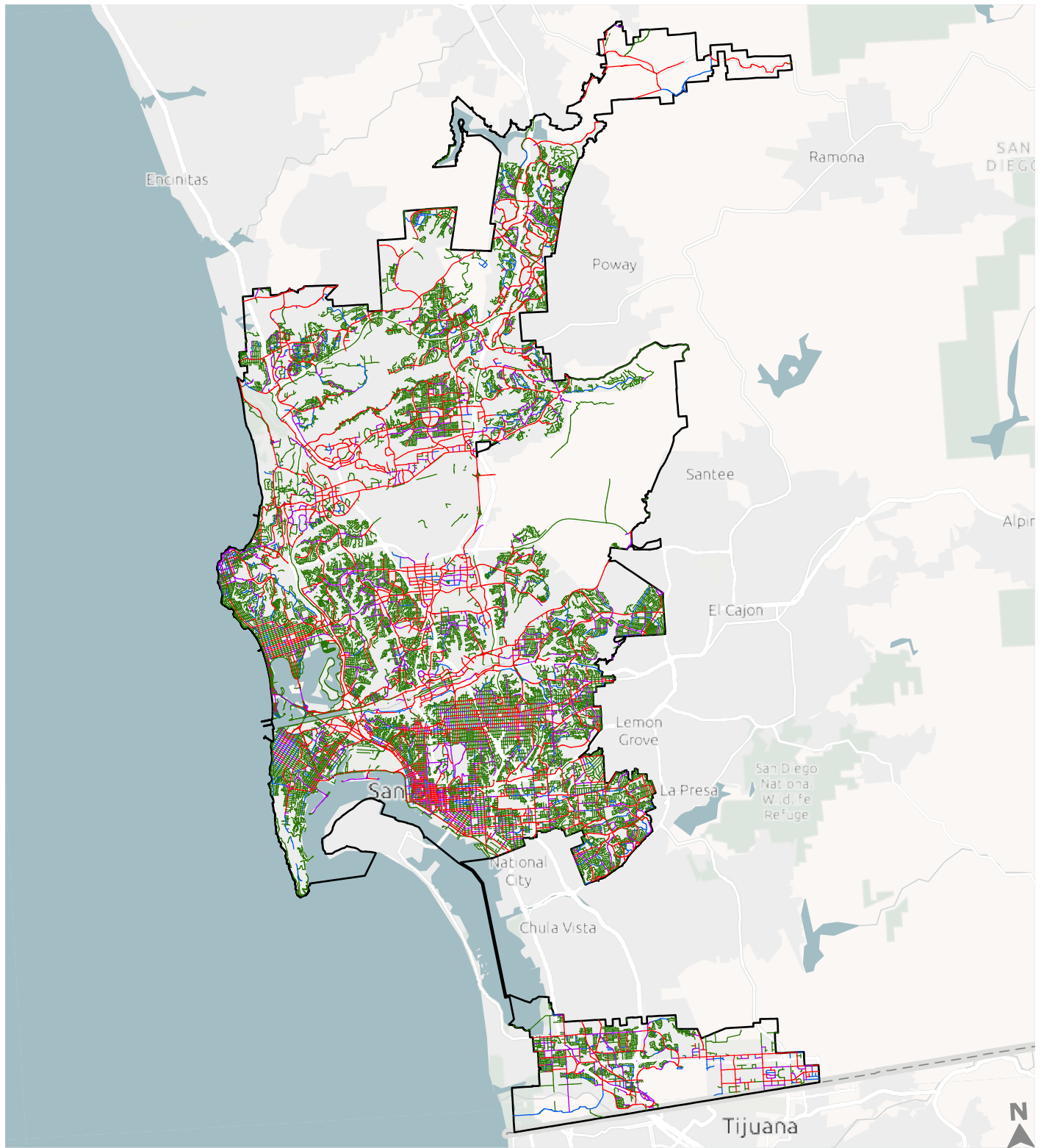


Figure 2

City of San Diego Bike Connectivity Score

Source: Fehr & Peers, 2024





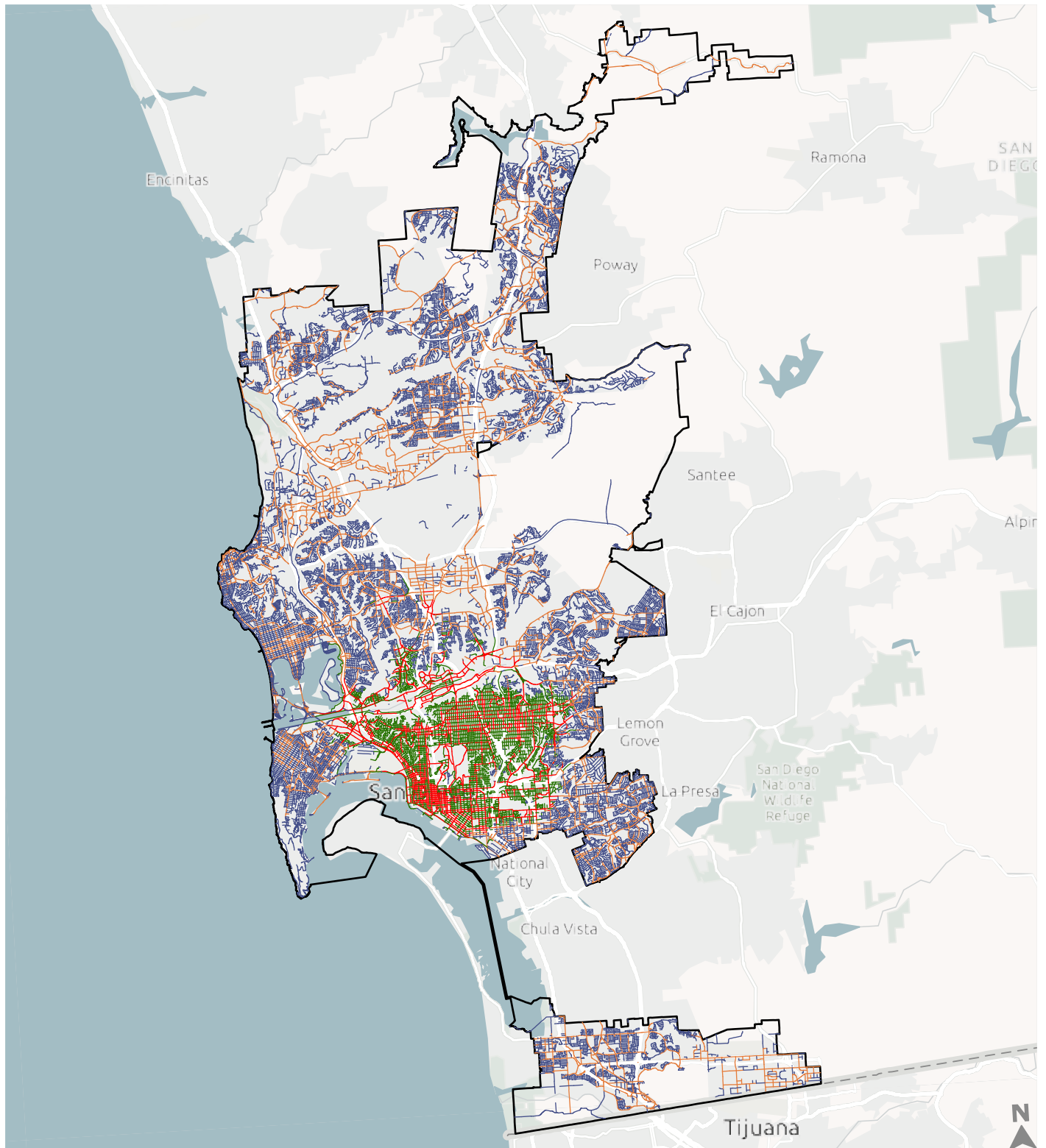
Bike Level of Traffic Stress (LTS)

- 1 3
- 2 4

Figure 3

City of San Diego Bike Level of Traffic Stress (LTS)
Source: SANDAG, 2024





- High LTS / High Connectivity
 — Low LTS / High Connectivity
- High LTS / Low Connectivity
 — Low LTS / Low Connectivity

Figure 4

City of San Diego Bike LTS / Connectivity
Source: Fehr & Peers, 2024



APPENDIX G

Collision Analysis





TO: City of San Diego

FROM: Sasha Jovanovic, CR Associates

DATE: 12-16-2024 (REVISED 10-08-2026)

RE: San Diego Bicycle Master Plan Collision Analysis

Introduction

This memorandum summarizes information from 92 bicyclist-involved collisions in San Diego which resulted in either a severe injury or fatality over a period of five years between 2019 and 2023. Each collision's notable attributes (party characteristics, injury severity, type of impact, primary collision factors, etc.) are analyzed and locations and environments in the City where collisions have occurred disproportionately are identified. Findings and narratives from this memo will be incorporated into the Bicycle Master Plan Update's assessment of existing conditions.

Data Sources

The City of San Diego provided historic records maintained by the San Diego Police Department of severe or fatal traffic collision locations through the end of 2023. These records have been vetted by City of San Diego staff for locational accuracy and final injury severity prior to analysis.

The City's data consisted of a generalized block address, injury severity and the date of the collision. To supplement the City's dataset and obtain additional collision attributes, the City's data was matched with corresponding records in the Statewide Integrated Traffic Records System (SWITRS). The SWITRS database contains a wider set of standardized attributes for traffic collisions, regardless of injury severity, reported to police departments across the state. SWITRS database collision attributes are based on police officer reports taken at the scene of the collision. These reports reflect their judgment and assessment at the time it occurred with the information they had available. This information is occasionally subject to later revision, which is why this report gives preference to analyzing the City of San Diego's data source, when its attributes are available.

Data Methods

Criteria used to determine a match between a City-sourced data record and its corresponding SWITRS record included finding consistency between the records' classification of the transportation mode(s) involved (confirming the involvement of a bicyclist), the records' injury severity, the date of the collision, and the geographic location provided by cross-streets or address. Eighty-seven (87) of the City's 92 records were matched with a corresponding SWITRS record to a high or reasonable degree of certainty. Some City records matched with a corresponding SWITRS record on multiple but not all criteria. These cases were ruled as matches with reasonable (though not 100%) certainty. For example, some records may have had close but slightly different dates, but all other criteria matched. There were some records, when compared, which matched dates, injury severity and geographic criteria, though were classified as involving a different mode (a motorcyclist instead of a bicyclist, for example). Another common scenario when records did not match entirely on all criteria was in the classification of injury severity. All fatal injury collisions, however, were matched successfully and analyzed in this memo.

For the five cases where a match could not be established, there were no corresponding SWITRS records which met any of the mode, geographic location, or injury severity criteria occurring within a reasonably close timeframe of the date listed in the City-sourced data. Where this memo's analysis examines variables only available from the SWITRS database (Tables 2 through 5), those five records are excluded from or listed as missing in the summaries. Otherwise, all 92 records are included in the summaries.

Collision Severity and Longitudinal Trends

Table 1 summarizes bicyclist-involved collisions between 2019 and 2023 by the year in which they occurred. The data shows an annual citywide average of approximately 15 severe injury collisions per year and three fatal injury collisions per year. It has been widely documented that the early stages of the COVID-19 pandemic contributed to lower travel activity for much of 2020, helping explain the sharp decrease in collisions of total bicycling collisions in 2020. Total collisions remained constant from 2020 to 2022. These years roughly approximate to the period where pandemic-related social distancing practices impacted levels of trip activity. However, with fewer collisions overall during that three-year stretch, it is notable that six bicycling fatalities occurred in 2021, more than any other year in the five-year period.

Table 1: Bicyclist-Involved Collisions per Year, 2019 to 2023

Year	Fatal Collisions ¹	Severe Injury Collisions ¹	Total Bicyclist Collisions ²
2023	3	19	365
2022	2	16	323
2021	6	12	325
2020	3	9	324
2019	4	18	356
<i>Total</i>	<i>18 (1.1%)</i>	<i>74 (4.4%)</i>	<i>1,693 (94.5%)</i>
Mean per Year	3.6	14.8	338.6

Source: City of San Diego (2024) ¹, SWITRS (2024) ²

Over the five-year period, fatalities comprised about 1% and severe injuries about 4% of all police reported bicyclist collisions. Total bicyclist-involved collisions regardless of injury severity are about 339 per year.

Collisions by Party at Fault

Party at fault was not an available attribute from the City of San Diego-sourced collision data, hence the five collision records out of 92 which could not be matched to SWITRS were not analyzed. Of the 87 severe or fatal bicyclist-involved collisions with matches to corresponding SWITRS records, 71 involved a driver and their vehicle, 15 collisions were solo-bicyclist collisions, and one collision was bicyclist-pedestrian. All 16 of the City's fatal bicyclist-involved crashes over the five years of data involved a driver. **Table 2** summarizes the party at fault by each type of collision.

Table 2: Severe and Fatal Collisions by Parties Involved

Parties Involved	Number of Collisions	Bicyclist at Fault	Non-Bicyclist at Fault	No Party at Fault
Bicyclist-Driver and their Vehicle	71	56.3% (40)	42.3% (30)	1.4% (1)
Solo-Bicyclist	15	86.7% (13)	n/a	13.3% (2)
Bicyclist-Pedestrian	1	0%	100% (1)	0%
Missing Data	5	n/a	n/a	n/a

Source: SWITRS (2024)

As shown, when bicyclists are involved in collisions with other parties, they are found at fault in collisions slightly more often (40 instances to 31, and one collision determined to have no party fault).

Collisions by Type of Impact

Table 3 summarizes the injury severity of bicyclist-involved collisions by the type of impact. Type of impact was not an available attribute from the City of San Diego-sourced collision data, hence the five collision records out of 92 which could not be matched to SWITRS were not analyzed. Of the 87 severe or fatal collisions where this attribute could be determined from SWITRS matches, broadside collisions were the most common collision type overall (though not the most common for fatal collisions). They represent over 40% of all severe injury collisions. Rear end collisions are the most common collision type that resulted in a bicyclist fatality. Exactly half of all bicycling fatalities were rear end collisions.

Table 3: Collisions by Type of Impact and Severity

Type of Impact	Combined Severe & Fatal	% of Combined	Severe Collisions	% of Severe	Fatal Bicyclist Collisions	% of Fatal
Broadside	31	35.6%	28	40.6%	3	16.7%
Rear End	21	24.1%	12	17.4%	9	50.0%
Other	10	11.5%	8	11.6%	2	11.1%
Overturned	8	9.2%	8	11.6%	-	-
Sideswipe	7	8.0%	4	5.8%	3	16.7%
Head-on	4	4.6%	3	4.3%	1	5.5%
Hit Object	4	4.6%	4	5.8%	-	-
Not Specified	2	2.3%	2	2.9%	-	-
Total	87	100%	69	100%	18	100%

Bold values = modal category

Source: SWITRS (2024)

Table 4 summarizes bicyclist-involved collisions by type of impact and party at fault (excluding solo-bicyclist collisions). Between 2019 and 2023, there were 72 non-solo bicyclist collisions, with 18 resulting in fatality. Despite cyclists being at fault more often in collisions involving drivers, the driver was at fault more often when the outcome was fatal (11 instances to six).

Table 4: Collisions by Type of Impact and Party at Fault (Non-Solo Bicyclist Collisions)

Type of Impact	Bicyclist at-Fault	Bicyclist at-Fault Fatal Only	Non-Bicyclist at-Fault	Non-Bicyclist at-Fault Fatal Only	No Fault	No Fault Fatal Only
Broadside	57.5% (23)	33.3% (2)	25.8% (8)	9.1% (1)	-	-
Rear End	20.0% (8)	33.3% (2)	42.0% (13)	63.6% (7)	-	-
Other	2.5% (1)	-	16.1% (5)	9.1% (1)	100% (1)	100% (1)
Sideswipe	12.5% (5)	33.3% (2)	6.5% (2)	9.1% (1)	-	-
Head-on	2.5% (1)	-	6.5% (2)	9.1% (1)	-	-
Overtaken	2.5% (1)	-	3.2% (1)	-	-	-
Not Specified	2.5% (1)	-	-	-	-	-
Total	40	6	31	11	1	1

***Bold** values = modal category*

Source: SWITRS (2024)

Broadside collisions occurred in most collisions with drivers when a cyclist was at fault. Rear end collisions were the most common type of collision when the driver was at fault (13 out of 31 instances) and the second most common type of collision when a cyclist was at fault (8 of 40 instances). Rear end collisions were by far the leading cause of a fatal bicyclist-involved collision when a driver was at fault.

Collisions by Violation Causes

Table 5 summarizes the violation causes of the 72 non-solo bicycling collisions grouped by primary collision factor. As shown, the most common violation category is unsafe left or right turn (all 14 violations were cited as CVC 22107¹). Unsafe left or right turns occurred in almost 20% of all collisions analyzed. In the 14 collisions resulting from this violation, the cyclist and driver were at fault an equal number of times. Six of the 16 fatal bicyclist-involved collisions were attributed to this violation, with the driver at fault twice as often when the results were fatal.

Table 5: Collisions by Type of Impact and Party at Fault (Non-Solo Bicyclist Collisions)

Violation Category	Combined Severe & Fatal	Bicyclist at-Fault	Non-Bicyclist at-Fault	No Fault	Fatal Collisions Only	Bicyclist at-Fault	Non-Bicyclist at-Fault	No Fault
Unsafe Left or Right Turn	19.4% (14)	17.5% (7)	22.6% (7)	-	33.3% (6)	33.3% (2)	36.4% (4)	-
Failure to Yield to Party w/Right of Way	18.1% (13)	15.0% (6)	22.6% (7)	-	-	-	-	-
Unsafe Speeds	16.7% (12)	12.5% (5)	22.6% (7)	-	27.8% (5)	16.7% (1)	36.4% (4)	-
Traveling on Wrong Side of Road	16.7% (12)	25.0% (10)	6.5% (2)	-	5.5% (1)	16.7% (1)	-	-
Other Hazardous/Misc.	12.5% (9)	5.0% (2)	19.4% (6)	100% (1)	16.7% (3)	-	18.2% (2)	100% (1)
Disobeying Signals and Signs	11.1% (8)	17.5% (7)	3.2% (1)	-	-	-	-	-
Unsafe Lane Change	5.6% (4)	7.5% (3)	3.2% (1)	-	16.7% (3)	33.3% (2)	9.1% (1)	-
Total	72	40	31	1	18	6	11	1

***Bold** values = modal category*

Source: SWITRS (2024)

¹ CVC 22107: "No person shall turn a vehicle from a direct course or move right or left upon a roadway until such movement can be made with reasonable safety and then only after the giving of an appropriate signal in the manner provided in this chapter in the event any other vehicle may be affected by the movement."

Like unsafe turns, failure to yield to the party with the right of way was another common violation cause (18% of non-solo collisions) and fault for this violation was nearly equal between party types in those collisions. However, no fatalities occurred because of this violation.

Unsafe speeds were another common violation category (17%), with a driver committing this violation slightly more often in collisions attributed to this cause. Unsafe speeds resulted in five bicyclist fatalities (a driver was at fault in all but one of those five instances).

Unsafe lane changes were an infrequent violation category in collisions (6%), though were most likely to result in fatalities when occurring. Three of the four unsafe lane change attributed collisions were fatal. Bicyclists were at fault in these two of these collisions.

Traveling on the wrong side of the road was a common violation type that was heavily skewed toward bicyclist-at fault collisions (10 of the 12 collisions). Despite the high frequency of this violation category in bicyclist-involved collisions, only one fatality was attributed to it. Another violation which skewed heavily toward bicyclists at fault was disobeying signals and signs. Seven of 8 collisions of this violation category were attributed to cyclists. None of the eight collisions of this violation category were fatal.

Of the 15 solo-bicycling collisions, eight were attributed to unsafe speeds and five to unsafe left or right turns.

Collisions by Frequency of Locations

There is only one location in the City where multiple severe bicyclist-involved collision occurred: Balboa Avenue and Viewridge Avenue. The two collisions occurring at this location happened in 2019 and 2023.

Note: this assessment is limited due to the exclusion of non-severe/fatal collisions and the lack of geographic specificity in the City-provided GIS data. The Balboa/Viewridge and 9500 Balboa Avenue collisions in SWITRS are close enough by SWITRS distance offset to be reasonably defined within/near the same intersection. There are two records with 3600 Midway Avenue listed as the location, but they are over 300' apart when taking the SWITRS specified distance offset.

Collisions by Community Planning Areas

Table 6 shows the frequency of severe and fatal bicycling-involving collisions by Community Planning Areas (CPAs) (collisions on a CPA boundary were counted in both communities in the table). As shown, Peninsula had more bicyclist-involved severe injury collisions than any other community with nine. Mid-City: Eastern Area had the most fatal collisions of any community with three.

Table 6: Collisions by CPA

Community Planning Area	Severe and Fatal Collisions	Severe Collisions	Fatal Collisions
Peninsula	9	9	0
Uptown	8	8	0
Downtown	6	4	2
University	5	4	1
Mid-City: Eastern Area	4	1	3
Skyline-Paradise Hills	4	2	2
Mission Bay Park	4	3	1
Linda Vista	4	3	1
La Jolla	4	3	1
Kearny Mesa	4	4	0
Mission Valley	2	1	1

Note this table counts collisions occurring on a CPA boundary in both CPAs

Source: City of San Diego (2024)

Table 7 shows the frequency of severe and fatal bicycling-involving collisions per capita by CPA, excluding communities with one or fewer collisions or a low population to avoid showing skewed data. When adjusting for population, Midway-Pacific Highway (5.3 collisions per 10,000 residents) and Barrio Logan (4.4 per 10,000) show the highest collision rates per capita.

Table 7: Collisions per Capita by CPA

Community Planning Area	Severe or Fatal Collisions ¹	Population ²	Collisions per 10,000
Midway-Pacific Highway	3	5,677	5.3
Barrio Logan (including 32 nd Street Naval Station area)	4	9,120	4.4
Kearny Mesa	4	11,458	3.5
Torrey Pines	2	6,496	3.1
Peninsula	9	42,604	2.1
Uptown	7	42,107	1.7
Ocean Beach	2	13,640	1.5
Black Mountain Ranch	2	14,745	1.4
La Jolla	4	30,200	1.3

Note: ranking excludes CPAs with fewer than two collisions or less than 3,000 population

Source: City of San Diego (2024) ¹, SANDAG 2023 Estimates (2024) ²

Collisions by City of San Diego Equity Variables

Table 8 shows the frequency and rate of severe and fatal bicycling-involved collisions occurring within and outside of City of San Diego Equity Variables. This analysis utilized the overlap of the following variables: the City's Climate Equity Index Communities of Concern² (areas with very low, low, or moderate access to opportunity) and the Environmental Justice Communities identified in the General Plan Environmental Justice Element.³ These geographies comprise about 11% of the San Diego's geographic area and contain just over one quarter of its population. As shown, there is marginal difference in the severe collision rate per 100,000 residents in the equity geography analyzed and Citywide rates.

² [City of San Diego - Climate Equity Index Scores](#)

³ [Environmental Justice Element of the City of San Diego General Plan](#)

Table 8: Collisions Within City's Climate Equity Index Communities of Concern AND Environmental Justice Communities

Geographic Area	Severe or Fatal Collisions	Severe Collisions	Fatal Collisions	Population	Severe Collisions per 100,000	Fatal Collisions per 100,000
Within City's Climate Equity Index Communities of Concern AND Environmental Justice Communities	25	19	6	414,310	4.59	1.45
Outside the Overlap of City's Climate Equity Index Communities of Concern AND Environmental Justice Communities	67	55	12	1,105,408	4.98	1.09
Citywide	92	74	18	1,519,718	4.87	1.18

Source: City of San Diego (2024)

Systemic Fatal Locations

The City of San Diego conducted a systemic safety analysis update in July 2024. The study analyzed ten years collision history (between 2014 and 2023) with the objective of identifying intersection environments where fatal injury collisions occurred disproportionately. The report identified four-lane by two-lane intersections with transit routes and a minimum of three injury collisions within the analyzed ten-year period as a priority environment for systemic safety improvements. About one quarter of fatal traffic collisions by any mode in the City over the ten year period occurred within these intersection environments (while these environments comprise only about 3% of all intersections in the City).

Four out of 18 fatal bicyclist-involved collisions (between 2019 and 2023) occurred within this systemic hotspot environment. These locations, with roadway the collision occurred on listed first and the intersecting cross-street listed second, were:

- Genesee Avenue and Sauk Avenue
- University Avenue and Alamo Drive
- Market Street and Fifth Avenue (signalized)
- Morena Boulevard and Napier Street

Only one of the systemic hotspot locations with a fatal bicycle collision, Genesee Avenue at Sauk Avenue, has an existing bicycle facility (Class II). The other systemic hotspot locations with fatal bicycle collisions all have previously planned bicycle facilities (Class II on University Avenue, Class III on Market Street, and Class IV on Morena Boulevard, respectively).

Three out of the 74 severe injury collisions (between 2019 and 2023) occurred within this systemic hotspot environments. These locations, with roadway the collision occurred on listed first and the intersecting cross-street listed second, included:

- Linda Vista Road and Fulton Street (signalized)
- Ingraham Street and Oliver Street
- Ingraham Street and Dana Landing Road/Perez Cove Way (signalized)

Two of the locations, Ingraham Street at Dana Landing Road/Perez Cove Way and Linda Vista Road at Fulton Street, have existing Class II bicycle facilities. The latter two locations have previously planned bicycle facilities (Class II on Ingraham Street, and Class IV (two-way) on Morena Boulevard, respectively).

All seven of the fatal and severe-injury bicyclist collisions occurred on the four-lane street. Except for the Market Street & Fifth Avenue collision (in Downtown San Diego) and Ingraham Street & Oliver Avenue (Pacific Beach) collisions, the environments had posted speed limits of 35 mph or greater. Drivers were at fault for five of the seven collisions. Three of the collisions, including two of the fatal collisions, were rear ends.

Citywide there are 487 systemic priority intersections, 299 of the systemic priority intersections have bicycle facility on one or both approaches. **Table 9** shows the distribution of systemic priority intersections by how they are configured with bicycle facilities. As shown, three of the four fatal bicyclist-involved collisions occurring at systemic priority intersections occurred at intersections with no bicycle facility on either cross-street.

Table 9: Systemic Priority Intersections with Existing Bicycle Facility

Bicycle Facility Characteristics	Number of Priority Intersections	Percent of Priority Intersections	Fatal Bicycle Collisions	Severe Bicycle Collisions
Bicycle Facility on Both Cross-Streets	31	6.4%	0	1
Bicycle Facility on Four-Lane Roadway Only	248	50.9%	1	1
Bicycle Facility on Two-Lane Roadway Only	20	4.1%	0	0
No Existing Bicycle Facility on Either Cross-Street	188	38.6%	3	1

Source: City of San Diego (2024)

Table 10 shows the bicycle facility classifications present at the 299 systemic priority intersections with existing bicycle facilities. As shown, when bicycle facilities are present at systemic priority intersections, the most common configuration is Class II on the four-lane street and no bicycle facility on the intersecting two-lane street. This configuration represents over half of all systemic priority intersections with bicycle facilities.

Table 10: Systemic Priority Intersections by Type of Bicycle Facility

Bicycle Facility on Four-Lane Street	Bicycle Facility on Two-Lane Street	Number of Priority Intersections	Percent of Priority Intersections
Class II	None	182	37.4%
Class III	None	34	11.4%
Bus-Bike Lane	None	17	5.7%
Class IV	None	15	5.0%
Class II	Class III	11	3.7%
Class II	Class II	10	3.3%
None	Class III	9	3.0%
None	Class II	6	2.0%
Class III	Class III	4	1.3%
Class IV	Class II	3	1.0%
None	Class IV	3	1.0%
Bus-Bike Lane	Class II	2	0.7%
None	Class IV (Two-Way)	2	0.7%
Bus-Bike Lane	Class IV	1	0.3%
Total Intersections with Bicycle Facility		299	61.4%

Source: City of San Diego (2024)

One of the objectives of the planned bicycle network will be to increase the quantity of systemic priority intersections with bicycle facilities from the current 61%, and to create more environments where both roadways have bicycle facilities. Presently only 6% of all systemic priority intersections have bicycle facilities on both intersecting roadways.

The installation of bicycle facilities at more systemic priority intersections will provide cyclists with their own space when maneuvering through intersections or treatments which provide separation or exclusive travel phases. The implementation of some bikeways may also result in lane reductions to some four lane streets, which would also result in countermeasures which modify the characteristics of the identified systemic priority intersections.

APPENDIX H

Potential Corridors for Additional Study



There are several corridors throughout the City where continuous and separated bikeways are highly desired, but existing site conditions and constraints are complex and cannot be addressed through signing and striping alone. These types of corridors should be studied in greater detail to assess their feasibility for development into complete streets with continuous and separated bikeways. Examples of corridors with these types of constraints are described below.

Table H-1: Potential Corridors for Additional Study

Street	From	To	Community Planning Areas	Proposed Bikeway (Class)	Additional Considerations	2025 Regional Plan
Chicano Park Bl (formerly Cesar Chavez Parkway)	25th St	Harbor Dr	Barrio Logan Southeastern San Diego	Bike Boulevard (Class III Enhanced)	Evaluate for: -Separated bikeway where feasible. -Maintain business access. -Minimize impacts to parking. -Safety improvements. Coordinate with: -Caltrans through Interstate 5. Notes: Barrio Logan community plan recommends additional study for this corridor.	Golden Hill to Bayshore Bikeway
Imperial Av	47th St	City of La Mesa	Chollas Valley/Encanto Neighborhoods	Bike Lane (Class II)	Evaluate for: -Separated bikeway where feasible Coordinate with: -SANDAG for regional connectivity	Lemon Grove to Imperial Bikeway
College Av	College Grove Dr	City of La Mesa	Eastern Area	One-Way Separated Bikeway (Class IV)	Evaluate for: -Expansion of curb-to-curb within existing ROW. Coordinate with: -Mid-City Communities CPU for potential redevelopment on westside. -Caltrans through SR94. -City of La Mesa for continuity of bikeway.	San Carlos to College and Grantville Bikeway

Street	From	To	Community Planning Areas	Proposed Bikeway (Class)	Additional Considerations	2025 Regional Plan
Adams Av	Park Bl	Aldine Dr	Kensington-Talmadge Normal Heights North Park	Bike Boulevard (Class III Enhanced)	Evaluate for: -Separated bikeways where feasible (e.g. bike lanes). -Traffic calming treatments (e.g. pop-outs, roundabouts, or traffic circles at intersections). -Minimize impacts to parking. -See Landis and Meade bikeway treatments.	Uptown to Kensington Connector
Torrey Pines Rd	La Jolla Village Dr	Prospect Pl	La Jolla	Bike Lane (Class II) Separated Bikeway (Class IV)	Evaluate for: -Corridor wide improvements to enhance safety. -Separated bikeways where feasible. Notes: Coastal Zone	Central Coast Corridor: Pacific Beach to La Jolla
N/E Mission Bay Dr	Sea World Dr	North Terminus	Mission Bay	Bike Path (Class I)	Evaluate for: -A separated off-street bike-or-multiuse path on the eastside of the roadway. -Minimize impacts to parking. Coordinate with: -Parks & Recreation and Park Planning for Mission Bay improvements. -SANDAG for regional connectivity. Notes: Coastal Zone	E Mission Bay Dr - Coastal Rail Trail San Diego (Clairemont to Tecolote) N Mission Bay Dr - North Mission Bay Dr to Rose Creek

Street	From	To	Community Planning Areas	Proposed Bikeway (Class)	Additional Considerations	2025 Regional Plan
Dana Landing Rd	Ingraham St	W Mission Bay Dr	Mission Bay	Two-Way Separated Bikeway (Class IV) south/eastside	Evaluate for: -Separated bikeway on south and eastside either off-street or expanding curb-to-curb. -Active transportation connections through Ingraham St and W Mission Bay Dr. Coordinate with: -SANDAG for regional connectivity Notes: Coastal Zone	Ocean Beach to Mission Bay
Mission Bl	Pacific Beach Dr	San Fernando Pl	Mission Beach	Bike Lane (Class II)	Evaluate for: -Corridor wide improvements to enhance safety. -Evaluate shrinking/removing median and striped buffers. Notes: Coastal Zone	
Taylor St	Pacific Highway	Presidio Dr	Old Town	Bike Lane (Class II)	Evaluate for: -Corridor wide improvements to enhance safety. -Separated bikeways where feasible.	Hotel Circle Connection
Garnet Av	West Terminus	Soledad Mountain Rd.	Pacific Beach	Bike Boulevard (Class III Enhanced) from West Terminus to Ingraham St Bike Lane (Class II) from Ingraham St to Soledad Mountain Rd	Evaluate for: -Corridor wide improvements to enhance safety. -Separated bikeway where feasible. -Removal of center-turn lane east of Ingraham St. Notes: Coastal Zone	Pacific Beach Bikeway (W Terminus to Ingraham)

Street	From	To	Community Planning Areas	Proposed Bikeway (Class)	Additional Considerations	2025 Regional Plan
Grand Av	West Terminus	Mission Bay Dr	Pacific Beach	Bike Lane (Class II)	Evaluate for: -Corridor wide improvements to enhance safety. Notes: Coastal Zone	Balboa Transit Center Connector Bikeway
Ingraham St	Beryl St	Crown Point Dr	Pacific Beach	Bike Lane (Class II) from Beryl St to Pacific Beach Dr Bike Boulevard (Class III Enhanced) Pacific Beach Dr to Crown Point Dr	Evaluate for: -Corridor wide improvements to enhance safety. Notes: Coastal Zone	Midway to Pacific Beach Bikeway
Pacific Beach Dr	West Terminus	East Terminus	Pacific Beach	Bike Boulevard (Class III Enhanced)	Evaluate for: -Corridor wide improvements to enhance safety. Notes: Coastal Zone	Pacific Beach to East Mission Bay
Rosecrans St	Lytton St	Fitch Loop	Peninsula	Bike Lane (Class II)	Evaluate for: -Corridor wide improvements to enhance safety. -Separated bikeways where feasible. Notes: Coastal Zone	Rosecrans Bikeway
North Torrey Pines Rd	Carmel Valley Rd	Torrey Pines Scenic Park N	Torrey Pines University	Existing Bike Lane (Class II)	Evaluate for: -Potential road diet -Separated bikeway where feasible Notes: Coastal Zone	Central Coast Corridor: La Jolla to Del Mar

APPENDIX I

Development Process for the Future Bikeway Network



Creating the Future Bicycle Network required balancing technical analysis with community priorities. The City evaluated existing roadway characteristics, travel patterns, and community input to determine the most appropriate bikeway for each corridor. This iterative process helped create a network that is connected, context-sensitive, and responsive to local needs. The following section describes how the City thoughtfully prepared the Future Network for residents.

Built on Existing Plans and Projects

The Future Bicycle Network combines future projects from many sources into one connected vision for biking in San Diego, including:

- Existing bikeways¹
- Bikeway projects that are already designed or funded²
- Recently adopted Community Plan Updates³
- Previous City bicycle planning efforts⁴
- New connections identified through this update⁵
- Regional bikeways from the SANDAG Active Transportation Network⁶

Match the Bikeway to the Street

Not every street needs the same type of bikeway.

A quiet residential street is often comfortable enough where bicyclists can share the road, while a busy arterial generally requires bicyclists to have greater separation from vehicle traffic. To identify the most appropriate bikeway for each corridor, the City evaluated roadway characteristics such as vehicle speeds, traffic volumes, and the number of travel lanes, together with current state and national design guidance. The National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide⁷ and Caltrans Design Information Bulletin 94⁸ served as starting points for developing preliminary bikeway type recommendations for each corridor. The table below summarizes the general guidance used for selecting bikeway types.

¹ Existing Bikeways: Bikeways in the ground as of November 2024.

² Designed Bikeways: Bikeways with 100% or nearly 100% designs with secured funding or pending allocation.

³ Proposed Bikeways in Community Planned Areas: Bikeways adopted in Community Planning Updates between 2022-2025.

⁴ Proposed Bikeways: Bikeways identified in City planning documents (e.g. 2013 BMP, Community Planning Documents, etc.).

⁵ Gaps/New Connections: New bikeways identified as part of the BMPU.

⁶ SANDAG Regional AT Network: Regional bikeways within the City of San Diego identified as part of the SANDAG 2025 RTP Active Transportation Network.

⁷ NACTO Urban Bikeway Design Guide. <https://nacto.org/publication/urban-bikeway-design-guide/>

⁸ Caltrans DIB 94. <https://dot.ca.gov/-/media/dot-media/programs/design/documents/dib-94-010224-a11y.pdf>

Table I-11: Bikeway Type Selection Guide

Vehicle Speed	Average Daily Vehicle Traffic on Roadway	Bikeway Type
Less than 10 mph	Any	Class 3 (Shared Street)
10-20 mph	2,000 or less	Class 3 Enhanced (Bicycle Boulevard)
10-20 mph	2,000 – 4,500	Class 2
10-20 mph	4,500 – 6,000	Class 2 Buffered (Class 2-B)
25 mph	Less than 1,500	Class 3 Enhanced (Bicycle Boulevard)
25 mph	1,500-4,500	Class 2
30 mph	Less than 4,500	Class 2
25 or 30 mph	4,500-6,000 ADT	Class 2 Buffered (Class 2-B)
Any	Greater than 6,000	Class 4 or Class 1
35 mph or greater	Any	Class 4 or Class 1

Source: Caltrans Design Information Bulletin (DIB) 94

Refine the Network Through Local Knowledge and Community Input

Once the initial bikeway types were identified, City staff screened these preliminary recommendations based on additional roadway and local conditions, as well as alignment with other capital projects, operational needs, and opportunities to coordinate implementation with other infrastructure improvements. The preferred minimum roadway widths detailed in the table below were broadly applied to evaluate whether proposed bikeways could generally be accommodated within existing roadway conditions.

Table I-22. Preferred Minimum Roadway Widths Used for Planning-Level Bikeway Feasibility Assessment

Facility	Minimum Width (ft)
General Purpose Through Lane	10 ft; 11 ft if bus route
Center Turn Lane	10 ft
Parking Lane	7 ft

The City then shared the Draft Bikeway Network with community members through an interactive online map-based survey and in-person community pop-ups. Community members and stakeholders identified missing connections, commented on proposed bikeway types, and shared local concerns that helped strengthen the Future Network presented in this Plan

The Future Network reflects the combined input of technical analysis, City staff expertise, and community feedback. While the Future Network establishes the City's long-term vision, individual projects will continue to be refined as they advance through environmental review, engineering design, funding, and future public engagement.

APPENDIX J

Prioritization Criteria and Methodology





TECHNICAL MEMORANDUM
July 9, 2026 (Revised October 8, 2026)

To: Angelica Rocha, Senior Transportation Planner, Fehr & Peers

From: Carl Sorenson, Senior Analyst, Evari Consulting

Re: San Diego Bicycle Master Plan Prioritization Methodology

INTRODUCTION

Priority project development for the City of San Diego will leverage a comprehensive series of datasets from recent and relevant city, regional, and statewide initiatives to identify a prioritized list of facility segments. The effort will align with the following priorities:

- Prioritize safety improvements to reduce fatalities and severe injuries and improve user comfort.
- Identify project opportunities in areas within City of San Diego Equity Variables and the Caltrans Transportation Equity Index.
- Close existing gaps, improve access and safety, and provide convenient connections within the City and beyond.
- Incorporate public feedback to assist with decision making when prioritizing facility segments.

The following pages of this memorandum outline the methodology that will be used to prioritize facility segments.

DATA SOURCES AND FACILITY SEGMENT PRIORITIZATION

The City has developed a comprehensive network of planned bicycle facilities. This network serves as the input for a data-driven prioritization framework designed to identify high-impact projects that advance safety, equity, connectivity, and public support. Each facility segment will be evaluated across multiple criteria and assigned a cumulative prioritization score.

Safety - 4 points

A safe biking environment not only protects current riders but also encourages broader community adoption of cycling as a viable mode of transportation. Each facility segment will receive a safety score based on its proximity to known risk factors. The goal is to prioritize improvements in areas with elevated collision risk, high-speed traffic, high stress roadways and systemic safety concerns. To assess and enhance safety across the network, the following indicators were analyzed. A project can receive up to 4 points for safety, one point for each item below:

Bicycle-Involved Collision History

Locations with a history of serious or fatal bicycle-related collisions are assigned one point. These incidents highlight areas where existing infrastructure may be insufficient or where traffic conditions pose significant risks to cyclists.

- **Step 1:** Map all collision data from 2014–2023
- **Step 2:** Buffer each bicycle facility segment by 50 feet on both sides.
- **Step 3:** Identify facility segments whose buffers intersect with recorded collision points
- **Step 4:** Identify the number of crashes at each facility segment, distinguishing between fatal and severe injury crashes
- **Step 5:** Assign a normalized score from 0-2 with more weight given to fatal or severe injury crashes. The score will be determined using the following inputs.
 - Severe crashes to receive 0.5 points
 - Fatal crashes receive 1 point
 - Total number of crashes

Roadways with High LTS

Level of Traffic Stress (LTS) data was provided by the San Diego Association of Governments (SANDAG), which was completed at a regional scale in November 2023 as part of the Regional Vision Zero Action Plan.

SANDAG's facility segment LTS methodology considers how comfortable facilities are for the user, based on factors such as Annual Average Daily Traffic (AADT), posted speed limit, number of lanes per direction, roadway directionality, presence of a centerline, on-street parking characteristics, and the presence and width of dedicated bicycle facilities. Prioritizing facility segments along high LTS (LTS score=3 or 4) roadways can help address these conditions and will receive 1 point.

- **Step 1:** Select all streets where "LTS_Class = 'High LTS'"
- **Step 2:** Select all facilities that overlap with those streets
- **Step 3:** Assign 1 point to selected facility segments

Systemic Safety Priority Intersections

The City conducted a comprehensive safety assessment to identify intersection characteristics with elevated risk factors for cyclists and pedestrians in July 2024. These intersections are defined by the City as being 4 by 2 lane intersections, on a transit route, and where 3 or more injury crashes have occurred in the last 10 years.

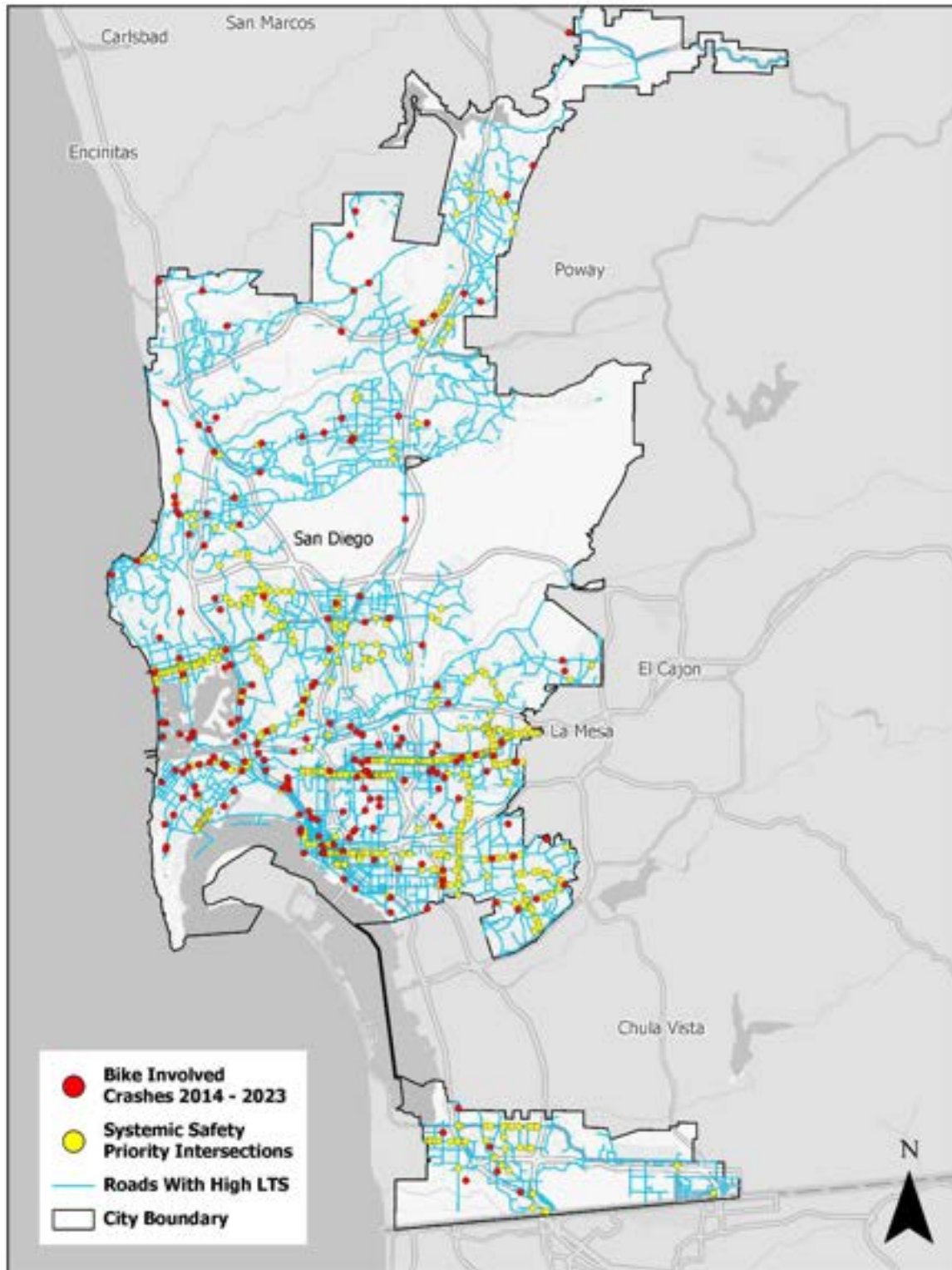
- **Step 1:** Buffer each facility segment by 50 feet on both sides.
- **Step 2:** Select facility segments whose buffers intersect with intersections identified as safety priorities by the City.
- **Step 3:** Assign 1 point to selected facility segments

Table 1: Scoring Safety Metrics

Metric	Category	Layer Description	Layer Name	Score	Source
Bicycle-Involved Collision History	Safety	Collision History	Citywide Collisions Severe Fatal.shp	0-2	City of San Diego
Roadways with High LTS	Safety	Highspeed Roadways/ LTS	Biking_LTS_Connectivity_Summary	0-1	SANDAG Regional Vision Zero Action Plan
Systemic Safety Priority Intersections	Safety	Systemic safety priority Intersections	Priority_Intersections.shp	0-1	City of San Diego

Figure 1 on the next page displays the collision history, high speed roadways and priority intersections citywide.

Figure 1: Safety Metrics



Equity - 3 points

Equity considerations are important to the planning and prioritization of active transportation projects, with a specific focus on identifying opportunities in communities that have been historically and structurally excluded from infrastructure investment.

The goal is to ensure that new and improved bike facilities serve residents of all ages, abilities, and backgrounds, particularly those in underserved neighborhoods where safe, accessible mobility options may be limited.

To guide this effort, a comprehensive set of equity metrics will be incorporated into the prioritization analysis. These metrics offer distinct lenses through which equity can be evaluated:

City of San Diego Equity Variables

This analysis utilized the overlap of the following variables: the City's Climate Equity Index (CEI) Communities of Concern¹ (areas with very low, low, or moderate access to opportunity) and the Environmental Justice Communities identified in the General Plan Environmental Justice Element.² The City recognizes these are underserved areas that lack access to quality, affordable, and reliable mobility options, as well as other essential resources. As such, these areas may face the largest barriers and should be prioritized.

- **Step 1:** Select all census tracts where "CEI_Class_IN ('Low', 'Moderate', 'Very Low')" overlaps with "EJ Communities"
- **Step 2:** Select all facility segments that intersect those tracts
- **Step 3:** Assign 2 points to selected facility segments

Caltrans Transportation Equity Index

This index supports transportation equity by identifying communities with limited access to mobility, economic opportunity, and safety. It informs Caltrans' planning and funding decisions to ensure that transportation improvements benefit those most in need. For more information about the Caltrans Transportation Equity Index see the link below.

<https://dot.ca.gov/programs/eta/transpo-equity/eqi>

- **Step 1:** Select all features where "SCREEN IN ('Transportation-Based Priority Populations')"
- **Step 2:** Select all facility segments that intersect those features
- **Step 3:** Assign 1 point to selected facility segments

Facility segments that intersect multiple layers will receive higher equity scores, reflecting their potential to improve access and mobility in underserved areas.

Table 2: Scoring for Equity Metrics

Metric	Category	Layer Description	Layer Name	Score	Source
City of San Diego Equity Variables	Equity	CEI Communities of Concern and Environmental Justice Overlap	Structurally_Excluded_Communities	0-2	City of San Diego

¹ [City of San Diego - Climate Equity Index Scores](#)

² [Environmental Justice Element of the City of San Diego General Plan](#)

Caltrans Transportation Equity Index	Equity	Transportation- Based Priority Populations	Caltrans EQI_Version_1_0	0-1	State - Caltrans
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Figures 2 and 3 show the two different equity metrics being evaluated.

Figure 2: Climate Equity Index Communities of Concern AND Environmental Justice Communities

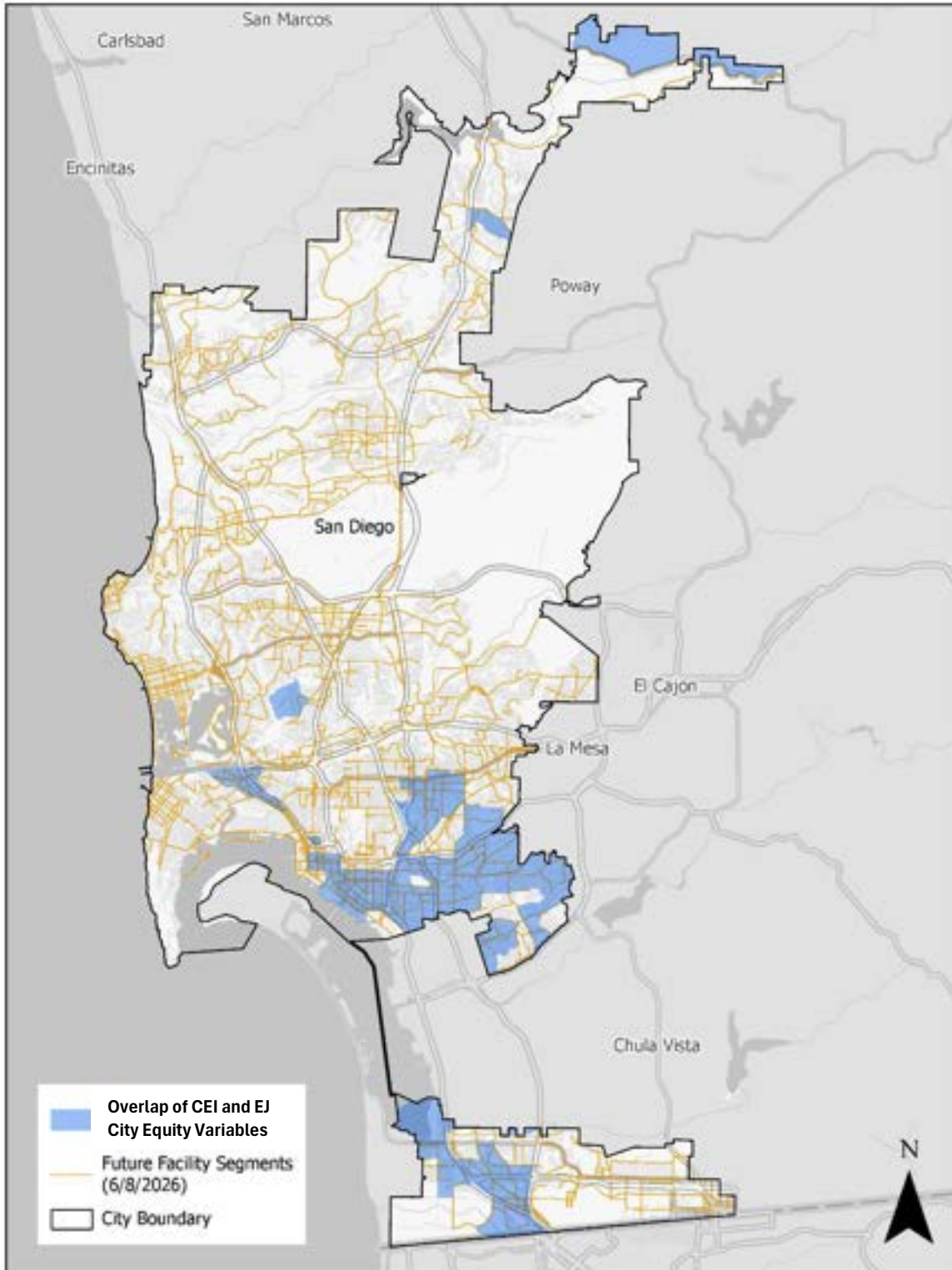
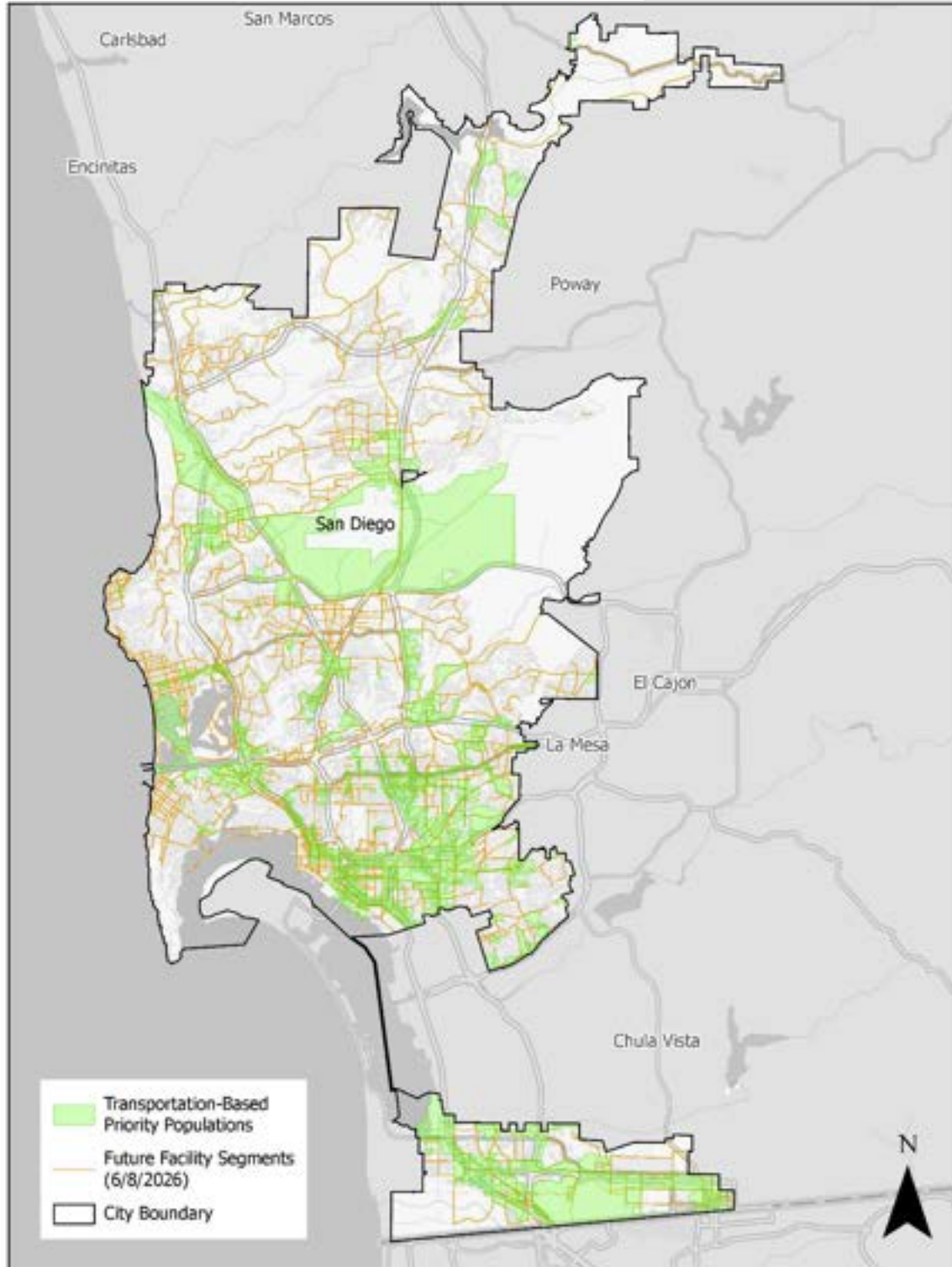


Figure 3: Caltrans Transportation-Based Priority Populations



Connectivity - 2 points

Connectivity Score

As part of Phase 1 of the BMPU, a connectivity analysis was conducted to identify locations in the City where bicycle and network enhancements can provide the greatest connectivity to everyday destinations. The analysis evaluated each network facility segment based on two key dimensions: connectivity (high vs. low access to destinations) and cyclist stress level (low vs. high stress conditions).

This approach allows the City to prioritize low-stress facility segments in areas with high connectivity, ensuring that the most accessible routes are also the most comfortable and safe for cyclists.

This connectivity score was compared to the multimodal heat map from the San Diego Master Mobility plan.

- **Step 1:** Select all road facility segments where "Connectivity_Class = 'High Connectivity'"
- **Step 2:** Select all facility segments that intersect those streets
- **Step 3:** Assign 1 point to selected facility segments

Network Gaps

To help close network gaps, a layer of new facilities was created as part of the BMPU State of the Network presentation. This layer is used to identify facility segments that will help close network gaps

- **Step 1:** Spatial join to identify all planned segments that overlap with new facilities
- **Step 2:** Assign 1 point to facility segments where join count is greater than 0

Table 3: Scoring for Connectivity Metrics

Metric	Category	Layer Description	Layer Name	Score	Source
Connectivity Score	Connectivity	Connectivity Score Results BMPU Phase 1	Biking_LTS_Connectivity_Summary	0-1	BMPU Connectivity Analysis
Network Gaps	Connectivity	New Infrastructure Segments From BMPU State of the Network	FutureNetwork_06192026_NewInfrastructure	0-1	BMPU State of the Network

Figure 4 shows the connectivity scores for all streets, and Figure 5 shows the Network Gaps.

Figure 4: LTS and Connectivity Scores

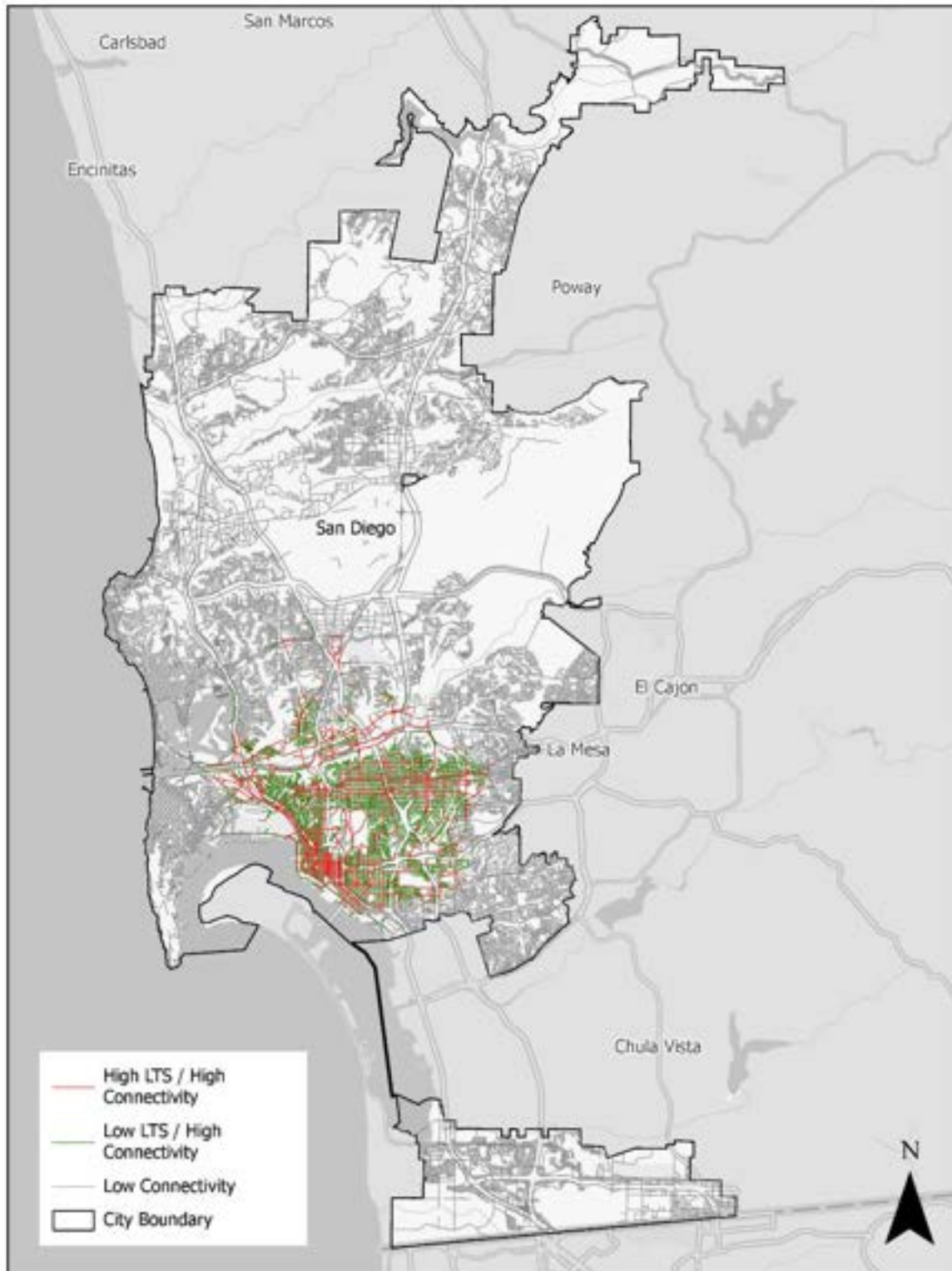
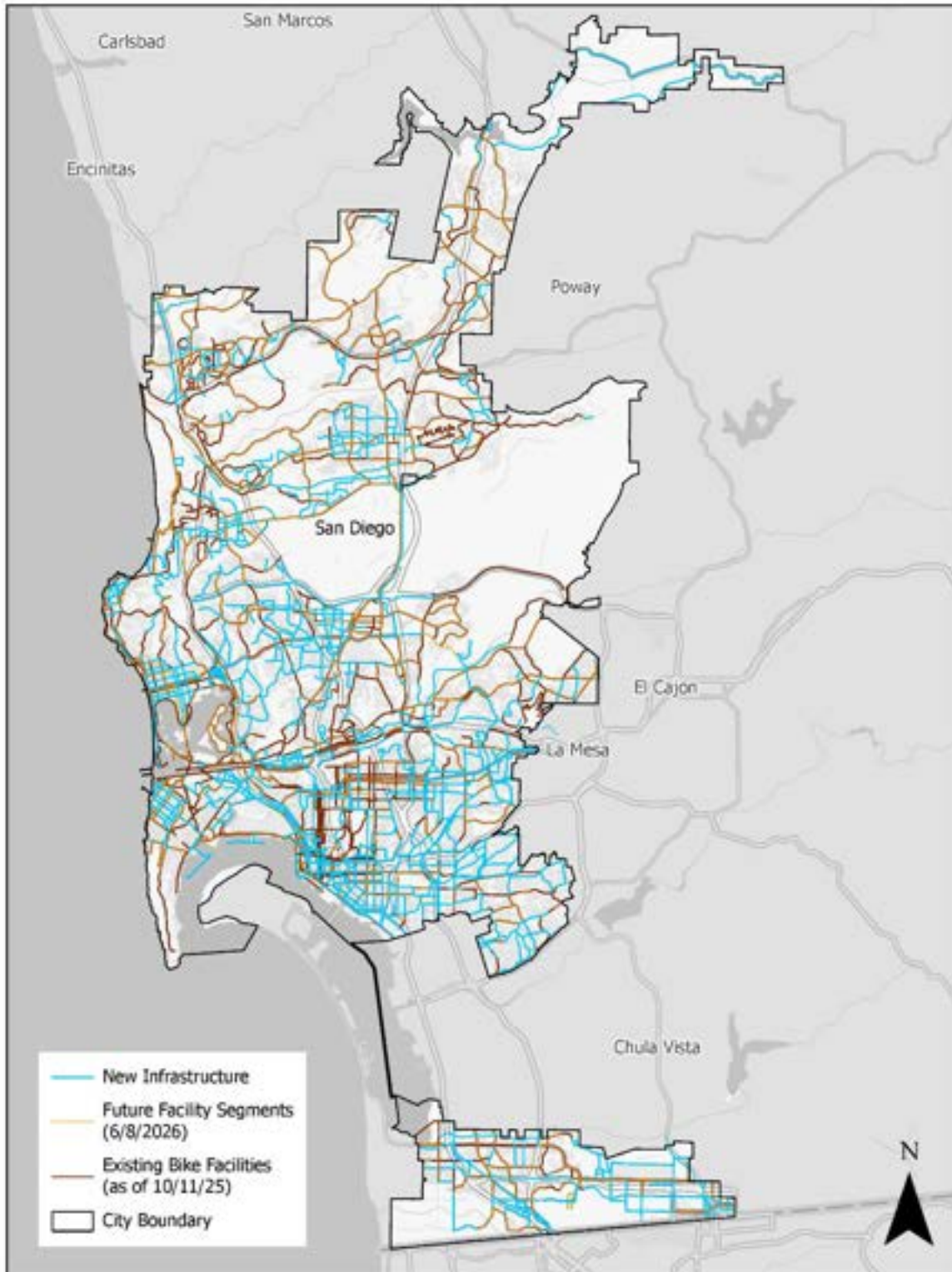


Figure 5: Network Gaps



Public Comment Review - 2 points

As part of Phase 1 of the BMPU and the SANDAG Vision Zero plan, public comments were collected through the Social Pinpoint program on cycling and road safety issues.

To ensure this feedback is meaningfully incorporated into the prioritization process, each comment was subject to a community voting mechanism, allowing participants to express agreement or disagreement through upvotes and downvotes.

To reflect collective sentiment and participation, both comment datasets will be evaluated independently. Each facility segment will be assigned a weighted score from 0-2 points, based on the relative density of public comments.

This approach emphasizes comment density as a quantitative measure of public engagement. By focusing on the relative volume of feedback, the process avoids ambiguity while ensuring that the most widely reported concerns are elevated.

This reinforces transparency and community-driven planning in the decision-making process.

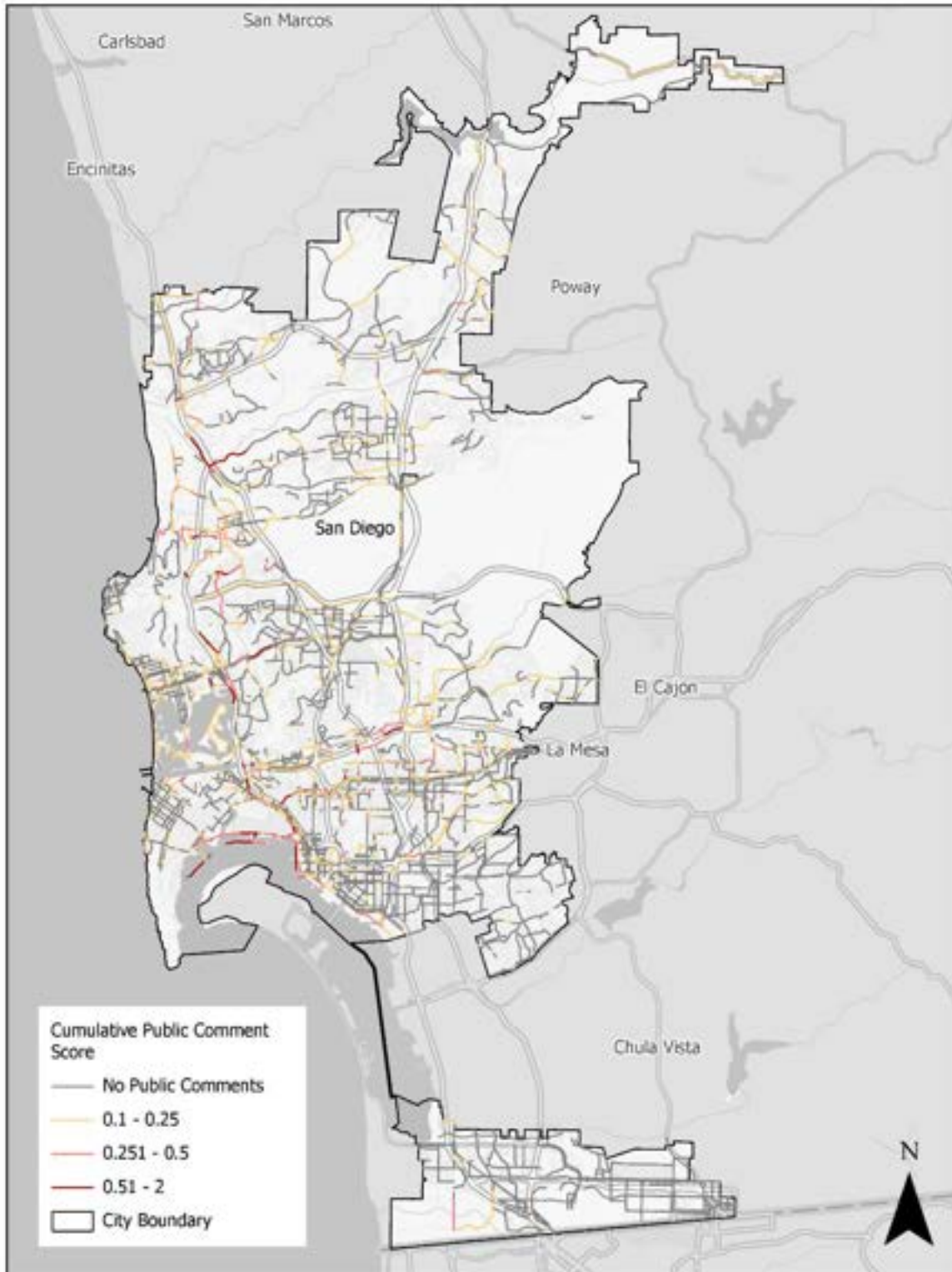
- **Step 1:** Assign comments to facility segments using a spatial join, and determine the quantity of comments associated with each facility segment
- **Step 2:** Assign a score to facility segments based on comment volume with facility segments that have one or more comments receiving a normalized score between 0.25 (1 comment) and 1 (maximum amount of comments)
- **Step 3:** Combine Vision Zero comment score and BMPU comment score so that each facility segment receives a score between 0 and 2

Table 4: Scoring for Public Comment Review

Metric	Category	Layer Description	Layer Name	Score	Source
BMPU Social Pinpoint	Public Comment Review	BMPU Phase 1 Social Pinpoint Public Comments	Feedback	0-1	BMPU Phase 1 Engagement
SANDAG Vision Zero Social Pinpoint	Public Comment Review	SANDAG Vision Zero Social Pinpoint Public Comments	SANDAG_AT-VZ_Social Pinpoint Public Comments (Points).csv	0-1	Regional Vision Zero Action Plan

Figure 6 shows the weighted public comment score for bike facility segments.

Figure 6: Public Comment Review



Smoothed Cumulative Score

All individual scores, Safety, Equity, Connectivity, and Public Comments will be summed to generate a composite prioritization score for each facility segment. This score reflects the facility segment's overall strategic value and readiness for implementation. To review facility segment scores along corridors the results will be smoothed along corridors using a half mile sliding window analysis, which will make values more consistent across corridors and remove the granularity that comes with using segments that have been split at intersections, while also not giving too much weight to longer segments.

- **Step 1:** Split dissolved facility segments at intersections so segments are broken up by block
- **Step 2:** Using the City's street centerline layer create a network of segments that have bicycle facilities that will be used as the routing backbone
- **Step 3:** Run the Create Routes tool on the street centerline network
- **Step 4:** Run the Locate Features Along Routes tool to locate facility segments along each route
- **Step 5:** For each corridor (grouped by Route ID), a half window slides along the route's range and computes a smoothed score at each position, which is then mapped back onto each original segment by snapping to the nearest window center

Table 5 shows the scoring for each category.

Category	Assigned Total	Maximum Possible Score
Safety	0-4 Points	4 Points
Equity	0-3 Points	3 Points
Connectivity	0-2 Points	2 Points
Public Comment Review	0-2 Points	2 Points

NEXT STEPS FOR IMPLEMENTATION*

Based on smoothed cumulative score, Fehr & Peers, Evari and City of San Diego will create three categories of project priorities: Very High Priority, High Priority, and Priority.

Once placed in a category, each facility segment will be further assigned to align with each of the City's funding sources as follows:

- **High Complexity**
- **Low Complexity**

**The updated bicycle network is currently being developed. Once the network has been finalized and all facility segments are confirmed, each facility segment will be evaluated using the defined prioritization metrics, and the approach outlined in previous sections.*

Figure 7 summarizes how each facility segment goes through the full prioritization workflow.

Figure 7: Prioritization Workflow



Figure 8: Facility Segment Smoothed Cumulative Priority Score

