



APRIL 2023 / DRAFT

CENTRAL MOBILITY HUB AND CONNECTIONS

COMPREHENSIVE
MULTIMODAL
CORRIDOR PLAN

SANDAG |  **Caltrans**

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ການຊ່ວຍເຫຼືອດ້ານພາສາພຣີ | Kaalmada Luqadda ee Bilaashka ah | Безкоштовна мовна допомога
sandag.org/LanguageAssistance | LanguageAssistance@sandag.org | (619) 699-1900

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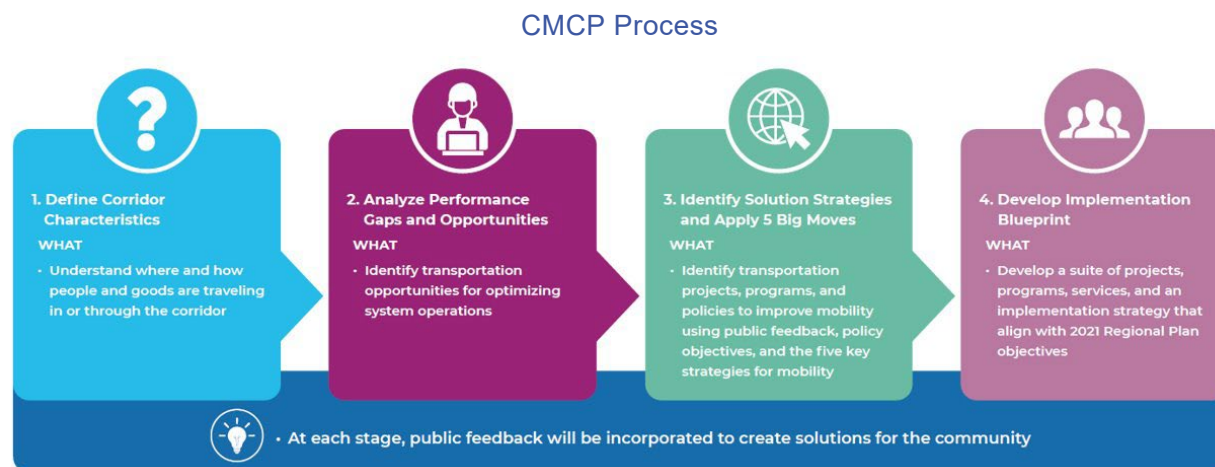
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Executive Summary

The California Department of Transportation (Caltrans) and the San Diego Association of Governments (SANDAG) have developed a Comprehensive Multimodal Corridor Plan (CMCP) for the Central Mobility Hub (CMH) and Connections Corridor, also known as the CMH and Connections CMCP, in collaboration with local agencies and partners and through engagement with the general public. This document builds on previous and current regional and local efforts to create a comprehensive strategy that sets a foundation for enhancing multimodal connectivity and accessibility across communities within the CMH and Connection Corridor.

CMCP Purpose. A CMCP is required to be eligible for certain sources of State funding, such as the Solutions for Congested Corridors Program (SCCP), funded by Senate Bill 1 (SB1) which can then be leveraged for various other local, state, and federal funding opportunities. Funds made available for the program shall be allocated by the California Transportation Commission to projects designed to achieve a balanced set of transportation, environmental, and community access improvements within highly congested travel corridors throughout the state.

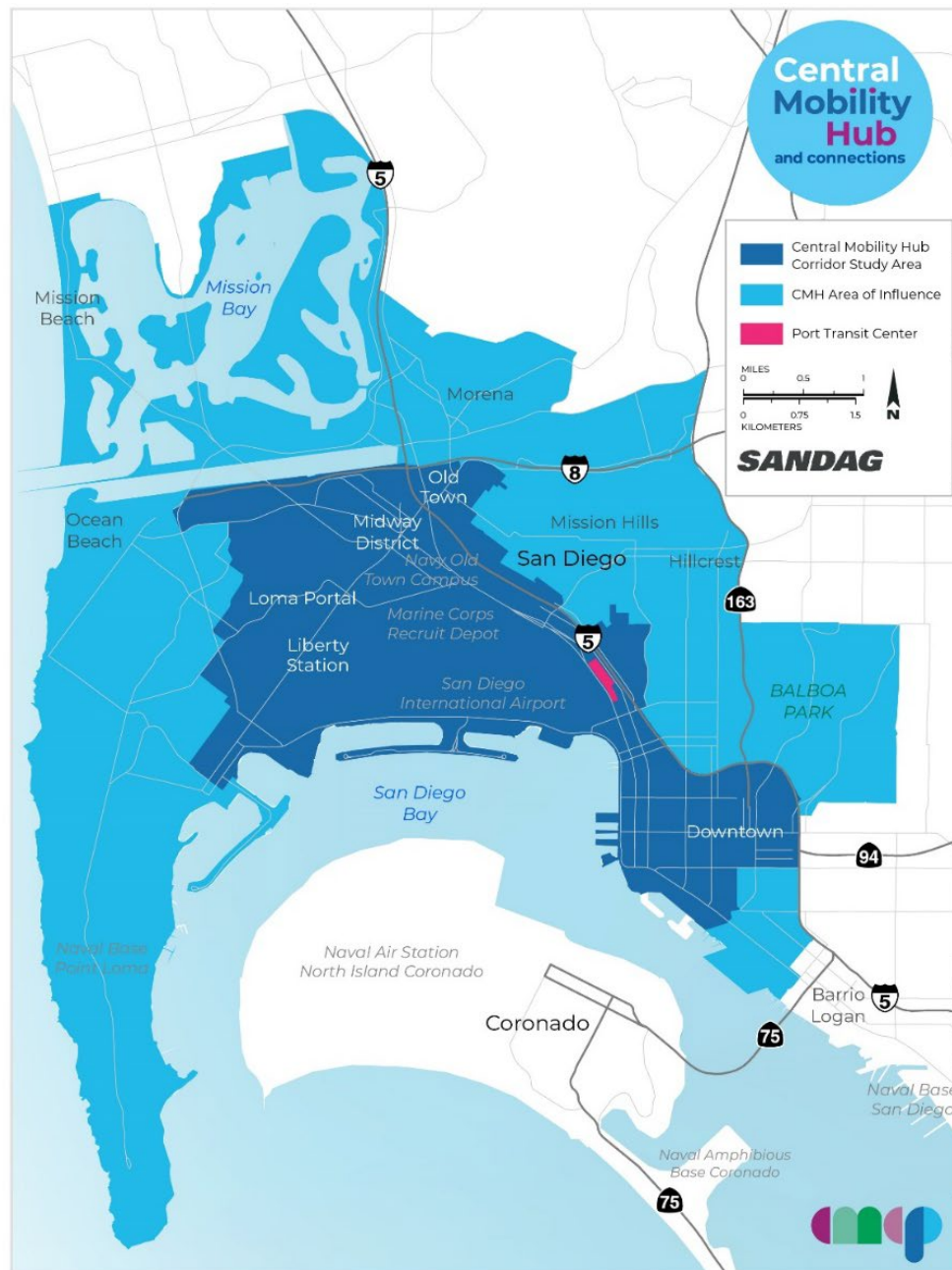
CMCP Process. The CMCP process is designed to understand the characteristics of the CMH and Connections Corridor and create equitable and sustainable solutions for residents, commuters, and visitors. The Draft CMH and Connections CMCP is based on an integrated planning process that brings together residents, local jurisdictions, and other partner agencies. It utilized a multimodal approach to create a balanced, equitable transportation system that integrates mobility options such as driving, biking, walking, transit, micromobility, and other mobility services to move people and goods within the designated corridor and beyond.



CMH and Connections Study Area. The CMH and Connections CMCP is focused on connections within and around the Port Transit Center (PTC) site, as the initial airport connectivity facility that could serve as a gateway to a future downtown CMH. SANDAG is evaluating several potential alignments for airport transit connections, including one from points north and south of SDIA. Several of the potential alignments include a transit center at the location of the existing Port of San Diego headquarters called the PTC. The PTC has not been selected as the final location for the CMH, but rather is intended to serve in interim as a valuable connection to the airport.

The main corridors located within the study area include Interstate 5 (I-5) and Interstate 8 (I-8), and the Los Angeles – San Diego – San Luis Obispo (LOSSAN) Rail Corridor, providing north-south and east-west connections from throughout the County. Other key corridors include North Harbor Drive, Pacific Highway, Sports Arena Boulevard, Laurel Street, and Washington Street, among others. This site is also located a few miles from the Coronado Ferry Terminal, which brings travelers across San Diego Bay to the City of Coronado.

CMH and Connections CMCP Study Area

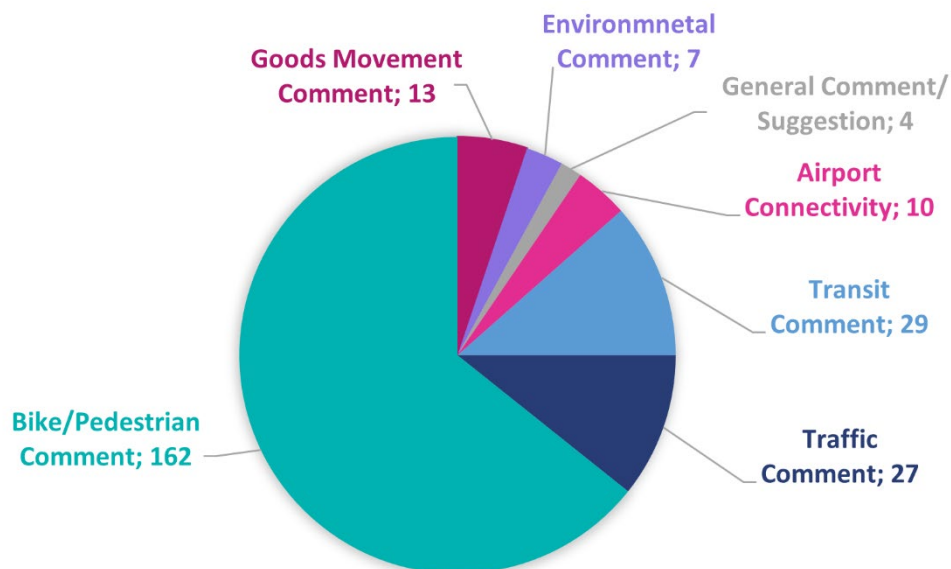


Corridor Context. The project team evaluated the existing conditions of the corridor, documenting the inventory of existing transportation infrastructure, current transit service, economic conditions, and population characteristics, as well as future economic and population characteristics. The CMCP team was also careful to document social equity characteristics such as race, income, zero-car households, and senior populations which allowed the project team to consider equity for future transportation scenarios. The 2050 horizon year is used as the basis for population, economic, and ridership forecasts, which are interpreted to illustrate what the corridor may look like in the future. The CMH and Connection Corridor is projected to have significant growth in the Midway District with redevelopment planned around the existing Sports Arena facility, or near the intersection of I-5 and I-8.

San Diego International Airport (SDIA) is a central location in the CMH and Connections Corridor. The SDIA drives regional travel from both inside and outside the study area and is a mile west of the PTC site and surrounded by the Midway, Old Town, Middletown and Little Italy communities. Users of the corridor are primarily residents, students, visitors, and workers traveling to and from employment, education, retail, entertainment, recreation, and cultural centers in Downtown San Diego and throughout the study area.

Engagement. A comprehensive outreach process was developed and implemented to inform and help develop the transportation solution strategies (TSS) for the CMH and Connections CMCP. The social distancing requirements of the COVID-19 pandemic brought unique challenges to public engagement where engagement activities were held online and publicized through social and local media as well as community advocacy groups. The process engaged technical subject matter experts (SMEs), local community planning organizations, partner planning agencies, and the general public. Meetings were held to help identify key needs, draft an inventory of TSS, and provide feedback on the implementation plan. The outreach process helped ensure an inclusive approach to the development of the CMH and Connections CMCP.

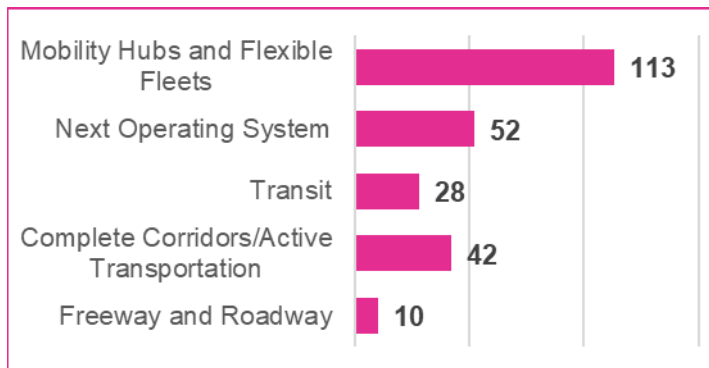
Variety of Comments Received During Engagement



Transportation Solution Strategies.

The TSS proposed in this plan align with the SANDAG 2021 Regional Plan and its five transformational strategies—the 5 Big Moves. The strategies are designed to enhance equitable access and comprehensive mobility for everyone, especially for equity focused communities. The strategies provide equitable, efficient, and reliable mobility alternatives to vehicular travel, regardless of ability or means.

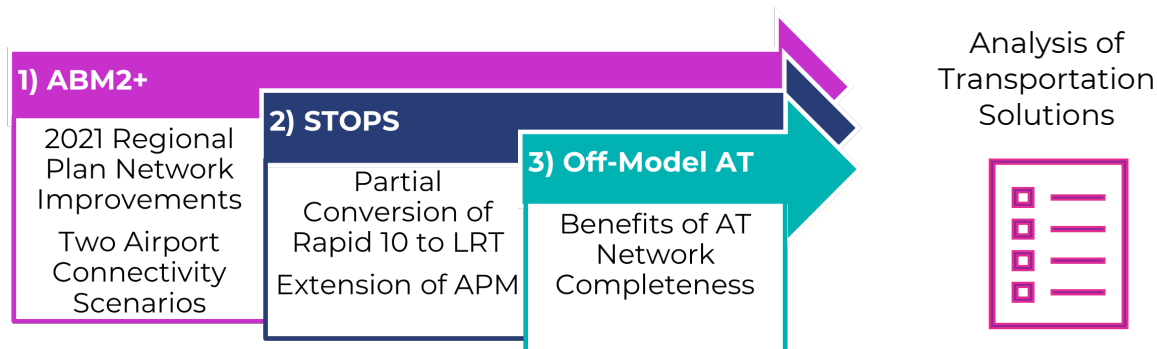
Proposed TSS by Category



The CMH and Connections CMCP includes 245 solutions, with careful consideration for how these solutions create equitable access to the airport, employment centers, and other key activity areas by connecting these destinations via direct and frequent transit service and other transportation options. The plan identifies key locations of population and employment densities and equity factors where mobility hubs serve as key connection points to other transit. Access to and from the mobility hubs is expanded with first/last mile connections to the surrounding communities via new bikeways, micromobility, and microtransit services. The TSS work together across the 5 Big Moves to achieve an equitable and balanced multimodal transportation system for the CMH and Connections Corridor.

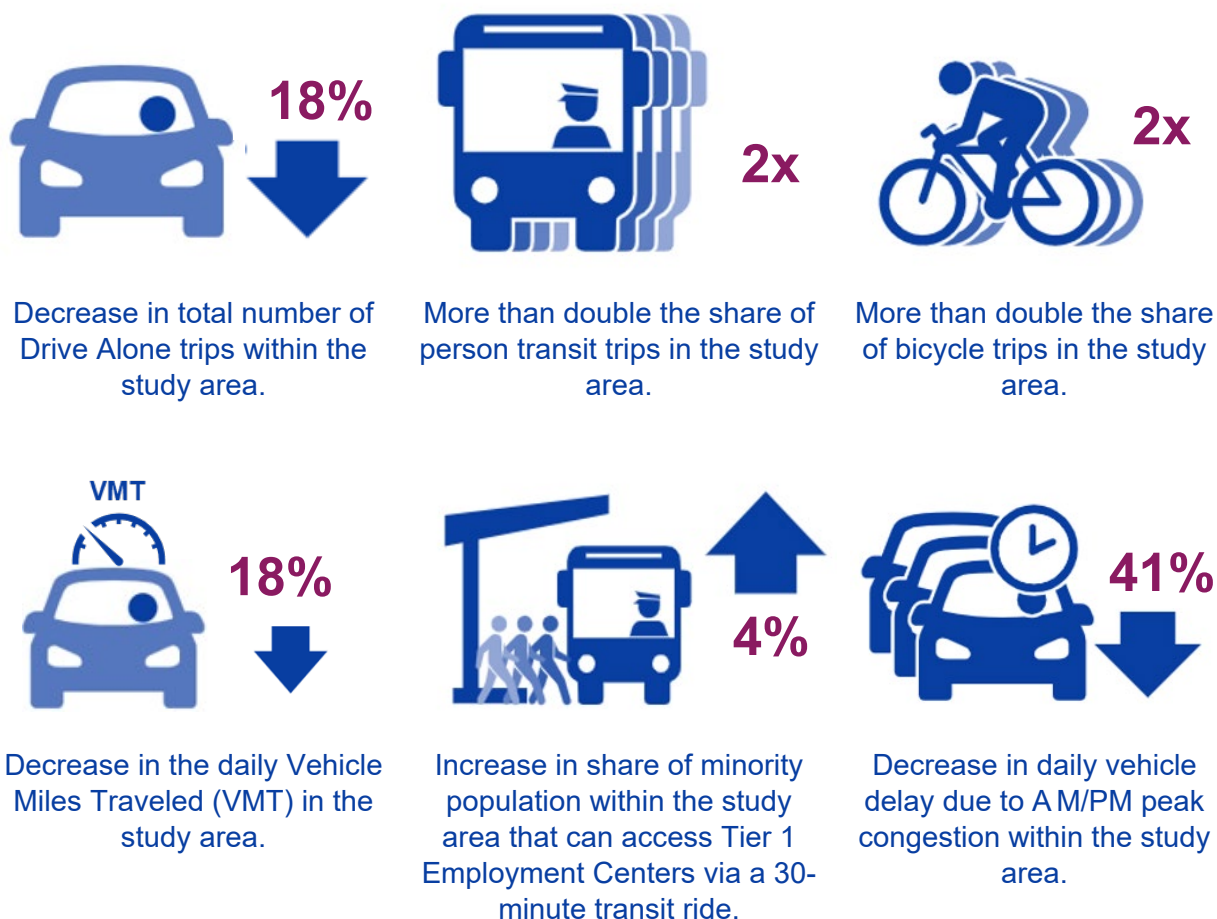
Evaluation of Corridor Scenarios. The characteristics of the project and surrounding area necessitated a hybrid approach for transportation modeling and evaluation. The hybrid approach consisted of three Activity-Based Model (ABM2+) run outputs, for quantitative insight into the performance of the backbone transportation network, supplemented by three Simplified Trips-on-Project Software (STOPS) model runs for granular insight into the ridership performance of three different fixed-guideway configurations, and an off-model Active Transportation (AT) Analysis to qualitatively examine the study area's AT network and provide additional AT-specific recommendations.

Modelling and Evaluation Methods of Proposed TSS Scenarios



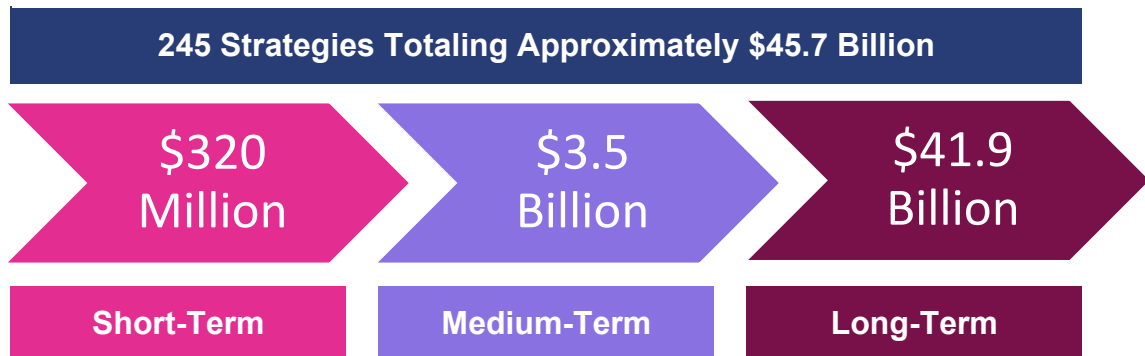
Both airport connectivity scenarios, run through the ABM2+ Model, provide substantial benefits as compared to the 2021 Regional Plan network improvements. While the STOPS analysis indicates numerous benefits of both proposed airport connectivity configurations. Specifically, compared to baseline, both alternative fixed-guideway configurations result in an impressive, over tenfold increase in new transit trips and over a 30-fold increase in calculated VMT savings. The AT analysis focused on improving network completeness and recommending extra mileage of AT facilities to maximize mode shift and reduce vehicle miles traveled (VMT).

Average Benefits of the CMH and Connections CMCP model runs within the study area, when compared to the 2021 Regional Plan Network Improvements Results



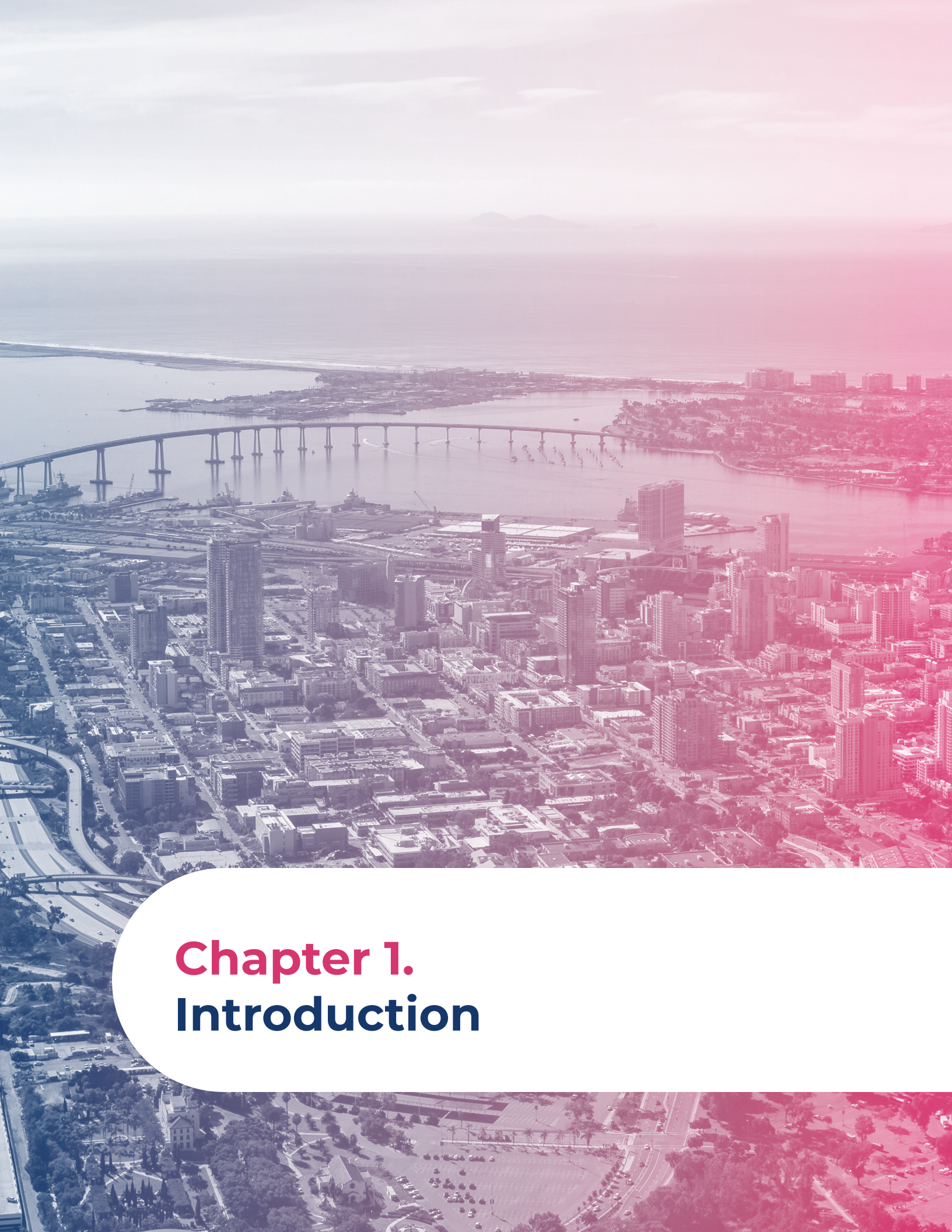
Implementation. All 245 TSS are evaluated against criteria such as cost, right-of-way needs, and environmental considerations to determine the implementation timeframe: short- (0-5 years), medium- (6 to 10 years), or long-term (10+ Years). The rough order of magnitude costs are primarily estimated by using methods from the 2021 Regional Plan and other CMCPs. Other costs that were not included in the SANDAG Regional Plan process or other CMCPs were identified through discussions with subject matter experts.

Proposed TSS Implementation & Cost



Securing new funding for the CMH and Connections CMCP will be necessary to implement the proposed solutions by 2050. The funding for these strategies is partially included in the 2021 Regional Plan but will have to be augmented by additional State and Federal sources such as SB1 funding.

SANDAG, Caltrans, and members of the CMH and Connections CMCP project team will continue to collaborate to advance the development of projects and programs proposed in the CMH and Connections Corridor, especially the final selection of the CMH proper location. The project team will also continue to engage stakeholders to help refine recommended strategies.

An aerial photograph of a coastal city, likely Vancouver, featuring a large bridge spanning a body of water, with mountains visible in the distance. The image is overlaid with a semi-transparent pink filter. A white circular shape is positioned in the lower-left quadrant, containing the chapter title.

Chapter 1. **Introduction**

1. Introduction

The Central Mobility Hub (CMH) and Connections Corridor serves diverse communities, employment centers, and recreational areas and is critical for the daily movement of people and goods through the region's urban core. These factors make it necessary for the San Diego Association of Governments (SANDAG), the California Department of Transportation (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.

In collaboration with partner agencies and the community, SANDAG and Caltrans developed this Comprehensive Multimodal Corridor Plan (CMCP) to address the current and future multimodal needs of the CMH and Connections study area. 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 San Diego
- Naval Base Point Loma
- North County Transit District (NCTD)
- Port of San Diego
- San Diego County Regional Airport Authority
- San Diego Metropolitan Transit System (MTS)

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

1.1 What is a Comprehensive Multimodal Corridor Plan (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, ground-up 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, micromobility, and other shared mobility services and supporting amenities 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.

1.2 What is Expected From a CMCP?

A CMCP supports the continuous improvement of the transportation system through a meaningful and collaborative planning process and is intended to be referenced and updated regularly. CMCPs are expected to:

- **Reimagine the approach to mobility** by focusing on quality of life, accessibility, sustainability, access to jobs, housing, education, and health for all
- **Address today's mobility challenges** while building a foundation for the future
- **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 regional, state, and local objectives and inform future transportation plans
- **Enable regions to compete for state funding** under the Senate Bill 1 (SB 1), the Road Repair and Accountability Act (2017), and the Congested Corridors Program.

As the implementation blueprint for multimodal mobility within a corridor, a CMCP helps to align community priorities and initiatives with state and regional goals to develop projects and services.

CMCPs are expected to be leveraged for applicable state and federal funds for projects. When funding is obtained, the CMH and Connections 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 federal, state, and local governments. Figure 1-2 shows how the CMCP process works in conjunction with state and regional planning efforts to make the recommended transportation projects a reality.

Figure 1-1: SB 1 Overview

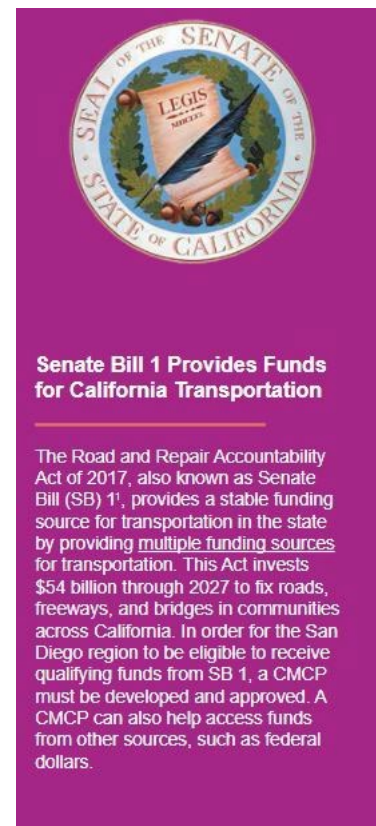


Figure 1-2: CMCP Process and Relationship to Other Planning Efforts



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

These documents are described in the following sections. A complete list of the studies and plans referenced can be found in Appendix A.

SANDAG 2021 Regional Plan

The 2021 Regional Plan is the 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 1-3, are the moves and their associated descriptions.

Figure 1-3: SANDAG 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.

FLEXIBLE FLEETS

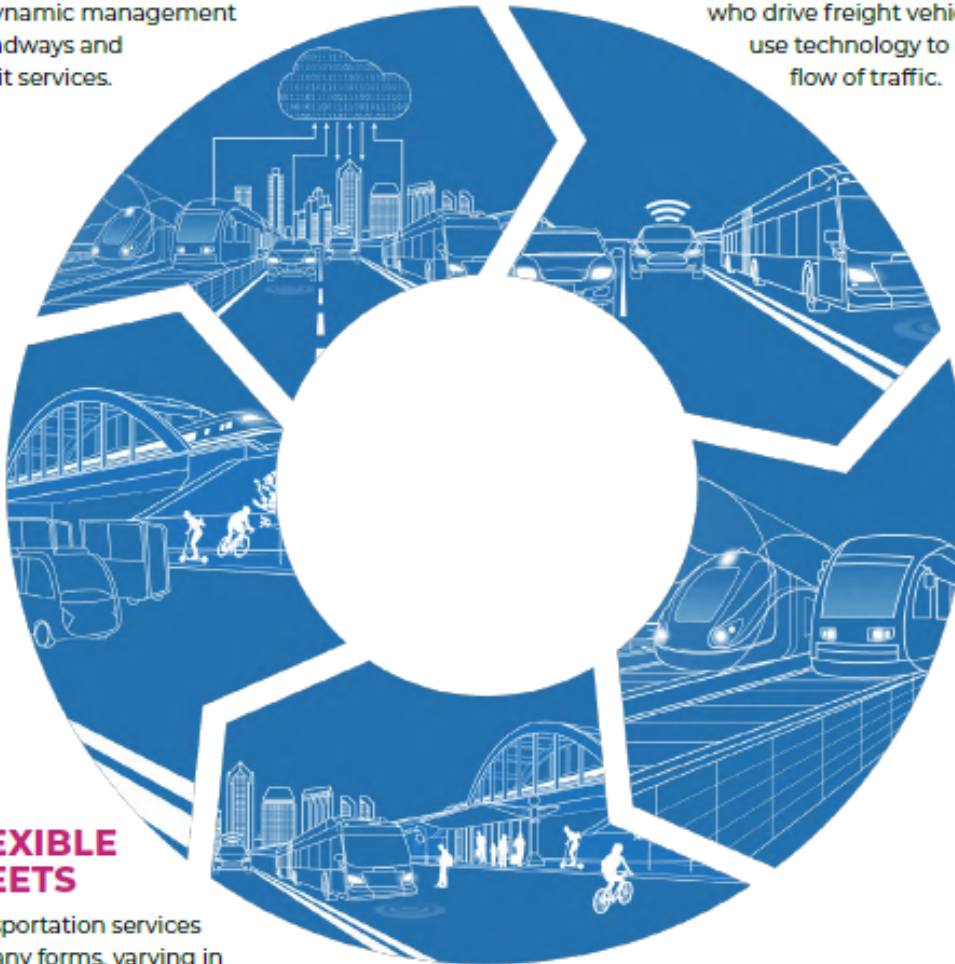
Transportation services of many forms, varying in size from bikes to scooters to shuttles, that offer first- and last-mile connections to transit and alternatives to driving alone.

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.

TRANSIT LEAP

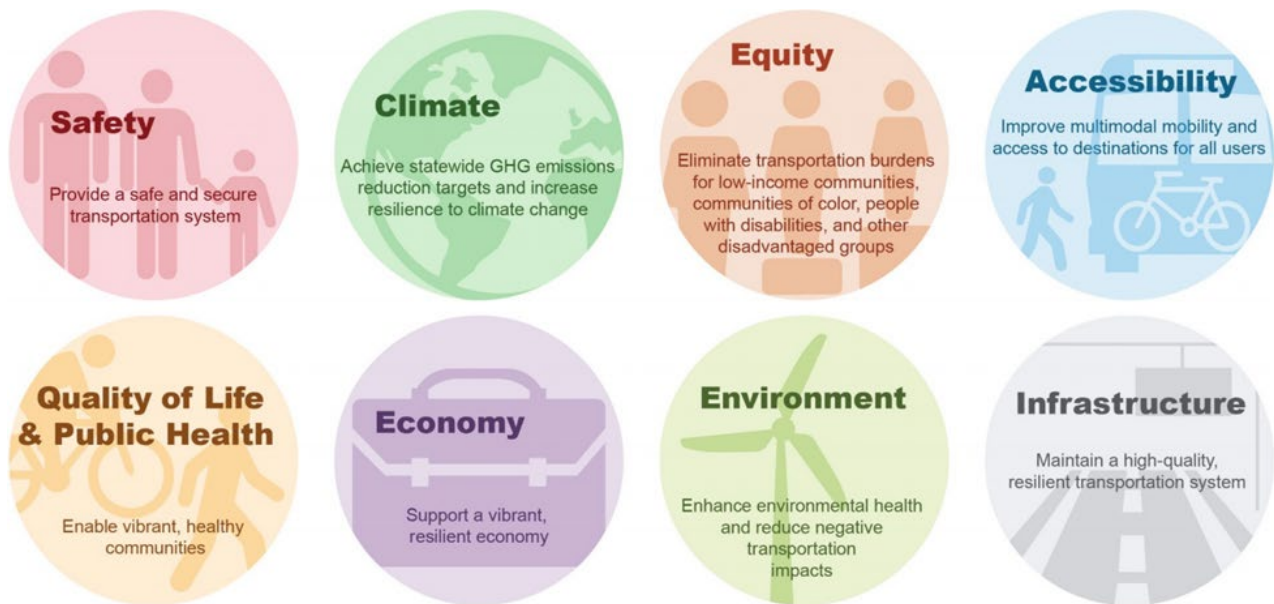
A complete network of fast, convenient, and reliable transit services that connect people from where they live to where they want to go.



California Transportation Plan 2050

The California Transportation Plan (CTP) 2050 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 for making effective, transparent, and transformative transportation decisions in California. While no specific projects are included in the CTP 2050, it does provide **people-focused policies, strategies, and investments that close the gap between the goals in regional transportation plans (RTP) and the state goals shown in Figure 1-4.**

Figure 1-4: CTP Goals



Climate Action Plan for Transportation Infrastructure

In July 2021, the California State Transportation Agency (CalSTA) adopted its Climate Action Plan for Transportation Infrastructure (CAPTI) 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 10 Guiding Principles. In addition to the Guiding Principles for funding, the following strategies and key actions are most applicable to the CMH and Connections CMCP:

- **Cultivate and Accelerate Sustainable Transportation Innovation by Leading with State Investments:** promote innovative sustainable transportation solutions in Solutions for Congested Corridor Program (SCCP) through multimodal corridor plans.
- **Elevate Community Voices in How We Plan and Fund Transportation Projects:** enhance and mainstream community engagement best practices.

- **Advance State Transportation Leadership on Climate and Equity through Improved Planning & Project Partnerships:** require corridor planning efforts to prioritize sustainable multimodal investments; support the development of innovative safety solutions based on the safe systems approach that advance sustainable transportation modes, particularly for rural communities.
- **Support Local and Regional Innovation to Advance Sustainable Mobility:** convene discussions regarding sustainable rural transportation solutions.

Caltrans Corridor Planning Process Guide

The Caltrans Division of Transportation Planning published the Corridor Planning Process Guide (Guide) in February 2020 to provide direction on the comprehensive analysis of transportation corridors to Caltrans and relevant partner agency staff. The Guide provides an eight-step corridor planning process:

1. Scope Effort
2. Gather Information
3. Conduct Baseline Performance Assessment
4. Identify Potential Projects and Strategies
5. Analyze Improvement Strategies
6. Select and Prioritize Solutions
7. Publish/Implement Corridor Plan
8. Monitor and Evaluate Progress

The eight-step corridor planning process is the foundation for the development of the CMH and Connections CMCP process, which is outlined in the CMCP Process section of this document.

Caltrans Smart Mobility Framework

The 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 the CMH and Connections 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

Health and safety designing, operating, and managing a system to improve user safety, encourage active lifestyles, and lessen exposure to pollution

Reliable mobility expanding multimodal options and operational strategies to better manage transportation network predictability

Social equity designing a transportation system that provides mobility for all users

Environmental stewardship reducing transportation greenhouse gas emissions while enhancing and protecting the State's built and natural environments

Robust economy supporting the economic health of the State and local governments, competitiveness of businesses, and the welfare of residents

Local Plans

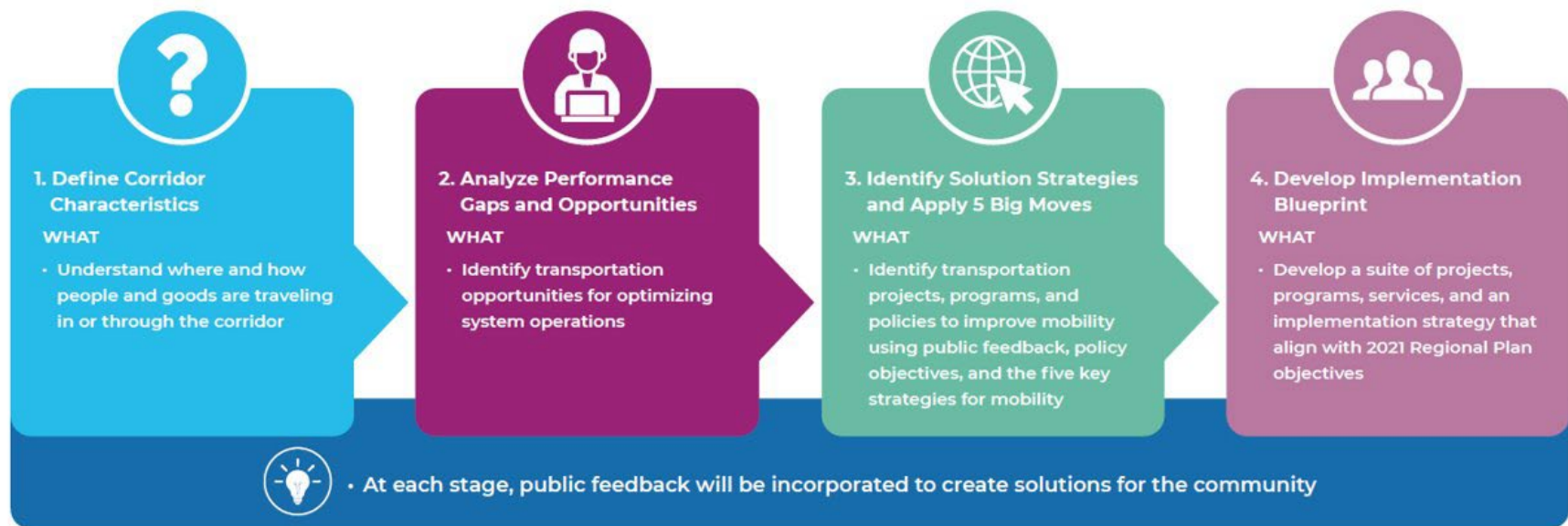
In addition to state and regional guidance and plans such as The Regional Aviation Strategic Plan (RASP) and the Airport Multimodal Accessibility Plan (AMAP) which SDCRAA and SANDAG prepare respectively, the CMH and Connections CMCP builds upon the insight, projects and policies listed in local community plans and studies. Some of these studies include the Midway Community Plan Update, the Airport Development Plan, the Port Master Plan Update, and the Military Multimodal Access Strategy, as well as other CMCPs.

The project team also engaged the City of San Diego, Metropolitan Transit System, Naval Base Point Loma, North County Transit District, Port of San Diego, and San Diego County Regional Airport Authority to ensure that the analysis, findings, and proposed projects and programs from the CMCP were compatible with existing and future local plans.

1.3 CMH and Connections CMCP Process

The CMH and Connections CMCP process aims to understand the characteristics of the Study Area and identify needs through extensive public involvement to create equitable transportation solutions. The overall CMCP process is shown in Figure 1-5 and the key steps are described in this section.

Figure 1-5: CMCP Process



The literature review and Baseline Conditions Analysis provided key contextual information for the Corridor discussed in Chapter 2: Local Context. The results of the Baseline Conditions Analysis combined with feedback from local communities, stakeholders and community-based organizations (Chapter 3: Engagement) are compiled to highlight the recurring key themes for the entire Corridor and inform the transportation solution strategies in Chapter 4: Transportation Solution Strategies.

The transportation solution strategies are divided into short-, mid-, and long-term solutions based on an analysis of each strategy using several factors related to implementation and is detailed in Chapter 6: Implementation.



Chapter 2.

Local Context

2. Local Context

As an initial step in the planning process, the Central Mobility Hub and Connections Comprehensive Multimodal Corridor Plan (CMH and Connections CMCP) study area was analyzed for existing and future sociodemographic conditions, land use, travel patterns, and long-term plans for the development of the area. This section provides an overview of the key findings and key considerations of the corridor's context; see Figure 2-1.

Figure 2-1: Corridor Context Summary



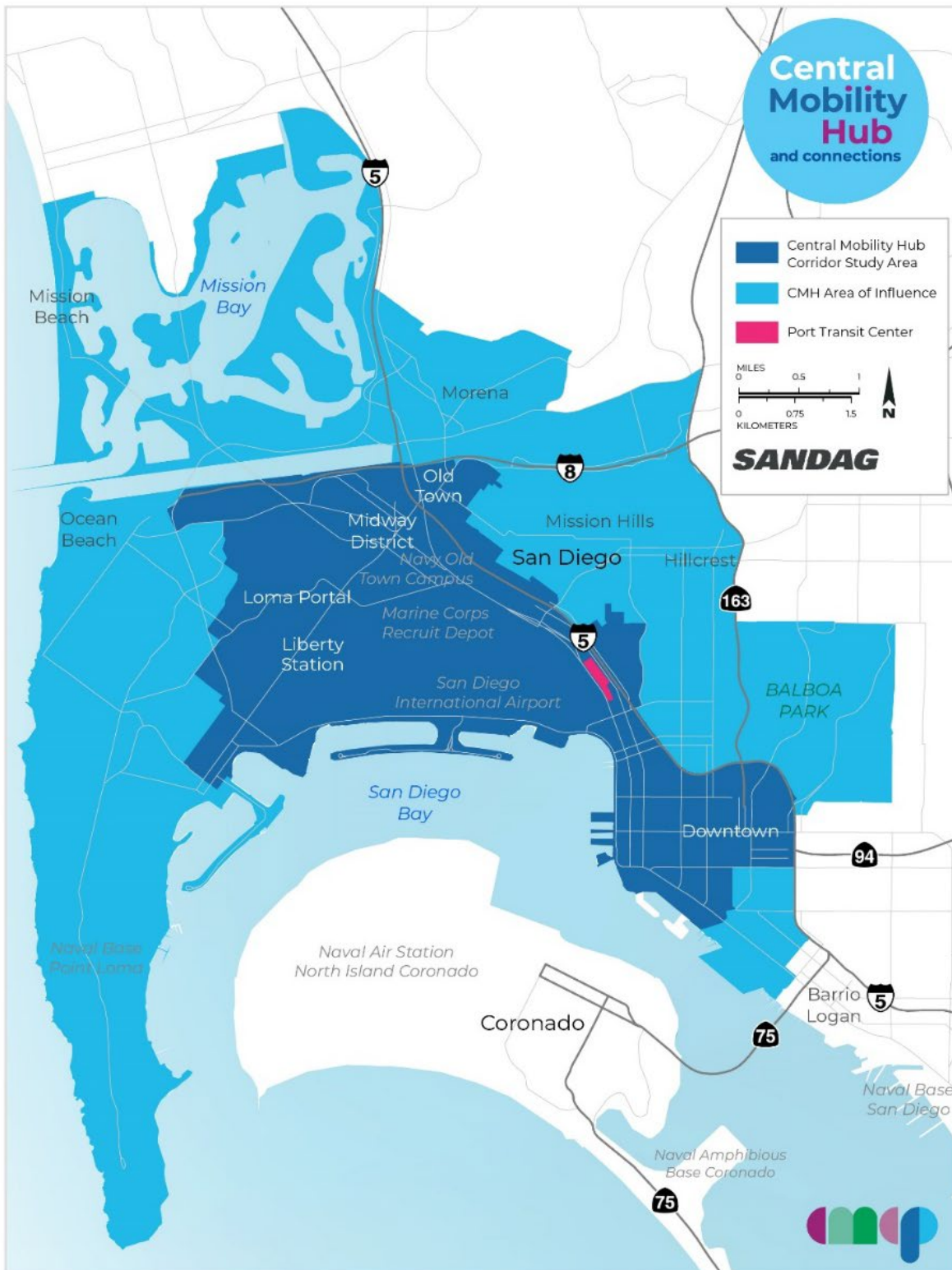
2.1 CMH and Connections CMCP Study Area

In April 2021, SANDAG began the environmental review process for the CMH project with the proposed project to be located at the Navy's Old Town Campus with an alternative at the Intermodal Transit Center site. After further study and public comments received through environmental review and community engagement, SANDAG shifted the focus for the CMH location to Downtown San Diego. Additionally, SANDAG is evaluating several potential alignments for airport transit connections, including one from points north and south of SDIA. Several of the potential alignments include a transit center at the location of the existing Port of San Diego headquarters called the Port Transit Center (PTC). The PTC has not been selected as the final location for the Central Mobility Hub, but rather is intended to serve in interim as a valuable connection to the airport.

The future CMH could be located in Downtown San Diego. SANDAG and the City of San Diego are actively working to identify a downtown location that could accommodate all intermodal uses included in the CMH project. In support of the CMH, the PTC would initially be developed at the Port of San Diego Headquarters. The Naval Information Warfare Systems Command (NAVWAR) facility and the Airport Intermodal Transit Center (ITC) were also previously considered as potential sites but were set aside after further analysis (for more information see Appendix A). Figure 2-2 shows the CMH and Connections CMCP study area and Area of Influence.

The CMH and Connections CMCP is focused on connections within and around the PTC site, as the initial airport connectivity facility that could serve as a gateway to a future downtown CMH. The main corridors located within the study area include Interstate 5 (I-5) and Interstate 8 (I-8), and the Los Angeles – San Diego – San Luis Obispo (LOSSAN) Rail Corridor, providing north-south and east-west connections from throughout the County. Other key corridors include North Harbor Drive, Pacific Highway, Sports Arena Boulevard, Laurel Street, and Washington Street, among others. This site is also located a few miles from the Coronado Ferry Terminal, which brings travelers across San Diego Bay to the City of Coronado.

Figure 2-2: CMH and Connections CMCP Study Area



2.2 Area of Influence

The CMH and Connections CMCP Area of Influence represents a larger boundary established by studying demographic and travel patterns developed from a larger, census tract-based area, which includes broader areas of Downtown San Diego, Balboa Park, Uptown, Middletown, Hillcrest, Old Town, Mission Valley, Mission Bay, the Midway Community, Point Loma, and Ocean Beach.

The Area of Influence will inform and benefit from the proposed projects in the study area. Transportation solutions proposed in this document are focused within the study area but may extend into the Area of Influence and beyond to complete network gaps or create a more comprehensive transportation system.

The corridor overlaps with two CMCPs: the Kumeyaay Corridor (I-8) CMCP and the South Bay to Sorrento CMCP. The Kumeyaay Corridor CMCP runs east-west across the northern portion of the CMH and Connections Area of Influence and encompasses communities including Ocean Beach, Midway-Pacific Highway, Old Town, Uptown, Middletown, and Hillcrest. The South Bay to Sorrento CMCP runs north-south and overlaps with the southeastern portion of the CMH and Connections Area of Influence, which encompasses a small portion of Downtown and Logan Heights.

2.3 Study Area History

The CMH and Connections study area has a unique transportation history, given that it encompasses several historic corridors and transit centers. The major freeway corridors running through the CMH and Connections study area are I-5 and I-8. The I-5 follows the original US 101 route, with the first section opening south of Downtown San Diego in the 1950s. The first section extended between National City to San Ysidro and was completed in the 1960s¹. The I-8 follows the historic US 80 and was completed in 1975².

Figure 2-3: Santa Fe Depot



Source: MTS

¹ <https://www.sandiegouniontribune.com/news/politics/sd-me-101-history-20170818-story.html>

² https://www.socalregion.com/highways/la_highways/i-8/

The area also features the coastal rail corridor, completed in 1885 and now known as the LOSSAN Rail Corridor. Old Town Transit Center is located at the intersection of Rosecrans Street/Taylor Street and Pacific Highway, east of the I-5 and I-8 interchange. This transit center is also on the site of Old Town San Diego State Historic Park. Nearby, Presidio Park is also the site of an early Spanish fort³. The station itself was built in the early 1990s. North-south Trolley service was eventually extended to Old Town Transit Center in 1996, Green Line service was extended here in 2005, and Blue Line service was extended further north with the opening of the Mid Coast Trolley Line in 2021⁴. Another historic transportation center in the CMH and Connections study area is the Santa Fe Train Depot. The Santa Fe Train Depot was constructed in 1915 in the Mission Style, which was in alignment with other structures built for the Panama-California Exposition⁵. Today, both the Old Town Transit Center and the Santa Fe Depot serve Amtrak, NCTD COASTER, and MTS Trolley trains. Numerous local and regional bus routes connect to the Santa Fe Depot as well, including Routes 83, 215, 225, 235, 280, 290, 923, and 992. Adjacent to the Santa Fe Depot, the Broadway Pier ferry terminal is just to two short blocks to the west.

2.4 Study Area Users

The primary users of the CMH and Connections study area are residents, students, visitors, and workers traveling to and from employment, education, retail, entertainment, recreation, and cultural centers in Downtown San Diego and throughout the study area. San Diego International Airport (SDIA) is also a central location that drives regional travel from both inside and outside the study area. Other users include residents in the Point Loma, Midway, Uptown, and Middletown communities. Residents from these areas also make short trips within the corridor, traveling within their community and to adjacent communities for shopping, school, services, and other trips. Users also include residents from communities outside the study area.

Within the CMH and Connections study area, the existing commuter mode share of residents living in the study area is: 62% drive alone, 6% carpool, 2% public transit, 2% bicycle, 6% walk, 4% other, while 19% worked at home, according to a compilation of census tract data from the U.S. Census 2021 American Community Survey 5-year estimates.

2.5 Communities in the Study Area

The PTC site is located less than a mile east of SDIA, and is surrounded by the Midway, Old Town, Middletown and Little Italy communities. A brief description of each community's characteristics is provided below.

³ <https://www.amtrak.com/stations/olt>

⁴ <https://www.sdmts.com/about/history>

⁵ <https://www.amtrak.com/stations/san>

Midway

The Midway community is a centrally located urban community in the northwest portion of the CMH and Connections study area. Central corridors running through this neighborhood include I-5, I-8, Camino Del Rio, Sports Arena Boulevard, Midway Drive, Barnett Ave, Rosecrans Street, Pacific Highway, and Kurtz Street. Land use in the Midway community includes industrial uses, with larger auto-oriented commercial uses located along “superblocks” found within the community. There are also multifamily residential developments, visitor-oriented uses, and U.S. Military properties.⁶ Key locations within the Midway community include the Marine Corps Recruit Depot, the San Diego Sports Arena, and Liberty Station. The City of San Diego is moving forward with a large-scale redevelopment of the Sports Arena site to create the Sports Arena Community Village, which would include middle-income and affordable housing and entertainment facilities.⁷

Figure 2-4: Midway community



Source: Times of San Diego

Old Town

The Old Town community is the birthplace of California and of the City of San Diego, as it is the site of the first permanent Spanish settlement in California. Before then, this area was established as the ancestral land of the Kumeyaay people, who had lived in the region for more than 10,000 years. The Old Town community is located south of I-8 and Mission Valley, east of I-5 and the Midway-Pacific Highway community, and west of the Mission Hills neighborhood.

Existing land uses in the Old Town community include retail, hotel, restaurants and professional office uses. Commercial uses are pedestrian-scale and serve both residents and visitors to the area. Residential uses within the community include single-family homes, multi-family duplexes, apartments, and condominiums.⁸ The Old Town community is also home to the Old Town Transit Center, which is a central multimodal transportation hub for the San Diego region. Other key locations in the Old Town community include the Old Town State Historic Park, U.S. Navy’s Public Works Facility, Fremont Elementary School/Ballard Parent Center, and the Old Town Academy public charter school.

Figure 2-5: Old Town community



⁶ <https://www.sandiego.gov/planning/community-plans/midway-pacific-highway>

⁷ <https://timesofsandiego.com/politics/2022/09/13/city-council-moves-forward-with-midway-rising-sports-arena-development/>

⁸ https://www.sandiego.gov/sites/default/files/old_town_san_diego_community_plan_0.pdf

Middletown

The Middletown community is located between the Old Town and Centre City communities and is generally bound by Witherby Street to the north, Laurel Street to the south, Horton Avenue and Titus Street to the East, and I-5 to the west. Land uses in Middletown include a mix of single-family and multi-family housing, as well as commercial and entertainment uses along India Street. The street grid in Middletown is generally arranged in a grid-pattern.⁹ The Middletown Trolley Station is also located in the Middletown community and serves the UC San Diego Blue Line and Green Line of the MTS Trolley System. This station also provides a shuttle connection to SDIA.

Figure 2-6: Middletown community



Little Italy

The Little Italy community is a neighborhood within Downtown San Diego. This neighborhood was historically a neighborhood for Italian immigrants, with its historic character being maintained in commercial and cultural land uses today. Land uses within Little Italy include single and multi-family housing, mixed-use development, mixed-commercial uses, and park/open spaces. This neighborhood has increasingly become dominated by mixed-use development, with commercial uses on the bottom floors and multi-family housing on higher levels. This community is a central hub for retail, dining, and entertainment for both residents and visitors year-round.

Figure 2-7: Little Italy community



⁹ <https://www.sandiego.gov/sites/default/files/legacy/planning/community/profiles/pdf/cputudmiddletown.pdf>

2.6 Sociodemographic Conditions

Existing Population Density

Existing population density¹⁰ within the study area and area of influence is reflected in Figure 2-8. The most densely populated communities within the study area include Downtown San Diego, Midtown, Ocean Beach and portions of northern Point Loma. Moderately dense geographic areas include the communities of Mission Hills, and the Midway District. The least densely populated areas within the study area are located along I-5 in Old Town, on the peninsula of Point Loma, and in the communities near Liberty Station and SDIA.

Forecasted Population Growth

The total population within the San Diego region will increase by approximately 13% from 3.3 million to 3.7 million by the 2050 horizon year.¹¹ Figure 2-9 reflects how the population is anticipated to grow within the study area and indicates that the most significant growth will be located along major transportation corridors including I-5 and I-8, particularly near Sports Arena Boulevard, which will grow by about 3,200 people. The greatest growth, however, is forecasted at the intersection of I-5 and I-8, where the population is expected to grow by about 4,500 people. Communities along I-8 including Mission Valley, the Midway District, and Morena are anticipated to grow more heavily than others and will gain between 2,500 and 5,000 people in some census tracts. Table 2-1 reflects the region's total forecasted population through the 2050 horizon year, as given in the SANDAG 2021 Regional Plan.¹²

Table 2-1: 2050 Regional Plan Forecast

2050 Regional Population Forecast	
Year	Population
2025	3,470,848
2035	3,620,348
2050	3,746,073

¹⁰ Existing population density data was retrieved from the SANDAG Data Viewer on September 21, 2020. Data in the data viewer reflects data utilized for the SANDAG 2019 Federal RTP.

¹¹ Forecasted population growth data was retrieved from the SANDAG Data Viewer on April 27, 2020. Data in the data viewer currently reflects 2016 data which was utilized for the SANDAG 2019 Federal RTP. Forecast growth data does not account for recent specific projects that may affect population and job growth, such as Midway Rising or at NAVWAR, or other recent redevelopment efforts in the region.

¹² SANDAG Series 14 Regional Growth Forecast, SCS Land Use Pattern

Existing Employment Density

Figure 2-10 shows the location of key employment facilities. These key employment centers are identified as locations where there is a high density of employment and have been classified into tiers, with tier one being the densest. Table 2-2 details the ranges between the tiers. The single tier one employment center within the study area is in Downtown San Diego¹³. Tier two employment centers are located both along I-8 and I-5 in communities including the Midway District, Midtown, and Uptown. Tier three employment centers within the study area include SDIA and Morena. There are no tier four employment centers located within the study area.

Table 2-2: Employment Center Tier Classification

Employment Center Tier Classification	
Tier	Number of Employees
1	Over 50,000 employees
2	25,000 – 49,999 employees
3	15,000 and 24,999 employees
4	2,500 – 14,999 employees

¹³ Key employment center data was retrieved from the SANDAG Data Viewer on April 27, 2020. Data in the data viewer currently reflects 2016 data which was utilized for the SANDAG 2019 Federal RTP.

Figure 2-8: Existing Population Density

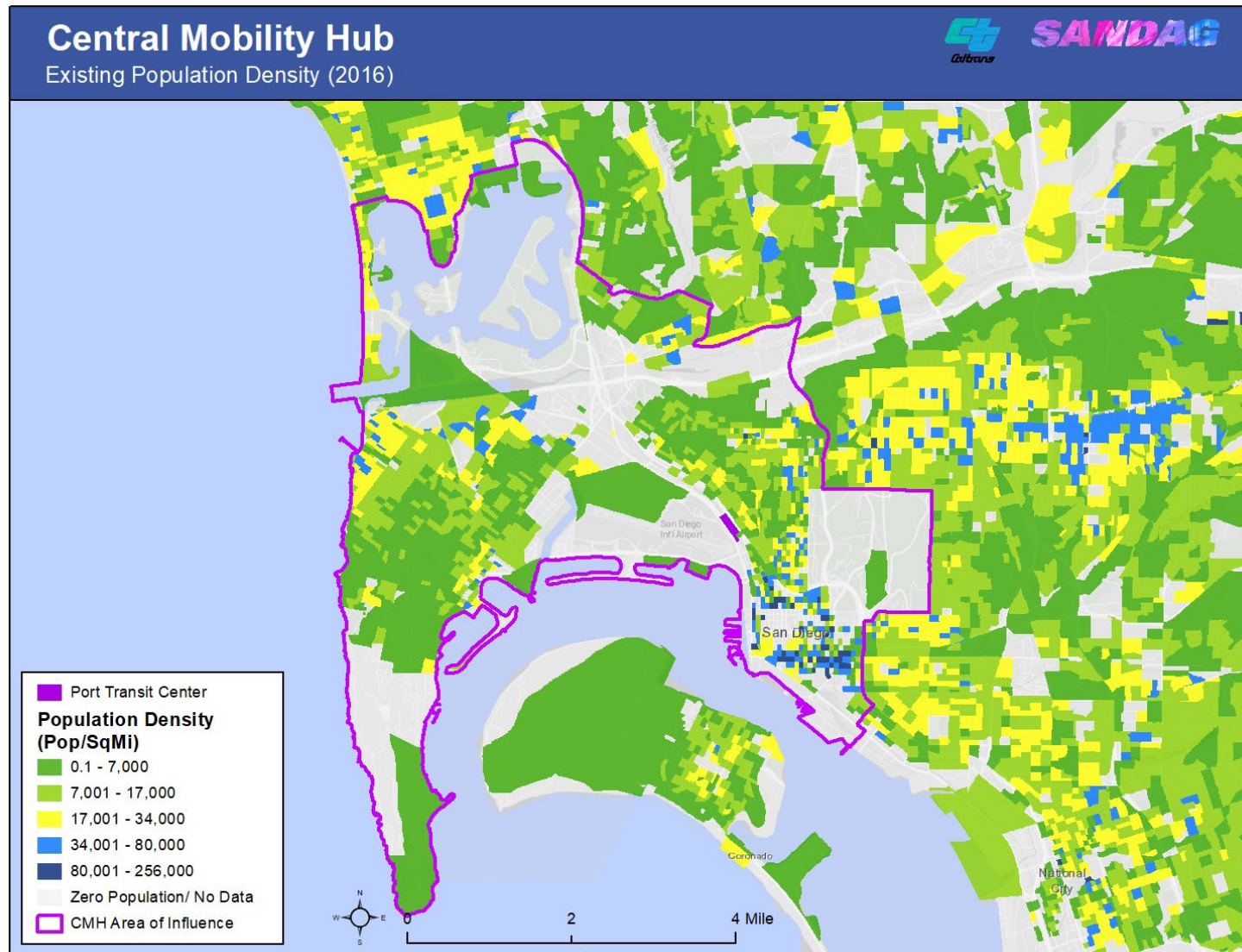


Figure 2-9: Forecasted Population Growth (2016-2050)

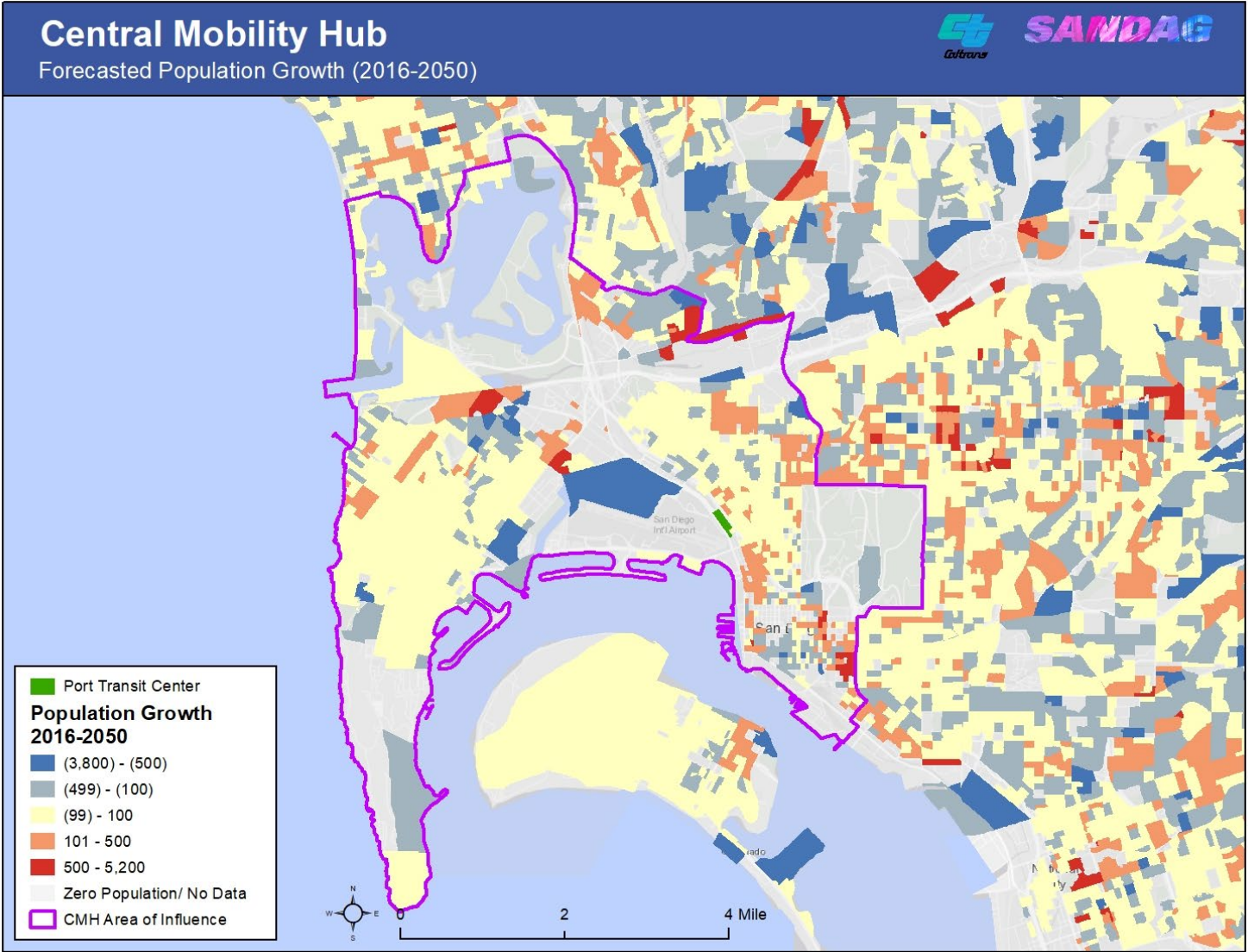
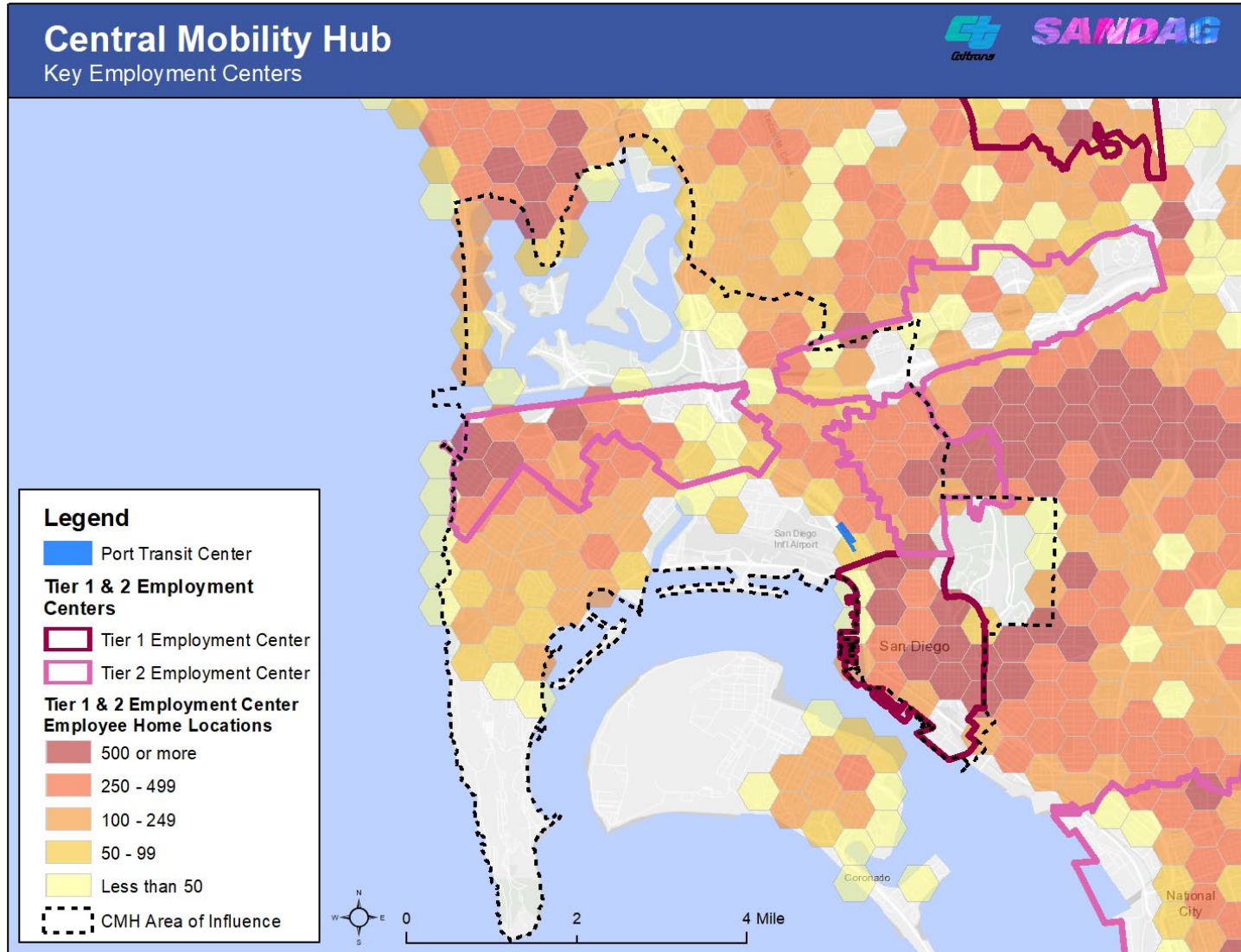


Figure 2-10: Key Employment Centers



Forecasted Job Growth

Employment within the region is projected to grow by approximately 27% by the year 2050.¹⁴ This is partially due to the military and naval facilities located within the region. Approximately 15,000 military jobs are forecasted to be added to the region by 2050. Major military and naval employment facilities are prominent employment hubs within the CMH and Connections study area and are located in Point Loma, at the Marine Corps Recruit Depot (MCRD), the Navy-Broadway complex, and within the Midway community. Within these areas alone, between 2,500 and 5,000 jobs are expected to be created. These areas should benefit from efficient multimodal connections, as transit demand for commuters will continue to grow in response to job growth.

The SANDAG 2021 Regional Plan estimates that approximately 439,899 new civilian jobs will be introduced to the region by 2050. Figure 2-11¹⁵ reflects that the civilian job force will grow considerably within the project area, including San Diego International Airport and at the future Central Mobility Hub. Employment at or related to the SDIA is anticipated to create approximately 2,800 new jobs. On the site of the future CMH, approximately 1,100 jobs are expected to be created by 2050. Table 2-3 reflects the region's forecasted employment growth as indicated in the SANDAG 2021 Regional Plan.

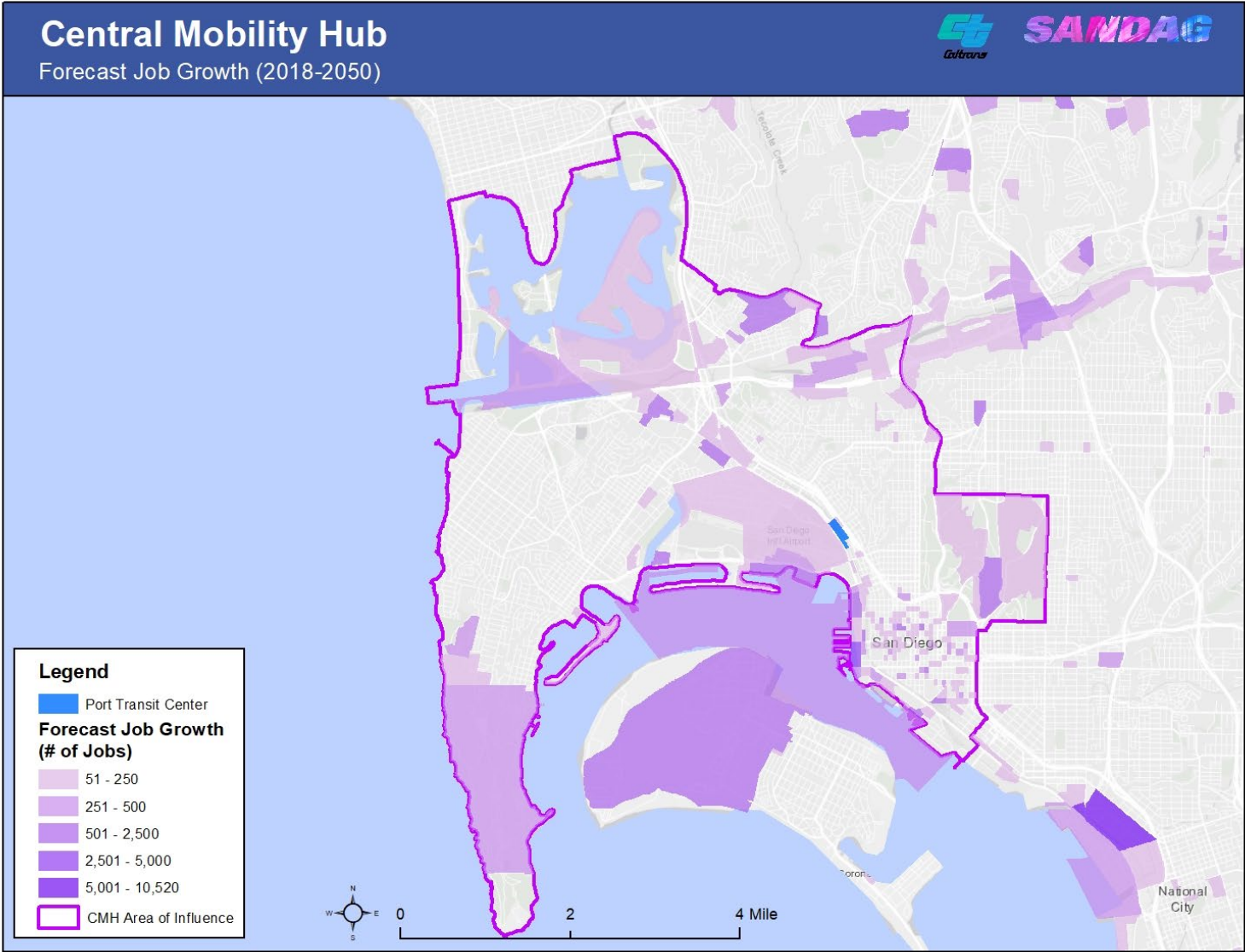
Table 2-3: Regional Employment Forecast

Regional Employment Forecast	
Year	Employment
2025	1.6 Million Employed
2035	1.8 Million Employed
2050	2.1 Million Employed

¹⁴ Note that forecasted employment growth data is based upon pre-pandemic data. Impacts of increased hybrid work environments are not captured in the employment growth forecast.

¹⁵ Forecasted employment growth data was retrieved from the SANDAG Data Viewer on April 27, 2020. Data in the data viewer currently reflects 2016 data which was utilized for the SANDAG 2019 Federal RTP.

Figure 2-11: Draft Forecast Job Growth (2018-2050)



Social Equity Focus Communities

Social equity focus communities are a central focus of this CMCP and include the following communities, as identified by the SANDAG 2021 Regional Plan: low-income, minority, and senior communities (persons aged 75+). Social equity focus communities are typically more reliant on alternative modes of transportation and historically have been underserved by transportation improvements, making it critical to understand their unique mobility needs and barriers. This section reviews demographic data from the 2021 Regional Plan and 2019 Federal RTP to detail where these communities are concentrated. Additionally, these two data sources combined provide a more comprehensive understanding of how transportation network improvements can better accommodate the needs of these communities.

Low-Income Communities

The CMCP study area's demographics are economically diverse. Low-income communities are identified as communities in which 33% or more of households are low-income¹⁶, and/or at least 10% of the households are overcrowded, and/or at least 25% of the population lives in poverty¹⁷. Many members of this community do not have reliable access to a vehicle and are largely transit dependent. Enhanced access to transit for this community will ensure that they have equitable access to educational and employment opportunities.

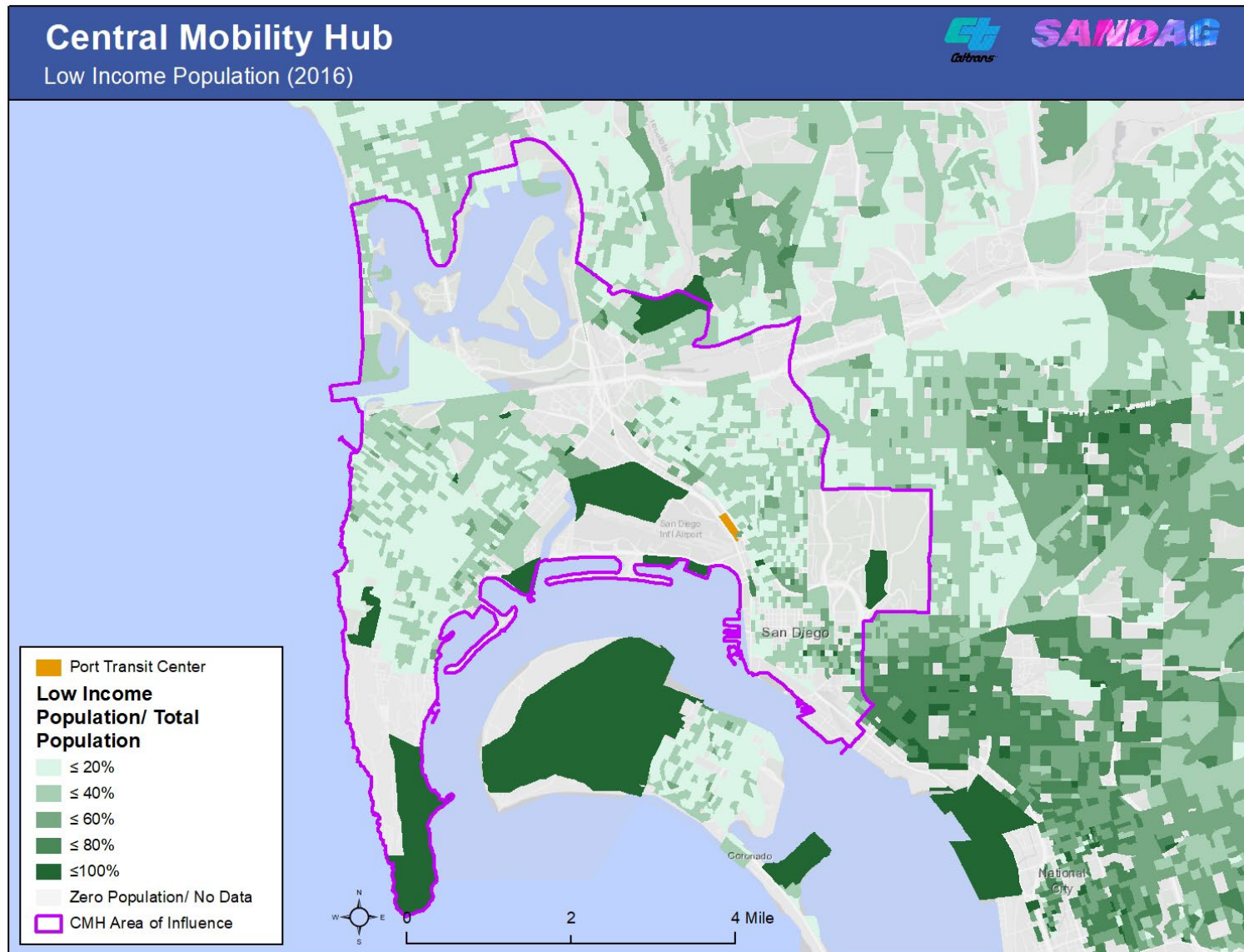
Figure 2-12 reflects¹⁸ communities characterized by low-income populations, including Naval Base Point Loma, the MCRD, and the area surrounding SDIA (though many of these populations are military, in which they receive housing, food, medical, and other resources through employment). Between 97% and 100% of the population in these communities have been identified as low-income. Moreover, the SANDAG 2019 Federal RTP determined that 41% of low-income communities of concern had access to high-frequency transit and by 2050 it is expected that this statistic will increase to 64%. These communities must be considered throughout the CMCP planning process, as ensuring equitable access to transportation is vital to achieving the social equity goals established in the 2021 Regional Plan.

¹⁶ Low-income communities are defined in the 2021 Regional Plan as populations with a household income of less than 200% of the 2016 federal poverty level.

¹⁷ The poverty line is set by the US Census Bureau and varies based on family size. For example, in 2021, the federal poverty line for a family of four was \$26,500 per year.

¹⁸ Low-income population data was retrieved from the SANDAG Data Viewer on April 27, 2020. Data in the data viewer currently reflects 2016 data which was utilized for the SANDAG 2019 Federal RTP.

Figure 2-12: Social Equity Focus Community – Low Income Population (2016)



Minority Communities

Minority populations have been identified by the SANDAG 2021 Regional Plan as another social equity focus community. The study area for the CMH and Connections CMCP is generally characterized by a less diverse demographic region compared to other communities outside of the CMH area of influence.

Figure 2-13 reflects¹⁹ that the minority population in 2016 was greatest in the East Village of Downtown and portions of the Midway District, with up to 56% of populations in census block groups self-identifying as part of a minority community. Approximately 60% of the population in areas including North Island and the Midway District identified as a minority. Additionally, the SANDAG 2019 Federal Regional Transportation Plan (RTP) estimates that by 2050, the population will grow to be even more diverse with nearly 40% of the population being Hispanic, nearly 12% being Asian, and about 4% being African American.

The document also identified that approximately 72% of minority communities live within a half-mile of a transit stop, while approximately only 39% of minority communities live within a half-mile of a high-frequency transit stop. Understanding where minority populations are more densely concentrated will be vital to ensuring equitable access to transportation. Improvements proposed in future CMCP deliverables should actively improve accessibility to all modes of transportation and reduce barriers to equity and opportunity.

Senior Communities

The SANDAG 2021 Regional Plan identifies the region's senior population as another social equity focus community. Figure 2-14 reflects²⁰ where the senior population is most heavily concentrated within the study area. The areas with the greatest senior population include the central portion of Point Loma and the communities of Old Town and Mission Hills. The senior population within these areas compose at least 24% of these community's population.

While not as heavily concentrated in neighboring areas, additional communities with significant senior populations include the Midway District, Middletown, and the community around Seaport Village. Within these areas, the senior population composes approximately 10% of the population. Moreover, the growth forecasts provided in the SANDAG 2019 Federal RTP indicate that the largest population growth will be experienced in the oldest age group, in which individuals are age 85 or older. This community relies heavily on accessible and reliable transit, as some are no longer able to operate a vehicle or experience other mobility challenges. Transit dependency is expected to increase significantly within the study area and area of influence, as the overall population continues to age.

¹⁹ Minority population demographic data was retrieved from the SANDAG Data Viewer on April 27, 2020. Data in the data viewer currently reflects 2016 data which was utilized for the SANDAG 2019 Federal RTP.

²⁰ Senior population demographic data was retrieved from the SANDAG data viewer on April 27, 2020. Data in the data viewer currently reflects 2016 data which was utilized for the SANDAG 2019 Federal RTP.

Figure 2-13: Social Equity Focus Community – Minority Population (2016)

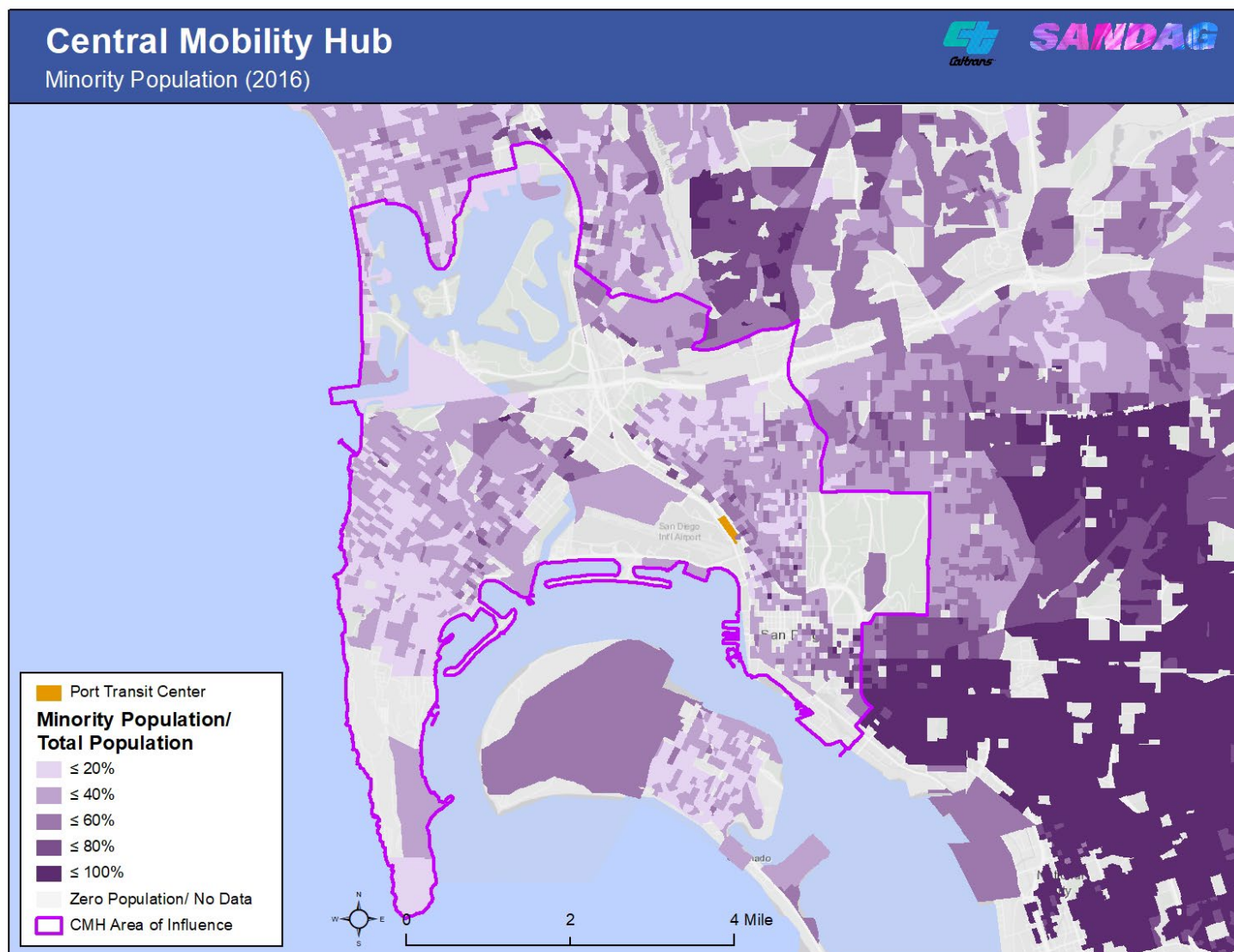
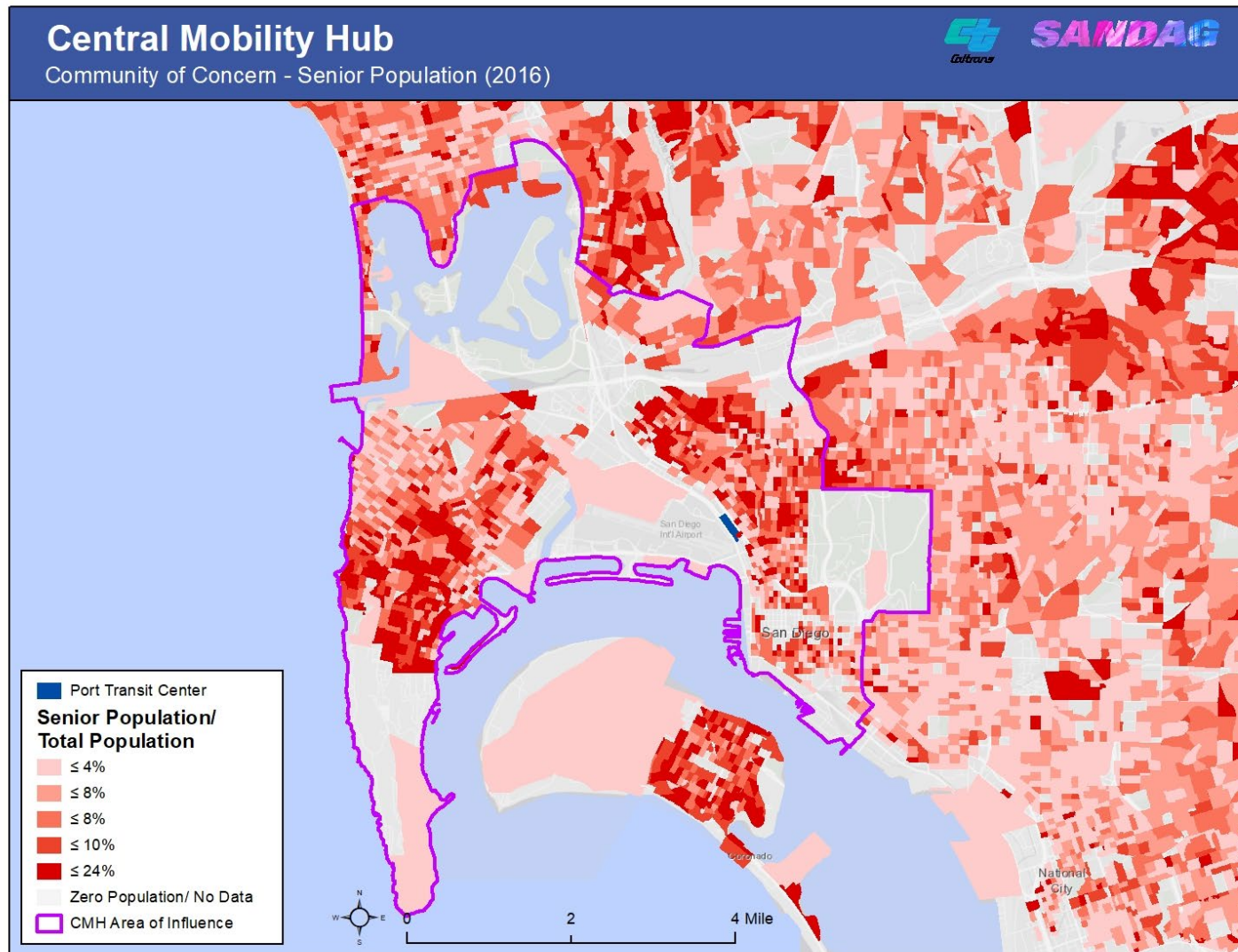


Figure 2-14: Social Equity Focus Community – Senior Population (2016)



2.7 Commute Patterns and Trip Generators

Key Destinations

Key destinations within the CMH and Connections study area include neighborhood destinations, cultural hubs, and transportation hubs. SDIA is a major trip generator for both residents and visitors to the CMH and Connections study area. Similarly, the San Diego Sports Arena located in the Midway community generates a significant number of daily trips from travelers living inside and visiting the CMH and Connections study area. The Arena will continue to be a key destination within the study area as the City moves forward with the Sports Arena redevelopment project. This project will provide additional housing and entertainment facilities, which will attract more visitors to this destination.

Other key destinations in the study area that serve as regional destinations include Old Town and Downtown San Diego. Old Town is located on the eastern side of the I-5/I-8 interchange and hosts the Old Town Transit Center. Downtown San Diego serves as a key destination in the CMH and Connections study area, as it is a major employment and entertainment hub and a major commercial center.

Traffic Flows

Figure 2-15 and Figure 2-16 reflect²¹ the traffic volume modeled by SANDAG's 2016 Activity Based Travel Model (ABM) within the CMH and Connections study area during the AM and PM peak periods, respectively. The model projects traffic volumes for morning peak and evening peak hours, between 6 AM and 9 AM and 4 PM and 7 PM, respectively. These peak travel times are consistent with anticipated morning and evening work commute hours. During these hours, the heaviest traffic flows were identified along I-5 and along the eastern portion of I-8. Two-way traffic volumes along I-5 and I-8 are generally greater during PM peak hours.²² I-5 sees greater demand in the southbound direction during AM peak hours and greater demand in the northbound direction during PM peak hours. For I-8, traffic volumes heading westbound are greater in the AM peak hours than in the eastbound direction, while the eastbound direction sees greater volume during the PM peak period.

²¹ Traffic flow data was retrieved from the SANDAG Data Viewer on April 27, 2020. Data in the data viewer currently reflects 2016 data which was utilized for the SANDAG 2019 Federal RTP.

²² Appendix T – SANDAG Travel Demand Model and Forecasting Documentation (SANDAG) 2019

Other corridors identified to have significant travel flows during the morning peak travel hours include Rosecrans Street, Barnett Avenue, and W Washington Street. During AM peak travel hours, traffic flows along Rosecrans Street are highest when traveling in the southbound direction. Moreover, during PM peak travel hours, traffic flows along Barnett Avenue and Washington Street are highest when traveling in the westbound direction. Figure 2-15 also reflects that most traffic flows are concentrated in Downtown San Diego, the Midway District, and in the Hillcrest community. Figure 2-15 shows one-way AM peak period volume for the 3-hour period. Figure 2-16 reflects that traffic flows are generally higher during evening peak travel hours than during morning commutes. Like morning peak travel time flows, the corridors which reflect the heaviest traffic include I-5, I-15, and I-8. Additional major arterials which experience significant traffic during PM peak travel include Rosecrans Street, Barnett Avenue, and W. Washington Street. Traffic flows are higher during peak PM hours along Rosecrans Street when traveling in the northbound, eastbound, and westbound direction than during morning commute times. Similarly, traffic flows are higher during PM peak travel hours when traveling in the northbound and westbound direction, than during morning commutes. Figure 2-16 shows one-way PM peak period volume for the 3-hour period from 4pm to 7 pm.

Figure 2-15: ABM Modeled Traffic Flows AM Peak Travel Time (2016)

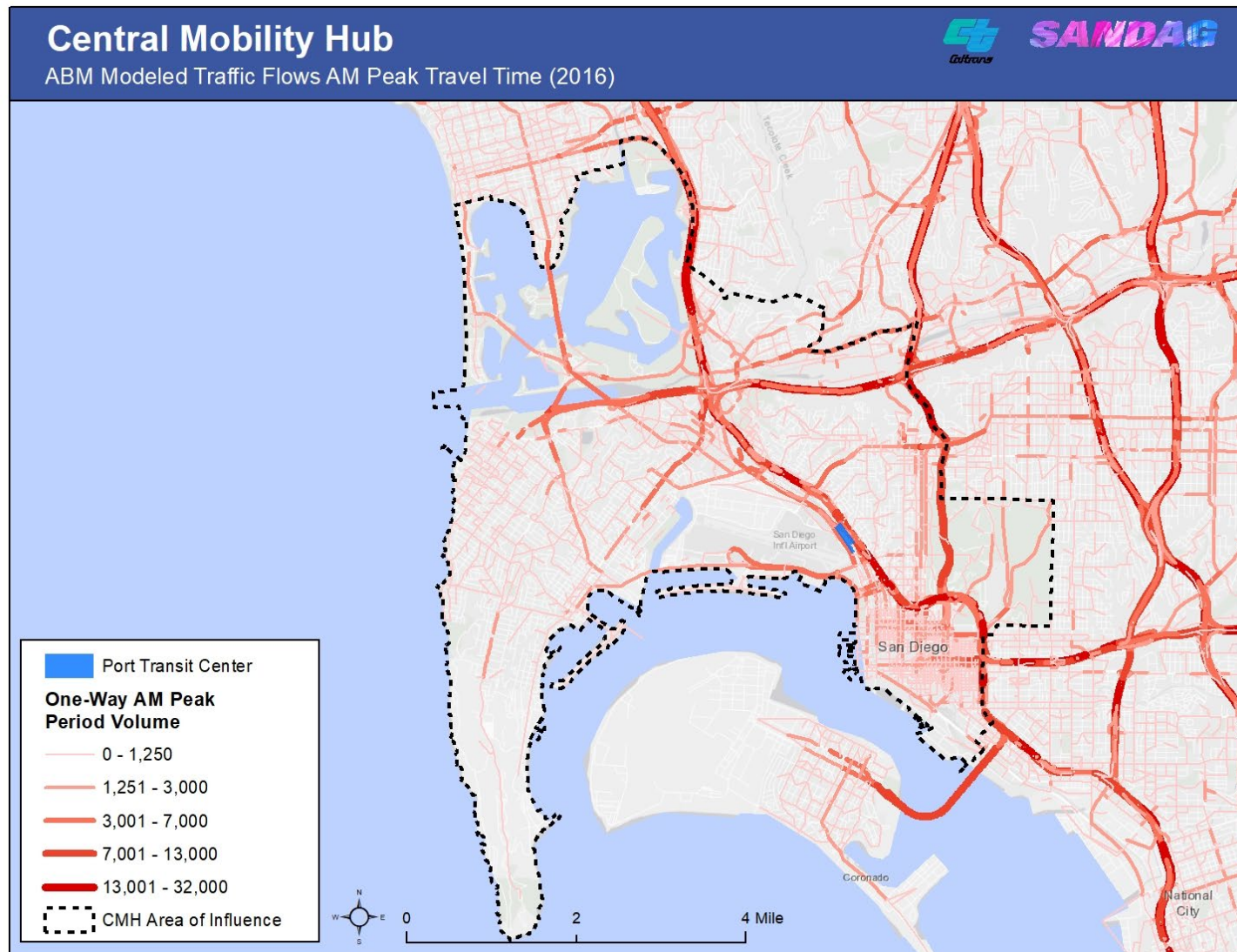
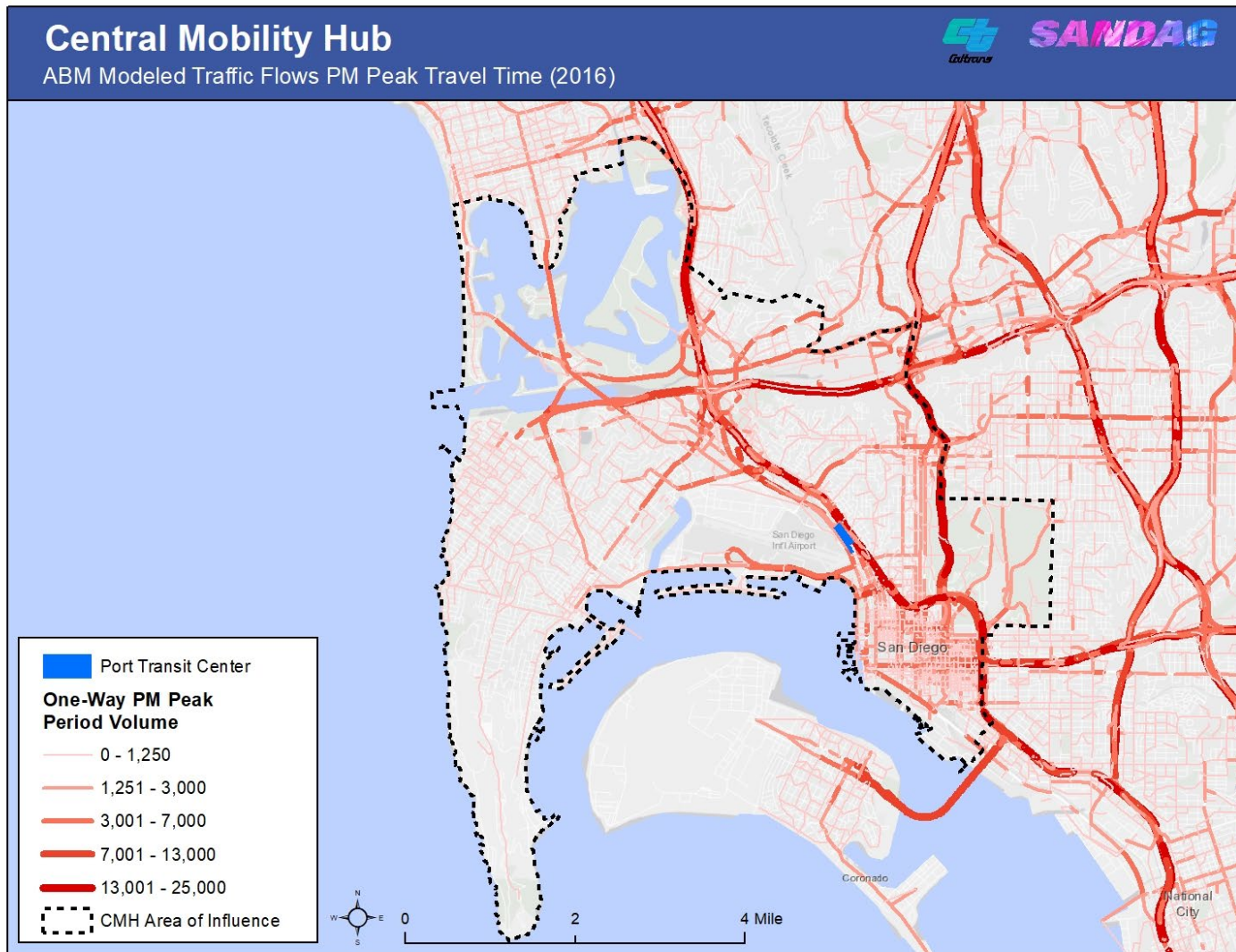


Figure 2-16: ABM Modeled Traffic Flows PM Peak Travel Time (2016)



Vehicle Miles Traveled

Figure 2-17 and Figure 2-18 show²³ the Vehicle Miles Traveled (VMT) by census tract against the regional mean, for either study area residents or employees. Vehicle miles traveled provide context to daily traffic volumes within the study area. California Senate Bill 743 resulted in VMT as the primary metric for determining California Environmental Quality Act (CEQA) transportation impacts across the state and is derived from the volume of vehicles and their respective travel lengths. Use of VMT as the metric to evaluate transportation impacts supports goals of reducing greenhouse gas emissions, development of multimodal transportation networks, and a diversity of land uses.

VMT per resident tracks resident-based VMT trips, where VMT per employee tracks employee-based trips. The regional mean for VMT per resident is 19 miles per day, while the VMT per employee is 27.2 miles per day. The amount of VMT against the regional mean varies throughout the study area, for both residents and employees. Figure 2-17 reflects that resident VMT is highest in the central portion in Point Loma, in the community of Mission Hills along I-8, and in the Midway District. VMT per Capita in these areas represent between 80% to 125% of the regional mean. For employee-based VMT shown in Figure 2-18, areas with high VMT against the regional mean are located in the southern portion of Point Loma, SDIA, and portions of Mission Valley. For both resident and employee-based trips stemming from the I-5 corridor, total daily VMT remains between 50% to 85% of the regional mean.

²³ VMT data was retrieved from the SANDAG Data Viewer on April 27, 2020. Data in the data viewer currently reflects 2016 data which was utilized for the SANDAG 2019 Federal RTP.

Figure 2-17: SB 743 VMT Per Resident by Census Tract (2016)

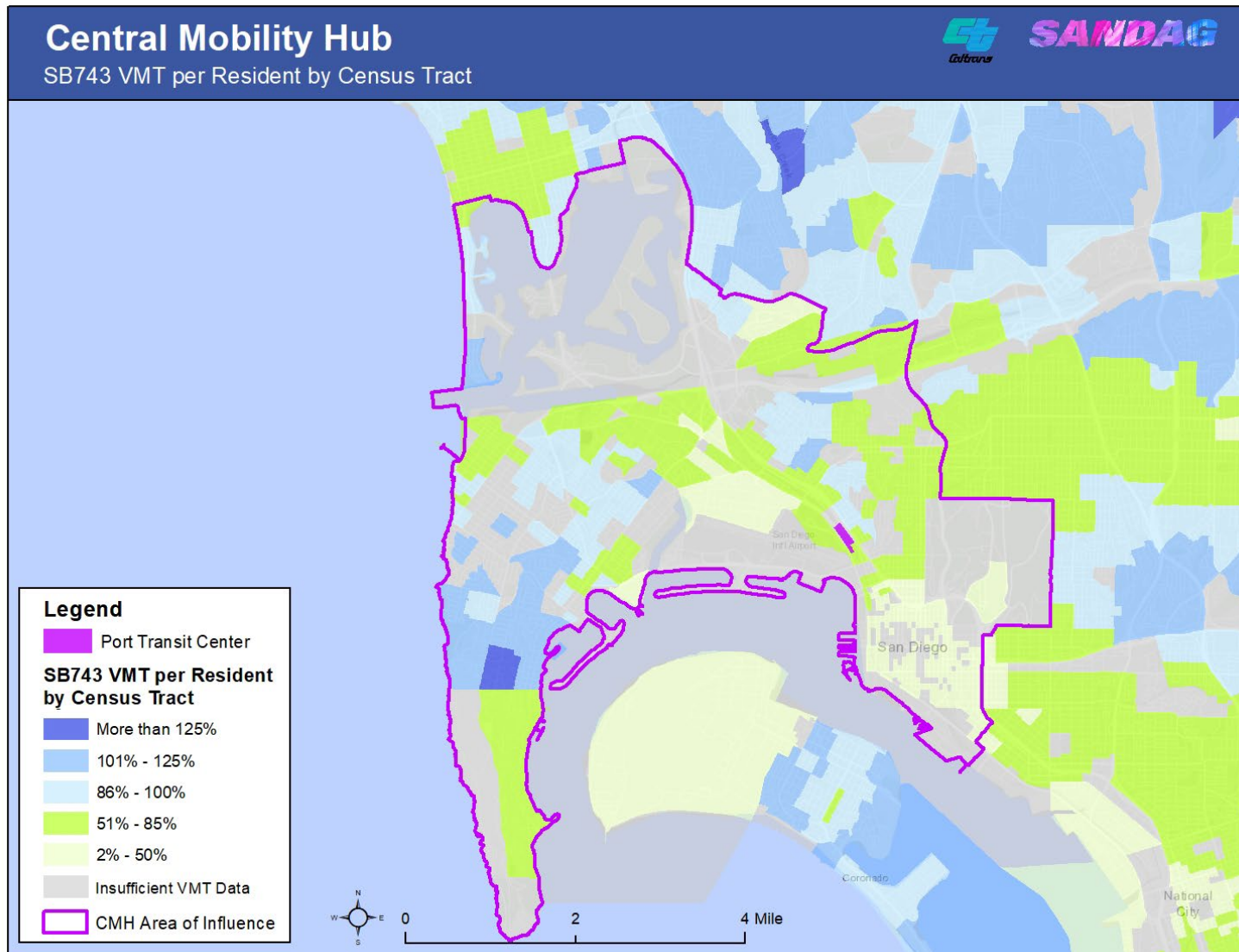
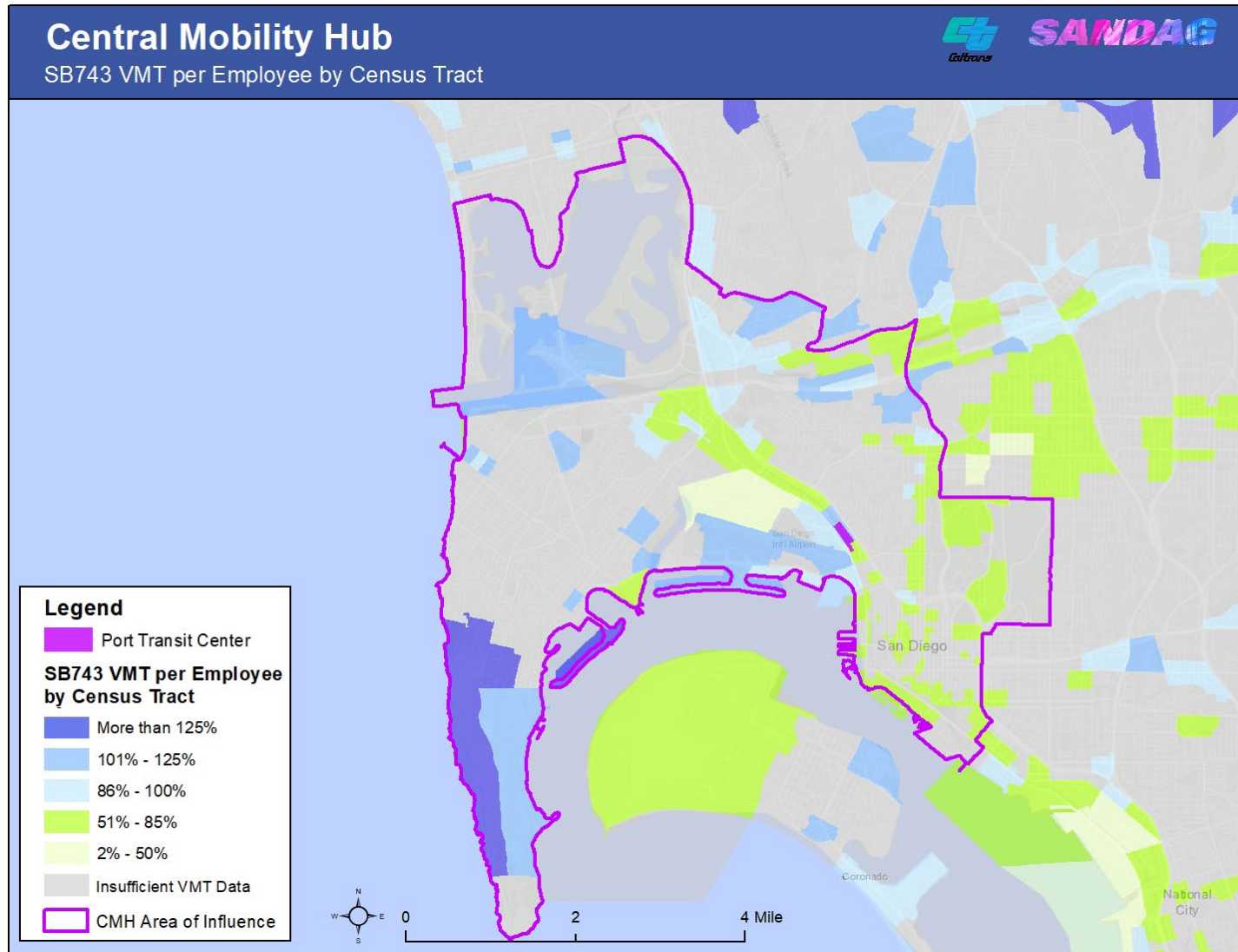


Figure 2-18: SB 743 VMT Per Employee by Census Tract (2016)



Transit

A variety of multimodal transit services are provided to residents and commuters within the CMH and Connections study area, as reflected in Figure 2-19. These services include commuter and intercity rail, light rail, and Rapid and local bus.



The COASTER, operated by North County Transit District (NCTD), provides commuter rail service to passengers traveling throughout the region. Within the CMH and Connections CMCP study area, the COASTER stops at the Old Town Transit Center and at Santa Fe Depot in Downtown. The COASTER operates seven days a week from 5 AM until 8 PM.



Pacific Surfliner, operated by Amtrak, provides intercity rail services from Santa Fe Depot from Santa Fe Depot and Old Town to destinations throughout Southern California, including Anaheim, Los Angeles, and Santa Barbara. The Pacific Surfliner operates daily, with 10 daily departures or arrivals to Santa Fe Depot between 4 AM and 9 PM northbound, and 9 AM to 1:15 AM southbound.



The San Diego Trolley, operated by San Diego Metropolitan Transit System (MTS), provides light rail service to passengers traveling shorter distances along three routes. The UC San Diego Blue Line provides north-south transit access across the study area, extending from University Town Center and UC San Diego to San Ysidro. The Blue Line departs every 7-8 minutes Monday through Friday from 4:30 AM until 1 AM and every 15 minutes on weekends from 5 AM until 1 AM.



The Sycuan Green Line runs parallel to I-8 in the eastern portion of the study area and extends along I-5 before reaching its southern terminus near Commercial Street in Downtown. The Green Line departs every 15 minutes Monday through Friday from 5 AM until 1 AM and departs every 15-30 minutes on Weekends from 5 AM until 1 AM.



The Orange Line provides transit access within the southern portion of the study area, and extends into East County from Broadway, south along Park Blvd, and east along Commercial Street. The Orange Line departs every 15 minutes Monday through Friday from 5 AM until 1 AM, every 15 minutes on Saturdays from 5 AM until 12:30 PM, and every 15 minutes on Sundays from 5 AM until 11 PM.

Figure 2-19: Existing Transit Network

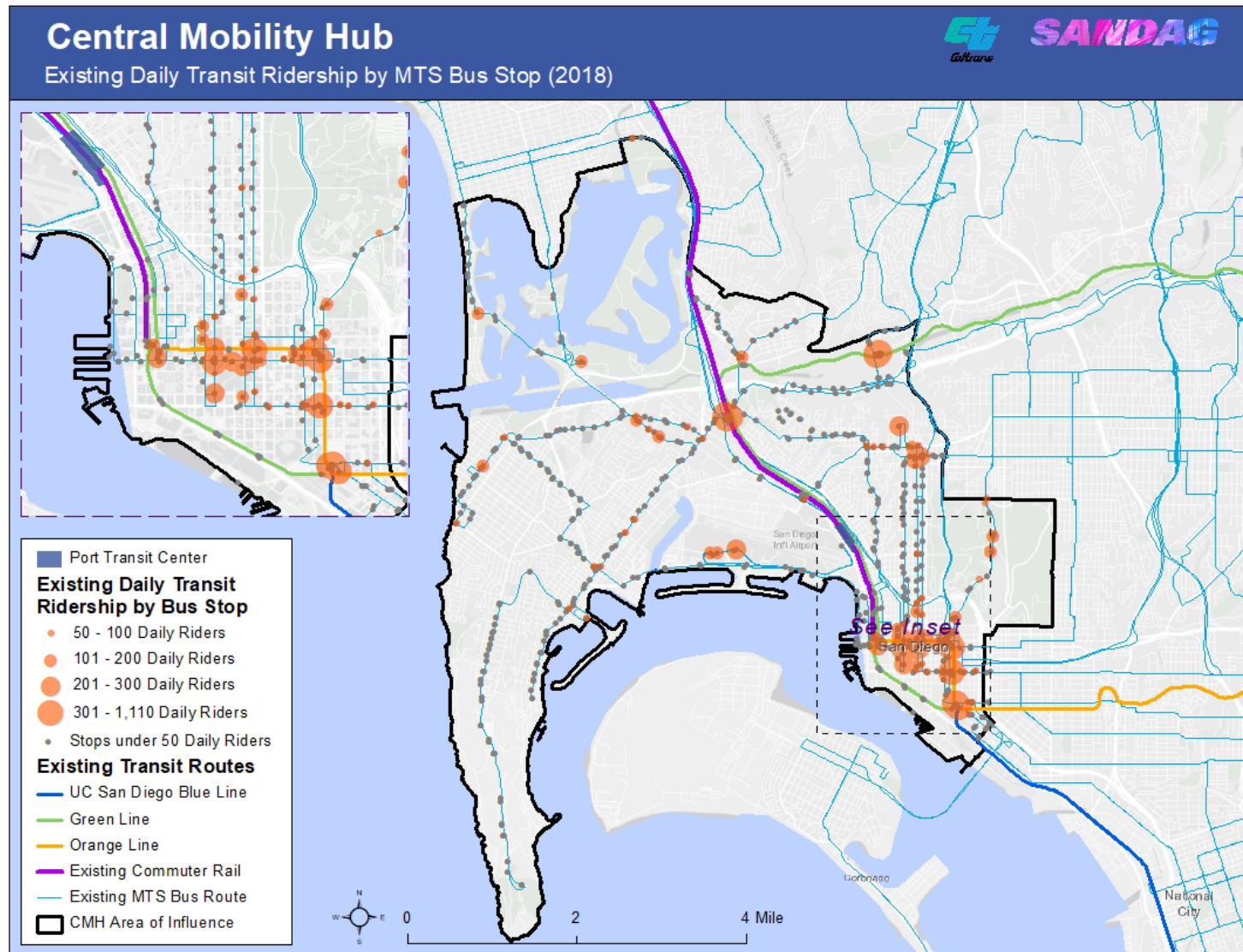


Table 2-4 reflects the estimated ridership numbers for San Diego light rail and commuter rail transit services as indicated by the SANDAG Passenger Counting Program for 2021.²⁴

Table 2-4: SANDAG 2021 Rail Route Ridership

SANDAG 2021 Rail Route Ridership			
Route	Route Description	Transit Mode	2021 Average Daily Passengers
UC San Diego Blue Line Trolley	University Town Center to San Ysidro	Light Rail	40,118
Green Line Trolley	Santee to Downtown SD/12 th & Imperial via La Mesa / Mission Valley	Light Rail	17,332
Orange Line Trolley	El Cajon to Downtown SD/American Plaza via Southeastern Communities	Light Rail	13,970
COASTER	Oceanside to Downtown San Diego	Commuter Rail	1,175
Pacific Surfliner	Santa Fe Depot to San Luis Obispo	Intercity Rail	646 at Santa Fe Depot 310 at Old Town Transit Center ²⁵

- The I-15 Rapid, operated by MTS, runs along I-15 along the eastern border of the CMH and Connections study area. MTS also operates four Rapid bus routes within the CMCP study area including routes 215, 235, 280, and 290. These routes provide access to Downtown San Diego before reaching their terminus at W. Grape Street and Pacific Highway in Little Italy.
- Local bus service within the study area is operated by MTS and provides access primarily to the Midway District, Coronado, Uptown, Midtown, and Downtown. Local bus routes providing transit service within the study area include routes 7, 8, 10, 11, 20, 28, 30, 35, 83, 84, 88, 110, 215, 901, 923, and 992.

Table 2-5 details the highest performing MTS stops by daily boardings for bus routes that provide service in the CMH and Connections CMCP study area (2018).²⁶

²⁴ SANDAG State of the Commute Infobits, p. 6. <https://www.sandag.org/-/media/SANDAG/Documents/PDF/data-and-research/applied-research-and-performance-monitoring/performance-monitoring/infobits-2021-state-of-the-commute-report-2022-05-01.pdf>

²⁵ Amtrak Ridership, Bureau of Transportation Statistics, FY 2021. <https://www.bts.dot.gov/browse-statistical-products-and-data/state-transportation-statistics/amtrak-ridership>

²⁶ Ridership data derived from System and Service Evaluation (MTS) 2017

Table 2-5: Daily MTS Ridership by Stop and Route (2018)

Daily MTS Ridership by Stop and Route			
Rank	MTS Stop	Route	Daily Boardings
1	11 th / Broadway	215	1,109
2	11 th / C	7	1,048
3	Old Town Transit Center	44	999
4	Broadway/ Park	235	945
5	Old Town Transit Center	35	876
6	Old Town Transit Center	10	854
7	12 th / Imperial Transit Center	12	837
8	12 th / Imperial Transit Center	929	786
9	Fashion Valley Transit Center	41	687
10	Old Town Transit Center	30	595
11	Old Town Transit Center	28	546
12	12 th / Imperial Transit Center	4	526
13	Market/ Park	5	516
14	Old Town Transit Center	8	512
15	Old Town Transit Center	150	489
16	Broadway/ Park	2	473
17	Market/ Park	3	473
18	Old Town Transit Center	9	432
19	Fashion Valley Transit Center	928	397
20	12 th / Imperial Transit Center	901	370
21	Fashion Valley Transit Center	6	364
22	11 th / C	20	345
23	Market/ Park	3	340
24	Old Town Transit Center	105	340
25	1 st / Broadway	150	336
26	5 th / C	120	285
27	Broadway/ 5 th	215	283
28	10 th / Broadway	5	276
29	Old Town Transit Center	30	274
30	Fashion Valley Transit Center	20	265
31	Front/ Arbor (UCSD)	3	264
32	4 th / University	3	248
33	Broadway/ Kettner	992	247
34	4 th / Broadway	3	245
35	University/ 5 th	10	244

Active Transportation

Existing active transportation infrastructure supports the ability of pedestrians and cyclists to reach their desired destination. Figure 2-20 reflects the available bikeway infrastructure within the CMH and Connections study area from iCommute SANDAG's San Diego Regional Bike Map (2022). The five main bikeways identified by the SANDAG 2021 Regional Plan include multi-use paths, bike lanes, and bike routes.

- **Multi-use paths (Class I):** provide a completely separated right of way for the exclusive use of bicyclists and pedestrians with minimized opportunity for crossflow traffic.
- **Bike lanes (Class II):** provide a painted striped lane for one-way bike travel on a street or highway.
- **Bike routes (Class III):** provide bicyclist access on a low traffic volume roadway that is shared with motor vehicle traffic. Signage is present on these roadways to indicate a shared roadway.
- **Protected/separated bike lanes (Class IV):** provide a separation between the bike lane and vehicular traffic lanes via grade separation, posts, barriers, or on-street parking
- **Bike boulevards (Class V):** provide bicyclist access on low traffic volume and speed roadways, designed and designated to give bicycle travel priority

Within the CMH and Connections study area, multi-use paths (Class I) exist along N Harbor Drive, I-8, Sea World Drive, and along the Liberty Station Esplanade. Bike lanes (Class II) exist along N Harbor Drive, Rosecrans Street, Barnett Avenue, Sports Arena Boulevard, Pacific Highway, W Washington Street, and parallel to I-8. Bike routes (Class III) exist along Pacific Highway, I-8, Chatsworth Blvd in Point Loma Heights, Presidio Drive in Presidio Park, and in Downtown San Diego. Separated bikeways (Class IV) are located on 4th Avenue, 5th Avenue, 6th Avenue, J Street, Beech Street, along Pacific Highway in Downtown.

Goods Movement

The CMH and Connections CMCP study area has several key corridors and points of access for the movement of goods throughout the study area and throughout the entire San Diego region, which includes goods movement from Mexico to the Ports of Los Angeles and Long Beach and beyond. Key corridors for goods movement within the study area include I-5 and I-8 for heavy duty truck transport, and the LOSSAN Rail Corridor for freight travel, as depicted in Figure 2-21. In addition to these key corridors, SDIA and the Port of San Diego are both major hubs for the import and export of goods.

Small last-mile deliveries have been surging within residential areas, especially following the COVID-19 pandemic and stay-at-home ordinances. As a result, local roads are also seeing an uptick in small truck transport. Ensuring the efficient movement of goods for both heavy-duty freight and small-scale deliveries throughout the transportation network is vital to the economic success of the region, as well as to ensuring that traffic impacts are minimized for all other roadway users.

Figure 2-20: Existing Bike Routes

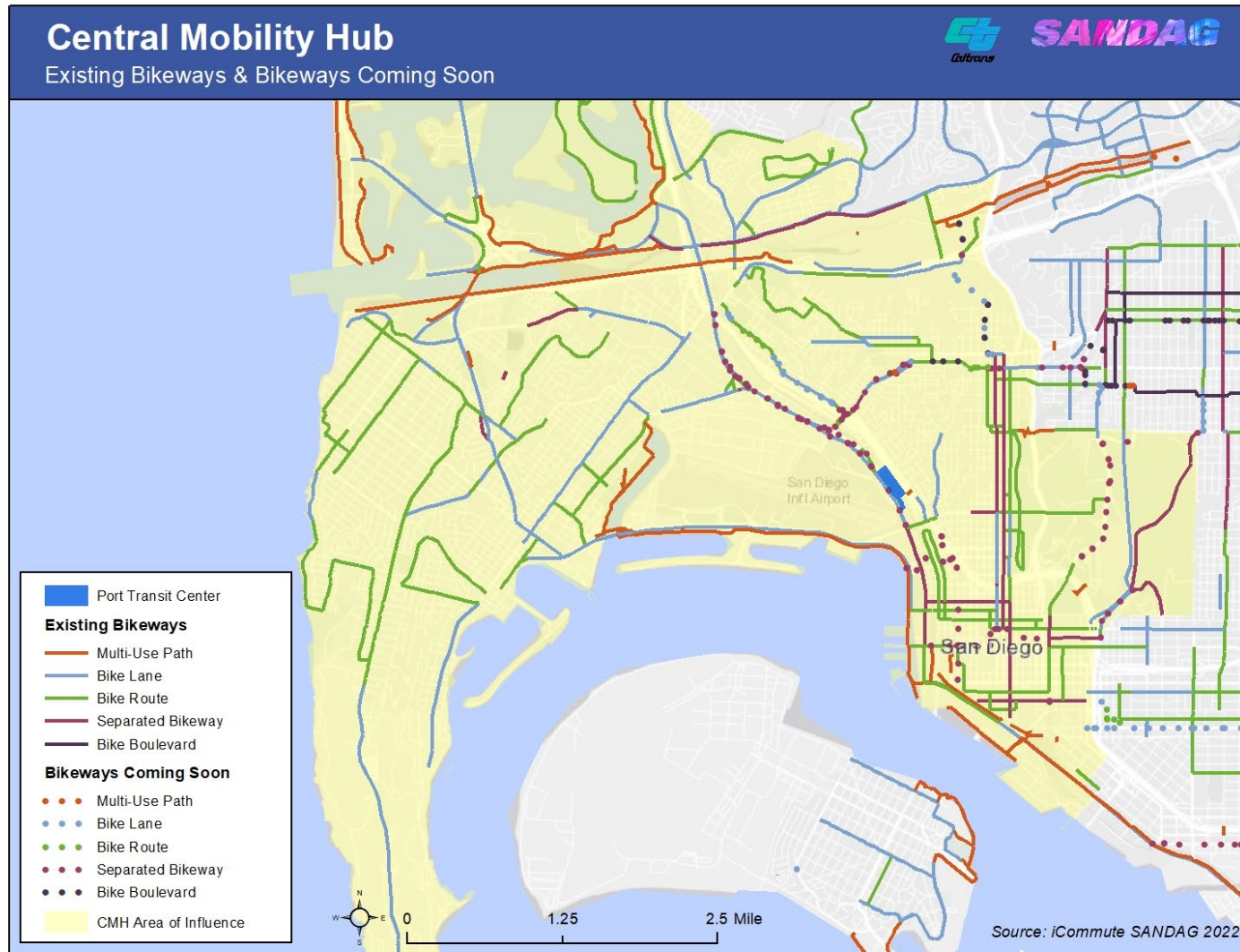
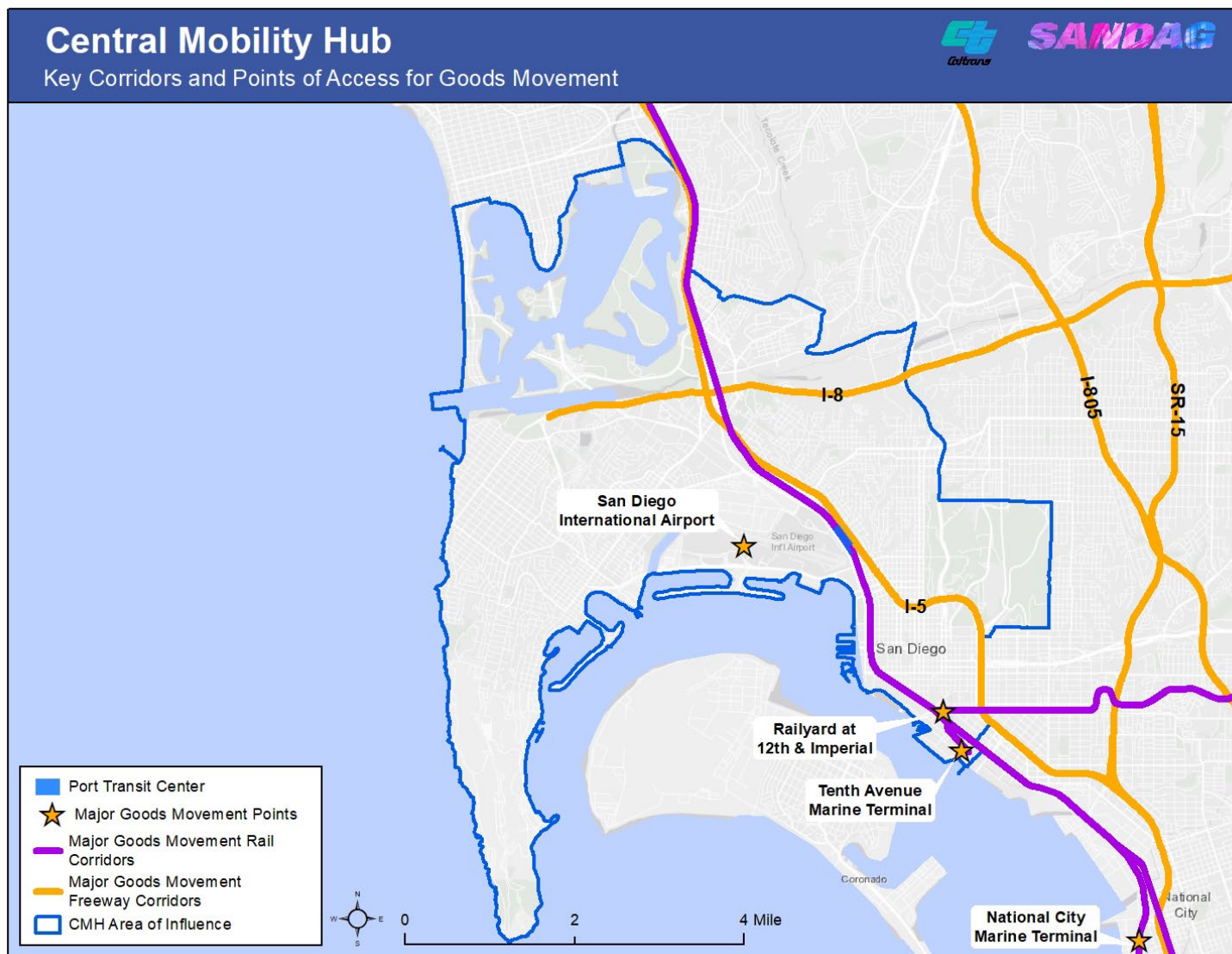


Figure 2-21: Goods Movement Network



Resiliency

Despite efforts to reduce greenhouse gas emissions, the consequences of global climate change are already being felt locally. California is one of the most “climate-challenged” regions of North America due to its historically variable climate, which will make extreme conditions more frequent and severe in the San Diego region.¹ Climate change is impacting public health, local economies, the natural environment, and communities across the San Diego region, who are adapting to current impacts and continue to adjust their behaviors to become more resilient to future impacts.

Climate change impacts in the San Diego region can loosely be grouped into two categories: those related to water (sea level rise, storm surge, precipitation) and those related to temperature (extreme heat, drought, wildfire risk). These impacts can have major consequences on the transportation system and critical infrastructure in the region and should be considered when evaluating, preparing, and designing the facilities within the CMH and Connections CMCP study area. This may translate into elevating infrastructure to minimize impacts from sea level rise or moving exposed infrastructure inland²⁷.

Water Impacts

Areas within the CMH and Connections CMCP study area that are forecasted to be most severely impacted by sea level rise (SLR) include the Port Waterfront, military installations, and the coastline, with an anticipated 0.08 inch increase every year. Elevated sea levels increase the impacts of weather events and combined with high tides and big waves can damage coastal infrastructure, structures, and ecosystems while worsening coastal erosion problems. Figure 2-23 shows a small portion of coastline in the North San Diego Bay, which is subject to the impacts of sea level rise and flooding within the study area.²⁸ The PTC is relatively inland and is not anticipated to be directly affected by SLR.

Figure 2-22: San Diego Waterfront



²⁷ “CMCP Existing Conditions – Resiliency Text” (SANDAG) December 2020

²⁸ Regional Transportation Infrastructure Sea Level Rise Assessment and Adaptation Guidance (SANDAG) November 2019; Map source: <https://coast.noaa.gov/digitalcoast/tools/slr.html>

The CMH Area of Influence is forecasted to experience 1.6 feet of sea level rise by 2050, and 4.9 feet of sea level rise by 2100.²⁹ This significant level of sea level rise is anticipated to result in greater rates of coastal erosion, storm surges, and coastal flooding events. The Port waterfront is among the most vulnerable areas to the impacts of sea level rise within the study area. Along the Port Waterfront, Harbor Drive between Laurel Street and Grape Street as well as between Market Street and Sigsbee Street is projected to be the most vulnerable to a sea level rise of nearly 5 feet. If not addressed, sea level rise may directly impact critical existing and proposed infrastructure including roadways, transportation services, and utilities located along the Waterfront. Any transit improvements in consideration on Harbor Drive east of the airport should strongly consider sea level rise as a prominent factor prior to implementation.

Similarly, the Ocean Beach community may be directly impacted by sea level rise, polluted storm water, and coastal erosion. Ocean Beach is within the 100-year floodplain, as designated by the Federal Emergency Management Agency (FEMA) and is at significant risk for bluff erosion. This presents a severe risk to the community, as erosion is occurring at a non-uniform rate along the coast, with certain areas experiencing greater rates of bluff erosion than others, which is projected to accelerate as sea levels rise.³⁰

In addition to roadways and neighborhoods, sea level rise is projected to affect numerous goods movement points, including SDIA and the Tenth Avenue Marine Terminal. Rail corridors and railyards are anticipated to be affected by sea level rise as well at levels of nearly 5 feet, especially around the Railyard at 12th Avenue and Imperial Street. As for freeway corridors, portions of I-5 and I-8 near their intersection just northwest of Old Town are projected to be affected.

San Diego has the second largest naval personnel concentration in the country, with two bases found within the CMH study area. Naval Base Point Loma (and Annex) and the Marine Corps Recruit Depot (MCRD) are within the CMH area of influence, and both have portions of their bases along the coast, though MCRD is more inland. Five feet of sea level rise is projected to compromise portions of Naval Base Point Loma and Annex as well as MCRD. Military installation resilience is a critical component to national security and refers to the capability of a military installation to avoid, prepare for, minimize the effect of, adapt to, and recover from extreme weather events.³¹ Key climate threats to military installations within this CMCP's study area include coastal storms/storm surges, erosion, sea level rise, and flooding, which all may hinder the military's ability to access their ports of entry. As noted in Figure 2-23, naval installations along the Port will be directly impacted by the forecasted 5 feet.³²

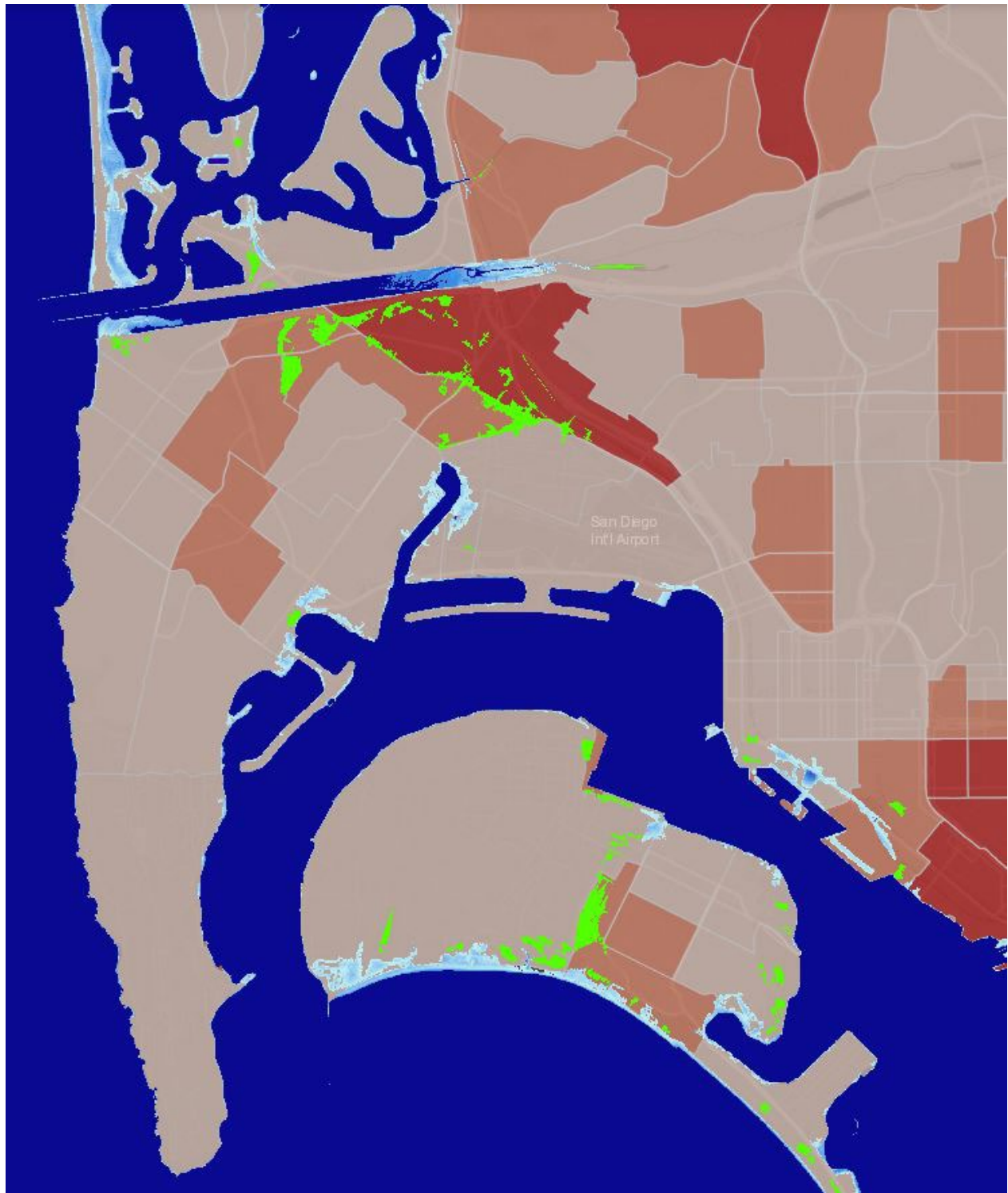
²⁹ Sea Level Rise Vulnerability Assessment & Coastal Resiliency Report (*Port of San Diego*) 2019

³⁰ Ocean Beach Community Plan and Local Coastal Program (*City of San Diego*) 2016

³¹ Office of Local Defense Community Collaboration Grant for Military Resilience: Climate Resilience Assessment (prepared by HNTB for SANDAG) 2021

³² Map source: <https://coast.noaa.gov/digitalcoast/tools/slr.html>

Figure 2-23: Areas Vulnerable to Sea Level Rise – 5 ft Water Level Increase (2100)



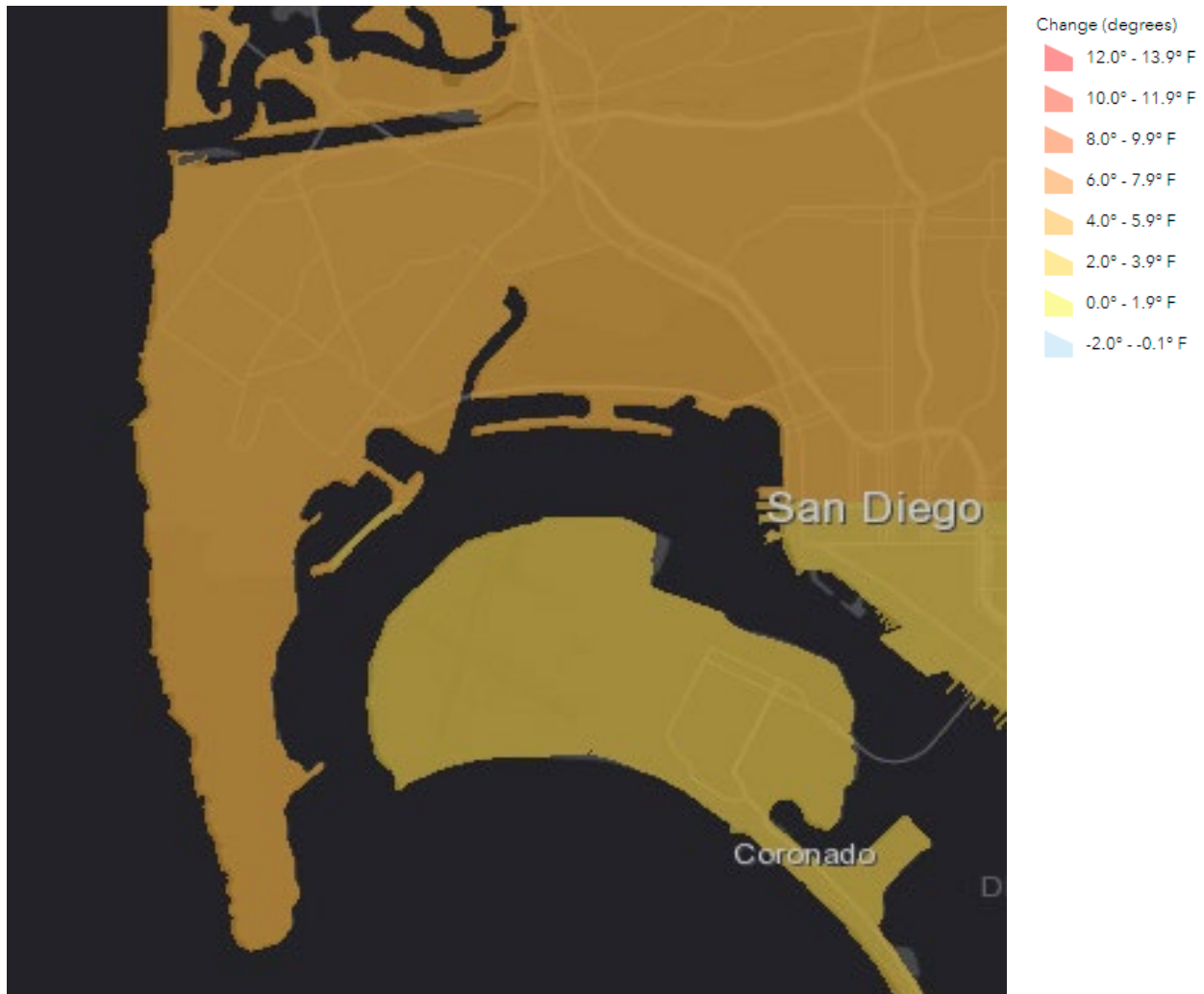
Temperature Impacts

In addition to climate change impacts from flooding and sea level rise, rising temperatures present a challenge to materials and the long-term maintenance of facilities. Downtown San Diego, which directly experiences the impacts of the urban heat island, will need to evaluate the long-term maintenance of facilities and the materials selected for use in the design and construction phase because materials exposed to high temperatures over long periods of time can crack, heave, or otherwise become deformed (e.g., pavement heave or track buckling). As average daily temperatures are steadily warming up, there is an increased risk for more severe and frequent fires and more droughts. This will directly impact the CMCP study area and area of influence, as fire threats can close or vastly alter access to the transportation system.³³ Figure 2-24 below shows the Caltrans projected Average Minimum Temperature in 2055. The figure indicates that temperatures within the study area will increase by between two to four degrees Fahrenheit, which is comparatively lower than other parts of California which will face temperature increases of up to 6.5 degrees.

These climate stressors also have the potential to impact all elements of a corridor beyond just a transportation or transit facility itself. There could be additional stress placed on sewer lines, storm water drains, and gas lines. Electrical and communications systems could be impacted by rolling brown outs and black outs caused by extreme heat events. High demand, severe winds, or fire-threat can lead to electricity shutoffs, compounding the impacts of increased temperatures and potentially affecting the transportation system and local evacuation routes if communications require electricity for delivery or if roadways are closed due to fire-threat. Key corridors that are vulnerable to moderate wildfire exposure include portions of I-5 and I-8 near the I-5/I-8 interchange and SR-163 between Robinson Avenue and El Prado. Therefore, there is a need to holistically plan for future conditions during the CMCP planning process to ensure that each corridor remains functional as the climate continues to change.

³³ Average Minimum Temperature 2055 Data derived from SANDAG Data Viewer on March 18, 2021.

Figure 2-24: Average Minimum Temperature 2055

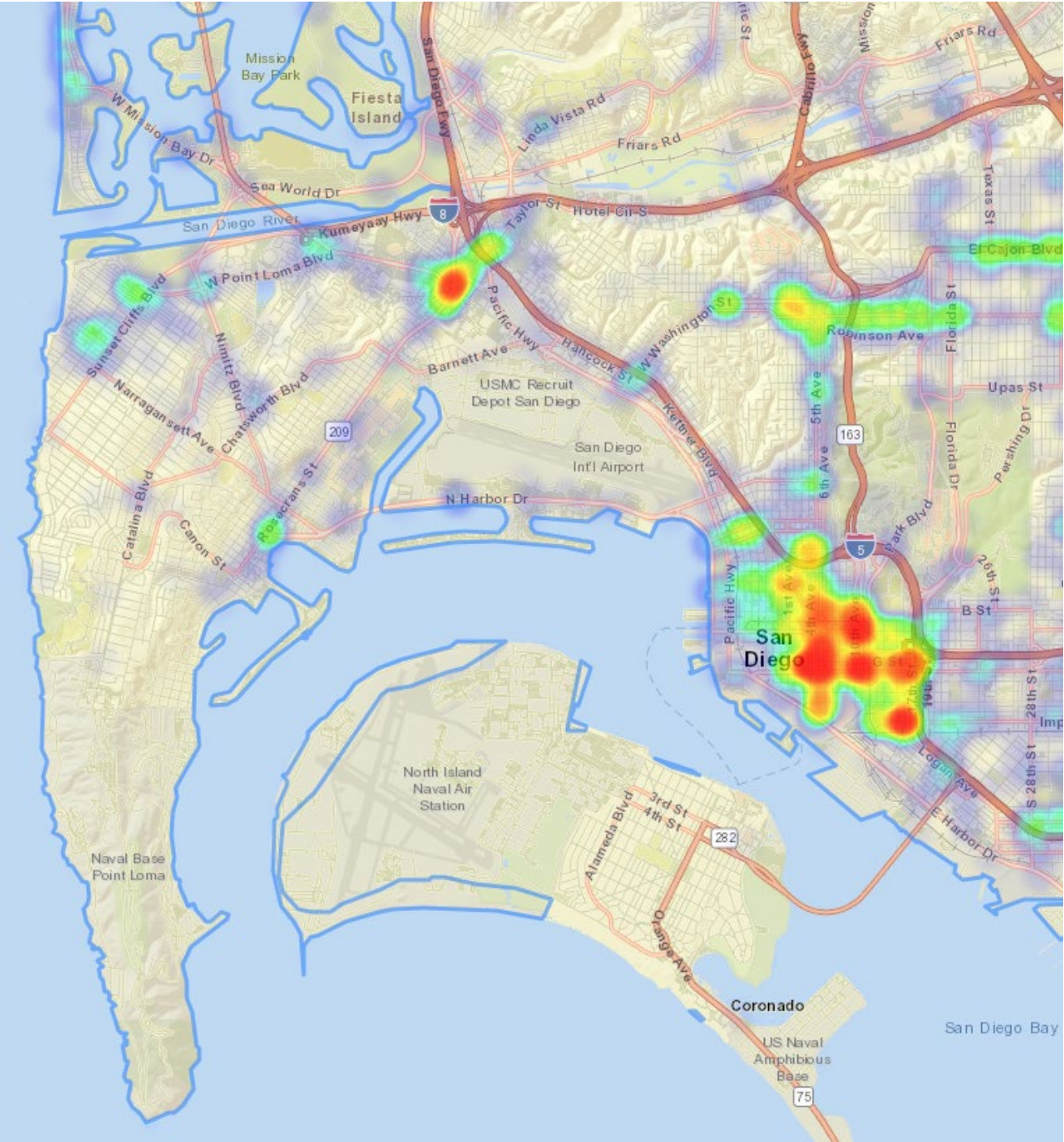


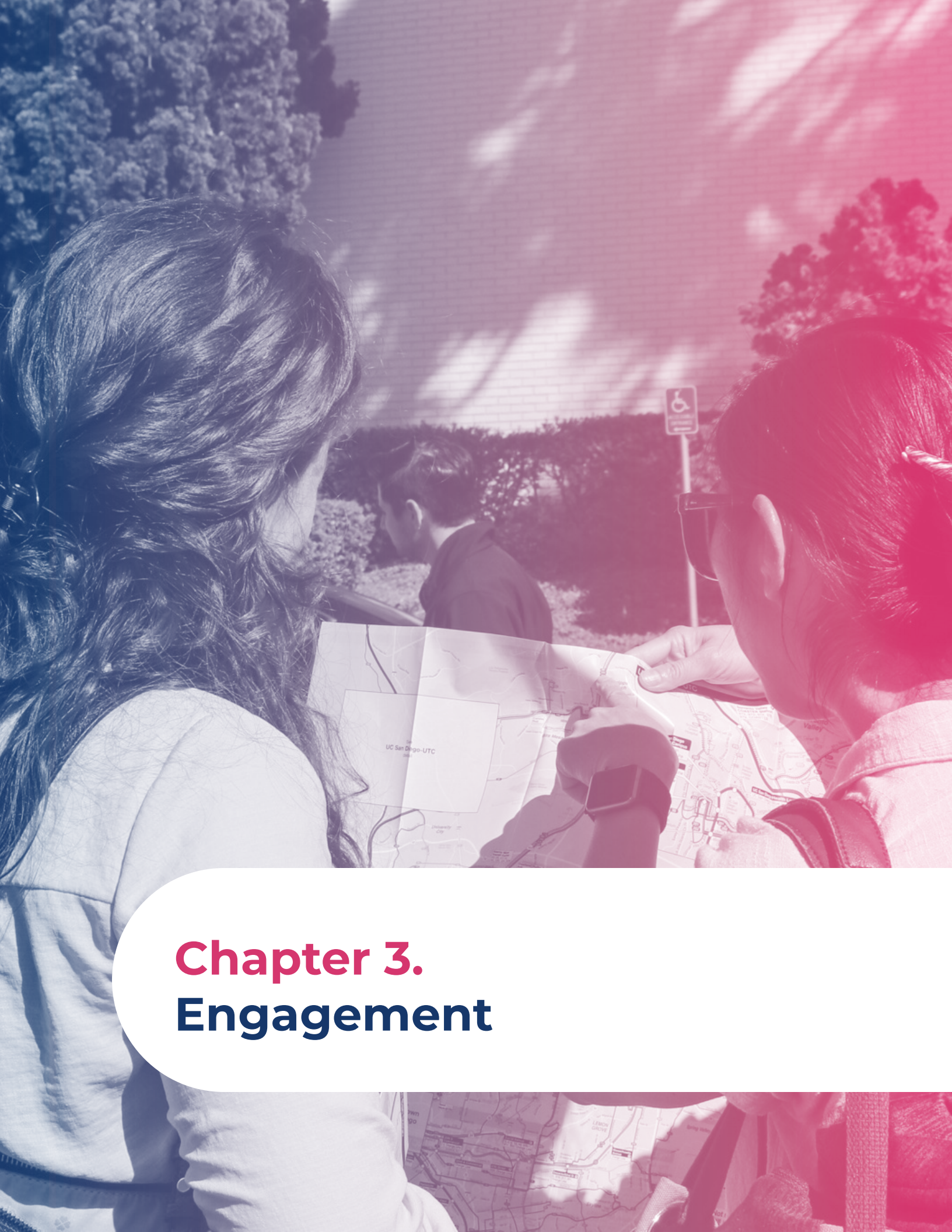
Safety

The safety of all roadway users, particularly for active transportation users is a critical component of this CMCP. Safe and efficient connections for bicyclists and pedestrians must be ensured to create a seamless active transportation network. Areas with high densities of collisions within the study area include Downtown San Diego, Middletown, and in Point Loma. More specifically, major corridors including Market Street, Broadway, N Harbor Drive, 6th Avenue, Washington Street, Pacific Highway, Rosecrans Streets, Sports Arena Boulevard, and Point Loma Boulevard reflected high volumes of collisions between pedestrians and vehicles and between bicyclists and vehicles. See Figure 2-25 for a heat map of the nearly 380 bicycle-involved collisions and 631 pedestrian-involved collisions within the study area over the 5-year period from 2016 to 2020.³⁴

³⁴ Collision data derived from TIMS SWITRS GIS Map April 2023.

Figure 2-25: SWITRS Collision Data





Chapter 3. **Engagement**

3. Engagement

Community engagement was integrated throughout the planning process for the Central Mobility Hub (CMH) and Connections Comprehensive Multi-modal Corridor Plan (CMCP). A Stakeholder Engagement Plan was developed at the outset and served as a guide for engaging the public and gathering input from various stakeholders, including agency partners, community planning groups, business and advocacy organizations, community-based organizations, and those living, working, and traveling within the corridor.

The objectives of the Stakeholder Engagement Plan (Appendix C) were to educate the public and key stakeholders about the plan, seek input about core mobility needs and opportunities in the corridor, and gather feedback on transportation strategies included in the plan.

3.1 Relationship to the Central Mobility Hub Project

The central feature of the CMH and Connections CMCP is a proposed CMH. As a priority project in the 2021 Regional Plan, the CMH would be part of a planned network of mobility hubs throughout the region to improve the transit experience. It would play a critical role in this network by serving as a state-of-the-art multimodal transportation center where the Trolley, COASTER, Amtrak Pacific Surfliner, Rapid bus rapid transit, local bus, active transportation, future California High-Speed Rail, and/or other and future transportation options would converge. A key feature of the project is to provide a direct transit link to San Diego International Airport (SDIA).

In April 2021, SANDAG began the environmental review process for the CMH project with the proposed project to be located at the Navy's Old Town Campus with an alternative at the Intermodal Transit Center site. After further study and public comments received through environmental review and community engagement, SANDAG shifted the focus for the CMH location to Downtown San Diego. Additionally, SANDAG is evaluating several potential alignments for airport transit connections, including one from points north and south of SDIA. Several of the potential alignments include a transit center at the location of the existing Port of San Diego headquarters, hereafter called the Port Transit Center (PTC).

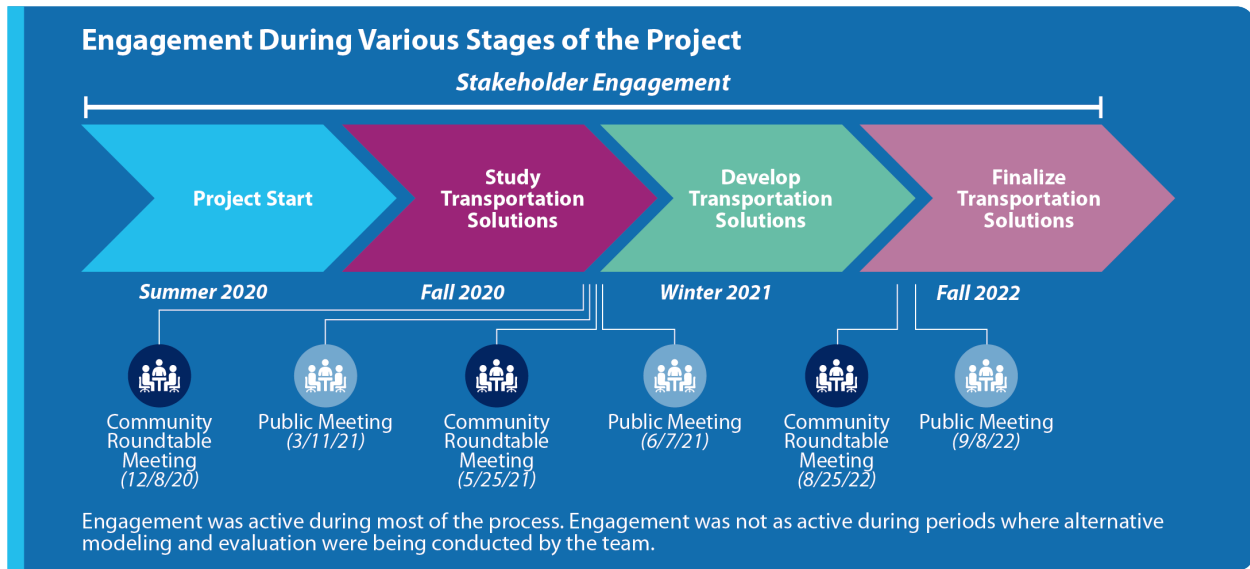
3.2 Community Engagement Methods

Community engagement for the CMH and Connections CMCP occurred in three phases to inform each step in the planning process, as shown in Figure 3-1.

Between the second and third phases of community engagement, the project team redirected focus for the CMH location from the Navy's Old Town Campus to Downtown San Diego with two proposed airport connections, resulting in a brief gap in outreach. During this time, SANDAG reviewed public comments and conducted further study, in addition to presenting the new direction for the project to the SANDAG Board of Directors in Spring 2022.

While CMH site planning is a separate planning effort from the CMCP, they are closely related. Therefore, the third phase of community engagement for the CMH and Connections CMCP was conducted in tandem with the CMH project.

Figure 3-1: Community Engagement Process



A variety of engagement methods were employed to ensure that SANDAG reached a diverse audience, including limited English proficiency communities and others that have been traditionally underrepresented in planning processes. Because much of the outreach took place at the height of the COVID-19 pandemic, engagement activities were conducted virtually. Engagement methods are discussed in the following subsections.

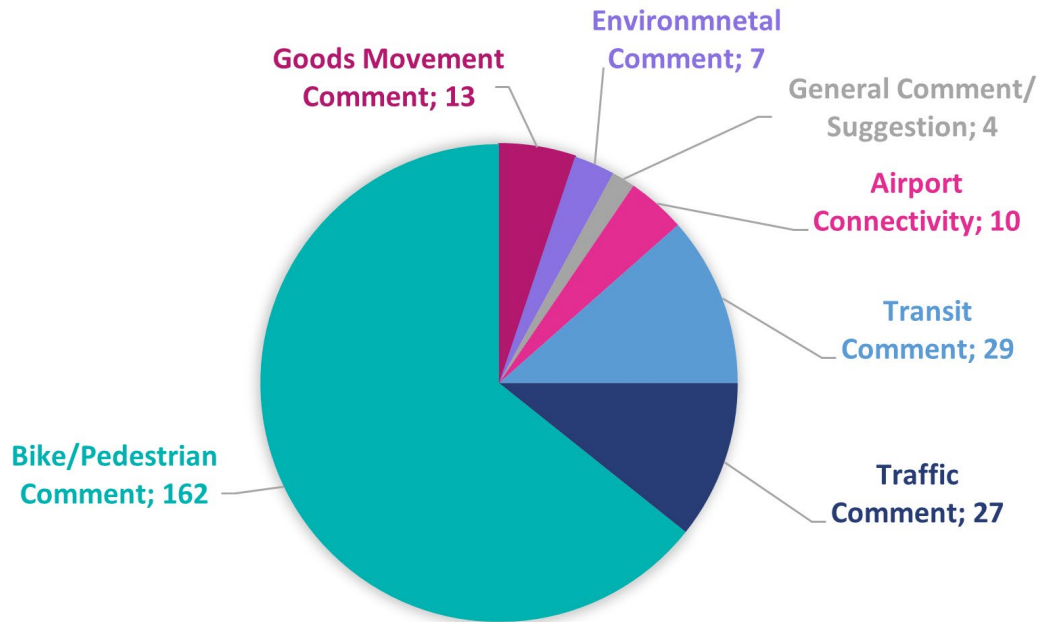
Virtual Engagement Hub

A virtual engagement hub was created through the Social Pinpoint platform to share project information and provide opportunities for members of the public to share their input online. The virtual engagement hub was available in English and Spanish and housed project materials available for download, presentations and recordings from the public meetings, and interactive tools to gather public input. These interactive tools included surveys and a mapping activity to share information about mobility concerns in the corridor. Table 3-1 summarizes the input received via the Virtual Engagement Hub. The breakdown of the comments received on the virtual engagement hub are depicted in Figure 3-2.

Table 3-1: Virtual Engagement Hub Activity

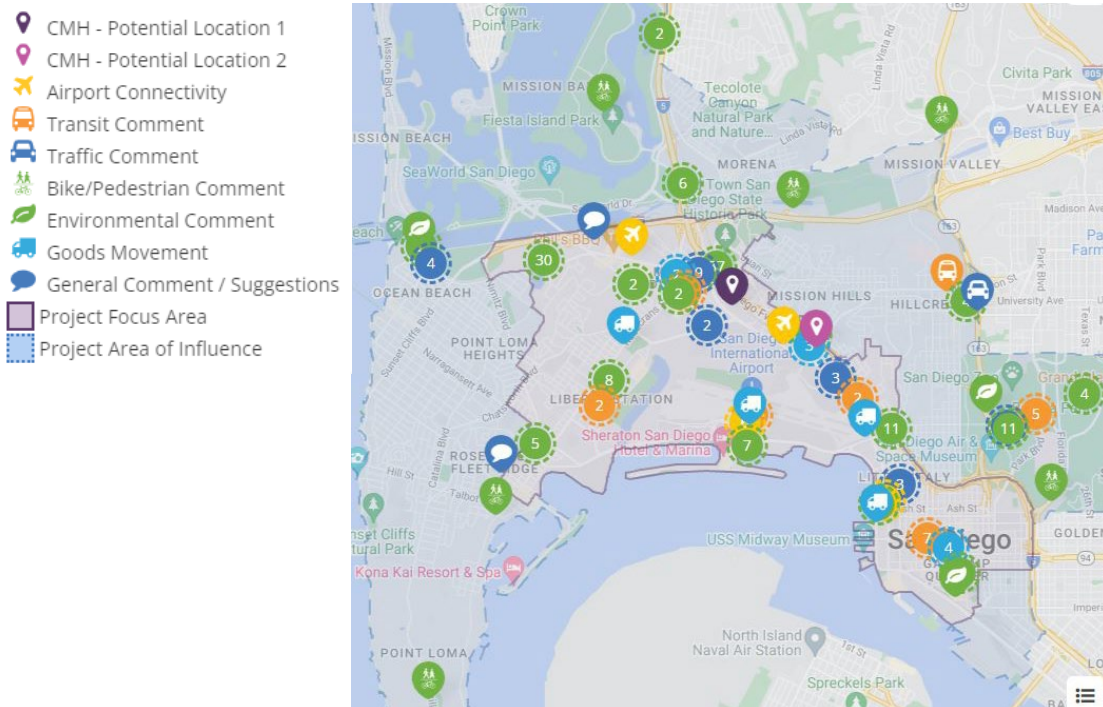
Virtual Engagement Hub Activity	
Phase/Activity	Level of Engagement
Phase 1 March 11, 2021-May 31, 2021	182 survey responses received 219 map comments posted
Phase 2 June 7, 2021-June 18, 2021	32 survey responses received 31 map comments posted
Phase 3 September 8, 2022- September 30, 2022	24 survey responses received
Virtual Engagement Hub Activity	10,252 site visits

Figure 3-2: Total Comments Received by Category



The comments received were mapped to specific locations within the project area using Social Pinpoint. This interactive map, depicted in Figure 3-3, allows the public and planning team to visually assess the types of comments received against particular areas of focus and concern. For instance, comments regarding goods movement are highly concentrated around the airport and downtown and do not correspond as heavily to the project area of influence, a more residential area.

Figure 3-3: Social Pinpoint Comments



Community Roundtable Meetings

Community roundtable meetings were conducted in each of the three phases of community engagement: the first took place on December 8, 2020, the second on May 25, 2021, and the final one on August 25, 2022. These meetings were hosted by community leaders from throughout the CMH and Connections Study Area and provided an opportunity to engage with leaders of these communities early in the process. The meetings allowed SANDAG the opportunity to share information, gain early input, and benefit from the insight about mobility challenges and priorities of communities in the corridor provided by the community leaders. Representatives from numerous organizations, as listed in Table 3-2, participated in community roundtable meetings. Note that this list of representatives only represents attendees at roundtable events; other stakeholders, like planning partners, were engaged through project study team meetings, individual meetings, or other sessions.

Table 3-2: List of Representatives at Community Roundtable Events

Midway-Pacific Highway Community Planning Group	San Diego County Bicycle Coalition
Old Town Community Planning Group	San Diego Regional Chamber of Commerce
Uptown Planners	Downtown San Diego Partnership
Peninsula Community Planning Board	Brookfield Properties
Ocean Beach Planning Board	Old Town Chamber of Commerce
Downtown Community Planning Council	San Diego County Regional Airport Authority
San Diego Downtown Residents Group	City of San Diego
Circulate San Diego	U.S. Navy

Virtual Public Meetings

Virtual public meetings were conducted via the Zoom platform in each of the three phases of community engagement. SANDAG and Caltrans gave meeting presentations and gathered community input through poll questions and a question-and-answer period. All meetings were conducted simultaneously in English and Spanish. The public meetings were widely publicized via:

- **Eblasts:** Eblasts were distributed to the project email list, community planning groups, community stakeholders, and other organizations to promote the public meetings and encourage participation.

- **Social media:** Posts were published and promoted on SANDAG, Caltrans, and external organization Facebook and Instagram accounts, and included community engagement meeting invites and a link to the SANDAG project website. The posts reached nearly 19,000 people and resulted in more than 36,000 impressions on social media. Facebook and Instagram posts were promoted for public meeting #1 and #2. Promotional posts help boost the post in order to reach a wider audience for a limited amount of time.
- **Local Media Release and Print Advertisements:** Press releases were submitted to media outlets to promote the public meetings. SANDAG also placed print advertisements in the Peninsula Beacon, Downtown/Uptown News and El Latino (Spanish language) for each of the meetings.

Table 3-3: Public Meeting Attendance

Public Meeting Attendance	
Meeting	Attendance
Public Meeting #1 March 11, 2021	207 attendees
Public Meeting #2 June 7, 2021	66 attendees
Public Meeting #3 September 8, 2022	53 attendees

The meeting dates and number of attendees is outlined in Table 3-3.

Project Study Team Meetings

The project team also received input and feedback through recurring meetings with the Project Study Team (PST), which included subject-matter experts in the various modes being reviewed as well as representatives of local jurisdictions and agencies active in the Study Area. The PST supported the analysis of existing conditions, the identification of mobility needs, as well as the development and refinement of transportation solution strategies that would improve connectivity within and around the CMH and surrounding communities. The PST also reviewed the evaluation and modeling outputs, to see whether the proposed improvements would spur the expected results and benefits for the region.

3.3 Key Takeaways and Results from Community Engagement

The community engagement process provided valuable input that helped inform the development of the CMH and Connections CMCP. Public input was sought at key milestones in the process so that input could inform each stage of the planning process.

Phase 1: Central Mobility Hub and Mobility Challenges

The focus of the first phase of stakeholder engagement for the CMH and Connections CMCP focused on potential locations for and features of a proposed CMH and gathering input on key mobility challenges within the corridor. Table 3-4 and Table 3-5 summarize the key takeaways from input received about the CMH and mobility challenges in the corridor.

Table 3-4: Takeaways from Phase 1 Public Input: CMH Location

Takeaways from Phase 1 Public Input
CMH Location
Should be a welcoming community space
Include mixed use space
Need bike amenities and electric vehicle charging stations
Concern for long walking distances between modes, space for freight/ truck deliveries, traffic congestion

Table 3-5: Takeaways from Phase 1 Public Input: Transportation Connections and Mobility Challenges

Takeaways from Phase 1 Public Input
Transportation Connections and Mobility Challenges
Protected bikeways along major arterials connecting to Central Mobility Hub
Pedestrian safety improvements throughout the study area
Improved transit connections from Midway District, Downtown San Diego, and airport
Protected bike intersections along corridors including University Avenue, Nimitz Boulevard, W. Point Loma Boulevard, and Pacific Highway.
Concern for high vehicular speeds along major arterials including Rosecrans Street, Nimitz Boulevard, Morena Boulevard, and Sports Arena Boulevard

Information gained during this phase also helped inform the project description and potential alternatives to begin the CMH's environmental review process. After initial environmental review and public input about potential locations, SANDAG has shifted focus to a CMH location in Downtown San Diego with two proposed alignments for airport transit connections under evaluation. Several of the potential alignments include a transit center at the location of the existing PTC site. The CMH and Connections CMCP is focused on improving connections within and around this site. As the initial airport connectivity facility, the PTC will serve as a gateway to a future downtown CMH.

Phase 2: Proposed Transportation Solutions

The second phase of community engagement focused on presenting proposed transportation solutions to the public and seeking their input. Transportation solutions in the areas of Freeways, Transit, Active Transportation, and Mobility Hubs/Flexible Fleets were presented. Virtual meeting participants and those who completed the survey on the virtual engagement site shared the following input:



Most participants agreed that the freeway transportation solutions presented were somewhat and mostly effective in addressing concerns.



Most participants agreed that the active transportation solutions proposed were somewhat and mostly effective in addressing concerns.



Most participants agreed that the transit solutions proposed were only somewhat effective in addressing concerns.



Most participants agreed that the solutions proposed for mobility hubs and flexible fleets were only somewhat effective in addressing concerns.



Participants believed the most important considerations to encourage people to take transit more frequently included making transit more frequent with faster travel times and more direct routes.



Participants believed that the most important features to encourage more people to ride their bikes were safe and comfortable bikeways and providing secure bike parking at destinations.



Some participants expressed concerns about taking roadway space to provide separated bikeways and wider sidewalks.

Phase 3: Transportation Solutions Around Proposed Airport Transit Connections

Once SANDAG shifted the CMH geographic focus from NAVWAR to the downtown San Diego area, a third phase of community engagement was added to share updated transportation solutions surrounding a potential new transit center at the PTC. Information provided during this phase included an update on the CMH project and additional proposed transportation solutions. Input from virtual meeting participants and those that completed surveys on the virtual engagement site provided the following key takeaways:



The most pressing issues in the corridors are to improve safety for bicyclists and to provide more public spaces.



If using a mode other than a car to access the airport, people would be most willing to take a people-mover or Trolley. Slightly fewer people indicated they would take the bus or use on-demand shuttle service.



The most desired improvement to make in the area is to provide a direct transit connection to the airport. Providing safer and more comfortable bikeways and walkways was also deemed important.



Overall, the meeting participants and survey respondents felt that the transportation solutions presented were mostly effective at addressing concerns.

Key Takeaways from Project Study Team Meetings

The PST meetings were conducted throughout the development of the CMH and Connections CMCP. Input collected helped better understand the unique challenges of the area and refine the strategies developed to address them. Primary takeaways from the PST discussions include the following:

- The Study Area is expected to grow significantly in the future with several key development projects planned in the Midway community. This CMCP is an opportunity to address the lack of connectivity in the area and establish a strong, integrated multimodal network ahead of the anticipated growth.
- The airport connection is a critical initiative that will support mobility at the regional level. Connections from rail and the freeway will be essential to support goods and people movement and access to and from San Diego North and East County.
- Transit connections and the proposed Next Generation Rapid network can be supported through dedicated lanes in areas where right-of-way is available. It is also important to make sure that changes to proposed routes aimed at improving access to the PTC and CMH will not hinder travel time and overall route performance.
- The Study Area is home to a disjointed pedestrian and bicycle network, making connectivity between the various local communities within the Area particularly challenging. There are also several high vehicular corridors within the Study Area that are unpleasant to walk or ride on. The active transportation strategies should focus on bridging those gaps within the network and creating separated infrastructure where possible, to improve comfort and safety for pedestrians and cyclists.

3.4 Conclusion

The community engagement process provided valuable information to the CMH and Connections CMCP team about existing conditions and mobility challenges in the study area as well as input on proposed transportation solutions and how they would function and be used by the community. Comments received reinforced the need to enhance connections between I-5 and I-8. A majority of the comments received were focused on the active transportation network, indicating community support for expanded bikeways and additional features to create a safe bike landscape. Engaging the community at key milestones in the process allowed the CMCP team to confirm information and develop a comprehensive set of transportation solutions that will make it more convenient for travelers to use alternative modes of transportation for their day-to-day trips.

Chapter 4. **Transportation Solution Strategies**



4. Transportation Solution Strategies

This chapter identifies priority needs and land use connections for the CMCP Project Area, and identifies multimodal projects for the transit, local roadway, highway, active transportation, and goods movement networks. The Transportation Solution Strategies (TSS) consider the unique needs of social equity-focus communities and provides equitable, efficient, and reliable mobility alternatives to vehicular travel, regardless of ability.

These transportation strategy solutions focus on connectivity, equity, accessibility, and multimodality to maximize connectivity to surrounding communities and the San Diego region as well. SANDAG's 2021 Regional Plan as well as other previously adopted transportation planning documents and existing regional transportation solutions have been utilized to inform the improvements proposed through this CMCP.

4.1 Development Process

Concepts developed as part of this project considered all mobility needs within study area communities, and developed TSS to address them, alongside strengthening connections to the various CMH sites. Focus was given to defining what amenities travelers would like and use throughout the corridor, and what mobility improvements would travelers like to see in the community. Travel patterns, demographics, and past and current land use and mobility plans were analyzed to consider all mobility needs.

One subset of the TSS that were defined focused on mobility challenges and barriers that would limit access to the Port Transit Center (PTC) site (see Figure 4-13), and that hinder safe travel within the communities included in the study area and area of influence. The development of these strategies included:

- **Existing Conditions Analysis:** A thorough review of existing and expected conditions in the study area and area of influence. This included an assessment of current and projected sociodemographic conditions, particularly as they pertain to social equity focus communities.
- **Review of Studies and Plans:** A review of existing and recently adopted plans including the SANDAG 2021 Regional Plan and community plan updates such as the Midway-Pacific Highway Community Plan Update. Redevelopment projects related to the redevelopment of the NAVWAR and Sports Arena sites were also reviewed to determine future mobility needs in the area.
- **Agency Coordination:** Extensive discussions with local stakeholders including San Diego Metropolitan Transit System (MTS), the City of San Diego, San Diego International Airport (SDIA) and the Port of San Diego to better understand existing and ongoing initiatives that need to be supported, improved, or revised because of the new airport connection to the PTC and, eventually to a potential downtown location.
- **Stakeholder Engagement:** Ongoing discussion and review of local priorities through round table and community workshops and digital engagement on the Social Pinpoint platform.

The following sections present an overview of the key challenges and opportunities identified and the concepts and strategies proposed to address them. The strategies follow a concentric approach, looking at:

1. Roadway improvements and mobility strategies that would support and improve direct access to the PTC site.
2. Conceptual mobility improvements that would establish connectivity from the PTC to SDIA as well as the communities and key destinations within the study area, with a focus on specific pain points.
3. A broader discussion on strategies that will improve and extend access and connectivity to communities and destinations to locations further out, including Balboa Park, Ocean Beach, and other regional destinations.

4.2 Key Features

The recommended TSS are grouped into five categories. Though individual categories are created for specific modes, the improvements proposed within each category have the ability to enhance access and mobility for any mode of transportation within the CMCP Project Area.



Mobility Hubs and Flexible Fleets



Next Operating System (OS)



Transit Improvements



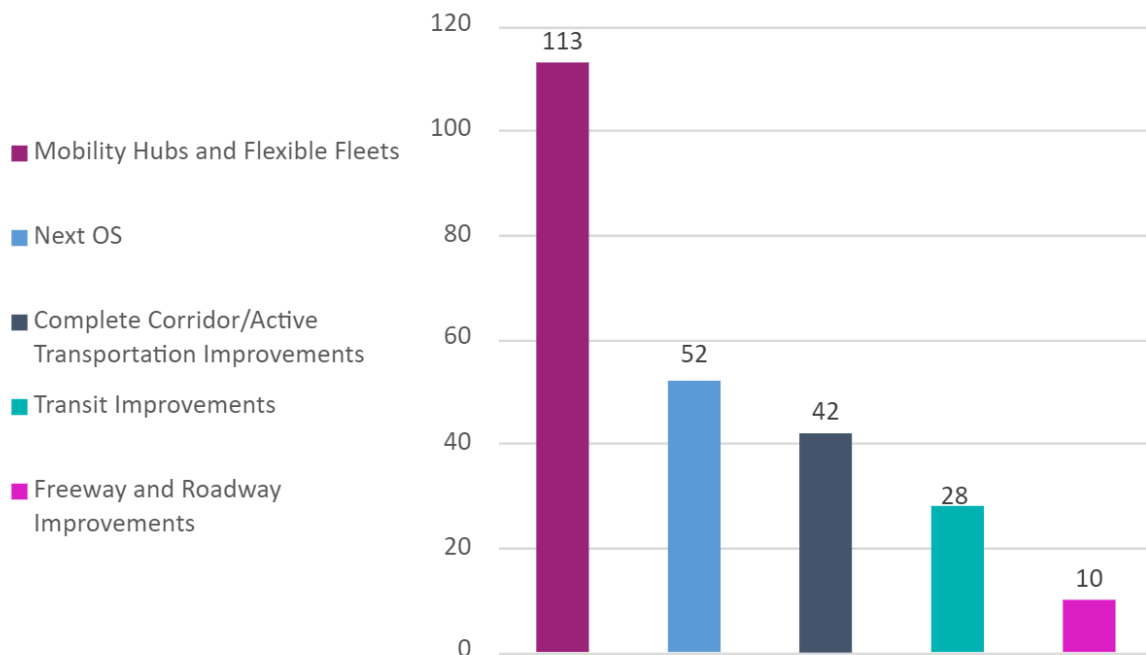
Complete Corridor/Active Transportation Improvements



Freeway and Roadway Improvements

In total, there are 245 proposed TSS. A summary of these solutions can be found in Figure 4-1 below. For a complete list of projects, see Appendix D. For details on proposed project phasing and cost, see Appendix E.

Figure 4-1: Summary of TSS by Category



4.2.1 Mobility Hubs and Flexible Fleets

Mobility hubs serve as centers of activity where several transportation options such as transit and shared mobility connect. Flexible fleets encompass a variety of transportation services, from shared bikes and scooters to on-demand shuttles, all of which promote less car reliant ways of getting around a community.

For the purposes of this document and the CMCP, mobility hubs are divided into four tiers. The Central Mobility Hub serves as the anchor mobility hub, while other types include regional mobility hubs, mobility nodes, and enhanced transit stops. Locations of these tiers are shown in Figure 4- and Figure 4- above. Within the CMCP, the PTC would initially serve as the Central Mobility Hub. A brief description of each type of Mobility Hub is provided below:

- **Central Mobility Hub (CM) Station:** The CMH itself will act as a key convergence point for regional and international connections such as the new airport connection, the Amtrak and COASTER stations, as well as trolley, Rapid and local buses. Additionally, various amenities would be provided to support first-last mile access to the CMH as well as offer social and economic opportunities. The details of the program of services and amenities provided at the CMH will be further detailed as part of the development of the CMH concept and environmental impact assessment.



- **Regional Mobility Hub Areas:** Regional Mobility Hub Areas are whole communities within San Diego where people, jobs and places connect and where existing and planned transit infrastructure can be leveraged to support daily mobility needs. The regional hubs are focus areas where mobility hub strategies and the deployment of flexible fleets can further support a modal shift and changes in travel behaviors.
- **Mobility Nodes:** Mobility nodes refer to areas within the regional hub areas that display very high concentrations of people and activities. They include areas with higher concentrations of trip origins and/or destinations, areas with higher concentrations of equity-focus communities as well as areas of expected growth.
- **Enhanced Transit Stops –** Enhanced stops are punctual sites where various modes converge, such as a transit stop located adjacent to a bike facility, or various services, like a transit stop where multiple routes connect. These locations will include amenities that improve the traveler's experience and connectivity to places and travel options.

Mobility Hubs and Flexible Fleet Amenities

This section outlines the amenities included under mobility hubs and flexible fleets and highlights their recommended locations within the study area.

Electric Bike or Scooter Share

A shared fleet of electric bikes (e-bikes) or motorized scooters can make it easier for people to travel to work or other destinations when topography is challenging or parking is scarce. While there are different business models, the service may operate much like bikeshare: electric bikes or scooters are docked at a station, and they can be released after check-in and payment at a kiosk. Members are typically charged by the hour, day, or month if they use the service regularly. Given the typical speeds of electric bikes and scooters, they are well suited for short trips of 2-3 miles – too far for many to walk.



Recommended Locations: Ocean Beach, Sports Arena Boulevard, Uptown, Little Italy, City College, Liberty Station Next Gen Rapid Stop



Carshare

Carshare services offer access to vehicles 24 hours a day, seven days a week. These cars can be found within a specified service area, at transit stations, and other locations, and people can find them by using a smartphone app. Users are typically charged according to how long they use the cars or how far they drive. Fees cover car insurance, parking, emergency roadside service, and other car-related expenses. Carsharing offers people a convenient way to make connections beyond the first

and last mile of a public transit stop. It also offers an alternative to owning a vehicle.

Recommended Locations: Ocean Beach, Sports Arena Boulevard, Uptown, Little Italy, City College, Liberty Station Next Gen Rapid Stop, UCSD Medical Center Next Gen Rapid Enhanced Stop

Parking Corrals

Designated space on the street where micromobility devices and shared rideables should be safely parked to avoid conflicts with other users.

Recommended Locations: PTC Mobility Hub, Ocean Beach Mobility Node, Sports Arena Mobility Node, Uptown Mobility Node, Downtown/Little Italy Mobility Node, Downtown/City College Mobility Node, Downtown/ Imperial Transit Center Mobility Node, Next Gen Rapid Enhanced Stop Locations



EV and e-bike Charging Station (EVCs)

An electric vehicle charging station (EVCS) gives people the opportunity to charge plug-in electric vehicles (PEVs) at a mobility hub. Battery-powered electric vehicles, plug-in hybrid electric vehicles, and electric vehicle conversions of hybrid or internal combustion engine vehicles are examples of PEVs. Passenger cars, microtransit vehicles, shuttles, and large transit buses can all be PEVs. They are critical to California's zero emission vehicle (ZEV) planning. E-bike charging infrastructure also allows for extended range and ease of travel for plug-in bicycles.

Recommended Locations: Ocean Beach Mobility Node, Sports Arena Mobility Node, Uptown Mobility Node



Microtransit Service

Microtransit often targets peak period commute travel, offering a flexible, on-demand option for small groups of people. It's ideal in places where high-frequency transit isn't warranted, or where it's too costly to operate. Microtransit can be particularly convenient where fixed-route service is limited or for those with accessibility challenges who would benefit using curb-to-curb services. Microtransit services use smaller vehicles that carry between five and 12 passengers, and riders typically can reserve service beforehand through a mobile app that directs them to gather at common locations along the service route for pick-up.



Recommended Locations: Ocean Beach, Sports Arena Boulevard, Uptown, Liberty Station Next Gen Rapid Stop, UCSD Medical Center Next Gen Rapid Enhanced Stop



Neighborhood Electric Vehicle Shuttles

Neighborhood electric vehicles (NEVs) offer a low speed, zero-emission motorized travel option for some mobility hub applications. NEVs typically have a maximum speed of 25 miles per hour (mph) and a maximum driving range of 40 miles on a single charge. Models range in size accommodating one to six people and may be used on local roads with posted speed limits of 35 mph or less (regulations differ by state). NEVs are used mostly for local

trips in self-contained areas such as planned communities, resorts, college campuses, and industrial parks. They offer older adults and other licensed drivers who don't want to use a conventional auto but may not be able to walk or ride bikes easily a way to get around.

Recommended Locations: Liberty Station Next Gen Rapid Stop, Ocean Beach

Secure Bike Parking and Fix-It Stations

Offering people places to fix, park, and lock up their bikes goes a long way toward encouraging biking as a transportation choice for short trips. That's especially true for people biking to and from transit stops. Mobility hubs can offer bike riders a variety of bike parking options, and secure and convenient bike parking facilities provide transit riders with an alternative to bringing their bikes onto transit. Parking options that are highly visible, convenient, and secure make mobility hubs an attractive destination for people who choose biking over driving alone. Making the environment around a mobility hub conducive to biking also will encourage people to bike not only to and from the hub, but also other nearby destinations such as work, shopping, and recreation.



Recommended Locations: PTC Mobility Hub, Ocean Beach Mobility Node, Sports Arena Mobility Node, Downtown/Little Italy Mobility Node, Downtown/City College Mobility Node, Downtown/Imperial Transit Center Mobility Node



Enhanced Transit Waiting Areas

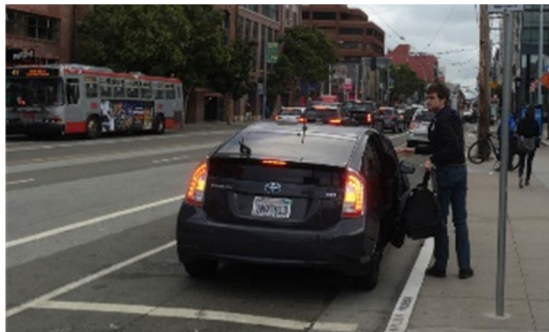
Waiting areas provide a safe and comfortable place for passengers to wait for their transit or shared mobility ride. Area enhancements may include seating, landscaping, lighting, shade and rain cover, trash receptacles, complimentary Wi-Fi, real-time transit arrival alerts, and daily schedule information. These amenities support the mobility hub concept by improving a passenger's overall transit riding experience, encouraging new riders to try transit, and increasing a passenger's sense of security.

Recommended Locations: Next Gen Rapid Enhanced Stop Locations

Personal Device Charging Station

Areas where transit riders can charge their device while waiting for their ride.

Recommended Locations: Next Gen Rapid Enhanced Stop Locations



Passenger Loading Zones

Passenger loading zones are places where passengers can be dropped off or picked up, conveniently and safely. They are typically marked as designated curb spaces that can be used by a wide variety of shared mobility services – shuttles, taxis, carpools, vanpools, and on-demand rideshare services.

Recommended Locations: Next Gen Rapid Enhanced Stop Locations

Wayfinding

Wayfinding is a tool that helps people navigate from place to place. In the context of a mobility hub, these places might include transit stations, civic and community buildings, parks, and more. Static and interactive signs can provide maps and directions to points of interest, transit schedules and routes, and other information on available mobility services and facilities. This mobility hub feature can exist throughout the five-minute walk, bike, and drive access sheds and be customized based on user type and travel mode.

Recommended Locations: All Locations





Package Delivery

Package delivery stations are secure lockers in which online orders can be held for pick up at any time of day. They can be conveniently situated at retail centers or transit stations. Offering package delivery services within a mobility hub can save people an extra trip by car to pick up a package – offering them one more reason to embrace an alternative to driving alone.

Recommended Locations: PTC Mobility Hub, Ocean Beach Mobility Node, Sports Arena Mobility Node, Uptown Mobility Node, Downtown/Little Italy Mobility

Node, Downtown/City College Mobility Node, Downtown/ Imperial Transit Center Mobility Node

Placemaking Amenities

Improvements such as added green spaces, shade, public seating, and public art that create a more welcoming transportation environment. Placemaking amenities include public art, listings of upcoming neighborhood events, and local business highlights can help personalize a transit waiting area.

Recommended Locations: All Locations



Bike Racks

Bike racks are stationary fixtures where cyclists can lock up their bikes for short periods of time. They can be situated at transit stations or on sidewalks close to building entrances. Each jurisdiction may have standards for bike rack type and placement, but the National Association of City Transportation Officials (NACTO) recommends placing bike racks at least three feet apart for convenient access. Also, short-term bike parking options should be situated within 50 feet of a transit stop or station entrance. Additional guidance on

bike rack placement near transit is provided by the NACTO Transit Street Design Guide.

Recommended Locations: Next Gen Rapid Enhanced Stop Locations

Multilingual Interactive Kiosks

Kiosks may provide such services as fare payment, wayfinding, real-time transit and airport departure/arrival information, and services and amenities directories. Kiosks should accommodate a variety of languages to allow for widespread use.

Recommended Locations: PTC Mobility Hub, Ocean Beach Mobility Node, Uptown Mobility Node, Downtown/Little Italy Mobility Node, Downtown/City College Mobility Node, Downtown/ Imperial Transit Center Mobility Node, Next Gen Rapid Enhanced Stop Locations



Dynamic/Flexible Parking

Parking occupancy via sensors and parking reservations via a booking system allows travelers to book and reserve parking spaces before arriving at the station. This allows travelers more certainty and the ability to plan ahead as well as make decisions. This parking area also has the ability to be flexible and multipurpose if needed. As the region shifts toward multimodal options, technology-enabled flexible use parking will accommodate the shift and provide practical options for folks traveling to the CMH from more suburban areas of the region.

Recommended Locations: PTC Mobility Hub, Ocean Beach Mobility Node, Uptown Mobility Node, Downtown/Little Italy Mobility Node, Downtown/City College Mobility Node, Downtown/ Imperial Transit Center Mobility Node, Next Gen Rapid Enhanced Stop Locations

4.2.2 Next Operating System (OS)

Next Operating System (OS) will allow people to connect to transportation services more seamlessly and provide a digital platform that allows for dynamic management of roadways and transit services. Essentially, it will function as the “brain” of the transportation network.

The possibilities for using Next OS are wide-ranging, but there are four core functionalities that it is intended to perform:



Data Management: This component of Next OS will be responsible for collecting, storing, and maintaining all data used by the various technologies within Next OS. This includes data from a variety of sources such as roadside equipment, Internet of Things (IoT) sensors, vehicles, mobile devices, and more. Data management also includes developing and maintaining data standards and formats to ensure data can be easily shared and accessed by all Next OS technologies as well as other systems.



Analytics - Once data is collected, it must be processed and analyzed to extract useful information that can be used to make decisions. The Analytics component of Next OS will be responsible for performing this analysis and generating reports, visualizations, and models that can be used by other tools within Next OS.



Communications - The communications component of Next OS will be responsible for developing and sending reports and alerts to decision makers. It will also send notifications and messages to users through a variety of channels such as email, text, push notifications, in-app messages, and more. Communications also includes developing and maintaining an accessible front-facing web interface where applicable.



Engagement - The engagement component of Next OS is responsible for developing and delivering interactive content such as dashboards, maps, surveys, and more. Engagement also encompasses the expected functionalities of help centers and other related user support systems should also be considered under this functionality.

These core functionalities serve as the foundation for the digital platform, on top of which more functionalities can be added as new needs emerge.

When implemented, Next OS will have a variety of positive impacts, including improved safety, increased mobility, enhanced customer service, and decreased greenhouse gas emissions. In order for those benefits to be achieved, though, the physical networks that comprise SANDAG's 5 Big Moves (Complete Corridors, Transit Leap, Active Transportation, Mobility Hubs, and Flexible Fleets) must be supported with new key technology features. Table 4-1 outlines those key features and describes their advantages.

Table 4-1: Next OS Features

Next OS Features		
Feature	Description	Category
Active Transportation Demand Management (ATDM)	The goal of ATDM is to create a balanced transportation network that utilizes all available modes strategically and gives priority to shared services. ATDM strategies include smart parking signage, priority lanes for transit and smart intersection technologies.	Complete Corridors
Smart Intersections	Smart intersections support increased safety and awareness of multiple modes at an intersection using complete sensor sets, sensor fusion algorithms which generate the environment model, and 5G or dedicated short-range communication (DSRC) units, both at the intersection, and in the vehicle. This may be applied in and around the CMH.	Complete Corridors
Dedicated transit lanes	A subcategory of dynamic lane operations, dedicated transit lanes are exclusive lanes for transit vehicles, particularly for Next-Gen Rapid BRT-type service, that allows transit vehicles to bypass congested traffic during peak hours. During non-peak hours, the lane may be used per demand for activities such as parking, pickup/drop-off, bike lane, or traffic lane.	Complete Corridors

Next OS Features		
Feature	Description	Category
Transit signal priority	Controller programming allows transit vehicles to be prioritized at crossings/intersections. Some examples of TSP implementation include green light phasing for transit vehicles or queue jumps. Shorter travel times and more reliable service could result from the addition of dedicated lanes paired with signal priority during peak travel hours.	Complete Corridors
Freight signal priority	Freight signal priority allows trucks to be prioritized at crossings while enhancing pedestrian, bicycle, and transit connections. This is currently being tested along Harbor Drive by the Port of San Diego's marine terminals.	Complete Corridors
Bike signals and signal priority	Similar to transit signal priority, bike signals may be installed to incentivize safe bicycle use as well as prioritize bikes on streets surrounding the CMH. Some existing examples of this can be found along the 4 th and 5 th Avenue cycle tracks.	Complete Corridors
Flexible use roadways (dynamic lane operations)	Travel lanes on Complete Corridors can be dedicated to different uses or modes at different times of day depending on traffic levels, transit services can become more responsive to user demand, and different numbers and types of transit vehicles can be deployed as needed to serve specific areas. They may also be used for pedestrian walkways, bike lanes, pickup/dropoff area, and parking.	Complete Corridors
Fleet and vehicle tracking	For bus and BRT systems, automatic vehicle location (AVL) functions help operators and the central management system understand the locations of individual vehicles within a transit network.	Transit Leap
Headway and schedule management	Particularly optimized for higher frequency services, this feature helps to space out individual vehicles to balance headway timing and ensure vehicles are spaced out evenly in real-time to manage demand	Transit Leap
Electric bus charging	Electric and zero emission transit vehicles are increasingly popular and needed in the transit industry. The ability to charge buses quickly and efficiently during layovers or along the route is critical for schedule adherence and service	Transit Leap
Passenger counting	This function helps to understand passenger demand patterns that can be used to adjust and inform service changes and improvements	Transit Leap, Mobility Hubs and Flexible Fleets
Vehicle occupancy	While the capacity for predictive and accurate vehicle occupancy has been heavily researched in the last few years, this feature is highly desired by transit agencies, but has not been widely implemented. Given global conditions, this feature is particularly important for rider and demand planning from both customer and operations perspectives	Transit Leap

Next OS Features		
Feature	Description	Category
Integrated fare payment and routing portal	Off-board fare payment and routing information makes it more seamless for riders using transit. Riders can pay beforehand for their whole trip and receive guided instructions for their trip, particularly if they are using multiple modes.	Transit Leap, Mobility Hubs and Flexible Fleets
Real-time information	Real-time information allows riders to receive updates on their smartphone or locally placed dynamic signage to know the status of their transit vehicles and ease rider uncertainty	Complete Corridors, Transit Leap, Mobility Hubs and Flexible Fleets
Wi-Fi	Reliable on-board Wi-Fi is increasingly important as smartphones are widely used and can connect riders to real-time transit information, routing and payment as well for an enhanced experience while riding	Transit Leap, Mobility Hubs and Flexible Fleets
Audio and visual next stop announcements	Next stop announcements are useful for letting riders know the next stop and enhances the customer experience. This feature also helps support the goal of equity for all types of users.	Transit Leap
Transportation management center	A central system with real-time dashboards of operations to manage all vehicles and movements as well as supporting infrastructure is critical.	Transit Leap, Mobility Hubs and Flexible Fleets
Data hub	High-speed data analytics, data repository, and data performance management platform that will bring together public transportation data and develop a public-private information exchange with companies such as transportation network companies and micromobility fleets. Micromobility and other flexible fleets will benefit from a consolidated database given the decentralized nature of the service. In addition, data hub should support complete corridor performance monitoring and metrics to support optimization of dynamic lane management for Active Traffic Management (ATM) and Active Transportation Demand Management (ATMD).	Mobility Hubs and Flexible Fleets
Mobility as a Service (MaaS) app	Application to plan, book, and pay across public and private shared services. Relies on the sharing of information between public and private providers. This function should be provided regionally and leveraged in the study area to promote transit and alternative modes and lower obstacles to greater mode shifts.	Mobility Hubs and Flexible Fleets
Charging stations	Smartphones are widely used but also require frequent charging, which is not always available to travelers. Charging stations provide a solution to a problem and incentivize travelers to stay at a transit station and conduct other activities	Mobility Hubs and Flexible Fleets
Geofenced drop zones for micromobility	Micromobility options, such as dockless scooters and bicycles, may be parked in geofences areas within the station area and serve as first last mile options	Mobility Hubs and Flexible Fleets

Next OS Features		
Feature	Description	Category
Smart lighting	Dynamic and motion-controlled lighting allows travelers to feel safe, particularly if the station is outside, while saving energy. Enhanced smart lighting may also be used as wayfinding.	Mobility Hubs and Flexible Fleets
Interactive kiosks	Kiosks at transit station may provide such services as fare payment, wayfinding, real-time transit and airport departure/arrival information, and services and amenities directories	Complete Corridors, Mobility Hubs and Flexible Fleets,
Dynamic signage and wayfinding	Dynamic signage, such as TransitScreens, provide real-time information to travelers on transit connections, airport arrivals/departures. Dynamic wayfinding allows varied messages to show on electronic screens to travelers that are making connections.	Mobility Hubs and Flexible Fleets
Dynamic curb management	Dynamic curb management allows curb space to accommodate changing demands throughout the day, such as for pickups/drop-offs, food trucks, micromobility parking zones, commercial loading/unloading, etc.	Complete Corridors, Mobility Hubs and Flexible Fleets
Flexible use parking	Parking occupancy via sensors and parking reservations via a booking system allows travelers to book and reserve parking spaces before arriving at the station. This allows travelers more certainty and the ability to plan ahead as well as make decisions. This parking area also has the ability to be flexible and multipurpose if needed. As the region shifts toward multimodal options, technology-enabled flexible use parking will accommodate the shift and provide practical options for folks traveling to the CMH from more suburban areas of the region.	Mobility Hubs and Flexible Fleets

4.2.3 Transit Improvements

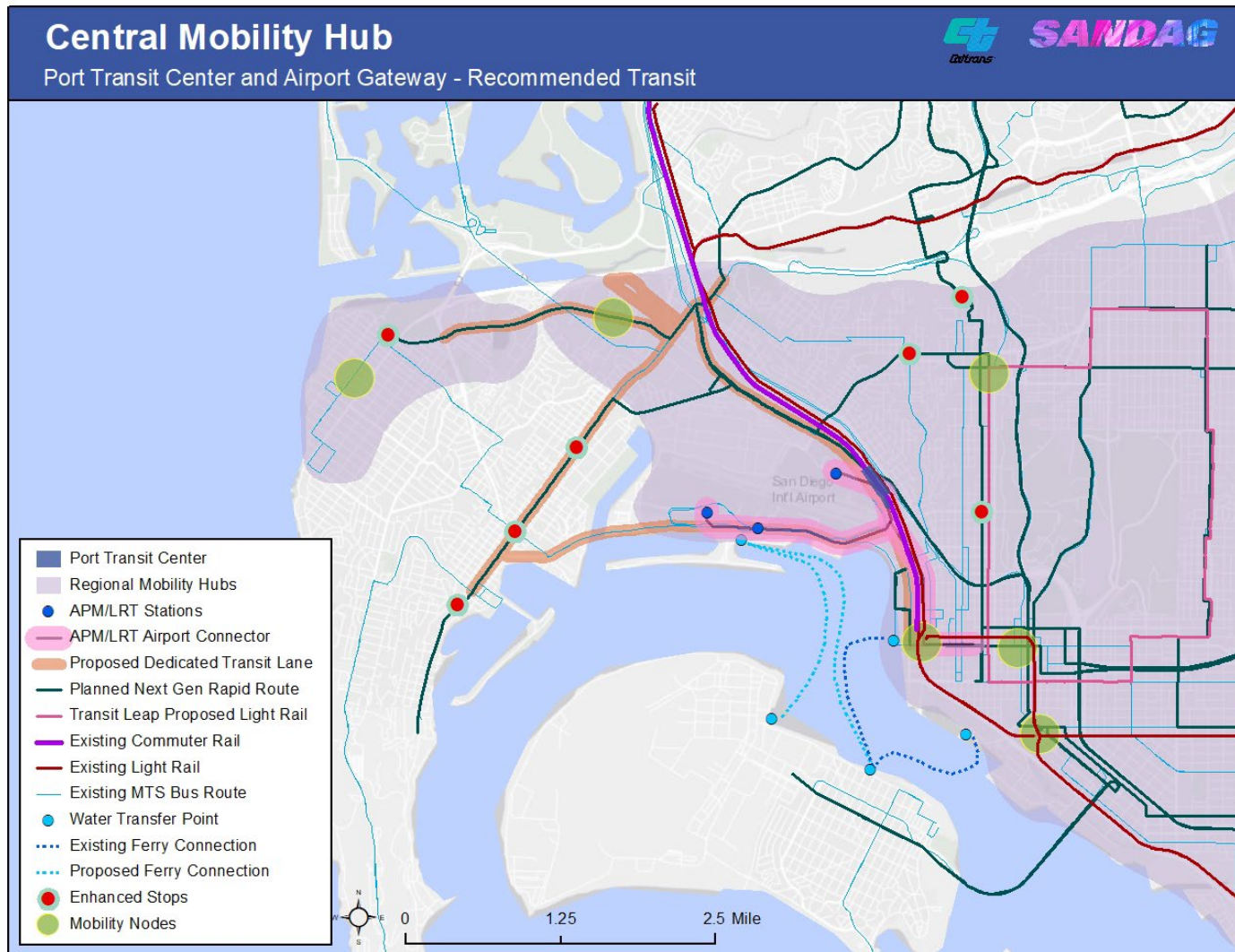
The CMH and Connections CMCP aims to create an expanded transit network that is more widely accessible and efficient for all users. The updated transit system incorporates and adds to the Transit Leap network component from SANDAG's 2021 Regional Plan to create a network of safe, reliable, and frequent transit service.

Currently, a variety of multimodal transit services are provided to residents and commuters within the CMH study area. These services include commuter rail, light rail, and Rapid and local bus services.

The geography and density of uses unique to San Diego have influenced a transit system which supports many residents and destinations. Transit connectivity is strong in Downtown San Diego, featuring a variety of transportation modes including bus, Trolley, and heavy rail. North of Downtown San Diego in the heart of the CMCP study area near the PTC, transit is more difficult to access due to I-5 separating communities from each other and destinations like the airport, as well as the geography of the area. North of the airport, the Old Town Transit Center is a hub for numerous routes, but again, lacks strong connectivity to the west in the Midway District, Ocean Beach, Point Loma Heights, and Liberty Station.

The SANDAG 2021 Regional Plan proposed numerous transportation projects to enhance transit connectivity within the CMH study area. The mix of transit leap, complete corridor, and mobility hub projects aims to bolster transit in the region beyond what currently exists. The CMH transit projects included in the SANDAG 2021 Regional Plan Network can be seen in Figure 4-2 below.

Figure 4-2: Enhanced Transit Projects



Recommended Strategies

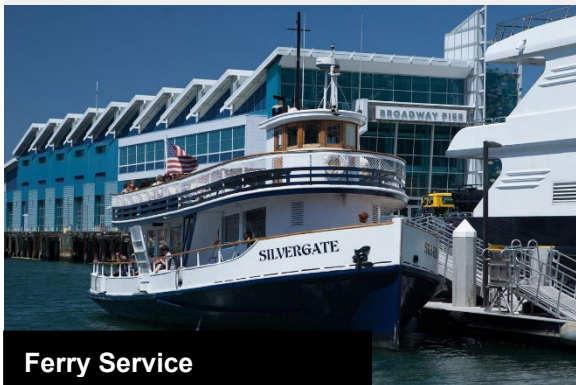
Transit strategies proposed in this CMCP enhance the projects included in the 2021 Regional Plan by facilitating direct connections from SDIA to the PTC and to Downtown San Diego, as well as from key communities within the study area to and from the PTC. These strategies include improvements and modifications to existing and planned transit services. The recommended transit strategies can be seen in Figure 4-8 and Figure 4-9. Transit recommendations span multiple modes including:



The CMCP proposes the introduction of high-speed commuter rail lines within Transit Leap. The commuter rail lines are projected at speeds reaching 110mph. The existing Coaster/LOSSAN corridor between Oceanside and Downtown San Diego will be realigned with tunneled segments at specific locations to achieve these speeds. A second North/South Transit Leap line (Route 583) will connect to the Cross-Border Xpress, San Ysidro, Chula Vista, National City, and Downtown San Diego via 12th & Imperial, City College, Santa Fe Depot, and terminate at the PTC.



An additional light rail line is proposed connecting the neighborhoods of Logan Heights, Golden Hill, South Park, North Park, University Heights, and Hillcrest with Downtown San Diego. This light rail line would join the existing MTS trolley system consisting of the Orange Line, Blue Line, and Green Line. A crucial element of the Transit Leap, light rail in San Diego is projected to reach top speeds of more than 55 mph, with service every 7.5 minutes.



Although there are existing ferry connections between Coronado and both the Broadway Pier and the Fifth Avenue/Convention Center Landing, an expansion to these existing water connections would enhance mobility for travelers. An additional water-based transfer point is proposed to be implemented on the eastern end of Harbor Island in the Harbor Island Planning District. This is consistent with the Port Master Plan Update, which proposes the addition of a “Regional Mobility Hub” near this location. Services that could be implemented at this water-based transfer point include increased ferry or water taxi services.



Next Gen Rapid

The expanded Next Gen Rapid network will provide extended service hours, better connections for passengers to key travel demand locations, and several transit priority treatments to increase efficiency and convenience for riders. Within the SANDAG 2021 Regional Plan and CMCP, many existing *Rapid* routes are proposed to be expanded with faster service, newer vehicles, and greater frequency. In this plan, new Rapid routes are proposed to better integrate the transit network and expand the service area.



Automated People Mover

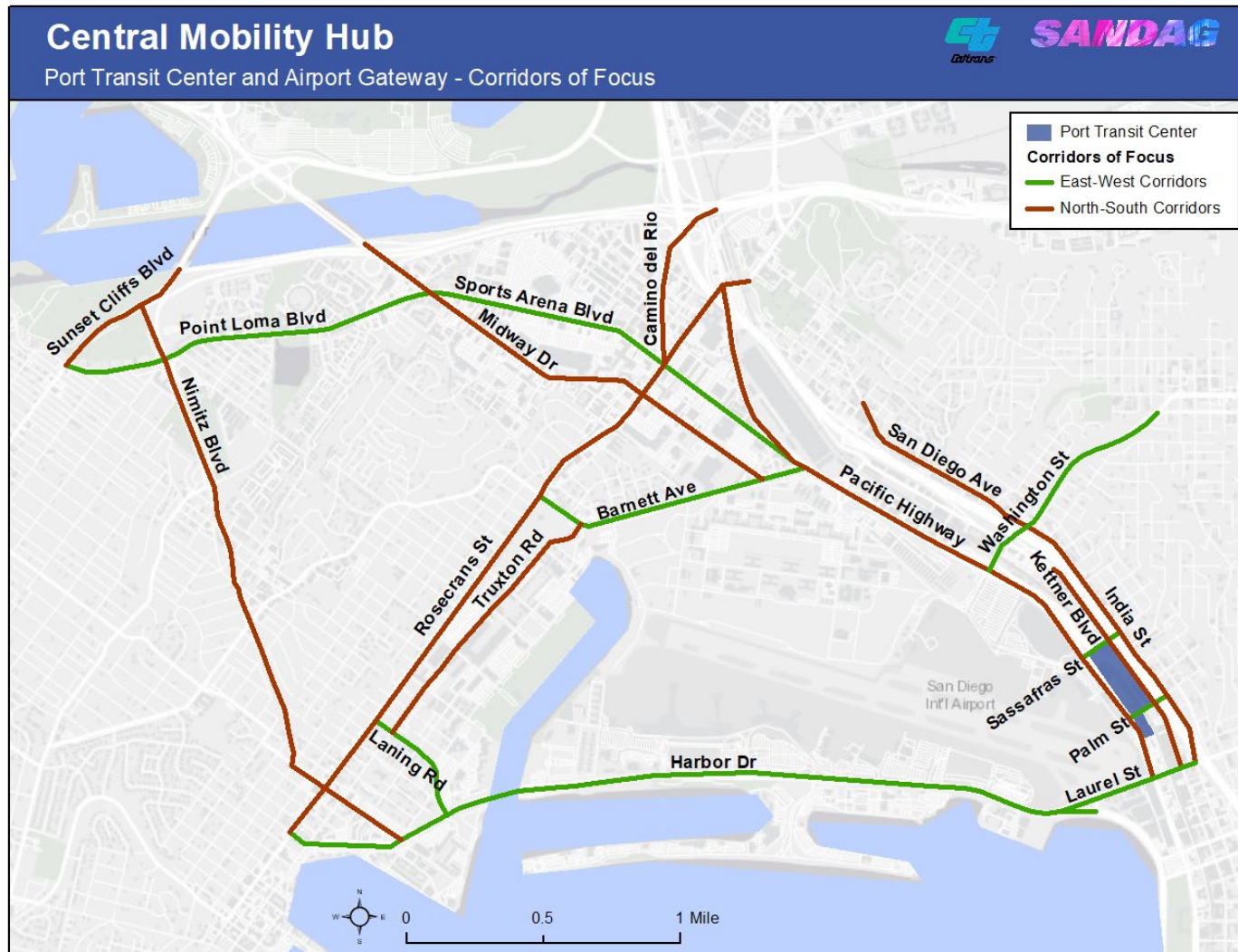
Fully automated and driverless direct transit solutions can match passenger demand with greater efficiency through use of technology and a smaller footprint than traditional metro light rail transit. They offer adequate ridership capability, level boarding, interior layout adapted to airport services and flexibility of services through use of state-of-the-art technologies, automation, connectivity, and electrification. The automated people mover (APM) is designed to be a direct connector between the Consolidated Rental Car Facility (CONRAC), PTC, SDIA, and the downtown CMH.

In addition to the transit strategies laid out in the 2021 Regional Plan, the CMH and Connections CMCP proposes two potential new fixed-guideway routes, each serving high-quality and efficient connection beyond the PTC, SDIA, and CONRAC, to reach key corridors in the study area. The potential fixed-guideway route may reach key neighborhoods in the CMCP area, including Liberty Station, the Midway District, Old Town, Middletown, and Ocean Beach. They are referred to generally as “fixed-guideway”. The technology selection for specific mode would come during project-specific work. The fixed-guideway could be either Light Rail Transit (Trolley), an APM, or other similar fixed-guideway technology.

4.2.4 Complete Corridor/Active Transportation Improvements

Complete Corridors are roadways with dedicated, safe spaces for everyone, including people who walk, bike, drive, ride transit, and use Flexible Fleets. They also provide space and accessibility for the movement of goods alongside people. To provide a safe, comfortable, and efficient network for all modes, many of the complete corridor mobility strategies include active transportation improvements. The mobility improvement strategies for Complete Corridors focus on the roads identified in Figure 4-3.

Figure 4-3: Corridors of Focus for Complete Corridor Improvements



Improvements for these corridors were developed with the goal of increasing connectivity by closing gaps along key travel routes and enhancing safety for all travelers by minimizing conflicts with vehicles to the greatest extent feasible. The specific location and type of facility for each improvement was based on connectivity needs, planned development in the area, and existing opportunities and constraints of the built environment.

Recommended Strategies

Existing conditions and specific near-term and longer-term recommendations are presented in -. Near-term recommendations are projects that are either planned and can be constructed within the next 5-10 years, or not planned but can be constructed within the existing right-of-way (ROW). Longer-term recommendations are projects that may need additional ROW acquisition during a Project redevelopment process.

Figure 4-4 shows the existing arterials and lane collectors within the CMH study area. This provides a baseline to which Figure 4-5 and Figure 4-6 can be compared.

Figure 4-4: Existing Arterial Functional Classifications

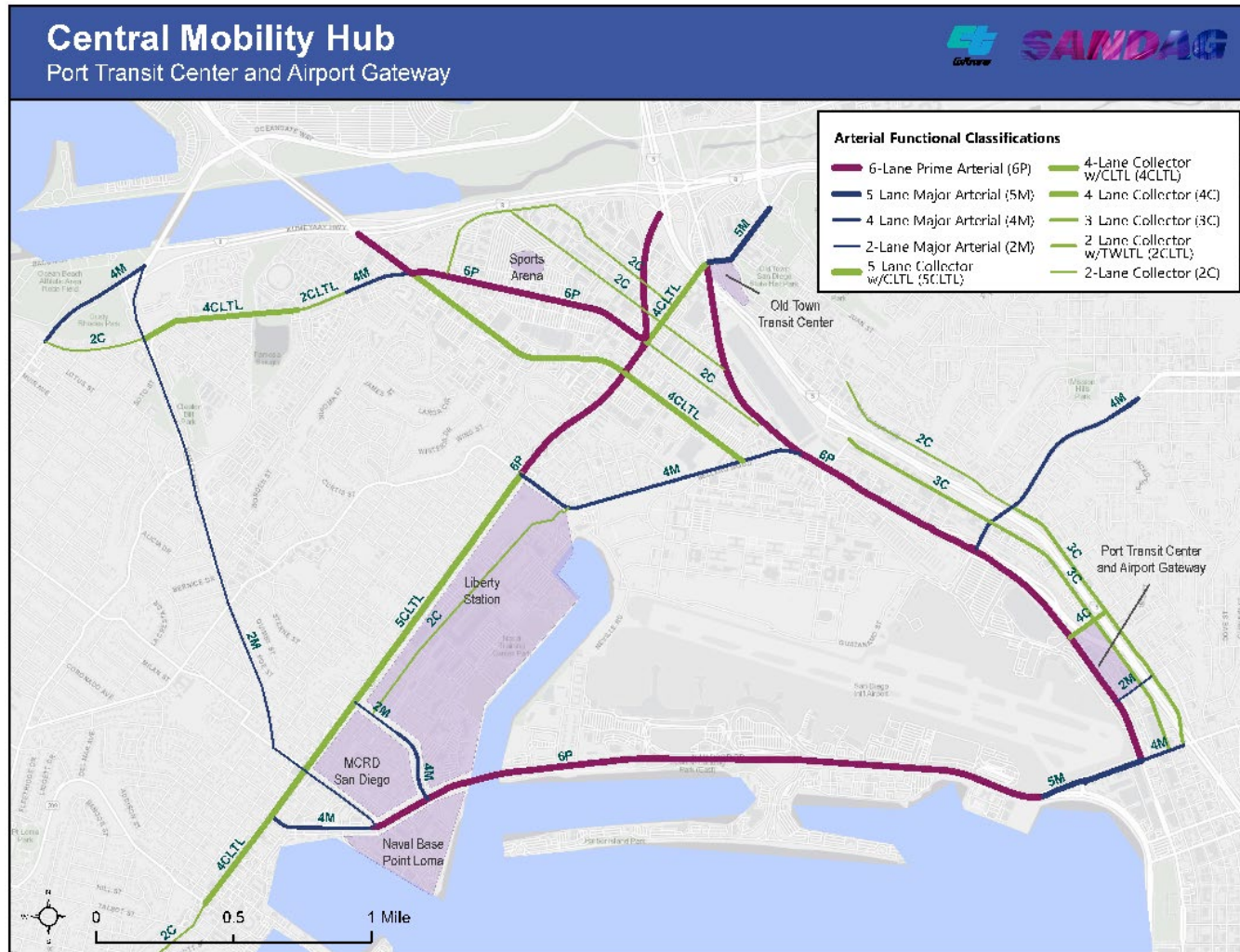


Figure 4-5 highlights the near-term recommendations to improve the corridor through the implementation of dedicated transit lanes.

Figure 4-5: Recommended Arterial Corridor Cross Sections – Near-term

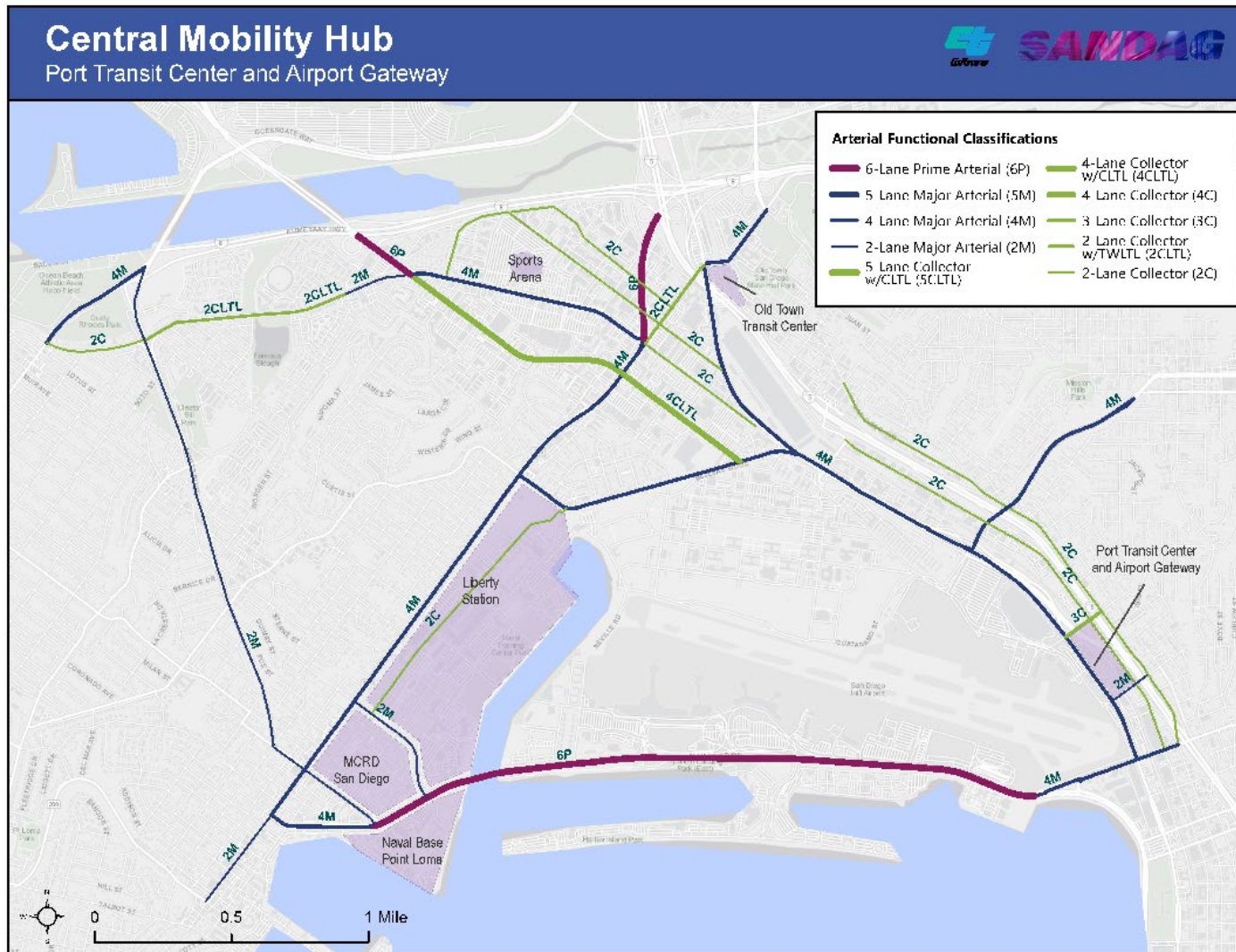


Figure 4-6 depicts the long-term recommendations proposed along the same arterials, which includes dedicated transit lanes as well as 2-lane transit only streets to provide better access in and out of the PTC. Additional detail on configurations around the PTC can be seen in Figure 4-11.

Figure 4-6: Recommended Arterial Corridor Cross Sections - Long-term

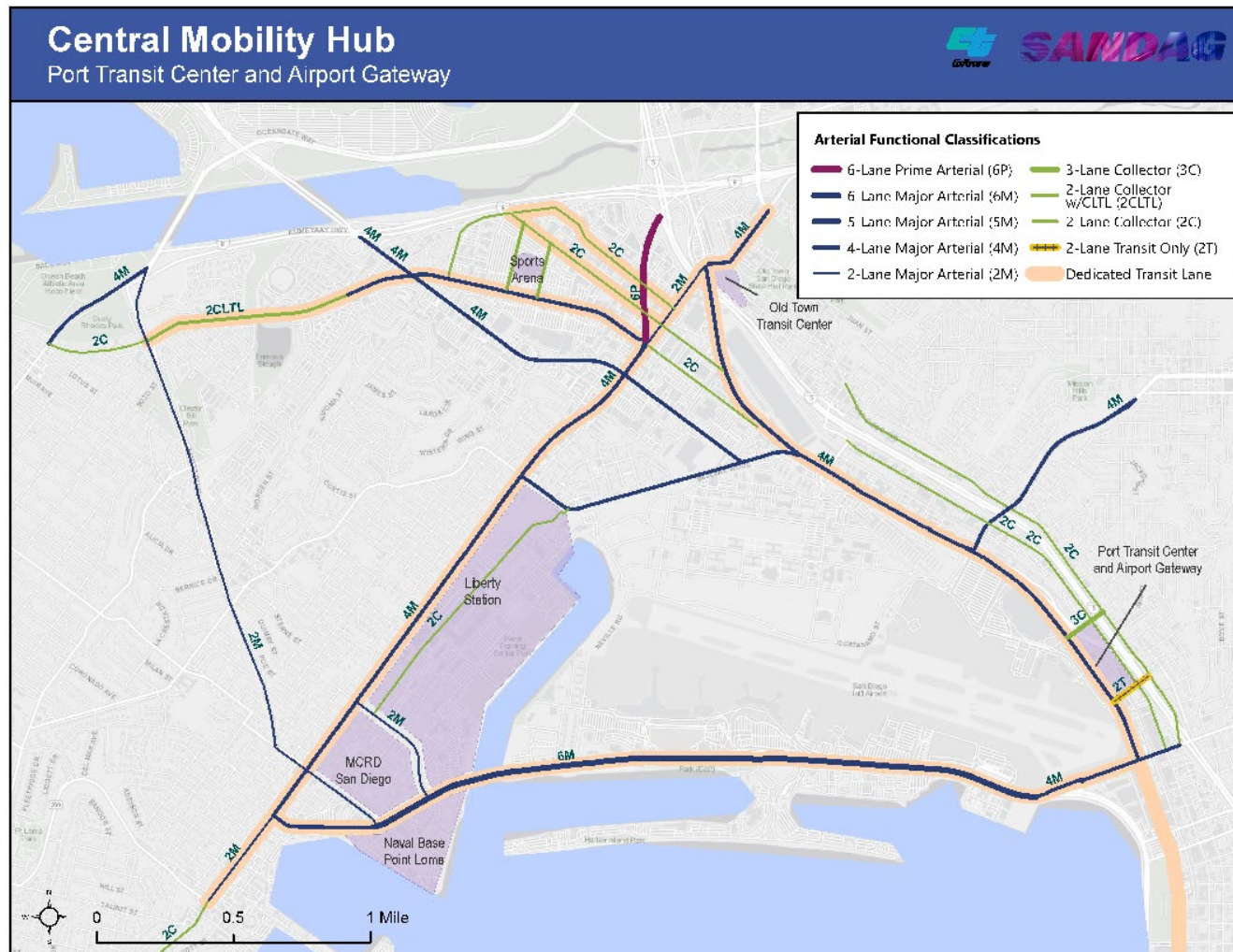


Figure 4-7 shows existing bicycle infrastructure by classification as well as the new infrastructure recommended in the near-term.

Figure 4-7: Existing and Recommended Bicycle Facility Classifications – Near-term

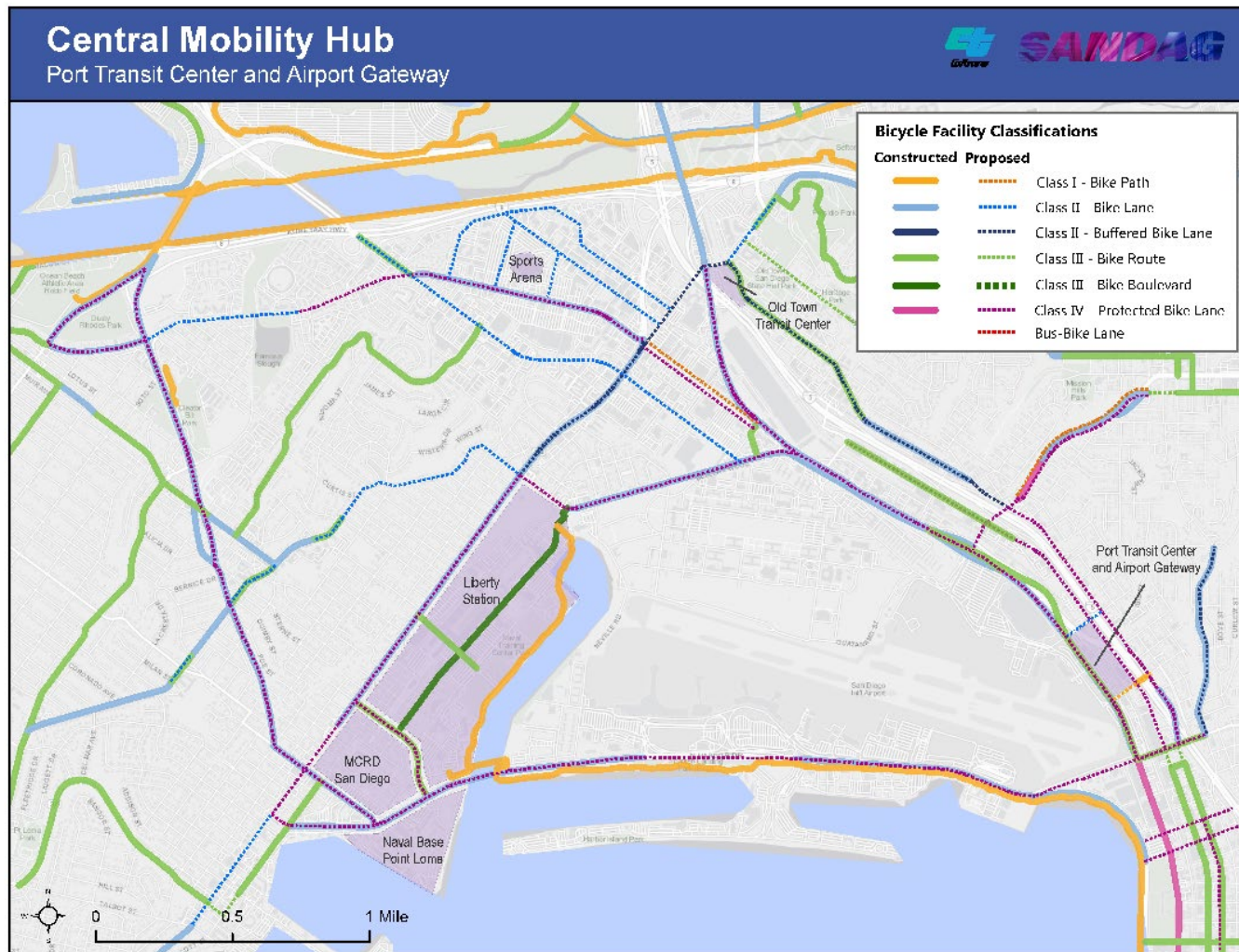


Figure 4-8 shows currently existing bike infrastructure and bike infrastructure that would be constructed in the near-term in Figure 4-7, as well as recommended future long-term projects.

Figure 4-8: Existing, Near-term and Recommended Bicycle Facility Classifications – Longer-term

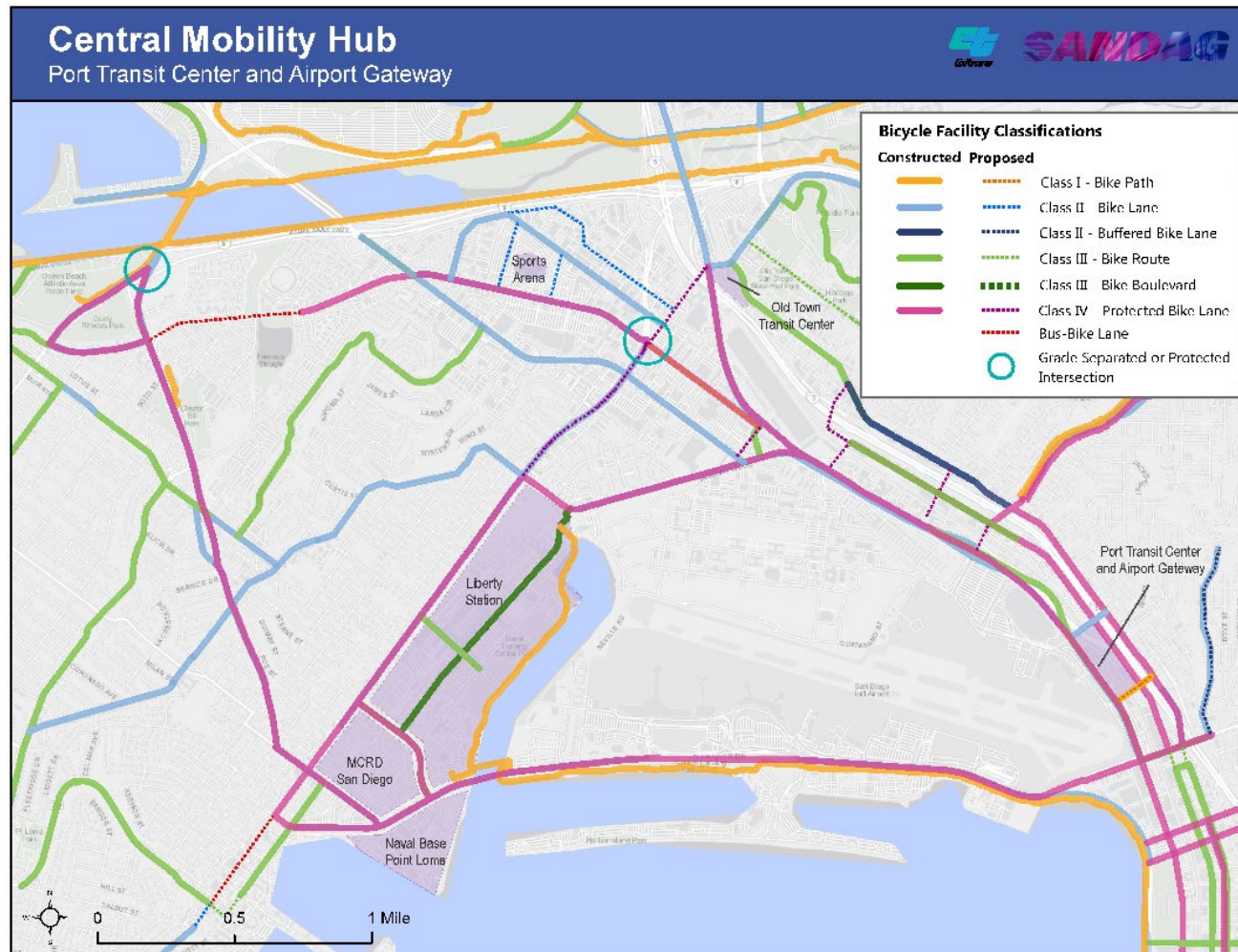


Figure 4-9 illustrates one proposed alignment of an APM/LRT route along with associated APM stops. It also includes locations of mobility hubs and nodes as discussed in 4.2.1 Mobility Hubs and Flexible Fleets, as well as the proposed transit improvements discussed in 4.2.3 Transit Improvements.

Figure 4-9: Fixed Guideway Concept 1

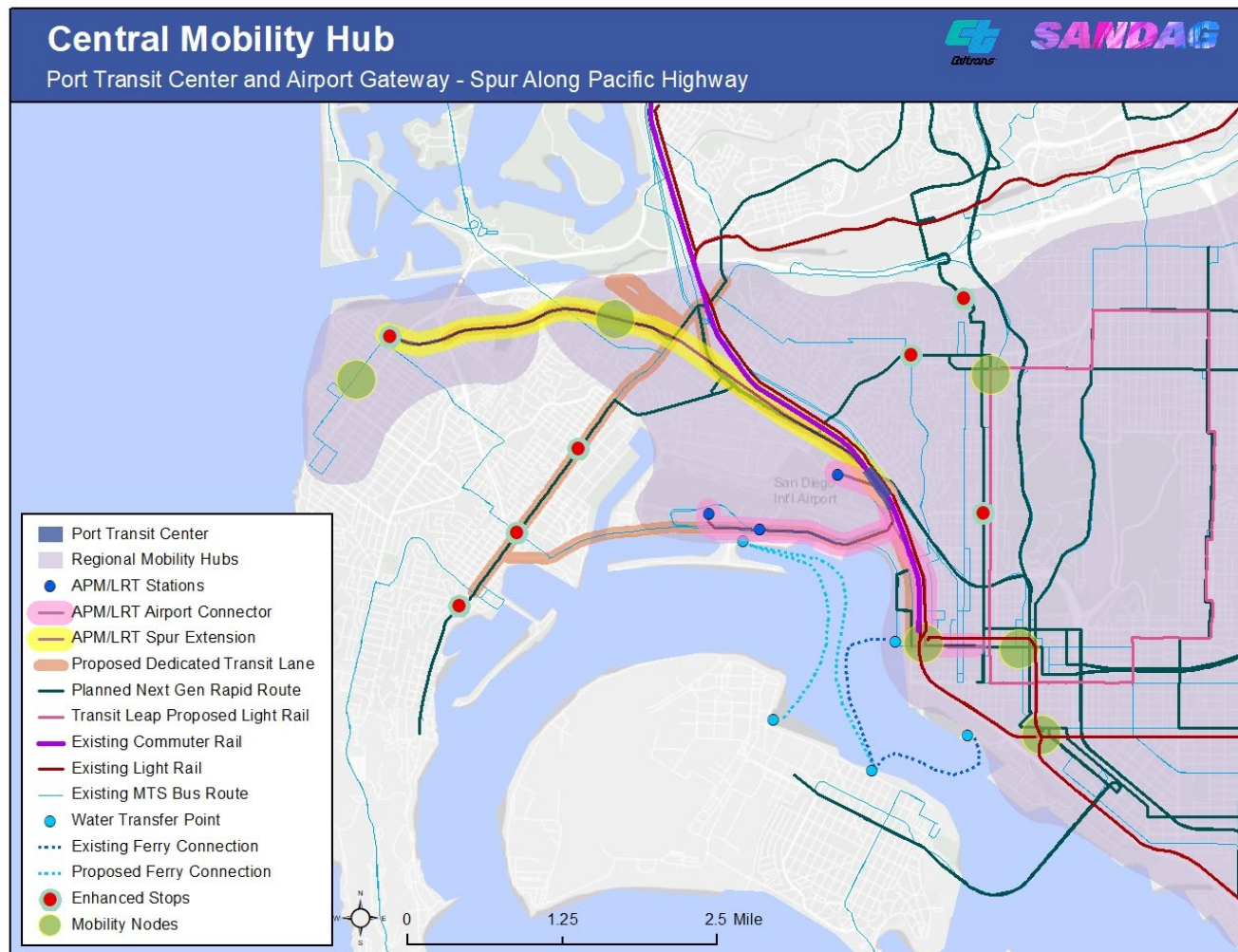


Figure 4-10 shows a second option for the proposed APM/LRT route. It also includes the same mobility hub and transit improvements shown in Figure 4-9, and discussed in 4.2.1 Mobility Hubs and Flexible Fleets and 4.2.3 Transit Improvements.

Figure 4-10: Fixed Guideway Concept 2

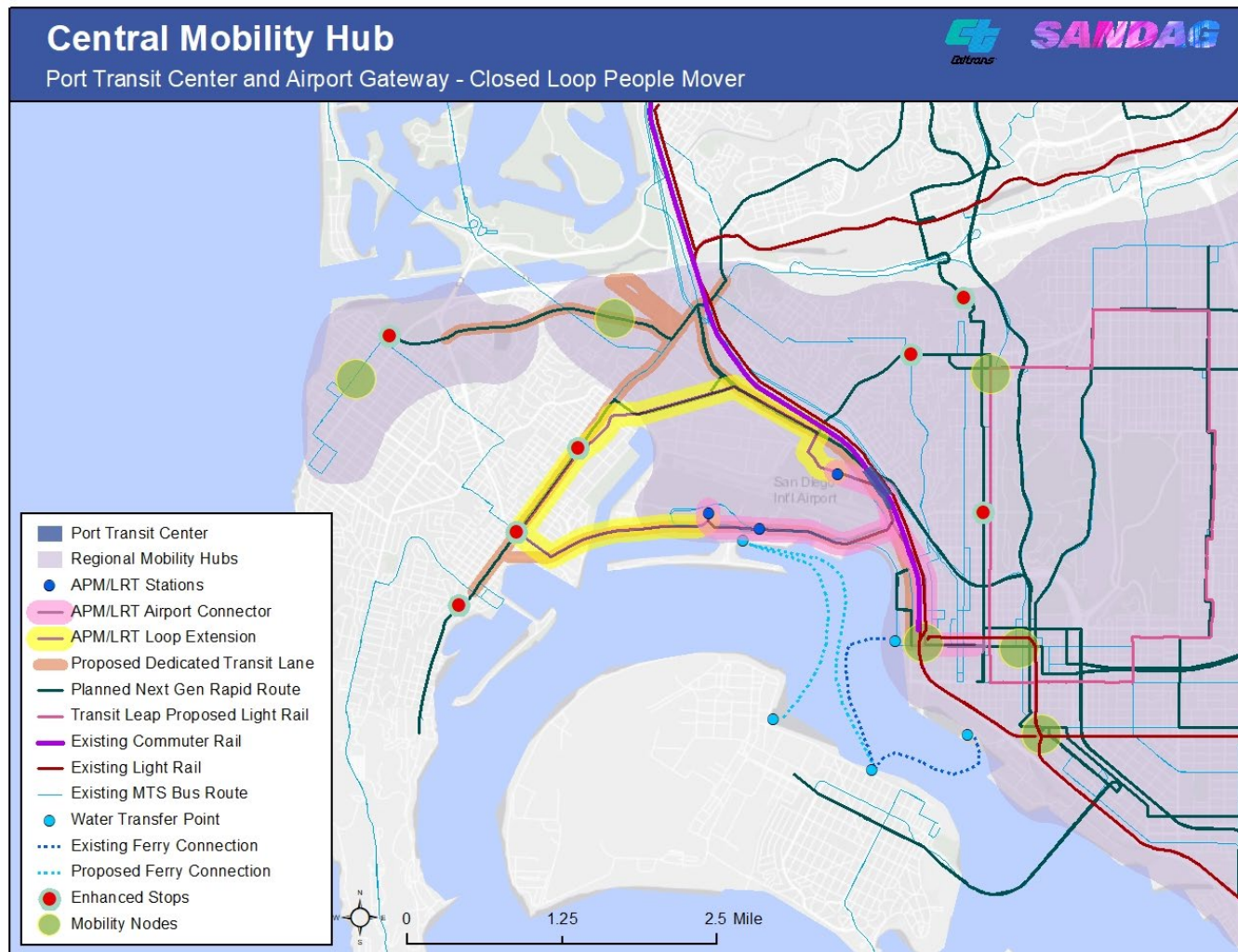


Figure 4-11: PTC Transit Access, Bicycle Facilities, and Protected Intersections

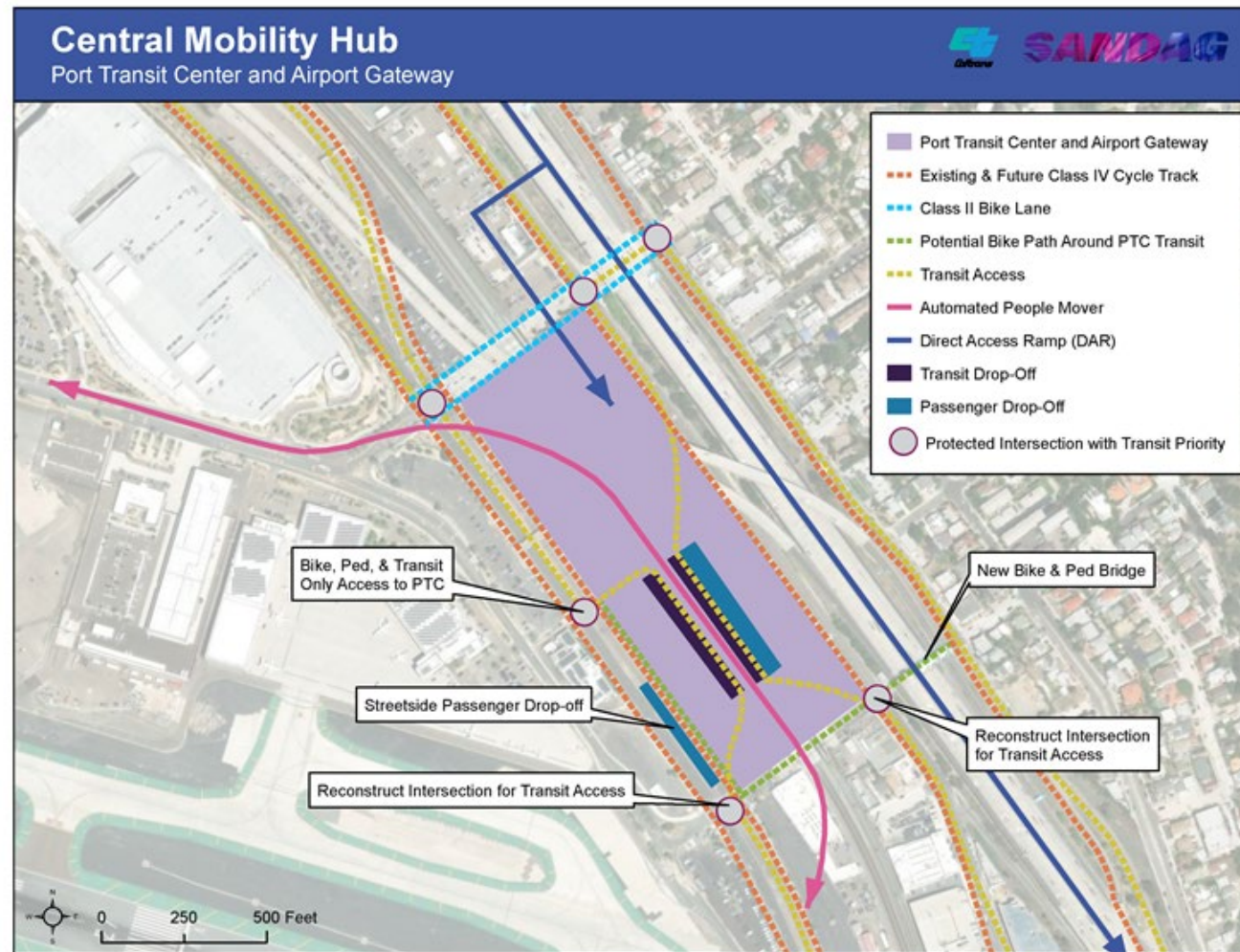


Figure 4-11 provides a more detailed look at the comprehensive network of transit, bicycle facilities, potential rideshare pick-up and drop-off that would exist around the PTC site. Within the center of the PTC site, the APM is proposed to pick-up and drop-off both northbound and southbound utilizing the existing Middletown Station. Transit drop-off platforms are proposed on either side of the APM station platform, which connect directly to transit coming to and from either Pacific Highway on the west side, or Kettner Boulevard on the east side. Two passenger drop-off zones for those coming by TNC or private vehicle are located at the PTC, with one located adjacent to the east transit drop-off zone, and the other located streetside to Pacific Highway just north of Palm Street.

All major roadways in the vicinity, including Pacific Highway, Kettner Boulevard, India Street, and Palm Street are to maintain or introduce Class IV Cycle Tracks to and from the PTC. The bike network would be complete with a new Class I bike and pedestrian bridge on Palm Street across I-5. Six new protected intersections are proposed at all major intersections adjacent to the PTC, including a new active transportation/ transit only intersection on Pacific Highway between Sassafras Street and Palm Street. Lastly, a new Direct Access Ramp (DAR) stemming from I-5 just north of Sassafras Street would connect to the PTC, streamlining vehicle access to the site while reducing VMT.

The following recommendations apply to all complete corridors:

1. Protected bike lanes should be implemented where feasible, including upgrading existing Class II Bike Lanes with buffer to Class IV Cycle Tracks
2. Parking-protected Cycle Tracks should be implemented where feasible to provide additional protection for cyclists
3. Transit priority signals should be assumed at all major corridors
4. Certain corridor segments should complete additional project-specific engineering studies prior to construction

4.2.5 Freeway and Roadway Improvements

The I-8 and I-5 freeways currently handle high traffic volumes and are frequently congested, leading to long travel times and inefficiencies in the movement of vehicles and goods accessing the study area and future CMH. Local roads and access routes similarly handle high traffic volumes, creating competition with other modes and safety concerns throughout the study area.

The proposed freeway improvements include implementation of Managed Lanes, new or reconfigured interchanges along I-5 and I-8, proposed direct access ramps (DARs), and modifications on connecting roadways. These improvements will enhance connectivity for freeway travelers accessing the Port Transit Center, as well as provide access to and from key locations throughout the study area. The proposed solutions and alternatives discussed in this section aim to enhance HOV and transit travel times, reduce traffic congestion and improve the flow of vehicles and goods on freeways and the connecting local road network.

Recommended Strategies

Proposed freeway projects for the CMH are shown on the maps and described below. Key projects include implementation of Managed Lanes along I-5, I-8, and SR 163, which are all listed in the 2021 Regional Plan network. On I-5 and I-8, two existing general-purpose lanes would be converted to Managed Lanes, and two additional Managed Lanes would be added, utilizing current shoulder right-of-way. The SR 163 proposal includes converting two existing general-purpose lanes to Managed Lanes from I-8 to I-805. Managed Lane freeway to freeway connectors are proposed to for I-5 and I-8 in the west to north, south to east, north to east and west to south directions. Additional projects that are not listed in the 2021 Regional Plan include SR 163 Southbound Managed Lanes (Phase 1), I-5/I-8 General Purpose Lane Connectors, Old Town Avenue Interchange Reconfiguration, and the I-5 Direct Access Ramps at Port Transit Center. Figure 4-12 provides a summary of all proposed freeway improvement projects. Overall, this includes 12 miles of newly proposed managed lanes, as well as four interchange improvements, one grade separation, and one direct access ramp improvement.



Figure 4-12: Summary of Locations for Potential Freeway Improvement



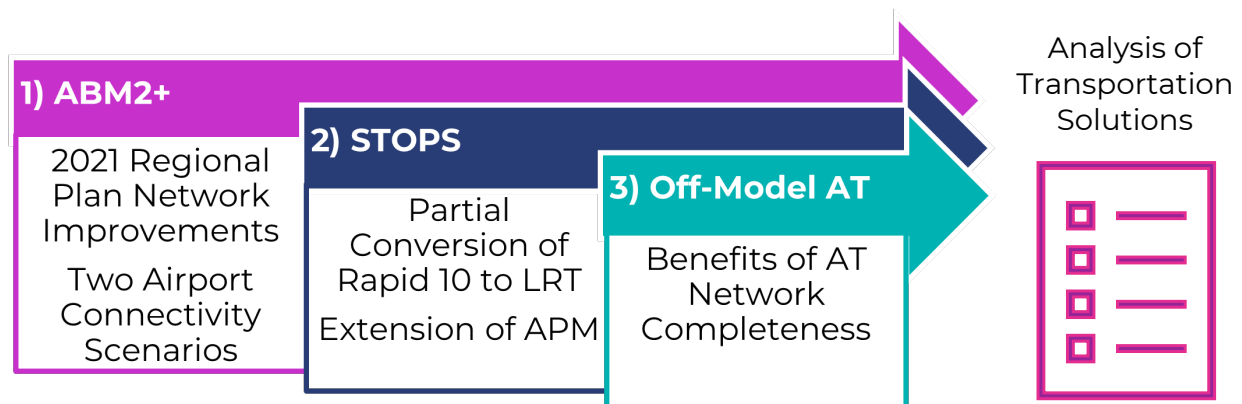
Chapter 5. Evaluation



5. Evaluation

This chapter describes the evaluation of the Central Mobility Hub (CMH) and Connections Comprehensive Multimodal Corridor Plan (CMCP) Transportation Solution Strategies (TSS) and the proposed alternatives, for the full list of proposed TSS see Appendix D. As discussed in the earlier chapters, the CMH and Connections CMCP is unique from previous CMCP projects in many ways. The characteristics of the project and surrounding area necessitated a hybrid approach for transportation modeling and evaluation. The hybrid approach consisted of three Activity-Based Model (ABM2+) run outputs, for quantitative insight into the performance of the backbone transportation network, supplemented by three Simplified Trips-on-Project Software (STOPS) model runs for granular insight into the ridership performance of three different fixed-guideway configurations, and an off-model Active Transportation (AT) Analysis to qualitatively examine the study area's AT network and provide additional AT-specific recommendations. See Appendix E for additional information on each modeling approach.

Figure 5-1: Approach to Evaluation Analysis



5.1 Performance-Based Assessment of Future Conditions

The framework for the performance-based assessment of future conditions was developed by SANDAG to help inform the effectiveness of the proposed multimodal transportation solutions using a data-driven approach. The framework employs the ABM2+ model to generate quantifiable results under 12 performance measure areas. These areas were thoughtfully designed to encompass the various aspects of the regional network, such as Multimodal Focus, Economic Development and Goods Movement, or Active Transportation and Micromobility. A more detailed discussion on the performance measure areas and corresponding results is included in Appendix E. While ABM2+ is an incredibly capable modeling tool, not all proposed CMH Transportation Solution Strategies were included in the CMH and Connections CMCP model runs. Examples of solutions that were not modeled include: new fixed-guideway configurations, sidewalk improvements, intersection control evaluations, and explicit improvements for mobility hub amenities or active transportation. While the STOPS model provided insight into the performance impacts of various fixed-guideway configurations, the benefits of the more nuanced solutions are discussed in Chapter 4.

ABM2+ Model Scenarios

Prior CMH concept development work played an instrumental role in determining the proposed alternatives for enhancing regional connectivity through the CMH and Connections CMCP project. This effort involved assessing 10 initial alternatives for Airport connectivity options and configurations, following which the project team identified two alternatives - Concept 1B and Concept 5B - as best candidates in establishing connectivity to the Airport and integrating into the region's broader transportation network. These alternatives propose a fixed-guideway connection between the San Diego International Airport (SDIA) and a state-of-the-art multimodal regional transportation center - the Port Transit Center (PTC). Both alternatives are well-positioned to deliver swift connections to the SDIA through a fixed-guideway connection line, while the PTC's strategic location enables seamless integration with the region's multimodal transportation system and offers the flexibility needed to accommodate future growth and development in the area.

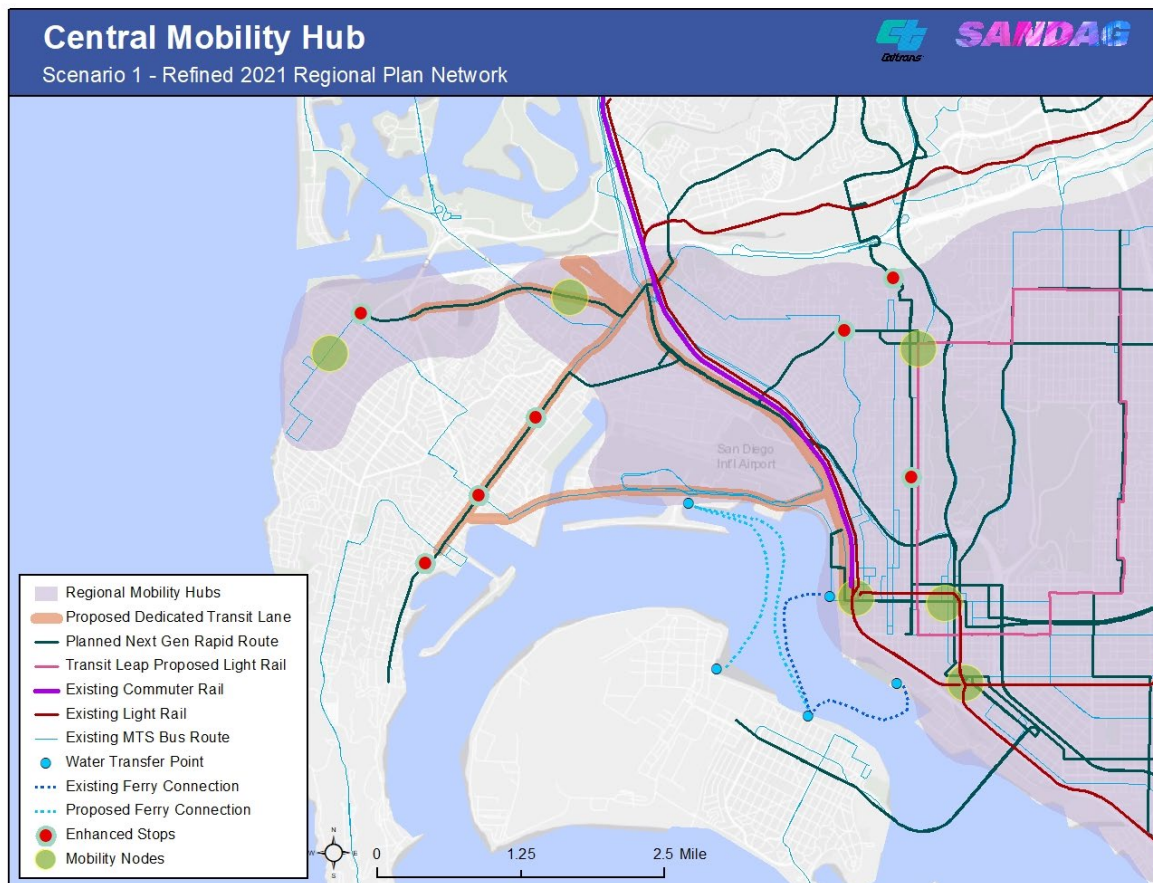
Ultimately, three ABM2+ model runs were performed for the CMH and Connections CMCP project to simulate alternative CMH and Connections CMCP network configurations as part of the analysis. The key assumptions and results of the model runs are outlined below and further discussed in Appendix E.

Scenario 1 – Refined 2021 Regional Plan Network

A CMH and Connections CMCP, in which the approved 2021 Regional Plan network is assumed, with several CMH and Connections CMCP specific modifications proposed to the network. Unlike the subsequent scenarios, Scenario 1 does not include the construction of any fixed-guideway components or the development of a regional multimodal transit facility near the San Diego International Airport. As such, this scenario is considered as the baseline alternative. Figure 5-2 illustrates the main features of the proposed transportation network included in this scenario.

Key network elements include: Refined 2021 Regional Plan Network, 2021 Regional Plan Active Mobility Network, Multi-modal Transit Mode Improvements, and Critical Infrastructure Support Facility Improvements

Figure 5-2: Scenario 1 – Refined 2021 Regional Plan Network

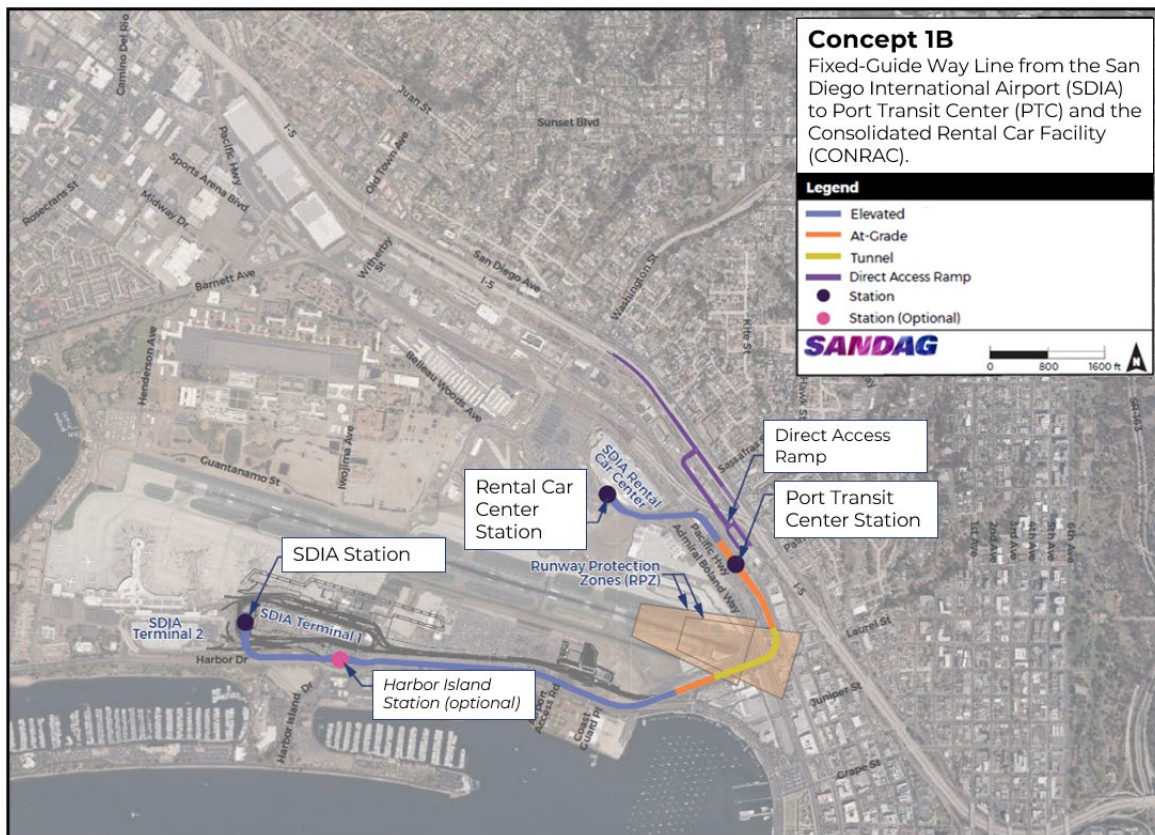


Scenario 2 – Concept 1B

A CMH and Connections CMCP alternative that retains the Refined 2021 Regional Plan Network improvements with two additional components: the Port Transit Center (PTC) regional multimodal transit facility, and a Fixed-Guideway line between the Airport and the PTC transit facility. An illustration of the proposed fixed-guideway airport connection service line and the location of the Port Transit Center is shown in Figure 5-3.

Key network elements include: 2021 Regional Plan Improvements, Port Transit Center, Sassafras Arterial-Connected Direct Access Ramp, Middletown Trolley Station, Active Mobility Improvements, Multimodal Transit Mode Improvements, Critical Infrastructure Support Facility Improvements, and Critical Infrastructure Support Facilities.

Figure 5-3: Scenario 2 – Concept 1B

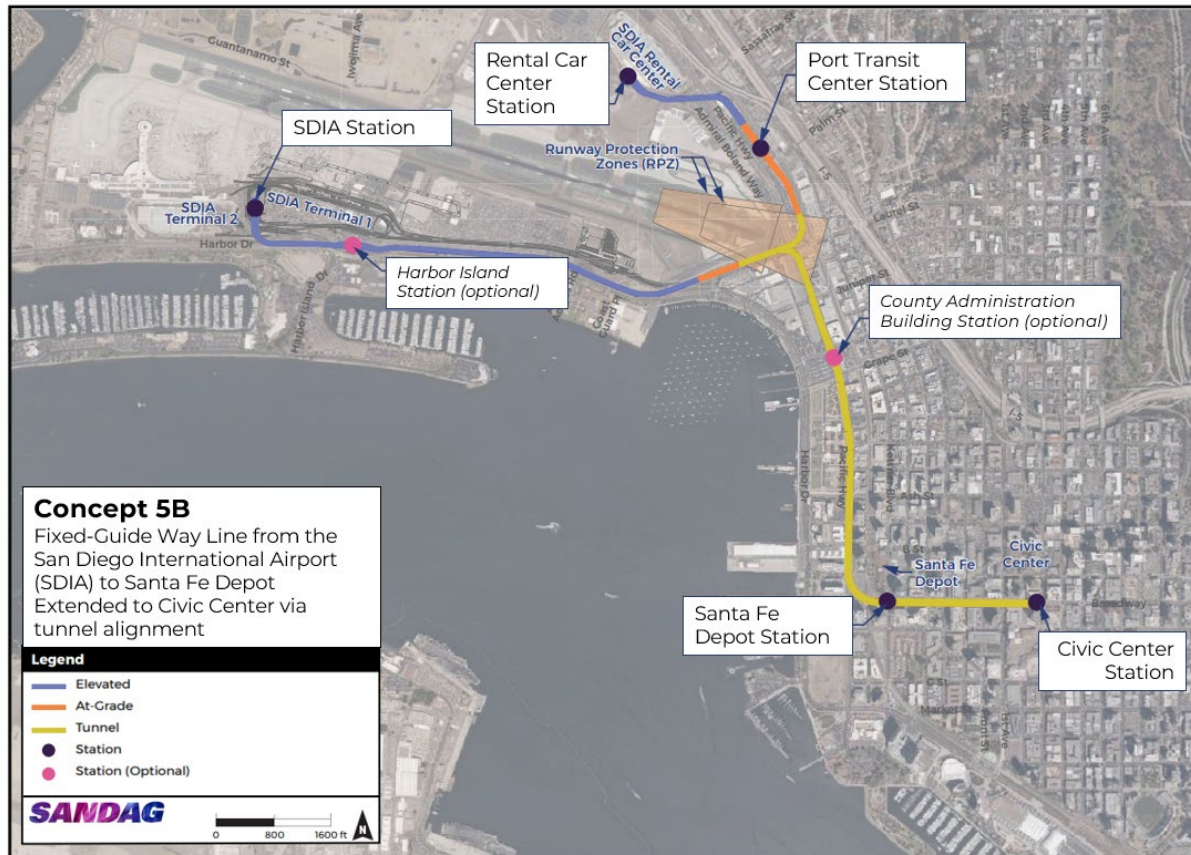


Scenario 3 – Concept 5B

A CMH and Connections CMCP alternative that mirrors Concept 1B with a key difference: this alternative proposes an extended fixed-guideway line connecting the Airport to the PTC, with an extension to the Santa Fe Depot and the San Diego Civic Center. An illustration of this extension is shown in Figure 5-4.

Key network elements include: Port Transit Center, Connection to Santa Fe Depot, Connection to Civic Center via Tunnel Alignment, Active Mobility Improvements, Multimodal Transit Mode Improvements, Critical Infrastructure Support Facility Improvements, and Critical Infrastructure Support Facilities.

Figure 5-4: Scenario 3 – Concept 5B



For the basis of the performance-based assessment, the ABM2+ model-generated results were assessed against the metrics of the 2021 Regional Plan network improvements. The limited number of projects that were able to be modeled as part of the ABM2+ model runs were not anticipated to show significant differences between the model runs nor the baseline. Nonetheless, the modeling of the three alternatives was necessary to ensure that the proposed alternatives were able to meet baseline conditions and provide insight into potential impacts, even if deviations were modest.

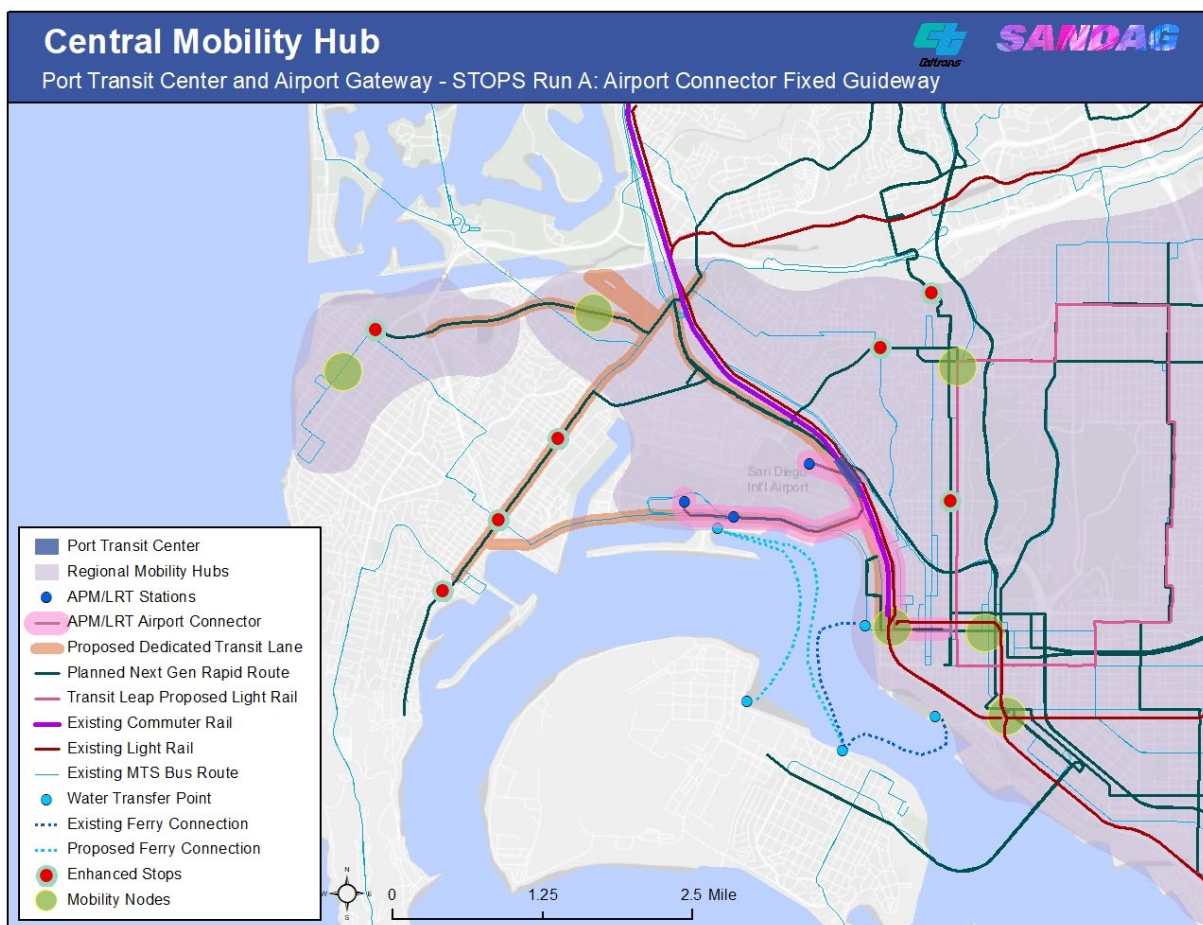
STOPS Model Scenarios

To supplement the ABM2+ model results and provide a complementary perspective on the performance of new fixed-guideway configurations, the project team employed the STOPS modeling tool as part of an additional, standalone model-based assessment. The STOPS model is an FTA approved tool for predicting transit ridership demand and estimating the performance of public transportation systems. For the CMCP analysis, STOPS was implemented with a combination of transit network information from the North County Transit District, the San Diego Metropolitan Transit System, and the San Diego County Regional Airport Authority together with travel demand data from the SANDAG ABM2+ model. With this foundation, the STOPS model simulated the following Airport connectivity configurations:

STOPS Run A – Airport Connector Fixed-Guideway

A baseline scenario based on exact assumptions of Concept 1B with a proposed fixed-guideway line between the Airport and the PTC. STOPS Run A is depicted in Figure 5-5

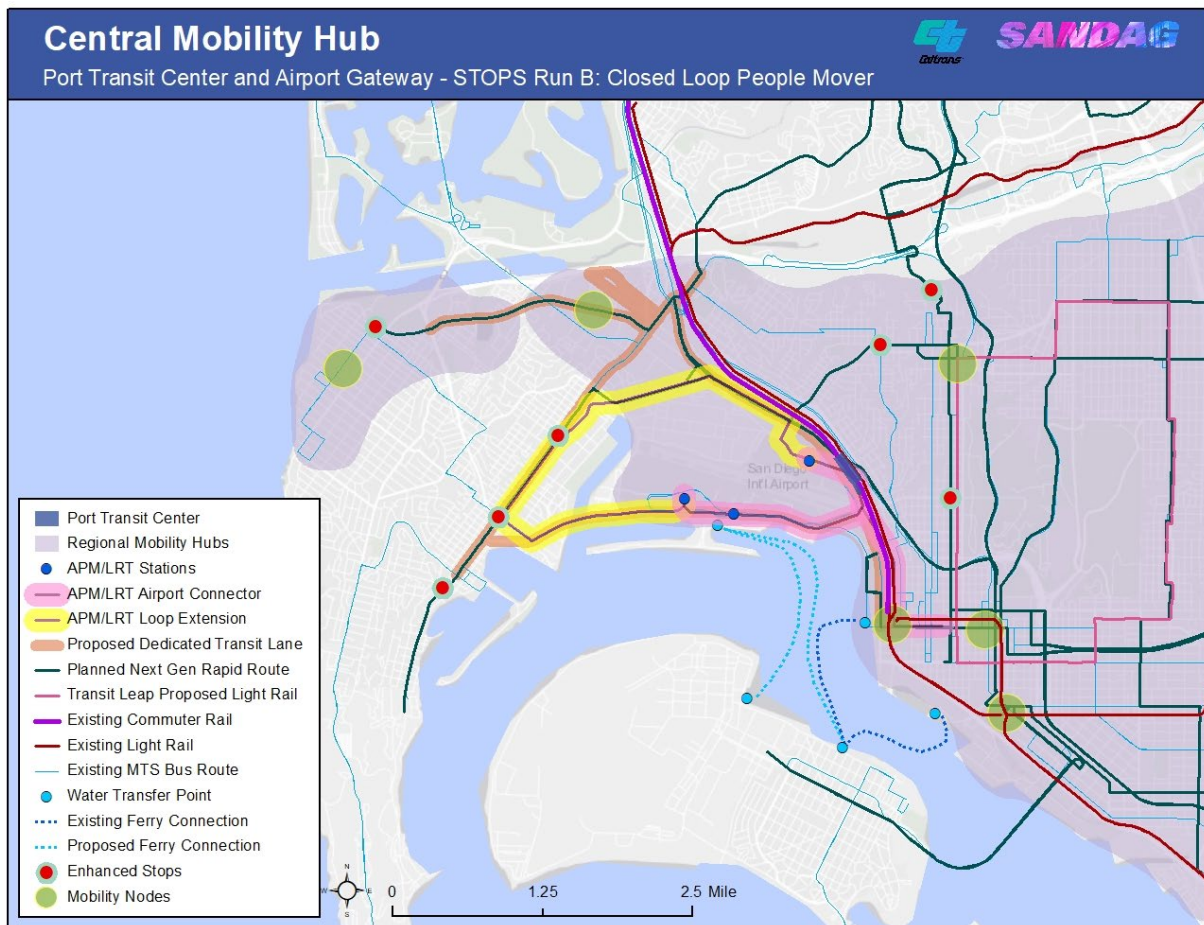
Figure 5-5: STOPS Run A



STOPS Run B – Airport Loop Fixed-Guideway

A scenario that assumes a loop configuration for the fixed-guideway, traversing and connecting the communities around the San Diego Airport. STOPS Run B is depicted in Figure 5-6.

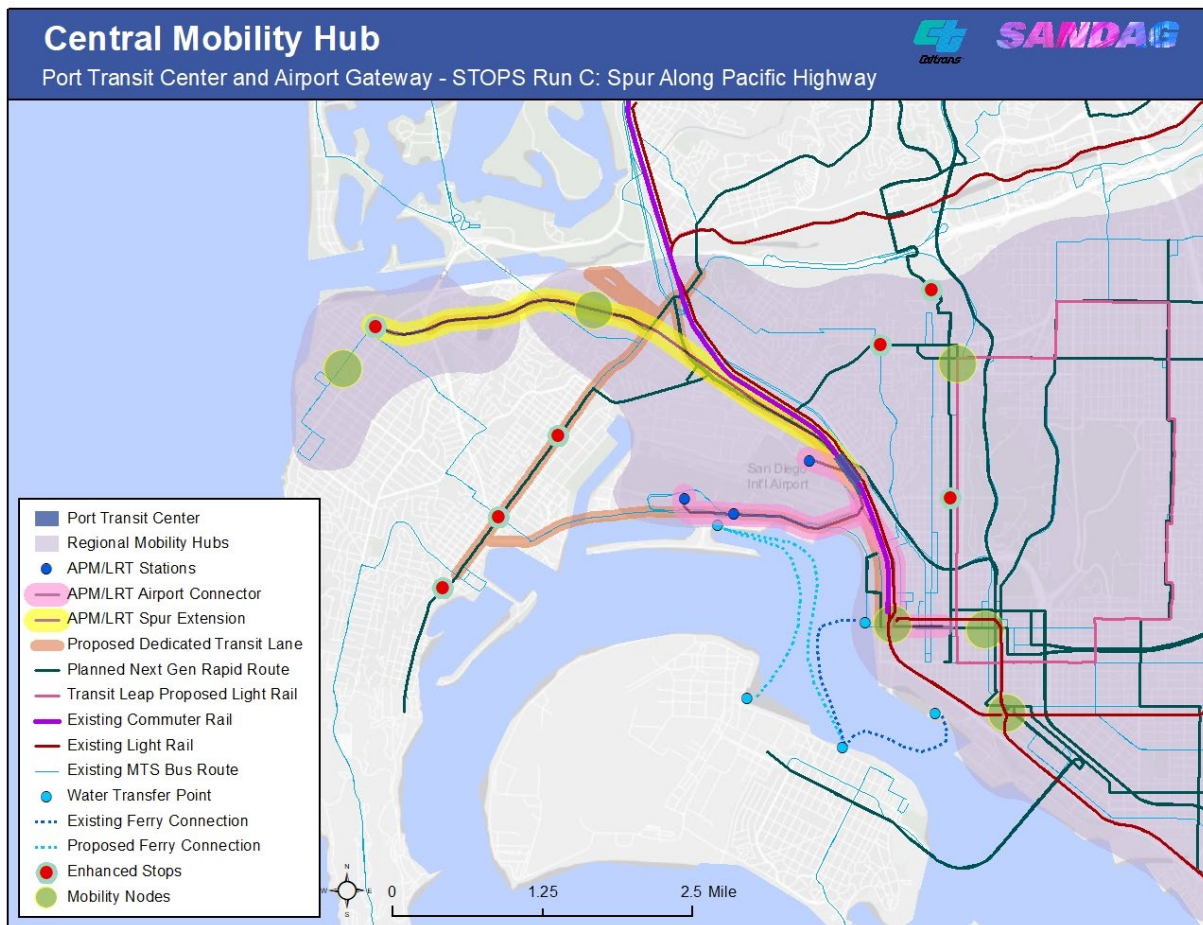
Figure 5-6: STOPS Run B



STOPS Run C – Fixed-Guideway to Downtown + Ocean Beach Spur

A scenario which assumes the extended fixed-guideway configuration of Concept 5B and includes the addition of a new extension from the PTC to Ocean Beach along Pacific Highway. STOPS Run C is depicted in Figure 5-7.

Figure 5-7: STOPS Run C



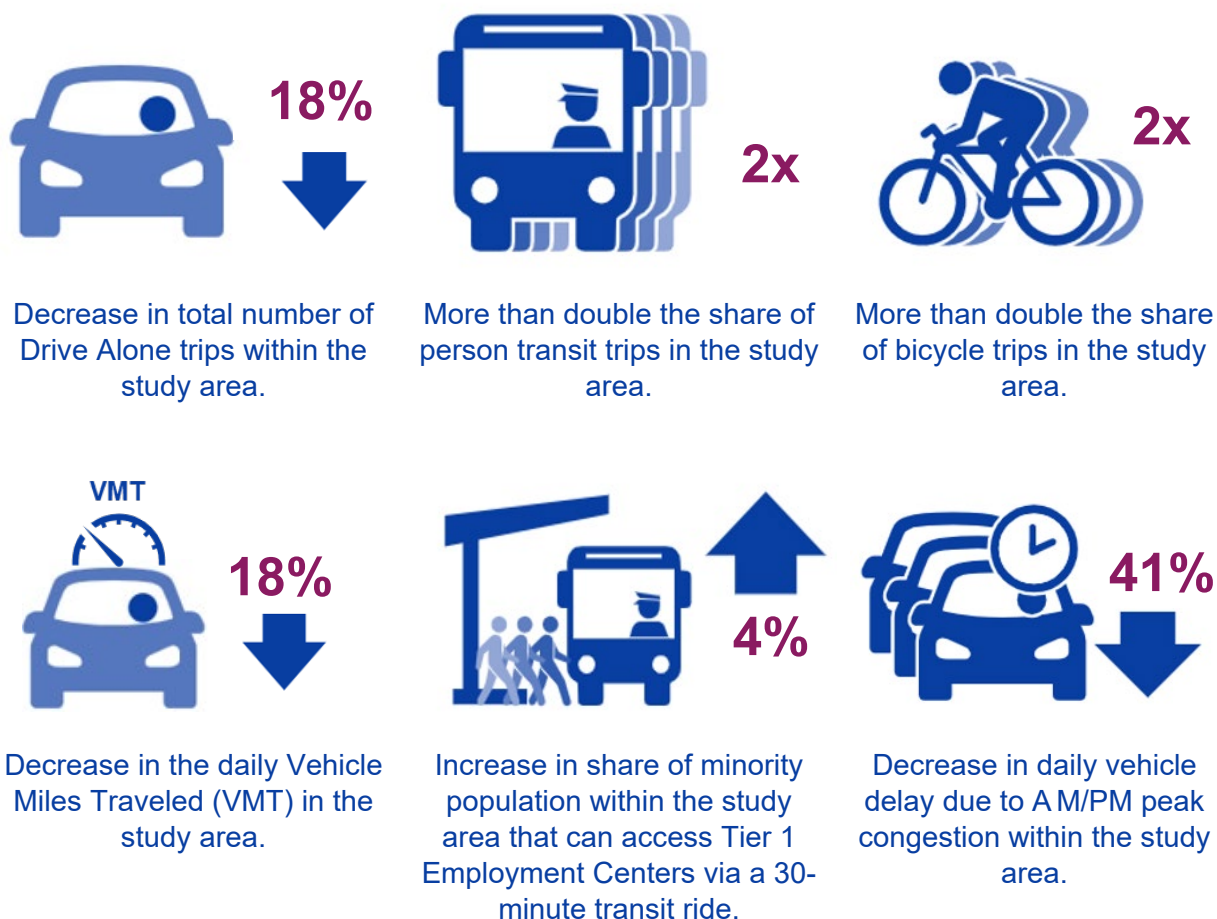
Although the STOPS modeling tool was implemented using a combination of data similar to ABM2+, its underlying data sets and model outputs differ from those of ABM2+. As a result, assessing the model results relative to the 2021 Regional Plan Build network baseline was not feasible. Instead, the project team used the results of STOPS Run A as a baseline for comparison between the other two STOPS model runs. This approach also allowed for establishing a reference link between the two models used.

5.2 Expected Benefits Analysis

ABM2+ Analysis

The analysis of the ABM2+ model runs shows that the proposed CMH and Connections CMCP alternatives would be highly effective in attaining the vast improvements of the 2021 Regional Plan network. Particularly, the results suggest that the proposed CMH scenarios establish a well-rounded multimodal transportation system that promotes a shift away from drive alone trips toward alternative modes of transportation. This shift is in part supported by the improved opportunity to rely on transit for regular commuting, as 90% of all residents within the study area could reach Tier 1 Employment Centers, 99.6% could access Tier 2 Employment Centers, and 83.6% could arrive at Higher Education Facilities – all within a 30-minute transit journey. The effectiveness of the CMH multimodal transportation networks is further proven by an observed reduction in Daily VMT values, even as the number of daily trips for all transportation modes is higher than those of the 2021 Regional Plan. The CMH alternatives are thus able to effectively support the movement of more people throughout the area, without the expected increases in greenhouse gas emissions.

Figure 5-8: Average benefits of the CMH and Connections CMCP model runs within the study area, when compared to the 2021 Regional Plan Network Improvements Results



Overall, the results between the Scenario 2: Concept 1B and Scenario 3: Concept 5B show comparable outcomes (detailed technical analysis and comparison of these results can be found in Appendix E). However, the improvements resulting from each of these scenarios are largely similar to the refined 2021 Regional Plan Network or baseline scenario, indicating that the most benefit is realized from implementation of projects already proposed in the Regional Plan. The most significant enhancements from which the study area would benefit when compared to the 2021 Regional Plan network improvements are highlighted in Figure 5-8.

The ABM2+ model run analysis underscores the noteworthy contributions made by the proposed CMH and Connections CMCP alternatives to the 2021 Regional Plan network. As such, it is vital to recognize that these represent incremental gains that build upon the already substantial improvements achieved by the 2021 Regional Plan. The additional improvements, made possible by the CMH and Connections CMCP alternatives, reflect the steadfast commitment to further strengthening the multimodal transportation system, ensuring greater accessibility for all residents, and reinforcing the overarching objectives of reducing greenhouse gas emissions and fostering sustainable mobility in the region.

STOPS Analysis

The results of the STOPS analysis for the CMH and Connections CMCP revealed numerous benefits of both proposed configurations (STOPS Run B and C). Specifically, compared to STOPS Run A, or the baseline scenario, both alternative fixed-guideway configurations result in an impressive, over tenfold increase in new transit trips, meaning additional trips on the fixed-guideway line that are a result of a mode shift from another mode. Additionally, both alternative configurations result in an over 30-fold increase in calculated VMT savings compared to the 2025 Future Existing Conditions scenario. The two proposed configurations show competing advantages, as shown in Table 5-1. The loop configuration proposed as part of STOPS Run B would result in the highest number of total boardings (number of passengers boarding the fixed-guideway line for each concept) across the network and at the airport. This suggests that the loop configuration would service the most airport trips overall and improve utilization of the fixed-guideway line by residents around the airport. The extended fixed-guideway service line (STOPS Run C) results in the highest number of new transit trips and calculated VMT savings – indicating that this configuration is overall more beneficial for reducing VMT and encouraging mode shift.

Table 5-1: STOPS Model Run Scenario Average Weekday Forecast

STOPS Model Run Scenario Average Weekday Forecast			
Concept	New Transit Trips	Total Boardings	VMT Savings
STOPS Run A: Airport Connector Fixed-Guideway	100	15,700	140
STOPS Run B: Airport Loop Fixed-Guideway	1,300	21,500	3,200
STOPS Run C: Fixed-Guideway to Downtown + Ocean Beach Spur	1,400	19,800	4,000

Active Transportation Analysis

Lastly, the Active Transportation (AT) Analysis concentrated on recommending new additions to the 2021 Regional Plan network. As the objective of the analysis was to provide AT amenities throughout the study area, the same AT network was considered for all three alternatives. The proposed improvements focused on improving network completeness and recommending extra mileage of AT facilities to maximize mode shift and vehicle miles traveled (VMT) reduction. The outcome is a proposed extension of the AT network by 20.6 miles of additional protected bikeways, a significant portion of which being Class II facilities that are upgraded to Class IV and Class I (Table 5-2). In areas where there are obstacles to obtaining right-of-way, such as West Point Loma Boulevard, the proposed network strives to balance the requirements for exclusive transit lanes, bikeways, and equitable effect on nearby high-density residential development.

Table 5-2: AT Analysis Recommended Network Improvements

AT Analysis Recommended Improvements	
Active Transportation Amenity Type	Recommended Network Extension
Class I	+1.3 miles
Class II	-11.2 miles
Class III	-4.5 miles
Class IV	+19.3 miles
Bus-Bike	+0.6 miles

Chapter 6. Implementation



6. Implementation

This chapter provides the implementation plan for the Central Mobility Hub (CMH) and Connections Comprehensive Multimodal Corridor Plan (CMCP) Transportation Solution Strategies (TSS), including an overview of the estimated costs and funding sources available, implementation phasing of the proposed strategies, limitations of the plan, and next steps after this initial effort.

6.1 Estimated Cost and Funding

To execute the CMH and Connections CMCP, preliminary costs were developed to assist in future strategic planning and fundraising efforts. This section details the estimated costs for the proposed TSS and potential funding sources.

Estimated Cost

Capital or installation costs were calculated and considered for every TSS proposed. Costs were developed using methods or estimates provided in the 2021 Regional Plan (RP) or other CMCPs. For costs not included in the 2021 RP, costs were derived from previously identified unit costs from peer reviewed studies or agency resources and further refined in consultation with subject matter experts.

All costs are escalated to 2022 dollars and account for 30% contingency, which is standard for transportation infrastructure and technology solutions at a preliminary/conceptual stage of development. The preliminary costs provided do not consider additional costs incurred during subsequent phases of planning, design, and support necessary to further develop each TSS.

The total capital cost of the 245 strategies proposed is approximately \$45.7 billion. Table 6-1 breaks down this cost by implementation phase.

Table 6-1: Cost Estimate by Phase

Cost Estimate by Phase	
Phase	Cost
Short-Term Implementation	\$320 million
Medium-Term Implementation	\$3.5 billion
Long-Term Implementation	\$41.9 billion
All Timeframes	\$45.7 billion

Funding

Additional funding streams will need to be pursued to execute the proposed TSS. There are two primary types of funding for the strategies under consideration: Discretionary and Formula Funds. Discretionary funds are awarded through a competitive grant process, based on the merit of a proposal. Formula funds are awarded without application through a predetermined selection criteria process.

These funding types can come from federal, state, or local sources. Federal transportation funding is primarily administered by the U.S. Department of Transportation (DOT). There are several federal discretionary grant programs available for local agency applicants, see Appendix E. To help finance projects, the Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides federal credit assistance to eligible surface transportation projects, including highway, roadway, transit, active transportation, and intelligent transportation system improvements.

State funding sources can supplement federal contributions or cover entire project costs. These sources include Senate Bill 1 (SB1), which over the next decade will invest \$54 billion to improve and repair roads and freeways, as well as provide transit and safety improvements throughout California. With the passage of SB1 in 2017, other state transportation funding sources were altered or created and are listed in Table 2. Additional funding opportunities can be found at California Grants Portal, a searchable database of state funding opportunities with additional information and resources on available funding.³⁵

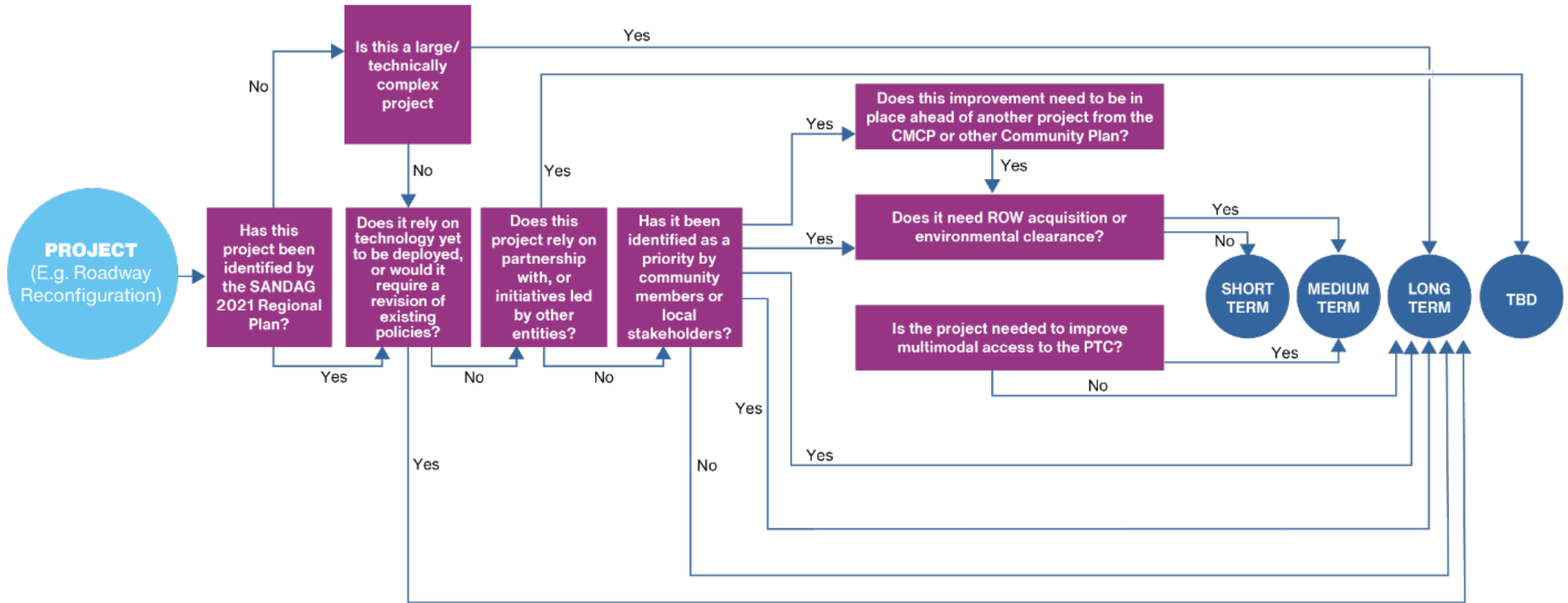
Local funding sources include the voter-approved *TransNet* program which places a half cent sales tax to fund transportation projects throughout San Diego County. *TransNet* has been extended until 2048 and is administered by SANDAG. Major construction and infrastructure projects were identified as Early Action Projects under *TransNet* and represent prioritized projects on a 10-year completion timeline. Two competitive grant programs to support walking, biking, and transit use in the region are also funded via *TransNet*. More information on funding sources can be found in Appendix E.

6.2 Phasing

Projects are distributed over a short (0-5 years), medium (6-10 years) and long (10+ years) term timeframe based on several factors. These factors include whether the project is listed in the SANDAG 2021 Regional Plan, if the project has been identified as a priority by community members or local stakeholders, complexity of the project, project readiness, and if there is funding available to initiate the project. The phased implementation of the transit facility at the Port Transit Center (PTC) was also taken into consideration, as some of the transportation strategies will need to be in place either prior to or following the opening of the PTC. Implementation phasing follows a decision tree model approach, as shown below in Figure 6-1, and is further refined by a TSS Scoring methodology.

³⁵ <https://www.grants.ca.gov/>

Figure 6-1: Implementation Decision Tree



TSS Scoring Methodology

The approach to assess the phasing timeframe for each TSS is similar and consistent with other CMCP efforts conducted by SANDAG and Caltrans. Each TSS was qualitatively evaluated against five criteria (Construction/Operational Complexity, Anticipated Environmental Clearance, Right Of Way (ROW) impact, Cost, Policy Considerations) and rated based on whether the strategy would lead to a low, medium, or high impact on project delivery, or complexity in each evaluated criterion.

Each rating was scored according to the following point system:

- Low impact = 3 points
- Medium impact = 2 points
- High impact = 1 point

The scores were totaled by project, with the highest scores highlighting projects that are the easiest to implement or that have the highest priority.

Additional factors considered included:

Dependencies: Identifies whether an improvement must be preceded by implementation of another project. For example, a project that is phased in the short-term based on the initial implementation criteria may be pushed to a medium-term phase or later if it is dependent upon the implementation of another strategy. The assumption is that one project would be fully built and then another project would begin without developing the project simultaneously at risk.

Implementation Readiness: If current technologies, practices, processes, and/or partnerships are already in place to support project implementation, then the phasing was revised based on this assessment. This includes existing design plans, environmental clearance, or ROW.

Phasing determinations assessed both the TSS score, and the dependencies and implementation readiness considerations for each project, providing a qualitative and quantitative approach.

TSS Implementation Phasing

Across all implementation phasing, there are a total of 245 CMH and Connections CMCP TSS proposed. A total of 104 TSS are phased for the short-term, 122 TSS are phased for the medium-term, and 19 TSS are phased for the long-term timeframe, see Table 6-2. For a complete list of the proposed TSS and their corresponding implementation phasing, see Appendix E.

Table 6-2: TSS Implementation Phases

TSS Implementation Phases	
Phase	Total No. of Strategies
Short-Term Implementation	104
Medium-Term Implementation	122
Long-Term Implementation	19
TSS – All Timeframes	245

It is recommended that some projects be bundled and phased together or in succession to maximize benefit. For instance, managed lanes on I-5 should be completed simultaneously with I-5 Next OS enhancements like dynamic lane assignments and shoulder running. While managed lanes on I-5 and I-8 should be in place before the Old Town Avenue Interchange reconfiguration. Similarly, smart intersections should be completed concurrently with the implementation of dedicated transit only lanes along the Pacific Coast Highway, Rosecrans St, Sports Arena Blvd, Point and N Harbor Dr. Improvements to the active transportation network around the Sports Arena Redevelopment should be done in concert with roadway transit enhancement. For instance, Class I enhancements on Sports Arena Blvd should happen at the same time as the dedicated transit lane is installed on the roadway.

Rapid buses should be implemented at the same time as the relevant enhanced stops or mobility hub nodes are installed so that complete service enhancement can be actualized. Generally, mobility hub and enhanced stop amenities should be phased with the transit routes these locations service. For instance, the PTC mobility hub should be implemented at the same time as the connections to the PTC are complete, all of which are projected for the medium-term. All connections or extensions to the PTC should be bundled together and implemented once the PTC and PTC mobility hub are in place.

6.3 Limitations of the Plan

This CMCP presents strategies and high-level concepts to improve travel across all modes in the CMH study area. Improvements are represented by projects and programs categorized under Highway and Roadway, Active Transportation, Mobility Hubs and Flexible Fleets, Transit, and Next OS. The proposed TSS were developed and refined through engagement with regional stakeholders including City of San Diego, Metropolitan Transit System, community-based organizations, subject matter experts, and the public. The list of strategies was developed with this input and represents conceptual improvements that will require further project planning and design before actual implementation can occur.

Analysis completed as part of this study helps to prioritize and plan, both conceptually and financially, for the additional work required to fully implement the strategies and solutions proposed. However, cost estimates do not factor in subsequent planning and overhead costs, and each TSS must undergo unique construction and design review and as well as the necessary clearances to proceed. The timeline for implementation of the proposed TSS spans 10+ years; as projects are implemented and technology advances the recommendations in this document may need to be reevaluated and assessed against the changing conditions of the CMH study area.

6.4 Next Steps

The CMCP will be a resource for SANDAG and Caltrans when planning for and securing funding for improvements in the region. The compiled TSS were created using a comprehensive approach to reimagine mobility in the study area that centers equity, accessibility, and improved quality of life. The result is a suite of multimodal transportation improvements that align with and advance regional, state, and local objectives. The plan compiles the TSS into specific strategies prioritizing and suggesting phasing and noting dependencies as well as implementation considerations for further development. This framework will enable SANDAG and Caltrans to compete for and secure funding to advance specific strategies. To progress the select projects, programs, and policies, SANDAG and Caltrans will continue to collaborate and seek stakeholder input as they further refine the recommended strategies – turning ideas into reality.