



TRAFFIC AND MOBILITY COMMISSION

Agenda

Council Chamber
1200 Carlsbad Village Drive
Carlsbad, CA 92008

Oct. 2, 2023, 4 p.m.

Welcome to Your Traffic and Mobility Commission Meeting

We welcome your interest and involvement in the city's legislative process. This agenda includes information about topics coming before the Traffic and Mobility Commission and the action recommended by city staff. You can read about each topic in the staff reports, which are available on the city website and in the Office of the City Clerk. The Minutes Clerk is also available to answer any questions you have about Traffic and Mobility Commission meeting procedures.

How to watch

In Person



City Council Chamber
1200 Carlsbad Village Drive

Online



Watch the livestream at
carlsbadca.gov/watch

How to participate

If you would like to provide comments to the Traffic and Mobility Commission, please:

- Fill out a speaker request form, located in the foyer.
 - Submit the form to the Minutes Clerk before the item begins.
 - When it's your turn, the Chair will call your name and invite you to the podium.
 - Speakers have three minutes, unless the presiding officer (usually the Chair) changes that time.
 - You may not give your time to another person, but groups can select a single speaker as long as three other members of your group are present. Group representatives have 10 minutes unless that time is changed by the presiding officer or the Commission.
- **In writing:** Email comments to traffic@carlsbadca.gov. Comments received by 2 p.m. the day of the meeting will be shared with the Traffic and Mobility Commission prior to the meeting. When e-mailing comments, please identify in the subject line the agenda item to which your comments relate. All comments received will be included as part of the official record.

Written comments will not be read out loud.

Reasonable Accommodations

Persons with a disability may request an agenda packet in appropriate alternative formats as required by the Americans with Disabilities Act of 1990. Reasonable accommodations and auxiliary aids will be provided to effectively allow participation in the meeting. Please contact the City Manager's Office at 442-339-2821 (voice), 711 (free relay service for TTY users), 760-720-9461 (fax) or manager@carlsbadca.gov by noon on the Monday before the meeting to make arrangements. City staff will respond to requests by 2 p.m. on Monday, the day of the meeting, and will seek to resolve requests before the start of the meeting in order to maximize accessibility.

More information about Traffic and Mobility Commission meeting procedures can be found at the end of this agenda and in the Carlsbad Municipal Code chapter 1.20.

CALL TO ORDER:

ROLL CALL:

PLEDGE OF ALLEGIANCE:

APPROVAL OF MINUTES:

Minutes of the Regular Meeting held on Sept. 5, 2023

PUBLIC COMMENT: *In conformance with the Brown Act, no Commission action can occur on items presented during Public Comment. A total of 15 minutes is provided so members of the public can address the Commissioners on items that are not listed on the Agenda. Speakers are limited to three (3) minutes each. If you desire to speak during Public Comment, fill out a SPEAKER CARD and submit it to the Minutes Clerk. If there are more than five (5) speakers, the remaining speakers will be heard at the end of the agenda just prior to Commissioners Reports.*

CONSENT CALENDAR: *The items listed under Consent Calendar are considered routine and will be enacted by one motion as listed below. There will be no separate discussion on these items prior to the time the Commission votes on the motion unless members of the Traffic and Mobility Commission, the Liaison or the public request specific items be discussed and/or removed from the Consent Calendar for separate action. A request from the public to discuss an item must be submitted to the Minutes Clerk in writing prior to Traffic and Mobility consideration of the Consent Calendar.*

DEPARTMENTAL REPORTS:

1. NORTH COUNTY COMPREHENSIVE MULTIMODAL CORRIDOR PLAN – Receive a presentation from Kareem Scarlett, the representative of California Department of Transportation and Brian Lane, the representative of San Diego Association of Governments regarding the North County Comprehensive Multimodal Corridor Plan. (Staff Contact: Nathan Schmidt, Public Works Department).

Staff's Recommendation: Receive the presentation.

2. MULTIMODAL LEVEL OF SERVICE METHODOLOGY UPDATE– Receive an overview of the City of Carlsbad's multimodal level of service and provide input. (Staff Contact: Nathan Schmidt, Public Works Department).

Staff's Recommendation: Receive the presentation and provide input.

3. TRAFFIC SIGNAL SYSTEM UPDATED – Receive a presentation and provide input to city staff on items related to the traffic signal system network. (Staff Contact: Nestor Mangohig, Public Works Department).

Staff's Recommendation: Receive the presentation and provide input.

CITY TRAFFIC ENGINEER COMMENTS:

COMMISSION COMMENTARY AND REQUESTS FOR CONSIDERATION OF MATTERS: *This portion of the agenda is for the Commission Members to make brief announcements, brief reports of their activities and requests for future agenda items.*

PUBLIC COMMENTS: Continuation of the Public Comments

This portion of the agenda is set aside for continuation of public comments, if necessary, due to exceeding the total time allotted in the first public comments section. When you are called to speak, please come forward to the podium and state your name. The remainder of the categories are for reporting purposes. In conformance with the Brown Act, no public testimony and no Commission action can occur on these items.

ADJOURNMENT:

ABOUT THE TRAFFIC AND MOBILITY COMMISSION AGENDA

Per Carlsbad Municipal Code 2.28.050 the Traffic and Mobility Commission is an advisory commission to the City Council directed to study all matters referred to it concerning traffic safety and pedestrian safety and to make written recommendations to the city council regarding traffic and pedestrian safety within the city.

The Ralph M. Brown Act (commonly referred to as the “Brown Act”) governs open meetings for local government bodies in the state of California. The Brown Act guarantees the public’s right to attend and participate in meetings of local legislative bodies and is contained in section 54950 et seq. of the Government Code. The Brown Act also includes requirements for the distribution of agendas for these public meetings.

TRAFFIC AND MOBILITY COMMISSION PROCEDURE

For each item on the agenda, City of Carlsbad staff will present a report to the Traffic and Mobility Commission. The Traffic and Mobility Commissioners may then ask clarifying questions about the staff report in advance of the public outreach. The audience will then be asked for comment. The Traffic and Mobility Commission is interested to hear all persons wishing to give testimony. Please file a **“Request to Speak”** form to speak on items listed on the agenda. Persons not desiring to speak but, wishing to be recorded as proponents or protesters of record, may do so by submitting their name and address to the minutes clerk. If

anyone wishes to question a Traffic and Mobility Commission recommendation, they may contact the Traffic and Mobility Division at 1635 Faraday Avenue, between the hours of 7:30 a. m. and 5:30 a.m., Monday through Thursday, and 8 a.m. to 5 p.m. on Friday.

Visual materials should be submitted to the Transportation Department at 1635 Faraday Avenue no later than noon the Friday before the meeting. Please label all materials with the agenda item number you are representing. All materials exhibited to the Traffic and Mobility Commission during the meeting (slides, maps, photos, etc.) are part of the public record and must be kept by the Traffic and Mobility Division for at least 60 days after final action on the matter. Your materials will be returned upon written request. **Video clips cannot be accommodated.**

The Public Comment portion of the Agenda allows community members to speak on items that are not on the agenda. If you desire to speak about an item not listed on the agenda, a **“Request to Speak”** form should be filed with the Minutes Clerk. In conformance with the Brown Act, no action can occur on items presented during Public Comment.

Any agenda related writings or documents provided to the majority of the Traffic and Mobility Commission after distribution of the Agenda packet will be available for public inspection at the Transportation Department located at 1635 Faraday Avenue, Carlsbad, CA 92008. In addition, a binder containing all agenda related writings and documents will be held by the Minutes Clerk at each Traffic and Mobility Commission meeting and available for public review.

Those wishing to speak to the Traffic and Mobility Commission are asked to come forward, speak into the microphone, and give their name and address for the taped record. A time limit of three minutes is allotted to

each speaker. Members of the public are asked to observe order at this meeting and to conduct themselves in a courteous and respectful manner.



TRAFFIC AND MOBILITY COMMISSION

Minutes

Council Chambers
1200 Carlsbad Village Drive
Carlsbad, CA 92008

Sept. 5, 2023, 4 p.m.

CALL TO ORDER: 4 p.m.

ROLL CALL: Coelho, Fowler, Penseyres, and Newlands.
Absent: Proulx, Garcia, Kohl.

PLEDGE OF ALLEGIANCE: Chair Coelho led the Pledge of Allegiance.

APPROVAL OF MINUTES:

Minutes of the Regular Meeting held on Aug. 7, 2023

Motion by Commissioner Newlands, seconded by Commissioner Penseyres to approve the minutes of the Regular Meeting held on Aug. 7, 2023, as presented. Motion carried, 4/0/3 (Proulx, Garcia, Kohl – Absent).

PUBLIC COMMENT: None

CONSENT CALENDAR: None

DEPARTMENTAL REPORTS:

1. **POLICE REPORT REGARDING TRAFFIC & MOBILITY-RELATED MATTERS DURING THE MONTH OF JULY 2023, INCLUDING NOTABLE NEWS FOR THE MONTH OF AUGUST** – Receive a presentation from a representative of the City of Carlsbad’s Police Department that will provide an overview of traffic and mobility-related police matters during the month of July 2023, including notable news for the month of August. (Staff Contact: Alonso DeVelasco, Police Department).

Staff’s Recommendation: Receive the presentation.

Lieutenant Alonso DeVelasco presented the report and reviewed a PowerPoint presentation (on file in the Office of the City Clerk).

The Commission received the PowerPoint presentation by Lieutenant DeVelasco.

In response to Commissioner Penseyres’ inquiry about the number of children and parents that have attended the E-Bike Training Classes, Lieutenant DeVelasco responded that he will provide the numbers.

2. ALL-WAY STOP CONTROL AT THE INTERSECTION OF MADISON STREET AND OAK AVENUE – Support staff’s recommendation to install an All-Way Stop at the intersection of Madison Street and Oak Avenue. (Staff Contact: Lindy Pham and Miriam Jim, Public Works Department).

Staff’s Recommendation: Support staff’s recommendation.

Associate Engineer Lindy Pham and Senior Engineer Miriam Jim presented the report and reviewed a PowerPoint presentation (on file in the Office of the City Clerk).

The Commission received the PowerPoint presentation by Associate Engineer Pham and Senior Engineer Jim.

Commissioner Penseyres recommended signs that read “Cross Traffic Do Not Stop.”

Motion by Vice-Chair Fowler, seconded by Commissioner Newlands to support staff’s recommendation to install an All-Way Stop at the intersection of Madison Street and Oak Avenue. Motion carried, 3/1/3 (Penseyres – No; Proulx, Garcia, Kohl – Absent).

3. CARLSBAD RESIDENTIAL TRAFFIC MANAGEMENT PROGRAM REVISION – Provide input on the additional proposed changes to the Carlsbad Residential Traffic Management Program Revision. (Staff Contact: Lindy Pham and Miriam Jim, Public Works Department).

Staff’s Recommendation: Provide input to staff.

Associate Engineer Lindy Pham and Senior Engineer Miriam Jim presented the report and reviewed a PowerPoint presentation (on file in the Office of the City Clerk).

The Commission received the PowerPoint presentation by Associate Engineer Pham and Senior Engineer Jim.

CITY TRAFFIC ENGINEER COMMENTS:

Transportation Planning & Mobility Manager Schmidt commented that the Traffic & Mobility Commission will be moving forward with the name change to Traffic Safety & Mobility Commission, and the new name should be in effect by Oct. 12, 2023.

Transportation Planning & Mobility Manager Schmidt commented that SANDAG is working on the 2025 Regional Plan Update and had extended the comment period to Sept. 30, 2023. He further added that comments can be made online or at their North County workshop on Sept. 13, 2023, at the Oceanside Public Library from 5:30 – 7 p.m.

COMMISSION COMMENTARY AND REQUESTS FOR CONSIDERATION OF MATTERS:

In response to Vice-Chair Fowler’s inquiry regarding the signals at Arenal Road and El Camino Real, City Traffic Engineer Kim responded that staff will provide a presentation at the October commission meeting.

Vice-Chair Fowler recommended moving the monitors from the sides of the Council Chambers to a more easily visible location.

In response to Chair Coelho's inquiry about looking into the overabundance of left-turn signals, City Traffic Engineer Kim responded that they are currently looking into possible locations to install flashing-yellow signals.

In response to Commissioner Penseyres' inquiry about reporting issues with traffic signals on the city's website, City Traffic Engineer John Kim explained that there are additional methods of contacting the Signals group. He further explained that they are able to make sensitivity adjustments to detection zones to address any comments regarding the sensors. Commissioner Penseyres further added that if the cameras cannot decipher what it is picking up, then it needs to be adjusted.

ADJOURNMENT: Chair Coelho adjourned the Traffic & Mobility Commission Regular Meeting on Sept. 5, 2023, at 5:31 p.m.

Eliane Paiva
Secretary



Staff Report

Meeting Date: Oct. 2, 2023

To: Traffic and Mobility Commission

Staff Contact: Nathan Schmidt, Transportation Planning and Mobility Manager
Nathan.Schmidt@carlsbadca.gov 442-339-2734

Subject: North County Comprehensive Multimodal Corridor Plan

Recommended Action

Receive a presentation from Kareem Scarlett, a representative of California Department of Transportation, or Caltrans, and Brian Lane a representative of San Diego Association of Governments, or SANDAG, regarding the North County Comprehensive Multimodal Corridor Plan.

Background

The North County Comprehensive Multimodal Corridor Plan, or NC-CMCP, is a long-range strategic transportation plan for North San Diego County subregion. The plan was led by Caltrans and SANDAG and includes a study area focused along the State Route 78, or SR-78, Corridor including the cities of Oceanside, Carlsbad, Vista, San Marcos, and Escondido. The plan was finalized in June 2023 and developed in collaboration between SANDAG, Caltrans, North County Transit District, or NCTD, the County of San Diego and the cities within the project area.

The NC-CMCP is a strategic blueprint aimed at identifying and implementing various transportation projects and services in the communities along the SR-78 corridor. This plan encompasses all modes of travel including driving, biking, walking, transit, micro-mobility, and other services. The NC-CMCP is intended to address significant challenges to the subregion such as aligning transportation policies with land use planning, enhancing accessibility for historically underserved communities, mitigating climate change effects, and adapting to evolving technology. The plan anticipates North County's population to grow by 13% and job opportunities by 26% by 2050, emphasizing the need for a comprehensive transportation strategy to accommodate this future growth.

The NC-CMCP developed a recommended network consisting of nine "Strategy Layers" which are largely based on SANDAG's 5 Big Moves identified in the 2021 Regional Plan. These strategy layers include elements such as Regional "Smart" Highway Capacity Management, Smart Arterials and Intersections, Mobility as a Service, Active Transportation, High-Frequency Transit, Sprinter Improvements, Reconnecting Communities and Complementary Programs.

Recommendations specific to the City of Carlsbad are as follow:

Regional Spines (See NC-CMCP Attachment 3):

- Interstate 5: Managed lanes, interchange reconfiguration improvement at I-5/SR-78, active transportation improvements at interchanges and crossings, signal coordination and communications upgrades at interchanges

Mobility Boulevards (See NC-CMCP Attachment 2):

- Development of a Mobility Hub in the heart of the Palomar Airport Road business park
- Palomar Airport Road: Transit Priority or “Flex Lanes” during peak periods, smart intersection improvements, Class-IV bikeways, pedestrian crossing enhancements, Rapid “Next Gen” Transit service with a frequency of 10 minutes, commuter express transit service to Kearny Mesa and Riverside, and local microtransit service
- El Camino Real: Transit Priority or “Flex Lanes” during peak periods, smart intersection improvements, Class-IV bikeways, pedestrian crossing enhancements, Rapid “Next Gen” Transit service with a frequency of 10 minutes
- Melrose Boulevard: Consider Transit Priority or “Flex Lanes” during peak periods, smart intersection improvements, Class-IV bikeways, pedestrian crossing enhancements, transit service with a frequency of 10 minutes, and local microtransit service

The plan also outlines implementation phases, including early action bundles for near-term implementation and a focus on balancing policies, funding, and priorities to ensure successful execution. By addressing these challenges and leveraging opportunities, the NC-CMCP seeks to create a holistic transportation and mobility system that improves safety, accessibility, connectivity, and overall quality of life for North County residents and businesses.

Caltrans and SANDAG staff will provide the Traffic & Mobility Commission with an overview of the recommendations in the NC-CMCP, including those projects which would be particularly relevant to the City of Carlsbad. The final plan is provided in Exhibit 1 and the plan appendices can be reviewed on the following project website: <https://www.sandag.org/regional-plan/comprehensive-multimodal-corridor-plans/north-county-cmcp>

City comments provided during public outreach period from February 2, 2023 to March 12, 2023 are provided in the City Council memorandum dated July 27, 2023, shown as exhibit 2.

Next Steps

Staff will continue collaboration with SANDAG and Caltrans staff to refine and implement the recommendations identified in the NC-CMCP and supported by the City of Carlsbad.

Exhibits

1. North County Comprehensive Multimodal Corridor Plan
2. City Council Memo dated July 27, 2023 Re: North County Comprehensive Multimodal Corridor Plan Update (Districts – All)



NORTH COUNTY

COMPREHENSIVE MULTIMODAL CORRIDOR PLAN



FINAL | June 2023

North County Comprehensive Multimodal Corridor Plan

SANDAG & California Department of Transportation

The San Diego Association of Governments (SANDAG) and California Department of Transportation (Caltrans) District 11 have developed a Comprehensive Multimodal Corridor Plan (CMCP) to address the current and future multimodal needs of the region. The CMCP process encourages cross-agency collaboration, seeks out public input, and leverages the knowledge of communities to develop strategies, programs, and projects. This report is a testament to successful collaboration across multiple agencies and community partners.

Disclaimer: The information and data contained in this document are for planning purposes only and should not be relied upon for final design of any project. Any information in this Comprehensive Multimodal Corridor Plan (CMCP) is subject to modification as conditions change and new information is obtained. Although planning information is dynamic and continually changing, SANDAG and Caltrans make every effort to ensure the accuracy and timeliness of the information contained in the CMCP. The information in the CMCP does not constitute a standard, specification, or regulation, nor is it intended to address design policies and procedures.



Coleen Clementson signing
on behalf of Hasan Ikhata

June 8, 2023

Name:
Hasan Ikhata
SANDAG Chief Executive Officer

Date



June 8, 2023

Name:
Gustavo Dallarda
Caltrans District 11 Director

Date



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- Attachment 2:** Mobility Boulevard Sheets
- Attachment 3:** Regional Spine Sheets
- Attachment 4:** Project and Program Inventory
- Attachment 5:** Early Action Bundle Sheets

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1

COMPREHENSIVE MULTIMODAL CORRIDOR PLAN (CMCP) FRAMEWORK

North County is home to 1 in 5 (20%) of the region’s residents and jobs and by 2050 is expected to grow by 13% in population and 26% in jobs. By 2050, 43% of North County Corridor residents and 67% of jobs are anticipated to reside within mobility hubs. Of North County trips, 70% stay within North County and 50% are less than 5 miles. Large employment centers are miles away from regional transportation facilities, exacerbating network congestion. Regional north-south facilities are separated by over 17 miles and limited to I-5, I-15, and COASTER/Amtrak. Consequently, major arterials provide the predominant mobility option for North County users. These factors make it necessary for SANDAG, Caltrans, local communities, and the people who regularly travel through the area to progress the vision of a technologically advanced, balanced, and integrated multimodal transportation system.





1 CMCP FRAMEWORK

The North County Comprehensive Multimodal Corridor Plan (North County CMCP) is a strategic blueprint for identifying and implementing multimodal projects and services within North County communities predominantly located along State Route 78 (SR 78).

North County is the gateway between regional destinations in San Diego County and the communities to the north—especially communities in southern Riverside County. North County mobility, transportation, and quality of life will be affected by a series of unique observations: strained system, continued population growth, and need to adapt and be resilient. These factors make it necessary for SANDAG, Caltrans, local communities, and the people who regularly travel through the area to make progress towards the vision of a technologically- advanced, balanced, and integrated multimodal transportation system.

SANDAG and Caltrans developed this Comprehensive Multimodal Corridor Plan (CMCP) to address the current and future multimodal needs of the North County corridor. A CMCP strives to create equitable and sustainable solutions for people living in the community and focuses on things such as transit, managed lane priorities, goods movement, climate impacts, environmental considerations, technology, and local road connections including bicycle and pedestrian connections. Based on the characteristics and needs of the corridor, SANDAG and Caltrans have recommended a package of projects, programs, and policies in which the region can invest to create a safe, equitable, reliable, intelligent transportation system of the future. This CMCP highlights the transportation solutions to be implemented with the general timeline and estimated costs for that implementation. The appendices to this document provide extensive details on the technical aspects of the plan, including how strategies were evaluated through research, analysis, community input, and strategic implementation.

SANDAG and Caltrans would like to thank representatives from the following organizations who served on the Project Development Team:

- City of Carlsbad
- City of Escondido
- City of San Marcos
- City of Oceanside
- City of Vista
- County of San Diego
- North County Transit District (NCTD)

A special acknowledgment is extended to all the community-based organizations, partner agencies, and community members that participated in the development of this plan.



What is a CMCP?

A Comprehensive Multimodal Corridor Plan (CMCP) is a strategic blueprint for identifying and implementing multimodal projects and services within communities predominantly along a specific corridor. The document is based on an integrated planning process that brings together residents, local jurisdictions, tribal governments, and other partner agencies.

A CMCP utilizes a multimodal planning process to create a balanced, equitable transportation system that integrates mobility options such as driving, biking, walking, transit, micro-mobility, and other mobility services to move people and goods within the designated corridor and beyond. A corridor study area may include multiple facilities such as local arterial roadways, state highways, rail lines, transit systems, and active transportation facilities.

A CMCP document plans for all modes of transportation by evaluating existing and future conditions, community priorities, and the potential benefit of proposed mobility strategies that align with state, regional, and project-specific goals. As the implementation blueprint for multimodal mobility within a corridor, a CMCP helps align community priorities and initiatives with state and regional goals to develop projects and services.

What is Expected from a CMCP?

A CMCP is a blueprint that successfully transitions agencies, stakeholders, and community members into implementing transportation infrastructure and services that support local mobility needs while advancing regional and state goals.



CMCPs are the evolution of transportation planning as they break down silos between agencies and communities along a corridor. They facilitate a holistic approach to develop a balanced transportation system that meet the mobility needs of all users, especially users from social equity focus communities¹. A CMCP supports continuous improvement of the transportation system through a meaningful planning and collaborative process that emphasizes the importance of providing useful options to allow people to choose how to get around. A CMCP simply cannot and should not be a “check the box” for project funding (or financing).

CMCPs are expected to:

- Reimagine the mobility approach by focusing on quality of life, accessibility, sustainability, access to jobs, housing, education, and health for all
- Engage communities, especially social equity focus communities, to identify projects and programs that provide meaningful benefits for all users of the transportation system
- Address today’s mobility challenges while building a foundation for the future
- Create a seamless (“door to door”) system of transportation improvements to enhance user experience and promote alternative modes of travel
- Promote cross-jurisdiction partnerships to implement corridor-wide transportation improvements
- Develop a balanced implementation plan for timely, phased (if necessary), integrated (with other parallel efforts), and effective results
- Provide an integrated set of multimodal transportation improvements that align with state, regional and local objectives and inform future plans
- Enable regions to compete for state funding under Senate Bill 1 (SB 1), the Road Repair and Accountability Act (2017), and the Congested Corridors Program

CMCPs are expected to be leveraged for applicable state and federal funds for projects. When funding is obtained, the CMCP transportation projects and programs will be added to the Regional Transportation Improvement Program (RTIP). The RTIP is a multi-billion-dollar, five-year program of major transportation projects funded by the federal, state, and local governments. Figure 1-3 shows how the CMCP process works in conjunction with state and regional planning efforts to make the recommended transportation projects a reality.

¹ Social equity focus communities are areas where there is a high concentration of people with low-income, seniors, People of Color, and federally recognized Native American tribes. These communities are historically underserved and often disadvantaged in terms of infrastructure and economic opportunities.

What is the North County CMCP?

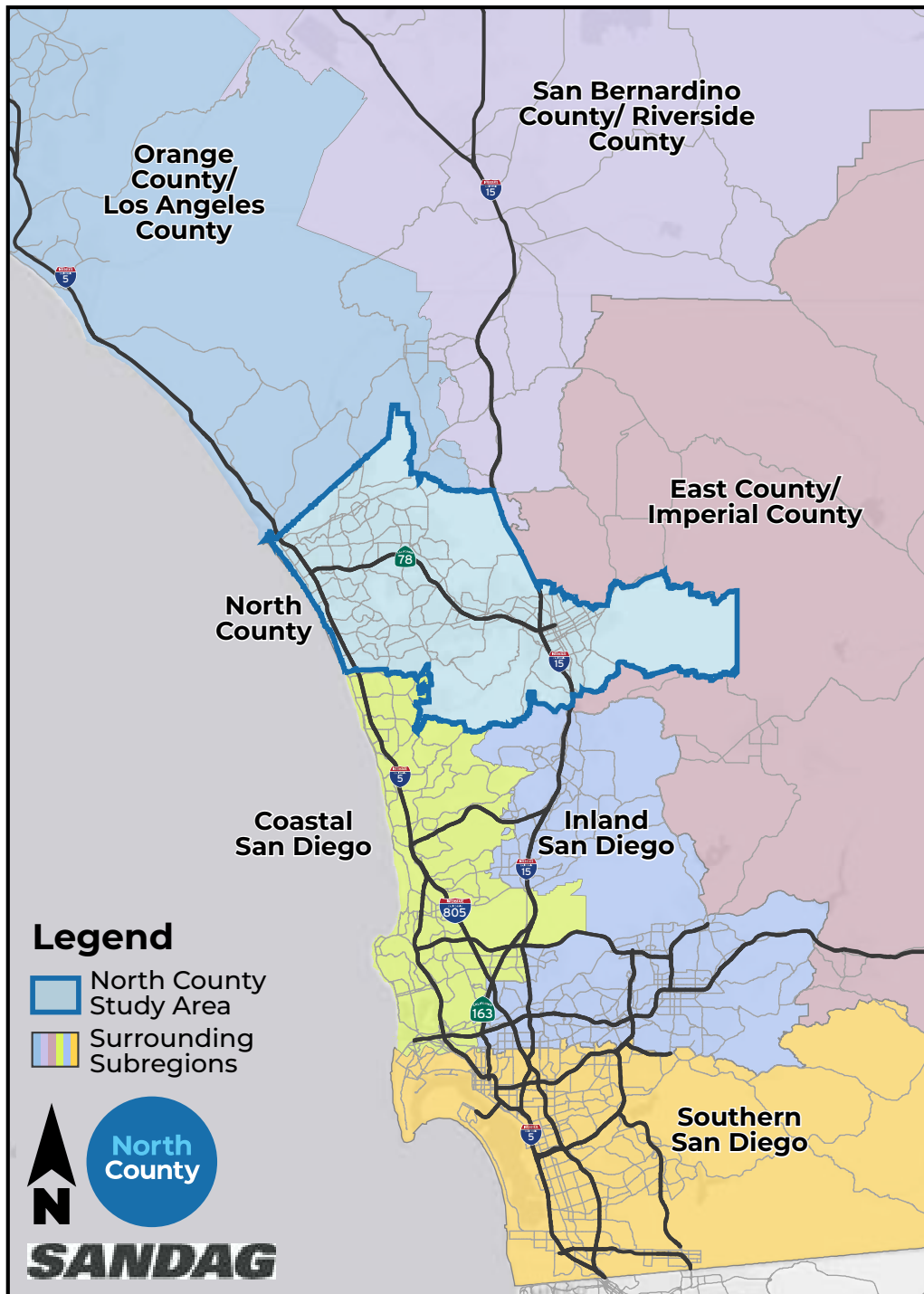


North County CMP aligns local general plans and initiatives with state and regional goals and prioritizes integrated transportation planning and implementation – allowing for transportation and mobility improvements to function well across jurisdictions, communities, users, and markets. It does this by analyzing transportation holistically and prioritizing collaboration among agencies to develop a multimodal system that meet user needs across jurisdictions. The North County CMCP connects the plans, policies, and programs of multiple cities and local transit agencies to identify and advance multimodal solutions and strategies that work together. All cities and regional/state agencies benefit from individual mobility plans and strategies—the North County CMCP integrates and builds upon them at a subregional level for the benefit of local communities.

Why North County Needs a CMCP?

The North County CMCP Study Area (shown in **Figure 1-1**) is located in the center of a mega region comprised of the transportation corridors connecting the counties of San Diego, Orange, and Riverside. In many ways, North County is the gateway between regional destinations in San Diego County and the communities to the north—especially communities in southern Riverside County.

Figure 1-1: North County and Surrounding Mega Region





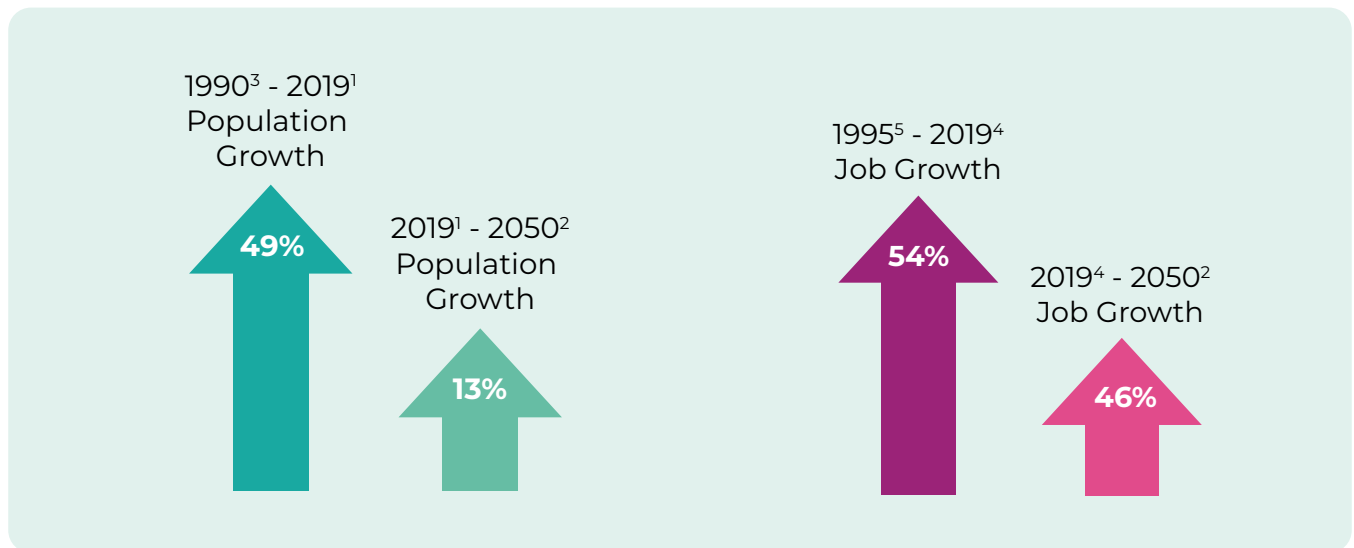
Strained system

The transportation system in North County influences individuals' and families' decisions on where to live, work, shop, go to school, recreate, and how to move around safely within the community. North County's rapid growth in population and employment over the last 20 years has strained the existing transportation system. The increased demand and mobility needs are either misaligned with existing transportation services or have outpaced the available capacity—making North County travelers experience congestion, delay, inconsistent travel times, and safety risks.

Continued growth

North County experienced rapid growth in the last 20 years and is expected to experience growth but at a slower rate. Between 1990 and 2019, the population in the subregion grew by 49 percent. Between 1995 and 2019, the number of jobs in the subregion grew by 54 percent. By 2050, 83,000 more people and 115,000 new jobs are projected – an increase of 13% and 45%, respectively. Growth in the number of people living and work presents opportunities and challenges for the transportation network.

Figure 1-2: Population and Job Trends in North County CMCP Study Area



Sources: (1) American Community Survey (ACS) 2019 5-Year Estimate, (2) SANDAG DS39 Forecast Estimates (2021), (3) IPUMS NHGIS (1990), (4) LEHD LODES Workplace Area Characteristics (2019), and (5) SANDAG Estimates (2020)

The Need to Adapt and Be Resilient

North County's transportation system will need to provide near-term solutions to provide relief from existing constraints and be adaptable and resilient to the future changes that are unpredictable. A few examples include:

- ✓ Serve the continued growth defined above through mobility options while acknowledging limited opportunities to add "traditional" forms of capacity (i.e., continuous widening of roads)
- ✓ Adapt to user behavior changes while addressing the impacts due to the lack of housing that is affordable
- ✓ Alleviate existing impacts to quality of life (air quality, loss of time in congestion) while tackling transportation-related climate impacts

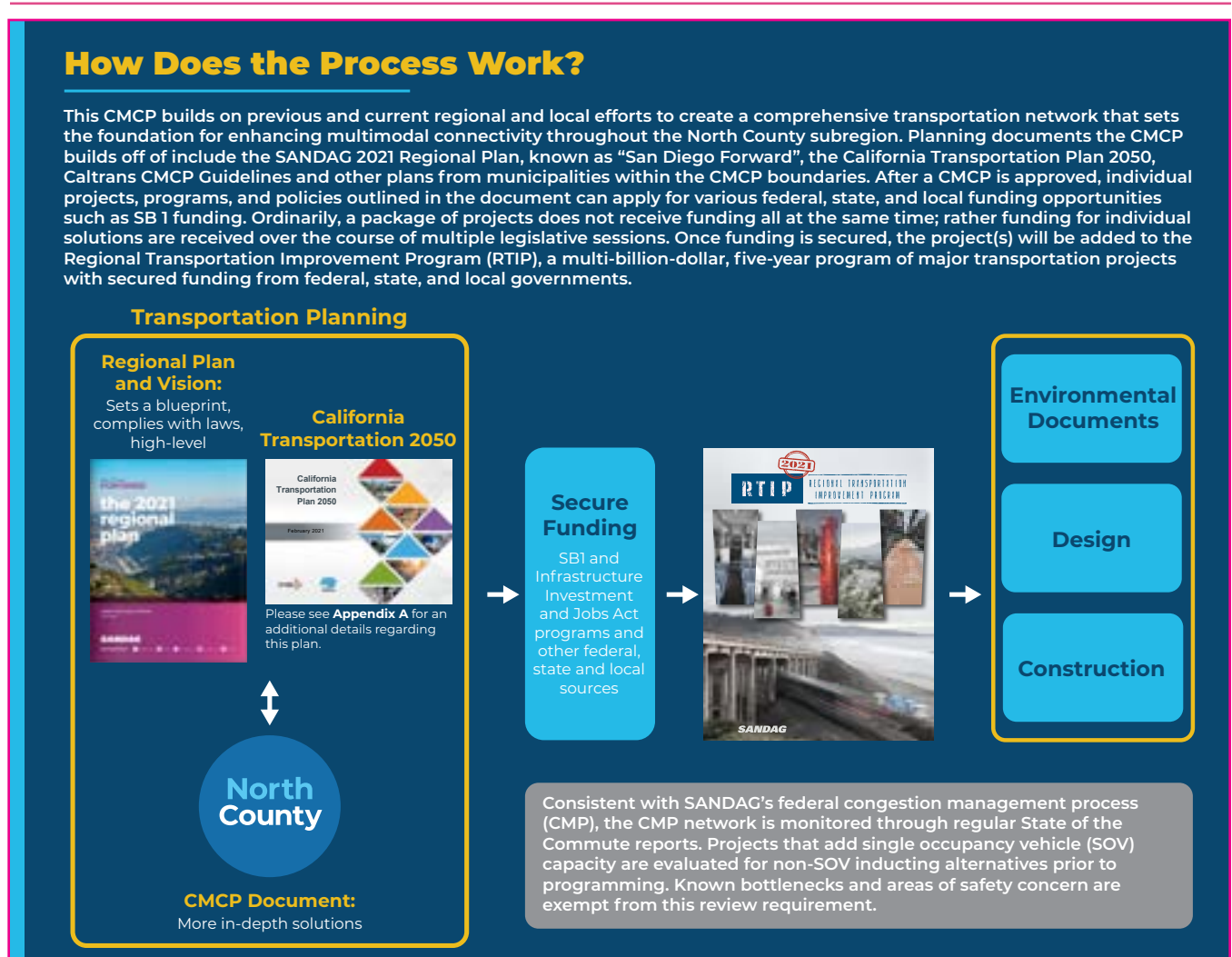


The Opportunity Ahead: Laying the Foundation and Building Upon It

The North County subregion can improve a strained transportation network steadily implementing integrated mobility options. This is an opportunity to transform the transportation system into a competitive advantage for North County. This CMCP will utilize the information readily available today and transportation owner/user experience to establish a path forward-starting by laying a foundation for improving multimodal mobility and accessibility across North County communities.

Based on up-to-date information and conditions, the North County CMCP will provide transportation strategies, programs, and projects that will allow North County to recognize the need for immediate improvements in multimodal mobility while providing an adaptable approach for future implementation of infrastructure. As part of Chapters 5 and 6, this CMCP will provide a North County tailored, implementation phasing to meet the changes in North County population and employment, new tools and technologies, and available funding sources (public and private).

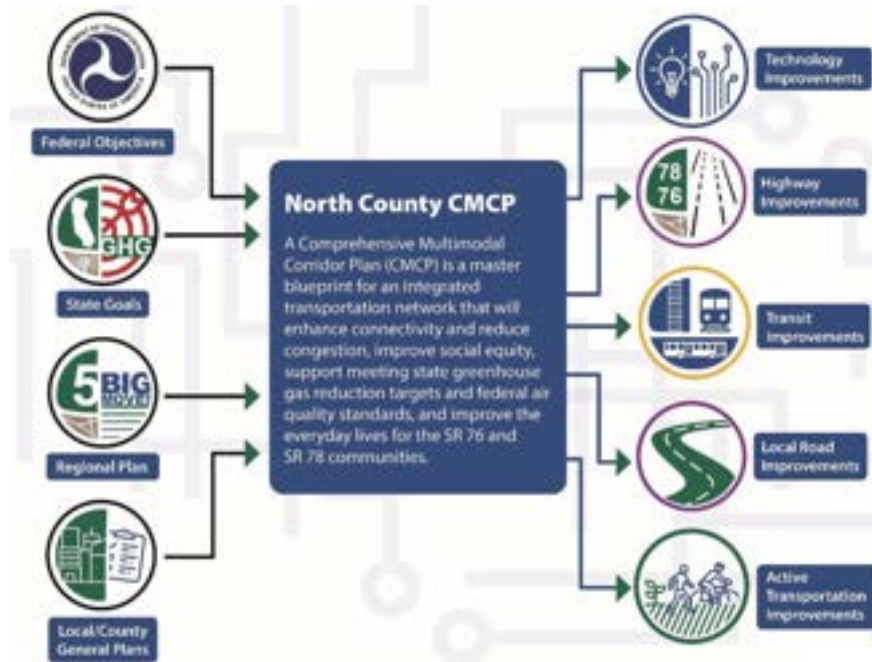
Figure 1-3: Transportation Planning and Implementation Process



Fitting into the Larger Context

The North County CMCP aligns and integrates state, regional policies with local planning efforts—allowing for North County sub-regional needs to be reflected within a single document. The planning efforts and initiatives on the state, regional, and local level have guided transportation choices and catalyzed changes on how to plan and think about transportation.

Figure 1-4: North County CMCP Relationship with Other Planning Efforts and Policies



In the past, transportation planning was “siloeed” where individual cities, regional, and state agencies developed individual planning efforts that were “coordinated” across agencies. The CMCP framework supports the transition from “siloeed” modes and jurisdictions to an “integrated” system approach.


This CMCP process develops a balanced, multimodal system aligning local, regional, state, and federal initiatives through a collaborative process that respects each entity’s goals, needs, and planning efforts. The North County CMCP aligns these planning efforts and bridges the gap between local planning and state/regional planning efforts—focusing on the sub-regional needs between North County cities and communities and the neighboring subregions.

The CMCP framework helps the vision and goals in state, regional and local efforts meet to address the traveling needs of North County.

The following regional, state, and local initiatives guide the CMCP process:

- SANDAG 2021 Regional Plan
- California Transportation Plan 2050
- Climate Action Plan for Transportation Infrastructure
- Caltrans Corridor Planning Process Guide
- Caltrans Smart Mobility Framework
- Other local plans

This North County CMCP develops a balanced, multimodal system aligning local, regional, state, and federal initiatives through a collaborative process that respects each initiative’s goals, needs, and planning efforts.



The North County CMCP is where local and North County needs meets the policy frameworks defined by the State’s CTP and the Regional Plan.

State and Regional Initiatives

State and regional transportation planning initiatives provide the strategic policy and funding priorities within the State of California and San Diego Region—providing a focus on the implementation of transportation at a macroscopic level. For successful implementation of projects across multiple jurisdictions, North County agencies, operators, and stakeholders need to be in alignment with state and regional initiatives. In other words, **CMCPs provide the framework for sub-regionally driven solutions at the local and subregional levels to promote state and regional initiatives.** CMCP alignment therefore demonstrates agency partnership across stakeholders and jurisdictions, proactive preparation for funding and implementation opportunities, and a transportation system plan that balances the policies and priorities across all parties.

The state and regional initiatives guiding the state and regional perspectives in the CMCP process include the California Transportation Plan 2050, Climate Action Plan, the Regional Plan, Regional Transportation Improvement Plan, and regional strategies such as the Regional Military Multimodal Access Strategy.

California Transportation Plan 2050

The California Transportation Plan (CTP) 2050¹ is a long-range transportation roadmap for achieving the state’s vision of a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health. The CTP 2050 provides a framework to make effective, transparent, and transformative transportation decisions in California. No projects are included in the CTP 2050, but it does provide **people-focused policies, strategies, and investments that close the gap between the goals in regional transportation plans (RTP) and the following state goals:**




¹ <https://dot.ca.gov/programs/transportation-planning/state-planning/california-transportation-plan>



Climate Action Plan for Transportation Infrastructure (CAPTI)

In July 2021, the California State Transportation Agency (CalSTA) adopted its Climate Action Plan for Transportation Infrastructure (CAPTI)¹ to prioritize transportation infrastructure investments that “... realize a truly low-carbon, sustainable, resilient, and economically competitive future for the state...” As part of the CAPTI investment framework and CTP 2050, the State of California is taking a “fix-it-first” approach using existing funding sources and prioritizing projects that align with CAPTI’s Guiding Principles. In addition to the Guiding Principles for funding, the following strategies and key actions are most applicable to the North County CMCP:

In addition to these Guiding Principles for funding, CAPTI has four strategies pertinent to North County CMCP:

-  Building toward an integrated, statewide rail and transit network
-  Investing in networks of safe and accessible bicycle and pedestrian infrastructure
-  Including investments in light, medium, and heavy-duty zero-emission vehicle (ZEV) infrastructure
-  Strengthening our commitment to social and racial equity by reducing public health and economic harms and maximizing community benefits
-  Making safety improvements to reduce fatalities and severe injuries of all users towards zero
-  Assessing physical climate risk
-  Promoting projects that do not significantly increase passenger vehicle travel
-  Promoting compact infill development while protecting residents and businesses from displacement
-  Developing a zero-emission freight transportation system
-  Protecting natural and working lands

- 1** *Cultivate and Accelerate Sustainable Transportation Innovation by Leading with State Investments* by promoting innovative sustainable transportation solutions in Solutions for Congested Corridor Programs (SCCP) Projects by requiring multimodal corridor plans.
- 2** *Support a Robust Economic Recovery by Revitalizing Transit, Supporting ZEV Deployment, and Expanding Active Transportation Investments* including increasing funding for Active Transportation Projects.
- 3** *Support Local and Regional Innovation to Advance Sustainable Mobility* through new mechanisms to mitigate increases in VMT from transportation projects. and convene discussions regarding sustainable rural transportation solutions.
- 4** *Strengthen Transportation and Land Use Connections* by leveraging transportation investments to incentivize infill housing and explore “highways to boulevards” conversion pilot program.

¹ <https://calsta.ca.gov/-/media/calsta-media/documents/capti-july-2021-a11y.pdf>



Caltrans Smart Mobility Framework

Smart Mobility Framework (SMF) is guidance that emphasizes the integration of transportation and land use concepts to bring about smart growth transportation strategies across California. Principles outlined in the SMF are woven throughout the development of North County CMCP – helping to guide the selection of solutions by emphasizing:

- Location efficiency – integrating land use and transportation to improve accessibility, maximizing non-motorized modes and transit, and reducing the number and length of trips.
- Reliable mobility – expanding multimodal options and operational strategies to better manage transportation network predictability.
- Health and safety – designing, operating, and managing a system to improve user safety, encourage active lifestyles, and lessen exposure to pollution.
- Environmental stewardship – reducing transportation greenhouse gas emissions while enhancing and protecting the State’s built and natural environments.
- Social equity – designing a transportation system that provides mobility for all users.
- Robust economy – supporting the economic health of the State and local governments, competitiveness of businesses, and the welfare of residents.



Regional Plan

The 2021 Regional Plan is the region’s vision for how the San Diego region will grow through 2050 and implement a fast, fair, and clean transportation system and a resilient region. The 2021 Regional Plan was adopted by the SANDAG Board of Directors in December 2021 and combines three required planning documents: Regional Transportation Plan (RTP), Sustainable Communities Strategy (SCS), and Regional Comprehensive Plan (RCP).

The plan defines projects, policies, and programs to address regional land use and transportation challenges while meeting the following regional goals and areas of emphasis:

- Efficiently move people and goods by providing competitive alternatives to driving
- Access to affordable, reliable, and safe mobility options for everyone
- Healthier air and reduced GHG emissions regionwide by supporting shorter trip-making through focused integration of transportation and land use

The 2021 Regional Plan incorporates five transformational strategies – “the 5 Big Moves” – into one integrated regional transportation system. Provided below, in **Figure 1-5**, are the moves and their associated descriptions. The Regional Plan utilizes the above 5 Big Moves to develop programs, projects, and implementation actions within North County phased between 2021 and 2050.

Figure 1-5: 2021 Regional Plan's 5 Big Moves

NEXT OS

The underlying technology that allows people to connect to transportation services and a digital platform that allows for dynamic management of roadways and transit services.

COMPLETE CORRIDORS

Roadways that offer dedicated, safe space for everyone, including people who walk, bike, drive, ride transit, and use Flexible Fleets, as well as those who drive freight vehicles. Complete Corridors use technology to dynamically manage the flow of traffic.



TRANSIT LEAP

A complete network of fast, convenient, and reliable transit services that connect people from where they live to where they want to go.

FLEXIBLE FLEETS

Transportation services of many forms, varying in size from bikes to scooters to shuttles, that offer first- and last-mile connections to transit and alternatives to driving alone.

MOBILITY HUBS

Vibrant centers of activity where transit and on-demand travel options, supported by safe streets, connect people with their destinations and businesses with their customers. Mobility Hubs are also planned to accommodate future growth and development.



Regional Transportation Improvement Plan

The 2021 Regional Transportation Improvement Plan (RTIP) represents the next five fiscal years (2021 through 2025) transportation improvements for the San Diego region—it is the “next step” of implementation from the revenue constrained RTP. Projects seeking funding must be included in the Regional Plan to be able to program funds in the RTIP. The 2021 RTIP can be seen here:

https://www.sandag.org/uploads/publicationid/publicationid_4747_28774.pdf.

+ Additional Regional Initiatives

The North County CMCP also considered the following regional documents and planning efforts:

- ↘ [Regional Transportation System Management and Operations](#)
- ↘ [Regional ITS Architecture](#)
- ↘ [Regional Multimodal Military Access Strategy](#)
- ↘ [Intraregional Tribal Transportation Strategy](#)
- ↘ [Regional Bike Plan](#)

The North County CMCP includes the programs and projects in North County from the 2021 Regional Plan, Regional Transportation Improvement Plan, and the additional regional initiatives list above to ensure consistency between the CMCP and regional efforts. Appendix B provides additional information about the projects and programs in North County from the 2021 Regional Plan.



Local Initiatives

The North County CMCP leverages the work that partners in North County have completed and undertaken—relying upon the local planning efforts previously completed by North County cities and communities as a springboard to documenting local access needs into the sub-regional context of North County. The CMCP will integrate the needs and projects identified where they align with sub-regional and regional transportation needs to reinforce the integrated system approach to meeting the diverse demands of North County’s communities.

The North County CMCP process builds upon the opportunity to collaborate with current local agency initiatives critical to North County, including general plan updates, arterial/corridor plans, and local development projects/programs expanding existing activity centers or creating new destinations. The following were guiding documents for local improvements prioritized within North County:

- City of Oceanside General Plan – Circulation Element
- City of Oceanside General Plan Update
- City of Oceanside Safe Routes to School Plan
- City of Oceanside Smart and Sustainable Corridors Plan
- City of Oceanside Bicycle Master Plan
- City of Carlsbad General Plan – Mobility Element
- City of Carlsbad Sustainable Mobility Plan
- City of Carlsbad Citywide Transportation Demand Management Plan
- City of Carlsbad Trails Master Plan
- City of Vista General Plan
- City of Vista Bicycle Master Plan
- Vista Safe Routes to School Master Plan
- City of Vista Traffic Congestion Management Plan
- City of Vista Emerald Drive Corridor Study
- City of Vista Roadway Safety Plan
- City of San Marcos General Plan
- City of San Marcos General Plan Update
- City of San Marcos Active Transportation Plan
- City of San Marcos Bicycle and Pedestrian Master Plan
- City of Escondido General Plan
- City of Escondido Bicycle Master Plan
- Caltrans SR-78 Managed Lanes Project Study Report-Project Development Support
- Caltrans I-5/SR-78 Project Study Report-Project Development Support
- Caltrans SR-78 DRAFT Transportation Concept Report
- Caltrans I-5/SR-78 Interchange Preliminary Engineering Studies
- SANDAG State Route 78 Corridor Study
- SANDAG Military Multimodal Access Strategy: Briefing Book (Camp Pendleton)
- North County Transit District Land Use and Transit Integration Study
- North County Transit District Strategic Multimodal Transit Implementation Plan
- North County Transit District SPRINTER Station Access Study
- County of San Diego Mobility Element
- County of San Diego Active Transportation Plan

Collaborative Project Engagement

Successful CMCP development and implementation requires alignment across transportation owners/operators and North County’s diverse stakeholders. To achieve this alignment, the CMCP process listened to stakeholder history/experiences, leveraged the knowledge of Cities/communities, and collaborated on the development of implementable strategies, programs, and projects.

The project engagement was performed with four levels of collaboration to provide an interactive and iterative process between agencies and stakeholders. The four levels allowed for participants to provide their lessons learned, insights on the transportation system, and gradually work towards alignment on the CMCP. Below are the four levels involved with the development of the North County CMCP:

- City Management Staff
- Technical Working Group
- Stakeholder Working Group
- Community Members and General Public

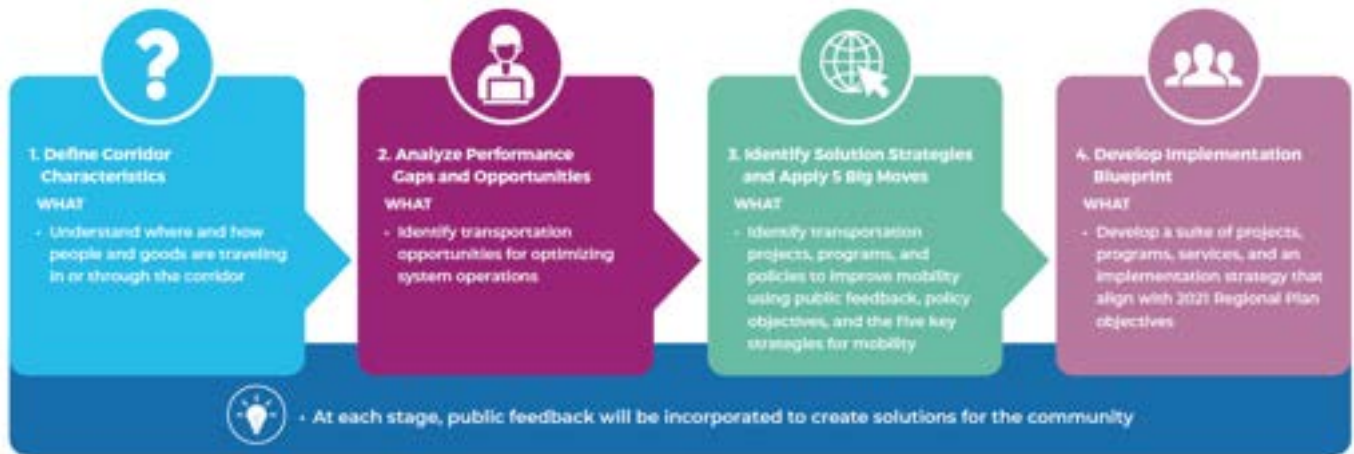
A summary of the engagement performed with the Technical Working Group and Stakeholder Working Group can be found in **Appendix C**. A summary of the outreach performed for the CMCP can be found in **Appendix I**.



CMCP Process: Creating the North County CMCP

The purpose of the North County CMCP is to develop a balanced and integrated transportation network in North County that gives travelers efficient and easy to use travel choices. The CMCP is informed by travel behavior data, existing infrastructure, and future community growth to identify, evaluate, and propose improvements—to improve mobility, community, and equity within North County. The CMCP process aims to understand Corridor characteristics and identify needs through extensive public involvement to create equitable transportation solutions. The overall CMCP process is shown in **Figure 1-6** and the key steps are described in this section.

Figure 1-6: North County CMCP Process





What is Included in the North County CMCP?

The North County CMCP includes the following subsequent chapters:

› Chapter 2: Corridor Context

Defines the study area for the North County subregion and provides a description of the study area's demographics, land use patterns, and travel patterns

› Chapter 3: Mobility Assessment

Describes the causes and effects of the subregion's transportation network deficiencies and the framework to develop and assess mobility solutions and strategies for the CMCP

› Chapter 4: Values, Goals, and Objectives

Outlines the goals and objectives to guide the identification, prioritization, and funding of mobility improvements

› Chapter 5: Mobility Solution

Identifies a balanced, integrated 30-year network comprised of projects, programs, and services

› Chapter 6: Performance Assessment and Plan Phasing

Outlines answers to fundamental questions regarding the proposed Mobility Solution

› Chapter 7: CMCP Implementation Blueprint

Provides recommendations on next steps for the agency partners in the corridor focusing near term implementation

2 CORRIDOR CONTEXT

Chapter 2 will bring into focus the historical context of transportation, the current state of land use, and the key conditions of the North County region influencing the development of the CMCP.

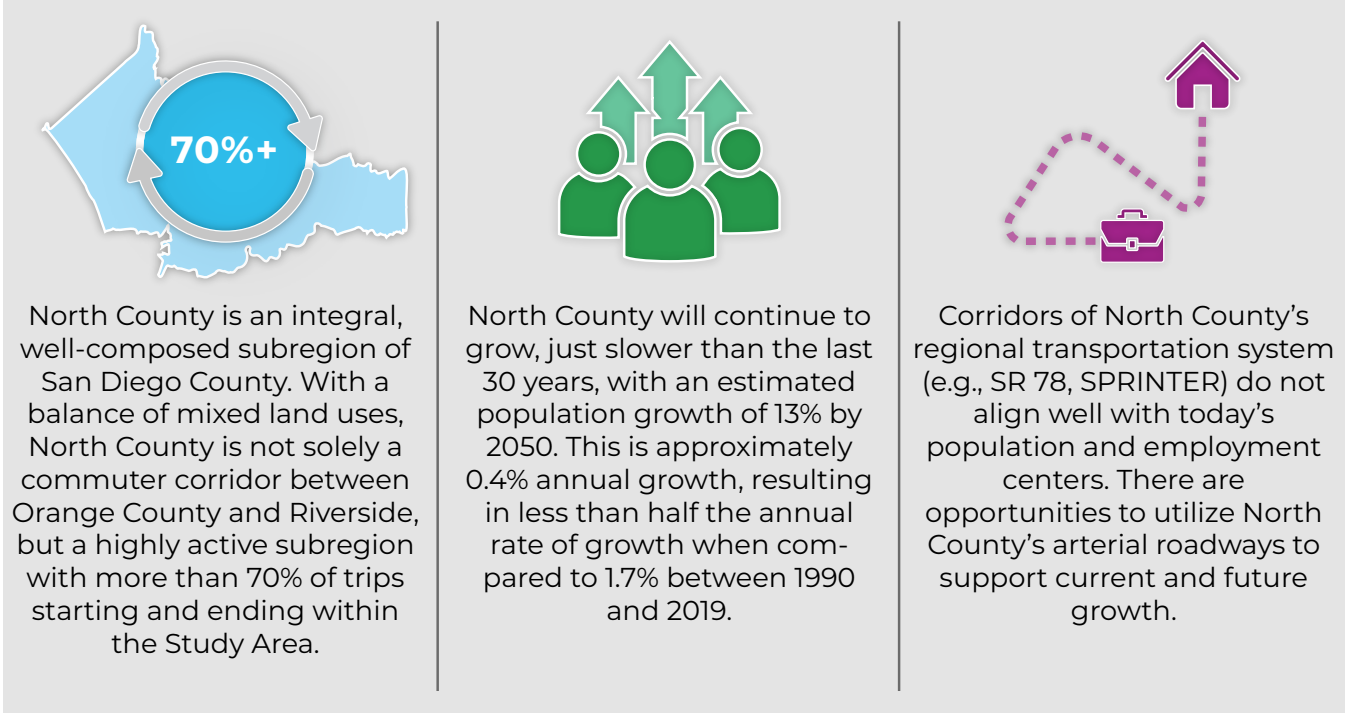


2 CORRIDOR CONTEXT

Chapter 2 provides context regarding North County’s demographics, land use, and the transportation system using North County data to understand underlying conditions. The corridor’s demographics and travel patterns inform the existing mobility needs and will help identify future opportunities to develop an adaptive and resilient transportation system for North County. This chapter is organized as follows:

- **Defining North County’s Study Area** provides an overview of the study area’s geographic scope and regional context.
- **North County’s Topography and Transportation** discusses North County’s unique natural topography and how it has shaped the existing transportation network.
- **North County’s Overall Population and Job Trends** presents information on North County’s existing and projected population and employment.
- **Where People Live and Work in North County** explores the relationship between employment and housing as it relates to the transportation system.
- **North County’s People and Communities** provides an overview of the North County community and highlights underrepresented populations and populations with unique mobility challenges.
- **Understanding North County Travel Patterns** discusses travel patterns into, out of, and within the study area.
- **Conclusion and Takeaways** highlights key points identified in the corridor characteristics assessment.

Figure 2-1: Chapter 2 Key Takeaways

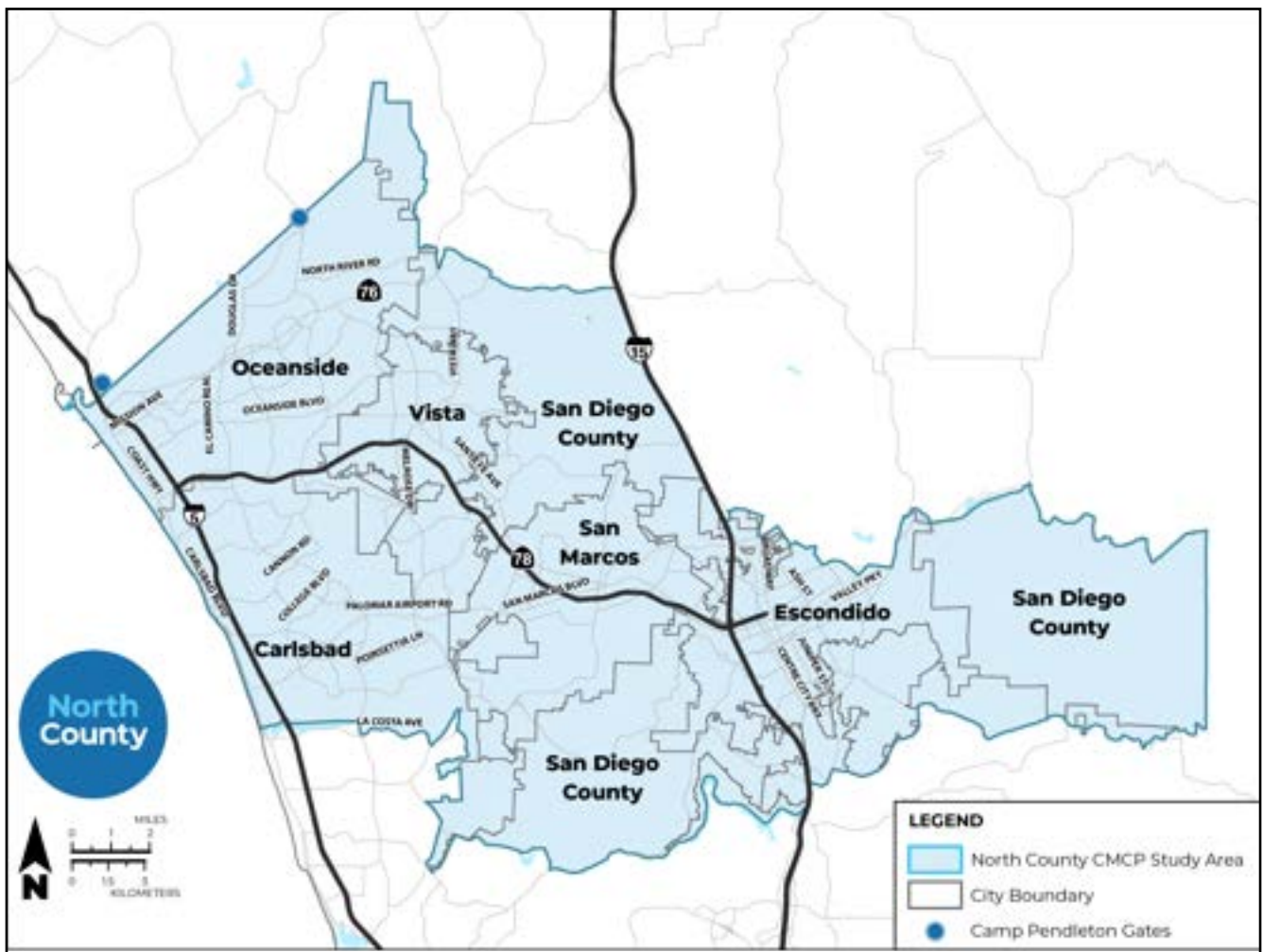


Defining North County’s Study Area

North County is unique in having five different contexts: coastal communities generally associated with the coastline and Interstate 5 (I-5); inland communities associated with State Route 78 (SR 78) or State Route 76 (SR 76); rural communities to the east and north typically associated with Valley Parkway and SR 78; Marine Corps Base Camp Pendleton and its reliance on regional access; and as a gateway region between the San Diego region to the south/east and Orange and Riverside Counties to the north via LOSSAN, I-5, and I-15. While Marine Corps Base Camp Pendleton is important to consider due to its driver as a major employer in the region, access to the base needs to be addressed at the federal level.






To focus the efforts of the CMCP, the North County study area was generally defined as the cities of Oceanside, Carlsbad, Vista, San Marcos, and Escondido as well as adjacent communities in unincorporated San Diego County as defined in **Figure 2-2**. Information regarding the development of the study area shape can be found in **Appendix H**.

Figure 2-2: North County CMCP Study Area






A combination of the following was utilized to develop the study area:

| | | | | | |
|---|--|---|---|---|-------------------------|
|  | City limits/ boundaries |  | Census block group boundaries <i>(for data compatibility)</i> |  | Activity centers |
|  | Forecasted population/ employment |  | Natural geographical constraints <i>(i.e., Pacific Ocean to the west, mountain ridges to the south, north, and east)</i> | | |

Preliminary origin destination data shows that more than 70% of the trips that start within the study area end within the study area. For trips that start within the study area, 80% also end within the study area. The high number of internal trips reinforces the defined boundaries of the North County CMCP for more detailed analysis. Utilizing the defined study area, the North County CMCP focuses on the travel behaviors and patterns for residents and employees, communities in unincorporated San Diego County, and access to Camp Pendleton’s gates. The Travel Patterns section of this chapter will discuss the North County travel patterns observed in greater detail. As we explore the population, employment, and activity characteristics of North County, we’ll observe how North County is demographically representative of the greater San Diego region within its smaller subregion.

The North County study area is a well-defined subregion that: captures 70% of the trips starting or ending within North County, and resembles the greater San Diego region—urban, suburban, and rural communities.



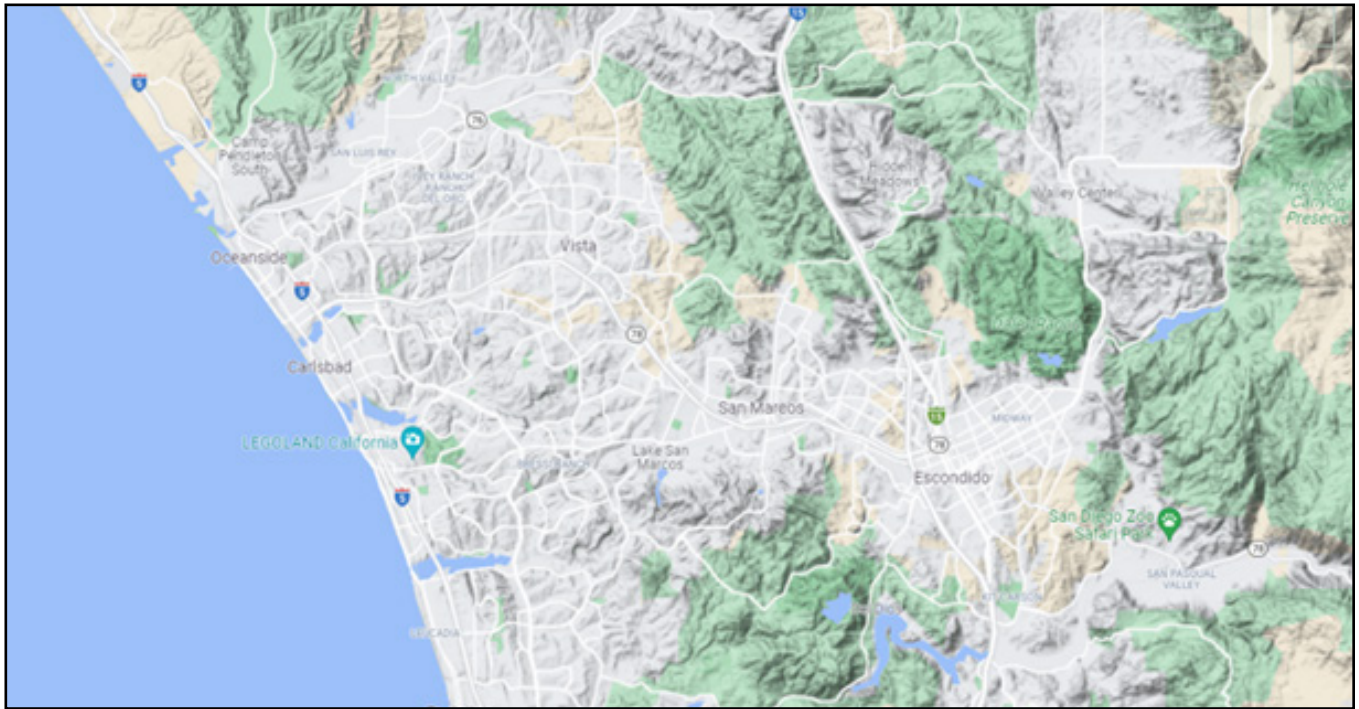
Topography and Transportation

The hills, ridges, and valleys of North County have influenced its development. These North County topographic features have presented great recreational opportunities for hiking, mountain biking, equestrianism, rock climbing, and many other outdoor activities that draw people to North County—however, the topography has also presented challenging terrain for construction and operations of the transportation system.

North County’s topographic features weaved the Escondido rail subdivision and the old “Cannon Ball Express” in 1888 along North County’s creeks and in between the ridges to the north and south connecting a series of small, narrow valleys between Oceanside and Escondido. These low-lying areas along the rail were the industrial and commercial spine of North County’s commerce including agriculture and manufacturing. Now, the Escondido rail subdivision serves as one of North County’s regional corridors with the SPRINTER rail service.

Similarly, the portions of SR 78 located within the study area started as a regional road between Oceanside and Escondido—effectively connecting the transportation system of the day: the US 101 (now I-5) and US 395 (now I-15). Starting in 1931 through 1990, SR 78 changed from a two-lane highway to a multi-lane expressway, and eventually to a freeway allowing for the development of new interchanges. The SR 78 was designed to traverse North County as easily as possible across narrow valleys and adjacent to steep elevations.

Figure 2-3: Topographical Map of North County



Source: Google Maps

Today, the North County hills, avoided during the early development of rail and highway corridors, provide the elevation and vistas for terraced development with steep roads and have created a curvilinear grid of arterials to traverse steep slopes between employment centers, community centers, and neighborhoods. The topography will continue to shape the way North County develops for housing and employment and how the transportation system can serve future North County communities.



North County's Overall Population and Job Trends

North County's population and job trends have influenced how investment in transportation has occurred over the decades. These transportation investments, in turn, influence the quality of life for North County's resident population by shaping access to jobs, education, housing, and recreational opportunities. The following explores historic and projected population and employment trends as they relate to how people move in, out, and through the North County study area.

Population and Employment Trends

Existing Population

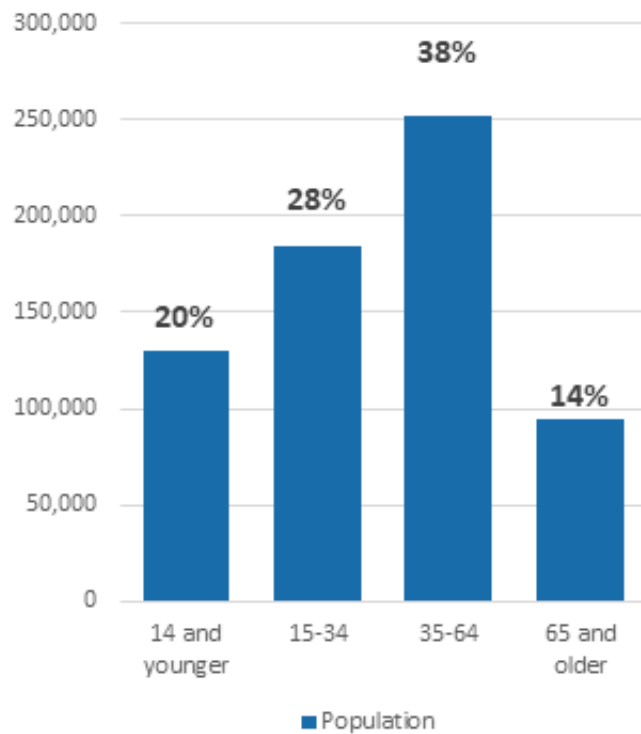
From 1990 to 2019, North County communities experienced significant growth in population (approximately 49%)—an estimated annual growth of 1.7% per year⁴. In 2019, approximately 661,000 people were living within the study area, accounting for 1 in 5 people (or 20% of the population) within the San Diego region⁵.

New housing opportunities for students, families, and new residents has kept North County's population relatively young with 2 in 3 people in the study area being between the ages of 15 and 64 (66%).

Almost half of North County's population is younger than 35. Education and job growth opportunities will be important for the next generation to affordably live and work within North County over the next 30 years.



Figure 2-4: Age Distribution of North County CMCP Study Area



Source: American Community Survey (ACS) 2019 5-Year Estimates

Existing Employment

Regarding employment, from 1995 to 2018, the number of North County jobs increased by 54%⁶. Today, there are approximately 260,000 jobs within the study area, accounting for approximately 18% of the jobs within the San Diego region. There are diverse industries throughout the North County study area, all of which have unique transportation needs.

⁴ Source: IPUMS NHGIS (1990)/American Community Survey (ACS) 2019 5-year Estimate

⁵ Source: American Community Survey (ACS) 2019 5-Year Estimate

⁶ Source: SANDAG Estimates (2020)/LEHD LODES Workplace Area Characteristics (2019)



Projected Population and Employment Growth

Over the next 30 years, North County and its neighboring communities (including southwest Riverside County) are expected to grow in both population and employment. North County's population is expected to reach approximately 744,000 by 2050⁷—about 13% growth between 2019 and 2050 (see **Figure 2-5**). Most of the growth is estimated to occur in the cities of Oceanside, Escondido, Vista, and San Marcos—with modest growth in Carlsbad and the unincorporated areas of San Diego County.

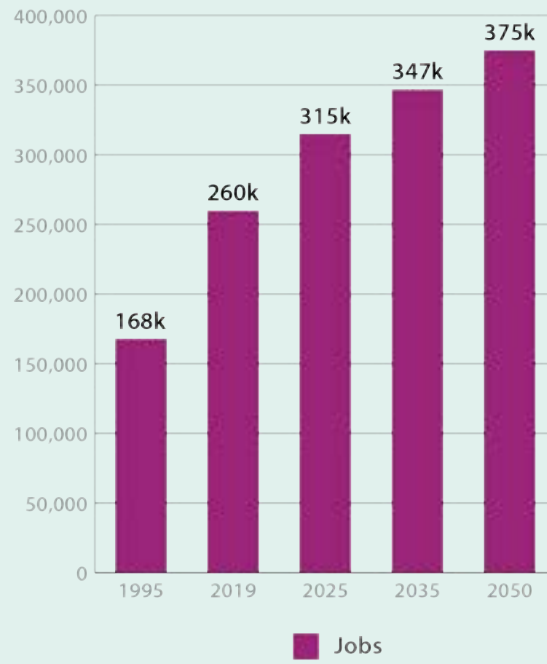
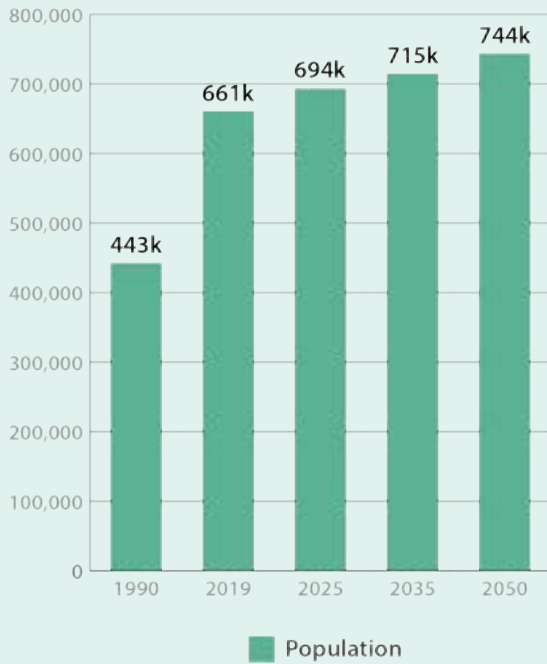
Figure 2-5 shows that North County is projected to experience more modest population growth from 2019 to 2050 than from 1990 to 2019. The figure also shows that job growth will be slightly slower than previously experienced. Between 1995 and 2019, the study area experienced job growth of 54%, while between 2019 and 2050, job growth of 46% is anticipated. The number of new jobs anticipated for each city in the study area will vary by 2050:

- 10-12% job growth in Carlsbad, Escondido, and Oceanside
- 20% job growth in Vista
- 40% job growth in San Marcos

Details on where these jobs are located and their influence on North County's transportation system are included in the subsequent section. Additional details about the community context of the North County subregion can be found also in **Appendix D**.

⁷Source: SANDAG DS39 Forecast Estimates (2021)

Figure 2-5: Population and Job Trends in North County CMCP Study Area



Population



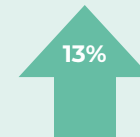
2019¹
660,700 North County Population
19.9% of Regional Population

2050²
744,000 North County Population
20.1% of Regional Population

1990³ - 2019¹
Population Growth



2019¹ - 2050²
Population Growth



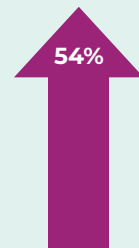
Jobs



2019⁴
259,700 North County Jobs
17.9% of Regional Jobs

2050²
375,300 North County Jobs
17.9% of Regional Jobs

1995⁵ - 2019⁴
Job Growth



2019⁴ - 2050²
Job Growth



Sources: (1) American Community Survey (ACS) 2019 5-Year Estimate, (2) SANDAG DS39 Forecast Estimates (2021), (3) IPUMS NHGIS (1990), (4) LEHD LODES Workplace Area Characteristics (2019), and SANDAG Estimates (2020)



Population, Jobs, and Transportation

There are approximately 300,000 jobs reported within the North County study area. In 2019, approximately 61% of the population in North County was employed. In addition to a higher number of employed individuals than jobs available, not all individuals live and work in North County. This highlights the importance of enhancing both local and regional connections between people and jobs.



In addition to projected growth within North County, the neighboring subregion of southwest Riverside County is expected to continue its aggressive growth in population. The growth surrounding North County will increase the demand for access to employment and education destinations within and from North County resulting in the need for a more efficient regional transportation network.

Where People Live and Work in North County

Land use and the transportation network are intrinsically linked and influence each other as they develop. Transportation investments can affect land use patterns, urban density, and housing prices while land use can influence how people travel. The subsequent section provides the following context:

- Where people live, work, and travel based on North County's land use patterns and key activity centers
- Planned growth hotspots anticipated by 2050
- How the combination of existing and future growth will define the activity centers and destinations that need to be served by North County's transportation system.

Existing Land Use Patterns Within North County

Existing land use patterns reflect substantial growth in residential and commercial development across all five cities and the unincorporated County over the last 30 years (see **Appendix F**).

Figure 2-6 shows the current land uses within the North County study area. The top land use categories (as a percentage of acres within the study area) are residential (33.1%), open space preserve/parks (22.3%), undeveloped (15.6%, not including roadway/utility infrastructure), and agriculture (8.7%).

Approximately 15% of the North County study area is currently vacant or undeveloped. Vacant or undeveloped land within activity centers and a half-mile of a SPRINTER station/transit stop provides an opportunity to link future development to transit services such as BREEZE, Rapid, and FLEX routes.



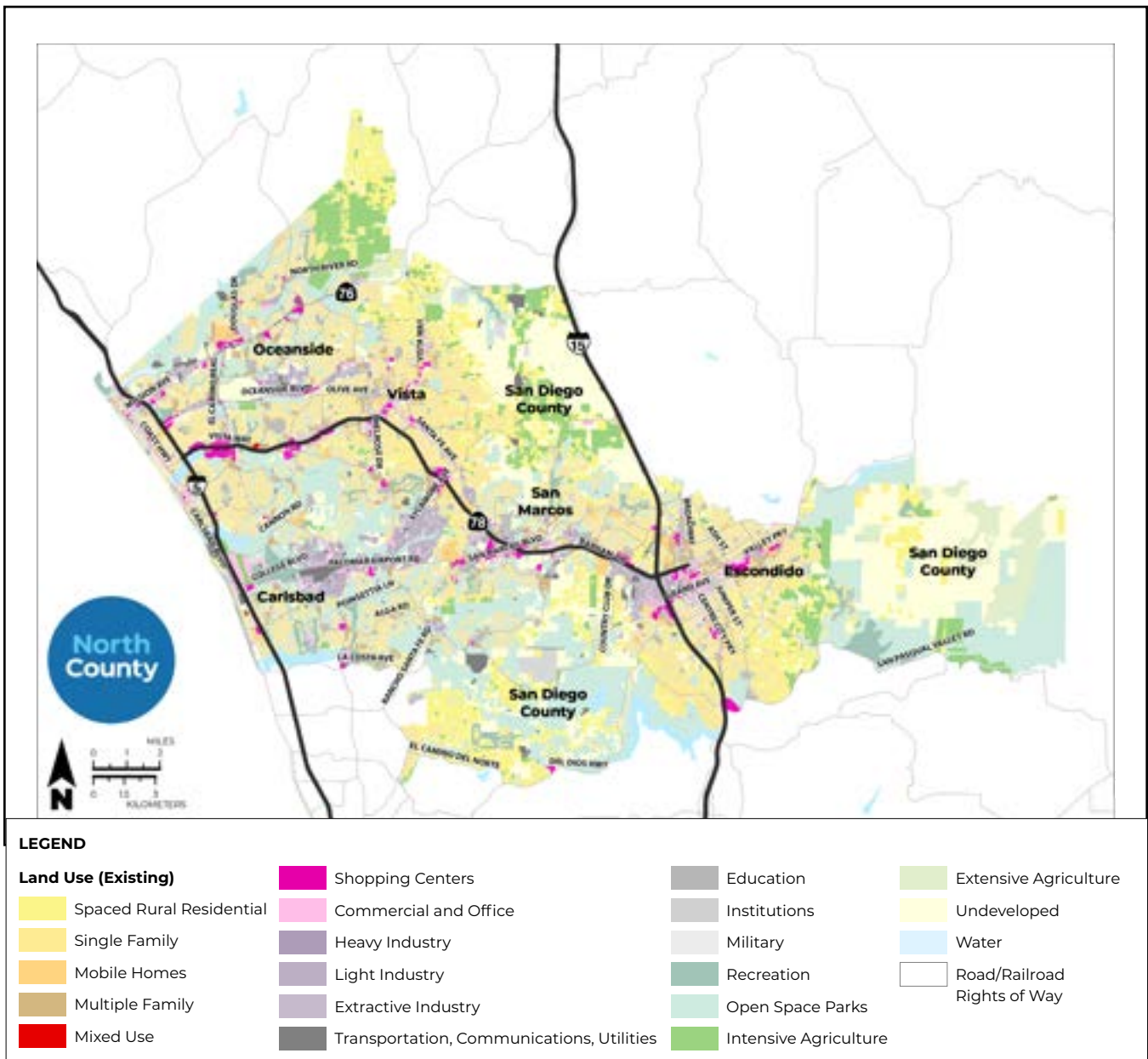
Table 2-1: Transit Oriented Development Opportunities

| AREA | UNDEVELOPED/VACANT LAND (ACRES) | PERCENT OF UNDEVELOPED/VACANT LAND IN STUDY AREA |
|---------------------------------------|---------------------------------|--|
| Half Mile of SPRINTER Stations | 562 | 2% |
| Half Mile of Study Area Transit Stops | 3,600 | 14% |
| Within Activity Centers ⁸ | 1,900 | 7% |
| Study Area | | 25,800 |

⁸ Activity Centers are areas with concentrated activity such as housing, employment, and/or retail.

North County has developed predominantly around single-family and spaced rural residential to keep up with housing demand over the last 30 years—creating the perception of North County being a series of “suburban” or “bedroom” communities. While housing developments have grown, North County has been successful in: 1) preserving recreation and open space parks that has reinforced its positive reputation for outdoor activities near neighborhoods; and 2) complementing housing growth with high employment development in Industrial, shopping centers, and retail/office commercial. Additional information about the land use in the subregion can be found in **Appendix F**.

Figure 2-6: Existing Land Uses



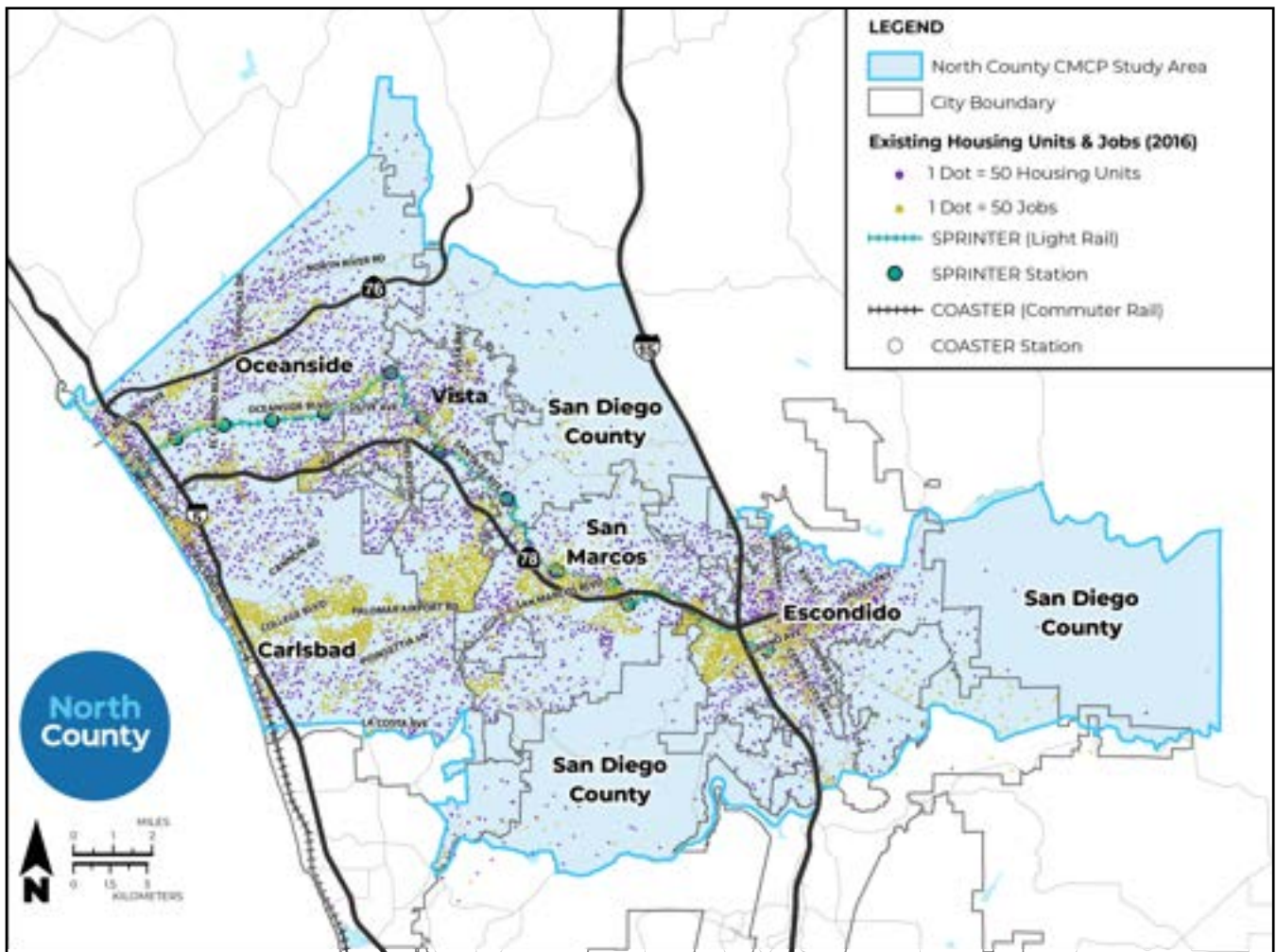
Source: SANGIS Land Use Current Shapefile (Accessed February 2021)

The CMCP assessed two complementary data points important to transportation: housing and jobs. Today, the North County study area has approximately 253,000 housing units distributed across North County and accounts for 19.4% of housing in the San Diego region. With employment, there are 256,000 jobs predominantly in concentrated areas in North County accounting for about 18% of the jobs within the region.

The industrial/manufacturing centers of the last century were located in the narrow valleys of North County. The resulting spatial misalignment between the transportation network, housing, and jobs observed today is a result of historic industrial/manufacturing center locations. The existing housing and job centers are clustered along or near North County's major arterials such as Valley Parkway, Centre City Parkway, Palomar Airport Road, San Marcos Boulevard, Vista Way, Oceanside Boulevard, Mission Avenue, Coast Highway, and Carlsbad Boulevard. **Figure 2-7** shows the existing concentration of housing and jobs employing a dot density map where each dot represents 50 housing units or 50 jobs.



Figure 2-7: Existing Housing Units and Jobs (2016)



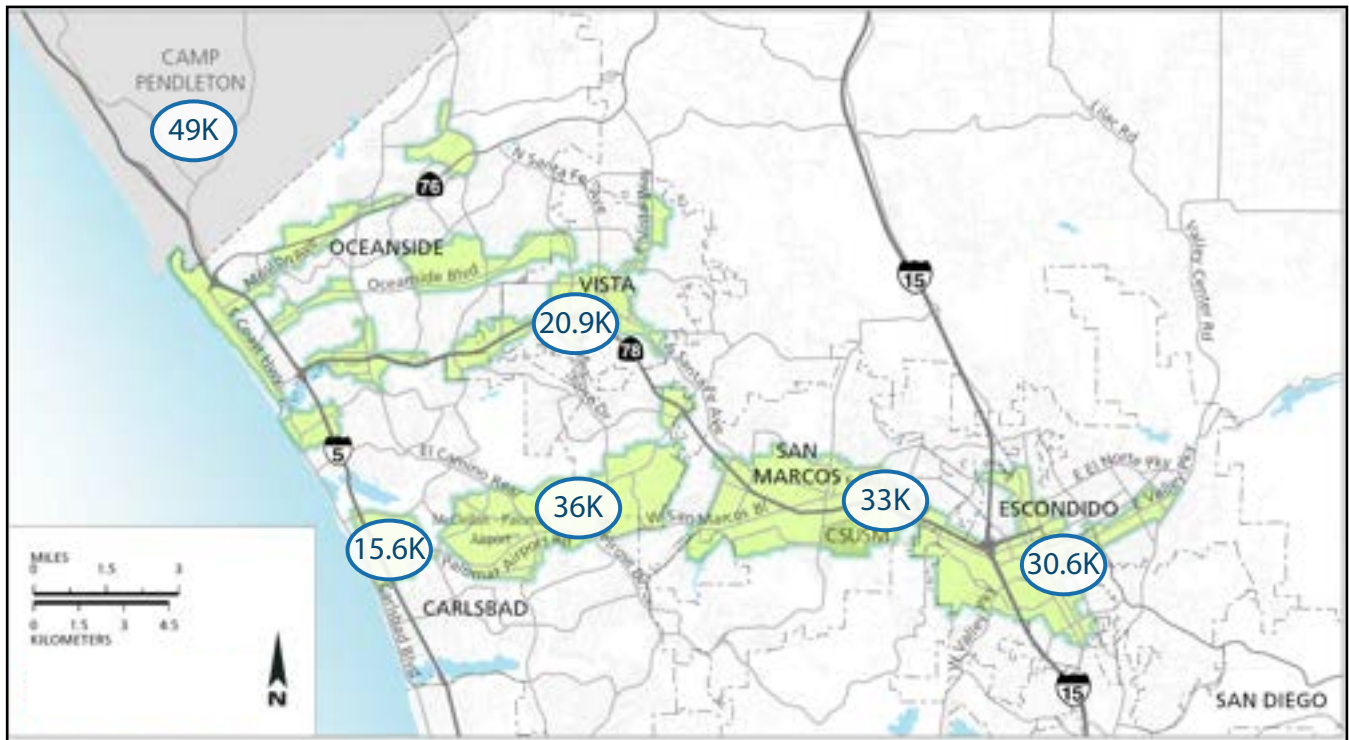
Source: SANDAG DS39 Forecast Estimates (2021)



Existing high density job centers developed over the last 30 years are not clustered around SR 78 and SPRINTER. Instead, older (less dense) developments neighbor the two corridors providing an opportunity for infill mixed-use development.

The concentrations of employment within the study area is represented by the employment centers shown in **Figure 2-8**. The key job centers show that the largest employment centers by number of employees in the study area are located in Carlsbad, San Marcos, and Escondido. These employment centers are anticipated to continue growing. Additional information about employment centers can be found in **Appendix G**.

Figure 2-8: North County Employment Centers



Source: SANDAG Employment Estimates, 2016



Projected Growth: Where Will People Live and Work By 2050?

Housing Considerations

North County is looking to not only incorporate more housing to accommodate projected population growth but provide housing options that promote affordability and home ownership. The cities in the study area are required to update their General Plans, housing elements, and zoning codes to accommodate the region’s housing unit allocation as indicated in **Table 2-2**. There are 31,300 housing units allocated to the communities in North County between 2021 and 2029. Approximately 31% (or 9,600) housing units are allocated within Escondido.

Jurisdictions in the study area are encouraged to consider the proximity of transit and jobs when identifying proposed housing sites. Housing sites located near transit and jobs can create an opportunity for residents to take more trips by bus, light rail, or train and/or live closer to where they work. This can create a shift in how people travel to their everyday destinations, opting for alternative transportation modes, and ultimately, reducing vehicle miles traveled (VMT) and GHG emissions.

The North County cities and unincorporated county are planning for an additional 25,000 to 30,000 dwelling units within the study area. Placement of these dwelling units will influence where population growth is likely to occur within the study area.



Table 2-2: 6th Cycle (2021-2029) RHNA Allocation for Jurisdictions in Study Area

| JURISDICTION | VERY LOW-INCOME ⁹ UNITS | LOW-INCOME UNITS | MODERATE INCOME UNITS | ABOVE MODERATE INCOME UNITS | TOTAL UNITS | PERCENT OF STUDY AREA |
|--------------------------------------|------------------------------------|------------------|-----------------------|-----------------------------|---------------|-----------------------|
| Carlsbad | 1,300 | 780 | 750 | 1,000 | 3,900 | 12.4% |
| Escondido | 1,900 | 1,200 | 1,500 | 5,000 | 9,600 | 30.7% |
| Oceanside | 1,300 | 720 | 880 | 2,600 | 5,400 | 17.4% |
| San Marcos | 730 | 530 | 540 | 1,300 | 3,100 | 10.0% |
| Unincorporated County ⁽¹⁾ | 1,800 | 990 | 1,200 | 2,700 | 6,700 | 21.4% |
| Vista | 520 | 320 | 370 | 1,400 | 2,600 | 8.2% |
| (Totals) | 7,520 | 4,600 | 5,200 | 14,000 | 31,300 | 100.0% |
| Region (Totals) | 42,300 | 26,600 | 29,700 | 73,000 | 171,700 | -- |
| Percent of Region | 16.0% | 15.3% | 15.8% | 17.3% | 16.4% | -- |

Notes: (1) Unincorporated County numbers include areas outside of the study area boundaries as the County’s Housing Element has not been finalized as of September 2021.

Source: SANDAG 6th Cycle Regional Housing Needs Assessment Plan¹⁰

⁹ Very Low, Low, Moderate, and Above Moderate Income is based on the County’s Average Median Income for Housing.

¹⁰ <https://www.sandag.org/index.asp?projectid=189&fuseaction=projects.detail>

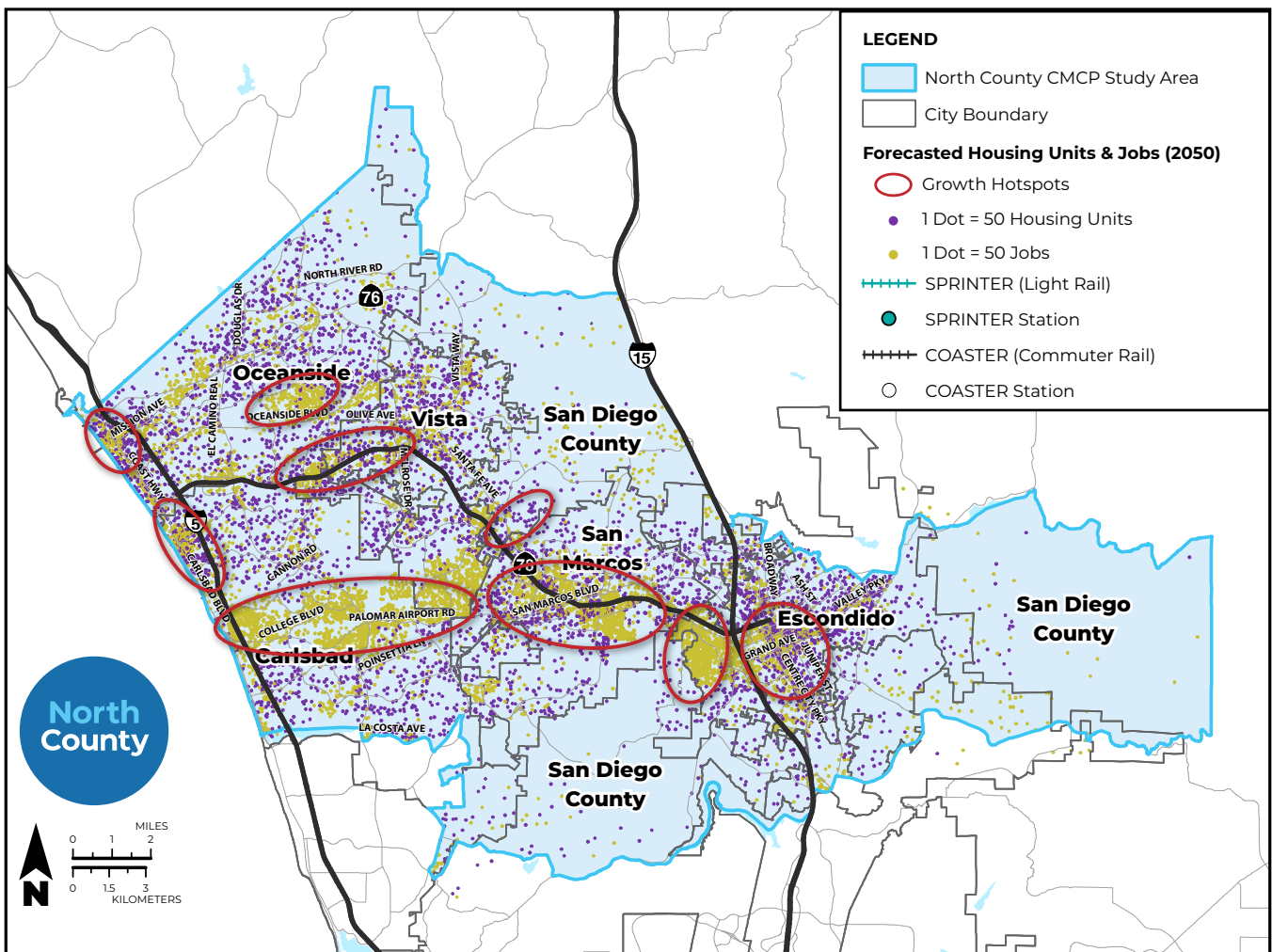
Figure 2-9 maps where growth is anticipated to occur for both population and employment. Looking at where growth is anticipated, “hotspots” have can be identified. These hotspots are expected to occur within three types of corridors:

- In proximity to SR 78 (e.g., San Marcos)
- Adjacent to SPRINTER stations (e.g., Oceanside, San Marcos, Escondido)
- Along North County’s major arterials (across all five cities)

In San Marcos and Escondido, many of the older commercial/industrial/shopping sites (many developed pre-1990s) are beginning to see redevelopment to support mixed-uses and integration with the transportation system—including sites adjacent to employment centers and educational institutions like California State University San Marcos (CSUSM).

Figure 2-9 shows the locations of planned housing units and jobs anticipated by 2050. This shows that there are concentrations of land use and activity in focused areas in Oceanside, Vista, San Marcos, and Escondido as well as the employment centers in Carlsbad. These concentrations (or activity centers) align with existing and planned mixed-use, shopping centers, commercial and office, and housing land uses. The more concentrated the housing/jobs are the greater need for mobility options and connections to sustain growth.

Figure 2-9: Planned Housing Units and Jobs by 2050





The combination of existing and future housing and employment concentrations will likely be along major arterials such as Valley Parkway, Centre City Parkway, Palomar Airport Road, San Marcos Boulevard, Vista Way, Oceanside Boulevard, Mission Avenue, Coast Highway, and Carlsbad Boulevard.

Planning for Adaptability and Change

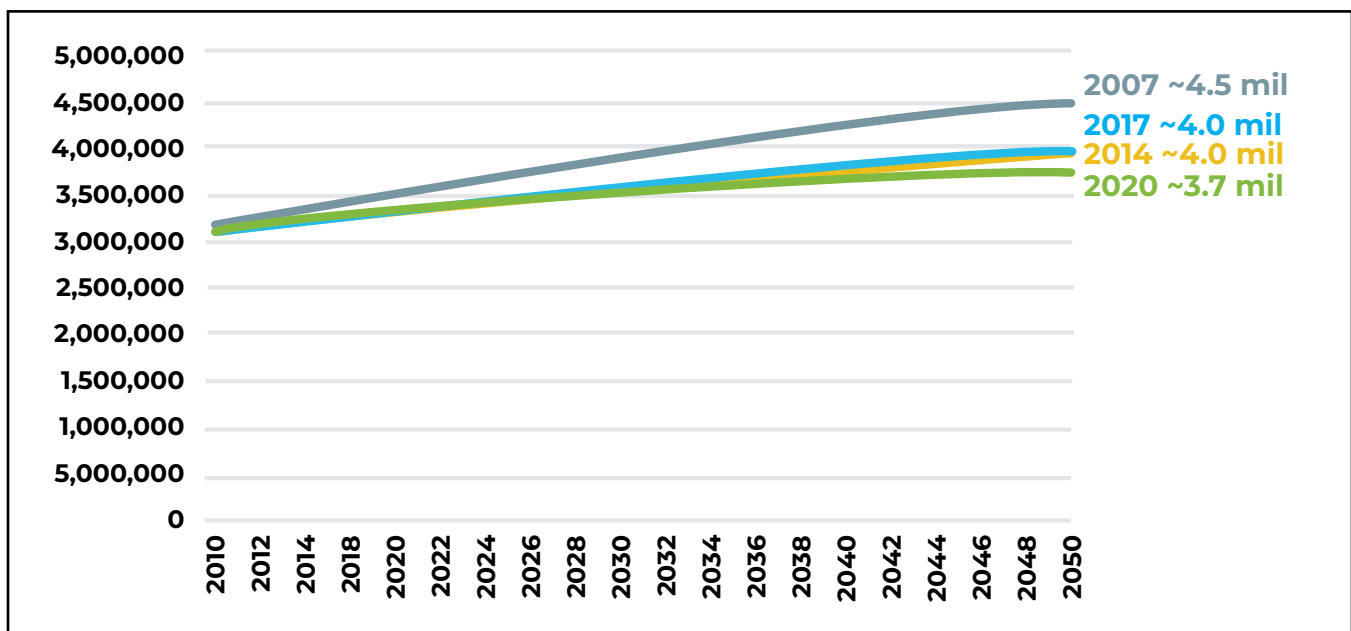
As discussed throughout this chapter, population is one of the primary drivers of travel demand within North County. Over the last 30 years, the changes in population and development patterns have driven many transportation investments by local, regional, and state agencies. These investments include the implementation of interchanges, managed lanes, Inland Rail Trail, and SPRINTER. Future implementation of transportation investments will continue to accompany housing and job development within North County.

As North County’s population continues to grow, the relationship between land use and transportation planning will become increasingly vital. Investments in a transportation network will need to support projected population growth but must plan for adaptability should population growth occur in areas that are not identified as growth hotspots or should growth occur at a faster or slower pace than projected. Building adaptability into the system so that the transportation network can support surrounding land uses will allow for communities to grow while supporting active transportation safety, increasing mobility, enhancing transportation services, and improving connectivity.

Key events can also drastically change projected population growth. The Department of Finance’s 2050 population estimates for the region have been reduced 14% from 4.3 million (2007 estimate) to 3.7 million (2020 estimate). Plans such as this CMCP will need to be continuously evaluated and adapted, to address the changing inputs like population, housing, and economic projections. Figure 2-14 highlights the changes in population projections from the CA DOF.



Figure 2-10: San Diego County Population Projections (CA Department of Finance)



North County’s People and Communities

North County’s transportation system influences the quality of life for residents and employees (both inside and outside of the study area) by shaping access to jobs, education, housing, and recreational opportunities.



San Marcos Farmer’s Market (San Marcos Farmer’s Market)

Understanding corridor travel types and behaviors based on the available system is fundamental to understanding the mobility challenges within North County (mobility challenges are discussed further in **Chapter 3**). Pairing travel behavior with land use trends will define the mobility patterns and improvement strategies that can be successful in meeting current and future needs. This section will provide key contexts of the study area’s demographics and trends that will affect how people will live and move in North County.

Social Equity Focus Communities Of North County

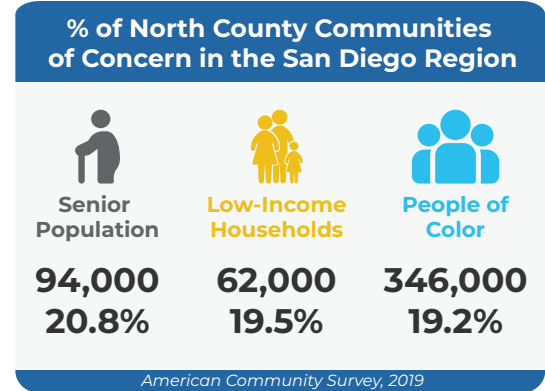
Vulnerable and underserved communities (social equity focus communities), defined as low-income, People of Color, or 75 years and older¹¹ are stakeholders and traveling users that need focused infrastructure and services within North County. Understanding how many people are identified within social equity focus communities provides necessary context for equitable transportation investments.

¹¹ The North County CMCP also looked at the population 65 years and older to better understand the population that will be a social equity focus community in the future.



There are about 661,000 people living within the study area. Social equity focus communities make up a significant portion of the current population and will continue to grow throughout the region. Over half of the population is defined as People of Color population and this percentage is expected to grow to 67% by 2050. The senior population will also increase to 46% by 2050. Low-income households currently make up 28% of the total population and are expected to decrease by 7% by 2050.

By 2050, 31% of the total population in the corridor will live within a half-mile of high frequency transit. Social equity focus communities will also increasingly live near transit by 2050. By 2050, 44% of seniors, 40% of low-income households, and 46% of People of Color population will live within a half mile of high frequency transit. Housing units within a half mile of high frequency transit are expected to jump to 77% by 2050. As of 2016, there are 16,391 housing units (23%) within a ½ mile of high frequency transit. This number is expected to increase significantly to 79,000 housing units (77%) located in close proximity to transit by 2050.



Underserved/Historically Excluded Communities

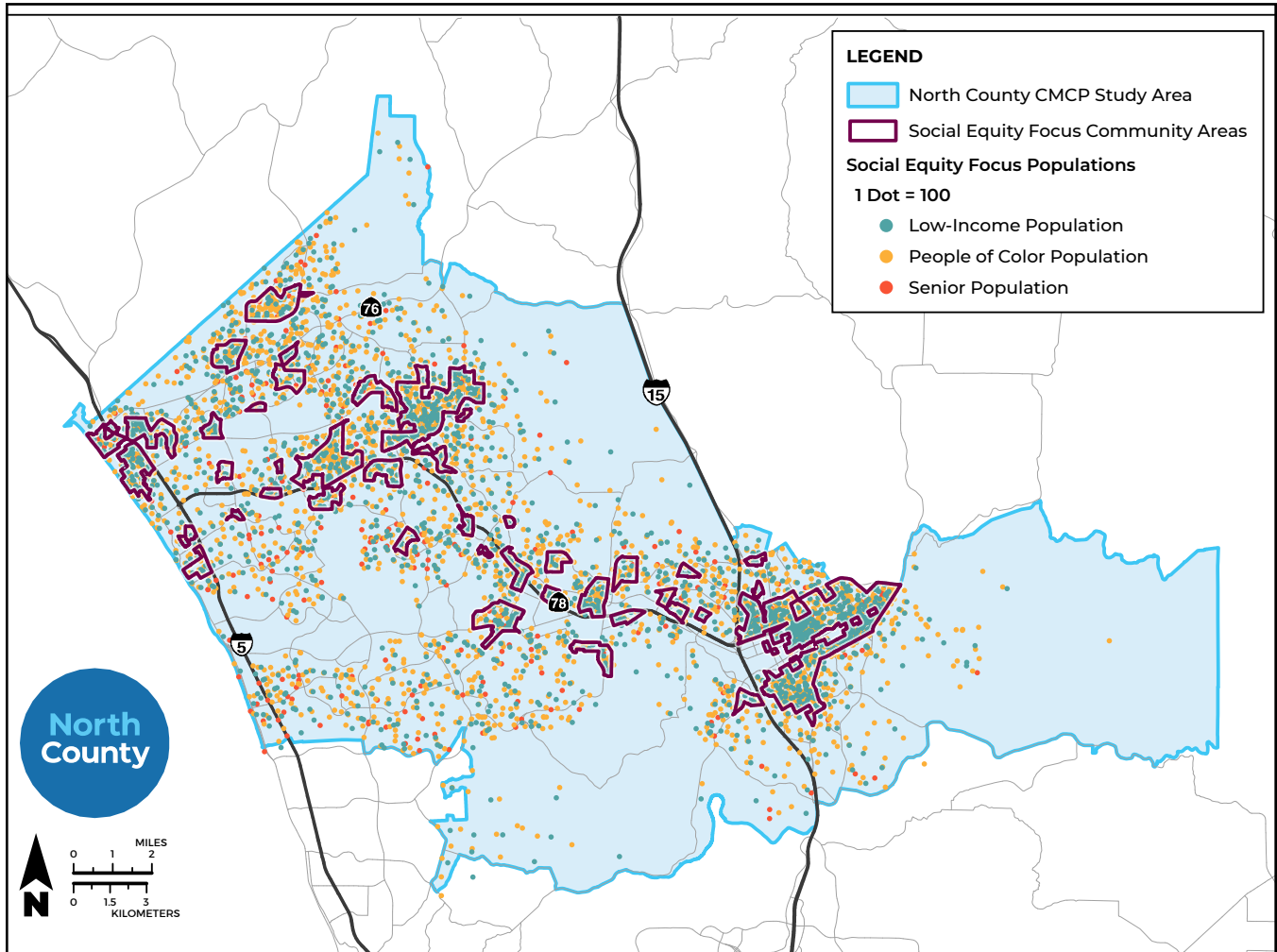
There are several metrics that can be used to measure underserved and historically excluded communities. For the purposes of this CMCP, the study area has been analyzed through the following lenses to identify communities that may be underrepresented in various factors that can be impacted by transportation investments:

- **Healthy Places Index** provides an index score based on economic, education, transportation, social, neighborhood, housing, clean environment, and healthcare indicators that quantifies factors that shape health.
- **SB 535 Disadvantaged Communities** shows the 25% highest scoring census tracts in the CalEnviroScreen as well as other areas with high amounts of pollution and low population. CalEnviroScreen uses environmental, health, and socioeconomic data to identify California communities that are most affected by pollution and experience adverse public health effects.
- **Low-Income Communities and Cities** is measured by members of the population who report an income less than 200 percent of the Federal Poverty Level and is consistent with the SANDAG policy definition of “low-income.”
- **Affordability of Housing** is defined by a threshold designated as low-income by the California Department of Housing and Community Development’s (HCD’s) State Income Limits. The HCD State Income Limits vary by household size for each county and provide income thresholds for extremely low, very low, low, median, moderate, and above moderate-income categories. AB 1550 defines low-income as 80% of the County of San Diego’s Area Median Income (AMI).

A more detailed summary of these metrics is found in **Appendix J**.

The social equity focus community (SEFC) areas of the subregion are shown in **Figure 2-11**. The SEFC areas represent the top 25 percent most dense areas where social equity focus populations including low-income population, People of Color population, and senior population reside.

Figure 2-11: Social Equity Focus Community (SEFC) Areas of North County

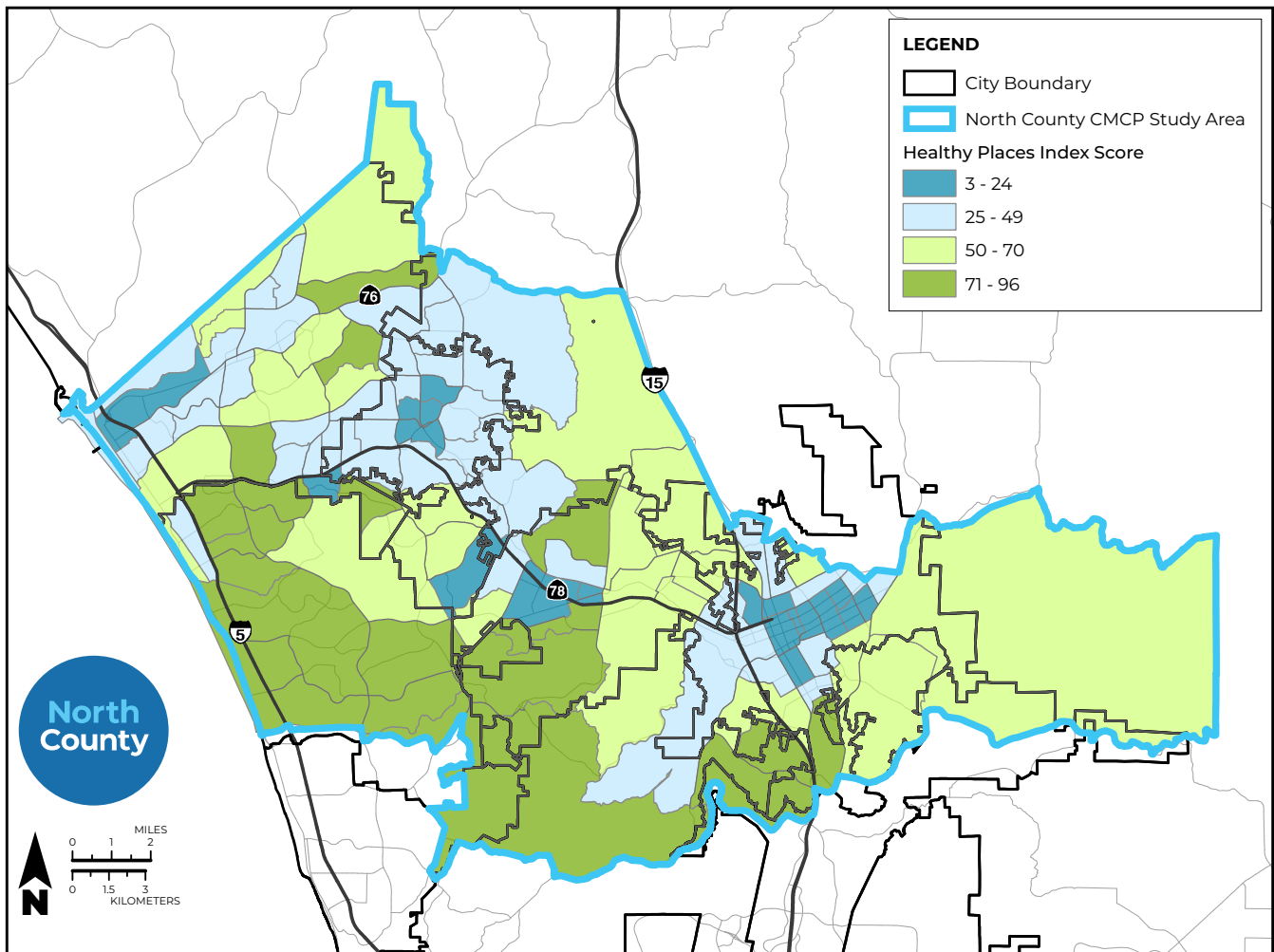


Healthy Places Index

The index score is a compilation 25 community characteristics to inform health equity within a community. The index is used to support equitable investments, programs, and policies. **Figure 2-12** below shows that the North County study area generally scores high on the Healthy Places Index indicating that North County is a relatively healthy community with factors that support a higher predicted life expectancy.

However, there are areas of Escondido, Vista, San Marcos and Oceanside with significantly lower scores—generally located in more urban, low-income communities. As the transportation network continues to develop, it will be important to understand the built environment, socioeconomic factors, and community factors that contributed to the score in these areas to ensure that the implementation of programs identified in the CMCP do not adversely impact the North County communities, but rather improves the health and wellbeing in these lower-scoring areas.

Figure 2-12: Healthy Places Index Score for North County CMCP



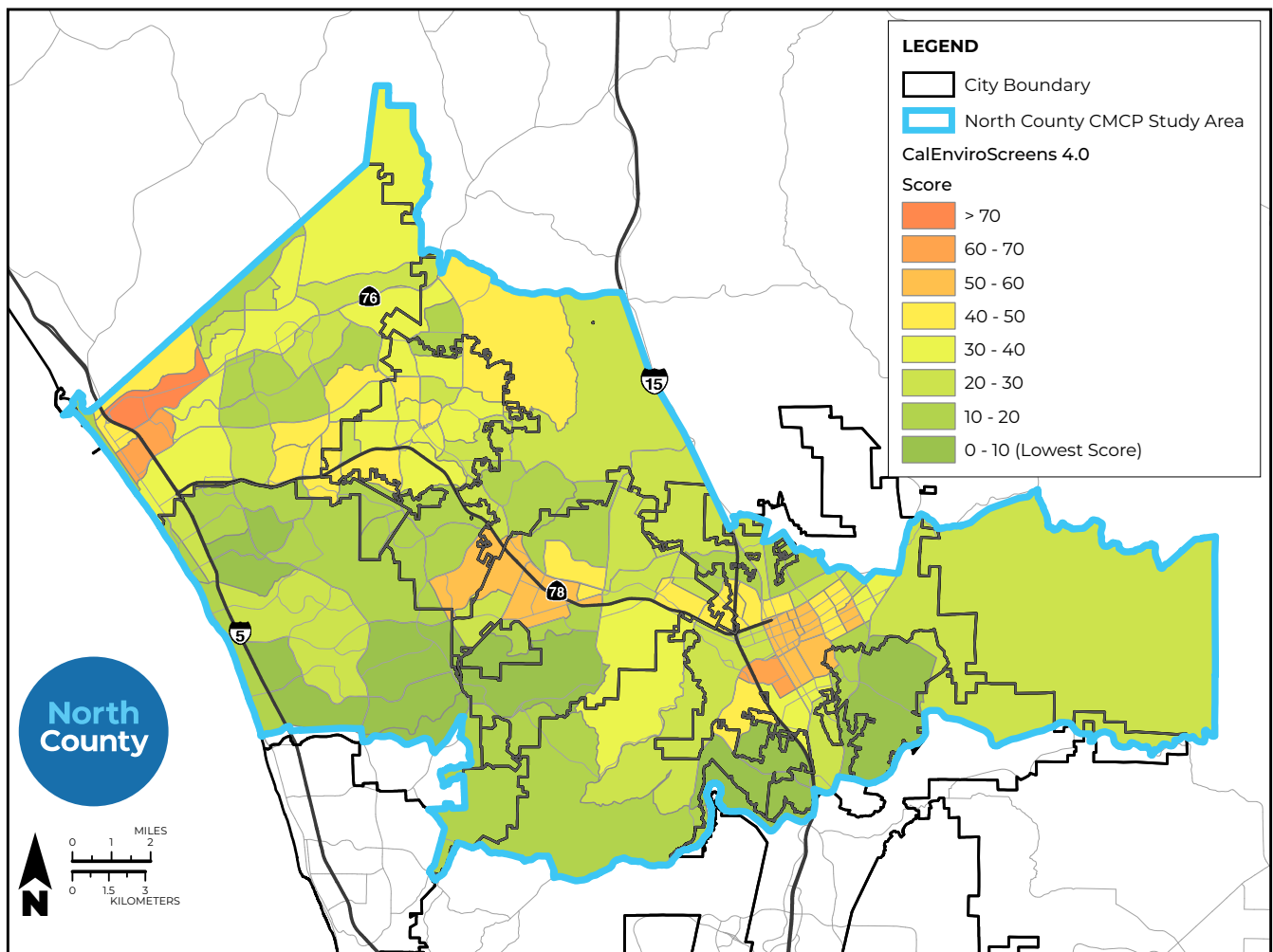
SB 535 and CalEnviro Screen

For the purpose of SB 535, disadvantaged communities are areas that represent the 25% highest scoring census tracts in CalEnviroScreen 4.0, census tracts previously identified in the top 25% in CalEnviroScreen 3.0, census tracts with high amounts of pollution and low populations, and federally recognized tribal areas as identified by the Census in the 2021 American Indian Areas Related National Geodatabase.

Using SB 535, there are no communities identified as disadvantaged within the Study area. Also, there are no census tracts that score in the top 25% of CalEnviroScreen 4.0—criteria for a tract to be identified as disadvantaged.

However, **Figure 2-13** shows that downtown Escondido and Oceanside score higher than the surrounding communities indicating higher cumulative impacts as a result of pollution exposure.

Figure 2-13: CalEnviroScreen 4.0 Score for North County CMCP

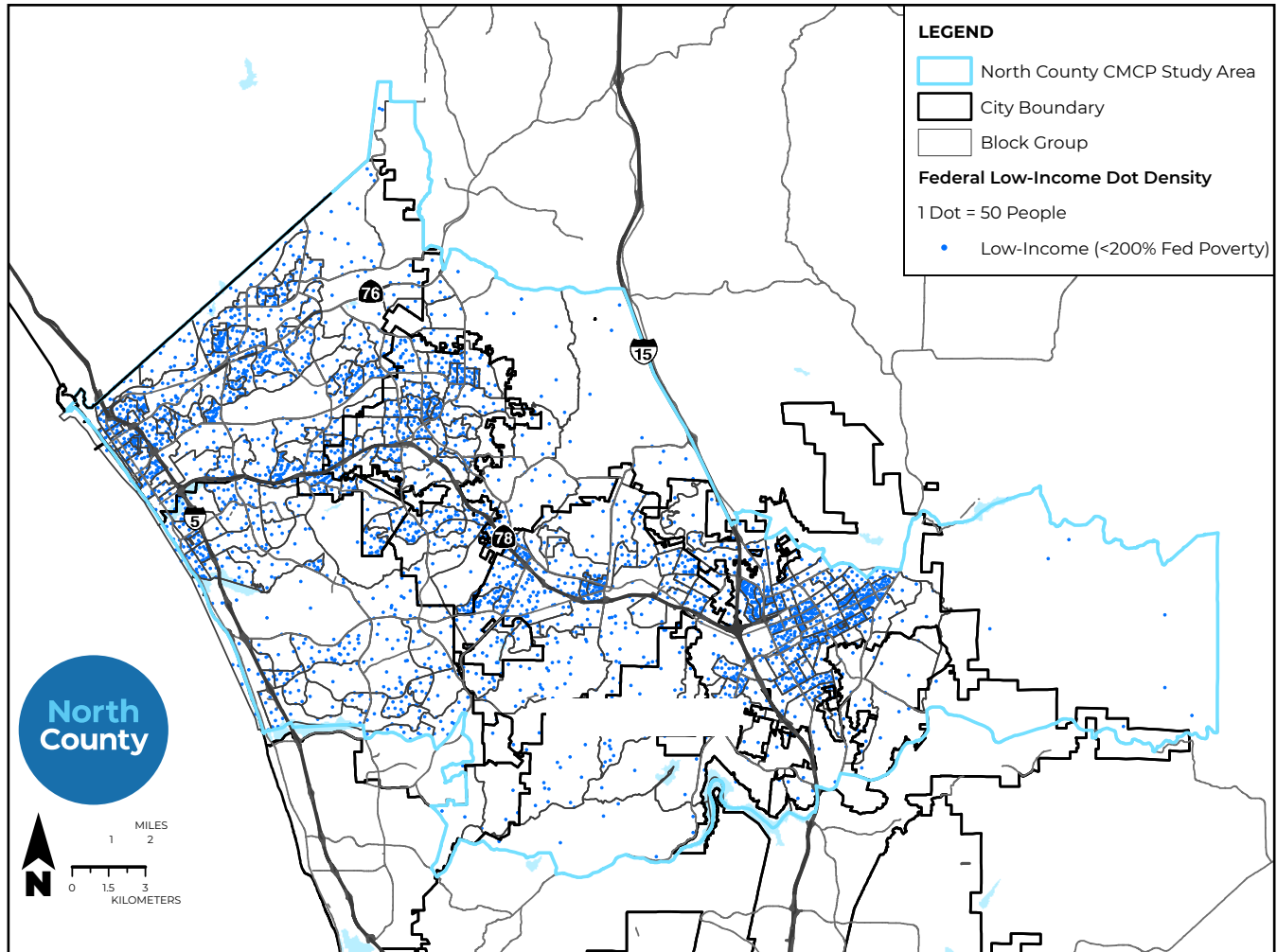


Low-Income Communities

Low-Income Defined by Poverty

Through the lens of low-income, for a family of four in North County, the threshold for “low-income” cannot exceed 200% of \$26,500 (i.e., \$53,000). The low-income population is based on reported incomes of 200% of the Federal Poverty Level. A substantial portion of the study area is considered low-income (28%). There are concentrations of low-income households in the cities of Oceanside, Vista, San Marcos, and Escondido (see **Figure 2-14**).

Figure 2-14: Federal Low-Income Population (2019)

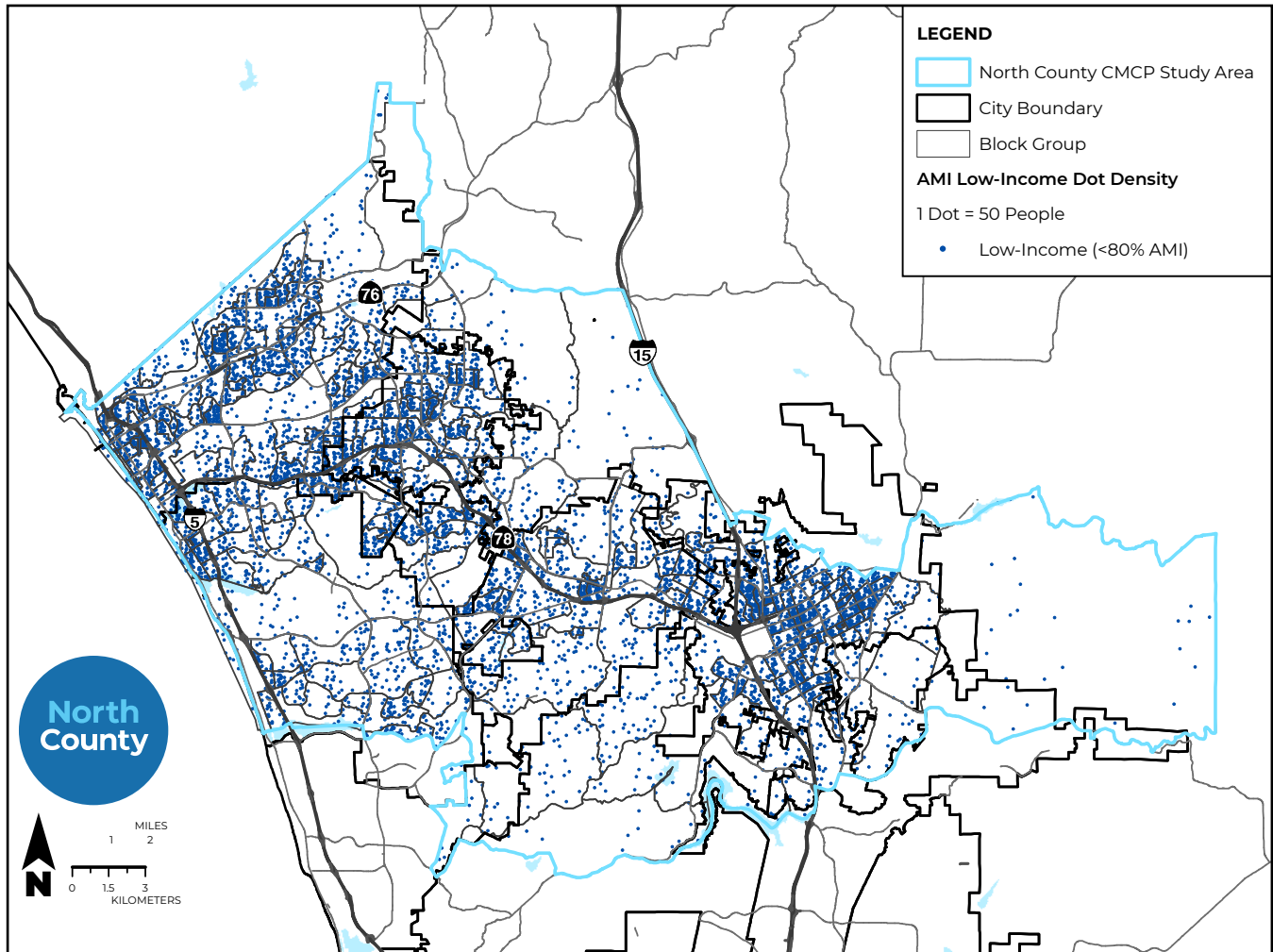


Low-Income Defined by Affordability of Housing

The second definition of low-income is on the threshold designated by HCD’s State Income Limits. The HCD State Income Limits vary by household size for each county and provide income thresholds for “Extremely Low,” “Very Low,” “Low,” “Median,” and “Moderate” income categories. AB 1550 refers to the “Low” income thresholds (80% of County of San Diego AMI) within this dataset.

Figure 2-15 demonstrates the larger proportion of North County’s population meeting HCD’s definition of a “low-income” household. This shows that a larger portion of North County’s population is categorized as low-income with regards to housing affordability due to higher housing costs in the region.

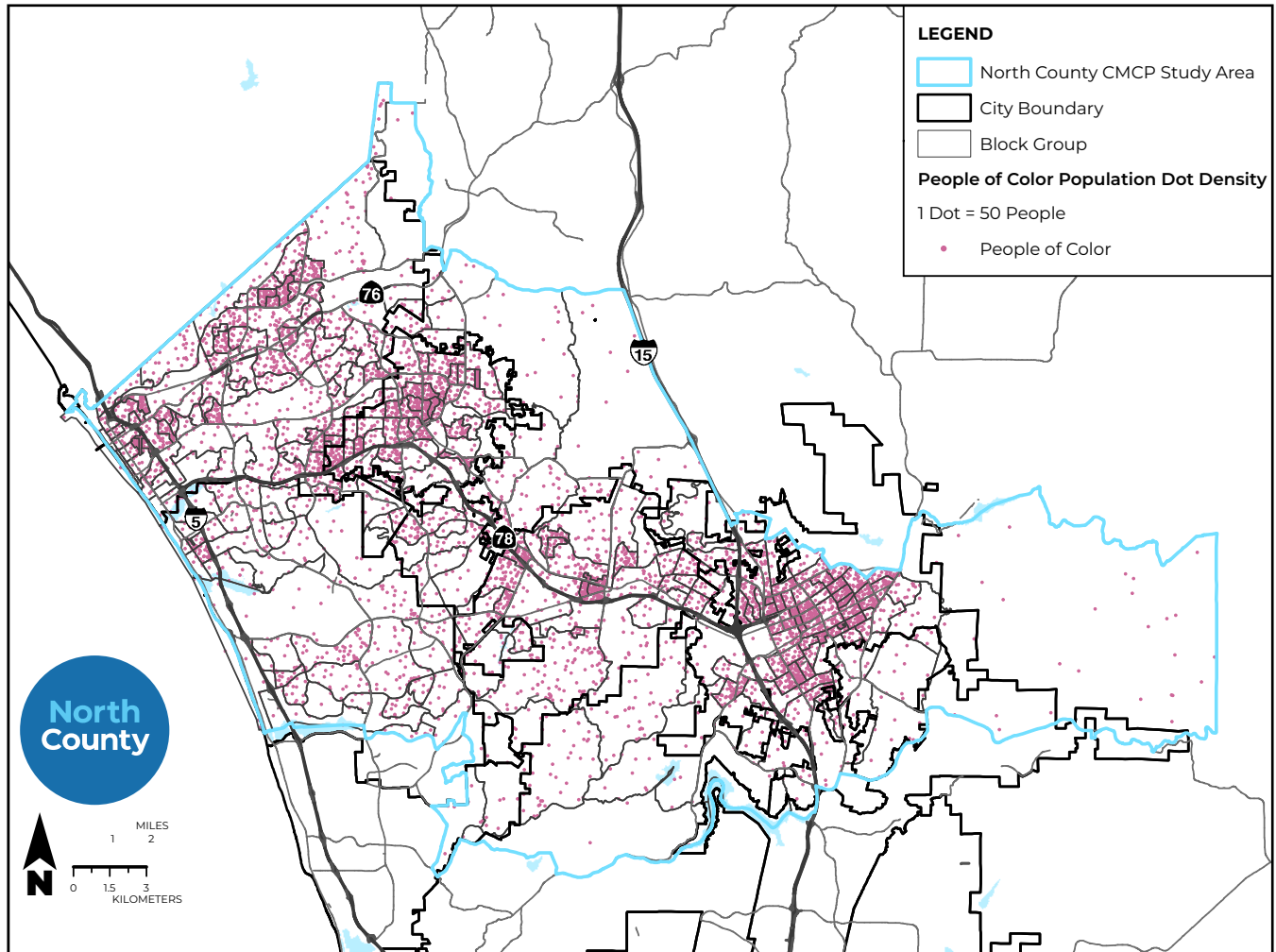
Figure 2-15: Housing-Defined Low-Income Population (2019)



People of Color

People of Color are persons who identify as non-white or Hispanic. This group has been historically underrepresented in planning processes. Understanding where these populations are concentrated can help to ensure that transportation projects and programs do not impose adverse impacts on People of Color communities, but rather support and better connect them. More than half of the population within the study area identifies as People of Color. There are higher concentrations of People of Color in the cities of Oceanside, Vista, San Marcos, and Escondido (see **Figure 2-16**).

Figure 2-16: People of Color Population(2019)





North County's Mobility Hubs

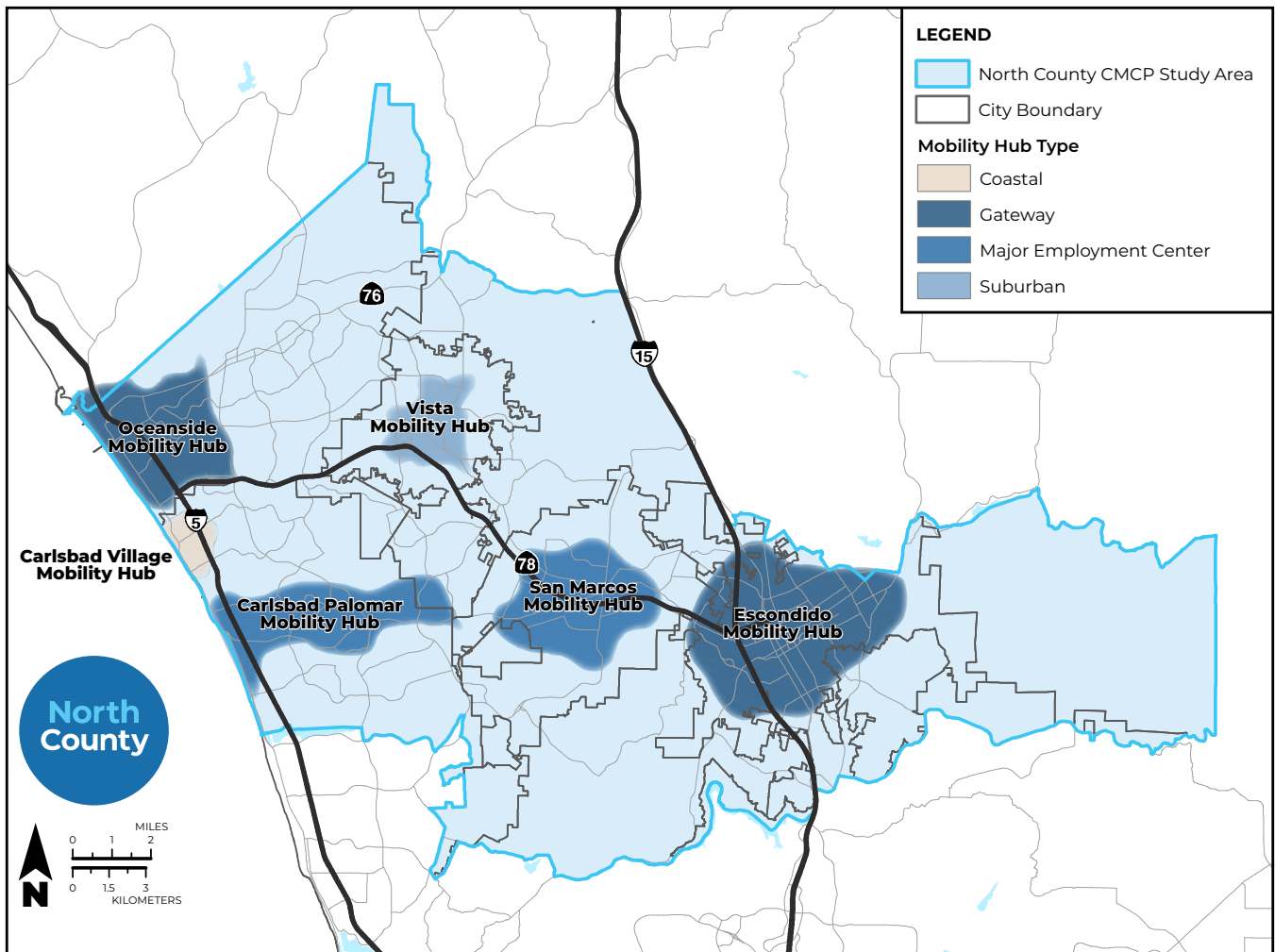
Situated within North County are multiple regional and interregional destinations including job centers, education institutions, recreational destinations, and medical centers. As mentioned above, land development patterns have created pockets and concentrations of industrial/commercial centers throughout the study area. These areas of concentrated activity—housing, employment, key destinations/attractors—represent North County's mobility hubs and potential zones for focused transportation and mobility service improvements.

A large portion of the travel demand within North County is associated with North County's mobility hubs. The following mobility hubs have been identified for North County: Oceanside, Carlsbad Village, Carlsbad Palomar, Vista, San Marcos, and Escondido (Figure 2-17).

Mobility hubs include places with a high concentration of activity that can serve as points of connection where different travel options come together to provide an integrated suite of mobility services, amenities, and supporting technologies that help users travel between their start and end destinations.

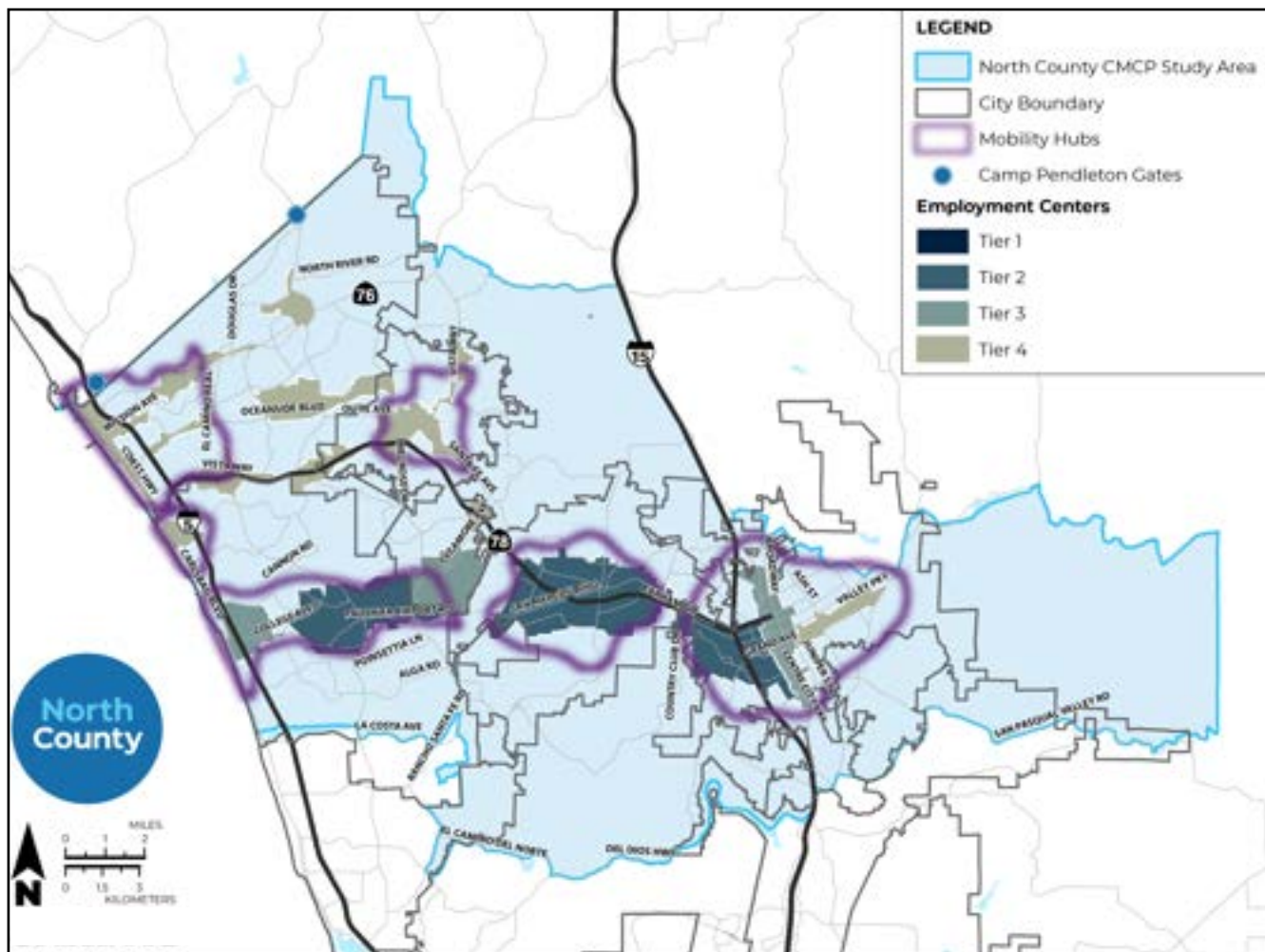


Figure 2-17: North County CMCP Mobility Hubs



North County’s mobility hubs have a high concentration of people and destinations. As part of SANDAG’s 2021 Regional Plan, identified employment centers helped identify North County’s mobility hubs as shown in **Figure 2-18**.

Figure 2-18: SANDAG Employment Tiers in Study Area by Mobility Hubs



Source: SANDAG 2021 Regional Vision – 5 Big Moves



The relatively small land area (20% of North County's land acreage) highlights the efficiency of these activity centers in providing housing and job centers. The six mobility hubs identified above account for 40% of the population and about 66% of jobs in North County. Furthermore, the mobility hubs include a higher proportion of People of Color, low-income, and senior populations. **Table 2-3** below breaks down the different community population numbers of how the mobility hubs influence the North County Study Area.






North County's mobility hubs encompass:

- » 40% of total population
- » 66% of employment
- » 47% of People of Color population
- » 51% of low-income population
- » 35% of 75+-year old senior population



These mobility hubs will be important in leveraging activity for future transportation strategies, planning, and implementation.

Table 2-3: Population Characteristics of Mobility Hubs

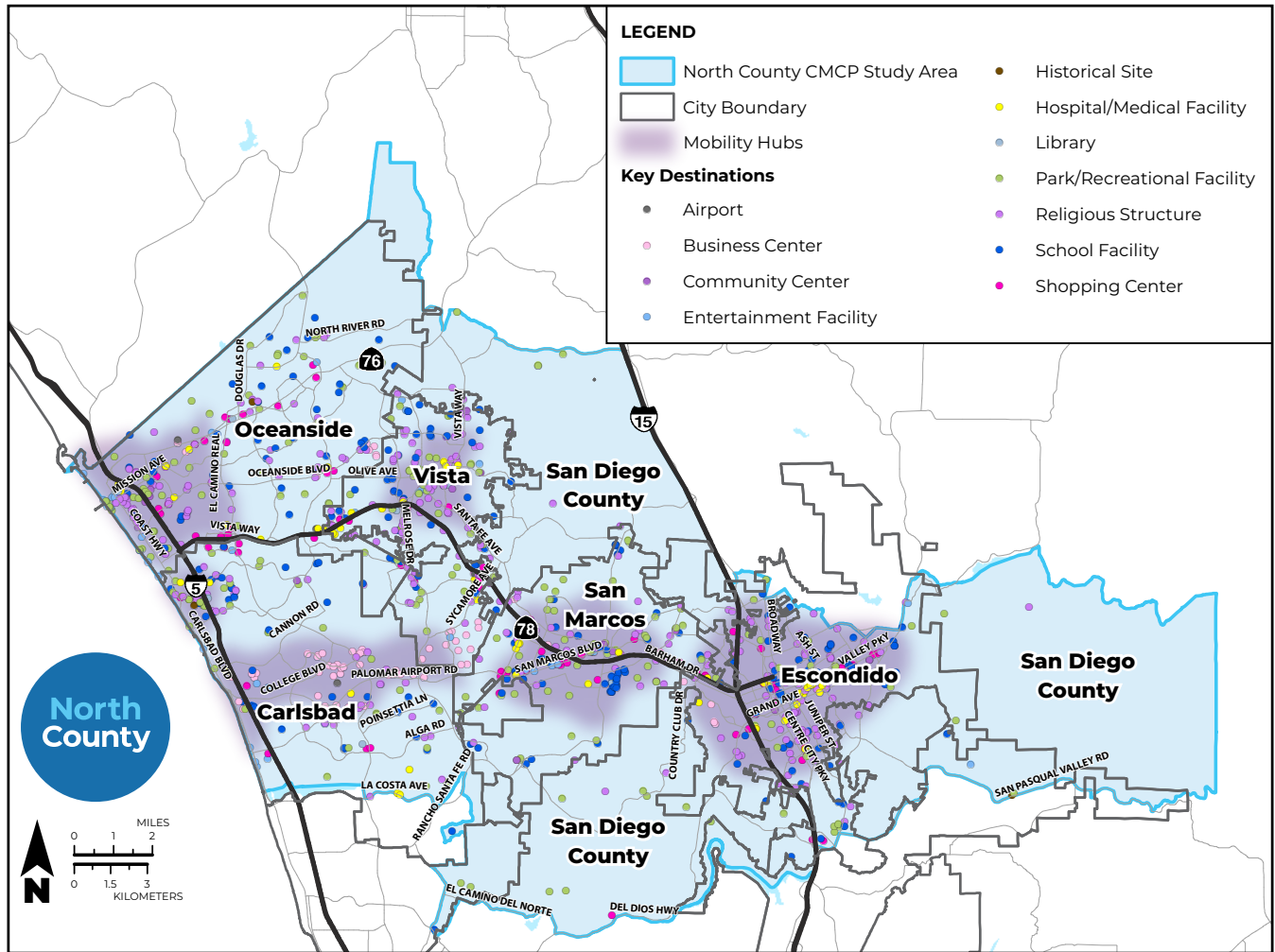
| | |  Population |  Jobs |  People of Color Population |  Low-Income Population |  Senior Population |
|------|------------------------------|--|--|--|---|---|
| 2016 | Mobility Hubs Influence | 262,920 | 181,215 | 160,064 | 111,215 | 13,984 |
| | Study Area | 656,984 | 274,831 | 340,750 | 217,897 | 40,083 |
| | Mobility Hubs Capture | 40% | 66% | 47% | 51% | 35% |
| 2050 | Mobility Hubs Capture | 43% | 67% | 45% | 54% | 40% |

Source: SANDAG DS39 Forecast Estimates (2021)

The mobility hubs also contain several types of key destinations such as entertainment facilities, community centers, business centers, schools, shopping centers, hospitals/medical facilities, civic facilities, and religious structures (see **Figure 2-19**).



Figure 2-19: Regional Attractions and Destinations





Understanding North County Travel Patterns

This section will explore how the general North County population travels, and for commuters, depend on the transportation and mobility systems for accessing housing and jobs. This section will include an analysis of where people:

- Live and work/study in North County;
- Live in North County and work outside of North County; and
- Live outside of North County and work in North County.

As noted above, understanding the travel patterns within, into, and out of the study area will identify important origins and destinations, important nodes, and key links.

NORTH COUNTY TRAVEL PATTERNS

As previously shown in Chapter 1, North County is at the center of a mega region that connects the study area to other parts of the region and adjacent counties. When considering this mega region and trips associated with North County, the following is a breakdown of trips:

- | | | | |
|-----------------------------------|-------|--|------|
| • Within Study Area Only | 69.2% | • Riverside/San Bernardino County (I-15) | 3.3% |
| • Coastal San Diego (I-5) | 11.7% | • East County/Imperial County | 2.5% |
| • Inland San Diego (I-15) | 6.1% | • Southern San Diego | 2.3% |
| • Orange/Los Angeles County (I-5) | 4.8% | | |

Analyzing travel patterns associated with North County shows that a majority of trips that occur are internal to the study area. This highlights the importance of enhancing the transportation network within North County.



Average commute trip length is 10.0 miles.



Approximately 70% of all weekday trips associated with North County (either origin or destination), start and end in North County while 15% of trips begin in or end within North County. Of the total weekday trips, approximately 20% of the trips are commute trips. Of the 20% commute trips, 60% of trips occur within the study area while 20% of trips flow into and/or out of the study area. Of the 80% non-commute trips, 70% of trips occur within the study area while 15% of trips flow into and/or out of the study area. For both commute and non-commute trips, a significant majority of trips begin and end within the study area.

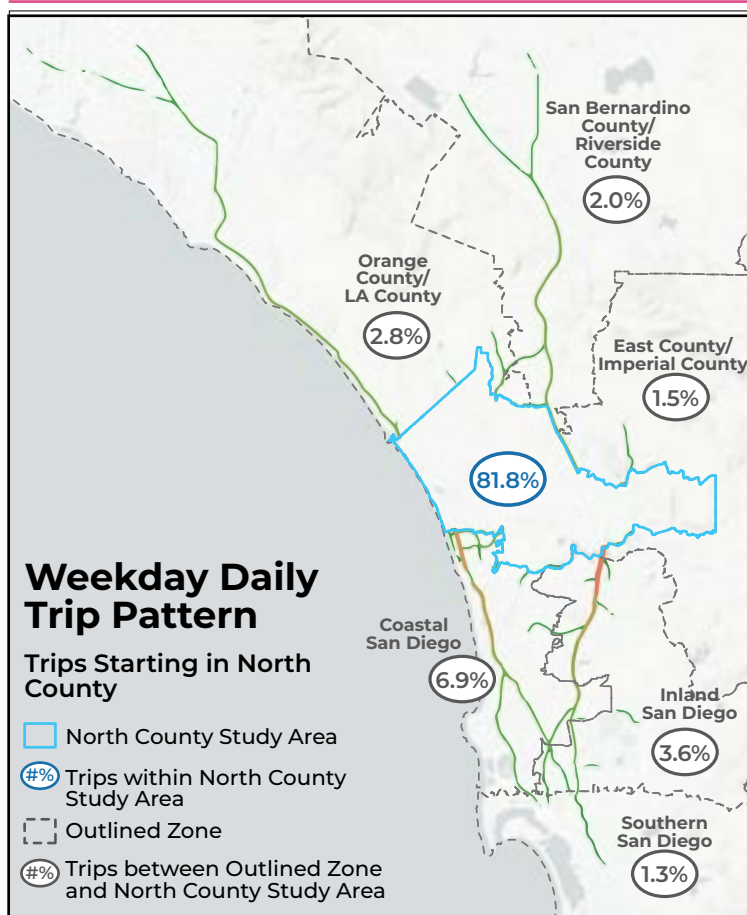
Commute Only Trip

All Day **Peak AM**

1 in 5 **1 in 3**

of total weekday trips during 24 hours *of total weekday trips during 6am-10am*

Figure 2-20: Weekday Daily Trip Pattern for Trips that Start in North County



Source: 2019 Streetlight Analytics

Figure 2-20 shows the total trips within the North County Study Area, and total trips that end in the various regions surrounding North County. When trips start in North County, 82% end within North County. This is followed by Coastal San Diego at 6.9%, the I-15 Corridor (San Diego) at 3.7%, and Orange County at 2.8%.

Weekday Statistics

Average of **2.3M trips per day**

Average Trip Lengths

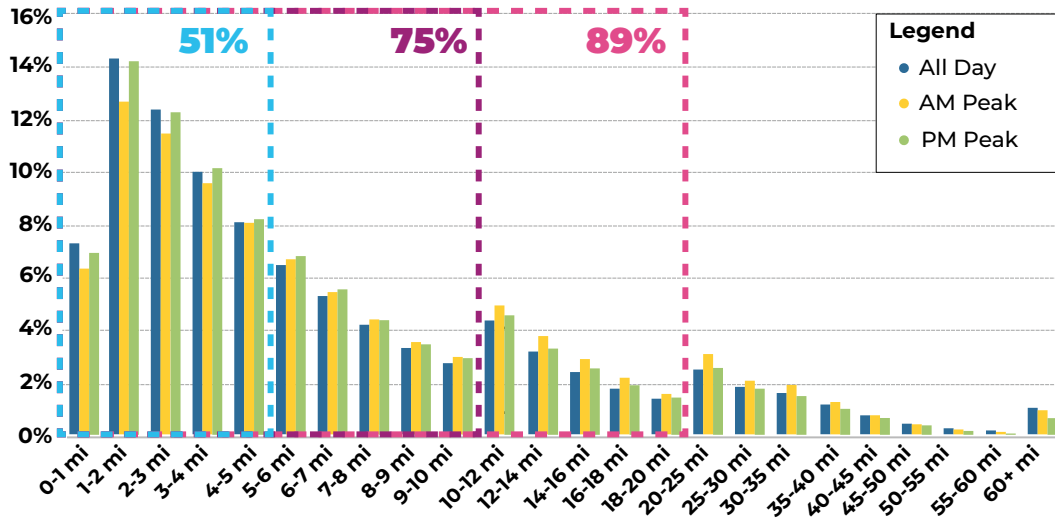
Trip Starts or Ends in North County: 11.6 miles

Internal Study Area Trips: 5.3 miles

External Study Area Trips: 25.6

The majority of trips are less than 10 miles, reinforcing that a majority of trips are contained within the study area. About 75% of trips are less than 10 miles, and about 51% of trips are less than 5 miles (see Figure 2-21). The high number of short trips highlights the need for improving local arterials and the active transportation network to provide an opportunity for a modal shift and increasing the efficiency of the transportation network.

Figure 2-21: Travel Shed Weekday Trip Length



Source: 2018 Streetlight Analytics

The majority of trips within North County are to neighboring community demand instead of end-to-end. There are strong connections between the following city pairs:

- Carlsbad and Oceanside
- San Marcos and Escondido
- Vista and Oceanside
- San Marcos and unincorporated San Diego County
- Vista and unincorporated San Diego County

Additional information about the travel patterns in North County can be found in **Appendix R**.

TRAVEL FROM OUTSIDE OF NORTH COUNTY

Due to its location at the center of a mega region, it is important to also understand travel from other regions into North County.

As the region surrounding North County continues to grow, North County's position as a throughway from between the San Diego, Riverside, and Orange counties could become more prominent, thereby increasing the need for more efficient regional transportation through the study area.

For work-based trips:

- » 49% of study area jobs are filled | by people who live outside the study area



2019 Location Based Service (LBS) transportation data focused on work based travel

- » 52% percent of North County residents work outside of the study area

2019 Location Based Service (LBS) transportation data focused on work based travel

North County's Mobility Hub Travel Patterns

The following mobility hubs have been identified as important areas in the community with regards to both activity and connectivity. The following is a review of mobility hub “Carlsbad Palomar Mobility Hub” in the North County community and describes the travel demand and top paths to and from the mobility hubs. The travel demand represents the total daily trips to, from, and within the mobility hub. The top corridor paths to and from the mobility hub have also been highlighted to show the roads most heavily used and can provide insight on where access could be improved.

Carlsbad Palomar Mobility Hub

Carlsbad Palomar is designated as a Tier 2 Employment Center due to its industrial area and the McClellan-Palomar Airport. Additional activity generators in this area include the Legoland Resort and Theme Park. Transit connects in this area via the Coaster Station located along the oceanfront.

Figure 2-22: Top Routes To and From Carlsbad Palomar Mobility Hub



Source: 2018 Streetlight Analytics

Table 2-4: Travel Patterns of Carlsbad Palomar Mobility Hub

| CARLSBAD PALOMAR MOBILITY HUB TRAVEL DEMAND | | TOP CORRIDOR PATHS TO AND FROM THE CARLSBAD PALOMAR MOBILITY HUB: |
|---|-------|---|
| Within Mobility Hub | 16.8% | <ul style="list-style-type: none"> • I-5 • SR 78 • El Camino Real • College Boulevard • Palomar Airport Road • Melrose Drive • San Marcos Boulevard • Sycamore Avenue |
| Within Study Area | 62.5% | |
| Inland San Diego | 5.7% | |
| Coastal San Diego | 19.6% | |
| Southern San Diego | 3.7% | |
| Riverside County/San Bernardino County | 3.0% | |
| Imperial County/East County | 0.6% | |
| Orange County/LA County | 4.9% | |

Source: 2018 Streetlight Analytics



Key Takeaways

The assessment of corridor characteristics can be summarized in the following key takeaways:

- ▲ **Housing, Jobs, and Transportation Network Alignment:** The current housing and job distribution do not align with the key regional transportation network (SR 78 and SPRINTER); instead, they are aligned with North County's arterial network.
- ▲ **Anticipated Growth:** The number of people and jobs within the study area will continue to grow. While the transportation network must be improved to support projected growth, it must also be planned for adaptability should growth occur at a faster pace or in areas not identified as growth hotspots.
- ▲ **Building a Relationship between Land Use and Transportation:** The five cities of North County have already started to mix land uses and activities in concentrated areas (i.e., North County's mobility hubs), where growth hotspots in housing and jobs are anticipated over the next 30 years. By 2050, the concentration of activity and planned future activity in North County's mobility hubs will house 43% of North County's population, continue to site two-thirds (67%) of jobs, and will experience an increase in low-income (54%) and senior (40%) populations.
- ▲ **Predominant Travel within Study Area:** The analysis of travel patterns in the study area shows that a majority of trips that start in North County also end in North County highlighting the need to improve the transportation network within the study area.

North County will have challenges in the future as the population continues to grow not solely related to commuter travel. In fact, the data shows that the majority of trips within and through North County are not related to commute travel. The North County transportation network needs to serve a variety of trip types that include, but are not limited to, commute trips, recreation/social trips, and other family/personal errands. North County's transportation system will need multiple solutions to serve the diverse needs within the community. The high percentage of total trips that occur within the study area and the alignment of North County's arterial network present an opportunity for mobility investments along these corridors to improve efficiency in moving high volumes of people within North County and to the regional rail and highway corridors.

3 MOBILITY ASSESSMENT

Chapter 3 assesses the transportation system deficiencies and their influence on mobility within the subregion. Combining regional/state goals, corridor context, and assessment of the network helps define North County’s key opportunities and constraints related to improving quality of life and meeting the mobility needs of the communities in the subregion.



3 MOBILITY ASSESSMENT

North County’s Mobility Assessment begins with understanding two underlying challenges of the transportation network in the subregion: **connectivity** and **land use patterns**. These two challenges impact users, communities, and local jurisdictions throughout the subregion by creating longer travel times, gaps in modal networks, the need for single-occupancy travel, congested facilities, unreliable transit, and limited travel choices to access North County’s key destinations.

This chapter will detail the impacts of connectivity and land use patterns on the transportation network to inform strategies that will address the needs of the subregion. Additional information about the existing transportation network can be found in **Appendix E**.



SR 78 Freeway
Source: City of San Marcos' Mobility Element

The Mobility Assessment is organized as follows:

User Experience



Feedback and results from the engagement and collaboration process defined in Chapter 1 including:

- Anecdotal experiences identifying a symptom or series of symptoms resulting from key underlying challenges of the transportation network
- Technical and stakeholder feedback on transportation and mobility needs

Transportation System Assessment



There are two underpinning areas of function and policy that contribute directly to how the transportation system ultimately performs: connectivity and land use patterns. These two areas are where the challenges of the transportation system exist and create resulting outcomes on the transportation network.

This portion of the chapter focuses on the technical review of existing evidence on the performance of the system—based on inputs from both the engagement and assessment practices.

User Experiences in North County

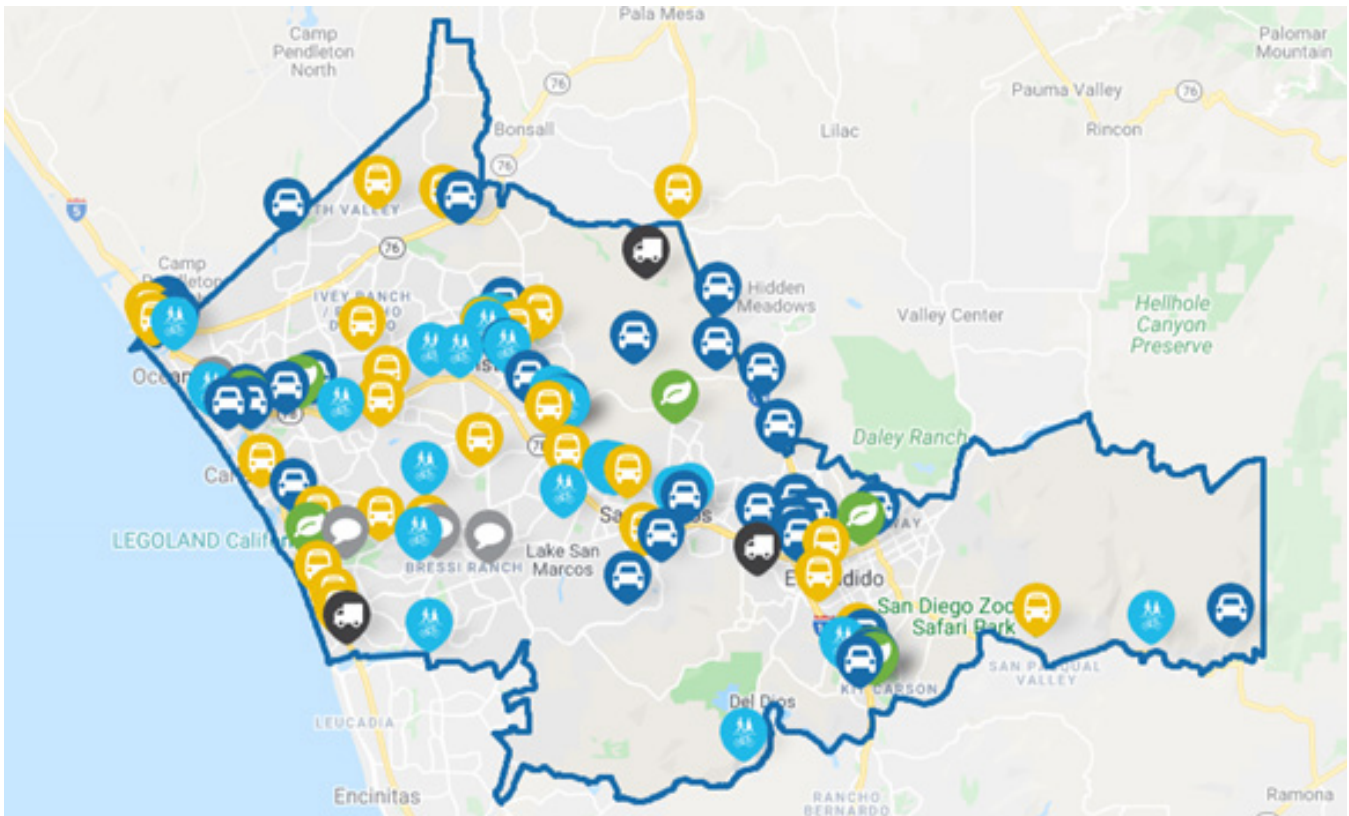
User experience starts with the users themselves. **Anecdotes and experiences were shared by North County users throughout the development of the CMCP**—stakeholder meetings, public meetings, Social Pinpoint website, and online surveys created to gather input on transportation concerns, priorities, and ideas for North County.

This section explores the input and feedback provided by North County users across the study area’s communities and the variety of transportation experiences.

An Engaged North County

North County’s CMCP received over 1,000 survey responses were received or from people/community members throughout the subregion.

Figure 3-1: Interactive Map on North County CMCP Social Pinpoint Virtual Engagement Hub



Participants and respondents noted their experience with transportation in North County through the virtual engagement hub. Below are the key themes identified from the responses.

- Major interchanges are congested and noisy
- Residential and employment centers are dispersed across North County
- Short distance trips are difficult to make around the major roads and freeways
- Access to transit stations and stops is difficult
- Lack of east-west transit routes and unreliable (low-frequency) service
- Connections across freeway and railroads are difficult for people who walk or bike
- Congested street and highway networks
- Limited choices for different users (e.g., seniors, students)



Public Responses and Experiences

Below are some key insights from the public regarding the range of transportation challenges, concerns, and needs—including infrastructure, process, and resources issues.

“Congestion in both directions for SR 78 between the SR 78/I-15 interchange and Rancho Santa Fe Road exists consistently... this is one of the worst stretches of freeway in the country.”

“COASTER and BREEZE service needs to run more often...catching the train or bus becomes a major project rather than providing freedom of movement.”

“76 is the main route for Southern Riverside County workers to get to San Diego jobs.”

“I live 0.6 miles from a shopping center and there is no safe, reasonable way to walk there.”

“Take into account retirees' use, which is different from commuter use. Older adults will continue to drive if there are no other options...”

“One huge priority to me has been able to have some type of bench and shade at our bus stops. And also have some type of night light stop locations at for safety of the community.”

“Streets are designed for minimal walkability and are auto-centric.”“Destinations are too far apart.”

“I would love to see faster/more frequent SPRINTER service. I live within walking distance of a Sprinter station but never use it because it only runs every 30 minutes and does not serve Downtown Carlsbad.”

“I work in this industrial park and I take the bus to the Coaster station. It is really dangerous that there are no sidewalks on any of the streets around North County.”

It does rain in San Diego County. There are few transit stops with overhead protection.

“Congestion is the #1 reason I do not shop or engage in local community/most of the county. It simply takes way too long to get anywhere and it's not pleasant. Not worth leaving home.”

“Too many delays.”

“The westbound SR 78 to I-5 southbound is difficult to get through and needs to have a completed interchange.”



STAKEHOLDER AND TECHNICAL WORKING GROUPS: EXPERIENCES AND CONCERNS

The working groups communicated their insights regarding the range of transportation challenges, concerns, and needs—including infrastructure, process, and resources issues:

Existing land use adjacent to transit limits effective access and ridership

Leveraging agency resources/efforts to support future city developments

Preparing for evolving vehicle (Bus and SOV) fleet technology

Balance of long/mid-term planning and short-term operations given limited resources

Preparing for future growth and development

Barrier type impacts of I-5, SR 78, I-15 LOSSAN and Sprinter corridors

Improvements for shorter internal trips

Limited or unavailable first- and last-mile connectivity solutions to transit Gaps and barriers as modes come together – in a disjointed, chaotic manner Weak timely east-west alternatives – competitive to vehicles

Complete Inland Rail Trail

Limited connectivity options to Valley Center

Safe and comfortable Active Transportation

Impacts of Riverside to Western side of North County traffic flow on communities

Congestion on SR 78 and SR 76

Competitive access to employment/education and health destinations for social equity focus communities

Technology upgrades and cross agency integration of technology

Regional traffic impacting local communities (at modal interfaces)

Improving connectivity to key local and regional destinations (such as Camp Pendleton, coastal destinations in Oceanside/Carlsbad, Cal State San Marcos)

Support for mobility zone improvements and/or evolving corridors such as Coast Highway, Oceanside Boulevard and Centre City Parkway



Corridor Performance Assessment and Related Outcomes

The North County corridor performance assessment intends to determine the magnitude of the transportation and mobility challenges for North County’s users through a technical review of transportation data. Where subsequent sections explore the nuances as to how and why the conditions of North County led to deficiencies in the system, this section focuses on the principal metrics that directly relate to transportation system performance:

- **Safety**
- **Travel Time**
- **Mode Share**
- **Vehicle Miles Traveled**
- **Reliability**

PERFORMANCE ASSESSMENT: SAFETY

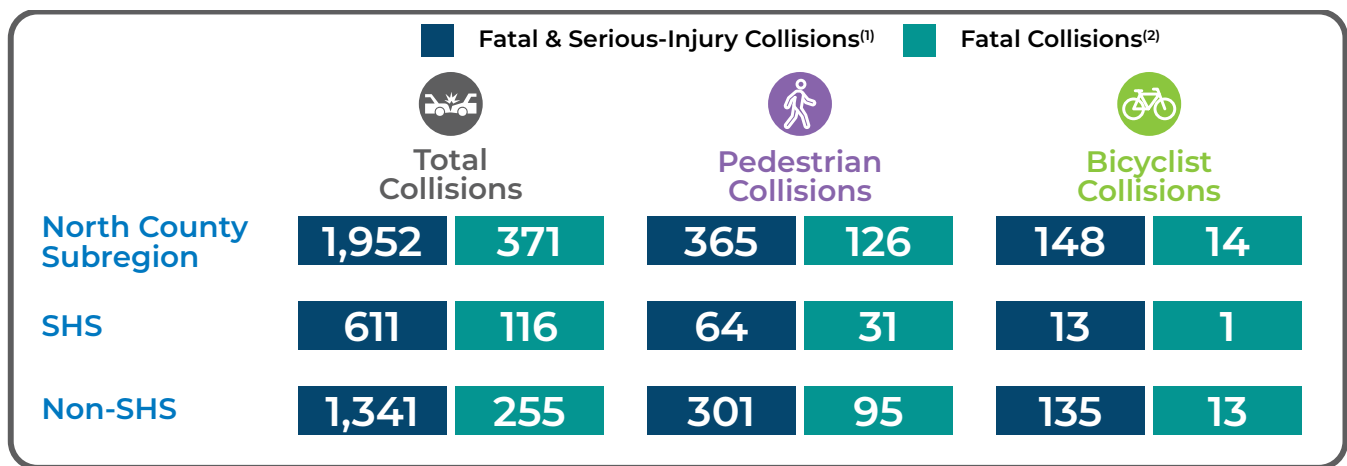
Over the last 10 years, there have been more than 50,000 documented collisions in the subregion, resulting in 390 fatalities and over 1,000 serious injuries. Analyzing the collisions that resulted in fatalities and serious injuries in more depth demonstrate that:

- Despite recent advances in vehicle technology, fatal and serious-injury accidents have not decreased due to several factors, including increase in distracted drivers or more frequent interaction between vehicles and cyclists/pedestrians;
- Unprotected users—pedestrians, bicyclists, and scooters—account for approximately 38% of the fatal collisions in the study area; and
- Despite the freeway system (State Highway System [SHS]) carrying large volumes of users at high speeds, almost 70% of the serious collisions occurred on city streets and 30% of those occurred in intersections.

Collisions affect all road users, those involved in the collision and the other road users delayed. Improved safety will mean an improved transportation experience for all users of the transportation system.

Additional information regarding the safety analysis results can be found **Appendix M**.

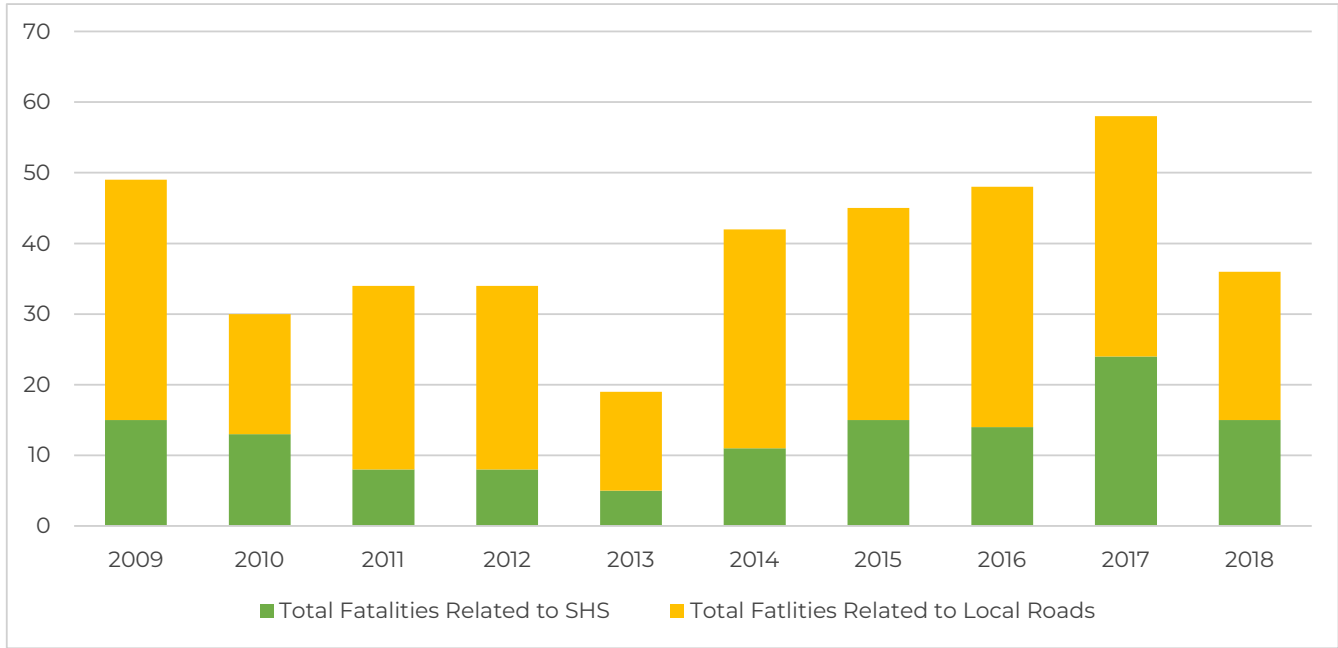
Figure 3-2: Study Area Collision Summary for Serious and Fatal Collisions



Source: (1) Transportation Injury Mapping System (TIMS) 2009-2018 (2) FARS 2009-2018

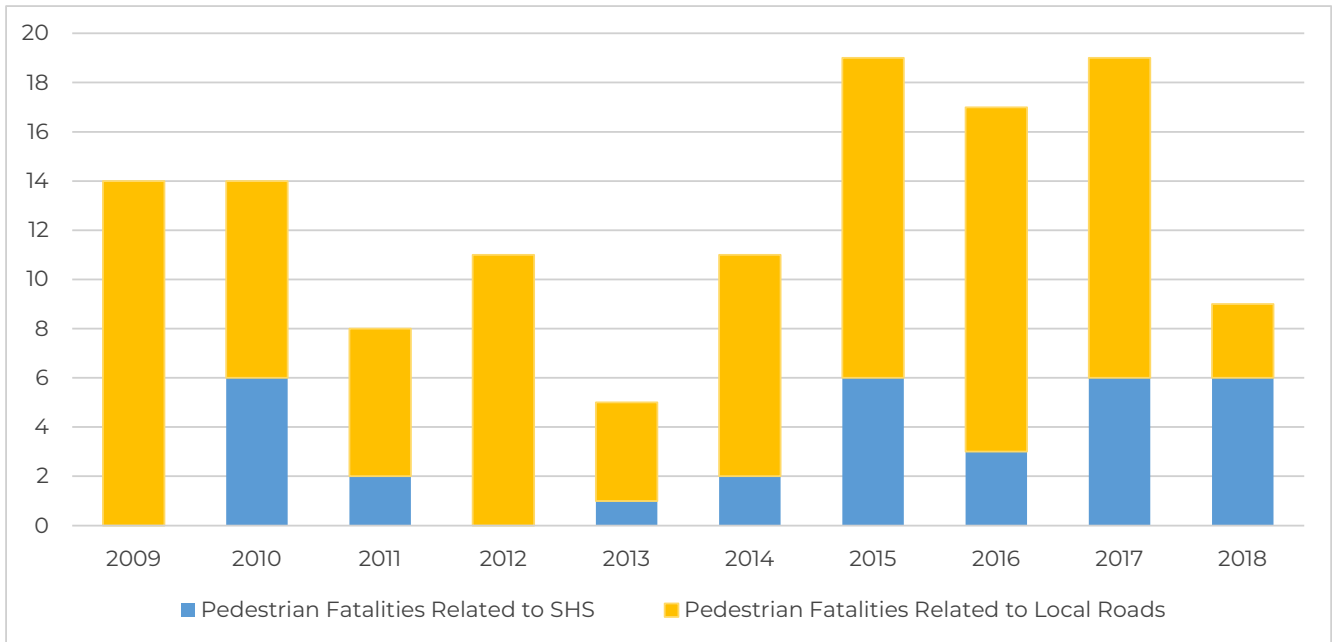


Figure 3-3: Fatalities Related to State Highway System (SHS) and Local Roads in Study Area



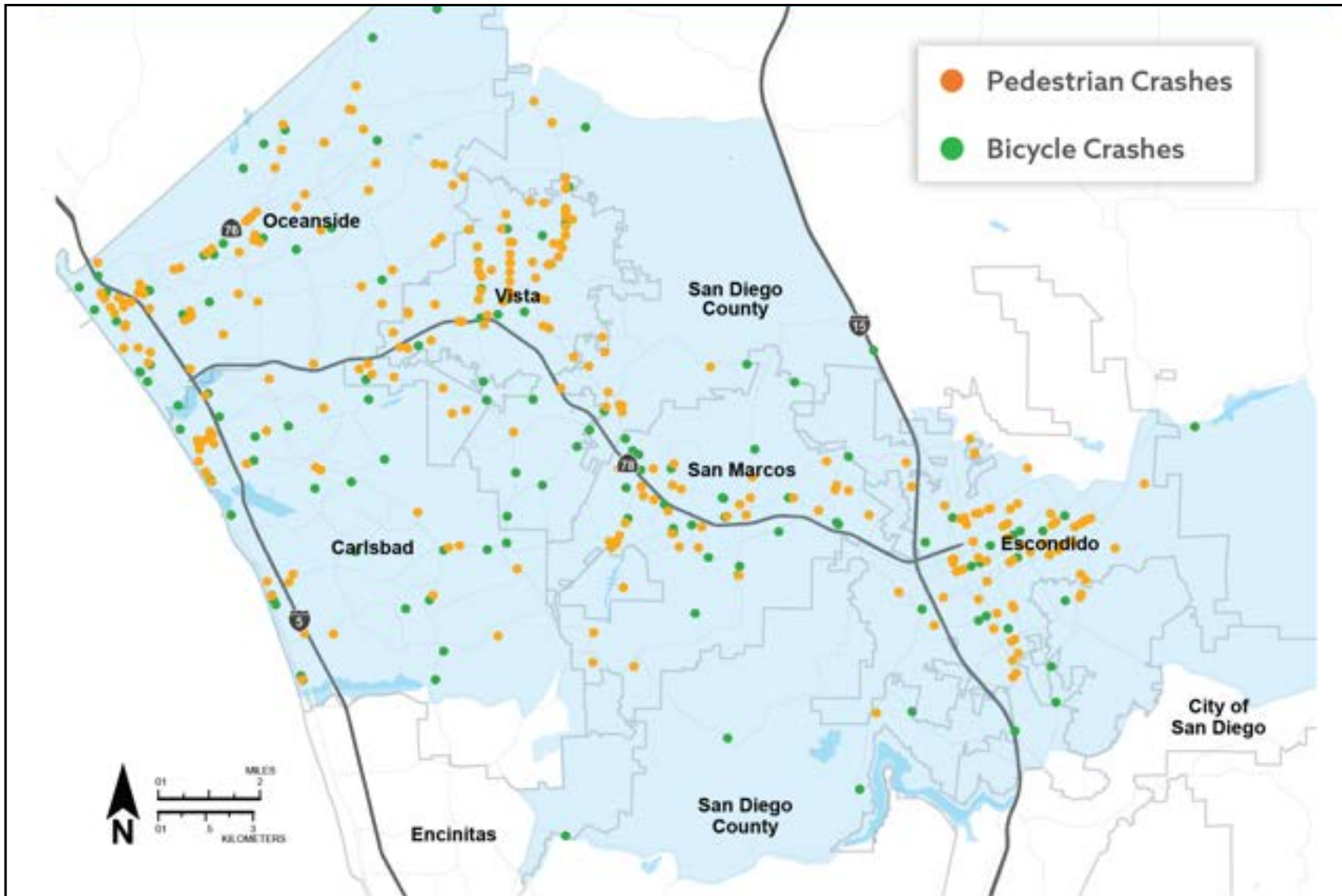
Source: Fatality Analysis Reporting System (FARS) 2009-2018

Figure 3-4: Pedestrian Fatalities Related to State Highway System (SHS) and Local Roads in Study Area



Source: FARS (2009-2018)

Figure 3-5: Study Area Local Roads Fatal and Serious Injury Collision (Pedestrians and Bicycle)



Source: TIMS (2009-2018)



PERFORMANCE ASSESSMENT: TRAVEL TIME

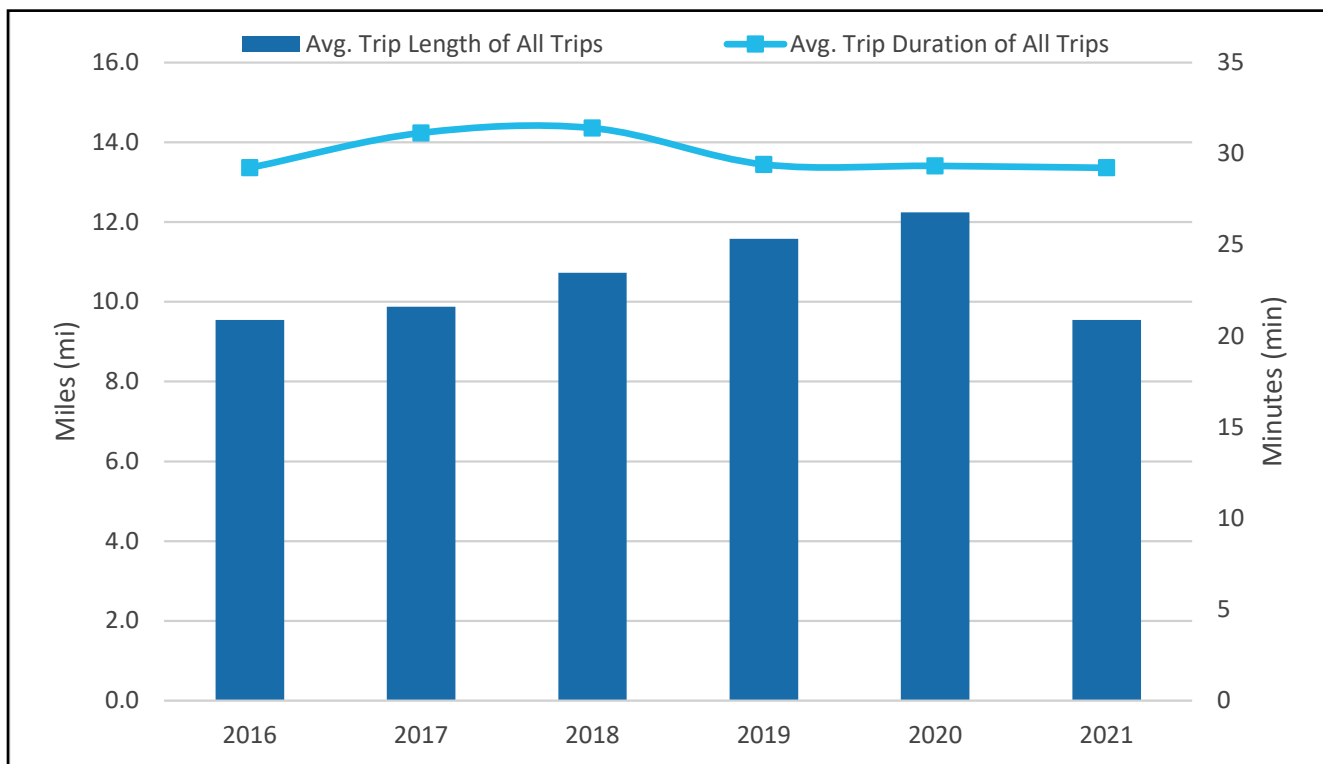
Total travel time is a key performance metric that captures the total “door-to-door” time spent traveling to work, school, shopping, and recreation. Travel time is a metric that can compare the competitiveness of various modes and the impact transportation has on a community’s quality of life. Additional information about travel time in the subregion can be found in **Appendix T**.

Travel time is influenced by a range of factors including:

- Length of trip
- Frequency of travel
- Congestion
- Transit frequency
- System reliability
- First and last mile accessibility

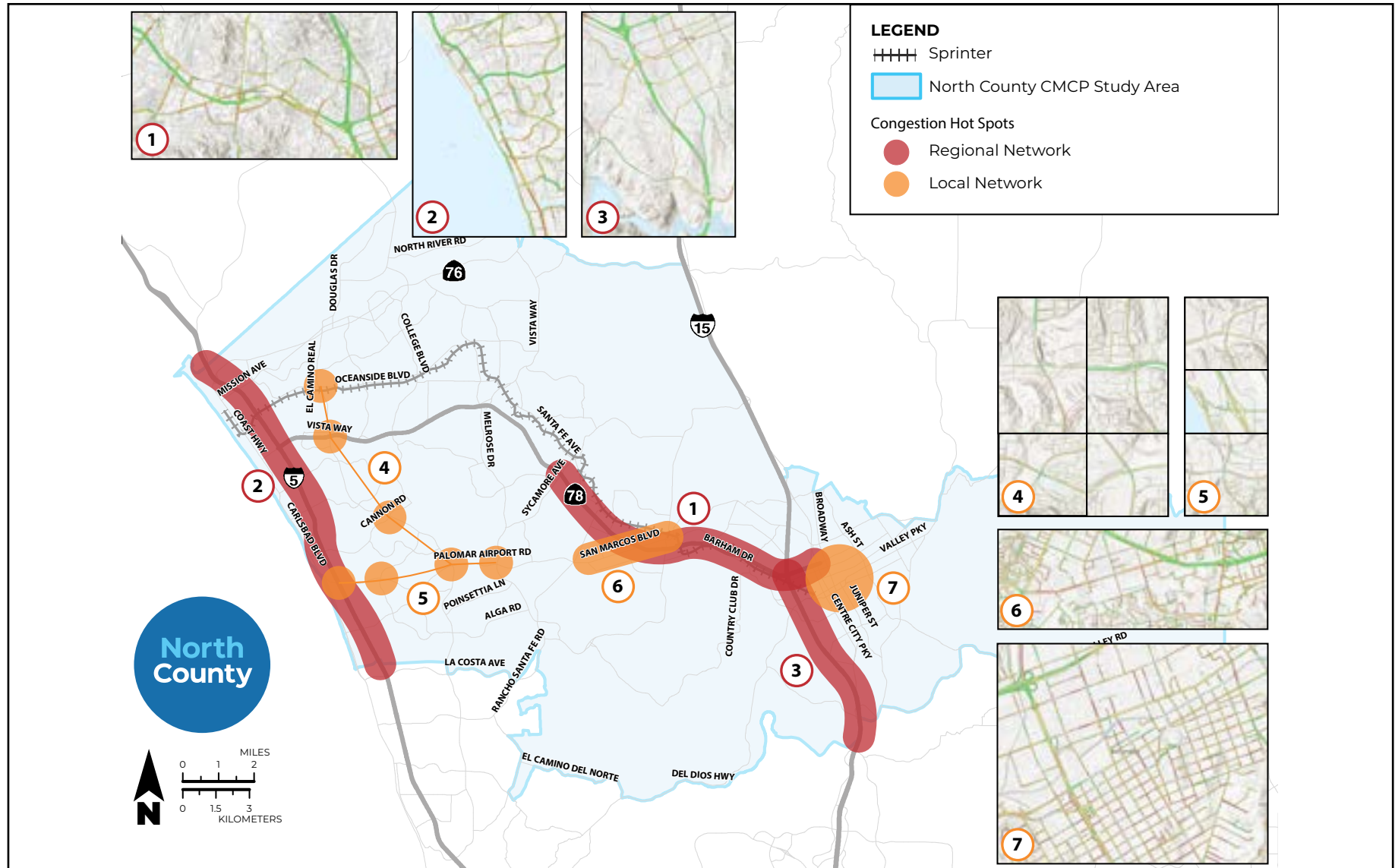
For trips starting and ending in the North County subregion, travelers spend 1.3M hours travelling a day—this equates to two (2) hours per capita. Prior to COVID, **trips to and from work were approximately 15 miles long and 30 minutes in duration**. While trip length and duration has decreased since the onset of the pandemic due to new trends, such as working remotely, it is still to be seen whether trip lengths and durations will return or even outgrow trips taken prior to COVID-19. For example, there are several studies showing that there is more trips being taken at peak times because people working from home are taking more trips and doing so at rush hour times, thereby leading to more congestion. The growth in North County has increased the demand on the transportation system and resulted in congestion. Between 2015 and 2019, North County trips had an average increase of two minutes in travel time. Congestion hot spots are highlighted in **Figure 3-6** and detailed in **Appendix P**.

Figure 3-6: Annual Estimated Trip Length and Trip Duration



Source: Streetlight Analytics

Figure 3-7: North County's Congestion Hot Spots (March 2019)



Source: HERE, Esri; Caltrans District 11 Mobility Performance Report (Quarterly Reports, 2019-2022)



PERFORMANCE ASSESSMENT: MODE SHARE

The predominant mobility option in the study area used to commute to work¹² is driving alone (Figure 3-8). Approximately 79% of residents reported driving alone as their commute method for work, followed by carpooling (8 percent), and working from home (7%). Active transportation and transit comprise about 4% of people’s commute choice, demonstrating that these options are not competitive with driving alone. For all day trips, Figure 3-9 shows the mode split where driving is the preferred mode but distributed: 47% driving alone, 44% carpooling, with active transportation and transit comprising of 8%. A summary of mode share data be found in Appendix O.

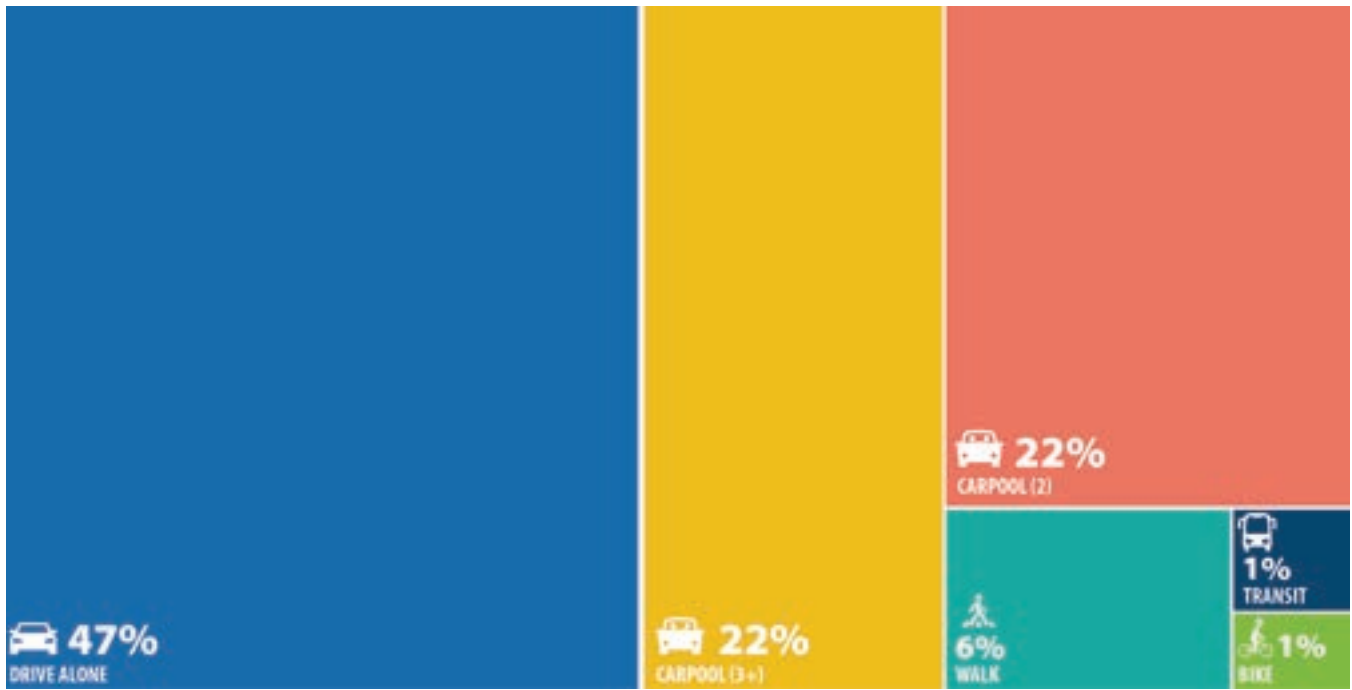
Figure 3-8: Mode Distribution – Means of Transportation to Work (2019)



Source: American Community Survey (ACS) 2019 5-Year Estimates

¹² Forecasted mode share will include commute and all-day mode splits.

Figure 3-9: Mode Distribution – Means of Transportation for All Trips (2016)



Source: SANDAG Regional Model, DS 39 Model Estimates

In terms of daily trip volume, below are a few examples of key corridors/services within North County from 2019:

Highways

- SR 78 – 140,000 trips
- SR 76 – 47,000 trips
- I-5 – 220,000 trips

Arterials

- Palomar Airport Road – 60,000 trips
- El Camino Real – 56,000 trips

Transit

- COASTER – 5,100 Boardings
- SPRINTER – 7,800 Boardings
- Breeze Route 301 – 2,300 Boardings
- Breeze Route 303 – 3,100 Boardings
- Rapid 235 – 5,800 Boardings



Performance Assessment: Vehicle Miles Traveled (VMT) Growth

VMT can be calculated and monitored using two methods—each providing insights on how infrastructure and operational improvement influence North County.

- » **Trip Origin/Destination Based** – Sums total lengths for trips starting or ending within a study area. This method includes distance traveled outside of study area but does not account for trips going “through” the study area.

Will be used as the primary method throughout the CMCP with the exception of greenhouse gas emissions.

- » **Trip Segment Based** – Sums the lengths of trip segments within study area boundaries. This method does not include distance traveled outside of study area but does account for trips going “through” the study area.

Was used in this CMCP to assess greenhouse gas emissions.

For the existing transportation system, prior to the COVID pandemic, North County saw daily vehicle miles traveled (VMT) of 26.6 million. North County’s VMT dipped to 21.1 million in 2020 before rebounding to 24 million in 2021. Analyzing in more depth North County’s 2019 trips VMT data¹³ revealed the following:

- Trips entirely within North County account for a smaller share (30%) of the VMT when compared to the share (70%) **of trips starting or ending within the study area.**
- Trips from the neighboring regions of Coastal San Diego, Inland San Diego, Orange/Los Angeles, and Riverside/San Bernardino contributed more than 66% of the VMT.
- Emerging from the pandemic, the share of VMT from longer distance trips from outside San Diego County dropped by almost 45% (i.e., trip accounted for ±26% of VMT in 2018 to ±14.5% in 2021)—most likely due to jobs changes, retirements, and work from home options.
- By 2050, VMT will increase. This shows economic growth happening within the area and subregions to North County.

*VMT is affected by mode split, length of trips, and frequency of travel. VMT can be reduced by **improving the competitiveness of alternative modes and by better aligning housing, employment, and other key destinations.***

More opportunities to live and work within North County reduce trip length and consequently reduce VMT.



Additional information about the VMT analysis performed for the subregion can be found in **Appendix Q**.

¹³ Total VMT includes all miles for the vehicle-based trips—both outside and within study area boundaries—and does not include transit or active transportation trips.



VMT by Internal vs. External Trip Types

With North County performing better than expected, the next step is understanding how different types of trips contribute to VMT performance and identify the markets/trips that can help reduce VMT per capita today and as the subregion grows into the future.

Internal Trips 70% of Trips | 30% of VMT → Shorter trips and lower VMT
External Trips 30% of Trips | 70% of VMT → Five times longer than internal trips



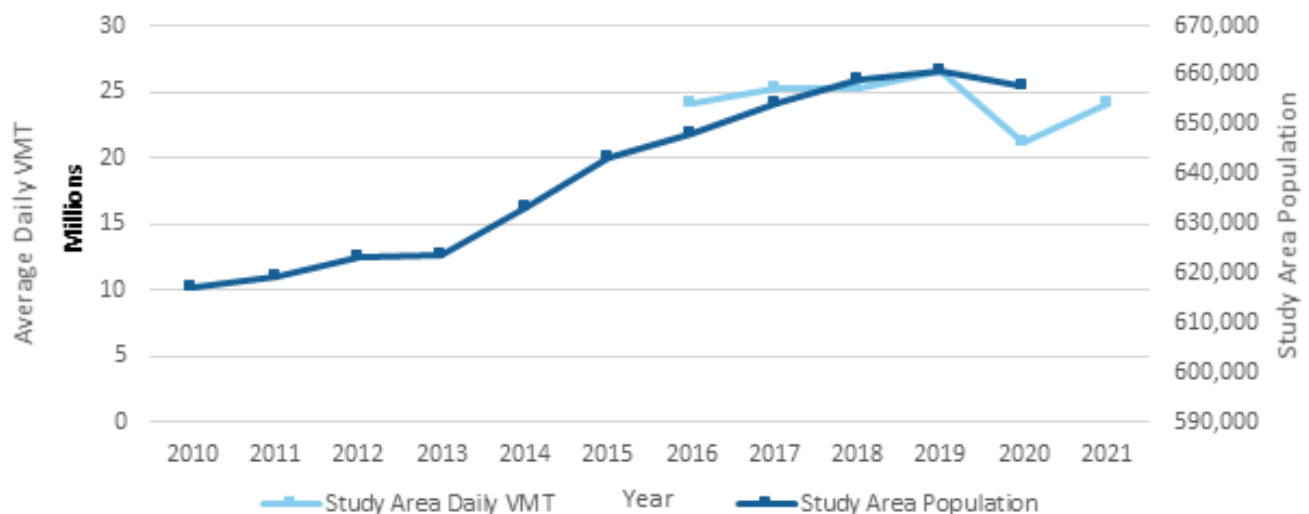
With external trips on average being five times longer the internal trips, the following can be inferred on trip length alone:

- External trips have the “higher” opportunity to reduce per capita VMT today when switching to other modes
- The percentage of internal trips needs to increase higher than 70% needs to grow higher than 70% to reduce average trip lengths and have more multimodal options to travel

VMT, Population, and Employment

VMT can be paired with total person trips, population or employment growth to ensure that VMT is placed into the larger subregional context. Having lower VMT alone isn't a positive indicator—for example, lower VMT could be a result of fewer trips due to a pandemic, economic recession, or other macro-level influences. However, if VMT is lower and total person trips are higher, this can be indication of a more efficient travel (e.g., shorter trips, improved mode share) or other factors leading to fewer vehicular trips. below is an example of how daily VMT can be tracked with population over time—along with a graph on how total trips along SR 78 compares to population.

Figure 3-10: Daily VMT and Population Over Time (2010 – 2019)



Source: Streetlight Analytics

Figure 3-11 and **Figure 3-12** represent the average employee and resident (respectively), non-commercial, vehicle travel made on an average weekday. Both figures show in shades of green locations (i.e., census tracts) where the VMT is 50-85% of the Regional Mean—a large portion North of SR 78 and in Escondido. For North County residents, the areas shaded in green coincide with North County’s activity centers and the region’s potential mobility hubs/zones. These figures illustrate how North County performs better than the region for VMT per employee and similarly to the region for VMT per capita.

North County having lower VMT per capita and per employee, is consistent with subregional context characteristics: a well-contained area with all types of development—urban, suburban, and rural—providing shorter distance travel than the greater San Diego Region. The improved balance between housing and employment over the last 20 years results in improved VMT performance of North County.

Figure 3-11: SB 743 Maps by Employee

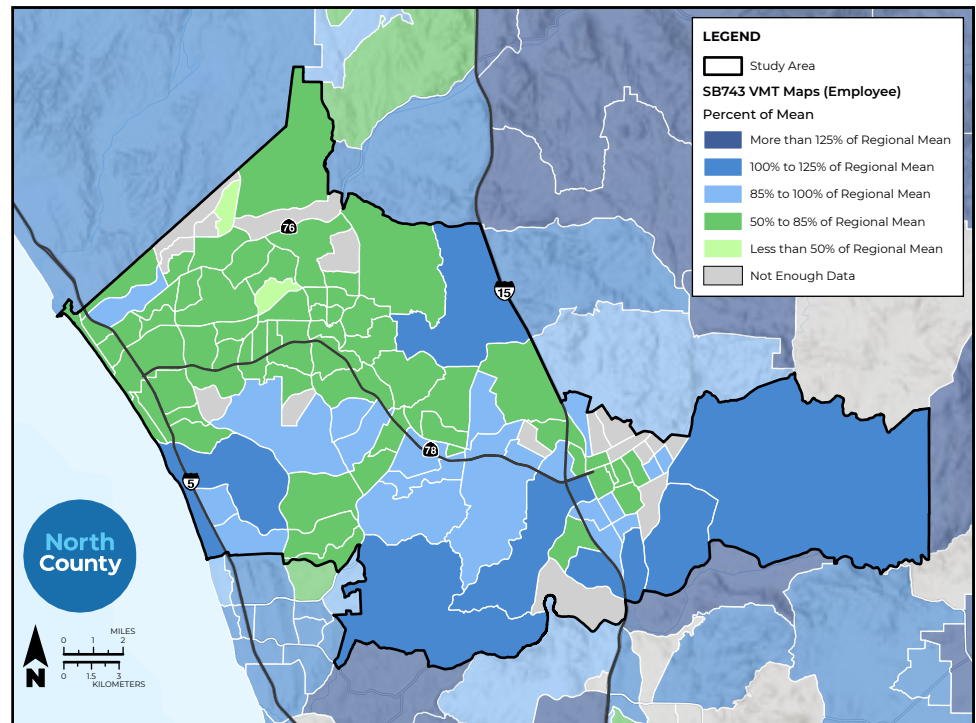
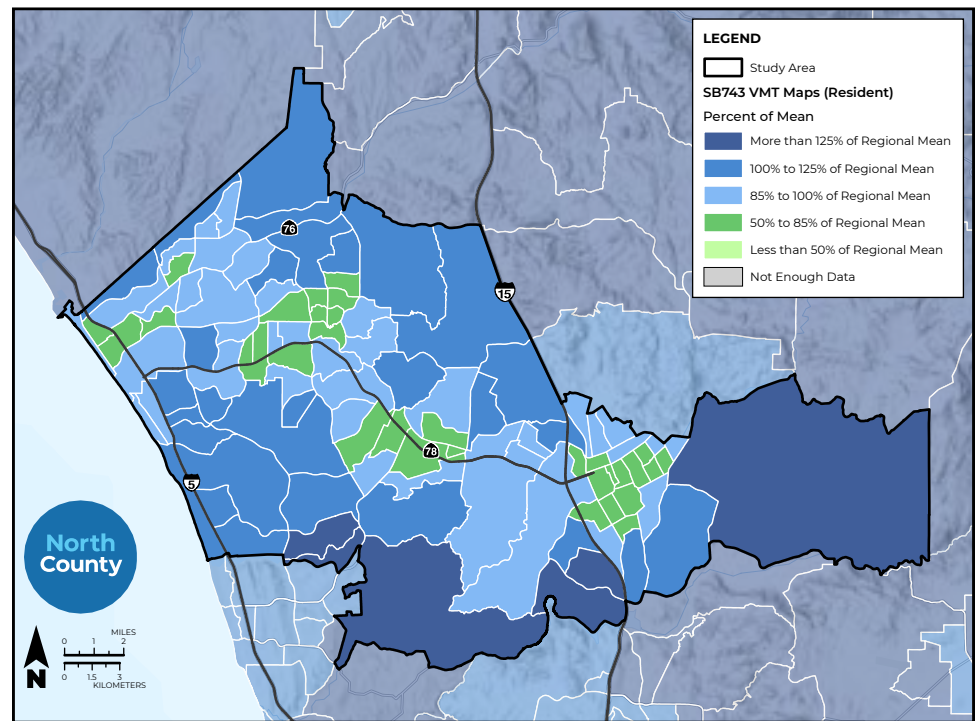


Figure 3-12: SB 743 Maps per Capita





PERFORMANCE ASSESSMENT: SYSTEM RELIABILITY

Travelers build buffer time into their total trip time (“planned trip time”) to account for disruptions like roadway conditions, weather, construction, crashes, special events, and unexpected traffic. Consistent travel time can be planned for travelers by adjusting their departure times for trips that may take longer than usual—creating greater assurance of on-time arrivals.

On SR 78 and major arterials, travel times can vary by almost twice the “free flow” conditions.



If traffic conditions are volatile (or transit times are perceived to have poor on-time performance and travel time), travelers will budget even more time to their trip—taking away from other priorities—or not take the trip at all. The inability to rely on the transportation system for consistent travel creates an unreliable and untenable transportation network.

Long travel times, indirect bus routes, and delays, coupled with the limited and indirect transit routes, create a perception of unreliability of the existing transit system. These inconsistent roadway conditions affect NCTD’s Breeze bus service where on-time performance was 88% in 2019—further limiting the effectiveness of transit as a reliable option.

On the other hand, SPRINTER has a great on-time performance of 98% in 2019; however, the service is limited by single-track rail for over half of the corridor. The lack of two tracks across SPRINTER results in lower frequency and thereby longer door-to-door travel times.

Transit service is generally reliable, but with lower service frequency; therefore, users may spend more time waiting if transit schedules do not match their departure/arrival times. This is in contrast to users’ experience with freeways—where travelers can access the freeways whenever they like but high traffic volumes and collisions can lead to unpredictable, unreliable travel times requiring more “planned travel time.”

Reliability Example: Travel from downtown San Marcos to downtown Escondido

- » Via SR 78 can take 12-24 minutes in the afternoon rush hour—requiring a planning time of at least 25 minutes
- » SPRINTER can take 15 minutes reliably (with 98% on-time arrival) but has only 30-minute frequency—therefore planning time for the trip would be at least 30 minutes





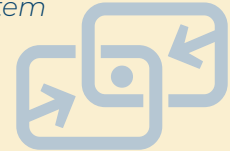
Structural Challenges and Observations

The performance assessments above highlight the range of current performance in the corridor. The transportation system challenges are not limited to a single facility, a single mode, traveler types, or specific communities; root causes are not isolated to any one issue. It is a combination of interrelated factors that lead to the the mobility experience of North County's communities and users.

From the above performance assessments, this CMCP has the following observations:

- **Users Spend Too Much Time Traveling** – Longer trips, congestion hot spots, and traffic spillover contribute to longer travel times.
- **Improved Facilities and Operations Management are Needed to Reduce Collisions** – North County needs transportation facilities that are safe for all users to travel on to reduce collisions (and their severity) on highways and arterials.
- **Current Transportation System is Unreliable** – Users see the transportation system being unreliable because of inconsistent service, congestion, and unpredictable travel times.

Land Use and Connectivity are the underlying infrastructure challenges that contribute to the transportation experience in North County. The interplay between the two influence how the entire transportation system performs and successfully meets the future needs of the subregion.



The underlying infrastructure challenges that directly influence the transportation and mobility outcomes in the North County corridor can be summarized:

- **Challenge #1 - Land Use Patterns** – Due to significant growth over the past 30 years and previous General Plan land use practices, much of the development (commercial and residential) was unmixed/separated creating the need for longer trips on North County's roadways.
- **Challenge #2 - Regional Facilities are Not Aligned with Major Employment Centers** – Many large employment centers are miles away from regional transportation facilities further exacerbating network congestion.
- **Challenge #3 - Connectivity Gaps/Barriers in the Transportation Network Means Less Choices for Traveling** – Gaps in the transportation network (infrastructure or service) leads to diverted trips to other facilities.
- **Challenge #4 - Transit is Difficult to Access and Use in North County** – Hard-to-access or declining transit services limit the potential for transit to play a larger role in improving mobility for North County.
- **Challenge #5 - Major Arterials Serve More Trips Because of Limited North-South Regional Options** – Arterials provide critical connections both east-west and north-south. With only the I-5, I-15, and Coaster/Amtrak providing north-south regional travel options, major arterials provide the conduit of services to connect travelers to their end destination within and outside of North County.



CHALLENGE #1: *LAND USE PATTERNS*

There is a unique relationship between transportation and the built environment. Where connectivity is the relative location of a person or user to a destination, land use patterns facilitate:

- Proximity of trip origin and destination
- Ease of accessing transportation options

Density, clustering, mix, and size of land use types determine where people travel and the number of trips (short and long) they are likely to make. In turn, the design and function of the transportation system affects the ease of mobility for neighborhoods and communities throughout the subregion. The relationship between land use and transportation impacts preferred travel options to get to work, school, the coast, recreational opportunities, and other key destinations as well as future development and growth. For example, low-density of land use activity (i.e., residents and jobs) make it difficult to efficiently operate high-frequency transit to serve the low-density land use.

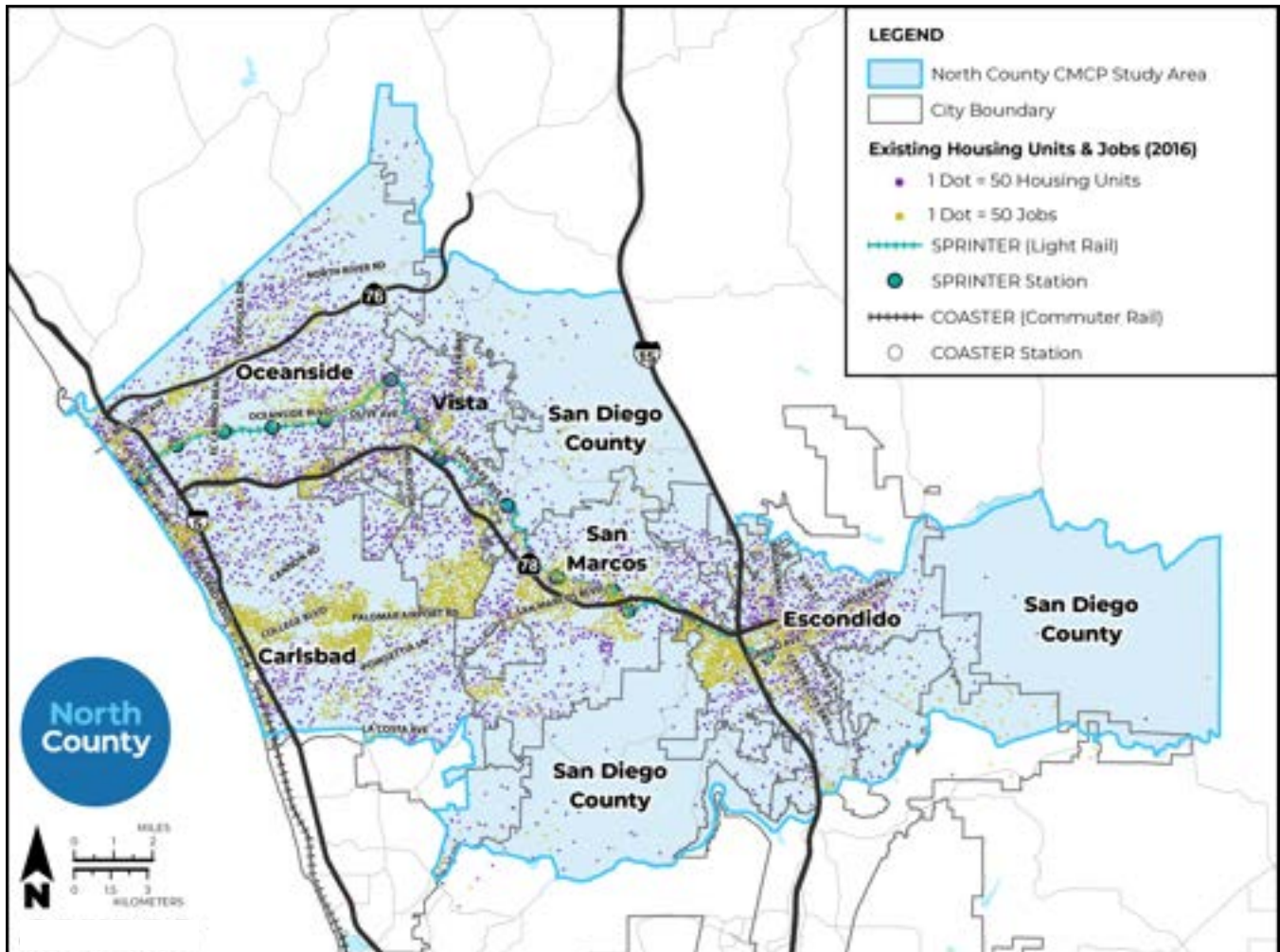
Two key factors regarding land use's influence on transportation are:

- Need for more housing types, affordability, and availability
- Increasingly specialized workforce requiring matching opportunities

North County's transportation system symptoms and deficiencies are intensified by the subregion's significant growth (49% increase in population) over the past 30 years. Development of employment centers and communities were unmixed—and accelerated to keep pace with the growing demand. The resulting land use patterns produced an increasing demand on transportation facilities and longer trips.

Figure 3-13 shows existing housing units and jobs in the subregion. There are large concentrations of jobs in certain areas while housing units are distributed across the subregion. This highlights that housing is physically separated from jobs, making it more difficult to promote walking and biking to and from work.

Figure 3-13: Existing Housing and Jobs Dot Density



Source: SANDAG DS39 Forecast Estimates (2021)

The subregion developed in a suburban manner between 1990 and 2010 resulting in **single-family residential units, commercial strips, and business parks**. Over the last 10 years, North County has seen more transit oriented, mixed-used developments.

Over the last 30 years, the transportation network was localized (adjacent to development) to support the growing land use activity and implemented “immediately” while larger infrastructure required more time to be implemented and utilized by travelers. As mentioned above, the results are the transportation symptoms experienced by users today.

The following factors seen in land use influence the transportation performance experienced today:

- Lower-density development
- Separation of land use types (e.g., residential homes being separated from employment centers)
- Lack of widely available alternative work schedules, telework, and remote work options
- Lack of affordable housing
- Fragmented planning and project coordination across agencies and modes
- Specialized, centralized employment areas in the region



Affordability in Housing Land Use

Travel demands and patterns are influenced by where people choose to live; however, that choice is greatly influenced by housing affordability¹⁴, followed by the proximity of jobs and destinations and transportation costs. As the areas near transit and employment areas become higher in demand and less affordable, many people are compelled to move further away from employment centers and transit-rich areas. When this occurs, people encounter higher transportation costs and longer commutes, resulting in increased VMT.

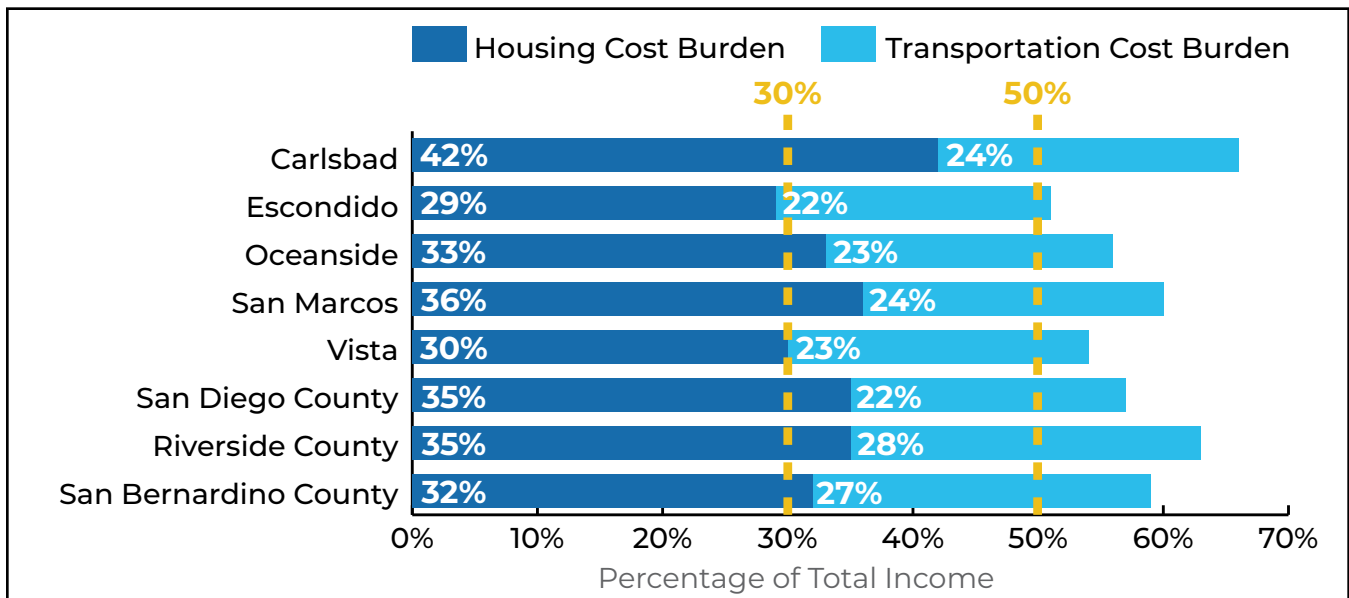
Figure 3-14 shows both a 30% and 50% threshold to demonstrate the average housing and transportation cost burden of cities in the subregion compared to the counties of San Diego, Riverside, and San Bernardino. Only Escondido has a housing cost burden below 30% of income in the subregion. Combined with transportation cost burdens, none of the areas are below the 50% threshold. Housing costs and supply particularly affect underserved communities and population groups such as low-income households and seniors.

The market is seeing many residents moving to more inland areas of San Diego County and even relocating to Riverside County and Mexico for more affordable housing sales.



The lack of affordable housing choices can lead to over-commuting due to households moving further from job centers and transit-rich areas in search of lower housing costs.

Figure 3-14: Average Housing and Transportation Cost Burdens



Source: Center for Neighborhood Technology (CNT), Housing and Transportation Affordability Index

As stated by San Diego Urban Land Institute in their 2022 Real Estate Trends Report¹⁵ :

“Traffic congestion eased in the San Diego region due to employees working at home during COVID-19 but have returned to pre-pandemic levels, and acceptable commutes will again dictate where housing is needed. Many San Diegans opt to relocate to Riverside County and Mexico for more affordable for-sale housing options.”

¹⁴ Housing affordability is widely accepted as paying no more than 30 percent of income towards housing costs. However, there is no official affordability definition for housing and transportation costs combined.

¹⁵ <https://sandiego-tijuana.uli.org/resources/regional-trends-report/>



CHALLENGE #2: REGIONAL FACILITIES ARE NOT ALIGNED WITH MAJOR EMPLOYMENT CENTERS

Several regional transportation facilities crisscross the subregion and provide connectivity to areas outside of North County. While North County regional facilities provide connectivity to all cardinal directions through the subregion, they bypass many of the major activity generators that attract both local and regional trips. Because of this misalignment, local arterials are required to provide the connectivity between regional transportation and regional activity centers. Users then experience challenges—congestion, limited transit, uncomfortable walking environments—along North County’s arterials which arise from the lack of person throughput (from services or infrastructure) to effectively connect regional transportation facilities to employment and housing.

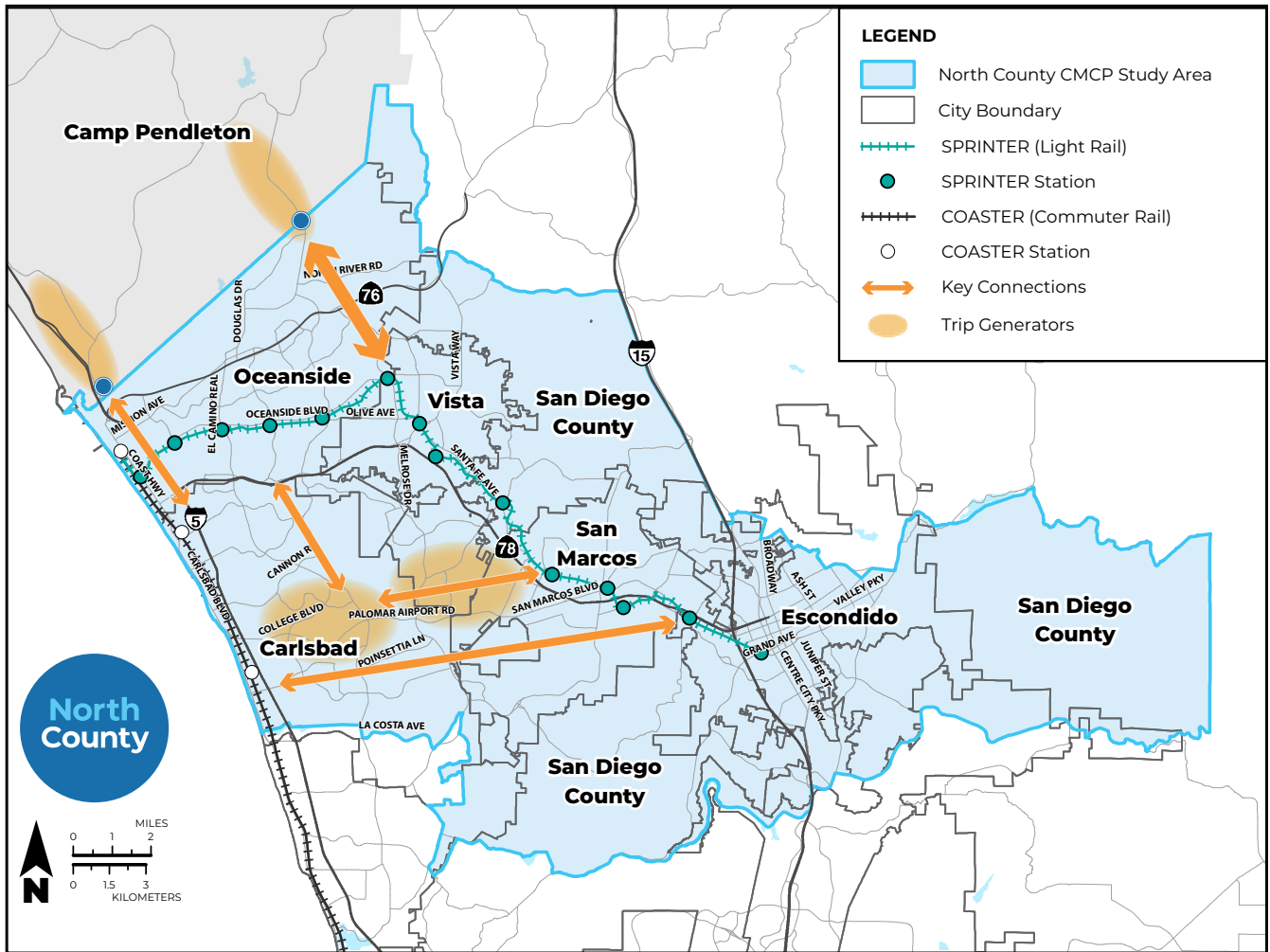
For regional trips from I-5 and I-15, **50% exit within three miles of entering SR 78 to access key destinations** via North County arterials.



NCTD’s SPRINTER alignment encourages rail trips between adjacent communities (e.g., Vista to Oceanside, Escondido to San Marcos) and growing employment centers (e.g., CSU San Marcos, western Escondido). The existing SPRINTER alignment does not facilitate trips to current major employment centers (e.g., Camp Pendleton, Carlsbad/Vista Business Parks), and thus, needs to be supported by first and last mile connections such as BREEZE routes and flex routes/microtransit to make SPRINTER a regional commuter alternative.

- Regional connectivity is provided by the North/South I-5 and I-15 corridors at western and eastern gateways of North County along with transit running parallel between or along the interstates. Travel east-west through North County is usually limited to SR 78 and to a lesser extent, SR 76. Major activity centers that are immediately adjacent to these freeways are reasonably well-served due to the cross-regional trips they generate. In North County, however, there are several major generators including the Palomar Airport Business Park and Camp Pendleton Gates that are miles away from the regional transportation system **(Figure 3-15)**.
- Users must traverse the limited east-west connections to complete their trips—often requiring out of direction travel and utilization of local arterials. North County’s local arterials, while capable of serving high volumes of local traffic, are constrained to meet the needs of all trip types (i.e., local, subregional, and regional). Because the local arterials are often pressed into service as workhorse connections, they have become congested and are limited in providing an efficient flow of people across North County.

Figure 3-15: Connections Needed between Trip Generators and the Regional Transportation Network





CHALLENGE #3: **CONNECTIVITY IN THE NETWORK**

Connectivity is the relative means and ease of a person trip between an origin and a destination. Connectivity is influenced by the physical roadway, transit, and active transportation networks, the integration of those transportation options with land use, along with the following:

- Natural geographic barriers (e.g., topography and slopes)
- Limited connection points to the I-5 and I-15 corridors
- SHS and rail corridors (SPRINTER and LOSSAN) are barriers for other methods of travel
- Limited north-south travel options
- Limited transit service options and frequency between key origin-destination pairs
- Limited or unavailable first- and last-mile solutions to transit, particularly the lack of basic active transportation facilities
- Less opportunities to access key destinations and activity centers from the SHS and major corridors due to distance, directness of travel, or the availability, quality, and affordability of travel options
- Physical gaps in the transportation network (e.g., incomplete arterials and active transportation network)

The subregion's transportation network evolved to consist of large, curvilinear arterials (e.g., El Camino Real, College Boulevard). These arterials were built further apart to conform to the rolling terrain while accommodating the growing trip demand. These larger distances between arterials have led to:

- Gaps in the network (due to terrain)
- Fewer alternative routes
- Uninviting pedestrian paths with limited street crossing opportunities
- Limited options to crossing the highways and railroads
- Concentrated traffic (and thereby congestion) at freeway interchanges and major intersections

Challenging the connectivity between key origins and destinations within North County's transportation network are the lower frequencies, shorter spans of service, and difficulty accessing bus stops and rail stations. These attributes limit transit services as a competitive travel option.

Stations need a strong sense of place within the surrounding community. Surrounding land use and access to transit (i.e., the first-/last-mile of trips) have a significant impact on the success of transit as a North County service.



Gaps and Barriers in the Transportation Network

Gaps and barriers in the transportation system reduce path choices and force travelers onto out-of-direction, inefficient, and—in some cases—less safe routes. Within North County, there are several types of gap/barriers influencing travel in North County:

- Lack of low-stress active transportation facilities and services across freeways, railroads, and high-speed arterials
- Gaps in low-stress active transportation facilities along arterials and near transit stations/stops
- Incomplete, not well-connected grid, including arterial gaps (e.g., College Blvd)

Transportation Gaps and Barriers

There are 80+ points of existing and proposed crossings that can be improved to provide better connections across:



- » Interstate 5
- » Interstate 15
- » SR 78
- » SR 76
- » LOSSAN Railroad
- » SPRINTER Railroad
- » Major Arterials

A common theme shared by agencies, stakeholders, and the public was the imposing nature of regional transportation facilities on surrounding communities and the lack of low-stress crossings. **Figure 3-16** highlights how SR 78 sits in-between growing communities within the City of San Marcos.

Figure 3-16: Confluence of Barriers in San Marcos



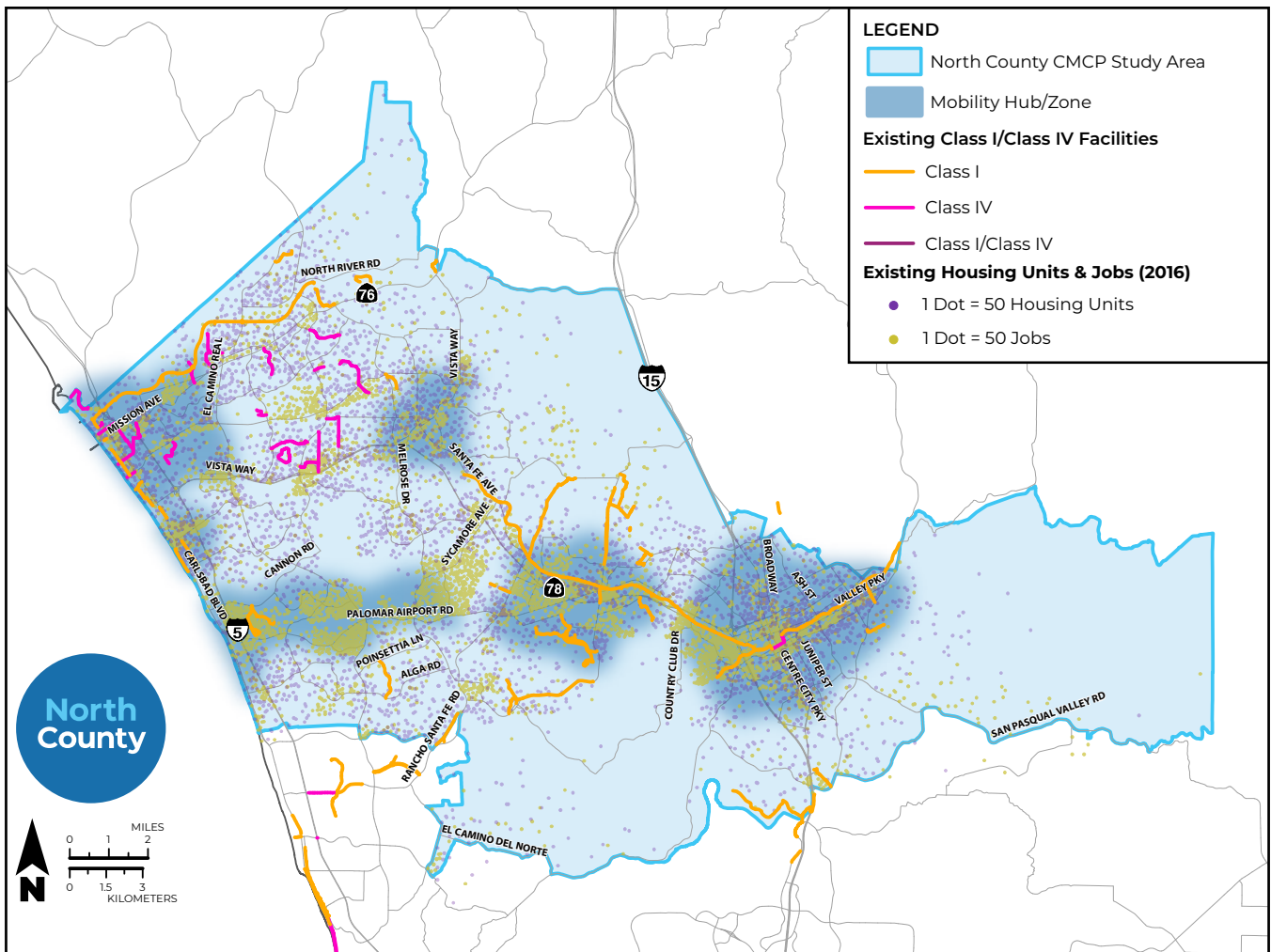
| Land Use (Existing) | | Land Use (Planned) | |
|---------------------|------------------|---------------------|------------|
| Residential | Commercial | Residential/Housing | Commercial |
| Mixed Use | Parks/Open Space | Mixed Use | |

Note: The City of San Marcos adopted an amendment to the University District Specific Plan (UDSP) in 2022, which results in a different street alignment for the UDSP area west of Twin Oaks Valley Road. The UDSP amendment closed vehicular access on segments of Mid City Lane on the east side of Twin Oaks Valley Road. In addition, the footprint of UDSP incorporated additional property on the east side of Twin Oaks Valley Road. Additional information about the UDSP can be found [here](#).

Incomplete, but Growing, Active Transportation Network

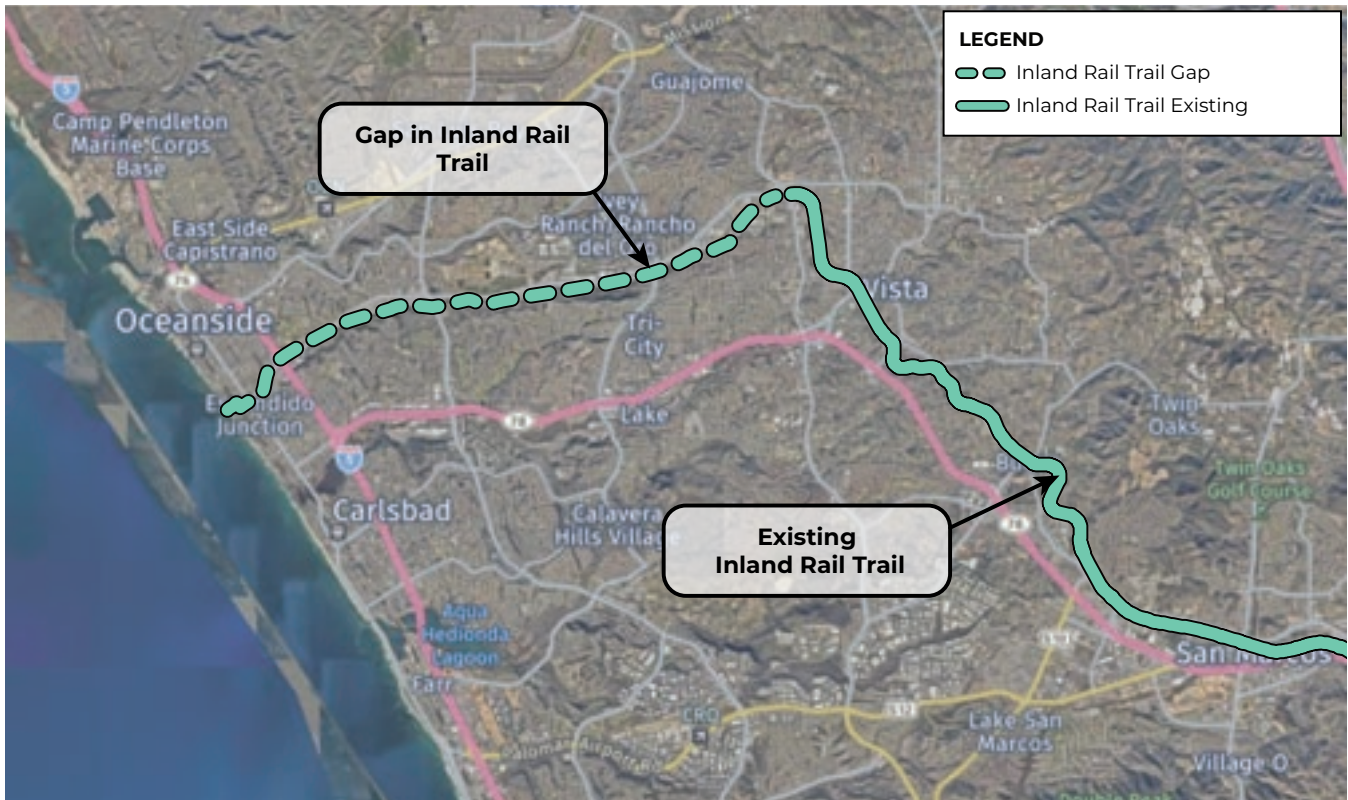
North County cities and SANDAG have been implementing more active transportation projects to create protected active transportation facilities. Currently, there is a lack of a complete network of high-quality, low-stress facilities that provide robust connectivity and accessibility. The existing multi-use paths and on-street protected bike facilities in the subregion are not continuous between mobility hubs or consistently found throughout a mobility hub. For example, where the Inland Rail Trail (IRT) is available, few facilities connect to the IRT from key destinations such as CSU San Marcos. **Figure 3-17** displays the existing Class I and IV facilities in North County and the incomplete nature of a protected network.

Figure 3-17: Existing Class I and Class IV Bicycle Facilities within the North County Study Area



Inland Rail Trail – A prominent transportation network gap currently exists, between Melrose Avenue and the coast (i.e., Coastal Rail Trail), in providing a key access corridor to coastal resources and activity centers. This premium North County bike facility has the capability to improve regional and subregional active transportation connections between communities and destinations.

Figure 3-18: Gap in Inland Rail Trail



Challenging Access to Education

With the lack of school busing and safe routes to school in the subregion, the cost/challenges of transportation to/from schools is effectively passed on to family households. In particular, the lack of school busing affects families of low-income households who can least afford getting their children to school across freeways and railroads.

The lack of school busing gave rise to a private network of drivers—friends and acquaintances of student families—to help provide rides to and from school for children, but at a cost. For example, according to parents in the City of Oceanside, many of whom are employed in industries with low pay and minimum wages, they struggle to budget the cost of transporting their children to school despite living in a more urban environment. Being close to one’s destination does not necessarily alleviate the transportation issue since the North County’s geography is challenging and publicly available transportation options are not effective or convenient for students and families.

Transportation is seen as an obstacle to the classroom, especially for students of color who are more likely to have an unexcused absence on their record.



CHALLENGE #4: LIMITED FREQUENCY AND LACK OF STATION ACCESS INFRASTRUCTURE

Access to transit (i.e., the first-/last-mile of trips) has a significant impact on the success of transit as a North County service. For a user, a transit trip includes more than traveling from station to station or stop to stop; to complete a "door-to-door" trip, a user's trip typically includes walking, biking, or driving to the stations. If access to transit and the surrounding environment is disorienting, challenging, or unpleasant, people will choose to drive or utilize another mode of transportation¹⁶.

NCTD had a daily ridership of 38,000 in October 2019—26,000 on BREEZE/FLEX services, 9,100 on SPRINTER, and 4,600 on COASTER. Currently, there are **several practical obstacles impeding travel via transit for North County users:** infrequent and slow transit service; difficult-to-access stops/stations; gaps or missing links in active transportation facilities; and lack of neighborhood/district shuttle services to commercial centers.

These obstacles impose a limit on choices available to travelers as well as the potential success of those choices. While it is possible to use alternative mobility options such as transit, biking, or walking, doing so is inconvenient due to infrequent service, the need for multiple connections, unprotected intersections and streets, and/or undesirable paths. The following inhibits transit as a successful element of a balanced transportation system:

- Only one route in NCTD's service is provided at high frequency meaning the user may have to wait up to 30-60 minutes for the next bus or train.
- Users do not see the available alternative mobility options as viable commute options due to inconvenience, reliability, and lack of competitiveness.
- Access to transit in North County is unfamiliar, inconvenient, or uncomfortable for users.

Accessibility, availability, comfort, convenience, cost, and safety influence how people choose to travel to, from, and within the subregion.

"I can only take transit and I don't have a safe and comfortable path to the station."

"I spend 15-30 minutes waiting for the bus or train."

"Bus is too slow."

"I can't access the SPRINTER station by walking and biking."



¹⁶ <https://portal.nctd.org/web/0/edoc/135800/010%20Complete%20Streets%20and%20Walking%20Paths%20-%20OCT.pdf>



Transit Frequency

The lack of frequency creates a service-based barrier to using transit. Users must account for the longer wait times between buses and trains in traveling to their destination (e.g., having to arrive 10 minutes early to avoid a 30-minute wait for missing the bus). **The lack of high-frequency services limits the opportunity for larger, mixed-use activity centers and development from taking immediate advantage of the rail service destinations.**

- Only Breeze 350 between Escondido and Westfield North County Mall is a high-frequency service of at least 15-minute frequency. No other NCTD service operates more frequently than 30 minutes—due to many factors including lack of infrastructure or supportive land use. This means the only stations or stops with high-frequency service are Escondido Transit Center and Del Lago Transit Center, both serviced by NCTD's BREEZE 350 and San Diego Metropolitan Transit Service (MTS) Rapid 235.
- NCTD's service levels are half the standard for what travelers and transit providers consider "high frequency"¹⁷.
- For the population of more than one million people living in the NCTD service area (approximately 700,000 within the study area), NCTD operates 203 transit vehicles (buses and trains) at maximum service¹⁸. Normalized by population, MTS operates twice that many vehicles at maximum service¹⁹.

Current track infrastructure limits the SPRINTER service improvements; additional double-tracking investment is required for the SPRINTER service to improve from 30-minute frequency to at least 15-minute frequencies. The inability to increase service frequency on the SPRINTER reduces the attractiveness of the rail service as a viable transportation option for many trips.

Transit Access

As an east-west spine, SPRINTER can have a large influence on how North County travels. However, stakeholders reported that SPRINTER was hard to access by walking and biking—as well as not competitive enough to driving.

Even at a lower frequency and difficulties with wayfinding/access, SPRINTER more than doubled its ridership between 2012 (3,600) and 2018²⁰ (8,500). Continued growth of transit ridership on the SPRINTER is constrained by:

- Low frequency in service
- Station parking
- Lack of pedestrian and bicycle facilities
- Difficult wayfinding
- Unrealized transit-oriented development surrounding the stations'

Conditions Needed for Transit to Thrive



- » Amount and density of activity (residential, employment, commercial, institutional) within proximity
- » Activities and land uses that generate all-day trip making demand—not just during the peak hour
- » Local connectivity by walking (quarter- to half-mile) and biking (two to three miles)
- » Connectivity to high-demand activity centers

¹⁷High-frequency is commonly defined as 15-minute (or better) service—a bus or train arriving every 15 minutes

¹⁸https://www7.fta.dot.gov/sites/fta.dot.gov/files/transit_agency_profile_doc/2019/90030.pdf

¹⁹https://www7.fta.dot.gov/sites/fta.dot.gov/files/transit_agency_profile_doc/2019/90026.pdf

²⁰SPRINTER celebrated its 10-year anniversary serving North County in 2018



Several factors discourage potential customers from using SPRINTER. With improved SPRINTER frequencies, stations will need the supporting development and comfortable access to infrastructure for SPRINTER's (and the subregion's) long-term success. The following are density benchmarks reviewed by Puget Sound Regional Council in the Pacific Northwest in evaluating transit-supportive densities²¹:

Table 3-1: Densities Summary for Existing Transit Services

| | LIGHT RAIL (EX: SPRINTER) | COMMUTER RAIL (COASTER) / EXPRESS BUS (MTS ROUTE 280) | BUS RAPID TRANSIT/ ALL-DAY FREQUENT BUS (MTS ROUTE 235) |
|----------------------------|--|---|---|
| Walk Distance | ½ mile | ½ mile | ¼ mile |
| Residential Density | 16-67+ residents per gross acre | n/a | 7-8+ housing units per gross acre |
| Employment | 100,000-150,000+ jobs in employment center | Central Business District(s) | n/a |
| Activity Units | 56-116+ residents and jobs per gross acre | n/a | 17 ± residents and jobs per gross acre |

Providing Equitable Access to Transit

Many underserved communities depend on transit for traveling to work, school, groceries, and other day-to-day needs. About 13% of the North County population lives within a half-mile of a high-frequency transit stop. Currently, there is a small percentage of population from social equity focus communities that live near high-frequency transit; however, these numbers are projected to grow by 2050. In 2016, the total study area population within a half-mile of high-frequency transit was 12.8%; of the senior population 11%; 16% of low-income; and 16% of People of Color population. The percentages are expected to increase in 2050 to 41%, 53%, and 46%, respectively. **Table 3-2** summarizes information for transit proximity for communities of concern within the subregion.

Over 20% of people who travel to work by transit have no automobile access

79% of people traveling to work by transit travel 30 minutes or longer, with the median transit trip approaching an hour (51 minutes)



Table 3-2: Percentage (%) of Population Groups within ½ Mile of High Frequency Transit Stop (2016)

| POPULATION GROUP | PERCENT OF POPULATION GROUP |
|--|-----------------------------|
| North County Study Area | 12.8% |
| Senior Population (75 years of age and older) | 11.2% |
| Low-Income (200% of Federal Poverty Level) | 15.6% |
| People of Color Population (Non-White, Hispanic) | 15.6% |

Source: SANDAG DS39 Estimates (2021)

²¹ <https://www.psrc.org/sites/default/files/tsdluguidancepaper.pdf>



Destination Accessibility via Transit

Destination accessibility was assessed via an isochrone analysis—an analysis that provides a quantitative and visual representation on how far existing users can travel within a given time frame. These analyses show how many destinations, housing units, and jobs are within a certain travel time (e.g., 30 minutes). Isochrones can help identify how accessible (or inaccessible) destinations are in the network. **Appendix K** details the methodology and analysis of 13 isochrone origins in the North County study area.

A series of 30-minute and 60-minute isochrone sheds were developed and analyzed for the North County Study Area during the PM peak; **Figure 3-19**, shown on the next page, is an example isochrone travel shed. The isochrone analysis helps illustrate what is accessible to existing users when traveling by transit. Accessibility (as analyzed by these isochrones) is influenced by three factors:

- **Land Use Proximity to Station**—better proximity, shorter access time
- **Concentration of Services and Frequency** – more services or frequency, means short waiting times and more directions to travel
- **In-Route Travel Time** – the faster the service, the more destinations can be reached

Table 3-3: Existing Access Summary for Transit and Auto

Based on today's NCTD network of services the following have the most access within 30 minutes

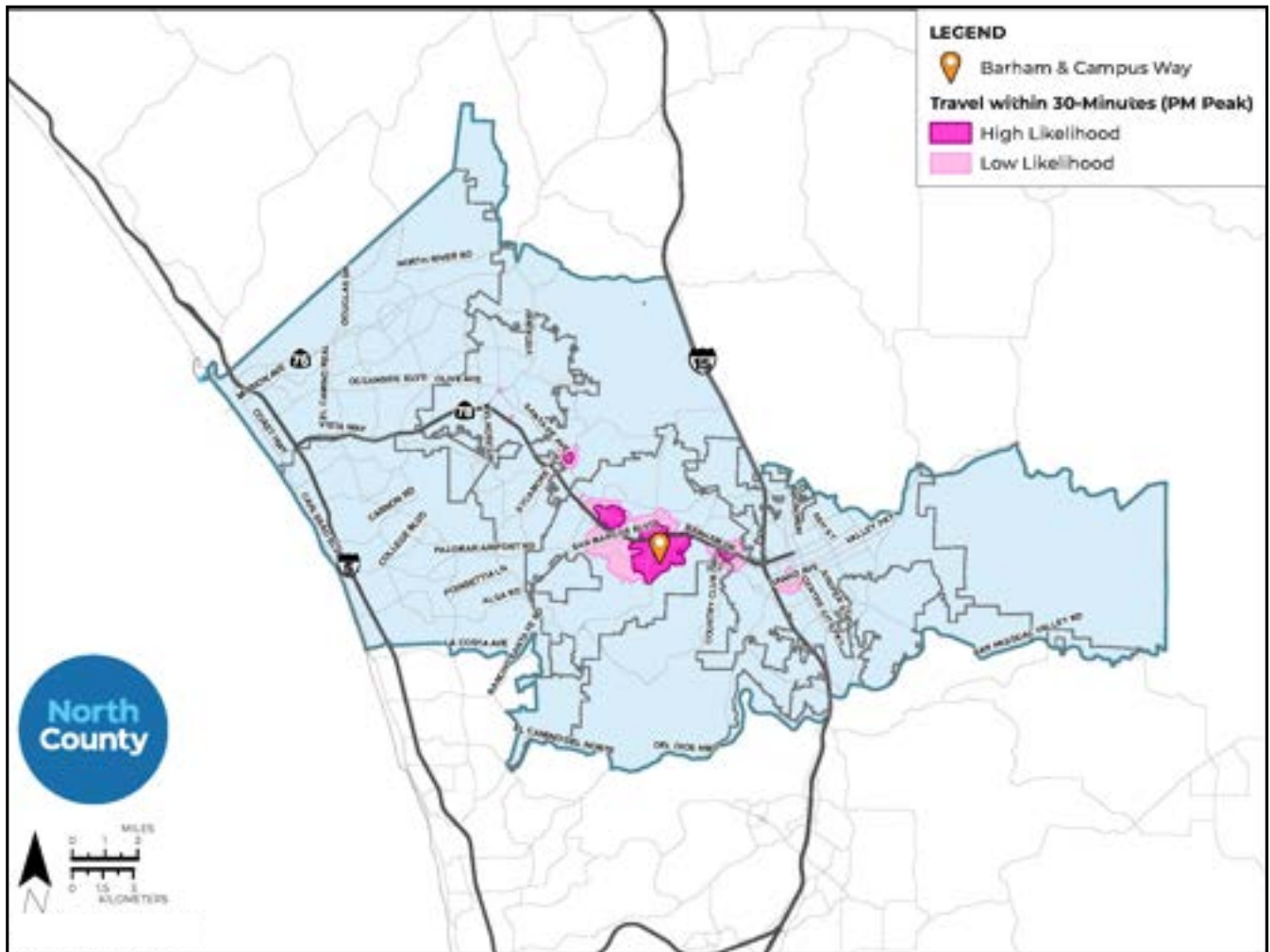
| LOCATION | TRANSIT ACCESS | AUTO COMPARISON |
|---|---|--|
| Vista Village | 140 Points of Interest 17,100 Housing Units 15,100 Jobs | 1,100 Point of Interest 287,800 Housing Units 357,800 Jobs |
| Downtown Escondido (Maple and Grand) | 140 Points of Interest 21,000 Housing Units 27,000 Jobs | 2,100 Point of Interest 460,500 Housing Units 795,100 Jobs |
| Faraday Avenue and El Camino Real | 40 Points of Interest 1,400 Housing Units 22,900 Jobs | 1,500 Point of Interest 310,400 Housing Units 494,400 Jobs |
| Downtown Oceanside (Wisconsin and Coast Highway) | 120 Points of Interest 14,000 Housing Units 20,000 Jobs | 1,200 Point of Interest 257,400 Housing Units 418,200 Jobs |

The following 13 locations were identified as representative points within North County for performing the isochrone analyses (see **Appendix K**):

- *Barham Drive and Campus Way*
- *Camp Pendleton Gate (Vandergrift)*
- *Carlsbad Boulevard and Carlsbad Village Drive*
- *College Boulevard and SR 76*
- *Faraday Avenue and El Camino Real*
- *Felicita Avenue and Centre City Parkway*
- *Maple Street and W Grand Avenue*
- *Oceanside Boulevard and Avenida del Oro*
- *Poinsettia Avenue and Business Park Drive*
- *Via Vera Cruz and San Marcos Boulevard*
- *Vista Village Drive and Santa Fe Avenue*
- *West Lake Drive and San Marcos Boulevard*
- *Wisconsin Avenue and Coast Highway*

Intersections within low-income communities are italicized.

Figure 3-19: Barham Dr and Campus Way, 30-Minute Travel Sheds at PM Peak

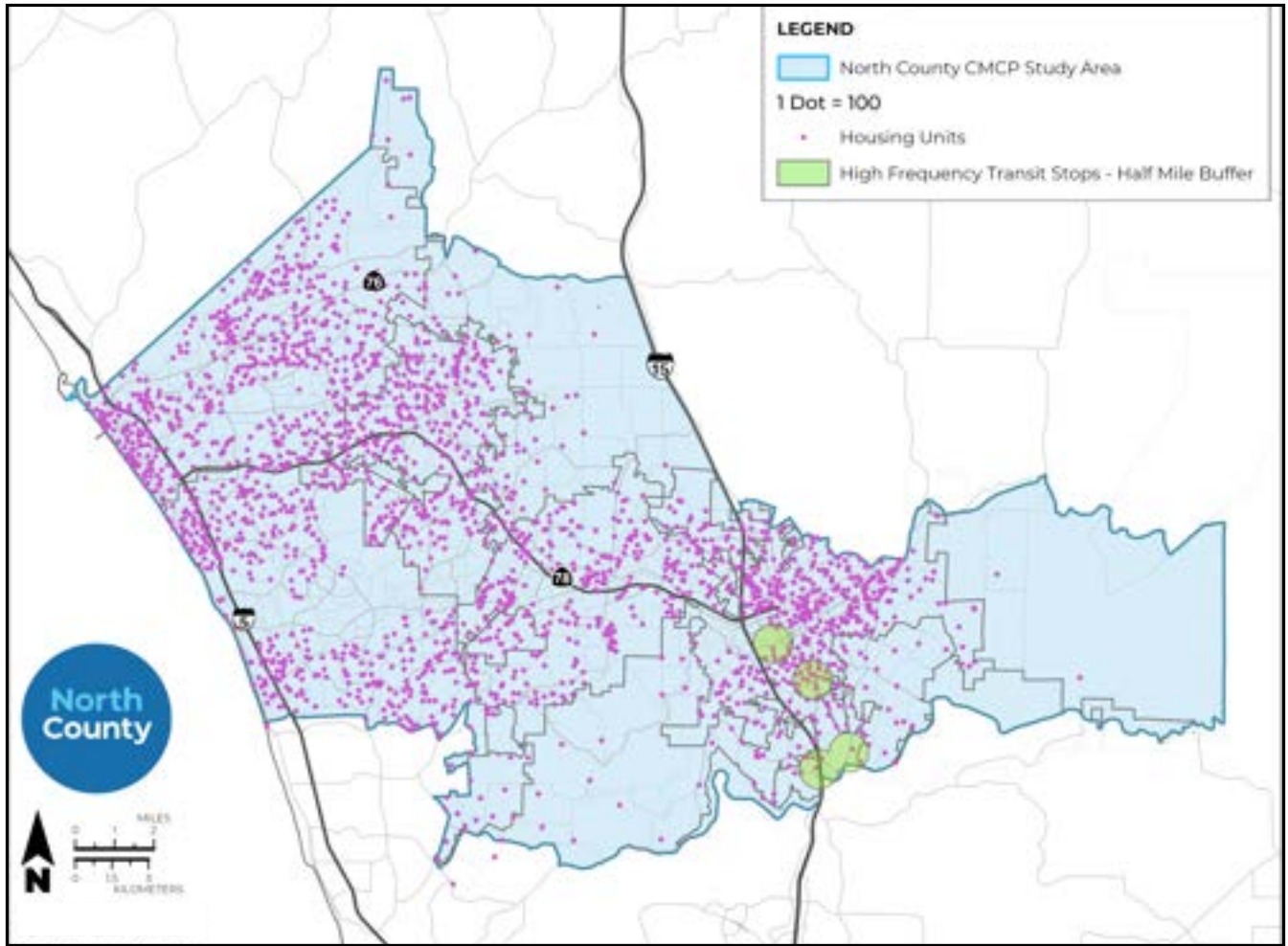


On average, the 13 representative points have a high likelihood of accessing within 30 minutes: 63 destinations, 7,400 housing units, and 15,100 jobs. The following were key insights from the isochrones:

- Vista Village Drive and Santa Fe Avenue (Vista Village) was the most accessible with access to 139 destinations, while Camp Pendleton Gate (Vandergrift) was the least accessible point with three destinations.
- Maple Street and W Grand Avenue (Downtown Escondido) provided the most access to housing units (21,000), while Faraday Avenue and El Camino Real was the least accessible (via transit) with fewer than 1,400 housing units.
- Maple Street and W Grand Avenue and Faraday Avenue and El Camino Real provided the most access to jobs (more than 20,000), while Camp Pendleton (Vandergrift) provided the least access outside of military-based jobs with approximately 1,000 jobs.

Camp Pendleton (Vandergrift) is the gateway to one of the largest employment centers in North County and on-base housing. Nevertheless, it is one of (if not the) least accessible location in North County via transit.

Figure 3-20: Existing Housing Units within High-Frequency Transit Stops



CHALLENGE #5: MAJOR ARTERIALS ARE NORTH COUNTY'S WORKHORSES

North County's major arterials (13 corridors) provide the critical connectivity that exists today for those traveling within North County. **Major arterials provide the connection to both regional transportation facilities and local/subregional connections between housing, employment, and day-to-day needs.** Figure 3-21 spotlights how these major arterials are fundamental to providing access to North County's large mobility hubs with two examples on the western end of the study area (see Chapter 2 for a list of mobility hubs).

North County's 13 Major Arterials



- » 1,300+ roadway miles
- » 20% of the study area's VMT, approximately the same as SR 78 (21%)
- » Provide connections between activity centers/communities and regional transportation

Figure 3-21: Highlighting the Importance of Arterials to North County (Examples: Oceanside and Carlsbad Mobility Hubs)



Source: Streetlight Analytics

In providing the “connective” elements for all types of travel, major arterials account for 20% of VMT in the study area which is effectively the same amount of VMT observed for SR 78 within the study area. **Today's performance of major arterials highlights the importance of providing a system or network approach to leverage major arterials to improve mobility and meet North County's needs.**

Major arterials are integral to providing and will continue to provide:

- Increased, efficient person throughput
- Complete street experience to provide mobility to all users
- Connections between key activity centers
- Future multimodal travel
- Travel time and reliability
- Safe travel environments
- Support to economic development lack of “high frequency services.”

Connecting to North-South Regional Facilities

North County's major arterials provide the critical connections between the primary north-south regional facilities (i.e., I-5 and I-15) to the destinations within North County. **Figure 3-22** displays the eastbound traffic exit distribution within three miles of the I-5 interchange while **Figure 3-23** displays the westbound traffic exit distribution within three miles of the I-15 interchange.

Figure 3-22: SR 78 Eastbound Traffic Exit Distribution From I-5

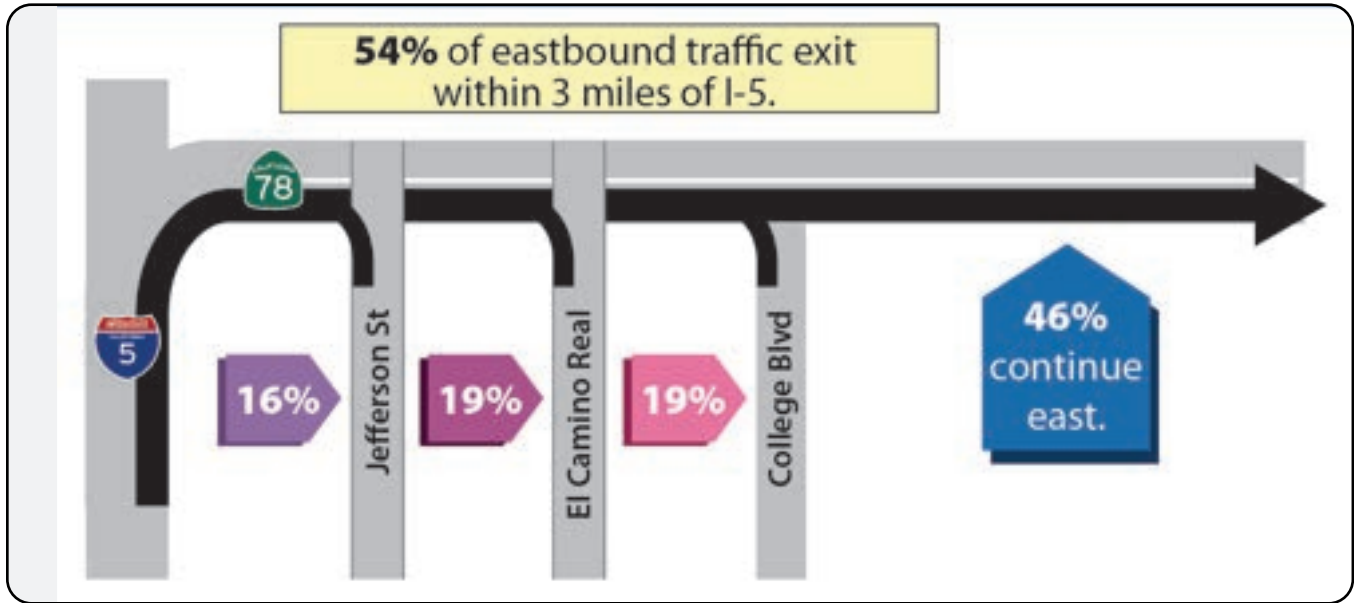
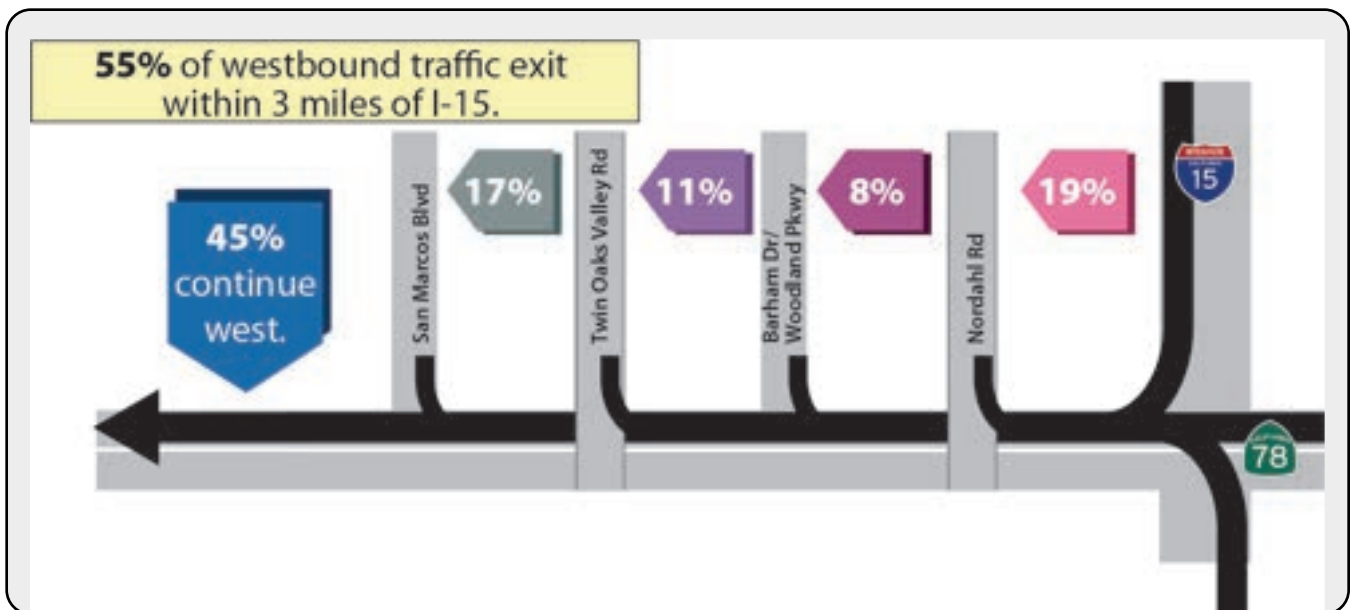


Figure 3-23: SR 78 Westbound Traffic Exit Distribution From I-15





Key Takeaways

The Mobility Assessment reveals there are many relationships between the challenges of the transportation network and the resulting outcomes experienced by users.

The underlying challenges and resulting system deficiencies affect how agencies and jurisdictions plan, build, and operate the transportation systems. Utilizing the transportation system deficiencies defined above, combined with the elements learned in Chapter 1 (Purpose of the CMPC) and Chapter 2 (Corridor Context), the following predominant subregional mobility opportunities and constraints were identified:



KEY OPPORTUNITIES

North County provides the following opportunities:

- A cohesive, self-contained subregion provides an opportunity for focused mobility improvements for future economic growth
- Local cities and agency partners strongly support change and innovation in the transportation network
- Alignment between regional mobility hubs and general plans creates land use synergy with improvement opportunities in the transportation network



KEY CONSTRAINTS

A sustainable transportation network for North County is impeded by:

- Lack of connectivity to the regional transportation network (transit or highway) from large employment centers and the regional transportation network
- Topography and current land use intensity and providing transportation service/ infrastructure improvements (e.g., rail on steep terrain)
- Lack of larger north-south transportation alternatives requiring North County's major arterials to carry more of the person-throughput and provide regional connectivity

4

VALUES, GOALS, AND OBJECTIVES

A CMCP requires clear goals and objectives to guide the identification, prioritization and funding of improvements. Goals and Objectives work in tandem to define for the public, stakeholders, and policy makers what success of a program will look like; providing focus and help measure how actions lead toward the desired success.



4 VALUES, GOALS, AND OBJECTIVES

The development of the Values, Goals, and Objectives presented in this chapter represent a coming together of Regional and State transportation goals with the mobility needs and constraints specific to the North County subregion. Developing a common Vision, Values, Goals, and Objectives addresses the challenge of coordinating across a subregion with diverse communities, jurisdictions, and agency planning efforts—to create a cohesive, overarching transportation strategy. These Values, Goals, and Objectives are used to guide the development of the integrated multimodal investment strategy presented in **Chapter 5**.





North County Transportation Vision

The CMCP vision was developed in collaboration with the local jurisdictions. The process began by developing an understanding of user experiences, challenges, and opportunities described in **Chapter 3** to develop a vision that would address North County's needs and meet state and regional goals and objectives.

VISION

The North County CMCP will create a comprehensive transportation and mobility system for San Diego County's northernmost communities that:

- ✓ **Improves quality of life for residents and supports economic prosperity in this vibrant subregion**
- ✓ **Provides sustainable solutions leading to the reduction of vehicle miles traveled**
- ✓ **Improves safety for all users of the transportation system**
- ✓ **Connects North County communities**
- ✓ **Fosters equitable access to opportunities for all users**
- ✓ **Provides a foundation for future opportunities—promoting mobility innovation and resiliency**

The above vision incorporates the fundamental beliefs that shape all aspects of the North County CMCP plan. It will serve as the guiding principle representing the characteristics and aspirations of the transportation system in North County. This vision reflects the input from stakeholders, residents, and employees of North County.



Objectives

While goals are the outcomes the plan intends to achieve, objectives are the specific steps needed to achieve these goals. The plan objectives are organized in two categories:



Customer objectives represent outcomes designed to meet the mobility needs of the users



Policy objectives are the principles and framework necessary to meet both the customer objectives and the state and regional program goals.

Customer Objectives

1. Spend less time traveling
2. Reduce distance traveled
3. Improve system reliability
4. Reduce fatal and severe collisions
5. Reduce impacts of regional transportation on communities
6. Increase the accessibility to regional and North County employment centers



Policy Outcome Objectives

1. Align mobility services with (existing and potential) activity centers and underserved communities
2. Improve multimodal choices in the corridor to support a significant increase in carpool, bike, transit, and walking trip percentages
3. Provide improved trip options for trips less than three miles
4. Better manage transportation connections across cities, public agencies, and private partners
5. Support population and job growth within focused areas
6. Improve connectivity between communities
7. Improve connectivity to the regional system

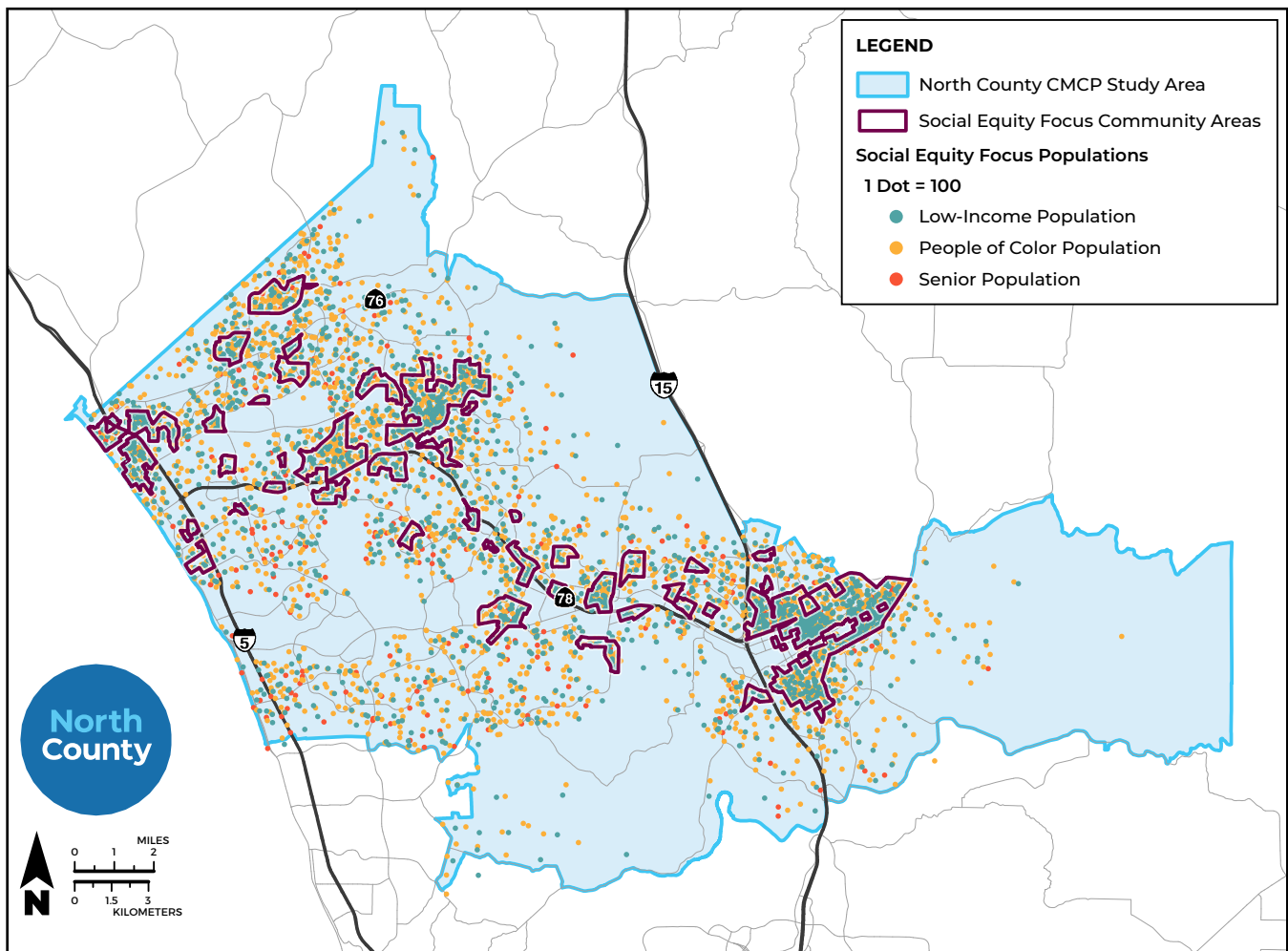
Performance Metrics

Performance measures are a key component of an effective transportation planning and implementation process. Performance targets provide numerical benchmarks to assess how well the plan is achieving the vision, goals, and objectives.

Historically, performance measures were siloed by mode and agency (freeway travel time, traffic counts, level of service). Unfortunately, this approach does not measure services from the user’s perspective of overall quality of mobility and access. As transportation planning has evolved to be a more “systems-based, multimodal, multiagency” approach, metrics need to also change to focus on evaluating the customer’s experience. To avoid an overwhelming number of performance measures and to focus the assessment on key observations and conclusions, a performance framework was developed to drill down from agency-level goals to program level objectives to project-level performance metrics. This multiagency framework allows a programmatic perspective for the Regional Plan while providing a more focused perspective for a subregion in the CMCP – while maintaining connection to an overarching set of goals and objectives.

Social equity focus metrics have been identified for the CMCP to ensure progress for all users, especially for social equity focus communities (SEFC)¹. This allows the CMCP’s proposed transportation solutions to be reviewed an equity perspective.

Figure 4-1: Social Equity Focus Community Areas





Regional Plan-Based Performance Measures

Regional performance measures within the Regional Plan provided the countywide context for monitoring performance. These measures align developing performance metrics/indicators for North County. From the regional performance measures, CMCP-specific metrics were developed to assess and monitor how North County’s transportation network is meeting the CMCP Values, Goals, and Objectives.

Below are the regionally oriented performance metrics for consistency with San Diego’s Regional Plan:

| | |
|--|--|
| Multimodal focus | Mode Share (commute trips, all trips) |
| | Percent change in mode share (commute trips, all trips) |
| | Mode share for short trips (3 miles or less for all trip types) |
| | Person Trips (commute trips, all trips) |
| | Person Trips for short trips (3 miles or less for all trip types) |
| Economic development and goods movement | Percent of residents that can access tier 1 and 2 employment centers or higher education within 30 and 45 minutes (social equity analysis) |
| | Freight - average amount of time in congestion |
| System operations and congestion relief | Daily vehicle hour delay by vehicle class |
| | Daily vehicle hour delay by vehicle class |
| Low-income and social equity focus community focus | Percentage of population within 0.5 miles of high frequency transit stop |
| | Accessible investments in social equity focus communities |
| Reduce greenhouse gas emissions and vehicle miles traveled | Daily VMT |
| | Greenhouse gas (GHG) emissions |
| Improve air quality and public health | On-road smog-forming pollutants (pounds/day) per capita (ROG, NOx) (summer) |
| | Average PM 2.5 exposure |
| | Near-roadway population exposure (social equity analysis) |
| Active transportation and micromobility | Bicycle and pedestrian miles traveled |
| | Percent of the population engaged in 20 minutes or more of transportation related physical activity |
| Improve jobs-housing balance | Population in multifamily residences within 0.25 miles of a transit stop |
| | Average peak commute time to work (min) |
| Increase supply of affordable housing | Multifamily housing within 0.5 miles of high frequency transit |
| System operations and congestion relief | Corridor total person throughput |
| | System completeness for top OD pairs connected by multiple modal options |

Performance metrics are first applied (where possible) to the existing transportation network—to provide context on how the system is supporting the goals and objectives and to set a “baseline” for future monitoring and comparison. A baseline performance assessment can be found in **Appendix L**.

CMCP PERFORMANCE MEASURES

CMCP performance measures were developed to:



Evaluate the future effect of proposed projects, programs, and strategies relative to the plan's goals and objectives. This is done through the use of forecasted information and transportation models.



Monitor trends in transportation system performance over time through the use of observed existing data.

The following outlines and organizes North County's key performance metrics as the primary measures to be monitored throughout the implementation of the CMCP.

| | OBSERVED (TRACKED) | MODELED (FORECASTED) |
|--|--------------------|----------------------|
| REGIONAL CONTEXT | | |
| Percentage of regional population | ✓ | ✓ |
| Percentage of regional employment | ✓ | ✓ |
| North County percentage of regional VMT | ✓ | ✓ |
| North County internal and external trip split | ✓ | ✓ |
| Number of jobs in North County | ✓ | ✓ |
| Number of residents in North County | ✓ | ✓ |
| IMPROVE EXPERIENCE FOR ALL | | |
| Spend Less Time Traveling | | |
| Daily person hours traveled per capita and per employee | ✓ | ✓ |
| Reduce Fatal and Severe Collisions | | |
| Annual number of fatal and severe incidents | ✓ | |
| Improved Travel Reliability | | |
| Planning time index (95th percent peak period travel time compared to average peak period travel time) | ✓ | |
| BUILD A FOUNDATION FOR FUTURE POSSIBILITIES | | |
| Number of jobs (and jobs per gross acre) within Mobility Zones | ✓ | ✓ |
| Number of residents (and residents per gross acre) within Mobility Zones | ✓ | ✓ |

| | OBSERVED (TRACKED) | MODELED (FORECASTED) |
|--|--------------------|----------------------|
| SHIFT TOWARDS CLEANER, TRANSFORMATIVE TRANSPORTATION | | |
| Travel Cleaner | | |
| Non SOV modal share | ✓* | ✓ |
| Non SOV modal share for trips less than 3 and 5 miles | | ✓ |
| SPRINTER ridership | ✓ | ✓ |
| Bus ridership | ✓ | ✓ |
| Travel Less | | |
| Average daily vehicle miles traveled in North County | ✓ | ✓ |
| Average daily vehicle miles traveled in North County per capita and per employee | ✓ | ✓ |
| Percentage of short trips (less than 3 miles) | ✓* | ✓ |
| PROVIDING CHOICES TAILORED TO NEEDS AND IMPROVING COMMUNITY CONNECTIONS | | |
| Increase Access to Jobs and Destinations | | |
| Percent of residents within 0.5 miles of high frequency transit stops | ✓ | ✓ |
| Percent of Tier 1 and Tier 2 jobs within 0.5 miles of high frequency transit stops | ✓ | ✓ |
| Improve Mobility for Social Equity Focus Populations | | |
| Percent of social equity focus community population within 0.5 miles of high frequency transit stops | ✓ | ✓ |

*Measure is approximated from model results



North County's Existing Performance

To understand future performance, a “baseline” is required—for the North County CMCP, 2016 was used as the “baseline” year. Utilizing both SANDAG’s Regional Activity Based Model and data from various sources (e.g., Streetlight, American Communities Survey), values were developed for each of the performance metrics to gauge North County’s performance based on the values, goals, and objectives above.

Below are the CMCP-oriented performance metrics for the Existing Conditions (2016):

| Performance Metrics | |
|--|---------------|
| Regional Context | |
| Percentage of Regional Population ⁽¹⁾ | 20% |
| Percentage of Regional Employment ⁽¹⁾ | 18% |
| North County Percentage (Trip-based) of regional VMT ⁽¹⁾ | 10% |
| North County Percentage (Segment-based) of regional VMT ⁽²⁾ | 18% |
| Number of Jobs in North County ⁽¹⁾ | 259,700 |
| Number of Residents in North County ⁽¹⁾ | 660,700 |
| Goals Metrics | |
| Improved Experience for All | |
| Daily Person Hours Traveled Per Resident ⁽¹⁾ | 2.00 |
| Daily Person Hours Traveled Per Employee ⁽¹⁾ | 2.56 |
| Annual Number of Fatal and Severe Incidents ⁽¹⁾ | 209 |
| Planning Time Index (1.0 = No Delay) ⁽³⁾ | 2.17 |
| Building a Foundation for Future Possibilities | |
| Number of Jobs within Mobility Hubs ⁽¹⁾ | 161,500 (62%) |
| Number of Residents within Mobility Hub ⁽¹⁾ | 263,100 (40%) |
| Shift Towards Cleaner, Transformative Transportation | |
| Non-SOV Modal Share for all Trips ⁽²⁾ | |
| Shared Ride 2 | 22% |
| Shared Ride 3+ | 22% |
| Transit | 1% |
| Bike | 1% |
| Walk | 6% |

¹ Observed/Collected Value

² Modelled Value

³ Showing planning time index for El Camino Real



Performance Metrics

Shift Towards Cleaner, Transformative Transportation (cont.)

| | |
|--|------------|
| Non-SOV Modal Share for Trips Less Than 3 Miles ⁽²⁾ | |
| <i>Shared Ride 2</i> | 22% |
| <i>Shared Ride 3+</i> | 23% |
| <i>Transit</i> | 1% |
| <i>Bike</i> | 2% |
| <i>Walk</i> | 14% |
| SPRINTER Average Weekday Ridership ⁽¹⁾ | 9,100 |
| BREEZE Average Weekday Ridership ⁽¹⁾ | 26,000 |
| Average Daily Vehicle Miles Traveled in North County ⁽²⁾ | 15,061,000 |
| Average Daily Vehicle Miles Traveled in North County per Capita ⁽²⁾ | 18.58 |
| Average Daily Vehicle Miles Traveled in North County per Employee ⁽²⁾ | 25.08 |
| Percentage of Short Trips (3 miles or less) ⁽²⁾ | 40% |

Providing Choices Tailored to Needs and Improving Community Connections

| | |
|--|-----|
| Percent of North County Residents Within 0.5 Miles of High Frequency Transit Stops ⁽²⁾ | 12% |
| Percent of Jobs within 0.5 Miles of High Frequency Transit Stops ⁽²⁾ | 3% |
| Percent of North County Social Equity Focus Community Population within 0.5 Miles of High Frequency Transit Stops ⁽²⁾ | 7% |

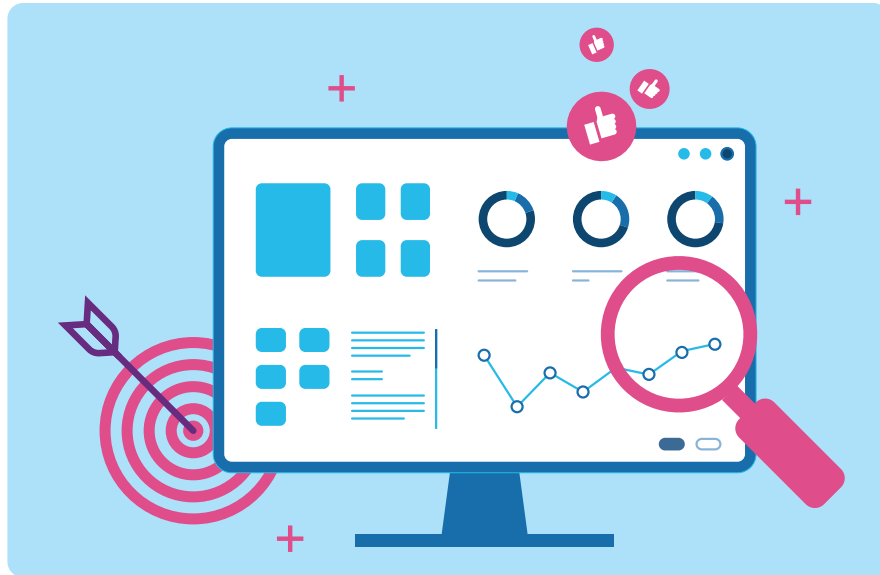
¹ Observed/Collected Value

² Modelled Value

³ Showing planning time index for El Camino Real

Performance Dashboard

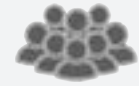
Using several of the performance metrics identified to quantify the potential success of the transportation network, a performance dashboard has been prepared to provide a preliminary understanding of how the existing transportation system currently performs. This provides an understanding of what performance measures could be targeted for improvement when developing the proposed transportation strategies. It also helps identify specific areas and locations in the subregion to focus on when developing potential transportation solutions. Additional information about the performance dashboard can be found in **Appendix V**.



REGIONAL CONTEXT



Jobs
259,700 North County Jobs
17.9% of Regional Jobs

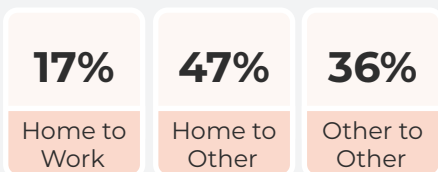


Population
660,700 North County Population
19.9% of Regional Population

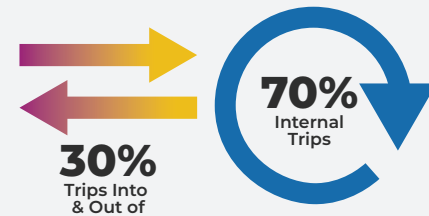


Vehicle Miles Traveled (VMT)
8,480,000 North County VMT
10% of Regional VMT

VMT Distribution by Trip Purpose



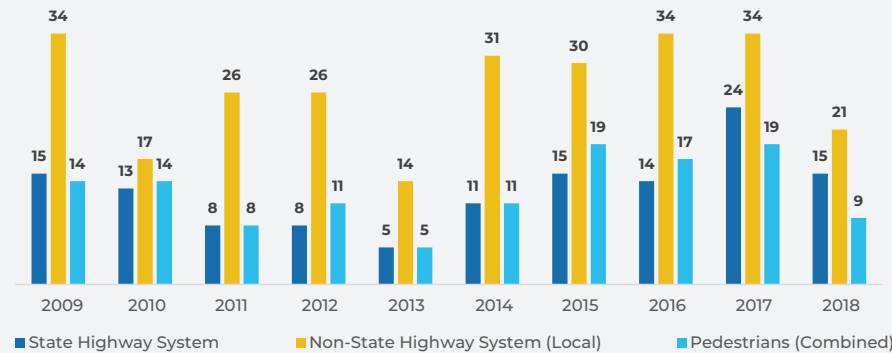
North County Travel Patterns



Source: ACS 2019 5-Year Estimates, LEHD LODES Workplace Area Characteristics (2019), Streetlight 2019

IMPROVE THE TRANSPORTATION EXPERIENCE FOR ALL

Fatal Collisions



Daily Trip Hours Traveled

1.00 per resident
2.56 per employee

Source: SWITRS (2010-2018), 2019 ACS 5-Year Estimates, LEHD LODES Workplace Area Characteristics (2019), Streetlight 2019

PROVIDING CHOICES TAILORED TO NEED, IMPROVING COMMUNITY CONNECTIONS



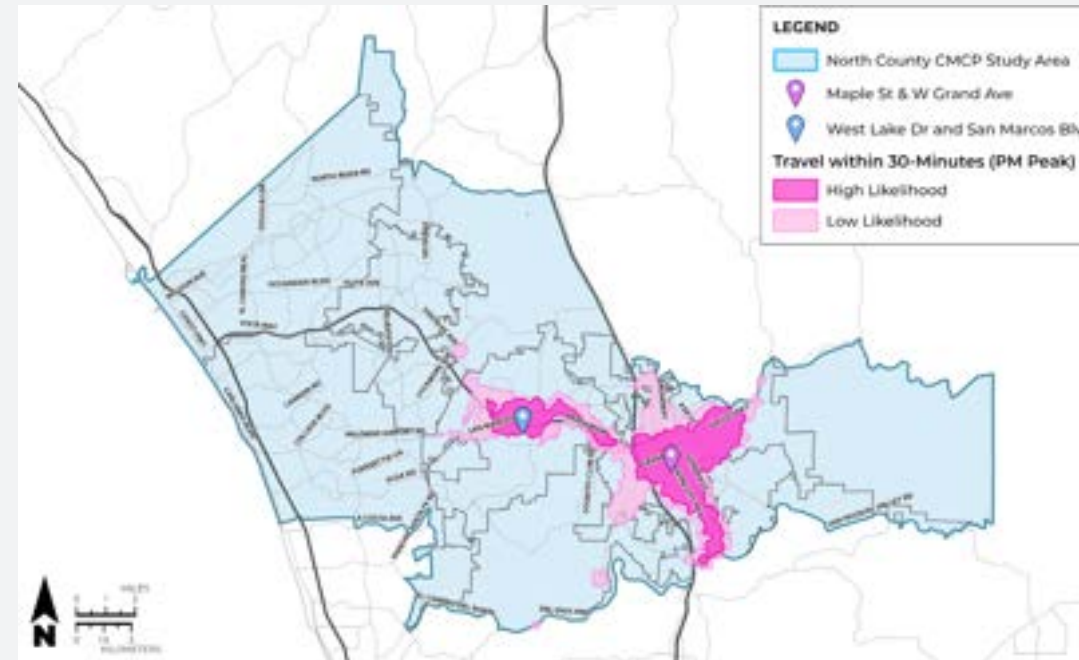
Percent of Residents within 0.5 Miles of High Frequency Transit
35,700 North County Residents
5.4% of North County Residents



Percent of Jobs within 0.5 Miles of High Frequency Transit
8,900 North County Jobs
3.4% of North County Jobs



Percent of Social Equity Population within 0.5 Miles of High Frequency Transit
17,700 North County Social Equity Focus Population
4.0% of North County Social Equity Focus Population



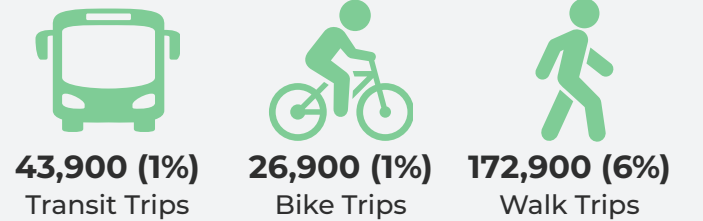
| Region | Origin Points | High Likelihood Points of Interest Reached | High Likelihood Jobs Reached | Time Competitiveness: Driving and Transit |
|-----------------|----------------------------------|--|------------------------------|---|
| South Escondido | Maple St and W Grand Ave | 140 | 26,900 | 10% of trips are transit competitive |
| San Marcos | West Lake Dr and San Marcos Blvd | 40 | 16,700 | 5% of trips are transit competitive |

Source: Open Street Map, NCTD GTFS, 2019 ACS 5-Year Estimates, SANDAG DS 39 Forecast Estimates (2021)

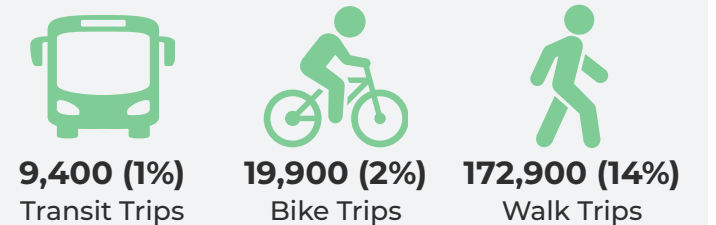
SHIFT TOWARD CLEANER, TRANSFORMATIVE TRANSPORTATION

MODE DISTRIBUTION

All Trips



Local Travel - Short Trips ≤ 3 Miles



AVERAGE WEEKDAY RIDERSHIP

20,900 BREEZE
7,700 SPRINTER

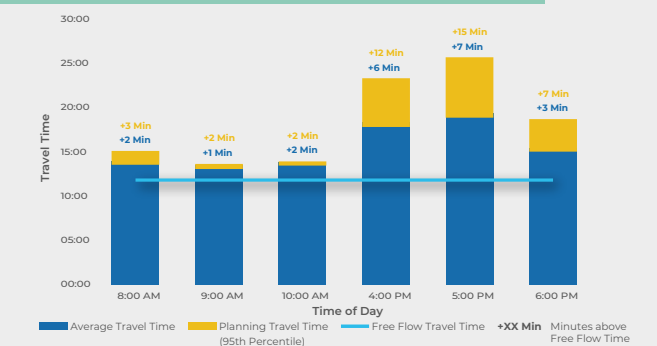
VMT

12.84 per resident
32.68 per employee

Source: SANDAG DS39 Forecast Estimates (2021), NCTD Operations Report (Q2, 2019)

TRAVEL TIME EXPERIENCE

El Camino Real NB: Poinsettia - SR 78

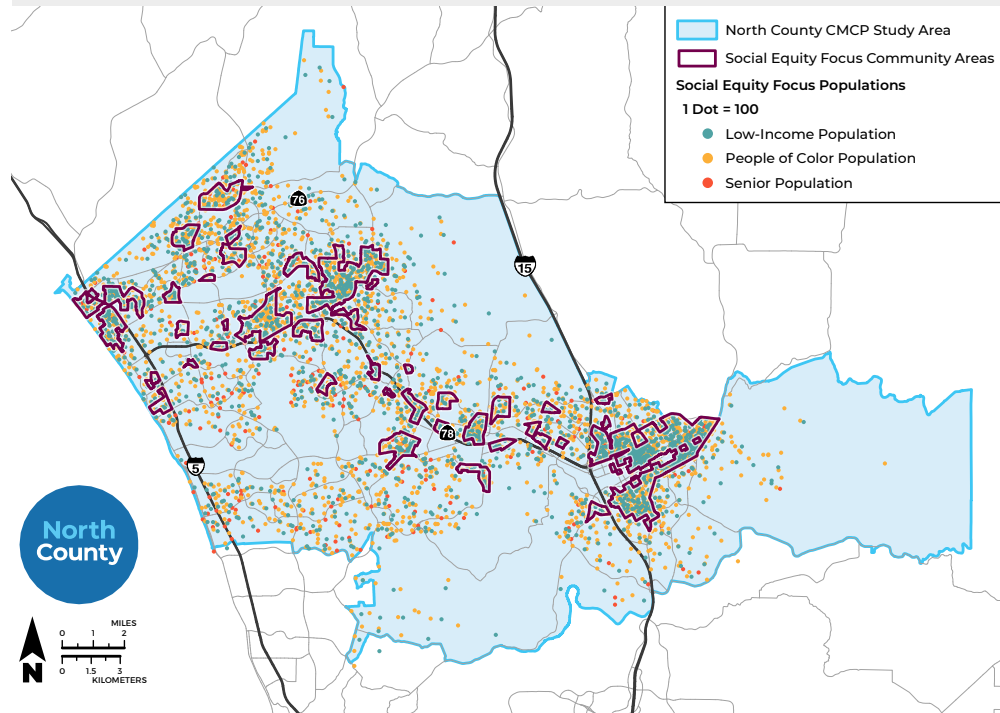


Source: Traction, Google

SOCIAL EQUITY FOCUS COMMUNITY AREAS

Social Equity Focus Community Areas

The Social Equity Focus Community (SEFC) Areas shown below were identified as the top 25 percent most dense areas of social equity focus populations.



| | Population in SEFC Area | % of SEFC Area Population | % of Study Area Population |
|------------|-------------------------|---------------------------|----------------------------|
| Total | 257,200 | - | 39% |
| Low-Income | 115,600 | 45% | 18% |
| Minority | 167,800 | 65% | 26% |
| Senior | 13,600 | 5% | 2% |

Access to Bike Facilities within SEFC Areas

476 Miles of Roads in SEFC Areas

58.1 Miles of Bike Lanes and Off-Street Paths in SEFC areas.

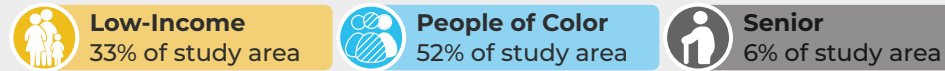
Collisions within SEFC Areas

183 Bike Collisions
 35 at Intersections
 11.7% of Collisions in Study Area

336 Pedestrian Collisions
 61 at Intersections
 21.5% of Collisions in Study Area

Source: SANDAG DS39 Forecast Estimates (2021), SANGIS, TIMS (2015 - 2020)

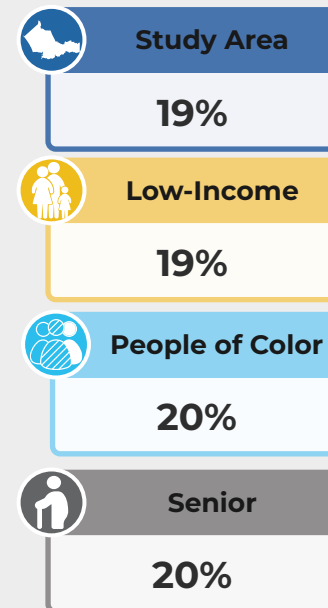
SOCIAL EQUITY FOCUS POPULATION



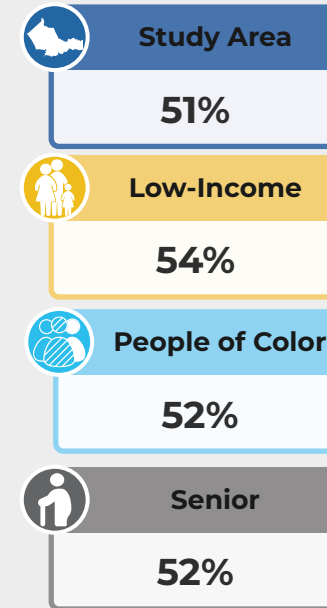
Source: SANDAG DS39 Forecast Estimates (2021)

ACCESS TO HIGHER EDUCATION

Percent of Residents Within 30 Minutes Via Transit



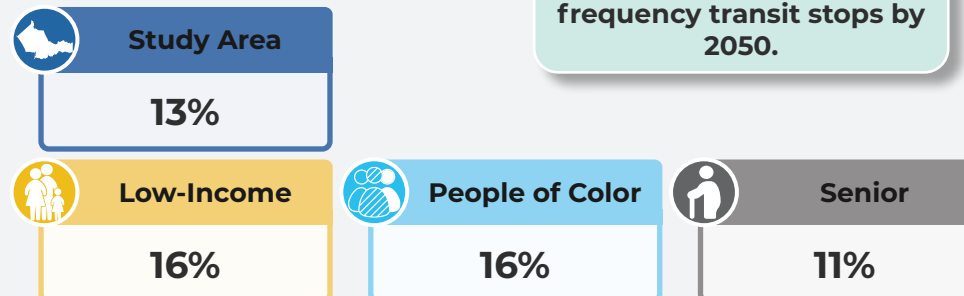
Percent of Residents Within 30 Minutes Via Automobile



Source: SANDAG DS39 Forecast Estimates (2021)

ACCESS TO HIGH FREQUENCY TRANSIT

Percent of Population within 0.5 miles of high frequency transit stops



Approximately 25% of the Study Area population will be able to access high frequency transit stops by 2050.

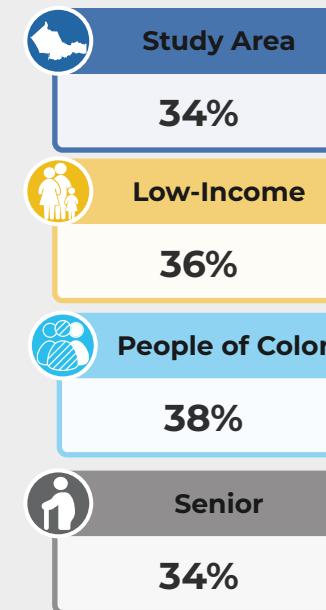
Source: SANDAG DS39 Forecast Estimates (2021)

*High-frequency transit stops are defined by the combined headway frequency of transit stops on a node, route, direction.

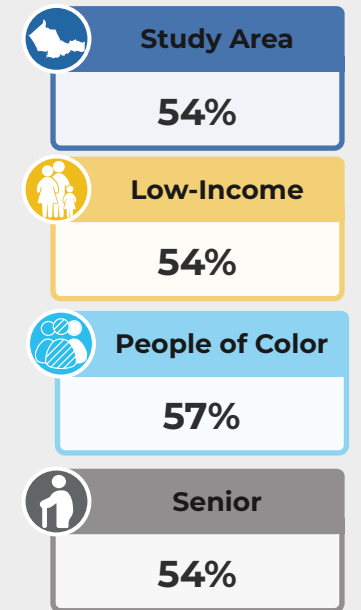
ACCESS TO EMPLOYMENT

TIER 1 AND 2 EMPLOYMENT CENTERS

Percent of Residents Within 30 Minutes



Percent of Residents Within 45 Minutes



Source: SANDAG DS39 Forecast Estimates (2021)



Supporting North County's Shift to Holistic System

This CMCP will help support the subregion's need to shift towards a holistic, system approach to improving the transportation network. It's an approach guided by stakeholders and community input and arriving at the CMCP Values, Goals, and Objectives. It is the foundation to building the projects and programs for North County and establishing a path towards implementation.

The following chapters will set a path for North County's communities to rely on customer experiences, utilize observed data, and maintain focus on the CMCP objectives to guide the steps to come. The more the above Vision, Goals, and Objectives are embraced, the more likely North County communities will achieve the desired results and achieve those results more quickly.

5 MOBILITY SOLUTION

*The aim of the CMCP is to create and present a balanced and integrated transportation system that meets community priorities now and into the future. The North County CMCP's 30-year mobility solution comprised composed of projects, programs, and services focuses on addressing the subregion's current and anticipated future mobility needs identified in **Chapter 3**, guided by the Values, Goals, and Objectives in **Chapter 4**.*



5 MOBILITY SOLUTION

The CMCP mobility solution (or “Plan”) leverages a multi-faceted system approach that utilizes nine transportation strategies and establishes a framework to emphasize service and infrastructure improvements at locations where travelers can be served, providing a better travel experience holistically. The Plan intends to avoid fragmentation by amplifying the transportation network benefits across modes, user types, and communities.

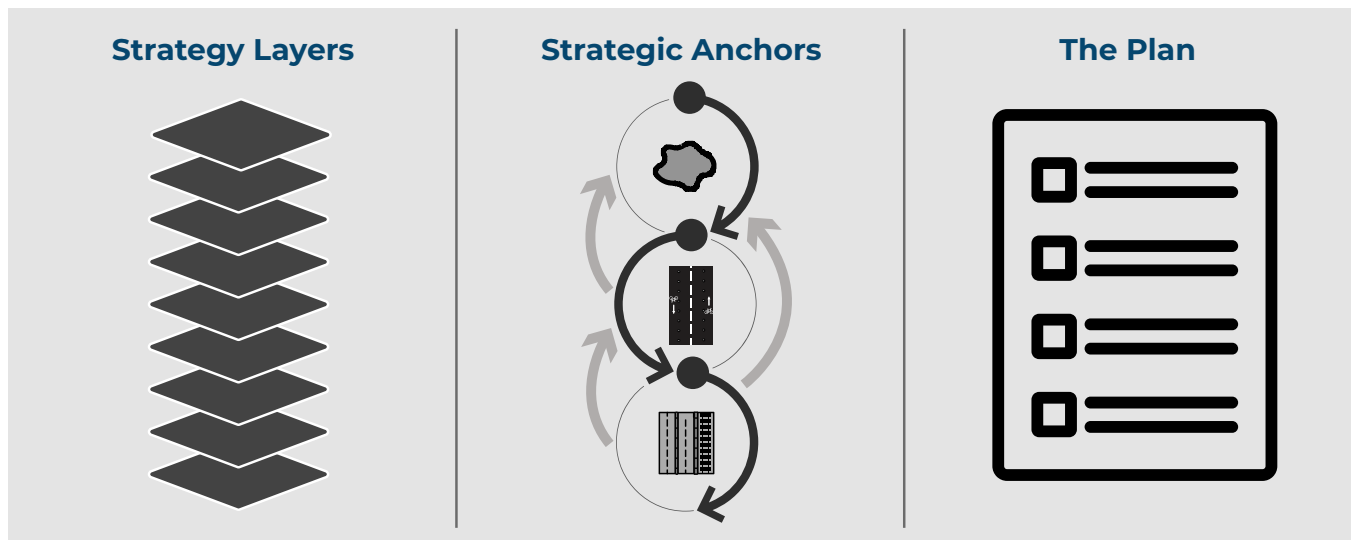
There is no single strategy that will address North County’s mobility needs; instead, it is the layering of the strategies and the application within strategic anchors that provides a nimble and adaptable transportation solution for North County.



The Plan is organized as follows:

- 1. Strategy Layers** – The transportation “strategy toolbox” of infrastructure, services, and technologies is based on the “Five Big Moves” outlined in the 2021 San Diego Forward Regional Transportation Plan, but tailored to North County’s unique needs and guided by community input, insights, and experiences.
- 2. Strategic Anchors** – The strategy framework used to organize and apply the strategy layers within North County.
- 3. The Plan (Project and Programs)** – The series of projects, programs, and services proposed for implementation over the next 30 years utilizing the application of the strategy layers and strategic anchors. **Chapters 6** and **7** will evaluate and present near-term opportunities in the Plan.

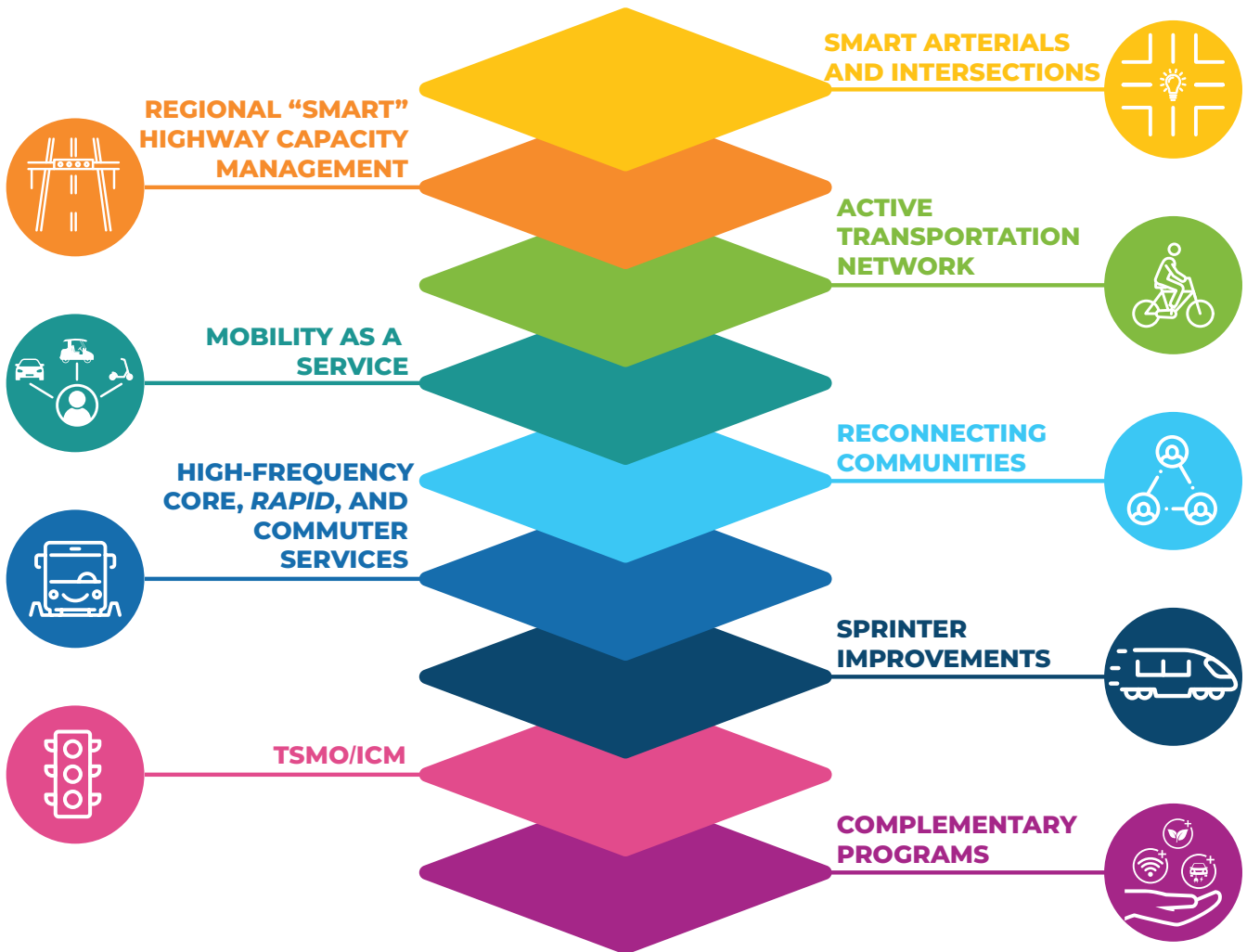
Figure 5-1: The Multi-Faceted System Approach to Develop The Plan



The Strategy Layers

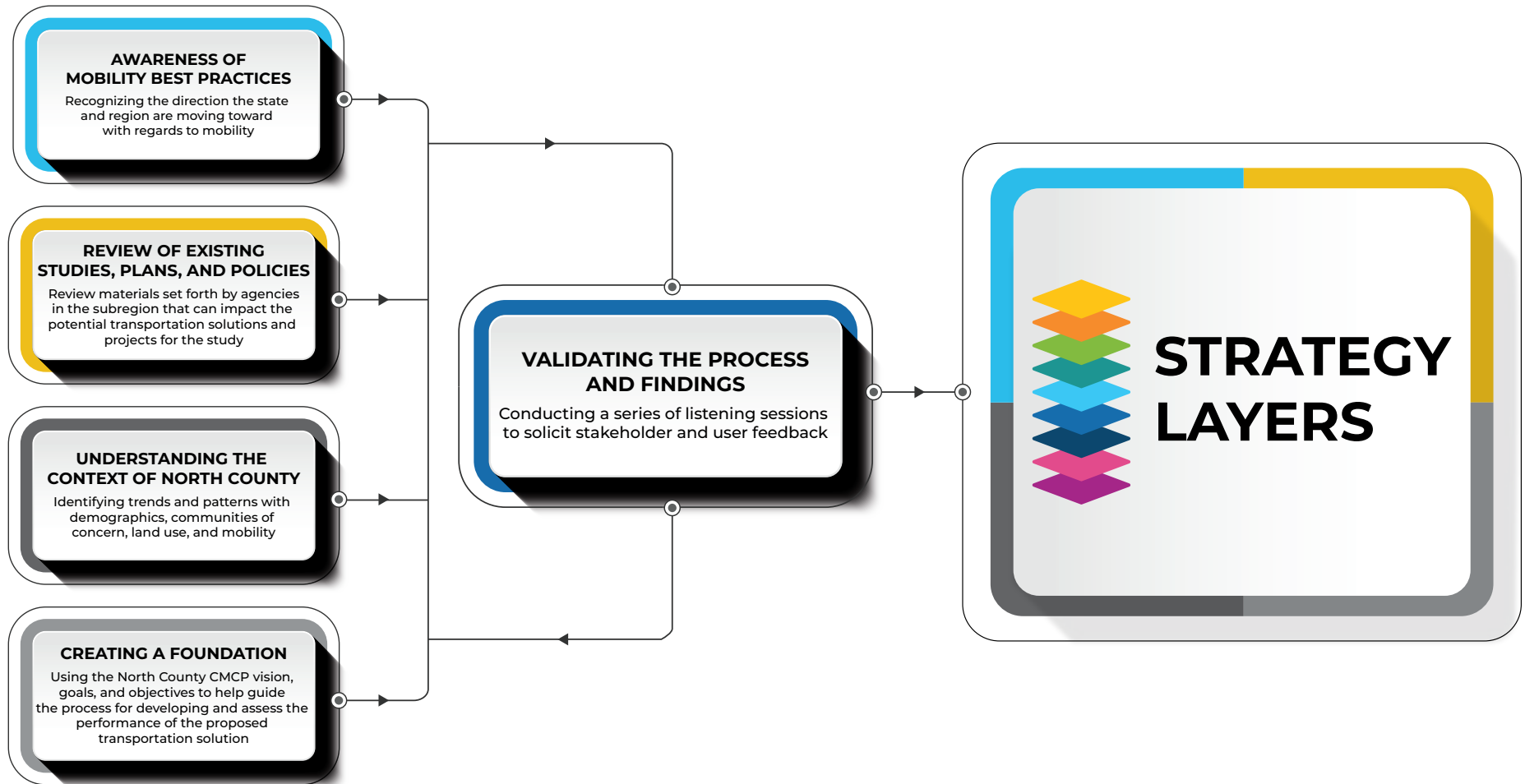
The CMCP Mobility Solution starts with transportation and mobility strategies organized into nine “layers.” The layers were derived from the regional vision statement included in the 2021 San Diego Forward Regional Plan and understanding North County’s needs and challenges, mobility best practices, and emerging transportation tools shown in **Figure 5-2**.

Each strategy represents a list of projects and services; not simply to be piled on top of another but layered and integrated to be mutually beneficial to create adaptable, resilient transportation systems.



Each strategy represents a list of projects and services; not simply to be piled on top of another but layered and integrated to be mutually beneficial to create adaptable, resilient transportation systems.

Figure 5-2: Strategy Layer Development Process



REGIONAL “SMART” HIGHWAY CAPACITY MANAGEMENT

STRATEGY

Integrate infrastructure and services along the State Highway System (SHS) for real-time traffic management and operations.

Example Projects

- Fiber/Wi-Fi Communications to Traffic Management Center
- Connected Ramp Meters
- Closing Connector Gaps Across Interchanges
- Cellular Vehicle-to-Everything (C-V2X) Deployments
- Direct Access Ramps
- Dynamic Lanes (e.g., HOV, Connected Vehicles/Autonomous Vehicles)
- Managed/Express Lanes
- Speed Harmonization and Management

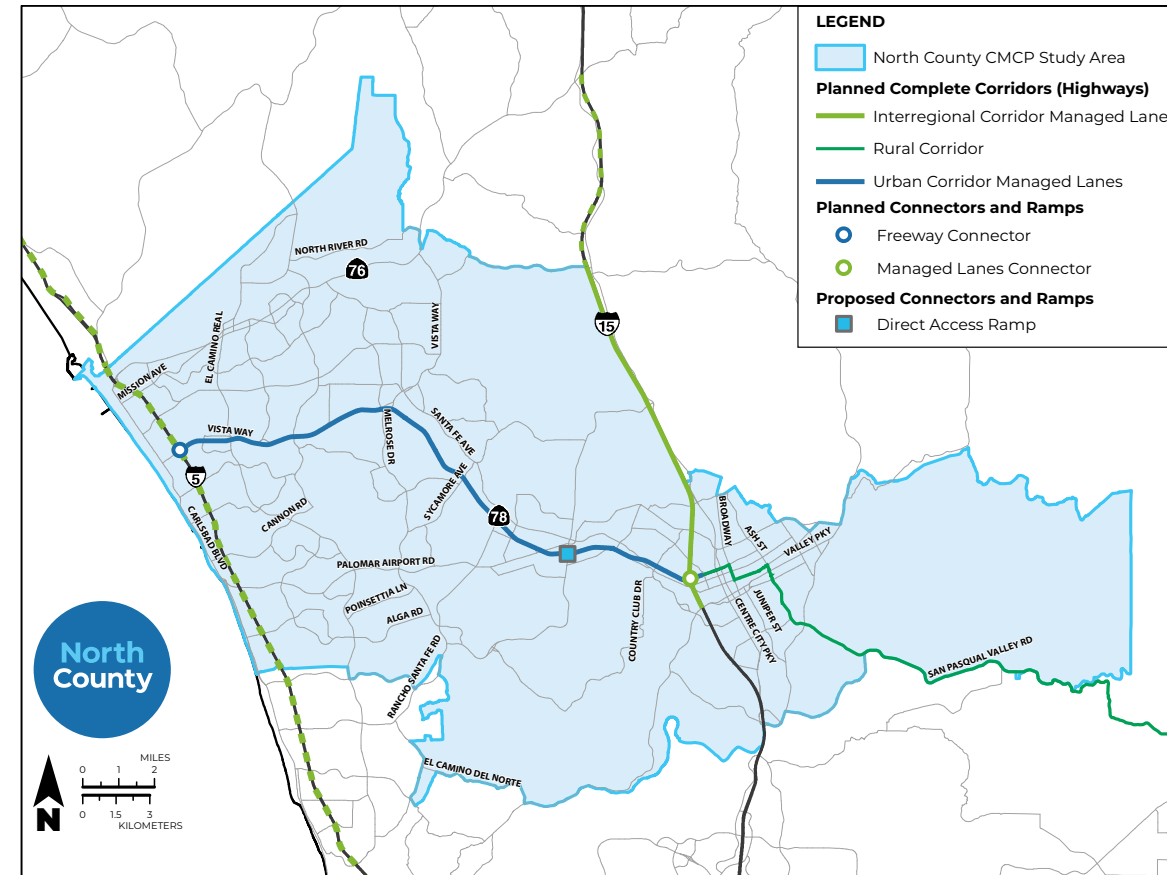
What It Means for North County

- Improved safety, mobility, and efficiency for all users
- Ability to actively manage traffic operations and adjust control mechanisms (e.g., traffic lights, freeway on-ramp meters, highway messages boards, and speed limits)
- Ability to dynamically direct traffic flow and direction in response to accidents, queuing, and congestion
- Improved connectivity and traffic flow between local roads and SHS
- Increased person-throughput and reduce vehicle miles traveled (VMT)
- Increased mode share of carpool, rideshare, and transit

What It Means for Users

- Improved travel times between home and key destinations such as work
- More consistent travel times
- Safer travel along local streets and SHS corridors
- Decreased noise from highway traffic
- Cleaner air from reduced greenhouse gas (GHG) emissions
- More options for carpool, rideshare, and transit travelers

Regional SMART Highway Capacity Management



| STRATEGY APPLICATION | Amount |
|---------------------------------------|----------|
| Urban Corridor Managed Lanes | 17 miles |
| Rural Corridor | 13 miles |
| Interregional Corridor Managed Lanes | 14 miles |
| Direct Access Ramp | 1 |
| Freeway Connector | 1 |
| Managed Lanes/Express Lanes Connector | 2 |

SMART ARTERIALS AND INTERSECTIONS

STRATEGY

Optimize arterial performance and safety by utilizing a SMART-Signal system to collect traffic data and generate real-time conditions.

Example Projects

- Fiber/Wi-Fi Communications to Traffic Management Centers
- Intersection CCTV cameras
- Adaptive Signal Control
- Intersection Coordination with Connected Ramp Meters
- Signal Coordination with At-Grade Transit Guideway Crossings
- Transit Queue Jumps and Signal Priority
- Flex/Dynamic Lane Assignment
- Passive Pedestrian/Bicyclist Detection
- Advance Pedestrian Phase
- Bicycle and Right Turn Lane Conflict Improvements
- Traffic Calming (e.g., Roundabouts, Traffic Circles, and Other Intersection Designs)

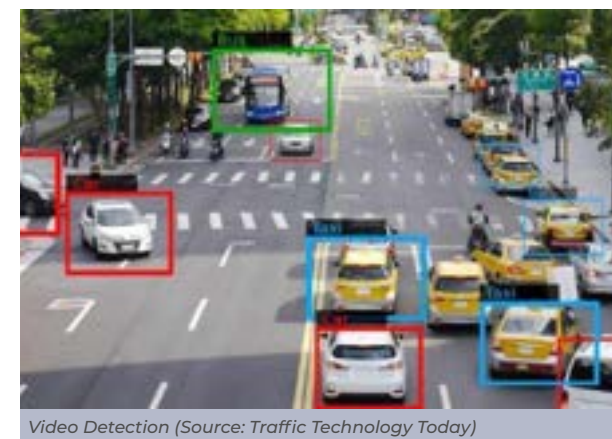
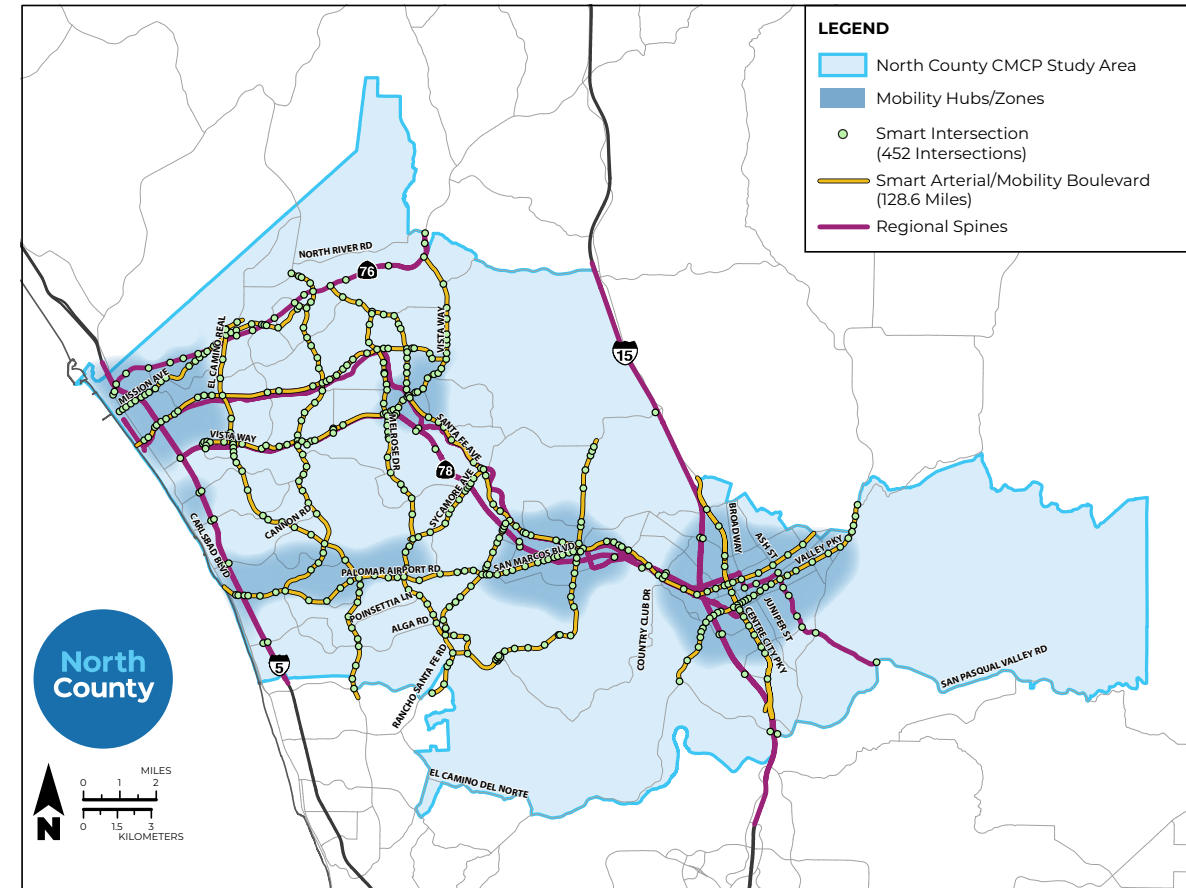
What It Means for North County

- Improved day-to-day traffic operations to move more people and goods to their destination efficiently and safely, while maximizing the limited space on roads through technology applications
- Real-time system operational awareness of the locations of transit vehicles, personal vehicles, pedestrians, and bicyclists
- Manage congestion along key streets in high demand by monitoring queue lengths and travel times
- Improved corridor signal progression
- Reduced delay and greenhouse gas (GHG) emissions, especially in areas with high concentrations of social equity focus communities
- Dynamic signal operations to adjust signal timing and traffic flow to reflect real-time traffic conditions

What It Means for Users

- Safer crossings for bikers and pedestrians
- Lower travel times and variability
- Cleaner air from reduced GHG emissions

Smart Arterials and Intersections



Video Detection (Source: Traffic Technology Today)

| STRATEGY APPLICATION | Number of Intersections |
|---------------------------------------|-------------------------|
| Study Area | 452 |
| Mobility Boulevard | 392 |
| Regional Spine | 85 |
| Mobility Hub | 69 |
| Mobility Boulevard and Regional Spine | 240 |
| Mobility Boulevard and Mobility Hub | 207 |
| 3 Strategic Anchors | 49 |



ACTIVE TRANSPORTATION NETWORK

STRATEGY

Expand the active transportation network to safely connect people walking and biking to their desired destinations through enhanced and protected facilities.

Example Projects

- Completed Gaps in Network
- Protected Bicycle Facilities along Mobility Boulevards
- Improved Pedestrian and Bike Crossing at Signalized Intersections along Mobility Boulevards (e.g., Intersection Clearance Detection)
- Advance Bicycle Detection
- Bicycle and Right-Turn Lane Conflict Improvements
- Two-Stage Left Turn Facilities
- Conversion of Class II Facilities to Protected Class IV Lanes at Intersection Approaches along Mobility Boulevards
- Provide Connections between Mobility Boulevards to the Inland Rail Trail and Other Major Trails
- Engineering feasibility studies to identify alternatives and constraints for proposed bikeway corridors

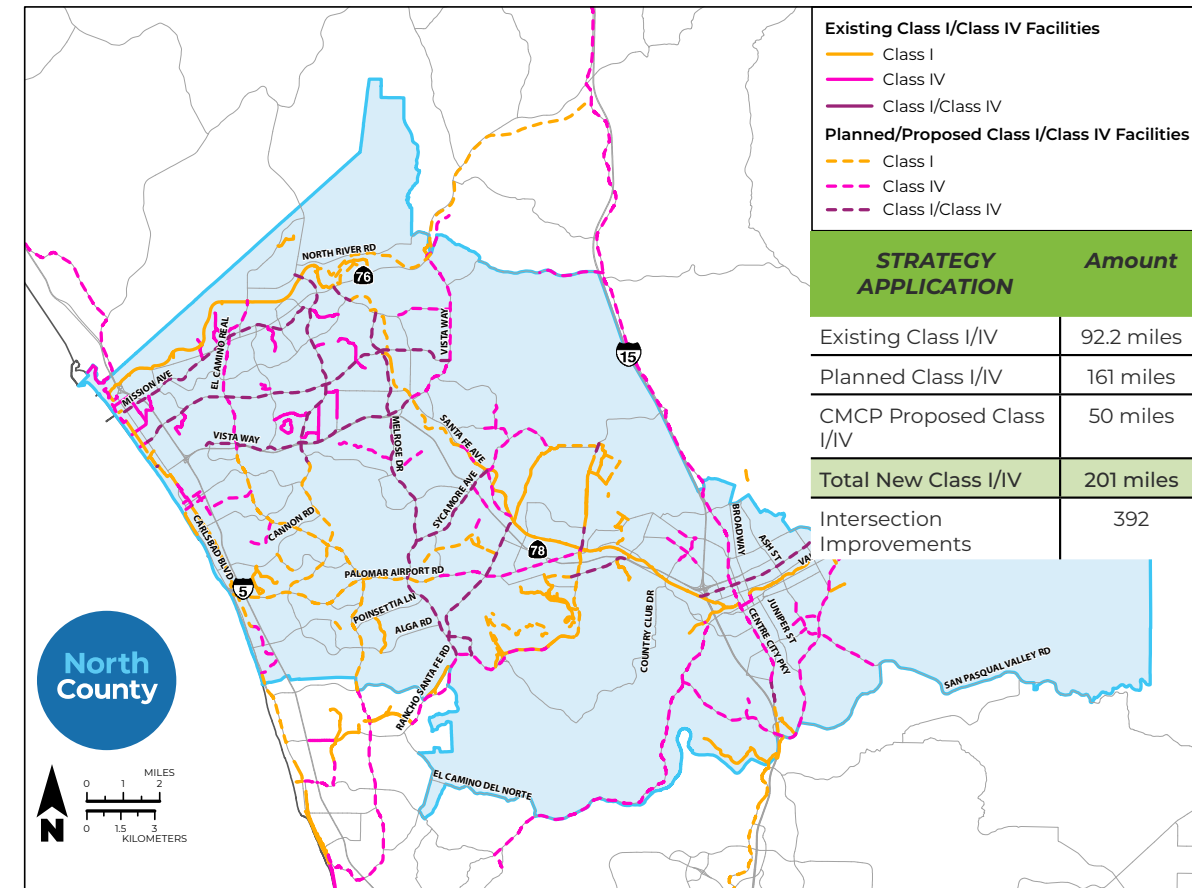
What It Means for North County

- Safer facilities and intersections for the transportation system's most vulnerable users (e.g., people who walk or bike)
- Reduction in conflicts and collisions between vehicles and people walking or biking
- Enhanced transportation network that provides a safe, convenient option for people who cannot drive or do not own a vehicle to get around
- Reduced air pollution and greenhouse gas (GHG) emissions
- Completed gaps for active transportation infrastructure along key local roads

What It Means for Users

- Shorter distances to walk and bike to destinations
- Safer travel crossings at intersections
- Opportunity to live a more active lifestyle
- Better access to transit stations and bus stops
- More low-cost options

Active Transportation



Bike Box in City of National City



Two-Way Cycle Bikeway (Source: NACTO)



RECONNECTING COMMUNITIES

STRATEGY

Provide a seamless transportation experience across agency boundaries and infrastructure (e.g., railroads, highways, overpasses/underpasses, and major arterials) for users.

Example Projects

- Closing Active Transportation Gaps across Interchanges and Crossings
- Improve Safety Devices/Design at Railroad Crossings
- Coordination across Freeway Interchanges (see TSMO Strategy)
- Intersection-to-Intersection Communication (between multiple agencies) (see TSMO Strategy)
- Arterial Coordination with Connected Ramp Meters (see TSMO Strategy)
- Signal Coordination with At-Grade Transit Guideway Crossings (see TSMO Strategy)

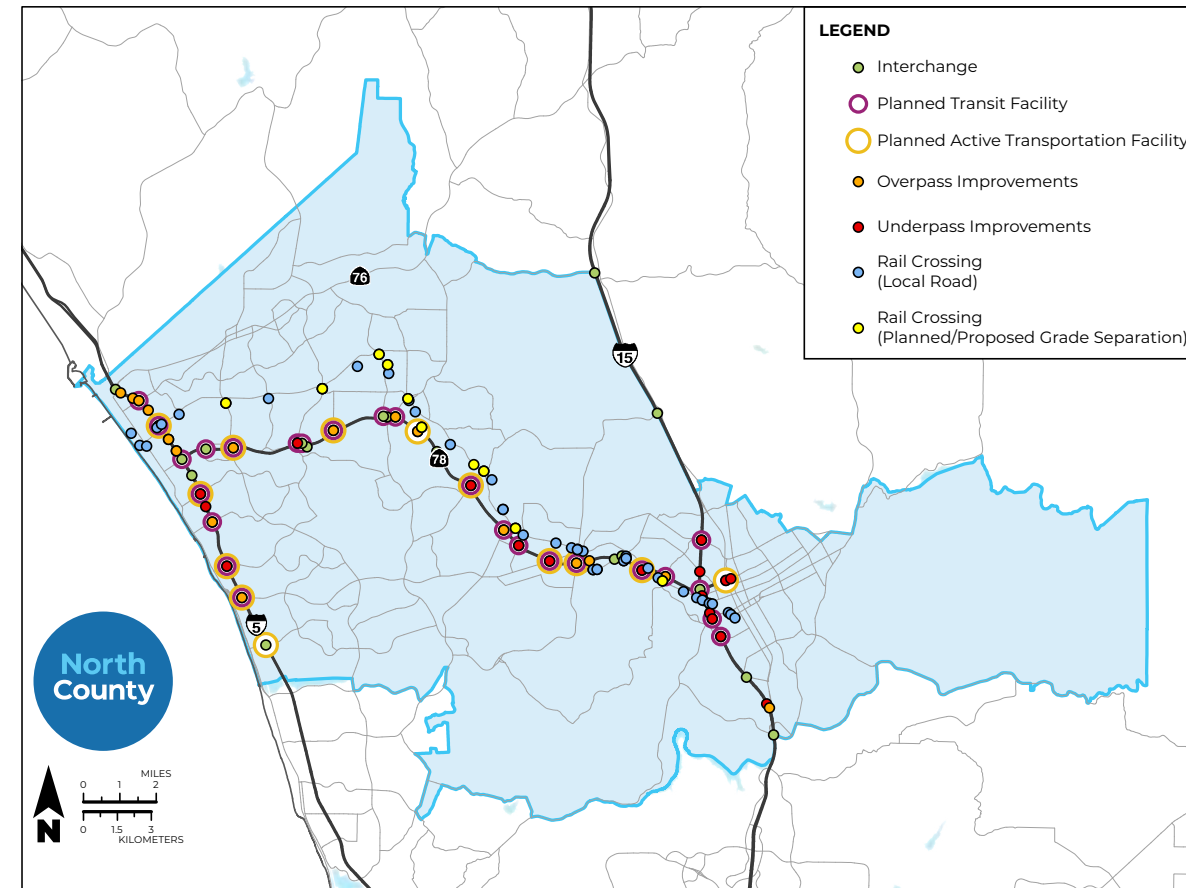
What It Means for North County

- Enhanced travel between communities at existing infrastructure that presents barriers and constraints (e.g., railroads, highways, and wide arterials) to all modes
- Interconnected system across agencies to create a seamless travel experience across agency boundaries
- Safer streets and intersections between State Highway System (SHS) and local roads

What It Means for Users

- Enhanced travel experience at railroad crossings, interchanges, and overpasses/underpasses
- Improved safety for all users at on/off-ramps, especially for people walking and biking
- Improved safety at rail crossings
- Minimized delay and congestion at on/off-ramps accessing the SHS
- Improved neighborhood connectivity, especially in areas with high concentrations of social equity focus communities
- Cleaner air from reduced greenhouse (GHG) emissions

Reconnecting Communities



Santa Fe Drive Underpass (Source: Google Maps)

| STRATEGY APPLICATION | Number of Intersections |
|--|-------------------------|
| Interchange Improvements | 23 |
| Overpass Improvements | 19 |
| Underpass Improvements | 23 |
| Rail Crossings | 38 |
| Rail Crossings with Planned/Proposed Grade Separations | 10 |

SPRINTER

STRATEGY

Increase use of SPRINTER by reducing or eliminating barriers to service and build out double-track in phases. Double track the SPRINTER corridor to the maximum extent possible to provide resiliency, operational flexibility and maximize reductions in headway times.

Example Projects

- Phased Double Tracking of SPRINTER Alignment
- Increased frequency between San Marcos and Escondido
- Increased frequency between Oceanside and Vista
- SPRINTER extension between Escondido and southern Escondido (Felicita Ave)
- Grade Separation with Intersection Improvements for Other Mobility Modes (see Reconnecting Communities Strategy)

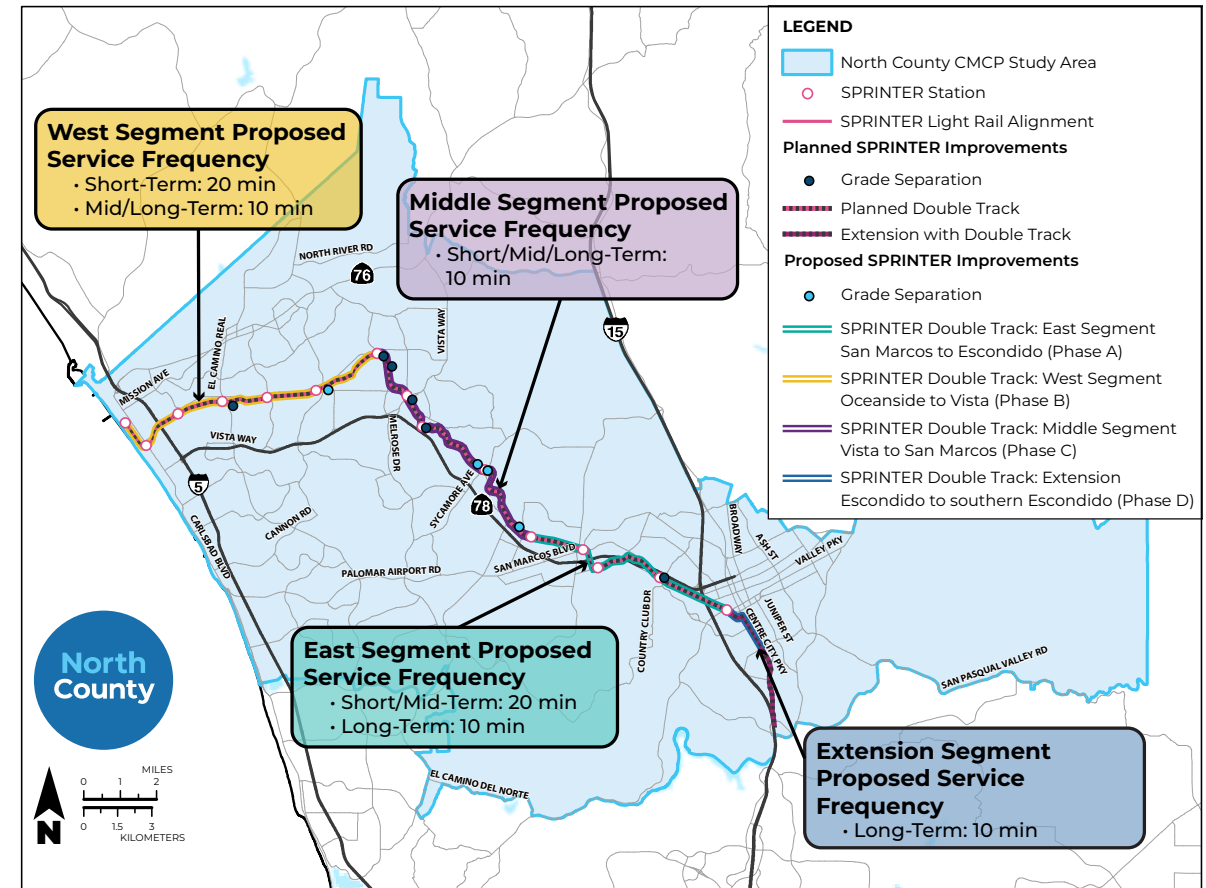
What It Means for North County

- Meet user demand and improve service frequency
- Phased improvements to align with anticipated development
- More seamless transition between modes
- Reduced conflict between modes at intersections

What It Means for Users

- More useful and convenient service
- Wider range of accessible destinations
- More reliable and reduced travel times
- A competitive travel option
- Improved safety at key intersections

SPRINTER



| STRATEGY APPLICATION | Amount |
|---|-----------|
| Grade Separation (Planned) | 6 |
| Grade Separation (Proposed) | 4 |
| East Segment San Marcos to Escondido (Phase A) | 6.5 miles |
| West Segment Oceanside to Vista (Phase B) | 8 miles |
| Middle Segment Vista to San Marcos (Phase C) | 7 miles |
| Extension Escondido to southern Escondido (Phase D) | 3 miles |



HIGH FREQUENCY CORE, RAPID, AND COMMUTER SERVICES

STRATEGY

Build upon NCTD's BREEZE core network to provide high-frequency, limited stop transit services to connect the community to key destinations within North County while creating a "grid" around SPRINTER and COASTER rail lines.

Example Projects

- Corridor Service Consolidation (from Mobility Boulevards)
- Rapid Style Stations
- Transit Queue Jumps and Signal Priority
- Direct Access Ramp(s) to Managed Lanes
- Night-bus network
- Transit Bypass Lanes
- Bus/Bike Lanes

What It Means for North County

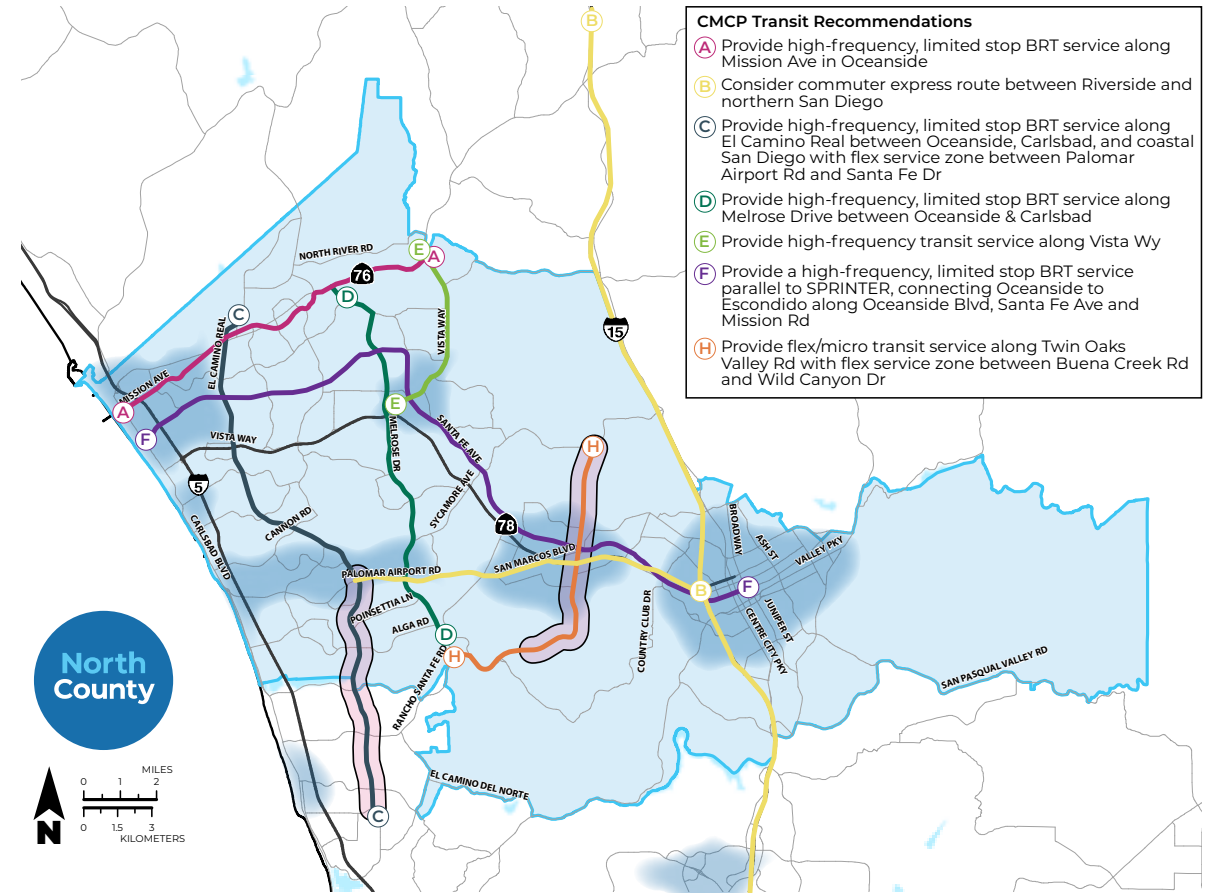
- Inter-connected transit service that serves all major corridors throughout North County CMCP study area (from inland communities to communities along the coast)
- Increased efficiency of bus travel through intersections with traffic signals that can adapt to changing conditions in real-time and prioritize transit services
- Reduced conflict between other modes with designated space for specific modes
- Increased person-throughput and reduce vehicle miles traveled (VMT) by making transit more convenient and attractive with more frequent service and reliable travel times
- Reduced delay of transit services

What It Means for Users

- Enhanced travel experience
- More reliable and on-time bus arrivals
- Faster bus trips
- Access to more jobs and opportunities
- Safer streets
- Increased options for high-speed transit services

To help inform this strategy, a transit demand and market analysis was completed. Details about the approach of the analysis can be found in **Appendix S**.

High Frequency Core, Rapid, and Commute Services



| STRATEGY APPLICATION | Amount |
|---------------------------|----------|
| BRT Services | 4 routes |
| Commuter Services | 2 routes |
| Frequent Transit Services | 1 route |
| Flex Services | 4 routes |

TSMO/ICM

STRATEGY

Coordinate and manage traffic operations for multiple modes within, across, and between agency boundaries of North County.

Example Projects

- Fiber/Wi-Fi Communications (with redundant paths) to Traffic Management Centers (TMCs)
- Integrated Corridor Management
- Traffic Incident Management
- Traffic Signal/Ramp Metering Improvements and Coordination
- Integrated Traveler Information at Mobility Hubs (i.e., shops, destinations), along Mobility Boulevards, and Regional Spines
- Operations and TMCs Coordination between and across Agency Boundaries
- See Regional “SMART” Highway Capacity Management and Smart Arterials and Intersection Sheets for more examples

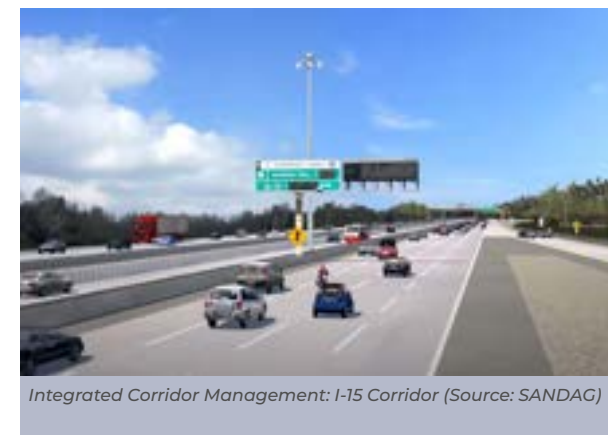
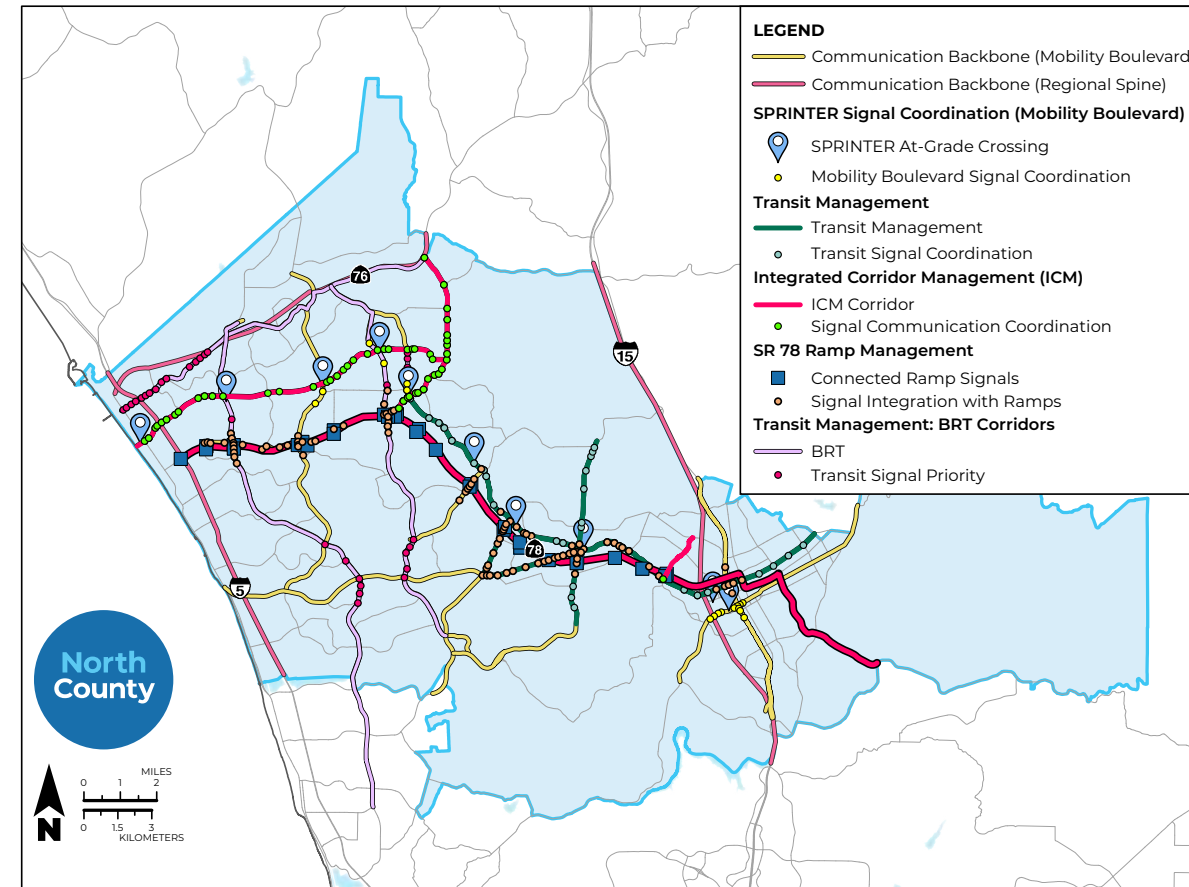
What It Means for North County

- Improved connectivity and traffic flow on and between State Highway System (SHS) and mobility boulevards
- Maximize the performance of the transportation system through flexible solutions to meet changing user needs and expectations in a cost-effective way
- Reduce impact of unexpected events (e.g., crashes, bad weather, work zones, and special events)
- More efficient and effective use of the existing capacity
- Increase person-throughput and reduce vehicle miles traveled (VMT)
- Intersection-to-intersection communication (between multiple agencies) to alleviate bottlenecks and optimize capacity through traffic operations
- Safer system for travelers and responders to traffic incidents
- Data collected to support traffic operations and inform performance management programs

What It Means for Users

- Reduced delay in trips, helping reach destinations on time regardless of the mode of travel
- More reliable service and travel time for people in carpools, rideshare, and transit
- Faster and less congested travel between home and work
- Safer streets and intersections

TSMO/ICM



| STRATEGY APPLICATION | Amount |
|---|----------------------------|
| Communication Backbone | 193 miles |
| SPRINTER At-Grade Crossing and Mobility Boulevard Signal Coordination | 10 crossings 66 signals |
| Transit Signal Coordination | 100 signals |
| Signal Coordination along ICM Corridors | 51 signals |
| Connected Ramp/Signal Integration | 30 ramps 102 signals |
| Transit Signal Priority | 87 signals |



MOBILITY AS A SERVICE (MAAS)

STRATEGY

Integration of various on-demand transportation services that facilitate a wide range of mobility options such as transit, carshare, rideshare, and micromobility.

Example Projects and Programs

- Peer-to-peer rental services (e.g., GoGet, FlexiCar)
- Micromobility services (e.g., Bird Scooters, Jump Bike)
- Rideshare apps (e.g., Uber, Lyft)

What It Means for North County

- Flexibility to efficiently adjust to changing commuter needs
- Reduced need for personal vehicles and thus, reducing the number of vehicles across communities
- Repurposed parking spaces for development such as businesses and housing
- Service for hard-to-access geographies
- Public-private partnerships
- Cost effective operations

What It Means for Users

- Personalized mobility solutions
- Integrated transportation services, real-time information, payment, and ticketing
- Increased options for short trips that are affordable and accessible
- Reduced congestion in peak travel times
- Park once or no park trips
- More modal choices
- A more responsive, efficient, and resilient transportation system



Mobility as a Service



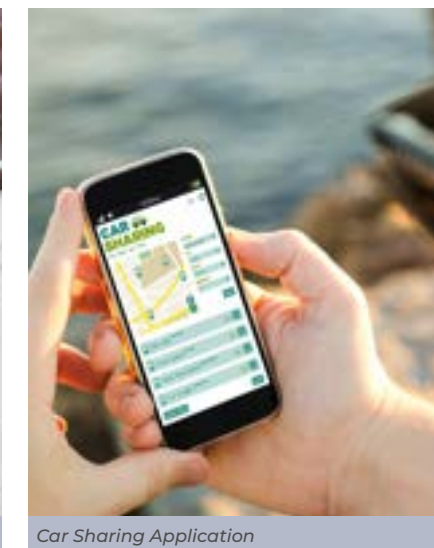
Access to Scooters



Bicycle Sharing Service Locator



Access to Docked Bike Charging Stations



Car Sharing Application



Trip Planning (Source: RideAmigos)



Transit Tap Card Kiosk



COMPLEMENTARY PROGRAMS

STRATEGY

Combine flexible mobility programs and complementary infrastructure improvements that amplify the benefits of the various modes.

Example Projects and Programs

- Telecommuting
- Transportation Demand Management (TDM)
- Electric Vehicle Charging Stations
- Secure Bike Parking
- Broadband Infrastructure
- Digital Wayfinding Kiosks
- Fleet Electrification
- Delivery Lockers
- Reduced Fair Vouchers
- Creek Restoration and Sustainability Program

What It Means for North County

- Increased access to activity centers, SPRINTER stations, educational institutions, and other key destinations while reducing the number of vehicle miles traveled
- Decreased congestion by encouraging use of shared mobility services
- Support for zero emissions infrastructure and telecommuting
- Intersection-to-intersection communication across communities, facility types, and agencies
- Community partnerships to increase sustainable and equitable transportation options
- More funding for increased zero emissions infrastructure
- Reduced chance of flooding at creeks and increased climate resiliency

What It Means for Users

- Increased access to recreation opportunities
- Increased flexibility
- More EV Charging options
- Better local air quality
- Increased access to jobs
- More efficient trips
- Diverse options

Complementary Programs



Digital Wayfinding Kiosk



Secure Bike Parking



Increased Telecommuting



Specialized Vehicles to Serve All Needs



Electric Vehicle Charging



Broadband Infrastructure

STRATEGY LAYER APPROACH

The CMCP’s layering approach is a powerful, resilient tool for addressing diverse mobility needs and has the ability to adapt and shift to respond to new or evolving transportation challenges.

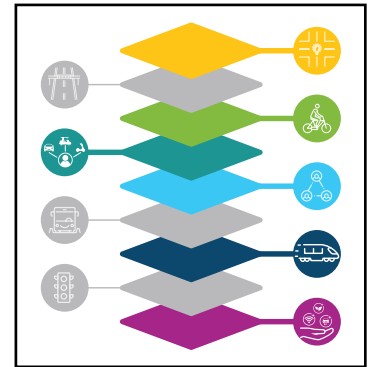
Utilizing a layering approach allows development of transportation solutions that effectively advance the vision of mobility for North County travelers by recognizing the interdependence of solutions and taking advantage of the synergy effect of implementing improvements together. **Figure 5-3** to **Figure 5-5** are examples of how the strategies can be layered with one another and complement each other. Each example is organized in the following way: purpose of the strategy layer, how it responds to the subregion’s opportunities and constraints, other strategy layers that support, and the result of applying the combined strategy layers.

Figure 5-3: Strategy Layering Example #1



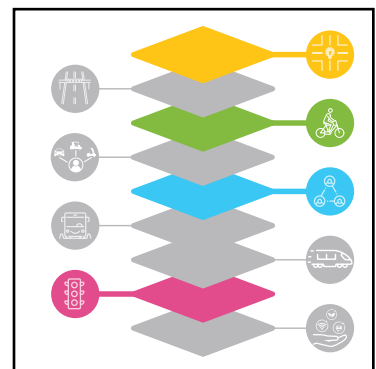
The **Active Transportation** strategy expands the active transportation network to reinforce connections and provide protected facilities for pedestrians and cyclists. A key opportunity for partnership between and with cities, this strategy was developed in response to observed collisions, growing e-bike and micromobility technology, and the high percentage of short trips (less than 3 miles) within North County. Active transportation improvements in combination with other strategies, such as **Transportation Interfaces** and **Smart Arterials and Intersections**, can facilitate safety improvements such as safer access to destinations/safe routes to school, and encourage the comfortable use of micromobility modes for shorter trips within North County communities.

Figure 5-4: Strategy Layering Example #2



The **SPRINTER** strategy is a targeted approach to implementing higher-frequency, faster, and more reliable SPRINTER service across North County. The SPRINTER serves several key destinations within North County with a high on-time performance; however, while on-time performance is high, the service is not reliably convenient due to lower frequency of service and difficult station accessibility. SPRINTER can become a more attractive option for users through targeted SPRINTER high frequency improvements (10- or 15-minute frequency) and station mobility and access improvements through the **Reconnecting Communities, Complementary Programs, Mobility as a Service, and Active Transportation** strategies.

Figure 5-5: Strategy Layering Example #3



The **Reconnecting Communities** strategy is focused on providing a seamless customer experience across transportation facilities (e.g., Interstate 5 or State Route 78). This strategy responds to transit station accessibility, the “barrier effect” regional facilities such as SR 78 and SPRINTER can have on communities, and the lack of coordinated door-to-door transportation services. Layering of Transportation Interface improvements with **Smart Arterials and Intersections, Mobility as a Service** and **TSMO/ICM** strategies can provide opportunities to improve user experience, provide consistent travel times, and allow for faster transit service along North County’s major arterials.



Adapting to Uncertainty and Variability

Planning for unknown variables is an imperative component of the North County CMCP. Unpredictable events will shape the future in ways that cannot be anticipated including:

- **New technology adoption and advancement** – the market penetration and adoption of new technologies such as electric vehicle, connected vehicles, and autonomous vehicles.
- **Population, land use, and job growth** – the rate and density of development for housing and job centers and the location of these developments, impacting the number of people and jobs the transportation system will need to support.
- **Evolving demands and priorities** – the rise of new regional and state policies, regulations, and fees such as the potential of a vehicle miles traveled (VMT) user fee.
- **Macroeconomic changes** – the potential disruption or changes of external economic factors that cannot be controlled.
- **Sustainability and resiliency** – the impacts climate change and sea-level rise are having on transportation infrastructure and the ability for the subregion’s transportation system to move people around in the face of one or more obstacles to normal conditions.
- **Changing demographics and trip patterns**

These uncertainties will present challenges as well as new opportunities. Understanding and accepting this uncertainty requires a transportation system that is nimble and adaptive in the face of challenges. The CMCP provides flexibility for agencies to pivot when more clear information and trends about unknown variables are discovered—allowing transportation solutions to change over time and ensure mobility in the corridor meets the goals and objectives of the CMCP.

There are projects and programs identified by stakeholders that depend on certain conditions and “what if” scenarios. These are identified to monitor conditions and help elevate projects when the “what if” conditions arise—facilitating a nimble and flexible CMCP for when conditions change.





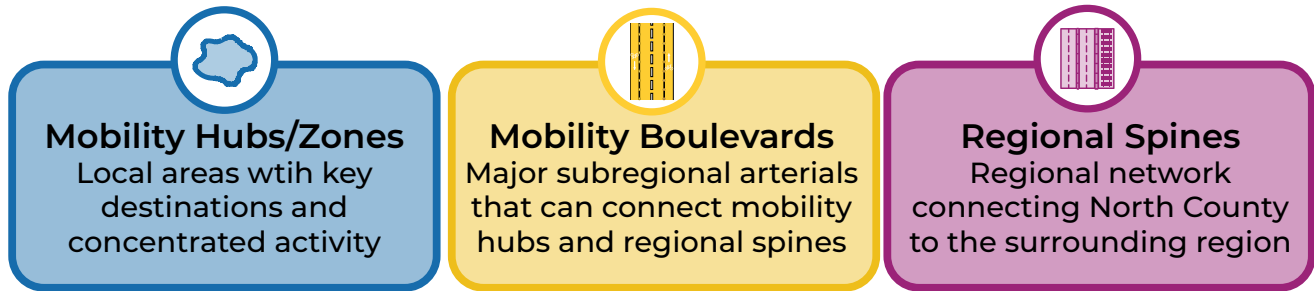
The Strategic Anchors

As described in **Chapters 2 and 3**, North County has significant mobility needs ranging from local community mobility to regional transportation. The CMCP Mobility Solution requires a framework that represents the best opportunity to meet plan goals and objectives to address North County’s mobility needs—and, therefore, priorities for state and regional funding. For North County, this framework is based on “strategic anchors” focused on facilities and travel at the local, subregional, and regional levels.

The strategic anchors are used to guide strategy, program, and project identification, development, and implementation to accomplish the goals and objectives set out for a successful North County transportation system.



The strategic anchors framework consists of three categories where each anchor complements the other to provide a balanced and integrated mobility network. The strategic anchors are:



These strategic anchors work in tandem, reinforce the alignment between transportation owners/ stakeholders, and are a means to identify projects and solutions that provide mobility improvements at the local, subregional, and regional levels as well as provide an enhanced travel experience. Additional information about travel time experience can be found in **Appendix T**. They’ll also provide the required organization and guidance to:

- Develop transportation solutions to address and balance local, regional, and state needs across communities and different users’ travel needs, and
- Strategically advance projects and programs emphasizing those that provide the most system benefit.



MOBILITY HUBS

Mobility Hubs are *areas or zones* with a high level of activity with potential to benefit from a greater concentration of mobility options—walking, biking, transit, neighborhood electric vehicles, and shared mobility. Successful mobility hubs are key in addressing affordable housing, better aligning employment with housing and reducing trip lengths. Mobility hubs are a strategic anchor for providing:

- “locally focused mobility solutions” through an integrated suite of mobility services, amenities, and supporting technologies to better connect high-frequency transit to an individual's origin or destination;
- integration between communities and activity centers through on-demand travel choices for short trips (less than 3 miles); and
- the transportation infrastructure and mobility services between 1) *activity centers* and 2) *mobility boulevards/regional spines*.

Mobility hubs are comprised of mobility programs and services focused on local mobility. Mobility hub program sheets (see **Attachment 1**) have been developed for several types of programs that are anticipated to be deployed within mobility hubs.

Within the study area, by 2050 North County mobility hubs/zones will include 320,000 residents and 250,000 employees—encompassing:



- » 67% of employment
- » 43% of population
- » 54% of low-income population
- » 45% of People of Color communities
- » 40% of 75 and older population



Source: City of San Marcos - North City



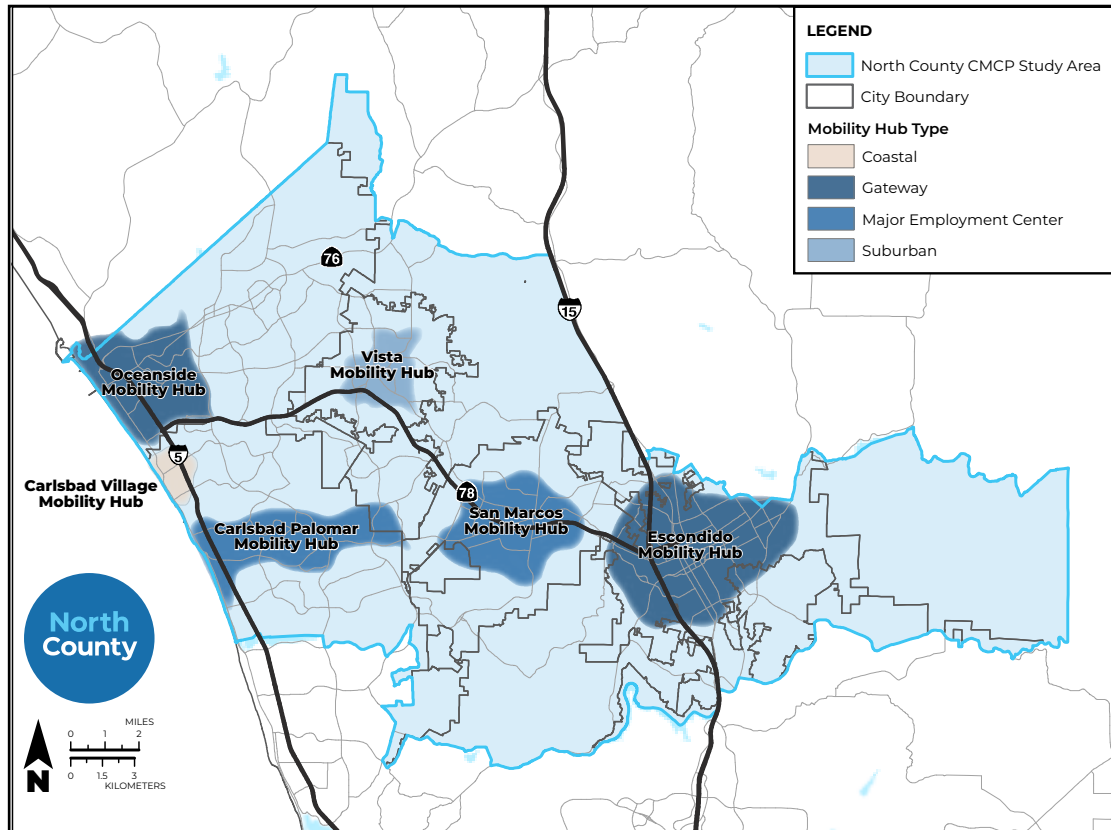
Identified Mobility Hubs/Zones

SANDAG’s Regional Vision and 2021 Regional Plan identified types of mobility hubs that reflect different geographic, land use, and transportation contexts. The following are the four types of mobility hubs identified in North County:

Table 5-1: Types of Mobility Hubs/Zones

| TYPE | DESCRIPTION | LOCATIONS WITHIN NORTH COUNTY |
|--------------------------------|--|-------------------------------|
| Gateway | Act as an entry point into the regional network. These mobility hubs are geographically near to “gateways” into the region including starting points of high frequency transit services. | Oceanside and Escondido |
| Major Employment Center | Regionally significant employment centers not in the Gateway hubs. | Carlsbad and San Marcos |
| Coastal | Located along the coastal areas of the region that are popular seaside and recreational destinations for residents and visitors alike. | Carlsbad Village |
| Suburban | Primarily residential and serve as large population centers. | Vista |

Figure 5-6: Mobility Hubs/Zones in the North County Subregion



Factors for Success

Mobility Hubs/Zones are most successful when the following conditions are present:

Figure 5-7: Factors for Mobility Hub Success





Mobility Boulevards - An Element of Complete Corridors

Mobility Boulevards are North County’s major arterials that are critical to moving people and goods—especially between regional facilities (i.e., I-5, I-15, SR 78, SPRINTER) and North County’s Mobility Hubs (i.e., major activity centers). Mobility Boulevards provide the web of major roadways needed to provide subregional connectivity and provide the following for the CMCP:

- Focus on “person throughput” rather than vehicle throughput
- Support safety and comfort for all modes of travel while promoting efficient movement
- Expand the function of the street to be more inclusive of various transportation users by allocating safe, comfortable space for walking, biking, and accessing transit
- Transportation options that complement one another, helping move more people and goods seamlessly while providing communities with mobility options

Identifying Mobility Boulevards

Mobility Boulevards have subregional significance—meaning they are not just local arterials that get people to the state highway system or serve as downtown main streets. They are corridors that carry a large amount of people and vehicles as they connect cities, communities, and major activity centers—approximately 40% of fatal and serious injuries over the last five years occurred along Mobility Boulevards. Mobility Boulevards will continue to serve North County’s multimodal transportation needs into the future.

The following information was utilized when selecting the candidates for Mobility Boulevards:

- Connection to activity centers/communities
- Adjacent land uses (residential, mixed-use, commercial)
- Alternative paths to state highway system
- Top routes of travel for users
- Potential for higher quality investments for pedestrians, bicyclists, and transit
- Estimated vehicle miles traveled (existing and future)
- Estimated existing peak hour volume
- Historic safety data

Additional information about the existing estimated peak hour volume of Mobility Boulevards can be found in **Appendix N**.

Mobility Boulevard sheets identify mobility solutions along each Mobility Boulevard to advance the vision, values, and goals set for North County.

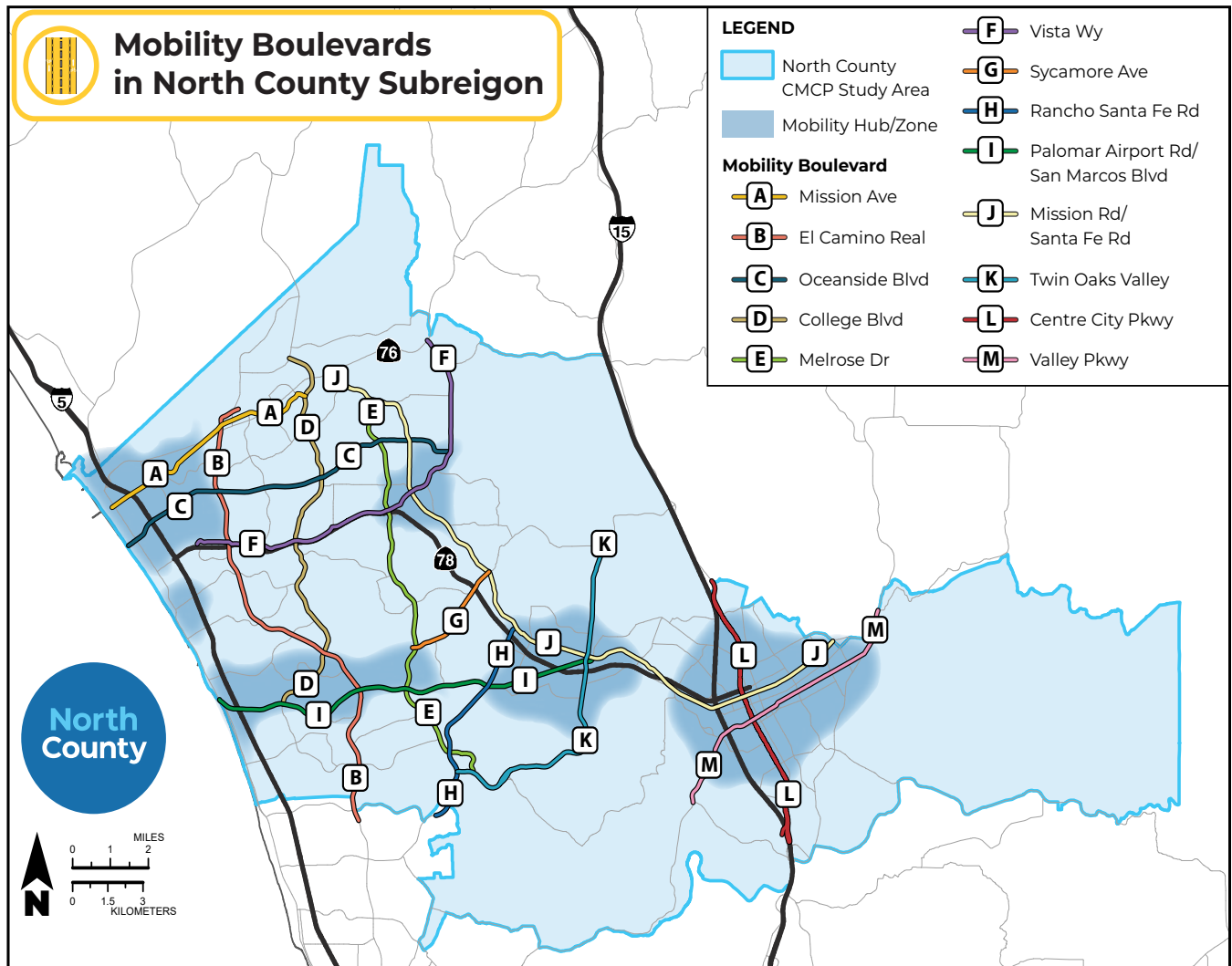
Click on one of the Mobility Boulevards below to jump to that specific Concept Sheet in **Attachment 2**:

- » Palomar Airport Road/San Marcos Boulevard
- » El Camino Real
- » Melrose Drive
- » Santa Fe Ave/Mission Road
- » Mission Avenue
- » College Boulevard
- » Oceanside Boulevard
- » Vista Way
- » Sycamore Avenue
- » Rancho Santa Fe Road
- » Twin Oaks Valley Road/San Elijo Road
- » Valley Parkway
- » Centre City Parkway



The identified Mobility Boulevards for the subregion are shown in **Figure 5-8**.

Figure 5-8: Mobility Boulevards for the North County CMCP





Factors for Success

Mobility Boulevards provide multiple benefits for the subregion including:



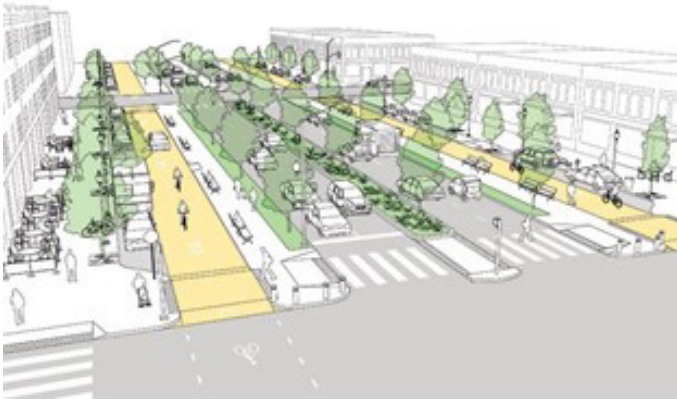
Mobility Boulevards provide an emphasis on multimodal, higher person-throughput and providing a safer environment for walking and biking along and across the boulevards. They are most successful when:

- Smart corridor concepts and technologies are incorporated to support higher person throughput
- Walking is supported with wider sidewalks and enhancements to the public realm within mobility hubs
- Biking is supported through separated facilities (Class IV facilities) that allow safe movement for e-bikes, regular bikes, and other micromobility options
- Transit is more frequent and has faster travel times by integrating flexible lanes (HOV 3+ or transit-only) and upgraded transit stops
- **Table 5-2** below provides examples of how North County travelers can benefit from Mobility Boulevards.

Table 5-2: Quality Investments for Mobility Boulevards

| INVESTMENT EXAMPLE | MODE SERVED | BENEFITS |
|-----------------------------|-------------|---|
| Wider Sidewalk | Walking | <ul style="list-style-type: none"> ➤ Minimize conflicts between pedestrians and vehicles ➤ Improve shopping experience with streets with retail land uses |
| Public Realm Enhancements | Walking | <ul style="list-style-type: none"> ➤ Buffer and protect pedestrians from roadway traffic ➤ Provide comfortable places to sit and rest |
| Class IV Separated Bikeways | Biking | <ul style="list-style-type: none"> ➤ Provide the safety, comfort, and separation most people want and need to consider bicycling ➤ Improve safety for bicyclists, drivers, and pedestrians |
| Transit-Only Lanes | Transit | <ul style="list-style-type: none"> ➤ Improve on-time performance and transit efficiency, bypassing congestion at intersections |
| Upgraded Transit Stops | Transit | <ul style="list-style-type: none"> ➤ Provide a comfortable, shaded waiting space ➤ Accessible and fast boarding |
| Smart Intersections | All | <ul style="list-style-type: none"> ➤ Improve person throughput through coordinated signals (both arterial and at freeway ramps) and more efficient signal operations ➤ Minimize conflicts between cyclists and vehicles |

Below are illustrative examples of Mobility Boulevards.





Regional Spines

Regional Spines are the regional transportation facilities that connect North County to the neighboring regions in southwest Riverside County, Orange County, and the rest of San Diego County. Regional Spines:

- Focus on “person throughput” rather than vehicle throughput including priority access for transit, carpooling, or vanpooling;
- Are historically high investment corridors that connect the subregion to the rest of the San Diego region and surrounding regions such as the counties of Riverside, San Bernardino, Los Angeles, and Orange. In addition to subregional importance these facilities play a significant role in meeting interregional and interstate mobility needs;
- Contain high capacity infrastructure for medium- to long-distance movement of people and goods;
- Will enable technology to accommodate efficient movement and modify the corridor based on changing traffic conditions; and
- Will utilize high-speed communication networks to allow connected vehicles, smartphones, and smart arterials to share data.

As part of **Attachment 3**, there is a sheet for each Regional Spine identified for the subregion. These sheets identify transportation solutions that can be implemented to improve the way users travel, and enhance the mobility options for these regional corridors, ultimately achieving the vision, values, and goals set for the subregion.

Identified Regional Spines

The following are corridors considered to be critical to subregional connection internally and to the surrounding regions:

- **SPRINTER** – connecting the North County study area to the COASTER, Metrolink, and Amtrak where users can transfer to commuter and intra-city rail services and travel to coastal cities in San Diego County, downtown San Diego, cities in Los Angeles County and Orange County, and even destinations in Riverside County and San Bernardino County
- **Inland Rail Trail** – part of the regional bike network, connecting the North County study area to other active transportation facilities in the regional bike network such as the Coastal Rail Trail and to SPRINTER stations
- **SR 78** – connecting users to communities throughout the North County study area and to other corridors that are part of the state highway system such as I-5 and I-15 to allow users to connect to surrounding regions
- **SR 76** – connecting users to communities in Riverside County and the northern portion of the North County study area and to Camp Pendleton (a major activity center immediately adjacent to the study area)
- **I-5** – connecting the North County study area to coastal cities in San Diego County as well as destinations in Los Angeles County and Orange County
- **COASTER (LOSSAN²²) Corridor** – connecting the North County study area to coastal cities in San Diego County via commuter rail.
- **I-15** – connecting the North County study area to inland cities in San Diego County, Riverside County, and San Bernardino County

Regional Spines sheets identify mobility and infrastructure solutions along each regional spine.

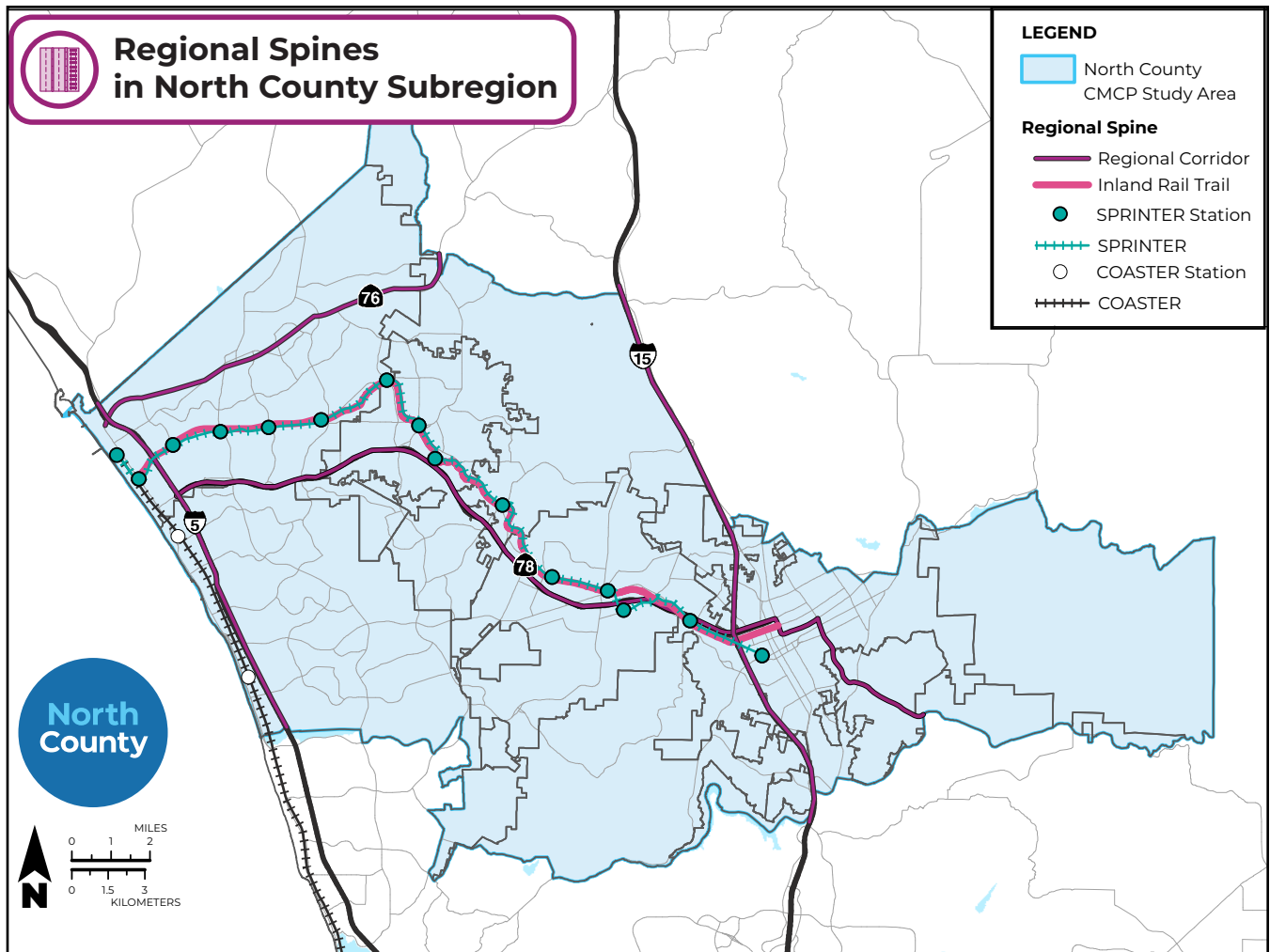
Click on one of the Regional Spine below to jump to that specific Concept Sheets in **Attachment 3**:

- » SPRINTER
- » Inland Rail Trail
- » SR 78
- » SR 76
- » I-5



²² Los Angeles-San Diego-San Luis Obispo Rail Corridor

Figure 5-9: North County CMCP Regional Spines



Factors for Success

Regional Spines are successful when:

- Technology (e.g., V2I or dynamic lane management) is embedded into the system to allow transportation operations managers to maximize the movement of people (i.e., person-throughput) by actively monitoring/managing corridor services and lanes based on changing travel conditions and user needs;
- Seamless transitions are available for users as they travel from activity centers (mobility hubs/zones) along main local roads (Mobility Boulevards) to the state highway system, SPRINTER, or Inland Rail Trail; and
- Facility designs address impacts of interregional and interstate transportation on adjacent communities.



The Plan

Through the strategy layers and framework, the Plan identifies the 48 mobility programs, projects, and services that can cohesively work together as an integrated transportation system and support the existing and future mobility needs of North County residents, employees, businesses, and visitors.

The CMCP is intended to connect the dots between where you are and where you want to go, by providing new or improved travel options in North County. With the CMCP, local communities will be empowered to advance local improvements while advancing North County CMCP values, goals, and objectives. In other words, the CMCP will support the collaboration of North County transportation agencies in developing improvements and implementing projects that reinforce community connectivity, economic vitality, and provide an overall better customer experience.

The following is a summary of the proposed CMCP Plan.



NORTH COUNTY CMCP SUMMARY



Regional SMART Highway Capacity Management **\$2,500 M**

| | |
|--------------------------------------|----------|
| Urban Corridor Managed Lanes | 17 miles |
| Rural Corridor (SR 78 to Ramona) | 13 miles |
| Interregional Corridor Managed Lanes | 14 miles |
| Direct Access Ramp | 1 |
| Freeway Connector | 1 |
| Managed Lanes Connector | 2 |



Smart Arterials and Intersections **\$100 M**

| | |
|-----------------------------------|-----|
| Study Area Intersections | 452 |
| Mobility Boulevard Intersections | 392 |
| Regional Spine Intersections | 85 |
| Mobility Hub Intersections | 69 |
| 3 Strategic Anchors Intersections | 49 |



Reconnecting Communities **\$300 M**

| | |
|---------------------------------------|----|
| Interchange Improvements | 23 |
| Overpass Improvements | 19 |
| Underpass Improvements | 23 |
| Rail Crossings | 38 |
| Rail Crossings with Grade Separations | 9 |



Complementary Programs **\$250 M** **\$50 M***

| | |
|------------------------------------|----------------------------|
| EV Infrastructure | 55 EV sites |
| Passenger Loading Zones | 257 PUDOs |
| Micromobility Charging and Parking | 25 charging 189 parking |
| Interactive Travel Kiosks | 110 kiosks |
| Parcel Delivery Lockers | 50 lockers |
| Carshare Parking | 453 stalls |
| Evacuation Response | 1 center 8 units |
| Supporting Policies and Programs | 16 policies/programs |

*Estimated operating costs



High Frequency Core, Rapid, and Commuter Services **\$270 M** **\$1,300 M***

| | |
|---------------------------|----------|
| BRT Services | 4 routes |
| Commuter Services | 2 routes |
| Frequent Transit Services | 1 route |
| Flex Services | 4 routes |



SPRINTER **\$1,400 M** **\$1,300 M***

| | |
|--|-----------|
| Grade Separations | 9 |
| East Segment: San Marcos to Escondido | 6.5 miles |
| West Segment: Oceanside to Vista | 8 miles |
| Middle Segment Vista to San Marcos: | 7 miles |
| Extension: Escondido to southern Escondido | 2 miles |



TSMO/ICM **\$70 M** **\$50 M***

| | |
|--|----------------------------|
| Communication Backbone | 193 miles |
| SPRINTER At-Grade Crossings and Mobility Boulevard Signal Coordination | 10 crossings 66 signals |
| Transit Signal Coordination | 100 signals |
| Signal Coordination along ICM Corridors | 51 signals |
| Connected Ramp/Signal Integration | 30 ramps 102 signals |
| Transit Signal Priority | 87 signals |



Active Transportation **\$580 M**

| | |
|--------------------------------|-----------|
| Planned Class I/IV Facilities | 161 miles |
| Proposed Class I/IV Facilities | 50 miles |
| Total New Facilities | 201 miles |
| Intersection Improvements | 392 |



Mobility as a Service **\$50 M** **\$370 m***

| | |
|--------------------------------|-----------|
| Microtransit Services | 1 per hub |
| Neighborhood Electric Vehicles | 1 per hub |
| Micromobility Fleet | 1 per hub |



The overall cost of the 48 mobility programs, projects, and services is approximately \$8.5 billion with approximately \$5.5 billion for transportation infrastructure and \$3 billion in operating costs. The breakdown of the overall cost by layer is approximately:

| STRATEGY LAYER | CAPITAL COST (MILLIONS) | OPERATING COST (MILLIONS) |
|---|-------------------------|---------------------------|
| Regional Smart Highway Capacity | \$2,500 | (1) |
| Smart Arterials and Intersections | \$100 | (1) |
| Transportation Interfaces | \$300 | (1) |
| Active Transportation | \$580 | (1) |
| Mobility as a Service | \$50 | \$370 |
| High Frequency Core, <i>Rapid</i> , and Commuter Services | \$270 | \$1,300 |
| SPRINTER | \$1,400 | \$1,300 |
| TSMO/ICM | \$70 | \$60 |
| Complementary Programs | \$200 | \$50 |

Notes: (1) Incorporated under TSMO/ICM operating costs.

For the compiled list of projects and programs, see **Attachment 4**.



Mobility Solution Takeaways

There is no single transportation investment that will solve the mobility issues of today and tomorrow. There are several unknowns about the future that need to be monitored to effectively implement the transportation solution strategy. However, through the layering and bundling approach of the Transportation Strategies and Anchors, the CMCP identifies opportunities for mobility investments that align with the North County CMCP vision, goals, and objectives. By using this approach, the transportation solution strategy will perform well to address mobility needs at the local, subregional, and regional levels and make progress towards state and regional goals and policies.

The mobility solution strategy can be summarized with the following:

- ▲ **Think differently about mobility challenges and the potential solutions.** Working towards improving best practices and innovative mobility solutions for different travel patterns guided by the North County CMCP vision, goals, and objectives to ensure community and stakeholder mobility priorities and needs were being addressed.
- ▲ **Nimble framework through layers and anchors.** Utilized the nine strategy layers within the strategic anchors to: address mobility issues in the subregion, support the subregion's vision for mobility, and align with the subregion's goals. The CMCP framework allows for adaptability and resiliency to changing conditions—allowing North County to pivot, as necessary, within and between local (mobility hubs/zones), subregion (mobility boulevards), and regional (regional spines) levels.
- ▲ **Build on today to setup for the future.** Through multiple strategies working together, the CMCP aims to address current deficiencies and concerns in a way that allows for future changes in a variety of possible scenarios.

Chapter 6 will further explore the performance and program consistency associated with implementing the North County CMCP transportation solution strategy. Through the evaluation of the performance measures and performance indicators, we can understand in the short-, mid-, and long-term:

- How far can we move the needle?
- What would it take to achieve the North County CMCP goals?
- What consequences might arise?

6

PERFORMANCE ASSESSMENT AND PLAN PHASING

In this Chapter, the CMCP answers fundamental questions regarding the proposed Mobility Solution (i.e., The Plan):

- *How successful can the Mobility Solution be in achieving North County's and Region's goals and objectives?*
- *How can the Mobility Solution be implemented (i.e., phased) to achieve potential success?*





6 PERFORMANCE ASSESSMENT AND PLAN PHASING

CMCP Forecasted Performance

The development of a well-rounded program of performance measures accomplishes two goals:

- Forecasts the effectiveness of the proposed (CMCP) improvements relative to the existing conditions and the Corridor’s Goals and Objectives outlined in Chapter 4
- Provides a framework for monitoring the effectiveness of completed improvements based on actual field conditions. This monitoring will compare actual field conditions to forecasted performance and identifies trends in other external influences that may affect that anticipated performance.

The CMCP’s performance modelling results answers the first fundamental question in the affirmative:



Yes, the CMCP is projected to be successful in meeting its objectives by improving travel times, providing more mobility choices for short trips, and providing mobility access to those who need it the most.

Development of the performance evaluation included adding the new improvements to the SANDAG’s ABM model. Note that other than the CMCP modifications, all other inputs to the ABM model remained consistent with the region’s 2021 RTP. Based on the updated modeling, the CMCP improvements will provide:

- ✓ Improving multimodal use for all trips and short trips
- ✓ Supports job growth within mobility hubs and improves access to jobs and key destinations
- ✓ Reduces VMT per resident by over two miles
- ✓ Spend less time traveling by reducing vehicle hours traveled per resident and employee
- ✓ Leverage transit services and infrastructure to carry over 130,000 people per day
- ✓ Improve access to transit for future residents through connecting transportation and destinations within mobility hubs



Estimated 2050 Performance Measures

Table 6-1 below provides a breakdown of the performance metrics provided by the modeling.

| Table 6-1: Estimated 2050 Performance Measures | | |
|--|-------------------|-------------------|
| MEASURE | 2016 CONDITIONS | 2050 ESTIMATE |
| Percentage of Regional Population | 20% | 20% |
| Percentage of Regional Employment | 18% | 16% |
| North County percentage of regional VMT ¹ | 10% | 18% |
| Number of jobs in North County | 259,700 | 336,200 |
| Number of residents in North County | 660,700 | 743,000 |
| Daily Person Hours Traveled Per Capita ⁽¹⁾ | 2.00 | 0.78 |
| Daily Person Hours Traveled Per Employee | 2.56 | 1.72 |
| Number of Jobs within Mobility Zones | 161,500 | 260,200 |
| Number of Residents within Mobility Zones | 263,100 | 437,300 |
| Non-SOV Modal Share for all trips (±1%) | 52% | 56% |
| Shared Ride 2 and 3+ | 44% | 41% |
| Transit | 1% | 5% |
| Active Transportation (Walk and Bike) | 7% | 10% |
| Non-SOV Modal Share for trips less than 3 miles (±1%) | 62% | 64% |
| Shared Ride 2 and 3+ | 45% | 40% |
| Transit | 1% | 3% |
| Active Transportation (Walk and Bike) | 16% | 21% |
| SPRINTER Average Weekday Ridership | 9,100 | 42,600 |
| BREEZE Average Weekday Ridership | 26,000 | 102,100 |
| Average Daily Vehicle Miles Traveled in North County | 15,061,000 | 16,185,830 |
| per capita | 18.58 | 16.03 |
| per employee | 25.08 | 20.51 |
| Percentage of short trips (3 miles or less) | 40% | 43% |
| Within 0.5 miles of High-Frequency Transit Stops | | |
| % of North County residents | 12% | 49.8% |
| % of North County jobs | 3% | 87.9% |
| % of North County SEFC | 7% | 85.7% |

Notes: (1) Developed using "segment-based" analysis, not "trip-based" calculations.



Improving Destination Accessibility By Transit

As part of Chapter 3, “Destination Accessibility via Transit,” accessibility was assessed via a 30-minute travel analysis (or 30-minute isochrone)—providing a quantitative and visual representation of how far users can travel within a given time frame. A similar analysis was performed for the proposed North County transit network to show how many destinations, housing units, and jobs are within a certain travel time (in this case, 30 minutes). The proposed isochrones help identify how accessibility is improved using the transit network. **Appendix W** details the methodology and analysis of the 13 isochrone origins in the proposed transit network.

A series of 30-minute travel sheds (or isochrones) were developed and analyzed for the North County Study Area during the PM peak; **Figure 6-1** shows an example of a proposed transit network isochrone shed compared to an existing transit network isochrone shed. **Table 6-2** highlights how the proposed transit network would perform in existing and future land uses.

Table 6-2: Comparison of 30-minute Travel in North County Existing (2016) and Proposed (2050) Transit Networks

| LOCATION | EXISTING TRANSIT ACCESS | PROPOSED TRANSIT COMPARISON (EXISTING LU) | PROPOSED TRANSIT COMPARISON (FUTURE LU) |
|--|---|--|---|
| Vista Village | 140 Points of Interest 17,100 Housing Units 15,100 Jobs | 200 Point of Interest 21,600 Housing Units 32,600 Jobs | 31,400 Housing Units 40,600 Jobs |
| Downtown Escondido (Maple and Grand) | 140 Points of Interest 21,000 Housing Units 26,900 Jobs | 150 Point of Interest 20,700 Housing Units 34,200 Jobs | 33,100 Housing Units 40,400 Jobs |
| Faraday Avenue and El Camino Real | 40 Points of Interest 1,400 Housing Units 22,900 Jobs | 90 Point of Interest 3,600 Housing Units 41,700 Jobs | 14,300 Housing Units 53,200 Jobs |
| Downtown Oceanside (Wisconsin and Coast Highway) | 120 Points of Interest 14,000 Housing Units 20,000 Jobs | 160 Point of Interest 20,300 Housing Units 28,400 Jobs | 32,300 Housing Units 33,400 Jobs |
| Viva Vera Cruz and San Marcos Blvd. | 70 Points of Interest 3,500 Housing Units 16,000 Jobs | 370 Point of Interest 33,200 Housing Units 92,300 Jobs | 57,200 Housing Units 121,900 Jobs |



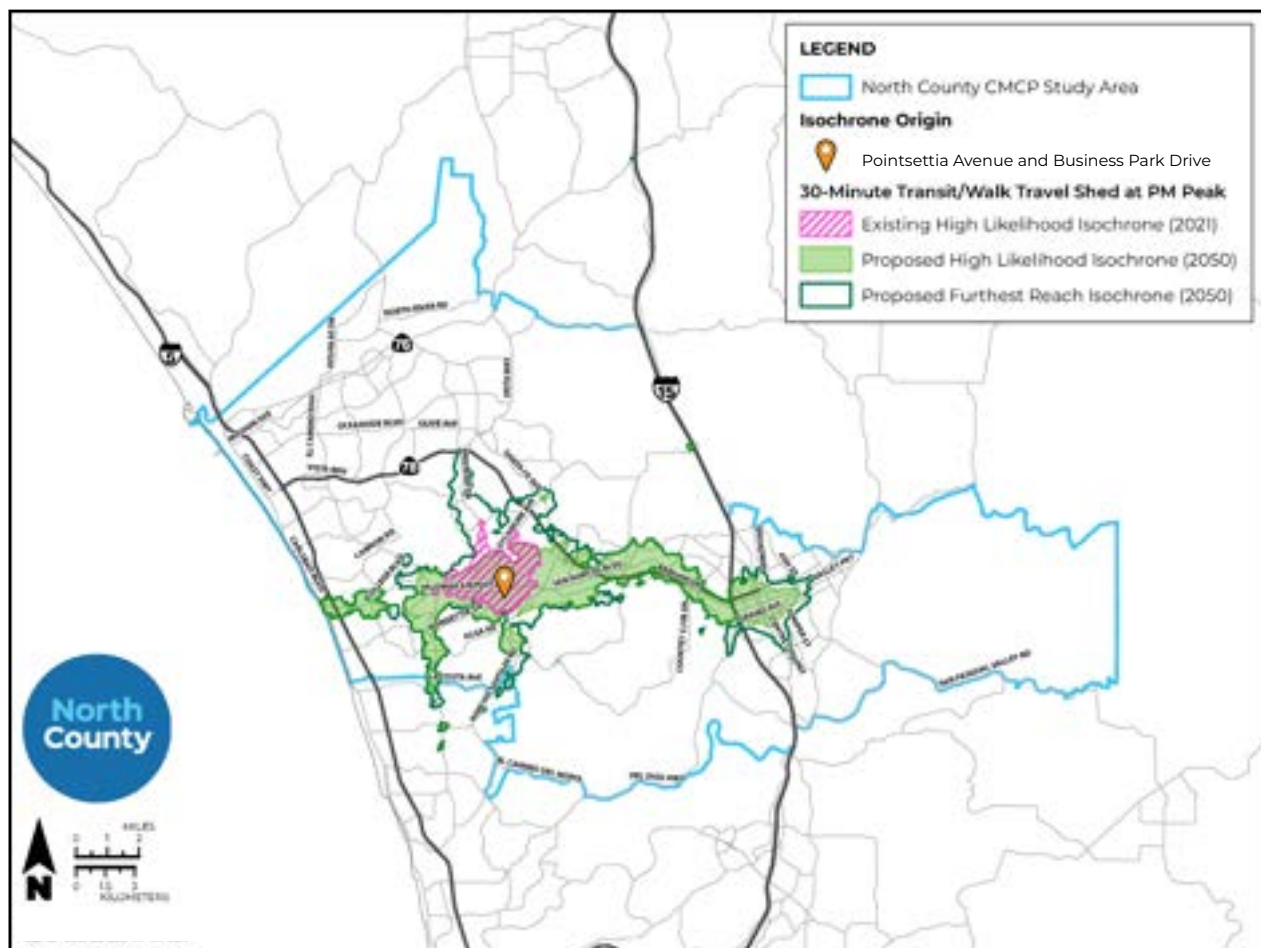
Most Improved Areas Experiencing Increase in Accessibility

- ✓ **Faraday Avenue and El Camino Real (Job Center)**
Improved Access to Housing and Access for Social Equity Focus Communities (SEFC)
- ✓ **Poinsettia Avenue and Business Park Drive (Job Center)**
Improved Access to Destinations and Access for SEFC
- ✓ **Via Vera Cruz and San Marcos Boulevard (Futured Mixed Use Community)**
Improved Access Across All Categories
- ✓ **West Lake Drive and San Marcos Boulevard**
Access for Senior SEFC

The improved accessibility (as analyzed by these isochrones) is influenced by three factors:

- Improved Land Use Proximity to Station— locating housing and employment near high-frequency transit leads to shorter station access; therefore, more opportunity to travel further via the transit vehicle or access more destinations at the other end of travel
- Improved Concentration of Services and Frequency – more services or frequency proposed translates to shorter waiting times and more choices for travel
- Faster In-Route Travel – improved signal coordination and flex lanes allow for faster service, and thereby more destinations can be reached

Figure 6-1: Poinsettia Avenue and Business Park Drive, 30-Minute Travel Sheds at PM Peak



CMCP Phasing

While all the proposed improvements in the CMCP are important, phasing of the proposed CMCP improvements needs to consider:

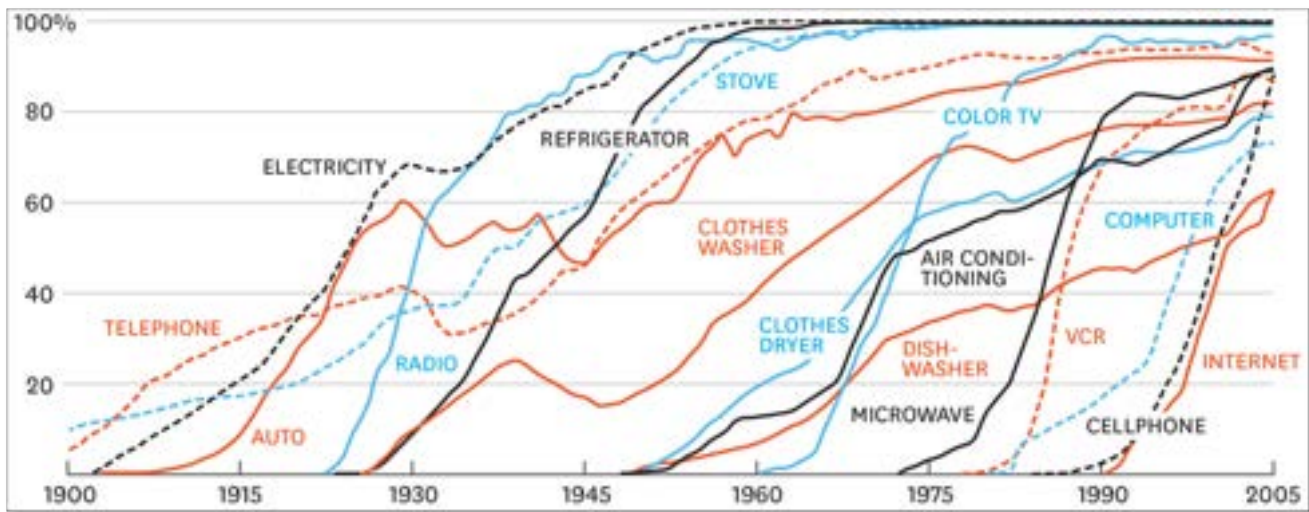
1. Evolving Need Aaffected by lincreasing Growth and Changing Land Use, Demographics, and Travel Behavior

In **Chapter 2**, the CMCP highlighted how factors like population, land use, and travel behavior affect travel demand within North County. Although forecasts typically assume these changes occur at a consistent and predictable rate, actual change can occur in a very uneven and disruptive manner due to changes in the economy, legislation, fuel prices, and social trends. While transportation improvements strive to be proactive and supportive where possible, phasing needs to balance this uncertainty with near-term needs and cost-effectiveness.

2. Maturing Technology

The CMCP projects and programs are developed to leverage new technologies anticipated to be in place by 2050. Examples include smart streets, connected vehicles, automated vehicles, flexible fleets, and dynamic lane management systems. Unfortunately, the timing of those technologies maturing to a point where they can be effective is difficult to predict—yet this uncertainty is not new regarding technology adoption. **Figure 6-2** displays various integration curves for key technological improvements over the last century. It is anticipated that new transportation technologies will follow rapid integration curves.

Figure 6-2: Consumption Spreads Faster Today – Percent of Household



(Source: Nicholas Felton, NYTimes, HBR.ORG)

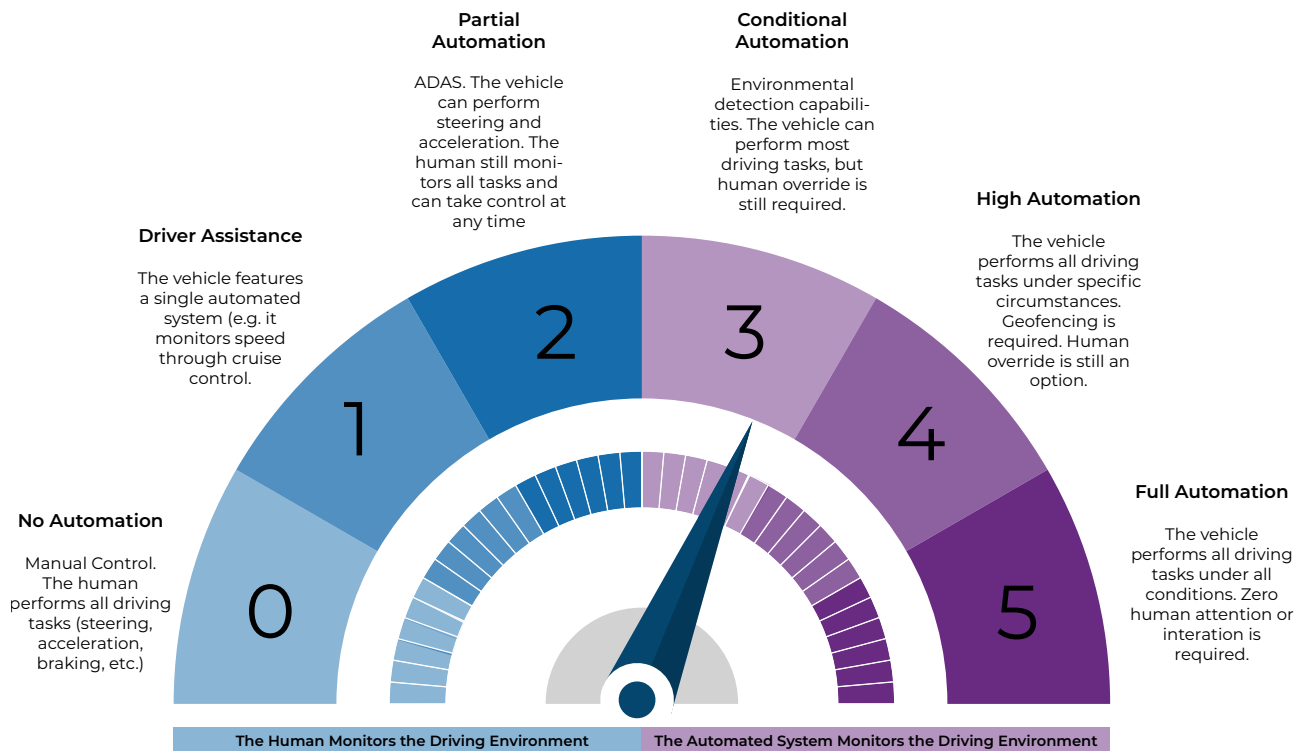
The following factors can affect how new technology is integrated into a household:

- The pace of the actual innovation
- Public acceptance
- Cost to the household
- Market penetration
- Needed public policy and regulatory changes
- Required network/system infrastructure changes



The evolution of automated vehicles will progress in an incremental manner, as described in **Figure 6-3**, with six levels of automation. Over time freeway capacity could be expected to change from today's 2,100 vehicles per hour per lane (VPHPL) to ultimately 3,200 VPHPL once Level 5 CV/AV vehicles are fully adopted. While full automation is likely many years away, the transportation network/infrastructure needs to be prepared for and will benefit from these incremental advancements. Additional information can be found in **Appendix U**.

Figure 6-3: The Six Levels of Driving Automation



(Source: SAE J 3016-2021)



3. Creating Alignment for Limited Funding

There are many factors that determine how a project or program becomes worthy of funding—especially when there are many needs to be met nationally, statewide, regionally, and locally. CMCP projects/programs can become competitive for limited revenues and funding opportunities by:

1. Aligning improvements and services with federal, state, and regional policies and priorities
2. Following and, when possible, early completion of regulatory requirements (e.g., state, federal)
3. Fostering public and partner agency support for improvements

Funding partners (e.g., US DOT or California Transportation Commission) define their priorities through a scoring rubric (or criteria) so that funding applicants can demonstrate how they are aligned with the funding partner. Additional information about funding opportunities can be found in **Appendix Y**. An example of a scoring rubric for the Solutions for Congested Corridors Program (part of the Road Repair and Accountability Act of 2017)²³ is shown below:

Figure 6-4: North County CMCP Criteria



1. Primary Criteria

- Demonstrates how the project is in the highly traveled and highly congested corridor and the extent of the problem over 20 years without the project.
- Explain how the proposed solution will relieve congestion, incorporate multiple modes, and provide performance improvements that balance transportation improvements and community impacts and provide environmental benefits



2. Additional Criteria

SAFETY

Must address safety issues and concerns in the corridor, including actual reported property, injury, and fatality collisions for the last five full years. Demonstrate how the proposed project increases safety for motorized and non-motorized users.

ACCESSIBILITY

Must address current accessibility issues and concerns in the corridor and how the proposed project will improve accessibility and connectivity to residents and non-residents that travel the corridor or need to travel through the corridor.

COMMUNITY ENGAGEMENT

Ability to create mobility opportunities for all Californians, especially those from disadvantaged or historically impacted and marginalized communities. Equitable projects demonstrate meaningful and effective public participation in decision-making processes, particularly by disadvantaged or historically impacted and marginalized communities.

²³ Solutions for Congested Corridors Program (SCCP): <https://catc.ca.gov/programs/sb1/solutions-for-congested-corridors-program#accordion-2022-Program49006294>

2. Additional Criteria

ECONOMIC DEVELOPMENT AND JOB CREATION/RETENTION

Must address how the proposed project will support economic development and access to employment.

AIR QUALITY AND GREENHOUSE GASES

Must address how the proposed project will reduce greenhouse gas emissions and criteria pollutants and advance the State’s air quality and climate goals.

EFFICIENT LAND USE AND HOUSING

Must address how the proposed project will support and advance transportation efficient land-use or Pro housing principles.

MATCHING FUNDS

Based on the number of matching funds and the source of funds. Priority will be given to projects that have committed discretionary federal funds at the time of project nomination.

DELIVERABILITY

Priority will be given to projects that have completed the design and rights of way components of the project unless the project is being delivered using the Design-Build method.

COLLABORATION

Jointly nominated and jointly funded projects are encouraged. For projects that cross jurisdictions, regions may pool their resources to jointly nominate and fund a project. Similarly, regional agencies may pool their resources to jointly nominate and fund projects with Caltrans.

COST EFFECTIVENESS

Consideration will be given to those projects that provide positive benefits in relation to the project costs.

4. Project Dependency

Frequently, CMCP projects require other system improvements to be fully effective. As an example, expansion of the *Rapid* transit system may require Mobility Blvd. improvements to provide desired technology and infrastructure to support service reliability and increased ridership; or improvements to SPRINTER service frequency will likely require concurrent double track and station improvements to achieve both the operational and service access improvements.



Phasing Approach

To maximize the effectiveness of investments and the competitiveness of projects for funding, the CMCP utilized the following guidelines in developing a phasing plan:

- **Utilize adaptive designs** that can evolve as technology and travel needs change
- **Prioritize safety and intersection control improvements** that reduce fatalities and serious injuries to address the 70% of those collisions that occur along the North County’s major arterials
- **Prepare transportation facilities at all levels for anticipated technology.** Enabling early deployments such as adaptive signals, smart intersections, “plug and play” communication backbone, and V2X applications.
- **Prioritize improvements that link communities and important destinations,** improve mobility options, improve safety and meet VMT goals.
- **Leveraging ongoing efforts in the corridor.** The graphic below displays current projects by local jurisdictions and by transportation agencies aligning with the North County CMCP priorities

| | |
|---|---|
| Oceanside | <ul style="list-style-type: none"> » Coast Highway Mobility Hub » Inland Rail Trail Gap Closure » Oceanside Boulevard Corridor Improvements |
| Carlsbad | <ul style="list-style-type: none"> » Sustainable Mobility Plan » Carlsbad Blvd Improvements » Cross Freeway Improvements » Adaptive Signal Deployments |
| Vista | <ul style="list-style-type: none"> » Construction Inland Rail Trail Segment 3 (Mar Vista to Civic Center) » Inland Rail Trail Gap Closure (Civic Center to Melrose) » Vista Village Transit Station |
| Vista Mobility Hub | <ul style="list-style-type: none"> » Townsite Complete Street » Emerald Drive Complete Street |
| San Marcos | <ul style="list-style-type: none"> » San Marcos Mobility Hub » Woodland/Barham/SR 78 Access Improvements » San Marcos Multi-way Blvd |
| Escondido | <ul style="list-style-type: none"> » Grand Avenue » Escondido Transit Station Joint Development with NCTD » City-wide signal upgrade (E-8, E-9, and E-10) |
| County of San Diego (within the study area) | <ul style="list-style-type: none"> » Bicycle and pedestrian improvements along SR 78 between Bear Valley and San Pasqual Valley » Transportation safety improvements near Buena Creek SPRINTER Station |
| NCTD | <ul style="list-style-type: none"> » SPRINTER Double Track Operational Prioritization and Project Study Report » Fleet conversion to zero-emission vehicles by 2033 » Identify and improve services and ridership for the top 10 routes in the regional bus network » TOD Station Sites (starting with OTC and Carlsbad stations) |
| SANDAG/Caltrans | <ul style="list-style-type: none"> » North Coast Corridor Public Works Plan » Construction of SR 76 adaptive signals between Rancho del Oro to Melrose Drive » Smart Ramp Meters along SR 78 » I-15/SR 78 Connectors and Express Lane Extension » I-5/SR 78 Connectors and Express Lane Extension » Corridor-wide ADA and Signal AT upgrades (SR 78 Asset Management) » Flexible Fleets Pilots |

Bundle current and proposed projects into a system-based strategy to support emerging mobility hubs and address current mobility needs—i.e., Early Action Bundles. These Early Action Bundles acknowledge areas of mobility challenges experienced by users and current projects/efforts underway by local jurisdictions and emphasize multi-jurisdictional solutions. Four areas were identified as meeting these criteria. These “early action bundles” are summarized below. A concept sheet is available for each bundle in **Attachment 5**.

- **Coastal Mobility Gateway**

- ↳ Addresses challenges with I-5 and LOSSAN as barriers and focuses on better connecting to and within coastal areas of Oceanside and Carlsbad.

- **Inland Mobility Gateway**

- ↳ Focuses on better connecting east/west and north/south travel.

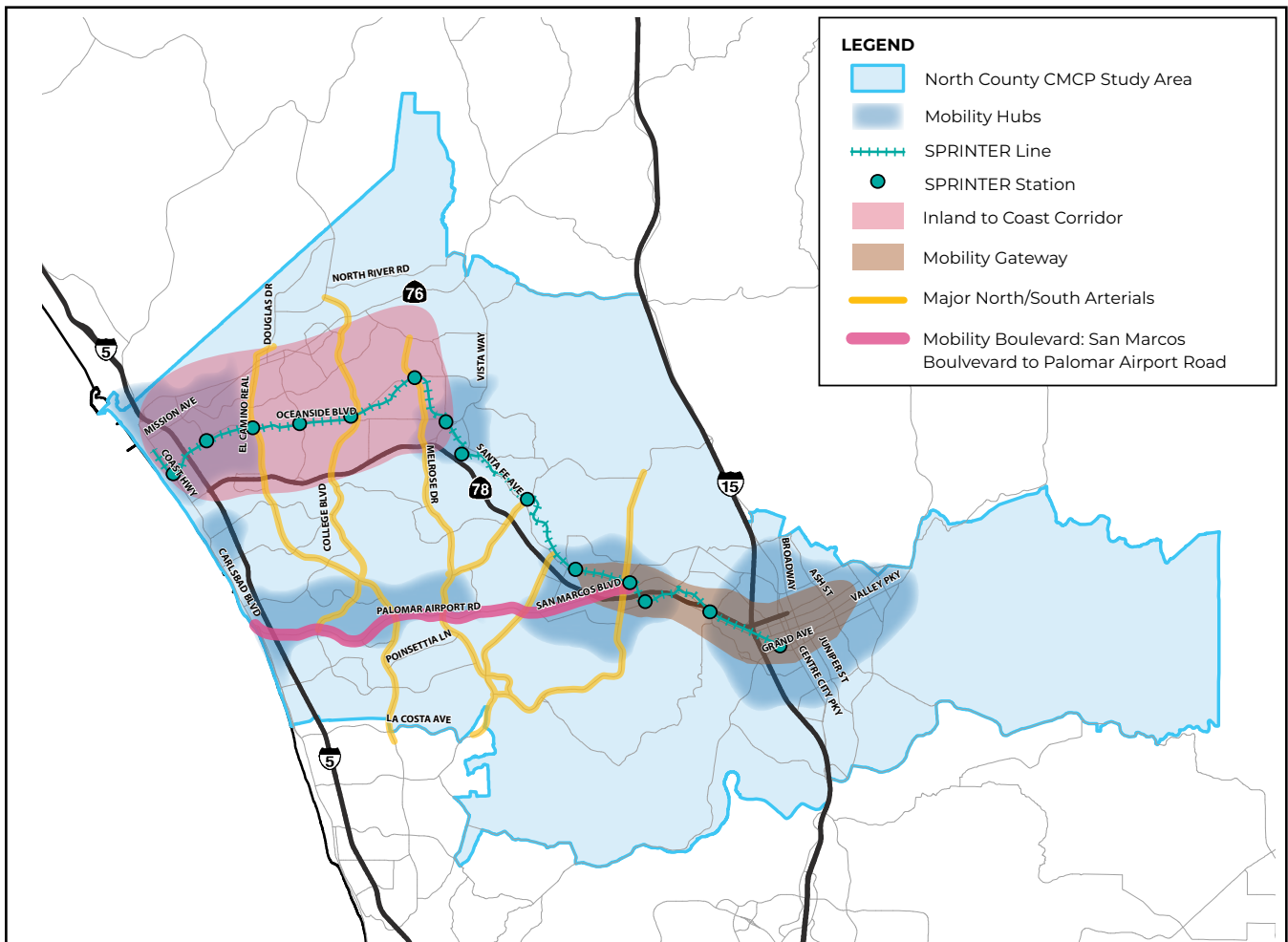
- **Major North/South Arterials**

- ↳ Emphasizes and invests in north/south arterial operations and services.

- **Mobility Boulevard: San Marcos Boulevard to Palomar Airport Road**

- ↳ Recognizes the importance of San Marcos Blvd and Palomar Airport Road in providing additional east-west connections for major employment centers through the southern edge of North County

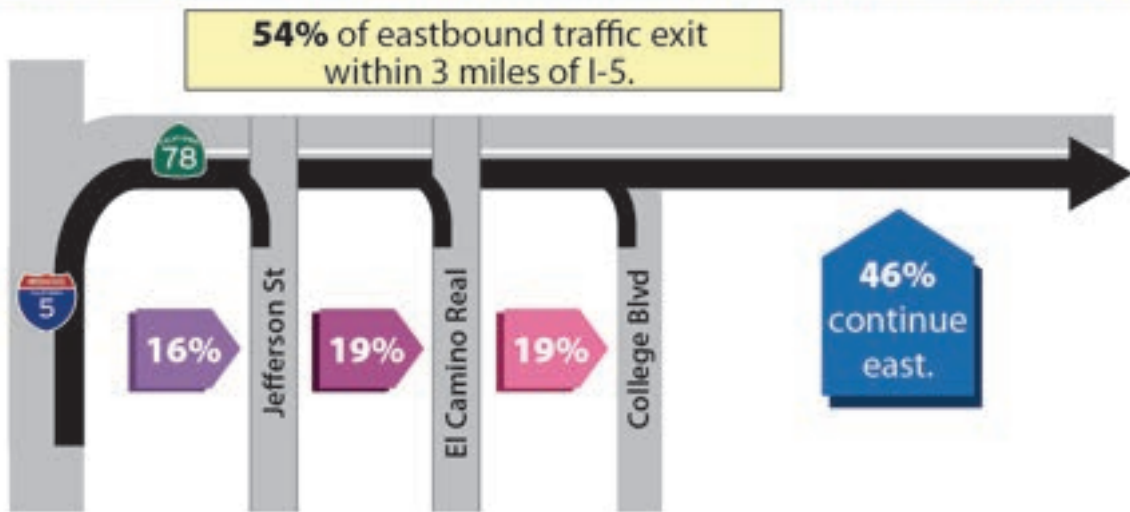
Figure 6-5: Early Action Bundle Locations



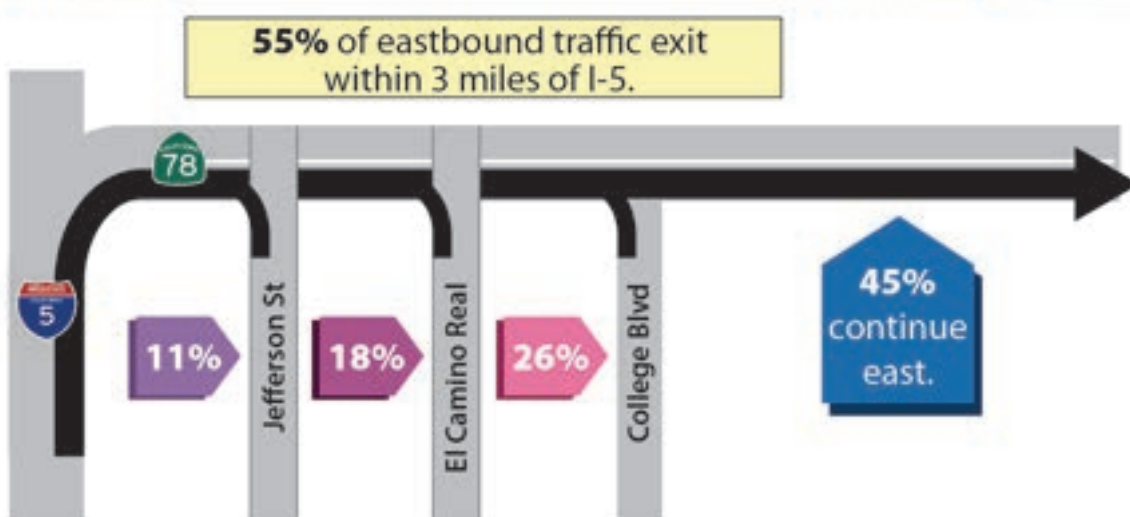
SR 78 Managed Lanes

As shared in **Chapter 3**, 54% of travelers along eastbound SR 78 (coming from I-5) exit within three miles of the interstate facility. A more detailed assessment of the SR 78 managed lanes was performed to assess the optimal implementation phasing. The analysis concluded extending the managed lanes system from I-5 and I-15 into SR 78 up to four miles on either end captured over 50% of market demand coming from the interstate system. Furthermore, managed lanes in the middle segment should be deferred until later in the program to leverage emerging technology advancements and reduce anticipated costs and impacts to the community associated with the widening of the freeway.

SR 78 Eastbound Traffic Exit Distribution From I-5 (Weekday All Day)



SR 78 Eastbound Traffic Exit Distribution From I-5 (Weekday Peak AM)

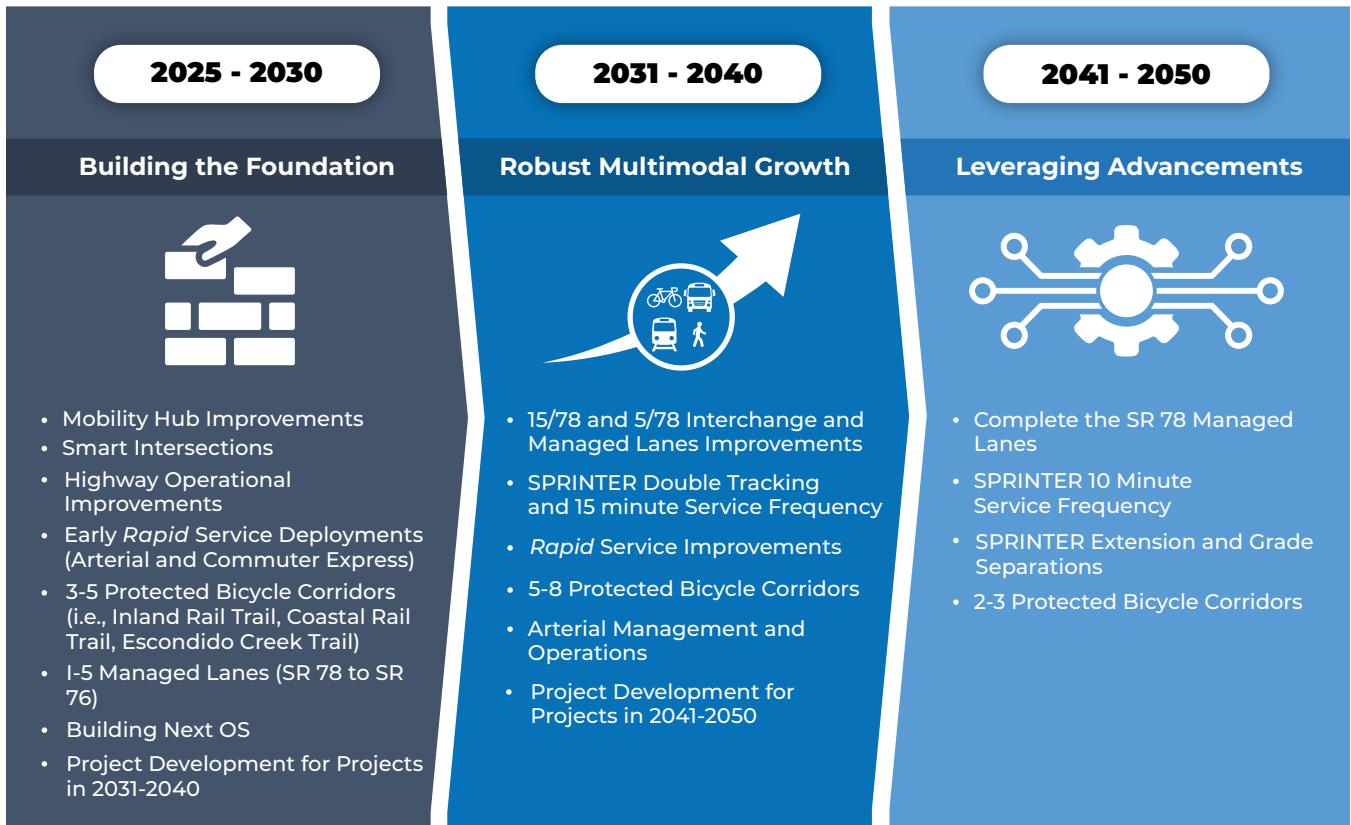




Resulting CMCP Phasing

Utilizing the above phasing approach allows improvements to build upon each other to help meet the performance measure goals and leverage support for greater investment from state and federal programs, development partners, and private investors. The following approximates how the CMCP can be phased based on the phasing considerations and approach:

Figure 6-6: Proposed Open to Traffic Phasing





Addressing Key North County Mobility Needs

Performance results and suggested phasing indicate that the CMCP addresses key mobility challenges identified in earlier chapters. Specifically, Early action projects would meet the following needs:

- 1. Challenge:** Approximately 7 in 10 fatal collisions occur on arterials—one-third (1/3) of all fatalities were pedestrians.

How does the Plan address this challenge? The CMCP will improve multimodal interactions (e.g., bikes and right-turning vehicles), crossings (e.g., railroad, interchanges/freeways, major intersections), and provide intersection traffic control that reduces speed while maintaining person-throughput (e.g., roundabouts).

- 2. Challenge:** The location of North County’s key destinations, combined with limited travel alternatives, leads to operational bottlenecks at the ends of the SR 78 freeway—where it connects with the two interstates (I-5 and I-15).

How does the Plan address this challenge? Extends the managed lanes system from I-5 and I-15 into SR 78 up to four miles and provides additional east-west travel options along SPRINTER and major arterials.

- 3. Challenge:** SPRINTER has limited demand for end-to-end trips on the corridor, and North County is seeing a renaissance of smart growth development within mobility hubs (e.g., Vista Village, San Marcos, Escondido).

How does the Plan address this challenge? Focus SPRINTER strategy on improving access and experience for short trips between neighboring mobility hubs stations—including multimodal access, safety and security, and station focused customer service.

- 4. Challenge:** 70% of North County study area trips are less than 5 miles. However, 70% of VMT is generated by the remaining 30% of trips. Because of the dispersed nature of regional trips, these longer trips can be challenging in providing competitive multimodal options.

How does the Plan address this challenge? Impact on VMT is greatest through land use improvements where policies reduce the distance between housing, employment, and activity centers. The CMCP provides integrated improvements targeted at reducing VMT per capita for both short- and long-distance trips, including: 1) early deployments of mobility hub services such as flexible fleet services (e.g., NEV shuttles, bikeshare); and 2) implementation of commuter services along the I-15 corridor from inland San Diego communities and Riverside County.

- 5. Challenge:** The shed has no north-south regional transportation corridor (i.e., highway) between I-5 and I-15. This requires local arterials to accommodate critical network connections to home, work, and recreational destinations.

How does the Plan address this challenge? The CMCP identified key arterials (i.e., Mobility Blvds.) as providing the robust network of multimodal services—including fiber communications, smart intersections, protected bicycle facilities, high-capacity transit, and on-demand flexible services.

- 6. Opportunity:** A key priority of users is improving the connectivity to Regional Spines and other key destinations.

How does the Plan address this challenge? The CMCP includes improvements along Mobility Blvds., Mobility Hubs, SPRINTER Stations (e.g., first-mile, last-mile improvements), and flexible fleets services to better connect (or reconnect) communities to regional services.



Call to Action

North County is ready for robust transportation and mobility investment to address the corridor's current and future needs. The call to action is needed to address the structural challenges within North County's transportation and mobility system—Chapter 7 answers that call to action. Through this chapter, the CMCP demonstrates that the project and programs included in “The Plan” meet the needs of North County users while working towards achieving Local, Regional, State, and Federal goals.

7

CMCP IMPLEMENTATION BLUEPRINT

This chapter provides recommendations on next steps for the first 10 years of the CMCP focused on three action areas:

- Prioritize early success through investments aligned with funding opportunities*
- Partner to integrate processes and collaborate across jurisdictions*
- Promote innovation of new tools, techniques, and knowledge for transportation*



Action Area A - Prioritize Early Success

The North County CMCP includes 48 projects and programs and recommends focusing early investment in four areas—referred to as Early Action Bundles. Efficient delivery of the CMCP will require parallel efforts to implement projects in the near term while advancing the next phase of projects for approval and funding.

Effective alignment of candidate projects with current federal, state, and regional funding priorities will lead to more projects being successfully completed. As described in **Chapter 6**, funding partners established scoring rubrics¹ to help select projects meeting funding criteria and are in a position to successfully deliver. Overlaying those criteria on the current mobility needs of the corridor results in the following recommendations:

- **A1: Expedite safety improvements**

Fast-tracking safety improvements will help North County users—especially vulnerable users such as pedestrians and cyclists—to move within North County safely. Safety improvement programs allowing for all modes will create a better traveling experience.



- **A2: Support emerging mobility hubs and advance VMT reduction improvements**

Investing in flexible fleets (e.g., NEVs) and other strategies that support the growing activity (i.e., residential, retail, and employment), will provide more choices for travel, advance reductions in VMT, reduce greenhouse gas emissions, and facilitate future transportation improvements within North County.

- **A3: Continue implementation of the Inland and Coastal Early Action Bundles**

The Inland and Coastal Early Action Bundles aim to achieve three overarching goals: help connect the inland and coastal communities, provide connections to critical interstate (i.e., I-15/SR 78, I-5/SR 78 Interchanges) and rail services, and support the growing mix of employment and residential centers. This recommendation builds on previously approved projects (e.g., I-5 Managed Lanes) and recognizes the importance of both North County and regional connections.

¹Examples of scoring rubrics prioritizing transportation investments, including RAISE (US DOT) and SB1 (California Transportation Commission), are included in **Appendix X**.

- A4: Focus on improving Community Connectivity through: SPRINTER station access improvements, first and last-mile connections, enhancements to local transit services such as BREEZE, and the infrastructure improvements needed to improve frequency in high-demand segments of the corridor**

SPRINTER is an underutilized resource that will benefit from improved station access and focus on serving shorter “community-to-community” trips versus “end-to-end” travel. Increased transit services with BREEZE, flex routes, and microtransit to SPRINTER stations can help address station accessibility issues and can help address the first and last-mile gap.



- A5: Invest in key local roads (i.e., Mobility Boulevards) to improve multimodal operations through the Major North/South Arterials and Mobility Boulevard: San Marcos Boulevard to Palomar Airport Road bundles.—including, early implementation of Smart Intersections, Active Transportation, and Rapid “light” services**

Major roads serve critical connections and are the primary paths between communities and destinations. Improving multimodal operations will help better utilize the existing infrastructure while providing more options to travel for both short- and long-distance trips.

- A6: Advance Reconnecting Communities projects**

Local communities are exploring better connections between neighborhoods—especially for those separated by transportation infrastructure (i.e., railroads and freeways). Creating new mobility options to cross railroads and freeways will foster better links between neighborhoods and communities.





Action Area B - Integrate and Collaborate

A successful North County transportation system requires an integrated systems approach that crosses jurisdictional boundaries. Traditional mode-based planning (typically siloed at the agency level) can lead to inefficient operations, missed opportunities, and poor door-to-door service.

- **B1: Leverage ongoing local efforts and create collaboration opportunities to advance capital and service programs**

North County already has several planning and transportation efforts underway to improve mobility for North County travelers. Cities and the County have limited resources to address mid- and long-term planning actions—e.g., flexible fleets, safety analyses, and integrated corridor management. Local agency partners are interested in exploring new ways to leverage state and regional resources (e.g., local assistance resources, subject matter experts, knowledge database) into North County efforts.

The ongoing efforts are also an excellent launching point for continued collaboration to leverage resources and support for needed transportation infrastructure and services.

- **B2: Integrate the CMCP and local planning and development review processes**

Communities within North County continue to grow and develop: Oceanside and San Marcos, are comprehensively updating their General Plans; and all jurisdictions are working with landowners and the development community to review potential development improvements.

Historically, local and developer funding focused on Level of Service (LOS) based improvements and mitigations. The improvements identified through this approach may no longer align with the improvements and objectives outlined in the CMCP. Several local agencies in the corridor are developing alternative fee structures to better align with the goals of reducing VMT, define the nexus between development and cumulative impacts, and encouraging multimodal solutions outlined in the CMCP.

- **B3: Collaborate to attract new funding sources**

Fostering collaboration and leveraging resources can lead to quicker project and program implementation. Existing and new grant programs are looking for collaborative partnerships amongst local and state agencies—discouraging local competitive behaviors. Many scoring rubrics encourage and reward projects and program applications that emphasize multi-jurisdictional efforts and benefits.

The North County CMCP was developed to align with regional, state, and federal policies and priorities. These policies and priorities guide the funding for state and federal discretionary grant programs anticipated over the next 5-10 years. The alignment of the CMCP to state and federal goals positions North County programs for pursuing funding projects

- **B4: Measure progress of CMCP objectives**

This action focuses on how the CMCP is improving the transportation infrastructure and services—and is intended to provide insights into the experience of users within North County. The development of a Transportation Performance Dashboard for North County based on the measures identified in **Chapter 4** will monitor progress toward the corridor objectives and inform needed adjustments for projects and programs .



Action Area C - Create an Innovation Testbed

North County can become a premier testbed for developing tools, techniques, management strategies, and technology for delivering the projects and improving the user experience. The subregion has been the home to innovation across many different industries: defense, communication technology, life sciences, education, health, and many more. North County recently innovated in early deployments of adaptive traffic signal control, real-time transit information, and vehicle-to-infrastructure communications. The following actions will continue supporting North County as an innovative provider of transportation services.

- **C1: Utilize smart technology to improve safety and efficiency**

Technology deployments at traffic signals, along corridors, within mobility hubs, and with the traveling public (i.e., cell phones, technology wearables) can proactively reduce fatalities and serious injuries for all users while improving the movement of people and goods. Updated systems that work across jurisdictional boundaries can allow for safety applications (e.g., leading pedestrian/bicycle signals, collision prediction, and avoidance), interagency traffic signal operation that minimizes “stop-and-go” and thereby greenhouse gas emissions, transit signal priority for improved transit travel time, and better information for travelers. Infrastructure that communicates and interacts with travelers, vehicles, and agency operators will be able to immediately manipulate traffic control devices or send alerts when needed.

- **C2: Explore Public-Private partnerships to develop sustainable and innovative transportation solutions**

Innovation includes “what” and “how” CMCP improvements can be implemented in close partnership between public and private entities. This implementation action can help develop research and innovation policies that enable private investment and allow future improvements to be responsive to changes in the many factors that influence transportation (e.g., economics, societal changes). There are many methods for engaging public-private partnerships (e.g., technology development, delivery methods) that need to be explored and evaluated for how they can improve the delivery of projects and programs. Areas to evaluate include the optimization of resources and expertise, overcoming institutional barriers, the scalability of improvements from site to network, and improving shared knowledge across implementing agencies.

- **C3: Prioritize Projects that Reduce VMT to Enable Overall CMCP Delivery**

Early implementation of projects that strategically reduce VMT—advancing regional and state VMT and multi-modal policies. Multimodal project that reduce VMT- provide consistent, well-balanced system improvements beneficial to North County users.



ATTACHMENTS

- Attachment 1:** Mobility Hub Sheets
- Attachment 2:** Mobility Boulevard Sheets
- Attachment 3:** Regional Spine Sheets
- Attachment 4:** Project and Program Inventory
- Attachment 5:** Early Action Bundle Sheets

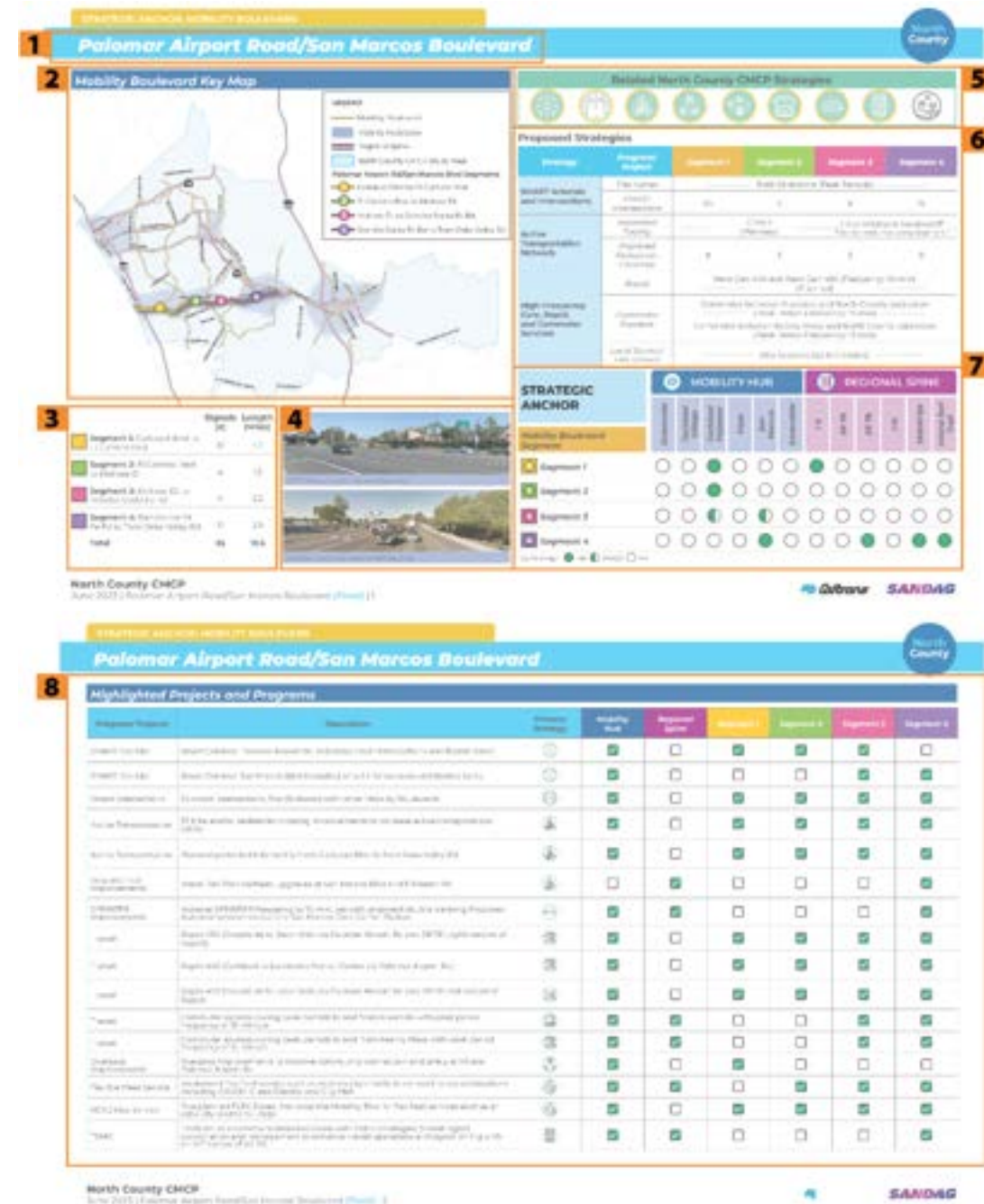
APPENDICES

- Appendix A:** Executive Summary of the California Transportation Plan 2050
- Appendix B:** 2021 Regional Plan North County Programs and Projects List
- Appendix C:** TWG and SWG
- Appendix D:** Community Context Analysis
- Appendix E:** Existing Transportation Network
- Appendix F:** Land Use Patterns
- Appendix G:** Employment Centers
- Appendix H:** Travel Shed
- Appendix I:** Public Communications Outreach Summary
- Appendix J:** Social Equity Memorandum
- Appendix K:** Isochrone Methodology and Analysis-Existing Condition (2019)
- Appendix L:** Baseline Performance Assessment
- Appendix M:** Safety Analysis
- Appendix N:** Major Arterials Volume Analysis
- Appendix O:** Mode Share Analysis
- Appendix P:** Congestion Hotspot Analysis
- Appendix Q:** VMT Analysis
- Appendix R:** Travel Patterns
- Appendix S:** Transit Competitiveness
- Appendix T:** Travel Time Experience
- Appendix U:** Sensitivity Analysis
- Appendix V:** Assessment of Performance Metrics (Performance Dashboard)
- Appendix W:** Isochrone Methodology and Analysis-Proposed Condition (2050)
- Appendix X:** Project Scoring Rubric Analysis
- Appendix Y:** Funding Sources
- Appendix Z:** Cost Estimate Methodology
- Appendix AA:** Public Comments for Draft CMCP

Attachment 1: Mobility Boulevard Sheets

A Mobility Boulevard Sheet was developed for each of the 13 mobility boulevards identified in the North County study area. Each sheet provides a high-level overview of relevant projects from the project inventory and describes how the mobility boulevards interface with the nine strategy layers and other strategic anchors (i.e., mobility hub and regional spine). Below is an overview of the elements that can be found across the Mobility Boulevard Sheet.

Mobility Boulevard Sheet User Guide



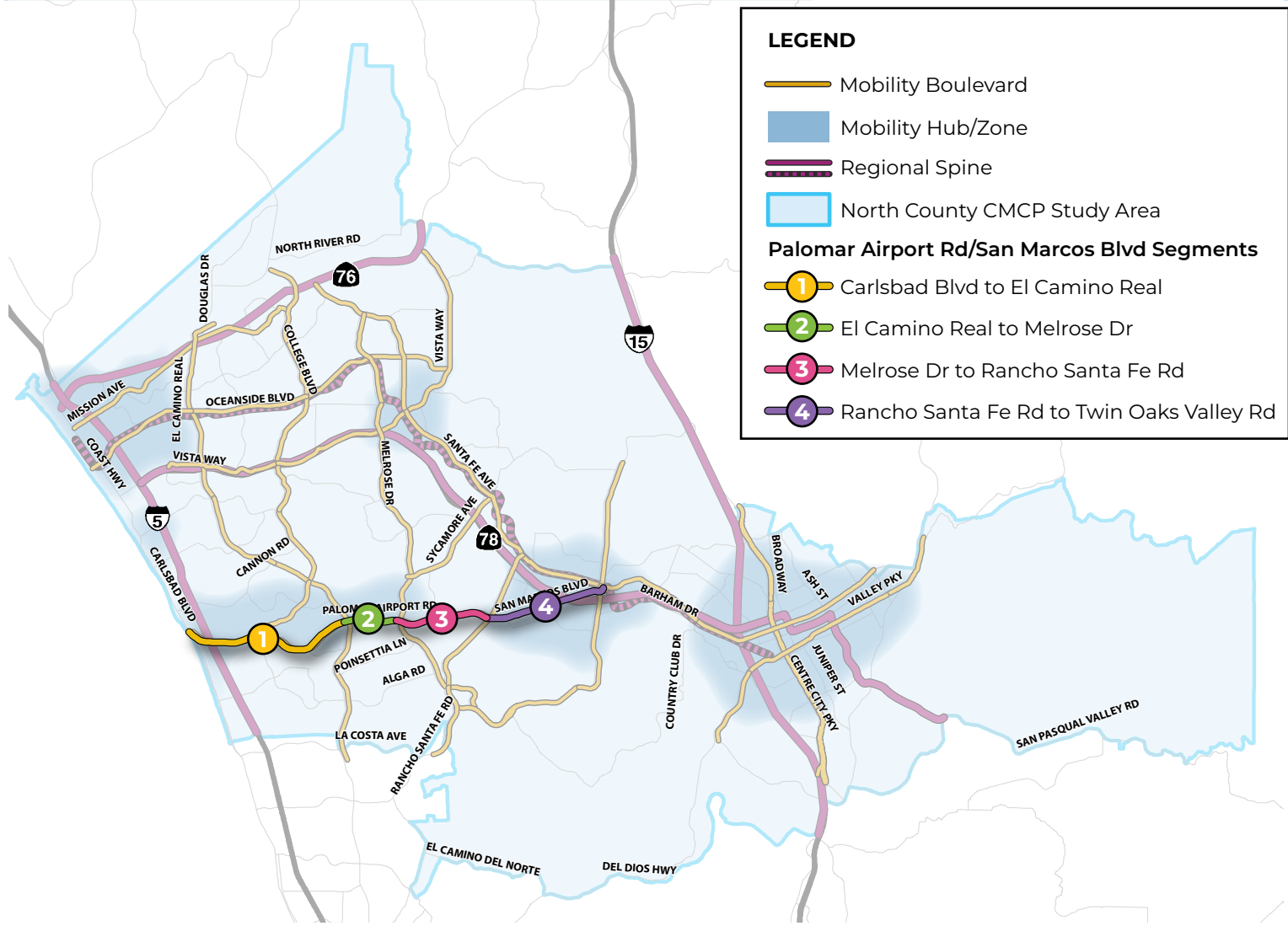
- Mobility Boulevard Name** – Name of the identified mobility boulevard
- Mobility Boulevard Key Map** – Identifies the location of the mobility boulevard within the North County subregion and its unique segments
- Mobility Boulevard Segment and Quick Info** – Outlines the number of signals and segment length in miles for each mobility boulevard segment identified in the key map
- Mobility Boulevard Photos** – Existing imagery related to the mobility boulevard to show typical conditions
- Related North County CMCP Strategies** – Highlights in green and a yellow outline which of the following strategies the mobility boulevard supports:

| Strategy Layer Icon | Strategy Layer |
|---------------------|---|
| | Smart Arterials and Intersections |
| | Regional "SMART" Highway Capacity Management |
| | Active Transportation Network |
| | Reconnecting Communities |
| | Mobility as a Service |
| | High-Frequency Core, Rapid, and Commuter Services |
| | SPURTER Improvements |
| | TSMO/ICM |
| | Complementary Programs |

- Proposed Strategies** – Provides detail as to how the strategy layer is being applied to the mobility boulevard (i.e., strategy improvement and which mobility boulevard segment would receive the improvements)
- Strategic Anchors** – Locates where the mobility boulevard segment intersects with other strategic anchors
- Highlighted Program and Projects** – Lists the projects and programs along the mobility boulevard with the following information for each:
 - type,
 - description,
 - primary strategy layer applicable,
 - intersection with mobility hub and regional spine (checkmark means yes), and
 - mobility boulevard segment is related (checkmark means yes).

Palomar Airport Road/San Marcos Boulevard

Mobility Boulevard Key Map



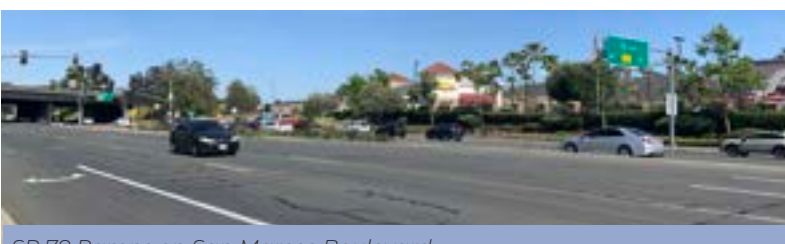
LEGEND

- Mobility Boulevard
- Mobility Hub/Zone
- Regional Spine
- North County CMCP Study Area

Palomar Airport Rd/San Marcos Blvd Segments

- 1 Carlsbad Blvd to El Camino Real
- 2 El Camino Real to Melrose Dr
- 3 Melrose Dr to Rancho Santa Fe Rd
- 4 Rancho Santa Fe Rd to Twin Oaks Valley Rd

| Segment | Signals (#) | Length (Miles) |
|--|-------------|----------------|
| Segment 1: Carlsbad Blvd to El Camino Real | 10 | 4.1 |
| Segment 2: El Camino Real to Melrose Dr | 4 | 1.3 |
| Segment 3: Melrose Dr to Rancho Santa Fe Rd | 6 | 2.2 |
| Segment 4: Rancho Santa Fe Rd to Twin Oaks Valley Rd | 15 | 2.9 |
| Total | 35 | 10.5 |



Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|---|-------------------------------|--|-----------|---|-----------|
| SMART Arterials and Intersections | Flex Lanes | Both Directions (Peak Periods) | | | |
| | SMART Intersections | 10 | 4 | 6 | 15 |
| Active Transportation Network | Separated Facility | Class I (Planned) | | Class IV/Bicycle Boulevard* Potential multi-way along Segment 4 | |
| | Improved Pedestrian Crossings | 8 | 3 | 3 | 9 |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | Next Gen 440 and Next Gen 450 (Frequency: 10 min) (Planned) | | | |
| | Commuter Express | Commuter between Riverside and North County subregion (Peak Period Frequency: 15 min) Commuter between Kearny Mesa and North County subregion (Peak Period Frequency: 15 min) | | | |
| | Local Service/Flex Service | Flex Services (up to 5 routes) | | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | REGIONAL SPINE | | | | | | |
|------------------|--------------|------------------|------------------|-------|------------|----------------|-----|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| 1 Segment 1 | ○ | ○ | ● | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ |
| 2 Segment 2 | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 Segment 3 | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 Segment 4 | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ● | ○ | ● | ● |

Symbol Key: ● Yes, ◐ Partial, ○ No

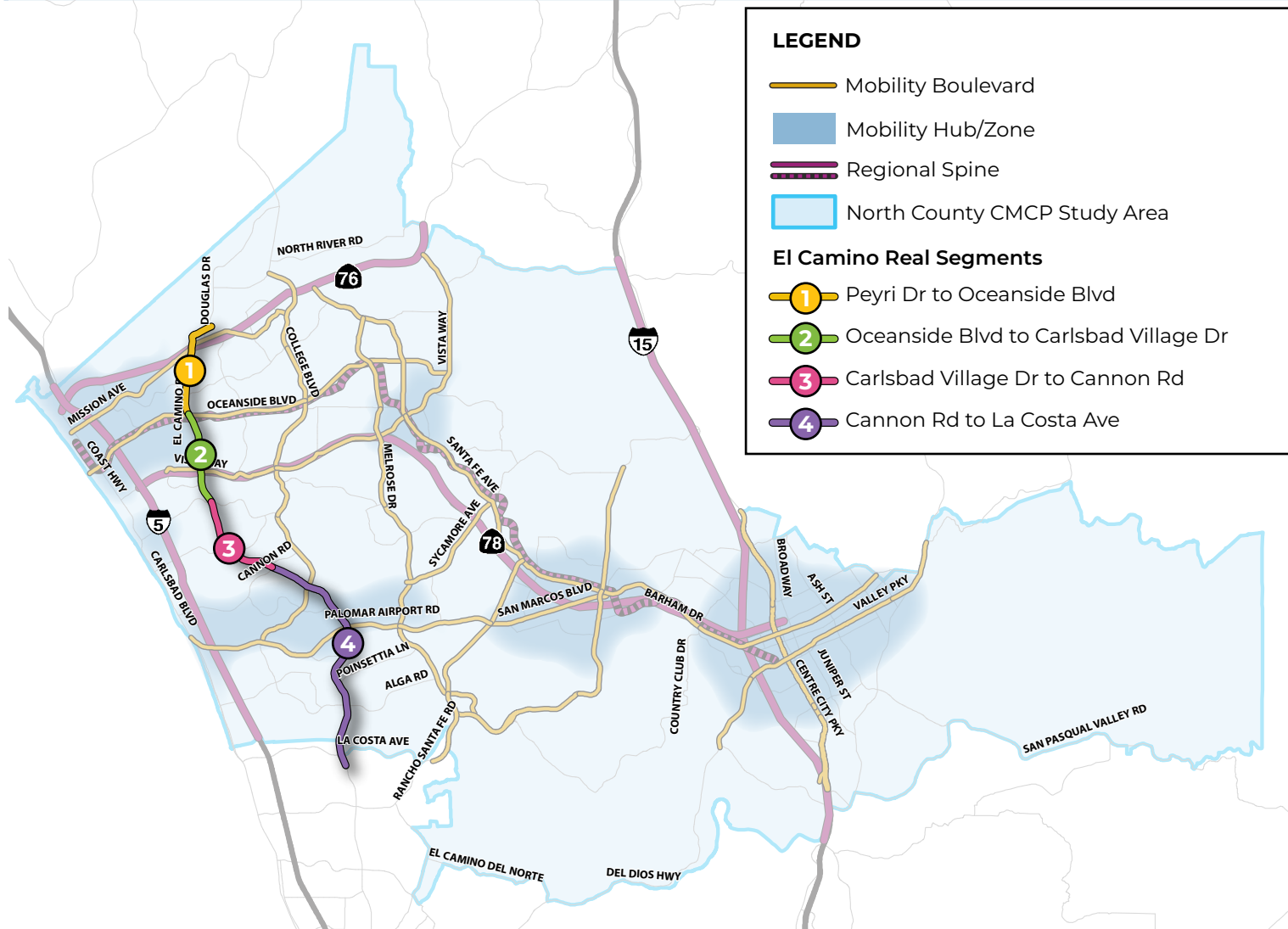
Palomar Airport Road/San Marcos Boulevard

Highlighted Projects and Programs

| Program/ Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|-----------------------------|---|------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| SMART Corridor | Smart Corridor: Palomar Airport Rd including smart intersections and flexible lanes | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SMART Corridor | Smart Corridor: San Marcos Blvd including smart intersections and flexible lanes | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Smart Intersections | 34 smart intersections, five (5) shared with other Mobility Boulevards | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 39 bike and/or pedestrian crossing improvements to increase active transportation safety | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Planned protected bike facility from Carlsbad Blvd to Twin Oaks Valley Rd | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Regional Trail Improvements | Inland Rail Trail trailhead upgrades at San Marcos Blvd and E Mission Rd | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SPRINTER Improvements | Increase SPRINTER frequency to 10 minutes with proposed double tracking; Proposed station improvements at the San Marcos Civic Center Station | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Rapid 450 (Oceanside to Escondido via Palomar Airport Rd and SR 78 (Light version of Rapid)) | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Rapid 440 (Carlsbad to Escondido Transit Center via Palomar Airport Rd) | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Rapid 450 (Oceanside to Escondido via Palomar Airport Rd and SR 78 (Full version of Rapid)) | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Commuter express during peak periods to and from Riverside with peak period frequency of 15-minute | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Commuter express during peak periods to and from Kearny Mesa with peak period frequency of 15-minute | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Overpass Improvements | Overpass improvements to improve community connection and safety at I-5 and Palomar Airport Rd | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Flexible Fleet Service | Implement flex fleet service such as an intra-city shuttle to connect to key destinations including CSUSM, Creek District, and City Hall | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| NCTD Flex Service | Five planned FLEX Zones that cross the Mobility Blvd for flex fleet services such as an intra-city shuttle to utilize | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | Establish as a communication backbone with TSMO strategies (transit signal coordination and management to enhance transit operations and signal timing with on-/off-ramps of SR 78) | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

El Camino Real

Mobility Boulevard Key Map



LEGEND

- Mobility Boulevard
- Mobility Hub/Zone
- Regional Spine
- North County CMCP Study Area

El Camino Real Segments

- 1 Peyri Dr to Oceanside Blvd
- 2 Oceanside Blvd to Carlsbad Village Dr
- 3 Carlsbad Village Dr to Cannon Rd
- 4 Cannon Rd to La Costa Ave

| Segment | Signals (#) | Length (Miles) |
|--|-------------|----------------|
| Segment 1: Peyri Dr to Oceanside Blvd | 6 | 2.4 |
| Segment 2: Oceanside Blvd to Carlsbad Village Dr | 10 | 2.2 |
| Segment 3: Carlsbad Village Dr to Cannon Rd | 5 | 2.4 |
| Segment 4: Cannon Rd to La Costa Ave | 14 | 5.9 |
| Total | 35 | 12.9 |



Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|---|-------------------------------|--------------------------------|--|-------------------|-----------|
| SMART Arterials and Intersections | Flex Lanes | Consider | Both Directions (Peak Periods) | Consider | |
| | SMART Intersections | 6 | 10 | 5 | 14 |
| Active Transportation Network | Separated Facility | Class IV (Planned) | | Class I (Planned) | |
| | Improved Pedestrian Crossings | 7 | 11 | 2 | 5 |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | None | Next Gen 477 (Frequency: 10 min) (Planned) | None | |
| | Commuter Express | None | | | |
| | Local Service/Flex Service | Flex Service (up to 12 routes) | | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | REGIONAL SPINE | | | | | |
|------------------|--------------|------------------|------------------|-------|------------|-----------|----------------|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| 1 Segment 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 2 Segment 2 | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ● | ● |
| 3 Segment 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 Segment 4 | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Symbol Key: ● Yes ● Partial ○ No

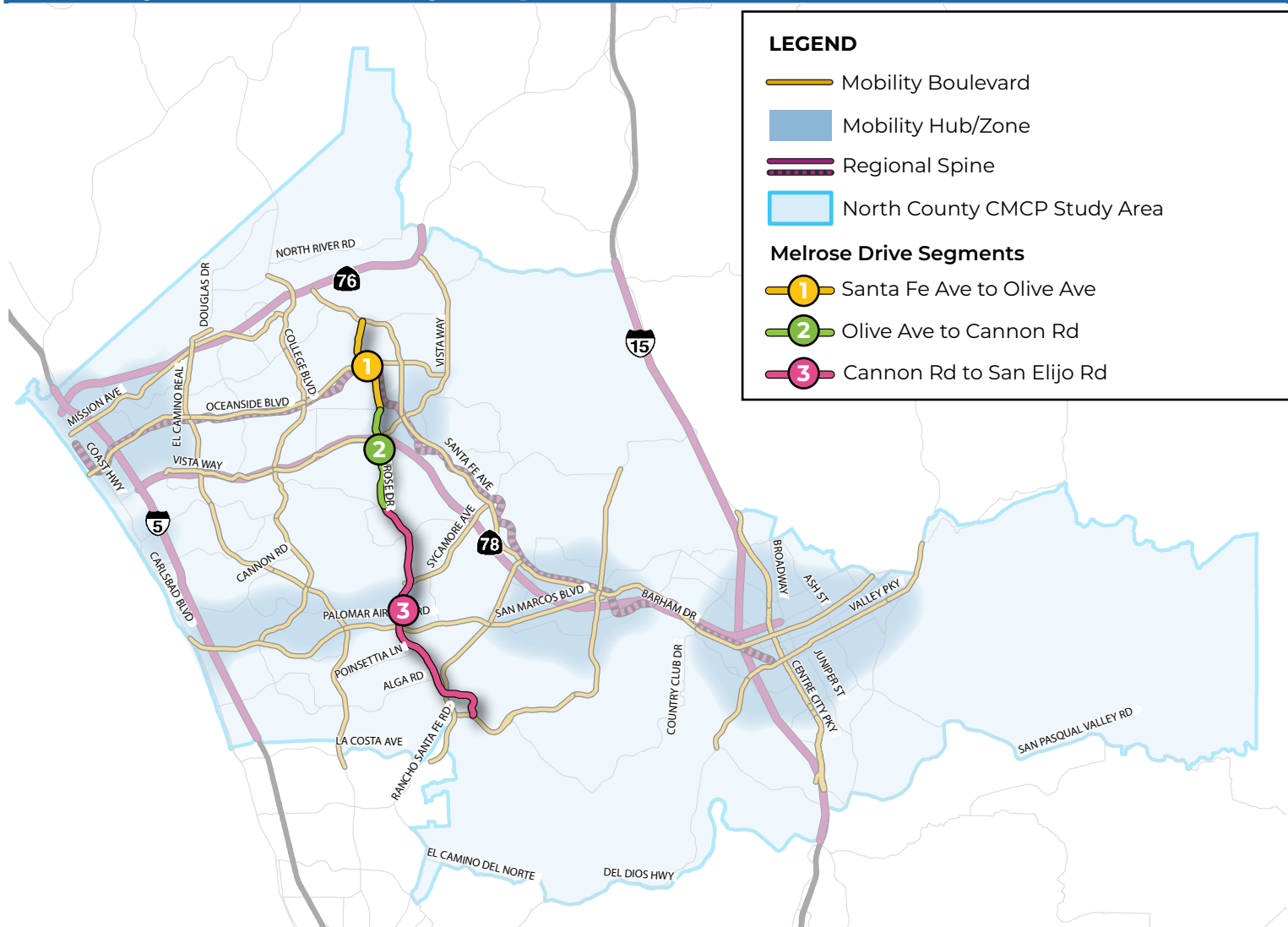
El Camino Real

Highlighted Projects and Programs

| Program/Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|--------------------------|---|------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Smart Intersections | 35 smart intersections, five shared with other Mobility Boulevards | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Interchange Improvements | Install traffic calming measures at eight intersections in the Carlsbad Barrio to reduce vehicle speeds | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Active Transportation | Protected or enhanced bicycle facilities (Class I/Class IV preferred) | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 36 bike and/or pedestrian crossing improvements to increase active transportation safety | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Sidewalk improvements along east and west sides of El Camino Real from Tamarack Ave to Chestnut Av; Sidewalk improvements along west side of El Camino Real from Lisa St to Crestview | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| SPRINTER Improvements | Corridor doubletracking | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SPRINTER Improvements | Station Improvements at the El Camino Real Station | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SPRINTER Improvements | Planned grade separation at El Camino Real | | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Transit | Limited stop <i>Rapid</i> along El Camino Real | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | <i>Rapid</i> transit route 477: Connection from Camp Pendleton to Carlsbad Village via College Blvd, Plaza Camino Real | | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Overpass Improvements | Overpass improvements to improve community connection and safety along El Camino Real and SR 78 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| NCTD Flex Service | 12 planned FLEX Zones by NCTD that serve or cross the Mobility Boulevard | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Melrose Drive

Mobility Boulevard Key Map



| | Signals (#) | Length (Miles) |
|---|-------------|----------------|
| Segment 1: Santa Fe Ave to Olive Ave | 10 | 4.1 |
| Segment 2: Olive Ave to Cannon Rd | 9 | 2.4 |
| Segment 3: Cannon Rd to San Elijo Rd | 14 | 6.3 |
| Total | 33 | 12.8 |



Related North County CMCP Strategies

Proposed Strategies












| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 |
|---|-------------------------------|---------------------------------------|-----------|-----------|
| SMART Arterials and Intersections | Flex Lanes | Consider | Yes | Consider |
| | SMART Intersections | 10 | 9 | 14 |
| Active Transportation Network | Separated Facility | Class I/IV (Proposed) | | |
| | Improved Pedestrian Crossings | 1 | 4 | 3 |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | Rapid (Peak Period Frequency: 10 min) | | |
| | Commuter Express | None | | |
| | Local Service/Flex Service | Flex Service (up to 2 routes) | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | REGIONAL SPINE | | | | | |
|------------------|--------------|------------------|------------------|-------|------------|-----------|----------------|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| Segment 1 | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ● | ○ | ○ | ● | ● |
| Segment 2 | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ |
| Segment 3 | ○ | ○ | ◐ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Symbol Key: ● Yes ◐ Partial ○ No

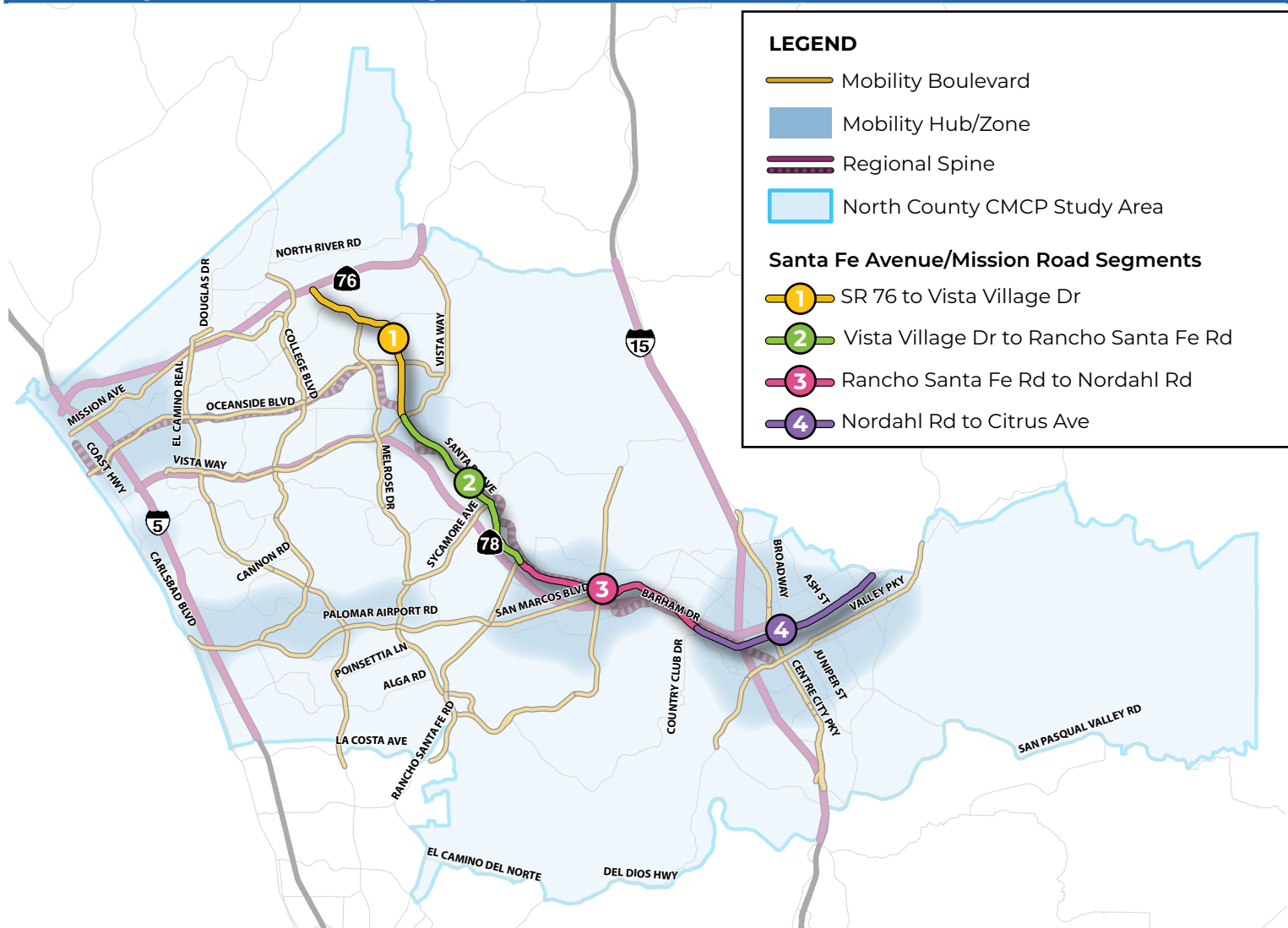
Melrose Drive

Highlighted Projects and Programs

| Program/Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 |
|-----------------------------|---|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Smart Corridor Improvements | Smart Corridor Candidate: Melrose Dr |  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Smart Intersections | 33 smart intersections, two shared with other Mobility Boulevards |  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 38 bike and/or pedestrian crossing improvements to increase active transportation safety |  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Protected bicycle facility with bikeway connection surrounding destinations such as San Elijo Town Center |  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Provide protected bike facility along Melrose Drive from Santa Fe Ave to San Elijo Rd |  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Active Transportation | Provide grade separated crossing between Inland Rail Trail and the Sprinter |  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SPRINTER Improvements | Planned grade separations at Melrose Dr and North Drive, double tracking and fleet improvements to improve SPRINTER frequency |  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Transit | Provide high-frequency, limited stop BRT service along Melrose Drive between Oceanside and Carlsbad |  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Underpass Improvements | Underpass improvements to improve community connection and safety along SR 78 and Melrose Dr |  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| NCTD Flex Service | Two planned FLEX Zones by NCTD that cross the Mobility Boulevard |  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies |  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Santa Fe Avenue/Mission Road

Mobility Boulevard Key Map



| | Signals (#) | Length (Miles) |
|--|-------------|----------------|
| Segment 1: SR 76 to Vista Village Dr | 16 | 4.3 |
| Segment 2: Vista Village Dr to Rancho Santa Fe Rd | 11 | 4.6 |
| Segment 3: Rancho Santa Fe Rd to Nordahl Rd | 16 | 4.8 |
| Segment 4: Nordahl Rd to Citrus Ave | 12 | 4.7 |
| Total | 55 | 18.4 |



Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|---|------------------------------|--|---------------------------------------|-----------|-------------------|
| SMART Arterials and Intersections | Flex Lanes | Consider | | | |
| | SMART Intersections | 16 | 11 | 16 | 12 |
| Active Transportation Network | Separated Facility | Planned; Class IV | Class I | | Planned; Class IV |
| | Improved Pedestrian Crossing | 6 | 11 | 3 | 18 |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | Next Gen 474 (Frequency: 10 min) (Planned) | Rapid (Peak Period Frequency: 10 min) | | |
| | Commuter Express | None | | | |
| | Local Service/Flex Service | Flex Service (up to 11 routes) | | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | REGIONAL SPINE | | | | | |
|------------------|--------------|------------------|------------------|-------|------------|-----------|----------------|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| Segment 1 | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ | ◐ | ○ |
| Segment 2 | ○ | ○ | ○ | ◐ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ | ● |
| Segment 3 | ○ | ○ | ○ | ○ | ◐ | ◐ | ○ | ○ | ○ | ○ | ○ | ● |
| Segment 4 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◐ |

Symbol Key: ● Yes ◐ Partial ○ No

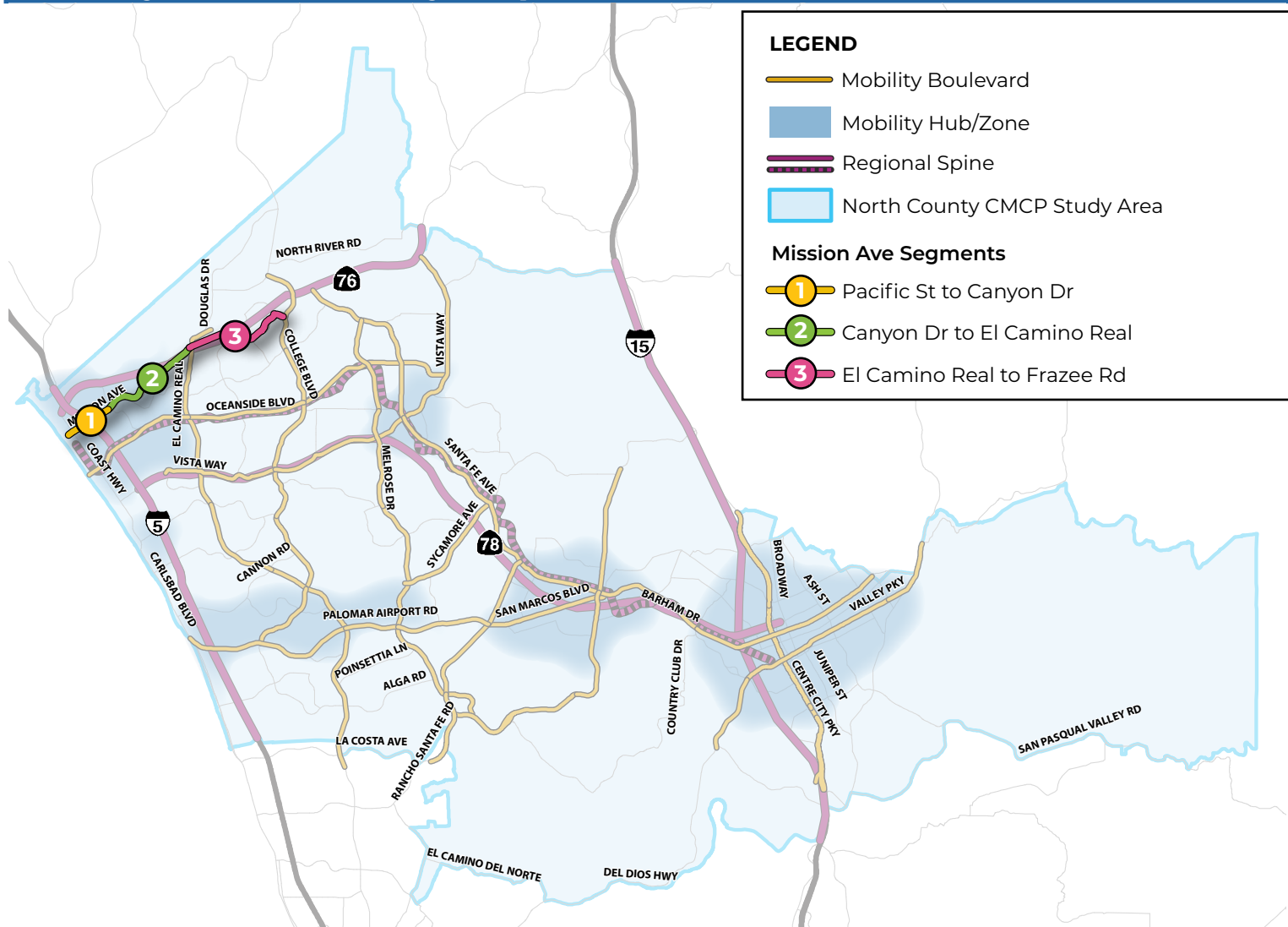
Santa Fe Avenue/Mission Road

Highlighted Projects and Programs

| Program/Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|------------------------------------|---|------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| SMART Intersections | 55 smart intersections, seven shared with other Mobility Boulevards | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation Improvements | 56 bike and/or pedestrian crossing improvements to increase active transportation safety (ex. Upgrades and development to Inland Rail Trail and Trailheads adjacent to Mobility Blvds.) | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation Improvements | Add sidewalks to create a complete sidewalk network | | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Active Transportation Improvements | Upgrades and development to Inland Rail Trail and Trailheads, adjacent to the Mobility Boulevards | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation Improvements | East/West pedestrian improvements intersecting Mobility Boulevard, along Centre City Pkwy and Mission Ave | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SPRINTER Improvements | Double track SPRINTER extension to southern Escondido, proposed grade separation at York Dr, Buena Creek Rd and Pacific St, and planned grade separation at Auto Parkway and Mission Avenue | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit Improvements | Provide a high-frequency, limited stop BRT service parallel to SPRINTER along Oceanside Blvd, Santa Fe Ave and Mission Rd, to Escondido | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit Improvements | Next Gen <i>Rapid</i> Route 474 from Oceanside to Vista via Mission Ave/Santa Fe Rd | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Underpass Improvements | Underpass improvements to improve community connection and safety along I-15, SR 78, and Mission Ave | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| NCTD Flex Service | 11 planned FLEX Zones by NCTD that cross the Mobility Boulevard | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Mission Avenue

Mobility Boulevard Key Map



LEGEND

- Mobility Boulevard
- Mobility Hub/Zone
- Regional Spine
- North County CMCP Study Area

Mission Ave Segments

- 1 Pacific St to Canyon Dr
- 2 Canyon Dr to El Camino Real
- 3 El Camino Real to Frazee Rd

| | Signals (#) | Length (Miles) |
|---|-------------|----------------|
| Segment 1: Pacific St to Canyon Dr | 8 | 1.1 |
| Segment 2: Canyon Dr to El Camino Real | 10 | 2.6 |
| Segment 3: El Camino Real to Frazee Rd | 10 | 2.6 |
| Total | 28 | 6.3 |



Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 |
|---|------------------------------|--|-----------|-----------|
| SMART Arterials and Intersections | Flex Lanes | Consider | | |
| | SMART Intersections | 8 | 10 | 10 |
| Active Transportation Network | Separated Facility | Class I/IV (Proposed) | | |
| | Improved Pedestrian Crossing | 13 | 8 | 3 |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | Next Gen 474 (Frequency: 10 min) (Planned) | | N/A |
| | Commuter Express | None | | |
| | Local Service/Flex Service | Flex Service (up to 5 routes) | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | REGIONAL SPINE | | | | | |
|-----------------------------------|--------------|------------------|------------------|-------|------------|-----------|----------------|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| Mobility Boulevard Segment | | | | | | | | | | | | |
| 1 Segment 1 | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ |
| 2 Segment 2 | ● | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 3 Segment 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ |

Symbol Key: ● Yes ○ Partial ○ No

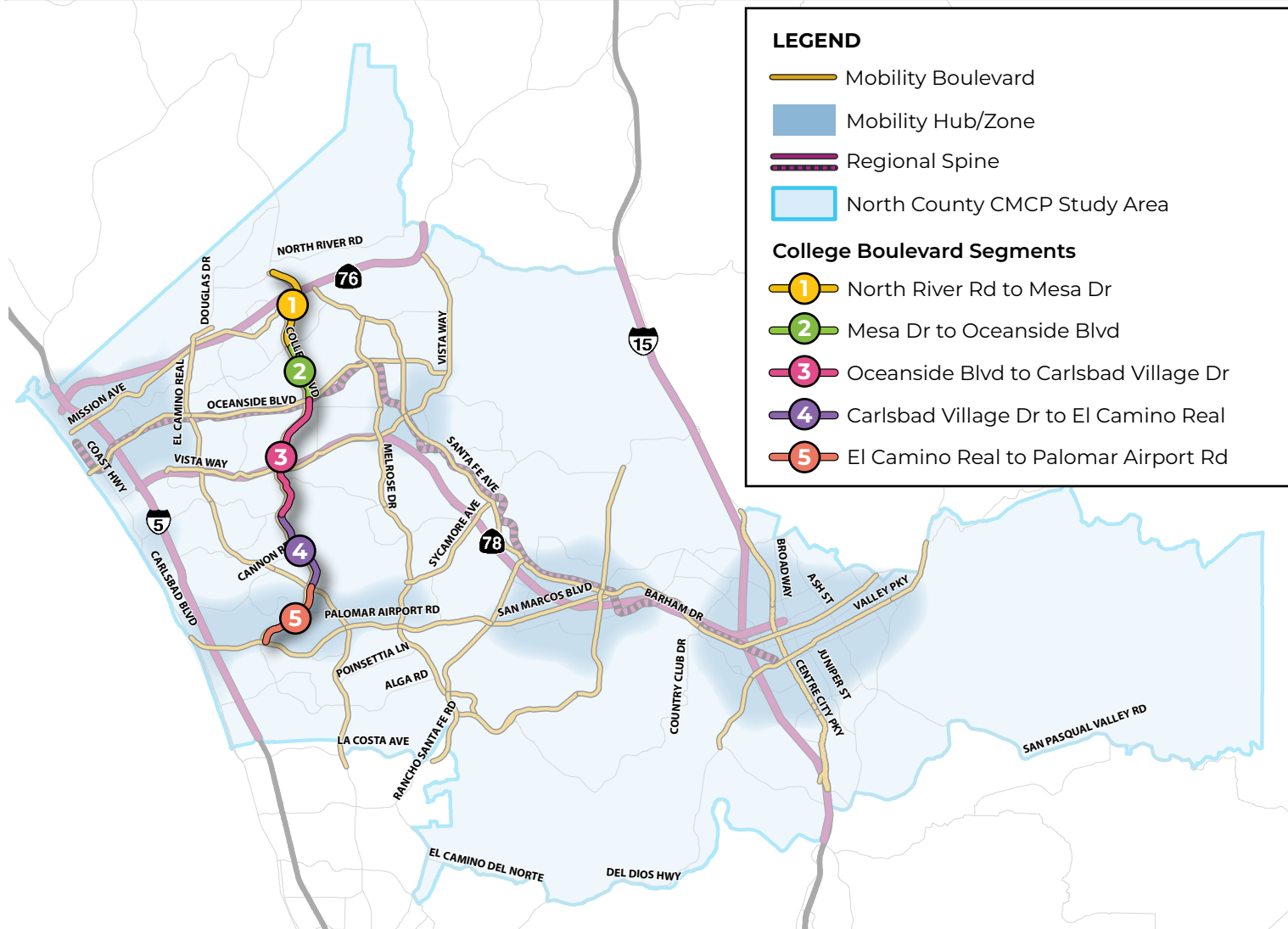
Mission Avenue

Highlighted Projects and Programs

| Program/ Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 |
|-----------------------|---|------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Smart Intersections | 28 smart intersections, two shared with other Mobility Boulevards. | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 28 bike and/or pedestrian crossing improvements to increase active transportation safety. | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Proposed protected bike facility along Mission Ave between Pacific Street to Frazee Rd | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Provide high-frequency, limited stop BRT service along Mission Ave in Oceanside from N Coast Hwy to Vista Way | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Transit | Next Gen <i>Rapid</i> Route 474 from Oceanside to Vista via Mission Ave/Santa Fe Rd | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Two planned NCTD Core services along Mobility Boulevard from Oceanside to Vista | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Overpass Improvements | Overpass improvements to improve community connection and safety from I-5 and Mission Ave | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| NCTD Flex Service | Five planned FLEX Zones by NCTD that cross the Mobility Boulevard | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

College Boulevard

Mobility Boulevard Key Map



| Segment | Signals (#) | Length (Miles) |
|--|-------------|----------------|
| Segment 1: North River Rd to Mesa Dr | 9 | 2.2 |
| Segment 2: Mesa Dr to Oceanside Blvd | 4 | 1.4 |
| Segment 3: Oceanside Blvd to Carlsbad Village Dr | 12 | 3.1 |
| Segment 4: Carlsbad Village Dr to El Camino Real | 4 | 2.0 |
| Segment 5: El Camino Real to Palomar Airport Rd | 4 | 1.8 |
| Total | 33 | 10.5 |



Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 | Segment 4 | Segment 5 |
|---|------------------------------|--|-----------|-----------|---------------------|-----------|
| SMART Arterials and Intersections | Flex Lanes | Consider | | | | |
| | SMART Intersections | 9 | 4 | 12 | 4 | 4 |
| Active Transportation Network | Separated Facility | Class I /Class IV (Planned) | | | Class I / (Planned) | |
| | Improved Pedestrian Crossing | 9 | 5 | 8 | 1 | 1 |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | Next Gen 477 (Frequency: 10 min) (Planned) | | | None | |
| | Commuter Express | None | | | | |
| | Flex Service/Local Service | Flex Service (up to 14 routes) | | | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | REGIONAL SPINE | | | | | | |
|------------------|--------------|------------------|------------------|-------|------------|----------------|-----|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| Segment 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Segment 2 | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ |
| Segment 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ● | ● | ○ |
| Segment 4 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Segment 5 | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Symbol Key: ● Yes ○ Partial ○ No

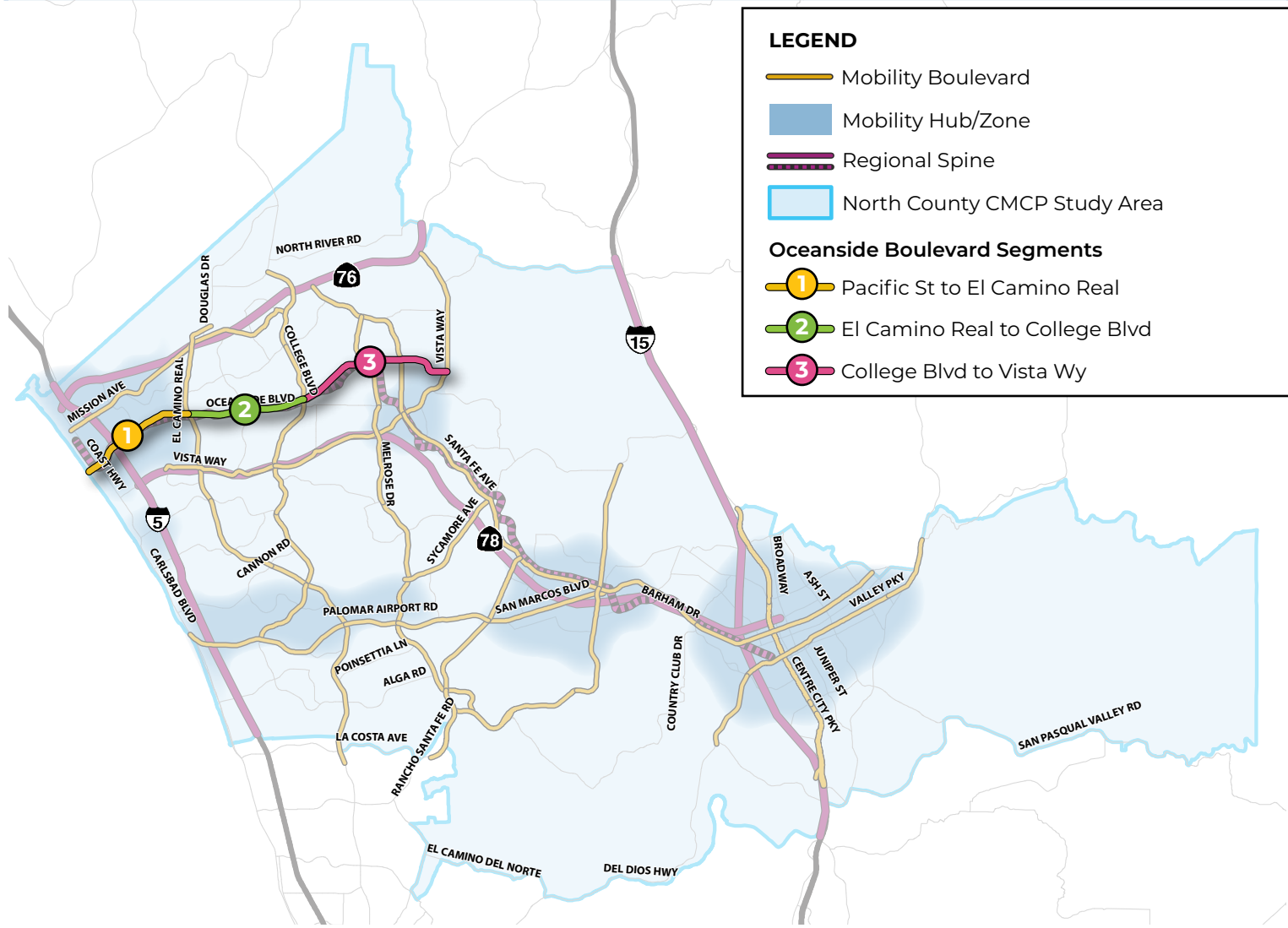
College Boulevard

Highlighted Projects and Programs

| Program/ Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 | Segment 4 | Segment 5 |
|-----------------------|--|------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| SMART Intersections | 33 smart intersections, five shared with other Mobility Boulevard | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 33 bike and/or pedestrian crossing improvements to increase active transportation safety | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Proposed protected bike facility along College Boulevard from North River Rd Palomar Airport Rd | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | City plans to extend College Boulevard between Bobcat Lane and El Camino Real to provide Class II bike lanes and a separate Class I multi-use path | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Transit | Core NCTD service planned along College Blvd from North River Rd to Oceanside Blvd | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Microtransit Service | Proposed microtransit service that crosses the Mobility Boulevard, from Cannon Rd to Melrose Dr | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| NCTD Flex Service | 14 planned FLEX Zones by NCTD that serve the Mobility Boulevard | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| SPRINTER Improvements | Proposed grade separation at College Boulevard | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Oceanside Boulevard

Mobility Boulevard Key Map



LEGEND

- Mobility Boulevard
- Mobility Hub/Zone
- Regional Spine
- North County CMCP Study Area

Oceanside Boulevard Segments

- 1 Pacific St to El Camino Real
- 2 El Camino Real to College Blvd
- 3 College Blvd to Vista Wy

| | Signals (#) | Length (Miles) |
|--|-------------|----------------|
| Segment 1: Pacific St to El Camino Real | 12 | 2.7 |
| Segment 2: El Camino Real to College Blvd | 4 | 2.8 |
| Segment 3: College Blvd to Vista Way | 16 | 3.9 |
| Total | 32 | 9.5 |



Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 |
|---|------------------------------|--------------------------------|-----------|-----------|
| SMART Arterials and Intersections | Flex Lanes | Consider | | |
| | SMART Intersections | 12 | 4 | 16 |
| Active Transportation Network | Separated Facility | Class IV (Planned) | | |
| | Improved Pedestrian Crossing | 12 | 2 | 5 |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | None | | |
| | Commuter Express | None | | |
| | Flex Service/Local Service | Flex Service (up to 13 routes) | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | REGIONAL SPINE | | | | | |
|-----------------------------------|--------------|------------------|------------------|-------|------------|-----------|----------------|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| Mobility Boulevard Segment | | | | | | | | | | | | |
| 1 Segment 1 | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ● | ○ |
| 2 Segment 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ |
| 3 Segment 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ |

Symbol Key: ● Yes ○ Partial ○ No

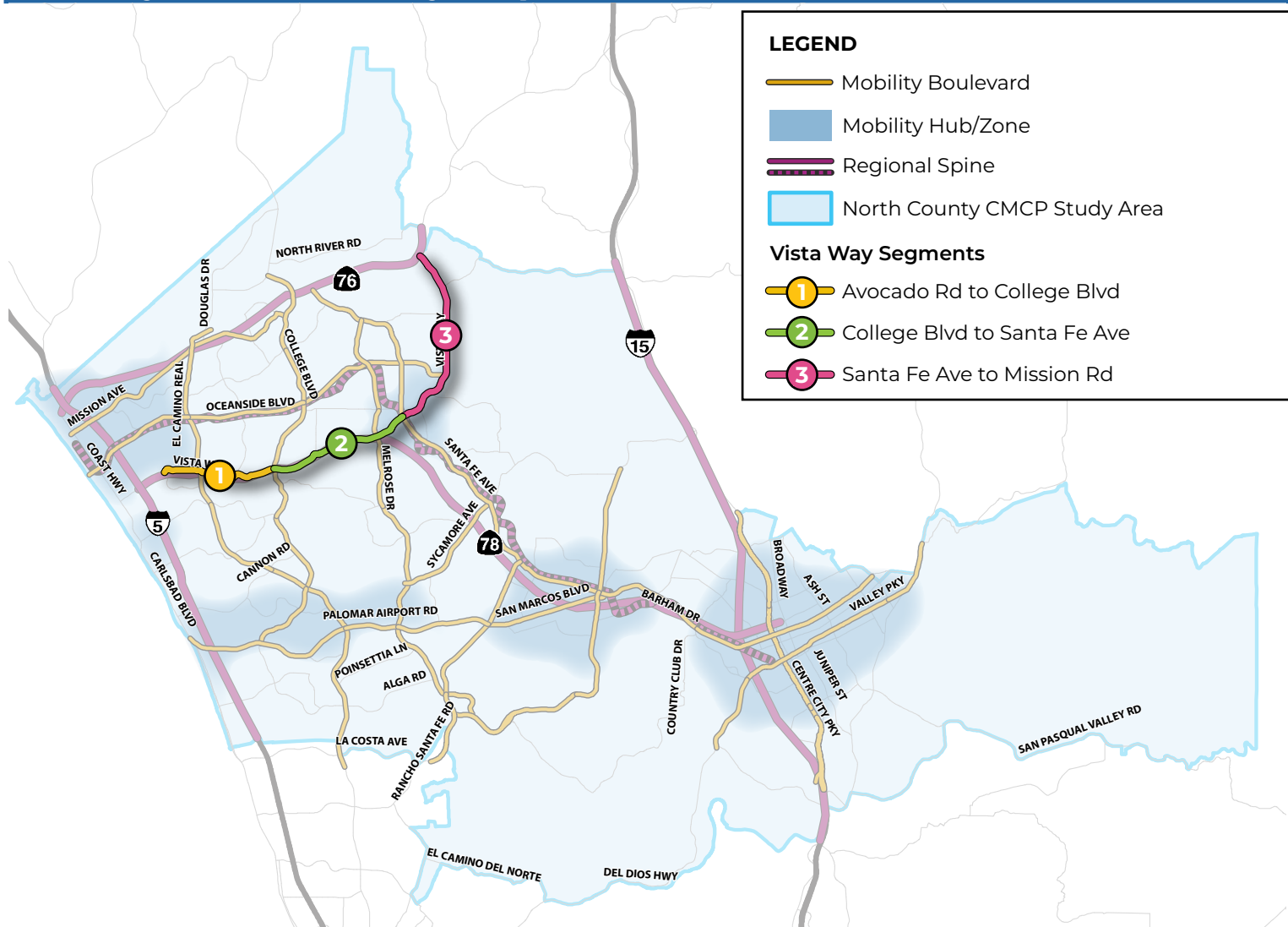
Oceanside Boulevard

Highlighted Projects and Programs

| Program/ Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 |
|------------------------|---|------------------|--------------|----------------|-----------|-----------|-----------|
| SMART Intersections | 32 smart intersections, five shared with other Mobility Boulevards | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Active Transportation | 32 bike and/or pedestrian crossing improvements to increase active transportation safety | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Active Transportation | Improvements to Inland Rail Trail and Trailheads from S Pacific St to Melrose Dr | | ✓ | ✓ | ✓ | ✓ | ✓ |
| SPRINTER Improvements | Planned grade separations, double tracking, station enhancements and fleet improvements to improve frequency | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Transit | Planned improvement and expansion of NCTD bus-service along Oceanside Blvd | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Transit | Provide a high-frequency, limited stop BRT service parallel to SPRINTER along Oceanside Blvd, Santa Fe Ave and Mission Rd, to Escondido | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Underpass Improvements | Underpass improvements to improve community connection and safety along Oceanside Blvd across I-5 | | ✓ | ✓ | ✓ | ☐ | ☐ |
| NCTD Flex Service | 13 planned FLEX Zones by NCTD that serve the Mobility Boulevard | | ✓ | ✓ | ✓ | ✓ | ✓ |
| TSMO | Establish corridor as a communication backbone with TSMO strategies | | ✓ | ✓ | ✓ | ✓ | ✓ |

Vista Way

Mobility Boulevard Key Map



| | Signals (#) | Length (Miles) |
|--|-------------|----------------|
| Segment 1: Avocado Rd to College Blvd | 12 | 2.8 |
| Segment 2: College Blvd to Santa Fe Ave | 13 | 3.5 |
| Segment 3: Santa Fe Ave to Mission Rd | 16 | 4.6 |
| Total | 41 | 10.8 |



Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 |
|---|------------------------------|--------------------------------|--|--|
| SMART Arterials and Intersections | Flex Lanes | Consider | Yes | |
| | SMART Intersections | 12 | 13 | 16 |
| Active Transportation Network | Separated Facility | Class I/IV (Proposed) | Class I (Planned) | Class I/IV (Proposed) |
| | Improved Pedestrian Crossing | 11 | 14 | 11 |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | None | Next Gen 477 (Frequency: 10 min) - Partial (Planned) | Next Gen 474 (Frequency: 10 min) (Planned) |
| | Commuter Express | None | | |
| | Flex Service/Local Service | Flex Service (up to 10 routes) | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | REGIONAL SPINE | | | | | |
|--------------------|--------------|------------------|------------------|---------|------------|-----------|----------------|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| 1 Segment 1 | Partial | No | No | No | No | No | No | No | Yes | No | Partial | No |
| 2 Segment 2 | No | No | No | Partial | No | No | No | No | Yes | No | Partial | No |
| 3 Segment 3 | No | No | No | Partial | No | No | No | Yes | No | No | No | Yes |

Symbol Key: ● Yes ● Partial ○ No

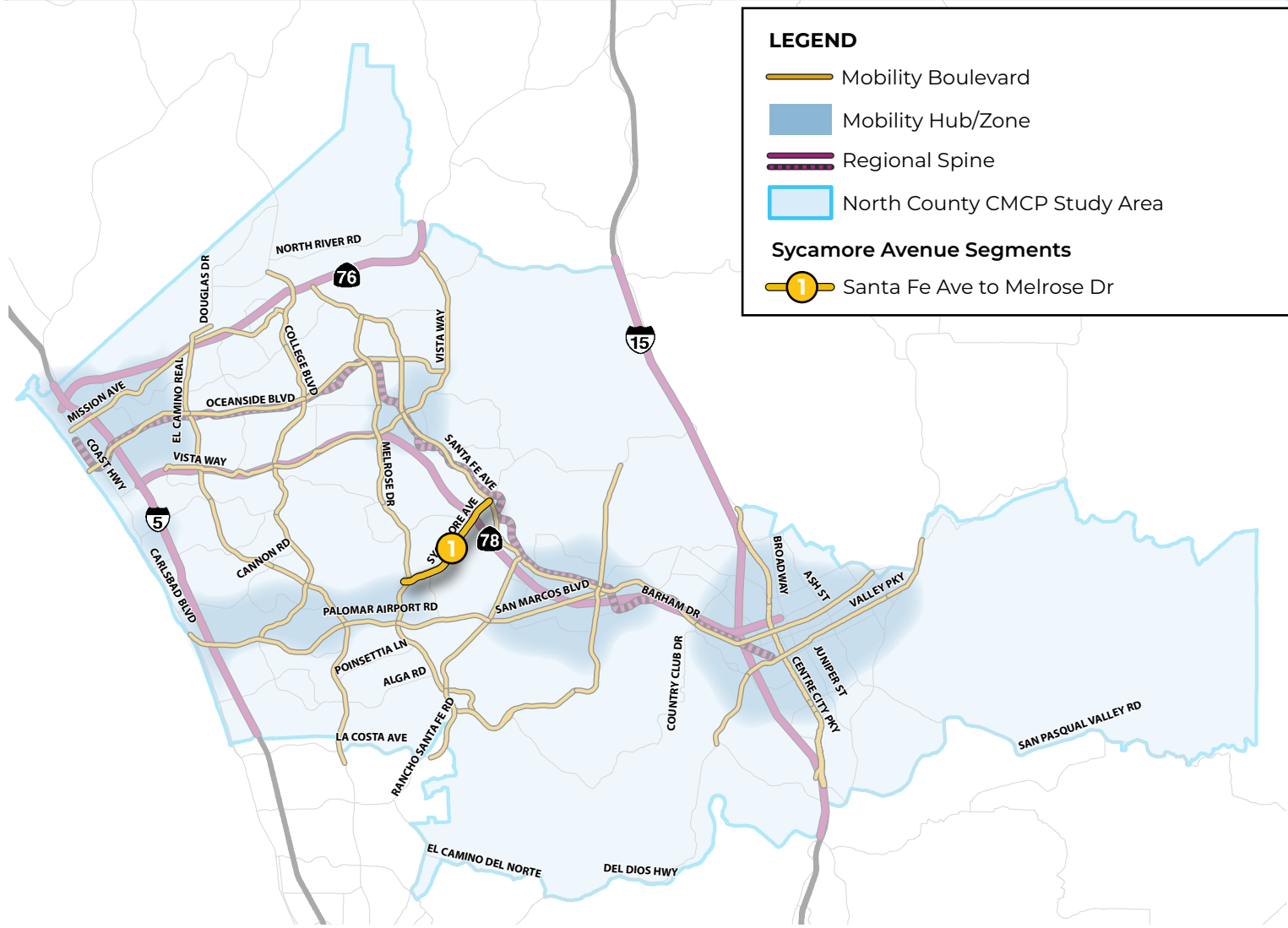
Vista Way

Highlighted Projects and Programs

| Program/Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 |
|--------------------------|---|------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Smart Intersections | 41 smart intersections, five shared with other Mobility Boulevards | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 41 bike and/or pedestrian crossing improvements to increase active transportation safety | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Proposed protected bike facility along Vista Way between Mission Rd and Avocado Rd | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| SPRINTER Improvement | Planned grade separation at Vista Village Dr and Main St | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Transit | Improve bus stop access/infrastructure along Vista Way | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Proposed high-frequency transit service along Vista Way, from Mission Rd to Sante Fe Ave | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Planned NextGen Rapid 474 intersecting Mobility Boulevard at Santa Fe Ave, from Oceanside to Vista vis Mission Ave/Sante Fe Rd Corridor | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Planned NextGen Rapid 477 intersecting Mobility Boulevard from Rancho Del Oro to El Camino Real, from Carlsbad Village Dr to SR 76 via College Blvd | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Operational Improvements | Improve traffic operations at the intersection of Vista Way and El Camino Real through the implementation of a smart signal | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Interchange Improvements | Role/Opportunity of parallel arterials such as West Vista Way and Mission/South Santa Fe | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| NCTD Flex Service | Ten planned FLEX Zones by NCTD that cross the Mobility Boulevard | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Sycamore Avenue

Mobility Boulevard Key Map



| | Signals (#) | Length (Miles) |
|--|-------------|----------------|
| Segment 1: Santa Fe Ave to Melrose Dr | 13 | 2.9 |
| Total | 13 | 2.9 |



Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 |
|---|------------------------------|--------------------|
| SMART Arterials and Intersections | Flex Lanes | Yes |
| | SMART Intersections | 13 |
| Active Transportation Network | Separated Facility | Class II (Planned) |
| | Improved Pedestrian Crossing | 6 |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | None |
| | Commuter Express | None |
| | Flex Service/Local Service | None |

STRATEGIC ANCHOR

| | MOBILITY HUB | | | | | REGIONAL SPINE | | | | | | |
|----------------------------|--------------|------------------|------------------|-------|------------|----------------|-----|-------|-------|------|----------|-------------------|
| Mobility Boulevard Segment | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| Segment 1 | ○ | ○ | ◐ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ● | ○ |

Symbol Key: ● Yes ◐ Partial ○ No

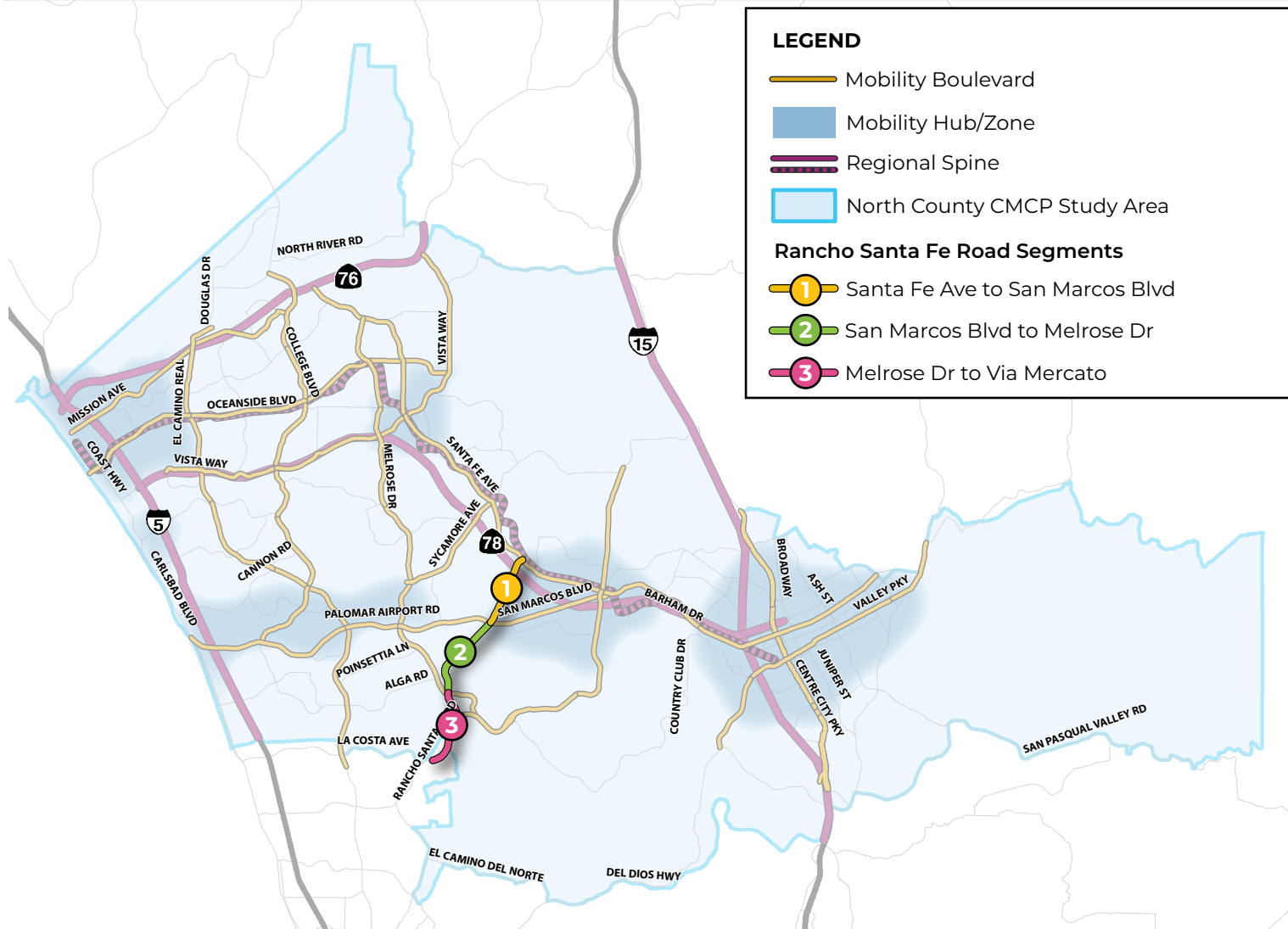
Sycamore Avenue

Highlighted Projects and Programs

| Program/ Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 |
|------------------------|--|------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Smart Intersections | 13 smart intersections, two shared with other Mobility Boulevards | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 13 bike and/or pedestrian crossing improvements to increase active transportation safety | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Proposed Class II facility from Thibode Rd to Hibiscus Dr | | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SPRINTER Improvements | Proposed grade separation at Buena Creek Rd | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Planned NCTD Local Service along Vista Mobility Boulevard | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Underpass Improvements | Underpass improvements | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Rancho Santa Fe Road

Mobility Boulevard Key Map



| Segment | Signals (#) | Length (Miles) |
|---|-------------|----------------|
| Segment 1: Santa Fe Ave to San Marcos Blvd | 11 | 1.7 |
| Segment 2: San Marcos Blvd to Melrose Dr | 8 | 2.1 |
| Segment 3: Melrose Dr to Via Mercato | 5 | 1.9 |
| Total | 24 | 5.7 |



Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 |
|---|------------------------------|-------------------------------|-----------|-----------|
| SMART Arterials and Intersections | Flex Lanes | Yes | | |
| | SMART Intersections | 11 | 8 | 5 |
| Active Transportation Network | Separated Facility | Class I/IV | | |
| | Improved Pedestrian Crossing | 5 | 1 | None |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | None | | |
| | Commuter Express | None | | |
| | Flex Service/Local Service | Flex Service (up to 2 routes) | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | REGIONAL SPINE | | | | | |
|------------------|--------------|------------------|------------------|-------|------------|-----------|----------------|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| Segment 1 | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ● | ○ | ● | ○ |
| Segment 2 | ○ | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Segment 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Symbol Key: ● Yes ◐ Partial ○ No

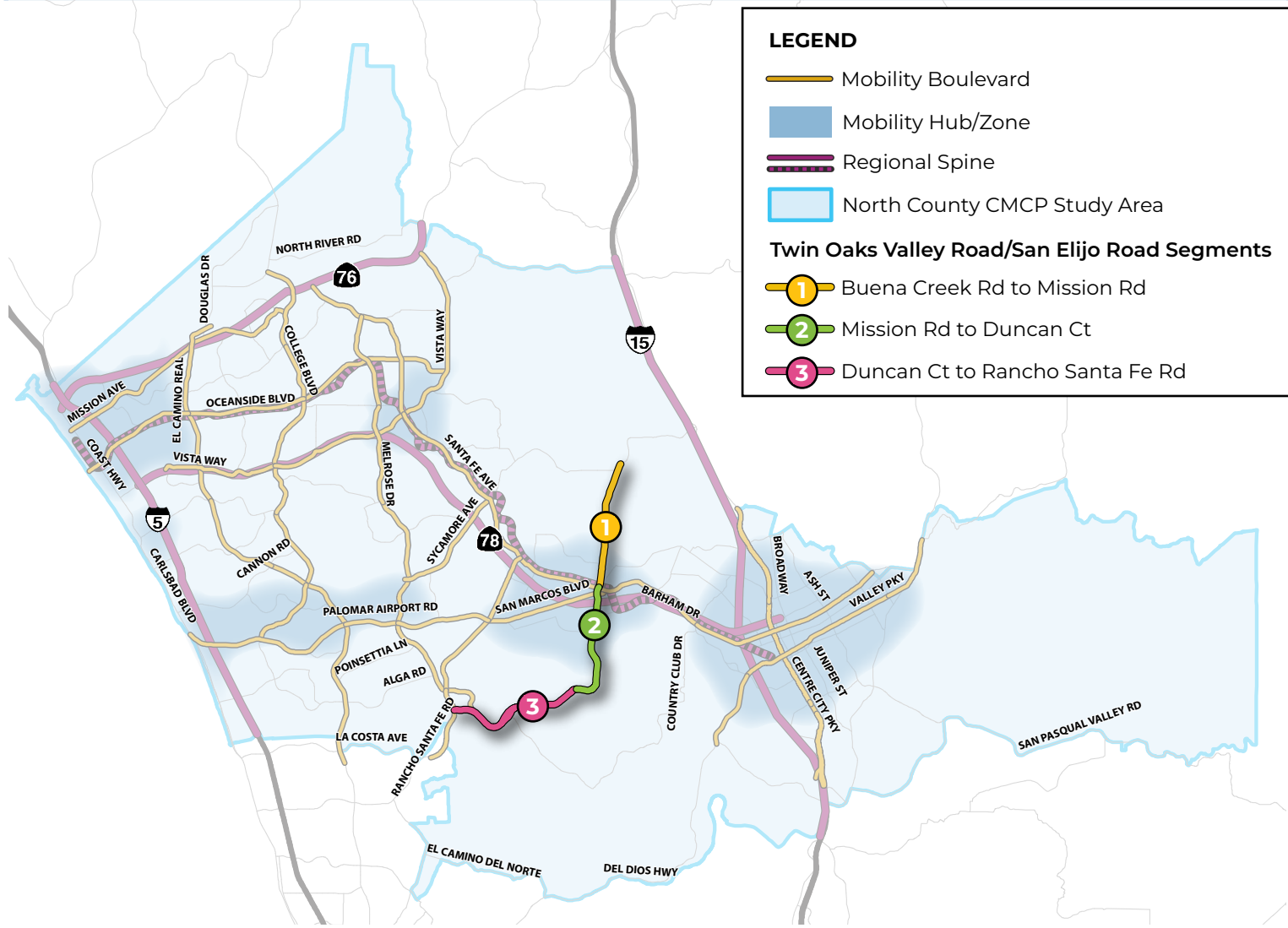
Rancho Santa Fe Road

Highlighted Projects and Programs

| Program/ Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 |
|-----------------------|--|------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Smart Arterials | Widening of Rancho Santa Fe Rd interchange overpass and ramps, along Mission Rd to Melrose Dr | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Smart Intersections | 24 smart intersections, three shared with other Mobility Boulevards | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 24 bike and/or pedestrian crossing improvements to increase active transportation safety | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| Active Transportation | Proposed Class I/Class IV Facility along Rancho Santa Fe Rd from Mission Rd to San Elijo Rd | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Planned NCTD Core Service from Encinitas to Palomar College | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Overpass Improvements | Overpass improvements to improve community connection and safety along SR 78 and Rancho Santa Fe | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| NCTD Flex Service | Two planned FLEX Zones by NCTD that cross the Mobility Boulevard | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Twin Oaks Valley Road/San Elijo Road

Mobility Boulevard Key Map



| | Signals (#) | Length (Miles) |
|---|-------------|----------------|
| Segment 1: Buena Creek Rd to Mission Rd | 8 | 3.0 |
| Segment 2: Mission Rd to Duncan Ct | 10 | 2.9 |
| Segment 3: Duncan Ct to Rancho Santa Fe Rd | 12 | 3.9 |
| Total | 30 | 9.8 |



Twin Oaks Valley Rd and Borden Rd



Twin Oaks Valley Rd and San Marcos Blvd

Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 |
|---|------------------------------|-------------------------------|-------------------|--------------------|
| SMART Arterials and Intersections | Flex Lanes | Consider | | |
| | SMART Intersections | 8 | 10 | 12 |
| Active Transportation Network | Separated Facility | Class IV (Planned) | Class I (Planned) | Class IV (Planned) |
| | Improved Pedestrian Crossing | None | 3 | None |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | None | | |
| | Commuter Express | None | | |
| | Flex Service/Local Service | Flex Service (up to 3 routes) | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | REGIONAL SPINE | | | | | |
|------------------|--------------|------------------|------------------|-------|------------|-----------|----------------|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| Segment 1 | ○ | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Segment 2 | ○ | ○ | ○ | ○ | ◐ | ○ | ● | ○ | ○ | ○ | ● | ● |
| Segment 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Symbol Key: ● Yes ◐ Partial ○ No

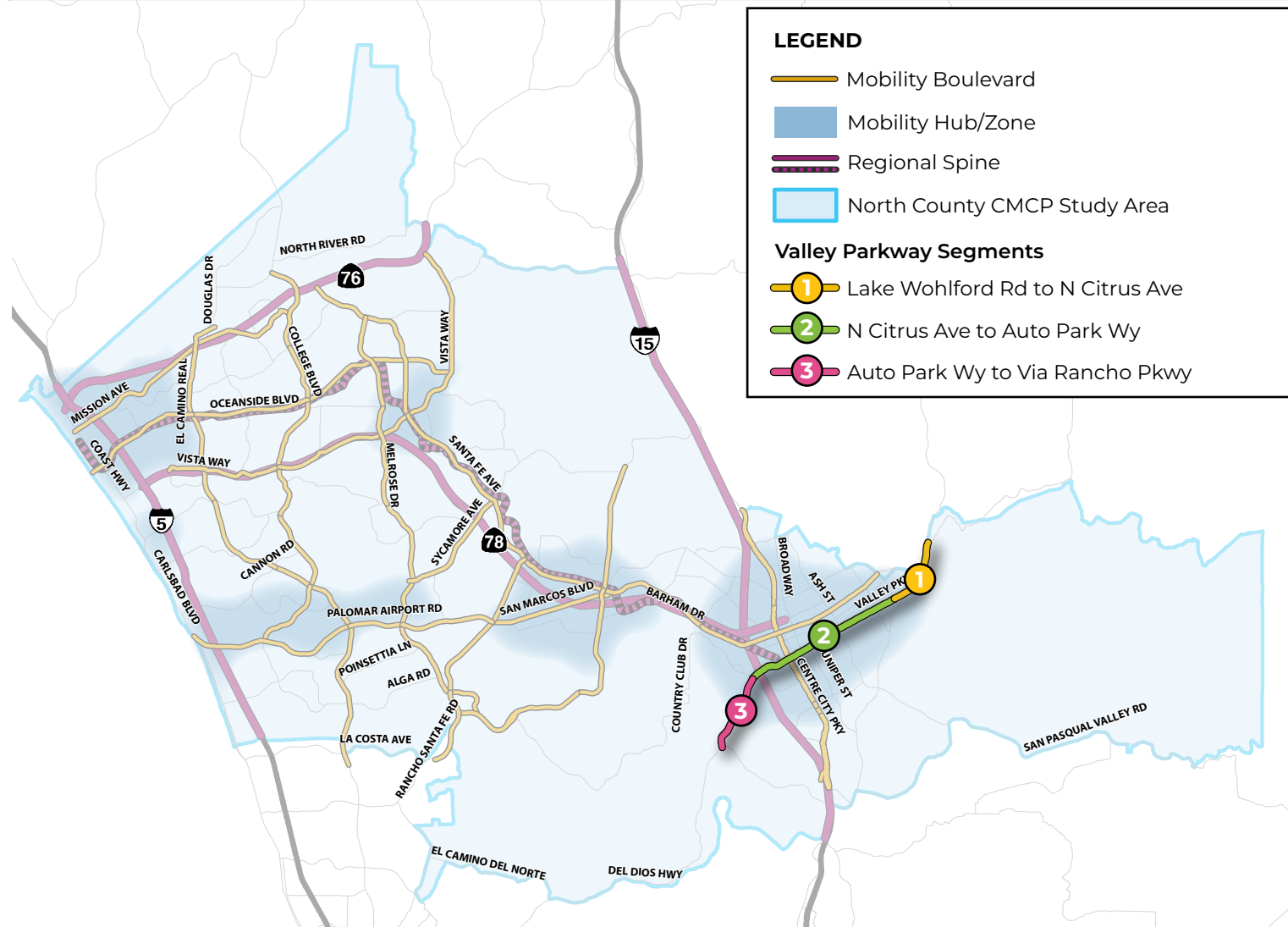
Twin Oaks Valley Road/San Elijo Road

Highlighted Projects and Programs

| Program/ Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 |
|---------------------------|---|------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Smart Intersections | 30 smart intersections, four shared with other Mobility Boulevards | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 30 bike and/or pedestrian crossing improvements to increase active transportation safety | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Development of Twin Oaks Valley Trailhead | | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Active Transportation | Planned Class I bike facility in Double Peak Regional Park to better connect Twin Oaks Valley Rd to planned trail network | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Planned Class I bike facility along Twin Oaks Valley Rd between San Marcos Boulevard and Double Peak Drive | | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Active Transportation | Planned Class IV bike facility between Double Peak Drive and Rancho Santa Fe Rd | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Interchange Improvements | Twin Oaks Valley Rd and SR 78 interchange capacity and metering improvements | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Overpass Improvements | Overpass improvements at Twin Oaks Valley Rd and Mission Rd Interchange to improve community connection and safety | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Overpass Improvements | Overpass improvements at Twin Oaks Valley Rd and SR 78 Interchange to improve community connection and safety | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Flex/Microtransit Service | Provide flex/microtransit service along Twin Oaks Valley Rd from Deer Springs Rd to Questhaven Rd | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| NCTD Flex Service | Three planned FLEX Zones by NCTD that cross the Mobility Boulevard | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Valley Parkway

Mobility Boulevard Key Map



| | Signals (#) | Length (Miles) |
|---|-------------|----------------|
| Segment 1: Lake Wohlford Rd to N Citrus Ave | 7 | 1.7 |
| Segment 2: N Citrus Ave to Auto Park Way | 19 | 3.9 |
| Segment 3: Auto Park Way to Via Rancho Parkway | 6 | 1.9 |
| Total | 32 | 7.4 |



Related North County CMCP Strategies

Proposed Strategies










| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 |
|---|------------------------------|--|-----------|--------------------|
| SMART Arterials and Intersections | Flex Lanes | Consider | | |
| | SMART Intersections | 7 | 19 | 6 |
| Active Transportation Network | Separated Facility | Existing Class I Parallel | | Class IV (Planned) |
| | Improved Pedestrian Crossing | 3 | 25 | None |
| High-Frequency Core, Rapid, and Commuter Services | Rapid | Next Gen 471 (Frequency: 10 min) (Planned) | | None |
| | Commuter Express | None | | |
| | Flex/Service Local Service | Flex Service (up to 3 routes) | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | REGIONAL SPINE | | | | | |
|------------------|--------------|------------------|------------------|-------|------------|-----------|----------------|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| Segment 1 | ○ | ○ | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ |
| Segment 2 | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ● | ● | ● | ○ |
| Segment 3 | ○ | ○ | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ |

Symbol Key: ● Yes ◐ Partial ○ No

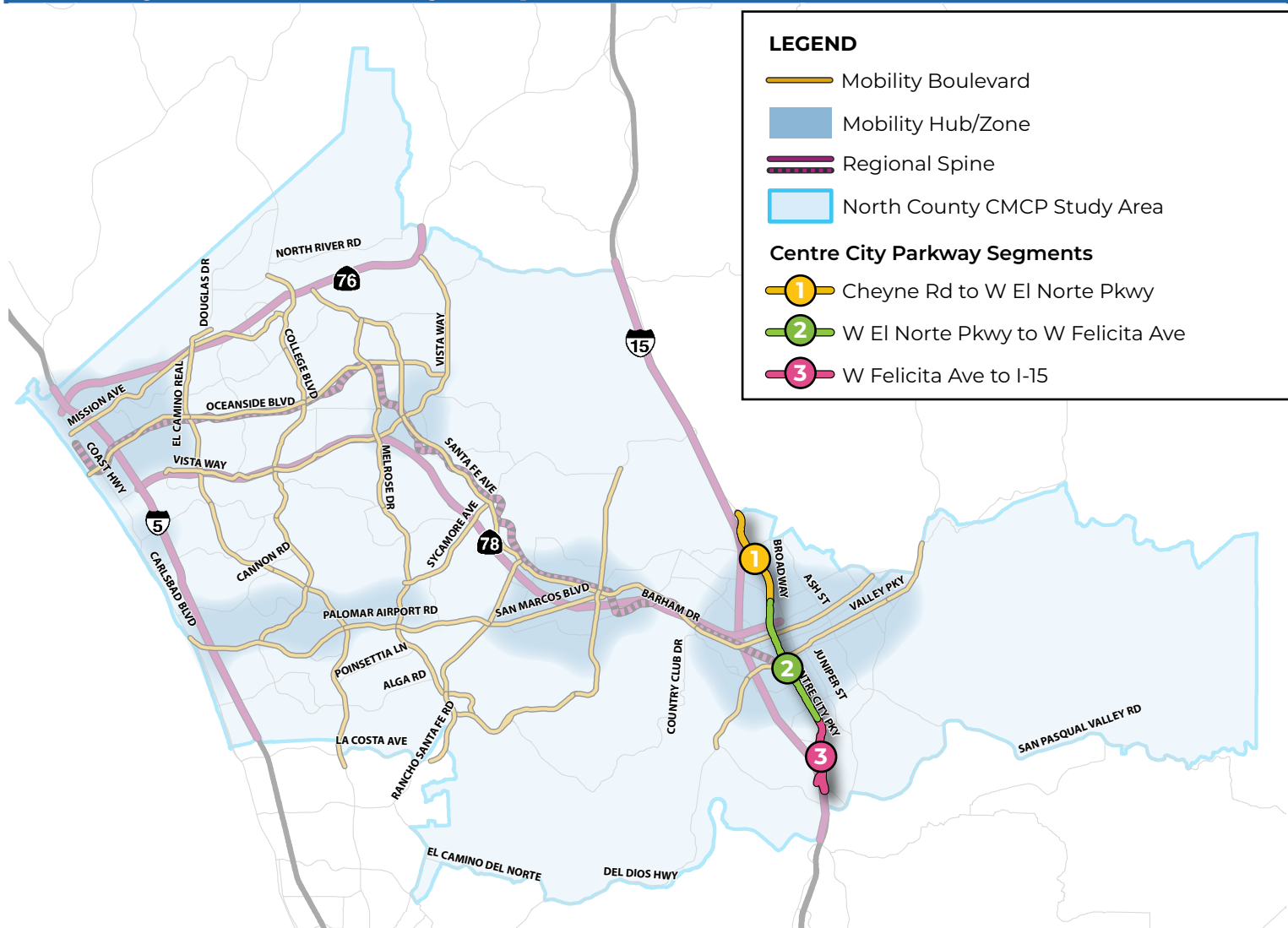
Valley Parkway

Highlighted Projects and Programs

| Program/ Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 |
|------------------------|---|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| SMART Intersections | 32 smart intersections, one shared with other Mobility Boulevard |  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 39 bike and/or pedestrian crossing improvements to increase active transportation safety |  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Proposed Mid-County Bikeway improvements from Rancho Santa Fe to Auto Park Way |  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Proposed Intra-city shuttle service between Escondido Transit Center and Downtown Escondido |  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Transit | Rapid 471 (Downtown Escondido to East Escondido) |  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Planned NCTD local service to serve Downtown Escondido |  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Underpass Improvements | Underpass improvements to improve community connection and safety along Valley Parkway and I-15 |  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| NCTD Flex Service | Three planned FLEX Zones by NCTD that serve the Mobility Boulevard |  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies |  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Centre City Parkway

Mobility Boulevard Key Map



| Segment | Signals (#) | Length (Miles) |
|---|-------------|----------------|
| Segment 1: Cheyne Rd to W El Norte Pkwy | 3 | 4.0 |
| Segment 2: W El Norte Pkwy to W Felicita Ave | 11 | 4.5 |
| Segment 3: W Felicita Ave to I-15 | 1 | 4.4 |
| Total | 15 | 12.8 |



Related North County CMCP Strategies

Proposed Strategies

| Strategy | Program/Project | Segment 1 | Segment 2 | Segment 3 |
|---|------------------------------|-------------------------------|-----------|-----------|
| SMART Arterials and Intersections | Flex Lanes | N/A | | |
| | SMART Intersections | 3 | 11 | 1 |
| Active Transportation Network | Separated Facility | Class I (Planned) | | |
| | Improved Pedestrian Crossing | 1 | 9 | 2 |
| High-Frequency Core, Rapid, and Commuter Services | SPRINTER | Extension South | | |
| | Commuter Express | None | | |
| | Flex Service/Local Service | Flex Service (up to 3 routes) | | |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | REGIONAL SPINE | | | | | |
|------------------|--------------|------------------|------------------|-------|------------|-----------|----------------|-------|-------|------|----------|-------------------|
| | Oceanside | Carlsbad Village | Carlsbad Palomar | Vista | San Marcos | Escondido | I-5 | SR 76 | SR 78 | I-15 | SPRINTER | Inland Rail Trail |
| Segment 1 | ○ | ○ | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ● | ○ | ○ |
| Segment 2 | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ● | ○ | ○ | ○ |
| Segment 3 | ○ | ○ | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ● | ○ | ○ |

Symbol Key: ● Yes ◐ Partial ○ No

Centre City Parkway

Highlighted Projects and Programs

| Program/ Projects | Description | Primary Strategy | Mobility Hub | Regional Spine | Segment 1 | Segment 2 | Segment 3 |
|------------------------|--|------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| SMART Intersections | 15 smart intersections, two shared with other Mobility Boulevards | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | 15 bike and/or pedestrian crossing improvements to increase active transportation safety | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Transportation | Provide enhanced bike facility along Mobility Boulevard | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| SPRINTER Improvements | Proposed SPRINTER extension at 10-min frequency on SPRINTER by 2050, along W Valley Pkwy to Felicita Rd or Del Lago Station | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Transit | Proposed Express BRT along Centre City Pkwy from SR 78 to I-15 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Overpass Improvements | Overpass improvements to improve community connection and safety from Centre City Pkwy to I-15 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Underpass Improvements | Underpass improvements to improve community connection and safety from Centre City Pkwy to I-15 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| NCTD Flex Service | Three planned FLEX Zones by NCTD that cross the Mobility Boulevard | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Crossing Improvements | Evaluate the need for pedestrian safety enhancements at intersections at W Felicita Ave, W 13th Ave, W 9th Ave, W 5th Ave, W 2nd Ave, W Grand Ave, W Valley Pkwy, W Washington Ave, W Mission Ave, Decatur Way, W El Norte | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | Establish corridor as a communication backbone with TSMO strategies | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Attachment 2: Mobility Hub Program Sheets

A Mobility Hub Program Sheet was developed for each program of improvements proposed for all the mobility hubs within the North County subregion. Each sheet provides information about the program and describes how it is related to the nine strategy layers and other strategic anchors (i.e., mobility boulevard and regional spine). Below is an overview of the elements that can be found across the Mobility Hub Program Sheet.

Mobility Hub Program Sheet User Guide

- 1. Program Name** – Name of the program to implement within mobility hub zones
- 2. Related North County CMCP Strategies** – Highlights in green and a yellow outline which of the following strategies the mobility hub program supports:

| Strategy Layer Icon | Strategy Layer |
|---------------------|---|
| | Smart Arterials and Intersections |
| | Regional “SMART” Highway Capacity Management |
| | Active Transportation Network |
| | Reconnecting Communities |
| | Mobility as a Service |
| | High-Frequency Core, Rapid, and Commuter Services |
| | SPRINTER Improvements |
| | TSMO/ICM |
| | Complementary Programs |

- 3. Program Statement** – Describes what the program is and its purpose
- 4. Actions by Term** – Details the actions to implement the program by phase (i.e., short, mid, and long)
- 5. CMCP Improvements** – What the CMCP can do to improve conditions for specific users by implementing this program
- 6. Preliminary Projects and Programs** – Lists out the projects and program strategies relevant to the program
- 7. Program Photos** – Precedent imagery related to the program

Flexible Fleet: Electric Bike and Scooter Share

Related North County CMCP Strategies



Electric Bike and Scooter Share offers bikes and scooters that can be rented and returned from docking stations located throughout the area, or by using a mobile app to locate available, undocked vehicles. Electric bike and scooter share programs provide first-mile/last-mile solutions while allowing users to utilize existing and planned active transportation infrastructure, such as bike lanes and streets.

ACTIONS

| SHORT TERM | MID TERM | LONG TERM |
|---|---|---|
| <ul style="list-style-type: none"> • Study locations suitable for bike and scooter share • Develop priority locations • Negotiate agreements with bike and scooter share companies • Engage with community and stakeholders • Improve supporting infrastructure (bike lanes, signage), as needed | <ul style="list-style-type: none"> • Develop locations for share stations and staging • Determine slow/no-ride zones • Finalize contracts with providers • Improve supporting infrastructure (EV charging), as needed | <ul style="list-style-type: none"> • Make necessary system adjustments • Improve supporting infrastructure (inductive EV charging), as needed |

CMCP Improvements

Electric Bike and Scooter Share provides flexible, point-to-point service for users at a low cost and without the need to rely on schedules. These flexible fleets would improve North County by:

- **Creating better connections with existing and planned transit infrastructure.** Electric Bike and Scooter Share helps users make more timely connections and reduces topographic or distance barriers.
- **Raising usage of active transportation infrastructure.** This program will provide more options for different modes of transportation that will minimize the physical effort needed to travel by foot or traditional bike.
- **Positively impacting community health.** By providing an alternative to private cars and carshares, this program will reduce air pollution while minimizing time spent in traffic. Overall health will also be improved through the increased levels of physical and outdoor activity.

Preliminary Projects and Programs

| DESCRIPTION | PRIMARY STRATEGY | SUPPLEMENT/ SUPPORT MOBILITY BOULEVARD | SUPPLEMENT/ SUPPORT REGIONAL SPINE |
|--|------------------|--|-------------------------------------|
| Designate electric bike and scooter share pick-up/drop-off locations along mobility boulevards with bike facilities and job centers to provide access to SPRINTER stations and other key destinations. | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Administer a voucher or reduced-fee program for individuals from low-income households. | | <input type="checkbox"/> | <input type="checkbox"/> |
| Install bike charging stations at SPRINTER stations and key destinations in mobility hubs (e.g., commercial centers, employer sites, and industrial parks). | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Partner with local bike CBOs to launch a bike lease and fix-it education program. | | <input type="checkbox"/> | <input type="checkbox"/> |
| Implement secure bike parking. | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |



Bikeshare (Source: JUMP)



Flexible Fleets (Source: Getty Images)



Station Rendering: Genesee



Micromobility Parking

Flexible Feet: Microtransit

Related North County CMCP Strategies



This program creates microtransit service in the North County region. Microtransit — which typically uses buses and vans much smaller than traditional municipal buses — is designed to be demand responsive or to run with fixed schedules, lines, and stops. This allows the service to be more efficient by pooling riders with other passengers traveling in the same or similar direction to nearby destinations. Hailing a ride could be done through a mobile app, call center, website, or an agent at popular destinations.

ACTIONS

| SHORT TERM | MID TERM | LONG TERM |
|---|--|---|
| <ul style="list-style-type: none"> • Study travel patterns • Determine feasibility of service and ideal scale • Negotiate agreements with software developers and microtransit operators • Engage with community and stakeholders | <ul style="list-style-type: none"> • Develop web interface • Determine service boundaries • Finalize contracts with providers • Facilitate connections with existing and planned bus and rail infrastructure • Plan for drop-off/pick-up areas at popular destinations • Educate public on usage | <ul style="list-style-type: none"> • Make necessary adjustments to system • Determine if bus lines can be replaced with microtransit service, or vice-versa |

CMCP Improvements

Microtransit provides flexible, single-seat rides for users at a low cost, without the need to rely on schedules, and attracts riders who find traditional transit unreliable or too infrequent. Microtransit would improve North County by:

- **Implementing a similar passenger experience as UberPOOL.** This program provides more convenient and accessible opportunities for non-automobile mobility throughout North County.
- **Facilitating connections with existing and planned transit infrastructure.** First- and last-mile gaps in the existing transit network are closed, wait times are lowered, and destinations that do not have the demand to support traditional transit can be reached.

Preliminary Projects and Programs

| DESCRIPTION | PRIMARY STRATEGY | SUPPLEMENT/ SUPPORT MOBILITY BOULEVARD | SUPPLEMENT/ SUPPORT REGIONAL SPINE |
|---|------------------|--|-------------------------------------|
| Perform a micromobility study to determine viable first- and last-mile strategies to SPRINTER stations. | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Provide flex/microtransit service with a flex service zone along Cannon Rd. | | <input type="checkbox"/> | <input type="checkbox"/> |
| Provide flex/microtransit service along Twin Oaks Valley Rd with a flex service zone between Buena Creek Rd and Wild Canyon Drive. | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Provide on-demand microtransit shuttle service from the Pointsettia Station to the business park along Palomar Airport Rd. | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Provide an intra-city shuttle service to connect CSUSM and other job centers in the San Marcos area. | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Provide a seasonal shuttle service to connect inland residents to beaches. | | <input type="checkbox"/> | <input type="checkbox"/> |
| Implement an affordable Mobility on Demand (MOD) service to serve communities of concern with access to key destinations around North County. | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |



Ride Sharing Applications (Source: Via)



Microtransit (Source: iStock)



Shuttle (Source: iStock)



Easy Mile (Source: Debbie Leung)

Flexible Fleet: NEVs

Related North County CMCP Strategies



This program facilitates implementation for Neighborhood Electric Vehicles (NEVs). NEVs are small, sometimes resembling a golf cart, generally with a maximum speed of 25 MPH. NEVs can be utilized for a variety of purposes, such as municipal service vehicles, carshare, or flexible shuttle service. Advantages to NEVs include their small size which allow them to navigate through tight spaces and occupy smaller parking spaces, their low speed which allows for safer integration with bike and pedestrian traffic, and their classification as zero-emission vehicles. As such, they qualify for a purchase rebate of \$1,500 from the State of California, which would lower costs for municipalities and agencies to acquire these vehicles.

ACTIONS

| SHORT TERM | MID TERM | LONG TERM |
|---|--|---|
| <ul style="list-style-type: none"> Determine feasibility of service and ideal scale Determine best uses for NEVs Assess NEV policies Negotiate with vehicle manufacturers Engage with community and stakeholders | <ul style="list-style-type: none"> Finalize contracts with providers Upgrade local infrastructure (charging, storing, and maintenance) Launch NEV public awareness campaign Develop services if applicable | <ul style="list-style-type: none"> Make necessary adjustments to system Refine integration with transit and microtransit, bike, and pedestrian, network |

CMCP Improvements

NEVs provide cleaner and more flexible vehicle options for municipalities and agencies. These flexible fleets would improve North County by:

- Providing more accessibility than traditional transit use.** Their small size allows them to be utilized on local streets and non-classified roadways, such as alleys, pedestrian malls, plazas, and pathways.
- Implementing a car share program for North County residents.** Residents can rent NEVs as needed, which will raise overall quality of life by lowering or eliminating costs associated with vehicle ownership.
- Positively impacting roadway safety.** The relatively low speed of NEVs will help prevent collisions and minimize severe injuries and/or fatalities.

Preliminary Projects and Programs

| DESCRIPTION | PRIMARY STRATEGY | SUPPLEMENT/ SUPPORT MOBILITY BOULEVARD | SUPPLEMENT/ SUPPORT REGIONAL SPINE |
|---|------------------|--|-------------------------------------|
| Perform a micromobility study to determine viable first- and last-mile strategies. | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Review speed along mobility boulevards and within mobility hubs to adjust speeds on roadway facilities to operate NEV services. | | <input type="checkbox"/> | <input type="checkbox"/> |
| Develop a NEV plan for each community in the subregion. | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Develop NEV policies to be inclusive of new transportation technologies along walking and biking facilities. | | <input type="checkbox"/> | <input type="checkbox"/> |
| Consider implementing NEV dedicated facility connecting the Coastal Rail Trail to communities along the coast. | | <input type="checkbox"/> | <input type="checkbox"/> |
| Upgrade rail trail facilities to allow shared use with NEVs. | | <input type="checkbox"/> | <input type="checkbox"/> |



Free subsidized shuttle service (Source: FRED)



Car Sharing (Source: Zipcar)



Electric Carshare (Source: Car2Go)



On-Street EV Charging (Source:iStock)

Pedestrian Safety Enhancements

Related North County CMCP Strategies



This program is broad in scope and will create a safer and more enjoyable pedestrian experience for residents. Projects could include, but are not limited to, pedestrian overpasses, improvements to the regional trail system, wider and more abundant sidewalks, road diets, safety buffers, better ADA compliance, flashing crossing beacons, and pedestrian scale lighting. Improvements will be focused along mobility boulevards within mobility hubs. These improvements complement one another, and provide a more attractive pedestrian experience.

ACTIONS

| SHORT TERM | MID TERM | LONG TERM |
|--|---|--|
| <ul style="list-style-type: none"> • Study locations in need of improvements • Prioritize locations most in need • Engage with community and stakeholders • Study cost, effects, and best practices of each intervention • Coordinate with municipalities that feature existing/planned active transportation plans | <ul style="list-style-type: none"> • Select alternatives for each location • Coordinate and develop contracts with consultants and construction crews • Educate public on improvements | <ul style="list-style-type: none"> • Continue to improve out sidewalk network • Monitor long-term reduction in injuries and fatalities |

CMCP Improvements

Pedestrian Safety Enhancements would improve North County by:

- **Increasing the number of trips completed by walking.** More walking trips reduces single-occupant vehicle trips and vehicle congestion.
- **Benefiting community and regional health.** Increased walking raises physical activity levels and air quality.
- **Removing barriers of inconvenience and creating new safety features.** Increased comfort and accessibility of pedestrian trips provides greater mobility options for non-vehicle trips.

Preliminary Projects and Programs

| DESCRIPTION | PRIMARY STRATEGY | SUPPLEMENT/ SUPPORT MOBILITY BOULEVARD | SUPPLEMENT/ SUPPORT REGIONAL SPINE |
|--|------------------|--|-------------------------------------|
| Improve pedestrian access across mobility boulevards by designing short-cut paths, introducing mid-block crossings, refuge islands, and other crossing improvements with complementary programs. | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Improve pedestrian amenities along mobility boulevards and at overpasses/underpasses to improve safety and connectivity (e.g., street furniture, shading, and lighting improvement). | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |



Bulbout (Source: NACTO)



Sidewalk Widening (Source: NACTO)



Mid-Block Crossing Enhancements (Source: SANDAG)



Safety Beacon at Crossing (Source: NACTO)

Bikeways

Related North County CMCP Strategies



This program focuses on improving multi-modal access to regional bikeways and trails in North County. This program will ensure that trailheads are located in areas that are accessible by the active transportation network and that areas near the trailheads generate trips on the regional bike and trails network. In addition, this program aims to improve access to popular destinations or important transportation nodes adjacent to trails. Providing these improvements would facilitate more opportunities for active transportation along mobility boulevards and within mobility hubs.

ACTIONS

| SHORT TERM | MID TERM | LONG TERM |
|--|---|--|
| <ul style="list-style-type: none"> • Study locations in need of improvements • Prioritize locations most in need • Engage with community and stakeholders • Study cost, effects, and best practices of each intervention • Coordinate with municipalities that feature existing/planned active transportation plans | <ul style="list-style-type: none"> • Select alternatives for each location • Coordinate and develop contracts with consultants and construction crews • Educate public on improvements | <ul style="list-style-type: none"> • Monitor overall increase in bike and pedestrian mile traveled and trips • Coordinate with extensions/expansions to the regional bikeways and trails |

CMCP Improvements

Bikeway and trailhead improvements would improve North County by:

- **Encouraging more activity at the trailheads.** More attractive, functional, and visible trailheads will draw users to trailheads and their adjoining trails.
- **Designing infrastructure for the region's climate.** Due to the region's climate that supports year-round walking and biking, improving access to and attractiveness of trailheads will raise the viability of pedestrian trips, providing greater mobility options for non-vehicle based trips.

Preliminary Projects and Programs

| DESCRIPTION | PRIMARY STRATEGY | SUPPLEMENT/ SUPPORT MOBILITY BOULEVARD | SUPPLEMENT/ SUPPORT REGIONAL SPINE |
|--|------------------|--|-------------------------------------|
| Improve multi-modal connections to trailheads and regional bike facilities by implementing Class I/Class IV bike facilities along mobility boulevards. | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Connect Escondido Creek Trail to mobility hubs. | | <input type="checkbox"/> | <input type="checkbox"/> |
| Provide fix-it stations at key locations near rail trails and within mobility hubs. | | <input type="checkbox"/> | <input type="checkbox"/> |
| Evaluate feasibility of upgrading rail trail facilities to allow for future shared-use with NEV | | <input type="checkbox"/> | <input type="checkbox"/> |
| Improve pedestrian amenities along and at Inland Rail Trail Trailheads. | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |



Santa Fe River Trail Bridge



Inland Rail Trail (Source: SANDAG)



Off-Street Bike Facility



On Street Protected Bike Facility

Roundabouts

Related North County CMCP Strategies



This program will implement policies and projects to analyze the feasibility of roundabouts as part of intersection improvements. Roundabouts are a type of traffic control strategy used to reduce high speeds, improve traffic flows, reduce conflict points between vehicles and other modes, and create a more comfortable pedestrian and bicyclist experience. Roundabout features — such as raised splitter islands that allow pedestrians to cross one direction of vehicle traffic at a time or separated pathways for bicyclists — can be included to enhance the user experience for multiple modes of travel. Truck aprons can also be included as a design feature to allow heavy vehicles to navigate the roundabout without damaging any infrastructure.

ACTIONS

| SHORT TERM | MID TERM | LONG TERM |
|---|--|---|
| <ul style="list-style-type: none"> Determine and prioritize locations for implementation Engage with community and stakeholders Study cost, effects, and best practices of each intervention Adopt a roundabout policy to explore the feasibility of a roundabout prior to constructing an intersection Perform an Intersection Control Evaluation | <ul style="list-style-type: none"> Select alternatives for each location Coordinate and develop contracts with consultants and construction crews Educate public on improvements Implement roundabouts at locations already identified as feasible by municipalities | <ul style="list-style-type: none"> Monitor change in collisions with a focus on pedestrian and bicycle collisions Implement roundabouts in the North County subregion |

CMCP Improvements

Roundabouts would benefit North County by:

- Improving Safety.** Roundabouts improve safety by reducing conflict points between vehicles and pedestrians and creating an environment that calms traffic. Lower speeds provide a more comfortable street environment for bicyclists and are associated with a decreased risk of collision resulting in injury or fatality.
- Providing Features for All Users.** Roundabouts can be designed to provide features for all users such as ramps to and from a separated or shared use path and enhanced crossing treatments for pedestrian visibility.
- Maintaining Flow of Traffic.** Roundabouts maintain the flow of traffic and reduce idling while enhancing pedestrian facilities to allow for greater pedestrian feasibility.

Preliminary Projects and Programs

| DESCRIPTION | PRIMARY STRATEGY | SUPPLEMENT/ SUPPORT MOBILITY BOULEVARD | SUPPLEMENT/ SUPPORT REGIONAL SPINE |
|--|------------------|--|------------------------------------|
| Roundabout Policy Update | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Construction of a roundabout and enhanced pedestrian crossing facilities at feasible intersections in the North County subregion that have a history of high bicycle and pedestrian collision rates. | | <input type="checkbox"/> | <input type="checkbox"/> |
| Analysis and design of intersection control features such as a roundabout, traffic signal or other intersection control improvement. | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |



Residential Roundabout (Street View)



Aerial View of Roundabout



Pedestrian Crossing at Roundabout

Attachment 3: Regional Spine Sheets

A Regional Spine Sheet was developed for each of the six regional spines identified in the North County study area. Each sheet provides a high-level overview of relevant projects from the project inventory related to the Regional Spine and describes how the regional spines interfaces with the nine strategy layers and other strategic anchors (i.e., mobility boulevard and mobility hub). Below is an overview of the elements that can be found across the Regional Spine Sheets.

Regional Spine Sheet User Guide

The image displays two screenshots of a Regional Spine Sheet for State Route 78. The top screenshot shows the 'Regional Spine Context Map' (2) and 'Relevant North County CMCP Strategies' (3). The bottom screenshot shows 'Highlighted Projects and Programs' (8) and 'Proposed Strategies' (7).

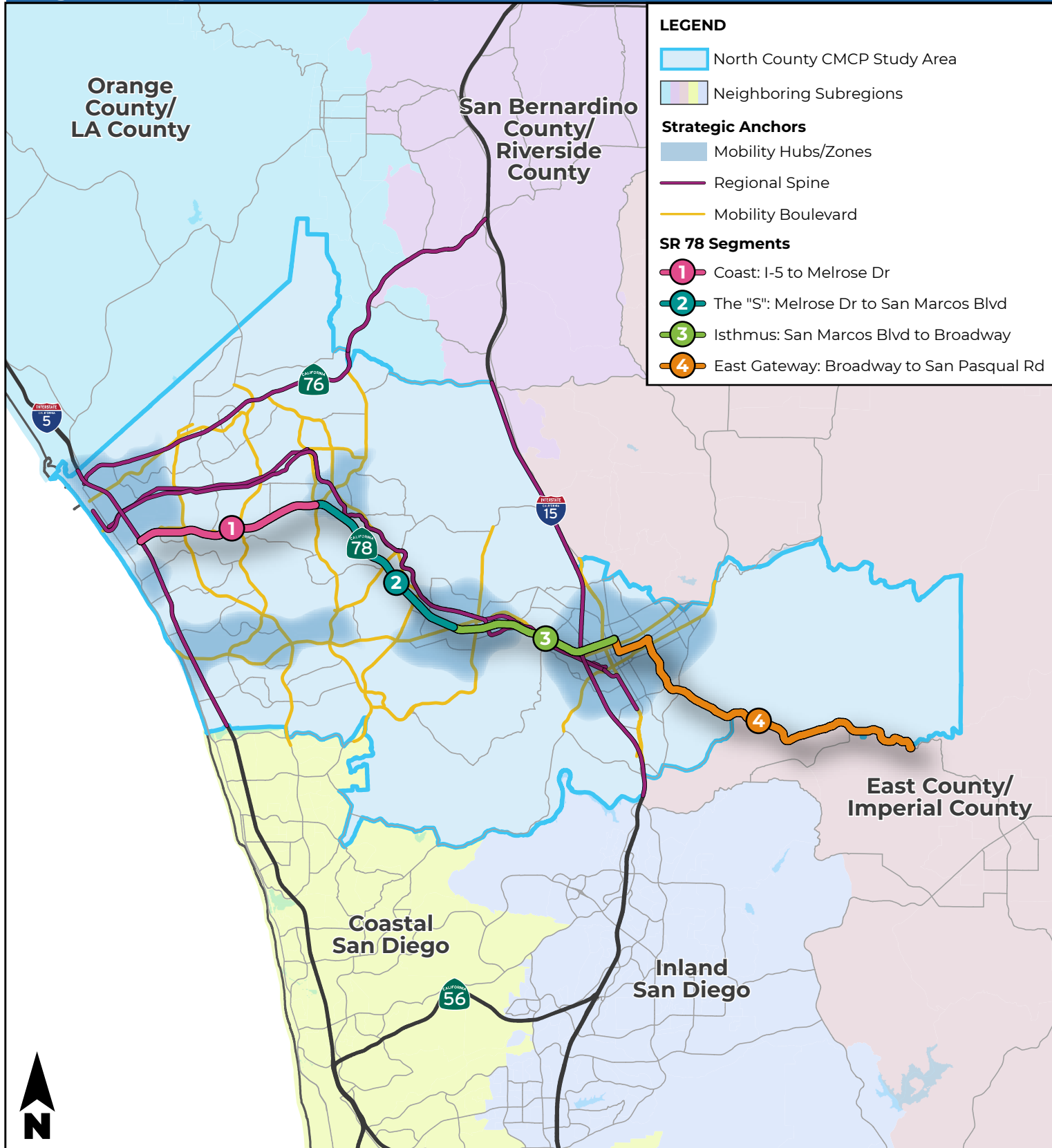
1. **Regional Spine Name** – Name of the identified regional spine
2. **Regional Spine Context Map** – Identifies the location of the regional spine, unique segments, and the spine’s relation to the surrounding regions
3. **Relevant North County CMCP Strategies** – Highlights in green and a yellow outline which of the following strategies the regional spine supports:

| Strategy Layer Icon | Strategy Layer |
|---------------------|---|
| | Smart Arterials and Intersections |
| | Regional “SMART” Highway Capacity Management |
| | Active Transportation Network |
| | Reconnecting Communities |
| | Mobility as a Service |
| | High-Frequency Core, Rapid, and Commuter Services |
| | SPINTER Improvements |
| | TSMO/ICM |
| | Complementary Programs |

4. **Corridor Description** – Describes the corridor in relation to the subregion
5. **Regional Spine Photos** – Existing image of the regional spine or a photo of a proposed strategy solution
6. **Regional Spine Segment and Quick Info** – Outlines key information such as grade separations/interchanges and length for each regional spine segment
7. **Proposed Strategies** – Identifies proposed strategies for the regional spine by segment
8. **Highlighted Program and Projects** – Lists the projects and programs along the mobility boulevard with the following information for each:
 - type,
 - description,
 - location
 - primary strategy layer applicable,
 - intersection with mobility hub and regional spine (checkmark means yes), and
 - regional spine segment that is related (checkmark means yes).

State Route 78

Regional Spine Context Map



LEGEND

- North County CMCP Study Area
- Neighboring Subregions
- Strategic Anchors**
 - Mobility Hubs/Zones
 - Regional Spine
 - Mobility Boulevard
- SR 78 Segments**
 - 1 Coast: I-5 to Melrose Dr
 - 2 The "S": Melrose Dr to San Marcos Blvd
 - 3 Isthmus: San Marcos Blvd to Broadway
 - 4 East Gateway: Broadway to San Pasqual Rd

Relevant North County CMCP Strategies



Corridor Description

SR 78 serves as the primary east-west travel corridor in the study area between East County and the Coast. The corridor intersects all North County cities and unincorporated areas of San Diego County. Improvements to the corridor will enhance regional travel to and from North County by better connecting the I-5 and I-15 North/South corridors.



| Regional Spine Segments | Interchange (#) | Length (Miles) |
|---|-----------------|----------------|
| 1 Coast: I-5 to Melrose Dr | 9 | 6.0 |
| 2 The "S": Melrose Dr to Las Posas | 7 | 6.2 |
| 3 Isthmus: Las Posas to Broadway | 7 | 5.5 |
| 4 East Gateway: Broadway to San Pasqual Rd | 11* | 12.4 |
| Total | 34 | 30.1 |

Note: *Interchange number for East Gateway segment represents number of signalized intersections.

Proposed Strategies

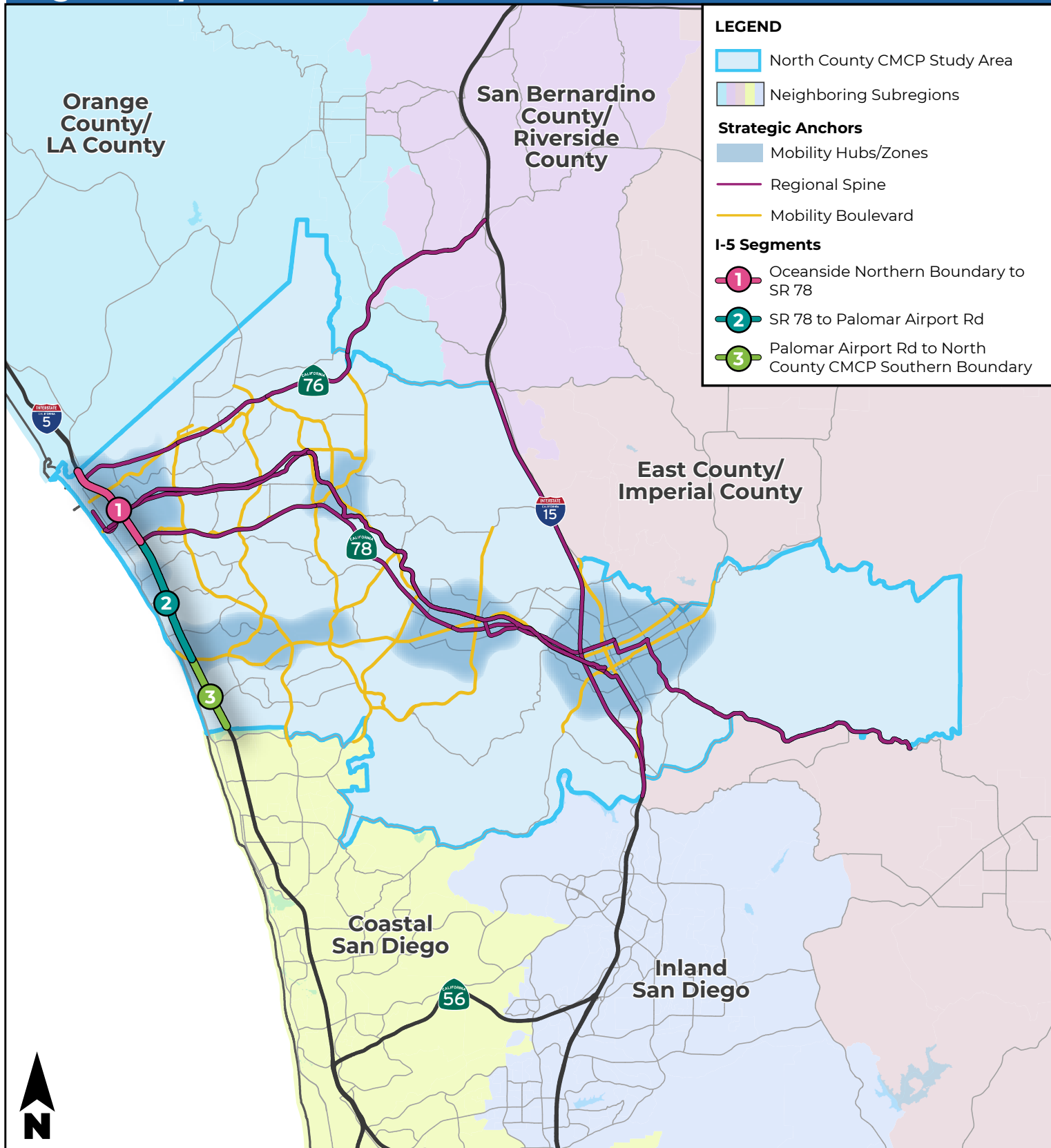
| Strategy | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|---|--|--------------------------------|---|-----------|
| Managed Lanes (ML) | Planned (I-5 to I-15) | | | |
| Connectors/Ramps | 1 Planned Freeway Connector | N/A | 1 Proposed Direct Access Ramp (DAR) 1 Planned ML Connector | N/A |
| Smart Intersections | 12 | 12 | 6 | 11 |
| Active Transportation: Crossings | 10 | 12 | 11 | 32 |
| High-Frequency Transit | N/A | N/A | Proposed Commuter Express (between Riverside and southern activity centers) | |
| TSMO: ICM | Integrated Corridor Management (ICM) with Communication Backbone | | | |
| TSMO: Connected Ramps | 12 on-/off-ramps 36 signals | 12 on-/off-ramps 38 signals | 6 on-/off-ramps 27 signals | N/A |
| Reconnecting Communities | 3 Overpasses 2 Underpasses | 4 Overpasses 3 Underpasses | 4 Overpasses 3 Underpasses | N/A |

State Route 78

Highlighted Projects and Programs

| Type | Description | Location | Primary Strategy | Increase Access to Mobility Hub | Supplement/Support Mobility Boulevard | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|--------------------------|--|--|------------------|-------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Freeway | SR 78 Smart Intersection Systems - improve ramp meters, signal controllers, and connect the system as a whole | SR 78 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | SR 78 (ATDM) | SR 78 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Managed Lanes | SR 78 Managed Lanes between College Blvd and Twin Oaks Valley Rd | SR 78 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Interchange Improvements | Interchange capacity and metering improvements | Woodland Interchange | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Interchange Improvements | Woodland interchange alignment and safety improvements, and construction funding | Woodland Interchange | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Connectors | Build managed lane direct connectors between SR 78 and I-5; managed lanes to College Boulevard | SR 78 and I-5 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Interchange Improvement | Analyze interchanges to improve and enhance traffic operations | SR 78 and Mar Vista Dr/Emerald Dr | | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Active Transportation | Improve bike and pedestrian facilities at 65 crossings to enhance access to the coast and inland communities | SR 78 | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Managed Lane Connectors | Build managed lane direct connectors between SR 78 and I-5; managed lanes to Twin Oaks Valley Road | SR 78 and I-5 | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Commuter Express | Commuter express route between Riverside (Temecula) and North County at 15-minute frequencies | I-15/SR 78/San Marcos Blvd (Riverside to El Camino Real and San Marcos Blvd) | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Commuter Express | Commuter express service along I-15/SR 78/San Marcos Blvd to connect subregion to Kearny Mesa employment center | I-15/SR 78/San Marcos Blvd (Kearny Mesa to El Camino Real and San Marcos Blvd) | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Managed Lane Connectors | Build managed lanes direct connectors between SR 78 and I-15 to improve connectivity and traffic flow on and between the two corridors | SR 78 and I-15 | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| TSMO | Integrated Corridor Management (ICM) | SR 78 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Interchange Improvement | Woodland interchange alignment and safety improvements, and construction funding | SR 78 and Woodland Parkway | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Complementary Program | Pilot corridor for green/sustainable infrastructure to support mobility innovation such as emerging-vehicle technologies | SR 78 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Interchange Improvement | Construction of a new interchange at the Smilax undercrossing | SR 78 and Smilax Road | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Interchange Improvement | Nordahl interchange adaptive traffic management solutions | SR 78 and Nordahl | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Regional Spine Context Map



Relevant North County CMCP Strategies

Corridor Description

I-5 serves as the north-south corridor for the San Diego region, connecting the region to the counties of Orange and Los Angeles as well as communities along the United States–Mexico border. For the CMCP, the regional spine is only the segments identified in the study area. The corridor provides regional circulation to neighborhoods in the cities of Oceanside and Carlsbad. The North Coast Corridor (NCC) Public Works Plan/Transportation and Resource Enhancement Program (PWP/TREP), has been completed for I-5 and was reviewed to identify previously planned rail, highway, transit, bicycle, and pedestrian improvements that will support North County mobility trips.



| Regional Spine Segments | Interchanges (#) | Length (Miles) |
|--|------------------|----------------|
| 1 Oceanside Northern Boundary to SR 78 | 6 | 3.1 |
| 2 SR 78 to Palomar Airport Rd | 5 | 4.2 |
| 3 Palomar Airport Rd to CMCP Southern Boundary | 1 | 2.5 |
| Total | 12 | 9.8 |

Proposed Strategies

| Strategy | Segment 1 | Segment 2 | Segment 3 |
|---|---|-------------------------------|------------|
| Managed Lanes | Planned Interregional Corridor Managed Lanes | | |
| Connectors/Ramps | 1 Planned Freeway Connector | N/A | N/A |
| Smart Intersections | 5 | 8 | 2 |
| Active Transportation: Crossings | 11 | 9 | 2 |
| TSMO: Communication | Communication Backbone | | |
| TSMO: Signal Coordination | 2 ICM Signal Communication 4 Transit Signal Priority | N/A | N/A |
| Reconnecting Communities | 7 Overpasses 2 Underpasses | 5 Overpasses 3 Underpasses | 1 Overpass |

I-5

Highlighted Projects and Programs

| Type | Description | Location | Primary Strategy | Increase Access to Mobility Hub | Supplement/Support Mobility Boulevard | Segment 1 | Segment 2 | Segment 3 |
|---------------------------------|---|----------------------------|------------------|-------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Active Transportation | Improve pedestrian and bicycle facilities | I-5 and Mission Ave Bridge | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Active Transportation | Improve bicycle and pedestrian facilities at 29 locations across I-5 to enhance access to the coast | I-5 | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Freeway/Managed Lane Connectors | Build freeway connectors between SR 78 and I-5 to improve connectivity and traffic flow on and between the two corridors | SR 78 and I-5 | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Overpass/Underpass | Improve conditions at 13 overpasses and 5 underpasses (E.g., protected bike facilities, sidewalk widening, and lighting improvements) | I-5 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |



Relevant Projects From I-5 North Coast Corridor Public Works Plan

The following projects from the I-5 North Coast Corridor Public Work Plan align with the projects proposed as part of the CMCP.

| Type | Description | Location |
|-----------------------|--|---------------------|
| Active Transportation | Coastal Rail Trail: Construct approximately 0.9 mile of dedicated bicycle facility from Poinsettia Station to Palomar Airport Road | Carlsbad |
| Active Transportation | Coastal Rail Trail: Construct approximately 0.5 mile of dedicated bicycle facility from Palomar Airport Road to Cannon Road | Carlsbad |
| Active Transportation | Coastal Rail Trail: Construct approximately 1.2 miles of dedicated bicycle facility from Cannon Road to Tamarack Avenue | Carlsbad |
| Active Transportation | I-5 North Coast Bike Trail: New facility that would run the entire length of the NCC, roughly parallel to the highway | Carlsbad/ Oceanside |
| Active Transportation | Upgrade pedestrian and bicycle facilities along local roads that cross I-5 in the City of Carlsbad and City of Oceanside as indicated in Section 4.4 of the PWP | Carlsbad/ Oceanside |
| Community Enhancement | Construct a trail along the west side of I-5 from La Costa Avenue to Avenida Encinas, crossing Batiquitos Lagoon as a suspended facility under the I-5 bridge structure | Carlsbad |
| Community Enhancement | Improve the existing park-and-ride facility to include new parking spaces and landscaping | Carlsbad |
| Community Enhancement | Construct a trail connection between the proposed Batiquitos Lagoon crossing and the existing trail on the east side of I-5 | Carlsbad |
| Community Enhancement | Construct a trail along the east side of I-5 crossing Agua Hedionda Lagoon as a suspended facility under the I-5 bridge structure | Carlsbad |
| Community Enhancement | Construct new Class II bicycle lanes and widen sidewalks in both directions | Carlsbad |
| Community Enhancement | Construct a new grade-separated crossing of the LOSSAN rail corridor for bicycles and pedestrians at Chestnut Avenue in Carlsbad | Carlsbad |
| Community Enhancement | Construct new Class II bicycle lanes and 17-foot sidewalks at the replaced California Street overcrossing, to include landscaping elements and a pocket park at Moreno Way | Oceanside |
| Community Enhancement | Construct widened sidewalks and landscaping at the Oceanside Boulevard undercrossing, as well as enhanced safety fencing at the adjacent SPRINTER rail right-of-way | Oceanside |
| Community Enhancement | Construct new 17-foot sidewalks on each side of the rebuilt overcrossing, as well as widened sidewalks on Brooks Street east of the highway | Oceanside |
| Community Enhancement | Construct new widened sidewalks and Class II bicycle lanes at the replaced overcrossing, including realignment of the highway on and off-ramps to allow for signalized pedestrian crossings | Oceanside |
| Community Enhancement | Construct facilities to connect the existing community gardens at Civic Center Drive and North Weitzel Street (west of I-5) with new community garden plots to the east of I-5; Construct a paved trail and linear park from the east side of the overcrossing to Buena Street, and construct wider sidewalks on Buena and Santa Barbara Streets | Oceanside |
| Community Enhancement | Construct a 0.285-acre community open space park and/or community gardens adjacent to the Family Recovery Center on Horne Street | Oceanside |
| Community Enhancement | Construct a new parking area and trailhead east of the highway at the SR 76 interchange, including the removal of an obsolete highway ramp | Oceanside |
| Community Enhancement | Improve the existing sidewalk under I-5 north of the San Luis Rey River to include new ramps, lighting, and landscaping | Oceanside |
| Community Enhancement | Construct new Class II bicycle lanes and widen the existing eastbound sidewalk to 8 feet | Oceanside |
| Community Enhancement | Improve the existing undercrossing of the LOSSAN rail corridor located north of the San Luis Rey River at the west end of the Harbor Drive parking lot | Oceanside |

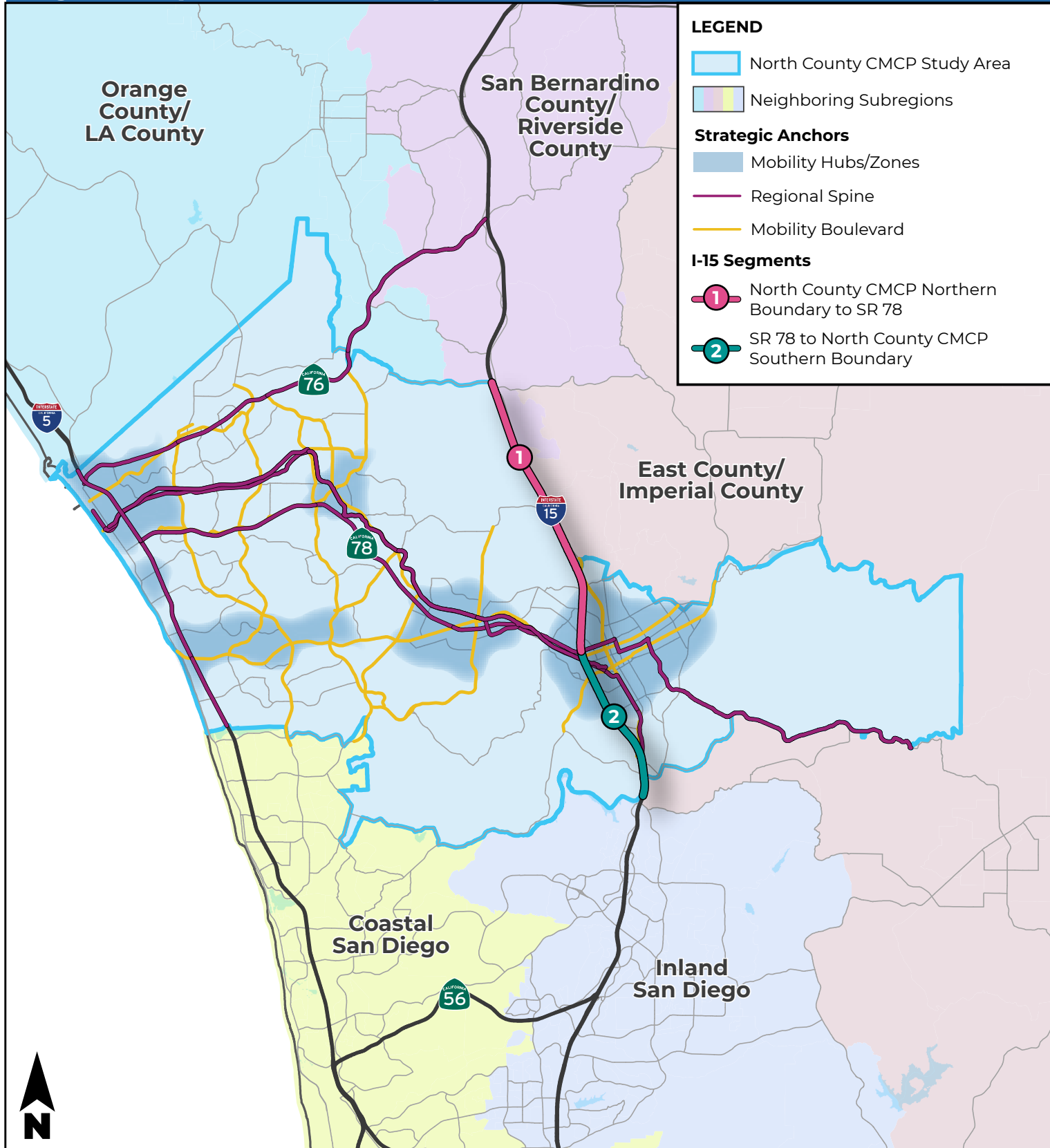


| Type | Description | Location |
|--------------------------|--|---------------------------|
| Highway Improvements | Two HOV/Express Lanes in each direction would be added from just north of Lomas Santa Fe Drive to Harbor Drive/Vandegrift Boulevard | Oceanside to Solana Beach |
| Highway Improvements | New or modified auxiliary lanes proposed for Poinsettia Lane to Palomar Airport Road (NB and SB weaving lanes) | Carlsbad |
| Highway Improvements | New or modified auxiliary lanes proposed for Palomar Airport Road to Cannon Road (extension SB between Cannon Road SB on-ramp to Palomar Airport Road SB off-ramp) | Carlsbad |
| Highway Improvements | New or modified auxiliary lanes proposed for Cannon Road to Tamarack Avenue (extension NB between Cannon Road NB on-ramp and Tamarack Avenue NB off-ramp; SB weaving lane) | Carlsbad |
| Highway Improvements | New or modified auxiliary lanes proposed for Carlsbad Village Drive to SR 78 (extension SB only) | Carlsbad |
| Highway Improvements | New or modified auxiliary lanes proposed for Las Flores Drive to SR 78 (NB deceleration lane only) | Carlsbad |
| Highway Improvements | New or modified auxiliary lanes proposed for SR 78 to Cassidy Street (SB weaving lane; an existing SB auxiliary-weaving-lane would extend to the new SB auxiliary-weaving-lane that would begin at Oceanside Boulevard SB on-ramp) | Oceanside |
| Highway Improvements | New or modified auxiliary lanes proposed for Cassidy Street to Oceanside Boulevard (extension of NB; SB weaving lane) | Oceanside |
| Highway Improvements | New or modified auxiliary lanes proposed for Oceanside Boulevard to Mission Avenue (NB and SB weaving lanes) | Oceanside |
| Highway Improvements | New or modified auxiliary lanes proposed for Mission Avenue to SR 76 (NB weaving only) | Oceanside |
| Highway Improvements | New or modified auxiliary lanes proposed for SR 76 to Harbor Drive (NB deceleration lane, extension SB) | Oceanside |
| Interchange Improvements | La Costa Avenue to NB I-5: From 1 SOV and 1 HOV to 2 SOV and 1 HOV | Carlsbad |
| Interchange Improvements | WB Palomar Airport Road to SB I-5: From 1 SOV and 1 HOV to 2 SOV and 1 HOV | Carlsbad |
| Interchange Improvements | Tamarack Avenue to NB I-5: From 1 SOV and 0 HOV to 2 SOV and 0 HOV | Carlsbad |
| Interchange Improvements | Carlsbad Village Dr to SB I-5: From 1 SOV and 0 HOV to 2 SOV and 0 HOV | Carlsbad |
| Interchange Improvements | Carlsbad Village Dr to NB I-5: From 1 SOV and 0 HOV to 2 SOV and 0 HOV | Carlsbad |
| Interchange Improvements | Las Flores Drive to SB I-5: From 1 SOV and 0 HOV to 2 SOV and 0 HOV | Carlsbad |
| Interchange Improvements | SR 78 to SB I-5: From 1 SOV and 0 HOV to 2 SOV and 0 HOV | Carlsbad/ Oceanside |
| Interchange Improvements | Remove EB SR 78 to NB I-5 Connector: From SOV and HOV to SOV and HOV | Carlsbad/ Oceanside |
| Interchange Improvements | Oceanside Boulevard to SB I-5: From 1 SOV and 1 HOV to 2 SOV and 1 HOV | Oceanside |
| Interchange Improvements | Oceanside Boulevard to NB I-5: From 2 SOV and 0 HOV to 1 SOV and 1 HOV | Oceanside |
| Interchange Improvements | Mission Avenue to SB I-5: From 1 SOV and 1 HOV to 2 SOV and 1 HOV | Oceanside |
| Interchange Improvements | Remove EB Mission Ave to SB I-5 Ramp: From SOV and HOV to SOV and HOV | Oceanside |
| Interchange Improvements | Mission Avenue to NB I-5: From 1 SOV and 0 HOV to 2 SOV and 1 HOV | Oceanside |
| Interchange Improvements | SR 76 to SB I-5: From 2 SOV and 0 HOV to 2 SOV and 1 HOV | Oceanside |



| Type | Description | Location |
|--|--|---------------------|
| Interchange Improvements | SR 76 to NB I-5: From 2 SOV and 0 HOV to 2 SOV and 1 HOV | Oceanside |
| Interchange Improvements | Remove NB I-5 to WB SR 76 Connector (closed to traffic): From SOV and HOV to SOV and HOV | Oceanside |
| Interchange Improvements | Harbor Drive to SB I-5: From 2 SOV and 1 HOV to 2 SOV and 1 HOV | Oceanside |
| Interchange Improvements | Harbor Drive to NB I-5: From 1 SOV and 0 HOV to 2 SOV and 0 HOV | Oceanside |
| Interchange Improvements | I-5/SR 56 Interchange | Oceanside |
| Interchange Improvements | I-5/SR 78 Interchange | Carlsbad/ Oceanside |
| Lagoon Bridge | Batiquitos Lagoon bridge replacement | Carlsbad |
| Lagoon Bridge | Agua Hedionda Lagoon bridge replacement | Carlsbad |
| Lagoon Bridge | Buena Vista Lagoon bridge replacement | Carlsbad |
| Over and Undercrossing Replacement and Upgrading | Replace the following undercrossings: Cannon Road, Chestnut Avenue, Carlsbad Village Drive, Oceanside Boulevard Overhead, I-5/SR 76 Separation, and Harbor Drive/Camp Pendleton | Carlsbad/ Oceanside |
| Over and Undercrossing Replacement and Upgrading | New bridge structures at: Oceanside Boulevard Overhead (NB Off-Ramp) and Harbor Drive Undercrossing (I-5 Northbound Off-Ramp) | Oceanside |
| Rail | Add a second main track and replace the San Luis Rey River Bridge in the 0.6-mile segment from CP East Brook to CP Shell; San Luis Rey River Bridge replacement | Oceanside |
| Rail | Construct a 1.1-mile second main track and straighten a curve from Mile Post (MP) 228.4 to MP 229.5 including through the Carlsbad Village Station; Buena Vista Lagoon Bridge replacement | Carlsbad |
| Rail | Construct 2.7 miles of a second main track between CP Ponto and CP Moonlight; expand the La Costa Avenue grade separation; Batiquitos Lagoon Bridge replacement | Carlsbad/ Encinitas |
| Regional and Local Gateway Features | Replace the following overcrossings and bridges: La Costa Avenue, Poinsettia Lane, Palomar Airport Road, Chinquapin Avenue, Tamarack Avenue, Las Flores Drive, Jefferson Street, SR 78/I-5 separation, Cassidy Street, California Street, Brooks Street, Mission Avenue, Fourth St/Bush Street, Neptune Way/8th Street | Carlsbad/ Oceanside |
| Regional and Local Gateway Features | Replace the following bridges: Buena Vista Creek Bridge and Locam Alta Creek Bridge | Carlsbad/ Oceanside |
| Regional and Local Gateway Features | Construct an art feature at Harbor Drive to serve as an entryway to Oceanside and the San Diego region | Oceanside |
| Regional and Local Gateway Features | Provide bicycle and pedestrian-friendly improvements and integrate human-scale elements such as lighting and material textures along: Carlsbad Village Drive interchange and Mission Avenue interchange | Carlsbad/ Oceanside |
| Station Improvements | Additional spaces at, adjacent to, or in close proximity to the existing Oceanside Transit Center to accommodate additional riders | Oceanside |
| Transit | Enhancements to Coast Highway bus service to include increased service frequencies and a menu of potential roadway features to facilitate transit operations, such as fewer stops, dedicated transit lanes, traffic-signal priority and intersection queue jumps | Carlsbad/ Oceanside |

Regional Spine Context Map



Relevant North County CMCP Strategies



Corridor Description

I-15 serves as an intraregional north-south corridor for the San Diego region, the only north-south corridor for interregional travel to the counties of Riverside and San Bernardino.

| Regional Spine Segments | Interchanges (#) | Length (Miles) |
|-----------------------------------|------------------|----------------|
| 1 CMCP Northern Boundary to SR 78 | 4 | 9.4 |
| 2 SR 78 to CMCP Southern Boundary | 4 | 5.2 |
| Total | 8 | 14.6 |

Proposed Strategies

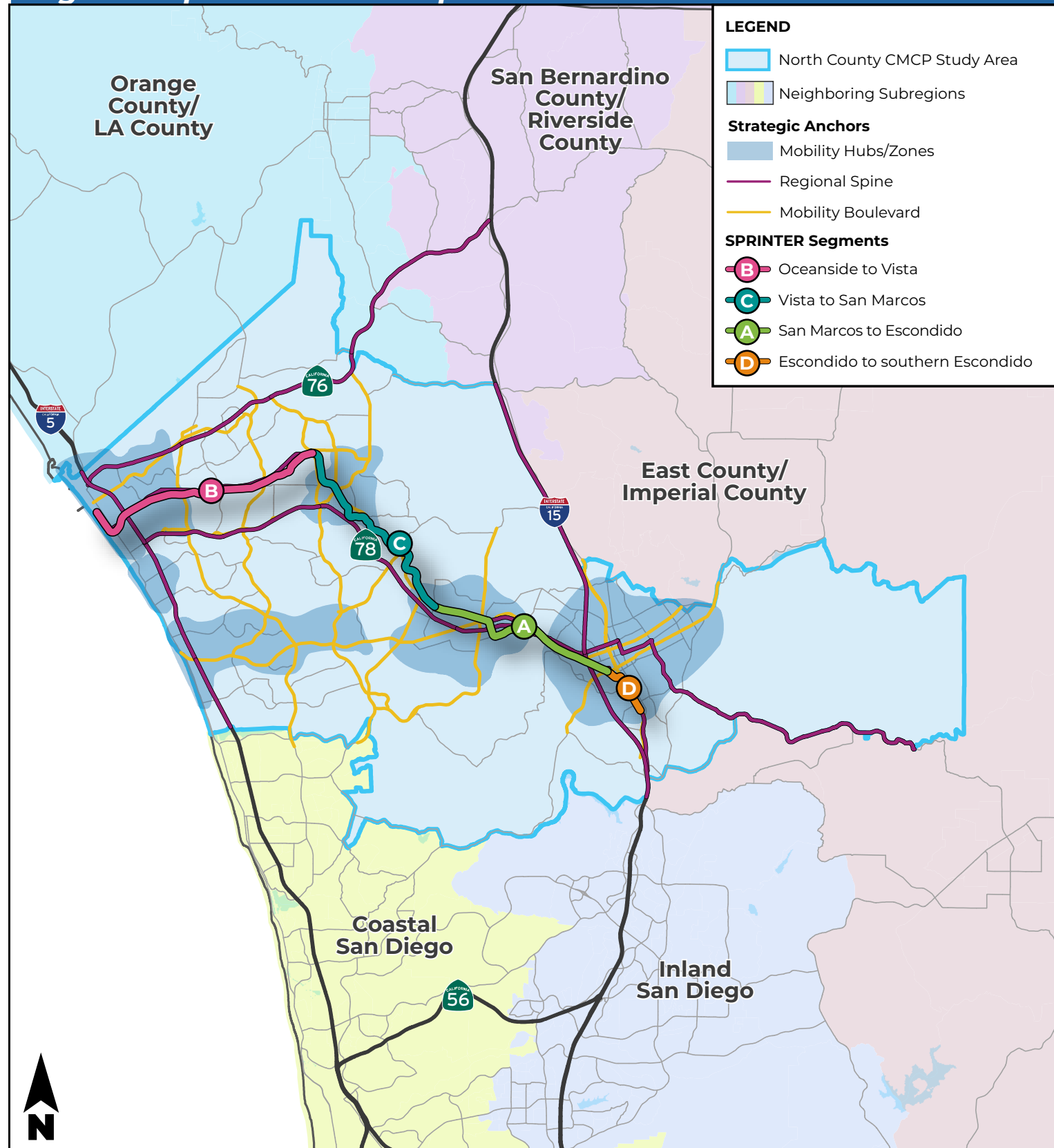
| Strategy | Segment 1 | Segment 2 |
|----------------------------------|--|---|
| Managed Lanes | Planned Interregional Corridor Managed Lanes | Existing Express Lanes |
| Connectors/ Ramps | 1 Planned Managed Lanes Connector | |
| Smart Intersections | 3 | 7 |
| High-Frequency Transit | Proposed Commuter Express (between Riverside County) | Proposed Commuter Express (between southern activity centers) |
| TSMO: Communication | Communication Backbone | |
| Reconnecting Communities | 1 Overpass 4 Underpasses | 2 Overpasses 7 Underpasses |
| Active Transportation: Crossings | 2 | 4 |



Highlighted Projects and Programs

| Type | Description | Location | Primary Strategy | Increase Access to Mobility Hub | Supplement/Support Mobility Boulevard | Segment 1 | Segment 2 |
|-------------------------|--|--|------------------|-------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|
| Commuter Express | Commuter express route between Riverside (Temecula) and North County at 15-minute frequencies | I-15/SR 78/San Marcos Blvd (Riverside to El Camino Real and San Marcos Blvd) | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Commuter Express | Commuter express route between Kearny Mesa and North County (via Rancho Bernardo TC) at 15-minute frequencies | I-15/SR 78/San Marcos Blvd (Kearny Mesa to El Camino Real and San Marcos Blvd) | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Managed Lane Connectors | Build managed lanes direct connectors between SR 78 and I-15 to improve connectivity and traffic flow on and between the two corridors | I-15 and SR 78 | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Overpass/Underpass | Improve conditions at 3 overpasses and 11 underpasses (E.g., protected bike facilities, protected crossings, sidewalk widening, and lighting improvements) | I-15 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Regional Spine Context Map



Relevant North County CMCP Strategies



SPRINTER Double Track (Source: NCTD)



SPRINTER Station (Source: NCTD)

Corridor Description

The SPRINTER is an east-west light rail that connects Oceanside, Vista, San Marcos, and Escondido. The SPRINTER provides an alternative to the heavily-trafficked SR 78. The planned and proposed alternatives will provide high-frequency rail service within North County communities.

| Regional Spine Segments | Grade Separations (#) | Length (Miles) |
|---|-----------------------|----------------|
| A Phase A: San Marcos to Escondido | 1 | 6.5 |
| B Phase B: Oceanside to Vista | 2 | 8.2 |
| C Phase C: Vista to San Marcos | 6 | 7.2 |
| D Phase D: Escondido to Southern Escondido | 0 | 1.8 |
| Total | 9 | 23.7 |

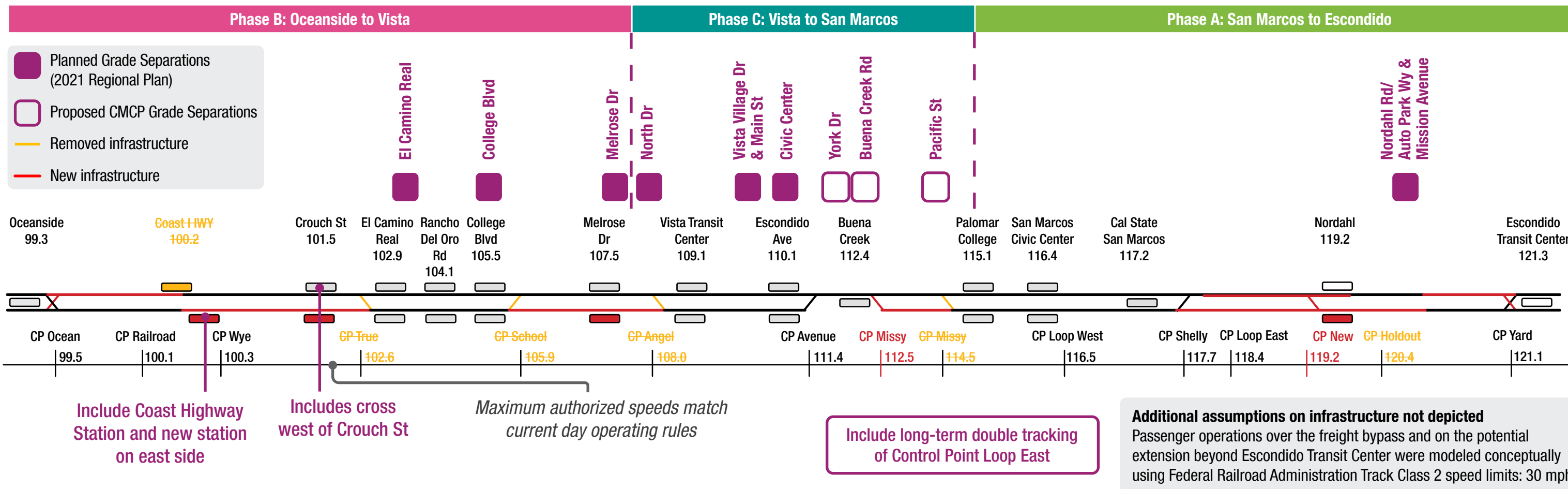
Proposed Strategies

| Strategy | Phase A | Phase B | Phase C | Phase D |
|--|---|---|---|-------------------|
| Smart Intersections | 14 Signals | 12 Signals | 15 Signals | 5 Signals |
| SPRINTER: Grade Separations | 1 Planned* | 2 Planned* | 3 Planned* 3 Proposed | N/A |
| SPRINTER: Double Track | 6.5 Miles | 8.2 Miles | 7.2 Miles | 1.8 Miles |
| SPRINTER: Frequency | Short-Term: 10 Min | Short-Term: 20 Min Mid/Long-Term: 10 Min | Short/Mid-Term: 20 Min Long-Term: 10 Min | Long-Term: 10 Min |
| High-Frequency Transit | Proposed BRT Service Parallel to SPRINTER Alignment | | | N/A |
| TSMO: At-Grade Rail Crossing and Signal Coordination | 24 Signals | 14 Signals | 25 Signals | 3 Signals |
| Reconnecting Communities | 2 Overpasses 7 Underpasses | 1 Overpass | 1 Overpass | N/A |
| Active Transportation: Rail Intersects | 18 | 9 | 8 | N/A |
| SPRINTER: Improved Station Access | 5 | 7 | 3 | N/A |

*Planned in RTP

SPRINTER

Improvements Track Map

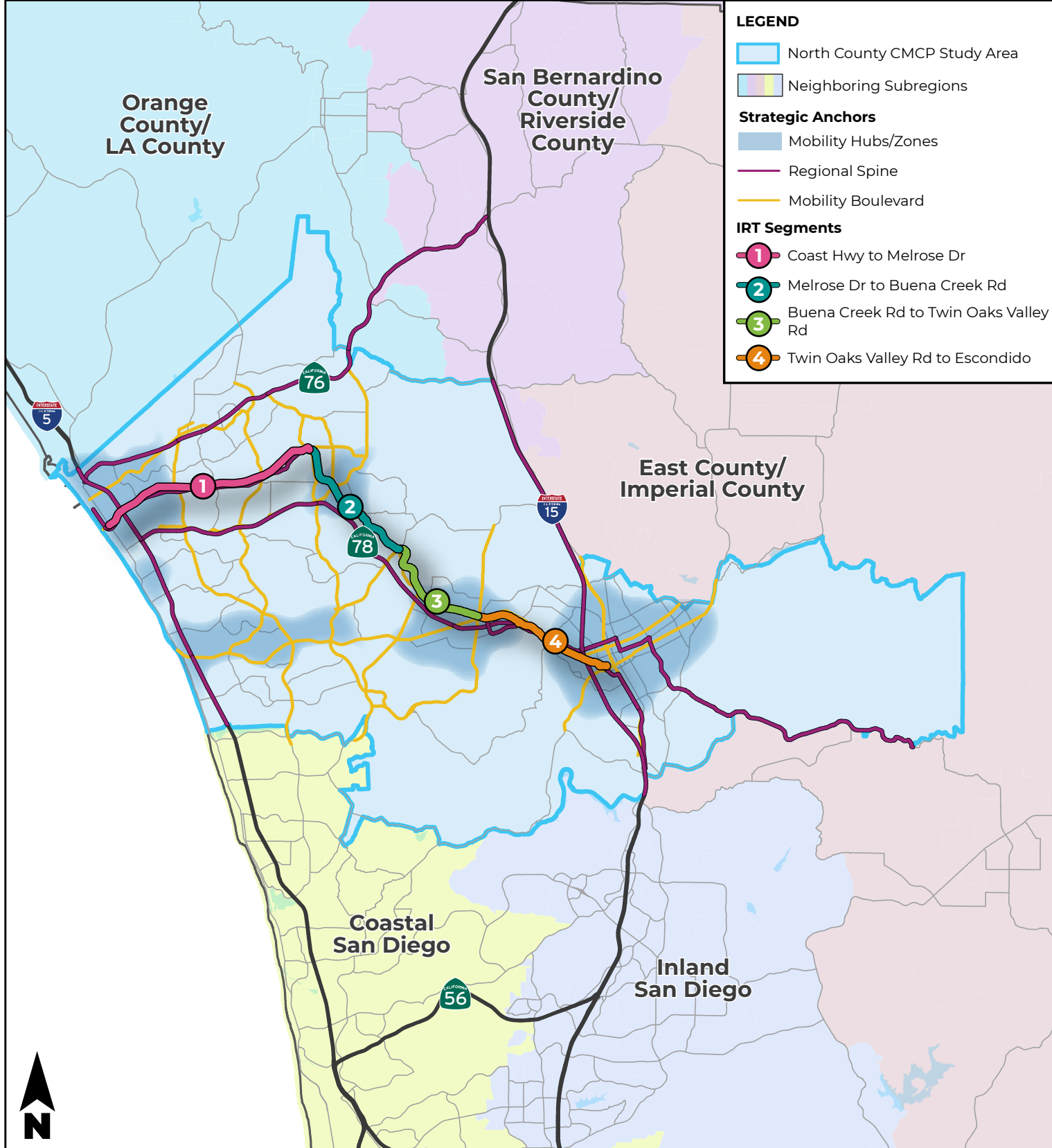


| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | MOBILITY BOULEVARD | | | | | | | | | | | | |
|------------------|--------------|------------------|------------------|-------|------------|-----------|--------------------|----------------|----------------|--------------|------------|-----------|--------------|--------------------|------------------------------------|------------------------|------------------|------------------|-------------|
| | Oceanside | Carlsbad Village | Carlsbad/Palomar | Vista | San Marcos | Escondido | Mission Ave | El Camino Real | Oceanside Blvd | College Blvd | Melrose Dr | Vista Way | Sycamore Ave | Rancho Santa Fe Rd | Palomar Airport Rd/San Marcos Blvd | Mission Rd/Santa Fe Rd | Twin Oaks Valley | Centre City Pkwy | Valley Pkwy |
| Phase A | ○ | ○ | ○ | ○ | ◐ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◐ | ◐ | ◐ | ○ | ◐ |
| Phase B | ◐ | ○ | ○ | ○ | ○ | ○ | ○ | ◐ | ◐ | ◐ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Phase C | ○ | ○ | ○ | ◐ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ○ | ○ | ◐ | ○ |
| Phase D | ○ | ○ | ○ | ○ | ○ | ◐ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◐ | ○ |

Symbol Key: ● Yes ◐ Partial ○ No

Inland Rail Trail

Regional Spine Context Map



Relevant North County CMCP Strategies



Inland Rail Trail adjacent to SPRINTER alignment (Source: SANDAG)



Inland Rail Trail with signage near Mar Vista Dr (Source: SANDAG)



Inland Rail Trail at the Buena Creek bridge (Source: SANDAG)

Corridor Description

The Inland Rail Trail is a planned protected active transportation facility that passes through the cities of Oceanside, Vista, San Marcos, and Escondido, and a portion of unincorporated San Diego County. This active transportation corridor is an important element of the San Diego Regional Bike Plan and 2021 Regional Plan. Completion of this corridor will help create an interconnected regional bike network between Escondido and the coast.

| Regional Spine Segments | Intersections (#) | Length (Miles) |
|---|-------------------|----------------|
| 1 Coast Hwy to Melrose Dr (Planned) | 27 | 7.3 |
| 2 Melrose Dr to Buena Creek Rd | 8 | 5.0 |
| 3 Buena Creek Rd to Twin Oaks Valley Rd | 10 | 4.0 |
| 4 Twin Oaks Valley Rd to Escondido | 9 | 4.9 |
| Total | 54 | 21.2 |

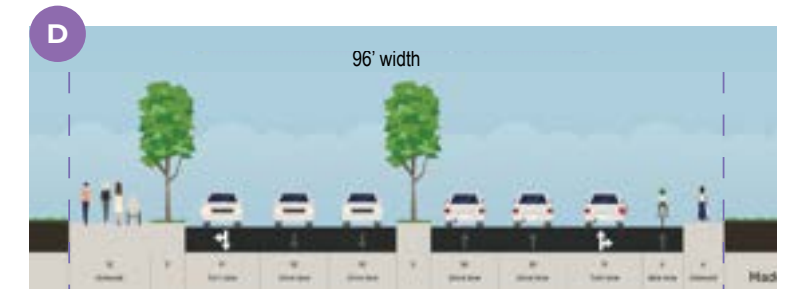
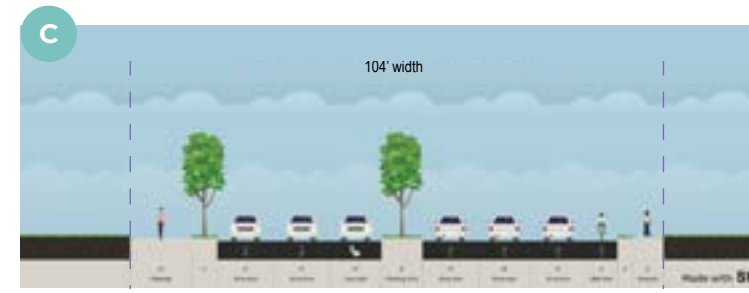
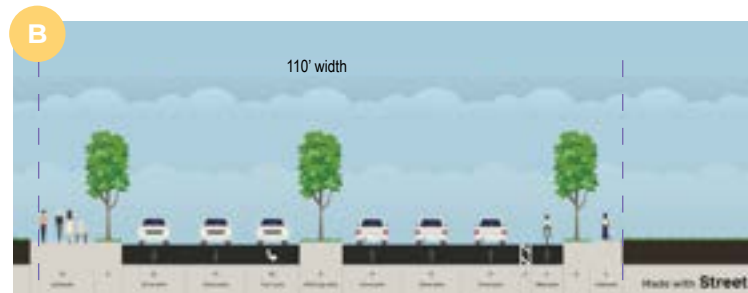
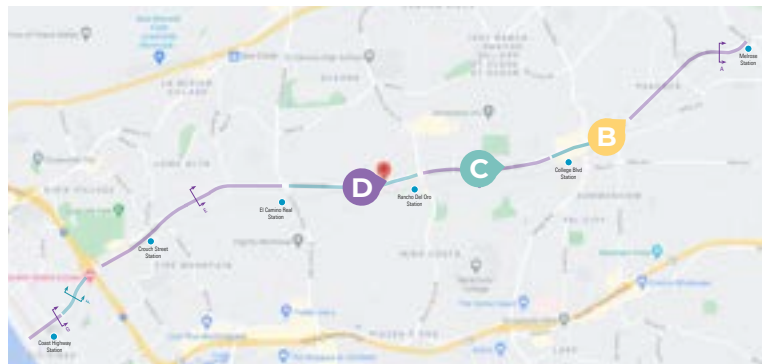
Proposed Strategies

| Strategy | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|---|-------------|-------------|-------------|---------------------------|
| Smart Intersections* | 33 | 2 | 6 | 6 |
| Active Transportation: Trailhead Access | 5 | 5 | 10 | 4 |
| TSMO: SPRINTER Rail Crossing | 1 Crossing | 5 Crossings | 5 Crossings | 1 Crossing |
| Reconnecting Communities | 1 Underpass | N/A | N/A | 1 Overpass 2 Underpass |

*Includes rail and local street adjacent intersections within 300 feet.

Inland Rail Trail

Example Street Running Alternatives Sections



Highlighted Projects and Programs

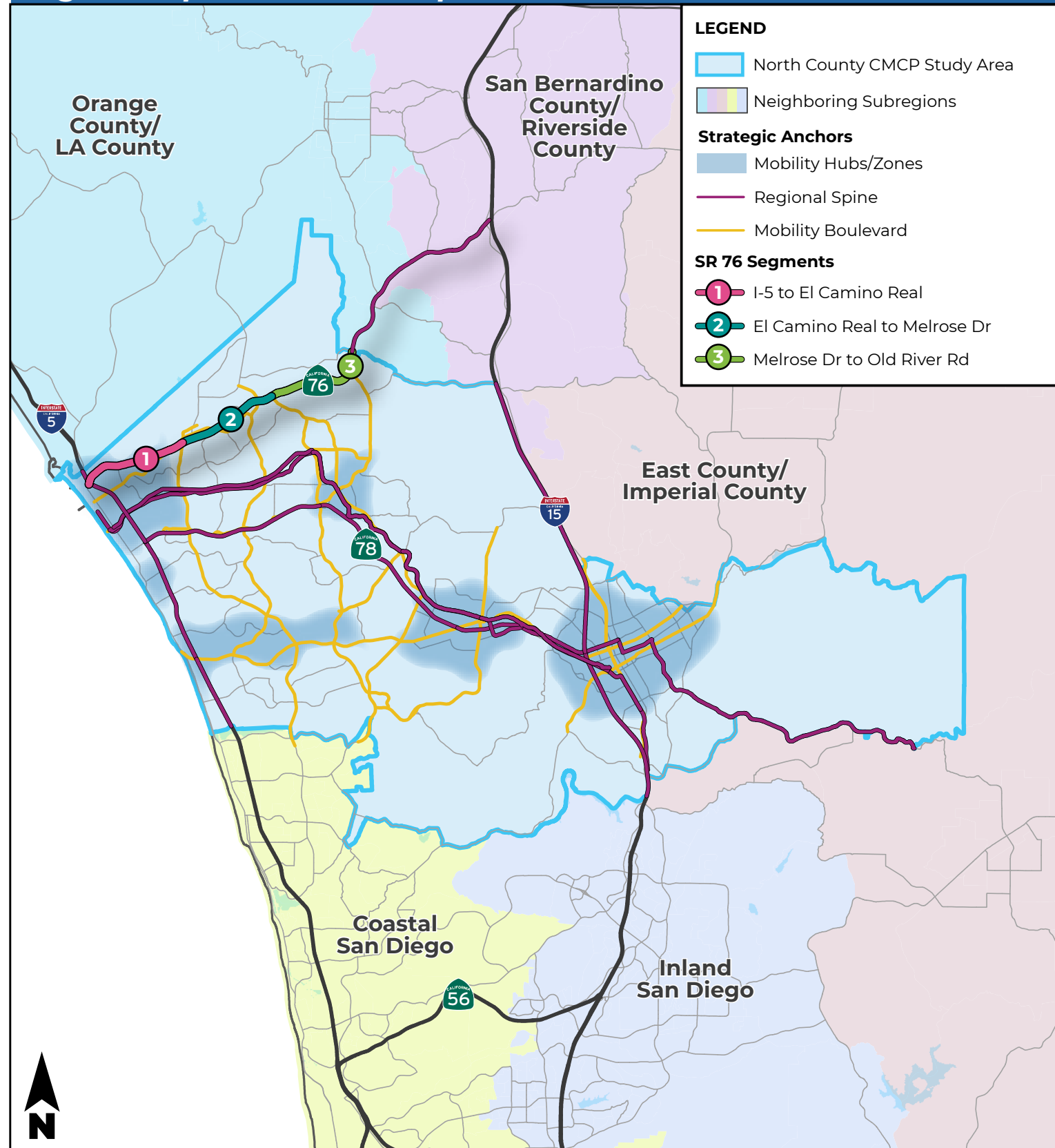
| Type | Description | Location | Primary Strategy | Increase Access to Mobility Hub | Supplement/Support Mobility Boulevard | Segment 1 | Segment 2 | Segment 3 | Segment 4 |
|------------------------|--|----------------------------|------------------|-------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Active Transportation | Improvements to Inland Rail Trail and Trailheads from S Pacific St to Melrose Dr | Oceanside Boulevard | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Active Transportation | Inland Rail Trail: Vista (Phase 4) | City of Vista | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Station Access | Connect to the Escondido Transit Center | City of Escondido | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Trailhead Improvements | Upgrade and improve access at trailhead (E.g., wayfinding) | Inland Rail Trail corridor | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

| STRATEGIC ANCHOR | MOBILITY HUB | | | | | | MOBILITY BOULEVARD | | | | | | | | | | | | | |
|------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| | Oceanside | Carlsbad Village | Carlsbad/Palomar | Vista | San Marcos | Escondido | Mission Ave | El Camino Real | Oceanside Blvd | College Blvd | Melrose Dr | Vista Way | Sycamore Ave | Rancho Santa Fe Rd | Palomar Airport Rd/San Marcos Blvd | Mission Rd/Santa Fe Rd | Twin Oaks Valley | Centre City Pkwy | Valley Pkwy | |
| Segment 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Segment 2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Segment 3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Segment 4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Symbol Key: Yes Partial No

State Route 76

Regional Spine Context Map



Relevant North County CMCP Strategies



Corridor Description

SR 76 serves as an east-west highway connecting I-5 along the coast to I-15 in the east. For the North County CMCP study area, Old River Road serves as the eastern terminus for the corridor. This corridor is a four-lane expressway, providing regional access and local circulation to neighborhoods in the city of Oceanside and County of San Diego.

| Regional Spine Segments | Intersections (#) | Length (Miles) |
|--------------------------------|-------------------|----------------|
| 1 I-5 to El Camino Real | 7* | 3.5 |
| 2 El Camino Real to Melrose Dr | 7 | 3.3 |
| 3 Melrose Dr to Old River Rd | 6 | 3.5 |
| Total | 20 | 10.3 |

Note: *Intersection number for I-5 to El Camino Real segment includes 1 interchange.

Proposed Strategies

| Strategy | Segment 1 | Segment 2 | Segment 3 |
|----------------------------------|-------------------------|------------------------|--|
| Managed Lanes | Dynamic Lane Assignment | | |
| Smart Intersections | 6 | 7 | 6 |
| Active Transportation: Crossings | 8 | 7 | 6 |
| High-Frequency Transit | N/A | Proposed Rapid Service | |
| TSMO: Communication | Communication Backbone | | |
| TSMO: Signal Coordination | N/A | N/A | 1 Signal Transit Management Coordination |
| Reconnecting Communities | 3 Underpasses | 1 Underpass | 1 Underpass |

State Route 76

Highlighted Projects and Programs

| Type | Description | Location | Primary Strategy | Increase Access to Mobility Hub | Supplement/Support Mobility Boulevard | Segment 1 | Segment 2 | Segment 3 |
|----------------------------|---|-------------------------------------|------------------|-------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Signal Synchronization | Implement an effective signal synchronization program along SR 76 to adjust flow of traffic based on traffic patterns and volumes | SR 76 | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Dynamic Lanes | Implement dynamic lanes to improve traffic operations | SR 76 | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Operational Improvements | 4-lane expressway plus 2 HOV/dynamic lanes | SR 76 (Melrose Dr to I-5) | | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Bicycle Signals/ Detection | Bicycle signals and detection equipment at signalized intersections | SR 76 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Grade Separation Analysis | SR 76 Grade Separation Feasibility Study | SR 76 (College Blvd and Douglas Dr) | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| High-Frequency Transit | Provide high-frequency, limited stop BRT service along Mission Ave in Oceanside | Mission Ave/SR 76 | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Attachment 4: Project and Program Inventory

To: San Diego Association of Governments and Caltrans District 11

From: North County Comprehensive Multimodal Corridor Plan Project Team

Date: June 2023

Subject: North County Comprehensive Multimodal Corridor Plan – Project and Program Inventory

Below are the projects and programs for the North County Comprehensive Multimodal Corridor Plan (North County CMCP). The North County CMCP proposes projects and programs that support the local, regional and state goals and align with the objectives of the CMCP process. The projects and programs outlined below represent the culmination of a high-level planning effort. Further engineering analysis and studies are needed to provide information for design and implementation.

Table 1. North County CMCP Project and Program Inventory

| Plan ID | Plan Name | Location | Project Type | Primary Strategic Anchor | Description | Category | Cost (Millions) |
|---------|--|----------------|---|--------------------------|--|----------|-----------------|
| NC01 | Mission Avenue Corridor-Wide Mobility Boulevard Improvements and Enhancements | Mission Avenue | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> Protected or enhanced bicycle facilities (Class I/Class IV preferred) Bicycle intersection clearance detection at signalized intersections Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection (up to 28 smart intersections) Improved pedestrian and bicycle facilities at overpasses and undercrossings such as wider sidewalks, protected or enhanced bicycle facilities, and landscaping (I-5 overcrossing) At grade pedestrian improvements to enhance existing crossing/connection at Palomar College and SPRINTER Station Establish corridor as a communication backbone with TSMO strategies (transit signal priority for high frequency transit) | Program | \$19 |
| NC02 | El Camino Real Corridor-Wide Mobility Boulevard Improvements and Enhancements | El Camino Real | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> Protected or enhanced bicycle facilities (Class I/Class IV preferred) Implement bicycle intersection clearance detection at intersections throughout corridor Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection (up to 35 smart intersections) Widen existing bridge and roadway at Cannon Rd to improve operations and add pedestrian/bicycle facilities Study all potential solutions to reduce congestion at Vista Way intersection Establish corridor as a communication backbone with TSMO strategies (transit signal priority for high-frequency transit and signal coordination with SPRINTER and on-/off-ramps of SR 78) Implement up to 35 smart intersections | Program | \$136 |

| Plan ID | Plan Name | Location | Project Type | Primary Strategic Anchor | Description | Category | Cost (Millions) |
|---------|---|---------------------|---|--------------------------|---|----------|-----------------|
| NC03 | Oceanside Boulevard Corridor-Wide Mobility Boulevard Improvements and Enhancements | Oceanside Boulevard | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> Protected or enhanced bicycle facilities (Class I/Class IV preferred) Implement bicycle intersection clearance detection at intersections throughout corridor Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection Enhance connectivity along Oceanside Boulevard first/last miles to align with future development Potential siting of the Inland Rail Trail to Oceanside Boulevard Establish corridor as a communication backbone with TSMO strategies (integrated corridor management, transit signal priority for high-frequency transit, and signal coordination with SPRINTER) | Program | \$30 |
| NC04 | College Boulevard Corridor-Wide Mobility Boulevard Improvements and Enhancements | College Boulevard | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> Protected or enhanced bicycle facilities (Class I/Class IV preferred) Implement bicycle intersection clearance detection at intersections throughout corridor Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection Operational improvements including complete the arterial connection to ECR and widening from Vista Way to Old Grove Fill in missing sidewalk areas Establish corridor as a communication backbone with TSMO strategies (signal coordination with SPRINTER and on-/off-ramps of SR 78) | Program | \$28 |
| NC05 | Melrose Drive Corridor-Wide Mobility Boulevard Improvements and Enhancements | Melrose Drive | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> Protected or enhanced bicycle facilities (Class I/Class IV preferred) Implement bicycle intersection clearance detection at intersections throughout corridor Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection Operational improvements at SR 78 interchange (widening, improve ramps and overpass) Establish corridor as a communication backbone with TSMO strategies (transit signal priority for high-frequency transit and signal coordination with SPRINTER and on-/off-ramps of SR 78) | Program | \$32 |
| NC06 | Vista Way Corridor-Wide Mobility Boulevard Improvements and Enhancements | Vista Way | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> Protected or enhanced bicycle facilities (Class I/Class IV preferred) Implement bicycle intersection clearance detection at intersections throughout corridor Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection Establish corridor as a communication backbone with TSMO strategies | Program | \$68 |
| NC07 | Sycamore Avenue Corridor-Wide Mobility Boulevard Improvements and Enhancements | Sycamore Avenue | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> Protected or enhanced bicycle facilities (Class I/Class IV preferred) Implement bicycle intersection clearance detection at intersections throughout corridor Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection Establish corridor as a communication backbone with TSMO strategies (signal coordination with on-/off-ramps of SR 78) | Program | \$9 |

| Plan ID | Plan Name | Location | Project Type | Primary Strategic Anchor | Description | Category | Cost (Millions) |
|---------|---|---|---|--------------------------|---|----------|-----------------|
| NC08 | Rancho Santa Fe Rd Corridor-Wide Mobility Boulevard Improvements and Enhancements | Rancho Santa Fe Rd | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> • Protected or enhanced bicycle facilities (Class I/Class IV preferred) • Implement bicycle intersection clearance detection at intersections throughout corridor across 78 and SPRINTER • Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection • Provide flex service zone between Palomar Airport Rd and Santa Fe Dr • Operational improvements at SR 78 interchange (widening, improve ramps and overpass) • Establish corridor as a communication backbone with TSMO strategies (signal coordination with on-/off-ramps of SR 78) | Program | \$17 |
| NC09 | Palomar Airport Road/San Marcos Boulevard Corridor-Wide Mobility Boulevard Improvements and Enhancements | Palomar Airport Road/San Marcos Boulevard | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> • Protected or enhanced bicycle facilities (Class I/Class IV preferred) • Implement bicycle intersection clearance detection at intersections throughout corridor • Upgrade all signalized intersections to smart intersections with recommended ICE analysis and proposed intersection improvements (i.e., bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection) • Flex lanes during peak periods • Provide flex service zone between Palomar Airport Road and Santa Fe Dr • Establish as a communication backbone with TSMO strategies (transit signal coordination and management to enhance transit operations and signal timing with on-/off-ramps of SR 78 and I-5) | Program | \$28 |
| NC10 | Santa Fe Avenue/Mission Road Corridor-Wide Mobility Boulevard Improvements and Enhancements | Mission Road/Santa Fe Road | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> • Protected or enhanced bicycle facilities (Class I/Class IV preferred) • Implement bicycle intersection clearance detection at intersections throughout corridor • Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection • Intersection improvements to allow active transportation improvements and operations at Smilax Road • South Santa Fe Avenue to accommodate active transportation improvements • Establish corridor as a communication backbone with TSMO strategies (transit signal priority for high-frequency transit and signal coordination with SPRINTER and on-/off-ramps of SR 78) | Program | \$134 |
| NC11 | Twin Oaks Valley/San Elijo Corridor-Wide Mobility Boulevard Improvements and Enhancements | Twin Oaks Valley | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | Provide the following mobility improvements and enhancements: <ul style="list-style-type: none"> • Protected or enhanced bicycle facilities (Class I/Class IV preferred) • Implement bicycle intersection clearance detection at intersections throughout corridor • Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection • Establish corridor as a communication backbone with TSMO strategies (signal coordination with on-/off-ramps of SR 78) • Provide flex/micro transit service along Twin Oaks Valley Road with flex service zone between Buena Creek Road and downtown San Marcos | Program | \$57 |

| Plan ID | Plan Name | Location | Project Type | Primary Strategic Anchor | Description | Category | Cost (Millions) |
|---------|---|---------------------|---|--------------------------|---|----------|-----------------|
| NC12 | Centre City Parkway Corridor-Wide Mobility Boulevard Improvements and Enhancements | Centre City Parkway | Complete Corridor: Active Transportation, SIS, TSMO, SPRINTER | Mobility Boulevard | <p>Provide the following mobility improvements and enhancements:</p> <ul style="list-style-type: none"> • Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection • Implement bicycle intersection clearance detection at intersections throughout corridor • Protected or enhanced bicycle facilities (Class I/Class IV preferred) • Improve east/west pedestrian connection across N. Centre City Pkwy in Escondido • Center-running Transit along Centre City Pkwy • Improve E/W ped connection across N Centre City Pkwy in Escondido • Establish corridor as a communication backbone with TSMO strategies (signal coordination with SPRINTER) | Program | \$158 |
| NC13 | Valley Parkway Corridor-Wide Mobility Boulevard Improvements and Enhancements | Valley Parkway | Complete Corridor: Active Transportation, SIS, TSMO | Mobility Boulevard | <p>Provide the following mobility improvements and enhancements:</p> <ul style="list-style-type: none"> • Upgrade signalized intersections to smart intersections with bike signals that promote leading bicyclist interval, two-stage left turn facilities, and advance bicycle detection • Implement bicycle intersection clearance detection at intersections throughout corridor • Protected or enhanced bicycle facilities (Class I/Class IV preferred) • Establish corridor as a communication backbone with TSMO strategies (signal coordination with SPRINTER) | Program | \$15 |
| NC14 | Mobility Hub: Oceanside Suite of Improvements | Oceanside | Mobility Hub - Gateway | Mobility Hub | <ul style="list-style-type: none"> • Coast Hwy Traffic Calming and Active Transportation Improvements • NEV Areawide Shuttles, Rideshare/Ridehailing and Microtransit (with eventual conversion to Autonomous Vehicles) • E-Bike grant program for disadvantaged communities • Connector program in Downtown Oceanside • Shuttle service for inland residents to access beaches • Improve pedestrian safety by filling gaps in sidewalk network | Program | \$128 |
| NC15 | Mobility Hub: Vista Suite of Improvements | Vista | Mobility Hub - Suburban | Mobility Hub | <ul style="list-style-type: none"> • NEV Areawide Shuttles, Rideshare/Ridehailing and Microtransit (with eventual conversion to Autonomous Vehicles) • E-Bike grant program for disadvantaged communities • Pilot program along Business Park Dr • Improve pedestrian safety by filling gaps in sidewalk network • Protected bicycle connections | Program | \$87 |
| NC16 | Mobility Hub: San Marcos Suite of Improvements | San Marcos | Mobility Hub - Major Employment Center | Mobility Hub | <ul style="list-style-type: none"> • NEV Areawide Shuttles, Rideshare/Ridehailing and Microtransit (with eventual conversion to Autonomous Vehicles) • E-Bike grant program for disadvantaged communities • Intra-City shuttle connecting CSUSM, Palomar Community College, San Marcos Creek District, San Marcos University District, San Marcos Civic Center, and other key community destinations with SPRINTER • Evaluate private ventures to encourage ridesharing, carpooling, and other first/last mile options • ZEV Initiatives - Charging Infrastructure • Improve pedestrian safety by filling gaps in sidewalk network • Protected bicycle connections | Program | \$160 |

| Plan ID | Plan Name | Location | Project Type | Primary Strategic Anchor | Description | Category | Cost (Millions) |
|---------|--|------------------------|--|--------------------------|---|----------|-----------------|
| NC17 | Mobility Hub: Escondido Suite of Improvements | Escondido | Mobility Hub - Gateway | Mobility Hub | <ul style="list-style-type: none"> • NEV Areawide Shuttles, Rideshare/Ridehailing and Microtransit (with eventual conversion to Autonomous Vehicles) • E-Bike grant program for disadvantaged communities • Program to increase residential density in vicinity of Mobility Hub • Circulator connecting Escondido Transit Center - Downtown Escondido (FRED and Circuit) • Pilot Program: Connected bike and/or transit corridor along Nordahl Road • Connect Escondido Creek Trail to mobility hubs/micro-hubs • Create connection to Harmony Grove residential areas • Flex service to Valley Center • Pedestrian and Bicyclist Gap Closures | Program | \$268 |
| NC18 | Mobility Hub: Carlsbad Village Suite of Improvements | Carlsbad Village | Mobility Hub - Coastal | Mobility Hub | <ul style="list-style-type: none"> • NEV Areawide Shuttles, Rideshare/Ridehailing and Microtransit (with eventual conversion to Autonomous Vehicles) • E-Bike grant program for disadvantaged communities • Mobility Hub Improvements at Poinsettia COASTER, Village COASTER, Carlsbad Mall • Improve pedestrian safety by filling gaps in sidewalk network • Protected bicycle connections | Program | \$32 |
| NC19 | Mobility Hub: Palomar Airport Road/Carlsbad Business Park Suite of Improvements | Carlsbad Business Park | Mobility Hub - Major Employment Center | Mobility Hub | <ul style="list-style-type: none"> • NEV Areawide Shuttles, Rideshare/Ridehailing and Microtransit (with eventual conversion to Autonomous Vehicles) • E-Bike grant program for disadvantaged communities • On-Demand Shuttle connecting Poinsettia Station to Palomar Airport Road • Complete gap along Cannon Road to provide flex/micro transit service with flex service zone | Program | \$113 |
| NC20 | I-15/SR 78 Interchange | SR 78 | Smart Highway Capacity | Regional Spine | <ul style="list-style-type: none"> • Managed Lanes • Direct connectors between I-15 and SR 78 | Project | \$294 |
| NC21 | BRT: College Boulevard | College Boulevard | Transit | Mobility Boulevard | <ul style="list-style-type: none"> • <i>Rapid 477</i> (Carlsbad Village to SR 76 via College Boulevard, Plaza Camino Real) with 10-minute frequencies | Project | \$108 |
| NC22 | BRT: El Camino Real | North County Coastal | Transit | Mobility Boulevard | <ul style="list-style-type: none"> • High-frequency, limited stop BRT service along El Camino Real between Oceanside, Carlsbad, and coastal San Diego with flex service zone between Palomar Airport Road and Santa Fe Dr with peak period frequencies of 10-minute | Project | \$50 |
| NC23 | BRT: Escondido (<i>Rapid 471</i>) | Escondido | Transit | Mobility Boulevard | <ul style="list-style-type: none"> • <i>Rapid 471</i> (Downtown Escondido to East Escondido) with 10-minute frequencies | Project | \$85 |
| NC24 | BRT: Melrose | Oceanside/Carlsbad | Transit | Mobility Boulevard | <ul style="list-style-type: none"> • High-frequency, limited stop BRT service along Melrose Drive between Oceanside and Carlsbad with peak period frequencies of 10-minute | Project | \$47 |

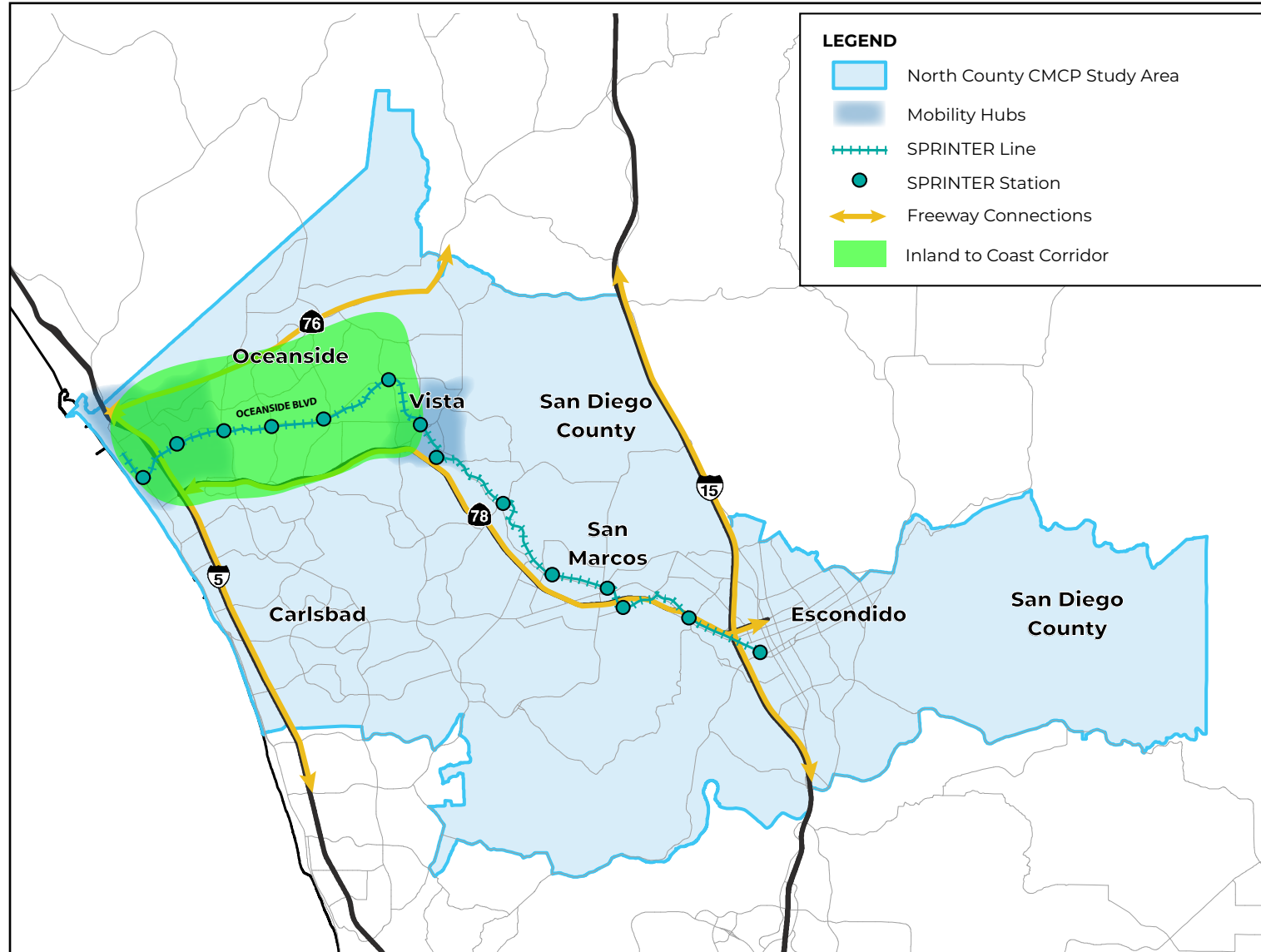
| Plan ID | Plan Name | Location | Project Type | Primary Strategic Anchor | Description | Category | Cost (Millions) |
|---------|---|------------------------------|-----------------------------|--------------------------|---|----------|-----------------|
| NC25 | SR 78 Operational Improvements and Managed Lanes | SR 78 | TSMO/Smart Highway Capacity | Regional Spine | <ul style="list-style-type: none"> • Carpool/Managed Lanes/Express Lanes (w/ connectors to I-5, I-15) • Auxiliary Lanes to address short trips • Direct Access Ramp at Twin Oaks Valley Road • Interchange operational improvements • Transportation System Management and Operations (TSMO) infrastructure with Dynamic Messaging, V2I Data Collection and Smart Ramp Metering • Expanded use of changeable message boards on the freeway and local arterials to inform driver decisions • Integrated Corridor Management (ICM) • Smart Ramp Metering • Study the potential for a comprehensive network of shared parking areas along the corridor to serve as hubs for rideshare, EV and NEV charging, and other first mile/last mile options • Establish SR 78 as a "Test Bed" for innovative/emerging technologies • Auxiliary Lanes for short trips and highway operations improvements | Program | \$756 |
| NC26 | Coastal Rail Trail | North Coast | Active Transportation | Regional Spine | <p>Create/complete the coastal bike trail:</p> <ul style="list-style-type: none"> • Construction of enhanced Class-II buffered bike lanes along Avenida Encinas between Carlsbad Boulevard and Cannon Road • Class-I multi-use path along the LOSSAN Corridor rail alignment between Cannon Road and Tamarack Avenue • Extend south to Cassidy St • Reach 3 Tamarack to Cannon • Reach 4 Cannon to Palomar Airport Road • Reach 5 Palomar Airport Road to Poinsettia Station • Alta Loma Marsh bridge • Morse Street to Oceanside Boulevard | Project | \$45 |
| NC27 | North County Roundabouts Programs | North County | Operation Improvements | Corridor-Wide | Regionwide effort for mobility hub areas; 20 intersection conversions across the study area | Program | \$100 |
| NC28 | BRT: Mission Avenue/SR 76 | Mission Avenue/SR 76 | Transit | Mobility Boulevard | • Provide high-frequency, limited stop BRT service along Mission Avenue in Oceanside with peak period frequencies of 10-minute | Project | \$42 |
| NC29 | BRT: Mission Avenue/Santa Fe Avenue (Rapid 474) | Mission Avenue/Santa Fe Road | Transit | Mobility Boulevard | • <i>Rapid 474</i> (Oceanside to Vista via Mission Avenue/Santa Fe Avenue Corridor) with 10-minute frequencies | Project | \$71 |
| NC30 | I-5/SR 78 Interchange | SR 78 | Smart Highway Capacity | Regional Spine | <ul style="list-style-type: none"> • Managed Lanes • Direct connectors between I-5 and SR 78 | Program | \$731 |
| NC31 | Inland Rail Trail Destination Connections | Oceanside | Active Transportation | Regional Spine | <ul style="list-style-type: none"> • Extend the Inland Rail Trail to the coast • Trailhead Improvements and Connectivity to Inland Rail Trail • Inland Rail Trail Connections • Improve bike and/or pedestrian crossings to increase active transportation safety on the trail and at trailheads | Project | \$128 |
| NC32 | BRT: Palomar Airport Road (Rapid 440) | Palomar Airport Road | Transit | Mobility Boulevard | • <i>Rapid 440</i> (Carlsbad to Escondido Transit Center via Palomar Airport Road) with 10-minute frequencies | Project | \$71 |

| Plan ID | Plan Name | Location | Project Type | Primary Strategic Anchor | Description | Category | Cost (Millions) |
|---------|--|---|---|--------------------------|--|----------|-----------------|
| NC33 | Rapid 450 | Oceanside to Escondido via Palomar Airport Road | Transit | Mobility Boulevard | <i>Rapid 450</i> (Oceanside to Escondido via Palomar Airport Road and SR 78 (Full version of <i>Rapid</i>)) | Project | \$31 |
| NC34 | BRT: Vista Way | Oceanside | Transit | Mobility Boulevard | <ul style="list-style-type: none"> • Provide high-frequency transit service along Vista Way with peak period frequency of 10-minute | Project | \$40 |
| NC35 | Camp Pendleton Access | Camp Pendleton | Active Transportation, Transit, Mobility as a Service | Mobility Hub | <ul style="list-style-type: none"> • Camp Pendleton Trail • Establish policy linkage between mobility hubs, general plans, and access improvements to Camp Pendleton • Transit services into base • Shuttle services • Enhance BREEZE services to connect people from places of residence and SPRINTER stations to Camp Pendleton | Project | \$116 |
| NC36 | Commuter Express: Palomar Airport to Kearny Mesa via Rancho Bernardo Transit Center | Regional | Transit | Regional Spine | <ul style="list-style-type: none"> • Commuter express service between Palomar Airport and employment center (Kearny Mesa via Rancho Bernardo TC) with peak period frequencies of 15-minutes | Project | \$25 |
| NC37 | SR 76 SMART Highway Improvements | Oceanside | Smart Highway Capacity, Active Transportation | Regional Spine | <ul style="list-style-type: none"> • Dynamic Lanes Project • Signal synchronization program • Install bicycle detection equipment at signalized intersections | Program | \$85 |
| NC38 | Commuter Express: Riverside (Temecula) to North County | Regional | Transit | Regional Spine | <ul style="list-style-type: none"> • Commuter express service along SR 78 (I-15 to San Marcos Boulevard) to connect subregion to Riverside with peak period frequencies of 15-minutes | Project | \$25 |
| NC39 | SPRINTER Double Tracking | SPRINTER Corridor | Transit | Regional Spine | <ul style="list-style-type: none"> • Double tracking for 10 min headways by 2050 • Phase double tracking of SPRINTER alignment between Oceanside to Escondido (Segment A – San Marcos to Escondido, Segment B – Oceanside to Vista, Segment C – Vista to San Marcos) | Program | \$373 |
| NC40 | SPRINTER Service Extensions | SPRINTER Corridor | Transit | Regional Spine | SPRINTER extension to south with 10-minute frequency for long-term. Extension to: <ul style="list-style-type: none"> • South Felicita Avenue • Westfield North County Mall | Project | \$376 |
| NC41 | Communication Backbone/Fiber | North County | TSMO | Corridor-Wide | <ul style="list-style-type: none"> • Implement fiber/wi-fi backhaul communications with redundant paths to transportation management centers • Implement communication backbone/fiber along regional spines and mobility boulevards • Build the foundation for connected vehicle infrastructure | Program | \$55 |

| Plan ID | Plan Name | Location | Project Type | Primary Strategic Anchor | Description | Category | Cost (Millions) |
|---------|--|-------------------|---------------------------|--------------------------|---|----------|-----------------|
| NC42 | Connecting Communities Across Regional Spines | North County | Transportation Interfaces | Regional Spine | <ul style="list-style-type: none"> • Improve connection between communities and at interchanges for people walking, biking, and using micromobility options • Improve mobility at overpasses and underpasses across regional spines through protected bike facilities, sidewalk widening, curb extensions/bulb outs, signal timing treatments, and lighting improvements • Improve conditions at at-grade rail crossings with clearly marked pedestrian/bike crossings, installation of a fixed median with flexible bollards, required safety measures for a quiet zone, and warning devices at pedestrian crossings • Improve interchanges along I-5, SR 78, and I-15 to promote people and goods through-put while improving safety for non-motorized modes. • New ped/bike facilities at I-5/SR 78 interchange to provide connections to coastal areas | Program | \$300 |
| NC43 | Regional Highway and Arterial TSMO, Regional Traffic Signal Management System | North County | TSMO | Corridor-Wide | <ul style="list-style-type: none"> • Regionalize existing City traffic signal coordination and create a Regional Traffic Signal Management and Surveillance System (TSMSS) • Regional Adaptive/Smart Signals conversion • Establish an integrated corridor management system along Oceanside Boulevard, Vista Way, and Nordahl Road with signal communication coordination • Video analytics (can provide automated incident alerts and identify operational issues) • Cameras, for incident management and operations monitoring/adjustments • Develop network optimization software to group platoons of connected and automated vehicles with common travel paths for priority routing through signalized routes • Changeable message signs • Pre-planned evacuation routes and traffic signal plans | Program | \$48 |
| NC44 | SPRINTER Grade Separations | SPRINTER Corridor | Transit | Regional Spine | <p>Grade Separations at:</p> <ul style="list-style-type: none"> •El Camino Real •Melrose Drive •North Drive •Vista Village Drive/ Main Street •Civic Center •Nordahl road/Auto Park Way and Mission Avenue <p>Proposed Grade Separations at:</p> <ul style="list-style-type: none"> •College Boulevard •York Drive •Buena Creek Road •Pacific Street | Program | \$510 |
| NC45 | SPRINTER Electrification | SPRINTER Corridor | Transit | Regional Spine | <ul style="list-style-type: none"> • SPRINTER Vehicle (rolling stock) conversion to all electric fleet | Program | \$69 |
| NC46 | San Luis Rey River Trail Extension | Oceanside | Active Transportation | Regional Spine | Extend the San Luis Rey River Trail East | Project | \$97 |
| NC47 | SPRINTER Station Access Improvements | North County | Transit | Regional Spine | <ul style="list-style-type: none"> • Access improvements to all 15 SPRINTER stations • Enhance rider experience through: transit-approaching music, increased security, and EV chargers, bike parking, and passenger loading zones at transit stations • Bike (or multi-use) paths from SPRINTER stations within Mobility Hubs to nearby attractions | Program | \$72 |

| Plan ID | Plan Name | Location | Project Type | Primary Strategic Anchor | Description | Category | Cost (Millions) |
|---------|-------------------------------|--|--------------|--------------------------|---|----------|-----------------|
| NC48 | BRT: SPRINTER Parallel | Oceanside Boulevard, Santa Fe Avenue, and Mission Road | Transit | Regional Spine | Provide a high-frequency, limited stop BRT service parallel to SPRINTER, connecting Oceanside to Escondido along Oceanside Boulevard, Santa Fe Avenue and Mission Road with peak period frequencies of 10-minutes | Project | \$49 |

- Connect inland communities to the coast (and vice versa)
- Provide a connection to the western regional spine
- Support a mix of employment and residential centers with future development intensity

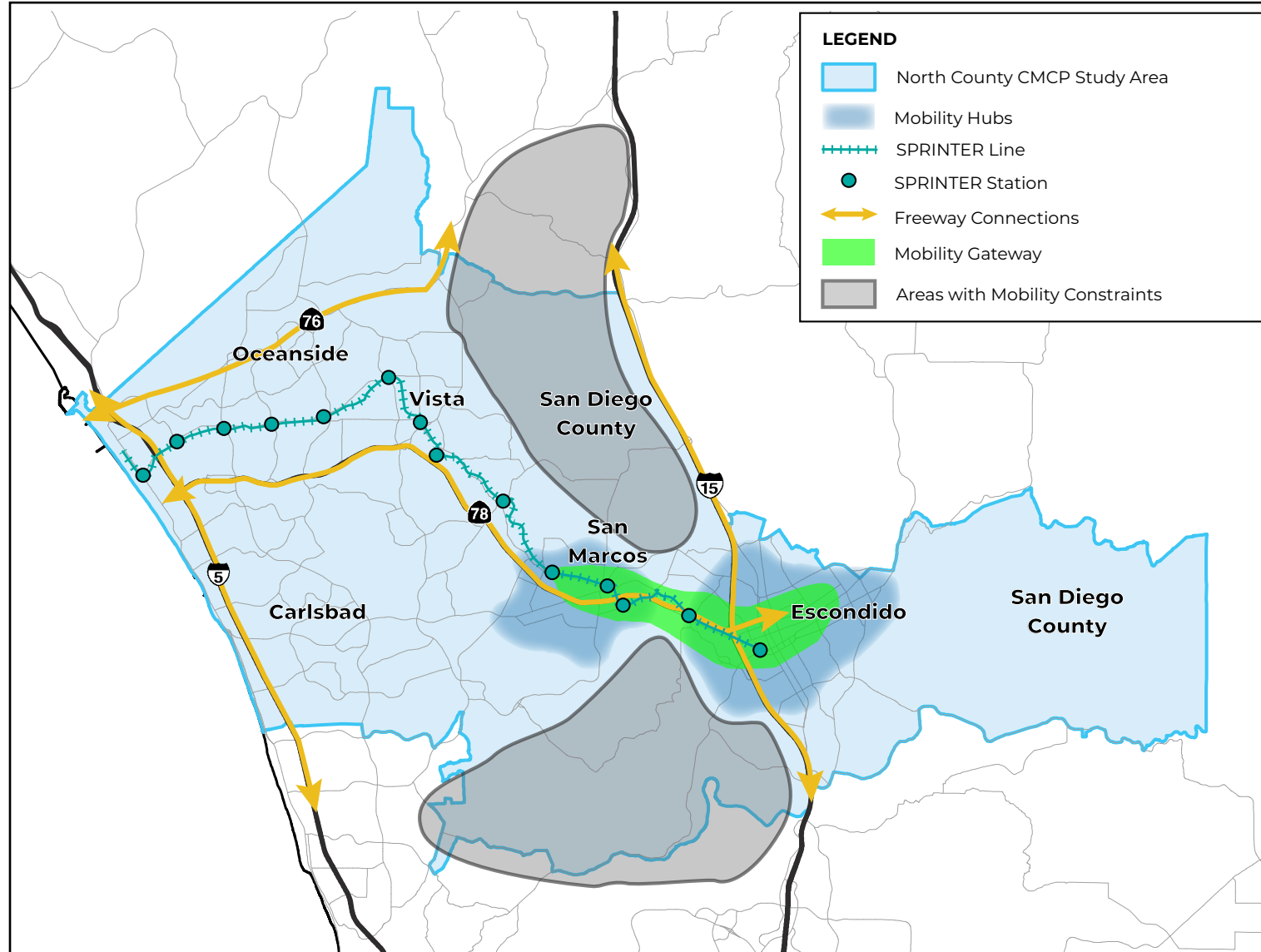


Projects from 'The Plan'

| Plan ID | Plan Name |
|---------|---|
| NC03 | Oceanside Boulevard Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC06 | Vista Way Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC08 | Rancho Santa Fe Road Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC14 | Mobility Hub: Oceanside Suite of Improvements |
| NC25 | SR 78 Operational Improvements and Managed Lanes |
| NC30 | I-5/SR 78 Interchange |
| NC31 | Inland Rail Trail Destination Connections |
| NC39 | SPRINTER Double Tracking |
| NC42 | Connecting Communities Across Regional Spines |
| NC44 | SPRINTER Grade Separations |
| NC45 | SPRINTER Electrification |
| NC47 | SPRINTER Station Access Improvemnets |
| NC48 | BRT: SPRINTER Parallel |

The projects from 'The Plan' are furthered described in detail in Attachment 4.

- Improve a narrow, geographically constrained transportation connection
- Support maturing mobility hubs at either end of the gateway
- Influence transportation improvements across North County and the surrounding mega region

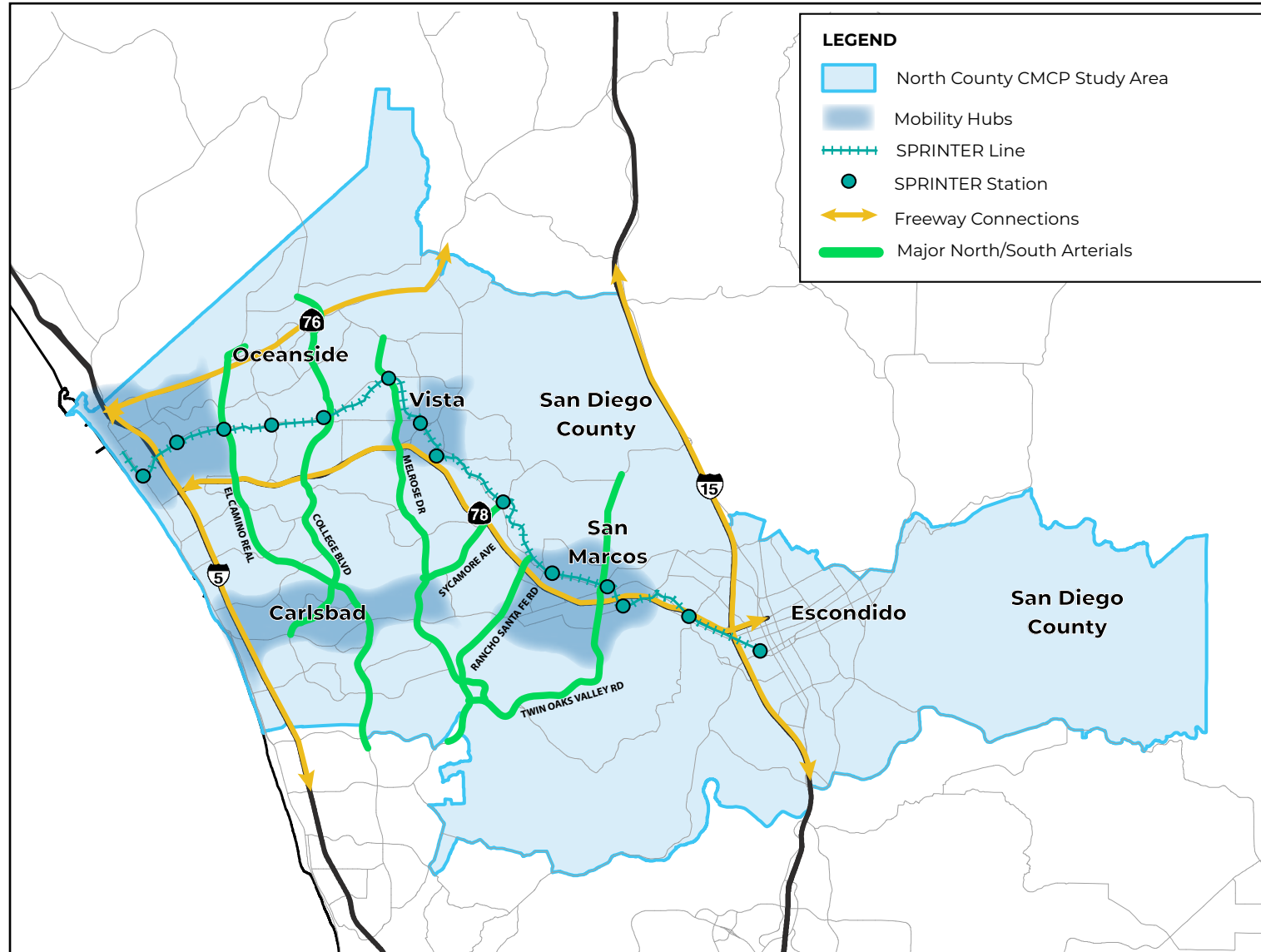


Projects from 'The Plan'

| Plan ID | Plan Name |
|---------|---|
| NC13 | Valley Parkway Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC17 | Mobility Hub: Escondido Suite of Improvements |
| NC20 | I-15/SR 78 Interchange |
| NC23 | BRT: Escondido (<i>Rapid 471</i>) |
| NC25 | SR 78 Operational Improvements and Managed Lanes |
| NC31 | Inland Rail Trail Destination Connections |
| NC33 | <i>Rapid 450</i> |
| NC39 | SPRINTER Double Tracking |
| NC40 | SPRINTER Service Extensions |
| NC42 | Connecting Communities Across Regional Spines |
| NC44 | SPRINTER Grade Separations |
| NC45 | SPRINTER Electrification |
| NC47 | SPRINTER Station Access Improvements |
| NC48 | BRT: SPRINTER Parallel |

The projects from 'The Plan' are further described in detail in Attachment 4.

- Improve a 15-mile stretch without high-capacity transportation facilities between I-5 and I-15
- Address the growing demand on a grid complementing San Marcos Blvd. and Palomar Airport Road, SR 78, Oceanside Blvd, and SR 76

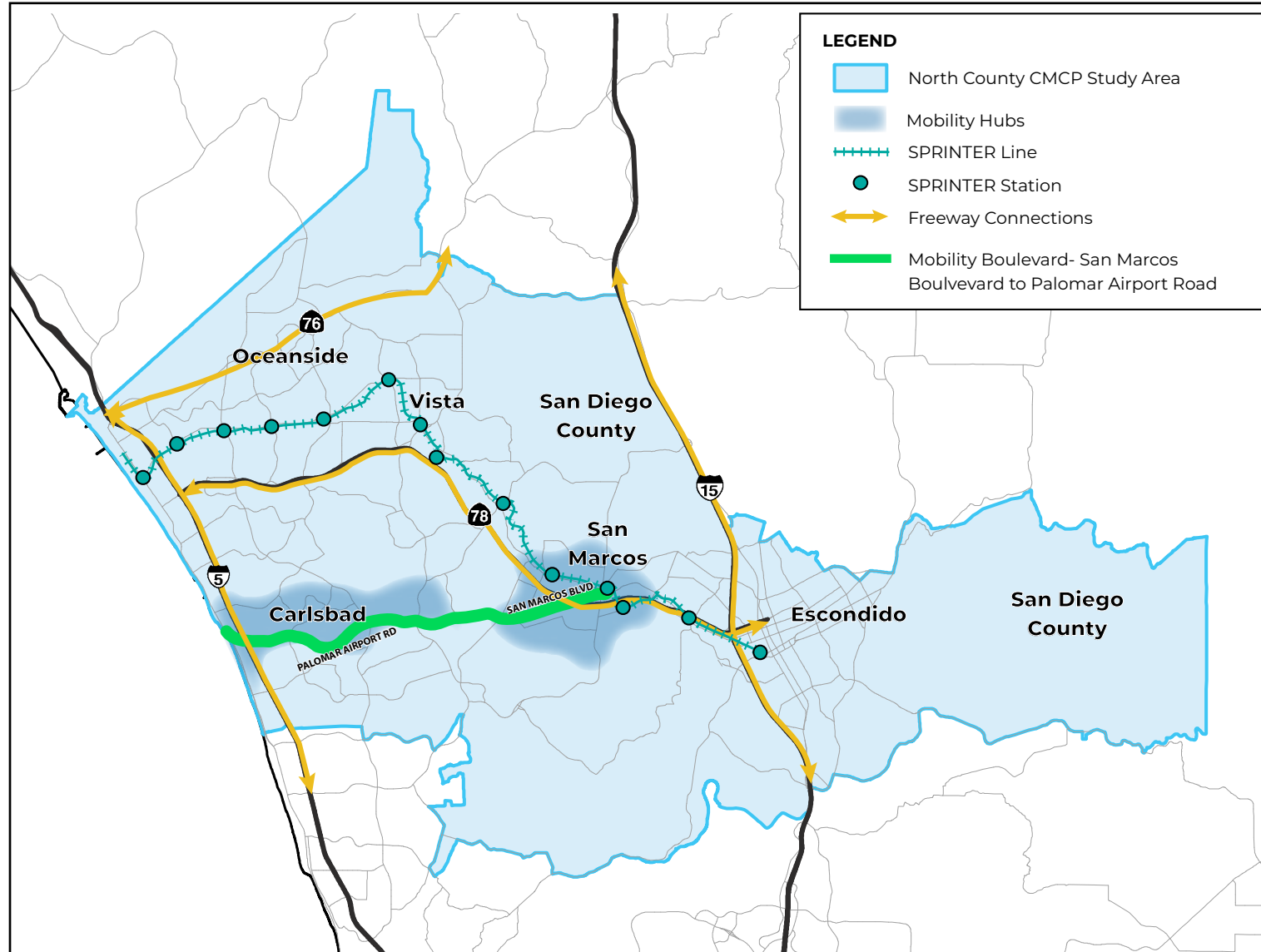


Projects from 'The Plan'

| Plan ID | Plan Name |
|---------|---|
| NC02 | El Camino Real Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC04 | College Boulevard Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC05 | Melrose Drive Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC07 | Sycamore Avenue Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC08 | Rancho Santa Fe Road Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC11 | Twin Oaks Valley/San Elijo Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC21 | BRT: College Boulevard |
| NC22 | BRT: El Camino Real |
| NC24 | BRT: Melrose |
| NC41 | Communication Backbone/Fiber |
| NC43 | Regional Highway and Arterial TSMO, Regional Traffic Signal Management System |
| NC47 | SPRINTER Station Access Improvemnets |

The projects from 'The Plan' are furthered described in detail in Attachment 4.

- Enhance a key east-west corridor between SR 78 and I-5
- Connect education institutions, employment centers, and North County destinations
- Support expected increase of development along the corridor

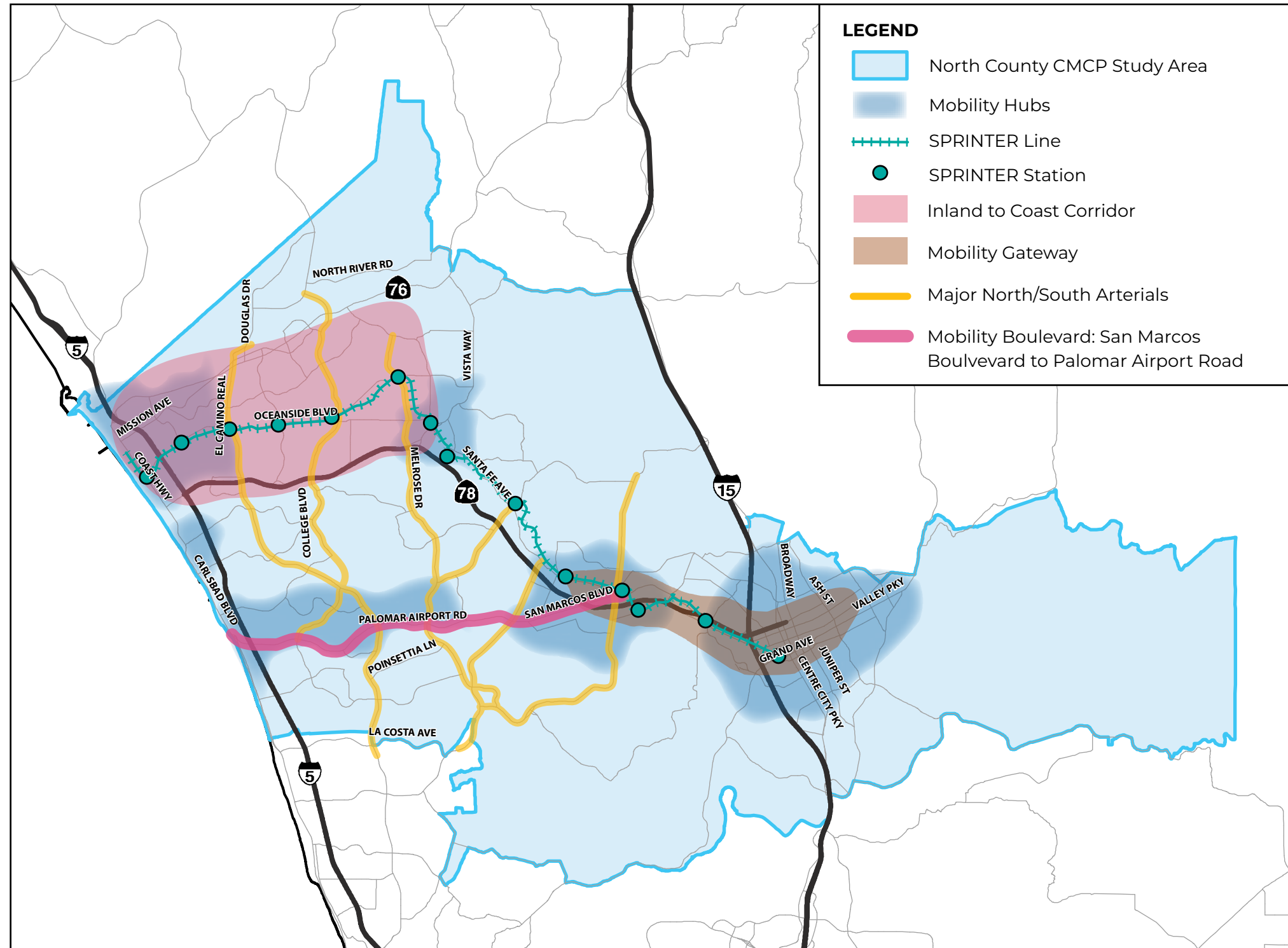


Projects from 'The Plan'

| Plan ID | Plan Name |
|---------|--|
| NC09 | Palomar Airport Road/San Marcos Boulevard Corridor-Wide Mobility Boulevard Improvements and Enhancements |
| NC19 | Mobility Hub: Palomar Airport Road/Carlsbad Business Park Suite of Improvements |
| NC32 | BRT: Palomar Airport Rd (<i>Rapid 440</i>) |
| NC33 | <i>Rapid 450</i> |
| NC41 | Communication Backbone/Fiber |
| NC42 | Connecting Communities Across Regional Spines |
| NC43 | Regional Highway and Arterial TSMO, Regional Traffic Signal Management System |
| NC47 | SPRINTER Station Access Improvemnets |

The projects from 'The Plan' are furthered described in detail in Attachment 4.

Early Action Bundle Locations



Early Action Bundles

Inland to Coast Corridor

- Connect inland and coastal communities
- Provide a connection to the I-5, the COASTER, and Amtrak
- Support a mix of employment and residential centers with future development intensity

Mobility Gateway

- Improve a narrow, geographically constrained transportation connection
- Support maturing mobility hubs in Escondido and San Marcos
- Influence transportation access across North County and the surrounding mega region

Major North/South Arterials

- Improve a 15-mile stretch without high-capacity transportation facilities between I-5 and I-15
- Address the growing demand on a grid complementing San Marcos and Palomar Airport Road, SR 78, Oceanside Boulevard, and SR 76

Mobility Boulevard: San Marcos Boulevard to Palomar Airport Road

- Enhance a key east-west corridor between SR 78 and I-5
- Connect education institutions, employment centers, and North County destinations
- Support development along the corridor

Projects from 'The Plan'

| Plan ID | Plan Name | Inland to Coast | Mobility Gateway | Major North/South Arterials | Mobility Boulevard: San Marcos and Palomar Airport Road |
|---------|--|-----------------|------------------|-----------------------------|---|
| NC01 | Mission Avenue Corridor-Wide Mobility Boulevard Improvements and Enhancements | Partial | No | No | No |
| NC02 | El Camino Real Corridor-Wide Mobility Boulevard Improvements and Enhancements | Partial | No | Yes | Related |
| NC03 | Oceanside Boulevard Corridor-Wide Mobility Boulevard Improvements and Enhancements | Yes | No | No | No |
| NC04 | College Boulevard Corridor-Wide Mobility Boulevard Improvements and Enhancements | Partial | No | Yes | Related |
| NC05 | Melrose Drive Corridor-Wide Mobility Boulevard Improvements and Enhancements | Partial | No | Yes | Related |
| NC06 | Vista Way Corridor-Wide Mobility Boulevard Improvements and Enhancements | Yes | No | No | No |
| NC07 | Sycamore Avenue Corridor-Wide Mobility Boulevard Improvements and Enhancements | No | No | Yes | No |
| NC08 | Rancho Santa Fe Road Corridor-Wide Mobility Boulevard Improvements and Enhancements | Yes | No | Yes | Related |
| NC09 | Palomar Airport Road/San Marcos Boulevard Corridor-Wide Mobility Boulevard Improvements and Enhancements | No | Partial | Related | Yes |
| NC10 | Santa Fe Avenue/Mission Road Corridor-Wide Mobility Boulevard Improvements and Enhancements | Partial | Partial | Related | Related |
| NC11 | Twin Oaks Valley/San Elijo Corridor-Wide Mobility Boulevard Improvements and Enhancements | No | Partial | Yes | Related |
| NC12 | Centre City Parkway Corridor-Wide Mobility Boulevard Improvements and Enhancements | No | Partial | No | No |
| NC13 | Valley Parkway Corridor-Wide Mobility Boulevard Improvements and Enhancements | No | Yes | No | No |
| NC14 | Mobility Hub: Oceanside Suite of Improvements | Yes | No | No | No |
| NC15 | Mobility Hub: Vista Suite of Improvements | Partial | No | Partial | No |
| NC16 | Mobility Hub: San Marcos Suite of Improvements | No | Partial | Partial | Related |

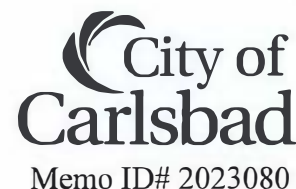
Projects from 'The Plan'

| Plan ID | Plan Name | Inland to Coast | Mobility Gateway | Major North/South Arterials | Mobility Boulevard: San Marcos and Palomar Airport Road |
|---------|---|-----------------|------------------|-----------------------------|---|
| NC17 | Mobility Hub: Escondido Suite of Improvements | No | Yes | No | No |
| NC18 | Mobility Hub: Carlsbad Village Suite of Improvements | Related | No | No | No |
| NC19 | Mobility Hub: Palomar Airport Road/Carlsbad Business Park Suite of Improvements | No | No | Partial | Yes |
| NC20 | I-15/SR 78 Interchange | Partial | Yes | No | Related |
| NC21 | BRT: College Boulevard | Partial | No | Yes | Related |
| NC22 | BRT: El Camino Real | Partial | No | Yes | Related |
| NC23 | BRT: Escondido (<i>Rapid 471</i>) | No | Yes | No | No |
| NC24 | BRT: Melrose | Partial | No | Yes | Related |
| NC25 | SR 78 Operational Improvements and Managed Lanes | Yes | Yes | Related | Related |
| NC26 | Coastal Rail Trail | Partial | No | No | Related |
| NC27 | North County Roundabouts Programs | Related | Related | Related | Related |
| NC28 | BRT: Mission Avenue/ SR 76 | Partial | No | No | No |
| NC29 | BRT: Mission Avenue/Santa Fe Avenue (<i>Rapid 474</i>) | Related | No | No | No |
| NC30 | I-5/SR 78 Interchange | Yes | No | No | No |
| NC31 | Inland Rail Trail Destination Connections | Yes | Yes | Related | No |
| NC32 | BRT: Palomar Airport Road (<i>Rapid 440</i>) | No | Partial | No | Yes |

Projects from 'The Plan'

| Plan ID | Plan Name | Inland to Coast | Mobility Gateway | Major North/South Arterials | Mobility Boulevard: San Marcos and Palomar Airport Road |
|---------|---|-----------------|------------------|-----------------------------|---|
| NC33 | Rapid 450 | No | Yes | No | Yes |
| NC34 | BRT: Vista Way | Partial | No | No | No |
| NC35 | Camp Pendleton Access | Related | No | Related | No |
| NC36 | Commuter Express: Palomar Airport to Kearny Mesa via Rancho Bernardo Transit Center | No | Partial | No | No |
| NC37 | SR 76 SMART Highway Improvements | No | No | Related | No |
| NC38 | Commuter Express: Riverside (Temecula) to North County | No | Partial | No | Related |
| NC39 | SPRINTER Double Tracking | Yes | Yes | Related | Related |
| NC40 | SPRINTER Service Extensions | No | Yes | Related | Related |
| NC41 | Communication Backbone/Fiber | Partial | Partial | Yes | Yes |
| NC42 | Connecting Communities Across Regional Spines | Yes | Yes | Partial | Yes |
| NC43 | Regional Highway and Arterial TSMO, Regional Traffic Signal Management System | Partial | Partial | Yes | Yes |
| NC44 | SPRINTER Grade Separations | Yes | Yes | Related | No |
| NC45 | SPRINTER Electrification | Yes | Yes | Related | Related |
| NC46 | San Luis Rey River Trail Extension | Partial | No | No | No |
| NC47 | SPRINTER Station Access Improvemnets | Yes | Yes | Yes | Yes |
| NC48 | BRT: SPRINTER Parallel | Yes | Yes | No | No |

To the members of the:
 CITY COUNCIL
 Date 11/21/23 CA CC
 CM ACM DCM (3)



Council Memorandum

July 27, 2023

To: Honorable Mayor Hall and Members of the City Council
From: Paz Gomez, Deputy City Manager, Public Works
Via: Geoff Patnoe, Assistant City Manager *GP*
Re: **North County Comprehensive Multimodal Corridor Plan Update (Districts – All)**

This memorandum provides an update to the Council Memorandum dated March 23, 2023 (provided as Attachment A), regarding staff's comments on the North County Comprehensive Multimodal Corridor Plan (CMCP), which was prepared by the California Department of Transportation (Caltrans) and the San Diego Association of Governments (SANDAG).

Background

The North County CMCP is the result of a three-year planning process led by Caltrans and SANDAG with involvement from the Cities of Oceanside, Carlsbad, Vista, San Marcos and Escondido. The CMCP utilizes a multimodal planning process intended to create a balanced, equitable transportation system that integrates mobility options such as driving, biking, walking, transit, micro-mobility and other mobility services to move both people and goods within North County and beyond.

The study area includes multiple facilities, including local arterial roadways, state highways, rail lines, transit systems and active transportation facilities. Within the City of Carlsbad, the CMCP focuses primarily on key regional arterials roadways and mobility boulevards including Palomar Airport Road, El Camino Real, College Boulevard and Melrose Drive. Additional recommendations are also provided in the areas around the city's Mobility Hub sites, including the Village and Palomar Airport Road Business Park. An informational website, which includes the final North County CMCP is available at: <https://sandag.mysocialpinpoint.com/finalplan>

Discussion

The draft CMCP underwent a public review and comment period from February 2, 2023, to March 12, 2023. The feedback received from the city and other stakeholders is memorialized in Attachment B. However, Caltrans and SANDAG have not yet provided a formal response to these comments though staff will continue working with the project teams from each agency to address the city's concerns. Specifically, staff is focused on issues related to the inclusion of the Coast Highway / Carlsbad Boulevard as a mobility boulevard, and re-evaluating transit services throughout Carlsbad and the region.

Public Works Branch

Transportation Department

Oct 2, 2023

1635 Faraday Avenue | Carlsbad, CA 92008 | 442-339-2780 t

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Next Steps

City staff have extended invitations to staff from both Caltrans and SANDAG to present the North County CMCP to the Traffic and Mobility Commission at a future meeting. The purpose of the proposed presentation is to provide the commission and the public with comprehensive information about the plan's recommendations and how the CMCP will play a pivotal role in shaping development of the transportation network across North County.

Attachments: A. Council Memorandum dated March 23, 2023
B. Public Comments for the Draft North County CMCP

cc: Scott Chadwick, City Manager
Cindie McMahon, City Attorney
Gary Barberio, Deputy City Manager, Community Services
Laura Rocha, Deputy City Manager, Administrative Services
Mickey Williams, Police Chief
David Graham, Chief Innovation Officer
Tom Frank, Transportation Director/City Engineer
Jeff Murphy, Community Development Director
Kristina Ray, Communication & Engagement Director
Mike Strong, Assistant Community Development Director
Gina Herrera, Deputy City Attorney
Matt Sanford, Economic Development Manager
Nathan Schmidt, Transportation Planning and Mobility Manager


To the members of the:
CITY COUNCIL
Date 3/23/22 CA CC
CM ACM DCM (3)

ATTACHMENT A



Council Memorandum

March 23, 2023

To: Honorable Mayor Blackburn and Members of the City Council
From: Paz Gomez, Deputy City Manager, Public Works
Via: Geoff Patnoe, Assistant City Manager 
Re: Comments on the North County Comprehensive Multimodal Corridor Plan (Districts – All)

This memorandum provides information on staff's recent comment letter (Attachment A) on the draft North County Comprehensive Multimodal Corridor Plan (CMCP), which is being prepared jointly by the California Department of Transportation (Caltrans) and the San Diego Association of Governments (SANDAG).

Background

As part of the California Senate Bill 1, Road Repair and Accountability Act of 2017, CMCPs must be completed for our region to be eligible to compete for certain state and federal funding and grant opportunities that can take future transportation improvements from idea to reality. In coordination with agency partners and Caltrans, SANDAG is currently developing CMCPs for our region's 12 major transportation corridors by 2025.

The North County CMCP is a component of the SANDAG Regional Plan for transportation projects and services in North County for the cities along the State Route 78 (SR-78) corridor. The North County CMCP focuses on multimodal transportation needs and projects within North County communities along SR-78, while the Regional Plan considers transportation needs and projects for the entire San Diego region. Both plans work together to provide a comprehensive transportation strategy for the San Diego region that supports sustainable growth, improves mobility and enhances quality of life for residents.

Discussion

The North County CMCP is the result of a two-year planning process led by Caltrans and SANDAG with involvement from the Cities of Oceanside, Carlsbad, Vista, San Marcos and Escondido. The North County CMCP utilizes a multimodal planning process intended to create a balanced, equitable transportation system that integrates mobility options such as driving, biking, walking, transit, micro-mobility and other mobility services to move both people and goods within North County and beyond.

The corridor study area includes multiple facilities such as local arterial roadways, state highways, rail lines, transit systems and active transportation facilities. Within the City of Carlsbad, the North County CMCP focuses primarily on key regional arterial roadways or mobility

Public Works Branch

Transportation Department

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boulevards including Palomar Airport Road, El Camino Real, College Boulevard and Melrose Drive. Additional recommendations are also provided in the areas around our mobility hub sites including the Village and Palomar Airport Road Business Park. An informational website, which includes the draft North County CMCP, is available at:

<https://sandag.mysocialpinpoint.com/northcounty>

The draft CMCP was circulated for public review and comment from February 2, 2023, to March 12, 2023. The city provided comments/concerns to SANDAG/Caltrans on March 12, 2023 (Attachment A), as highlighted in the following comments/concerns:

1. Clarify whether the plan incorporates the city's existing and planned land uses. This has been an ongoing issue that staff have raised in prior correspondences
2. Provide more details on project/program specifics or how they will impact the city. The plan seems to create funding requirements for some future activities, but it provides little detail on project/program specifics and impacts to the city. Project details could include specific project alignments, right-of-way needs or coordination with specific agencies
3. Request inclusion of the Coast Highway/Carlsbad Boulevard as a mobility boulevard as identified by staff during numerous technical working group meetings
4. Recommend considerations to re-evaluate existing fixed route transit services throughout North County and for transit technologies that would better serve our subregion including on-demand flexible fleets and rideshare programs
5. Make changes to the recommended bikeway improvements along Palomar Airport Road, El Camino Real and College Boulevard. Additionally, request specific scope improvements on the city's portion of Palomar Airport Road including improved intersections through the Interstate 5 (I-5) interchange area and replacing the bridge over the North County Transit District's railroad right-of-way with a multimodal bridge
6. Request improvements to bicycle and pedestrian access through freeway interchanges, which act as critical barriers for active transportation users in Carlsbad

Next Steps

According to the latest correspondence with Caltrans and SANDAG, Caltrans will respond to comments and finalize the North County CMCP. They have not yet provided an estimated completion date. The document should inform development of the next SANDAG Regional Plan which is currently underway. Staff will continue to review all project-related materials and recommend changes at each milestone to help ensure that regional goals, policies and priorities are fiscally responsible, safety-conscious, sustainable, equitable and in alignment with the goals and policies established by our community.

Attachment: A. City of Carlsbad letter dated March 12, 2023

Council Memo – Comments on the North County CMCP (Districts – All)

March 23, 2023

Page 3

cc: Scott Chadwick, City Manager
Cindie McMahon, City Attorney
Gary Barberio, Deputy City Manager, Community Services
Laura Rocha, Deputy City Manager, Administrative Services
David Graham, Chief Innovation Officer
Tom Frank, Transportation Director/City Engineer
Zach Korach, Finance Director
Jeff Murphy, Community Development Director
Kristina Ray, Communication & Engagement Director
Mike Strong, Assistant Director of Community Development
Eric Lardy, City Planner
Nathan Schmidt, Transportation Planning and Mobility Manager
Matt Sanford, Economic Development Manager

March 12, 2023

California Department of Transportation, District XI
 Attn. Kareem Scarlett, PE
 4050 Taylor St.
 San Diego CA, 92110

North County Comprehensive Multimodal Corridor Plan

Dear Mr. Scarlett:

The City of Carlsbad appreciates the opportunity to provide comments on the draft North County Comprehensive Multimodal Corridor Plan (CMCP) and would like to make the following comments:

General Comments:

These corridor studies stem from Senate Bill 1 and will assist SANDAG and the Department of Transportation (Caltrans) to nominate projects, with preference to be given to projects that demonstrate collaboration between the regional agencies and Caltrans. The City has provided comments to SANDAG during the development of the current Regional Plan which were shared with the North County CMCP Technical Working Group and are still relevant for suggested revisions to the proposed plans programs and projects of this plan. Please refer to our previous comments to SANDAG regarding the Regional Plan included in a City Council Memorandum dated Oct 21, 2021 Re: SANDAG 2021 Regional Transportation Plan Draft EIR Comment Letter- referenced at following web address - <https://records.carlsbadca.gov/WebLink/DocView.aspx?id=5493674&dbid=0&repo=CityofCarlsbad>. Below are specific comments regarding the draft plan:

Mobility Hubs:

- Recommend changing the On-demand shuttle connecting transit center to employment centers to a “On-demand flexible fleet” to facilitate the option of rideshare programs.

Mobility Boulevards:

- Request inclusion of the **Coast Highway / Carlsbad Boulevard as a Mobility Boulevard**. Throughout the Technical Working Group meetings, the City of Carlsbad and Oceanside requested that Coast Highway and Carlsbad Boulevard be included as a “Mobility Boulevard” in the North County CMCP. This primary north-south corridor is the most highly utilized corridor in North County from a multimodal users perspective and most consistent with the definition of a Mobility Boulevard as an alternative path to the state highway system (I-5), has a high potential for higher quality investments for pedestrians, bicyclists, and transit, and connects the subregions primary activity centers in Oceanside, Carlsbad and neighboring cities to the south.
- College Boulevard: The recommended active transportation improvements include a Class-IV protected bikeway to Palomar Airport Road. The City of Carlsbad recommends that this be revised to a Class-I facility within the city limits. The city is developing a plan for the extension of College Blvd. between Bobcat Lane and El Camino Real which includes a plan to provide both Class-II bike lanes and a separate Class-I multi-use path along this new alignment.
- Palomar Airport Road/San Marcos Boulevard: Recommend a Class-I multi-use path be provided along El Camino Real within the City of Carlsbad instead of the proposed Class-IV protected

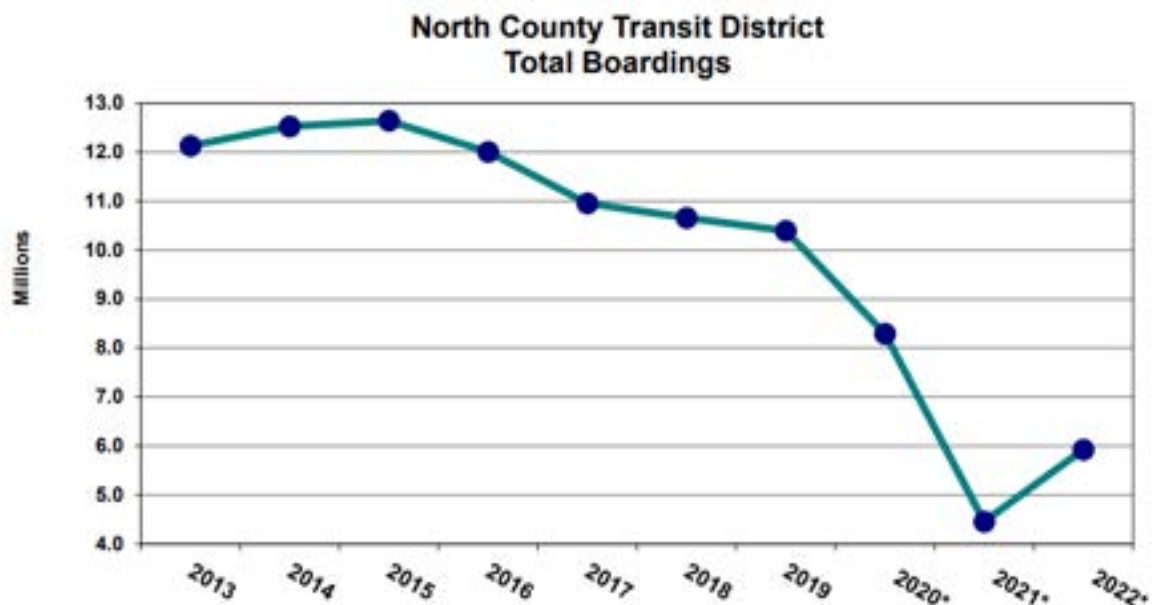
bikeway due to the high vehicle speeds, wide roadways, and potentially limited visibility of bicyclists at the primary intersections. It is also recommended to provide flexible fleets/on-demand transit along this corridor as a primary connection from the Poinsettia Coaster Station to the Business Parks along Palomar Airport Road and eventually Cal State San Marcos. Recommend upgrading all intersections through interchange to smart intersections with recommended revisions as explained below. Requesting a proposed multimodal bridge over NCTD rail road right of way and tracks to facilitate adequate space for vehicle lanes, a Class I pathway, sidewalks, and class IV or buffered class II for the highspeed bicyclist including electric bicycles.

- El Camino Real: Recommend a Class-I multi-use path be provided along El Camino Real within the City of Carlsbad instead of the proposed Class-IV protected bikeway due to the high vehicle speeds, wide roadways, and potentially limited visibility of bicyclists at the primary intersections.

Regional Spines:

- In the area serviced by North County Transit District (NCTD), fixed route transit ridership declined from 2015 to 2021 and has not returned to the pre-pandemic ridership levels as shown in the below graph included in NCTD’s Annual Comprehensive Financial Report For the Fiscal Years Ended June 30, 2022 and 2021

Source: NCTD Internal Financial Information



Interstate 5 (I5) and State Route 78 (SR78) – Recommend prioritizing the NCC improvements and managed lanes on both I5 and SR 78. The new managed lanes would facilitate next gen Rapid (BRT) and Flexible Fleet public transit programs which support Senate Bill 1 Chapter 8.5 Congested Corridors, section 2391. The NCC EIR includes an additional Managed Lane to provide 8 free lanes and 4 managed lanes. To implement the flexible fleet programs with

minimum delays on the I5 and SR 78 routes, we recommend revising the projects scopes included in this plan and subsequently the Regional Plan to include 8 free lanes and 4 managed lanes on I5, and adding the previously scheduled proposed lanes on SR78 included in the current Transnet Extension Ordinance. We recommend moving up the projects priorities to be completed by 2035 which could support the Next Gen Rapid projects and flexible fleet public rideshare transit programs. Recommended priority projects for this corridor include:

1. Completing the I5 and SR 78 multimodal interchange
2. Completing the Village Trench Project
3. Completing additional managed lanes on I5 and SR78 in the Transnet Extension Ordinance.
4. To address the community barrier created by I5 and the current auto-centric on and off-ramp intersections designed in the 1960s, include in the plan all new multimodal interchanges throughout I5 NCC and North County CMCP with the similar approach used in the Birmingham Drive interchange in the NCC.

A overview of the current trends in our region and many of the recommendations included in this letter are explained in our short presentation to SANDAG Independent Taxpayer Oversight Committee (ITOC) on May 11, 2022 at the following web address -

https://www.youtube.com/watch?v=3Cj_qAtqg2M&t=1332s . Please include the related recommendations in the presentation as recommendations in this letter.

- Recommend using program language consistent with SANDAG including the following flexible fleet programs.
 - Rideshare: Drivers and passengers headed in a similar direction can share the ride in a vehicle. This includes carpool, vanpool, and pooled ridehailing services such as uberPOOL and Lyft Shared.
 - Microtransit: Multi-passenger shuttles can carry up to 15 passengers and provide rides within a defined service area. This technology-enabled transit service allows users to reserve a ride ahead of time or on-demand. Smaller, all-electric shuttles, also known as neighborhood electric vehicles (NEV), are a form of microtransit that provides a sustainable and convenient solution for short trips around communities.
 - Ridehailing: On-demand ridehailing services allow someone to request a ride in real time. Services link the passenger with available drivers based on their trip length, number of passengers, origin, and destination. This includes services such as Uber, Lyft, and taxis.

Projects and Programs:

- Delete all reference to flexible lanes on Palomar Airport Road and other arterials in Carlsbad
- Revise Carlsbad Mobility Hubs • NEV Areawide Shuttles to • “Rideshare/Rideshailing and Microtransit”
- Recommend all Rapid (BRTs) be revised to routes on I5 and SR 78 as explained in the first comment under Regional Spines
- For all identified - • Upgrade signalized intersections to smart intersections, recommend revise to:
 - Upgrade signalized intersections to smart intersections including Intersection Control Evaluation (ICE).

- ICE guidelines shall conform with the California Manual on Uniform Traffic Control Devices (CA MUTCD), Section 4C.01b and 01c regarding intersection control. An engineering study shall include consideration of a roundabout (yield control). If a roundabout is determined to provide a viable and practical solution, it shall be studied in lieu of, or in addition to a traffic control signal. Refer to the California Department of Transportation (Caltrans) website for more information on the Traffic Operations Policy Directive 13-02, Intersection Control Evaluation (ICE), and other resources for the evaluation of intersection traffic control strategies: <http://www.dot.ca.gov/hq/traffops/liasons/ice.html>
- Palomar Airport Road/San Marcos Boulevard Corridor Wide Mobility Boulevard Improvements & Enhancements- Recommend
 - Upgrading all intersections through interchange to smart intersections with recommended ICE analysis and proposed intersection improvements. Recommend increasing cost estimate \$10 million or per an engineer's estimate of probably cost and revise cost accordingly.
 - Requesting a proposed multimodal bridge over NCTD rail road right of way and tracks to facilitate adequate space for vehicle lanes, a Class I pathway, sidewalks, and class IV or buffered class II for the highspeed bicyclist including electric bicycles. Recommend increasing budget estimate \$30 million or complete engineer's estimate of probably cost and revise cost accordingly.

Other General Comments:

- Transit Demand Analysis: The expansion of transit throughout the subregion is a key element of the North County CMCP however the analysis provided in Appendix C does not provide any information to support the significant expansion of traditional fixed route transit. To understand how transit can be utilized to improve the ways people travel throughout North County a full demand analysis and supporting market research data should be provided in the document. Appendix R, Travel Patterns, should be similarly structured to understand how the recommended transit services can address the current travel patterns in the subregion.
- Barriers for Active Transportation: Freeways interchanges are among the most significant barriers for active transportation users in the subregion due to the high-speed design features and number of conflict points. In the City of Carlsbad, the I-5 freeway divides the city and disconnects active transportation users between the highly attractive coastal destinations in the west and the residential and business park areas in the eastern portions of the city. The "Gaps and Barriers" section of the CMCP fails to highlight these critical gaps at freeway interchanges. Improvements at the freeway interchanges are under the jurisdiction of Caltrans so the draft CMCP should provide guidance on how these freeway barriers will be overcome with specific project recommendations for active transportation improvements at all freeway interchanges in the city.
- The final North County CMCP should prioritize all remaining and un-finished projects that were identified during the North Corridor Public Works Plan (NC PWP) and seek ways to streamline implementation.

- The draft North County CMCP inventories and assesses existing and future conditions in each city. However, despite previously providing information to SANDAG staff, the assumptions used for "existing" and "planned" land use and transportation in the City of Carlsbad are not consistent with our adopted land use and transportation plans or policies (e.g., forecasted housing and roadway capacities). Predicting the effect of transportation plans or projects on land uses and land use planning is critical to developing context sensitive solutions for transportation projects. Therefore, utilization of the most recent planning assumptions is not only necessary but is required as specifically stated therein Government Code Section 65080. Furthermore, the land use assumptions for "uses, residential densities, and building intensities within the region" (as required by Government Code Section 65080 (b)(2)(B)(i)) should also be the same, as that provided to the State Air Resources Board (as required per Government Code Sections 65080 (b)(2)(H and J) in estimating and analyzing GHG from the RTP and the effect on growth and whether the effects of that growth would be significant in the context of the region's plans, natural setting, and growth patterns.
- The draft North County CMCP identifies new policies, programs, and projects that were not included in the RTP or the NC PWP. The North County CMCP seems to create a funding requirement for some future activity that is reasonably foreseeable and/or an irrecoverable commitment to specific program or construction project. As of this writing, it is unclear what procedures related to CEQA apply to the adoption of the North County CMCP. If the scope of the North County CMCP is a "project" as defined by CEQA (and NEPA), then the City of Carlsbad will need to be consulted as a Responsible Agency per CEQA Guidelines Section 15096. As such, the Lead Agency (i.e., SANDAG) should consider whether the project is covered by a previous environmental review. To determine whether a project can tier from a certified program EIR, the Lead Agency should consider whether the later project (Public Resources Code Section 21068.5) is consistent with the program for which the original EIR was prepared and certified; is consistent with applicable land use plans and zoning in which the later project would be located; and would not trigger the need for a subsequent or supplemental EIR. In this instant, there would need to be an evaluation of impacts to existing Land Use Plans, and the lack of a reasonable range of alternatives that show what would occur if funding or land use assumptions for the new projects have not been prepared.
- The draft North County CMCP only lists potential projects; it does not show potential alignments, right of way needed or coordination with specific agencies. More information needs to be provided on project implementation phasing (both short-range and long-range improvements), unfunded projects and various funding mechanisms that can bridge the unfunded gaps.
- Carlsbad respectfully requests that SANDAG support the city's service bureau requests as efficiently as possible. Further delays in completion of the regional travel demand model could adversely impact our rezone schedule and jeopardize our ability to timely meet our Housing Element program requirements, thereby potentially placing our HCD housing element certification at risk. Additionally, the city requests that future decisions to update the 2021 Regional Transportation Plan respect the fact that Carlsbad and other local jurisdictions have been waiting on the availability of the regional model for local projects for some time and that further delays could result in additional liability, time, and costs for member agencies.

If you have any questions or need additional information, please contact Jeff Murphy, Community Development Director at Jeff.Murphy@carlsbadca.gov for land use related items or Tom Frank, Transportation Director/City Engineer, at tom.frank@carlsbadca.gov for mobility related items.

Sincerely,



Tom Frank

Transportation Director/City Engineer

- c: Paz Gomez, Deputy City Manager, Public Works
- Gary Barberio, Deputy City Manager, Community Services
- Ron Kemp, Assistant City Attorney
- Jeff Murphy, Community Development Director
- Eric Lardy, City Planner
- Scott Donnell, Senior Planner
- Jason Geldert, Engineering Manager
- Nathan Schmidt, Transportation Planning and Mobility Manager

Appendix AA: Public Comments for Draft CMCP

To: San Diego Association of Governments and Caltrans District 11
From: North County Comprehensive Multimodal Corridor Plan (CMCP) Project Team
Date: June 2023
Subject: North County Comprehensive Multimodal Corridor Plan (CMCP) – Public Comments
Draft CMCP

Overview

The North County CMCP project team reviewed all comments received during the 45-day public review period. The comments generally consisted of factual errors and requests of new transportation concepts, projects or programs.

The final report, attachments and appendices incorporated factual errors identified during the public review period. The project team reviewed the new transportation concepts, projects or programs to determine consistency with the following principles:

1. Reduction in VMT through system-based planning or implementation of transportation infrastructure and services of regional significance.
2. Alignment with local, regional and state goals, policies, and initiatives.
3. Supports well-functioning transportation and mobility functions across jurisdictions, communities, users, and markets.

The project team also reviewed new transportation concepts, projects or programs to determine consistency with CMCP. The project team determined new transportation concepts, projects or programs as inconsistent with the CMCP based on the following guidelines:

1. Did not mitigate VMT from transportation projects or be included as part of a system-based solution to multi-modal options of regional significance.
2. Did not advance sustainable rural transportation solutions.
3. Did not support state (e.g., SB743, California Transportation Plan 2050) or regional (e.g., Regional Plan) priorities and initiatives.

When appropriate, transportation projects and concepts were incorporated into the three Strategic Anchors (i.e., Attachment 1 - Mobility Boulevards, Attachment 2 - Mobility Hubs, and Attachment 3 - Regional Spines). The requested projects have not been evaluated for feasibility or costed; they are noted for future planning efforts (e.g., 2025 Regional Plan). As the CMCP is a strategic blueprint for North County's transportation system and a requirement for SB1 funding from the State of California, it is not an obligation but an effective planning exercise to inform future planning efforts, including SANDAG's 2025 Regional Plan. Project-specific planning, alternatives, environmental clearance, and

engineering are to be evaluated, addressed, and documented through subsequent project-specific efforts.

Summary of Comments

Table 1 shows the themes of the public comments and incorporation into the CMCP document that will help guide future transportation planning, design, implementation, and operations.

Table 1. Theme of Comments Incorporated into the CMCP

| Comment Theme | Incorporation into CMCP |
|---|--|
| Improvements to reduce travel delay and meet travel demand along the SR 76 corridor. | <ul style="list-style-type: none"> • Implement TSMO improvements to SR 76 for both regional travel and local community mobility. • Assess major infrastructure changes to SR 76 as part of future consideration and evaluation. |
| Greater travel demand in North County and State Highway System is resulting in more travel along major arterials. | <ul style="list-style-type: none"> • Continue acknowledgment of North County corridors (e.g., State Route 78) as important and critical connections to large employment centers and activity centers in North County. • Advance arterial roadways (i.e., Mobility Boulevards) as core corridors for moving people and goods within North County. |
| Consider “Vision Zero” statement for the region to improve safety for all users, including people walking and biking. | <ul style="list-style-type: none"> • Expand “Vision Zero” efforts to improve walking and bike safety while managing travel demand — including expansion of roundabout programs, scramble crosswalks, protected bicycle facilities, and other safety improvement strategies. |
| Emphases of completion of Inland Rail Trail in North County. | <ul style="list-style-type: none"> • Advance completion of Inland Rail Trail, between the Cities of Vista and Oceanside. Facility is a high priority and is a part of a long-standing commitment to regional active transportation network in North County communities. |
| The COVID-19 pandemic has affected how transit service is utilized in North County CMCP. Transit should change to meet customer behaviors. | <ul style="list-style-type: none"> • Advance NCTD’s focus on core network while implementing flexible service formats (e.g., Flex Services, Microtransit) to meet current and future evolving trip patterns. |
| Land use agencies are currently evaluating growth opportunities along future high-frequent corridors (e.g., SPRINTER) near downtown areas and within the mobility hubs. | <ul style="list-style-type: none"> • Coordinate and leverage proposed transit-oriented development (TOD) by NCTD and cities in North County. |
| Coast Highway and Carlsbad Boulevard is a primary north-south corridor west of Interstate 5 and should be a candidate for multi-modal, mobility investments. | <ul style="list-style-type: none"> • Advance Mobility Hub improvements (e.g., active transportation facilities, roundabouts) and services along Coast Highway (Oceanside Mobility Hub) and Carlsbad Boulevard (Carlsbad Village Mobility Hub)—to provide higher quality investments for local mobility to destinations along the coastline. |
| Complete implementation of Coastal Rail Trail. | <ul style="list-style-type: none"> • Support implementation of Coastal Rail Trail as a regional and state priority for active transportation improvements through the I-5 North Coast Corridor Public Works Plan. |

Future Consideration and Evaluation

Table 2 displays projects and programs received during the public review period that should be considered for future planning efforts (e.g., Regional Plan, local corridor plans).

Table 2. Comments for Future Consideration and Evaluation

| Projects and Programs for Future Consideration and Evaluation |
|--|
| Additional budget in “Reconnecting Communities” strategy layer for connection of local access, between communities and across state highway interchanges—including Vista Way across I-5/SR 78 interchange. |
| Alignment and routing of BRT/Commuter Express services along Regional Spines and Mobility Boulevards. |
| Expansion of Reconnecting Communities strategy to include construction of new or reconstruction of existing bridges to meet multimodal needs across NCTD rail corridors (i.e., COASTER, SPRINTER). |
| Expansion of multi-purpose trails and pathways to recreational destinations. |

TITLE VI STATEMENT

The California Department of Transportation (Caltrans) and San Diego Association of Governments (SANDAG) assure that no person shall, on the basis of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance, as required by Title VI of the Civil Rights Act of 1964, as amended, the Civil Rights Restoration Act of 1987, Federal Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), and Federal Executive Order 13166 (Improving Access to Services for Persons with Limited English Proficiency). Caltrans and SANDAG will make every effort to ensure nondiscrimination in all of their programs and activities, whether they are federally funded or not, and to ensure that services and benefits are fairly distributed to all people, regardless of race, color, or national origin. In addition, Caltrans and SANDAG will facilitate meaningful participation in the transportation planning and decision-making process in a nondiscriminatory manner, including providing meaningful access for persons with limited English proficiency (LEP). For more information on Title VI of the Civil Rights Act of 1964 at Caltrans please visit: <https://dot.ca.gov/programs/civil-rights/title-vi>.

Public Comments on Draft CMCP

The following pages show the comments received during the public review period.



Draft North County CMCP Comments

| # | Agency | Comment |
|-----|------------------|---|
| 160 | City of Carlsbad | General Comments: These corridor studies stem from Senate Bill 1 and will assist SANDAG and the Department of Transportation (Caltrans) to nominate projects, with preference to be given to projects that demonstrate collaboration between the regional agencies and Caltrans. The City has provided comments to SANDAG during the development of the current Regional Plan which were shared with the North County CMCP Technical Working Group and are still relevant for suggested revisions to the proposed plans programs and projects of this plan. Please refer to our previous comments to SANDAG regarding the Regional Plan included in a City Council Memorandum dated Oct 21, 2021 Re: SANDAG 2021 Regional Transportation Plan Draft EIR Comment Letter- referenced at following web address - https://records.carlsbadca.gov/WebLink/DocView.aspx?id=5493674&dbid=0&repo=CityofCarlsbad . Below are specific comments regarding the draft plan: |
| 161 | City of Carlsbad | Mobility Hubs: Recommend changing the On-demand shuttle connecting transit center to employment centers to a "On-demand flexible fleet" to facilitate the option of rideshare programs |
| 162 | City of Carlsbad | Mobility Boulevards: a) Request inclusion of the Coast Highway / Carlsbad Boulevard as a Mobility Boulevard. Throughout the Technical Working Group meetings, the City of Carlsbad and Oceanside requested that Coast Highway and Carlsbad Boulevard be included as a "Mobility Boulevard" in the North County CMCP. This primary north-south corridor is the most highly utilized corridor in North County from a multimodal users perspective and most consistent with the definition of a Mobility Boulevard as an alternative path to the state highway system (I-5), has a high potential for higher quality investments for pedestrians, bicyclists, and transit, and connects the subregions primary activity centers in Oceanside, Carlsbad and neighboring cities to the south. |
| 163 | City of Carlsbad | Mobility Boulevards: b) College Boulevard: The recommended active transportation improvements include a Class-IV protected bikeway to Palomar Airport Road. The City of Carlsbad recommends that this be revised to a Class-I facility within the city limits. The city is developing a plan for the extension of College Blvd. between Bobcat Lane and El Camino Real which includes a plan to provide both Class-II bike lanes and a separate Class-I multi-use path along this new alignment. |
| 164 | City of Carlsbad | Mobility Boulevards: c) Palomar Airport Road/San Marcos Boulevard: Recommend a Class-I multi-use path be provided along El Camino Real within the City of Carlsbad instead of the proposed Class-IV protected bikeway due to the high vehicle speeds, wide roadways, and potentially limited visibility of bicyclists at the primary intersections. It is also recommended to provide flexible fleets/OnDemand transit along this corridor as a primary connection from the Poinsettia Coaster Station to the Business Parks along Palomar Airport Road and eventually Cal State San Marcos. Recommend upgrading all intersections through interchange to smart intersections with recommended revisions as explained below. Requesting a proposed multimodal bridge over NCTD rail road right of way and tracks to facilitate adequate space for vehicle lanes, a Class I pathway, sidewalks, and class IV or buffered class II for the highspeed bicyclist including electric bicycles. |
| 165 | City of Carlsbad | Mobility Boulevards: d) El Camino Real: Recommend a Class-I multi-use path be provided along El Camino Real within the City of Carlsbad instead of the proposed Class-IV protected bikeway due to the high vehicle speeds, wide roadways, and potentially limited visibility of bicyclists at the primary intersections. |
| 166 | City of Carlsbad | Regional Spines: a) In the area serviced by North County Transit District (NCTD), fixed route transit ridership declined from 2015 to 2021 and has not returned to the pre-pandemic ridership levels as shown in the below graph included in NCTD's Annual Comprehensive Financial Report For the Fiscal Years Ended June 30, 2022 and 2021. |
| 167 | City of Carlsbad | Regional Spines: b) Interstate 5 (I5) and State Route 78 (SR78) – Recommend prioritizing the NCC improvements and managed lanes on both I5 and SR 78. The new managed lanes would facilitate next gen Rapid (BRT) and Flexible Fleet public transit programs which support Senate Bill 1 Chapter 8.5 Congested Corridors, section 2391. The NCC EIR includes an additional Managed Lane to provide 8 free lanes and 4 managed lanes. |
| 168 | City of Carlsbad | Regional Spines: To implement the flexible fleet programs with minimum delays on the I5 and SR 78 routes, we recommend revising the projects scopes included in this plan and subsequently the Regional Plan to include 8 free lanes and 4 managed lanes on I5, and adding the previously scheduled proposed lanes on SR78 included in the current Transnet Extension Ordinance. |
| 169 | City of Carlsbad | Regional Spines: We recommend moving up the projects priorities to be completed by 2035 which could support the Next Gen Rapid projects and flexible fleet public rideshare transit programs. Recommended priority projects for this corridor include: 1. Completing the I5 and SR 78 multimodal interchange 2. Completing the Village Trench Project 3. Completing additional managed lanes on I5 and SR78 in the Transnet Extension Ordinance. 4. To address the community barrier created by I5 and the current auto-centric on and offramp intersections designed in the 1960s, include in the plan all new multimodal interchanges throughout I5 NCC and North County CMCP with the similar approach used in the Birmingham Drive interchange in the NCC. |
| 170 | City of Carlsbad | 4. To address the community barrier created by I5 and the current auto-centric on and offramp intersections designed in the 1960s, include in the plan all new multimodal interchanges throughout I5 NCC and North County CMCP with the similar approach used in the Birmingham Drive interchange in the NCC. |
| 171 | City of Carlsbad | Regional Spines Cont.: a) A overview of the current trends in our region and many of the recommendations included in this letter are explained in our short presentation to SANDAG Independent Taxpayer Oversight Committee (ITOC) on May 11, 2022 at the following web address - https://www.youtube.com/watch?v=3Cj_qAtqg2M&t=1332s . Please include the related recommendations in the presentation as recommendations in this letter. |
| 172 | City of Carlsbad | Regional Spines Cont.: b) Recommend using program language consistent with SANDAG including the following flexible fleet programs. • Rideshare: Drivers and passengers headed in a similar direction can share the ride in a vehicle. This includes carpool, vanpool, and pooled ride hailing services such as uberPOOL and Lyft Shared. • Microtransit: Multi-passenger shuttles can carry up to 15 passengers and provide rides within a defined service area. This technology-enabled transit service allows users to reserve a ride ahead of time or on-demand. Smaller, all-electric shuttles, also known as neighborhood electric vehicles (NEV), are a form of microtransit that provides a sustainable and convenient solution for short trips around communities. • Ridehailing: On-demand ridehailing services allow someone to request a ride in real time. Services link the passenger with available drivers based on their trip length, number of passengers, origin, and destination. This includes services such as Uber, Lyft, and taxis. |
| 173 | City of Carlsbad | Projects and Programs: a) Delete all reference to flexible lanes on Palomar Airport Road and other arterials in Carlsbad |
| 174 | City of Carlsbad | Projects and Programs: b) Revise Carlsbad Mobility Hubs • NEV Areawide Shuttles to • "Rideshare/Ridesh ailing and Microtransit" |
| 175 | City of Carlsbad | Projects and Programs: c) Recommend all Rapid (BRTs) be revised to routes on I5 and SR 78 as explained in the first comment under Regional Spines |
| 176 | City of Carlsbad | Projects and Programs: d) For all identified - • Upgrade signalized intersections to smart intersections, recommend revise to: Upgrade signalized intersections to smart intersections including Intersection Control Evaluation (ICE). (ICE guidelines shall conform with the California Manual on Uniform Traffic Control Devices (CA MUTCD), Section 4C.01b and 01c regarding intersection control. An engineering study shall include consideration of a roundabout (yield control). If a roundabout is determined to provide a viable and practical solution, it shall be studied in lieu of, or in addition to a traffic control signal. Refer to the California Department of Transportation (Caltrans) website for more information on the Traffic Operations Policy Directive 13-02, Intersection Control Evaluation (ICE), and other resources for the evaluation of intersection traffic control strategies: http://www.dot.ca.gov/hq/traffops/liaisons/ice.html |
| 177 | City of Carlsbad | Projects and Programs: e) Palomar Airport Road/San Marcos Boulevard Corridor Wide Mobility Boulevard Improvements & Enhancements |



Draft North County CMCP Comments

| # | Agency | Comment |
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| 178 | City of Carlsbad | Recommend --a)Upgrading all intersections through interchange to smart intersections with recommended ICE analysis and proposed intersection improvements. Recommend increasing cost estimate \$10 million or per an engineer's estimate of probably cost and revise cost accordingly. |
| 179 | City of Carlsbad | Recommend b)Requesting a proposed multimodal bridge over NCTD rail road right of way and tracks to facilitate adequate space for vehicle lanes, a Class I pathway, sidewalks, and class IV or buffered class II for the highspeed bicyclist including electric bicycles. Recommend increasing budget estimate \$30 million or complete engineer's estimate of probably cost and revise cost accordingly. |
| 180 | City of Carlsbad | Other General Comments: a) Transit Demand Analysis: The expansion of transit throughout the subregion is a key element of the North County CMCP however the analysis provided in Appendix C does not provide any information to support the significant expansion of traditional fixed route transit. To understand how transit can be utilized to improve the ways people travel throughout North County a full demand analysis and supporting market research data should be provided in the document. Appendix R, Travel Patterns, should be similarly structured to understand how the recommended transit services can address the current travel patterns in the subregion. b) Barriers for Active Transportation: Freeways interchanges are among the most significant barriers for active transportation users in the subregion due to the high-speed design features and number of conflict points. In the City of Carlsbad, the I-5 freeway divides the city and disconnects active transportation users between the highly attractive coastal destinations in the west and the residential and business park areas in the eastern portions of the city. The "Gaps and Barriers" section of the CMCP fails to highlight these critical gaps at freeway interchanges. Improvements at the freeway interchanges are under the jurisdiction of Caltrans so the draft CMCP should provide guidance on how these freeway barriers will be overcome with specific project recommendations for active transportation improvements at all freeway interchanges in the city. c) The final North County CMCP should prioritize all remaining and un-finished projects that were identified during the North Corridor Public Works Plan (NC PWP) and seek ways to streamline implementation. d) The draft North County CMCP inventories and assesses existing and future conditions in each city. However, despite previously providing information to SANDAG staff, the assumptions used for "existing" and "planned" land use and transportation in the City of Carlsbad are not consistent with our adopted land use and transportation plans or policies (e.g., forecasted housing and roadway capacities). Predicting the effect of transportation plans or projects on land uses and land use planning is critical to developing context sensitive solutions for transportation projects. Therefore, utilization of the most recent planning assumptions is not only necessary but is required as specifically stated therein Government Code Section 65080. Furthermore, the land use assumptions for "uses, residential densities, and building intensities within the region" (as required by Government Code Section 65080 (b)(2)(B)(i)) should also be the same, as that provided to the State Air Resources Board (as required per Government Code Sections 65080 (b)(2)(H and J) in estimating and analyzing GHG from the RTP and the effect on growth and whether the effects of that growth would be significant in the context of the region's plans, natural setting, and growth patterns. |
| 181 | City of Carlsbad | Other General Comments continued: e) The draft North County CMCP identifies new policies, programs, and projects that were not included in the RTP or the NC PWP. The North County CMCP seems to create a funding requirement for some future activity that is reasonably foreseeable and/or an irrecoverable commitment to specific program or construction project. As of this writing, it is unclear what procedures related to CEQA apply to the adoption of the North County CMCP. If the scope of the North County CMCP is a "project" as defined by CEQA (and NEPA), then the City of Carlsbad will need to be consulted as a Responsible Agency per CEQA Guidelines Section 15096. As such, the Lead Agency (i.e., SANDAG) should consider whether the project is covered by a previous environmental review. To determine whether a project can tier from a certified program EIR, the Lead Agency should consider whether the later project (Public Resources Code Section 21068.5) is consistent with the program for which the original EIR was prepared and certified; is consistent with applicable land use plans and zoning in which the later project would be located; and would not trigger the need for a subsequent or supplemental EIR. In this instant, there would need to be an evaluation of impacts to existing Land Use Plans, and the lack of a reasonable range of alternatives that show what would occur if funding or land use assumptions for the new projects have not been prepared. f) The draft North County CMCP only lists potential projects; it does not show potential alignments, right of way needed or coordination with specific agencies. More information needs to be provided on project implementation phasing (both short-range and long-range improvements), unfunded projects and various funding mechanisms that can bridge the unfunded gaps. g) Carlsbad respectfully requests that SANDAG support the city's service bureau requests as efficiently as possible. Further delays in completion of the regional travel demand model could adversely impact our rezone schedule and jeopardize our ability to timely meet our Housing Element program requirements, thereby potentially placing our HCD housing element certification at risk. Additionally, the city requests that future decisions to update the 2021 Regional Transportation Plan respect the fact that Carlsbad and other local jurisdictions have been waiting on the availability of the regional model for local projects for some time and that further delays could result in additional liability, time, and costs for member agencies. |
| 216 | City of Escondido | Page 103 1.We agree with the concept of proposed bike facilities along Center City Parkway and along Mission, and we recognize that this document is necessarily a high-level planning document and can't possibly get into the constraints that could occur during the engineering phases of projects. That said, we offer caution that a full Class 1 or Class IV facility along Mission may be challenging, particularly at the east end of Mission. In this location, for example, given the speed of the roadway and the lower traffic volumes, and the context of the neighborhood, a Class II facility may be more appropriate. We request that notes be added to the plan to state that the plan is conceptual and further engineering study may support alternative facilities or routes. 2.Please adjust the map so that the east end of Escondido is not cut off. |
| 217 | City of Escondido | Page 105 1.Extension (of Sprinter from) Escondido (Transit Center) to southern Escondido (Phase D) should state to North County Mall - distance should be 3 miles |
| 218 | City of Escondido | Page 106 1.Map should show the existing Route 350 (the only high-frequency route in City) |
| 219 | City of Escondido | Attachment 5 - Early action items for Escondido 1.From our meetings with the team, we understood that the 15/78 Interchange project (NC20), as well as the Valley Parkway Mobility Blvd project (NC13), would be included on the Early Action Items list. Unless we have misread the attachment, that does not appear to be the case. Throughout development of the CMCP, the I-15/SR78 project has been identified as a priority by all committee members along the SR-78 corridor and should be identified in the Early Action List. In addition, we believe that transit demand and the need for improvements as demonstrated by the planned route 471 and the East Valley Specific Plan, that is sure to result in additional density along this corridor, necessitate early action on the Valley Parkway Mobility Blvd that connects Valley Center and surrounding tribal lands with transportation options. In addition, Valley Parkway is a key route for first and last mile connections to transit that are necessary to serve social equity communities of this area. Please modify pages 1 and 2 to include these projects in the Early action bundles, as well as pages 6 and 7. We have attached marked-up pages for your convenience. |
| 102 | City of Oceanside: Public Works Department/Traffic Engineering Division | SR-76: a) Appendix B, Figure 1: Please highlight SR-76 |
| 103 | City of Oceanside: Public Works Department/Traffic Engineering Division | SR-76: b) Attachment 4: In addition to grade separation at SR-76/Douglas and SR-76/College, please provide grade separation at SR-76/Foussat and SR-76/Rancho Del Oro as well |
| 104 | City of Oceanside: Public Works Department/Traffic Engineering Division | SR-76:c) Regional Spine: Please check the box for Segment 1 (El Camino Real to Melrose Drive) for High-Frequency Transit |
| 105 | City of Oceanside: Public Works Department/Traffic Engineering Division | SR-78: Please include the construction of SR-78 and Rancho Del Oro interchange. This interchange needs to be added to the Strategic Anchor: Region Spine section of Attachment 3. This interchange is shown on the City's circulation Element and its construction will help alleviate the congestion on College Boulevard |
| 106 | City of Oceanside: Public Works Department/Traffic Engineering Division | I-5: a) please have the I-5 include full access to California Street |



Draft North County CMCP Comments

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| 107 | City of Oceanside: Public Works Department/Traffic Engineering Division | I-5: b) SR-78 and I-5 Interchange improvements need to be highlighted as a top priority project for North County |
| 108 | City of Oceanside: Public Works Department/Traffic Engineering Division | Sprinter: a) Attachment 3, Proposed Strategies: Of the two suggested railroad track grade separations that are being proposed, City of Oceanside prefers grade separations at College Boulevard and Crouch Street |
| 109 | City of Oceanside: Public Works Department/Traffic Engineering Division | Mission Avenue: a) Please consider providing NCTD FLEX-On-Demand service to hillside neighborhoods (e.g., Marlado Heights neighborhood north of SR-76 between Benet Road and Foussat Road, and the neighborhoods along Rancho Del Oro). |
| 110 | City of Oceanside: Public Works Department/Traffic Engineering Division | Oceanside Boulevard: a) Attachment 4, Plan ID NC03: Under "Descriptions," please include "Provide connectivity to NCTD facilities." |
| 111 | City of Oceanside: Public Works Department/Traffic Engineering Division | Oceanside Boulevard:b) Please place more emphasis on completing the Inland Rail Trail through Oceanside, |
| 112 | City of Oceanside: Public Works Department/Traffic Engineering Division | Oceanside Boulevard: c) Please provide a NCTD FLEX On-Demand service to the Fire Mountain neighborhood (bounded by Oceanside Boulevard, 1-5 and El Camino Real) and the Loma Alta neighborhood (bounded by Oceanside Boulevard, Canyon Drive and El Camino Real) |
| 113 | City of Oceanside: Public Works Department/Traffic Engineering Division | Oceanside Boulevard: d) Please add to the Mobility Boulevard Attachment: i) A micro transit or NEV between the Sprinter Stations and El Corazon Park to Segment 2, El Camino Real to College Boulevard. El Corazon encompasses one of the largest soccer complexes in San Diego County. It has a large aquatics center, a senior center and two mixed-use residential developments with hundreds of units. In addition, construction of the Frontwave Arena, an 8,000-seat sports and entertainment center, is currently under construction with completion anticipated in early 2024. |
| 117 | City of Oceanside: Public Works Department/Traffic Engineering Division | Coastal Rail Trail: a) Please add the Coastal Rail Trail to the Mobility Boulevard. |
| 118 | City of Oceanside: Public Works Department/Traffic Engineering Division | Coastal Rail Trail: b) Please include Loma Alta Bridge to the priority Coastal Rail Trail improvements |
| 119 | City of Oceanside: Public Works Department/Traffic Engineering Division | El Camino Real: a) Please prioritize smart intersection improvements at El Camino Real/Vista Way and El Camino Real/Mission Avenue |
| 120 | City of Oceanside: Public Works Department/Traffic Engineering Division | El Camino Real: b) Please extend the Next Gen 477 rapid bus service through Segment 1 of El Camino Real |
| 121 | City of Oceanside: Public Works Department/Traffic Engineering Division | El Camino Real: c) Please provide a NCTD FLEX On-Demand service to the Fire Mountain neighborhood (bounded by El Camino Real, Vista Way and Oceanside Boulevard), the Henie Hills neighborhood (bounded by El Camino Real, Vista Way and Oceanside Boulevard) and the Oceana neighborhood (bounded by El Camino Real, SR-76 and Mesa Drive. |
| 122 | City of Oceanside: Public Works Department/Traffic Engineering Division | El Camino Real:d) Please add to the Mobility Boulevard Attachment: i) An enhanced bicycle facilities and sidewalk to Segment 1 (Peyri Road to Oceanside Boulevard). |
| 123 | City of Oceanside: Public Works Department/Traffic Engineering Division | Rancho Del Oro: a) Please include Rancho Del Oro as a Mobility Boulevard and acknowledge the need for the SR-78/RDO interchange. |
| 124 | City of Oceanside: Public Works Department/Traffic Engineering Division | College Boulevard: a) Please provide a grade separation at College Boulevard and the Sprinter line |
| 125 | City of Oceanside: Public Works Department/Traffic Engineering Division | College Boulevard: b) Please provide a NCTD FLEX On-Demand service to the Mira Costa neighborhood (bounded by College Boulevard, Vista Way and Cameo Drive). |
| 126 | City of Oceanside: Public Works Department/Traffic Engineering Division | College Boulevard: c) Please add to the Mobility Boulevard Attachment: i) In Segment 1: North River Road to Mesa Drive ii) A grade separation at College Boulevard and SR76 |
| 127 | City of Oceanside: Public Works Department/Traffic Engineering Division | Melrose Drive: a) Please provide grade separated crossings for both the Sprinter and the Inland Rail Trail. |
| 128 | City of Oceanside: Public Works Department/Traffic Engineering Division | Melrose Drive: b) Please provide a NCTD FLEX On-Demand service to the Peacock neighborhood located southwest of Melrose Drive and Oceanside Boulevard. |
| 129 | City of Oceanside: Public Works Department/Traffic Engineering Division | Melrose Drive: c) Strategic Anchor, Mobility Element, Melrose Drive: In Segment 1, there is mention of ten signals, but when counted, there are only nine. Is the Rail Road crossing being counted as a signal too? Please clarify. |
| 130 | City of Oceanside: Public Works Department/Traffic Engineering Division | Melrose Drive: d) Please check Mobility Boulevard Attachment: i) Segment 1, on the key map, what is labeled as "River Rd to Olive Ave" actually shows "North Santa Fe Avenue to Olive Avenue." |
| 131 | City of Oceanside: Public Works Department/Traffic Engineering Division | North Santa Fe Avenue: a) Please add North Santa Fe Avenue to the Mobility Boulevard Attachment: i) Please check the Segment 1 box for "Upgrade and development to Inland Rail Trail and Trailheads." North Santa Fe Avenue is a major corridor leading to the Inland Rail Trail/San Luis Rey River Trail. ii) Please add sidewalk improvements on the east side of North Santa Fe between SR-76 and Champlain Street. This will provide access to Guajome Regional Park. |



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| 132 | City of Oceanside: Public Works Department/Traffic Engineering Division | Vista Way: a) Vista Way west from 1-5 to Broadway Street is not included with the Mobility Boulevard-Vista Way study. We believe it should be included, specifically, in the context of reconstruction of the I-5/SR78/Nista Way interchange. The nearest connection, from west of 1-5 to east of 1-5, that does not go through residential neighborhoods, is Oceanside Boulevard. Currently, making the connection between the two segments of Vista Way, drivers must get on SR-78 and exit at Jefferson Street. Also, there are no pedestrian or bike accesses at this crossing, which need to be constructed as part of the interchange improvements. |
| 133 | City of Oceanside: Public Works Department/Traffic Engineering Division | General Comments: a) Please include Rancho Del Oro Road/SR-78 interchange in the North County CMCP. |
| 134 | City of Oceanside: Public Works Department/Traffic Engineering Division | General Comments: b) Appendix N: The volumes are based on 2016 counts and are seven years old. Is there a plan to collect more recent traffic volume counts? |
| 135 | City of Oceanside: Public Works Department/Traffic Engineering Division | General Comments: c) There are many references to "River Road." This specific road is not found anywhere. Should the referenced name be "North River Road?" Please make the road name correction throughout the draft report. Example locations where this is mentioned are: i) Strategic Anchor, Regional Spine, State Route 76 ii) Strategic Anchor, Mobility Boulevard, Melrose Drive |
| 136 | City of Oceanside: Public Works Department/Traffic Engineering Division | General Comments: d) Please consider using another color for check marks in the boxes other than yellow. Yellow is hard to see when printed. |
| 137 | City of Oceanside: Public Works Department/Traffic Engineering Division | General Comments: e) Strategic Anchor, Mobility Hubs, Bikeways: It is noted, "upgrade rail trail facilities to allow shared use with NEVs." Where has this been done and is this expected to be implemented? Shouldn't bike/walking paths be separated from vehicles? |
| 138 | City of Oceanside: Public Works Department/Traffic Engineering Division | General Comments: f) Early Action, Inland to Coast: Example "NC45," what is "SPRINTER Electrification?" |
| 139 | City of Oceanside: Public Works Department/Traffic Engineering Division | General Comments: g) Early Action, Inland to Coast: Along with "grade separation," please include signal interconnect communication between the closest traffic signal and the railroad crossing. |
| 140 | City of Oceanside: Public Works Department/Traffic Engineering Division | General Comments: h) Traffic calming devices were mentioned as part of the Mobility Boulevard study. What type of traffic calming devices are proposed for collector roads? |
| 182 | City of San Marcos | General: There are quite a few attachments and appendices. Ensure all references are hyperlinked in the final on line text for ease of use. |
| 183 | City of San Marcos | CMCP page 13: Local Initiatives: The City of San Marcos ATP currently underway should be listed together with the current mobility efforts the jurisdictions are bringing forward. |
| 184 | City of San Marcos | CMCP Page 72: Figure 3-16: Confluence of Barriers in San Marcos: A University District Specific Plan Amendment was last adopted in 2022 and resulted in a different street alignment for the UDSP area west of Twin Oaks Valley Road. In addition, the amendment closed to vehicular access segments of Mid City Lane on the east side of Twin Oaks Valley Road. Further, the footprint of the UDSP grew as additional property on the east side was incorporated. Please update the overlay in the image to match the current street alignment in the UDSP. |
| 185 | City of San Marcos | CMCP page 99: Figure 5-2: Strategy Layers: Consider including some form of this explanatory graphic directly into each attachment that uses these symbols. |
| 186 | City of San Marcos | CMCP page 101: Regional "smart" Highway Capacity Management: Graphic appears to show a direct access lane at San Marcos Blvd. Text in the attachments refers to a direct access lane at Twin Oaks Valley Road. Please clarify. See also comment below about direct access ramp locations. |
| 187 | City of San Marcos | CMCP page 103: Active Transportation Network: Graphic shows Class IV bike facilities on San Marcos Blvd. Note that Class IV facilities are likely incompatible with existing right-of-way, development, and the proposed local access vehicular lane on portions of San Marcos Boulevard (multi-way). |
| 188 | City of San Marcos | CMCP page 104: Reconnecting Communities: Scale of graphic is illegible for purposes of determining which locations are targeted by this strategy. Suggest creating multiple graphics at a scale where the areas targeted by this strategy can be discerned. |
| 189 | City of San Marcos | CMCP page 105: Sprinter: Scale of graphic is illegible for purposes of determining which locations are targeted by this strategy. Suggest creating multiple graphics at a scale where the areas targeted by this strategy can be discerned. Suggest also referen cing detailed sheets in the attachments that may supplement this graphic to make it clear where the improvements might be located. |
| 190 | City of San Marcos | Attachment 3: Regional Spine Sheets: Sprinter Improvements Track Map: Adjustcolor-codingof Phase A, B, C, D to match the segment colors on the preceding page, "Regional Spine Context Map". Phase A is shown as influencing the Oceanside mobility hub- please confirm accuracy. |
| 191 | City of San Marcos | Attachment 4 NC16: Mobility Hub: San Marcos Suite of Improvements: Intra-City shuttle connecting CSUSM with SPRINTER and other key locations: Expanded connectivity should be considered to align with the San Marcos General Plan and to optimize the utility of the shuttle. The shuttle system could connect the city's core activity centers, retail, and recreational destinations including Palomar Community College, the San Marcos Creek District, the University District, California State University San Marcos, and the Civic Center. Refer to General Plan Figure 3-3. |
| 192 | City of San Marcos | Attachment 4 NC19: Mobility hub: Palomar Airport Road/Carlsbad Business Park Suite of Improvements: Carlsbad Business Park: On-Demand Shuttle connecting Poinsettia Station to Palomar Airport Rd: Consider extending on-demand shuttle service to the east along San Marcos Blvd. to Las Posas in order to serve the new housing projects proposed on both sides of San Marcos Blvd. between Mc Mahr and Via Vera Cruz as well as Breeze routes 347 and 445. |
| 193 | City of San Marcos | Attachment 4 NC25: SR 78 Operational Improvements and Managed Lanes: Direct Access ramps: Direct access ramps would introduce additional traffic conflicts on San Marcos Blvd. and Twin Oaks Valley Road, further divide communities, and significantly impact productive commercial properties. Additional analysis should be done along the corridor to determine appropriate locations and impacts. |
| 194 | City of San Marcos | Attachment 4 NC27: North County Roundabout Programs: In Mobility hub areas; 20 intersection conversions across the study area: Please advise where additional information about the 20 intersections identified for study and potential conversion to roundabouts are listed |
| 195 | City of San Marcos | Attachment 4 NC44: Sprinter Grade Separations: Grade Separations at: El Camino Real, Melrose Drive, Vista Village Drive/Main Street, North Drive, Civic Center, Auto Parkway: Locations listed are those planned in the 2021 Regional Plan. Add the Proposed CMCP Grade Separations: York Drive, Buena Creek Road, and Pacific Street. |
| 196 | City of San Marcos | Attachment 5: Early Action Bundles: Early Action: Mobility Gateway: Consider incorporating pedestrian and bicycle oriented improvements to the San Marcos Blvd. underpass at SR-78 as a part of the early action bundle. Doing so will connect the mobility hub across the SR-78, reconnecting the community and enhancing travel through San Marcos Blvd. |
| 197 | City of San Marcos | Appendix F: Land Use Patterns: The document considers the acreage within a half mile radius of Sprinter and transit stops. Consider offering a calculation of the acreage within a half mile specifically of a high-quality transit stop today, and how that number will change with the implementation of increased service proposed by the CMCP (thereby making an increased number of transit stops meet the "high-quality" standard). |
| 198 | City of San Marcos | Appendix M: Safety Analysis: The report details collision data for pedestrians and bicyclists and aims for improvements and programs to reduce conflicts through traffic calming, restricting right turns on red signal, and other measures. Consider a bold "Vision Zero" statement for the region to significantly improve walking and biking safety. Consider scramble crosswalks at appropriate locations where pedestrian traffic is significant and should be prioritized. |
| 203 | County of San Diego | CMCP impacts that could have potentially significant adverse effects to the unincorporated county or County facilities should be evaluated using the County's Guidelines for Determining Significance. These guidelines are available online at: http://www.sandiegocounty.gov/pds/procguid.html . |



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| 204 | County of San Diego | Local Initiatives (pg 22) a) The plan should take into consideration and reference the County's 2018 Active Transportation Plan (ATP). The ATP can be found at this link: https://www.sandiegocounty.gov/content/dam/sdc/pds/advance/activetransportationplan/FinalATPOctober2018.pdf . b) Certain appendices to the County's ATP may be helpful to reference in prioritizing projects to implement the NCCMCP: Appendix A in the link below contains Level of Traffic Stress (LTS) maps for bicycle facilities, based on the pre-2018 (ATP adoption) Mobility Element Network and based on the Mobility Element Network as updated with the ATP. Maps covering areas within the NCCMCP geographic scope include Bonsall (maps on pages 5 and 6 of the PDF page counter), Fallbrook (maps on pages 15 and 18 of the PDF page counter), North County Metro (maps on pages 27-28 of the PDF page counter), and San Diego (maps on pages 41-42 of the PDF page counter). Appendix A_wDraftFinalCover.pdf (sandiegocounty.gov). Appendix B: ATP Toolbox, providing guidance for planning and design of active transportation improvements. The guidance is based on types of improvements in relation to Mobility Element Network classifications and is not set up with individualized guidance by community/subregional plan area. AppendixB.pdf (sandiegocounty.gov) |
| 205 | County of San Diego | Section 5: Mobility Assessment: a) active transportation: The map showing planned Class I and Class IV bicycle facilities is not the most current. The current County General Plan Mobility Element Network can be found at the link below. https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/GP/MobilityNetworkAppendix_2022.pdf . Maps and tables covering areas within the NCCMCP geographic scope include the Bonsall Mobility Element Network (Figure M-A-2 on page 7 of the PDF page counter and corresponding table on pages M-A-7 through M-A-9 [pages 8-10 in the PDF page counter]), the Fallbrook Mobility Element Network (Figure M-A-7 on page 23 of the PDF page counter and corresponding table on pages M-A-23 through M-A-26 [pages 24-27 in the PDF page counter]), the North County Metro Mobility Element Network (Figure M-A-12 on page 43 of the PDF page counter and corresponding table on pages M-A-43 through M-A-47 [pages 44-48 in the PDF page counter]), and the San Diego Metro Mobility Element Network (Figure M-A-19 on page 65 of the PDF page counter and corresponding table on pages M-A-65 through M-A-67 [pages 66-68 in the PDF page counter]). The CMCP should include bike facilities planned in the County's Mobility Element Network (i.e. Class IV Bike Facilities). |
| 206 | County of San Diego | Section 5: Mobility Assessment: b) Sprinter: The County is currently analyzing potential for Transit Oriented Development near the Buena Creek Sprinter Station in the North County Metro Planning Area. This is the only rail station in the unincorporated area, this is a significant opportunity of funding for rail projects in the County. The County Planning and Development Services Department (PDS) will be beginning a project in Spring 2023 known as the "Community-Based Transportation Program", which will conduct outreach to understand the mobility needs of the stakeholders in the area near the Sprinter Station. As this project is partly funded through a SANDAG Smart Growth Incentive Program (SGIP) Cycle 5 grant, the County will need to collaborate with SANDAG to meet the transportation goals for the Station, the area, and the region. |
| 207 | County of San Diego | Section 5: Mobility Assessment: c) High Frequency core, rapid, & commuter services: The County supports the recommendation to provide flex/micro transit service along Twin Oaks Valley Road with flex service zone between Buena Creek Road and Wild Canyon Drive. Consideration should be given to provide flex/micro transit service within the Buena Creek Road/Deer Springs Road corridor, which would improve east-west transportation options between the County's General Plan Villages of North County Metro North (in the vicinity of the Buena Creek Road/South Santa Fe Avenue intersection) and Hidden Meadows (in the vicinity of the Mountain Meadow Road and Meadow Glen Way intersection, just east of the North County CMCP study area). The County's current Mobility Element Network, this corridor is planned for widening/adding lanes to handle additional capacity anticipated with General Plan buildout. The Mobility Element Network classifications (planned buildout) for the corridor are a combination of 4.1B Major Road and 6.2 Prime Arterial |
| 208 | County of San Diego | Parks and Recreation: Use the County Trails Master Plan as a planning and reference document, Consider a multi-purpose trails and pathways for pedestrians, cyclists, equestrians in some areas, Coordinate with County DPR and DPR community stakeholders to incorporate safe multi-use crossings associated with County trail and/or park access such as crossings, bridges or overpasses for recreational use for areas nearby existing or potential future trail connections/trailheads, Coordinate with County DPR and DPR community stakeholders to ensure wildlife connectivity is maintained from adjacent lands to preserved County lands, including wildlife-only crossings, Coordinate with County DPR and DPR community stakeholders to ensure regional trail connectivity and connections to County DPR facilities, specifically for San Luis Rey River Trail Extension, Coordinate with DPR on any DPR managed facilities and associated land impacts, including stormwater runoff, transportation, road closures or delays, vegetation plans and public access: Guajome County Park, San Luis Rey River Park, Gopher Canyon County Preserve, Diamond Trail County Preserve, Escondido Creek County Preserve, Sage Hill County Preserve, Del Dios Highlands County Preserve, Val Serano County Preserve, Santa Fe Valley County Preserve, Bottle Peak County Preserve |
| 209 | County of San Diego | Public Works: Transportation/Traffic: 1) CMCP should recommend that prior to any increase in service frequency and/or double tracking improvements, the Sprinter grade separation improvements should be completed to minimize impacts to daily traffic operations along local arterials that traverse the sprinter rail line(s) corridor. The Sprinter Station at Buena Creek Road is the only transit station located within the unincorporated area and the current single Sprinter line presents challenges to traffic operations along Buena Creek Road and South Santa Fe Avenue at the crossing locations |
| 210 | County of San Diego | Public Works: Transportation/Traffic: 2) County roads such as Deer Springs Road, Buena Creek Road, and South Santa Fe Avenue should be recognized as Major Arterials and Mobility Boulevards located within the NC CMCP area because of the parallel routes and connectivity that these roads provide for SR-78 and I-15. Improving traffic flow and increasing safety for all road users along these Major Arterial routes should be a regional and NC CMCP priority. These Major Arterials located within the unincorporated area experience heavy use from regional traffic diverted from the congested SR-78 and I-15 freeway facilities especially during morning and evening peak traffic periods. |
| 211 | County of San Diego | Public Works: Transportation/Traffic: 3) The County supports improvements that increase traffic flow efficiency and safety along County maintained roadway facilities for all road users while remaining consistent with the County's Public Road Standards. |
| 212 | County of San Diego | Public Works: Transportation/Traffic: 4) The NC CMCP should recommend improvements to Park-n-Ride lots located at the SR-78 and I-15 interchanges to encourage carpooling and transit use. Sufficient parking spaces and ample security should be prioritized for planned Park-n-Ride lots enhancements. |
| 199 | North County Transit District | the CMCP more comprehensively consider BREEZE bus routes as part of the transportation network. For example, on page 69 the CMCP states: "NCTD's SPRINTER alignment encourages rail trips between adjacent communities (e.g., Vista to Oceanside, Escondido to San Marcos) and growing employment centers (e.g., CSU San Marcos, western Escondido). However, the alignment does not facilitate trips to current major employment centers (e.g., Camp Pendleton, Carlsbad/Vista Business Parks) making SPRINTER less of a regional commuter alternative for these trip destinations." This negates the service provided by various BREEZE routes such as 315 and 445. |
| 200 | North County Transit District | page 105, recommend that the following language be included: "Double-Track the SPRINTER corridor to the maximum extent possible to provide resiliency, operational flexibility and maximize reductions in headway times." |
| 201 | North County Transit District | page 144, Action Area A4 expand language to provide recommendations that specifically allow for increased BREEZE services to address SPRINTER Station accessibility and close the first mile/last mile gap |
| 202 | North County Transit District | page 145, BREEZE is noticeably missing from the language in the document. It is strongly recommended that funds be allocated to also improve BREEZE service levels and capabilities. |
| 89 | Oceanside Bicycle and Pedestrian Committee | The Committee supports the CMCP's multi-modal focus and believes this is critical in order to reduce VMT and help address the climate crisis, in addition to addressing mobility challenges and gaps. |
| 90 | Oceanside Bicycle and Pedestrian Committee | Phase 1 of the Phasing Plan calls for investments in "3 - 5 protected bicycle corridors (i.e. Inland Rail Trail, Coastal Rail Trail, Escondido Creek Trail)." We recommend the Plan more emphatically call for "Completion of the Oceanside Segments of the Inland and Coastal Rail Trails. |
| 91 | Oceanside Bicycle and Pedestrian Committee | The City of Oceanside is currently pursuing two key grants with regard to the Coastal and Inland Rail Trails - one to complete final design and construction of the Coastal Rail Trail segment between Oceanside Blvd. and Morse, and the other to conduct an alignment study and Project Study Report for completion of the Inland Rail Trail segment in Oceanside. We respectfully request that Caltrans and SANDAG grant application reviewers carefully consider the importance the CMCP places on completion of these bicycle facilities in providing improved regional mobility and interconnections between communities. |
| 92 | Oceanside Bicycle and Pedestrian Committee | The Plan is correct in pointing out that better connections are needed between the Inland Rail Trail and major destinations, as noted on page 103. Completion of the IRT will help address this. Additional Class II and Class IV bike lanes and signage should be recommended to further improve these connections. |
| 93 | Oceanside Bicycle and Pedestrian Committee | We recommend the Plan incorporate Oceanside's "Smart and Sustainable Corridors Plan (SSCP)" and the Coast Highway Corridor Plan into the "Complete Corridors" section of the CMCP, and include bicycling and pedestrian improvements for Oceanside Blvd, Mission Avenue, Vista Way, and Coast Highway, as noted in Table 5-2 (Quality Investments for Mobility Boulevards) of the Plan. It should be noted that, even with completion of the IRT, Oceanside Blvd. will continue to be an important cycling route for completion of cyclists' trips, and needs to be improved for the safety and comfort/ease of use by cyclists. |
| 94 | Oceanside Bicycle and Pedestrian Committee | Also, the Coast Highway Corridor Plan's roadway redesign features a "road diet", reducing the number of lanes from 4 to 3, between the arterials, and from 4 to 1, at the new roundabouts. This provides more room for biking and walking. The Coast Highway Corridor Plan's incentive zone will allow for more density, increased height, and less parking. Oceanside has recently secured funding for detailed design, from SR 76 to Wisconsin. Funding its construction would be an excellent choice for a SANDAG Smart Growth Incentive Fund grant |



Draft North County CMCP Comments

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| 95 | Oceanside Bicycle and Pedestrian Committee | The Mobility Hub discussion (page 40) should include specifics on the importance of the transit centers that anchor each one, the mobility hub features they should include, and should state that the transit centers should be highly-visible and attractive parts of the communities they serve. |
| 96 | Oceanside Bicycle and Pedestrian Committee | The Plan devotes very little to station parking, just stating that it is a constraint on SPRINTER ridership. The Plan should call for managed parking systems with properly priced parking that encourage alternative modes rather than just continuing the unfortunate practice of "free parking", which only contributes to further greenhouse gases and VMT. For the Oceanside Transit Center Redevelopment Project (currently going through City review), we submitted detailed comments to the NCTD and Toll Brothers on car parking systems that would maximize fairness to those who would prefer to drive less, thus reducing VMT. The latest CARB Scoping Plan, especially its Appendix E, makes it clear that California can't achieve its climate mandates without pricing parking. |
| 97 | Oceanside Bicycle and Pedestrian Committee | The Plan makes no mention of Road User Charges, despite the fact that, with declining sales tax revenues from gasoline sales, insufficient funding will be generated to support transportation infrastructure. The Plan should discuss Road User Charges and support them to replace (not add to) taxes on gasoline. Attached is the Oceanside Bicycle and Pedestrian Committee's Resolution on Road User Charges. The latest CARB Scoping Plan recommends RUC implementation by 2025, instead of the previous understanding that it would start in 2030. |
| 98 | Oceanside Bicycle and Pedestrian Committee | The rapid expansion of cycling, and in particular, e-bikes, has demonstrated the need for comprehensive bicycle safety training for all levels of users, including youth as well as adults. The Committee strongly supports use of public roads for cycling, when the roads meet current safety standards and are properly maintained. But it is also important that educational resources be made available to ensure cyclists ride safely. Classes should be taught by League (League of American Bicyclists) Certified Instructors (LCI). Data should be collected to determine if these classes are a cost-effective way to reduce VMT. If so, they should be scaled up by paying a living wage to instructors and paying students that graduate. |
| 99 | Oceanside Bicycle and Pedestrian Committee | (1) California's current road-use fees (our gas tax, our toll roads and our bridge-use tolls) do not currently cover the full cost of operating and maintaining roads, and gas tax revenues are projected to further decrease as vehicles become more efficient and/or electric powered; (2) having the full cost of motor vehicle road use hidden from users decreases incentives to bicycling and walking, thereby increasing driving and thus adding significantly to air pollution, congestion, sprawl, and GHG emissions; (3) an assessment conducted by the California Transportation Commission (CTC) found that 58 percent of our state's roads are in need of maintenance, 20 percent of our bridges need major or preventative maintenance, and 6 percent of our bridges require replacement; (4) roads and bridges are our most important cycling infrastructure; and (5) a RUC has been shown to be feasible by the CTC; and finally, |
| 100 | Oceanside Bicycle and Pedestrian Committee | (1) our gas tax is our most significant road-use fee; (2) state-mandated increases in battery-electric vehicles will reduce gas-tax revenue; (3) a gas tax is inherently regressive because low-income drivers tend to drive older cars, less fuel-efficient cars; and (4) a gas tax does not account for time, place, driver income, vehicle weight, vehicle pollution level, or instantaneous roadway congestion |
| 101 | Oceanside Bicycle and Pedestrian Committee | The Oceanside Bicycle and Pedestrian Committee supports replacing the state gas tax with a road-use charge (RUC) pricing and payout system that (1) would cover all road-use costs; (2) would protect the economic interests of low- and middle-income drivers by use of a progressive price structure that also recognizes the need of rural drivers; (3) would protect privacy by requiring a search warrant to obtain location or travel information and has built in safeguards against unauthorized data use; (4) would include an instantaneous congestion pricing-algorithm; (5) would ensure that the per-mile price incentive to drive energy-efficient cars would still be sufficient to support necessary fleet electrification; (6) would ensure that cyclists and pedestrians are not charged under the system, given that they contribute no emissions or wear-and-tear on the road system, and they help alleviate congestion |
| 1 | Public | How can I comment when you do not give any details also please stop trying to force us onto buses and trains, we are in construction and need our vehicles and we don't need to pay any more money in fees or taxes our gas taxes are already the highest you people are trying to tax us to death I have lived in California my whole life 58 years and am seriously thinking of leaving this state good luck when all the tax payers leave and you have no one to collect money from . Please spend the taxes we have paid into what it was supposed to pay for route 78 !!! |
| 2 | Public | Finish the projects that were promised years ago with the tax raise. Freeway 78 improvements. Interstate 5 & 78 interchange. The new stuff has nothing on getting to work by 7am on camp Pendleton. Also no transportation after 10 pm to get home from anywhere. Need roads. |
| 3 | Public | Yes, I would like to provide input on next steps for the Project Team. 1) Why isn't light rail being expanded north south into vista, oceanside and Carlsbad. Why was the plan for the sprinter extension along Palomar airport road eliminated? I'm not sold on BRT as it not much more efficient than the regular bus system. For BRT to be successful, it has to be grade separated from regular traffic and run frequently. The issue with the sprinter is that it doesn't go to any major employment centers. We have been waiting for over 40 years for improvements at the 78/5 interchange which is very dangerous. I'm not sold on this comprehensive north county plan and if I had to vote on the or on another Transnet tax increase to fund these projects, I would vote no. You all don't listen to the public |
| 4 | Public | I'm happy to see some focus on improving the sprinter, it has so much potential! it would be nice to see some study of overhead electrification for the line. Bus Rapid Transit is sorely needed in North County, and it's good to see that included in the plan. however, there are still a lot of funds set aside for highway expansion which does not match well with the regions climate goals. we should be cautious investing in such polluting and expensive infrastructure that ultimately incurs much higher maintenance costs for the region than mass transit options. thanks! |
| 5 | Public | Highway 78 does not have enough space nor lanes for a carpool lane. This will further create a huge traffic jam on this highway; which will spill into frontage roads and even residential. Perhaps the plan to stop developing in overdeveloped areas is a place to start. We are burdened with inflation, now a toll? It does not make sense. |
| 6 | Public | We need safe bike pathways in the corridors, such as, along the 5,76 and 78 for commuting by bike. |
| 7 | Public | The parking facilities at Sprinter stations require some minimum security. I would definitely use the sprinter more often if there was security at the parking lots. |
| 8 | Public | Interesting I can't find Appendix Y...Funding ABSOLUTELY DO NOT RAISE OUR TAXES for this plan!!!! ABSOLUTELY DO NOT IMPLEMENT A MILEAGE TAX for this plan!!! We in San Diego County and the State of California are being TAXED TO DEATH!!!! You politicians have no clue how you hurt those you pledged to help. |
| 9 | Public | All I see in plans for us around north county has to do with bicycles or buses how about making the 76 and actual highway how about making sure traffic lights work together we are not a small city I'm not taking the bus or a bicycle so if you want to help us stop with this nonsense |
| 10 | Public | As long as your public transit stations are inundated/surrounded by drug addicts and mentally ill street people, ALL OF THIS is a pointless waste of money. Lack of safety in public transportation is why I will never allow my family to use it. End of story. |
| 11 | Public | Somebody needs to stop smoking crack, and fix the roads like you've promised multiple times. This is totally pie in the sky, most people don't want to ride in a mobile homeless shelter. |
| 12 | Public | First a comment on the executive summary: on p. 3, "What is in the North County CMCP?" it notes \$420M budgeted for Flexible Fleets; but nowhere else in the exec. summary is implementation of flexible fleets provided. It can and should be, on p. 5, Challenges, and Opportunities; on p. 6, Mobility Framework and Solution (provide a specific "strategy layer"); on p. 7 (add a flexible fleets rectangle); on p. 8, "Implementation"; on p. 9, add as an "early action bundle" item; and as a specific service addition piece on pp. 11 and 12. Flexible fleets is a vital piece of the transportation access puzzle, clearly needs to be emphasized as providing that crucial first/last 5 mile access within e.g. mobility hubs, and into the regional transit system. |
| 13 | Public | every effort to create a contiguous, segregated bike lane/path from oceanside beach through Carlsbad would be appreciated! (and enhance community, healthy lifestyle, and value) |
| 14 | Public | In the Interactive GIS Map: Please confirm identification of flexible fleets implementation in the Mobility Hubs (MHs): e.g. Oceanside, NEV shuttles, E Bike grants, NEV connector program; and similar with the other MHs - Vista, Carlsbad, Escondido, San Marcos, Carlsbad Village, and Palomar Airport. Thank you for these flexible fleets items! |
| 15 | Public | Re: the Interactive Map: Can this map show a layer of North County employment centers? So that it can be seen how mobility hubs relate to employment centers; and how CMCP improvements create improved employment and customer access to employment/business centers. |
| 16 | Public | No one I know including myself wants more TSA. People in Oceanside, walk or drive to work. I see empty trains going by all the time. Waste of our tax money. Use our money to repair streets with CONCRETE instead of patch every year. Improve traffic lights and safety areas for bicycles and walkers. |
| 17 | Public | The most important part in my opinion of this plan is the improvements of the I-78 and I-5 Junction and the Interstate 15 and 78 Junction. These should be your top priority and it is my opinion they are the greatest traffic snafus in the north county except for the overdevelopment. We must face facts. We cannot sustain the development in Southern California anymore there's no water. Mass transit has always been second fiddle to the automobile in California and always will be reducing traffic congestion should be a top priority. Restrictions on development until new water sources are found are imperative. Thank you. |



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| 18 | Public | I believe Sandag should be dissolved. They do NOTHING but pilfer money from taxpayers and even their own members have no say in how they steal the taxpayers money. We need to give a voice back to the voters. And while I'm here, let's ask the board members "how many of you took the bus into work today? How many of you took the bus to get groceries or to soccer practice?? WAKE UP. Your plan is ill conceived. |
| 19 | Public | I highly recommend that SANDAG be DISBANED. They don't care about the people, only their own agenda. That's why they pick and choose who sits on the panel. They don't want opinions different than theirs. Sounds like a Dictatorship. Anything they try to pass or informed on the people needs to be put on the ballot for us to vote on. DISBAN SANDAG NOW! |
| 20 | Public | People who ride transportation need closnes home food church seniors rely heavy on trolleys buses Already we feel there is no one for the seniors!!!! |
| 21 | Public | Please prioritize finishing the Inland Sprinter rail trail all the way to Oceanside, extend the Sprinter line to North County Fair, speedup and shorten travel time on Sprinter between Escondido and Oceanside, more Express buses between Escondido transit center and downtown San Diego. |
| 22 | Public | This plan makes no sense to improve transit in the area. It is a waste of taxpayer dollars and will make traffic worse. |
| 23 | Public | Make a correction on draft p. 33: text says "Low-income households currently make up 28% of the total population," but the adjacent graphic says 19.5% |
| 24 | Public | draft p. 44, the listing of destinations under "North County Travel Patterns" is confusing in labeling destinations; e.g. rather than saying "Coastal San Diego," which implies City of San Diego only, say something like "Regional Coastal Communities" and maybe in parentheses, list the cities; same for the other labels |
| 25 | Public | Draft p. 104, description of "Reconnecting Communities" – graphic shows geographic location/alignment of improvements, but all seem to be on SR78, the Sprinter rail line, and I-5; but nothing along the proposed rapid service BRT lines, p. 106, items A, B, D, E, F and H. Why? Should not the BRT routes also have "reconnecting communities" improvements to speed BRT service? |
| 26 | Public | Draft p. 106, "High Frequency Core, Rapid, & Commuter Services" – the example projects appear to be good to speed BRT service, including direct access ramps and transit bypass lanes; but these do not appear to include exclusive BRT travel ways (fully separated from private auto travel). Why? Would not exclusive travel ways substantially speed service/reduce travel time for BRT, esp. combined with "reconnecting communities" work along these routes and with the TSMO/ICM items which are planned? |
| 27 | Public | Draft p. 108, "MOBILITY AS A SERVICE" – Please explicitly include/identify microtransit as an important MAAS element; it appears that "NEV Services, Shuttles (e.g., 'gO'side') is microtransit, if so, please label so. And to this page, please explicitly note that MAAS is a crucial component of SANDAG's "flexible fleets" big move item. |
| 28 | Public | Draft p. 136, "Phasing Approach" – I do not see included establishing flexible fleets/microtransit services in the listed mobility hubs; please include. The graphic under "Leveraging ongoing efforts in the corridor" shows existing services; there are existing microtransit services in North County, please include in this graphic. |
| 29 | Public | Draft p. 137 – again, explicitly include community-level microtransit and flexible fleets among "early action" items. |
| 30 | Public | Draft Chapter 7 – THANK YOU for identifying and prioritizing flexible fleets/micromobility as an early action investment item, A2. |
| 31 | Public | I did not see availability of the appendices, but assume that as needed they will be amended per comments received and changes made in the full CMCP report. |
| 32 | Public | Draft p. 124 – THANK YOU for including funding for micromobility services! |
| 33 | Public | When will the appendices and attachments be available to review? I would especially like to see Appendix W, Isochrone Methodology and Analysis-Proposed Condition (2050) |
| 34 | Public | Both the frequency and speed of BRT services after implementation will be crucial to success of this plan. Is there available an analysis and/or exhibit showing the speed of end-to-end service of each of the BRT routes? Is there available a listing of the times and frequency of service of these routes? |
| 35 | Public | I greatly object to any mileage tax SANDAG might impose on drivers! You promised to spend great funds on our freeways, and have fallen short. No mileage tax. |
| 36 | Public | I feel that there is too much emphasis on mass transit and bicycles. Ridership on mass transit already does not support the system. We need to put more emphasis on improvements for motor vehicles because that is what the people want. They want to traffic to flow. Bike paths are great for recreational riding, but bicycles should not be prioritized over motor vehicles. SANDAG needs a reality check. |
| 37 | Public | The transit system that Sandag has decided for San Diego and counties that this is best for the population is ridiculous. It will not work. There are too many obstacles. Sandag does not care, all it wants more money from the people, because people will continue on driving due to the distance of where they live to go to work, shopping, doctor's visits, dropping off kids at school, school activities. How about our seniors and disabled people. Like I have stated, Sandag does not care about the people. |
| 38 | Public | Please continue to include bike paths, lanes and pathways with trails. We need to be able to safely transport without vehicles! |
| 39 | Public | It seems like a good draft and I will be interested to read the final draft, as well. A few points I would like to make. Even though many companies are requiring their employees to return to their offices, I believe that more companies should give the option of working from home. They should come up with ways to measure productivity if that is a concern. Certainly some employees did take unfair advantage of being at home, not working as diligently, but the majority of employees did well. That would help ease the amount of traffic on San Diego roads. If you are going to increase mass transit, include basic services at each station. People need dry cleaners and grocery stores often during the week and having it readily available where the train stops would make driving a car to work less critical and riding a train more attractive. And make the fares affordable or there will be even less incentive to use mass transit. Provide a secure environment both at the stations and on the trains. Thanks for being willing to listen! Donna Meyer Escondido, CA |
| 40 | Public | We don't want your 15 minute cities. https://www.facebook.com/1176700807/posts/pfbid02iPYuQ742nQLpN6JMaDh2J9rafz5tPKZmpnBBJ1oNzJNhAmnr1Gojng9Vfw1cl/?mbextid=cr9u03 Climate change is a LIE. Does that make me one of the "barriers" you will be addressing? |
| 41 | Public | I'm concerned about the significant increase in engineers, blowing their horns at all hours of the night on a regular basis. I do not live right next to a crossing and there's no reason for them to be laying on their horn in the middle of the night. It is a habit not a necessity. I would like to see quiet hours, or even better no horn zones like Oceanside has where there are no train horns allowed. How can we do this? I live in Carlsbad and it's really interfering with my health because of the interrupted sleep because of the very loud and persistent train horns. Very frustrating. |
| 42 | Public | I'm in a mobile home Park in North County. It would be such a help to many in our complex to have better access to public transportation. The closest bus stop is perhaps 2 miles away. |
| 43 | Public | Don't change a thing...stop wasteful spending and overtaxing. The constant barrage of controlling policies, high taxes and fees in addition to over inflation and greed are what is driving people out of this state. Please leave North county alone. We like not having toll roads and would prefer to sit in traffic than fund any more backwards policies. Thank you for listening and I hope you take this to heart. |
| 44 | Public | Greetings, Three is No component for public art in this plan. Why is that? Steve Dilley |
| 45 | Public | Chatter on local Poway Facebook page noted that no reference made to include Poway. Is this because the plan addresses the '78' corridor or is the another reason(s)? |
| 46 | Public | We want to drive cars. Plan for that. |
| 47 | Public | NO MILAGE TAX!!!! Please invest in traffic flow-cars-north county |
| 48 | Public | No, it does little to lighten the burden of North County communities. You have faved to add lanes to the 15N corridor instead we get a mess of traffic to create a smoother ride. I'd prefer a bumpy ride that at least goes the speed limit to a smooth stop and go ride on the freeway. |



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| 49 | Public | There's really needs to be a more accessible route between HWY 76 and the 78 freeway -or from north Oceanside to the 78. Commuting from north Oceanside via College and Emerald is unbearable. |
| 50 | Public | Eventually the 805 needs some sort of extension (god forbid maybe thru Rancho Santa Fe) because that's where the traffic comes from - 4 freeways going into 2 for north county. Traffic in vista (vista way is ONE LANE TO THE 76 and clog sup simply due to the deer springs stoplight to turn right). Vista has dealt with drivers and big rigs on neighborhood roads (foothill Dr is the worst) and should have to deal with that. The 5 fwy carpool lanes need to be timed. So many flex workers are in congestion at 11-2pm and the carpool lane is empty. |
| 51 | Public | This Plan fails to address natural resources areas in the plan area. The leaders failed to consider ANY natural resources issues in this document. More pretty pictures that mean nothing to the average person. It does not even consider the actual environment or natural resources. Suggestion to double track Sprinter, for example, will devastate the natural resources/wildlife corridor/floodplain of Loma Alta Creek. The pages are also unreadable for the average person as the attachments are in tiny typeface- certainly unreadable on someone's phone for example. This plan is a failure for North County. I have not reviewed the rest of the area documents but failure to include environment tells me the goal is to build rather than work with the natural environment, thereby leading to more destruction of our natural resources. |
| 52 | Public | Wow, what a piece of unreadable project jargon incomprehensible to anyone to the few patient to wade through it. Rewrite this to make it readable in 10-15 minutes without throwing everything into the kettle trying to win over a jury. Roughly \$10K per North County resident is funded how? Over what duration? Is this the only capital and services improvements expected through 2050? Are there studies as to the disastrous outcomes if nothing is done (i.e., if you improve transportation more people will come and the converse)? No to the expenditures for the light rail until ridership goes up significantly. Active mobility and showing the Bird stuff, LOL. Paying for charging stations, no. Allow local cities to optionally participate via direct funding for regional hubs. For Escondido, it's laughable. I read most of it and there doesn't appear to have any other versions available such as an austere, capital improvement only, smart traffic control, etc. available. There is no estimated out of pocket taxpayer costs, budget/funding/construction schedule, etc. More than disappointed as many will not read this document presented as if we were management. |
| 53 | Public | After a quick review, my principal comment is that those areas deemed "social equity communities" today, may well be otherwise within a very few years, while others may emerge. I would pay more attention to general population, job centers and key sites (stadiums, etc.) than particular communities. Communities change far faster than roads and infrastructure ever could. |
| 54 | Public | No freeway expansion! Any new HOV lanes should be converted from general lanes. Funding for road maintenance to replace the gas tax should be based on VMT x vehicle weight^4 to reflect full road impact. As we phase out gas taxes, I support EVs (of which I am a driver) to be the first group of vehicles to pay VMT/weight-based fees. I believe there is broad enough market adoption of EVs that we shouldn't worry about this tax choking demand for EVs. I also support congestion pricing on all of our freeways. But we need to make sure this doesn't turn our neighborhoods into cut-through corridors from drivers looking to avoid the congestion fees. Therefore, we should institute a slow-streets approach to neighboring roads and streets, using traffic calming strategies to discourage the use of local streets as high-speed cut throughs. I support government-supported car-sharing programs. This can be done by developing guidelines/funding for municipalities to build a car-sharing fleet for their residents, and/or providing a pooled insurance program for families that want to share a car with other families (since these insurance programs don't appear to be available in the private market). Instituting car-sharing programs can contribute significantly to reducing car ownership, which is crucial to decreasing VMT and increasing alternative mode share. Make roads safer for bicyclists. Slow streets down through traffic calming measures. Reduce numbers of lanes on arterials as much as possible. Increase transit frequency to every 15 minutes as much as possible, and maintain the free-fare program for students. Provide incentives (e.g, grants) for employers to provide free transit passes for employees. Institute parking meters in most commercial areas. Parking fees can be used to fund improvements in parking benefit districts in the immediate vicinity of those meters (e.g., increasing walkability and safety, more street trees, free transit passes to employees of the surrounding businesses). Push back against the California Coastal Commission's determination that parking = access in the coastal zone. Parking takes up valuable space for people and other modes of transportation, and therefore reduces access for those without a car. Develop guidelines for municipalities to convert single-family zoning to mix-used zoning, where appropriate, to allow errands to be accomplished within a short distance, and to eliminate parking minimums. |
| 55 | Public | 1. Very hard to understand exactly what you are proposing 2. From what I read it looks like public transit use is down with only small less that 1percent increases in things like light rail. Read the document. People want to use cars and carpool lanes. Public transit has already reached its maximum appeal. With the use of electric cars automobiles will not continue to contribute to climate change. Many people cannot use public transit to do daily activities: drop of kids at school and get to work 2x day; Work in various areas of the county that require driving to get to the location quickest and easiest and cheapest. 3. While I have no problem with a carpool/fast-trak choice like we now have on the 15; I DO NOT WANT "managed lanes" that charge me every time I get on the road based on the time/congestion. These are FREEWAYS that we already paid for in California. 4. Who is paying for this? A mileage tax on each car? The fees for the "managed" "smart" lanes? I vote NO 5. If you really want public comment...write this is a way people can understand. I have an advanced degree and I can't figure out what you are doing. 6. Answer this in plain English: 1- What are you planning to do/change? 2- How/when will you do it? 3-Who will pay for it? 4-How much will it cost me to drive on the "freeway" under the new program? Otherwise, how can we even begin to comment on this? Thank you for your consideration of my input |
| 56 | Public | There were no details for the 78 to I-15 corridor interchange. I drive it daily at 7:30AM or earlier. It can take 30 minutes to go less than 6 miles. I think the lanes need to be changed up. #1 designated as thru, #2 & #3 as I-15 S. there should be another merge south lane that keeps people from folks jamming in at the last minute or cutting across three lanes to make the merge. Signage AT the merge is terrible. people cut over at Nordahl and take the freeway entrance to avoid the jam. I suggest you spend a week or two driving this yourself to see what a terror and death road it is. |
| 57 | Public | Is this plan already funded or does it require additional taxation or alternative methods of funding the plan? Will parts of the 78 become a toll road? Is there any plans to widen the 56? |
| 58 | Public | No mileage tax to pay for your project. We don't live in a downtown environment and expanding train access is a waste of resources. Stop squeezing the poorest of us to pay for some horrible vision that is supposedly "green." That's what a mileage tax would do. |
| 59 | Public | Please solve the traffic problems in North County before you start working on other transit issues. We live on mountain tops (me) and in isolated valleys and must use cars to get around. Our current transportation by NCTD is way underused and inaccessible to many, and making it better will not change who will ride it. |
| 60 | Public | Any train that does not run at least every 15 minutes by day and 30 by night may as well not be on the schedule, as passengers will worry about connections, about a late or cancelled train, about a long gap between them that would make it faster to cycle or drive. Locomotives are cheap, engine drivers aren't ridiculously expensive, and carrying the same number of passengers on trains half as long and twice as frequent is a major improvement in a service. |
| 61 | Public | Don't forget that the intersection of 67 and 78 is "regionally significant." We need more bus service in Ramona. |
| 62 | Public | It is concerning that neither the approaches or challenges note the importance of considering protection of our natural resources- particularly the areas identified in the regional conservation plans. Projects like double tracking of the Sprinter along the constrained wetlands corridor of Loma Alto Creek- that bisects the major regional North/South wildlife movement corridor are particularly problematic. |



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| # | Agency | Comment |
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| 63 | Public | Will any of this be paid for through the newly passed Infrastructure Bill? Quarterly and transparent reporting to the public about how their taxpayer dollars are being spent would help increase confidence of all of us that what we pay in taxes actually goes to the projects that will improve our lives. Personally I don't mind paying taxes but I want to see results. I want to know that the government isn't paying \$600 for a hammer. I want my taxes to pay for things that benefit the people and that contractors are being held to account, that they are being fair. Profit is absolutely necessary for businesses to succeed but gouging is not acceptable. |
| 64 | Public | NO!! to almost all of it. This is the \$165 Billion plan to take away our cars and charge a mileage tax. Yes, to I5 to 78 upgrade. Yes, to carpool on 78. Yes to I15 to 78 upgrade. NO, to taking away the traffic lanes so the few hundred bikes can have their own lanes. Are you going to charge a wheel tax and include bikes? when do they pay their fair share? You are doing this on the backs of autos/ gas that you are trying to take away. COMPLETE the updates/ upgrades that were promised in the last sales tax increase. UNTIL to deliver what YOU promised, I do NOT trust you with a single penny of my tax dollars. |
| 65 | Public | SANDAG is acting corruptly serving their own agenda rather than needs of the voters. They steal the taxes voted for road improvement and use it for buses with very few riders and rail that can't serve the unincorporated population at all. The large cities vote should not override the votes of the smaller cities and unincorporated areas of the county. I am angry, as is many others who are using 2 lane roads to drive down the hill to get EVERYTHING except groceries. This community doesn't even have a K-Mart any more. BUSES, TRAINS and such have no part to play in this community with jobs in every other community outside Ramona. Roads will always play the most important part of commuting for us. We need at least 2 lanes each way on 78 and 67. DO THAT! Reply1d |
| 66 | Public | Looks like this is all to make it easier for bike riders and to encourage such. Great....but what about elderly people that are unable to either purchase or ride those bikes, have limited, little, no public transportation in the area? We are still forced to drive or hire others to drive at great expense. Yes, make it safer for bike riders, but start providing safe, timely, convenient public transportation in, and to, areas that are not near bus/rail services. In paying for all of this, let's not make drivers pay for it all, but require bike riders to kick in. After all this is to make it safer for them AND the driver! I keep hearing about a mileage tax.....how about a bike tax??? |
| 67 | Public | You should include La Costa Ave in south Carlsbad as part of this plan as well since most of La Costa Ave from Ranchi Santa Fe Road to I-5 is heavily impacted with excess and grid locked traffic . |
| 68 | Public | Why are there no plans to widen SR 67 from Ramona to Lakeside? |
| 69 | Public | Widen the 78 and fill in the pot holes. |
| 70 | Public | Looks like a good plan for residential and shopping but doesn't do enough to get people to work and back from the two largest industrial parks. You need a train that runs from the station in Sorrento Valley to Poway up the canyon with stops along the way and feeder lines to both sides of the industrial park. Same for Palomar Airport Rd. |
| 71 | Public | BRT on El Camino Real should extend to future Park and Ride at I-5 and Manchester. This will allow travel from central N County to the Park and Ride to catch future BRT and carpool traveling southerly from this point. Added benefit is access to the Mira Costa Campus on Manchester. I understand this may be outside of the scope of the project, but surely there is a way to make this connection happen. |
| 72 | Public | Go overall plan. One aspect that plan does not address wrt quality of life is the impact of train horns against the ever increasing coastal rail corridor activity. Train horns have gotten louder and more frequent. With double tracking along the train corridor; particularly through the Carlsbad Barrio and downtown Carlsbad, the train will be more and more frequent with the loud horns. There was a proposal to trench the tracks through downtown and potentially through Carlsbad. However, that is years away if ever to be implemented. In the meantime, SANDAG/Carlsbad should implement silent train crossings similar to Oceanside. |
| 73 | Public | As someone who is low income and works long and late hours I'd like to say how incredibly out of touch and useless this plan is to us. This plan only will help those that work 9 to 5 jobs in corporations that have the time any money to spend waiting long times for transportation. I need transportation directly to job sites in an extremely timely fashion. This is quite possibly the worst plan I've ever seen and will not in the slightest help me or the thousands of people like me cleaning workplaces doing maintenance and generally making life for white collar rich people. You should be ashamed. |
| 74 | Public | Tax those in the backcountry and do nothing for them. Commit to widen hwy 67 to get voter approval then refuse to widen it. Propose animal crossings while you ignore one of the most unsafe and dangerous state highways in the state. Your organization is a joke. No on all of it, dissolve SanDag and return to the previous method of managing highways. |
| 75 | Public | Most people don't want to be reliant on public transportation and even more they don't want an increase in tax during this time of inflation. This creates a major gap in the economic tiers of the it's public. I vote no on this project. Instead the freeways and roads should widen to accommodate the influx of traffic. |
| 76 | Public | Public transit is a complete FAIL. You serve less than 3% of the population with it. It costs millions per year to run busses THAT ARE EMPTY 98% of the time! Creating a larger union will only make our pension nightmare even larger! Public transit is inconvenient, and absolute time water and unneeded! It would be more cost effective to go buy 60,000 new ev cars and give them to those that use transit!!! Your woke climate BS will have zero effect for the climate. Why??? Because China and India are opening a combined 1 coal fired power plant per week for the planned next 2 years! ZERO EFFECT! My money is not your money. And I don't owe anything so that others can travel on my dime! |
| 77 | Public | Be real. People live outside the routes of bus, tram and train service in San Diego. We made a choice to get out of city limits. We want the choice to drive where and when we want to. Sandag is a communist style form of government... wanting to control who has a vehicle / how much is driven and when. The weighted vote was inspired by an activists (Lorena Gonzales) who is self serving. The decision to give this power to 2 cities was not a public choice but made by legislation that does not live here. Time to clean the swamp/ disban Sandag - and get out of our personal lives |
| 78 | Public | I think this plan is a great step in the right direction. I think the key thing to keep in mind is that housing and transit are intrinsically connected, so North county should be considering dense housing on as much of their unused space as possible to compliment these transit improvements. |
| 79 | Public | Having a goal to reduce the number of cars on the roads is reasonable but in order to get people to use mass transit, it must provide them with good, safe, clean transportation plus convenient services like grocery stores and dry cleaners (just two examples) so there is less of a need to drive all around town. The train systems in Europe are fabulous and the people use them happily. Find out what they are doing right and then do that. If the number of cars continues to increase, no one will be going anywhere and they will do it slower and slower every year. We want Caltrans to do the right thing but we residents need to be willing to do the same. |
| 80 | Public | The problem in Southern California, as mentioned in one of the comments, is that mass transit doesn't go where people need to go. I suggested building convenience businesses like dry cleaners and grocery stores but it has to go beyond that. Businesses need to be encouraged to have their offices close to the transit stations. And again, it must be made safe and clean or people will continue to not use it. |
| 81 | Public | I grew up in New York city. Took mass transit all my life till I came to California mass transit is tiring, uncomfortable and never takes you where you need to go without wasting hours of your time. And it will be worse here in San Diego county. |
| 82 | Public | Please do not waste your tax payer money on this! We don't need it. Fix the roads first. No one wants public transit 25 year north county resident. |
| 83 | Public | As an engineer I love trains, but as a resident I almost never use them and never will. Forget them. I ride my bicycle a lot, but bollards, segregated bike lanes, bike lanes to the right of turning traffic and door-zone bike lanes discourage me from riding more. Most recent bicycle infrastructure has made things WORSE. Want to encourage cycling?.. fix the road surface and take down anything that may crash us (inc bollards). My preferred mode of transportation is my EV and flying. |
| 84 | Public | People nationwide are suffering from inflation, but more so in California because of our base cost of living, taxes and over regulation. NO GAS TAX!! |
| 85 | Public | Have you seen the billboard adds comparing gasoline tax in every other state to our's? This over ambitious project spending tons of money while my street light has been out for 3 YEARS will turn the state Red and completely kill all of this. Stop spending SO MUCH MONEY and fix my street light! |
| 86 | Public | this plan does not serve my needs and I am am utterly disgusted that you would even consider rating a road usage tax down my throat to pay for it. |
| 87 | Public | Not at all. I travel from Oceanside to Escondido and back Monday through Friday. I have done this drive for 16 plus years. The drive has gotten worse and worse. Each way has doubled. Mass transit doesn't even touch this issue. I have to be at work at 730am and so I would have to leave before 5am just to get to work on time and would have to walk through some unsafe neighborhoods. Also I have children that I need to pick up and certain times so I have to drive to make sure they make it to their practices on time. Adding the driving tax just punished us who are trying to make a living to help pay the high cost of living it costs to live in San Diego. |



Draft North County CMCP Comments

| # | Agency | Comment |
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| 88 | Public | Why don't you fix the roads up in north county. Vista way is a grid lock mess. 76 is a grid lock mess. By the time you start to fix a hwy, it takes way too long and too much waste in money spent and you never complete fixing the problems. The people using the mass transit systems are already using it. Quit wasting money on systems people are going to use in a community/county like San Diego. You can also shove your per mile tax where the sun doesn't shine. You are putting California's liberal politics over the overall good of all of our county's tax paying citizens. We deserve better. |
| 141 | Public | The League of Women Voters of North County San Diego submit the following comments on the Draft North County Multimodal Corridor Plan (CMCP). The League of Women Voters is a nonpartisan political organization dedicated to empowering voters and defending democracy through advocacy and education on public policy issues of importance to our community. In 2021 our League adopted a San Diego Regional Transportation Action Policy which endorses <ul style="list-style-type: none"> • a synergistic transportation and climate action plans, • a decrease in vehicle miles traveled through land use and transportation alternatives, and • promotion of cost-effective transportation solutions. We specifically support a comprehensive, affordable transportation system available to all, including special segments of the population such as the elderly, disabled, and students. We support the far-reaching scope of the CMCP, its multimodal approach, consideration of the Regional Housing Needs Assessment (RHNA) and the collaboration shown in creating the draft CMCP. Since the CMCP is dependent on the 2021 Regional Transportation Plan which may be modified by SANDAG due to funding, we urge outreach and updates to the community on any impacts to the CMCP. <u>As a trusted community partner, the League would welcome opportunities to participate with you in educational outreach to the community about the Multimodal Corridor Plan.</u> |
| 214 | Public | University student who lives in District 1 of Vista California. I recently viewed your plan for the North County Regions and am really looking forwards to seeing this happen. Although common to see comments by older folk to disagree with "15 minute cities" I can guarantee the younger population really is for this. I would love to be able to get to my university using the public transportation in 15 minutes or less. I would like to see the public transportation to be quicker than 30 minutes. As I have classes at Palomar College, 30 minute periods for the train to come can be very detrimental if I happen to oversleep. And I know comments I could receive by this, "Be more time efficient, Just don't sleep in..." Those are irrelevant. How could you have public transportation be quicker? I assure you already know the answer, but if you do not, dedicating a lane to buses is a huge step to having faster public transportation. I do not include trains because I know trains get priority over cars. I know because I use the train daily from school-home. I know there is more to making trains faster, it would be investing into faster rail system and faster trains. Which means analyzing if investing in faster trains is useful in cities like Vista. But I hope this is talked about. Second small input, . Stop investing into the freeways! Please use this money for other transportation initiatives like having security on trains. Investing into freeways for constant road fixes will just make cities along those freeways more and more into debt. I know how much money it takes to yearly fix roads and freeways from the damage CARS make to it. It is an endless money waster. Another input I would like to address is the issues with stoplights. The roads in Vista do not prioritize active modes of transportation and this can be deadly. As I was crossing the E Vista Way street, a very dangerous street for pedestrians, it took me more than 5 minutes of waiting for the hand sign to indicate I could walk. . If we observe traffic systems of cities in Europe, they have a system that always have the right of passage to pedestrians and if it detects a car for example approaching the intersection, that is when it turns red for the pedestrians. Various times in the Santa Fe South and E Vista Way intersection I have been many times almost ran over. Please listen to people like me who advocate for streets to be slower and not so wide. No matter how wide E Vista Way is made, there will still be traffic because the actual issue is not being addressed. Instead, you are making streets like E Vista Way and basically every major street in Vista a minute to cross. If you were to walk across these streets in rush hour you would see what I am talking about, cars do not care about you. |
| 215 | Public | Although I am appreciative to Caltrans trying to alleviate traffic congestion in the North County, I do not believe the plan will have the intended outcome. Mass/ Alternate transit is good good in theory, in Southern California it has not worked as intended. Residential areas are too spread out to make it a viable alternative to using cars for transportation. Just throwing money to build alternate infrastructure does not mean the population will use it. Taking travel lanes from cars to give to bikes only exasperates traffic congestion and you will never get enough people to use bikes to alleviate that issues. It will only serve a small portion of the population, while not fulfilling the need of the many. Mass transit may be a viable alternate, but it need to be made safe, and once safe, the populace needs to be shown it is safe and efficient. Please incorporate some alternative transportation in to your plan, but for the foreseeable future, the majority of money needs to be allocates for vehicles. |
| 142 | Public | on Page 7. It shows that CA's Climate Mandates are part of the context. Since that it true, another important document, that you erroneously leave out, is CARB's Scoping Plan, which is how CA plans to achieve its climate mandates. Here is what you should take from that document to apply to the CMMP. The CARB Scoping Plan states that we can't electrify our fleet fast enough to achieve the CA Climate Mandates. We need to also reduce VMT by 25% by 2030, calling into question the SB 375 target CARB gave to SANDAG: a 19% reduction, by 2035. It also states that do get that reduction, we must have a Road Use Charge (RUC) by 2025, instead of the earlier understanding that we could wait until 2030. It also makes it clear that we must price parking and this new practice must be widely adopted |
| 143 | Public | Just for example, I will include this, from the Scoping Plan: 2.1 Zero-emission vehicles are not enough to solve the climate crisis. Contrary to popular belief, zero-emission vehicles (ZEV) alone are not enough to solve the climate crisis. The 2022 Scoping Plan illustrates that despite cleaner vehicles and low-carbon fuels, the path to carbon neutrality by 2045 also depends on reducing per capita VMT (the total passenger vehicle miles driven by an average person in California on any given day). To meet the carbon neutrality goal, the Scoping Plan proposes reducing VMT from 24.6 miles per day in 2019 to 18.4 miles by 2030 (a 25 percent reduction) and to 17.2 miles per day by 2045 (a 30 percent reduction). |
| 144 | Public | The other aspect of "context" that is missing is our need to stabilize the climate at a livable level. In 2011, AG Harris wrote, in a letter responding to SANDAG's Draft RTP, that climate stabilization is the objective of CEQA. Since it is that important, it should be fully explained in the report. Chapter 4's Vision, Values, Goals, Objectives, and Metrics This chapter must be rewritten to reflect the grim reality that climate destabilization will overwhelm all good intentions, including our values, goals, objectives, and metrics. Failing to achieve CA's climate mandates would ensure that CA is helping to destabilize our earth's climate, which equates to a "devastating collapse of the human population" (Scientific American), caused by such things as mass starvation. It would lead to human extinction. Make no mistake. It probably will happen. Here is what the Secretary General says about our greenhouse gas (GHG) emission, which mostly comes from cars: a) We have a Code Red Climate Emergency. b) We are solidly on a path to an unlivable planet. c) We are driving towards Climate Hell with our foot on the accelerator. d) We are dangerously close to the point of no return. |
| 145 | Public | The new CARB Scoping Plan makes clear what I have been trying to tell SANDAG for over 15 years: "free parking" is not free and it should be priced in a car parking system that causes both drivers and non-drivers to benefit equally (ideally, down to the penny) when the very expensive-to-provide parking facility is provided. CARB's Scoping Plan makes it clear that, in order to meet the CA Climate Mandates, charging for parking must become our practice. The corridor being discussed here is in California. |
| 146 | Public | On its Page 18, Appendix E of the Scoping Plan states that "free parking" incentivizes driving alone; and that for the State to meet its climate goals, parking cash-out is needed. Also, that a state action is to end its subsidies to car parking for its 200,000 employees. Would the SANDAG do the same for its employees? The employees of the North Area Corridor must do this. This letter shows a painless way to make that happen. Painless in the sense that even employees that drive everyday will not lose any money. In Appendix E of the Scoping Plan, on Page 27, it says that the State should take this action, with reasons then added, as follows: Reduce or eliminate parking requirements (and/or enact parking maximums, as appropriate) and promote redevelopment of excess parking, especially in infill locations. Building parking for infill development makes construction costs more prohibitive, considering parking can cost up to \$100,000 per stall, which takes away both physical space |



Draft North County CMCP Comments

| # | Agency | Comment |
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| 147 | Public | Car Parking that is Not Assigned to a Particular Car but is Instead Available to All Drivers with a Car that is Associated with an Account. This parking would include on-street, employee, transit station, shopping center, beach, school, library, and so on. For example, employee parking should be operated for the financial gain of the employees. The car parking earnings that an employee earns is proportional to the time they spend at the work location. That is independent of whether they drive or not. However, the parking must be value priced. Those that drive every day would lose money, without the addition of an "add-in" payment, sized so that Money Lost = Parking Charge – Parking Earnings – Add-In = zero. The means that we must "bend over backwards" for those that continue to drive everyday. They must break even. Those that get to work without driving, even just one day, will earn money and so will not need, nor get, the "Add-In". |
| 148 | Public | Regarding Transit Center parking, the official policy of the Sierra Club shows that they want parking at train stations to be minimal, full-priced, and open to all drivers ("public"): Rail systems are most effective in stimulating compact development patterns, increasing public transit patronage, and reducing motor vehicle use. Station access should be provided by foot, bicycle, and public transit, with minimal, but full-priced, public parking. Accommodation of pedestrians, bicycles and public transit should be given priority over private automobiles. |
| 149 | Public | The conclusion is that the practices of the all corridors must at least match the recommendations of the Scoping Plan, because they only about State Mandates, which are easier than the climate stabilization requirement of 80% below our 1990 level by 2030. (Note: the 2030 requirement explains why all the COP 25, 26, 27, etc. meetings are trying to get larger commitments from member countries, for the year of 2030. It also explains the UN Secretary's comments shown above.) |
| 150 | Public | Assigned Parking: For this type of parking system, the space is being charged to the person associated with the car that is associated with the space, 24/7 (all day, every day), whether the car is present or not. |
| 151 | Public | Apartments, Rewards-Based Unbundling: For apartments, assigned parking should be unbundled from the rent with a "Rewards-Based Unbundling" system. Each month, the household in each unit selects the number of assigned parking spaces they want to rent, including the choice of zero parking spaces. Compared to the "bundled parking" system (often erroneously called "free parking"), rents for the living space will be significantly lower, under any system of unbundling. Management needs to compute the monthly price for the parking with the same method (cost plus profit or as much as the market will bear, or some other method) that is used to determine the rent for the apartment. Rewards-Based Unbundling adds complexity, compared to the standard method of unbundling the cost of the assigned parking. However, it is a critically important, driving mitigation measure. It rewards driving less. It is fully automated, meaning that the money flows out of an account depending on the data that is collected regarding the status of the parking space. Privacy must also be provided. Here is how this works. |
| 152 | Public | There are three price rates (each rate is per minute) defined. One is the "Full Price". It is computed by dividing the monthly price (\$300 per month, for example) by the number of minutes in the month. The "Storage Price" is discounted from the Full Price. For example, it might be 30% less than the Full Price. The 3rd price rate defined is the "Vacant Price". Since the parking is assigned, it is still unavailable to other drivers, even though the assigned car is not present. Therefore, the assigned space is still being rented when the space is vacant. The Vacant Price needs to be higher than the Full Price so that the owner gets, as an average, over all of the assigned car parking spaces, the Full Price. The Vacant Price can be computed from the Full Price and the Storage Price, from an assumed average fraction of time that the space is vacant, to achieve the Full Price. Table 2 shows the variable names, the abbreviated variable names used for the algebraic derivations, the definitions, how to calculate the variable, and the example values. |
| 153 | Public | Parking Assigned to a Hotel Room: The best case is that hotel patrons arrive by transit and never use a car. Given a hotel's proximity to transit, the ocean, and/or downtown, many guests might not ever use a car during their stay. Complementary bicycles should be provided, as is done in many European hotels. Lists of good bike rides should be provided, including the scenic San Luis Rey River Trail. Many visitors, especially from large American and foreign cities, will arrive to our area on transit. For guest that want to rent an assigned parking space, a "per day" version of the Awards-Based Unbundling system described for the hotel should be used. |
| 154 | Public | I appreciate the CMCP's multi-modal focus. This is critical in order to reduce VMT. |
| 155 | Public | Please incorporate Oceanside's "Smart and Sustainable Corridors Plan (SSCP)" and the Coast Highway Corridor Plan into the "Complete Corridors" section of the CMCP, and include bicycling and pedestrian improvements for Oceanside Blvd, Mission Avenue, Vista Way, and Coast Highway, as noted in Table 5-2 (Quality Investments for Mobility Boulevards) of the Plan. Oceanside Blvd. is an important cycling route for bike riders. It needs to be improved for the safety and comfort/ease of use by cyclists. Also, the Coast Highway Corridor Plan's roadway redesign features a "road diet", reducing the number of lanes from 4 to 3, between the arterials, and from 4 to 2, at the new roundabouts. This provides more room for biking and walking. The Coast Highway Corridor Plan's incentive zone will allow for more density, increased height, and less parking. Oceanside has recently secured funding for detailed design, from SR 76 to Wisconsin. Funding its construction would be an excellent choice for a SANDAG Smart Growth Incentive Fund grant. Please let me know if you agree. Your agreement would help me urge Oceanside to submit a SGIF proposal. |
| 156 | Public | The Mobility Hub discussion (page 40) should include specifics on the importance of the transit centers that anchor each one, the mobility hub features they should include (the car parking systems described above, for example, to be fair to all and to increase ridership), and should state that the transit centers should be highly-visible and attractive parts of the communities they serve. To understand how a value-priced, automated, shared, parking system could maximize ridership, it could be pointed out that parking earnings for a transit rider of driving age would be proportional to the time they spend on a round trip. The net cost to ride would then be, for someone who did not park a car at the transit center, the fare, minus the car-parking earnings. If someone parked a car, the net cost would be the fare, plus the cost to park, minus the car-parking earnings. |
| 157 | Public | The Plan does not mention transit-station parking, just stating that it is a constraint on SPRINTER ridership. The Plan should call for managed parking systems with properly priced parking that encourage alternative modes rather than just continuing the unfortunate practice of "free parking", which only contributes to further greenhouse gases and VMT. For the Oceanside Transit Center, there were at least 3 letters to the NCTD and Toll Brothers on OTC car parking systems that would maximize fairness to those who would prefer to drive less, thus reducing VMT. Again, allow me to state that the latest CARB Scoping Plan, especially its Appendix E, makes it clear that California can't achieve its climate mandates without pricing parking. |
| 158 | Public | The Plan makes no mention of the coming CA Road Use Charge (RUC), despite the fact that, with declining sales tax revenues from gasoline sales, insufficient funding will be generated to support transportation infrastructure. The Plan should discuss Road User Charge and support it to replace (not add to) taxes on gasoline. The Oceanside Bicycle and Pedestrian Committee has adopted an excellent Resolution on a Road User Charge. The latest CARB Scoping Plan recommends a RUC implementation by 2025, instead of the previous understanding that it would start in 2030. |
| 159 | Public | The rapid expansion of cycling, and in particular, e-bikes, has demonstrated the need for comprehensive bicycle safety training for all levels of users, including youth and adults. I strongly support the use of public roads for cycling, when the roads meet current standards and are properly maintained. But it is also important that educational resources be made available to ensure cyclists ride safely. Classes should be taught by League (League of American Bicyclists) Certified Instructors (LCI). Data should be collected to determine if these classes are a cost-effective way to reduce VMT. If so, they should be scaled up by paying a living wage to instructors and paying students that graduate. |
| 213 | Public | Escondido has no plan headed south, other than to an Escondido mall. Do you have another plan to get them downtown or to the International Airport?, , Rancho Bernardo, 4S and Poway are not considered North County. What part of San Diego are we? On most of the other maps in San Diego, we are called North County or Northeast County. Where is our transportation plan to review? , Is there a plan for us to get to the San Diego Airport and back, with luggage, keeping in mind we are one of the oldest populations in San Diego County? Is there a plan to get the North East populations downtown, for shopping, food and entertainment, without a car? Is there a plan for us to get to the coast, for a few hours on the beach or shopping, without a car?, Could you please direct me to the transportation plan that supports the North East part of San Diego County, or whatever you call us? |
| 114 | City of Oceanside: Public Works Department/Traffic Engineerign Division | Coast Highway: a) Attachment 4, Plan ID NC26: Under Descriptions, please include "Morse Street to Oceanside Boulevard" for the Coastal Rail Trail (below "Broadway to Eaton") |
| 115 | City of Oceanside: Public Works Department/Traffic Engineerign Division | Coast Highway: b) Attachment 3, Regional Spine Sheets: Please include sheets for "Coastal Rail Trail" similar to the Inland Rail Trail. |
| 116 | City of Oceanside: Public Works Department/Traffic Engineerign Division | Coast Highway: c) Attachment 2, Mobility Boulevard Sheets: Please include Coast Highway (and Carlsbad Boulevard). |





Staff Report

Meeting Date: Oct. 2, 2023
To: Traffic and Mobility Commission
Staff Contact: Nathan Schmidt, Transportation Planning and Mobility Manager
Nathan.schmidt@carlsbadca.gov, 442-339-2734
Subject: Multimodal Level of Service Methodology Update

Recommended Actions

Receive an overview of the City of Carlsbad’s multimodal level of service and provide feedback.

Executive Summary

This report provides an overview of the City of Carlsbad’s multimodal level of service, or MMLOS, methodology for pedestrian, bicycle, and transit travel modes. This report is intended to inform the Traffic and Mobility Commission of the updates to the City’s current MMLOS methodology based on feedback received from the Traffic & Mobility Commission ad-hoc subcommittee, provide the MMLOS results on the initial sample group of streets that were monitored for the Growth Management Plan, and a review of staff’s recommended revisions to the MMLOS methodology based on these results. This report includes the most recent proposed updates as a part of meetings with the ad-hoc subcommittee meetings after the March 6, 2023 meeting.

Based on feedback from the Traffic and Mobility Commission, staff will update the MMLOS methodology and results based on the recommended revisions and utilize the tool for both Growth Management Plan Monitoring and for Local Mobility Analysis for private development projects. The updated findings of this analysis will be presented to the Traffic & Mobility Commission and included in the Annual Growth Management Monitoring Report for fiscal year 2022-23.

Background

The 2008 California Complete Streets Act requires cities in California to plan for a balanced, multi-modal transportation system that meets the needs of all travel modes. Accomplishing this state mandate requires a fundamental shift in how the city plans and designs the street system – recognizing the street as a public space that serves all users of the system (elderly, children, bicyclists, pedestrians, etc.) within the urban context of that system (e.g. accounting for the adjacent land uses).

Previously, growth management circulation performance standard was based on the circulation needs of a single mode of travel – the automobile. The Sept. 22, 2015, General Plan Mobility Element was adopted to identify a new livable streets strategy for mobility within the city. This

strategy focuses on creating a ‘multi-modal’ street network that supports the mobility needs of pedestrians, bicyclists, transit users, and vehicles. This multi-modal transportation goal aligns with the city’s Climate Action Plan in achieving its goals of reducing greenhouse gas emission within the city by reducing vehicle dependence.

The city’s approach to provide livable streets recognizes that improving the LOS for one mode of transportation can sometimes degrade the LOS for another mode. For example, pedestrian friendly streets are designed to encourage pedestrian uses and typically have amenities that slow vehicle travel speeds (e.g., short-distance pedestrian crossings that restrict vehicle mobility). Therefore, the General Plan Mobility Element’s livable streets approach identifies, based on the location and type of street (street typology), the travel modes for which service levels should be enhanced and maintained per the MMLOS standard (LOS D or better). The street typology identifies which modes of transportation are subject to, and which modes are not subject to, the MMLOS standard.

Table 1 below summarizes the street typology and MMLOS Standard from the Carlsbad General Plan Mobility Element and Exhibit 1 depicts the livable street system with the street typologies identified for all city streets. The original table from the General Plan is found in Appendix C.

Table 1: Street Typology and MMLOS Standard

| STREET TYPOLOGY | Modes subject to the MMLOS D Standard | | | |
|--|---------------------------------------|---------|------------|---------|
| | Auto | Transit | Pedestrian | Bicycle |
| Freeways | Yes | Yes | No | No |
| Arterial Streets | Yes | Yes | No | No |
| Identity Streets | No | No | Yes | Yes |
| Village Streets | No | No | Yes | Yes |
| Arterial Connector Streets | Yes | No | Yes | Yes |
| Neighborhood Connector Streets | No | No | Yes | Yes |
| Coastal Streets | No | No | Yes | Yes |
| School Streets | No | No | Yes | Yes |
| Employment/Transit Connector Streets | No | Yes | Yes | Yes |
| Industrial Streets | Yes | Yes | No | No |
| Local/Neighborhood Streets | No | No | Yes | Yes |
| All Streets Located Within Half-Mile of a Transit Center | No | Yes | Yes | Yes |
| Bicycle/Pedestrian Pathways | No | No | Yes | Yes |

This report presents the analysis results for 41.1 total miles of roadways of the roadway typologies listed below for Pedestrian and Bicycle LOS plus a sample of segments for testing the Transit LOS methodology. A summary of the results of this analysis is provided in Carlsbad MMLOS Monitoring Results report in Exhibit 3.

- Identity Streets: 4.4 miles
- Village Streets: 19.0 miles
- Coastal Streets: 10.0 miles

- School Streets: 25.6 miles
- Industrial Streets: 2.8 miles
- Employment/Transit Connector Streets: 9.0 miles
- Arterial Streets 11.4 miles (Transit only)

Prior Traffic and Mobility Commission and Ad-Hoc Committee Review

An overview of the proposed updates to the MMLOS methodology was first presented to the T&MC at the June 1, 2020, meeting. During this review, and due to the detailed nature of MMLOS, the T&MC recommended to establish an ad-hoc committee to work with staff to guide the future updates of the MMLOS methodology. Since this time the ad-hoc committee has convened several meetings with staff to undergo an iterative process of refining and testing the methodology.

On April 4, 2022, the Traffic and Mobility Commission was presented with the proposed updates and initial results of the MMLOS methodology. Based on their review, the T&MC recommended additional revisions to the methodology, such as provisions for high visibility crosswalks, essential transit stop access and amenities, Transportation Demand Management, or TDM, requirements, and additional bicycle lane requirements. The T&MC also advised that staff continue to meet with the ad-hoc committee to review and refine the methodology based on updated testing results.

On March 6, 2023 the Traffic and Mobility Commission was once again presented with the proposed updates. The updates presented are summarized below. Based on the commissions review, the T&MC requested staff to meet with the ad-hoc committee to discuss the updates in more detail.

Multimodal Level of Service Methodology

As previously mentioned, the MMLOS method to measure service to pedestrian, bicycle, and transit modes was originally developed as part of the General Plan Environmental Impact Report, or EIR. This approach (the development of the MMLOS tool) is unique to the City of Carlsbad. The Carlsbad MMLOS approach reports a letter grade (A thru F) that reflects the quality of service provided to a user of that mode of travel based on the attributes of the associated pedestrian, bicycle or transit facility. Each attribute contributes to a point system that, when the total points for all attributes are added together, corresponds to a MMLOS letter grade. Essential features are indicated for each mode of travel and represent the basic components of a pedestrian, bicycle, or transit facility. If all essential feature elements are met for the applicable mode then the street will receive an acceptable LOS score of D or better.

The MMLOS tool, used to monitor the LOS for individual streets based on minimum operating standards defined by street type, was finalized July 2018 with some modifications made. The MMLOS thresholds are presented in Table 2 below. The detailed MMLOS scoring sheets for pedestrian and bicycle travel modes are provided in Exhibit 2.

Table 2: Multimodal Level of Service (MMLOS) Thresholds

| Point Score | LOS |
|-------------|-----|
| 90 - 100 | A |
| 80 - 89 | B |
| 70 - 79 | C |
| 60 - 69 | D |
| 41 - 59 | E |
| 0 - 40 | F |

Source: City of Carlsbad

Goal and Purpose of the MMLOS

As noted in General Plan Mobility Element Policy 3-P.3, the purpose of the MMLOS methodology is to provide a means for evaluating the impacts of individual development projects, as well as monitoring the LOS for individual streets to ensure that they are meeting the specified standard by street type. To accomplish these goals, the methodology ideally needed to result in levels of service similar to auto-based LOS (A through F) and quantitatively measured (even if some of the individual features evaluated were qualitative in nature). Ultimately, the City of Carlsbad in collaboration with the consultant Fehr & Peers developed a spreadsheet-based tool as part of the MMLOS methodology to provide an automated method of calculating points for a specified location.

Multimodal Level of Service Methodology Updates – Presented March 6, 2023

The following three sections provide an overview of the proposed updates presented at the March 6, 2023 Traffic and Mobility Commission meeting.

Pedestrian MMLOS Methodology

The Pedestrian MMLOS scoring criteria was established so that a facility can meet the LOS D standard if it can adequately serve people who walk and disabled users. Additionally, five criteria were identified that support the City of Carlsbad’s Climate Action Plan goals. A facility segment must fulfill the criteria indicated as essential features to be assigned a score commensurate with LOS D. The scoring criteria include, but are not limited to the following:

Essential Features:

- Sidewalk width, condition, and ramps and landing consistent with the Americans with Disabilities Act, or ADA
- Striped crosswalks are marked according to the California Manual of Uniform Traffic Control Design, or CA-MUTCD
- Adequate pedestrian crossing features are provided on roads with posted speed limits of 35 MPH or more
- High visibility crosswalks are provided on all legs of all

Other Features:

- Design consistent with the CA-MUTCD

- Street light locations
- Speed limit and number of through lanes
- Sidewalk buffer width from traffic
- Presence of a landscaped buffer
- Safety and speed control at crossings along the segment
- Presence of street tress.

Based on a review of the results and through the testing process staff is proposing the following changes to the ad-hoc subcommittee’s recommended Pedestrian MMLOS methodology based on the rationale provide for each feature in Table 3 below:

Table 3: Staff’s Proposed Changes to the Pedestrian MMLOS Criteria

| Ad-Hoc Committee Recommendation: | Proposed Staff Revision: | Rationale for Revision: |
|--|---|--|
| Essential Feature: Striped crosswalks are marked according to CA-MUTCD guidelines | Essential Feature: Striped crosswalks, <u>if existing</u> , are marked according to CA-MUTCD guidelines | Marking of any new crosswalks should be evaluated based on engineering analysis of existing conditions. |
| Essential Features: For roadways with 4 lane or more and/or posted speed 35 or more, are the pedestrian crossings: 1) controlled (i.e., by a stop sign, signal or roundabout) or enhanced with an RRFB or PHB, if warranted, and 2) provided within 600 ft spacing in at least one direction from a pedestrian access point to the development (or at the next adjacent public street intersection if intersection spacing exceeds 600 ft)? | Essential Features: <u>Applicable to Local Mobility Analysis projects only.</u> For roadways with 4 lane or more and/or posted speed 35 or more, are the pedestrian crossings: 1) controlled (i.e., by a stop sign, signal or roundabout) or enhanced with an RRFB or PHB, if warranted, and 2) provided within 600 ft spacing in at least one direction from a pedestrian access point to the development? (or at the next adjacent public street intersection if intersection spacing exceeds 600 ft.) <u>and approved by the City Traffic Engineer?</u> | The requirement of any new pedestrian crossing should be reviewed and approved by the City Traffic Engineer. Placement of crosswalks should be based on an engineering evaluation conducted to determine if a marked crosswalk should be installed at an uncontrolled or mid-block location, and if so, what visibility enhancements should be included in the design. Typical factors which should be considered when installing new pedestrian crossing features include: Sufficient demand exists to justify the installation of a crosswalk. Sufficient sight distance as measured by stopping sight distance calculations exists and/or |

| | | |
|--|--|--|
| | | sight distance will be improved prior to crosswalk marking. |
| Essential Feature: High-Visibility (striped) crosswalks on all legs of all signalized intersections where crossings are permitted | Recommend deleting this essential feature. | This essential feature is addressed by the feature provided in row 1 of this table. High visibility marking of crosswalks should not be implemented indiscriminately but determined based on an engineering evaluation of existing conditions. |

Bicycle MMLOS Methodology

The Bicycle LOS scoring criteria was established so that a facility can meet the LOS D standard if it meets the expectations laid out in the Bike Master Plan. Similar to Pedestrian LOS, three criteria were identified that support the CAP. A facility segment must fulfill a majority of these criteria in order to be assigned a score of LOS D. The scoring criteria include:

Essential Features:

- Require a Class-I (Bike Path), Class-IV (Protected Bikeway), or buffered Class-II when the posted speed limit is 35 MPH or above
- Bicycle facilities must be the CA-MUTD guidelines for signing and striping
- Free of infrastructure that obstructs a bicycle facility such as drainage grates or other obstructions
- Class-II bike lanes shall be a minimum of 5 feet in width
- Class-II bike lanes provide a straight-through right of way or clear delineation of conflict zones at intersections

Other Features:

- Roadway pavement conditions and presence of obstructions
- Design of bikeway consistent with the CA-MUTCD
- Presence of on street parking and parking type
- Speed limit
- Bicycle facility designation and consistency with the Bicycle Master Plan for the study segment and intersecting segments
- Presence of bicycle detection
- Presence of bicycle racks.

Staff does not propose any additional changes to the Bicycle MMLOS beyond those that were identified by the TMC ad-hoc subcommittee.

Transit MMLOS Methodology

The Transit LOS scoring criteria was established so that a transit stop can meet the LOS D standard if it provides reasonable amenities and transit frequency. A stop must include several key transit stop amenities to be deemed consistent with the CAP. Similar to Pedestrian and Bicycle LOS, three criteria were identified as essential features that support the City of Carlsbad's CAP and SMP. A facility segment must fulfill these three criteria to be assigned a score commensurate with LOS D. If it fails to meet any of the essential features, the segment's score will be capped at LOS E. A partial list of all transit scoring criteria include, but are not limited to the following:

Essential Features:

- If a project is greater than ¼ mile walk to the nearest transit stop a project will require a TDM plan
- Pedestrian crossing features such as stop signs, traffic signals, Rectangular Rapid Flashing Beacons (RRFBs) or Pedestrian Hybrid Beacons are provided on roads with posted speed limits of 35 MPH or more
- Mid-block protected pedestrian crossings are provided if a project access point is greater than 600 feet from the nearest pedestrian crossing
- Sidewalks are ADA-compliant between a project frontage and the nearest transit stop within a ¼ mile
- Transit stops require a covered bus stop/shelter, bench, ADA accessible pad
- If transit service headways are less than or equal to 30 minutes in peak hours a project shall be required to include a TDM plan

Other Features:

- Presence of transit stop amenities
- ADA compliant sidewalk connections to the stop
- Transit frequency and number and quality of routes serving the stop

Based on a review of the results and through the testing process staff is proposing the following changes to the ad-hoc subcommittee's recommended Transit MMLOS methodology based on the rationale provide for each feature in Table 4 below. As in the table below, staff is recommending that the required transit station amenities be consistent with North County Transit District's (NCTD) Bus Stop Development Handbook which are based on specific thresholds for number of daily boardings at each stop location. The excerpt from the NCTD Bus Stop Development Handbook which indicates the thresholds for daily boardings is provided in Exhibit 5.

Table 4: Staff's Proposed Changes to the Transit MMLOS Criteria

| Ad-Hoc Committee Recommendation: | Proposed Staff Revision: | Rationale for Revision: |
|--|---|--|
| Essential Features: No greater than 1/4 mile to the nearest transit stop - rail and bus | Recommend removal of the essential feature requirement for these three (3) criteria | Transit routes and stop locations are beyond the control of the city of Carlsbad. The added requirement of a project requiring a TDM plan should be determined based on a the city's TDM ordinance and/or Growth Management Plan mitigation requirement. |
| Essential Features: No greater than 1/4 mile to the nearest transit stop - bus only | | |
| Essential Features: No greater than 1/2 mile to the nearest transit stop | | |
| Essential Features: For roadways with 4 lane or more and/or posted speed 35 or more, are the pedestrian crossings: 1) controlled (i.e., by a stop sign, signal or roundabout) or enhanced with an RRFB or PHB, if warranted, and 2) provided within 600 ft spacing in at least one direction from a pedestrian access point to the development (or at the next adjacent public street intersection if intersection spacing exceeds 600 ft)? | Essential Features: For roadways with 4 lane or more and/or posted speed 35 or more, are the pedestrian crossings: 1) controlled (i.e., by a stop sign, signal or roundabout) or enhanced with an RRFB or PHB, if warranted, <u>and approved by the City Traffic Engineer?</u> | The requirement of a pedestrian crossing should be reviewed and approved by the City Traffic Engineer. Placement of crosswalks should be based on an engineering evaluation conducted to determine if a marked crosswalk should be installed at an uncontrolled or mid-block location, and if so, what visibility enhancements should be included in the design. Typical factors which should be considered when installing new pedestrian crossing features include: Sufficient demand exists to justify the installation of a crosswalk. Sufficient sight distance as measured by stopping sight distance calculations exists and/or sight distance will be improved prior to crosswalk marking. |

| | | |
|--|--|--|
| <p>Essential Features: Are sidewalks or paths generally ADA-compliant between the project frontage and the nearest transit stop within a 1/4-mile distance?</p> | <p>Essential Features: Are sidewalks or paths generally ADA-compliant between the project frontage and the nearest transit stop within a 1/4-mile distance? <u>Applicable to Local Mobility Analysis projects only.</u></p> | <p>This criteria indicates a distance from a proposed project site and would be applicable to Local Mobility Analysis projects only.</p> |
| <p>Essential Features: Covered bus stops/shelter</p> | <p>Essential Features: Covered bus stops/shelter shall be provided if <u>sufficient right-of-way exist</u> and if the stop location meets the NCTD requirements for a shelter stop (>20 daily boardings)</p> | <p>Staff recommends the proposed revisions in order to be consistent with the requirements established by North County Transit District's Bus Stop Guidelines</p> |
| <p>Essential Features: ADA Accessible Pad</p> | <p>Essential Features: ADA Accessible Pad if sufficient right-of-way exist and if the stop location meets the NCTD requirements for a bench stop (>10 daily boardings)</p> | |
| <p>Additional Questions for LMA Only Project</p> | | |
| <p>Essential Features: Are transit service headways less than or equal to 30 minutes between 6:30-8:30 am and 4-6 pm on weekdays.</p> <p>If no, then capped at LOS E without TDM program</p> | <p>Recommend removal of both criteria from the Transit LOS methodology.</p> | <p>In order to meet the essential feature requirement for both criteria, a development project would be required to implement a TDM plan in order to address the lack of transit service to the project area. Staff recommends removing each of these criteria as a project should require a TDM based on the city's TDM ordinance and/or Growth Management Plan mitigation requirement.</p> |
| <p>Essential Features: For developments with a residential component, are transit service headways less than 60 minutes between 9:00 am and 5:00 pm on weekends.</p> <p>If no, the capped at LOS E without a TDM plan that includes access to vehicle-based alternative transportation.</p> | | |

Multimodal Level of Service Methodology – Proposed Updates October 2023

As previously discussed, at the March 6, 2023 meeting, staff was directed to meet with the ad-hoc committee again before coming back to the commission. Commissioner Penseyres, Commissioner Kohl and Commissioner Newlands were assigned to be the committee members. At the August 7, 2023 meeting, the ad-hoc committee was reduced to just include Commissioner Penseyres and Commissioner Kohl.

Staff met with the ad-hoc committee on May 31, 2023 and August 23, 2023. In those meetings staff discussed the proposed revisions in detail. The ad-hoc committee members agreed with all the proposed revisions to the methodology that were presented on March 6, 2023, but did recommend the two following changes to the MMLOS methodology.

- Bicycle MMLOS – Recommended changes to the essential feature “If class II bicycle lanes exists, are lanes a minimum width of 5 ft” to be “If class II bicycle lanes exists, are lanes a minimum width of 5 ft excluding gutter pan”
- Pedestrian and Transit MMLOS – Both commissioners recommended removal of RRFB’s as crossing devices.

For the two proposed changes, the table below summarizes staffs recommendations.

| Ad-Hoc Committee Recommendation: | Proposed Staff Revision: | Rationale for Revision: |
|--|--|---|
| <p><u>Bicycle MMLOS - Essential Feature:</u> If class II bicycle lanes exists, are lanes a minimum width of 5 ft excluding gutter pan</p> | <p>If class II bicycle lanes exist, the minimum bike lane width should be 6 ft..</p> | <p>Staff recognizes the importance of have an appropriate rideable surface width within the bike lane when next to a gutter pan or other longitudinal obstruction however this revision will provide for an easier method to measure the minimum bike lane width. It will also allow for a sufficient ridable width even with the presence of a gutter pan.</p> |
| <p>For roadways with 4 lane or more and/or posted speed 35 or more, are the pedestrian crossings: 1) controlled (i.e., by a stop sign, signal or roundabout) or enhanced with an RRFB or PHB, if warranted, and 2) provided within 600 ft</p> | <p>For roadways with 4 lane or more and/or posted speed 35 or more, are the pedestrian crossings: 1) controlled (i.e., by a stop sign, signal or roundabout) or enhanced with an <u>RRFB or</u> PHB, if warranted, and 2) provided within 600 ft</p> | <p>Staff recommends keeping the option of an RRFB to enhance pedestrian crossings along roadways.</p> |

| | | |
|--|--|--|
| spacing in at least one direction from a pedestrian access point to the development (or at the next adjacent public street intersection if intersection spacing exceeds 600 ft)? | spacing in at least one direction from a pedestrian access point to the development (or at the next adjacent public street intersection if intersection spacing exceeds 600 ft)? | |
|--|--|--|

Next Steps

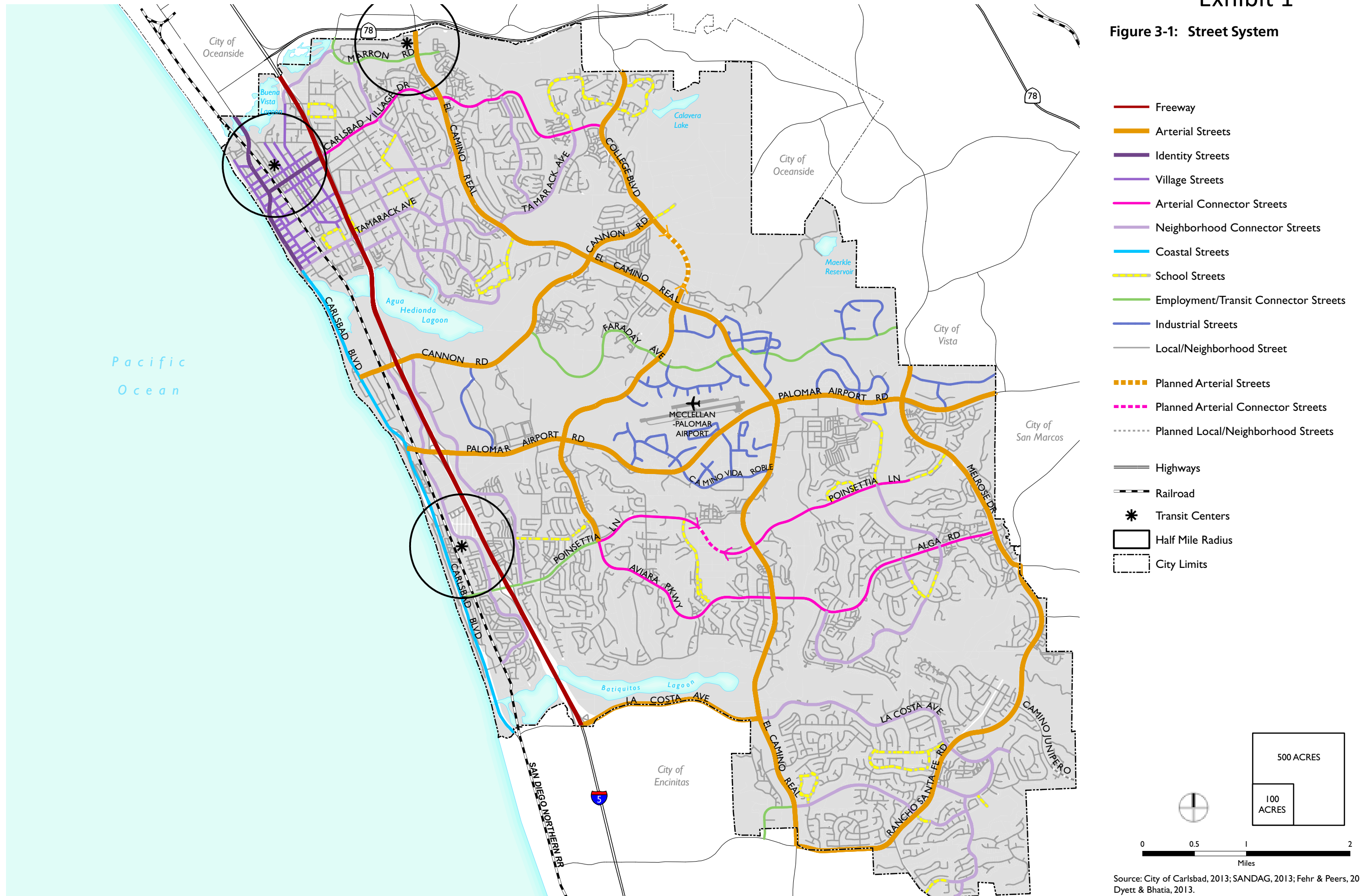
Based on feedback from the Traffic and Mobility Commission, staff will update the MMLOS methodology and results based on the recommended revisions and utilize the tool for both Growth Management Plan Monitoring and for Local Mobility Analysis for private development projects. The updated findings of this analysis will be presented to the Traffic & Mobility Commission and included in the Annual Growth Management Monitoring Report for fiscal year 2022-23. Staff will reassess the tool in 2024 after applying the updated methodology citywide for the Annual Growth Management Monitoring Report and bring any proposed changes back to the Traffic and Mobility Commission.

Exhibits

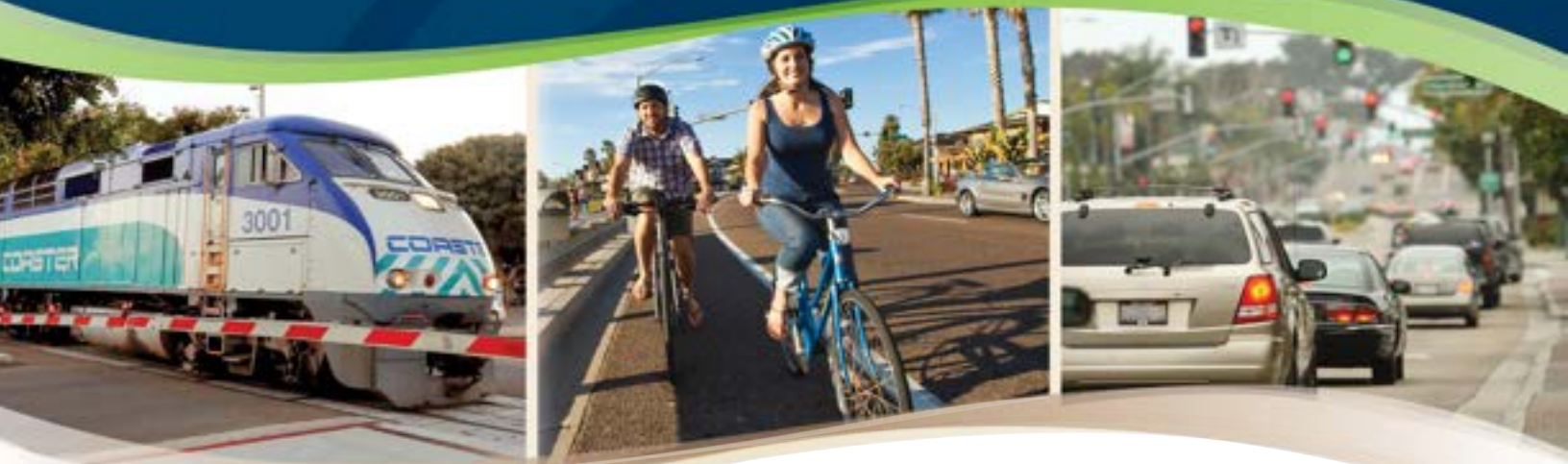
1. General Plan Mobility Element Livable Streets Network
2. Multi-Modal Level of Service (MMLOS) Methodology White Paper & Technical Memorandum
3. Multi-Modal Level of Service (MMLOS) 2022 Monitoring Results
4. Results with staff’s proposed revisions for Pedestrian and Transit LOS
5. Excerpt from the NCTD Bus Stop Development Handbook

Exhibit 1

Figure 3-1: Street System



Source: City of Carlsbad, 2013; SANDAG, 2013; Fehr & Peers, 2013; Dyett & Bhatia, 2013.



Multi-Modal Level of Service (MMLOS) Methodology White Paper & Technical Memorandum



January 9, 2022



1. Background

In 2010, the City of Carlsbad (“City”) contracted Fehr & Peers to prepare the General Plan Mobility Element. This document was designed to meet the California Complete Streets Act (Assembly Bill 1358). Specifically, the Mobility Element was developed to “include a complete streets¹ approach that balances the needs of all users of the street, including motorists, pedestrians, bicycles, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation.” The Mobility Element established a “multi-modal level of service (MMLOS) methodology for Carlsbad that determines the vehicle level of service by the Highway Capacity Manual (HCM) and evaluates the service levels for pedestrians, bicyclists, and transit users” (Mobility Element, updated September 2015). The HCM, last updated in 2022, is the industry standard for roadway analysis and is published by the Transportation Research Board (TRB). The Mobility Element evaluation methodology for active and transit modes used a customized approach that considered modes based on roadway typologies included in the Mobility Element and identified deficiencies in the existing active and transit network and services that could be improved by the City.

When the City’s MMLOS methodology was originally being developed in 2010, the transportation industry was still developing complete street strategies and used a variety of methodologies to evaluate effectiveness and quantify multimodal operations. The Mobility Element identified several jurisdictions with existing approaches to quantifying MMLOS. The jurisdictions considered included the City of Fort Collins, and the State of Florida. It also referenced the Pedestrian Environmental Quality Index (PEQI) and the Bicycle Environmental Quality Index (BEQI), both developed in the San Francisco area to evaluate streetscape improvements. Finally, the Mobility Element considered the national MMLOS guidelines published in the 2010 HCM by the Transportation Research Board (TRB) for cities to develop MMLOS methodologies. Carlsbad’s Mobility Element defined MMLOS approaches for auto, pedestrian, bicycle, and transit.

At the time the Mobility Element was being developed, the HCM MMLOS methodology was not conducive to the analysis of citywide active transportation and transit networks, due in part to the large amount of detailed data required to analyze facilities supporting these modes. The effort to collect and process this data rendered application of the HCM methodologies cost-prohibitive. Additionally, the HCM primarily considers the ability of a facility to serve the expected throughput or volume of users and does not consider the pedestrian or bicyclist experience or amenities that

¹ The terms “livable streets” and “complete streets” were used interchangeably in the Mobility Element.



may affect active transportation. Finally, the HCM MMLOS methodology included factors that were outside of the control of the City and did not align with the desire of the City to consider factors that the City would have the ability to improve if necessary. City staff recognized the shortcomings of the HCM methodology to evaluate both private development projects and for citywide monitoring purposes and determined that it would be prudent to create a customized methodology that not only incorporated principles of current best practices, but also incorporated Climate Action Plan (CAP) and Sustainable Mobility Plan (SMP) goals and considered the role that user experience has in encouraging pedestrian, bicycle, and transit facility use. The remainder of this report describes the approach to calculating LOS for each of the applicable travel modes and how the MMLOS methodology has evolved.



2. MMLOS Overview

Carlsbad has implemented a MMLOS methodology that reflects the quality of service a user experiences as opposed to measuring the demand on a given facility against its capacity. The MMLOS approach developed for Carlsbad is based on a point system related to the adherence of a facility's design to current best practices and industry standards, as well as the amenities available to the user of that facility. This approach was based on available best practices at the time of development, including elements used in the PEQI for evaluating sidewalks and paths, the BEQI for evaluating bikeways and the MMLOS methodologies used in the City of Fort Collins and the State of Florida. Using guidance from these methodologies, the City of Carlsbad created a methodology which was validated to local conditions, design guidelines, and correlates the expectations of travelers and the City to a minimum quality level for each facility type.

Pedestrian LOS

The Pedestrian LOS scoring criteria was established so that a facility can meet the LOS D standard if it can adequately serve people who walk, as well as disabled users who may use devices to assist with travel. Additionally, six criteria were identified as essential features that support the City of Carlsbad's CAP and SMP goals. A facility segment must fulfill these six criteria to be assigned a score commensurate with LOS D or better. If it fails to meet any of the essential features, the segment's score will be capped at LOS E. A partial list of all pedestrian scoring criteria includes, but is not limited to the following elements:

- Design consistent with the Manual of Uniform Traffic Control Design (MUTCD)
- Sidewalk width, condition, and ramps and landing consistent with the Americans with Disabilities Act (ADA)
- Street light spacing consistent with the City's Engineering Standard
- Speed limit and number of through lanes on the adjacent street
- Sidewalk buffer width from traffic
- Presence of a landscaped buffer
- Safety and speed control at street crossings and along the segment
- Presence of street trees.

Bicycle LOS

The Bicycle LOS scoring criteria was established so that a facility can meet the LOS D standard if it meets the expectations laid out in the SMP. Similar to Pedestrian LOS, five criteria were identified as essential features that support the City of Carlsbad's CAP and SMP. A facility segment must



fulfill these five criteria to be assigned a score commensurate with LOS D. If it fails to meet any of the essential features, the segment's score will be capped at LOS E. A partial list of all bicycle scoring criteria includes:

- Roadway pavement conditions and presence of obstructions
- Design of bikeway consistent with the MUTCD
- Presence of on street parking and parking type
- Speed limit
- Bicycle facility designation and consistency with the SMP for the study segment and intersecting segments
- Street light spacing consistent with the City's Engineering Standard.

Transit LOS

The Transit LOS scoring criteria was established so that a transit stop can meet the LOS D standard if it provides reasonable amenities and transit frequency. A stop must include several key transit stop amenities to be deemed consistent with the CAP. Similar to Pedestrian and Bicycle LOS, three criteria were identified as essential features that support the City of Carlsbad's CAP and SMP. A facility segment must fulfill these three criteria to be assigned a score commensurate with LOS D. If it fails to meet any of the essential features, the segment's score will be capped at LOS E. A partial list of all transit scoring criteria include, but are not limited to the following:

- Presence of transit stop amenities
- ADA compliant sidewalk connections to the stop
- Transit frequency and number and quality of routes serving the stop
- Presence of controlled crosswalk if applicable
- Provision of a TDM program that provides vehicle-based options in areas without frequent transit service.



3. MMLOS Changes

We gathered stakeholder feedback on the MMLOS tool through 2021 and 2022 through virtual meetings with City of Carlsbad staff members from Community Development, Streets & Traffic, Traffic and Mobility Commission (TMC), and other members designated by City staff. The MMLOS methodology and tool interface were updated as a result of the recommendations from stakeholders.

All elements of the tool were updated including the Page Zero and Glossary tabs as necessary. We also performed multiple validation and quality control checks on the tool to ensure that the updated tool is functioning properly and provides reasonable estimates of MMLOS results. The final changes incorporated in the tool are summarized below in **Table 1** through **Table 3**.



Table 1– Pedestrian MMLOS Criteria Changes

| Category | Revised | | | Original | | Changes |
|--|---|--------|---------|--|--------|--|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| Accessibility and functionality | * Essential Features: Sidewalk or path meets ADA unobstructed width based on Sustainable Mobility Plan (SMP) recommendations (Minimum recommended unobstructed width based on SMP is 5') | - | E | * Essential Features (Criteria must be met): Sidewalk or path meets ADA unobstructed width requirements | 15 | Points eliminated for all essential features. |
| | Sidewalk unobstructed width meets minimum width for typology according to the General Plan (or 5' if unspecified) ¹ | 5 | D | * Essential Features (Criteria must be met): Sidewalk width meets minimum width for typology according to the Mobility Element (or 5' if unspecified) | 10 | Word "Unobstructed" added to the criterion. Eliminated as an essential feature and point value adjusted through re-validation process. |
| | Sidewalk unobstructed width exceeds minimum width for typology according to the General Plan (or more than 5' if unspecified) ¹ | 5 | - | Sidewalk width exceeds minimum width for typology according to the Mobility Element (or 6' if unspecified) | 5 | Minimum sidewalk width has updated and the word "Unobstructed" added to the criterion. |
| | Sidewalk unobstructed width meets recommended width for typology according to the General Plan (or 8' if unspecified) | 5 | - | Sidewalk width meets recommended width for typology according to the Mobility Element (or 8' if unspecified) | 10 | Word "Unobstructed" added to the criterion and point value adjusted through re-validation process. |
| | * Essential Features: Ramps and landings at intersection meet ADA requirements | - | E | * Essential Features (Criteria must be met): Ramps and landings within segment meet ADA requirements | 10 | Points eliminated for all essential features. |
| | * Essential Features: Sidewalk segments meet ADA requirements (ramps, cross-slope, and trip hazards) | - | E | * Essential Features (Criteria must be met): Sidewalk segments meet ADA requirements (cross-slope and trip hazards) | 10 | Points eliminated for all essential features. |
| Street characteristics | 3 lanes or less, including turn lanes, to be crossed without pedestrian refuge | 5 | - | 3 lanes or less to be crossed without pedestrian refuge | 10 | Point value adjusted through re-validation process. |



| Category | Revised | | | Original | | Changes |
|---------------------------------|--|--------|---------|--|--------|--|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| | On-street parking or bike lane provides 6' or more buffer between pedestrians and vehicle travel way | 5 | - | On-street parking or bike lane provides 6' or more buffer between pedestrians and vehicle travel way | 5 | No change |
| | Landscaping 2' to 5' wide provides 'buffer' between pedestrians and vehicle travel way | 3 | - | Landscaping 2' to 5' wide provides 'buffer' between pedestrians and vehicle travel way | 5 | Point value adjusted through re-validation process. |
| | Landscaping greater than 5' wide provides 'buffer' between pedestrians and vehicle travel way | 7 | - | Landscaping greater than 5' wide provides 'buffer' between pedestrians and vehicle travel way | 10 | Point value adjusted through re-validation process. |
| | Less than 3,000 vehicles per lane per day | 5 | - | Less than 3,000 vehicles per lane per day | 5 | No change |
| | Speed limit 30 mph or less | 5 | - | Speed limit 30 mph or less | 5 | No change |
| | No apparent sight distance issues at intersections and pedestrian crossings | 5 | - | No apparent sight distance issues at intersections and pedestrian crossings | 5 | No change |
| | Permanent speed control devices installed on segments posted as approved by the City Traffic Engineer | 5 | - | Permanent speed control devices installed on segments posted as approved by the City Traffic Engineer | 5 | No change |
| Crossing characteristics | * Essential Features: Striped crosswalks are marked according to CA MUTCD guidelines | - | E | * Essential Features (Criteria must be met): Crosswalks are marked according to CA MUTCD guidelines | 10 | Text changed to include all potential crosswalk locations and/or markings |
| | * Essential Features: For roadways with 4 lane or more and/or posted speed 35 or more, are the pedestrian crossings: 1) controlled (i.e., by a stop sign, signal or roundabout) or enhanced with an RRFB or PHB, if warranted, and 2) provided within 600 ft spacing in at least one direction from a pedestrian access point to the development (or at the next adjacent public street intersection if intersection spacing exceeds 600 ft)? | - | E | - | - | Added as an essential feature to improve pedestrian network connectivity and accessibility and also improve safety on high-speed segments. |



| Category | Revised | | | Original | | Changes |
|-----------------------|---|--------|---------|--|--------|--|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| | * Essential Features: High-visibility (striped) crosswalks on all legs of all signalized intersections where crossings are permitted | - | E | Crosswalk is high visibility (i.e., continental markings per the CA MUTCD) | 5 | Classified as an essential feature to improve pedestrian on crosswalk. |
| | Traffic calming measures that reduce crossing width (pedestrian refuge, bulbouts, chokers, right-turn median island) | 7 | - | Traffic calming measures that reduce crossing width (pedestrian refuge, bulbouts, chokers, right-turn median island) | 10 | Point value adjusted through re-validation process. |
| | Presence of intersection enhancements for pedestrians (pedestrian-friendly signal phasing, pedestrian countdown heads, signage, etc.) | 5 | - | Presence of intersection enhancements for pedestrians (pedestrian-friendly signal phasing, pedestrian countdown heads, signage, etc.) | 10 | Point value adjusted through re-validation process. |
| | RRFBs at uncontrolled crossings if warranted | 5 | - | RRFBs at uncontrolled crossings if warranted | 5 | No change |
| Other Elements | street lighting locations consistent with City of Carlsbad standards for street light spacing? | 5 | - | * Essential Features (Criteria must be met): Street light locations appear adequate | 10 | Street light spacing should be reviewed according to the new developed City's Engineering Standards. Eliminated as an Essential Feature and point value adjusted through re-validation process |
| | Active building frontages on 80% of street curbline (pedestrian attracting frontages such as active storefronts and recreational spaces) | 5 | - | Active building frontages on 80% of street curbline (pedestrian attracting frontages such as active storefronts and recreational spaces) | 5 | No change |
| | Street trees provide shade over more than 50% of sidewalk length | 5 | - | Street trees provide shade over more than 50% of sidewalk length | 5 | No change |



| Category | Revised | | | Original | | Changes |
|---|--|--------|---------|--|--------|---|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| | Street furniture oriented toward businesses or attractions | 5 | - | Street furniture oriented toward businesses or attractions | 5 | No change |
| | Pedestrian scale lighting | 5 | - | Pedestrian scale lighting | 5 | No change |
| | Are directional pedestrian ramps provided? | 5 | - | - | - | Criterion added to encourage the use of direction ramps to enhance pedestrian safety and directness of travel for people who walk |
| ¹ If sidewalk width exceeds the minimum requirement, no additional points will be given for meeting the minimum sidewalk width. | | | | | | |



Table 2 – Bicycle MMLOS Criteria Changes

| Category | Revised | | | Original | | Change |
|--------------------------------|---|--------|---------|--|--------|--|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| Street Characteristics | Speed limit is ≤ 25 mph | 20 | - | Speed limit is ≤ 25 mph | 25 | Point value adjusted through re-validation process. |
| | Speed limit is 30 mph | 15 | - | Speed limit is 30 mph | 15 | No change |
| | Speed limit is 35 mph | 5 | - | Speed limit is 35 mph | 10 | Point value adjusted through re-validation process. |
| | * Essential Features: Speed limit ≥ 35 and no class I, buffered II, or IV | - | E | - | - | Added as an essential features to make sure a protected bike facility is provided on high-speed segments. |
| | Street with ADT < 3,000 | 10 | - | Street with ADT < 3,000 | 15 | Point value adjusted through re-validation process. |
| | - | - | - | Street with ADT between 3,000 and 6,000 | 10 | Deleted. Segments with ADT more than 3,000 does not provide a safe and comfortable space for bike users, so should not get any score. |
| Facility | Class I facility (off-street path, multiuse path) or Class IV (cycle track)? | 25 | - | Class I facility (off-street path), Class IV (cycle track), or multiuse path | 25 | No change |
| | Class II exist? | 5 | - | Class II facility that meets minimum width of 5' (on-street bicycle lanes) | 15 | Question split into two questions. 1) if Class II is available, 2) Minimum width of Class II bike lane (see Class II Bike Lane only questions below) |
| | Class III facility (bike route designated by signage or paint only) | 0 | - | Class III facility (bike route designated by signage or paint only) | 5 | Point value adjusted through re-validation process. |
| Connectivity/Contiguity | Bikeway meets or exceeds the SMP for designated facilities on the segment only | 10 | - | Bikeway meets or exceeds the Bicycle Master Plan | 25 | Point value adjusted through re-validation process. |



| Category | Revised | | | Original | | Change |
|---------------------------------|---|--------|---------|---|--------|--|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| Bikeway Design | Bikeway meets or exceeds the SMP for designated facilities on side streets only | 5 | - | Bikeways on side streets are consistent with Bicycle Master Plan along segment | 5 | No change |
| | Bikeway meets or exceeds the SMP for designated facilities along both the segment and side streets | 15 | - | Bikeway meets or exceeds the SMP for designated facilities along both the segment and side streets | 20 | Point value adjusted through re-validation process. |
| | * Essential Features: Bicycle facilities with signing and striping meet CA MUTCD guidelines for designated facilities | - | E | * Essential Features: Bicycle facilities with signing and striping meet design guidelines D | 10 | Points eliminated for all essential features. |
| | * Essential Features: Good pavement condition for bikeway (no visible potholes) | - | E | * Essential Features: Good pavement condition for bikeway (no visible potholes) | 10 | Points eliminated for all essential features. |
| | * Essential Features: Free of infrastructure that obstructs bike facility (e.g. grates) | - | E | * Essential Features: Free of infrastructure that obstructs bike facility (e.g. grates) | 5 | Points eliminated for all essential features. |
| Adjacent Vehicle Parking | No on-street parking and speed limit is 25 or 30 mph | 5 | - | No on-street parking and speed limit is 25 or 30 mph | 5 | No change |
| | Back-in angled parking | 5 | - | Back-in angled parking | 5 | No change |
| | On streets with parallel parking provide a minimum 2' door-side buffer at Class-II bike lanes or sharrows signage and sharrows/BMUFL installed? | 5 | - | Parallel parking with door-side buffered bike lane | 5 | Changed to emphasize the importance of minimum door-side buffer width. |
| Other Elements | Are the street lighting locations consistent with City of Carlsbad standards for street light spacing? | 5 | - | - | - | Street light spacing should be reviewed according to the new developed City's Engineering Standards |
| | - | - | - | Enhanced bicycle detection or video detection is provided at intersections | 5 | Deleted per City's request. Bike detection will be addressed through the citywide traffic signal program |



| Category | Revised | | | Original | | Change |
|--|---|--------|---------|---|--------|---|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| | - | - | - | Bicycle racks are provided along segment | 5 | Deleted per City's request. It is not a contributing factor to bike users comfort level. |
| Class II Bike lane only features | | | | | | |
| Class II Bike lane only features | * Essential Features: If Class II Bicycle lanes exists, are lanes a minimum width of 5 ft.? | - | E | Class II facility that meets minimum width of 5' (on-street bicycle lanes) | 15 | Question split into two questions. 1)if Class II is available, (see above) 2) Minimum width of Class II bike lane. |
| | Bike lane (including buffer) is at least 8' wide from face of curb | 10 | - | Bike lane (including buffer) is at least 8' wide from face of curb | 10 | No change |
| | Class-II Bike Facility Provided: 7+ Ft. ¹ | 7 | - | - | - | New criteria added because bike lanes with greater width provide more comfort for bike users. |
| | Class-II Bike Facility Provided: 6 Ft. ¹ | 5 | - | - | - | |
| | Is there a painted buffer between all vehicle and Class II bicycle lanes with CA MUTCD-recommended striping. | 5 | - | Bike lane buffer (2' min) is provided | 5 | Changed to make sure the buffer lane is striped according to design standards. |
| | * Essential Features: Do all Class-II bicycle lanes provide bicyclists with straight-through right of way or clear delineation of conflict zones at intersections? | - | E | Bike lanes are striped continuously on all approaches to and departures from intersections, without dropping at turn lanes or driveways | 5 | Wording of question changed for clarity. Added as a new essential features to make sure a bike lane connectivity is provided along the segment. |
| Class III Bike Facility only features | | | | | | |
| Facility | Additional traffic calming/speed management features have been applied to Class III facility (i.e. a bike boulevard) | 10 | - | Additional traffic calming/speed management features have been applied to Class III facility (i.e. a bike boulevard) | 10 | No change |

¹ If the total width of bike lane and buffer is more than 8', no additional points will be given for these two questions.



Table 3 – Transit MMLOS Criteria Changes

| Category | Revised | | | Original | | Change |
|----------|--|--------|--|---|--------|--|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| Access | * Essential Features: No greater than 1/4 mile to the nearest transit stop - rail and bus | - | if no bus stops within 1/2 mi of the project site cap at E. For LMA projects: if no bus stops within 1/2 mi of the project site cap at E without a TDM plan | - | - | LOS cap was added to ensure access to transit service is provided within a reasonable walking distance (i.e., 1/2-mile) of a proposed development or analysis segment. |
| | * Essential Features: No greater than 1/4 mile to the nearest transit stop - bus only | | | - | - | |
| | * Essential Features: No greater than 1/2 mile to the nearest transit stop | | | 30 (rail/bus) 20 (bus) | - | |
| | No greater than 1 mile to the nearest transit stop | 5 | - | No greater than 1 mile bicycle ride to the nearest transit stop | 5 | 1 mile bike ride changed to 1 mile distance |
| | * Essential Features: For roadways with <u>4 lanes or more and/or posted speed 35 or more</u> , are the pedestrian crossings to a transit stop on the other side of the street: 1) controlled (i.e., by a stop sign, signal or roundabout) or enhanced with an RRFB or PHB, if warranted, and 2) provided at 600 ft spacing in at least one direction from the ped access point at the development (or at the next adjacent public street intersection if intersection spacing exceeds 600 ft)? | - | E | - | - | Added to improve pedestrian network connectivity and accessibility to transit facilities and also improve safety on high-speed segments. |
| | * Essential Features: for road <u><= 3 lanes</u> : If it is more than 600 feet from a pedestrian access point to the nearest pedestrian crossing, has an engineering | - | E | - | - | For low-speed segments check enough crossing is provided to access the transit facilities on the other side of the road. |



| Category | Revised | | | Original | | Change |
|-------------------------|---|--------|---------|---|--------|--|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| | study for a mid-block crossing been conducted? | | | | | |
| | * Essential Features: Are sidewalks or paths generally ADA-compliant between the project frontage and the nearest transit stop within a 1/4 mile distance? | - | E | ADA compliant sidewalk or path to transit stops in both directions | 15 | To clarify this question for the user, the maximum distance (1/4 mile) between a development to the closest transit stop is specified. |
| Connectivity | Multiple transit routes stop on segment | 10 | - | Multiple transit routes stop on segment | 10 | No change |
| | Bus route provides a direct link to a COASTER station or mobility hub | 15 | - | Route provides a direct link to a COASTER station or mobility hub | 15 | No change |
| | - | - | - | Route provides for a single transfer to reach a COASTER station or mobility hub | 5 | Deleted. This is similar to the question above. and it is deleted to avoid getting credit to a development for both questions. |
| Transit priority | Dedicated right of way | 5 | - | Dedicated right of way | 5 | No change |
| | Transit priority during peak hours | 5 | - | Transit priority during peak hours | 5 | No change |
| Service | Non-LMA only: At least one route has Headways of- 15 minutes between 6:30-8:30 am and 4-6 pm on weekdays | 20 | - | Headways of- 15 minutes between 6:30-8:30 am and 4-6 pm on weekdays | 15 | Point value adjusted through re-validation process. |
| | Non-LMA only: Headways of 30 minutes between 6:30-8:30 am and 4-6 pm on weekdays | 10 | - | Headways of 30 minutes between 6:30-8:30 am and 4-6 pm on weekdays | 5 | Point value adjusted through re-validation process. |
| | Non-LMA only: Headways of 1 hour between 6:30-8:30 am and 4-6 pm on weekdays | 5 | - | Headways of 1 hour between 6:30-8:30 am and 4-6 pm on weekdays | 2 | Point value adjusted through re-validation process. |



| Category | Revised | | | Original | | Change |
|--|--|-----------|---------|--|--------|--|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| | Commuter shuttle service provided during the morning and afternoon commute periods | 10 | - | Commuter shuttle service provided during the morning and afternoon commute periods | 10 | No change |
| | Non-LMA only: No more than 1 hour headways between 9 am and 5 pm on weekends | 5 | - | No more than 1 hour headways between 9 am and 5 pm on weekends | 5 | No change |
| Amenities | Are essential amenities available at all of transit stops | see below | | * Essential Features: Transit stop amenities available: | - | Some important amenities changed to essential and if not met, LOS caps at E. |
| | * Essential Features: Covered bus stops/shelter | - | - | Covered bus stops | 5 | |
| | * Essential Features: Bench | - | | Bench | 10 | |
| | * Essential Features: ADA Accessible Pad | - | | - | - | |
| | Well-lit stop that provides a sense of security | 5 | - | Well-lit stop that provides a sense of security | 5 | |
| | Trash receptacle | 2 | - | Trash cans | 2 | |
| | - | - | - | Bus stop located within a block of commercial services | 5 | |
| Bicycle Accommodations | Bike parking available at the bus stop | 5 | - | Bike parking available at the bus stop | 5 | No change |
| | Is the bus stop within 1/4 of a bike repair shop or publicly accessible bike repair station? | 5 | - | Bus stop within 1/4 mile of a bike repair shop | 5 | No change |
| No Transit Stop Located Within 1/2 Mile Walk from Subject Site or Roadway Segment | | | | | | |
| Transportation Demand Management (TDM) Strategies | - | - | - | Complies with approved TDM program | 90 | deleted |



| Category | Revised | | | Original | | Change |
|--|--|--------|--|--|--------|--------------------|
| | Criterion | Points | LOS Cap | Criterion | Points | |
| Available Mobility Services | - | - | - | Area governed by an adopted TDM ordinance that will promote ridesharing and/or the use of non-auto modes | 60 | deleted |
| | - | - | - | On demand rideshare services available | 60 | deleted |
| | - | - | - | Segment within FLEX service area | 60 | deleted |
| Additional Questions for LMA Only Project | | | | | | |
| Local Mobility Analysis | * Essential Features: Are transit service headways less than or equal to 30 minutes between 6:30-8:30 am and 4-6 pm on weekdays: | - | if no, then capped at LOS E without TDM program | - | - | LOS cap was added. |
| | * Essential Features: For developments with a residential component, are transit service headways less than 60 minutes between 9:00 am and 5:00 pm on weekends: | - | If no, the capped at LOS E without a TDM plan that includes access to vehicle-based alternative transportation | - | - | LOS cap was added. |



4. Examples of Multimodal Methodologies and Tools

The transportation industry generally follows the HCM for automobile LOS analysis. However, the HCM is not as widely used for evaluating other modes of transportation. This is due to the shortcomings of the HCM methodology discussed in Section 1, and primarily due to agency staff and facility users' desire to meet the city's goals related to active transportation design and to consider the quality of bicycle, pedestrian, and transit facilities based on user comfort. Many jurisdictions do not formally calculate a LOS for non-automobile facilities, and they do not employ minimum operating standards for transit, pedestrian, and bicycle facilities. However, several public agencies have recognized the value in quantifying operations of multimodal facilities and services as a means of justifying capital expenditures for constructing new facilities, as well as requiring the implementation of these facilities as part of new development. Most importantly, this approach provides a more transparent process for the public to understand investment decisions related to mobility infrastructure. The following three jurisdictions have developed a custom methodology to analyze the quality of pedestrian, bicycle, and transit facilities in a way that reflects user comfort and also reflects each jurisdiction's unique values and planning context.

City of Aspen

In 2013, the City of Aspen developed a MMLOS toolkit which was used throughout Aspen to analyze pedestrian, bicycle, and transit facilities. This toolkit provided a variable number of points to each facility depending on the answer to questions regarding the following design features:

- Pedestrian Facilities
 - Sidewalk condition
 - Pedestrian routes
 - Driveways, parking, and access considerations
 - Traffic calming and pedestrian network
- Bicycle Facilities
 - Modifications to existing bicycle paths
 - Bicycle parking
- Transit Facilities
 - Basic transit stop amenities
 - Enhanced amenities



This methodology will be used primarily by developers to determine what improvements are needed on each roadway providing access to their project site.

The Aspen MMLOS toolkit is currently being updated and will be released by the end of this year. The updates include an additional of new infrastructure components and some point changes.

City of Boulder

In 2019, the City of Boulder published the *Boulder Low-Stress Walk and Bike Network Plan* which includes a methodology for evaluating both pedestrian and bicycle facilities throughout Boulder. The pedestrian facility evaluation considers pedestrian level of traffic stress (LTS) and the network on which pedestrians can access destinations within a 15-minute walk. The scoring scale for this methodology is based on a scale of LTS 1 to 4 where LTS 1 is the lowest stress or most comfortable facility and LTS 4 is the least comfortable facility. This methodology includes the following considerations:

- Segment level of comfort
 - Presence of sidewalk and proximity to vehicle travel paths
 - Number of travel lanes
 - Presence of a center median
 - Posted speed limit
 - Presence and frequency of commercial driveway curb cuts
- Crossing level of comfort
 - Intersection control
 - Traffic control device
 - Marking presence
 - Intersection posted speed limit (if different from segment posted speed limit)
 - Crossing distance

This document also included the following recommendations to the City of Boulder to add additional criteria to the evaluation methodology as additional data becomes available. The additional suggested data is as follows:

- Median width
- Pedestrian-scale lighting
- Sidewalk condition
- Traffic volumes
- Turn lanes
- Leading pedestrian intervals and signal timing



- Turning operations
- Turning speed and travel speed
- Geometric design elements

The bicycle facility evaluation considers a bicycle vision network and includes a facility type selection tool that recommends improvements given the following criteria:

- Posted speed limit
- Average daily traffic (ADT)
- Number of lanes

These methodologies were developed based on national research and best practices from Mekuria, Furth, and Nixon's Level of Traffic Stress methodology (2012), National Association of City Transportation Officials (NACTO) Urban Streets Design Guide and the American Association of State Highway and Transportation Officials (AASHTO).

County of Montgomery

The County of Montgomery in Virginia is currently poised to adopt updates to their Local Area Transportation Review (LATR) process to incorporate Vision Zero. The current LATR process includes review of vehicular, bicycle, and transit facilities. The methodologies used for each are as follows:

- Vehicular Evaluation: LOS
- Bicycle Facility Evaluation: Level of Traffic Stress accessibility
- Transit Facility Evaluation: LOS / Transit Capacity and the Quality of Service Manual

The current update will change some of the evaluation methods to be similar to those used in the City of Carlsbad. The proposed updated methodologies are as follows:

- Vehicular Evaluation: Focus on crash mitigation over roadway capacity improvements
- Bicycle Facility Evaluation: Level of Traffic Stress accessibility
- Transit Facility Evaluation: LOS / Transit Capacity and Quality of Service Manual and pedestrian LTS analysis from the project site to all nearby transit stops
- Pedestrian Facility Evaluation: Pedestrian Level of Comfort (similar to LTS) accessibility analysis

Additionally, Montgomery County is considering a change in General Plan metrics to person throughput for both passenger vehicle and transit modes on a corridor level.



City and County of Honolulu

City and County of Honolulu Department of Transportation Services (DTS) published Transportation Impact Assessment Guide (DTS TIA Guide) in 2020. This guideline includes the level of service analysis for all modes including auto, pedestrian, bicycle, and transit.

DTS's TIA guideline recommends using the most current version of the PEQI for pedestrian LOS analysis. PEQI measures 36 indicators across six categories: including intersection safety, traffic, street design, land use, perceptions of safety, and perceptions of walkability. Each indicator is assigned a weighted score and added together to generate a total score for a segment or an intersection. Then, a comfort rating from one to four is assigned to each PEQI score range representing relative pedestrian comfort.

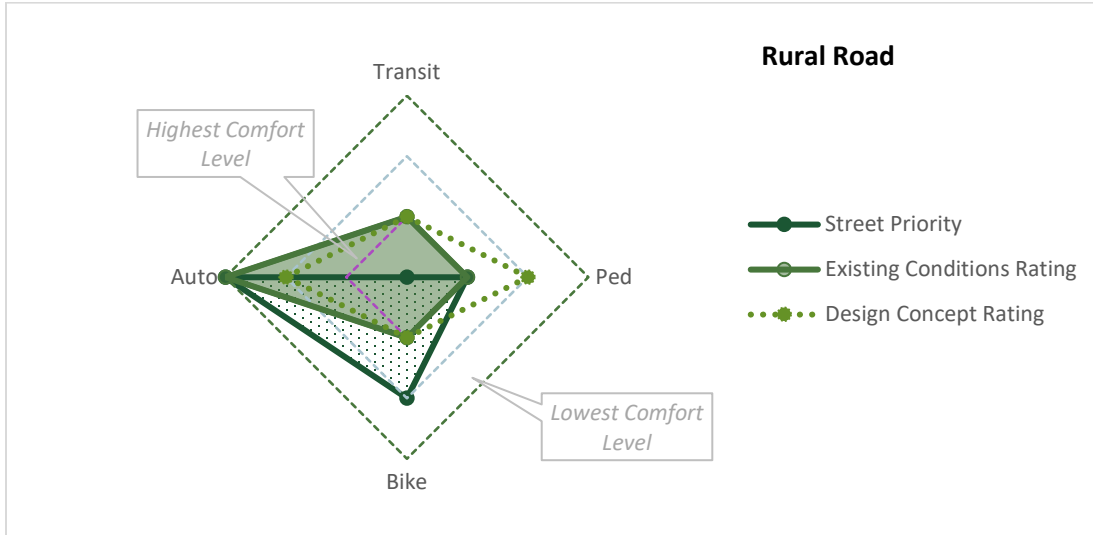
The Level of Traffic Stress (LTS) analysis for bicycles should be evaluated using the City-specific LTS tool. The bicycle LTS tool evaluates bicycling conditions using four (4) metrics including traffic volumes, vehicle speeds, type of bicycle infrastructure, and roadway design. An LTS rating from one (1) to four (4) is assigned to each study segment or intersection representing the level of comfort for bicyclists.

Transit Capacity and Quality of Service Manual (TCQSM) is a tool to evaluate transit LOS recommended by the DTS TIA Guidelines. The TCQSM tool evaluates transit operations, transit amenities, and pedestrian environment; and assigns a score to each study segment by direction. A rating from one (1) to four (4) is assigned to each segment representing relative transit operations/comfort.

The performance of all modes should be compared to target scores which vary by street type throughout the City and County of Honolulu. Targets are based on the priorities for the study segments. For instance, automobile traffic and transit services are prioritized on expressways, boulevards, and parkways where traffic speeds and volumes are higher, while pedestrian and bicycle comfort scores are prioritized on streets, shared streets and mews (pedestrian malls). The study segments need to be evaluated and presented in a diagram that includes a target score, an existing score, and a design concept score (if applicable) as shown in the example below. A segment is performing well if the existing rating is lower or equal to the target score.



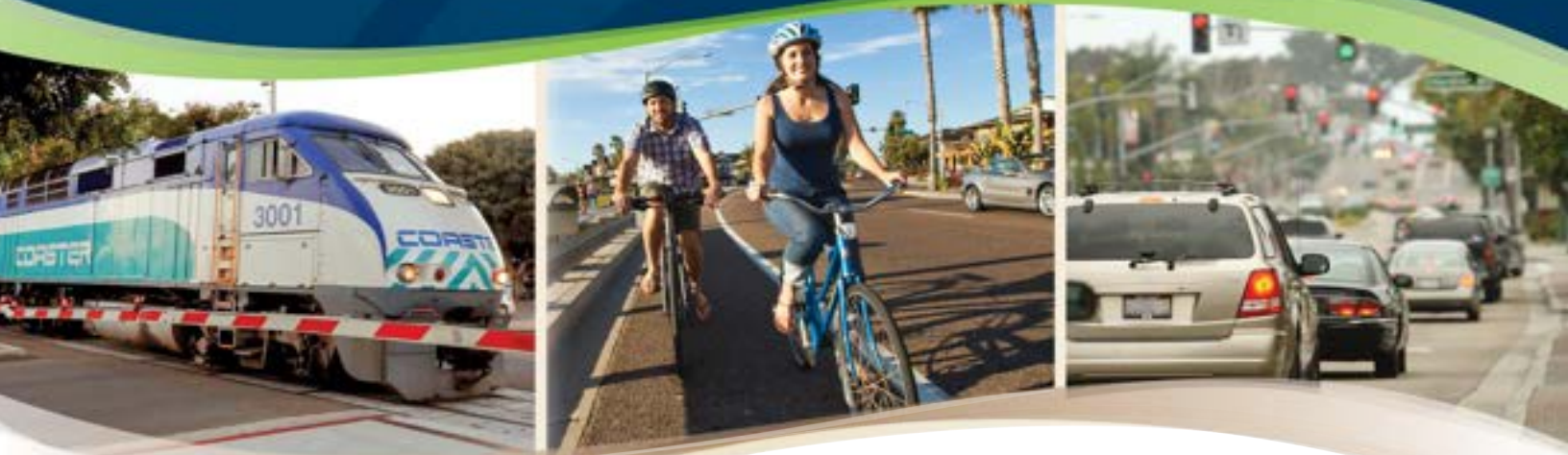
Example Diagram for a rural road: Auto, ped, bike, and transit are priority modes on a rural roadway.





5. Conclusion

Consistent with best practices employed in other communities across the country, and to quantitatively evaluate multimodal facilities for purposes of monitoring, the City developed a customized MMLOS methodology for pedestrian, bicycle and transit facilities and services. This practice incorporates the innovative approach to evaluating mobility in support of livable streets and implementation of the CAP and SMP. The MMLOS tool provides a cost-effective and locally validated method of determining deficiencies in the non-automobile transportation network based on easily obtained quantitative information. Analyses can be performed by both City staff and developer consultants to ultimately ensure compliance with the Growth Management Program (GMP) monitoring efforts.



Multi-Modal Level of Service (MMLOS)
2022 Monitoring Results
Coastal, Village, Identity, School Streets



January 25, 2023

Prepared by:



1. Introduction

Consistent with the General Plan and Sustainable Mobility Plan (SMP), the City of Carlsbad has established a process for evaluating transit, bicycle, and pedestrian Multimodal Level of Service (MMLOS) on all applicable city streets. The MMLOS methodology and tool provide a means for evaluating the impacts of individual development projects, as well as monitoring the LOS for individual streets to ensure that they are meeting the specified minimum operating standard by street type. The MMLOS tool provides results of LOS A (the best) through F (the worst) for transit and active transportation modes and helps the City to identify where additional improvements are required to meet the minimum operating standard of LOS D.



An example of a high-quality pedestrian intersection.

This document presents the MMLOS monitoring process for a subset of the City street typologies including Identity Streets, Village Streets, Coastal Streets, and School Streets. All four roadway typologies require that Pedestrian or Bicycle LOS be analyzed per the City's General Plan. A few sample segments where Transit LOS analysis is required within the Industrial, Employment/Transit Connector, and Arterial Street typologies were also selected and tested using the updated 2022 tool.

Initially, the tool was developed in July 2018 and later updated in 2019. After two years, the project team was requested to further refine the MMLOS tool based on comments provided by Traffic Mobility Commission (TMC) members and City staff to provide more reasonable and intuitive results for all modes. One of the major changes is that new "capping" criteria for essential features (and a few non-essential features) were introduced into the tool for all modes so that if selected criteria are not met, the total score will be capped at a specified LOS grade.

This report presents the analysis results of the four roadway typologies noted above for Pedestrian and Bicycle LOS (plus a few segments for testing the Transit tool) with the following total street segment lengths:

- Identity Streets: 4.4 miles (2.2 miles in each direction)
- Village Streets: 19.0 miles (9.5 miles in each direction)
- Coastal Streets: 10.0 miles (5.0 miles in each direction)

- School Streets: 25.6 miles (12.8 miles in each direction)
- Industrial Streets: 2.8 miles (1.4 miles in each direction)
- Employment/Transit Connector Streets: 9.0 miles (4.5 miles in each direction)
- Arterial Streets: 11.4 miles (5.7 miles in each direction)

Overall, a total of 41.1 miles of City of Carlsbad roadways were analyzed using the newly revised December 2022 MMLOS methodology. This document provides the detailed results of this analysis for all study segments and identifies those street segments where either the Bicycle, Pedestrian, or Transit LOS is currently deficient (LOS E or F).

2. Data Collection and Analysis

Methodology

Utilizing the methodology outlined in the July 2018 Methodology report with the updates listed in **Section 1**, pedestrian, bicycle, and transit facilities on both sides of the roadway were initially analyzed using (1) an initial desktop review using Google Earth, and (2) a subsequent field visit to each study location to verify the desktop review in 2019.



Example of pedestrian field observation.

In 2022, previous data collected in 2019 was reviewed and updated once more based on newer versions of data provided by the City or collected through Google Earth.

Information on existing streetlight locations, roadway typologies within the City, existing sidewalk locations and width, and bicycle facility designations were obtained from the City's draft Sustainable Mobility Plan (SMP), 2020. Speed limit information was provided by the City of Carlsbad. The accessibility and safety requirements for crosswalks, ramps, landings, and bike facility signing and striping were evaluated with the most recent guidelines including City of Carlsbad Engineering Standards (2022), Americans with Disabilities Act (ADA), and Manual on Uniform Traffic Control Devices (MUTCD) guidelines (CA Edition).

Daily segment volumes were collected as part of the previous effort in 2019. The 2022 Average Daily Traffic (ADT) were obtained by applying a one percent (1%) annual growth rate to 2019 volumes. The one percent (1%) growth rate was obtained from 2015 Traffic Monitoring Program. Transit segments attributes were collected using Google Earth and data from the public transit agency, North County Transit District, that provides transit services in the city. All other attributes were collected using Google Earth and field observation verification.

The information gathered was inputted into Geographic Information Software (GIS) software in which a single layer was created to include data for all inputs included on the Pedestrian and Bicycle LOS tabs of the MMLOS Tool.

Every segment was analyzed using a "weakest link" approach, in which the entire segment was reviewed and given a score for the worst-performing portion of the segment. For example, if a roadway segment has an 8-foot wide sidewalk for a portion of the segment and a 5-foot wide sidewalk for the remainder, the 5-foot sidewalk will be recorded as the maximum unobstructed sidewalk width and a note will be recorded in the GIS data that identifies the presence of a wider sidewalk along a portion of the segment.

3. MMLOS Monitoring Results

The results of the analysis using the December 2022 MMLOS methodology are illustrated in **Figure 1** through **Figure 3** for the pedestrian, bicycle, and transit modes, respectively.

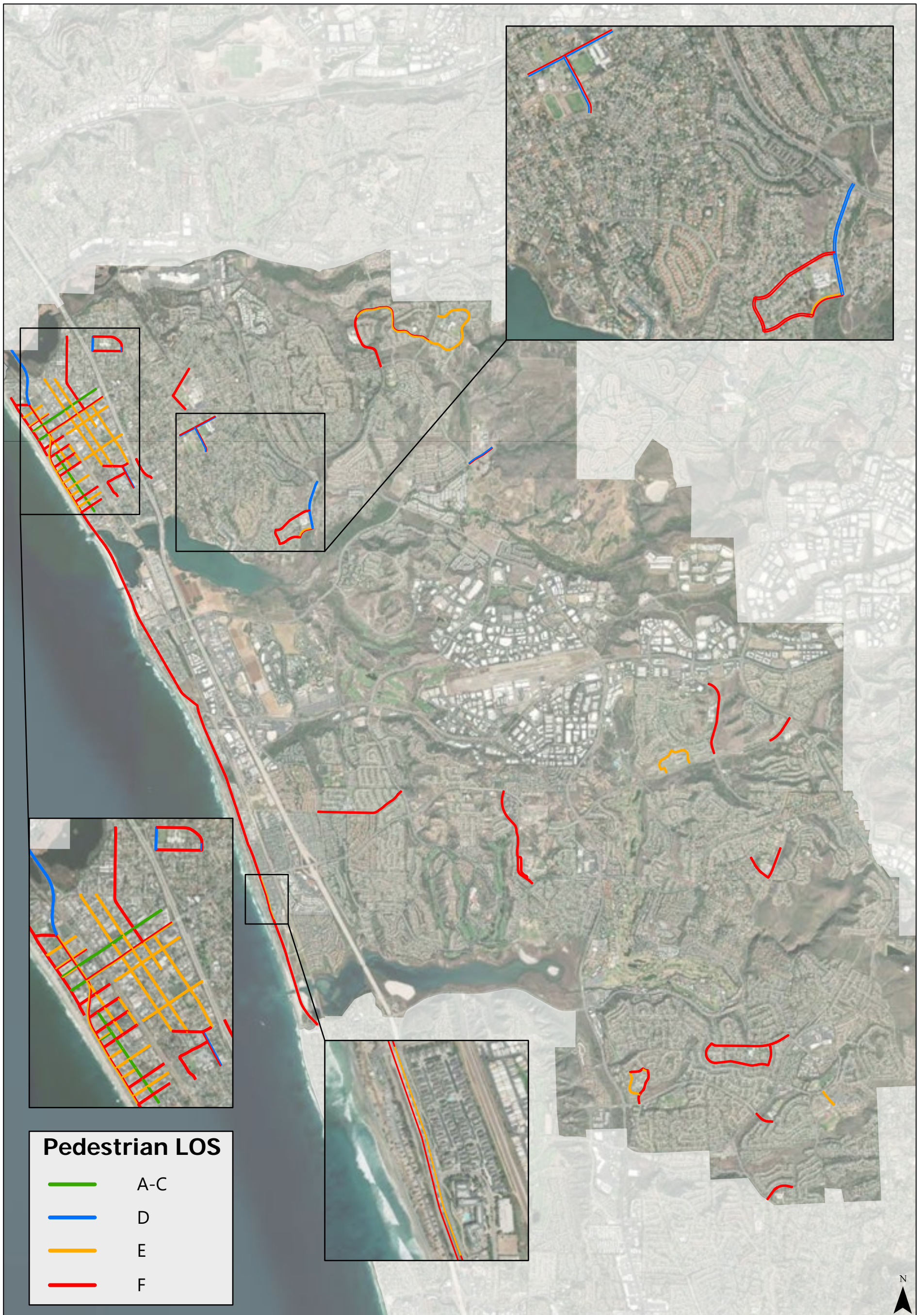
Those segments that are currently deficient (LOS E or F) are listed in **Table 1 through Table 3** below. The primary reason for the deficiency, whether or not essential features are met, is also listed in the tables.



Examples of pedestrian deficient roadways



Examples of bicycle and transit deficient roadways, respectively.



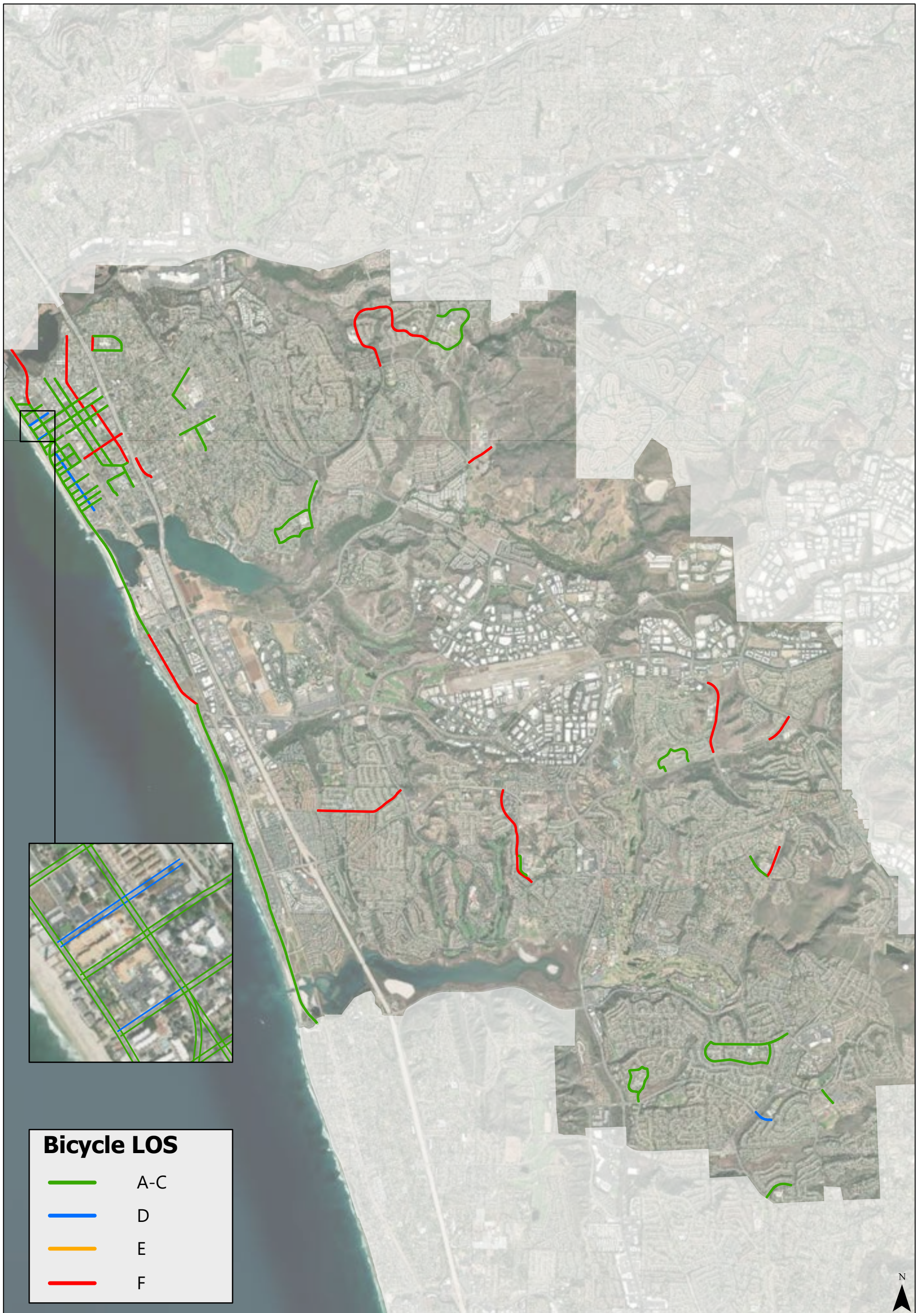




Table 1 – Pedestrian LOS Segment Deficiencies

| Roadway | Extent (From) | Extent (To) | Street Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|----------------|-----------------|------------------|-----------------|-----------|-------|-----|---|--------------|------------------|----------------------------|---------------------------|-------------------------------|
| | | | | | | | Sidewalk Minimum Width | ADA Sidewalk | ADA Ramp/Landing | MUTCD Consistent Crosswalk | High Visibility Crosswalk | Controlled Crossing & Spacing |
| Cannon Rd | College Blvd | East Termination | School | EB | 39 | F | No | No | No | Yes | Yes | No |
| Jefferson St | Anchor Way | Magnolia Ave | Village | SB | 42 | F | Yes | Yes | No | Yes | Yes | No |
| Poinsettia Ln | Melrose Dr | Paseo Escuela | School | NB | 19 | F | Yes | Yes | Yes | Yes | No | Yes |
| Poinsettia Ln | Melrose Dr | Paseo Escuela | School | SB | 19 | F | Yes | Yes | Yes | Yes | No | Yes |
| Conosa Way | Ambrosia Ln | Ambrosia Ln | School | NB | 49 | F | No | No | No | Yes | Yes | No |
| Conosa Way | Ambrosia Ln | Ambrosia Ln | School | SB | 49 | F | No | No | No | Yes | Yes | No |
| Anchor Way | Jefferson St | Hibiscus Cir | School | NB | 32 | F | Yes | Yes | No | Yes | No | No |
| Anchor Way | Jefferson St | Hibiscus Cir | School | SB | 32 | F | Yes | Yes | No | Yes | No | No |
| Geode Ln | Titanite Pl | Quartz Way | School | NB | 52 | E | Yes | Yes | Yes | Yes | No | No |
| Geode Ln | Titanite Pl | Quartz Way | School | SB | 57 | E | Yes | Yes | Yes | Yes | No | No |
| Camino Robledo | Avenida Toronja | Paseo Aliso | School | NB | 47 | F | Yes | Yes | Yes | No | No | No |
| Camino Robledo | Avenida Toronja | Paseo Aliso | School | SB | 52 | E | Yes | Yes | Yes | No | No | No |
| Maple Ave | Garfield | Carlsbad Blvd | Village | NB | 59 | E | Yes | Yes | Yes | No | No | No |
| Maple Ave | Garfield | Carlsbad Blvd | Village | SB | 59 | E | Yes | Yes | Yes | No | No | No |
| Mica Rd | Titanite Pl | Poinsettia Ln | School | EB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Mica Rd | Titanite Pl | Poinsettia Ln | School | WB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Titanite Pl | Mica Rd | Geode Ln | School | EB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Titanite Pl | Mica Rd | Geode Ln | School | WB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Valley St | Chestnut Ave | Basswood Ave | School | EB | 37 | F | Yes | Yes | Yes | Yes | No | No |
| Valley St | Chestnut Ave | Basswood Ave | School | WB | 37 | F | Yes | Yes | Yes | Yes | No | No |
| Cherry Ave | Garfield St | Carlsbad Blvd | Village | NB | 54 | E | Yes | Yes | Yes | No | No | No |
| Cherry Ave | Garfield St | Carlsbad Blvd | Village | SB | 54 | E | Yes | Yes | Yes | No | No | No |

| Roadway | Extent (From) | Extent (To) | Street Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|-----------------|----------------------|----------------------|-----------------|-----------|-------|-----|---|--------------|------------------|----------------------------|---------------------------|-------------------------------|
| | | | | | | | Sidewalk Minimum Width | ADA Sidewalk | ADA Ramp/Landing | MUTCD Consistent Crosswalk | High Visibility Crosswalk | Controlled Crossing & Spacing |
| Pio Pico Dr | Tamarak Ave | Magnolia Ave | School | EB | 27 | F | Yes | Yes | Yes | Yes | No | Yes |
| Pio Pico Dr | Tamarak Ave | Magnolia Ave | School | WB | 27 | F | Yes | Yes | Yes | Yes | No | Yes |
| Park Dr | Kelly Dr | Alondra Dr | School | NB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Park Dr | Kelly Dr | Alondra Dr | School | SB | 44 | F | No | No | No | Yes | No | No |
| Buena Vista Way | Highland Dr | Pio Pico Dr | School | NB | 42 | F | No | No | No | No | No | No |
| Buena Vista Way | Highland Dr | Pio Pico Dr | School | SB | 42 | F | No | No | No | No | No | No |
| Highland Dr | Buena Vista Way | Las Flores Dr | School | NB | 44 | F | No | Yes | Yes | Yes | Yes | No |
| Sycamore Ave | Garfield St | Carlsbad Blvd | Village | NB | 54 | E | No | Yes | Yes | Yes | Yes | No |
| Quartz Way | Poinsettia Ln | GEODE LN | School | NB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Quartz Way | Poinsettia Ln | GEODE LN | School | SB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Maverick Way | Southern Termination | Camino De Los Coches | School | NB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Maverick Way | Southern Termination | Camino De Los Coches | School | SB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| El Fuerte St | Lucienga St | Corintia St | School | NB | 34 | F | Yes | Yes | Yes | Yes | Yes | No |
| El Fuerte St | Lucienga St | Corintia St | School | SB | 34 | F | Yes | Yes | No | Yes | Yes | No |
| Carlsbad Blvd | La Costa Ave | Avenida Encinas | Coastal | NB | 31 | F | No | No | No | Yes | No | Yes |
| Carlsbad Blvd | La Costa Ave | Avenida Encinas | Coastal | SB | 31 | F | No | No | No | Yes | No | Yes |
| Tamarack Ave | Strata Dr | College Blvd | School | NB | 59 | E | Yes | Yes | Yes | No | No | No |
| Tamarack Ave | Strata Dr | College Blvd | School | SB | 59 | E | Yes | Yes | Yes | No | No | No |
| Tamarack Ave | College Blvd | Strata Dr | School | EB | 59 | E | Yes | Yes | Yes | No | No | No |
| Tamarack Ave | College Blvd | Strata Dr | School | WB | 59 | E | Yes | Yes | Yes | No | No | No |
| Las Flores Dr | Highland Dr | Pio Pico Dr | School | NB | 44 | F | No | Yes | Yes | Yes | No | No |
| Las Flores Dr | Highland Dr | Pio Pico Dr | School | SB | 44 | F | No | Yes | Yes | Yes | No | No |
| Basswood Ave | Valley St | Monroe St | School | EB | 37 | F | Yes | Yes | Yes | No | No | No |
| Basswood Ave | Valley St | Monroe St | School | WB | 37 | F | No | No | No | No | No | No |

| Roadway | Extent (From) | Extent (To) | Street Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|---------------------|------------------|-----------------|-----------------|-----------|-------|-----|---|--------------|------------------|----------------------------|---------------------------|-------------------------------|
| | | | | | | | Sidewalk Minimum Width | ADA Sidewalk | ADA Ramp/Landing | MUTCD Consistent Crosswalk | High Visibility Crosswalk | Controlled Crossing & Spacing |
| Magnolia Ave | Brady Cir | Monroe St | School | WB | 37 | F | No | Yes | Yes | Yes | Yes | No |
| Hibiscus Cir | Tamarack Ave | Anchor Way | School | NB | 42 | F | Yes | Yes | No | No | No | No |
| Hibiscus Cir | Tamarack Ave | Anchor Way | School | SB | 42 | F | Yes | Yes | No | No | No | No |
| Hillside Dr | Kelly Dr | Valencia Ave | School | EB | 37 | F | Yes | Yes | Yes | Yes | No | No |
| Hillside Dr | Kelly Dr | Valencia Ave | School | WB | 37 | F | Yes | Yes | Yes | Yes | No | No |
| Alondra Dr | Park Dr | Valencia Ave | School | NB | 47 | F | Yes | Yes | Yes | Yes | No | No |
| Alondra Dr | Park Dr | Valencia Ave | School | SB | 42 | F | Yes | Yes | Yes | Yes | No | No |
| Valencia Ave | Alondra Way | Hillside Dr | School | NB | 47 | F | Yes | Yes | No | No | No | No |
| Valencia Ave | Alondra Way | Hillside Dr | School | SB | 47 | F | Yes | Yes | No | No | No | No |
| Camino De Las Ondas | Aviara Pkwy | Paseo Del Norte | School | EB | 37 | F | Yes | Yes | Yes | Yes | No | No |
| Camino De Las Ondas | Aviara Pkwy | Paseo Del Norte | School | WB | 37 | F | Yes | Yes | Yes | Yes | No | No |
| Ambrosia Ln | Aviara Pkwy | Calliandra Rd | School | NB | 37 | F | Yes | Yes | Yes | Yes | No | No |
| Ambrosia Ln | Aviara Pkwy | Calliandra Rd | School | SB | 37 | F | Yes | Yes | Yes | Yes | No | No |
| Ambrosia Ln | Poinsettia Ln | Calliandra Rd | School | NB | 39 | F | Yes | Yes | Yes | Yes | No | Yes |
| Ambrosia Ln | Poinsettia Ln | Calliandra Rd | School | SB | 39 | F | Yes | Yes | Yes | Yes | No | Yes |
| El Fuerte St | Bressi Ranch Way | Poinsettia Ln | School | NB | 29 | F | No | No | No | Yes | No | Yes |
| El Fuerte St | Bressi Ranch Way | Poinsettia Ln | School | SB | 34 | F | Yes | Yes | Yes | Yes | No | Yes |
| Corintia St | Cazadero St | El Fuerte St | School | NB | 49 | F | Yes | Yes | No | No | No | No |
| Corintia St | Cazadero St | El Fuerte St | School | SB | 49 | F | Yes | Yes | No | No | No | No |
| Paseo Aliso | Camino Robledo | Calle Barcelona | School | NB | 49 | F | Yes | Yes | Yes | Yes | No | No |
| Paseo Aliso | Camino Robledo | Calle Barcelona | School | SB | 49 | F | Yes | Yes | Yes | Yes | No | No |
| Paseo Tulipero | Avenida toronja | Paseo Aliso | School | EB | 57 | E | Yes | Yes | Yes | No | No | No |

| Roadway | Extent (From) | Extent (To) | Street Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|-----------------|---------------------|---------------------|-----------------|-----------|-------|-----|---|--------------|------------------|----------------------------|---------------------------|-------------------------------|
| | | | | | | | Sidewalk Minimum Width | ADA Sidewalk | ADA Ramp/Landing | MUTCD Consistent Crosswalk | High Visibility Crosswalk | Controlled Crossing & Spacing |
| Paseo Tulipero | Avenida toronja | Paseo Aliso | School | WB | 57 | E | Yes | Yes | Yes | No | No | No |
| Avenida Toronja | Paseo Tulipero | Camino Robledo | School | EB | 47 | F | Yes | Yes | Yes | No | No | No |
| Avenida Toronja | Paseo Tulipero | Camino Robledo | School | WB | 47 | F | Yes | Yes | Yes | No | No | No |
| Levante St | Estancia St | Segovia Way | School | EB | 42 | F | Yes | Yes | No | No | No | No |
| Levante St | Estancia St | Segovia Way | School | WB | 47 | F | Yes | Yes | No | No | No | No |
| Segovia Way | Estancia St | Levante St | School | NB | 47 | F | Yes | Yes | No | No | No | No |
| Segovia Way | Estancia St | Levante St | School | SB | 47 | F | Yes | Yes | No | No | No | No |
| Estancia St | Levante St | Segovia Way | School | NB | 47 | F | Yes | Yes | No | No | No | No |
| Estancia St | Levante St | Segovia Way | School | SB | 42 | F | Yes | Yes | No | No | No | No |
| Levante St | La Costa Ave | Estancia St | School | NB | 42 | F | Yes | Yes | No | Yes | No | No |
| Levante St | La Costa Ave | Estancia St | School | SB | 37 | F | Yes | Yes | No | Yes | No | No |
| Calle Barcelona | Calle Posada | Rancho Santa Fe Rd | School | EB | 44 | F | Yes | Yes | Yes | Yes | No | No |
| Calle Barcelona | Calle Posada | Rancho Santa Fe Rd | School | WB | 44 | F | Yes | Yes | Yes | Yes | No | No |
| Calle Acervo | Rancho Santa Fe Rd | Calle Catalonia | School | EB | 44 | F | Yes | Yes | Yes | Yes | No | No |
| Calle Acervo | Rancho Santa Fe Rd | Calle Catalonia | School | WB | 49 | F | Yes | Yes | Yes | Yes | No | No |
| Jefferson St | Pine Ave | Carlsbad Village Dr | Village | NB | 59 | E | Yes | Yes | Yes | No | No | No |
| Jefferson St | Pine Ave | Carlsbad Village Dr | Village | SB | 59 | E | Yes | Yes | Yes | No | No | No |
| Jefferson St | Carlsbad Village Dr | Las Flores Dr | Village | NB | 34 | F | Yes | Yes | Yes | No | No | No |
| Jefferson St | Carlsbad Village Dr | Las Flores Dr | Village | SB | 34 | F | Yes | Yes | Yes | No | No | No |

| Roadway | Extent (From) | Extent (To) | Street Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|---------------|---------------------|---------------------|-----------------|-----------|-------|-----|---|--------------|------------------|----------------------------|---------------------------|-------------------------------|
| | | | | | | | Sidewalk Minimum Width | ADA Sidewalk | ADA Ramp/Landing | MUTCD Consistent Crosswalk | High Visibility Crosswalk | Controlled Crossing & Spacing |
| Harding St | Magnolia Ave | Carlsbad Village Dr | Village | NB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Harding St | Magnolia Ave | Carlsbad Village Dr | Village | SB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Madison St | Arbuckle Pl | Laguna Dr | Village | NB | 56 | E | No | No | No | Yes | No | No |
| Madison St | Arbuckle Pl | Laguna Dr | Village | SB | 56 | E | No | No | No | Yes | No | No |
| Madison St | Magnolia Ave | Carlsbad Village Dr | Village | NB | 59 | E | Yes | Yes | Yes | No | No | No |
| Madison St | Magnolia Ave | Carlsbad Village Dr | Village | SB | 59 | E | Yes | Yes | Yes | No | No | No |
| Roosevelt St | Carlsbad Village Dr | Laguna St | Village | NB | 59 | E | Yes | Yes | Yes | No | No | No |
| Roosevelt St | Carlsbad Village Dr | Laguna St | Village | SB | 59 | E | Yes | Yes | Yes | No | No | No |
| Roosevelt St | Magnolia Ave | Carlsbad Village Dr | Village | NB | 59 | E | No | Yes | Yes | No | No | No |
| Roosevelt St | Magnolia Ave | Carlsbad Village Dr | Village | SB | 59 | E | No | Yes | Yes | No | No | No |
| Washington St | Chestnut Ave | Pine Ave | Village | EB | 57 | E | No | Yes | Yes | No | No | No |
| Washington St | Chestnut Ave | Pine Ave | Village | WB | 59 | E | Yes | Yes | Yes | No | No | No |
| Ocean St | Pine Ave | Pacific Ave | Village | NB | 37 | F | No | No | No | No | No | No |
| Ocean St | Pine Ave | Pacific Ave | Village | SB | 37 | F | No | No | No | No | No | No |
| Lincoln St | Chestnut Ave | Carlsbad Village Dr | Village | NB | 52 | E | Yes | Yes | Yes | No | No | No |
| Lincoln St | Chestnut Ave | Carlsbad Village Dr | Village | SB | 52 | E | Yes | Yes | Yes | No | No | No |
| Beech Ave | Ocean St | Washington St | Village | EB | 59 | E | Yes | Yes | Yes | No | No | No |
| Beech Ave | Ocean St | Washington St | Village | WB | 59 | E | Yes | Yes | Yes | No | No | No |

| Roadway | Extent (From) | Extent (To) | Street Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|---------------------|---------------|---------------|-----------------|-----------|-------|-----|---|--------------|------------------|----------------------------|---------------------------|-------------------------------|
| | | | | | | | Sidewalk Minimum Width | ADA Sidewalk | ADA Ramp/Landing | MUTCD Consistent Crosswalk | High Visibility Crosswalk | Controlled Crossing & Spacing |
| Christiansen Ave | Ocean St | Washington St | Village | EB | 49 | F | No | No | No | Yes | No | No |
| Christiansen Ave | Ocean St | Washington St | Village | WB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Cypress Ave | Ocean St | Carlsbad Blvd | Village | EB | 47 | F | No | No | No | Yes | No | No |
| Cypress Ave | Ocean St | Carlsbad Blvd | Village | WB | 47 | F | No | No | No | Yes | No | No |
| Carlsbad Village Dr | Ocean St | Washington St | Village | EB | 49 | F | Yes | Yes | Yes | No | No | No |
| Carlsbad Village Dr | Ocean St | Washington St | Village | WB | 49 | F | Yes | Yes | Yes | No | No | No |
| Oak Ave | Railroad | I-5 | Village | EB | 57 | E | Yes | Yes | Yes | No | No | No |
| Oak Ave | Railroad | I-5 | Village | WB | 57 | E | Yes | Yes | Yes | No | No | No |
| Pine Ave | Carlsbad Blvd | Washington St | Village | EB | 47 | F | Yes | Yes | Yes | No | No | No |
| Pine Ave | Carlsbad Blvd | Washington St | Village | WB | 47 | F | Yes | Yes | Yes | No | No | No |
| Walnut Ave | Carlsbad blvd | Washington St | Village | EB | 47 | F | Yes | Yes | Yes | No | No | No |
| Walnut Ave | Carlsbad blvd | Washington St | Village | WB | 42 | F | No | Yes | Yes | No | No | No |
| Chestnut Ave | Carlsbad Blvd | WashingtonSt | Village | EB | 37 | F | No | No | No | Yes | No | No |
| Chestnut Ave | Carlsbad Blvd | WashingtonSt | Village | WB | 37 | F | No | No | No | Yes | No | No |
| Chestnut Ave | I-5 | Railroad | Village | EB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Chestnut Ave | I-5 | Railroad | Village | WB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Magnolia Ave | Roosevelt St | Harding St | Village | EB | 47 | F | Yes | Yes | Yes | No | No | No |
| Magnolia Ave | Roosevelt St | Harding St | Village | WB | 47 | F | Yes | Yes | Yes | No | No | No |
| Acacia Ave | Carlsbad Blvd | Railroad | Village | EB | 52 | E | Yes | Yes | Yes | No | No | No |
| Acacia Ave | Carlsbad Blvd | Railroad | Village | WB | 52 | E | Yes | Yes | Yes | No | No | No |
| Juniper Ave | Carlsbad Blvd | Railroad | Village | EB | 47 | F | No | No | No | Yes | No | No |
| Juniper Ave | Carlsbad Blvd | Railroad | Village | WB | 47 | F | No | No | No | Yes | No | No |

| Roadway | Extent (From) | Extent (To) | Street Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|---------------------|---------------------|---------------------|-------------------------------|-----------|-------|-----|---|--------------|------------------|----------------------------|---------------------------|-------------------------------|
| | | | | | | | Sidewalk Minimum Width | ADA Sidewalk | ADA Ramp/Landing | MUTCD Consistent Crosswalk | High Visibility Crosswalk | Controlled Crossing & Spacing |
| Hemlock Ave | Carlsbad Blvd | Railroad | Village | EB | 52 | E | Yes | Yes | Yes | No | No | No |
| Hemlock Ave | Carlsbad Blvd | Railroad | Village | WB | 52 | E | Yes | Yes | Yes | No | No | No |
| Redwood Ave | Garfield St | Carlsbad Blvd | Village | EB | 47 | F | Yes | Yes | Yes | Yes | No | No |
| Redwood Ave | Garfield St | Carlsbad Blvd | Village | WB | 47 | F | Yes | Yes | Yes | Yes | No | No |
| Carlsbad Blvd | Carlsbad Village Dr | Cypress Ave | Identity (adjacent to retail) | NB | 56 | E | Yes | Yes | Yes | Yes | No | No |
| Carlsbad Blvd | Carlsbad Village Dr | Cypress Ave | Identity (adjacent to retail) | SB | 49 | F | Yes | Yes | Yes | Yes | No | No |
| Carlsbad Blvd | Redwood Ave | Carlsbad Village Dr | Identity (adjacent to res.) | NB | 41 | F | Yes | Yes | Yes | Yes | Yes | No |
| Carlsbad Blvd | Redwood Ave | Carlsbad Village Dr | Identity (adjacent to res.) | SB | 51 | E | Yes | Yes | Yes | Yes | Yes | No |
| Carlsbad Village Dr | I-5 Ramp | Carlsbad Blvd | Identity (adjacent to retail) | EB | 54 | E | Yes | Yes | Yes | Yes | No | Yes |
| Carlsbad Village Dr | I-5 Ramp | Carlsbad Blvd | Identity (adjacent to retail) | WB | 44 | F | Yes | Yes | Yes | Yes | No | Yes |
| Carlsbad Blvd | Cannon Rd | Redwood Ave | Coastal | NB | 32 | F | Yes | Yes | Yes | Yes | No | No |
| Carlsbad Blvd | Cannon Rd | Redwood Ave | Coastal | SB | 42 | F | Yes | Yes | Yes | Yes | No | No |
| Carlsbad Blvd | Palomar Airport Rd | Cannon Rd | Coastal | NB | 34 | F | No | No | No | Yes | No | No |
| Carlsbad Blvd | Palomar Airport Rd | Cannon Rd | Coastal | SB | 34 | F | No | No | No | Yes | No | No |
| Carlsbad Blvd | Palomar Airport Rd | Island Way | Coastal | NB | 24 | F | No | No | No | Yes | No | Yes |
| Carlsbad Blvd | Palomar Airport Rd | Island Way | Coastal | SB | 24 | F | No | No | No | Yes | No | Yes |

| Roadway | Extent (From) | Extent (To) | Street Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|---------------|---------------------|---------------------|-----------------|-----------|-------|-----|---|--------------|------------------|----------------------------|---------------------------|-------------------------------|
| | | | | | | | Sidewalk Minimum Width | ADA Sidewalk | ADA Ramp/Landing | MUTCD Consistent Crosswalk | High Visibility Crosswalk | Controlled Crossing & Spacing |
| Carlsbad Blvd | Breakwater Rd | Island Way | Coastal | NB | 24 | F | No | No | No | Yes | No | Yes |
| Carlsbad Blvd | Breakwater Rd | Island Way | Coastal | SB | 24 | F | No | No | No | Yes | No | Yes |
| Carlsbad Blvd | Ponto Road | Poinsettia Ln | Coastal | NB | 54 | E | Yes | Yes | Yes | Yes | No | Yes |
| Carlsbad Blvd | Ponto Road | Poinsettia Ln | Coastal | SB | 24 | F | No | No | No | Yes | No | Yes |
| Grand Ave | Ocean St | Carlsbad Blvd | Village | EB | 59 | E | No | No | No | Yes | Yes | No |
| Jefferson St | Tamarack Ave | Anchor Way | School | SB | 32 | F | Yes | Yes | No | Yes | Yes | No |
| Valley St | Tamarack Ave | Magnolia Ave | School | EB | 37 | F | No | Yes | Yes | Yes | Yes | No |
| Tamarack Ave | College Blvd | Simsbury Ct | School | EB | 59 | E | Yes | Yes | Yes | No | No | No |
| Tamarack Ave | College Blvd | Simsbury Ct | School | WB | 44 | F | Yes | Yes | Yes | No | No | No |
| Tamarack Ave | Carlsbad Village Dr | Simsbury Ct | School | NB | 42 | F | Yes | Yes | Yes | Yes | No | No |
| Tamarack Ave | Carlsbad Village Dr | Simsbury Ct | School | SB | 47 | F | Yes | Yes | Yes | Yes | No | No |
| Carlsbad Blvd | Avenida Encinas | Ponto Road | Coastal | NB | 34 | F | No | No | No | Yes | No | Yes |
| Carlsbad Blvd | Avenida Encinas | Ponto Road | Coastal | SB | 24 | F | No | No | No | Yes | No | Yes |
| Redwood Ave | Garfield St | Cul-de-sac | Village | EB | 37 | F | No | No | No | Yes | No | No |
| Redwood Ave | Garfield St | Cul-de-sac | Village | WB | 37 | F | No | No | No | Yes | No | No |
| Carlsbad Blvd | Poinsettia Ln | Breakwater Rd | Coastal | NB | 44 | F | Yes | Yes | Yes | Yes | No | Yes |
| Carlsbad Blvd | Poinsettia Ln | Breakwater Rd | Coastal | SB | 24 | F | No | No | No | Yes | No | Yes |
| Madison St | Arbuckle Pl | Carlsbad Village Dr | Village | NB | 59 | E | Yes | Yes | Yes | Yes | No | No |
| Madison St | Arbuckle Pl | Carlsbad Village Dr | Village | SB | 59 | E | Yes | Yes | Yes | Yes | No | No |

Table 2 – Bicycle LOS Segment Deficiencies

| Roadway | Extent (From) | Extent (To) | Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|---------------------|-----------------|------------------|----------|-----------|-------|-----|---|---------------------|------------------|-------------------------|--|---|
| | | | | | | | MUTCD Consistent Design | Free of Obstruction | Pavement Quality | Minimum Bike Lane Width | Bike Lane with Straight-through Right of Way | High-Speed Road with at least class I, buffered II, or IV |
| Cannon Rd | College Blvd | East Termination | School | EB | 32 | F | Yes | Yes | Yes | No | Yes | NA |
| Cannon Rd | College Blvd | East Termination | School | WB | 32 | F | Yes | Yes | Yes | No | Yes | NA |
| Poinsettia Ln | Melrose Dr | Paseo Escuela | School | NB | 17 | F | Yes | Yes | Yes | Yes | No | No |
| Poinsettia Ln | Melrose Dr | Paseo Escuela | School | SB | 17 | F | Yes | Yes | Yes | Yes | Yes | No |
| Pio Pico Dr | Tamarak Ave | Magnolia Ave | School | EB | 15 | F | Yes | Yes | Yes | NA | NA | No |
| Pio Pico Dr | Tamarak Ave | Magnolia Ave | School | WB | 15 | F | Yes | Yes | Yes | NA | NA | No |
| Pio Pico Dr | Buena Vista Way | Las Flores Dr | School | NB | 25 | F | Yes | Yes | Yes | NA | NA | No |
| Pio Pico Dr | Buena Vista Way | Las Flores Dr | School | SB | 25 | F | Yes | Yes | Yes | NA | NA | No |
| El Fuerte St | Luciernga St | Corintia St | School | NB | 25 | F | Yes | Yes | Yes | Yes | Yes | No |
| El Fuerte St | Luciernga St | Corintia St | School | SB | 25 | F | Yes | Yes | Yes | Yes | Yes | No |
| Camino De Las Ondas | Aviara Pkwy | Paseo Del Norte | School | EB | 17 | F | Yes | Yes | Yes | NA | NA | No |
| Camino De Las Ondas | Aviara Pkwy | Paseo Del Norte | School | WB | 17 | F | Yes | Yes | Yes | NA | NA | No |
| Ambrosia Ln | Aviara Pkwy | Calliandra Rd | School | NB | 12 | F | No | Yes | Yes | NA | NA | No |
| Ambrosia Ln | Aviara Pkwy | Calliandra Rd | School | SB | 12 | F | No | Yes | Yes | NA | NA | No |
| Ambrosia Ln | Poinsettia Ln | Calliandra Rd | School | NB | 12 | F | Yes | Yes | Yes | NA | NA | No |

| Roadway | Extent (From) | Extent (To) | Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|---------------|---------------------|----------------------|---|-----------|-------|-----|---|---------------------|------------------|-------------------------|--|---|
| | | | | | | | MUTCD Consistent Design | Free of Obstruction | Pavement Quality | Minimum Bike Lane Width | Bike Lane with Straight-through Right of Way | High-Speed Road with at least class I, buffered II, or IV |
| Ambrosia Ln | Poinsettia Ln | Calliandra Rd | School | SB | 12 | F | Yes | Yes | Yes | NA | NA | No |
| El Fuerte St | Bressi Ranch Way | Poinsetia Ln | School | NB | 17 | F | Yes | Yes | Yes | Yes | Yes | No |
| El Fuerte St | Bressi Ranch Way | Poinsetia Ln | School | SB | 17 | F | Yes | Yes | Yes | Yes | Yes | No |
| Jefferson St | Carlsbad Village Dr | Las Flores Dr | Village | NB | 13 | F | Yes | Yes | Yes | Yes | Yes | No |
| Jefferson St | Carlsbad Village Dr | Las Flores Dr | Village | SB | 13 | F | Yes | Yes | Yes | Yes | Yes | No |
| Harding St | Magnolia Ave | Carlsbad Village Dr | Village | NB | 35 | F | Yes | Yes | No | Yes | Yes | NA |
| Harding St | Magnolia Ave | Carlsbad Village Dr | Village | SB | 35 | F | Yes | Yes | No | Yes | Yes | NA |
| Chestnut Ave | I-5 | Railroad | Village | EB | 30 | F | No | Yes | No | NA | NA | NA |
| Chestnut Ave | I-5 | Railroad | Village | WB | 30 | F | No | Yes | No | NA | NA | NA |
| Carlsbad Blvd | Cypress Ave | Northern City Limits | Identity (adjacent to non-retail or non-residential uses) | NB | 20 | F | Yes | Yes | Yes | Yes | Yes | No |
| Carlsbad Blvd | Cypress Ave | Northern City Limits | Identity (adjacent to non-retail or non-residential uses) | SB | 20 | F | Yes | Yes | Yes | Yes | Yes | No |
| Carlsbad Blvd | Palomar Airport Rd | Cannon Rd | Coastal | NB | 27 | F | Yes | Yes | Yes | Yes | Yes | No |

| Roadway | Extent (From) | Extent (To) | Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | | |
|---------------|---------------------|-------------|----------|-----------|-------|-----|---|---------------------|------------------|-------------------------|--|---|
| | | | | | | | MUTCD Consistent Design | Free of Obstruction | Pavement Quality | Minimum Bike Lane Width | Bike Lane with Straight-through Right of Way | High-Speed Road with at least class I, buffered II, or IV |
| Carlsbad Blvd | Palomar Airport Rd | Cannon Rd | Coastal | SB | 30 | F | Yes | Yes | Yes | Yes | Yes | No |
| Tamarack Ave | College Blvd | Simsbury Ct | School | EB | 27 | F | Yes | Yes | Yes | NA | NA | No |
| Tamarack Ave | College Blvd | Simsbury Ct | School | WB | 27 | F | Yes | Yes | Yes | NA | NA | No |
| Tamarack Ave | Carlsbad Village Dr | Simsbury Ct | School | NB | 27 | F | Yes | Yes | Yes | NA | NA | No |
| Tamarack Ave | Carlsbad Village Dr | Simsbury Ct | School | SB | 27 | F | Yes | Yes | Yes | NA | NA | No |

Table 3 – Transit LOS Segment Deficiencies

| Roadway | Extent (To) | Extent (From) | Typology | Direction | Score | LOS | Primary Reason for Deficiency (Essential Features Met?) | | | | |
|------------------------|---|--------------------------|-----------------------------------|-----------|-------|-----|--|----------------|-----------------------------|-------------------------------|----------------------------|
| | | | | | | | Distance to Transit Stop | Stop Amenities | ADA Compliant Sidewalk/Path | Controlled Crossing & Spacing | Mid-block Crossing Studied |
| El Camino Real | Aviara Pkwy/Alga Rd | La Costa Ave | Arterial | NB | 40 | F | Yes | No | No | Yes | No |
| El Camino Real | Aviara Pkwy/Alga Rd | La Costa Ave | Arterial | SB | 47 | F | Yes | No | No | Yes | No |
| Faraday Ave | Hub International Driveway | Cannon Rd | Employment/ Transit Connectors | NB | 20 | F | Yes | No | Yes | Yes | No |
| Faraday Ave | Hub International Driveway | Cannon Rd | Employment/ Transit Connectors | SB | 20 | F | Yes | No | Yes | Yes | No |
| Jefferson St/Marron Rd | Residential Driveway (W/O Avenida de Anita) | Lagoon View Dr | Employment/ Transit Connectors | NB | 45 | F | Yes | No | No | Yes | No |
| Jefferson St/Marron Rd | Residential Driveway (W/O Avenida de Anita) | Lagoon View Dr | Employment/ Transit Connectors | SB | 45 | F | Yes | No | No | No | No |
| Loker Ave W | El Fuerte St | Palomar Airport Rd | Industrials | NB | 35 | F | Yes | No | Yes | Yes | No |
| Loker Ave W | El Fuerte St | Palomar Airport Rd | Industrials | SB | 35 | F | Yes | No | Yes | Yes | No |
| Palomar Airport Rd | Palomar Oaks Way | Aviara Pkwy/College Blvd | Arterial | NB | 20 | F | Yes | No | No | Yes | No |
| Palomar Airport Rd | Palomar Oaks Way | Aviara Pkwy/College Blvd | Arterial | SB | 25 | F | Yes | No | Yes | Yes | No |
| Rancho Santa Fe Rd | San Elijo Rd | Camino Junipero | Arterial | NB | 35 | F | Yes | No | Yes | Yes | No |
| Rancho Santa Fe Rd | San Elijo Rd | Camino Junipero | Arterial | SB | 35 | F | Yes | No | Yes | Yes | No |

4. Recommendations

It is recommended that the City of Carlsbad review the deficiencies listed in **Tables 1 through 3** and consider upgrades to these segments to improve the corresponding Bicycle, Pedestrian, and/or Transit LOS to an acceptable level of LOS D or better.

| Pedestrian MMLOS | | | | | | | | | |
|---------------------|----------------------|----------------------|-----------|---------|-----------|---------|--|-------|--|
| Roadway | From | To | NB/EB | NB/EB | SB/WB | SB/WB | Failing With Proposed Staff Revisions? | | Reason For Failing |
| | | | Ped Score | Ped LOS | Ped Score | Ped LOS | NB/EB | SB/WB | |
| Cannon Rd | College Blvd | East Termination | 39 | F | 69 | D | Yes | Yes | Missing Sidewalk, do existing sidewalks meet ADA, do Ramps/Landings meet ADA |
| Jefferson St | Anchor Way | Magnolia Ave | 67 | D | 42 | F | Yes | Yes | Do Ramps/Landings meet ADA requirements? |
| Poinsettia Ln | Melrose Dr | Paseo Escuela | 19 | F | 19 | F | No | No | High Visibility Crosswalks |
| Conosa Way | Ambrosia Ln | Ambrosia Ln | 49 | F | 49 | F | Yes | Yes | Missing Sidewalk, do existing sidewalks meet ADA, do Ramps/Landings meet ADA |
| Anchor Way | Jefferson St | Hibiscus Cir | 32 | F | 32 | F | Yes | Yes | High Visibility Crosswalks & do Ramps/Landings meet ADA requirements? |
| Geode Ln | Titanite Pl | Quartz Way | 52 | E | 57 | E | No | No | High Visibility Crosswalks |
| Camino Robledo | Avenida Toronja | Paseo Aliso | 47 | F | 52 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Maple Ave | Garfield | Carlsbad Blvd | 59 | E | 59 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Mica Rd | Titanite Pl | Poinsettia Ln | 59 | E | 59 | E | No | No | High Visibility Crosswalks |
| Titanite Pl | Mica Rd | Geode Ln | 59 | E | 59 | E | No | No | High Visibility Crosswalks |
| Valley St | Chestnut Ave | Basswood Ave | 37 | F | 37 | F | No | No | High Visibility Crosswalks |
| Cherry Ave | Garfield St | Carlsbad Blvd | 54 | E | 54 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Pio Pico Dr | Tamarack Ave | Magnolia Ave | 27 | F | 27 | F | No | No | High Visibility Crosswalks |
| Park Dr | Kelly Dr | Alondra Dr | 59 | E | 44 | F | No | Yes | High Visibility Crosswalks, Missing sidewalk (SB) |
| Buena Vista Way | Highland Dr | Pio Pico Dr | 42 | F | 42 | F | N/A* | N/A* | All essential criteria |
| Pio Pico Dr | Buena Vista Way | Las Flores Dr | 69 | D | 67 | D | | | |
| Highland Dr | Buena Vista Way | Las Flores Dr | 44 | F | 69 | D | Yes | | Min sidewalk width 4 ft (NB) |
| Sycamore Ave | Garfield St | Carlsbad Blvd | 54 | E | 94 | A | Yes | | Min sidewalk width 4 ft |
| Quartz Way | Poinsettia Ln | GEODE LN | 59 | E | 59 | E | No | No | High Visibility Crosswalks |
| Maverick Way | Southern Termination | Camino De Los Coches | 59 | E | 59 | E | No | No | High Visibility Crosswalks |
| El Fuerte St | Luciernga St | Corintia St | 34 | F | 34 | F | No | No | Pedstrian crossing control/provided within 600 ft |
| Carlsbad Blvd | La Costa Ave | Avenida Encinas | 31 | F | 31 | F | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Tamarack Ave | Strata Dr | College Blvd | 59 | E | 59 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Tamarack Ave | College Blvd | Strata Dr | 59 | E | 59 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Las Flores Dr | Highland Dr | Pio Pico Dr | 44 | F | 44 | F | Yes | Yes | Min sidewalk width 4 ft & High Visibility Crosswalks |
| Basswood Ave | Valley St | Monroe St | 37 | F | 37 | F | N/A* | N/A* | All essential criteria (WB) |
| Magnolia Ave | Brady Cir | Monroe St | 67 | D | 37 | F | Yes | Yes | Missing sidewalk |
| Hibiscus Cir | Tamarack Ave | Anchor Way | 42 | F | 42 | F | Yes | Yes | High Visibility Crosswalks & do Ramps/Landings meet ADA requirements? |
| Kelly Dr | El Camino Real | Park Dr | 69 | D | 69 | D | | | |
| Hillside Dr | Kelly Dr | Valencia Ave | 37 | F | 37 | F | No | No | High Visibility Crosswalks |
| Alondra Dr | Park Dr | Valencia Ave | 47 | F | 42 | F | No | No | High Visibility Crosswalks |
| Valencia Ave | Alondra Way | Hillside Dr | 47 | F | 47 | F | Yes | Yes | High Visibility Crosswalks & do Ramps/Landings meet ADA requirements? |
| Camino De Las Ondas | Aviara Pkwy | Paseo Del Norte | 37 | F | 37 | F | No | No | High Visibility Crosswalks |
| Ambrosia Ln | Aviara Pkwy | Calliandra Rd | 37 | F | 37 | F | No | No | High Visibility Crosswalks |
| Ambrosia Ln | Poinsettia Ln | Calliandra Rd | 39 | F | 39 | F | No | No | High Visibility Crosswalks |
| El Fuerte St | Bressi Ranch Way | Poinsetia Ln | 29 | F | 34 | F | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Corintia St | Cazadero St | El Fuerte St | 49 | F | 49 | F | Yes | Yes | High visibility crosswalks, Are crossings generally consistent with MUTCD, do Ramps/Landings meet ADA requirements? |
| Paseo Aliso | Camino Robledo | Calle Barcelona | 49 | F | 49 | F | No | No | High Visibility Crosswalks |
| Paseo Tulipero | Avenida toronja | Paseo Aliso | 57 | E | 57 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Avenida Toronja | Paseo Tulipero | Camino Robledo | 47 | F | 47 | F | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Levante St | Estancia St | Segovia Way | 42 | F | 47 | F | Yes | Yes | High visibility crosswalks, Are crossings generally consistent with MUTCD, do Ramps/Landings meet ADA requirements? |
| Segovia Way | Estancia St | Levante St | 47 | F | 47 | F | Yes | Yes | High visibility crosswalks, Are crossings generally consistent with MUTCD, do Ramps/Landings meet ADA requirements? |
| Estancia St | Levante St | Segovia Way | 47 | F | 42 | F | Yes | Yes | High visibility crosswalks, Are crossings generally consistent with MUTCD, do Ramps/Landings meet ADA requirements? |
| Levante St | La Costa Ave | Estancia St | 42 | F | 37 | F | Yes | Yes | High Visibility Crosswalks & do Ramps/Landings meet ADA requirements? |
| Calle Barcelona | Calle Posada | Rancho Santa Fe Rd | 44 | F | 44 | F | No | No | High Visibility Crosswalks |
| Calle Acervo | Rancho Santa Fe Rd | Calle Catalonia | 44 | F | 49 | F | No | No | High Visibility Crosswalks |
| Jefferson St | Pine Ave | Carlsbad Village Dr | 59 | E | 59 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Jefferson St | Carlsbad Village Dr | Las Flores Dr | 34 | F | 34 | F | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Harding St | Magnolia Ave | Carlsbad Village Dr | 59 | E | 59 | E | No | No | High Visibility Crosswalks |

| | | | | | | | | | |
|---------------------|---------------------|----------------------|-----|---|-----|---|------|------|--|
| Madison St | Arbuckle Pl | Laguna Dr | 56 | E | 56 | E | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Madison St | Magnolia Ave | Carlsbad Village Dr | 59 | E | 59 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Roosevelt St | Carlsbad Village Dr | Laguna St | 59 | E | 59 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Roosevelt St | Magnolia Ave | Carlsbad Village Dr | 59 | E | 59 | E | Yes | Yes | Min sidewalk width 4 ft & High Visibility Crosswalks |
| Washington St | Chestnut Ave | Pine Ave | 57 | E | 59 | E | N/A* | N/A* | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA |
| Ocean St | Pine Ave | Pacific Ave | 37 | F | 37 | F | N/A* | N/A* | All essential criteria |
| Lincoln St | Chestnut Ave | Carlsbad Village Dr | 52 | E | 52 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Garfield St | Tamarak Ave | Pine Ave | 99 | A | 99 | A | | | |
| Beech Ave | Ocean St | Washington St | 59 | E | 59 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Christiansen Ave | Ocean St | Washington St | 49 | F | 59 | E | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Grand Ave | Carlsbad Blvd | Roosevelt St | 100 | A | 100 | A | | | |
| Grand Ave | Roosevelt st | Eastern Terminus | 100 | A | 99 | A | | | |
| Carlsbad Village Dr | Ocean St | Carlsbad Blvd | 79 | C | 96 | A | | | |
| Cypress Ave | Ocean St | Carlsbad Blvd | 47 | F | 47 | F | N/A* | N/A* | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Carlsbad Village Dr | Ocean St | Washington St | 49 | F | 49 | F | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Oak Ave | Railroad | I-5 | 57 | E | 57 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Pine Ave | Carlsbad Blvd | Washington St | 47 | F | 47 | F | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Walnut Ave | Carlsbad blvd | Washington St | 47 | F | 42 | F | No | Yes | Missing sidewalk (WB), High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Chestnut Ave | Carlsbad Blvd | WashingtonSt | 37 | F | 37 | F | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Chestnut Ave | I-5 | Railroad | 59 | E | 59 | E | No | No | High Visibility Crosswalks |
| Magnolia Ave | Roosevelt St | Harding St | 47 | F | 47 | F | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Acacia Ave | Carlsbad Blvd | Railroad | 52 | E | 52 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Juniper Ave | Carlsbad Blvd | Railroad | 47 | F | 47 | F | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Hemlock Ave | Carlsbad Blvd | Railroad | 52 | E | 52 | E | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Redwood Ave | Garfield St | Carlsbad Blvd | 47 | F | 47 | F | No | No | High Visibility Crosswalks |
| Carlsbad Blvd | Cypress Ave | Northern City Limits | 68 | D | 69 | D | | | |
| Carlsbad Blvd | Carlsbad Village Dr | Cypress Ave | 56 | E | 49 | F | No | No | High Visibility Crosswalks |
| Carlsbad Blvd | Redwood Ave | Carlsbad Village Dr | 41 | F | 51 | E | No | No | Pedstrian crossing control/provided within 600 ft |
| Carlsbad Village Dr | I-5 Ramp | Carlsbad Blvd | 54 | E | 44 | F | No | No | High Visibility Crosswalks |
| Carlsbad Blvd | Cannon Rd | Redwood Ave | 32 | F | 42 | F | No | No | High Visibility Crosswalks |
| Carlsbad Blvd | Palomar Airport Rd | Cannon Rd | 34 | F | 34 | F | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Carlsbad Blvd | Palomar Airport Rd | Island Way | 24 | F | 24 | F | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Carlsbad Blvd | Breakwater Rd | Island Way | 24 | F | 24 | F | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Carlsbad Blvd | Ponto Road | Poinsettia Ln | 54 | E | 24 | F | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Grand Ave | Ocean St | Carlsbad Blvd | 59 | E | 100 | A | Yes | Yes | Missing Sidewalk (EB), do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Jefferson St | Tamarack Ave | Anchor Way | 62 | D | 32 | F | No | Yes | do Ramps/Landings meet ADA requirements? |
| Valley St | Tamarack Ave | Magnolia Ave | 37 | F | 67 | D | Yes | | 4 ft min width sidewalk |
| Tamarack Ave | College Blvd | Simsbury Ct | 59 | E | 44 | F | No | No | High Visibility Crosswalks & Are crossings generally consistent with MUTCD |
| Tamarack Ave | Carlsbad Village Dr | Simsbury Ct | 42 | F | 47 | F | No | No | High Visibility Crosswalks |
| Carlsbad Blvd | Avenida Encinas | Ponto Road | 34 | F | 24 | F | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Redwood Ave | Garfield St | Cul-de-sac | 37 | F | 37 | F | N/A* | N/A* | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Carlsbad Blvd | Poinsettia Ln | Breakwater Rd | 44 | F | 24 | F | Yes | Yes | Missing Sidewalk, High visibility crosswalks, do existing sidewalks meet ADA, do Ramps/Landings meet ADA requirements? |
| Madison St | Arbuckle Pl | Carlsbad Village Dr | 59 | E | 59 | E | N/A* | N/A* | High Visibility Crosswalks |

*Alternative Streets will no longer require monitoring.

| Transit MMLOS | | | | | | | |
|------------------------|--------------------------|---|---------------|-------------|---------------|-------------|---|
| Roadway | From | To | NB/EB | NB/EB | SB/WB | SB/WB | Reason For Failing |
| | | | Transit Score | Transit LOS | Transit Score | Transit LOS | |
| Loker Ave W | Palomar Airport Rd | El Fuerte St | 35 | F | 35 | F | Missing Bench, ADA Pad, Covered Shelter. |
| Jefferson St/Marron Rd | Lagoon View Dr | Residential Driveway (W/O Avenida de Anita) | 45 | F | 45 | F | Covered Shelter & Are sidewalks within a 1/4 mile ADA compliant. |
| Faraday Ave | Cannon Rd | Hub International Driveway | 20 | F | 20 | F | Missing Bench, ADA Pad, Covered Shelter. |
| El Camino Real | La Costa Ave | Aviara Pkwy/Alga Rd | 40 | F | 47 | F | Missing ADA Pad, Covered Shelter & Are sidewalks within a 1/4 mile ADA compliant. |
| Palomar Airport Rd | Aviara Pkwy/College Blvd | Palomar Oaks Way | 20 | F | 25 | F | Missing Bench, ADA Pad, Covered Shelter & Are sidewalks within a 1/4 mile ADA compliant (NB). |
| Rancho Santa Fe Rd | Camino Junipero | San Elijo Rd | 35 | F | 35 | F | Missing Bench, ADA Pad, Covered Shelter. |

3.0 Bus Stop Guidelines

Obstacles to improving transit infrastructure – lack of sidewalk and bike network, available space for stop infrastructure (including ADA), accessible neighborhood sidewalks connecting to stops, accessible street crossings. Work with city departments to make improvements and encourage continued upgrades to complete the networks, especially during other construction projects.

3.1 Curb-Side Improvements

Passenger comfort, safety, and convenience are all impacted by bus stop features that are located off the street or roadway, commonly referred to as curbside improvements. This section outlines how developers and jurisdictions can appropriately locate bus stops and choose the correct stop type, as well as information on general preferred and recommended curbside improvements.

3.1.1 Bus Stop Types

The design of a bus stop can often impact the amount of ridership at that particular location. A stop must be accessible, safe, and convenient for passengers. NCTD has developed three distinct bus stop types – the basic stop, the bench stop, and the shelter stop – as well as stops associated with transit stations/centers.

BASIC STOPS are characterized by the presence of a bus stop sign only, and do not contain passenger amenities like benches or shelters. These stops are generally utilized in rural areas or those areas with lower density and lower ridership. Basic stops are required to meet ADA design requirements.

BENCH STOPS are basic transit stops with the addition of a bench for waiting passengers and trash receptacles. In some cases, additional amenities such as lighting or bicycle racks may be warranted. Bench stops are best suited for areas with low to medium density and ridership.

| | Required Amenities | Recommended Amenities | Optional Amenities |
|-------------|---|--|---|
| Bench Stops | <ul style="list-style-type: none"> • Bus stop sign • ADA accessible pad • Bench • Connection to adjacent sidewalks/pathways • Trash receptacle | <ul style="list-style-type: none"> • Lighting • Bicycle racks/lockers • Transit route information | <ul style="list-style-type: none"> • Screening from sun / elements (landscaping) • Transit system information |

SHELTER STOPS are located in areas with higher ridership and medium to high density developments. In addition to a sign, ADA compliant concrete pad, and bench, these stops include a shelter and trash receptacle, at a minimum. Additional amenities like lighting and bicycle racks are highly encouraged. The design of a shelter stop is dependent upon the existing features of the site, including sidewalk design, right-of-way, and proximity to existing structures.

| | Required Amenities | Recommended Amenities | Optional Amenities |
|----------------------|--|---|---|
| Shelter Stops | <ul style="list-style-type: none"> • Bus stop sign • ADA accessible pad • Bench • Shelter • Connection to adjacent sidewalks/pathways • Trash receptacle | <ul style="list-style-type: none"> • Lighting • Bicycle racks/lockers • Transit route information • Screening from sun / elements (landscaping) • Transit system information | <ul style="list-style-type: none"> • Digital messaging signs |

STATION STOPS are associated with branded services like BREEZE Rapid. These stops have enhanced passenger amenities, including more robust transit system information signage and branded shelters.

| | Required Amenities | Recommended Amenities |
|---|---|---|
| Station Stops (BREEZE Rapid) | <ul style="list-style-type: none"> • All requirements of shelter stops, plus: • Single shelter or double shelter with integrated station marker • Station marker with integrated seats • Solar-powered LED lighting | <ul style="list-style-type: none"> • Transit route and schedule information • Transit system information • Wayfinding signage • Digital messaging signs |

The dimensions for each stop type above have been provided as guidelines for the development of new bus stops. District staff understands that some stops may not be able to be retrofitted to meet these standards, or alternative designs may be more feasible based on existing conditions. When a developer has been required to upgrade an existing stop, District staff should be contacted to help create an appropriate design.

3.1.2 Bus Stop Type Selection Criteria

The type of stop provided is primarily driven by route frequency and land use density – routes with higher frequency are typically located in areas with more intensive development, and generally result in more daily boardings. The table below shows the recommended attributes for each of the four stop types. District staff will assist developers in determining the appropriate stop type on a case-by-case basis.

Table 1: Bus Stop Type Location Recommendations

| Criteria | Basic Stop | Bench Stop | Shelter Stop |
|--|--------------------------------|---|--|
| Minimum Daily Boardings | | | |
| Rural Stop | <5 daily boardings | 5 – 10 daily boardings | 10+ daily boardings |
| Suburban Stop | <10 daily boardings | 10 – 20 daily boardings | >20 daily boardings |
| Urban Stop | <20 daily boardings | 20 – 30 daily boardings | >30 daily boardings |
| Density Considerations | Low density residential; Rural | Low to Medium Density Residential; Commercial; Industrial | Medium to High Density Residential; Mixed-Use; Commercial Core |
| Land Use and Development: Located ¼-mile (max.) from employment center, retail/commercial center, mixed use development or other major activity center | | | ✓ |
| Population Considerations: Youths, seniors, disabled persons, low-income households | | Within ¼-mile of population concentrations | Within 1/8-mile of population concentrations |
| Connections with other NCTD mode or transit provider | | ✓ | ✓ |
| Located within Planned Enhanced Development Corridor | | | ✓ |

In addition, NCTD’s system also includes Station Stops, which are generally characterized by service from multiple routes and/or providers, enhanced facilities, and higher ridership. Stops that are served by BREEZE Rapid are also categorized as Station Stops. New stations should be focused in urban and more developed suburban areas with a mix of uses, commercial core development, and medium to higher density housing, particularly with affordable and multi-family housing, in addition to the provision of enhanced transit service or connections to multiple transit options. In suburban settings, a minimum of 100 daily boardings may warrant a general station, while in urban settings, a minimum of 500 daily boardings should be generated.

3.1.3 Design and Access

Providing defined, safe, and direct access to a bus stop is critical to maintaining and increasing transit usage. Access to a bus stop from an intersection or land use should be as direct as possible, and provide essential security and safety along the route. General guidelines for access are as follows:



Staff Report

Meeting Date: Oct. 2, 2023

To: Traffic and Mobility Commission

Staff Contact: Nestor Mangohig, Senior Engineer
Nestor.Mangohig@carlsbadca.gov, 442-339-2504

Subject: Traffic Signal System Update

Recommended Action

Receive a presentation and provide input to city staff on items related to the traffic signal system network.

Background

The purpose of this presentation is to provide an update on the traffic signal system network. Much of the recent focus on the traffic signal system has been specific to network upgrades that would increase traffic signal data efficiency throughput and increase system security, while also eliminating the occurrence of network outages experienced at the Traffic Management Center, or TMC. The presentation will also provide an overview of signal operations at El Camino Real & Arenal Road during emergency vehicle preemption as well as protected-permissive operations of a Flashing Yellow Arrow, or FYA, signal.

Discussion

Traffic Signal Communications Network

When initially established, the city traffic signal communications network was comprised of a combination of wireless radio and copper hardwire connections. All traffic signals that were in communication with the TMC, were connected to a larger aggregated signal group that passed through one or two wireless and solar repeaters. As the city upgraded its signal controller technology, these repeaters became a constriction that could not allow all controllers to transmit real-time traffic signal information.

Before the Carlsbad Digital Information Network, or CDIN, was established, several departments transmitted their data between their central servers and field equipment on independent networks, including the traffic signal system, utilities, police, etc. With the recent implementation of the CDIN, the city's Information Technology, or IT, Department has focused on integration and upgrade of the various networks that were previously stand-alone. A major feature of the CDIN is the utilization of fiber-optic communication technology to increase data throughput and reliability.

The following traffic communication network upgrades have been completed to improve traffic signal system functionality and reliability:

- Connected the Aviara Park wireless repeater to a nearby park facility on fiber. This eliminated the need to transmit to the Crossings golf course via wireless and solar repeater. All signals transmitting to Aviara Park now return to the TMC on last leg fiber.
- Removed the wireless and solar repeater from the golf course and replaced with new equipment now located at the Crossings golf course clubhouse. The clubhouse equipment is on direct power. Since the clubhouse is on fiber, all signals transmitting to the golf course now return to the TMC on last leg fiber.
- Redirected several traffic signal groups away from longer wireless connections to Aviara Park or Crossing golf course repeaters to closer fiber connections.
- Migrated the server for the traffic signal central software system. This included creation of new virtual servers with updated operating systems to improve performance and increase security.
- Migrated Bluetooth reader devices to the new network.
- Rebuilt the video detection software viewer and moved devices to the new network.
- Reconfigured traffic signal and video detection devices from the legacy IP settings to the current CDIN network settings. This improved performance and increased security.

Other projects either underway or identified as potential network improvement project are described below:

- Interim cellular connections are being established for all traffic signal locations previously offline due to the line-of-sight limitations. The cellular connections will be replaced as future connections are established via high-speed wireless or fiber.
- The city is actively exploring opportunities to partner with residential fiber providers to upgrade existing copper hardwire connections to fiber between traffic signals where conduit exists.
- The city is actively exploring opportunities to bring back additional traffic signals on fiber that are not in proximity to the current CDIN backbone.

Traffic Signal Operations

The communication network upgrades have allowed staff to fully utilize functionality of both the traffic signal central software and the upgraded traffic controllers in the field. The following tasks have been completed or are in process related to signal operations:

- Signal coordination timing is in operation for the morning and evening peak periods on El Camino Real, Palomar Airport Road, and Rancho Santa Fe Road. Use of midday coordination is under consideration.
- Carlsbad Village Drive, west of Interstate 5, or I-5, is currently running coordination timing offset from the I-5/Carlsbad Village Drive northbound on/off-ramp signal. Caltrans has updated their own central system and controllers which now keeps their signal clocks current, making coordination possible.

- El Camino Real, in the vicinity of State Route 78, or SR-78, Plaza Drive to Carlsbad Village Drive, is currently running coordination timing offset from the SR-78 eastbound on/off-ramp signal. City of Oceanside signals to the north of SR-78 are also working from the same Caltrans offset. City of Oceanside recently upgraded its controller at El Camino Real/Vista Way due to periodic malfunctions. The previous controller was not consistently maintaining current time settings and would exacerbate traffic flow conditions on the El Camino Real corridor during peak and saturated conditions.
- Staff is evaluating use of coordination timing on other corridors and/or intersections groups.
- The traffic signal central system software, ATMS.now, was recently updated from v2.12 to v2.14. This is expected to address several bugs reported to the developer by city staff, including the copy/paste grid function, and pedestrian displays on real-time scan, etc.
- Traffic signal controllers are currently running the Cubic Scout system with firmware ranging from v80.4.2 to v85.3. With the rollout of the new ATMS.now, staff is testing the stability and functionality of each version before considering upgrade of all devices to the most up to date v85.x.
- Network communications upgrades have allowed real-time alerts to function more reliably, e.g., notification when a signal goes into all-way flashing red operations, when a signal controller is accessed, etc.
- Alert configurations are being evaluated to notify during missed detection and false detection events.
- Bluetooth reader device settings are being reconfigured to provide more usable vehicle feedback.
- Big data analytics platform is being tested to view historical travel patterns and other data insights.
- Detection upgrades on primary corridors is being evaluated. The city's predominant detection system has been discontinued by the manufacturer and spare components are no longer commercially available. As primary corridors are upgraded, components that are removed can be reused elsewhere or kept for spares.

The presentation also provides an overview of the following traffic signal operations:

- El Camino Real/Arenal Road phase sequencing during emergency vehicle preemption, including issues previously identified and corrected.
- FYA protected-permissive left turn operations. A new traffic signal using FYA will be constructed as part of the conditions of approval for a new Chick-fil-A restaurant on the 5900 block of Avenida Encinas.

Next Steps

Staff will continue to work in close coordination with the IT Department to improve the traffic signal communication network, with the purpose of using signal controller and central system technologies to optimize traffic flow within the city.