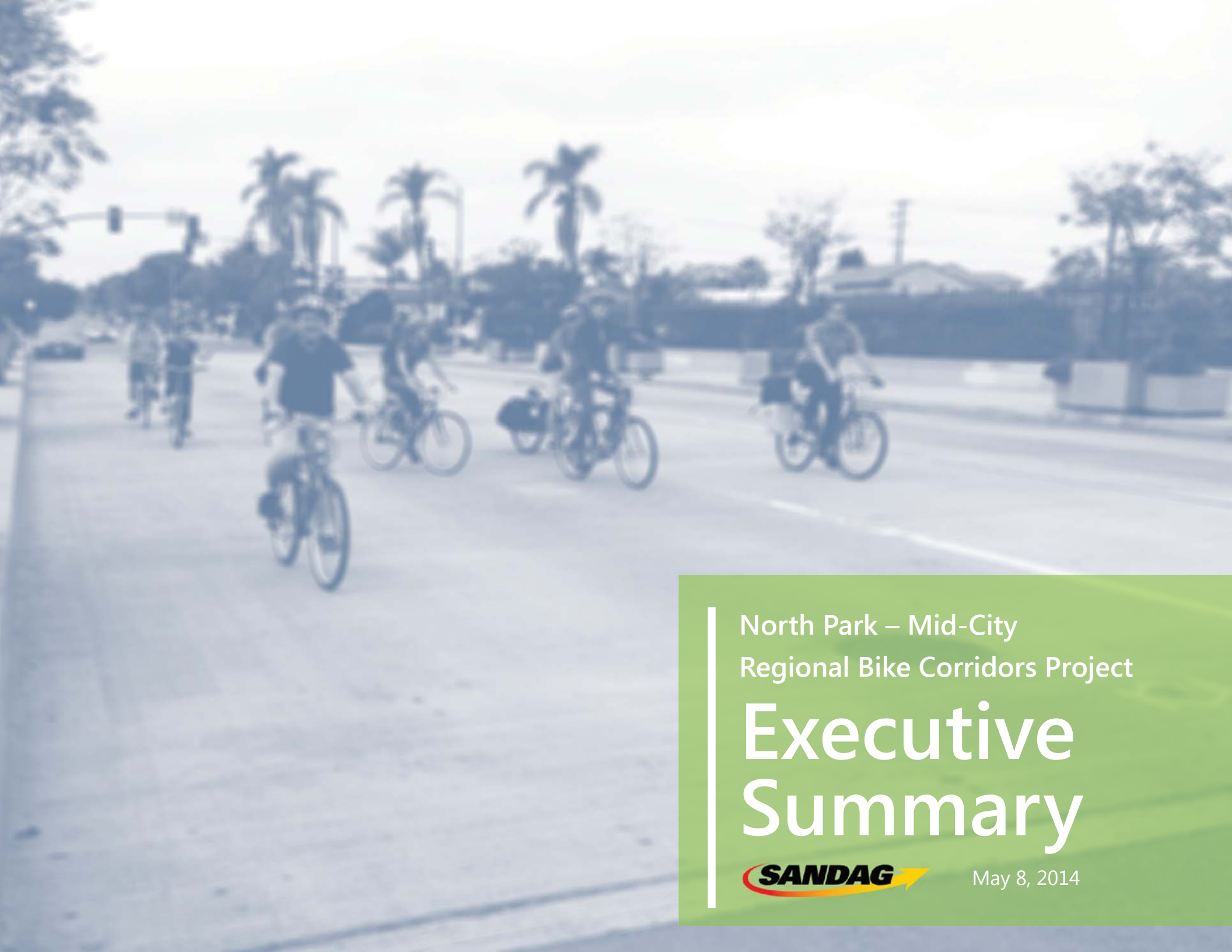

North Park – Mid-City
Regional Bike Corridors Project

Executive Summary

SANDAG

May 8, 2014

What Are the North Park – Mid-City Regional Bike Corridors?

The North Park – Mid-City Regional Bike Corridors Project will improve east-west travel from the San Diego neighborhood of North Park to the City of La Mesa by creating inviting and convenient bikeways that connect key community destinations, including schools, parks, transit stops, and commercial centers. Extensive community involvement and technical analysis has led to three recommended alignments, shown in Figure 1. This document summarizes the process through which these alignments were selected and presents steps taken as the project has moved through conceptual design.

As a starting point, the project team examined the Preliminary Regional Project Corridors for the North Park and Mid-City areas identified in the San Diego Regional Bicycle Plan illustrated in Figure 2.

When completed, planned bikeway improvements are intended to contribute towards establishing more complete streets and will enhance safety and livability for people of all ages and abilities through a focus on the following project goals:

1. Provide safe, livable, complete streets that serve people of all ages and abilities
2. Provide direct access to schools, transit stops, community destinations, and commercial centers
3. Design innovative facilities with appropriate separation from vehicular traffic, traffic calming elements, and end-of-trip facilities
4. Be consistent with and leverage community planning efforts
5. Support place-making, sustainability, equity, and economic development and redevelopment efforts

In addition, this project aims to contribute to and complement regional bike program goals guided by SANDAG and other visioning agencies, including an emphasis on low-stress bikeways and bikeways that can be used for common, everyday trips in addition to recreational purposes.

This Executive Summary provides an overview of the planning process and recommended improvements, including conceptual designs and a description of the next steps toward implementation.

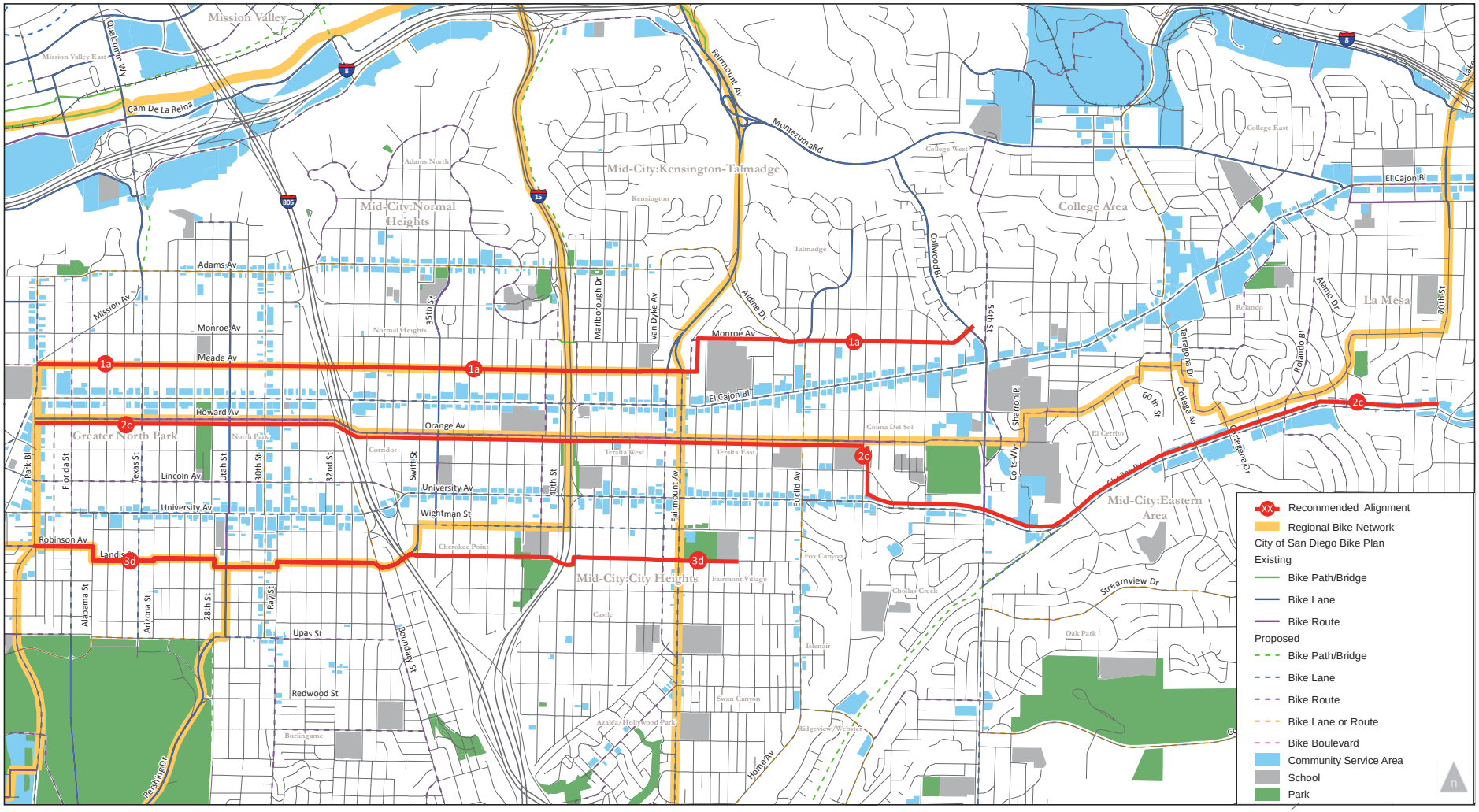

Figure 1. Recommended Alignments

Screening analysis and public input led to the selection of the three chosen bikeway corridors shown here.

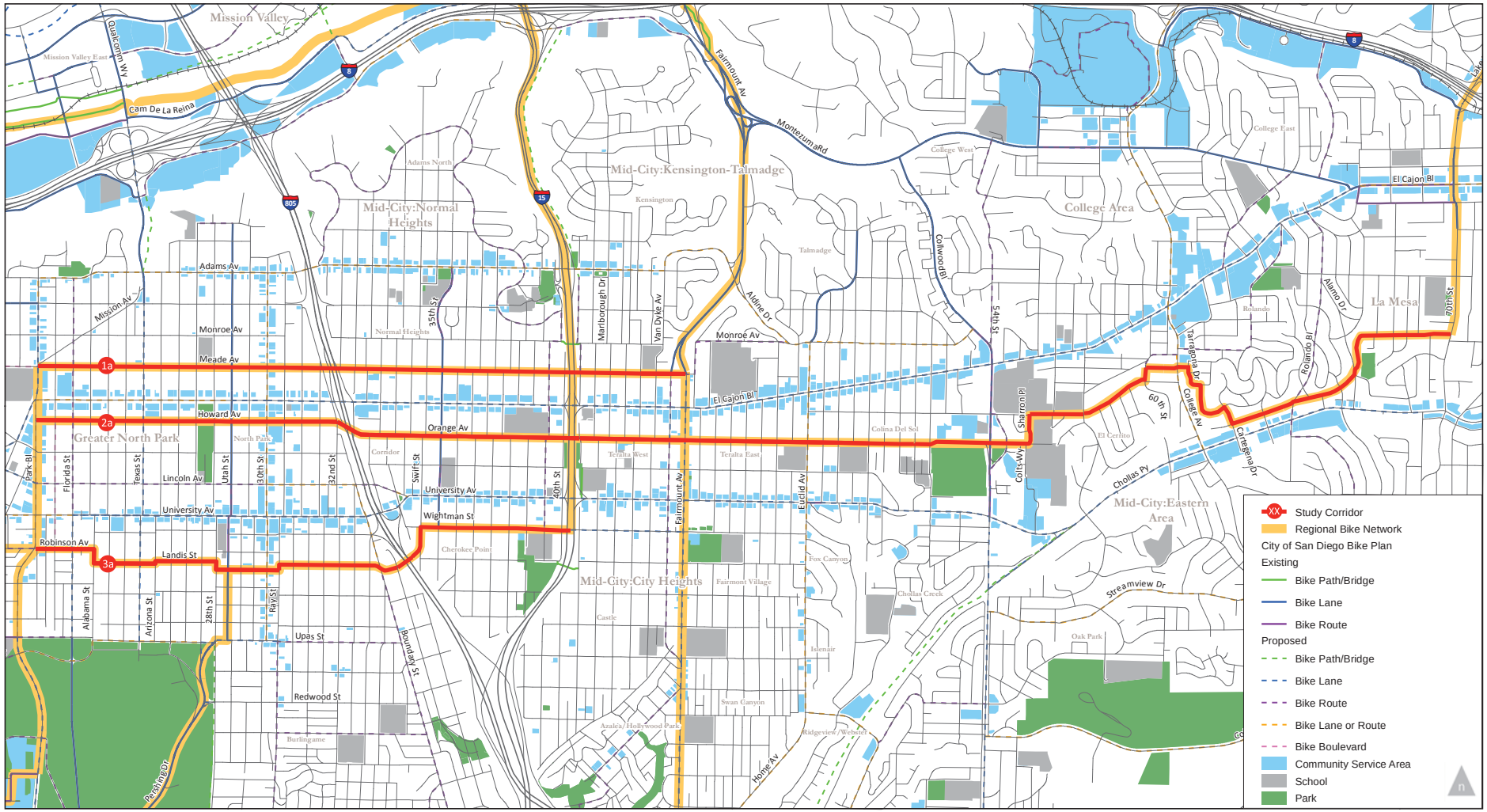

Figure 2. SANDAG Regional Bike Plan - Preliminary Project Corridors

The North Park – Mid-City Regional Bike Corridors were first identified in *Riding to 2050: The San Diego Regional Bike Plan*. These Preliminary Project Corridors (shown above) served as the starting point for the planning process described in this report.

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Bikeways for the Community

A Community Advisory Group (CAG) made up of a diverse group of community stakeholders was formed to help guide the planning and conceptual design of the North Park – Mid-City Regional Bike Corridors. The CAG provided in-depth input on community issues, opportunities, and proposed facility designs and facilitated broad community involvement throughout the planning and design phase of the project. The first CAG meeting, held on January 30, 2013, provided an overview of the project, facilitated discussion of the project vision and goals, and solicited community feedback on the opportunities for and constraints on potential bike facilities on the three Preliminary Project Corridors.

Additionally, SANDAG staff and key members of the consultant team (including planners, traffic and civil engineers and urban designers) participated in a two-day, in-depth field visit of the Preliminary Project Corridors, entirely by bicycle. This provided an on-the-ground perspective of the corridors and surrounding neighborhoods and offered insights into the topographic, infrastructure, land use and traffic-related issues along the routes.

Figure 3. Site Visit
Project team members get an "on-the-ground" perspective during a bikeabout through the preliminary project corridors.

A World of Possibilities

The purpose of the alignment study was to evaluate potential east-west alignment alternatives within the project area in order to determine the three best alignments for near-term implementation. Through a site visit and community involvement process emphasizing the project goals, the three preliminary corridors were expanded to thirteen alignment alternatives for analysis and consideration. These alignments were divided into three corridors: North (1), Central (2), and South (3), as shown in Figure 5. Alternative Alignments 1a, 2a, and 3a most closely resemble the Preliminary Project Corridors; the remaining Alternative Alignments represent the expanded set of alignments that provide options for serving the three corridors.

In the second CAG meeting, held on March 6, 2013, community members learned about the route alignment development process and broke into groups to provide feedback and generate ideas on potential alignment alternatives to the Preliminary Project Corridors and other regional and local opportunities.

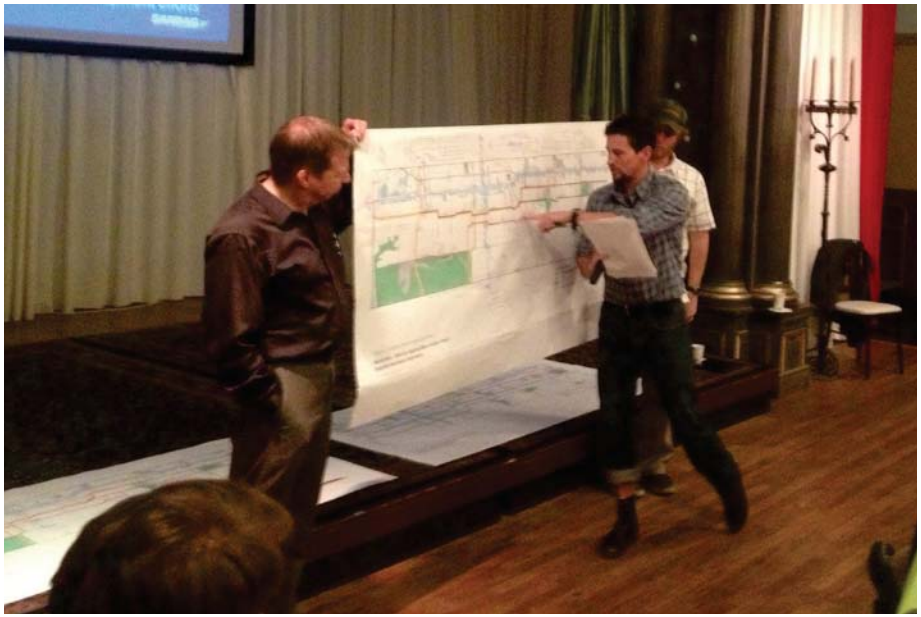

Figure 4. CAG Meeting #2 Photos

At the 2nd CAG meeting, the project team presented some initial ideas for alternatives to the Preliminary Project Corridors identified in the Regional Bike Plan. Based on ideas generated by the CAG, thirteen potential alignments were identified for further evaluation.

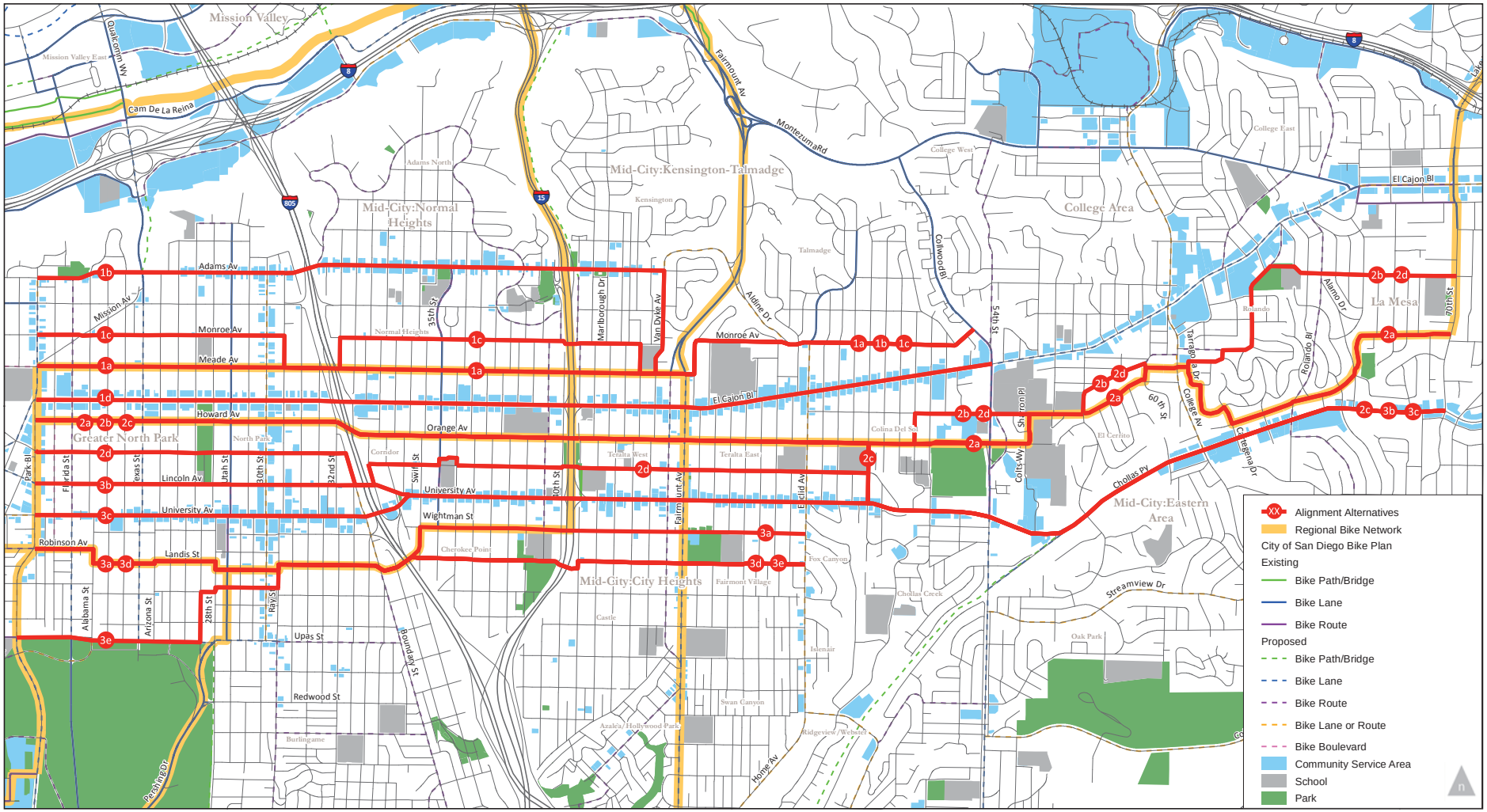

Figure 5. Alignment Alternatives

The three Preliminary Project Corridor alignments were expanded to thirteen based on ideas generated at the first and second CAG meetings and site visits by the project team.

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Goals Inform Selection

The team considered each of the alignment alternatives in a two-stage process, which is described in Figure 6. First, alignment alternatives were screened using the qualitative, goal-based criteria to refine the alternatives for further analysis. The top two alignments from each corridor were then analyzed in greater detail using an innovative set of quantitative metrics reflecting the project goals. These six top-performing alignments are presented in Figure 7.

The resulting six alignments and their associated metrics were presented to the community and project stakeholders for additional feedback at the 3rd CAG Meeting and the project's first public workshop.

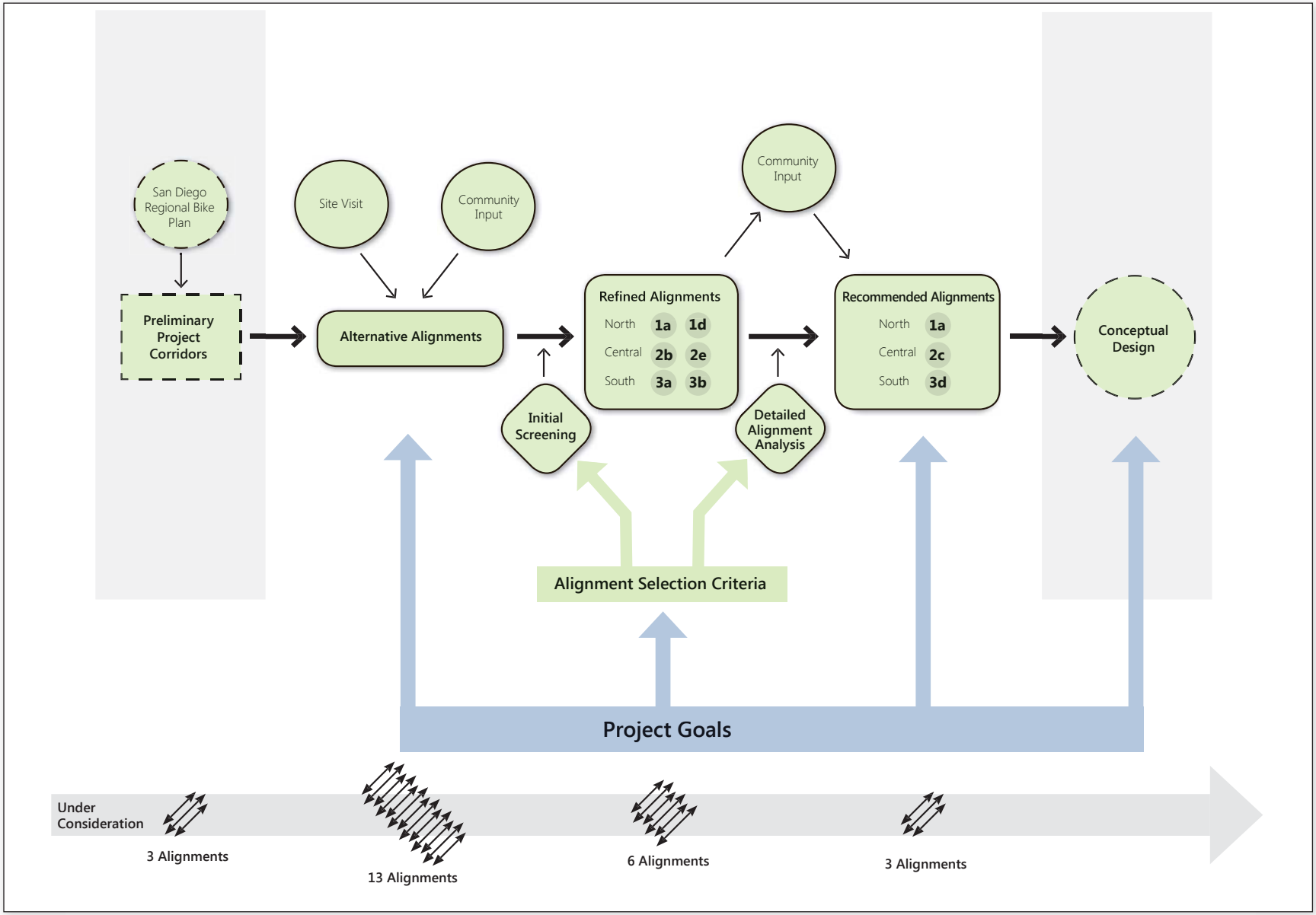

Figure 6. Planning Process Flow Chart

The thirteen potential alignments were evaluated using an innovative set of screening criteria based on the Project Goals. The above image provides an overview of the planning process.

**For more information, see the Alignment Study Report at KeepSanDiegoMoving.com/RegionalBikeProjects*

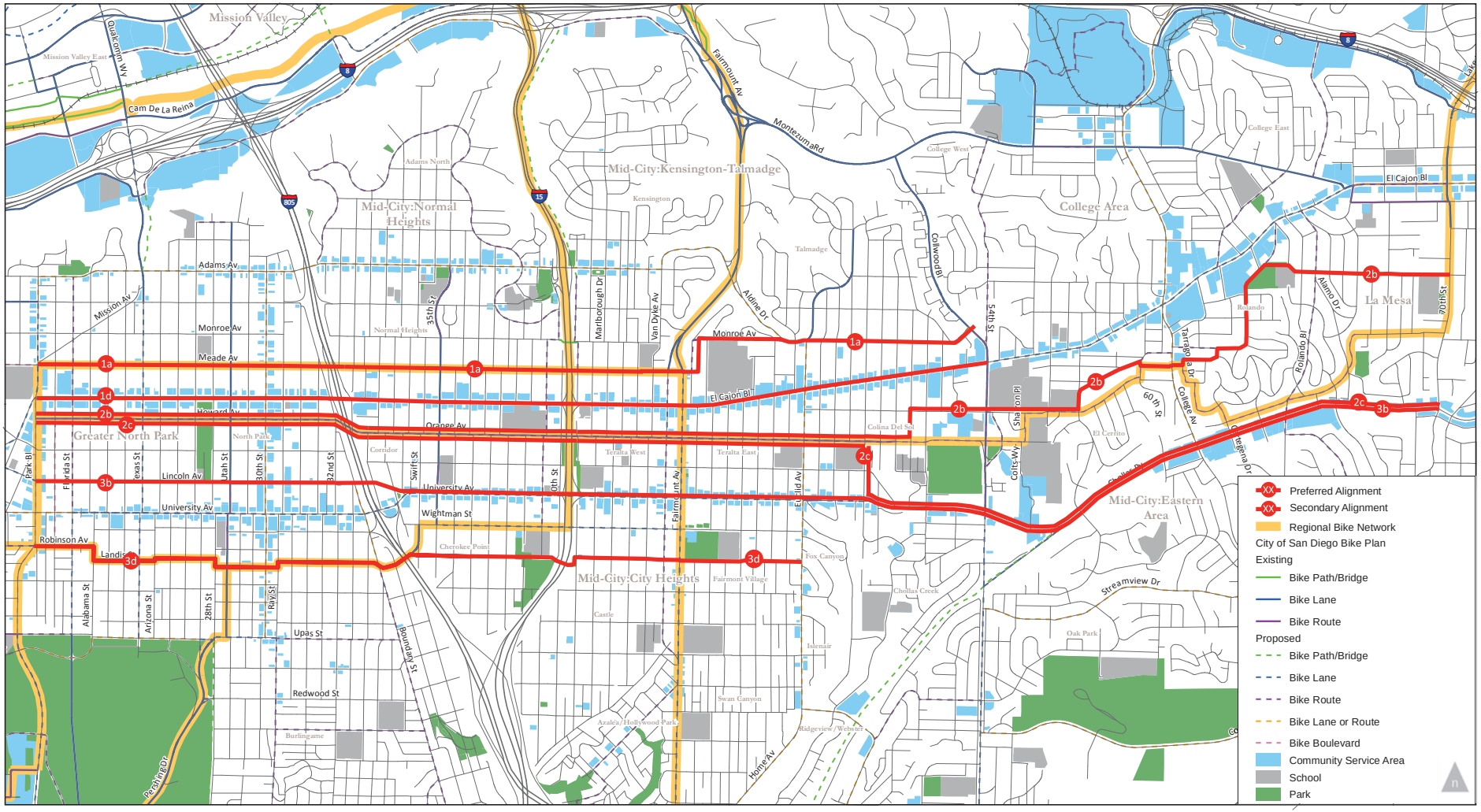

Figure 7. Refined Alignments

The screening process allowed the project team to narrow the list of potential alignments, and present the top two options for each corridor to the CAG and the general public for input.

Figure 8. First Community Open House

In the summer of 2013, SANDAG held the project's first public open house, which presented current analysis and gathered community input. Attendees provided feedback for the six corridors that were still under consideration.

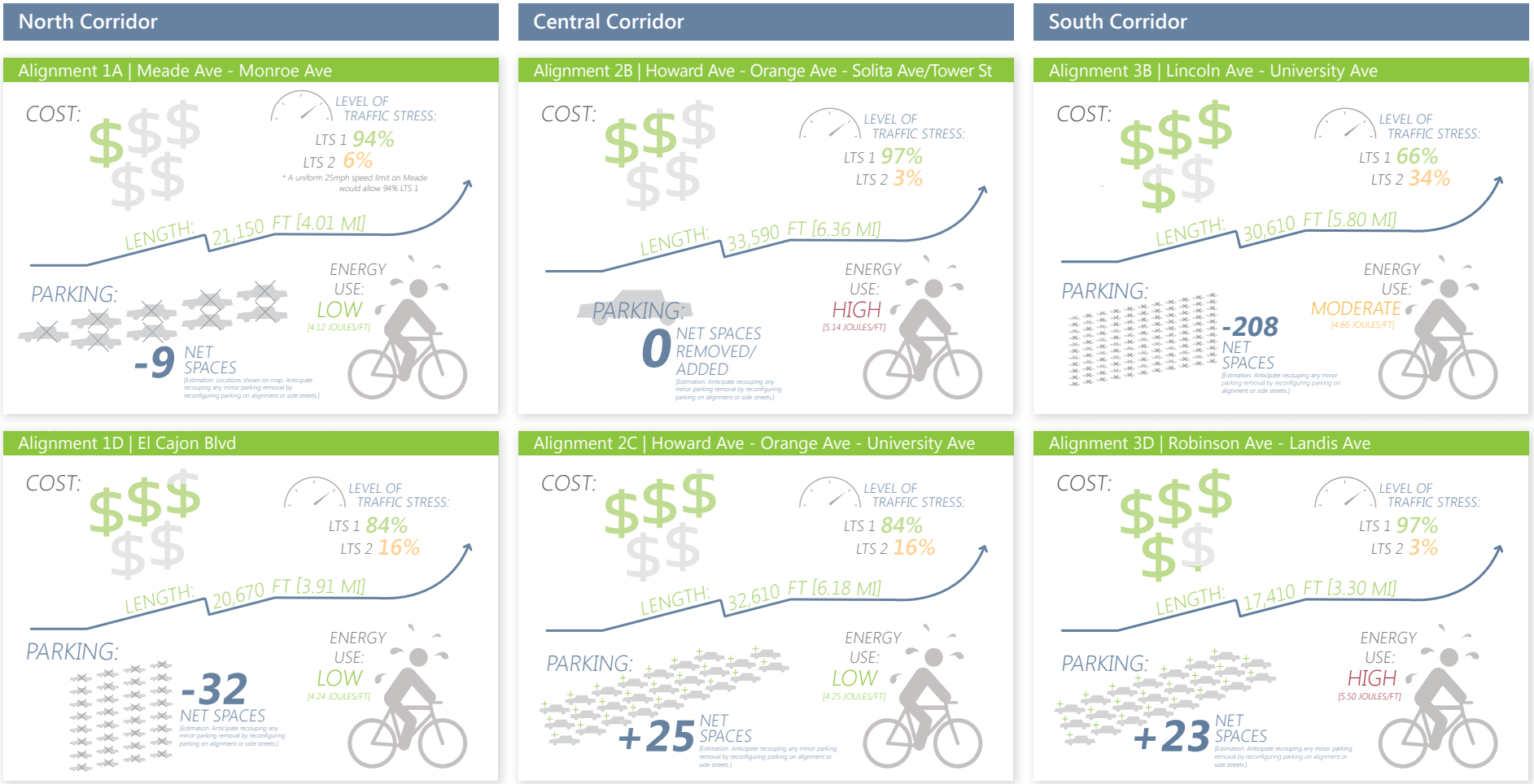

Figure 9. Alignment Fast Facts

The quantitative metrics used in the detailed analysis allowed the project team to convey a broad spectrum of relevant information about the benefits and implications for each alignments. The details of the analysis were made available to the public through the posting of the complete alignment study on the project website in advance of the first public workshop. In addition, the project team developed the infographics shown above to convey this information clearly and quickly to Community Advisory Group members and other community members.

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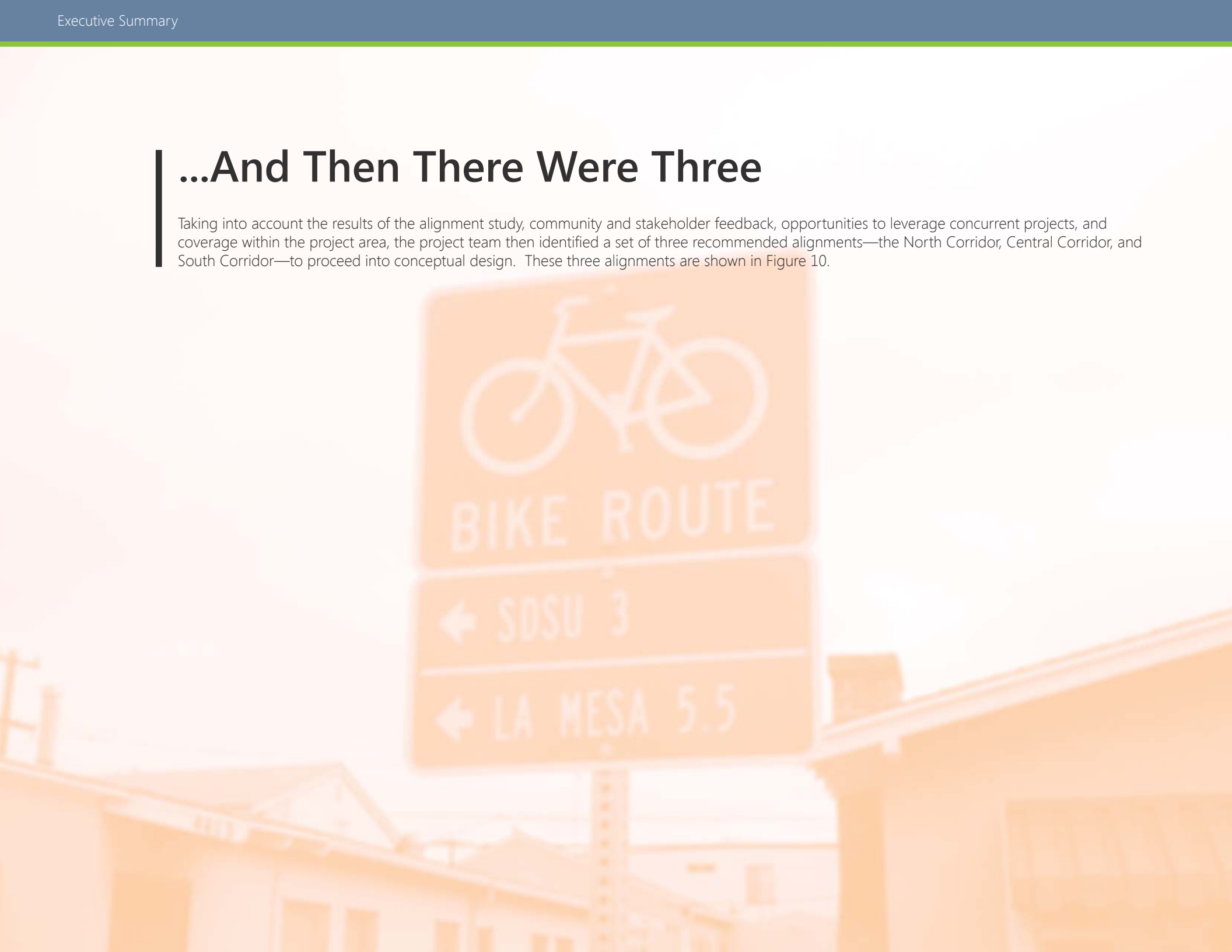
...And Then There Were Three

Taking into account the results of the alignment study, community and stakeholder feedback, opportunities to leverage concurrent projects, and coverage within the project area, the project team then identified a set of three recommended alignments—the North Corridor, Central Corridor, and South Corridor—to proceed into conceptual design. These three alignments are shown in Figure 10.



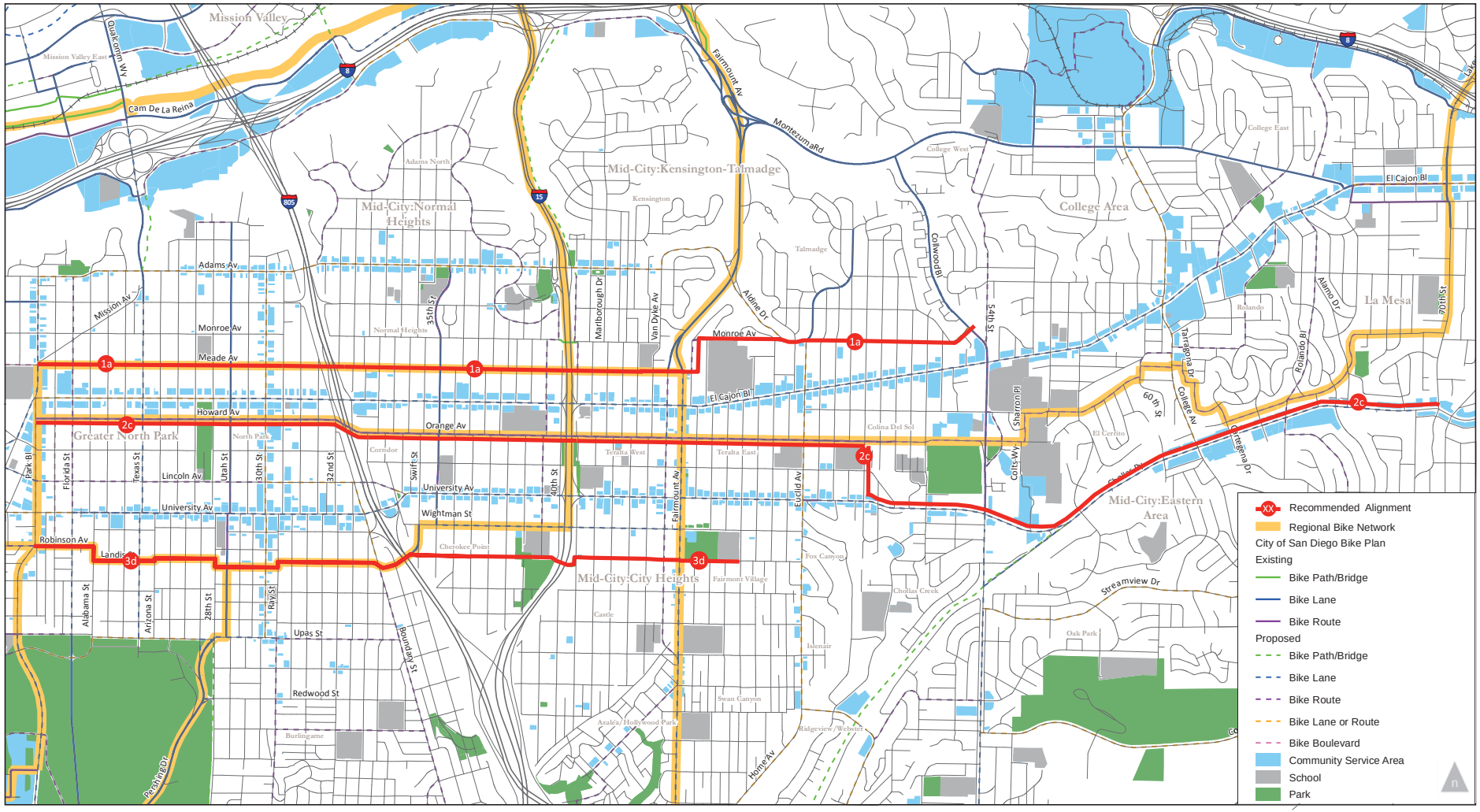


Figure 10. Recommended Alignments

Screening analysis and community involvement led to the selection of the three bikeways shown here.

What about Traffic Nearby?

The project team then went "back to the street" to collect even more detailed data on the recommended alignments. Traffic count data was collected and analyzed at 36 study intersections along the three corridors in order to establish a baseline for the future environmental analysis.

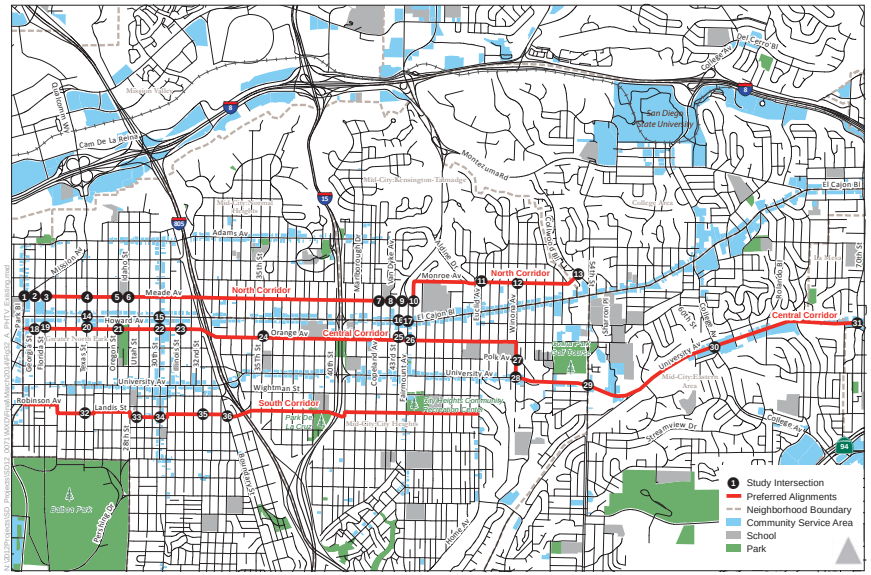
This data was used to inform the design concepts developed for each corridor. The analysis helped to answer some of the following important considerations:

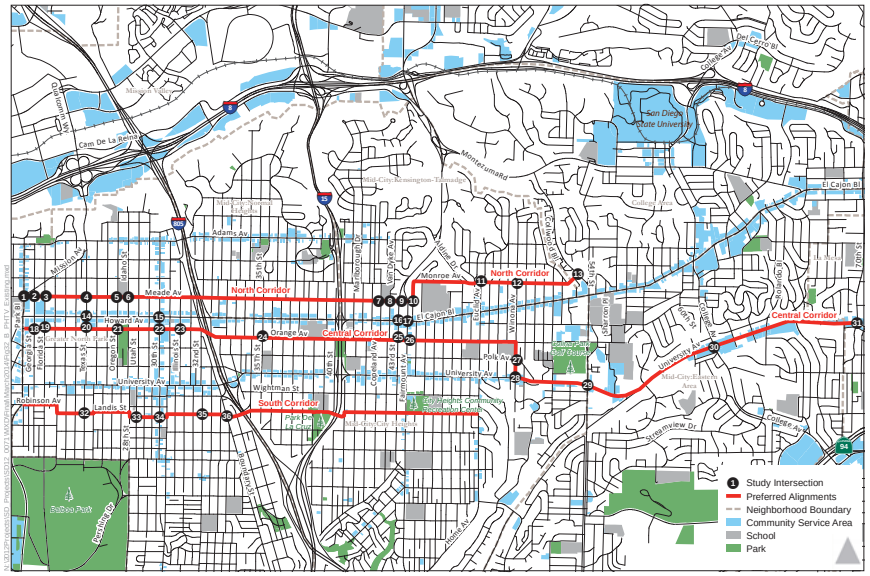
- Where can travel or turning lanes be removed to make way for low-stress bikeways?
- Is traffic diversion needed in order to create a more comfortable riding environment?
- How can high-quality bikeways be designed while avoiding unnecessary traffic impacts?
- Can the designs improve conditions for people riding bikes while supporting broader community goals of reducing speeding and cut-through traffic?

Figure 11. Traffic Count Data ▶

Traffic count data was used to better understand existing conditions, identify potential design solutions, test the implications of the designs, and refine as necessary. Through this iterative process, the project team developed the design concepts laid out in the next section.

**For larger scale versions of these figures, see the Existing Conditions Report at KeepSanDiegoMoving.com/RegionalBikeProjects*


North Corridor
Central Corridor
South Corridor
Study Intersection
Preferred Alignments
Neighborhood Boundary
Community Service Area
School
Park


North Corridor
Central Corridor
South Corridor
Study Intersection
Preferred Alignments
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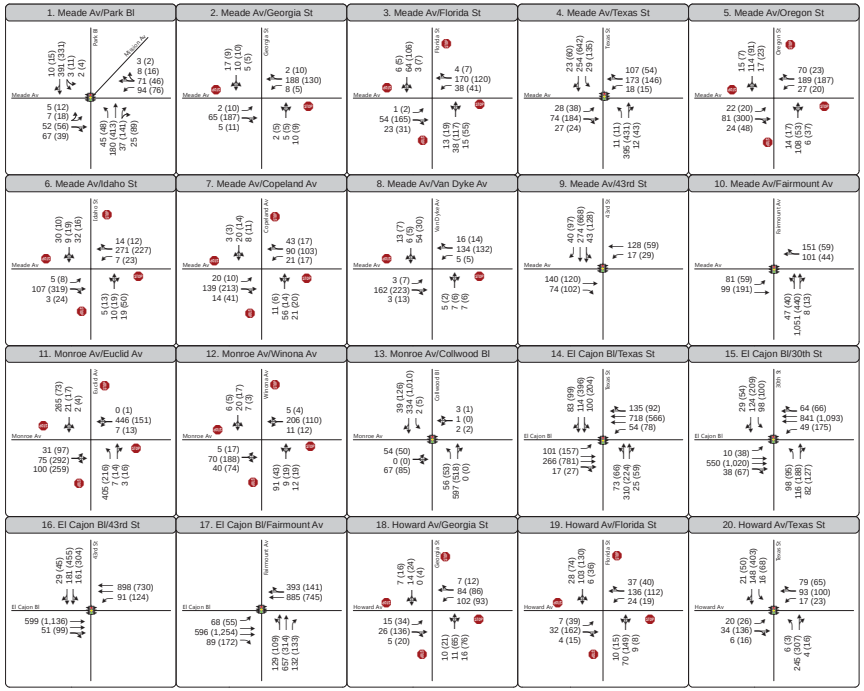
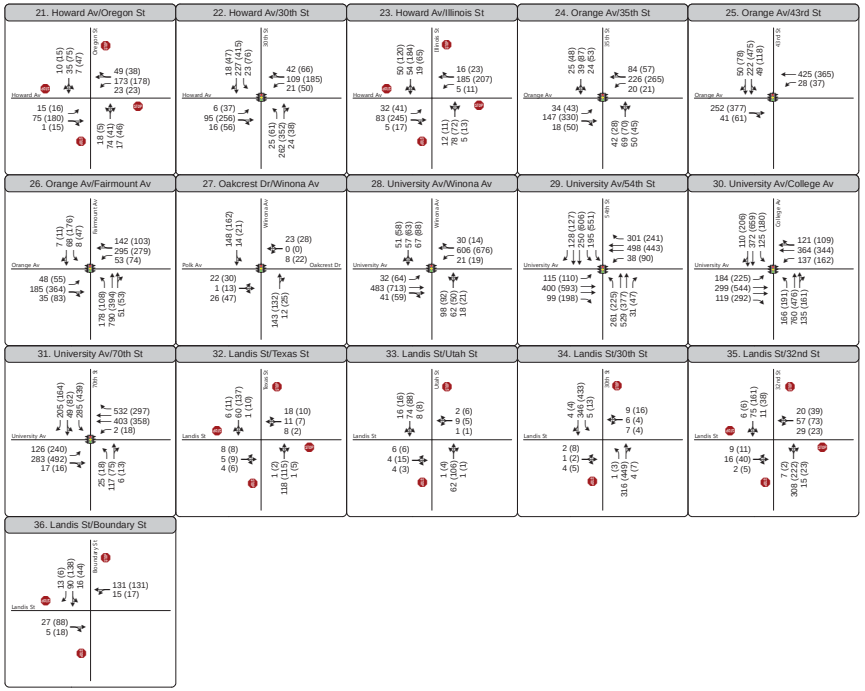
Community Service Area
School
Park


1. Meade Av/Park Bl
2. Meade Av/Georgia St
3. Meade Av/Florida St
4. Meade Av/Texas St
5. Meade Av/Oregon St
6. Meade Av/Idaho St
7. Meade Av/Copeland Av
8. Meade Av/Van Dyke Av
9. Meade Av/43rd St
10. Meade Av/Fairmount Av
11. Monroe Av/Euclid Av
12. Monroe Av/Winona Av
13. Monroe Av/Collwood Bl
14. El Cajon Bl/Texas St
15. El Cajon Bl/30th St
16. El Cajon Bl/43rd St
17. El Cajon Bl/Fairmount Av
18. Howard Av/Georgia St
19. Howard Av/Florida St
20. Howard Av/Texas St
Turn Lane
AM (PM) Peak Hour Traffic Volume
Traffic Signal
Stop Sign


21. Howard Av/Oregon St
22. Howard Av/30th St
23. Howard Av/Illinois St
24. Orange Av/35th St
25. Orange Av/43rd St
26. Orange Av/Fairmount Av
27. Oakcrest Dr/Winona Av
28. University Av/Winona Av
29. University Av/54th St
30. University Av/College Av
31. University Av/70th St
32. Landis St/Texas St
33. Landis St/Utah St
34. Landis St/30th St
35. Landis St/32nd St
36. Landis St/Boundary St
Turn Lane
AM (PM) Peak Hour Traffic Volume
Traffic Signal
Stop Sign

Building on Current Plans

Recommended roadway treatments, described below, infuse existing and planned facilities with improved, low-stress features.

- **Bike Boulevard:** This treatment provides enhanced signing and striping—including shared-use markings ("sharrows"), clearly visible signage, and bicycle-friendly intersection improvements—along a bike route. Where space permits, back-in angled parking allows parked motorists to easily see bicyclists on the street. Bike boulevards are typically designated on slow-speed streets without a lot of traffic, so that bicyclists can comfortably share travel lanes with automobiles.
- **Buffered Bike Lane:** The roadway is configured so that a designated bike lane is separated from moving traffic by a painted, striped section, creating more space between bicyclists and cars than a typical bike lane offers.
- **Protected Bike Lane:** Like a buffered bike lane, space is created between the bike lane and moving autos; however, the space is occupied not by paint but by a raised curb, a separation device, or landscaping.

The types of bicycle facilities along each of the three recommended alignments were determined based on existing and planned bicycle facilities in the area, shown in Figure 19.

Based on these conditions, cross sections along each alignment were proposed as a result of the alignment study. The North, Central, and South Corridor cross sections are illustrated in Figure 12 to Figure 18.

NORTH CORRIDOR — MEADE AVE - MONROE AVE

The North Corridor extends east-west from the Meade Avenue / Park Boulevard intersection, and then connects to Monroe Avenue via 44th Street and terminates at the Monroe Avenue / Collwood Boulevard intersection.

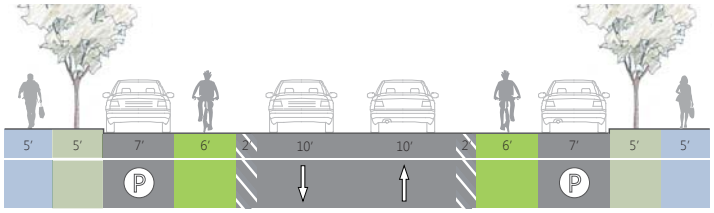


Figure 12. Proposed Buffered Bike Lanes on Meade Avenue

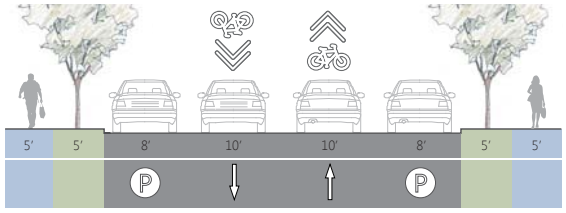


Figure 13. Proposed Bicycle Boulevard on Monroe Avenue

CENTRAL CORRIDOR — HOWARD AVE - ORANGE AVE - UNIVERSITY AVE

The Central Corridor extends east-west from the Howard Avenue / Park Boulevard intersection, and travels via Orange Avenue, Winona Avenue, and University Avenue before terminating at the University Avenue / 70th Street intersection.

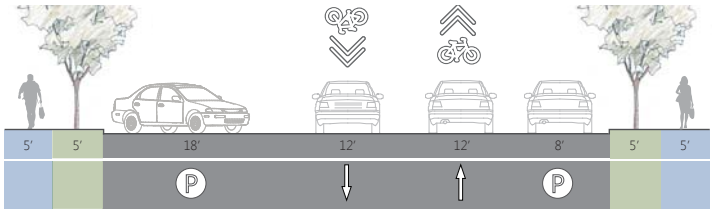


Figure 14. Proposed Bicycle Boulevard on Howard Avenue

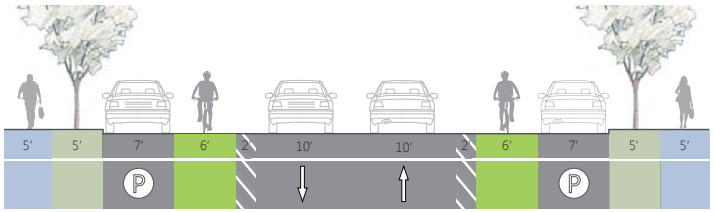


Figure 15. Proposed Buffered Bike Lanes on Orange Avenue

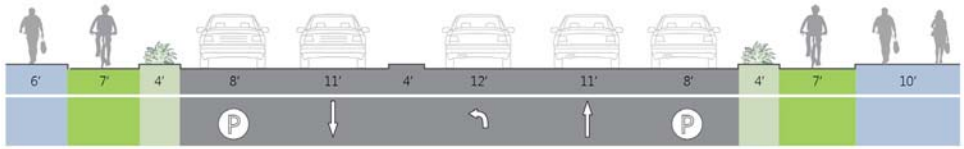


Figure 16. Proposed Protected Bike Lane on University Avenue East of College Avenue

SOUTH CORRIDOR — ROBINSON AVE - LANDIS ST

The South Corridor extends east-west from the Robinson Avenue / Park Boulevard intersection and continues east via Landis Avenue where it terminates at the Landis Avenue / Euclid Avenue intersection.

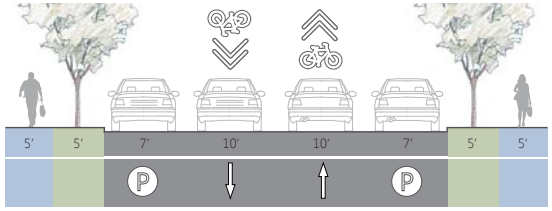


Figure 17. Proposed Bicycle Boulevard on Landis Avenue, East of Ray Street

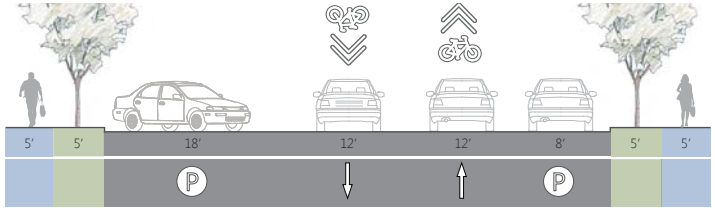


Figure 18. Proposed Bicycle Boulevard on Landis Avenue, East of Central Avenue

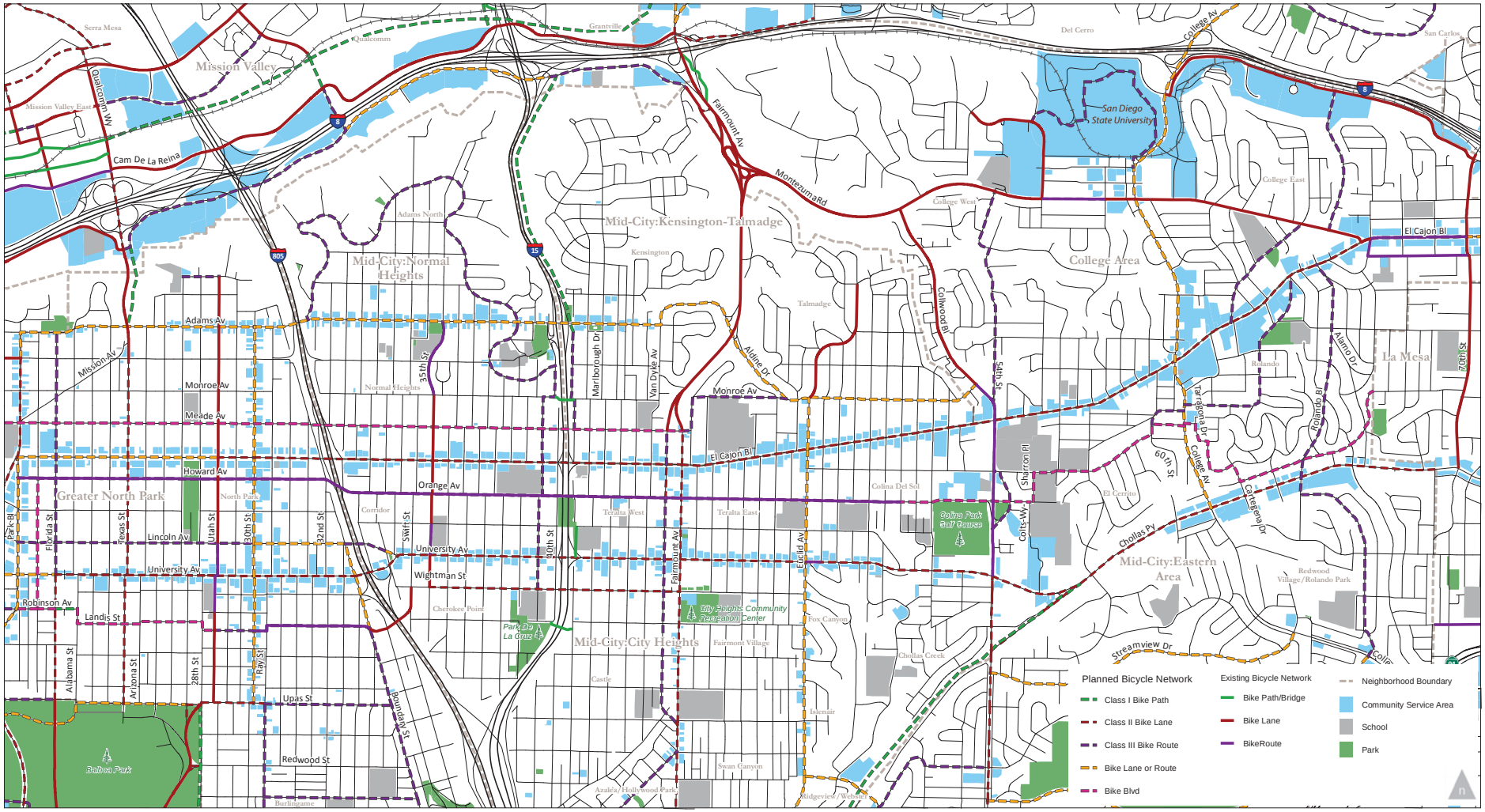


Figure 19. Existing and Planned Regional Bike Network

The bikeway facility types selected for the North Park – Mid-City Regional Bike Corridors either match or improve upon what was recommended in local plans. The project team also integrated other existing and proposed bikeways into the design of this project. For example, wherever one of the regional bike corridors intersects an existing or near-term bikeway, consideration was given to solutions—such as mini-roundabouts—that would facilitate movement along both routes.

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Proposed Improvements Are Coming Together

To enhance both pedestrian and bicycle circulation, various modifications to the roadway network along the three corridors have been proposed and presented to the community. These modifications include traffic calming measures and changes to traffic control devices, such as removal of stop signs, removal of left-turn lanes, and the installation of mini-roundabouts. Each corridor presents its own challenges and opportunities.

- **North Corridor – Meade Ave - Monroe Ave:** Various modifications, including mini-roundabouts, chicanes, the removal of stop signs in the direction of bicycle travel, and diverters are recommended along Meade Avenue, as well as buffered bike lanes. Monroe Avenue recommended modifications include the incorporation of mini-roundabouts and one traffic diversion device along the bike boulevard. Bike-friendly improvements to existing signalized intersections are also recommended throughout the corridor.
- **Central Corridor – Howard Avenue - Orange Ave - University Ave:** Mini-roundabouts, diversion devices, the removal of stop signs, and existing signal modifications are recommended along Howard Avenue and Orange Avenue, where a bike boulevard and buffered bike lanes are recommended, respectively. Along University Avenue, where protected bike lanes are recommended, intersection modifications include bike-friendly improvements to existing signals.
- **South Corridor – Robinson Ave - Landis St:** A recommended bike boulevard from end to end, the south corridor is recommended to receive mini-roundabouts and the removal of various stop signs. Because the route jogs in places, wayfinding is recommended where applicable. Additionally, bicycle/pedestrian bridges are recommended to provide a direct crossing of I-805 and to add a connection and mitigate a major elevation change between Florida and Alabama Streets. Improvements at either end of the existing bicycle path crossing of I-15 are also recommended.

Existing intersection control types are shown in Figure 20, while Figure 21 displays the intersection locations where modifications are proposed. Figures 22 to 41 illustrate the detailed concept designs at each of these intersection locations.

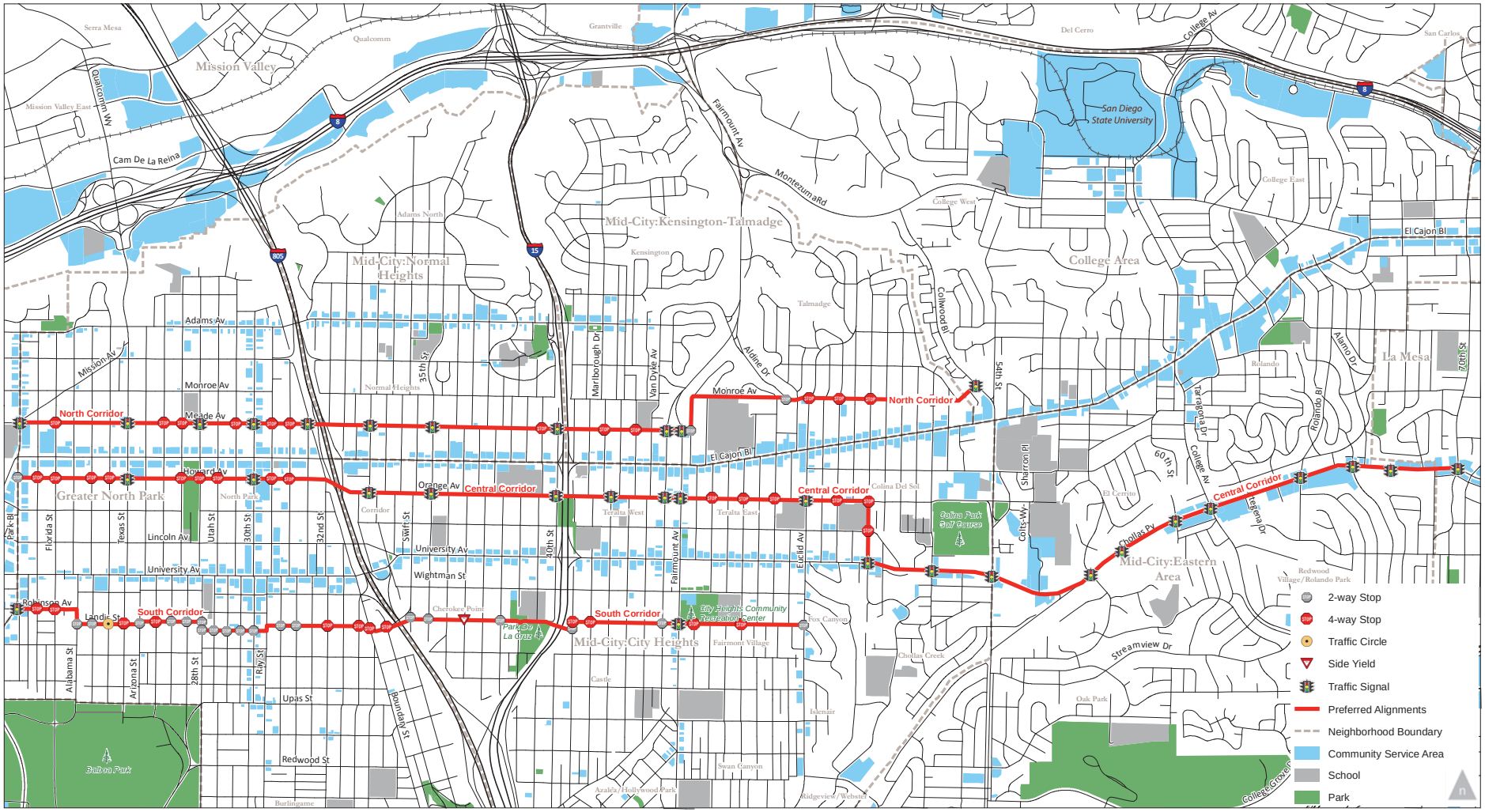


Figure 20. Existing Intersection Control

The final chosen bikeway corridors currently have a number of two- and four-way stop-controlled intersections, as well as a number of signalized intersections, that have been taken into consideration in the bikeway design process.

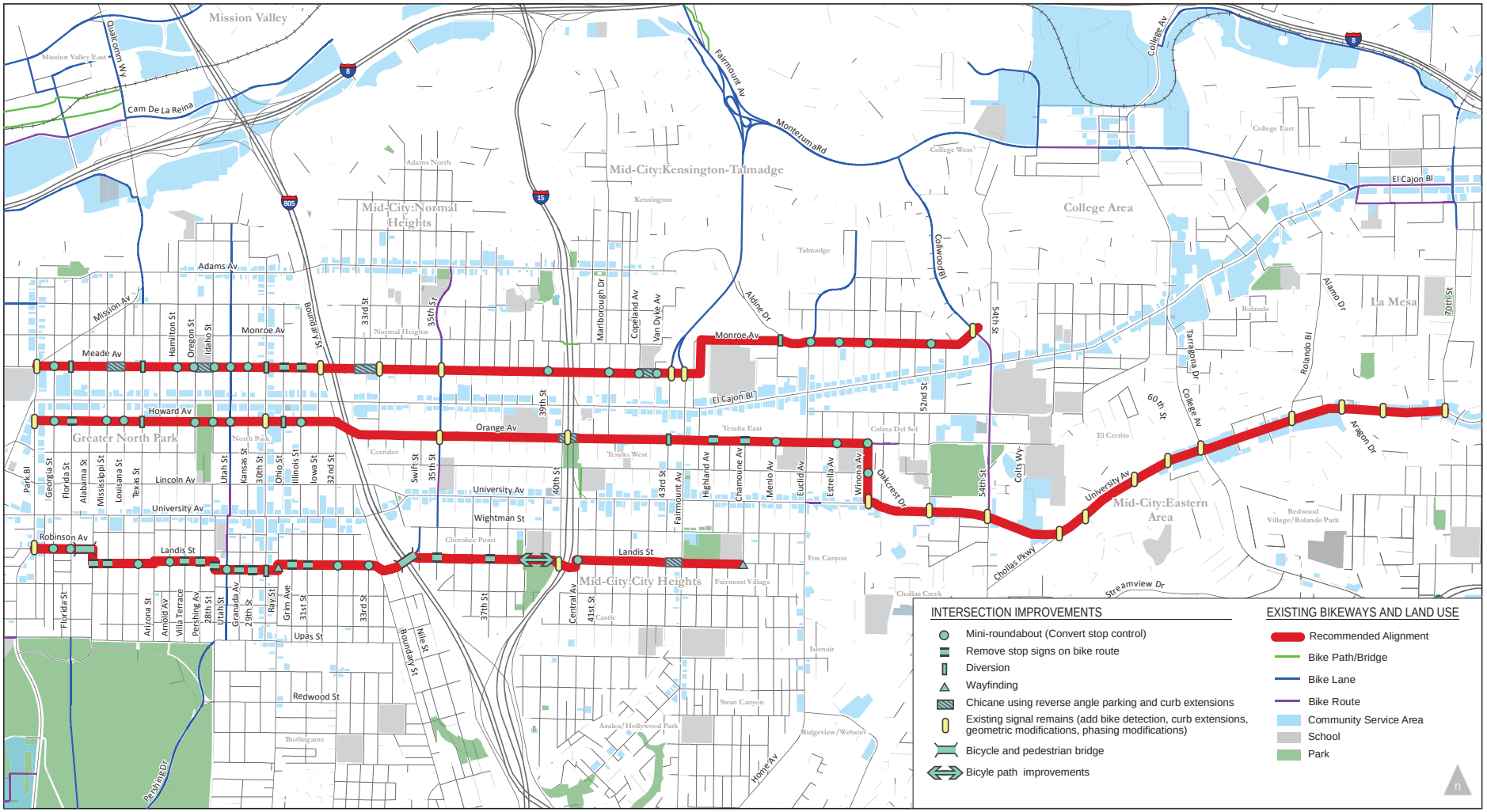


Figure 21. Intersection Modification Locations

Pictured are the locations of proposed intersection modifications that will improve the bicycling experience along the three recommended routes.

Figure 22. Concept Design – Meade Ave/Park Blvd

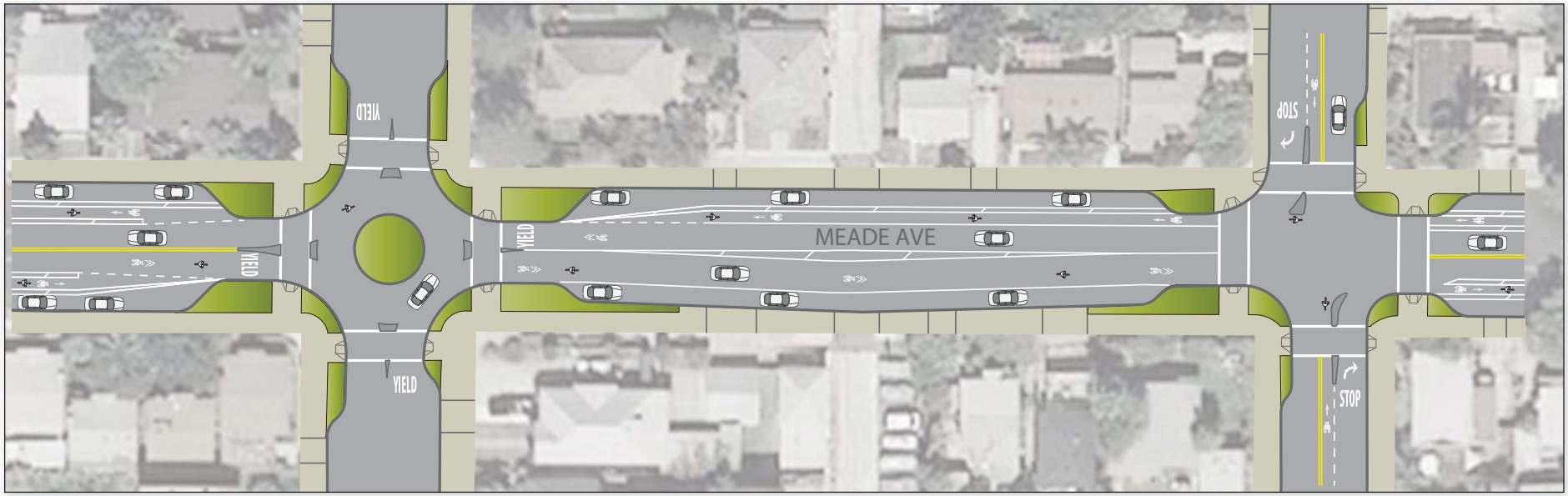


Figure 23. Concept Design – Meade Ave/Georgia St - Florida St

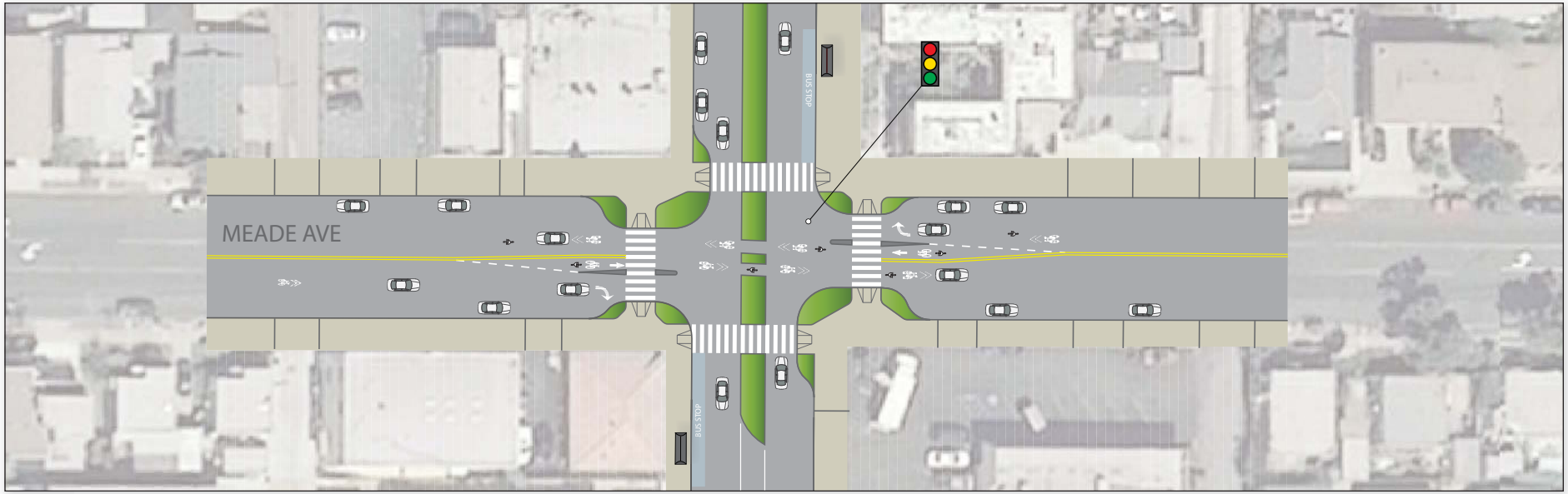


Figure 24. Concept Design – Meade Ave/30th St

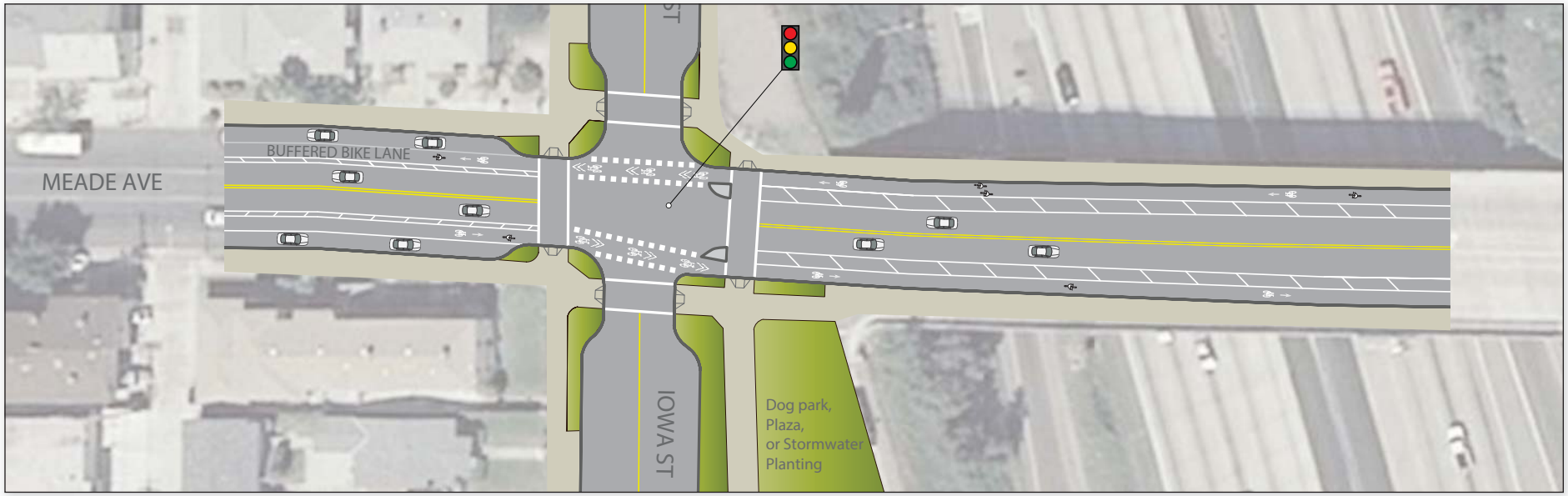


Figure 25. Concept Design – Meade Ave/Iowa St-Boundary St

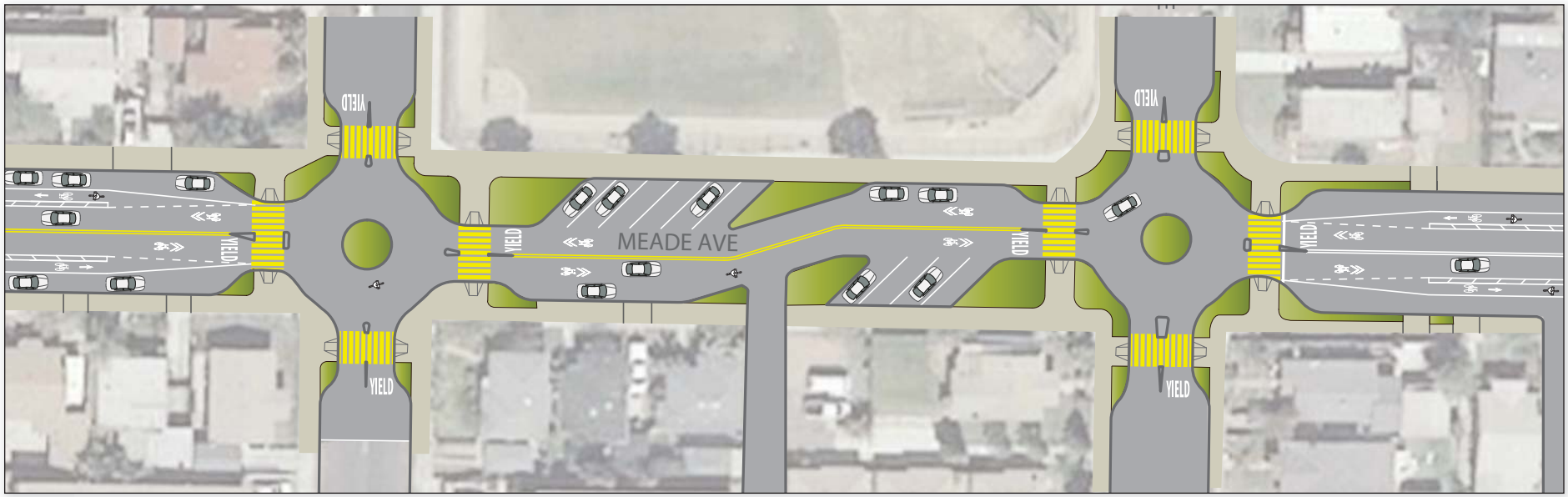


Figure 26 Concept Design – Meade Ave/Copeland Ave/Van Dyke Ave

Figure 27. Concept Design – Monroe Ave/Aldine Dr

Figure 28. Concept Design – Monroe Ave/Collwood Blvd

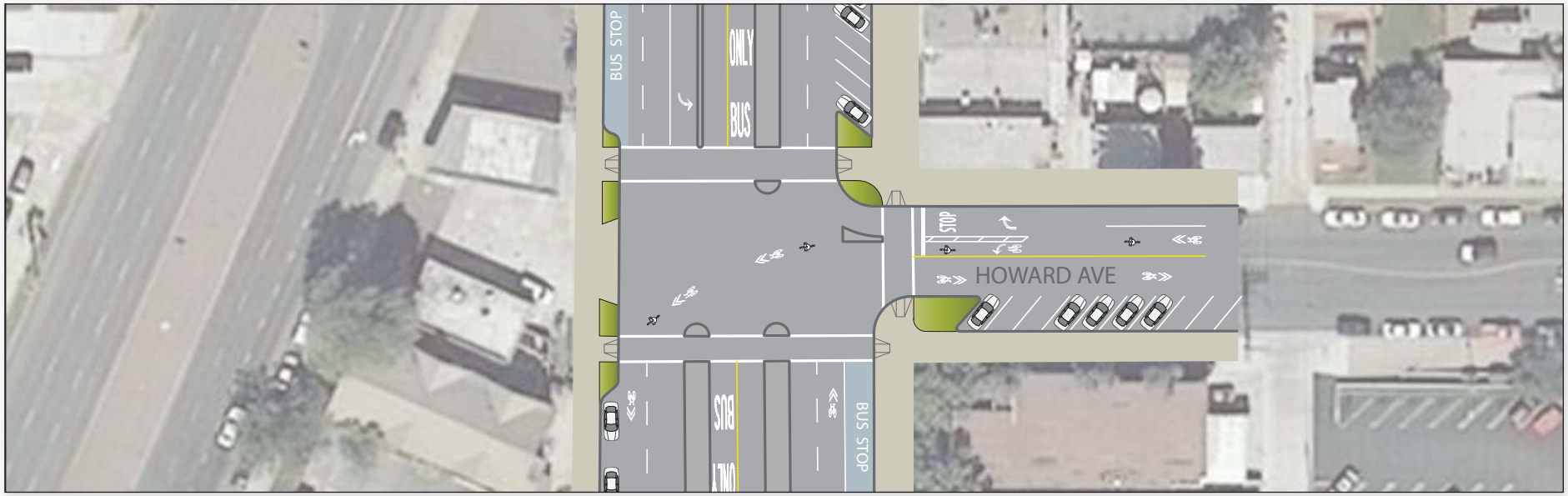


Figure 29. Concept Design – Howard Ave/Park Blvd

Figure 30. Concept Design – Howard Ave/30th - Ohio St

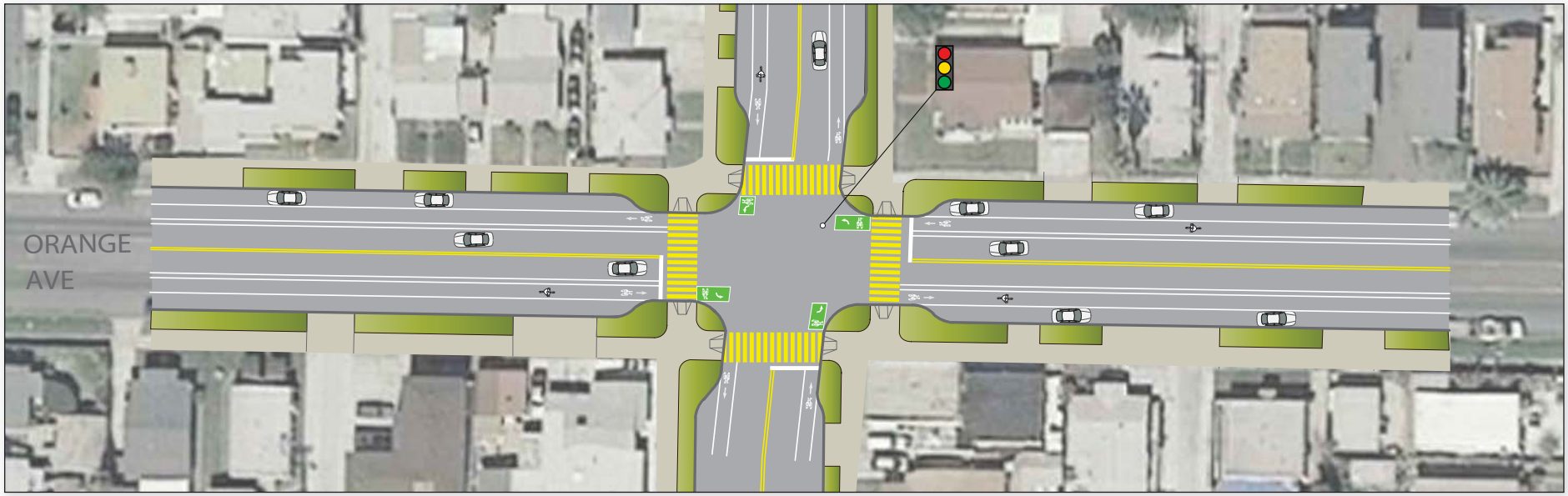


Figure 31. Concept Design – Orange Ave/35th St

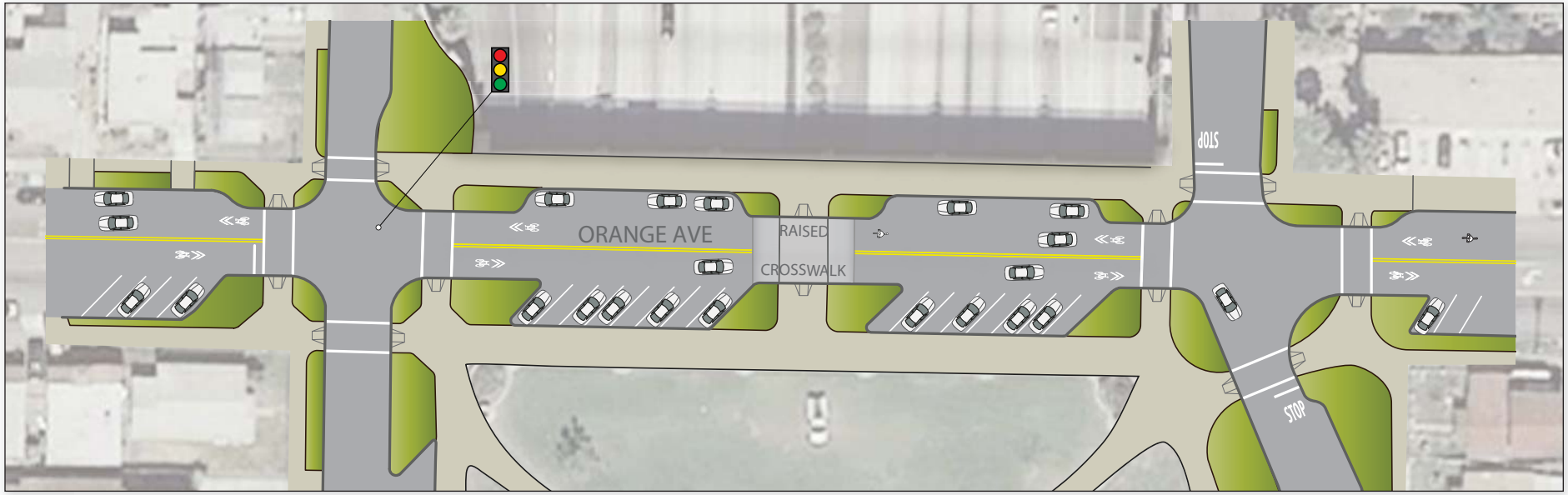


Figure 32. Concept Design – Orange Ave/40th St – Central Ave

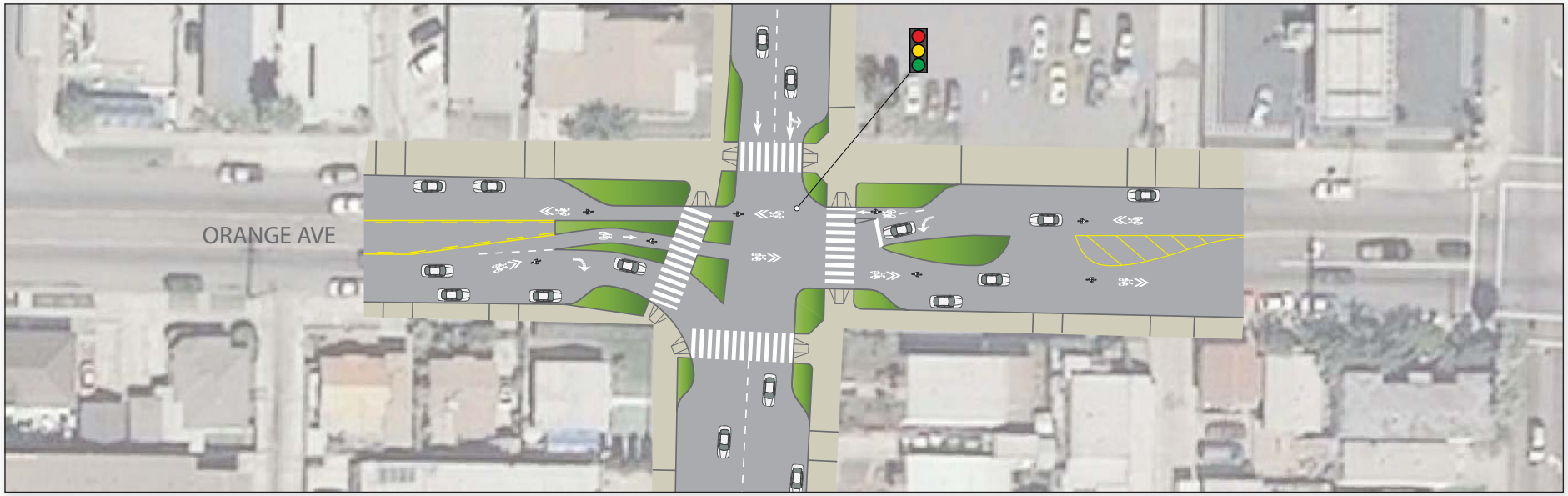


Figure 33. Concept Design – Orange Ave/43rd St

Figure 34. Concept Design – University Ave/54th Street

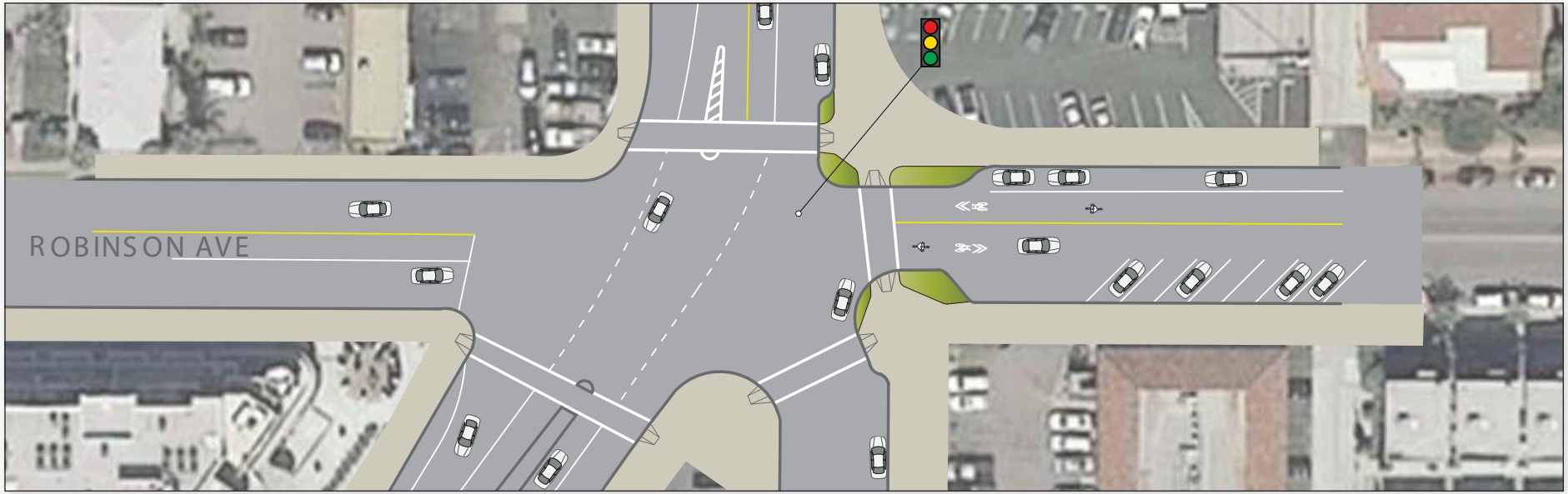


Figure 35. Concept Design – Robinson Ave/Park Blvd

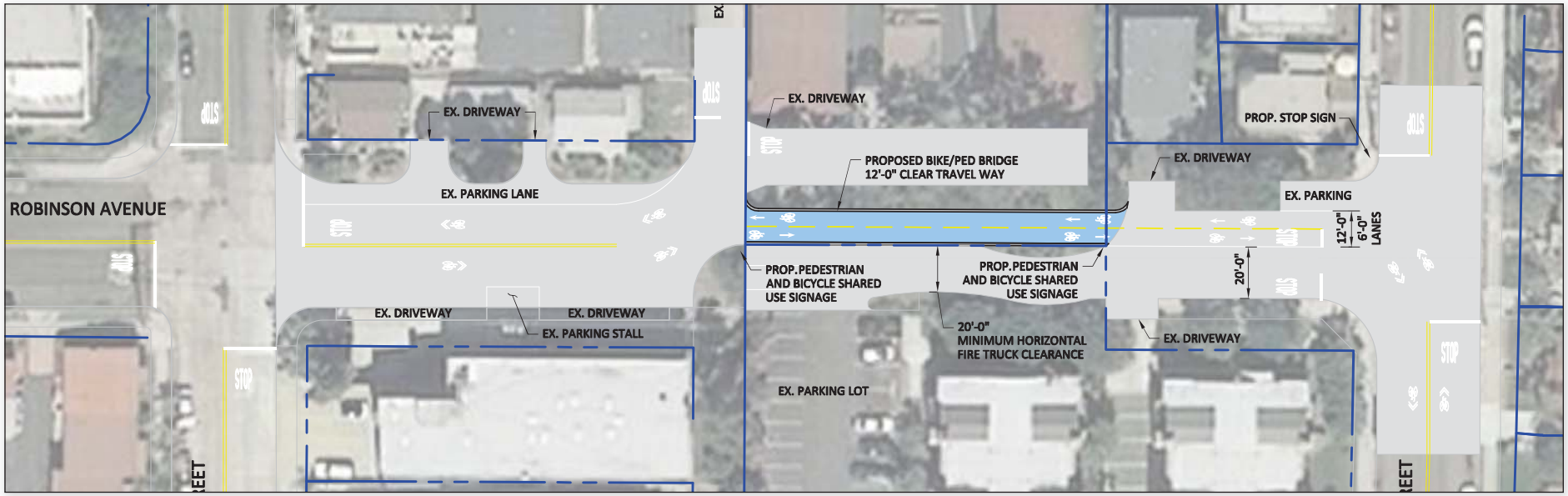


Figure 36. Concept Design – Robinson Ave/Florida St

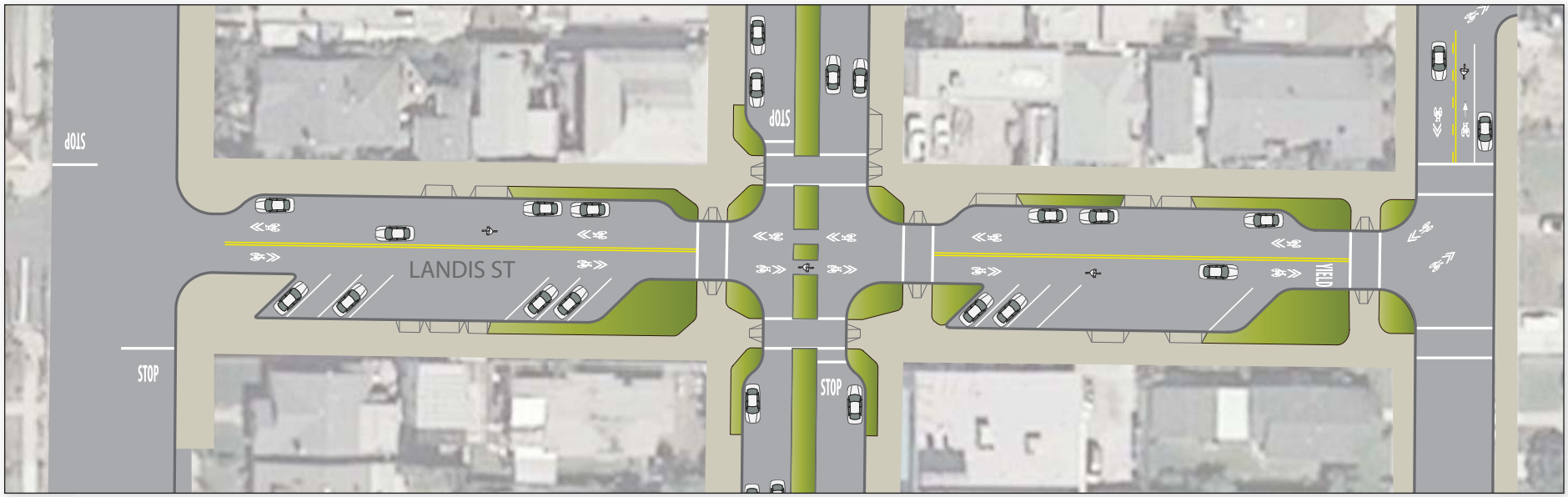


Figure 37. Concept Design – Landis St/29th St – Ray St

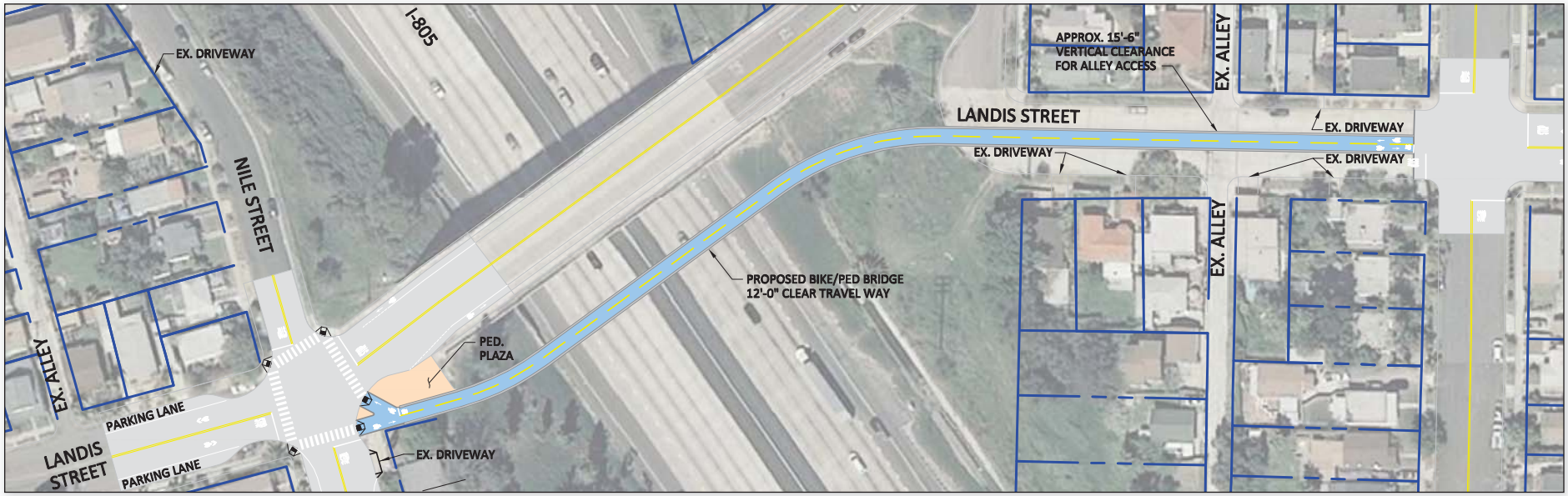


Figure 38. Concept Design – Landis St/Nile St – 35th St

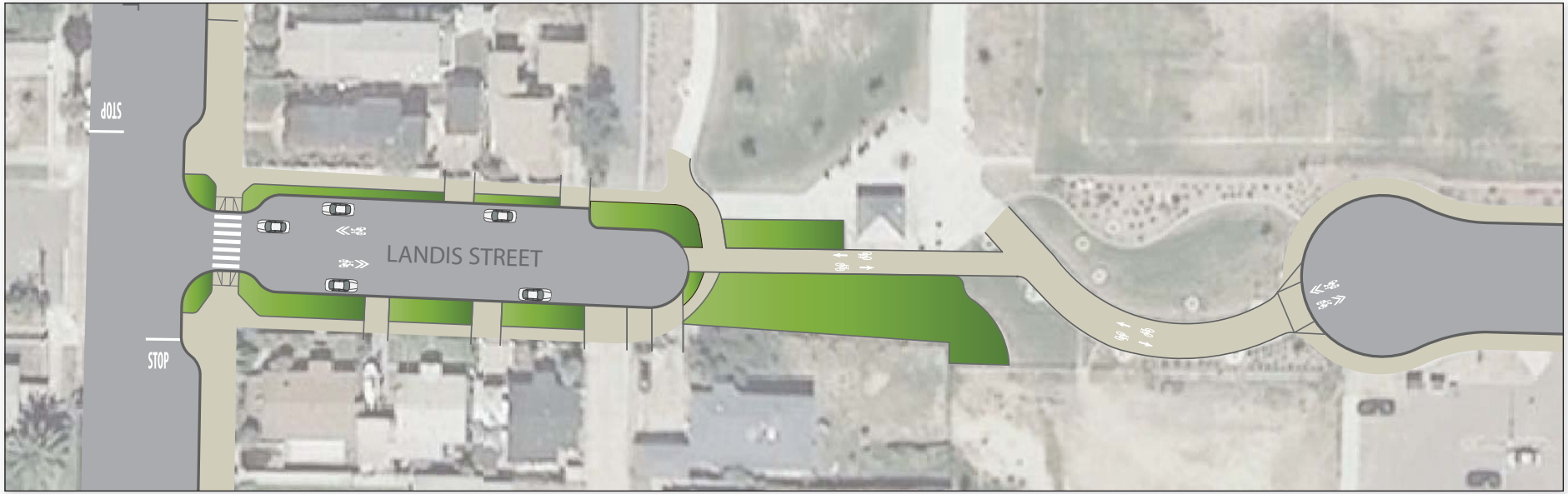


Figure 39. Concept Design – Landis St/37th St

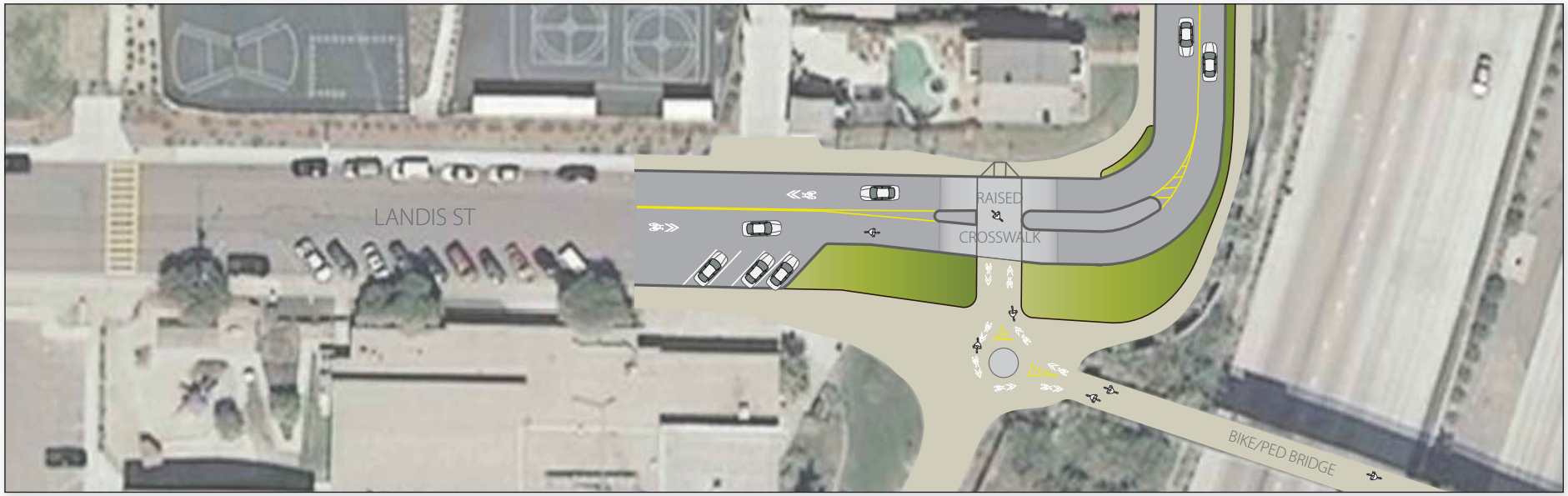


Figure 40. Concept Design – Landis St/40th St

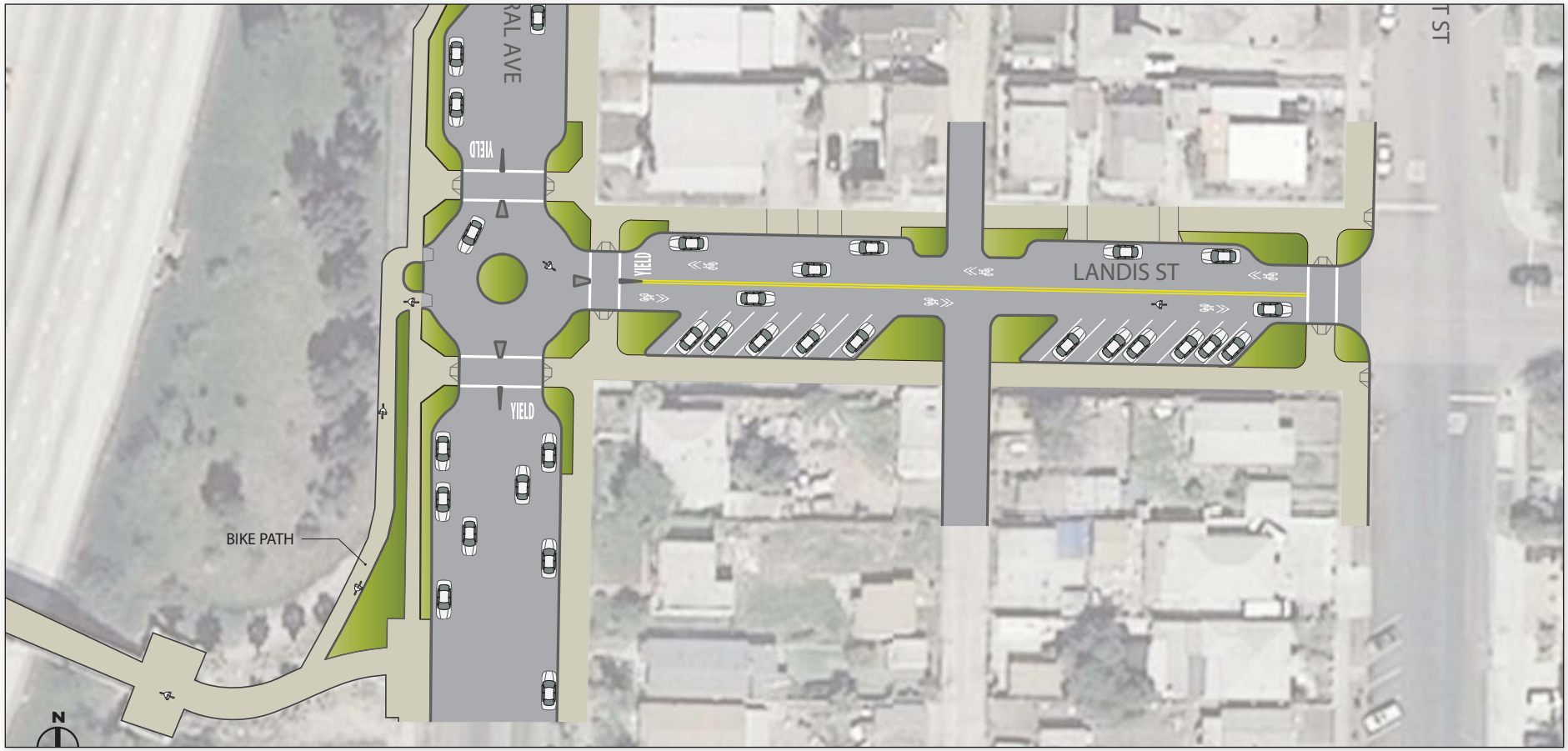


Figure 41. Concept Design – Landis St/Central Ave

Next Steps: Community Engagement Continues

Concept designs were presented to the community and project stakeholders for additional feedback during the project's second community open house. Figure 42 displays the meeting brochure provided to open house attendees. In addition to the higher-profile outreach efforts described so far in this document, SANDAG staff has engaged extensively with residents and organizations.

Figure 43 shows where we are in the overall project implementation timeline. As the project moves into its next phases, community engagement will continue to be important to the project's success. Attention will be made to ensure bikeways are safe, comfortable to use, and contribute positively to livability in the North Park – Mid-City area.

BIKEWAY BENEFITS

MINI-ROUNDABOUT

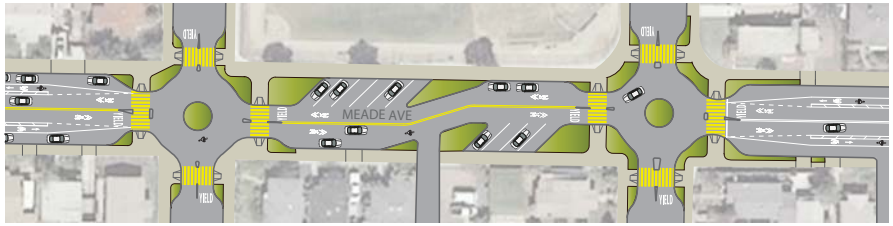
A circular intersection where traffic circulates around a central island. Curb extensions and splitter islands deflect oncoming traffic to slow vehicle speed as cars enter the circle.

+ Can reduce crash frequency and severity
+ Can calm two streets at once
+ Allow people riding bikes and driving cars to legally maintain some momentum through the intersection
+ Opportunity for stormwater capture and landscape plantings.

BACK-IN ANGLED PARKING

Reorients traditional head-in angle parking to allow drivers to back into a diagonal parking space.

+ Improves driver visibility of approaching traffic and people riding bikes
+ Improves vehicle passenger safety, especially for children, as open doors of the vehicle block pedestrian access to the travel lane and guide pedestrians to the sidewalk
+ Eases loading of cargo into trunk of vehicle



CURB EXTENSIONS

Traffic-calming measure meant to reduce speeding and increase driver awareness. Consists of an extension of the curb into the street, making the sidewalk and/or landscaping space wider.

+ Narrows the distance that a pedestrian has to cross and decreases pedestrian exposure to vehicles
+ Increases the sidewalk space on the corners
+ Improves pedestrian visibility
+ Lowers vehicle turning speeds
+ Provides opportunity to store and treat storm water runoff

CHICANE

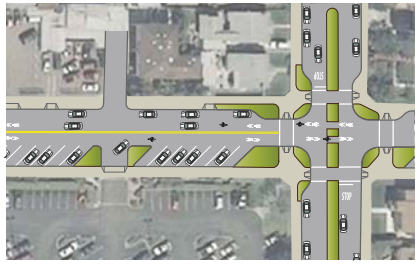
Curb extensions that alternate from one side of the street to the other, forming S-shaped curves along the roadway. They interrupt straight stretches of roadway. They can be created by alternating on-street parking between each side of the street.

+ Slows vehicle speeds
+ Shortens pedestrian crossing distance
+ Easily negotiable by large vehicles on low volume streets

MEDIAN ISLAND

Islands located along the centerline of a street continuing through an intersection to prevent vehicle through movement at a cross street, while allowing people walking and biking to continue through the intersection.

+ Improves safety by preventing dangerous turning movements
+ Reduces cut-through traffic



ECONOMIC & HEALTH BENEFITS

Increased Property Values: Homes located on a bicycle boulevard in Portland, OR are worth $5,757 more than homes that are not.

Job Creation: On an average, every $1M spent on bicycle infrastructure helped create 11.4 jobs compared to 7.8 jobs for road-only infrastructure jobs.

Increase in Retail Sales: Protected bike lanes on 8th and 9th Ave in New York City led to 49% increase in retail sales for locally based businesses compared to 3% borough-wide.

People who ride their bike regularly benefit in many different ways: Up to 32% use fewer sick days. Up to 55% have lower health costs. Up to 52% increase productivity.

WELCOME

North Park - Mid-City Regional Bike Corridors Open House

Franklin Elementary School
4481 Copeland Ave., San Diego, CA 92116

MEETING AGENDA

Welcome by Councilmember Marti Emerald 5:30 p.m.
Presentation 5:40 p.m. - 6 p.m.
Open House 6 p.m. - 8 p.m.

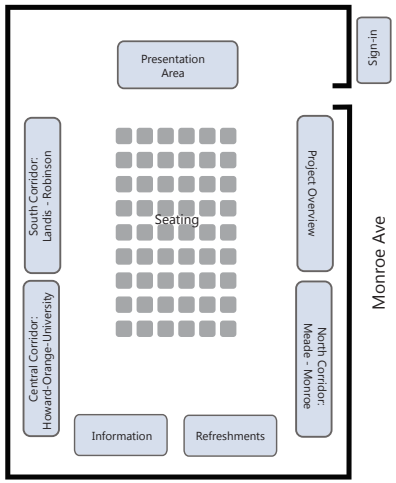
Project information stations are organized clockwise from the right of the entrance. First, is an overview of the project. Then, the recommended alignments with preliminary design concepts for key locations are presented at the remaining stations circling the room.

BACKGROUND

This project is designing three bikeways that will make it safer for people of all ages and comfort levels to bike between North Park and Mid-City and will add green space and other features that make streets more attractive and safer for everyone.

For more information, please contact Bridget Enderle at (619) 595-5612 or sign up for project updates at: KeepSanDiegoMoving.com/NorthParkMidCityBike.

MEETING INFORMATION STATIONS



SANDAG

Figure 42. Community Open House Meeting Brochure

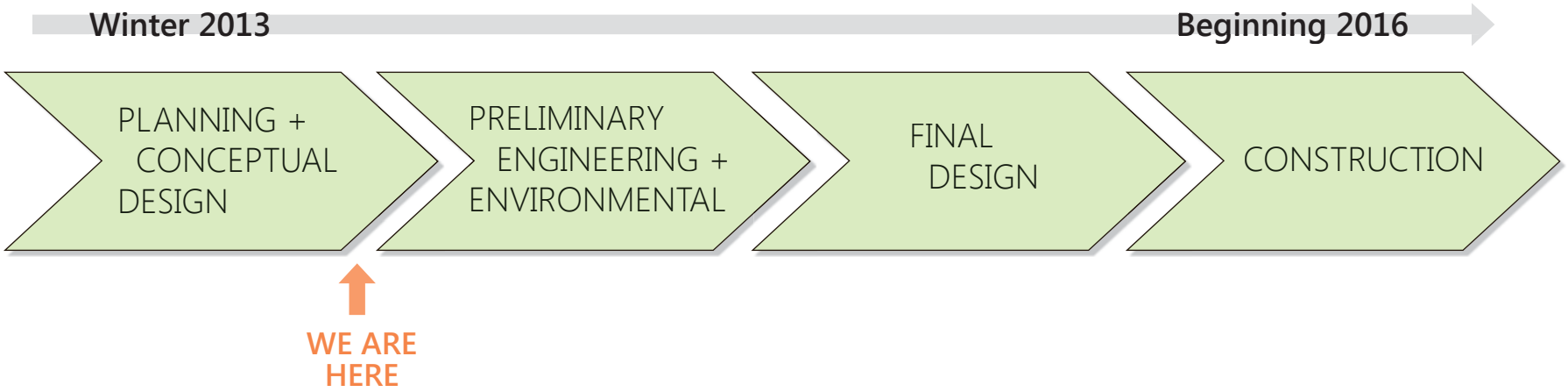


Figure 43. Overall Project Timeline

As of April 2014, the planning and conceptual design phase of the project is complete. The preliminary engineering and environmental analysis phase begins Summer 2014.