



Airport Transit Connection Concept Evaluation Study Addendum

September 2026

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Acronyms/Abbreviations

Acronym/Abbreviations	Definition
ABM	activity-based model
APM	Automated People Mover
ATC	Airport Transit Connection
Board	San Diego Association of Governments Board of Directors
Caltrans	California Department of Transportation
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CONRAC	Consolidated Rental Car Center
CPUC	California Public Utilities Commission
DAR	direct access ramp
EIR	environmental impact report
FAA	Federal Aviation Administration
LOSSAN	Los Angeles–San Diego–San Luis Obispo Rail Corridor
LRT	light rail transit
MSA	Major Statistical Area
MTS	San Diego Metropolitan Transit System
NCTD	North County Transit District, operating as North County Transit – San Diego Railroad
NEPA	National Environmental Policy Act
OMSF	operations, maintenance, and storage facility
O&M	operations and maintenance
OTTC	Old Town Transit Center
PDT	project development team
PTC	Port Transit Center
RPZ	runway protection zone
SANDAG	San Diego Association of Governments
SDIA	San Diego International Airport
Study	Concept Evaluation Study
TBM	tunnel boring machine
Trolley	San Diego Trolley
UC San Diego	University of California, San Diego
USFWS	United States Fish and Wildlife Service

1 Executive Summary

1.1 Introduction

The San Diego Association of Governments (SANDAG) prepared the Airport Transit Connection (ATC) Concept Evaluation Study (Study) in July 2023 to develop and evaluate concepts to create a regional transit connection to San Diego International Airport (SDIA). These concepts fall within three transit modes: automated people mover (APM), San Diego Trolley (Trolley) light rail transit (LRT), and enhanced bus service. Five APM concepts were evaluated involving transit connections to the north and/or south of SDIA with variations of stops, termini, configurations, and features. These five APM concepts include two north-route-only concepts and three concepts with north and south routes combined. The study noted that SANDAG also planned to evaluate a south-route only option in subsequent studies. In addition to the five APM concepts, one concept was studied for the Trolley mode, and one concept was studied for the enhanced bus mode. The concepts included in the Study are summarized in Table 2-1. SANDAG presented the Study at the July 2023 SANDAG Board of Directors (Board) Meeting.

Following release of the study, SANDAG staff continued coordination with partner agencies, including the San Diego Metropolitan Transit System (MTS), SDIA, City of San Diego, North County Transit District, operating as North County Transit – San Diego Railroad (NCTD), and Port of San Diego to receive additional input. SANDAG also provided an update to the Board in February 2024. Consequently, SANDAG reevaluated next steps and determined that analysis in advance of the environmental process was needed to further screen modes and alignments and advance the project to align with the most recent regional forecasts. A post-pandemic airport travel survey and airport model calibration was necessary to update this travel market within the SANDAG activity-based model (ABM). The 2024 Airport Travel Survey established the baseline of current airport travel and provided insights into the travel preferences of air passengers and employees.

At the February 2024 Board update, staff also committed to developing near-term strategies for enhancing bus and shuttle connections. These could include more frequent service to and from the airport and transit priority treatments to benefit MTS Route 992, the San Diego Flyer, and other shuttle services. In 2026, SANDAG moved forward with agreements to fund enhancements to MTS Route 992 service in the near-term.

This addendum reflects the continued planning work to evaluate and determine the rail concepts that could advance to a future environmental clearance phase. The addendum incorporates the following new technical work conducted as part of this continued planning work, as described further in Section 3:

- Development of project objectives and a draft Purpose and Need Statement
- Trolley operational modeling
- SANDAG's 2024 Airport Travel Survey
- Identification of APM Operations, Maintenance, and Storage Facility (OMSF) locations
- Updated capital cost estimating
- Updated ridership forecasts, using similar fare inputs for all concepts

The addendum also reflects concept refinements developed in response to partner agency feedback (Section 4) including development of a new Trolley concept and evaluation of standalone south route concepts that correspond to the southern route of the APM north and south route concepts in the Study (Table 1-1). A pare down approach was developed to further evaluate the rail concepts considered in the Study, inclusive of concept refinements (Section 5).

Table 1-1: Concepts Included in the Addendum.

Mode		Concept	Variations	Description
APM	North-Only Routes	Concept 1: SDIA to CONRAC/PTC	Concept 1A: SDIA to CONRAC/PTC Concept 1B: Concept 1A + DAR to/from I-5 Concept 1C: Concept 1A + LOSSAN (COASTER and/or Surfliner) Platform	Concept 1A alignment: Hybrid of elevated, at-grade, cut-and-cover tunnel Concept 1C: single platform to be served bi-directionally
		Concept 2: SDIA to OTTC	No variations	Hybrid of elevated, at-grade, cut-and-cover alignment
	North and South Routes Combined	Concept 3: SDIA to PTC/CONRAC and Santa Fe Depot	Concept 3A: Elevated South Route	Concept 1A + all elevated south route
			Concept 3B: Bored Tunnel South Route	Concept 1A + all underground south route
			Concept 3C: Hybrid (elevated and bored tunnel) South Route	Concept 1A + elevated south route alignment transitions to underground alignment near Harbor Dr/Hawthorn St
		Concept 4: SDIA to PTC/CONRAC and Convention Center	Concept 4A: Elevated South Route	Concept 1A + all elevated south route
			Concept 4B: Bored Tunnel South Route	Concept 1A + all underground south route
			Concept 4C: Hybrid (elevated and bored tunnel) South Route	Concept 1A + elevated south route alignment transitions to underground alignment near Harbor Dr/Hawthorn St
		Concept 5: SDIA to PTC/CONRAC and Civic Center	Concept 5A: Elevated South Route	Concept 1A + all elevated south route
			Concept 5B: Bored Tunnel South Route	Concept 1A + all underground south route
			Concept 5C: Hybrid (elevated and bored tunnel) South Route	Concept 1A + elevated south route alignment transitions to underground alignment near Harbor Dr/Hawthorn St
	South-Only Routes	Concept 8: SDIA to Santa Fe Depot	Concept 8A: Elevated	All elevated alignment
			Concept 8B: Hybrid (elevated and bored tunnel)	Elevated alignment transitions to underground alignment near Harbor Dr/Hawthorn St
		Concept 9: SDIA to Convention Center	Concept 9A: Elevated	All elevated alignment
			Concept 9B: Hybrid (elevated and bored tunnel)	Elevated alignment transitions to underground alignment near Harbor Dr/Hawthorn St
		Concept 10: SDIA to Civic Center	Concept 10A: Elevated	All elevated alignment
			Concept 10B: Hybrid (elevated and bored tunnel)	Elevated alignment transitions to underground alignment near Harbor Dr/Hawthorn St

Mode	Concept	Variations	Description
Trolley	Concept 6: SDIA to 12th & Imperial Transit Center	Concept 6A: 12th and Imperial Transit Center to Hawthorn St; spur tracks to SDIA	Shared Blue/Green/Airport Trolley tracks between 12th & Imperial Transit Center and Hawthorn St.; Hybrid underground, at-grade, and elevated spur to SDIA
		Concept 6B: 12th and Imperial Transit Center to Hawthorn St; extend existing Trolley trench south to B St; spur to SDIA; and grade separate three Trolley crossings.	Shared Blue/Green/Airport Trolley tracks between 12th & Imperial Transit Center and Hawthorn St.; Extend existing Trolley trench south to B St./Santa Fe Depot; Hybrid underground, at-grade, and elevated spur to SDIA; grade separate Trolley crossings at West Cedar Street, West Beech Street, and West Ash Street.

Source: SANDAG 2025

Notes: APM = Automated People Mover; CONRAC = Consolidated Rental Car Center; DAR = direct access ramp; LOSSAN = Los Angeles–San Diego–San Luis Obispo Rail Corridor; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

1.2 Pare Down

The concepts studied in this addendum were evaluated using a three-round approach, described in the sections that follow.

1.2.1 Pare Down Round 1

A set of quantitative pare down metrics was developed to evaluate the concepts based on information available in 2025. These metrics were grouped into two categories, travel markets and transit connectivity. The detailed assessment of Round 1 is included in Section 5.1. Concept 6A-B received the highest overall score when considering all metrics, followed by Concept 5A-C/10A-B (tied) and, 4A-C. Concept 1A-C and Concept 2 received the lowest scores and were therefore not recommended to advance into Round 2 of the pare down process. All other concepts were advanced to Round 2.

1.2.2 Pare Down Round 2

Round 2 evaluated the concepts that advanced from Round 1 using both quantitative and qualitative criteria. Four categories of criteria were developed for this evaluation:

- Cost Considerations
- Complexity
- Compatibility
- Operational Considerations

The recommendations resulting from the Round 2 assessment are summarized in Table 1-2.

Table 1-2: Round 2 Recommendations

Mode	Terminus	Concept	Description	Recommendation
APM	Santa Fe Depot	3A	SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	Remove from consideration
		3B	SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route	Remove from consideration
		3C	SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid (elevated and bored tunnel) South Route	Remove from consideration
		8A	SDIA to Santa Fe Depot – Elevated	Advance to Round 3
		8B	SDIA to Santa Fe Depot – Hybrid (elevated and bored tunnel)	Advance to Round 3
	Convention Center	4A	SDIA to PTC/CONRAC and Convention Center – Elevated South Route	Remove from consideration
		4B	SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	Remove from consideration
		4C	SDIA to PTC/CONRAC and Convention Center– Hybrid (elevated and bored tunnel) South Route	Remove from consideration
		9A	SDIA to Convention Center – Elevated	Advance to Round 3
		9B	SDIA to Convention Center – Hybrid (elevated and bored tunnel)	Remove from consideration
	Civic Center	5A	SDIA to PTC/CONRAC and Civic Center – Elevated South Route	Remove from consideration

Mode	Terminus	Concept	Description	Recommendation
		5B	SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	Remove from consideration
		5C	SDIA to PTC/CONRAC and Civic Center – Hybrid (elevated and bored tunnel) South Route	Remove from consideration
		10A	SDIA to Civic Center – Elevated	Remove from consideration
		10B	SDIA to Civic Center – Hybrid (elevated and bored tunnel)	Remove from consideration
Trolley	12th & Imperial Transit Center	6A	SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	Advance to Round 3
		6B	SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA	Advance to Round 3

Source: WSP 2026

Notes: CONRAC = Consolidated Rental Car Center; PTC = Port Transit Center; SDIA = San Diego International Airport

1.2.3 Pare Down Round 3

Round 3 considered additional information for the concepts that advanced from Round 2. Based on partner agency requests, travel times and ridership forecasts were calculated for each remaining concept (Concepts 6A-B, Concepts 8A-B, and Concept 9A). The evaluation of travel time and ridership is detailed in Section 5.3, including station-to-station travel time and station boardings.

1.3 Partner Agency Collaboration and Public Outreach

Throughout the new technical analysis and pare down process, SANDAG coordinated with partner agencies to provide regular status updates, and to receive input on new technical work, concept refinements, and the pare down approach. SANDAG also held regular project development team (PDT) meetings with representatives from the California Department of Transportation (Caltrans), the City of San Diego, MTS, NCTD, the Port of San Diego, and SDIA to provide project updates. SANDAG also held a series of stakeholder roundtables comprised of members of the public and local organizations. Coordination efforts are summarized in Section 6.

1.4 Conclusion

The concepts considered in Round 3 of the pare down process could advance into a future environmental clearance phase for a rail connection to SDIA:

- Concept 6A Trolley: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA
- Concept 6B Trolley: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA
- Concept 8A APM: SDIA to Santa Fe Depot – Elevated
- Concept 8B APM: SDIA to Santa Fe Depot – Hybrid (elevated and bored tunnel)
- Concept 9A APM: SDIA to Convention Center – Elevated

As demonstrated throughout this addendum, these concepts provide a variety of benefits, including serving different locations in downtown San Diego, while balancing capital cost, O&M, and complexity

considerations. While underground or trenched concepts, such as those included in Concepts 8B and 6B, would increase cost, they could provide benefits to the surrounding community. Additionally, Concept 9A could be included in an environmental document with phased construction, with Concept 8A comprising the first phase of implementation and the extension from Santa Fe Depot to Convention Center as the second phase. An update to the SANDAG Transportation Committee will occur in the fall.

As the timing of a future environmental clearance phase is unknown, updated studies may be required prior to initiating environmental clearance to determine if the complexity or benefits of the alignments would differ from those identified in this study. An update to the SANDAG Transportation Committee and to partner agencies will occur in the fall of 2026.

2 Introduction

SANDAG prepared the Study, released in July 2023, to develop and evaluate concepts to create a regional transit connection to SDIA. This addendum builds off the Study and prior studies to evaluate and identify the leading concepts that could advance to the environmental clearance phase and be considered for creating a direct transit connection to SDIA.

2.1 Background

The need for a regional transit connection to SDIA has been discussed in the San Diego region for almost 40 years. This need is becoming more urgent as SDIA undertakes expansion efforts to meet growing demand, including the redevelopment of Terminal 1 currently underway. Phase 1 of the Terminal 1 redevelopment project, including a new on-airport roadway, opened in September 2025. In 2019, the San Diego County Regional Airport Authority collaborated with SANDAG to preserve a “transit-ready area” for a future transit connection. A 10-year airline operating and lease agreement financially supports the redevelopment of Terminal 1 and could provide funding for eligible airport-related transportation projects if other regional funding sources can be secured.

In 2018, the SANDAG Board convened the Airport Connectivity Subcommittee composed of a group of elected leaders from around the region working with the San Diego County Regional Airport Authority, the Port of San Diego, and other relevant agencies to explore opportunities to connect SDIA to the regional transit system. In 2019, the Board initiated preliminary environmental analysis, planning, and engineering for a regional transit solution for the airport, including the option of a Central Mobility Hub and Airport Transit Connection (ATC). In 2021, the Board approved San Diego Forward: The 2021 Regional Plan, which included the establishment of a direct connection from the regional transit system to SDIA (SANDAG 2012). In May 2022, SANDAG leadership provided an update to the Board on the progress of its efforts with respect to development of a Central Mobility Hub and an ATC. The Board expressed a desire to further understand the different alternative concepts under consideration, including three transit modes: APM, Trolley LRT, and enhanced bus service.

In response, SANDAG developed the Study. The Study evaluated various transit concepts and routes, with the three transit modes, for creating a direct transit connection to SDIA. Seven concepts were evaluated in this study, as outlined in Table 2-1. Of the five APM concepts evaluated, two concepts included transit connections to the north only, and three concepts included connections to the north and south of SDIA. All concepts had variations of stops, termini, alignment configurations, and other features. The study noted that SANDAG also planned to evaluate a south-route only concept in subsequent studies. In addition to the five APM concepts, one concept was studied for the Trolley mode, and one concept was studied for the enhanced bus mode. The purpose of the study was to develop and evaluate the leading concepts to create a regional transit connection to SDIA, with the intent to continue refining and identifying other variations of the concepts as part of the future environmental clearance phase.

Table 2-1: Concepts Included in the Concept Evaluation Study

Mode	Concept		Potential Features/Variations
APM	North Route Only ¹	Concept 1 SDIA to CONRAC/PTC	Concept 1A: SDIA to CONRAC/PTC Concept 1B: Concept 1A + DAR to/from I-5 Concept 1C: Concept 1A + LOSSAN (COASTER and/or Surfliner) Platform
		Concept 2: SDIA to OTTC	N/A
	North and South Routes Combined	Concept 3: SDIA to PTC/CONRAC and Santa Fe Depot	Concept A: Elevated Concept B: Bored Tunnel Concept C: Hybrid (elevated and bored tunnel)
		Concept 4: SDIA to PTC/CONRAC and Convention Center	
		Concept 5: SDIA to PTC/CONRAC and Civic Center	
Trolley	Concept 6: SDIA to 12th & Imperial Transit Center		N/A
Enhanced Bus	Concept 7: Route from SDIA to OTTC and Route from SDIA to Santa Fe Depot and City College		N/A

Source: SANDAG 2022

Notes: ¹ For the ATC concepts, the Concept Evaluation Study started with the assumption that a north route was necessary in any configuration to accommodate potential locations for a required vehicle maintenance and storage facility. For this reason, a full evaluation of south-route-only concepts was not included in the study, APM = Automated People Mover; ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; DAR = direct access ramp; LOSSAN = Los Angeles–San Diego–San Luis Obispo Rail Corridor; N/A = not applicable; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

SANDAG presented the Study at the July 2023 SANDAG Board Meeting. Following release of the study and update to the Board, SANDAG staff continued coordination with partner agencies, including MTS, SDIA, City of San Diego, NCTD, and Port of San Diego, to receive additional input. SANDAG provided an additional update to the Board in February 2024 to discuss steps being taken to prepare the project for future environmental analysis.

Consequently, SANDAG reevaluated next steps and determined that analysis in advance of the environmental process was needed to further screen modes and alignments and advance the project to align with the most recent regional forecasts. A post-pandemic airport travel survey and airport model calibration were necessary to update this travel market within the SANDAG model. The Airport Travel Survey established the baseline of current airport travel and provided insights into the travel preferences of air passengers and employees. At the February 2024 Board update, staff also committed to developing near-term strategies for enhancing bus and shuttle connections. These strategies could include more frequent service to and from the airport and transit priority treatments for MTS Route 992, the San Diego Flyer, and other shuttle services. Such strategies would enhance existing transit service to the airport prior to the implementation of a connection via rail. As enhanced bus service will be considered by other SANDAG studies, this report focuses exclusively on refining rail concepts, without further considering the enhanced bus concept from the 2023 study.

This addendum reflects the continued planning work to evaluate and determine the concepts that could advance to a future environmental clearance phase. The addendum incorporates new technical work including development of project objectives and a Purpose and Need Statement, Trolley operational modeling to determine the feasibility of improved frequencies, SANDAG's 2024 Airport Travel Survey, identification of APM OMSF locations, and updated cost estimating. Additionally, in response to

community and stakeholder feedback, standalone south route concepts associated with APM Concepts 3, 4, and 5 were identified and staff developed a new Trolley concept to reduce the at-grade Trolley configuration (Section 4) in Downtown San Diego. A pare down approach, detailed in Section 5, was developed to further evaluate the rail concepts considered in the Study, inclusive of these concept refinements. The results of the pare down process are summarized in Section 7.

2.2 Purpose of Addendum

The purpose of this addendum is to evaluate and identify the leading concepts that could advance to a future environmental clearance process. This addendum builds off the Study, incorporating new technical work (Section 3), concept refinements (Section 4), and stakeholder coordination (Section 6).

2.3 Concepts Studied in this Addendum

Table 2-2 provides a description of each concept evaluated in this addendum, and Table 2-3 outlines the concept characteristics. The concepts are shown on Figure 2-1 through Figure 2-21. In addition to the rail concepts in the Concept Evaluation Study, the concept refinements in this addendum include three south route-only APM concepts, referred to as Concepts 8, 9, and 10, as well as a new Trolley concept, referred to as Concept 6B. These concept refinements are described in Section 4. The bus concept evaluated in the Study (Concept 7: Route from SDIA to Old Town Transit Center [OTTC] and Route from SDIA to Santa Fe Depot and City College) is not included in this addendum as the focus of the pare down is on the rail concepts. SANDAG is continuing to consider the bus concept through near and mid-term bus priority solutions.

Table 2-2: Concepts Included in the Addendum

Mode		Concept	Variations	Description
APM	North-Only Routes	Concept 1: SDIA to CONRAC/PTC	Concept 1A: SDIA to CONRAC/PTC Concept 1B: Concept 1A + DAR to/from I-5 Concept 1C: Concept 1A + LOSSAN (COASTER and/or Surfliner) Platform	Concept 1A alignment: Hybrid of elevated, at-grade, cut-and-cover tunnel Concept 1C: single platform to be served bi-directionally
		Concept 2: SDIA to OTTC	No variations	Hybrid of elevated, at-grade, cut-and-cover alignment
	North and South Routes Combined	Concept 3: SDIA to PTC/CONRAC and Santa Fe Depot	Concept 3A: Elevated South Route	Concept 1A + all elevated south route
			Concept 3B: Bored Tunnel South Route	Concept 1A + all underground south route
			Concept 3C: Hybrid (elevated and bored tunnel) South Route	Concept 1A + elevated south route alignment transitions to underground alignment near Harbor Dr/Hawthorn St
		Concept 4: SDIA to PTC/CONRAC and Convention Center	Concept 4A: Elevated South Route	Concept 1A + all elevated south route
			Concept 4B: Bored Tunnel South Route	Concept 1A + all underground south route
			Concept 4C: Hybrid (elevated and bored tunnel) South Route	Concept 1A + elevated south route alignment transitions to underground alignment near Harbor Dr/Hawthorn St
		Concept 5: SDIA to PTC/CONRAC and Civic Center	Concept 5A: Elevated South Route	Concept 1A + all elevated south route
			Concept 5B: Bored Tunnel South Route	Concept 1A + all underground south route
			Concept 5C: Hybrid (elevated and bored tunnel) South Route	Concept 1A + elevated south route alignment transitions to underground alignment near Harbor Dr/Hawthorn St
	South-Only Routes	Concept 8: SDIA to Santa Fe Depot	Concept 8A: Elevated	All elevated alignment
			Concept 8B: Hybrid (elevated and bored tunnel)	Elevated alignment transitions to underground alignment near Harbor Dr/Hawthorn St
		Concept 9: SDIA to Convention Center	Concept 9A: Elevated	All elevated alignment
			Concept 9B: Hybrid (elevated and bored tunnel)	Elevated alignment transitions to underground alignment near Harbor Dr/Hawthorn St
		Concept 10: SDIA to Civic Center	Concept 10A: Elevated	All elevated alignment
			Concept 10B: Hybrid (elevated and bored tunnel)	Elevated alignment transitions to underground alignment near Harbor Dr/Hawthorn St

Mode	Concept	Variations	Description
Trolley	Concept 6: SDIA to 12th & Imperial Transit Center	Concept 6A: 12th and Imperial Transit Center to Hawthorn St; spur tracks to SDIA	Shared Blue/Green/Airport Trolley tracks between 12th & Imperial Transit Center and Hawthorn St.; Hybrid underground, at-grade, and elevated spur to SDIA
		Concept 6B: 12th and Imperial Transit Center to Hawthorn St; extend existing Trolley trench south to B St; spur to SDIA; and grade separate three Trolley crossings	Shared Blue/Green/Airport Trolley tracks between 12th & Imperial Transit Center and Hawthorn St.; Extend existing Trolley trench south to B St./Santa Fe Depot; Hybrid underground, at-grade, and elevated spur to SDIA; grade separate Trolley crossings at West Cedar Street, West Beech Street, and West Ash Street.

Source: SANDAG 2025

Notes: APM = Automated People Mover; CONRAC = Consolidated Rental Car Center; DAR = direct access ramp; LOSSAN = Los Angeles–San Diego–San Luis Obispo Rail Corridor; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

Table 2-3: Concept Characteristics

Concepts	Length of at-grade (miles)	Length of elevated structure (miles)	Length of tunnel (miles)	Length on existing tracks (miles)	Length in reconstructed trench (miles)	Total alignment length (miles)	Number of stations
APM Concept 1A-C1: SDIA to CONRAC/PTC	0.40	1.75	0.25	—	—	2.40	Up to 4 stations ²
APM Concept 2: SDIA to OTTC	0.40	3.48	0.25	—	—	4.13	Up to 4 stations ²
APM Concept 3A: SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	0.40	3.17	0.25	—	—	3.83	Up to 6 stations ³
APM Concept 3B: SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route	0.40	1.75	1.44	—	—	3.59	Up to 6 stations ³
APM Concept 3C: SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid South Route	0.54	2.16	1.11	—	—	3.81	Up to 6 stations ³
APM Concept 4A: SDIA to PTC/CONRAC and Convention Center – Elevated South Route	0.40	4.11	0.25	—	—	4.77	Up to 7 stations ³
APM Concept 4B: SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	0.40	1.75	2.39	—	—	4.55	Up to 7 stations ³
APM Concept 4C: SDIA to PTC/CONRAC and Convention Center – Hybrid South Route	0.54	2.16	2.05	—	—	4.75	Up to 7 stations ³
APM Concept 5A: SDIA to PTC/CONRAC and Civic Center – Elevated South Route	0.40	3.58	0.25	—	—	4.23	Up to 7 stations ³
APM Concept 5B: SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	0.40	1.75	1.84	—	—	3.99	Up to 7 stations ³
APM Concept 5C: SDIA to PTC/CONRAC and Civic Center – Hybrid South Route	0.54	2.16	1.52	—	—	4.22	Up to 7 stations ³
Trolley Concept 6A: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	0.18	1.40	0.27	2.04	—	3.89	Up to 8 (6 existing) ²
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA	0.18	1.40	0.27	1.50	0.54	3.89	Up to 8 (6 existing) ²
APM Concept 8A: SDIA to Santa Fe Depot – Elevated	0.00	2.51	0.00	—	—	2.51	Up to 4 stations ²

Concepts	Length of at-grade (miles)	Length of elevated structure (miles)	Length of tunnel (miles)	Length on existing tracks (miles)	Length in reconstructed trench (miles)	Total alignment length (miles)	Number of stations
APM Concept 8B: SDIA to Santa Fe Depot – Hybrid	0.14	1.50	0.86	—	—	2.50	Up to 4 stations ²
APM Concept 9A: SDIA to Convention Center – Elevated	0.00	3.45	0.00	—	—	3.45	Up to 5 stations ²
APM Concept 9B: SDIA to Convention Center – Hybrid	0.14	1.50	1.80	—	—	3.43	Up to 5 stations ²
APM Concept 10A: SDIA to Civic Center – Elevated	0.00	2.91	0.00	—	—	2.91	Up to 5 stations ²
APM Concept 10B: SDIA to Civic Center – Hybrid	0.14	1.50	1.27	—	—	2.90	Up to 5 stations ²

Source: WSP and HDR 2026

Notes: ¹ The characteristics presented are common for Concept 1A, 1B, and 1C

² Harbor Island is an optional station

³ Harbor Island and County Administration Building are optional stations

Numbers may not equal due to rounding

APM = Automated People Mover; CONRAC = Consolidated Rental Car Center; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

Figure 2-1: APM Concept 1A SDIA to CONRAC/PTC



Source: SANDAG 2025

Figure 2-2: APM Concept 1B SDIA to CONRAC/PTC with Direct Access Ramp



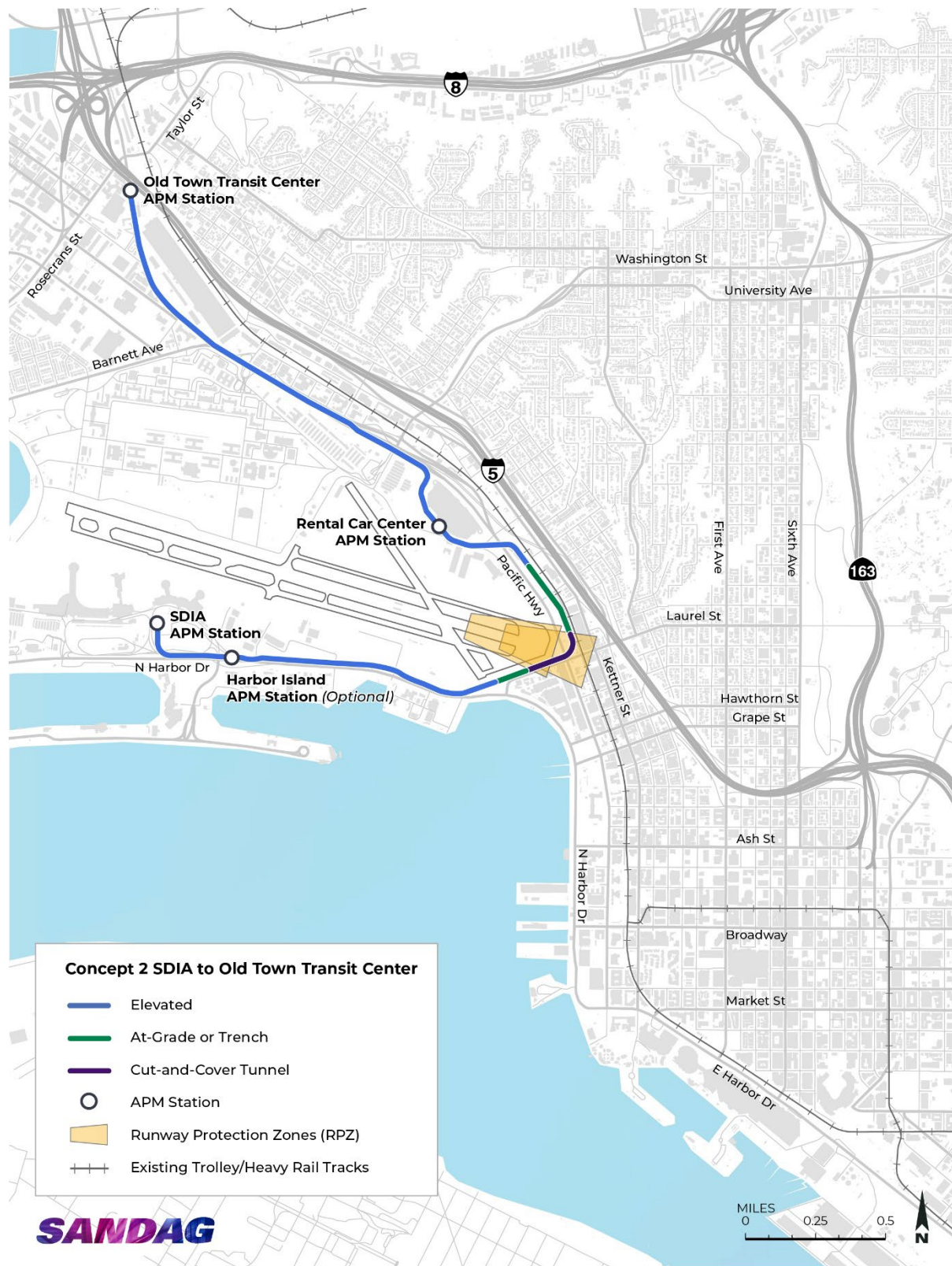
Source: SANDAG 2025

Figure 2-3: APM Concept 1C SDIA to CONRAC/PTC with LOSSAN Platform



Source: SANDAG 2025

Figure 2-4: APM Concept 2 SDIA to OTTC



Source: SANDAG 2025

Figure 2-5: APM Concept 3A SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route



Source: SANDAG 2025

Figure 2-6: APM Concept 3B SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route



Source: SANDAG 2025

Figure 2-7: APM Concept 3C SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid South Route



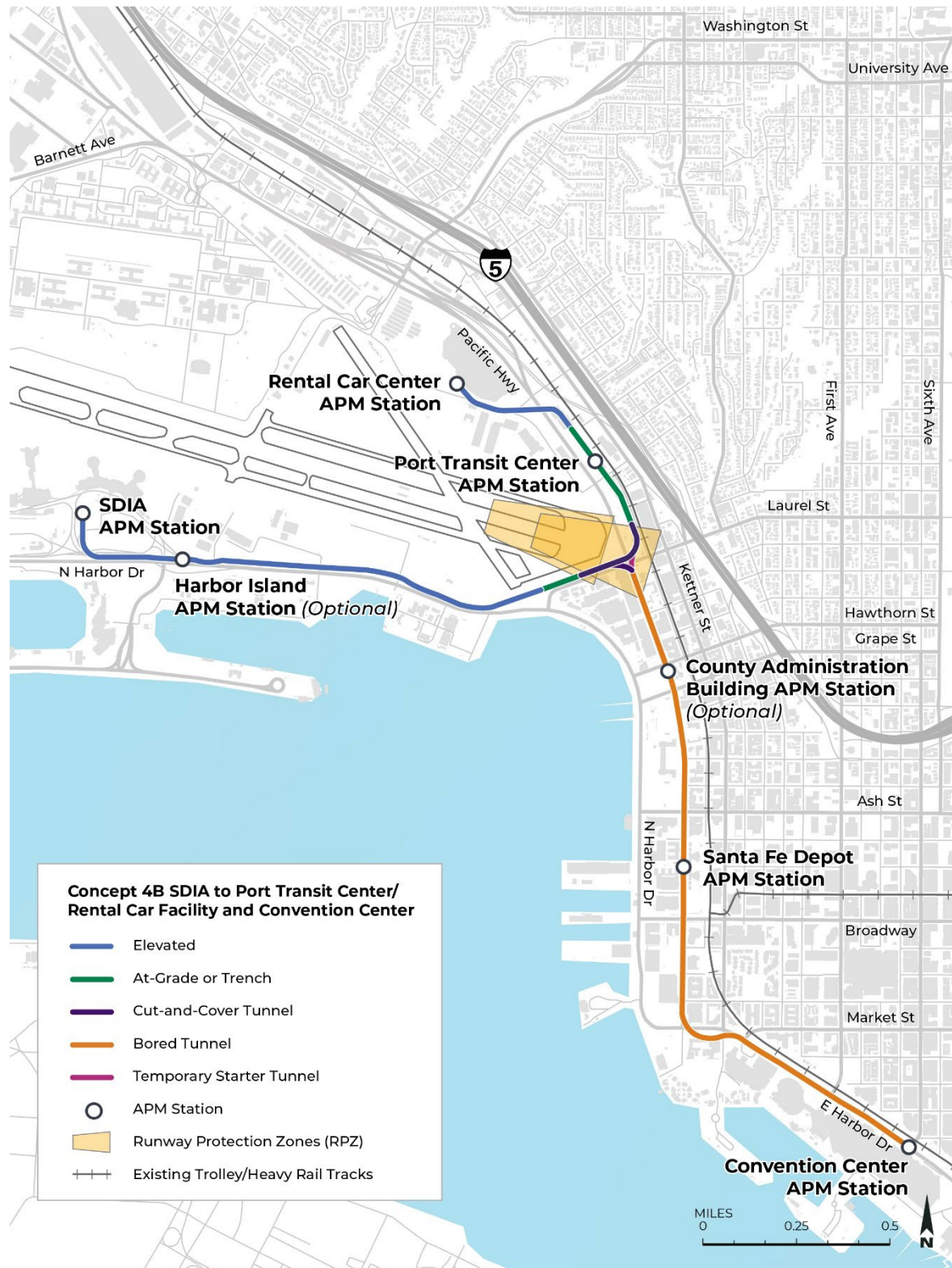
Source: SANDAG 2025

Figure 2-8: APM Concept 4A SDIA to PTC/CONRAC and Convention Center – Elevated South Route



Source: SANDAG 2025

Figure 2-9: APM Concept 4B SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route



Source: SANDAG 2025

Figure 2-10: APM Concept 4C SDIA to PTC/CONRAC and Convention Center – Hybrid South Route



Source: SANDAG 2025

Figure 2-11: APM Concept 5A SDIA to PTC/CONRAC and Civic Center – Elevated South Route



Source: SANDAG 2025

Figure 2-12: APM Concept 5B SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route



Source: SANDAG 2025

Figure 2-13: APM Concept 5C SDIA to PTC/CONRAC and Civic Center – Hybrid South Route



Source: SANDAG 2025

Figure 2-14: Trolley Concept 6A SDIA to 12th & Imperial Transit Center



Source: SANDAG 2025

Figure 2-15: Trolley Concept 6B SDIA to 12th & Imperial Transit Center – Extended Trench and Three Grade Separations



Source: SANDAG 2025

Figure 2-16: APM Concept 8A SDIA to Santa Fe Depot – Elevated



Source: SANDAG 2025

Figure 2-17: APM Concept 8B SDIA to Santa Fe Depot – Hybrid



Source: SANDAG 2025

Figure 2-18: APM Concept 9A SDIA to Convention Center – Elevated



Source: SANDAG 2025

Figure 2-19: APM Concept 9B SDIA to Convention Center – Hybrid



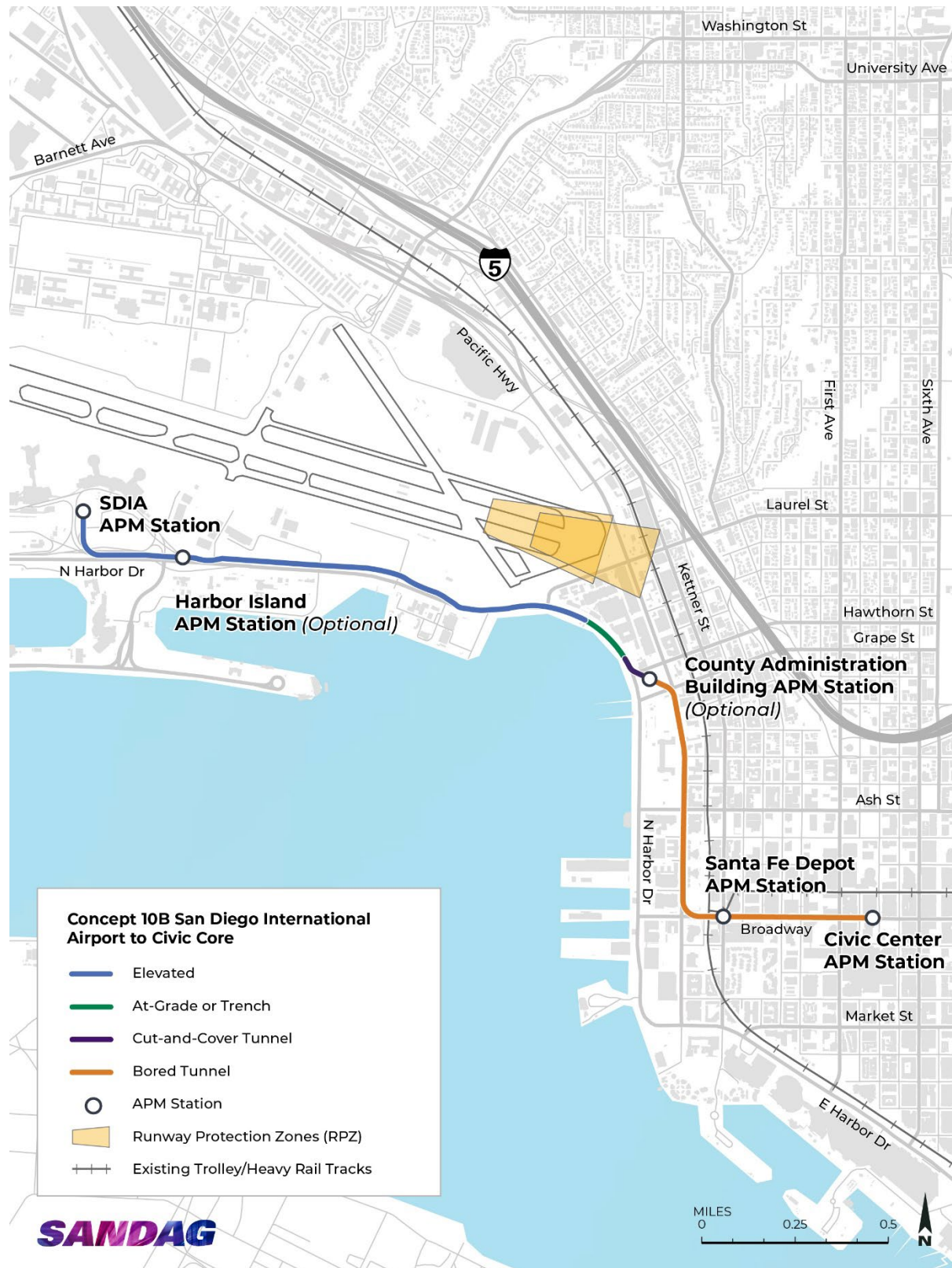
Source: SANDAG 2025

Figure 2-20: APM Concept 10A SDIA to Civic Center – Elevated



Source: SANDAG 2025

Figure 2-21: APM Concept 10B SDIA to Civic Center – Hybrid



Source: SANDAG 2025

3 New Technical Work

This section summarizes the new technical work undertaken by SANDAG as part of the continued planning work to evaluate and determine the concepts that could advance to a future environmental clearance phase. The new technical work includes development of project objectives and a Purpose and Need Statement, Trolley operational modeling, SANDAG's 2024 Airport Travel Survey, identification of APM OMSF locations, updated cost estimates, and updated ridership forecasts.

3.1 Objectives and Purpose and Need

California Environmental Quality Act (CEQA) objectives were developed in support of the state environmental clearance process and would be included in a Notice of Preparation when CEQA scoping is initiated.

CEQA Objectives:

- Increase transit ridership to and from SDIA through the provision of convenient, fast, high-frequency transit service that improves regional transit intermodal connectivity and accessibility.
- Provide direct, reliable, convenient, high-quality transit to and from SDIA and regional destinations that reduces travel times, increases ease of travel via public transportation, and enhances the travel experience.
- Enhance access to employment, recreational opportunities, and other key regional destinations.
- Demonstrate good public stewardship by delivering the project in a way that considers prior, ongoing, and planned investments, and construction, right-of-way, operations, and maintenance costs.

A Purpose and Need Statement for the National Environmental Policy Act (NEPA) environmental clearance process was developed in coordination with partner agencies. The Purpose and Need Statement was prepared as part of the Study to support the pare down process and determine what concepts could advance to a future NEPA environmental clearance phase.

The Purpose of the Project is to:

- Provide direct, frequent, reliable transit service to and from SDIA.
- Reduce travel time and enhance ease and comfort of the transit travel experience to and from SDIA.
- Enhance connectivity and access to employment, including at SDIA, recreational opportunities, and other key regional destinations.
- Demonstrate good public stewardship by delivering the project in a way that considers prior, ongoing, and planned investments, and construction, right-of-way, operations, and maintenance costs.

The project is needed because:

SDIA serves San Diego County, which has a population of more than 3 million and is a top destination for tourists and business travelers due to the mild climate and variety of beaches, convention centers and other conference/meeting venues, major universities, large military presence, amusement destinations, and thriving biotechnology industries. Given this, SDIA operates at a significant scale, navigating high passenger volumes and a large workforce daily, with both projected to increase. A regional transit connection to SDIA has been a decades-long goal, the need for which is increasing to meet the growing demand for both passengers and employees.

SDIA is the busiest single-runway airport in the United States. SDIA served approximately 25 million passengers in 2024, with approximately 69,000 passengers traveling to and from the airport each day. Additionally, approximately 6,000 airport employees commute to SDIA per day. Planned redevelopment of Terminal 1, which is underway, will increase the number of gates in Terminal 1 from 19 to 30, with a proportional increase in the number of travelers served (estimated to increase to 40 million by 2050) and employees required to support operations.

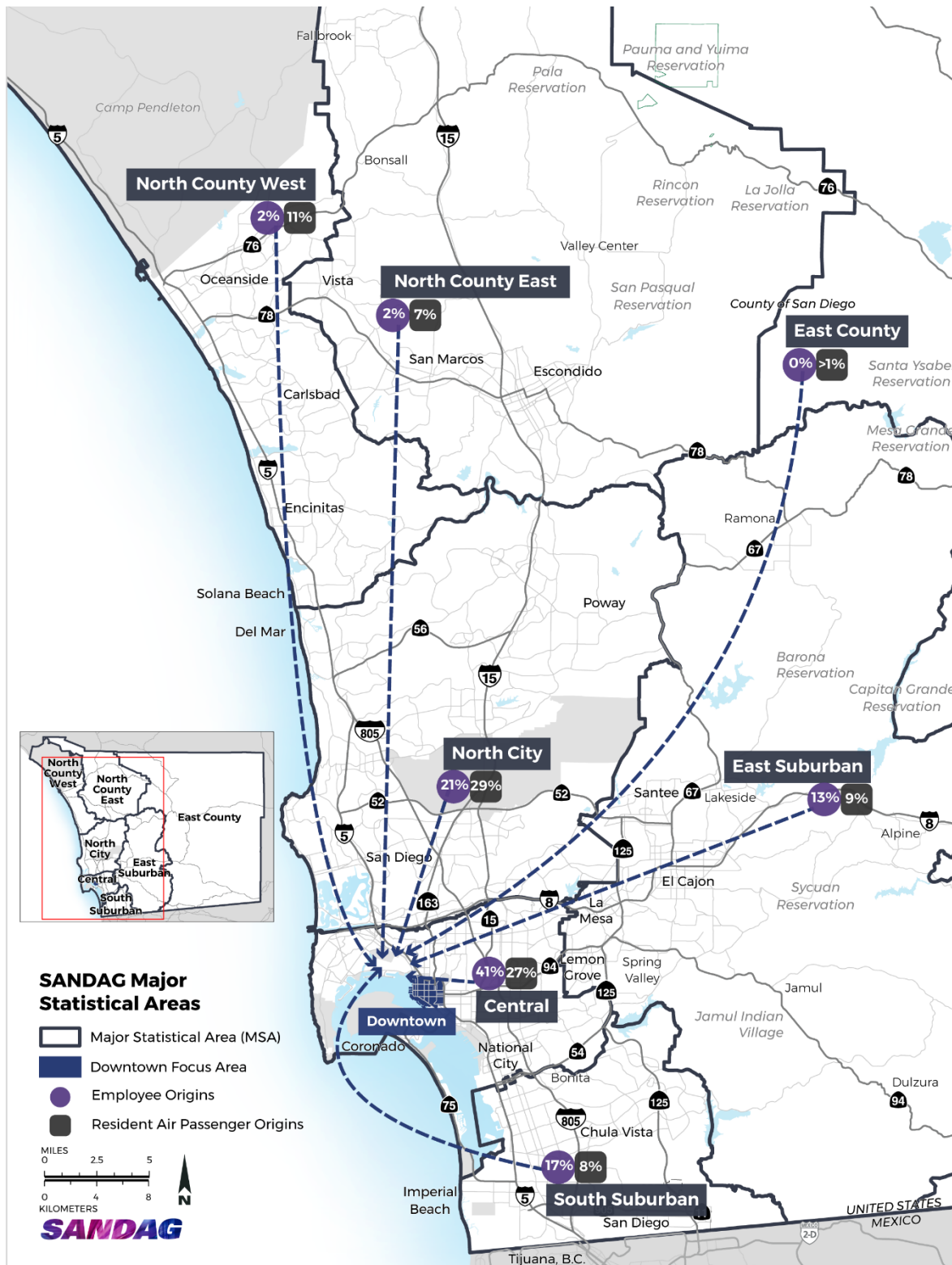
Despite the scale of traveler and employee activity at SDIA and its location in San Diego's urban core, there is limited connectivity between the airport and the regional transportation system. Access to and from SDIA is funneled through a few major arterials, including North Harbor Drive. While the redevelopment of Terminal 1 includes a new on-airport entrance road, other travelers, including those departing the airport or while traveling along other roads as they approach the airport, are confined to congested arterials. Additionally, connectivity to the regional transit network is currently provided via one MTS bus route from SDIA to Downtown (Route 992) and a SDIA-provided shuttle (Airport Flyer) from the Old Town Transit Center (OTTC) provide transit service to SDIA. Santa Fe Depot and OTTC connect to inter-city, commuter and light rail services, as well as multiple bus services. Additionally, existing airport bus and shuttle services operate on congested roadways around the airport, which heavily affects transit travel time and the reliability of travel for all roadway users.

The majority of travelers arrive via private or hailed vehicle. Specifically, the SANDAG Airport Travel Survey conducted in fall 2024 found that less than 1% of departing passengers take public transit to SDIA, compared to 36% accessing the airport via a for-hire vehicle and approximately 23% each for private vehicle drop off/pick up and rental car. The transit mode share is greater for employees, with approximately 12% of SDIA employees accessing the airport via public transit, compared to approximately 75% accessing via driving and parking a private vehicle.

While passengers and employees travel between SDIA and multiple locations in the region, the SANDAG Airport Travel Survey identified several key travel origins (identified as SANDAG Major Statistical Areas [MSAs] Figure 3-1). The most common travel origin for employees is San Diego's Central MSA at approximately 41% of employees. The Downtown San Diego MSA is part of the Central MSA. Of the total 41% of employees, 5% travel from Downtown San Diego specifically. For resident air passengers, the most common travel origin to the airport is also the Central MSA at 27%, of which 4% live in Downtown.

Given the anticipated growth in passengers and employees, along with the constrained roadway network and limited transit connectivity, a more frequent and convenient transit service is needed to provide a connection between SDIA, the regional transit network, and the Central MSA.

Figure 3-1: SANDAG Major Statistical Areas



Source: SANDAG 2025

Notes: Approximately 4% of employees and 9% of resident air passengers travel from areas external to the San Diego Region. Percentages may not total due to rounding.

3.2 Trolley Operational Modeling

A Trolley operational modeling study was conducted to explore 7.5- and 15-minute headway frequencies on the proposed Trolley concept (referred to in the study as the Airport Trolley Line) to determine potential implications on reliability of the Airport Trolley Line or other MTS Trolley Lines. Different headway scenarios were also considered for the other existing Trolley Lines, as shown below. This operational modeling study is detailed in the Concept 6 Trolley Operational Modeling Memorandum completed in March 2026 and included as Appendix A to this addendum.

Rail Traffic Controller is a rail network operations simulation modeling platform developed by Berkeley Simulation Software. The simulation model was based on the model used during the environmental clearance and design phases of the Mid-Coast Corridor Transit Project and updated to reflect the existing MTS Trolley network. Two types of simulations were conducted for this study: deterministic and randomized. Deterministic simulations are typically used to evaluate schedule or infrastructure feasibility under ideal conditions (e.g., trains stopping or dwelling for the same amount of time at every station and every driver accelerating and decelerating at the same speed). Randomized simulations introduce some level of unpredictability to mimic real-life operations, such as variable stop/dwell times at stations and variable operator behavior. The simulations included three headway scenarios:

- Headway Scenario 1: More Frequent Airport Service with Near-Term Headways
 - University of California, San Diego (UC San Diego) Blue Line: 7- and 8-minute headways northbound; 6- and 9-minute headways southbound
 - Green Line: 15-minute headway
 - Orange Line: 15-minute headway
 - Copper Line: 15-minute headway
 - Airport Trolley Line: 7- and 8-minute headways
- Headway Scenario 2: Average 7.5-minute Headways on Nearly All Services
 - UC San Diego Blue Line: 7- and 8-minute headways
 - Green Line: 7- and 8-minute headways
 - Orange Line: 7- and 8-minute headways
 - Copper Line: 15-minute headway
 - Airport Trolley Line: 7- and 8-minute headways
- Headway Scenario 3: More Frequent Green Line and Orange Line Service
 - UC San Diego Blue Line: 7- and 8-minute headways
 - Green Line: 7- and 8-minute headways
 - Orange Line: 7- and 8-minute headways
 - Copper Line: 15-minute headway
 - Airport Trolley Line: 15-minute headway

Results of the simulations found that all three headway scenarios could achieve 100% on time performance¹ in both deterministic and randomized simulations. Therefore, simulations demonstrated the feasibility of 7.5- and 15-minute headways on the proposed Airport Trolley Line, even with increased headways on the Green, UC San Diego Blue, and/or Orange Lines. However, traffic analysis would be necessary during the future environmental clearance phase to determine the effects on vehicular traffic circulation where the Airport Trolley Line would operate through at-grade crossings. The estimate of number of vehicles required for the conceptual capital cost estimates and the updated ridership forecasting assume 7.5-minute headways for the Airport Trolley Line.

3.3 Airport Survey

In fall 2024, SANDAG conducted an Airport Travel Survey that established the baseline of current airport travel with reliable post-pandemic data and provided insights into the travel preferences of air passengers and employees.

The study's main objectives were as follows:

- Provide post-pandemic airport travel behavior for residents, tourists, business travelers, convention center attendees, and airport workers.
- Provide robust data for the update of SANDAG's ABM3 prior to conducting updated ridership forecasts for this study.
- Provide high-quality data that can support identification of a range of alternatives for the ATC Project, additional regional planning efforts, and implementation initiatives.

The Survey included both in-person intercept/face-to-face interviews and online, self-administered survey options. Between September 30 and December 2, 2024, SANDAG collected approximately 4,300 responses from residents and visitors, and approximately 600 responses from employees. Responses were collected at SDIA terminals, onboard airport shuttles and buses (including MTS Route 992 and the Airport Flyer), and online. Approximately 87% of the results were from in-person surveys with almost 500 surveys collected via a self-administered online option. An additional 754 stated preference surveys were collected, with 79% collected from air passengers and the remaining 21% collected from employees.

The survey captures departing air passenger characteristics and origins; commuting employee characteristics and origins; current transit usage to the airport; travel party size; household income; and stated preferences for transit service times, transit service characteristics, and the importance of wait time. The survey process and results were completed in November 2025. Results of the survey were also considered in the pare down process of this addendum, and detailed survey results are included in Appendix D.

3.4 APM Operations, Maintenance, and Storage Facilities

Each APM concept would require an OMSF located along, or in close proximity to, the concept alignment. The APM concepts considered in the Study assumed an OMSF would be located between Pacific Highway and California Street, north of Laurel Street. This site, formerly referred to as the Port Headquarters site, was identified in coordination with the City of San Diego, Port of San Diego, and SDIA prior to release of the 2023 Study. A new OMSF would not be required for Trolley concepts due to the

¹ On-time performance was measured based on the public schedule as of February 2025. 100% on-time performance indicates that each simulated train in the deterministic and randomized scenarios arrived within a defined time threshold. For purposes of the Trolley operational modeling, trains arriving at terminals and departing from stations between 0 minutes early and 5 minutes late are considered on time, consistent with MTS Policy 42.

existing facility at 12 S. 13th Street in Downtown San Diego. Since completion of the Study, SANDAG continued to review potential sites for an OMSF and coordinate with partner agencies to evaluate additional potential OMSF locations. As part of these efforts, the City of San Diego provided SANDAG with a list of over 40 properties in and around the downtown and SDIA area for consideration. The feasibility of these sites was evaluated with a focus on location and parcel size, considering approximately 2-acre sites, and no new feasible sites were identified.

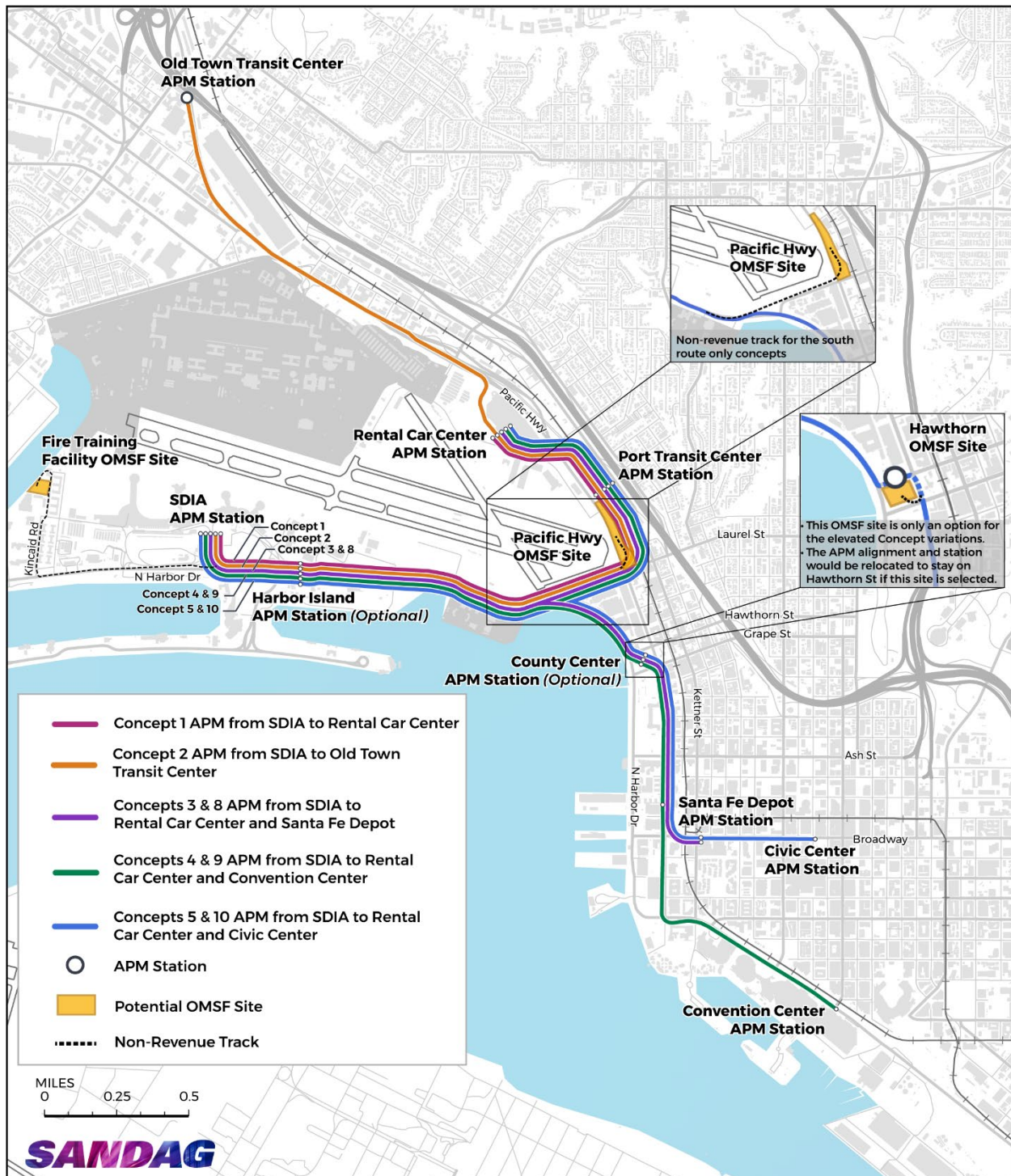
As a result of the review of potential sites and continued coordination with partner agencies (as summarized in Section 6), two additional locations were identified for consideration. The three potential sites were shared with partner agencies, and no fatal flaws in terms of potential site availability were identified:

- Pacific Highway OMSF – Located between Pacific Highway and California Street, north of Laurel Street (3.16 acres).
- Fire Training Facility OMSF – Located west of SDIA at the San Diego Fire Rescue Training Facility site (2.2 acres).
- Hawthorn OMSF – Port of San Diego owned parking lot located between Hawthorn Street and Grape Street to the north and south and between Pacific Highway and North Harbor Drive to the east and west (1.8 acres).

These OMSF locations are shown on Figure 3-2. The Pacific Highway and Fire Training Facility are feasible locations for all APM concepts. The Port Parking Lot is an optional location for the APM Concept A variations (all elevated alignments) but would require shifting the alignment and the optional County Administration Building APM station to Hawthorn Street on the perimeter of the Port-owned parking lot. This location would not be feasible for the Concept B or C variations because the alignment transitions to an underground alignment in this location and therefore an OMSF could not be accommodated with the change in profile. The specific OMSF location for each APM concept has not been identified. For purposes of the cost considerations evaluated in Round 2 of the pare down, each concept was paired with an OMSF at either the Pacific Highway or Fire Training Facility site based on the most costly site (as determined by the length or type of non-revenue tracks²) to provide a more conservative cost estimate, as shown in Table 3-1 and discussed in Section 3.5.

² Non-revenue track refers to segments of track not carrying passengers, including track used to connect to operations, maintenance, and storage facilities.

Figure 3-2: Operations, Maintenance, and Storage Facility Site Options - North and South Route Concepts



Source: SANDAG 2026

3.5 Preliminary Capital Cost Estimate

Updated preliminary capital cost estimates, escalated to 2025 dollars, were prepared as part of the addendum, building off the estimates previously prepared for the Study in 2023. The capital cost basis of estimate is detailed in Appendix B. Preliminary capital cost estimates were prepared for the APM and Trolley concepts that advanced to Round 2 of the pare down process in this addendum, discussed in Section 5.2.

Cost estimates were also prepared that excluded the optional station(s) to identify potential cost savings if the optional stations are not implemented:

- No Harbor Island Station
- No County Administration Station (applies to APM concepts only)
- No Harbor Island or County Administration Stations (applies to APM concepts only)

The following major work elements were included in each cost estimate, as applicable:

- Construction of APM/ LRT guideways, including at-grade, retained fill, retained cut, bored tunnel, cut-and-cover tunnel, and elevated viaduct (as relevant to the concept)
- Construction of ancillary features as applicable to the concept (e.g., equipment to provide power to the concept)
- Roadway improvements along North Harbor Drive and other areas affected by construction
- Allowances for utility relocations, removal of hazardous materials, and streetscaping
- Construction of the APM OMSF along with associated non-revenue tracks
- Stations
- Vertical circulation elements and pedestrian connections (as relevant)
- Procurement of APM/LRT vehicles

Right-of-way acquisition, financing, and escalation costs are not included in these estimates.

For purposes of the preliminary capital cost estimate, each concept was paired with an OMSF location, as shown in Table 3-1. The OMSF pairing for each concept was selected based on the most costly site (as determined by length or type of non-revenue tracks shown in Table 3-2) to provide a more conservative cost estimate. For concepts with north and south routes (Concepts 3-5), the Fire Training Facility OMSF would be the most expensive location and was used in the preliminary capital cost estimate. For concepts with a south route only (Concepts 8-10), the Pacific Highway OMSF would be the most expensive location and was used in the preliminary capital cost estimate. As a comparison, cost estimates were also prepared for Concepts 3 to 5, assuming the OMSF location at the Pacific Highway location, and for Concepts 8 to 10, assuming the OMSF location at the Fire Training Facility.

Table 3-1: Automated People Mover and Operations, Maintenance, and Storage Facility Pairings for Cost Estimate

APM Concept	OMSF Location
Concept 3A-C: SDIA to PTC/CONRAC and Santa Fe Depot	Fire Training Facility OMSF
Concept 4A-C: SDIA to PTC/CONRAC and Convention Center	Fire Training Facility OMSF
Concept 5A-C: SDIA to PTC/CONRAC and Civic Center	Fire Training Facility OMSF
Concept 8A-B: SDIA to Santa Fe Depot	Pacific Highway OMSF
Concept 9A-B: SDIA to Convention Center	Pacific Highway OMSF
Concept 10A-B: SDIA to Civic Center	Pacific Highway OMSF

Source: WSP and HDR 2026

Notes: APM = Automated People Mover; CONRAC = Consolidated Rental Car Center; OMSF = Operations, Maintenance, and Storage Facility PTC = Port Transit Center; SDIA = San Diego International Airport

Table 3-2: Length of Non-Revenue Track

APM Concept	Fire Training Facility OMSF		Pacific Highway OMSF		Hawthorn OMSF1	
	Elevated and Surface (miles)	Cut-and-Cover Tunnel (miles)	Elevated and Surface (miles)	Cut-and-Cover Tunnel (miles)	Elevated and Surface (miles)	Cut-and-Cover Tunnel (miles)
Concept 3A-C: SDIA to PTC/CONRAC and Santa Fe Depot	1.00	0.00	0.03	0.00	0.02	0.00
Concept 4A-C: SDIA to PTC/CONRAC and Convention Center	1.00	0.00	0.03	0.00	0.02	0.00
Concept 5A-C: SDIA to PTC/CONRAC and Civic Center	1.00	0.00	0.03	0.00	0.02	0.00
Concept 8A-B: SDIA to Santa Fe Depot	1.00	0.00	0.57	0.24	0.02	0.00
Concept 9A-B: SDIA to Convention Center	1.00	0.00	0.57	0.24	0.02	0.00
Concept 10A-B: SDIA to Civic Center	1.00	0.00	0.57	0.24	0.02	0.00

Source: WSP and HDR 2026

Notes: ¹ This OMSF site is only an option for the Concept A variations

APM = Automated People Mover; CONRAC = Consolidated Rental Car Center; OMSF = Operations, Maintenance, and Storage Facility PTC = Port Transit Center; SDIA = San Diego International Airport

3.6 Ridership Forecasts

Projected ridership in 2050 was forecasted using the SANDAG ABM3 model for each concept that advanced to Round 3 of the pare down process in this addendum. The updated ridership forecasting assumed 7.5-minute headways, a 21-hour span of service, and application of the regional fare system for the APM and Trolley concepts, and was developed in collaboration with MTS.

The following scenarios were modeled for the 2050 horizon year:

- No Build Scenario: no ATC rail assumed. Two Rapid bus routes and one Express bus route to SDIA were included in the model network; these routes align with SANDAG planning efforts that are being conducted concurrently with the rail pare down process.
- Concept 6A-B: Trolley to 12th & Imperial Transit Center with optional Harbor Island Station.
- Concept 8A-B: APM to Santa Fe Depot with optional Harbor Island and County Administration Building Stations.
- Concept 9A: APM to Convention Center with optional Harbor Island and County Administration Building Stations.

4 Concept Refinements

This section summarizes the additional APM and Trolley concepts developed since completion of the Study in 2023. Additional exhibits for these concepts are included in Appendix C of this addendum.

4.1 Automated People Mover South Route Concepts

Concepts 3, 4, and 5 in the Study, inclusive of variations, included both a north and south route. The Study noted that SANDAG also planned to evaluate a south-route only option in subsequent studies. For purposes of a high-level screening in the Study, an initial evaluation was performed on a south-route-only configuration of Concept 5, which would have a southern terminus at Civic Center. As documented in the Study, advancing a south route for implementation is responsive to community and stakeholder feedback, which expressed the desire for prioritizing an equitable and convenient transit connection to the airport for South Bay travelers, as well as a direct connection to the downtown core and its dense supply of housing, jobs, existing transit riders, and tourist destinations. As a result, this addendum includes an evaluation of the standalone south route concepts that correspond to the southern route of Concepts 3, 4, and 5. Each south route concept includes a variation for an elevated configuration and a hybrid configuration (elevated and bored tunnel) as outlined in Table 4-1. Concepts 8A-B, 9A-B, and 10A-B are shown on Figure 2-16 through Figure 2-21.

Table 4-1: Automated People Mover South Route Concepts

APM South Route Concept	Potential Features/Variations
Concept 8: SDIA to Santa Fe Depot	• Concept A: All elevated alignment • Concept B: Elevated alignment transitions to underground alignment near Harbor Dr/Hawthorn St
Concept 9: SDIA to Convention Center	• Concept A: Elevated • Concept B: Hybrid (elevated and bored tunnel)
Concept 10: SDIA to Civic Center	• Concept A: Elevated • Concept B: Hybrid (elevated and bored tunnel)

Source: SANDAG 2026

Notes: APM = Automated People Mover; SDIA = San Diego International Airport

4.2 Trolley Concept

In coordination with local partner agencies, SANDAG developed a new Trolley concept, referred to as Concept 6B (Figure 2-15). Concept 6B is similar to Concept 6 evaluated in the Study, referred to in this addendum as Concept 6A. Both concepts would provide a connection from SDIA to the existing 12th & Imperial Transit Center. However, for Concept 6B, the existing trench containing the Trolley tracks at Hawthorn Street would be extended south beneath West Cedar Street, West Beech Street and West Ash Street. South of West Ash Street, the Concept 6B alignment would begin to ascend to tie into the existing at-grade tracks north of B Street before connecting to the existing Santa Fe Depot Station and continuing south along the existing Trolley Green Line tracks to the 12th & Imperial Transit Center, where it would connect directly to three Trolley lines. Plan sheets for the concept alignment are included in Appendix C.

Similar to Concept 6A, this concept would provide access to the existing Trolley stations at Santa Fe Depot, Seaport Village, Convention Center, and Gaslamp Quarter, before terminating at the 12th & Imperial Transit Center.

The existing at-grade County Center/Little Italy Station would be depressed in the reconstructed trench in its current location between West Beech and West Cedar Streets, and vertical circulation would be added. The existing Trolley trench is shown on Figure 4-1. The existing County Center/Little Italy Station would be reconstructed within the extended trench. Two locations are under consideration for the reconstructed County Center/Little Italy Station:

1. In the same location as the existing station between West Beech and West Cedar Streets
2. Between West Date and West Fir Streets.

Ultimately only one location would be constructed if this concept advances to environmental clearance and implementation.

Pedestrian access to the below-grade station within the trench would be provided by vertical circulation elements located at either end of the platforms, with access from West Beech and West Cedar Streets. Waterfront access would be provided from West Beech and West Cedar Streets via the new bridges spanning the extended trench. For the alternative station location between West Date and West Fir Streets, station access would be provided by vertical circulation elements from West Date and West Fir Streets.

Additional access from Pacific Highway would be provided via ramps and walkways extending beneath the LOSSAN tracks to the station platforms. Waterfront access for this alternative would be provided from Pacific Highway. Section 6 describes the partner agency collaboration involved in the development of this concept. The operational modeling described in Section 3.2 would also apply to this concept.

Figure 4-1: Existing Trolley Trench



Source: SANDAG 2026

5 Pare Down Assessment

The concepts studied in this addendum were evaluated using a three-round approach, described in the sections that follow.

5.1 Pare Down Round 1

A set of quantitative pare down metrics was developed to evaluate the concepts based on information available in 2025. These metrics were grouped into two categories, travel markets and transit connectivity, as outlined on Figure 5-1 and described in Sections 5.1.1 and 5.1.2. The Round 1 criteria were focused on potential travelers and connectivity at the concept stations. Therefore, concepts were evaluated based on the alignment route and station locations. The alignment variations were not evaluated independently as part of this round as the alignment type (i.e., underground or elevated) would have a negligible effect on the overall connectivity provided by the concept.

Figure 5-1: Round 1 Pare Down Metrics

Travel Markets			
Resident air passengers (leisure/business) and employees		Visitors (leisure/business)	
Local Catchment	Regional Catchment	Local Catchment	Regional Catchment
Population: - Number of employees 1/2 mile and 5 miles - Number of air passengers 1/3 mile and 5 miles - Hard to reach population: low income, minority, senior, zero car/transit dependent	Population: - Total population within 45 minutes by transit - Total college/university student population within 45 minutes by transit (proxy for university activity) - Hard to reach population: low income, minority, senior, zero car/transit dependent	- Number of jobs (proxy for area business activity) 1/3 mile and 5 miles - Number of hotel rooms 1/3 mile and 5 miles - Amount of conference space 1/3 mile and 5 miles	- Conference space within 45 minutes by transit - Number of jobs within 45 minutes by transit - Number of amusement jobs within 45 minutes by transit - Number of hotel rooms within 45 minutes by transit
Transit Ridership/Transit Connectivity			
Travel associated with different modes or types of service (Amtrak, COASTER, Trolley, MTS bus) - Boardings/alightings within 0.5 miles of proposed ATC stations - Through-travelers within 0.125 and 0.25 miles of proposed ATC stations			

Source: WSP 2025

5.1.1 Travel Markets

As part of Round 1, travel markets were evaluated to understand the range of potential travelers to and from SDIA. For the purposes of this pare down, this metric was divided into two categories: resident air passengers and visitors. Resident air passengers include those for whom SDIA is the home departing airport and employees as they are more likely to have similar travel patterns compared to visiting passengers. Visitors include those travelling to or from SDIA as their arrival airport. Data from the

SANDAG ABM2+ model was used to identify local distance-based travel sheds (local catchment) and regional time-based travel sheds (regional catchment) for residents and visitors to evaluate the range of potential travelers that each concept would serve. Employment and air passenger data within these travel sheds were gathered from the SANDAG ABM2+ model. Hotel and conference space data was derived from the SANDAG Tourism Authority. For each metric, concepts were scored based on their total values using a 1-9 rating scale, with 9 being the highest possible score. The evaluation for residents and visitors for both the local and regional catchments is described in the sections that follow.

5.1.1.1 Resident Air Passengers

Local Catchment

For the local catchment, the evaluation of resident air passengers considered the total number of employees within a 1/2-mile walk and 5-mile drive of each concept station, and the total population within a 1/3-mile walk and 5-mile drive of each concept station. A larger walk radius was used for employees as they are likely to have a greater willingness to walk farther compared to air passengers who may have luggage. The local catchment also considered the following demographics for both employees and air passengers, referred to in this addendum as hard to reach populations:

- Low-income population
- Minority population
- Senior population
- Transit-dependent population (zero-car households)

Scores were developed using a 1-9 ranking of the total resident/employee population and the average of the individual rankings for the hard to reach population demographics. Within a 1/3-mile walk, Concept 6A-B received the highest score for total population and hard to reach population. Within a 5-mile drive, Concept 4A-C received the highest total population and hard to reach population score. Within a 1/2-mile walk, Concept 6A-B received the highest score for total population and hard to reach population. Within a 5-mile drive, Concept 4A-C received the highest total population and hard to reach population score. Detailed scores for each metric are included in Appendix D.

Regional Catchment

For the regional catchment, the evaluation of resident air passengers considered the total number population within 45 minutes of each concept station by transit. In addition to air passengers, the total university/college student population within 45 minutes of each concept station by transit was also included. Given the number of major universities within San Diego County, the total student population was captured as a proxy for overall university activity. University activity may include travel by students and prospective students, families, sports teams, and for meetings and conferences. Scores were developed using a ranking of the total population and the average of the individual rankings for the hard to reach population demographics. Concept 8A-B received the highest scores for total population and college/university student population, including the hard to reach population. Detailed scores are included in Appendix D.

Resident Total

Given the variety of metrics within the Resident category, average scores were developed for each travel market:

- Average score for residents (air passengers/employees) – Local
 - Air passenger population within 1/3-mile walk.

- Air passenger hard to reach population within 1/3-mile walk.
- Air passenger population within 5-mile drive.
- Air passenger hard to reach population within 5-mile drive.
- Employee population within 1/3-mile walk.
- Employee hard to reach population within 1/3-mile walk.
- Employee population within 5-mile drive.
- Employee hard to reach population within 5-mile drive.
- Average score for residents (air passengers/employees) – Regional
 - Total population within 45 minutes by transit.
 - College/university population within 45 minutes by transit.

After the average scores for these two categories were calculated, a weight was applied to each score to reflect the proportion of residents (air passengers and employees) to visitors at the airport on a given day based on information gathered from the Airport Survey, which is 46% residents and 54% visitors. A 46% weight was applied to each air passenger/employee score as shown in Table 5-1. The weighted resident local and resident regional categories were summed for an overall resident score. Concept 9A-B received the highest resident score.

Table 5-1: Resident Combined Weighted Scores

Concepts	Average Resident Local Score	Resident Local Weighted Score (0.46)	Average Resident Regional Score	Resident Regional Weighted Score (0.46)	Resident Weighted Total Score
APM Concept 1A-C: SDIA to CONRAC/PTC	1.06	0.49	1.00	0.46	0.95
APM Concept 2: SDIA to OTTC	2.75	1.27	3.44	1.58	2.85
APM Concept 3A-C: SDIA to PTC/CONRAC and Santa Fe Depot	5.34	2.46	5.13	2.36	4.82
APM Concept 4A-C: SDIA to PTC/CONRAC and Convention Center	7.59	3.49	4.06	1.87	5.36
APM Concept 5A-C: SDIA to PTC/CONRAC and Convention Center	7.88	3.62	2.63	1.21	4.83
Trolley Concept 6A-B: SDIA to 12th & Imperial Transit Center	6.13	2.82	4.75	2.19	5.00
APM Concept 8A-B: SDIA to Santa Fe Depot	3.03	1.39	9.00	4.14	5.53
APM Concept 9A-B: SDIA to Convention Center	5.63	2.59	8.00	3.68	6.27
APM Concept 10A-B: SDIA to Civic Center	5.59	2.57	7.00	3.22	5.79

Source: WSP 2025

Notes: Bold text indicates the highest scores.

5.1.1.2 Visitors

Local and Regional Catchment

For the local catchment, the evaluation of visitors considered the number of jobs, number of hotel rooms, and amount of conference space within a 1/3-mile walk and 5-mile drive of each concept station. For the regional catchment, the evaluation of visitors considered the number of jobs, number of amusement jobs, number of hotel rooms, and amount of conference space within 45 minutes of each concept station by transit. The number of jobs was used as a proxy for business activity, and the number of hotel rooms and conference space were used to capture major potential destinations for visitors. Each individual metric received a ranking from 1-9 based on the total values. Local and regional catchment scores were developed using an average of these rankings. Detailed scores are included in Appendix D.

Overall, for the visitor local catchment metrics, Concept 6A-B received the highest score within the 1/3-mile walk radius and Concept 4A-C received the highest score within the 5-mile drive radius. Concept 10A-B received the highest visitor score within the regional catchment.

One average score was developed for each travel market:

- Average score for visitors – Local
 - Number of jobs, hotel rooms, and amount of conference space within 1/3-mile walk.
 - Number of jobs, hotel rooms, and amount of conference space within 5-mile drive.
- Score for visitors – Regional
 - Number of jobs, amusement jobs, hotel rooms, and amount of conference space within 45 minutes by transit.

After the average scores for these two categories were calculated, the weight was applied to reflect the proportion of residents to visitors. A 54% weight was applied to each visitor score as shown in Table 5-2. The weighted resident local and resident regional categories were summed for an overall resident score. Similarly, the weighted visitor local and visitor regional categories were summed for an overall visitor score.

Table 5-2: Visitor Combined Weighted Scores

Concept	Average Visitor Local Score	Visitor Local Weighted Score (0.54)	Visitor Regional Score	Visitor Regional Weighted Score (0.54)	Visitor Weighted Total Score
APM Concept 1A-C: SDIA to CONRAC/PTC	2.17	1.17	1.00	0.54	1.71
APM Concept 2: SDIA to OTTC	4.33	2.34	3.75	2.03	4.37
APM Concept 3A-C: SDIA to PTC/CONRAC and Santa Fe Depot	5.33	2.88	5.25	2.84	5.72
APM Concept 4A-C: SDIA to PTC/CONRAC and Convention Center	8.00	4.32	5.00	2.70	7.02
APM Concept 5A-C: SDIA to PTC/CONRAC and Convention Center	6.50	3.51	4.75	2.57	6.08
Trolley Concept 6A-B: SDIA to 12th & Imperial Transit Center	6.33	3.42	3.50	1.89	5.31
APM Concept 8A-B: SDIA to Santa Fe Depot	2.17	1.17	4.75	2.57	3.74

Concept	Average Visitor Local Score	Visitor Local Weighted Score (0.54)	Visitor Regional Score	Visitor Regional Weighted Score (0.54)	Visitor Weighted Total Score
APM Concept 9A-B: SDIA to Convention Center	5.00	2.70	4.25	2.30	5.00
APM Concept 10A-B: SDIA to Civic Center	3.83	2.07	7.50	4.05	6.12

Source: WSP 2025

Notes: Bold text indicates the highest scores.

5.1.2 Transit Connectivity

The transit connectivity metric measured how each concept connects with the existing transit network and riders. A transit connectivity index was developed to understand these potential connections to existing transit service and transit activity at each concept station. This metric focused on the availability of connections to existing service and did not consider the quality of transfers across modes at these connections. Quality and convenience of transfers was considered in the Study and is discussed in Appendix C. The transit connectivity metric considered boardings, alightings, and through trips associated with the various transit services and routes located within 0.5-mile of all stations associated with each concept.

The following services are located within 0.5-mile of the concept stations and were included in the transit connectivity index:

- MTS Trolley
- MTS Rapid and local bus
- NCTD COASTER commuter trains
- Amtrak Pacific Surfliner

The total number of boardings, alightings, and through trips was calculated for the stations and stops associated with existing routes within each concept station area. The boardings and alightings reflect passengers who currently interact with the station area and were captured within 0.5-mile of each concept station. Through trips reflect those who travel through the station area on an existing route but may not begin or end their trip within the station area. Through trips were captured within 0.25-mile and 0.125-mile of each concept station to reflect the potentially smaller range of these passengers who may have less interaction with the station areas.

Through trips help to understand those travelling within the area, but the passengers captured via boardings and alightings data have a greater likelihood of using a new transit station at these locations because they either live, work, or perform another activity nearby and are familiar with the surrounding area and how to get to and from the station. Therefore, through trips were weighted lower than boardings and alightings to reflect this lower interactivity. The transit connectivity index for each concept was calculated by combining the boardings, alightings, and through trips as follows:

- Applied a weighting to the number of through trips that corresponded to the distances captured.
 - The through trips captured within 0.25-mile were multiplied by 0.25.
 - The through trips captured within 0.125-mile were multiplied by 0.125.

- Summed the total number of boardings and alightings, the weighted total of through trips within 0.25-mile, and the weighted number of through trips within 0.125 mile for each individual station associated with the concept.
- Scaled down the total sum by a factor of 1,000, resulting in the final transit connectivity index value.

Concepts were ranked based on their total transit connectivity index values using a 1–9 rating scale, with 9 being the highest possible score. As shown in Table 5-3, Concept 6A-B (Trolley) received the highest transit connectivity score.

Table 5-3: Transit Connectivity Scores

Concepts	Transit Connectivity Index	Transit Connectivity Score
APM Concept 1A-C: SDIA to CONRAC/PTC	10.87	1.00
APM Concept 2: SDIA to OTTC	29.06	2.00
APM Concept 3A-C: SDIA to PTC/CONRAC and Santa Fe Depot	40.80	4.00
APM Concept 4A-C: SDIA to PTC/CONRAC and Convention Center	66.35	6.00
APM Concept 5A-C: SDIA to PTC/CONRAC and Convention Center	83.29	8.00
Trolley Concept 6A-B: SDIA to 12th & Imperial Transit Center	138.17	9.00
APM Concept 8A-B: SDIA to Santa Fe Depot	30.99	3.00
APM Concept 9A-B: SDIA to Convention Center	56.54	5.00
APM Concept 10A-B: SDIA to Civic Center	73.48	7.00

Source: WSP 2025

Notes: Bold text indicates the highest scores.

5.1.3 Metric Summary and Recommendations

Final scores for each concept were developed using the sum of the Travel Markets resident and visitor scores and the Transit Connectivity score, as shown in Table 5-4.

Table 5-4: Total Concept Scores

Concepts	Travel Markets Resident Score	Travel Markets Visitor Score	Transit Connectivity Score	Total Concept Score
APM Concept 1A-C: SDIA to CONRAC/PTC	0.95	1.71	1.00	3.66
APM Concept 2: SDIA to OTTC	2.85	4.37	2.00	9.21
APM Concept 3A-C: SDIA to PTC/CONRAC and Santa Fe Depot	4.82	5.72	4.00	14.53
APM Concept 4A-C: SDIA to PTC/CONRAC and Convention Center	5.36	7.02	6.00	18.38
APM Concept 5A-C: SDIA to PTC/CONRAC and Convention Center	4.83	6.08	8.00	18.91
Trolley Concept 6A-B: SDIA to 12th & Imperial Transit Center	5.00	5.31	9.00	19.31

Concepts	Travel Markets Resident Score	Travel Markets Visitor Score	Transit Connectivity Score	Total Concept Score
APM Concept 8A-B: SDIA to Santa Fe Depot	5.53	3.74	3.00	12.27
APM Concept 9A-B: SDIA to Convention Center	6.27	5.00	5.00	16.26
APM Concept 10A-B: SDIA to Civic Center	5.79	6.12	7.00	18.91

Source: WSP 2025

Notes: Bold text indicates the highest scores.

Concept 6A-B received the highest overall score when considering all metrics, followed by Concepts 5A-C and 10A-B with the same total concept score, and Concept 4A-C. Concept 1A-C and Concept 2 received the lowest scores and were therefore not recommended to advance into Round 2 of the pare down process. These results and recommendations for Round 1 were discussed at a partner agency workshop with members of the PDT in June 2025, summarized in Section 6. No opposition was received from partner agencies during or following the workshop.

5.2 Pare Down Round 2

Round 2 evaluated the concepts that advanced from Round 1 using both quantitative and qualitative criteria. Table 5-5 provides a summary of the concepts included in the Round 2 evaluation. Each concept variation was evaluated independently in this round as the criteria were able to differentiate concepts by alignment type. Four categories of criteria were developed for this evaluation, which are discussed in greater detail in the following sections: cost considerations, complexity, compatibility, operational considerations.

Table 5-5: Summary of Concepts Advanced to Round 2

Concepts	Total Length (miles) ¹	Elevated and Surface (miles)	Bored Tunnel (miles)	Cut-and-Cover Tunnel (miles)	Number of Stations
APM Concept 3A: SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	3.83	3.58	0.00	0.25	6 including 2 optional ¹
APM Concept 3B: SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route	3.59	2.15	1.14	0.30	6 including 2 optional ¹
APM Concept 3C: SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid (elevated and bored tunnel) South Route	3.81	2.70	0.76	0.35	6 including 2 optional ¹
APM Concept 4A: SDIA to PTC/CONRAC and Convention Center – Elevated South Route	4.77	4.52	0.00	0.25	7 including 2 optional ¹
APM Concept 4B: SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	4.55	2.15	2.04	0.36	7 including 2 optional ¹
APM Concept 4C: SDIA to PTC/CONRAC and Convention Center– Hybrid (elevated and bored tunnel) South Route	4.75	2.70	1.65	0.40	7 including 2 optional ¹
APM Concept 5A: SDIA to PTC/CONRAC and Civic Center – Elevated South Route	4.23	3.98	0.00	0.25	7 including 2 optional ¹
APM Concept 5B: SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	3.99	2.15	1.54	0.30	7 including 2 optional ¹
APM Concept 5C: SDIA to PTC/CONRAC and Civic Center – Hybrid (elevated and bored tunnel) South Route	4.22	2.70	1.17	0.35	7 including 2 optional ¹
Trolley Concept 6A: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	3.89 (including 2.04 miles on existing track)	1.58	0.00	0.27	2 new, including 1 optional ²
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA	3.89 (including 1.50 miles on existing track)	1.58	0.00	0.27 cut-and-cover and 0.54 extended trench	2 new, including 1 optional ² ; depress County Center/Little Italy Station
APM Concept 8A: SDIA to Santa Fe Depot – Elevated	2.51	2.51	0.00	0.00	4 including 2 optional ¹
APM Concept 8B: SDIA to Santa Fe Depot – Hybrid (elevated and bored tunnel)	2.50	1.63	0.76	0.10	4 including 2 optional ¹

Concepts	Total Length (miles) ¹	Elevated and Surface (miles)	Bored Tunnel (miles)	Cut-and-Cover Tunnel (miles)	Number of Stations
APM Concept 9A: SDIA to Convention Center – Elevated	3.45	3.45	0.00	0.00	5 including 2 optional ¹
APM Concept 9B: SDIA to Convention Center – Hybrid (elevated and bored tunnel)	3.43	1.63	1.65	0.15	5 including 2 optional ¹
APM Concept 10A: SDIA to Civic Center – Elevated	2.91	2.91	0.00	0.00	5 including 2 optional ¹
APM Concept 10B: SDIA to Civic Center – Hybrid (elevated and bored tunnel)	2.90	1.63	1.17	0.10	5 including 2 optional ¹

Source: WSP and HDR 2026

Notes: ¹ Harbor Island and County Administration Building are optional stations

² Harbor Island is an optional station

Numbers may not equal due to rounding

APM = Automated People Mover; ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; PTC = Port Transit Center; SDIA = San Diego International Airport

5.2.1 Cost Considerations

The cost considerations category is comprised of two criteria:

5.2.1.1 Capital Investment Needs

The capital investment needs criterion considers the overall preliminary capital cost of the concept. The capital cost estimates include revenue and non-revenue track length, construction cost, vehicles, professional services, an allowance for utility relocations, and allocated and unallocated contingency. Low, mid, and high points of preliminary capital cost were estimated. The preliminary capital cost does not include right-of-way acquisitions. For purposes of identifying vehicle needs, the cost assumes 7.5-minute headways for all concepts. Capital investment needs also consider the preliminary capital cost with and without the optional stations. Operational considerations are discussed in Section 5.2.4. Based on reviews of the concept alignments, it is not anticipated that the concepts would remove or reconstruct recent infrastructure investments. Refer to Section 5.2.3.2 for the assessment of compatibility with planned projects and plans.

Table 5-6 presents the low-end, mid-point, and high-end preliminary capital cost estimate for each concept evaluated under Round 2 in 2025 dollars. As shown in the table, Concept 4B has the highest preliminary capital cost, with a mid-point estimate of approximately \$5.6 billion. Concept 6A has the lowest preliminary cost, with a mid-point estimate of approximately \$1.5 billion. Therefore, Concept 4B would have the highest and Concept 6A would have the lowest capital investment needs.

Table 5-6: Preliminary Capital Cost Estimates

Concept Description	Cost in Millions (2025)		
	Low	Mid-Point	High
APM Concept 3A: SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	\$2,654	\$3,123	\$4,059
APM Concept 3B: SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route	\$3,663	\$4,310	\$5,602
APM Concept 3C: SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid (elevated and bored tunnel) South Route	\$3,572	\$4,203	\$5,463
APM Concept 4A: SDIA to PTC/CONRAC and Convention Center – Elevated South Route	\$3,015	\$3,547	\$4,611
APM Concept 4B: SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	\$4,741	\$5,577	\$7,250
APM Concept 4C: SDIA to PTC/CONRAC and Convention Center– Hybrid (elevated and bored tunnel) South Route	\$4,707	\$5,537	\$7,198
APM Concept 5A: SDIA to PTC/CONRAC and Civic Center – Elevated South Route	\$2,900	\$3,411	\$4,435
APM Concept 5B: SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	\$4,366	\$5,136	\$6,677
APM Concept 5C: SDIA to PTC/CONRAC and Civic Center – Hybrid (elevated and bored tunnel) South Route	\$4,273	\$5,027	\$6,535
Trolley Concept 6A: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	\$1,288	\$1,516	\$1,970
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA	\$2,612	\$3,073	\$3,994
APM Concept 8A: SDIA to Santa Fe Depot – Elevated	\$1,835	\$2,159	\$2,806

Concept Description	Cost in Millions (2025)		
	Low	Mid-Point	High
APM Concept 8B: SDIA to Santa Fe Depot – Hybrid (elevated and bored tunnel)	\$2,799	\$3,293	\$4,280
APM Concept 9A: SDIA to Convention Center – Elevated	\$2,179	\$2,564	\$3,333
APM Concept 9B: SDIA to Convention Center – Hybrid (elevated and bored tunnel)	\$3,808	\$4,480	\$5,824
APM Concept 10A: SDIA to Civic Center – Elevated	\$2,027	\$2,385	\$3,100
APM Concept 10B: SDIA to Civic Center – Hybrid (elevated and bored tunnel)	\$3,437	\$4,043	\$5,256

Source: WSP 2025

Notes: Preliminary capital cost estimates do not include right-of-way costs.

APM = Automated People Mover; ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; PTC = Port Transit Center; SDIA = San Diego International Airport

Generally, longer alignments and/or those with tunnel components require a greater investment than shorter alignments that are predominantly at-grade or elevated. The Trolley concepts would have the shortest length of new alignment by utilizing between 1.5 miles (Concept 6B) to 2.0 miles (Concept 6A) of existing Trolley tracks. The Trolley concepts would also utilize the existing OMSF, which would minimize the investment needed to implement these concepts. O&M considerations for the OMSF are discussed in Section 5.2.4.1.

The APM concepts would introduce a new transit technology and would have greater lengths of new alignments than the Trolley concepts. The APM concepts would also require an OMSF and non-revenue tracks to connect to the OMSF, which increases the infrastructure needed to support the project. Three potential sites have been identified for an OMSF (as described in Section 3.4). The preliminary capital cost estimates include the OMSF location that would require the more costly non-revenue tracks to access the site in order to provide a more conservative cost estimate. Therefore, Concepts 3-5, inclusive of variations, assume the OMSF would be located near the Fire Training Facility OMSF with approximately 1 mile of non-revenue tracks in an elevated configuration to access the OMSF. Concepts 8-10, inclusive of variations, assume the OMSF would be located at the Pacific Highway OMSF near Palm Street with approximately 0.8 mile of non-revenue tracks in an elevated and cut-and-cover trench configuration, which increases the cost compared to the non-revenue tracks required to access the Fire Training Facility OMSF. As a comparison, cost estimates were also prepared for Concepts 3-5, assuming the OMSF at the Pacific Highway location, and for Concepts 8-10, assuming the OMSF location at the Fire Training Facility. The Pacific Highway OMSF site would reduce capital investment needs for Concepts 3-5 by approximately \$336 million. The Fire Training Facility OMSF site would reduce capital investment needs for Concepts 8-10 by \$362 million.

Among all concepts under consideration in Round 2, implementing Concept 6A could demonstrate greater fiscal responsibility because it has the lowest preliminary capital cost. Concepts 8A, 9A, and 10A have the next lowest preliminary capital costs; however, all three would require an OMSF and the capital cost estimates would increase in subsequent phases of project development as an OMSF site is confirmed and right-of-way costs are calculated. Additionally, given the dense urban environment and potential for redevelopment, the OMSF site(s) may not be available at the time construction begins or may require costly efforts to relocate the land uses on the site at that time.

Concept 6B would require a greater investment than Concept 6A (a mid-point estimate of approximately \$3.1 billion and \$1.5 billion, respectively) due to the construction of the extended trench and depressed County Center/Little Italy Station and vertical circulation. While Concept 6B would have a greater capital

investment need than Concept 6A, this concept would provide benefits compared to Concept 6A. Specifically, Concept 6B would remove three at-grade Trolley crossings, which would provide benefits by eliminating warning bell and horn noise associated with Trolleys traveling through the at-grade crossings and improving vehicular and pedestrian circulation at those locations due to reduced gate down times. Additionally, Concept 6B could provide an opportunity to relocate the County Center/Little Italy Station north between Date and Fir Streets, which would provide benefits in station spacing from the Santa Fe Depot station and connectivity to the Little Italy community.

Concept 3A has the lowest cost of the APM concepts with north and south routes and is approximately \$50 million more than Concept 6B. Concept 3A would provide increased connectivity by going north and south of SDIA and opportunities for future extensions to the north, south, and east.

The APM concepts include two optional stations, and the Trolley concepts include one optional station. Deferring construction of the optional station(s) would decrease cost, thereby reducing the upfront capital investment needs required to construct the project. However, deferring a station would also reduce benefits such as connectivity. Table 5-7 shows the mid-point preliminary capital cost of each concept with and without the optional stations. The greatest cost savings would occur if both stations were deferred for Concepts 3B, 4B, and 5B given the higher cost of the underground County Administration Building APM station under these concepts. For the APM concepts, the cost savings would be the lowest if both optional stations were deferred for Concepts 3A, 4A, 5A, 8A, 9A, and 10A because Elevated stations have a lower capital cost than underground stations. Deferring the Harbor Island Trolley station would reduce capital investment needs by approximately \$65 million.

Table 5-7: Preliminary Capital Cost Estimates – with and without optional stations (in millions)

Concept Description	Mid-Point with Optional Stations	Mid-Point without Harbor Island Optional Station	Mid-Point without County Administration Bldg Optional Station	Mid-Point without Both Optional Stations	Savings without Both Optional Stations
APM Concept 3A: SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	\$3,123	\$3,049	\$3,049	\$2,976	\$146
APM Concept 3B: SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route	\$4,310	\$4,236	\$4,080	\$4,007	\$303
APM Concept 3C: SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid (elevated and bored tunnel) South Route	\$4,203	\$4,129	\$4,032	\$3,959	\$244
APM Concept 4A: SDIA to PTC/CONRAC and Convention Center – Elevated South Route	\$3,547	\$3,474	\$3,474	\$3,401	\$146
APM Concept 4B: SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	\$5,577	\$5,504	\$5,347	\$5,274	\$303

Concept Description	Mid-Point with Optional Stations	Mid-Point without Harbor Island Optional Station	Mid-Point without County Administration Bldg Optional Station	Mid-Point without Both Optional Stations	Savings without Both Optional Stations
APM Concept 4C: SDIA to PTC/CONRAC and Convention Center– Hybrid (elevated and bored tunnel) South Route	\$5,537	\$5,464	\$5,367	\$5,294	\$244
APM Concept 5A: SDIA to PTC/CONRAC and Civic Center – Elevated South Route	\$3,411	\$3,338	\$3,338	\$3,265	\$146
APM Concept 5B: SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	\$5,136	\$5,063	\$4,906	\$4,833	\$303
APM Concept 5C: SDIA to PTC/CONRAC and Civic Center – Hybrid (elevated and bored tunnel) South Route	\$5,027	\$4,954	\$4,856	\$4,783	\$244
Trolley Concept 6A: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	\$1,516	\$1,450	N/A	N/A	\$65
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA	\$3,073	\$3,007	N/A	N/A	\$65
APM Concept 8A: SDIA to Santa Fe Depot – Elevated	\$2,159	\$2,085	\$2,085	\$2,012	\$146
APM Concept 8B: SDIA to Santa Fe Depot – Hybrid (elevated and bored tunnel)	\$3,293	\$3,220	\$3,122	\$3,049	\$244
APM Concept 9A: SDIA to Convention Center – Elevated	\$2,564	\$2,491	\$2,491	\$2,417	\$146
APM Concept 9B: SDIA to Convention Center – Hybrid (elevated and bored tunnel)	\$4,480	\$4,407	\$4,310	\$4,236	\$244
APM Concept 10A: SDIA to Civic Center – Elevated	\$2,385	\$2,311	\$2,311	\$2,238	\$146
APM Concept 10B: SDIA to Civic Center – Hybrid (elevated and bored tunnel)	\$4,043	\$3,970	\$3,873	\$3,800	\$244

Source: WSP 2025

Notes: APM = Automated People Mover; ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; PTC = Port Transit Center; SDIA = San Diego International Airport

5.2.1.2 Cost Per Mile

Cost per mile for each concept considers the total preliminary capital cost (described above) divided by the length of revenue miles for the concept. The calculation includes the more conservative OMSF option

and inclusion of all optional stations as applicable to that concept. This criterion is used to allow an apples-to-apples comparison among concepts as otherwise, the varying lengths of the concepts would skew the comparison because longer alignments would have higher costs.

Table 5-8 presents the low, mid-point, and high-end cost per mile for each of the concepts evaluated in Round 2. Concept 10B has the highest mid-point cost per mile of the concepts (approximately \$1.5 billion per mile) followed by Concept 9B (approximately \$1.6 billion per mile). Concept 6A has the lowest mid-point cost per mile (\$392 million per mile) followed by Concept 6B (\$686 million per mile).

Table 5-8: Cost per Mile

Concept Description	Cost in Millions (2025\$)		
	Low	Mid-Point	High
APM Concept 3A: SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	\$712	\$838	\$1,089
APM Concept 3B: SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route	\$1,049	\$1,234	\$1,604
APM Concept 3C: SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid (elevated and bored tunnel) South Route	\$959	\$1,128	\$1,466
APM Concept 4A: SDIA to PTC/CONRAC and Convention Center – Elevated South Route	\$650	\$765	\$994
APM Concept 4B: SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	\$1,093	\$1,286	\$1,672
APM Concept 4C: SDIA to PTC/CONRAC and Convention Center– Hybrid (elevated and bored tunnel) South Route	\$1,015	\$1,195	\$1,553
APM Concept 5A: SDIA to PTC/CONRAC and Civic Center – Elevated South Route	\$685	\$806	\$1,047
APM Concept 5B: SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	\$1,134	\$1,335	\$1,735
APM Concept 5C: SDIA to PTC/CONRAC and Civic Center – Hybrid (elevated and bored tunnel) South Route	\$1,046	\$1,230	\$1,599
Trolley Concept 6A: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	\$333	\$392	\$509
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA	\$583	\$686	\$892
APM Concept 8A: SDIA to Santa Fe Depot – Elevated	\$783	\$921	\$1,197
APM Concept 8B: SDIA to Santa Fe Depot – Hybrid (elevated and bored tunnel)	\$1,181	\$1,390	\$1,807
APM Concept 9A: SDIA to Convention Center – Elevated	\$669	\$787	\$1,023
APM Concept 9B: SDIA to Convention Center – Hybrid (elevated and bored tunnel)	\$1,195	\$1,405	\$1,827
APM Concept 10A: SDIA to Civic Center – Elevated	\$745	\$876	\$1,139
APM Concept 10B: SDIA to Civic Center – Hybrid (elevated and bored tunnel)	\$1,271	\$1,495	\$1,944

Source: WSP 2025

Notes: APM = Automated People Mover; ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; PTC = Port Transit Center; SDIA = San Diego International Airport

5.2.1.3 Conclusion

The cost considerations, including capital investment needs and cost per mile, are summarized below.

- Overall, the APM concepts would have higher capital investment needs than the Trolley concepts.
 - The APM concepts would introduce a new transit technology and have greater lengths of new alignment than the Trolley concepts. These concepts would also require an OMSF and non-revenue tracks to connect to the OMSF, which would increase infrastructure needed to support the project.
 - Concept 4B has the longest length of new alignment and the highest preliminary capital cost, of all concepts followed by Concept 4C, 5B, and 5C.
 - Concepts 8A, 9A, and 10A have the lowest preliminary capital costs of the APM concepts and second lowest of all concepts; however, the capital cost estimates would increase in subsequent phases of project development as an OMSF site is confirmed and right-of-way costs included in the capital costs.
 - Concept 10B has the highest cost per mile of all concepts, followed by Concepts 9B and 8B. Concept 4A has the lowest cost per mile of the APM concepts, followed by Concepts 9A and 5A.
 - Concept 3A has the lowest cost of the APM concepts with north and south routes and would provide increased connectivity compared to the south route only concepts by going north and south of SDIA and opportunities for future extensions to the north, south, and east.
- The Trolley concepts would have lower capital investment needs than the APM concepts.
 - The Trolley concepts would have the shortest length of new alignment by utilizing between 1.5 miles (Concept 6B) to 2.0 miles (Concept 6A) of existing Trolley tracks.
 - Concept 6A has the lowest preliminary capital cost of all concepts and implementing this concept would have lower investment needs compared to the APM concepts. Concept 6B has the fifth lowest capital cost of all concepts included in Round 2.
 - Concept 6A has the lowest cost per mile of all concepts, followed by Concept 6B.
 - Concept 6B would require a greater investment than Concept 6A due to the construction of the extended trench and depressed County Center/Little Italy Station and vertical circulation. However, Concept 6B would provide additional community benefits by potentially relocating the County Center/Little Italy Station and eliminating three Trolley at-grade crossings, improving circulation and minimizing noise associated with the warning bells and Trolley horns.

5.2.2 Complexity

The complexity category includes criteria focused on potential utility conflicts, potential right-of-way needs, complexity of construction, and potential for future extensions. The analysis is focused on the location and configuration of the revenue tracks and stations associated with each concept, and did not consider the potential APM OMSF locations or non-revenue tracks to access the OMSF.

5.2.2.1 Utility conflicts

Number of major utilities and priority utilities that are within a buffer of the alignment for each concept that could be in conflict. Utilities within the buffer for bored tunnels were not included in this analysis as it is expected that the tunnel would be substantially deeper than any utilities, with the exception of specific locations, such as the launch and retrieval sites for the tunnel boring machine (TBM) and at stations. Note that potential electrical facility conflicts were limited to visible overhead lines during site visits in summer 2025 when the Round 2 analysis occurred. It is possible that additional conflicts to existing underground

electric utilities may exist, which will need to be evaluated in subsequent phases of the project. A potential utility conflict does not assume whether relocation or protect-in-place is required or if the conflict can be avoided in subsequent phases of design.

- Alignment buffer:
 - 10-foot radius from column and straddle bent locations for elevated alignments.
 - 20 feet from track centerline for at-grade and cut-and-cover alignments.
 - 20 feet at stations, and within the limits of the launch and retrieval sites for TBMs.
- Major utilities:
 - Water facilities equal to or greater than 16 inches.
 - Sewer facilities equal to or greater than 18 inches.
 - Storm drain facilities equal to or greater than 36 inches.
 - Overhead electric transmission facilities 69 kilovolt and greater.
- Priority utilities are those within the buffer described above that would have the largest potential effect on the project schedule and/or budget based upon size and location in relation to each concept.

Table 5-9 outlines the number and type of major utilities identified within the buffer described above. Concept 4B would have the greatest number of potential conflicts (24) and Concepts 8A, 8B, and 10A would have the fewest (8).

Table 5-9: Major Utilities

Concept Description	Sewer	Water	Storm Drain	Overhead Transmission Line	Total
APM Concept 3A: SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	5	5	5	1	16
APM Concept 3B: SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route	5	7	5	1	18
APM Concept 3C: SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid (elevated and bored tunnel) South Route	4	6	5	1	16
APM Concept 4A: SDIA to PTC/CONRAC and Convention Center – Elevated South Route	6	8	7	1	22
APM Concept 4B: SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	5	8	10	1	24
APM Concept 4C: SDIA to PTC/CONRAC and Convention Center– Hybrid (elevated and bored tunnel) South Route	4	7	11	1	23
APM Concept 5A: SDIA to PTC/CONRAC and Civic Center – Elevated South Route	5	5	5	1	16
APM Concept 5B: SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	6	8	5	1	20
APM Concept 5C: SDIA to PTC/CONRAC and Civic Center – Hybrid (elevated and bored tunnel) South Route	5	7	5	1	18

Concept Description	Sewer	Water	Storm Drain	Overhead Transmission Line	Total
Trolley Concept 6A: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	1	7	2	0	10
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA (Cedar St Option)	3	7	2	0	12
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA (Fir St. Option)	3	7	2	0	12
APM Concept 8A: SDIA to Santa Fe Depot – Elevated	3	3	2	0	8
APM Concept 8B: SDIA to Santa Fe Depot – Hybrid (elevated and bored tunnel)	2	4	2	0	8
APM Concept 9A: SDIA to Convention Center – Elevated	4	6	4	0	14
APM Concept 9B: SDIA to Convention Center – Hybrid (elevated and bored tunnel)	2	5	8	0	15
APM Concept 10A: SDIA to Civic Center – Elevated	3	3	2	0	8
APM Concept 10B: SDIA to Civic Center – Hybrid (elevated and bored tunnel)	3	5	2	0	10

Source: WSP, HDR, GPM 2025; SanGIS 2025

Notes: “Concept 6B (Cedar)” indicates that the County Center/Little Italy Station would remain in the current location but would be depressed (i.e., located within a trench). “Concept 6B (Fir)” indicates that the County Center/Little Italy Station would be a depressed station located between Date and Fir Streets.

APM = Automated People Mover; ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; PTC = Port Transit Center; SDIA = San Diego International Airport

To further analyze the potential utility conflicts, a list of priority conflicts was identified for each concept. Priority utility conflicts are those that would have the largest potential effect on the project schedule and/or budget based upon size and location in relation to each concept, assuming the conflict could not be avoided through design. A summary of the size and type of priority conflicts and description of what the conflict would be is included in Appendix D. Table 5-10 provides a summary of the total priority conflicts per concept. Concepts 3A, 4A, and 5A could have the highest number of potential priority conflicts (9), while Concepts 3B, 4B, 5B, 6A, 8B, 9B, and 10B could have the fewest (5).

Table 5-10: Priority Utility Conflicts – Totals

Concept Description	Priority Conflicts Total
APM Concept 3A: SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	9
APM Concept 3B: SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route	5
APM Concept 3C: SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid (elevated and bored tunnel) South Route	7
APM Concept 4A: SDIA to PTC/CONRAC and Convention Center – Elevated South Route	9

Concept Description	Priority Conflicts Total
APM Concept 4B: SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	5
APM Concept 4C: SDIA to PTC/CONRAC and Convention Center– Hybrid (elevated and bored tunnel) South Route	7
APM Concept 5A: SDIA to PTC/CONRAC and Civic Center – Elevated South Route	9
APM Concept 5B: SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	5
APM Concept 5C: SDIA to PTC/CONRAC and Civic Center – Hybrid (elevated and bored tunnel) South Route	7
Trolley Concept 6A: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	5
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA (Cedar St Option)	7
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA (Fir St. Option)	7
APM Concept 8A: SDIA to Santa Fe Depot – Elevated	7
APM Concept 8B: SDIA to Santa Fe Depot – Hybrid (elevated and bored tunnel)	5
APM Concept 9A: SDIA to Convention Center – Elevated	7
APM Concept 9B: SDIA to Convention Center – Hybrid (elevated and bored tunnel)	5
APM Concept 10A: SDIA to Civic Center – Elevated	7
APM Concept 10B: SDIA to Civic Center – Hybrid (elevated and bored tunnel)	5

Source: WSP, HDR, GPM 2025

Notes: APM = Automated People Mover; ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; PTC = Port Transit Center; SDIA = San Diego International Airport

5.2.2.2 Right-of-way acquisitions/needs

The evaluation of potential right-of-way needs considered the number of parcels within a buffer from the centerline of the nearest rail that may require some form of a property acquisition to support the concept. The buffer used in this evaluation captured 20 feet for elevated and at-grade alignments, 20 feet for tunnel/cut-and-cover, 20 feet at stations, and 10 feet radius from edge of columns and straddle bents. Additionally, for the extended trench under Concept 6B, a buffer of 9 feet from the centerline of the west side rail (Heavy Rail) for the shoofly and 20 feet from the eastern rail (LRT) was used. The analysis also considers the number of buildings within the buffer that could require demolition. The number of parcels potentially affected was summarized by privately owned, institutional and public and semi-public facilities, and total parcels. The number of parcels potentially affected does not distinguish between full or partial acquisitions, easements, or whether acquisitions would be permanent or temporary. Actual acquisition requirements, including temporary construction easements, will be identified in subsequent phases of project development for the concepts that advance.

Potential right-of-way needs for each concept are shown in Table 5-11. The property needs are categorized as privately owned property or institutional and public and semi-public facilities. Institutional and public and semi-public facilities are defined in the City of San Diego General plan as “Uses that are identified as public or semi-public facilities in the community plan and which offer public and semi-public services to the community. Uses may include but are not limited to: airports, military facilities, community colleges, university campuses, landfills, communication and utilities, transit centers, water sanitation

plants, schools, libraries, police and fire facilities, cemeteries, post offices, hospitals, park-and-ride lots, government offices and civic centers.”

As shown in Table 5-11, Concepts 4B and 4C could affect the greatest number of institutional and public and semi-public land uses (25) while Concept 6B could affect the fewest (9). The Concept 6B with the Fir Street Option for the County Center/Little Italy Station could affect the greatest number of privately owned properties (28) while the Cedar Street Option could affect 24 privately owned properties. Concept 6A could affect the fewest number of privately owned land uses (1). Concept 4B could affect the greatest number of total parcels (46) while Concept 6A could affect the fewest (10). Concept 4A could require the greatest number of potential building demolitions (10).

Table 5-11: Potential Right-of-Way Needs

Concept Description	Number of Parcels Potentially Affected			Number of Buildings for Potential Demolition
	Institutional and Public and Semi-public Facilities	Privately Owned ¹	Total	
APM Concept 3A: SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	19	11	30	9
APM Concept 3B: SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route	20	16	36	9
APM Concept 3C: SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid (elevated and bored tunnel) South Route	20	9	29	9
APM Concept 4A: SDIA to PTC/CONRAC and Convention Center – Elevated South Route	22	12	34	10
APM Concept 4B: SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	25	21	46	9
APM Concept 4C: SDIA to PTC/CONRAC and Convention Center– Hybrid (elevated and bored tunnel) South Route	25	14	39	9
APM Concept 5A: SDIA to PTC/CONRAC and Civic Center – Elevated South Route	20	17	37	9
APM Concept 5B: SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	21	16	37	9
APM Concept 5C: SDIA to PTC/CONRAC and Civic Center – Hybrid (elevated and bored tunnel) South Route	21	9	30	9
Trolley Concept 6A: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	9	1	10	4
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA (Cedar St Option)	14	24	38	0
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA (Fir St. Option)	14	28	42	3
APM Concept 8A: SDIA to Santa Fe Depot – Elevated	10	5	15	0

Concept Description	Number of Parcels Potentially Affected			Number of Buildings for Potential Demolition
	Institutional and Public and Semi-public Facilities	Privately Owned ¹	Total	
APM Concept 8B: SDIA to Santa Fe Depot – Hybrid (elevated and bored tunnel)	11	3	14	0
APM Concept 9A: SDIA to Convention Center – Elevated	13	6	19	0
APM Concept 9B: SDIA to Convention Center – Hybrid (elevated and bored tunnel)	16	8	24	0
APM Concept 10A: SDIA to Civic Center – Elevated	11	11	22	0
APM Concept 10B: SDIA to Civic Center – Hybrid (elevated and bored tunnel)	12	3	15	0

Source: WSP, HDR, and GPM 2025

Notes: ¹The parcel that includes Santa Fe Depot is assumed to be privately owned given ownership of the parcel. APM = Automated People Mover; ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; PTC = Port Transit Center; SDIA = San Diego International Airport

5.2.2.3 Construction complexity

The evaluation of construction complexity includes a high-level discussion of construction challenges associated with each concept, including railroad/Trolley operations. Construction complexity for each concept is partially driven by the length of alignment (particularly length underground), type of alignment (e.g., elevated, cut-and-cover), and whether work is required in a constrained right-of-way. A detailed summary of constructability for Concept 6B is also included in Appendix C. The discussion of construction complexity is presented as follows in order from the highest degree of complexity to the lowest.

Highest degree of complexity

The following concepts all have the highest degree of construction complexity and are generally presented in order of complexity, starting from most complex.

- **Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA**
 - Concept 6B would have the highest degree of complexity among the concepts.
 - Based on preliminary, high-level reviews, the construction scenario assumes that half the trench would be constructed at a time in order to maintain 4 operating tracks (2 Los Angeles–San Diego–San Luis Obispo Rail Corridor [LOSSAN] heavy rail and 2 MTS LRT) and minimize impacts to adjacent properties. This assumption would increase the construction duration and complexity but would minimize impacts to rail service during construction.
 - To maintain 4 operating tracks, a temporary track called a shoofly would be constructed for the LOSSAN service. The shoofly would be located along the western side of the MTS right-of-way and on California Street. It is assumed one of the LOSSAN tracks would then be temporarily modified to allow Trolley operations while the first half of the trench is being constructed. This would include the temporary relocation of the OCS system to the LOSSAN track.

- Once the first half of the trench is constructed, one direction of the Trolley tracks would become operational in the trench while the other half of the trench and other direction of the Trolley tracks are being constructed.
- In the final condition, both Trolley tracks would be located within the trench, the LOSSAN tracks would be located slightly west of their current location, and the shoofly would be removed.
- Construction would occur mostly in the constrained MTS right-of-way, which is abutted mainly by residential and hotel properties, limiting access and the area available for staging and construction activities.
- MTS and LOSSAN service would likely need to operate under slow orders when approaching, and running adjacent to, construction activities. Flagging protection would be required, which would significantly impact construction productivity during service hours, limiting efficiency and extending the construction duration.
- Excavation of materials and delivery of construction equipment would likely occur at Santa Fe Depot and/or the north end near the spur north of Grape Street, and could require crossing active tracks.
- Construction of the Trolley spur from the existing trench, which contains the Trolley tracks, to the new alignment to SDIA would be complex and require phased construction activities to maintain LOSSAN operations while building the cut-and-cover spur connection.
- Construction of the new Trolley alignment would occur under the 108-inch sewer-interceptor pipeline, which would require a deep track profile and complex protect-in-place methods to support this critical utility.
- The alignment transition from a cut-and-cover tunnel to an elevated guideway along North Harbor Drive would require complex staging to minimize impacts to traffic.
- The County Center/Little Italy Station would be closed during construction.
- Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway potentially affecting vehicular access to and from the airport.
- Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.
- **APM Concepts 5B and 5C: SDIA to PTC/CONRAC and Civic Center – Bored Tunnel and Hybrid South Route**
 - Concepts 5B and 5C would generally have the next highest degree of construction complexity.
 - These concepts would require construction of 4.22 miles of guideway for Concept 5C and 3.99 miles of guideway for Concept 5B and up to 7 stations.
 - Concept 5B would require launching the TBM near Pacific Highway and Laurel Street and construction of 1.84 mile of tunnel (cut-and-cover and bored), inclusive of the north route.
 - Concept 5C would require launching the TBM near Pacific Highway and Hawthorn Street and construction of 1.52 mile of tunnel (cut-and-cover and bored), inclusive of the north route.

- Concept 5C would be more complex than Concept 5B as the south route alignment would transition from elevated to retained fill, then cut-and-cover tunnel to bored tunnel along North Harbor Drive. This concept would have greater potential to disrupt traffic to and from SDIA and affect utilities as a result of this transition.
- Construction of the cut-and-cover alignment at Hawthorn Street for Concept 5C would occur under the 108-inch sewer-interceptor pipeline, which would require a deep track profile and protect-in-place methods to support this critical utility.
- Concepts 5B and 5C would require construction adjacent to and under Laurel Street and Pacific Highway, respectively, which could require detours for airport traffic or staging to minimize impacts.
- Both concepts would require construction of up to three underground stations – near the County Administration Building (optional), Santa Fe Depot, and near Civic Center. Two of these underground stations would be along Broadway.
- Construction of the underground stations could require partial roadway closures and/or complete roadway closures at night until the station is excavated and decking can be installed
- Construction activities along Broadway would be challenging given the constrained right-of-way and development immediately adjacent to the roadway. The location and extent of building foundations is unknown.
- The constrained right-of-way and density of development would limit areas available for construction laydown, unless roadway lanes are closed and detours provided.
- The bored tunnel alignment would turn east from Pacific Highway to Broadway. Given limitations in turning radii for TBMs, it is likely the TBM would need to tunnel under the existing parking lot at the northeast quadrant of Pacific Highway and Broadway. Depending on the depth of the tunnel, this movement could be encumbered if the parking lot is redeveloped prior to the start of construction and the corresponding development included deep building foundations and/or underground parking.
- The TBM would need to be retrieved from a shaft near the southern end of the alignment within Broadway. This retrieval could affect traffic on Broadway and intersecting streets due to the constrained right-of-way in the highly urbanized area. Alternatively, the TBM could be dismantled and returned through the tunnel and removed at the launch site, which would be a much more complex operation and could extend construction duration.
- Concepts 5B and 5C would require construction at the end of the runway and certain construction operations could temporarily obstruct the runway protection zone (RPZ). This would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction schedule. Constructing a cut-and-cover tunnel at the end of the runway and cut-and-cover tunnel under Pacific Highway would involve pile augering with tall equipment. To keep the RPZ unobstructed for flight operations, this work would need to be performed after flight operations cease at night and before starting again the next morning and would require mobilization and demobilization of the tall equipment daily. Potentially further shortening the work window, there are pieces of the Instrument Landing System near the end of the runway, specifically the Localizer. The Localizer provides horizontal guidance to pilots by sending radio signals. It is sensitive to vibration and may need time to be calibrated each morning before flights resume.

- Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway potentially affecting vehicular access to and from the airport.
- Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.
- **APM Concepts 4B and 4C: SDIA to PTC/CONRAC and Convention Center – Bored Tunnel and Hybrid South Route**
 - These concepts would require construction of 4.75 miles of guideway for Concept 4C and 4.55 miles of guideway for Concept 4B and up to 7 stations.
 - Concept 4B would require launching the TBM near Pacific Highway and Laurel Street and construction of 2.40 miles of tunnel (cut-and-cover and bored), inclusive of north route.
 - Concept 4C would require launching the TBM near Pacific Highway and Hawthorn Street and construction of 2.05 miles of tunnel (cut-and-cover and bored), inclusive of north route.
 - Concept 4C would be more complex than Concept 4B as the south route alignment would transition from elevated to retained fill, then cut-and-cover tunnel to bored tunnel. This concept has greater potential to disrupt traffic along North Harbor Drive to and from SDIA and affect utilities as a result of this transition.
 - Construction of the cut-and-cover alignment for at Hawthorn Street for Concept 4C would occur under the 108-inch sewer-interceptor pipeline, which would require a deep track profile and protect-in-place methods to support this critical utility.
 - These concepts would require construction adjacent to and under Laurel Street and Pacific Highway, which could require detours for airport traffic or staging to minimize impacts.
 - Both concepts require the construction of up to three underground stations—near the County Administration Building (optional), Santa Fe Depot (on Pacific Highway), and Convention Center.
 - Construction of the underground stations could require partial roadway closures and/or complete roadway closures at night until the station is excavated and decking can be installed.
 - Construction of the underground stations associated with Concepts 4B and 4C would be less complex than the underground stations along Broadway for 5B and 5C given the wider roadway right-of-way and greater distance from adjacent development.
 - The bored tunnel alignment would turn east from Pacific Highway to North Harbor Drive. Given limitations in turning radii for TBMs, it is likely the TBM would need to tunnel under the property where the Headquarters at Seaport is located. Further study would be needed to determine the extent of building foundations and if the TBM would need to tunnel under the existing buildings on the property.
 - The TBM would need to be retrieved from a shaft near the southern end of the alignment near the Convention Center or dismantled and returned through the tunnel and removed where it is launched. Retrieving the TBM near the Convention Center would affect traffic on East Harbor Drive.
 - Concepts 4B and 4C would require construction at the end of the runway and certain construction operations could temporarily obstruct the RPZ. This would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction

schedule. Constructing a cut-and-cover tunnel at the end of the runway and cut-and-cover tunnel under Pacific Highway would involve pile augering with tall equipment. To keep the RPZ unobstructed for flight operations, this work would need to be performed after flight operations cease at night and before starting again the next morning and would require mobilization and demobilization of the tall equipment daily. Potentially further shortening the work window, there are pieces of the Instrument Landing System near the end of the runway, specifically the Localizer. The Localizer provides horizontal guidance to pilots by sending radio signals. It is sensitive to vibration and may need time to be calibrated each morning before flights resume.

- Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway potentially affecting vehicular access to and from the airport.
- Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.
- **Trolley Concept 6A: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA**
 - Concept 6A would use the existing Trolley tracks from 12th & Imperial Transit Center to where the new alignment would spur from the existing tracks near Hawthorn Street. Therefore, this concept would have a lower degree of construction complexity compared to Concept 6B.
 - Concept 6A would require construction of a spur from the existing MTS tracks for the new alignment to SDIA, which would be complex and require construction activities under active LOSSAN tracks. MTS operations would be affected during construction activities at the junction location, which could extend the construction duration.
 - Construction of the new Trolley alignment would occur under the 108-inch sewer-interceptor pipeline, which would require a deep track profile and complex protect-in-place methods to support this critical utility.
 - The alignment transition from a cut-and-cover tunnel to an elevated guideway along North Harbor Drive would require complex staging to minimize impacts to traffic.
 - Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway potentially affecting vehicular access to and from the airport.
 - Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.
- **APM Concepts 3B and 3C: SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel and Hybrid South Route**
 - These concepts would require construction of 3.81 miles of guideway for Concept 3C and 3.59 miles of guideway for Concept 3B and up to 6 stations.
 - Concept 3B would require launching the TBM near Pacific Highway and Laurel Street and construction of 1.44 mile of tunnel (cut-and-cover and bored), inclusive of north route.

- Concept 3C would require launching the TBM near Pacific Highway and Hawthorn Street and construction of 1.11 mile of tunnel (cut-and-cover and bored), inclusive of north route.
- Concept 3C would be more complex than Concept 3B as the south route alignment would transition from elevated to retained fill, then cut-and-cover tunnel to bored tunnel. This concept has greater potential to disrupt traffic along North Harbor Drive to and from SDIA and utilities as a result of the transitions.
- Construction of the cut-and-cover alignment at Hawthorn Street for Concept 3C would occur under the 108-inch sewer-interceptor pipeline, which would require a deep track profile and protect-in-place methods to support this critical utility.
- These concepts would require construction adjacent to and under Laurel Street and Pacific Highway, which could require detours for airport traffic or staging to minimize impacts.
- Both concepts require the construction of up to two underground stations—near the County Administration Building (optional) and Santa Fe Depot.
- Construction of the underground stations could require partial roadway closures and/or complete roadway closures at night until the station is excavated and decking can be installed.
- As currently depicted, the underground Santa Fe Depot APM Station would be located on Broadway, which would require complex construction in a constrained right-of-way, similar to Concepts 5B and 5C. Alternatively, the alignment could end on Pacific Highway with the underground Santa Fe Depot APM Station located on Pacific Highway.
- As currently depicted, the TBM would turn from Pacific Highway to Broadway. Given limitations in turning radii for TBMs, it is likely the TBM would need to tunnel under the existing parking lot at the corner of Pacific Highway and Broadway. Depending on the depth of the tunnel, this movement could be encumbered if the parking lot is redeveloped prior to the start of construction and the corresponding development included deep building foundations and/or underground parking. Alternatively, the alignment could end on Pacific Highway, which would eliminate the curve.
- The TBM would need to be retrieved from a shaft near the southern end of the alignment near Santa Fe Depot or returned through the tunnel and removed where it is launched.
- Concepts 3B and 3C would require construction at the end of the runway and certain construction operations could temporarily obstruct the RPZ. This would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction schedule. Constructing a cut-and-cover tunnel at the end of the runway and cut-and-cover tunnel under Pacific Highway would involve pile augering with tall equipment. To keep the RPZ unobstructed for flight operations, this work would need to be performed after flight operations cease at night and before starting again the next morning and would require mobilization and demobilization of the tall equipment daily. Potentially further shortening the work window, there are pieces of the Instrument Landing System near the end of the runway, specifically the Localizer. The Localizer provides horizontal guidance to pilots by sending radio signals. It is sensitive to vibration and may need time to be calibrated each morning before flights resume.
- Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway potentially affecting vehicular access to and from the airport.
- Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions

to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.

Moderate-high degree of complexity

The following concepts all have a moderate to high degree of construction complexity and are generally presented in order from greater complexity to less complex.

- **APM Concept 5A: SDIA to PTC/CONRAC and Civic Center – Elevated South Route**
 - Concept 5A requires construction of up to 4.23 miles of guideway, including 0.25 mile of underground alignment (in the RPZ), and up to 7 stations.
 - The alignment would be predominantly elevated, which would require construction over roadways; lane closures may be required.
 - Concept 5A would require construction of the elevated guideway along Broadway, which would increase complexity. Additionally, construction of the two elevated stations along Broadway would increase complexity due to the footprint required for the vertical circulation elements.
 - Concept 5A would also require construction over active railroad tracks on Broadway, which would increase complexity.
 - This concept would require construction at the end of the runway, and certain construction operations could temporarily obstruct the RPZ. This would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction schedule. Constructing a cut-and-cover tunnel at the end of the runway and cut-and-cover tunnel under Pacific Highway would involve pile augering with tall equipment. To keep the RPZ unobstructed for flight operations, this work would need to be performed after flight operations cease at night and before starting again the next morning and would require mobilization and demobilization of the tall equipment daily. Potentially further shortening the work window, there are pieces of the Instrument Landing System near the end of the runway, specifically the Localizer. The Localizer provides horizontal guidance to pilots by sending radio signals. It is sensitive to vibration and may need time to be calibrated each morning before flights resume.
 - Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway potentially affecting vehicular access to and from the airport.
 - Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.
- **APM Concept 4A: SDIA to PTC/CONRAC and Convention Center – Elevated South Route**
 - Concept 4A requires construction of 4.77 miles of guideway, including 0.25 mile of underground alignment (in the RPZ), and up to 7 stations.
 - The alignment would be predominantly elevated, which would require construction over roadways; lane closures may be required. Construction of the elevated Convention Center APM Station would be adjacent to the future COASTER station, which could increase construction complexity in efforts to minimize or avoid effects to COASTER operations.
 - This concept would require construction at the end of the runway and certain construction operations could temporarily obstruct the RPZ. This would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction

schedule. Constructing a cut-and-cover tunnel at the end of the runway and cut-and-cover tunnel under Pacific Highway would involve pile augering with tall equipment. To keep the RPZ unobstructed for flight operations, this work would need to be performed after flight operations cease at night and before starting again the next morning and would require mobilization and demobilization of the tall equipment daily. Potentially further shortening the work window, there are pieces of the Instrument Landing System near the end of the runway, specifically the Localizer. The Localizer provides horizontal guidance to pilots by sending radio signals. It is sensitive to vibration and may need time to be calibrated each morning before flights resume.

- Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway, potentially affecting vehicular access to and from the airport.
- Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.

- **APM Concept 3A: SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route**

- Concept 3A requires construction of 3.83 miles of guideway, including 0.25 mile of underground alignment (in the RPZ), and up to 6 stations.
- The alignment would be predominantly elevated, which would require construction over roadways; lane closures may be required.
- As currently depicted, the elevated alignment would turn from Pacific Highway to Broadway. As a result, construction would be required over active railroad tracks and along Broadway. Alternatively, the alignment could end on Pacific Highway, which would avoid crossing over the active tracks and reduce construction complexity.
- This concept would require construction at the end of the runway and certain construction operations could temporarily obstruct the RPZ. This would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction schedule. Constructing a cut-and-cover tunnel at the end of the runway and cut-and-cover tunnel under Pacific Highway would involve pile augering with tall equipment. To keep the RPZ unobstructed for flight operations, this work would need to be performed after flight operations cease at night and before starting again the next morning and would require mobilization and demobilization of the tall equipment daily. Potentially further shortening the work window, there are pieces of the Instrument Landing System near the end of the runway, specifically the Localizer. The Localizer provides horizontal guidance to pilots by sending radio signals. It is sensitive to vibration and may need time to be calibrated each morning before flights resume.
- Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway, potentially affecting vehicular access to and from the airport.
- Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.

Moderate degree of complexity

The following concepts all have a moderate degree of construction complexity and are generally presented in order from greater complexity to less complex.

- **APM Concept 10B: SDIA to Civic Center – Hybrid**

- Construction of Concept 10B is similar to that described for Concept 5C, with the exception that a north route would not be constructed.
- Concept 10B would require launching the TBM near Pacific Highway and Hawthorn Street and construction of 1.27 miles of tunnel (cut-and-cover and bored).
- The alignment would transition from elevated to retained fill, then cut-and-cover tunnel to bored tunnel. This concept has the potential to disrupt traffic along North Harbor Drive to and from SDIA and utilities as a result of the transitions.
- Construction of the cut-and-cover alignment at Hawthorn Street would occur under the 108-inch sewer-interceptor pipeline, which would require a deep track profile and protect-in-place methods to support this critical utility.
- The concept would require construction of up to three underground stations—near the County Administration Building (optional), Santa Fe Depot, and near Civic Center. Two of these underground stations would be along Broadway.
- Construction of the underground stations could require partial roadway closures and/or complete roadway closures at night until the station is excavated and decking can be installed.
- Construction activities along Broadway would be challenging given the constrained right-of-way and development immediately adjacent to the roadway. The location and extent of building foundations is unknown.
- The constrained right-of-way and density of development would limit areas available for construction laydown, unless roadway lanes are closed and detours provided.
- The TBM would turn from Pacific Highway to Broadway. Given limitations in turning radii for TBMs, it is likely the TBM would need to tunnel under the existing parking lot at the corner of Pacific Highway and Broadway. Depending on the depth of the tunnel, this movement could be encumbered if the parking lot is redeveloped prior to the start of construction and the corresponding development included deep building foundations and/or underground parking.
- The TBM would need to be retrieved from a shaft near the southern end of the alignment within Broadway or returned through the tunnel and removed where it is launched.
- Concept 10B would not include a north route, and therefore, would not require construction in the RPZ.
- Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway, potentially affecting vehicular access to and from the airport.
- Construction of the guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.

- **APM Concept 9B: SDIA to Convention Center – Hybrid**

- Construction of Concept 9B is similar to that described for Concept 4C, with the exception that a north route would not be constructed.
- Concept 9B would require launching the TBM near Pacific Highway and Hawthorn Street and construction of 1.80 mile of tunnel (cut-and-cover and bored).
- The alignment would transition from retained fill, then cut-and-cover tunnel to bored tunnel. This concept has the potential to disrupt traffic along North Harbor Drive to and from SDIA and utilities as a result of the transitions.
- Construction of the cut-and-cover alignment at Hawthorn Street would occur under the 108-inch sewer-interceptor pipeline, which would require a deep track profile and protect-in-place methods to support this critical utility.
- The concept would require construction of up to three underground stations—near the County Administration Building (optional), Santa Fe Depot (on Pacific Highway), and Convention Center.
- Construction of the underground stations could require partial roadway closures and/or complete roadway closures at night until the station is excavated and decking can be installed.
- Construction of the underground stations would be less complex than the underground stations along Broadway for Concept 10B given the wider roadway right-of-way and greater distance from adjacent development.
- The TBM would turn from Pacific Highway to North Harbor Drive. Given limitations in turning radii for TBMs, it is likely the TBM would need to tunnel under the property where the Headquarters is located. Further study would be needed to determine the extent of building foundations and if the TBM would need to tunnel under the Headquarters building.
- The TBM would need to be retrieved from a shaft near the southern end of the alignment near the Convention Center or returned through the tunnel and removed where it is launched.
- Concept 9B would not include a north route, and therefore, would not require construction in the RPZ.
- Construction of the guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway, potentially affecting vehicular access to and from the airport.
- Construction of the guideway segment within the airport would include construction over the existing airport terminal roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.

- **APM Concept 8B: SDIA to Santa Fe Depot – Hybrid**

- Construction of Concept 8B is similar to that described for Concept 3C, with the exception that a north route would not be constructed.
- Concept 8B would require launching the TBM near Pacific Highway and Hawthorn Street and construction of 0.86 mile of tunnel (cut-and-cover and bored).
- The alignment would transition from elevated to retained fill, then cut-and-cover tunnel to bored tunnel. This concept has the potential to disrupt traffic along North Harbor Drive to and from SDIA and utilities as a result of the transitions.

- Construction of the cut-and-cover alignment at Hawthorn Street would occur under the 108-inch sewer-interceptor pipeline, which would require a deep track profile and protect-in-place methods to support this critical utility.
- The concept would require construction of up to two underground stations—near the County Administration Building (optional) and Santa Fe Depot.
- Construction of the underground stations could require partial roadway closures and/or complete roadway closures at night until the station is excavated and decking can be installed.
- As currently depicted, the underground Santa Fe Depot APM Station would be located on Broadway, which would require complex construction in a constrained right-of-way, similar to Concept 10B. Alternatively, the alignment could end on Pacific Highway with the underground Santa Fe Depot APM Station located on Pacific Highway.
- As currently depicted, the TBM would turn from Pacific Highway to Broadway. Given limitations in turning radii for TBMs, it is likely the TBM would need to tunnel under the existing parking lot at the corner of Pacific Highway and Broadway. Depending on the depth of the tunnel, this movement could be encumbered if the parking lot is redeveloped prior to the start of construction and the corresponding development included deep building foundations and/or underground parking. Alternatively, the alignment could end on Pacific Highway, which would eliminate the curve.
- The TBM would need to be retrieved from a shaft near the southern end of the alignment near Santa Fe Depot or returned through the tunnel and removed where it is launched.
- Concept 8B would not include a north route, and therefore, would not require construction in the RPZ.
- Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway, potentially affecting vehicular access to and from the airport.
- Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.

Lowest degree of complexity

The following concepts all have the lowest degree of construction complexity and are generally presented in order from greater complexity to least complex.

- **APM Concept 10A: SDIA to Civic Center – Elevated**

- Construction of Concept 10A would be similar to Concept 5A, with the exception that a north route would not be constructed.
- Concept 10A would require construction of 2.91 miles of guideway and up to 5 stations.
- The alignment would be entirely elevated, which would require construction over roadways; lane closures may be required.
- Concept 10A would require construction along Broadway, which would increase complexity.
- Concept 10A would also require construction over active railroad tracks on Broadway, which would increase complexity.

- Concept 10A would not include a north route, and therefore, would not require construction in the RPZ.
- Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway, potentially affecting vehicular access to and from the airport.
- Construction of the elevated guideway segment within the airport property would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.
- **APM Concept 9A: SDIA to Convention Center – Elevated**
 - Construction of Concept 9A would be similar to Concept 4A, with the exception that a north route would not be constructed.
 - Concept 9A requires construction of 3.45 miles of guideway and up to 5 stations.
 - The alignment would be entirely elevated, which would require construction over roadways; lane closures may be required.
 - Concept 9A would not include a north route, and therefore, would not require construction in the RPZ.
 - Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway, potentially affecting vehicular access to and from the airport.
 - Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.
- **APM Concept 8A: SDIA to Santa Fe Depot – Elevated**
 - Construction of Concept 8A would be similar to Concept 3A, with the exception that a north route would not be constructed.
 - Concept 8A requires construction of 2.51 miles of guideway and up to 4 stations.
 - The alignment would be entirely elevated, which would require construction over roadways; lane closures may be required.
 - As currently depicted, the elevated alignment would turn from Pacific Highway to Broadway. As a result, construction would be required over active railroad tracks and along Broadway. Alternatively, the alignment could end on Pacific Highway, which would reduce construction complexity.
 - Concept 8A would not include a north route, and therefore, would not require construction in the RPZ.
 - Construction of the elevated guideway along North Harbor Drive would require construction activities within the median or adjacent to the roadway, potentially affecting vehicular access to and from the airport.
 - Construction of the elevated guideway segment within the airport would include construction over the existing airport access roadways as well as surface parking facilities. To minimize disruptions

to vehicular traffic, phased construction may be required in this area, which could extend the construction duration.

5.2.2.4 Potential for Future Extensions

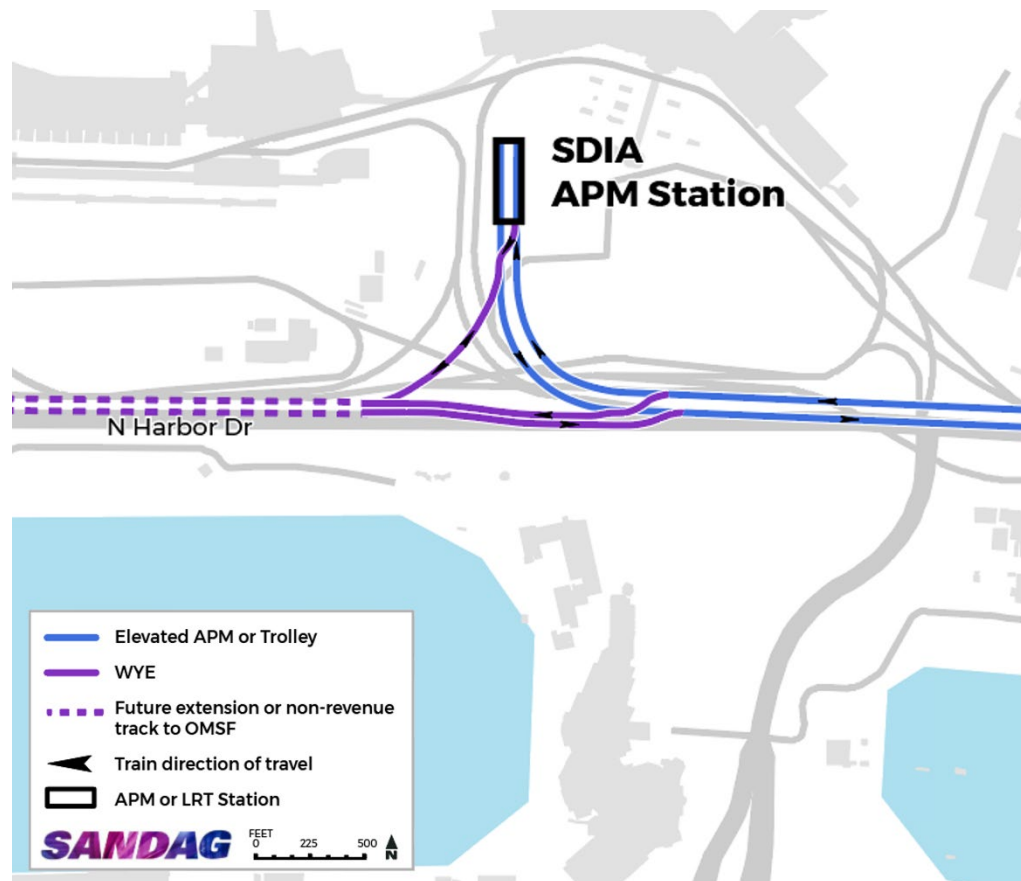
The evaluation of complexity included considerations of the potential for each concept to be extended to other locations to the west, south, east, or north and the potential complexity associated with that extension given the alignment type at the terminus.

Extensions to the west of San Diego International Airport

- All APM and Trolley concepts would have a terminus at SDIA, which is assumed to be an elevated station at the Transit Ready Area on SDIA property.
 - Constructing a wye junction³ (Figure 5-2) and new tracks would be extremely difficult after operation has started on the initial alignment without disrupting service. Alternatively, the wye junction and a stub could be constructed with the initial project to minimize future construction impacts to service.
 - Extensions to points west of SDIA would require trains to change direction after serving the SDIA Station and then operate through a wye junction to travel to the west. Depending on service frequency, this movement could introduce scheduling challenges or adjustments to headways to avoid conflicting train movements through the wye junction and to account for the time needed to switch directions.
 - Alternatively, the SDIA Station for either APM or Trolley concepts could be located on North Harbor Drive, which would alleviate operational challenges if or when an extension occurs. However, a station on North Harbor Drive would increase walking distances between the station and airport terminals, which would be less convenient for passengers, particularly those with luggage, however, a dedicated enclosed walkway connecting the station to the Airport can mitigate some of the challenges.
- A potential OMSF location has been identified west of SDIA near Spruance Road and Kincaid Road for the APM concepts (referred to as the Fire Training Facility OMSF Site). This OMSF location would require non-revenue tracks along North Harbor Drive to McCain Road. (An OMSF would not be required for Trolley concepts.)
 - If this OMSF location were implemented, a future connection for the APM to the west of SDIA would occur via a wye junction from the nonrevenue tracks, which would minimize construction impacts to revenue service.
 - The operational constraints at the SDIA Station would remain when the service is extended.

³ A wye junction is a “Y” shaped track configuration consisting of three tracks that enable a train to reverse or switch routes.

Figure 5-2: Potential Future Extension West of San Diego International Airport



Source: WSP and HDR 2025

Extensions to the south or east

- The Trolley concepts would share the LRT tracks with the UC San Diego Blue and the Green Line Trolley between Hawthorn Street and 12th and Imperial Transit Center. The Green Line Trolley and Airport Trolley Line would both terminate at 12th and Imperial Transit Center. If a different terminus is identified in the future, studies could be conducted to determine the feasibility of the Airport Trolley Line sharing tracks with the UC San Diego Blue and/or Orange Line Trolley along other parts of the MTS system. The Trolley concepts extend farther south than the APM concepts and would provide more coverage in the initial phase.
- The southern terminus varies among the APM concepts: Santa Fe Depot (Concepts 3A-C and 8A-B), Convention Center (Concepts 4A-C and 9A-B), and Civic Core (Concepts 5A-C and 10A-B). The APM concepts also have various station configurations at the southern terminus: elevated (A variations) or underground (B and C variations).
 - There are two potential locations for a Santa Fe Depot APM Station – on Pacific Highway north of Broadway or on Broadway east of Pacific Highway. If Santa Fe Depot is identified as the terminus for the initial project (Concepts 3A-C and 8A-B), the complexity of a future extension would vary depending on the location of the APM station and direction of the extension. Locating the station on Pacific Highway would minimize the complexity of a future extension as the alignment could more easily continue either south or east. In contrast, locating the station along Broadway would facilitate an extension to the east but would complicate a future extension to the south. However,

a stub alignment could be built to either the south or east to facilitate a future extension that would minimize construction impacts on service.

- For the concepts that terminate at Civic Core (Concepts 5A-C and 10A-B) or Convention Center (Concepts 4A-C and 9A-B), implementation of an extension to the east or south would require construction of a new alignment. Construction of the new alignment would be challenging without effecting service. Alternatively, a stub alignment could be constructed with the initial project to minimize future construction impacts to service. The concepts that terminate at Convention Center (4A-C and 9A-C) are the farthest south of the APM concepts. The concepts that terminate at Civic Core (5A-C and 10A-B) are the farthest east of the APM concepts. These concepts extend farther than Concepts 3A-B and would provide more coverage in the initial phase.
- In general, extensions of an underground alignment (B and C variations) would be more costly and complex to construct than extensions of an elevated alignment (A variations), regardless of whether a stub alignment is part of the initial project.
- Extensions of an alignment to the south or east are not anticipated to introduce operational challenges as the alignment would operate as a single route and would not have vehicles approaching from conflicting directions. However, if the alignment is extended south and east, scheduling challenges could occur depending on service frequencies.

Extensions to the north

- The Trolley concepts would operate through a spur that would connect to the existing LRT tracks and allow service to continue to the south. A wye junction would be required at this connection point to also provide service to the north on the existing LRT tracks. Additional operational modeling would be required to determine if an Airport Trolley Line with a north and south alignment would affect operations of the UC San Diego Blue Line and Green Line Trolley between OTTC and Santa Fe Depot.
- APM Concepts 3A-C, 4A-C, and 5A-C include a north route that would continue to stations at the Port Headquarters and Consolidated Rental Car Center (CONRAC). Extensions north of CONRAC would require construction of a new alignment with similar challenges as those identified for extensions to the south. The challenges could be minimized with construction of a stub as part of the initial project.
- APM Concepts 8A-B, 9A-B, and 10A-B include a south route only.
 - Implementation of an extension to the north would require construction of a spur from the elevated alignment near Coast Guard Place, which would be challenging to construct without affecting service unless a stub were constructed with the initial project.
 - Implementation of a new north route could require adjustments to the schedule or headways of a south route as the two routes would share tracks from around Coast Guard Place to the SDIA Station.

5.2.2.5 Conclusion

The overall complexity for each concept, which considers potential utility conflicts, potential right-of-way needs, construction complexity, and potential for future extensions is summarized as follows. This section presents a bookend of overall complexity, summarizing the concepts with the greatest and least complexity. Concepts 3A, 3B, 3C, 4A, 5A, 9A, 9B, 10A, and 10B not summarized below as they would have moderate overall complexity, specifically less than Concept 6A but greater than Concepts 8A and 8B.

- Concepts 4B, 4C, 5B, and 5C are anticipated to have the greatest complexity for the following reasons:
 - **Construction Complexity:**
 - Concept 5B and Concept 5C are among the most complex to construct, particularly given the underground construction required along Broadway where right-of-way is constrained with development immediately adjacent to the roadway.
 - Concepts 4C and 4B would also have among the highest degree of construction complexity though the right-of-way along East Harbor Drive is slightly less constrained than that associated with Concept 5B along Broadway.
 - **Potential Utility Conflicts:**
 - Concept 4B has the potential to conflict with the greatest number of major utilities (24), though only 5 of those are priority utilities.
 - Concept 4C has the potential to conflict with 23 major utilities, of which 7 are priority utilities.
 - Concept 5B has the potential to conflict with 20 major utilities, of which 5 are priority utilities.
 - Concept 5C has the potential to conflict with 18 major utilities, of which 7 are priority utilities.
 - Some utility conflicts may be avoided through advancement of design; however, the presence of these utilities near the concepts could introduce risk to schedule and/or cost to relocate the utility or protect it in place if the conflict cannot be avoided through design.
 - **Potential Right-of-Way Needs:**
 - Concept 4B could affect the greatest number of total properties (46), of which 21 are privately owned properties.
 - Concept 5B could affect 16 privately owned properties and 37 total properties.
 - Concept 4C could affect 14 privately owned properties and 39 total properties.
 - Concept 5C could affect 9 privately owned properties and 30 total properties.
 - It is unknown if acquisitions would be required from these properties, and if so, the extent of the acquisition (i.e., full or partial, temporary or permanent). Property acquisitions, particularly from private properties, increase project cost and the efforts needed prior to starting construction.
 - **Potential for Future Extensions:** Concepts 4B, 4C, 5B, and 5C are among the longest alignments and therefore the need for future extensions would generally be limited to the west (all concepts), south (Concept 5B and 5C), or east (Concepts 4B and 4C). The complexity of the extension to the west is the same for all concepts, and therefore, is not a differentiator. Each of these concepts would be underground at the southern terminus, which would make a future extension to the south or east more complex and costly than if the alignment were elevated.
- Concept 6B is anticipated to have the next greatest degree of complexity for the following reasons:
 - **Construction Complexity:**
 - Concept 6B would have the highest degree of construction complexity given the assumption that 4 operating tracks (2 LOSSAN heavy rail and 2 MTS Trolley) would be maintained during construction. This assumption would minimize the area available for construction of the extended trench and limit productivity and efficiency, thereby increasing the overall duration of construction.

- Construction of the spur for the new alignment from the existing trench would require phased construction activities of the cut-and-cover tunnel in order to maintain LOSSAN operations.
- Construction of the new alignment under the 108-inch sewer interceptor pipeline would also require complex protect-in-place methods to protect this critical utility.
- **Potential Utility Conflicts:** Concept 6B has the lowest number of potential conflicts with major utilities (12), of which 5 are priority conflicts. As such, there could be reduced complexity required to minimize conflicts as design progresses and/or less complexity associated with relocating or protecting utilities in place during construction.
- **Potential Right-of-Way Needs:** Concept 6B could affect the greatest number of private properties.
 - The County Center/Little Italy Station option at Fir Street could affect four more private properties compared to the Cedar Street station option (28 and 24, respectively).
 - Acquisition of land from private properties would increase the cost of the project and could introduce schedule risks.
 - As a result of the number of private properties potentially affected, Concept 6B would also have among the highest number of total properties affected (42 total properties for the Fir Street station option and 38 for the Cedar Street station option).
- **Potential for Future Extensions:** The Trolley concepts extend farther south than the APM concepts and would provide more coverage in the initial phase. If a different terminus was identified in the future, studies could be conducted to determine the feasibility of the Airport Trolley Line sharing tracks with the UC San Diego Blue and/or Orange Line Trolley along other parts of the MTS system. A wye junction would be required at the connection point to the existing LRT tracks to provide service to the north on the existing LRT tracks. Additional operational modeling would be required to determine if an Airport Trolley Line with a north and south alignment would affect operations of the UC San Diego Blue Line and Green Line Trolley between OTTC and Santa Fe Depot.
- Concept 6A complexity considerations would include the following:
 - **Construction Complexity:** Concept 6A would have among the highest degrees of construction complexity, though it would be less complex than Concept 6B and Concepts 5C, 5B, 4C, and 4B.
 - **Potential Utility Conflicts:** Concept 6A could conflict with a moderate number of total major utilities (10), of which 5 are priority utilities.
 - **Potential Right-of-Way Needs:** Concept 6A could affect the lowest number of private properties (1) and could have the lowest number of total properties affected (10).
 - **Potential for Future Extensions:** The Trolley concepts extend farther south than the APM concepts and would provide more coverage in the initial phase. If a different terminus was identified in the future, studies could be conducted to determine the feasibility of the Airport Trolley Line sharing tracks with the UC San Diego Blue and/or Orange Line Trolley along other parts of the MTS system. A wye junction would be required at the connection point to the existing LRT tracks to provide service to the north on the existing LRT tracks. Additional operational modeling would be required to determine if an Airport Trolley Line with a north and south alignment would affect operations of the UC San Diego Blue Line and Green Line Trolley between OTTC and Santa Fe Depot.

- Concepts 8A and 8B are anticipated to have the lowest degree of overall complexity for the following reasons:
 - **Construction Complexity:** Concept 8A ranks the lowest for overall complexity. It would not include construction of a north route and would therefore not require construction in the RPZ. Concept 8B also would not require construction in the RPZ, but it would have a slightly higher degree of construction complexity due to the tunnel segment and up to 2 underground stations.
 - **Potential Utility Conflicts:** Concept 8A would have moderate number of conflicts with major utilities (15), 7 of which are priority utilities. Concept 8B would have a moderate number of conflicts with major utilities (13), 5 of which are priority utilities. Some utility conflicts may be avoided through advancement of design; however, their presence near the concepts could introduce risk to schedule and/or cost to relocate the utility or protect it in place if the conflict cannot be avoided through design.
 - **Potential Right-of-Way Needs:** Concept 8A could affect a moderate number of total properties (privately owned plus institutional and public/semi-public facilities; 15), of which 5 are privately owned properties. Concept 8B could affect 3 privately owned properties and 14 total properties.
 - **Potential for Future Extensions:** Concepts 8A and 8B are south route only concepts, which would present additional challenges to extend to the north versus concepts with both a north and south route. If Santa Fe Depot is identified as the terminus for the initial project, the complexity of a future extension would vary depending on the location of the APM station and direction of the extension. In general, extensions of an underground alignment (8B) would be more costly and complex to construct than extensions of an elevated alignment (8A).

All other concepts would have moderate complexity when balancing construction complexity, potential utility conflicts, potential right-of-way needs, and potential for future extensions.

5.2.3 Compatibility

The compatibility category is focused on regulatory considerations related to implementing each concept as well as the potential to overlap with current plans and projects to better understand the compatibility of each concept within the larger planning landscape. The analysis focused on the location and configuration of the revenue tracks and stations associated with each concept, and did not consider the potential APM OMSF locations or non-revenue tracks to access the OMSF.

5.2.3.1 Regulatory Considerations

SANDAG has been coordinating with the following partner agencies throughout the course of this study (in no particular order): MTS, SDIA, the City of San Diego, Caltrans, the Port of San Diego, and NCTD. Coordination with those partners will continue during the subsequent stages of project development process (e.g., environmental clearance) as relevant for the concepts that advance to each phase. Coordination will also be required with other regulatory agencies during subsequent phases, including, but not limited to, California Department of Fish and Wildlife (CDFW), US Fish and Wildlife Service (USFWS), California Coastal Commission (CCC), and California Public Utilities Commission (CPUC).

The Regulatory Considerations criterion identifies the federal and state agency approvals, permits, and coordination potentially required for implementation of each concept, based on information available as of 2025 when Round 2 evaluation was conducted. Table 5-12 summarizes the regulatory considerations for each concept. A “Yes” indicates that the regulation would be applicable to that concept based on the concept’s alignment, design features, and/or location. A “No” indicates that the regulation is not anticipated to be applicable. Additional approvals and coordination may be identified during subsequent phases of the Project development process. See the *Airport Transit Connection Concept Evaluation Study* (SANDAG 2023) for a description of the regulatory considerations described in this section. This

Addendum also includes Section 207.2 (Clearances for Civil Airports) of the 2025 Caltrans Highway Design Manual, which establishes minimum clearance requirements between highways and civil airports.

All concepts, inclusive of variations, would require permitting and coordination with the Federal Aviation Administration (FAA), CCC, USFWS, CDFW, San Diego County Regional Airport Authority, CPUC, and the Federal Railroad Administration.

- As shown in Table 5-12, Concepts 3A-C, 4A-C, and 5A-C would require compliance with the greatest number of regulations (11).
 - These concepts have north and south routes that would require construction within the runway RPZ, which would result in additional coordination with and approval from FAA compared to concepts that have a south route only and avoid work in the RPZ. The FAA memorandum *Interim Guidance on Land Uses within a Runway Protection Zone* (FAA 2012) imposes strict limitations on transportation infrastructure in the RPZ. Transportation development projects, including rail facilities (light or heavy, passenger or freight), which enter the limits of the RPZ require coordination with the National Airport Planning and Environmental Division, APP-400. Concepts 3A-C, 4A-C, and 5A-C would need to be designed to avoid land use issues within the RPZ, minimize land use impacts in the RPZ, and mitigate risk to people and property on the ground (i.e., through tunneling, depressing, and/or protecting facilities through the RPZ) if these concepts advance to the future environmental clearance phase.
- Concepts 8A-B, 9A-B, 10A-B, and 6A-B would require compliance with 10 regulations.
 - These concepts would avoid construction within the RPZ, and therefore, the FAA memorandum would not be applicable.

Table 5-12: Regulatory Considerations

Regulation	APM with Santa Fe Depot Terminus					APM with Convention Center Terminus					APM with Civic Center Terminus					Trolley with 12th & Imperial Transit Center Terminus	
	3A	3B	3C	8A	8B	4A	4B	4C	9A	9B	5A	5B	5C	10A	10B	6A	6B
FAA: 14 Code of Federal Regulations Chapter 14	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FAA: Interim Guidance on Land Uses within a Runway Protection Zone	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	No
CCC: 15 Code of Federal Regulations Parts 923 and 930 - Coastal Zone Management Act	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CCC: Title 14, Natural Resources Division 5.5, CCC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USFWS: Federal Endangered Species Act	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USFWS: Migratory Bird Treaty Act	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CDFW: California Endangered Species Act	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Regulation	APM with Santa Fe Depot Terminus					APM with Convention Center Terminus					APM with Civic Center Terminus					Trolley with 12th & Imperial Transit Center Terminus	
	3A	3B	3C	8A	8B	4A	4B	4C	9A	9B	5A	5B	5C	10A	10B	6A	6B
SDIA Regional Airport Authority Biodiversity Plan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Federal Railroad Administration: 49, Code of Federal Regulations Subtitle B, Chapter VII	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CPUC General Orders	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Caltrans: Highway Design Manual Section 207.2 Clearances for Civil Airports	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Total	11	11	11	10	10	11	11	11	10	10	11	11	11	10	10	10	10

Source: WSP 2025, CCC 1972, CDFW 1970, FAA 2012, SDIA 2020, USFWS 1918, USFWS 1973

Notes: Yes = the regulation would be applicable to the concept based on the concept's alignment, design features, and/or location.

No = the regulation is not applicable to the concept, based on information known at this time.

Based on current design, all concepts comply with the clearance requirements included in Caltrans Highway Design Manual Section 207.2 (Clearances for Civil Airports).

CCC = California Coastal Commission; CDFW = California Department of Fish and Wildlife; CPUC = California Public Utilities Commission; FAA = Federal Aviation Administration; SDIA = San Diego International Airport; USFWS = United States Fish and Wildlife Service.

5.2.3.2 Overlap with Current Plans and Projects

The evaluation also considered compatibility with plans and projects of the partner agencies. This analysis helped to identify potential overlap with plans and projects to better understand the compatibility of each concept with the larger planning landscape.

Table 5-13 summarizes the potential for overlap with plans and projects as of 2025 when the evaluation was conducted. Overlap with plans and projects could result in conflicts or implementation complexities. A “Yes” indicates that the concept could overlap the plan/project based on the concept’s alignment, design features, and/or location. A “No” indicates that the concept would not overlap with the plan or project, based on information known at this time. SANDAG will continue coordination with partner agencies for the concept(s) that advance to each stage of the project development process to continue to minimize conflicts to the extent practicable.

- As shown in Table 5-13, Concepts 3A, 4A, and 5A have the potential to overlap with the greatest number of plans and projects (5).
 - Concepts 3A, 4A, and 5A could overlap with planned improvements identified in the Airport Development Plan for SDIA (SDIA 2018). The project includes a new Class IV bicycle lane on both sides of Pacific Highway north of Laurel Street. At this location, the APM concepts with a north route include a cut-and-cover tunnel under Pacific Highway and an elevated segment crossing Pacific Highway.
 - Concepts 3A, 4A, and 5A would need to be designed to avoid conflicting with the City of San Diego General Plan Policy UD-A.3 from the Urban Design Element (City of San Diego 2024). Policy UD-A.3 emphasizes preserving scenic vistas and view corridors, particularly near waterfronts and natural features. Because these concepts have an elevated alignment adjacent to the waterfront along North Harbor Drive between Laurel Street and Hawthorn Street, they would need to be designed to minimize visual impacts and complement the surrounding environment.
 - Concepts 3A, 4A, and 5A could overlap with planned bicycle improvements identified in the City of San Diego Mobility Master Plan (City of San Diego 2025) and would require additional design coordination with the city during subsequent phases of project development if these concepts advance. Planned improvements include implementation of one-way Class IV bicycle facilities (i.e., cycle tracks) along each side of Broadway from North Harbor Drive to 3rd Avenue. To accommodate the cycle tracks, lane widths would be reduced on Broadway.
 - The potential overlap for Concepts 3A and 4A is limited to the area at or near the intersection of Pacific Highway and Broadway. Concept 3A includes a new Santa Fe Depot APM station along Broadway at Broadway and Kettner Boulevard, however, this concept could be redesigned to locate the new station along Pacific Highway, which would eliminate the overlap. The new Santa Fe Depot APM station for Concept 4 would be located along Pacific Highway and would avoid overlap with future bicycle facilities on Broadway; however, the Concept 4A alignment could include an elevated stub-ended spur on Broadway east of Pacific Highway for potential future extension. The overlap would be eliminated if the sub-ended spur is not included as part of the project; however, future extensions to the east could be more complex without that spur.
 - Concept 5A has a greater potential for conflict as it includes an elevated APM alignment on Broadway from Pacific Highway to the Civic Center with stations at the Civic Center on Broadway west of 3rd Avenue and adjacent to Santa Fe Depot on Broadway. Adjustments to Broadway to accommodate the elevated guideway and stations have not been identified at

this phase, therefore, the concept could potentially conflict with the planned bicycle improvements and would require additional coordination with the city.

- Concept 3A, 4A, and 5A could overlap with planned transit only lanes on the south side of North Harbor Drive east of Harbor Island Drive included as part of the Port of San Diego Port Master Plan (Port of San Diego 2024). Concepts 3A, 4A, and 5A include an elevated APM alignment along the north side of North Harbor Drive, which should minimize potential overlap; however, additional coordination would be needed with the Port and city to minimize potential conflicts.
- Concepts 3A, 4A, and 5A could overlap with potential future redevelopment of a Port of San Diego-owned parking lot between North Harbor Drive, Pacific Highway, Grape Street, and Hawthorn Street. As they are currently designed, these concepts have an elevated alignment that traverses through the parking lot and the optional County Administration Building APM Station would be located within the parking lot. Based on coordination with the Port of San Diego, the Port is considering potential redevelopment at this location, and these concepts could potentially conflict with future plans. However, these concepts could be re-designed in a later phase of project development to avoid the parking lot by turning east on Hawthorn Street and south on Pacific Highway and locating the optional station on Pacific Highway.
- Concepts 3C, 4C, and 5C have the potential to overlap with the following 4 plans and projects:
 - Concepts 3C, 4C, and 5C could potentially overlap with the planned Class IV bicycle lane on Pacific Highway north of Laurel Street in the Airport Development Plan for SDIA. This overlap would be the same as that described for Concepts 3A, 4A, and 5A.
 - Concepts 3C, 4C, and 5C would include an elevated alignment adjacent to the waterfront along North Harbor Drive south of Laurel Street before transitioning to retained fill and ultimately a cut-and-cover tunnel by Hawthorn Street and would need to be designed to avoid conflicting with the City of San Diego General Plan Policy UD-A.3.
 - Concepts 3C, 4C, and 5C could potentially overlap with planned transit only lanes on the south side of North Harbor Drive east of Harbor Island Drive included as part of the Port of San Diego Port Master Plan. This overlap would be the same as that described for Concepts 3A, 4A, and 5A.
 - Concepts 3C, 4C, and 5C could also overlap with future development at the Port of San Diego parking lot. The APM alignment at this location would be within a cut-and-cover and bored tunnel and the optional County Administration Building APM station would be located beneath the parking lot. It is assumed that the TBM would be launched from this parking lot.
 - If the parking lot is redeveloped before the concept is constructed, an alternative location would need to be identified to launch a TBM or other tunnel construction methods would need to be considered. The location of the transition from a cut-and-cover tunnel to an elevated alignment would also need to be modified. Additionally, the alignment would need to be of sufficient depth to avoid building foundations and/or underground parking.
 - If the parking lot is not redeveloped prior to construction of the concept, coordination would be needed with the Port to confirm the preferred depth of the tunnel so as not to limit development opportunities. However, if the optional County Administration Building APM Station is included, the station entrance could preclude redevelopment potential unless the station and entrance are relocated to Pacific Highway or incorporated into the redevelopment of the site.
 - Concepts 3C, 4C, and 5C would not overlap with implementation of planned Class IV bicycle lanes on Broadway as the APM alignment would be within a bored tunnel.

- Concepts 8A, 9A, and 10A also have the potential to overlap with 4 plans and projects:
 - Concepts 8A, 9A, and 10A would need to be designed to avoid conflicting with the City of San Diego General Plan Policy UD-A.3. This overlap would be the same as that described for Concepts 3A, 4A, and 5A.
 - Concepts 8A, 9A, and 10A could overlap with the planned Class IV bicycle facilities along Broadway. Similar to the discussion of Concepts 3A and 4A above, the potential for overlap with Concepts 8A and 9A would be limited to the area at or near the intersection of Pacific Highway and Broadway. As with Concept 5A, Concept 10A has a greater potential for conflict as it includes an elevated APM alignment on Broadway from Pacific Highway to the Civic Center and two APM stations on Broadway.
 - Concepts 8A, 9A, and 10A could overlap with planned transit only lanes on the south side of North Harbor Drive east of Harbor Island Drive included as part of the Port of San Diego Port Master Plan. This overlap would be the same as that described for Concepts 3A, 4A, and 5A.
 - Concepts 8A, 9A, and 10A could overlap with future development at the Port parking lot because these concepts would have an elevated alignment that traverses through the parking lot and the optional County Administration Building APM Station would be located within the parking lot. Similar to Concepts 3A, 4A, and 5A, these concepts could be re-designed in a later phase of project development to avoid the parking lot by turning east on Hawthorn Street and south on Pacific Highway and locating the optional station on Pacific Highway.
 - Concepts 8A, 9A, and 10A do not include a north route and would not have the potential to overlap with implementation of the planned Pacific Highway Class IV bicycle lane included in the Airport Development Plan.
- Concepts 6A and 6B also have the potential to overlap with 4 plans and projects:
 - Concept 6A and 6B include an elevated alignment adjacent to the waterfront along North Harbor Drive south of Laurel Street before transitioning to at-grade, trench, and cut-and-cover tunnel. These concepts would need to be designed to avoid conflicting with the City of San Diego General Plan Policy UD-A.3.
 - Concepts 6A and 6B could overlap with planned transit only lanes on the south side of North Harbor Drive east of Harbor Island Drive included as part of the Port of San Diego Port Master Plan. This overlap would be the same as that described for concepts 3A, 4A, and 5A.
 - Concepts 6A and 6B could overlap with planned off-site improvements to Grape Street included in the SDIA Airport Development Plan EIR (SDIA 2020). Planned improvements include removing parking on both sides of Grape Street from North Harbor Drive to State Street, adding a travel lane on the south side of Grape Street, and adding a Class IV bicycle facility on the north side. The Concept 6A and Concept 6B spur connection to the new alignment would be located north of and under Grape Street and potential overlap may be limited to the construction phase if roadway closures are required.
 - In discussion with partner agencies, future grade separation of the LOSSAN tracks into a trench, including south of Hawthorn Street, could be desirable. Concepts 6A and 6B would spur under the existing at-grade LOSSAN tracks at Hawthorn Street, which would increase the depth needed to grade separate the LOSSAN tracks if they were grade separated via a trench. Based on preliminary reviews that considered the depth needed to maintain clearance requirements between the Trolley and LOSSAN tracks and the profile that heavy rail and freight trains can traverse, the LOSSAN tracks would not be able to return to an at-grade configuration by Santa Fe

Depot. Therefore, these concepts would preclude grade separation of the LOSSAN tracks via trench unless the Santa Fe Depot LOSSAN station is depressed rather than at-grade.

- Concept 6A and 6B would avoid potential overlap with the planned Class IV bicycle lanes on Pacific Highway and Broadway as well as future development of the Port of San Diego parking lot.
- Concepts 8B, 9B, and 10B have the potential to overlap with 3 plans and projects:
 - Concepts 8B, 9B, and 10B do not include a north route and would not have the potential to overlap with implementation of the bicycle lane.
 - Concepts 8B, 9B, and 10B include an elevated alignment adjacent to the waterfront along North Harbor Drive south of Laurel Street before transitioning to retained fill and ultimately a cut-and-cover tunnel by Hawthorn Street and would need to be designed to avoid conflicting with the City of San Diego General Plan Policy UD-A.3. This overlap would be the same as that described for concepts 3C, 4C, and 5C.
 - Concepts 8B, 9B, and 10B could overlap with planned transit only lanes on the south side of North Harbor Drive east of Harbor Island Drive included as part of the Port of San Diego Port Master Plan. This overlap would be the same as that described for Concepts 3A, 4A, and 5A.
 - Concepts 8B, 9B, and 10B could overlap with future development at the Port of San Diego parking lot. This overlap would be the same as that described for Concepts 3C, 4C, and 5C.
 - Concepts 8B, 9B, and 10B would also avoid overlapping with future implementation of planned Class IV bicycle lanes on Broadway as the APM alignment at these locations would be within a bored tunnel.
- Concepts 3B, 4B, and 5B have the potential to overlap with 2 plans and projects:
 - Concepts 3B, 4B, and 5B could overlap with the planned Class IV bicycle lane on Pacific Highway north of Laurel Street in the Airport Development Plan for SDIA. This overlap would be the same as that described for Concepts 3A, 4A, and 5A.
 - Concepts 3B, 4B, and 5B could overlap with planned transit only lanes on the south side of North Harbor Drive east of Harbor Island Drive included as part of the Port of San Diego Port Master Plan. This overlap would be the same as that described for Concepts 3A, 4A, and 5A.
 - Concepts 3B, 4B, and 5B do not include an elevated alignment adjacent to the waterfront south of Laurel Street and therefore would need to be designed to avoid conflicting with the City of San Diego General Plan Policy UD-A.3.
 - Concepts 3B, 4B, and 5B would avoid overlapping with future implementation of planned Class IV bicycle lanes on Broadway as the APM alignment at these locations would be within a bored tunnel.
 - Concepts 3B, 4B, and 5B would also avoid overlap with potential future redevelopment of the Port of San Diego-owned parking because the APM alignment and optional County Administration Building APM Station would be located along Pacific Highway.

SANDAG has also identified potential future private development that the project could potentially overlap with the concepts evaluated in Round 2.

- A parcel at Hawthorn Street and Pacific Highway was purchased for redevelopment in 2021. The developer is proposing an office building and ground floor retail at the project site which is bounded by Hawthorn Street to the north, Grape Street to the south, Pacific Highway to the west and California

Street to the east. This site overlaps with the location of the Concept 6A and Concept 6B spur connection to the new alignment. If the development is constructed prior to implementation of the project, the spur for the Trolley concepts may need to be shifted farther north to avoid the development, depending on the location and depth of foundations.

- Redevelopment of an existing parking lot bounded by Pacific Highway to the west, Broadway to the south, and Santa Fe Depot to the east has been identified as a potential redevelopment site. Due to the turning radius for a TBM, Concepts 3B, 3C, 5B, 5C, 8B, and 10B would have a portion of the bored tunnel alignment under this site. A bored tunnel at this location could be encumbered if the site is developed prior to implementation of these concepts and the development includes deep building foundations and/or underground parking that would conflict with the depth of a bored tunnel. Alternatively, Concepts 3B, 3C, and 8B could be modified to terminate on Pacific Highway, which would avoid the alignment turning east under the parking lot.

No other private parcels planned for future redevelopment have been identified that would overlap with the concepts. Coordination will continue with the City of San Diego in subsequent phases of project development to continue to identify potential redevelopment projects and how they may overlap with the concepts that advance.

Table 5-13: Potential for Overlap with Plans and Projects

Project/Plan	APM with Santa Fe Depot Terminus				APM with Convention Center Terminus					APM with Civic Center Terminus						Trolley with 12th & Imperial Transit Center Terminus	
	3A	3B	3C	8A	8B	4A	4B	4C	9A	9B	5A	5B	5C	10A	10B	6A	6B
Pacific Hwy Class IV bicycle lane (SDIA)	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	No
General Plan Policy UD-A.3 (City of San Diego)	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Broadway Class IV bicycle lane (City of San Diego)	Yes	No	No	Yes	No	Yes	No	No	Yes	No	Yes	No	No	Yes	No	No	No
Harbor Drive transit-only lanes (Port of San Diego)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Potential parking lot redevelopment (Port of San Diego)	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
Grape Street Roadway Improvements (SDIA)	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes
Potential grade separation of the LOSSAN tracks	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes
Total	5	2	4	4	3	5	2	4	4	3	5	2	4	4	3	4	4

Source: WSP 2025

Notes: Overlap with plans and projects could result in conflicts or implementation complexities. A “Yes” indicates that the concept could result in an overlap based on the concept’s alignment, design features, and/or location. A “No” indicates that the concept would not overlap with the plan or project.

LOSSAN = Los Angeles–San Diego–San Luis Obispo Rail Corridor; SDIA = San Diego International Airport

5.2.3.3 Conclusion

The compatibility assessment for each concept is summarized below from greatest to lowest number of regulations to comply with and potential to overlap with plans and projects. SANDAG will continue coordination with partner agencies and other stakeholders during the future phases of the project development process as relevant for the concept(s) that advance to each phase.

- Concepts 3A, 4A, and 5A would require compliance with the greatest number of regulations (all 10 regulations discussed in Section 5.2.3.1) and are anticipated to have the potential to overlap with the greatest number of plans and projects (5).
 - The north route associated with these concepts could potentially overlap with planned bicycle facilities on Pacific Highway north of Laurel Street identified in the Airport Development Plan for SDIA.
 - These concepts have an elevated alignment adjacent to the waterfront along North Harbor Drive between Laurel Street and Hawthorn Street and would need to be designed to avoid conflicting with the City of San Diego General Plan Policy UD-A.3.
 - These concepts could overlap with planned bicycle improvements identified in the City of San Diego 2025 Mobility Master Plan. Concept 5A with the elevated alignment along Broadway would have the greatest potential for overlap.
 - These concepts could overlap with planned transit only lanes on North Harbor Drive included as part of the Port of San Diego Port Master Plan.
 - These concepts could also overlap with potential future redevelopment of a Port of San Diego-owned parking lot between North Harbor Drive, Pacific Highway, West Grape Street, and West Hawthorn Street.
- Concepts 3C, 4C, and 5C would require compliance with all identified regulations (10) and have the potential to overlap with the next greatest number of plans and projects (4):
 - Concepts 3C, 4C, and 5C would avoid potential overlap with City of San Diego planned bicycle facilities on Broadway. The other potential overlaps are similar to those described for Concepts 3A, 4A, and 5A.
- Concepts 3B, 4B, and 5B would require compliance with all identified regulations (10) but have the potential to overlap with the fewest number of plans and projects (2).
 - These concepts would not include an elevated alignment adjacent to the waterfront south of Laurel Street and therefore would avoid conflicting with the City of San Diego General Plan Policy UD-A.3.
 - These concepts would avoid overlapping with future implementation of planned Class IV bicycle lanes on Broadway as the APM alignment would be within a bored tunnel.
 - These concepts would avoid overlap with potential future redevelopment of the Port of San Diego-owned parking because the APM alignment and optional County Administration Building APM Station would be located along Pacific Highway.
- Concepts 8A, 9A, 10A, 6A, and 6B would require compliance with the next greatest number of regulations (9) and have the potential to overlap with 4 plans and projects:
 - These concepts would avoid construction within the RPZ and therefore would not need to comply with the FAA memorandum.

- These concepts would avoid potential overlap with SDIA planned bicycle facilities on Pacific Highway.
- Concepts 6A and 10A would avoid overlap with City of San Diego planned bicycle facilities on Broadway and potential conflicts with future development at the Port of San Diego parking lot.
- Concepts 6A and 6B could conflict with potential grade separation of the LOSSAN tracks if the grade separation were to occur via a trench.
- Concepts 6A and 6B could overlap with roadway improvements to Grape Street included in the Airport Development Plan EIR, though the spur for the new alignment to SDIA would be located north of and under Grape Street.
- Concepts 8B, 9B, and 10B would also require compliance with the next greatest number of regulations (9) and have the potential to overlap with 3 plans and projects:
 - These concepts would avoid construction within the RPZ and therefore would not need to comply with the FAA memorandum.
 - These concepts would avoid potential overlap with SDIA planned bicycle facilities on Pacific Highway.
 - These concepts would also avoid potential overlap with City of San Diego planned bicycle facilities on Broadway.

5.2.4 Operational Considerations

The operational considerations category is comprised of three criteria:

- O&M needs/requirements
- Minimum headways
- Reliability of operations

5.2.4.1 Operations and Maintenance

The O&M criterion evaluates characteristics of the concepts that would affect operations and/or maintenance costs of the system, such as technology, guideway and station infrastructure, operations and support staff, and other considerations. A quantitative O&M cost estimate was not prepared because O&M cost is influenced by operational aspects such as headways, hours of service, fare, and technology (for the APM concepts), which are decisions that would be made during future phases of the project development process for concepts that advance. Therefore, the analysis that follows provides a high-level, qualitative assessment of the O&M considerations associated with the various concepts.

Technology

- The Trolley concepts would use an existing technology that operates within the MTS system, thereby benefiting from maintenance equipment and practices that are familiar to staff.
- The APM concepts would introduce a new technology into the region. Several APM technologies are available, including, but not limited to, steel wheel, rubber tire, monorail, or cable pulled. Maintenance needs and level of familiarity with maintenance practices would vary by technology.
 - Note: Rubber tire vehicles provide greater flexibility in accommodating steeper profiles and/or tighter turns compared to steel wheel. For instance, the slopes and curvature required to navigate the alignment between CONRAC, the Port Headquarters, and the RPZ would be extremely challenging for a steel wheel vehicle, and design modifications would be needed if this technology

were selected. The lifespan of rubber tire and steel wheel on steel rail APM vehicles is around 30 years, which is similar to the lifespan for Trolley vehicles of around 25 years.

Guideway and Station Infrastructure

Longer alignments generally have higher O&M implications than shorter alignments.

- Trolley concepts:
 - Concept 6A would use existing tracks for 2.0 miles and operate on a new alignment for 1.9 miles. The new alignment would include at-grade, cut-and-cover tunnel, and elevated structure. Overall, this concept would have the lowest O&M implications associated with guideway and station infrastructure among all concepts because it minimizes the length of tunnel structure (0.3 mile) and total new alignment and would predominantly operate at-grade on existing tracks.
 - Concept 6B would use existing tracks for 1.5 miles, operate within an extended trench for 0.5 mile, and operate on a new alignment for 1.9 miles. The new alignment would include at-grade, cut-and-cover tunnel, and elevated structure. Overall, this concept would have higher O&M implications than Concept 6A given the portion of the alignment that would be within an extended trench, which would include features that require ongoing maintenance such as drainage and lighting, within the trench structure.
 - The Trolley concepts would require a wye junction where the new alignment would spur off the existing UC San Diego Blue and Green Line Trolley tracks. This junction would increase maintenance requirements.
 - The Trolley concepts would introduce increased train frequencies on portions of the existing UC San Diego Blue and/or Green Lines. This would contribute to additional wear and tear on shared infrastructure, including track components, traction power systems, and signaling equipment, particularly in areas with tight headways or complex switching operations. Increased use of at-grade crossings may also accelerate maintenance needs for crossing gates, warning devices, and track circuits. While these impacts may be partially addressed through existing MTS maintenance practices, they nonetheless represent incremental O&M implications for the Trolley concepts that rely on shared infrastructure.
- APM concepts:
 - The APM concepts would require a new guideway, the length of which would vary from 2.5 miles (Concept 8) to approximately 4.7 miles (Concepts 4A and 4C). Concepts with a north and south route (Concepts 4A-C, 5A-C, and 3A-B) would have higher O&M implications than the south route only concepts (Concepts 9A-B, 10A-B, and 8A-B). Additionally, the concepts with a north and south route would require a wye junction where the two routes would meet, which would increase maintenance requirements.
 - Compared to conventional rail systems, such as LRT, APM guideways typically include more sensitive and maintenance-intensive equipment, such as embedded sensors, automated switching mechanisms, motorized components (e.g., cable pulls, linear induction motors), and specialized power and communications systems integrated into the guideway itself. These systems require more frequent calibration, monitoring, and component replacement compared to standard infrastructure, contributing to higher long-term O&M implications for APM concepts.

Underground alignments generally increase O&M implications due to the additional infrastructure required to support operation in a tunnel, such as fire life safety components.

- Among the APM concepts, the concept variations with underground alignments (the B and C variations) would generally have higher O&M implications than the concept variations that are

elevated (the A variations). Concept 4B would have the longest underground length (2.4 miles, including the portion of the north route that is in a tunnel within the RPZ) with APM Concept 8B having the shortest (0.9 mile).

- Trolley Concepts 6A and 6B would have 0.3 mile of alignment in a tunnel, which is shorter than the APM alignments under consideration.

The number of stations and the configuration of those stations also affect O&M requirements. Underground, depressed, and elevated stations generally have higher O&M implications than at-grade stations, given the additional infrastructure needed to support the station that requires ongoing maintenance (e.g., vertical circulation elements such as elevators, stairs, and/or escalators).

- Trolley concepts:
 - Concept 6A would introduce two new stations—one at SDIA and an optional station at Harbor Island, both of which would be elevated. This concept would also increase activity at six existing at-grade stations, which would increase O&M needs at those stations.
 - Concept 6B would include a new station at SDIA and an optional station at Harbor Island, both of which are elevated. This concept would also depress the existing at-grade County Center/Little Italy Station, which would require the addition of vertical circulation elements, lighting, and drainage and increase O&M needs compared to the existing configuration of the station. The concept would also increase activity at the six existing stations, which would increase O&M needs at those stations. Therefore, this concept would have higher O&M implications than Concept 6A.
- APM concepts:
 - The number of stations introduced under the APM concepts varies by concept. All stations along the A variations would be elevated. For the B and C variations, stations would either be elevated (SDIA and Harbor Island optional station) or underground (all other stations). The number of stations are as follows:
 - Four stations, two of which are optional: Concepts 8A-8B
 - Five stations, two of which are optional: Concepts 9A-9B, 10A-10B
 - Six stations, two of which are optional: Concepts 3A-3C
 - Seven stations, two of which are optional: Concepts 4A-C, 5A-C
 - O&M implications would be higher for concepts with a greater number of stations and for those with underground stations. Therefore, Concepts 4B, 4C, 5B, and 5C would have the highest O&M implications and Concept 8A would have the lowest O&M implications.

Operations and Support Staff

This O&M cost driver reflects costs associated with personnel (such as salaries), including drivers/operators and other support personnel.

- The Trolley concepts would require a driver, whereas the APM concepts are assumed to be driverless. Therefore, the APM concepts would have a lower O&M cost implication in terms of on-board operators.
- The APM concepts would require a new OMSF, which would increase staffing needs compared to the Trolley concepts that would be operated and maintained at existing facilities. Based on discussions with MTS, staffing needs for the Trolley concepts at the existing facilities may increase by approximately five light rail vehicle mechanics, three facilities service persons, and eight for maintenance of way. The APM concepts would need staff for the new OMSF, and APM concepts

typically require specialized O&M staff with skillsets distinct from those used for traditional operator-driven systems. These skillsets include expertise in automated control systems, vehicle automation software, specialized guideway components, and platform-based safety systems. As a result, APM operations would likely require separate training programs, maintenance procedures, and systems management protocols, many of which differ from those currently in use within the Trolley system. This divergence may reduce the ability to leverage existing workforce and infrastructure, increasing fixed labor and systems costs. Therefore, the Trolley concepts would have a lower O&M cost implication in terms of other personnel needed to operate and maintain the system.

Other Considerations

- Trolley Concept 6A would increase Trolley frequency through nine existing at-grade crossings, which are protected by crossing gates, signals, and other infrastructure that would require maintenance.
- Trolley Concept 6B would increase Trolley frequency through six existing at-grade crossings, which are protected by crossing gates, signals, and other infrastructure that would require maintenance.
- The APM concepts would be entirely grade separated, and therefore, would not require gates, signals, or other equipment at the street level.
- At this stage, O&M cost estimates carry a high degree of uncertainty due to factors that will be defined in later phases of project development, such as technology and vendor selection for APM systems, service span and peak frequency, ridership levels (which influence vehicle utilization and station wear), and whether maintenance is performed in shared or stand-alone facilities.
- Procurement and contracting models can differ between modes. APM suppliers often operate under long-term contracts, which include O&M of the system. This can offer performance guarantees but may limit flexibility to integrate operations with existing MTS practices. In comparison, Trolley operations would likely continue under existing MTS practices.

5.2.4.2 Potential Minimum Headways

The potential minimum headways by technology, which demonstrates the flexibility to provide more frequent service if needed for special events or other circumstances, assuming vehicles are available, is discussed below. Actual headways would be determined during later stages of project development.

- The APM concepts with a north and south alignment (all variants of Concepts 3, 4, and 5) would have a segment where service on both routes overlap, which would dictate the minimum headways that could be provided on each route. Minimum headways could be as short as 4 minutes on each route.
- APM concepts with a south alignment only (all variants of Concepts 8, 9, and 10) could have a minimum headway of 2 minutes.
- The Trolley concepts could have a minimum headway of 7.5 minutes because the Airport Trolley Line would share tracks with the Trolley UC San Diego Blue and/or Green Lines, which would dictate service frequency.

5.2.4.3 Reliability of Operations

The text that follows evaluates reliability by considering potential effects to the operation of each concept resulting from external factors, such other rail traffic on shared tracks or vehicular traffic at at-grade crossings.

- The APM concepts are in dedicated right-of-way separate from roadway vehicles and other rail operations minimizing the potential operational disruptions from external factors.

- Trolley Concepts 6A and 6B operations could be affected by the following:
 - Disruptions on the shared Trolley tracks between the proposed spur at Hawthorn Street and 12th & Imperial Transit Center, either from incidents on the UC San Diego Blue or Green Line or with vehicular or pedestrian activity at the at-grade crossings. Specifically, for both concepts, there are approximately 2.0 miles of shared track and 1.9 mile of Airport Trolley Line exclusive track. Along the shared track, Concept 6A would have nine at-grade crossings with roadway vehicles and pedestrians while Concept 6B would have six at-grade crossings.
 - The Airport Trolley Line would operate through a wye junction as it travels from the existing UC San Diego Blue and Green Line tracks to the new alignment. There is a potential for delays to occur to UC San Diego Blue or Green Line trains traveling northbound or southbound and diverging Airport Trolley Line trains traveling through the wye junction. Based on operational modeling conducted in support of this study, the delays are anticipated to be short and not likely to cause cascading delays in the system.

5.2.4.4 Conclusion

The operational considerations for each concept, including O&M, minimum headways, and reliability of service are summarized below.

- Overall, the APM concepts would have higher O&M implications than the Trolley concepts but may provide better reliability and allow increased flexibility to provide more frequent service if needed.
 - The APM concepts would introduce a new technology into the region, which could require additional maintenance equipment and practices beyond what currently exists within the MTS system and is familiar to staff. APM guideways also typically include more sensitive and maintenance-intensive equipment that require more frequent calibration, monitoring, and component replacement contributing to higher long-term O&M implications.
 - Though the APM concepts are assumed to be driverless, they would require a new OMSF and an operations center, which would increase staffing needs, with specialized staff, compared to the Trolley concepts.
 - Among the APM concepts, concept variations with a north and south route (Concepts 4A-C, 5A-C, and 3A-B) would have higher O&M implications than the south route only concepts (Concepts 9A-B, 10A-B, and 8A-B).
 - Concept variations with underground alignments (the B and C variations) would generally have higher O&M implications than the concept variations that are elevated (the A variations). O&M implications would also be higher for concepts with a greater number of stations and for those with underground stations. Concept 4B is among the concepts with the greatest number of stations and would have the longest underground length (2.4 miles, including the portion of the north route that is in a tunnel within the RPZ). Concept 8B is among the concepts with the fewest number of stations and would have the shortest underground length (0.9 mile).
 - The APM concepts may allow increased flexibility to provide more frequent service, assuming there are a sufficient number of vehicles available.
 - The APM concepts may provide more reliable service compared to the Trolley concepts by minimizing potential operational disruptions. The APM concepts are in dedicated rights-of-way separate from roadway vehicles and would not share tracks with other transit lines. APM concepts with a south route only could have a minimum headway of 2 minutes (Concept 9A-B, 10A-B, and 8A-B).

- APM Concepts 4A-C and 9A-B would not cross existing tracks and would not have any interaction with NCTD or MTS operations.
- The Trolley concepts would have the lowest O&M implications but may result in less reliability and flexibility to provide more frequent service compared to the APM concepts (though better connections to regional transit network).
 - The Trolley concepts would use an existing technology that operates within the MTS system and would use the existing OMSF, providing a benefit for staff.
 - While the APM concepts would have a lower O&M cost implication in terms of on-board operators, the Trolley concepts would have a lower O&M cost implication in terms of other personnel needed to operate and maintain the system.
 - Concept 6B would have higher O&M implications than Concept 6A. Concept 6B would include a portion of the alignment within an extended trench and would depress the existing at-grade County Center/Little Italy station with the addition of vertical circulation, which would increase O&M needs compared to the at-grade alignment and County Center/Little Italy Station.
 - The Trolley concepts would have a shorter tunnel length (0.3 mile) than the APM B and C concept variations and would introduce fewer new stations than all APM concepts under consideration.
 - The Trolley concepts could have a minimum headway of 7.5 minutes, longer than the APM concepts.
 - Trolley Concepts 6A and 6B operations could be affected if there are disruptions on the shared Trolley tracks, including at the at-grade crossings. Concept 6B would provide a benefit in terms of reliability because it would remove three at-grade LRT crossings.
 - The Trolley concepts would not have any interaction with NCTD operations after construction is complete.

5.2.5 Recommendations

The following presents the tradeoff assessment for the concepts included in Round 2 and recommendations of what concepts should be removed from consideration or advanced to Round 3. The concepts have been grouped and evaluated based on the southern terminus. Recommendations are shown in Table 5-14 and described in the sections below.

Table 5-14: Round 2 Recommendations

Terminus	Concept	Description	Recommendation	Rationale
Santa Fe Depot	3A	SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	Remove from consideration	Removed given the capital cost, cost per mile, and O&M implications associated with a north and south route, construction complexity, and low score from Round 1
	3B	SDIA to PTC/CONRAC and Santa Fe Depot – Bored Tunnel South Route	Remove from consideration	Removed given the capital cost, cost per mile, and O&M implications associated with a north and south route, construction complexity, and low score from Round 1
	3C	SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid (elevated and bored tunnel) South Route	Remove from consideration	Removed given the capital cost, cost per mile, and O&M implications associated with a north and south route, construction complexity, and low score from Round 1
	8A	SDIA to Santa Fe Depot – Elevated	Advance to Round 3	Advanced given the lower capital cost, cost per mile, O&M implications, and lower overall complexity
	8B	SDIA to Santa Fe Depot – Hybrid (elevated and bored tunnel)	Advance to Round 3	Advanced given the lower capital cost, cost per mile, O&M implications, and lower overall complexity
Convention Center	4A	SDIA to PTC/CONRAC and Convention Center – Elevated South Route	Remove from consideration	Removed given the capital and O&M implications and complexity in terms of construction, potential utility conflicts, and right-of-way needs
	4B	SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	Remove from consideration	Removed given the high cost, complexity, and O&M implications
	4C	SDIA to PTC/CONRAC and Convention Center– Hybrid (elevated and bored tunnel) South Route	Remove from consideration	Removed given the high cost, complexity, and O&M implications
	9A	SDIA to Convention Center – Elevated	Advance to Round 3	Advanced given the lower capital cost, cost per mile, O&M implications, and overall complexity
	9B	SDIA to Convention Center – Hybrid (elevated and bored tunnel)	Remove from consideration	Removed given the score from Round 1 and the capital cost investment and O&M implications

Terminus	Concept	Description	Recommendation	Rationale
Civic Center	5A	SDIA to PTC/CONRAC and Civic Center – Elevated South Route	Remove from consideration	Removed given the high cost, complexity, and O&M implications
	5B	SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	Remove from consideration	Removed given the high cost, complexity, and O&M implications
	5C	SDIA to PTC/CONRAC and Civic Center – Hybrid (elevated and bored tunnel) South Route	Remove from consideration	Removed given the high cost, complexity, and O&M implications
	10A	SDIA to Civic Center – Elevated	Remove from consideration	Removed given the given the additional cost compared to Concept 8A with a terminus at Santa Fe Depot, despite the lower capital cost, O&M implications, and lower construction complexity
	10B	SDIA to Civic Center – Hybrid (elevated and bored tunnel)	Remove from consideration	Removed given the construction complexity, capital cost investment, and O&M implications
12th & Imperial Transit Center	6A	SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	Advance to Round 3	Advanced given the high score in Round 1, lowest capital cost, cost per mile of all concepts, and low O&M considerations
	6B	SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA	Advance to Round 3	Advanced given the high score in Round 1, lower capital cost, second lowest cost per mile of all concepts, low O&M considerations, and opportunity to remove three Trolley at-grade crossings

Source: WSP 2026

Notes: CONRAC = Consolidated Rental Car Center; PTC = Port Transit Center; SDIA = San Diego International Airport

5.2.5.1 Alignments to Santa Fe Depot (Concepts 3A-C and 8A-B)

Remove Concept 3A

- Compared to Concepts 3B and 3C, Concept 3A would have a lower capital cost and cost per mile. Concept 3A would also have the lowest capital cost of the APM concepts that include a north and south route.
- Concept 3A would potentially conflict with fewer major utilities (16) than Concept 3B (18) and could affect fewer private parcels (11) than Concept 3B (16).
- Concept 3A would have moderate-high construction complexity because construction of the guideway and an elevated station would be required along Broadway, including over active railroad tracks. Additionally, Concept 3A would require construction that could temporarily obstruct the RPZ, which would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction schedule.
- Concept 3A would have lower O&M implications than Concepts 3B and 3C because it is primarily elevated and would not include an underground alignment or station. Concept 3A would also have lower O&M implications than Concepts 4A-C and 5A-C because of the shorter alignment.
- The Round 1 score for Concepts 3A-C was the lowest of the APM concepts that include a north route.
- ***Therefore, given the capital cost, cost per mile, and O&M implications associated with a north and south route, construction complexity, and low score from Round 1, it is recommended that Concept 3A is removed from further consideration.***

Remove Concept 3B and 3C

- Concepts 3B and 3C have the sixth and seventh highest capital cost, respectively. Both concepts have a higher cost than Concepts 3A, 4A, and 5A, which would also provide rail connections to the north and south of SDIA.
- Concepts 3B and 3C could conflict with 18 and 16 major utilities, respectively, if those conflicts cannot be avoided through design.
- Concept 3B could affect the 4th highest number of private parcels (16); Concept 3C could affect 9.
- Concepts 3B and 3C would require construction that could temporarily obstruct the RPZ, which would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction schedule. These concepts would also require construction of a bored tunnel and underground stations.
- Concepts 3B and 3C do not go as far east as Concepts 5B or 5C or as far south as Concepts 4B or 4C. It would be more costly and complex to construct an extension to the south and/or east given the tunnel configuration.
- The Round 1 score for Concepts 3A-C was the lowest of the APM concepts that include a north route. Concepts 3A-C also scored lower than Concepts 9A-B and 10A-B.
- ***Therefore, it is recommended that Concepts 3B and 3C are removed from further consideration.***

Advance Concept 8A and 8B

- Concept 8A would have the second lowest capital cost. Concept 8B would have the 3rd highest cost per mile but would have a lower capital cost than Concepts 3B and 3C.

- Concept 8A is tied for the lowest number of potential major utility conflicts (8); however, 7 of these are priority utilities. Concept 8B is also tied for lowest number of potential major utility conflicts (8) and priority utility conflicts (5).
- Concept 8B could affect the 2nd lowest number of total parcels (14) and private parcels (3). Concept 8A could affect 15 parcels, 5 of which are private, which is the 3rd lowest in both categories.
- Concept 8A would have the lowest degree of complexity of all concepts, though construction of an elevated guideway could be required over active railroad tracks and along Broadway, including an elevated station if the alignment terminates on Broadway rather than Pacific Highway. Concept 8B would also have moderate construction complexity. Similar to Concept 3C, Concept 8B would require construction of a bored tunnel and an underground station along Broadway if the alignment terminates on Broadway rather than Pacific Highway.
- Concepts 8A and 8B would have lower O&M implications among the APM concepts because the alignments are shorter with fewer stations (up to 4). Concept 8B would have higher O&M implications than Concept 8A because Concept 8B has an underground alignment and stations.
- ***Therefore, given the lower capital cost, cost per mile, O&M implications, and lower overall complexity, it is recommended that Concepts 8A and 8B advance to Round 3.***

5.2.5.2 Alignments to Convention Center (Concepts 4A-C and 9A-B)

Remove Concepts 4B (Bored Tunnel South Route) and 4C (Hybrid South Route)

- Concepts 4B and 4C have the highest and second highest capital cost.
- Concepts 4B and 4C could conflict with the highest and second highest number of major utilities (24 and 23, respectively).
- Concept 4B could affect the highest number of parcels (46), and Concept 4C could affect the 2nd or 3rd highest number (39).
- Concept 4B could affect the 2nd highest number of private parcels (21); Concept 4C could affect 14.
- Concepts 4B and 4C would have among the highest construction complexity. Concepts 4B and 4C would require construction that could temporarily obstruct the RPZ, which would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction schedule.
- While Concepts 4B and 4C go the farthest south of the APM concepts, it would be more costly and complex to construct an extension to the east given the tunnel configuration.
- Concepts 4B and 4C would have the longest length of tunnel segments and, along with Concepts 5B and 5C, have the greatest number of stations (up to 7, including 3 underground). As such, these concepts would have among the highest O&M implications.
- Concepts 4A-C had the 4th highest score from Round 1 (out of 9).
- ***Therefore, given the high cost, complexity, and O&M implications, it is recommended that Concepts 4B and 4C be removed from further consideration.***

Remove Concept 4A (Elevated South Route)

- Compared to Concepts 4B and 4C, Concept 4A would have a lower capital cost, cost per mile, and O&M implications.
- Concept 4A could conflict with slightly fewer major utilities than Concepts 4B and 4C (22 compared to 23 and 24, respectively) but could conflict with more priority utilities (9). Concept 4A could affect 34

total parcels, of which 12 are private, which is less than the number potentially affected by Concepts 4B and 4C.

- Construction of Concept 4A would have moderate-high construction complexity. Concept 4A would require construction that could temporarily obstruct the RPZ which would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction schedule.
- Concept 4A would have higher O&M implications than south route only concepts and Concept 3A given the length of the alignment and number of stations (up to 7).
- Concepts 4A-C had the 4th highest score of the concepts in Round 1 (out of 9), which was approximately 2 points higher than Concepts 9A-B.
- ***Therefore, when considering the capital and O&M implications and complexity in terms of construction, potential utility conflicts, and right-of-way needs, it is recommended that Concept 4A is removed from further consideration.***

Remove Concept 9B (Hybrid)

- Concept 9B would have the fifth highest capital cost. Additionally, this concept would have a higher capital cost than Concepts 3A, 4A, and 5A which would provide rail connections to the north and south of SDIA. Concept 9B also would also have the 2nd highest cost per mile.
- Concept 9B would have lower O&M implications than Concepts 4B and 4C because the alignment is shorter and there are fewer stations (up to 5). However, because Concept 9B has an underground alignment, this concept would have higher O&M implications than Concepts 9A.
- Concepts 9A-B had the 5th highest score from Round 1 (out of 9).
- ***Therefore, when considering the score from Round 1 and the capital cost investment and O&M implications, it is recommended that Concept 9B be removed from further consideration.***

Advance Concept 9A (Elevated)

- Concept 9A would have the fourth lowest capital cost and cost per mile.
- Concept 9A could have fewer potential major utility conflicts (14) than Concepts 4A-C; of which 7 are priority utilities.
- Concept 9A could affect 19 parcels, of which 6 are private, which is among the lower range of potential right-of-way needs for the concepts considered.
- Concept 9A has among the lowest construction complexity.
- Concept 9A would have lower O&M implications than Concept 9B because it is entirely elevated.
- Concepts 9A-B had the 5th highest score from Round 1 (out of 9).
- ***Therefore, given the lower capital cost, cost per mile, O&M implications, and overall complexity, it is recommended that Concept 9A advance to Round 3.***

5.2.5.3 Alignments to Civic Center (Concepts 5A-C and 10A-B)

Remove Concepts 5B (Bored Tunnel South Route) and 5C (Hybrid South Route)

- Concepts 5B and 5C have the third and fourth highest capital cost.
- Concepts 5B and 5C could conflict with 20 and 18 major utilities, respectively, if those conflicts cannot be avoided through design.

- Concept 5B could affect 37 parcels, of which 16 are private. Concept 5C could affect 30 parcels, of which 9 are private.
- Concepts 5B and 5C are among the most complex to construct, particularly given the constrained right-of-way and development immediately adjacent to Broadway. Additionally, Concepts 5B and 5C would require construction that could temporarily obstruct the RPZ, which would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction schedule.
- While Concepts 5B and 5C go the farthest east of the concepts, it would be more costly and complex to construct an extension to the south given the tunnel configuration.
- Concepts 5B and 5C would have among the highest O&M implications given the length of the alignment, tunnel configuration, and up to three underground stations. These concepts also have the greatest number of stations (up to 7); tied with Concepts 4A-C and 5A.
- While Concepts 5A-C had the second highest score from Round 1 (out of 9), the score was only slightly higher than Concepts 10A-B, which also serve Civic Center but do not include a north route.
- **Therefore, it is recommended that Concepts 5B and 5C are removed from further consideration.**

Remove Concept 5A (Elevated South Route)

- Compared to Concepts 5B and 5C, Concept 5A would have a lower capital cost, cost per mile, and O&M implications.
- Concept 5A could affect the same number of total parcels as Concept 5B (37), of which 17 are private.
- Concept 5A could conflict with 16 major utilities and could conflict with more priority utilities (9) compared to Concepts 5B (5) and 5C (7).
- Construction of Concept 5A would have moderate-high construction complexity because construction of the guideway and two elevated stations would be required along Broadway, including over active railroad tracks, which would increase complexity. Additionally, Concept 5A would require construction that could temporarily obstruct the RPZ, which would require work to be performed under limited work windows at night when flight operations have ceased causing a longer construction schedule.
- While Concepts 5A-C had the second highest score from Round 1 (out of 9), the score was only slightly higher than Concepts 10A-B, which also serve Civic Center but do not include a north route.
- **Therefore, it is recommended that Concept 5A is removed from further consideration.**

Remove Concept 10B (Hybrid)

- Concept 10B has the eighth highest capital cost. Additionally, this concept has a higher capital cost than Concepts 3A, 4A, and 5A, which would provide rail connections to the north and south of SDIA. Concept 10B also has the highest cost per mile.
- Concept 10B would have moderate construction complexity. Similar to Concept 5C, Concept 10B would require construction of a bored tunnel and two underground stations along Broadway, which would be challenging given the constrained right-of-way and development immediately adjacent to the roadway.
- Concept 10B would have lower O&M implications than Concepts 5B and 5C because the alignment is shorter and there are fewer stations (up to 5). However, because Concept 10B has an underground alignment, this concept would have higher O&M implications than Concept 10A.

- ***Therefore, given the construction complexity, capital cost investment, and O&M implications, it is recommended that Concept 10B be removed from further consideration.***

Remove Concept 10A (Elevated)

- Concept 10A would have the third lowest capital cost but seventh lowest cost-per-mile. The capital cost for Concept 10A would be over \$200 million higher than Concept 8A which includes a terminus at Santa Fe Depot. This increase in cost reflects an additional 0.5 mile of alignment and Civic Center station in an area already served by Trolley and where more walkable infrastructure exists.
- Concept 10A is tied for the lowest number of potential major utility conflicts (8); however, 7 of these are priority utilities.
- Concept 10A could affect 22 parcels, of which 11 are private, which is among the lower to middle of the range of potential effects of the concepts considered.
- Concept 10A has among the lowest construction complexity, though construction of an elevated guideway would be required over active railroad tracks and along Broadway, including 2 elevated stations.
- Concept 10A would have lower O&M implications than Concept 10B because it is entirely elevated.
- ***Despite the lower capital cost, O&M implications, and lower construction complexity, it is recommended that Concept 10A be removed from further consideration given the additional cost compared to Concept 8A with a terminus at Santa Fe Depot.***

5.2.5.4 Alignments to 12th and Imperial Transit Center (Concepts 6A-B)

Advance Concept 6A

- Concept 6A would have the lowest capital cost and cost per mile.
- Concept 6A could have the second lowest number of major utility conflicts (10), of which 5 are priority utilities.
- Concept 6A could also affect the fewest number of total parcels (10), of which only 1 is a private property.
- Concept 6A would have high construction complexity, but would be less complex than Concept 6B or Concepts 4B-C and 5B-C.
- If a southern or eastern terminus other than the existing 12th & Imperial Transit Center were identified in the future, studies could be conducted to determine the feasibility of the Airport Trolley Line sharing tracks with the UC San Diego Blue and/or Orange Lines along other parts of the MTS system.
- Concept 6A would have low O&M implications given the shorter length of new alignment, limited tunnel segment, and lower number of new stations. Additionally, this concept would not require construction or expansion of an OMSF. While additional drivers would be required for the new line, there would be minimal increases in maintenance staff. Trolley technology would also be less complex to maintain than that required for an APM.
- Concept 6A would not be able to achieve headways as short as an APM and could be exposed to conditions that could affect reliability due to operating on shared Trolley tracks, at shared stations, through the wye junction to the new alignment, and through at-grade crossings.
- Concepts 6A-B had the highest score in Round 1.
- ***Given the high score in Round 1, lowest capital cost, cost per mile of all concepts, and low O&M considerations, it is recommended that Concept 6A advance to Round 3.***

Advance Concept 6B

- Concept 6B has the fifth lowest cost and second lowest cost per mile.
- Concept 6B could have the third lowest number of major utility conflicts (12), of which 7 are priority utilities.
- Two locations are under consideration for the County Center/Little Italy Station—at the current location by West Cedar Street or between Date and Fir Streets. The Fir Street option could result in the 2nd highest number of total parcels potentially affected (42), and the Cedar Street option could result in the 4th highest number of total parcels potentially affected (38). Either option could result in the highest number of private parcels potentially affected compared to all other concepts, though the number of private parcels would be higher for the Fir Street option (28) than the Cedar Street option (24).
- Concept 6B would have the highest construction complexity under the assumption that 4 sets of tracks (2 LOSSAN and 2 Trolley) would remain in operation during construction to the extent feasible. As a result, half the trench would be constructed at a time within the constrained MTS right-of-way, which would increase complexity and the construction schedule.
- Concept 6B would have higher O&M implications than Concept 6A given operation within the extended trench including additional drainage and lighting needs, the County Center/Little Italy Station would be depressed, and vertical circulation elements would be added for the station. Similar to Concept 6A, Concept 6B would not require a new or expanded OMSF. While additional drivers would be required for the new line, there would be minimal increases in maintenance staff. Trolley technology would also be less complex to maintain than that required for an APM.
- Concept 6B would not be able to achieve headways as short as an APM. Similar to Concept 6A, Concept 6B could be exposed to conditions that could affect reliability due to operating on shared Trolley tracks, at shared stations, through the wye junction to the new alignment, and through at-grade crossings; however, this concept would eliminate 3 at-grade Trolley crossings which could minimize locations where external factors (e.g., automobiles) could affect reliability.
- Concepts 6A-B had the highest score in Round 1.
- ***Therefore, given the high score in Round 1, lower capital cost, second lowest cost per mile of all concepts, low O&M considerations, and opportunity to remove three Trolley at-grade crossings, it is recommended that Concept 6B advance to Round 3.***

5.3 Pare Down Round 3

Given the considerations for each concept discussed in Section 5.2.4.4, the goal of Round 3 was not to pare down additional concepts but to provide additional information and context on these concepts. Based on partner agency requests, travel times and ridership forecasts were calculated for each remaining concept. Concepts 6A-B, 8A-B, and 9A were evaluated based on the alignment route and station locations. The alignment variations were not evaluated independently because travel time and ridership would not vary substantially by alignment type.

5.3.1 Station-to-Station and Total Travel Time

The evaluation of travel time included the calculation of the station-to-station and total travel time for each concept that advanced to Round 3, as shown in Figure 5-3, Figure 5-4, and Figure 5-5, respectively. Trolley travel times for Concept 6A-B were calculated using the Trolley operational model (described in Section 3.2). APM travel times for Concepts 8A-B and 9A were calculated based on alignment length, number and location of stations, average speed between stations, and anticipated acceleration and

deceleration at stations. The travel time calculations, a maximum speed of 55 miles per hour, and acceleration and deceleration of 3 feet per second squared. Travel times were calculated using both a 30-second and 55-second dwell time. The 55-second dwell time considers the potential need for longer dwell times to accommodate passengers travelling to and from the airport carrying bags which may slow boardings and alightings. These dwell times were selected in consideration of passengers travelling to and from the airport carrying bags which may slow down boardings and alightings. Minor differences in travel times to and from SDIA are mainly attributed to differences in curve radii and overall track length differences between inside tracks (shorter) and outside tracks (longer). At this stage of the planning process, it is assumed that travel time for Concept 8A would be similar to the travel time for Concept 8B and Concept 6A would be similar to Concept 6B despite differences in alignment type.

The travel time calculations included all optional stations. For purposes of comparison, travel time was also calculated without the optional stations. The exclusion of the Harbor Island optional station for Concepts 6A-B would result in a total travel time reduction of approximately 1-2 minutes. The exclusion of one optional station from Concepts 8A-B and Concept 9A would result in a total travel time reduction of approximately 1 minute; the exclusion of both optional stations would result in a travel time reduction of approximately 2 minutes.

Total travel times between SDIA and Santa Fe Depot for each concept were also isolated for purposes of comparison, as this is a common station across each concept.

- For Trolley Concepts 6A-B, total travel time to Santa Fe Depot would be approximately 7.3 minutes with a 30-second dwell and 8.5 minutes with a 55-second dwell.
- APM Concepts 8A-B would have a total travel time from SDIA to Santa Fe Depot of approximately 6.8 minutes with a 30-second dwell and 7.6 minutes with a 55-second dwell.
- APM Concept 9A would have a total travel time from SDIA to Santa Fe Depot of approximately 6.5 minutes with a 30-second dwell and 7.5 minutes with a 55-second dwell.

Concept 9A would have a shorter travel time to and from the Santa Fe Depot ATC Station due to the difference in the station location for each concept. Specifically, under Concept 9A, the station would be located along Pacific Highway, north of Broadway, whereas under Concepts 8A-B, the station is assumed to be located along Broadway and would require vehicles to turn from Pacific Highway to Broadway, introducing a curve and adding to the overall length. As noted previously, the Santa Fe Depot APM Station could be located on Pacific Highway instead under Concepts 8A-8B, in which case the travel time would be similar to that shown for Concept 9A.

Figure 5-3: Concept 6A-B Travel Time

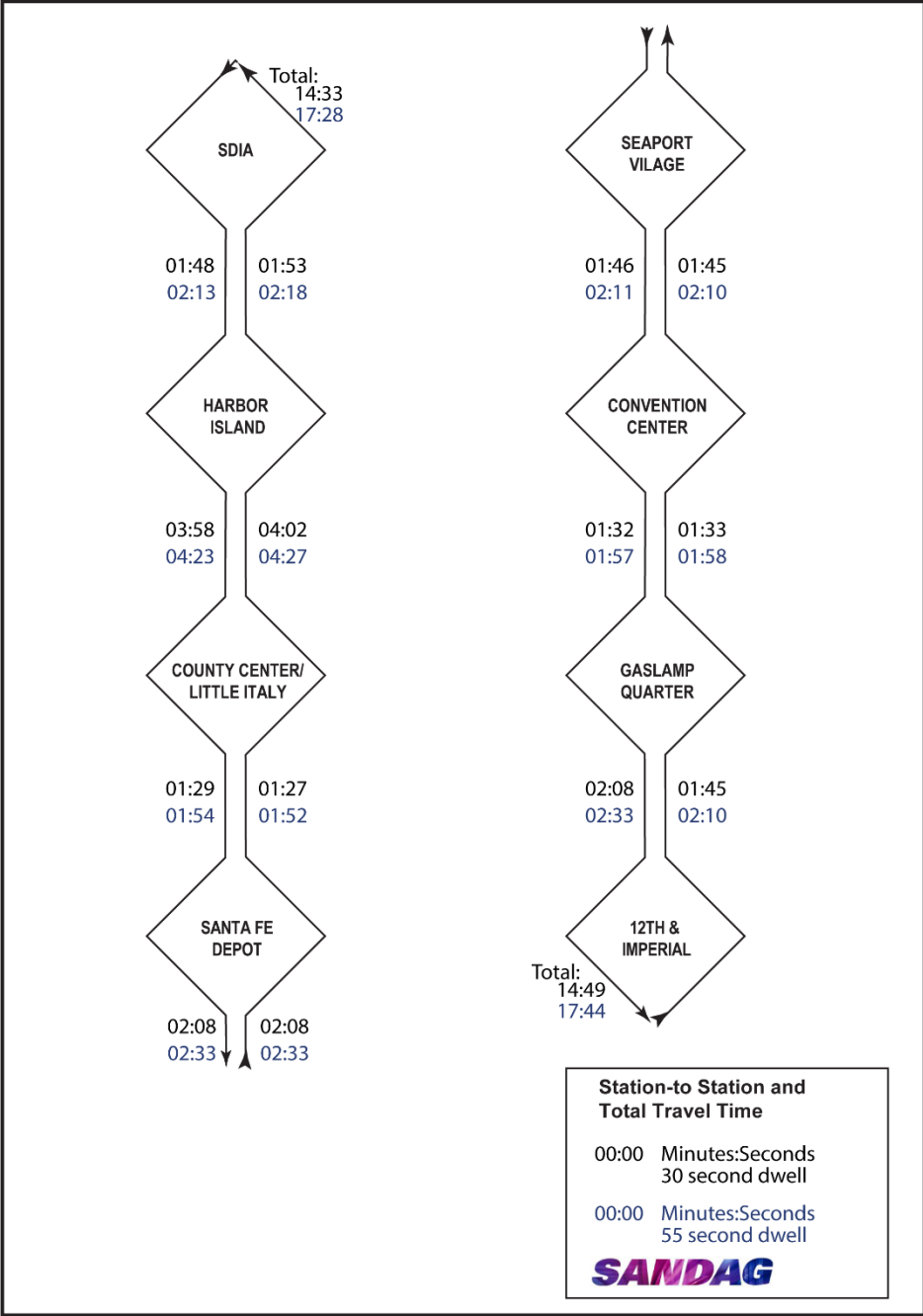


Figure 5-4: Concept 8A-B Travel Time

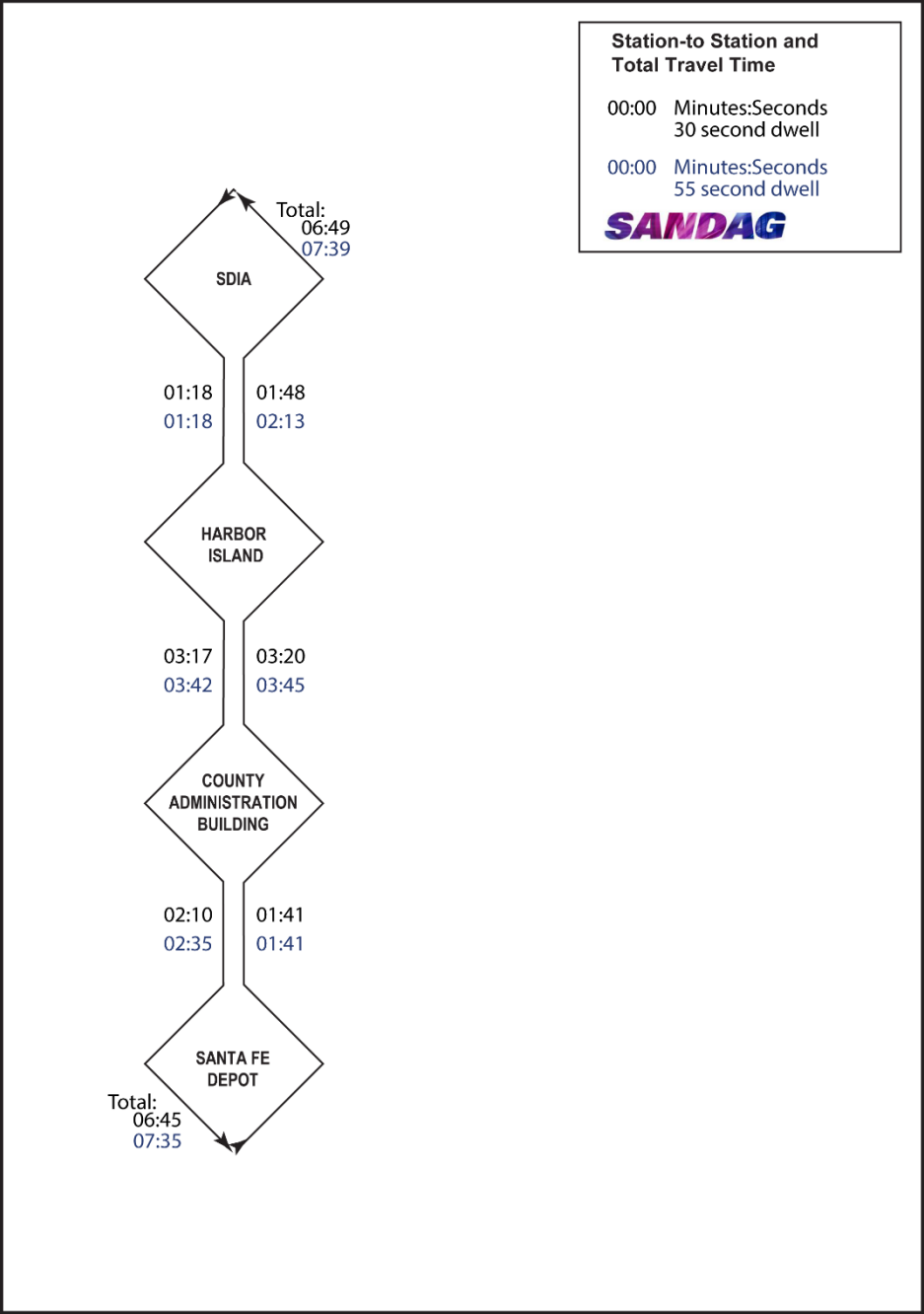
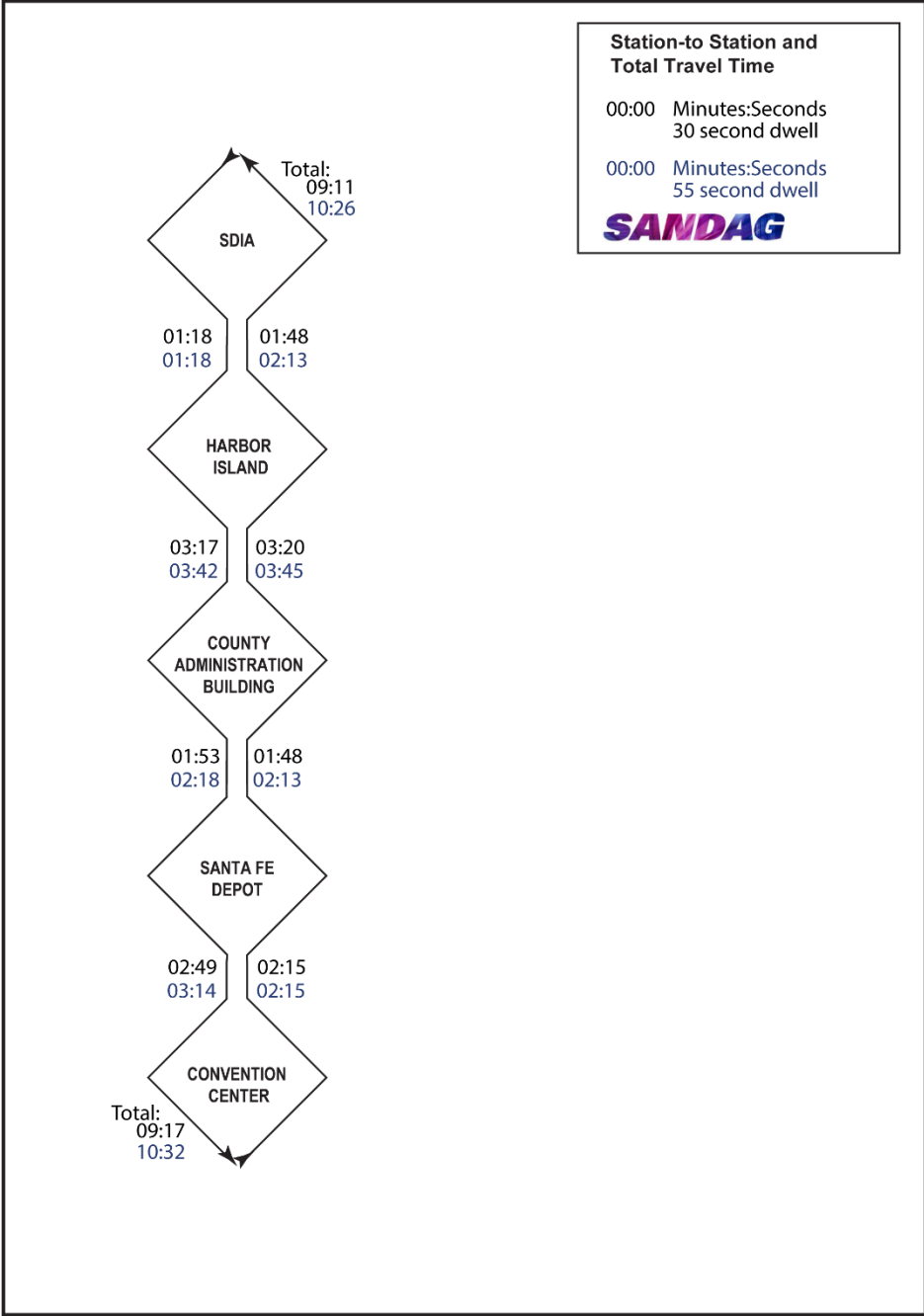


Figure 5-5: Concept 9A Travel Time



Source: WSP and HDR 2026
Notes: SDIA = San Diego International Airport

5.3.2 Ridership Forecasts

Projected ridership in 2050 was forecasted for Concepts 6A-B, 8A-B, and 9A utilizing the updated SANDAG ABM3 model, and consistent fares. The updated ridership forecasting assumed 7.5-minute headways and a 21-hour span of service for the APM and Trolley concepts, developed in collaboration with MTS. Table 5-15 summarizes the projected ridership for each concept. Ridership by station for each concept is shown on Figure 5-6, Figure 5-7, and Figure 5-8 for Concepts 6A-B, Concepts 8A-B, and Concept 9A, respectively. As shown in Table 5-15, Concepts 6A-B would have the highest total daily boardings and highest activity at SDIA, followed by Concept 9A.

Table 5-15: 2050 Ridership

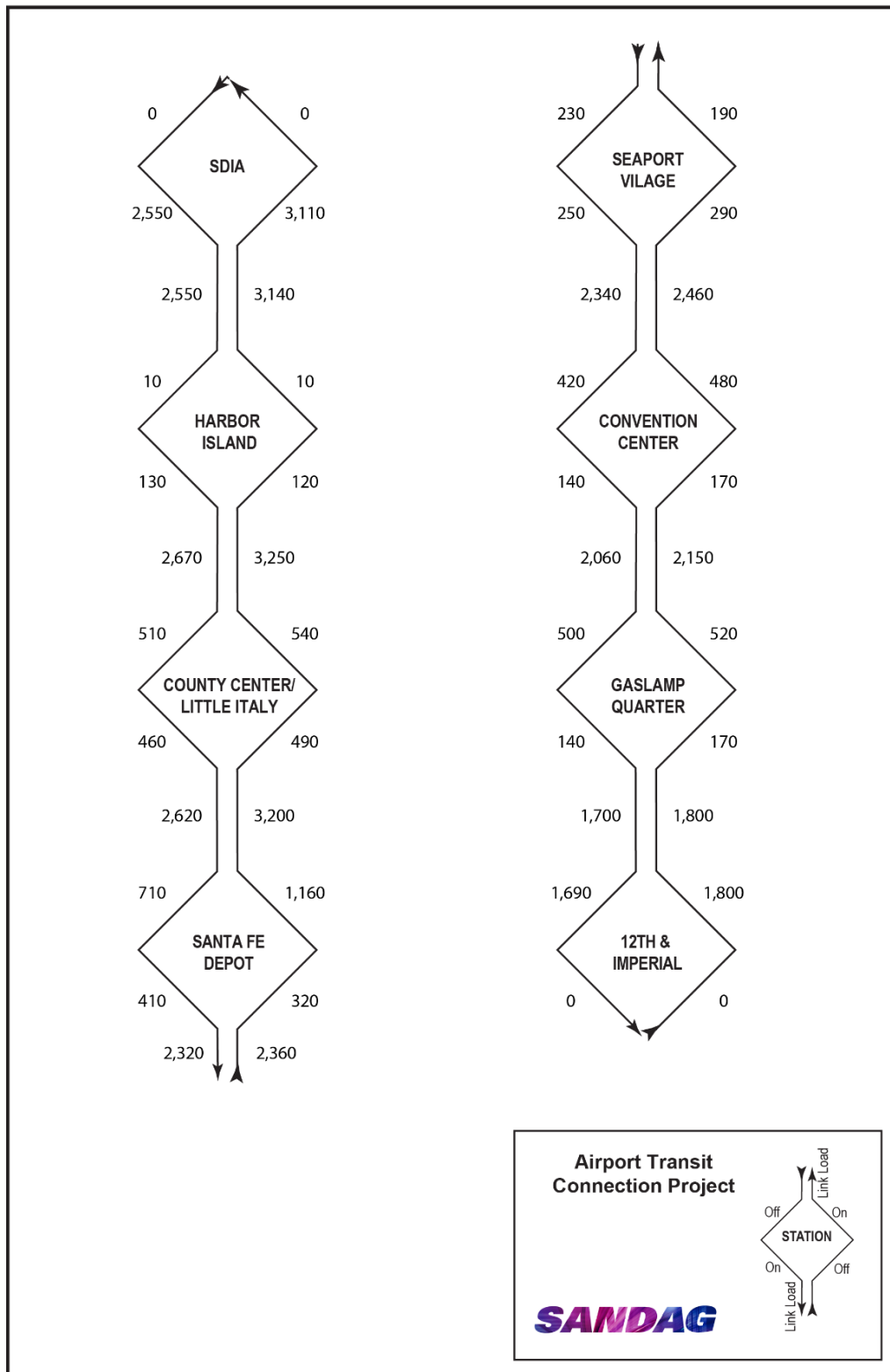
Ridership	Concepts 6A-B SDIA to 12th & Imperial Transit Center	Concepts 8A-B SDIA to Santa Fe Depot	Concept 9A SDIA to Convention Center
Total Daily Boardings	8,800	4,500	5,800
SDIA Station Daily Boardings	2,600	1,600	2,200
SDIA Station Daily Alightings	3,100	2,300	2,900
Total SDIA Activity (Boardings + Alightings)	5,700	4,000	5,100

Source: SANDAG 2026

Notes: Numbers are rounded to the nearest hundred. Numbers may not equal due to rounding.

SDIA = San Diego International Airport

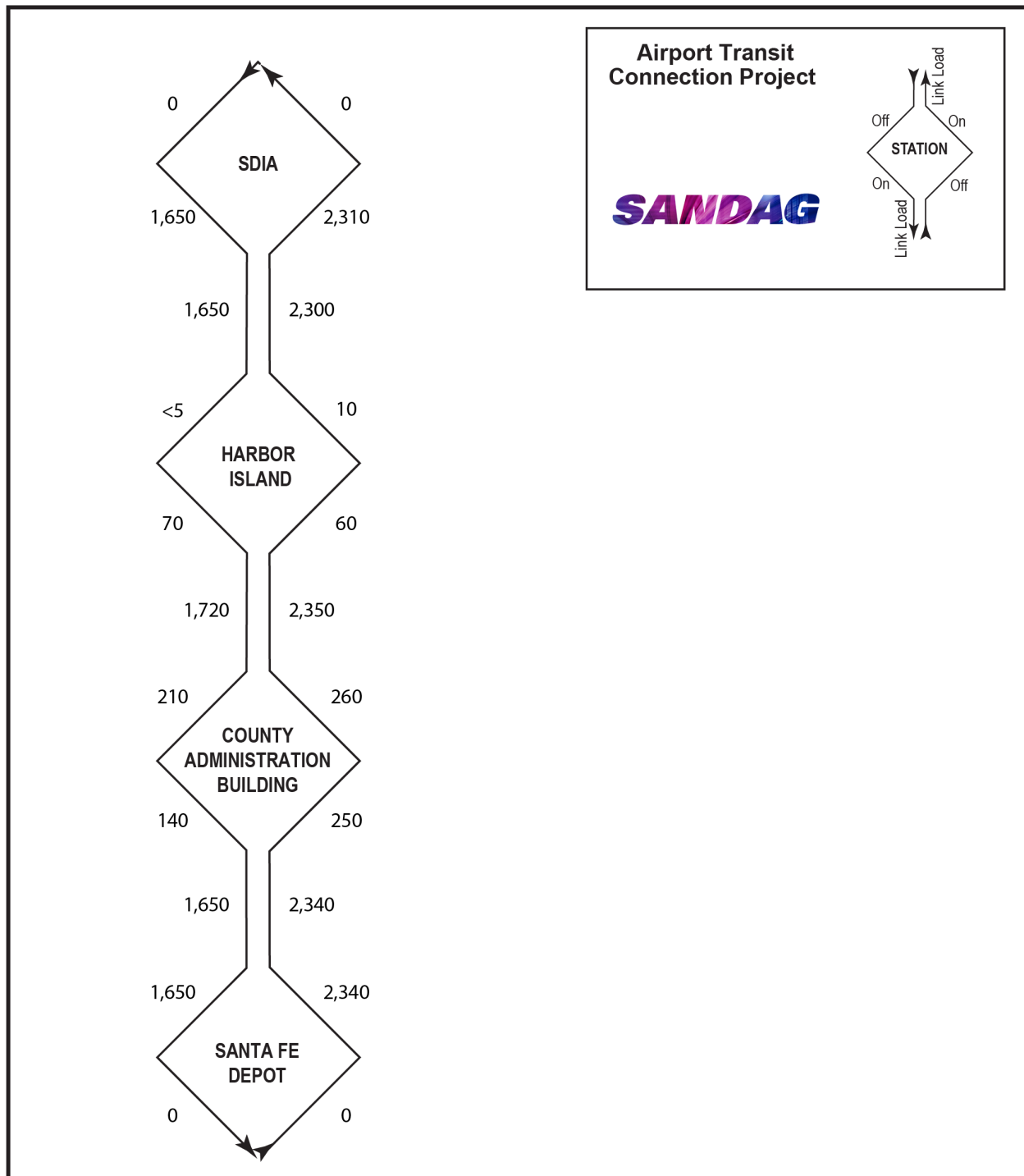
Figure 5-6: Concept 6A-B Ons (Boardings) and Offs (Alightings) by Station



Source: SANDAG 2026

Notes: Numbers are rounded to the nearest 10; numbers may not equal due to rounding

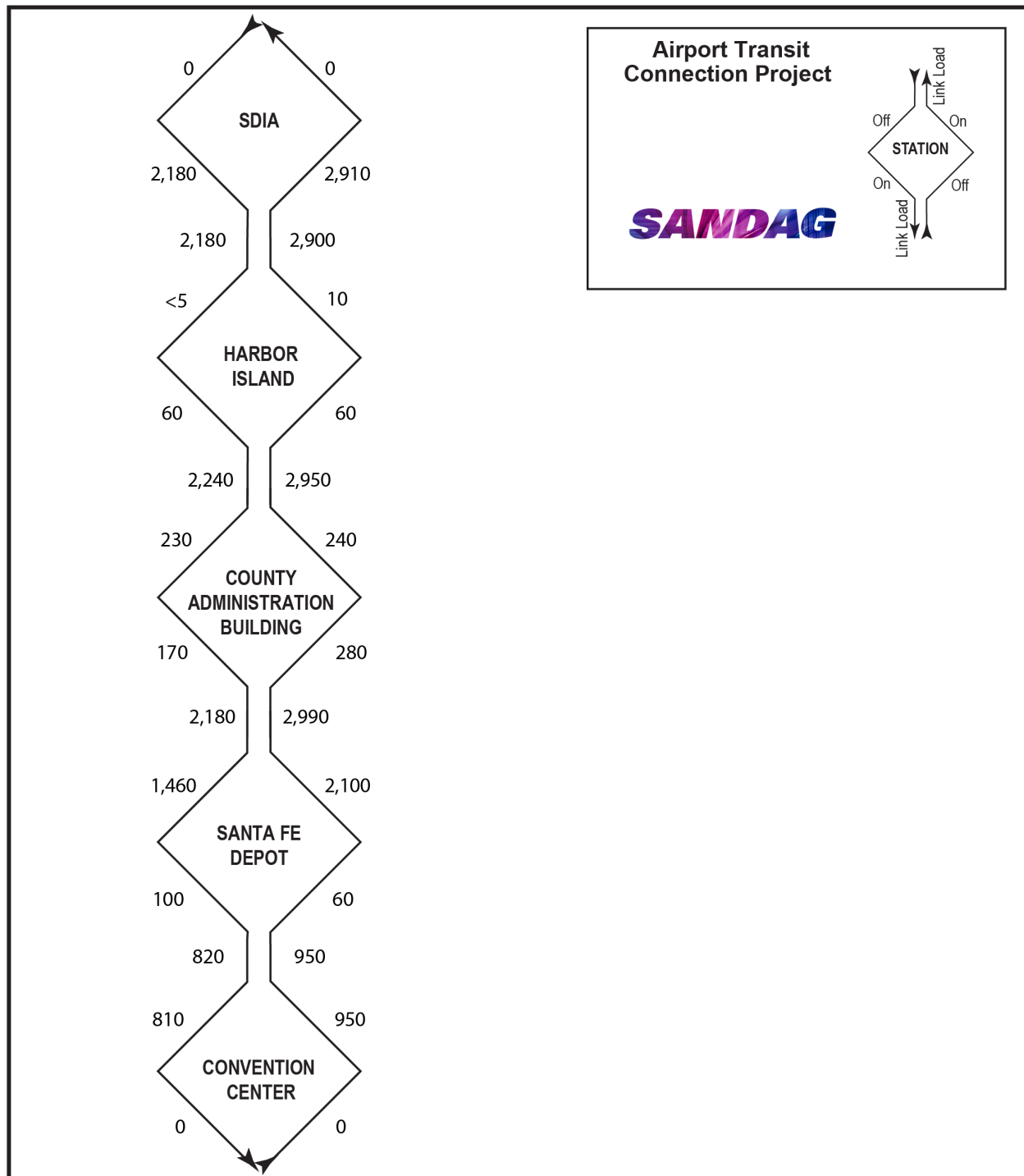
Figure 5-7: Concept 8A-B Ons (Boardings) and Offs (Alightings) by Station



Source: SANDAG 2026

Notes: Numbers are rounded to the nearest 10; numbers may not equal due to rounding

Figure 5-8: Concept 9A Ons (Boardings) and Offs (Alightings) by Station



Source: SANDAG 2026

Notes: Numbers are rounded to the nearest 10; numbers may not equal due to rounding

6 Partner Agency and Stakeholder Collaboration

6.1 Partner Agency Meetings

Throughout the duration of the new technical work and pare down process, SANDAG coordinated with partner agencies and other stakeholders to provide regular status updates, and to receive input on new technical work, concept refinements, and the pare down approach and results. SANDAG also held regular PDT meetings with the partner agencies, which included representatives from Caltrans, the City of San Diego, MTS, NCTD, the Port of San Diego and SDIA to provide project updates. SANDAG also held a series of roundtables with community stakeholders during this process. The specific coordination efforts are presented as follows, sequentially:

- **April 24, 2024:** SANDAG met with MTS to present potential Trolley concepts that would minimize the length of shared track along the Trolley Green Line and UC San Diego Blue Line. MTS stated a preference for double track alignments rather than single tracked. Attendees also discussed the potential for alignments that would remain at-grade or in a trench rather than elevated. Potential headways for an airport rail connection were also discussed. MTS confirmed that the existing OMSF would be sufficient to accommodate new light rail vehicles for an airport connection. Attendees also discussed potential refinements to an enhanced bus concept.
- **May 21, 2024:** SANDAG met with SDIA to discuss potential locations for an APM OMSF. SDIA identified locations where modifications to existing uses would occur. SDIA also suggested other routes for the non-revenue tracks from the APM SDIA Station at the Transit Ready Area to an OMSF at the Fire Training Facility Site.
- **May 23, 2024:** SANDAG met with the City of San Diego to discuss potential sites for the APM OMSF and the various rail concepts under consideration at that time. City of San Diego staff stated that they would provide a list of potential sites for an OMSF after the meeting. SANDAG staff considered that list, as noted in Section 3.4.
- **June 25, 2024:** SANDAG met with the Port of San Diego to discuss potential locations for the APM OMSF and the enhanced bus concept. A potential site for the OMSF that would be on the west side of North Harbor Drive north of Laurel Street was eliminated from further consideration based on input received in the meeting.
- **June 27, 2024:** SANDAG met with the City of San Diego to discuss potential sites for an APM OMSF based on information previously provided by the city.
- **July 10, 2024:** SANDAG held a regular PDT meeting to provide updates on the potential locations for an OMSF discussed in this addendum. City of San Diego and Port staff provided inputs as relevant for the parcels under their jurisdiction. SANDAG also provided updates on a potential Trolley concept and stated that Trolley operational modeling would occur for Concept 6A to determine potential headways. The Trolley concept presented at this meeting would consist of a double-tracked, mostly elevated alignment that would spur from the Trolley Green Line near the Gaslamp Station to minimize the length of shared tracks. The alignment would parallel the Trolley Green Line near East Harbor Drive and along Pacific Highway. This concept did not receive support from partner agencies and was eliminated from further consideration. As a result, Concept 6A advanced and staff began to evaluate the potential for new Trolley Concept 6B.

- **July 16, 2024:** SANDAG met with SDIA to provide an update on alignments for the non-revenue tracks to the Fire Training Facility Site OMSF option. SDIA provided further recommendations for the alignment to avoid select parcels near the airport. SANDAG also provided an update on the enhanced bus concept.
- **August 2, 2024:** SANDAG met with MTS to discuss preliminary results from the Trolley operational modeling, discuss the potential Trolley concept that would spur near the Convention Center, and provide updates on the enhanced bus concept. MTS provided information about upcoming modifications to the Trolley network, in particular the Copper Line. Attendees also discussed different inputs for the modeling to obtain MTS feedback. Regarding the Trolley concept, MTS confirmed that an elevated alignment that would spur near the Convention Center would not receive support. Attendees discussed evaluating a concept that would extend the existing trench at Hawthorn Street south before coming to grade at Santa Fe Depot.
- **August 12, 2024:** SANDAG met with the Port of San Diego and SDIA to discuss the enhanced bus concept and rail pare down process.
- **September 11, 2024:** SANDAG held a regular PDT meeting to provide an update on the Airport Survey and pare down approach. SANDAG confirmed that the Trolley concept presented at the July 10, 2024, meeting was eliminated from further consideration. SANDAG presented an overview of new Trolley Concept 6B.
- **October 4, 2024:** SANDAG met with MTS to provide updates on the Trolley operational modeling, and the various scenarios tested. Attendees discussed potential assumptions for the randomization tests that would be conducted.
- **November 13, 2024:** SANDAG held a regular PDT meeting and provided updates on the project and Airport Survey.
- **March 5, 2025:** SANDAG held a roundtable meeting to engage key community stakeholders, including Community Planning Groups, business organizations, transportation advocates, and community-based organizations⁴. SANDAG presented project updates, including the new Trolley concept and evaluation of APM south route only concepts. The roundtable provided an opportunity for participants to provide targeted feedback on the number of concepts under consideration and to incorporate community priorities and mobility challenges into the planning process.
- **March 25, 2025:** SANDAG met with MTS to provide an update on the Trolley operational modeling, including the randomization tests. MTS acknowledged that 7.5-minute headways on all lines appear feasible from an operational standpoint.
- **April 10, 2025:** SANDAG met with representatives from MTS to discuss development of the new Trolley Concept 6B. SANDAG presented the in-progress concept design to receive MTS input on the grade where the alignment would transition from the extended trench to Santa Fe Depot and discussed potential utility conflicts and construction approach. MTS confirmed that a 4.3% grade would be preferred.
- **April 17, 2025:** SANDAG held a regular PDT meeting and provided an update on the various efforts underway for the Trolley concepts, including the operational modeling and development of Trolley

⁴ The following groups participated in Stakeholder Roundtable meetings: RideSD, Downtown Community Planning Council, Metropolitan Transit System (MTS), Train Coalition, Downtown San Diego Partnership, Circulate San Diego, Vista Community Clinic, Bayside Community Center, Olivewood Gardens.

Concept 6B. SANDAG also provided an update on near-term bus opportunities, the ATC rail concept pare down process, and preliminary insights from the Airport Survey.

- **April 18, 2025:** SANDAG met with NCTD to discuss the in-progress Trolley Concept 6B. SANDAG presented in the progress concept design and discussed potential utility conflicts and construction approach. NCTD provided inputs on their operation at Santa Fe Depot and location of infrastructure and access requirements. NCTD asked if Concepts 6A or 6B would preclude grade separation of the LOSSAN tracks in this area. SANDAG considered the potential to preclude grade separation of the LOSSAN tracks as part of the Round 2 pare down process.
- **May 14, 2025:** SANDAG met with SDIA and Port of San Diego during which SDIA provided an update on the on-airport roads that were under construction and SANDAG presented the APM alignment in proximity to SDIA. SDIA also provided an overview of roadway modifications proposed off SDIA property, including at Grape Street. This information was incorporated into the Round 2 evaluation.
- **May 21, 2025:** SANDAG met with Caltrans and the City of San Diego to present the in-progress Trolley Concept 6B and optional relocation of the County Center/Little Italy Station farther north between West Fir and Date Streets. The City of San Diego was open to potentially shifting the station north. The city also provided updates on potential redevelopment adjacent to the trench and provided feedback on potential modifications to California Street. The city also provided input on pedestrian circulation to either location of the Trolley station.
- **June 3, 2025:** SANDAG met with representatives from MTS and SDIA regarding the Airport Travel Survey. At the meeting, SANDAG presented detailed draft summaries of the survey results for discussion. Survey results and the full survey instrument were provided ahead of the meeting to allow time for review and comment. SANDAG addressed SDIA and MTS comments and received feedback to assist in preparation of the summaries for the survey report.
- **June 18, 2025:** SANDAG held a partner agency workshop with members of the PDT. Attendees at the workshop included representatives from Caltrans, the City of San Diego, MTS, NCTD, the Port of San Diego, and SDIA. At the meeting, staff presented results of the Airport Survey and updates on design of the new Trolley concept, Concept 6B. Staff addressed questions on the design of Concept 6B. Staff also presented the recommendations from Round 1 to remove Concepts 1A-C and Concept 2 from consideration and did not receive opposition from attendees on advancing the remaining concepts in Round 2 of the pare down process. The workshop provided an opportunity for discussion of the Round 1 results and sought feedback on criteria to consider in Round 2.
- **July 9, 2025:** SANDAG held a regular PDT meeting to confirm the approach and results of Round 1 of the pare down process. SANDAG also provided an overview of draft Purpose and Need statement for the Project. The draft Purpose and Need statement was provided to attendees after the meeting for their review and comment. The statement included in this addendum reflects input received.
- **September 9, 2025:** SANDAG held a second roundtable meeting with community stakeholders. SANDAG provided an update on the Airport Survey and pare down process.
- **September 10, 2025:** SANDAG held a regular PDT meeting and provided a summary of the criteria considered in Round 2 of the pare down process and received feedback from PDT members. SANDAG also provided an update on revisions made to the Purpose and Need Statement based on PDT feedback.
- **November 2025:** SANDAG held pre-brief meetings with the partner agencies to present results from Round 2 of the pare down process. SANDAG met with partner agencies individually to introduce preliminary results from Round 2 and to provide an opportunity to discuss and receive feedback on the in-progress results of the Round 2 evaluation in advance of a second workshop.

- **November 6, 2025:** pre-brief meeting with MTS—MTS asked questions about construction activities for different concepts and suggested showing the information in a table format to make it easier to compare activities across concepts. MTS also provided input on the O&M implications of the Trolley concepts, which SANDAG incorporated into the analysis ahead of the workshop.
- **November 7, 2025:** pre-brief meeting with SDIA—SDIA noted that travel time would be an important metric for SDIA and stakeholders. As a result, SANDAG included travel time as part of Round 3. Attendees discussed other tradeoffs associated with the various concepts.
- **November 13, 2025:** pre-brief meeting with City of San Diego—The city asked about potential impacts to streets and about potential construction methods for underground segments of the APM alignments.
- **November 14, 2025:** pre-brief meeting with NCTD—Attendees discussed potential implications to the LOSSAN corridor from the concepts under consideration. NCTD suggested that the criteria more clearly consider potential effects to existing rail services; SANDAG incorporated this feedback into the Round 2 evaluation prior to the workshop.
- **November 14, 2025:** pre-brief meeting with Caltrans—Caltrans noted their standards for Airway-Highway Clearance Requirements near airports. After the meeting and as part of Round 2, SANDAG confirmed that the concepts would meet clearance requirements.
- **November 14, 2025:** pre-brief meeting with Port of San Diego—The Port asked about other alignment locations and potential implications to the Port Headquarters Building for APM north routes.
- **December 15, 2025:** SANDAG held a second partner agency workshop with members of the PDT. At the meeting, staff presented results of Round 2 of the pare down process and the recommendations for concepts to advance to Round 3. A briefing packet with the results and recommendations was provided to attendees ahead of the workshop. At the workshop, staff presented the recommendation that Concepts 3A, 8A, 8B, 9A, 10A, 6A, and 6B advance to Round 3 of the pare down process. SANDAG and attendees discussed the possibility of also eliminating Concept 3A and 10A in Round 2. Attendees did not suggest additional concepts to be considered in Round 3. After the presentation of results and recommendations, attendees discussed the tradeoffs of the concepts and provided suggestions for Round 3 considerations. Following the agency workshop, Concepts 3A and 10A were eliminated as part of the final Round 2 recommendations. SANDAG provided an update to the members of the PDT at the February 11, 2026, PDT meeting regarding the elimination of these concepts. The PDT members did not express opposition to the final Round 2 recommendations.
- **February 11, 2026:** SANDAG provided a summary of the rail concept pare down outcomes to the PDT, including the final Round 2 recommendations following the December 2025 PDT workshop which included eliminating Concepts 3A and 10A. SANDAG also provided an overview of the Round 3 approach and provided a preview of ATC Rapids planning.
- **June 17, 2026:** SANDAG held a regular PDT meeting and provided an update of the pare down process for the rail concepts. SANDAG presented key takeaways from the five remaining concepts: Concept 6A, 6B, 8A, 8B, and 9A. The key takeaways summarized elements of Round 2. SANDAG also discussed transit boardings and travel times for the five concepts considered in Round 3. Following the discussion of the pare down process, SANDAG summarized ATC Rapids planning for nearer-term airport transit solutions and noted upcoming milestones for the project.

6.2 SANDAG Board, Policy Advisory Committee, and Working Presentations

SANDAG staff presented ATC project updates to various working groups, Policy Advisory Committees, and the SANDAG Board of Directors:

- **February 23, 2024 - Board of Directors:** Staff relayed that additional analysis would be conducted to reduce the number of ATC concepts for environmental clearance consideration while aligning with forecast and transportation data being used for the 2025 Regional Plan.
- **November 14, 2024 - Mobility Working Group:** Presented updates on the airport travel survey, ATC Trolley concept refinement, ATC pare down approach, and stakeholder engagement.
- **November 15, 2024 - Transportation Committee:** Presented updates on the airport travel survey, ATC Trolley concept refinement, ATC pare down approach, and stakeholder engagement.
- **December 6, 2024 - Board of Directors:** Report: Presented updates on the airport travel survey, ATC Trolley concept refinement, ATC pare down approach, stakeholder engagement, and near-term strategies for enhanced bus and shuttle connections.
- **January 21, 2025 - Social Services Transportation Advisory Council:** Presented updates on airport travel survey, ATC Trolley concept refinement, ATC pare down approach, and stakeholder engagement.
- **March 28, 2025 - Borders Committee:** Presented updates on near-term planning for enhanced bus and shuttle connections in the context of other transportation improvements being implemented by MTS.
- **May 22, 2025 - Social Equity Working Group:** Presented updates on the airport travel survey results, ATC Trolley concept refinement, ATC pare down progress, and stakeholder engagement.
- **September 5, 2025 - Transportation Committee:** Presented updates on airport travel survey results, ATC Trolley concept refinement, ATC pare down progress, and near-term strategies for enhanced bus and shuttle connections.
- **April 7, 2026 - Social Services Transportation Advisory Council:** Presented on the airport travel survey, ATC pare down approach, near-term strategies for enhanced bus and shuttle connections, and gathered feedback on accessibility concerns and recommendations as it relates to potential ATC rail and bus stations.
- **September 18, 2026 - Transportation Committee:** Presented a final update on the ATC rail concept planning phase—pare down results, concept costs, ridership, construction complexity considerations, and next steps for implementing ATC improvements.

6.3 Partner Agency Board Presentations

- **January 9, 2025 - San Diego County Regional Airport Authority Board of Directors:** Presented updates on the airport travel survey, ATC Trolley concept refinement, ATC pare down approach, stakeholder engagement, and near-term strategies for enhanced bus and shuttle connections.
- **January 16, 2025 - MTS Board of Directors:** Presented updates on the airport travel survey, ATC Trolley concept refinement, ATC pare down approach, stakeholder engagement, and near-term strategies for enhanced bus and shuttle connections.

- **February 11, 2025 - Port Board of Directors:** Presented updates on the airport travel survey, ATC Trolley concept refinement, ATC pare down approach, stakeholder engagement, and near-term strategies for enhanced bus and shuttle connections.

7 Findings and Conclusion

The need for a regional transit connection to SDIA has been discussed in the San Diego region for almost 40 years. This need is becoming more urgent as SDIA undertakes expansion efforts to meet growing demand, including the redevelopment of Terminal 1 currently underway. Phase 1 of the Terminal 1 redevelopment project, including a new on-airport roadway, opened in September 2025.

Since 2023 when the Study was completed, SANDAG conducted new technical work in support of refining and evaluating potential rail transit alignments to SDIA. This technical work included:

- Conducting Trolley operational modeling to determine potential headways for the Trolley concepts.
- Conducting Airport Travel Surveys to establish the baseline of current airport travel and provide insights into the travel preferences of air passengers and employees; information was used to update the travel market within the SANDAG ABM3 model.
- Reviewing potential APM OMSF sites, including coordination with applicable partner agencies regarding potential site availability.
- Updating preliminary capital cost estimates, including escalating costs to 2025 dollars.
- Conducting updated ridership forecasting using the SANDAG ABM3 model with updates to reflect the Airport Travel Surveys and consistent fares across all concepts.

Additionally, SANDAG undertook a three-round pare down process to narrow the range of rail transit alignments that could advance to a future environmental clearance phase and conducted outreach with partner agencies and other stakeholders in support of this process.

7.1 Findings of Pare Down Process

Round 1 of the pare down process evaluated alignment route and station locations using quantitative metrics related to resident (air passenger and airport employees) and visitor travel markets and station transit connectivity. The focus was on the nine concepts comprised of north routes, south routes, or north and south routes and did not consider the variations associated with each concept:

- Concept 1A-C: SDIA to CONRAC/Port Transit Center (PTC) (APM, North Route Only)
- Concept 2: SDIA to OTTC (APM, North Route Only)
- Concept 3A-C: SDIA to PTC/CONRAC and Santa Fe Depot (APM, North and South Route)
- Concept 4A-C: SDIA to PTC/CONRAC and Convention Center (APM, North and South Route)
- Concept 5A-C: SDIA to PTC/CONRAC and Civic Center (APM, North and South Route)
- Concept 6A-B: SDIA to 12th & Imperial Transit Center (Trolley)
- Concept 8A-B: SDIA to 12th & Imperial Transit Center (APM, South Route Only)
- Concept 9A-B: SDIA to Convention Center (APM, South Route Only)
- Concept 10A-B: SDIA to Civic Center (APM, South Route Only)

Based on scores from Round 1 (Table 5-4), Concept 1A-C and Concept 2 were recommended for elimination. No opposition was received from partner agencies on this recommendation.

Round 2 of the process used quantitative and qualitative metrics under four categories to evaluate the remaining concepts, inclusive of the variations:

- **Cost Considerations:** Capital investment needs (including preliminary capital cost estimates) and cost per mile
- **Complexity:** Potential utility conflicts, potential right-of-way acquisitions/needs, construction complexity, and potential for future extensions
- **Compatibility:** Regulatory approvals and compatibility/overlap with current plans and projects
- **Operational Considerations:** O&M needs/requirements, potential minimum headways, and reliability of operations

Based on the analysis and as summarized in Section 5.2.5, Concepts 6A-B (Trolley), 8A-B, and 9A (APM) were recommended to advance, and Concepts 3A-C, 4A-C, 5A-C, 9B, and 10A-B (APM) were recommended for elimination. No opposition was received from partner agencies on these recommendations.

Round 3 focused on developing additional information on the concepts that remained, with a focus on:

- Station-to-station and total travel time on the alignment
- Ridership forecasts for the 2050 horizon year, including total ridership, activity at the SDIA station (boardings and alightings), and boardings and alightings at other stations along the alignment.

Table 7-1 provides a summary of the findings for each of the concepts included in Round 3, inclusive of the evaluation from Rounds 1 and 2 of the process, presented in order by concept number.

Table 7-1: Summary of Findings of Concepts to Advance from Round 3

Criterion	Concept 6A	Concept 6B	Concept 8A	Concept 8B	Concept 9A
	Trolley – 12th and Imperial Transit Center to Hawthorn St; spur tracks to SDIA	Trolley – 12th and Imperial Transit Center to Hawthorn St; extend existing Trolley trench south to B St; spur to SDIA; and grade separate three Trolley crossings.	APM – SDIA to Santa Fe Depot Elevated	APM – SDIA to Santa Fe Depot Hybrid	APM – SDIA to Convention Center Elevated
Total length of new tracks (miles)	1.9	2.4	2.5	2.0	3.5
Number of new stations	2, including 1 optional	2, including 1 optional; reconstructed County Center/Little Italy Station	4, including 2 optional	4, including 2 optional	5, including 2 optional
Requires new OMSF	No	No	Yes	Yes	Yes
Round 1 total score	19.3		12.3		16.3
Preliminary capital cost (mid-point, excludes ROW)	\$1.5 billion	\$3.1 billion	\$2.2 billion	\$3.3 billion	\$2.6 billion
Cost per mile (based on mid-point capital cost)	\$392 million per mile	\$686 million per mile	\$921 million per mile	\$1,390 million per mile	\$787 million per mile
Cost savings with deferral of optional stations	\$65 million, 1 station		\$146 million, 2 stations	\$244 million, 2 stations	\$146 million, 2 stations
Potential major utility conflicts	10	12	8	8	14
Potential priority utility conflicts	5	7	7	5	7
Number of parcels potentially affected	10	38 – Cedar St Station Option 42 – Fir St Station Option	15	14	19
Number of private properties potentially affected	1	24 – Cedar St Option 28 – Fir St Option	5	3	6
Construction complexity	Construction complexity	Construction complexity	Construction complexity	Construction complexity	Construction complexity
Future extension - south	Could use existing Trolley tracks		Would require a new alignment; complexity would be less if station is located on Broadway rather than Pacific Highway; extension would be less costly and complex given elevated alignment	Similar to Concept 8A but more complex and costly given underground alignment	Alignment is farthest south of concepts included in Round 3; no further extension opportunities identified
Future extension – east via Broadway	Could use existing Trolley tracks		Would require a new alignment; extension would be less costly and complex given elevated alignment	Similar to Concept 8A but more complex and costly given underground alignment	Would require a new alignment and wye junction from Pacific Highway at Broadway
Future extension – west of SDIA	Requires a wye junction, which could be constructed with initial project; alternatively, station could be located on N. Harbor Drive which would simplify future connections		Similar to Concepts 6A-B unless non-revenue tracks to OMSF are along N.Harbor Drive which could be extended farther west as a future extension		
Future extension – north of SDIA via Pacific Hwy	Requires a wye junction at existing Trolley Green and UC San Diego Blue Line tracks		Requires a wye junction, which could be constructed with initial project		
O&M implications	Low – shorter length of new alignment and limited new tunnel; 2 new stations; requires additional drivers but limited new maintenance staff; less complex technology to maintain	Low, but greater than 6A – Extended trench and depressed County Center/Little Italy Station increase O&M needs; other considerations similar to 6A	Lowest of APM concepts, driverless but would require more O&M staff than Concepts 6A-B; more complex technology to maintain	Higher than Concept 8A given underground alignment	Higher than Concept 8A given additional length of alignment and station
Other alignment considerations	Increases Trolley activity through 9 existing at-grade crossings	Increases Trolley activity through 6 existing at-grade crossings and grade separates Trolley tracks at 3 existing at-grade crossings	Entirely grade separated		
Headway considerations	Would not be as short as APM concepts		Could be as frequent as 2 minutes for special events or other circumstances if vehicles are available		

Criterion	Concept 6A	Concept 6B	Concept 8A	Concept 8B	Concept 9A
	Trolley – 12th and Imperial Transit Center to Hawthorn St; spur tracks to SDIA	Trolley – 12th and Imperial Transit Center to Hawthorn St; extend existing Trolley trench south to B St; spur to SDIA; and grade separate three Trolley crossings.	APM – SDIA to Santa Fe Depot Elevated	APM – SDIA to Santa Fe Depot Hybrid	APM – SDIA to Convention Center Elevated
Total travel time (55-second dwell)	17.7 minutes from SDIA; 17.5 minutes to SDIA		7.6 minutes from SDIA 7.6 minutes to SDIA		10.5 minutes from SDIA 10.4 minutes to SDIA
Total travel time between SDIA and Santa Fe Depot (55-second dwell)	8.5 minutes		7.6 minutes		7.3 minutes
Total modeled daily route boardings (2050)	8,800		4,500		5,800
Total modeled activity at SDIA (2050 boardings + alightings)	5,700		4,000		5,100

Source: WSP 2026

Notes: Numbers are rounded to the nearest tenth except ridership which is rounded to the nearest hundred.

APM = Automated People Mover; O&M = operations and maintenance; OMSF = Operations, Maintenance, and Storage Facility; ROW = right-of-way; SDIA = San Diego International Airport; UC San Diego = University of California, San Diego

7.2 Conclusions

Concepts 6A, 6B, 8A, 8B, and 9A could advance into the environmental clearance phase for a rail connection to SDIA. These concepts represent two modes (Trolley and APM) and three potential southern termini (12th & Imperial Transit Center, Santa Fe Depot, and Convention Center). As demonstrated throughout this addendum, these concepts provide a variety of benefits, including serving different locations in Downtown San Diego, while balancing capital cost, O&M, and complexity considerations. While underground or trenched concepts, such as those included in Concepts 8B and 6B, would increase cost, they could provide benefits to the surrounding community. Additionally, Concept 9A could be included in an environmental document with phased construction, with Concept 8A comprising the first phase of implementation and the extension from Santa Fe Depot to Convention Center as the second phase.

As the timing of a future environmental clearance phase is unknown, updated studies may be required prior to initiating environmental clearance to determine if the complexity or benefits of the alignments would differ from those identified in this study. In particular, the potential locations identified in this addendum for the APM OMSF may not be available at the time of environmental clearance and additional screening may be required to determine potential options.

In the near term and consistent with a February 2024 Board update, SANDAG proposes to advance planning for enhanced bus service to SDIA while potential funding sources are identified for a future rail project. An update to the SANDAG Transportation Committee and to partner agencies will occur in fall 2026 to provide an update on the completion of the ATC rail planning efforts, near-term Route 992 operational enhancements, and ATC rapid bus planning updates.

8 References

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Appendix A: Trolley Operational Modeling Memo

Concept 6 Trolley Operational Modeling

March 4, 2026

Executive Summary

Introduction

This operational modeling study was conducted for the Airport Transit Connection (ATC) Trolley concept (Concept 6) to explore the greatest possible frequency that a potential new Airport Trolley Line could sustain within the San Diego Metropolitan Transit System (MTS) Trolley system. The simulation model was developed and updated based on the model used during the environmental clearance and design phases of the Mid-Coast Corridor Transit Project. Two types of simulations were conducted for this study: deterministic and randomized. Deterministic simulations are typically used to evaluate schedule or infrastructure feasibility under ideal conditions (for example, trains stopping for the same amount of time at every station and every driver accelerating and decelerating at the same speed). Randomized simulations introduce some level of unpredictability to mimic real-life operations, such as variable stop times at stations and variable operator behavior.

Model Inputs

The simulations included three headway scenarios:

- Headway Scenario 1: More Frequent Airport Service with Near-Term Headways (3-minute headway on shared territory on average [20 trains per hour])
- Headway Scenario 2: Average 7.5-minute Headways on Nearly All Services (2.5-minute headway on shared territory on average [24 trains per hour])
- Headway Scenario 3: More Frequent Green Line and Orange Line Service (2.5-minute headway on shared territory on average [24 trains per hour])

Results and Conclusion

Results of the simulations found that all three headway scenarios completed dispatch with no cascading delays and achieved 100 percent on time performance in both deterministic and randomized simulations. The simulations demonstrated the feasibility of 7.5- and 15-minute headways on the proposed Airport Trolley Line, even with increased headways on the Green, Blue, and/or Orange Lines. However, traffic analysis would be necessary to determine the effects on vehicular traffic circulation where the Airport Trolley Line would operate through at-grade crossings.

The simulations also revealed impacts from the Airport Trolley Line and increased service levels on other lines to other parts of the Trolley system, particularly with the increased service frequency on the existing Trolley lines. At higher frequencies, simulations suggest that turnarounds and recovery time would be particularly challenging when Green Line and Orange Line trains both operate at 7.5-minute average headways as the layover time at both ends of the line are limited due to track availability.

Introduction

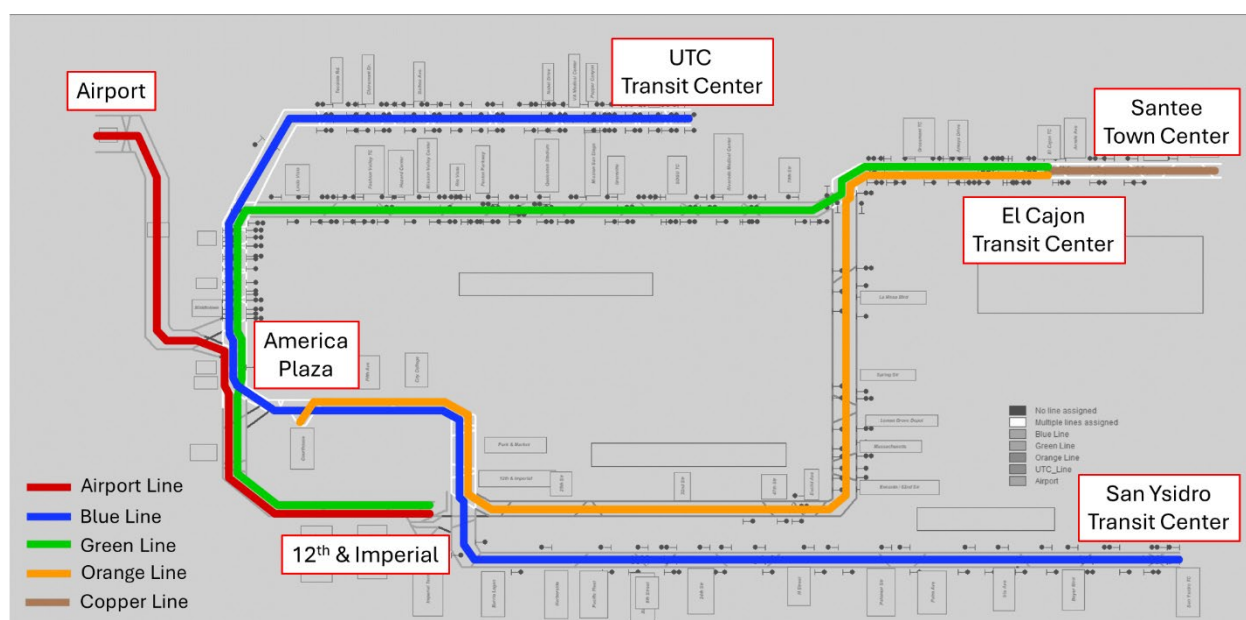
This memorandum documents the methodology and results of the ATC simulation as it pertains to Trolley Concept 6. Two variations of Concept 6 are under consideration—one that would maintain the LRT tracks in the current configuration between Santa Fe Depot and Hawthorn Street (referred to as Concept 6A) and the other that would extend the existing trench at Hawthorn Street south to Santa Fe Depot (referred to as Concept 6B). The simulation and results presented in this memorandum are applicable to both variations. The goal of the simulation is to explore the highest possible frequency that a potential new Airport Trolley Line could sustain within the MTS Trolley system. The simulation model was developed in Rail Traffic Controller (RTC) based on the model used during the environmental clearance and design phases of the Mid-Coast Corridor Transit Project.

The following updates were made to the prior model:

- The Airport Trolley Line was added. This new line would share tracks with the Green Line between 12th & Imperial Transit Center to the Santa Fe Depot, share tracks with the Blue and Green Line to approximately Hawthorn Street, and then spur onto a new alignment to San Diego International Airport (SDIA). The segment between Santa Fe Depot to the south and the added wye junction for the Airport Trolley Line on the north is referred to as “shared territory” in this memo.
- A second station track at the 12th & Imperial Green Line Station was added.
- The Courthouse Station was added along the Blue and Orange Line on C Street east of America Plaza (though the station is only served by the Orange Line). This station serves as the terminus of the Orange Line rather than America Plaza as originally reflected in the model.
- Copper Line was added between El Cajon Transit Center and Santee Town Center, which resulted in an adjustment to the termini of the Orange and Green Lines.

Figure 1 shows the schematic of the network.

Figure 1: Schematic of MTS Trolley System in RTC



Source: WSP 2025

Rail Traffic Controller

RTC is a rail network operations simulation modeling platform developed by Berkeley Simulation Software. It is capable of simulating train dispatch operations over large, sophisticated networks with various equipment types, train consists, terrain, and track conditions, and is widely used by railroads and transit agencies in the US.

Simulation Types

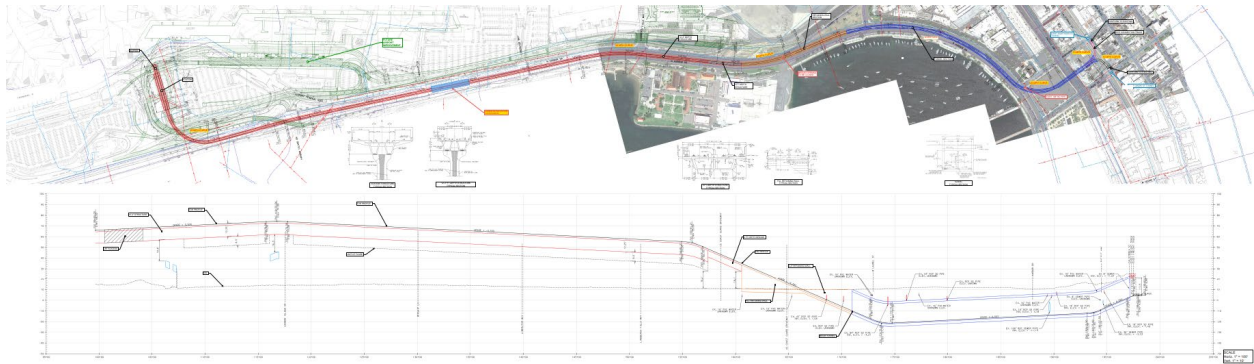
Two types of simulations were conducted for this study: deterministic and randomized. Deterministic simulations are typically used to evaluate schedule or infrastructure feasibility under ideal conditions (for example, trains stopping for the same amount of time at every station and every driver accelerating and decelerating at the same speed). Randomized simulations introduce some level of unpredictability to mimic real-life operations, such as variable stop times at stations and variable operator behavior.

Model Inputs

Trolley Network

The RTC model was based on an existing model developed for the Mid-Coast Corridor Transit Project, which began operations in 2021. The model was first updated in 2022 to support planning for the ATC Project as defined at that time and to reflect updates to the MTS system (for example, the addition of the Courthouse Station on the Orange Line). The model was subsequently updated in 2024 as described in the introduction section. The Airport Trolley Line extension was modeled based on the exhibit shown in Figure 2.

Figure 2: Airport Trolley Line Extension Design Plan and Elevation

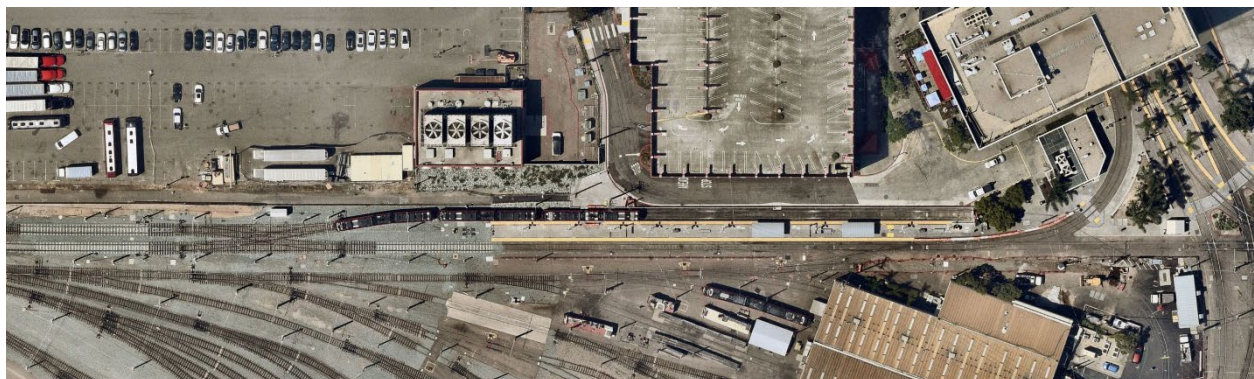


Source: WSP 2022

Note: RTC modeling efforts began in 2022 based on the project's preliminary design at that time. The design was subsequently modified as the study advanced. The change in design is not expected to substantially change the results presented in this memorandum.

An additional second station track at the 12th & Imperial Green Line Station was added to the model using measurements obtained from Nearmap satellite imagery that was retrieved May 12, 2024 (Figure 3).

Figure 3: Satellite Image of Second Station Track at 12th & Imperial Terminal



Source: Nearmap retrieved on May 12, 2024

Prior to September 29, 2024, service between the El Cajon Transit Center and Santee Town Center was operated as part of the Green Line and Orange Line service. The single-track section between the Gillespie Field Station and Santee Town Center was causing delays and missed trips on the two lines. This prompted MTS to split this section of service into its own line—referred to as the Copper Line—and truncate both the Green Line and Orange Line at the El Cajon Transit Center. In early August 2024, MTS provided draft schedules for the Copper Line and the truncated Green and Orange Lines that were used to develop the simulation. During a meeting in October 2024, MTS provided additional information on operation of the Copper Line at El Cajon Transit Center.

Schedules and Deterministic Simulation Assumptions

Three headway scenarios were developed and simulated:

- Headway Scenario 1: More Frequent Airport Service with Near-Term Headways (3-minute headway on shared territory on average [20 trains per hour]), with individual headways as follows:
 - Blue Line: 7- and 8-minute headways northbound; 6- and 9-minute headways southbound
 - Green Line: 15-minute headway
 - Orange Line: 15-minute headway
 - Copper Line: 15-minute headway
 - Airport Service: 7- and 8-minute headways
- Headway Scenario 2: Average 7.5-minute Headways on Nearly All Services (2.5-minute headway on shared territory on average [24 trains per hour]), with individual headways as follows:
 - Blue Line: 7- and 8-minute headways
 - Green Line: 7- and 8-minute headways
 - Orange Line: 7- and 8-minute headways
 - Copper Line: 15-minute headway
 - Airport Service: 7- and 8-minute headways
- Headway Scenario 3: More Frequent Green Line and Orange Line Service (2.5-minute headway on shared territory on average [24 trains per hour]), with individual headways as follows:
 - Blue Line: 7- and 8-minute headways
 - Green Line: 7- and 8-minute headways
 - Orange Line: 7- and 8-minute headways
 - Copper Line: 15-minute headway
 - Airport Service: 15-minute headway

Runtimes are largely based on a Trolley schedule provided by MTS in August 2024, shortly before the Copper Line service started, with minor adjustments to departure times at some stations to minimize conflicts. Most of the adjustments resulted in slight increases (up to 2 minutes) in end-to-end travel time. These increases would not increase peak vehicle requirements but would have an impact on layover time at the terminals. The appendix to this memorandum includes a comparison of runtimes between MTS schedules and the schedules used in RTC for each line.

The minimum equipment turnaround time at terminal stations in the simulation was assumed to be 4 minutes for all Blue, Green, Orange, and Airport Trolley Line trains, which is shorter than the 5 minutes MTS typically maintains. On the Copper Line, trains at Santee Town Center were also assumed to have a minimum turn time of 4 minutes; however, at the El Cajon Transit Center, Copper Line trains are assumed to have a minimum 1-minute turnaround time due to their short length (single car consists). Interlining between lines was

not included in this study due to potential equipment differences between lines.

The minimum dwell time at each intermediary station was assumed to be 25 seconds (referred to as “standard test” in this memorandum). An “extended dwell test” was also developed to simulate heavier traffic conditions in downtown San Diego between 12th & Imperial Transit Center and Santa Fe Depot, based on input from MTS staff members provided in October 2024¹. This test added an additional 20 to 30 seconds of minimum dwell time to selected stations in downtown San Diego on the Blue and Orange Lines, resulting in up to 55 seconds of minimum dwell time for some trains at some stations. Figure 4 shows the lines and stations with increased minimum dwell times under this test.

On-time performance (OTP) was measured at terminals and at intermediate stations along the route based on the public schedule as of February 2025. Trains arriving at terminals and departing from stations between 0 minutes early and 5 minutes late are considered on time, consistent with MTS Policy 42.

Each scenario utilized the same schedule over two hours to simulate peak operations.

Randomization Assumptions

A series of randomized simulations for the three headway scenarios were conducted to emulate the variability of day-to-day operations. Randomized times between 0 and 30 seconds were added to the minimum dwell time at all intermediary stations on all lines—resulting in minimum dwell times up to 55 seconds in standard dwell tests and up to 85 seconds in extended dwell tests. Table 1 exemplifies randomly increased dwell times at some stations for a Blue Line train compared to its scheduled time in the deterministic simulations. Initial departure times were assumed to remain as scheduled. Three randomized simulations were dispatched for each headway scenario and each dwell test for a total of 18 randomized simulations.

¹ Meetings also occurred with MTS staff in August 2024 and March 2025 to discuss simulation inputs, scenarios, and results.

Figure 4: Extended Dwell Times at Selected Stations in Downtown San Diego for Blue Line and Orange Line Trains



Source: WSP 2025

Table 1. Example of Randomly Increased Minimum Dwell Times at Some Stations on a Blue Line Train

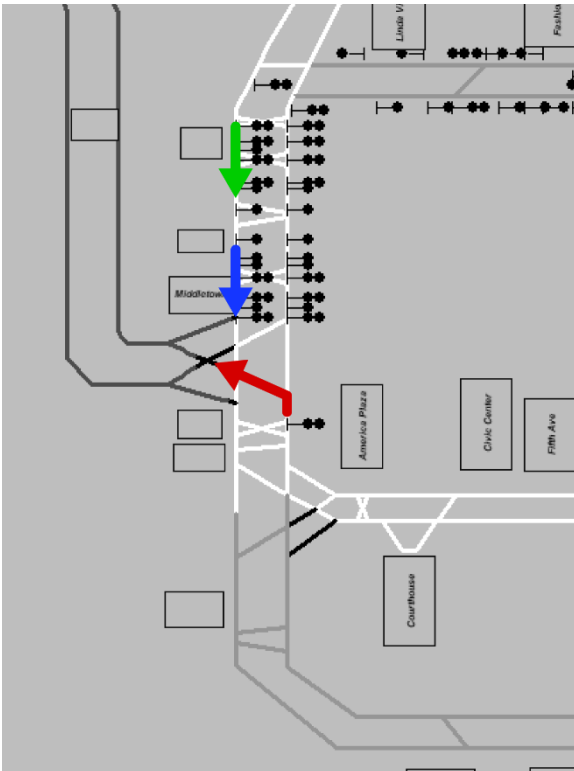
Node Name	Deterministic HH:MM:SS	Randomized HH:MM:SS
County Center	0:25	0:27
Santa Fe Depot	0:55	0:55
America Plaza S	0:45	1:09
Civic Center	0:55	1:19
Fifth Ave	0:55	0:55
City College	0:55	0:55
Park Market	0:55	1:10
12th Imperial	0:55	1:09
Barrio Logan	0:25	0:44
Harbor Side	0:25	0:25
Pacific Fleet	0:25	0:25
8th Street	0:25	0:25

Source: WSP 2025

Results and Observations

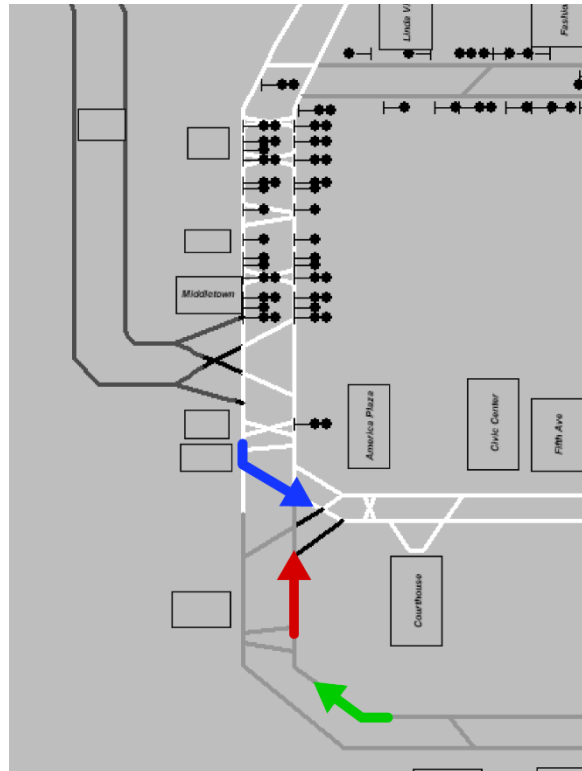
This section presents the results of the simulations and their implications. The deterministic simulations revealed some minor conflicts at the two wye junctions: one where northbound Airport Trolley Line trains (red arrow) heading to SDIA via the proposed wye junction for the Airport Trolley Line would have a conflict with southbound Blue Line (blue arrow) and Green Line (green arrow) trains (Figure 5); and one where southbound Blue Line trains (blue arrow) heading to San Ysidro Transit Center via the Broadway wye junction would have a conflict with northbound Airport Trolley Line (red arrow) and Green Line (green arrow) trains (Figure 6). In deterministic simulations, these conflicts only cause a few seconds of delays when trains stop to wait for another train to clear the junction. These delays do not accumulate as there is enough time in the schedule to absorb them.

Figure 5: Conflict Between Diverging Northbound Airport Trolley Line Train and Southbound Blue and Green Line Trains



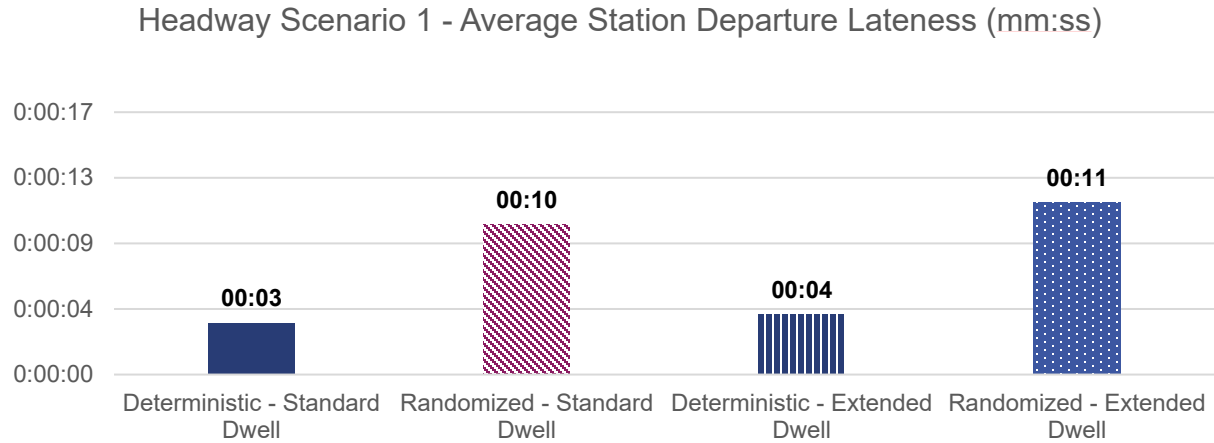
Source: WSP 2025

Figure 6: Conflict Between Diverging Southbound Blue Line Train and Northbound Airport Trolley Line and Green Line Trains



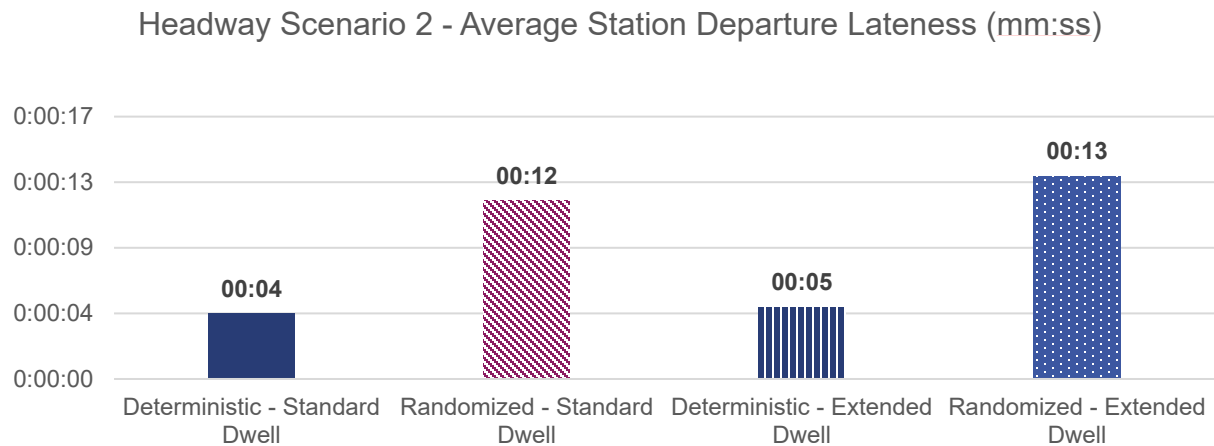
These conflicts can cause longer delays in randomized simulations due to the randomly lengthened dwell times. The combined impact of conflicts and randomly lengthened dwell times on adherence to schedule is exhibited in departure lateness, which is the time between a scheduled and actual departure measured at each station (Figure 7 to Figure 9). Nonetheless, all trips operated within the OTP threshold.

Figure 7: Headway Scenario 1 - Average Station Departure Lateness



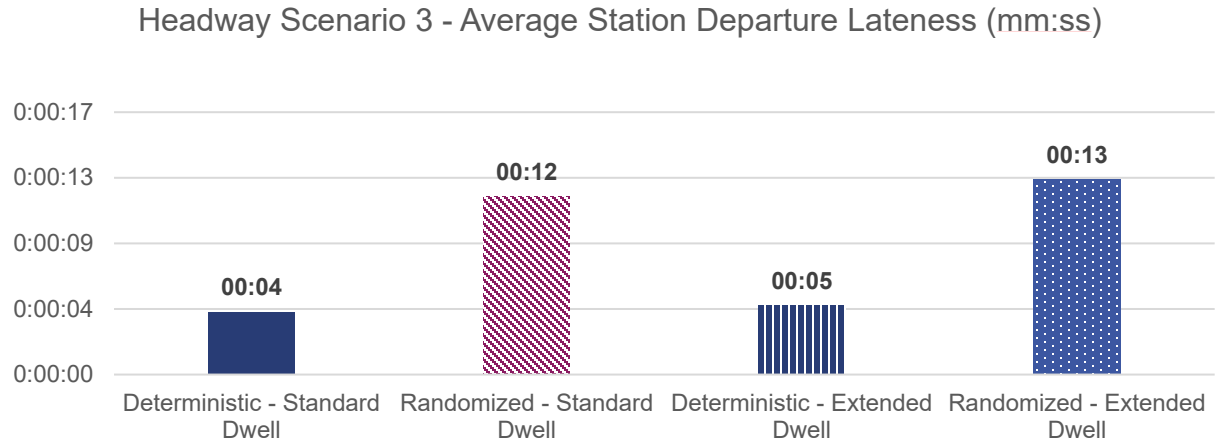
Source: WSP 2025

Figure 8: Headway Scenario 2 - Average Station Departure Lateness



Source: WSP 2025

Figure 9: Headway Scenario 3 - Average Station Departure Lateness

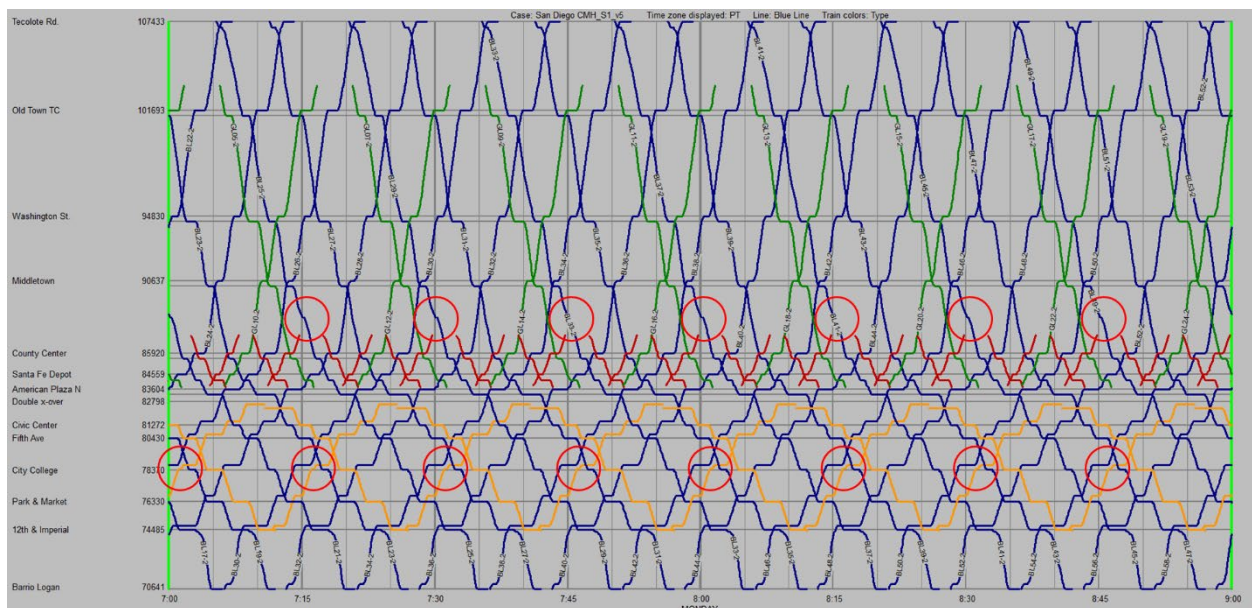


Source: WSP 2025

Headway Scenario 1

Figure 10 shows the deterministic simulation time-distance chart on Blue Line territory from the Barrio Logan Station to the Tecolote Road Station between 7:00 and 9:00 a.m. for Headway Scenario 1. Minor delays were observed on some Blue Line southbound trains near the diverging westbound Airport Trolley Line trains as well as on some Orange Line westbound trains near preceding Blue Line trains. These delays are represented by the slight change of slope and/or breakages in the lines, highlighted in red circles in Figure 10.

Figure 10: Time-Distance Chart on Blue Line Territory from Barrio Logan Station to Tecolote Road Station between 7:00 and 9:00 a.m. from Headway Scenario 1 Deterministic Simulation

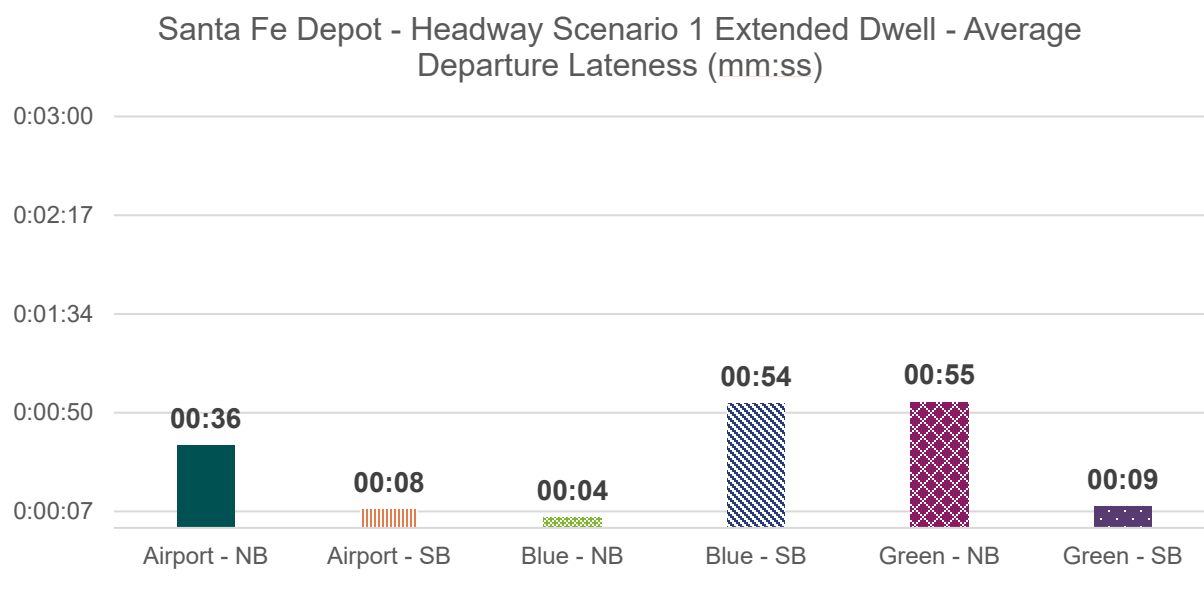


Source: WSP 2025

Figure 11 to Figure 13 summarize the average, maximum, and 80th percentile departure lateness by line and direction at Santa Fe Depot from the randomized simulation extended dwell tests for Headway Scenario 1. These statistics are also summarized for the County Center/Little Italy Station in Figure 14 to Figure 16. At Santa Fe Depot, southbound Blue Line and northbound Green Line trains experienced the highest average departure lateness at almost 1 minute, followed by northbound Airport Trolley Line trains at just over 30 seconds. Southbound Blue Line trains experienced the highest maximum lateness at almost 2 minutes, followed by northbound Green Line and Airport Trolley Line trains at just over 1.5 minutes. The 80th percentile departure lateness followed similar trends but to a lesser extent overall.

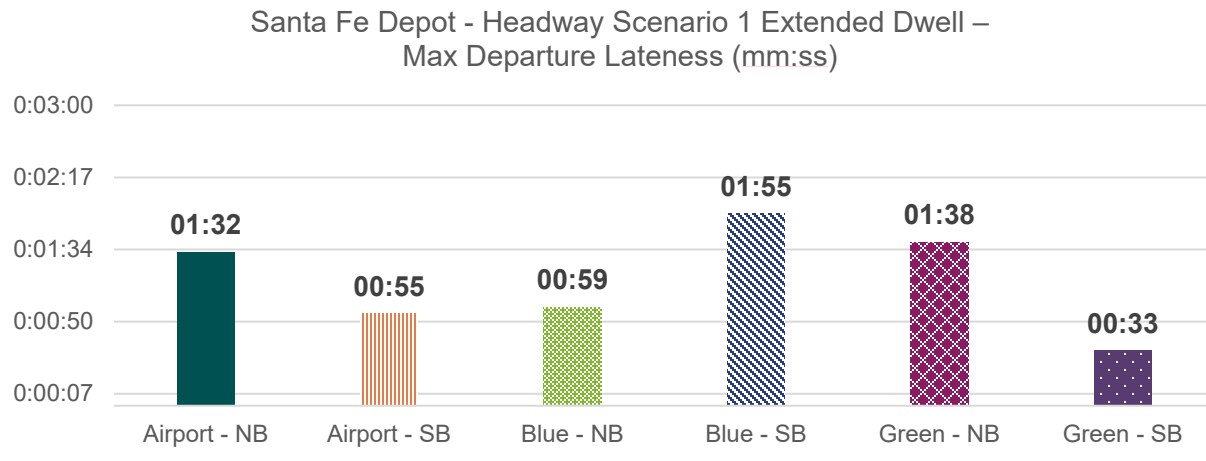
Statistics on departure lateness at the County Center/Little Italy Station are very similar but lower than those at Santa Fe Depot. This suggests that some southbound Blue Line trains are delayed at the added wye junction for the Airport Trolley Line by diverging Airport Trolley Line trains. And to a lesser extent, northbound Green Line and Airport Trolley Line trains are delayed at the existing Broadway wye junction by diverging Blue Line trains.

Figure 11: Average Departure Lateness at Santa Fe Depot by Line and Direction for Headway Scenario 1 Extended Tests



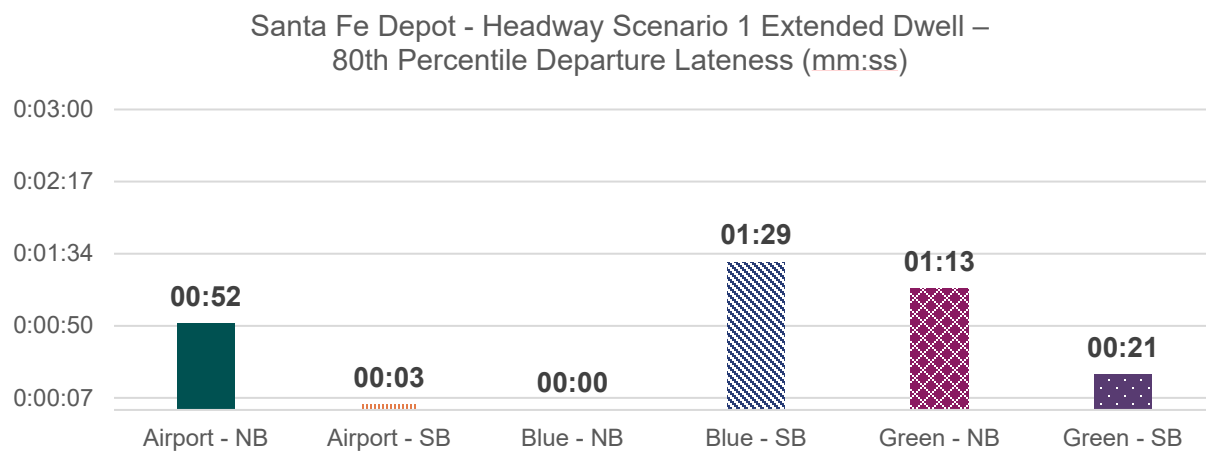
Source: WSP 2025

Figure 12: Maximum Departure Lateness at Santa Fe Depot by Line and Direction for Headway Scenario 1 Extended Tests



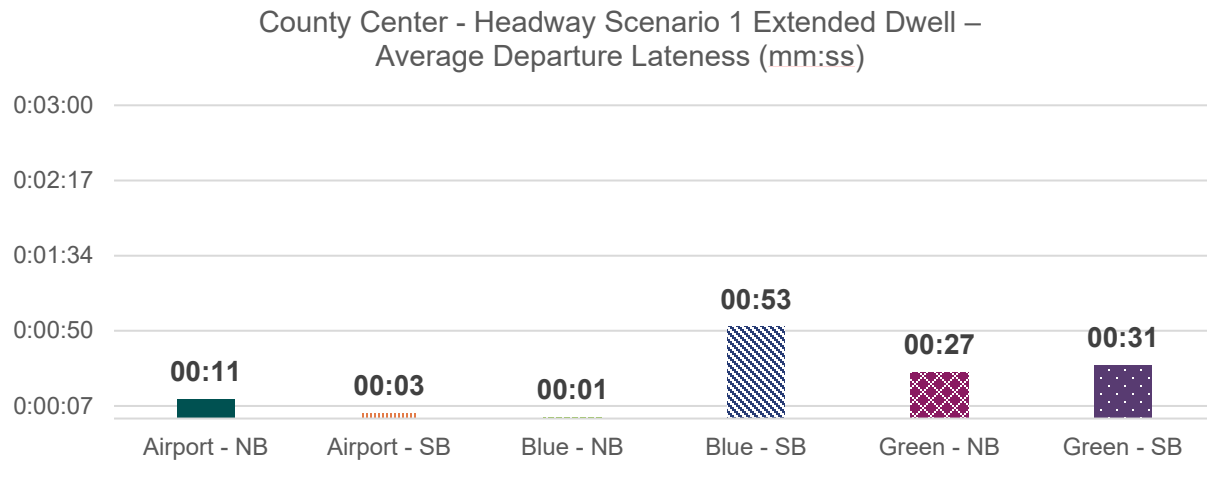
Source: WSP 2025

Figure 13: 80th Percentile Departure Lateness at Santa Fe Depot by Line and Direction for Headway Scenario 1 Extended Tests



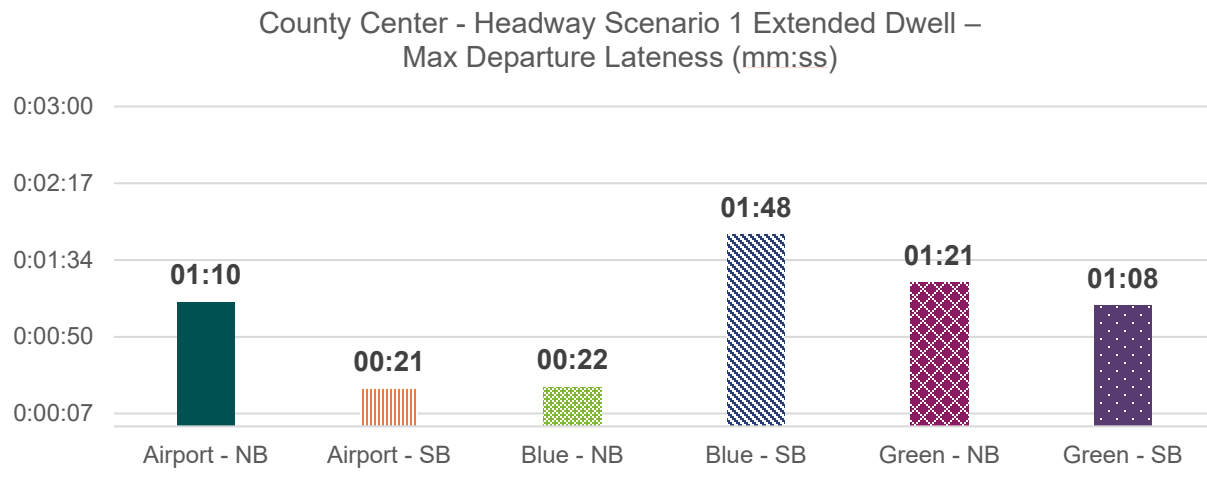
Source: WSP 2025

Figure 14: Average Departure Lateness at County Center/Little Italy Station by Line and Direction for Headway Scenario 1 Extended Tests



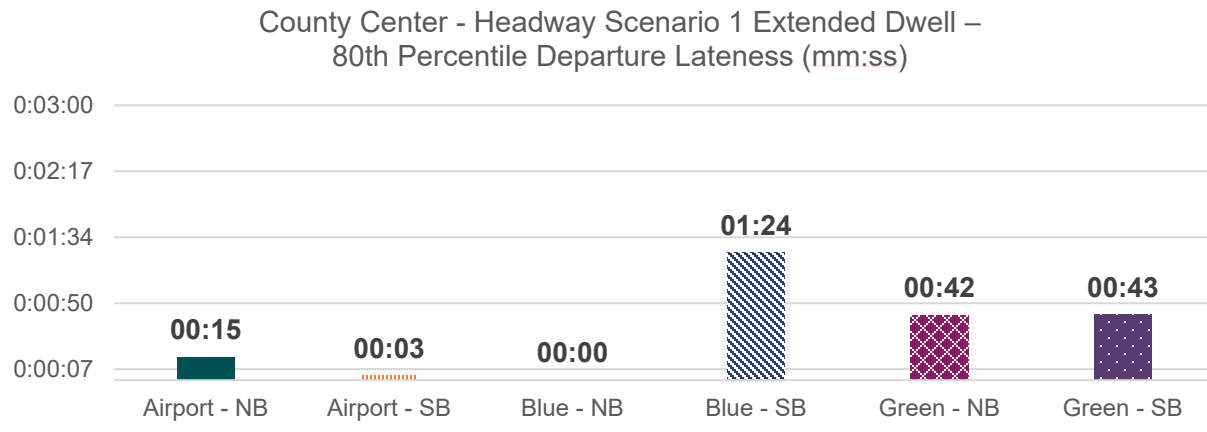
Source: WSP 2025

Figure 15: Maximum Departure Lateness at County Center/Little Italy Station by Line and Direction for Headway Scenario 1 Extended Tests



Source: WSP 2025

Figure 16: 80th Percentile Departure Lateness at County Center/Little Italy Station by Line and Direction for Headway Scenario 1 Extended Tests

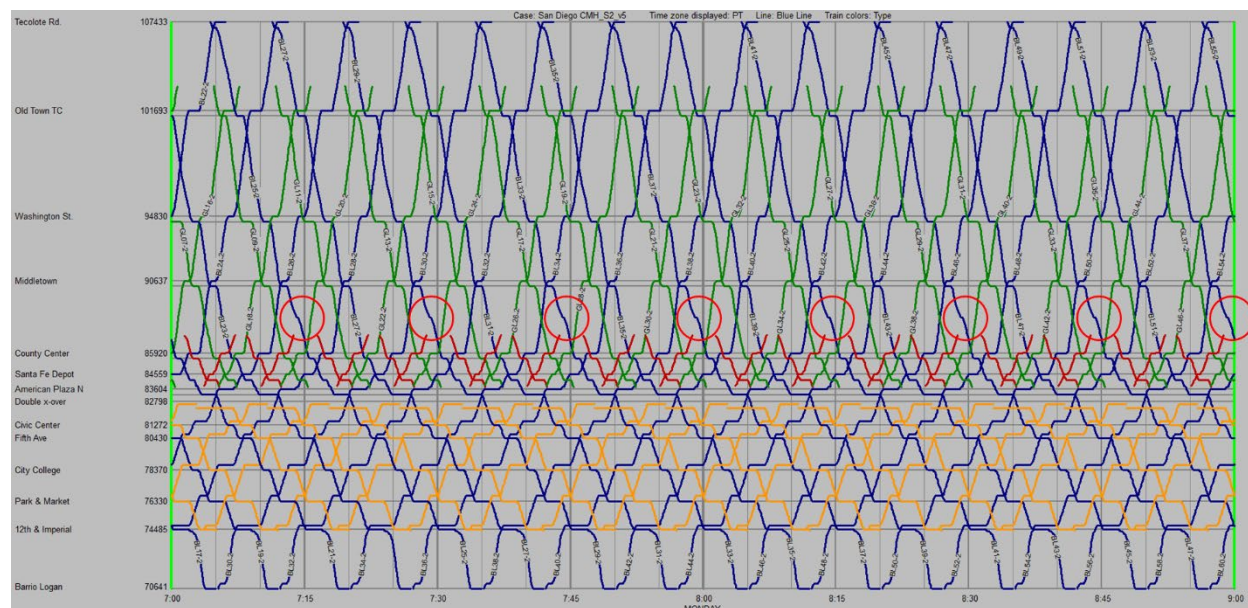


Source: WSP 2025

Headway Scenario 2

Figure 17 shows the deterministic simulation time-distance chart on Blue Line territory from the Barrio Logan Station to the Tecolote Road Station between 7:00 and 9:00 a.m. for Headway Scenario 2. Despite the increased frequency on the Green and Orange Lines compared to Headway Scenario 1, the deterministic simulation shows similarly minor delays on some Blue Line southbound trains north of the added wye junction for the Airport Trolley Line caused by diverging westbound Airport Trolley Line trains. These delays are represented by the slight change of slope and/or breakages in the lines, highlighted in red circles in Figure 17.

Figure 17: Time-Distance Chart on Blue Line Territory from Barrio Logan Station to Tecolote Road Station between 7 and 9:00 a.m. from Headway Scenario 2 Deterministic Simulation



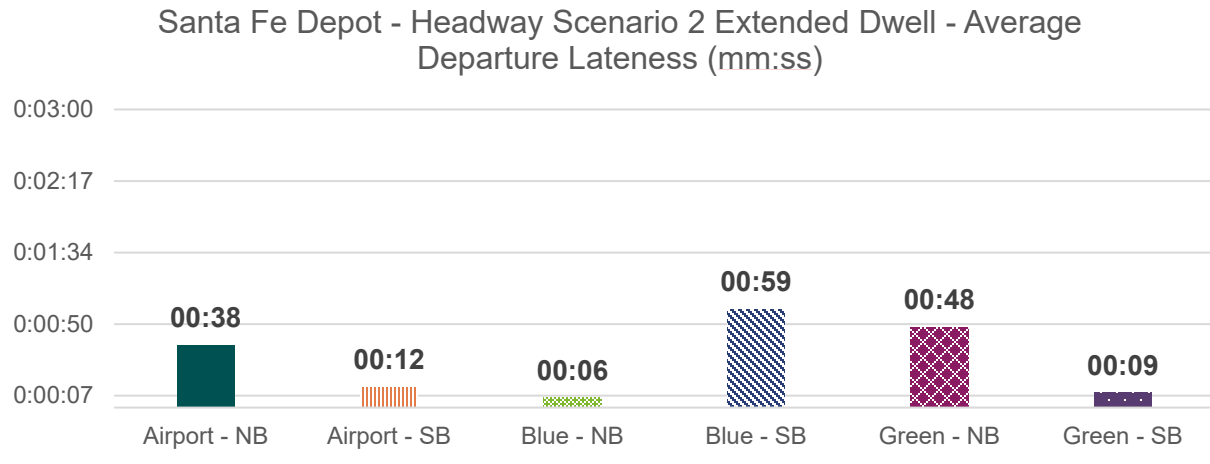
Source: WSP 2025

Figure 18 to Figure 20 summarize the average, maximum, and 80th percentile departure lateness by line and direction at Santa Fe Depot from the randomized simulation extended dwell tests for Headway Scenario 2. These statistics are also summarized for the County Center/Little Italy Station in Figure 21 to Figure 23. The average departure lateness at Santa Fe Depot is very similar to that of Headway Scenario 1, with southbound Blue Line and northbound Green Line trains experiencing the highest average departure lateness, followed by northbound Airport Trolley Line trains.

Compared to Headway Scenario 1, southbound Blue Line trains and northbound Airport Trolley Line trains experienced slightly higher average lateness, while northbound Green Line trains recorded a slightly lower average. The 80th percentile departure lateness on all lines and directions is very similar to that of Headway Scenario 1. One outlier is that southbound Blue Line trains recorded a maximum departure lateness of almost 3 minutes in Scenario 2, compared to 2 minutes for Headway Scenario 1, while trains on the other lines and directions experienced similar results as Headway Scenario 1. This is mostly due to randomization as maximum lateness is most susceptible to fluctuation, and the rest of the lateness is similar to Headway Scenario 1.

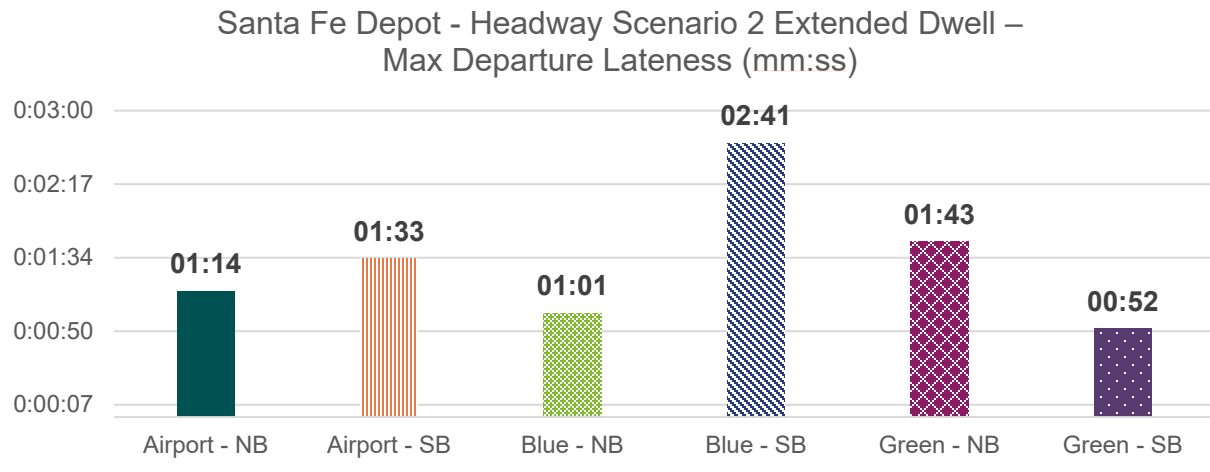
Statistics on departure lateness at the County Center/Little Italy Station are very similar but lower than those at Santa Fe Depot, suggesting an overall similar delay pattern as Headway Scenario 1. But due to the higher frequency in the shared corridor between the two wye junctions, trains are slightly more prone to delays caused by longer-than-expected dwell times at stations.

Figure 18: Average Departure Lateness at Santa Fe Depot by Line and Direction for Headway Scenario 2 Extended Tests



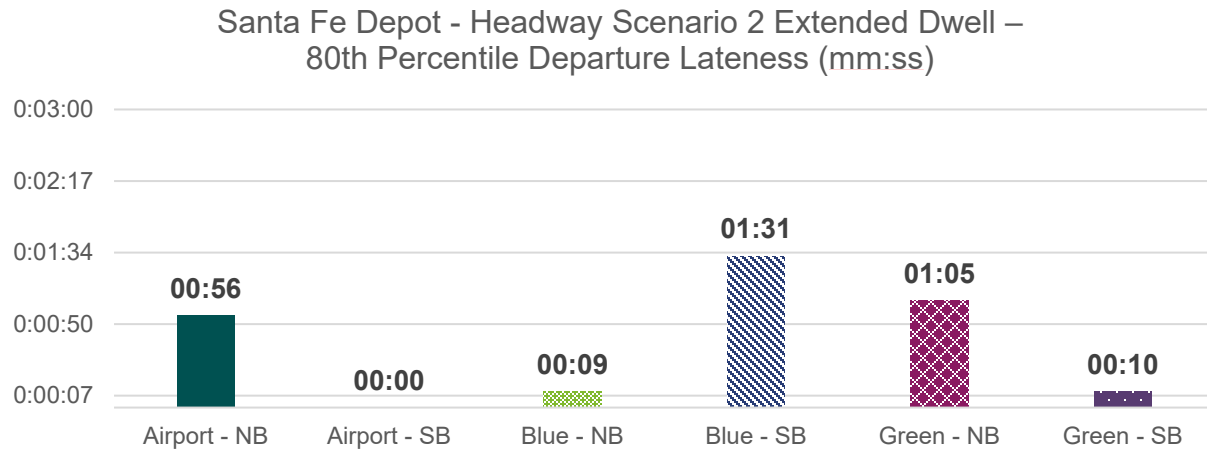
Source: WSP 2025

Figure 19: Maximum Departure Lateness at Santa Fe Depot by Line and Direction for Headway Scenario 2 Extended Tests



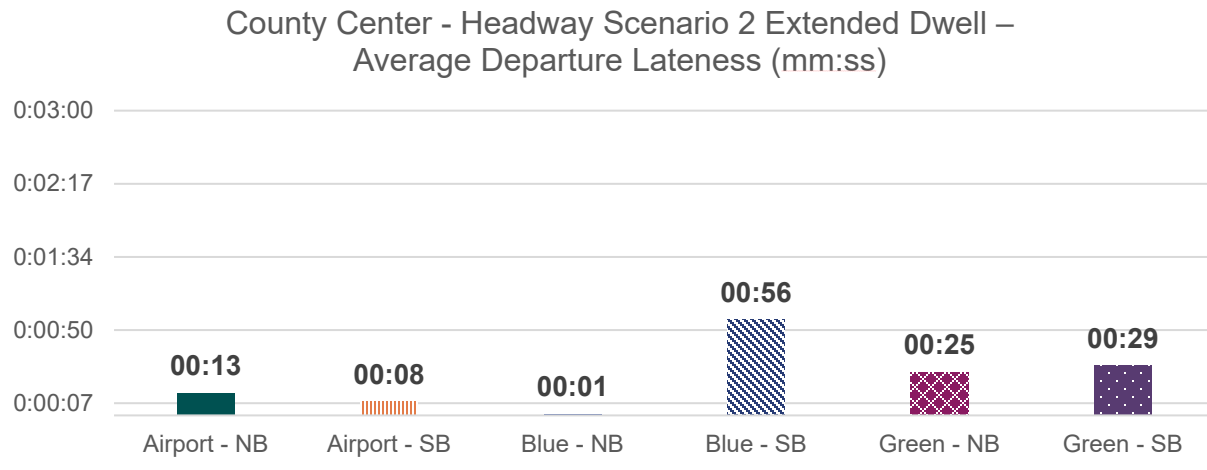
Source: WSP 2025

Figure 20: 80th Percentile Departure Lateness at Santa Fe Depot by Line and Direction for Headway Scenario 2 Extended Tests



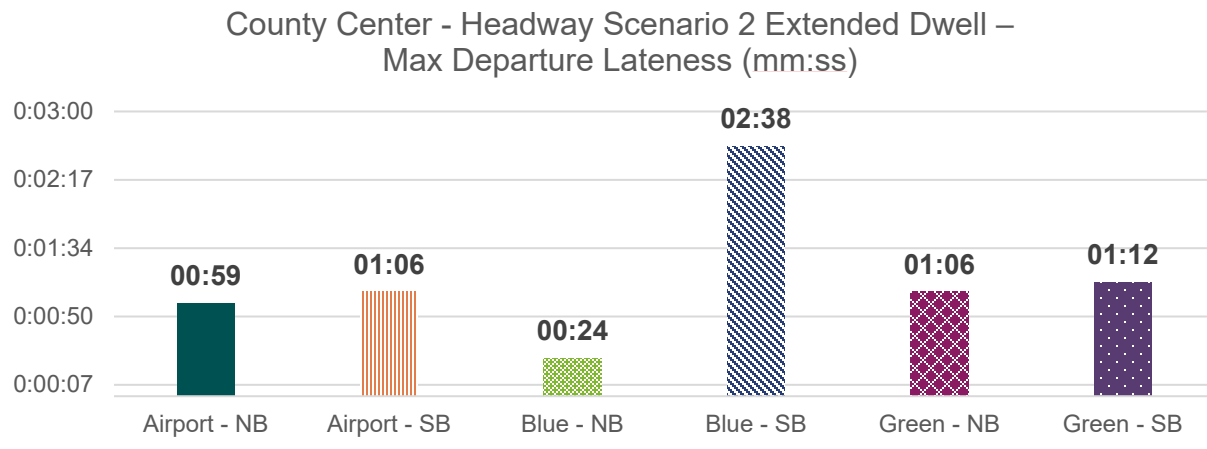
Source: WSP 2025

Figure 21: Average Departure Lateness at County Center/Little Italy Station by Line and Direction for Headway Scenario 2 Extended Tests



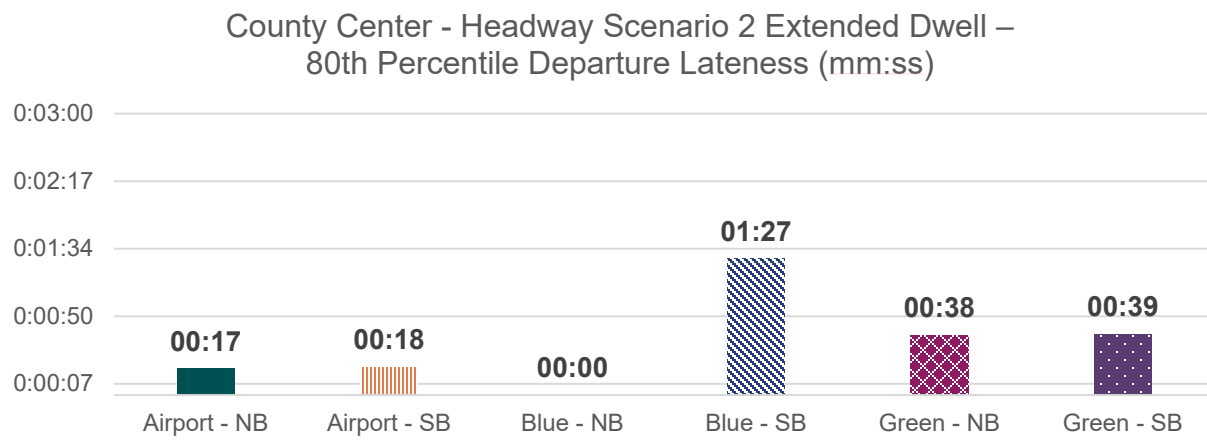
Source: WSP 2025

Figure 22: Maximum Departure Lateness at County Center/Little Italy Station by Line and Direction for Headway Scenario 2 Extended Tests



Source: WSP 2025

Figure 23: 80th Percentile Departure Lateness at County Center/Little Italy Station by Line and Direction for Headway Scenario 2 Extended Tests

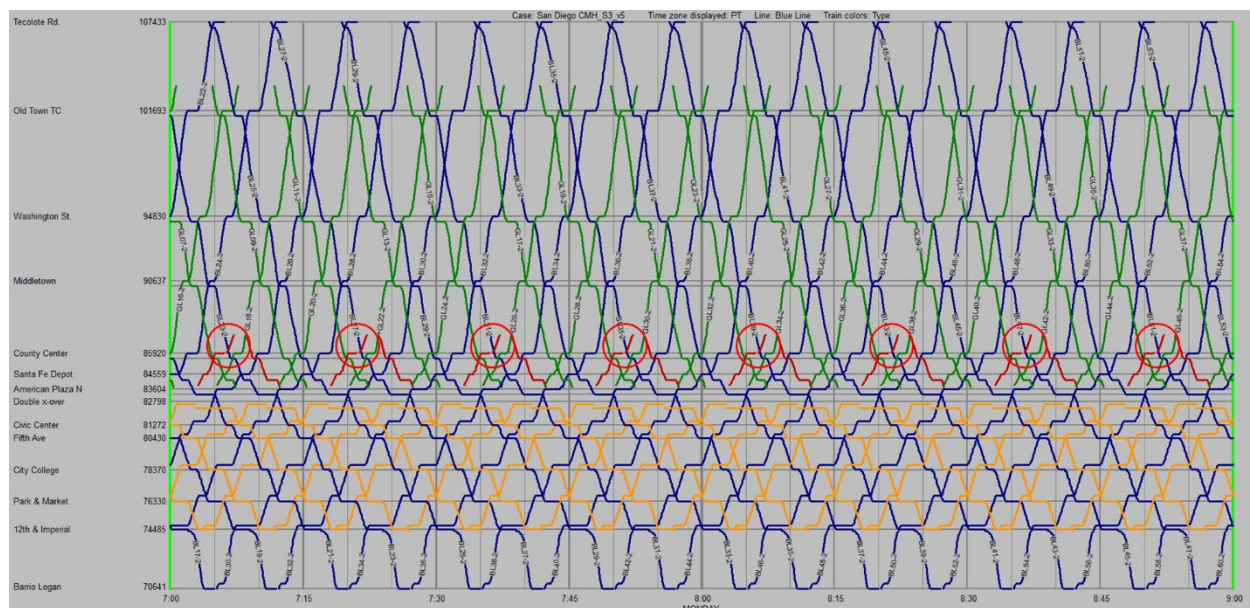


Source: WSP 2025

Headway Scenario 3

Figure 24 shows the deterministic simulation time-distance chart on Blue Line territory from the Barrio Logan Station to the Tecolote Road Station between 7:00 and 9:00 AM for Headway Scenario 3. Some northbound Airport Trolley Line trains are delayed by southbound Blue Line trains north of the County Center/Little Italy Station, but overall they operated more consistently than Headway Scenario 2 on the shared corridor due to reduced frequency on the Airport Trolley Line. These delays are represented by the slight change of slope and/or breakages in the lines, highlighted in red circles in Figure 24.

Figure 24: Time-Distance Chart on Blue Line Territory from Barrio Logan Station to Tecolote Road Station between 7:00 and 9:00 a.m. from Headway Scenario 3 Deterministic Simulation



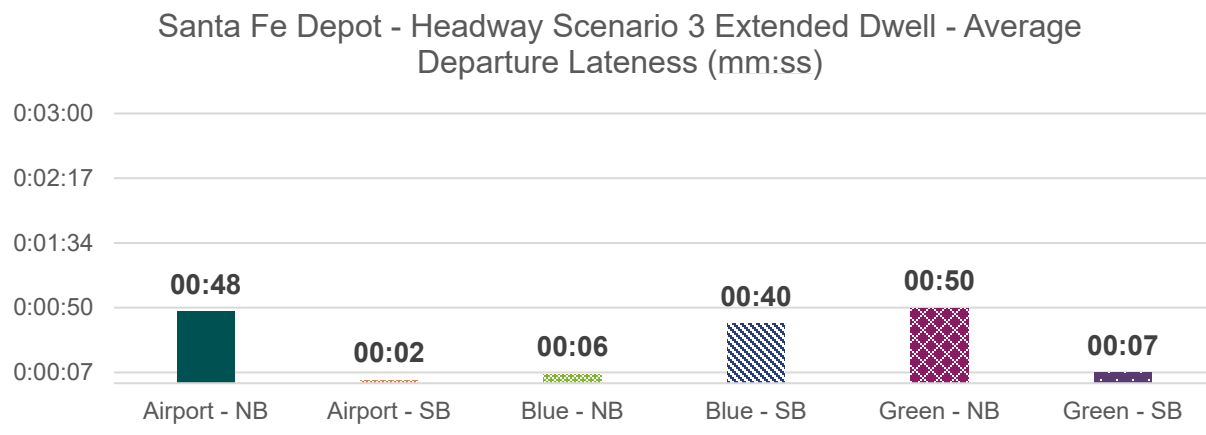
Source: WSP 2025

Figure 25 to Figure 27 summarize the average, maximum, and 80th percentile departure lateness by line and direction at Santa Fe Depot from randomized simulation extended dwell tests for Headway Scenario 3. These statistics are also summarized for County Center/Little Italy Station in Figure 28 to Figure 30. Similar to the previous two headway scenarios, the trains that recorded high average departure lateness were northbound Airport Trolley Line trains, southbound Blue Line trains, and northbound Green Line trains. But unlike the previous two scenarios, the lateness on southbound Blue Line trains was lower than the lateness for Airport Trolley Line or Green Line trains. Regarding maximum departure lateness, northbound Green Line trains recorded the highest duration at just under 2 minutes, followed by northbound Airport Trolley Line and southbound Blue Line trains. The departure lateness at the 80th percentile is slightly higher than the average lateness.

Unlike the first two headway scenarios, statistics on departure lateness at the County Center/Little Italy are fairly different to those at Santa Fe Depot, with southbound Blue Line trains experiencing the highest average lateness, followed by southbound Green Line trains, northbound Green Line trains, and northbound Airport Trolley Line trains. This indicates that while some southbound Blue Line trains were still delayed by diverging Airport Trolley Line trains, the delays were less than in the first two scenarios. This results in southbound Blue Line trains being more likely to enter the diverging move before the northbound Airport Trolley Line and Green Line trains arrived before the Broadway wye junction, and in turn caused higher lateness on the northbound trains.

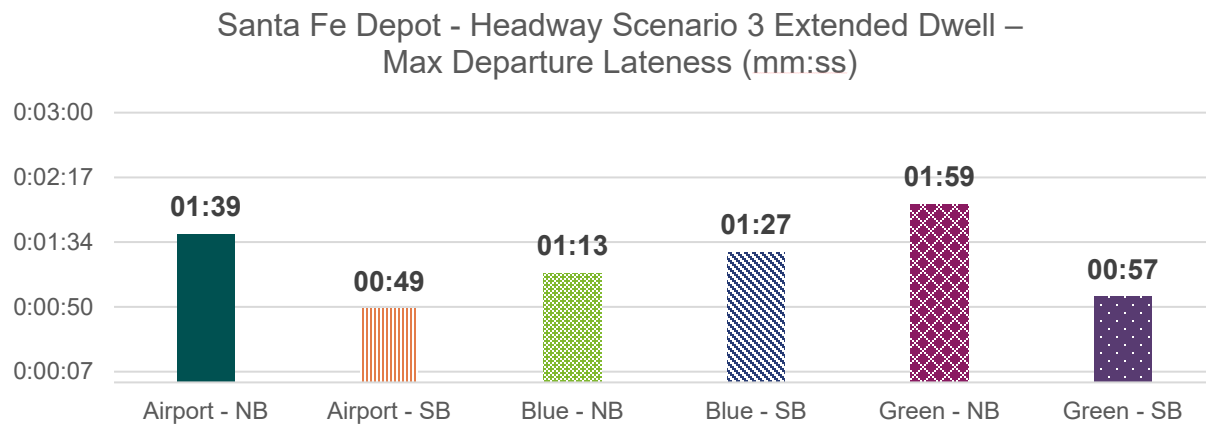
Overall, the reduced frequency on the Airport Trolley Line appeared to slightly reduce the delays caused by conflicts with Blue and Green Line trains, as exhibited in the lower departure lateness.

Figure 25: Average Departure Lateness at Santa Fe Depot by Line and Direction for Headway Scenario 3 Extended Tests



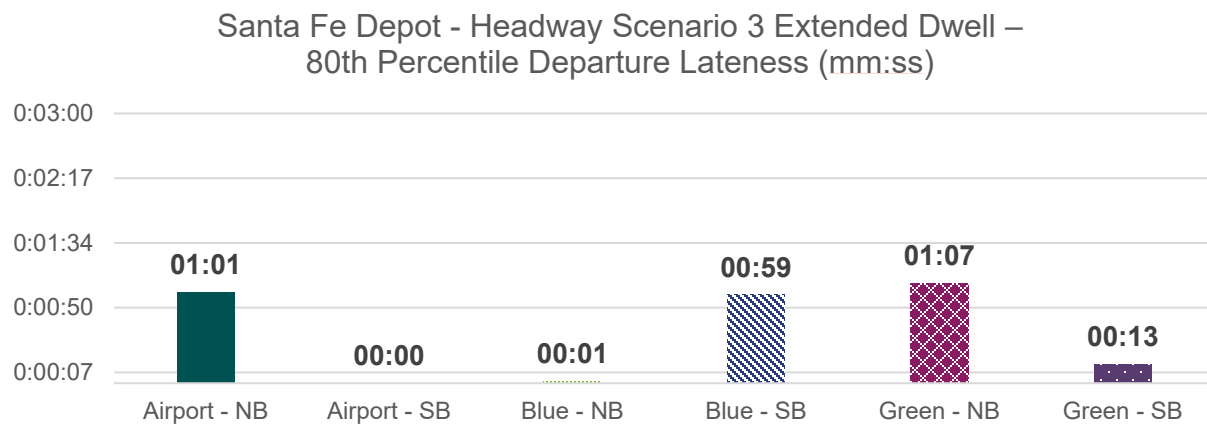
Source: WSP 2025

Figure 26: Maximum Departure Lateness at Santa Fe Depot by Line and Direction for Headway Scenario 3 Extended Tests



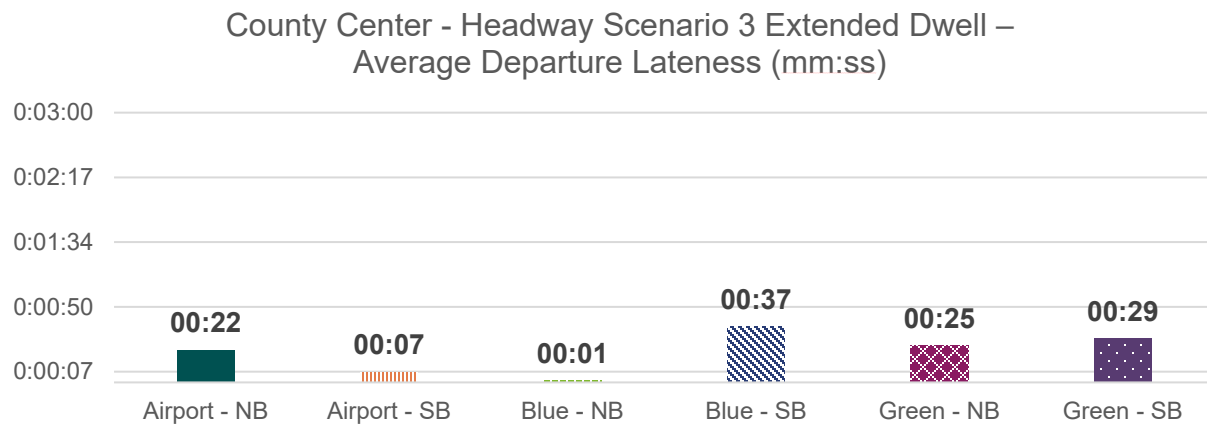
Source: WSP 2025

Figure 27: 80th Percentile Departure Lateness at Santa Fe Depot by Line and Direction for Headway Scenario 3 Extended Tests



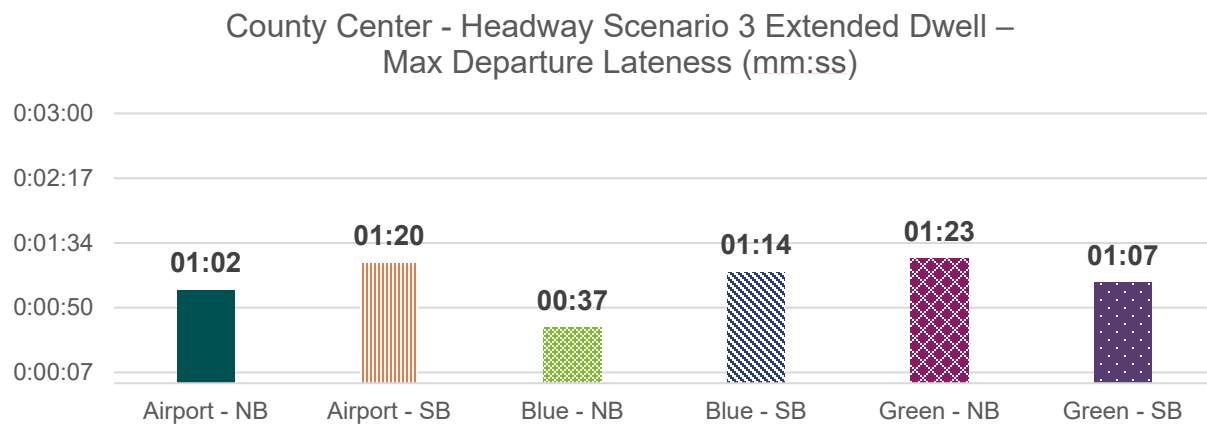
Source: WSP 2025

Figure 28: Average Departure Lateness at County Center/Little Italy Station by Line and Direction for Headway Scenario 3 Extended Tests



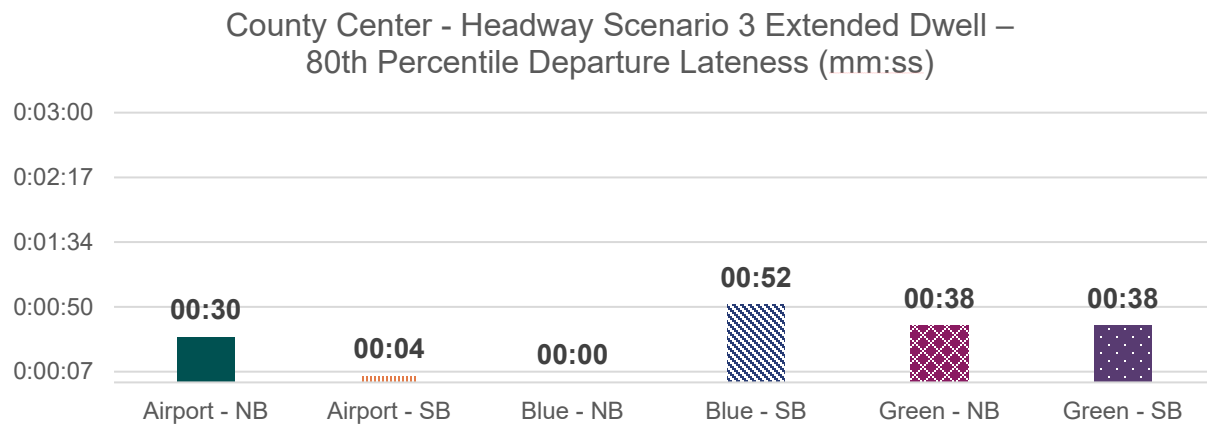
Source: WSP 2025

Figure 29: Maximum Departure Lateness at County Center by Line and Direction for Headway Scenario 3 Extended Tests



Source: WSP 2025

Figure 30: 80th Percentile Departure Lateness at County Center by Line and Direction for Headway Scenario 3 Extended Tests



Source: WSP 2025

Conclusion

In summary, all three headway scenarios completed dispatch with no cascading delays and achieved 100 percent OTP in both deterministic and randomized simulations. Minor conflicts were observed in proximity to the added wye junction for the Airport Trolley Line between trains traveling northbound or southbound and diverging trains. However, these delays are short and not likely to cause cascading delays in the system.

The simulations demonstrated the feasibility of 7.5- and 15-minute headways on the proposed Airport Trolley Line, even with increased headways on the Green, Blue, and/or Orange Lines. However, traffic analysis would be necessary to determine the effects on vehicular traffic circulation where the Airport Trolley Line would operate through at-grade crossings.

Late departures at some stations, such as the Santa Fe Depot and County Center/Little Italy stations, and early arrivals at subsequent stations, indicate schedules could be tweaked on some lines to reallocate travel times. For example, travel time in later sections of the trip could be reallocated to travel time between earlier stations, thereby reducing lateness at these stations. However, the observed lateness does not affect the total travel time.

While it was not the main focus of this study, the simulations also revealed the impact of the Airport Trolley Line and increased service levels on other lines to other parts of the Trolley system, particularly with the increased service frequency on the existing Trolley lines. At higher frequencies, equipment turnarounds could be challenging due to the need for short layover times caused by the limited track availability. This is especially true at the El Cajon Transit Center, where all Green Line, Orange Line, and Copper Line trains share the available tracks. Equipment turnarounds at the location of the 12th & Imperial Transit Center that would serve as the terminus for Green Line and Airport Trolley Line trains may also be challenging if both lines operate at an average 7.5-minute headway.

Further, the simulations suggest that turnarounds and recovery time would be particularly challenging when Green Line and Orange Line trains both operate at 7.5-minute average headways as the layover time at both ends of the line are limited due to track availability:

- 6 minutes for Green Line trains at the 12th & Imperial Transit Center
- 4 minutes for Orange Line trains at the Courthouse Station
- 4 minutes for both lines at El Cajon Transit Center

Combined with the minimum 4 minutes required for equipment turnaround as specified during MTS coordination meetings, this would mean that the Green Line would not have scheduled recovery time at the east end of the line, and the Orange Line would not have scheduled recovery time at either end.

Appendix B:

Capital Cost Basis of Estimate

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1 Introduction

Updated preliminary capital cost estimates were prepared in 2025 building off the estimates previously prepared for the Concept Evaluation Study completed in 2023. Preliminary capital cost estimates were prepared in 2025 dollars for the automated people mover (APM) and Trolley concepts that advanced to Round 2 in the addendum pare down process, listed as follows:

- Concept 3A – APM from San Diego International Airport (SDIA) to Port Transit Center/ Consolidated Rental Car Center (PTC/CONRAC) and Santa Fe Depot – Aerial south route
- Concept 3B – APM from SDIA to PTC/CONRAC and Santa Fe Depot – Bored tunnel south route
- Concept 3C – APM from SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid south route
- Concept 4A – APM from SDIA to PTC/CONRAC and to Santa Fe Depot Extended to Convention Center – Aerial south route
- Concept 4B – Bored Tunnel Airport Transit Connector from San Diego International Airport to PTC/CONRAC and to Santa Fe Depot Extended to Convention Center – Bored tunnel south route
- Concept 4C – Hybrid Airport Transit Connector from SDIA to PTC/CONRAC and to Santa Fe Depot Extended to Convention Center – Hybrid south route
- Concept 5A – Aerial Airport Transit Connector from SDIA to PTC/CONRAC and to Santa Fe Depot Extended to Civic Center – Aerial south route
- Concept 5B – Bored Tunnel Airport Transit Connector from SDIA to PTC/CONRAC and to Santa Fe Depot Extended to Civic Center – Bored tunnel south route
- Concept 5C – Hybrid Airport Transit Connector from SDIA to PTC/CONRAC and to Santa Fe Depot Extended to Civic Center – Hybrid south route
- Concept 6A – Trolley Concept Light Rail Transit from SDIA to 12th & Imperial Transit Center – existing tracks between 12th and Imperial Transit Center and Hawthorn Street, spur tracks to SDIA
- Concept 6B – Trolley Concept Light Rail Transit from SDIA to 12th & Imperial Transit Center – extend existing Trolley trench south to B St; spur to SDIA; and grade separate three Trolley crossings
- Concept 8A – Aerial APM from SDIA to Santa Fe Depot
- Concept 8B – Hybrid APM from SDIA to Santa Fe Depot
- Concept 9A – Aerial APM from SDIA to Santa Fe Depot Extended to Convention Center
- Concept 9B – Hybrid APM from SDIA to Santa Fe Depot Extended to Convention Center
- Concept 10A – Aerial APM from SDIA to Santa Fe Depot Extended to Civic Center
- Concept 10B – Hybrid APM from SDIA to Santa Fe Depot Extended to Civic Center

Additionally for each concept noted above, cost estimates were prepared that excluded optional stations:

- No Harbor Island Station (relevant for all Round 2 concepts)
- No County Administration Station (not relevant to Concepts 6A or 6B)
- No Harbor Island or County Administration Stations (not relevant to Concepts 6A or 6B)

The following major work elements were included in each cost estimate, as applicable:

- Construction of APM/light rail transit (LRT) guideways (as relevant to the concept), including at-grade, retained fill, retained cut, bored tunnel, cut-and-cover tunnel, and/or aerial viaduct
- Roadway improvements along North Harbor Drive and other areas affected by construction
- Construction of the APM Operations, Maintenance, and Storage Facility (Fire Training Center or Port Property sites depending on the concept), along with associated non-revenue tracks
- Aerial, underground, or depressed stations
- Vertical circulation elements and pedestrian connections
- Procurement of APM/LRT vehicles
- PTC (north route or north/south route concepts)

Right-of-way acquisition, financing, and escalation costs are not included in these estimates. Costs are presented in 2025 dollars.

2 Methodology

The preliminary capital cost estimates prepared for the ATC project are considered a Class 4 estimate based on the Association for the Advancement of Cost Engineering (AACE) Estimate Classification. Class 4 estimates are typically developed during concept or feasibility studies when projects are less well defined. A midpoint cost was estimated and then presented as a range that extends 15% lower than the midpoint estimate to reflect the low range and 30% higher from the midpoint as the high end of the range of probable costs. These percentages were informed by the AACE Cost Estimate Classification Matrix for the Road and Rail Transportation Infrastructure Industries matrix.

The estimate was developed using unit costs for key construction elements and parametric quantities based on conceptual project layouts. Quantities for each layout, as described in Section 3, were estimated from the conceptual designs and applied to the corresponding unit costs to develop construction costs. An allocated contingency of 30% to 40% was included to account for design refinement and other uncertainties associated with this stage of project development.

Each concept estimate was developed using program components made up of individual Unit Pricing Elements (UPE). After the construction costs were calculated, an additional 30% was added to account for professional services, such as engineering, environmental support, legal services, and project management. An unallocated contingency of 20% was also included to address uncertainties that may arise during environmental clearance, procurement, and construction. The combined total represents the estimated cost for each concept.

3 Quantity Basis

Aerial Viaduct: The following design assumptions were used when quantifying the aerial viaduct for either the APM or Trolley concepts:

- Pier spacing of 130 feet from column to column;
- Aerial piers built on top of 120-inch drilled shafts extending 100 vertical linear feet into ground
- A superstructure of precast segmental box girders

Underground Structures: Utilized typical bored tunnel and cut-and-cover tunnel sections to quantify underground structures. Additional assumptions:

- Secant pile system required for cut-and-cover systems for ground water control
- Temporary street decking assumed in traffic areas that are unable to remain closed for extended periods

Stations: For the APM, utilized prototypical stations based on similar design intent at Los Angeles International Airport and Seattle-Tacoma International Airport:

- Includes architectural features premium factor of 10 percent on architectural scope costs (such as canopy, stairs, platform edge, mechanical/electrical/plumbing)
- Allowances included for mechanical, electrical, lighting, and station furnishings

Quantities were generated from the conceptual design as well as collaboration with the engineering team. Software applications such as Bluebeam, Google Earth, and On-Screen Takeoff were used to scale drawings and complete quantity takeoff.

4 Cost Basis

Unit prices were sourced from cost databases available at the time the estimates were developed, such as RS Means and the California Department of Transportation (Caltrans) Contract Cost Database. Each cost was reviewed to utilize the most current and up to date pricing information as well as localization adjustments to San Diego, California. Specialty construction cost items were estimated using applicable aviation transit project cost information, such as Los Angeles International Airport and Seattle-Tacoma International Airport. The resulting unit prices reflect a blend of database and actual costs, so that estimates are accurate for current market conditions as of 2025.

5 Assumptions, Clarifications, and Exclusions

The following assumptions, clarifications, and exclusions are included in each estimate:

- A productivity loss factor of 20 percent is included for items constructed within the Restricted Airspace (i.e., Runway Protection Zone).
- All rebar assumed at 200 pounds per cubic yard on cast-in-place concrete items. Precast concrete items are inclusive of reinforcement.
- Mobilization and Demobilization Allowance of 10% of construction costs included on each Unit Pricing Element.
- General Conditions Allowance of 20% of construction costs included on each Unit Pricing Element.
- Overhead and Profit Allowance of 8% of construction costs included on each Unit Pricing Element.
- Land acquisition costs are excluded from estimates.
- Operation and Maintenance costs are excluded from estimates.
- APM concepts with both north and south routes include demolition of the existing concrete structure identified as the Port of San Diego Building as part of the APM.
- APM and LRT concepts include the purchase of transit vehicles assuming service is provided at 7.5-minute headways.
- Track power, control, and communications costs are included.
- Vertical circulation at aerial, depressed, and underground stations is included.
- Ground improvements (jet grouting) are included at cut-and-cover segments and underground stations.
- Ground improvements (jet grouting) are included for 20 percent of the bored tunnel length to account for poor soil conditions at the beginning and ends of the bored tunnel guideway section.
- Allowance included for utility modifications and relocations. Utility modifications were estimated as tiered conditions between three levels of varying types and sizes of utilities likely to be impacted depending on anticipated site conditions.
- Allowance included for environmental mitigation and hazardous materials removal. These items were estimated as a tiered approach varying between three levels of potential mitigations and/or hazmat removal (light, medium, or heavy) depending on anticipated conditions along the alignments.
- Global supply chain shortages and COVID productivity loss factors are excluded from the estimates.
- Existing 108-inch interceptor sanitary sewer structural support costs are included where applicable as a separate project element (Concepts 3C, 4C, 5C, 6A, 6B, 8B, 9B, and 10B).
- The quantity of non-revenue track required to access the operations, maintenance, and storage facility is included in the cost estimate; however, cost per mile is based on the length of revenue track only.

- Concept 6B assumes a multi-phased construction staging approach with temporary construction elements to maintain operations on the two LOSSAN and two Trolley tracks.
- Costs are presented in 2025 Base Year dollars.

6 Capital Cost by Concept in Round 2

The tables that follow show the cost for each concept in Round 2 by program component.

Table 1: Concept 3A - SDIA to PTC/CONRAC and Santa Fe Depot – Aerial South Route

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$1,781.5	\$2,095.9	\$2,724.7
Vehicles	\$23.2	\$27.3	\$35.5
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$507.5	\$597.1	\$776.2
Unallocated Contingency (20%)	\$341.9	\$402.2	\$522.9
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$2,654.1	\$3,122.5	\$4,059.3

Source: WSP 2025

Table 2: Concept 3B - SDIA to PTC/CONRAC and Santa Fe Depot - Bored Tunnel South Route

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$2,471.0	\$2,907.1	\$3,779.2
Vehicles	\$23.2	\$27.3	\$35.5
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$699.2	\$822.6	\$1,069.3
Unallocated Contingency (20%)	\$469.7	\$552.6	\$718.3
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$3,663.1	\$4,309.5	\$5,602.4

Source: WSP 2025

Table 3: Concept 3C – APM from SDIA to PTC/CONRAC and Santa Fe Depot – Hybrid South Route

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$2,407.8	\$2,832.7	\$3,682.5
Vehicles	\$23.2	\$27.3	\$35.5
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$682.6	\$803.0	\$1,044.0
Unallocated Contingency (20%)	\$458.6	\$539.6	\$701.4
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$3,572.2	\$4,202.6	\$5,463.4

Source: WSP 2025

Table 4: Concept 4A – APM from SDIA to PTC/CONRAC and to Santa Fe Depot Extended to Convention Center – Aerial South Route

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$2,023.2	\$2,380.2	\$3,094.3
Vehicles	\$26.5	\$31.2	\$40.6
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$576.8	\$678.6	\$882.2
Unallocated Contingency (20%)	\$388.6	\$457.2	\$594.4
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$3,015.1	\$3,547.2	\$4,611.4

Source: WSP 2025

Table 5: Concept 4B – Bored Tunnel Airport Transit Connector from San Diego International Airport to PTC/CONRAC and to Santa Fe Depot Extended to Convention Center – Bored Tunnel South Route

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$3,202.1	\$3,767.2	\$4,897.4
Vehicles	\$26.5	\$31.2	\$40.6
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$904.7	\$1,064.3	\$1,383.6
Unallocated Contingency (20%)	\$607.2	\$714.3	\$928.6
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$4,740.5	\$5,577.1	\$7,250.2

Source: WSP 2025

Table 6: Concept 4C – Hybrid Airport Transit Connector from SDIA to PTC/CONRAC and to Santa Fe Depot Extended to Convention Center – Hybrid South Route

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$3,177.6	\$3,738.4	\$4,859.9
Vehicles	\$26.5	\$31.2	\$40.6
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$899.0	\$1,057.7	\$1,375.0
Unallocated Contingency (20%)	\$603.4	\$709.9	\$922.9
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$4,706.6	\$5,537.2	\$7,198.3

Source: WSP 2025

Table 7: Concept 5A – Aerial Airport Transit Connector from SDIA to PTC/CONRAC and to Santa Fe Depot Extended to Civic Center – Aerial South Route

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$1,945.4	\$2,288.7	\$2,975.3
Vehicles	\$26.5	\$31.2	\$40.6
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$554.2	\$652.0	\$847.7
Unallocated Contingency (20%)	\$373.6	\$439.5	\$571.3
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$2,899.7	\$3,411.4	\$4,434.8

Source: WSP 2025

Table 8: Concept 5B – Bored Tunnel Airport Transit Connector from SDIA to PTC/CONRAC and to Santa Fe Depot Extended to Civic Center – Bored tunnel South Route

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$2,947.2	\$3,467.3	\$4,507.6
Vehicles	\$26.5	\$31.2	\$40.6
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$832.6	\$979.5	\$1,273.4
Unallocated Contingency (20%)	\$559.1	\$657.8	\$855.2
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$4,365.5	\$5,135.9	\$6,676.7

Source: WSP 2025

Table 9: Concept 5C – Hybrid Airport Transit Connector from SDIA to PTC/CONRAC and to Santa Fe Depot Extended to Civic Center – Hybrid South Route

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$2,882.7	\$3,391.4	\$4,408.8
Vehicles	\$26.5	\$31.2	\$40.6
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$815.7	\$959.6	\$1,247.5
Unallocated Contingency (20%)	\$547.8	\$644.5	\$837.9
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$4,272.7	\$5,026.7	\$6,534.7

Source: WSP 2025

Table 10: Concept 6A – Trolley Concept Light Rail Transit from SDIA to 12th & Imperial Transit Center – existing tracks between 12th and Imperial Transit Center and Hawthorn Street, spur tracks to SDIA

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$782.8	\$920.9	\$1,197.2
Vehicles	\$124.2	\$146.2	\$190.0
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$218.1	\$256.5	\$333.5
Unallocated Contingency (20%)	\$163.1	\$191.9	\$249.5
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$1,288.2	\$1,515.6	\$1,970.2

Source: WSP 2025

Table 11: Concept 6B – Trolley Concept Light Rail Transit from SDIA to 12th & Imperial Transit Center – extend existing Trolley trench south to B St; spur to SDIA; and grade separate three Trolley crossings

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$1,686.7	\$1,984.3	\$2,579.6
Vehicles	\$124.2	\$146.2	\$190.0
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$469.9	\$552.8	\$718.6
Unallocated Contingency (20%)	\$331.0	\$389.4	\$506.2
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$2,611.8	\$3,072.7	\$3,994.5

Source: WSP 2025

Table 12: Concept 8A – Aerial APM from SDIA to Santa Fe Depot

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$1,234.2	\$1,452.0	\$1,887.6
Vehicles	\$13.3	\$15.6	\$20.3
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$351.2	\$413.2	\$537.2
Unallocated Contingency (20%)	\$236.2	\$277.9	\$361.2
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$1,834.9	\$2,158.7	\$2,806.3

Source: WSP 2025

Table 13: Concept 8B – Hybrid APM from SDIA to Santa Fe Depot

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$1,891.6	\$2,225.4	\$2,893.0
Vehicles	\$13.3	\$15.6	\$20.3
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$535.2	\$629.6	\$818.5
Unallocated Contingency (20%)	\$358.8	\$422.1	\$548.8
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$2,798.8	\$3,292.7	\$4,280.5

Source: WSP 2025

Table 14: Concept 9A – Aerial APM from SDIA to Santa Fe Depot Extended to Convention Center

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$1,464.4	\$1,722.9	\$2,239.7
Vehicles	\$16.6	\$19.5	\$25.4
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$417.3	\$491.0	\$638.3
Unallocated Contingency (20%)	\$280.8	\$330.3	\$429.4
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$2,179.1	\$2,563.7	\$3,332.8

Source: WSP 2025

Table 15: Concept 9B – Hybrid APM from SDIA to Santa Fe Depot Extended to Convention Center

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$2,576.4	\$3,031.0	\$3,940.3
Vehicles	\$16.6	\$19.5	\$25.4
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$727.6	\$856.0	\$1,112.7
Unallocated Contingency (20%)	\$487.6	\$573.6	\$745.7
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$3,808.1	\$4,480.1	\$5,824.1

Source: WSP 2025

Table 16: Concept 10A – Aerial APM from SDIA to Santa Fe Depot Extended to Civic Center

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$1,361.8	\$1,602.1	\$2,082.7
Vehicles	\$16.6	\$19.5	\$25.4
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$387.6	\$456.0	\$592.8
Unallocated Contingency (20%)	\$260.9	\$307.0	\$399.1
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$2,026.8	\$2,384.5	\$3,099.9

Source: WSP 2025

Table 17: Concept 10B – Hybrid APM from SDIA to Santa Fe Depot Extended to Civic Center

Program Component	Cost in Millions (2025)		
	Low	Point	High
Capital Construction	\$2,323.9	\$2,734.1	\$3,554.3
Vehicles	\$16.6	\$19.5	\$25.4
Land Acquisition	\$0.0	\$0.0	\$0.0
Professional Services	\$656.2	\$772.0	\$1,003.6
Unallocated Contingency (20%)	\$440.0	\$517.7	\$673.0
Operation & Maintenance	\$0.0	\$0.0	\$0.0
Program Total	\$3,436.7	\$4,043.2	\$5,256.2

Source: WSP 2025

The APM concepts include two optional stations, and the Trolley concepts include one optional station. Deferring construction of the optional station(s) would decrease cost, thereby reducing the upfront capital

investment needs required to construct the project. Table 18 shows the mid-point preliminary capital cost of each concept with and without the optional stations.

Table 18: Preliminary Capital Cost Estimates – with and without optional stations (in millions)

Concept Description	Mid-Point with Optional Stations	Mid-Point without Harbor Island Optional Station	Mid-Point without County Administration Bldg Optional Station	Mid-Point without both optional stations	Savings without both optional stations
Concept 3A Elevated	\$3,123	\$3,049	\$3,049	\$2,976	\$146
Concept 3B Bored Tunnel	\$4,310	\$4,236	\$4,080	\$4,007	\$303
Concept 3C Hybrid	\$4,203	\$4,129	\$4,032	\$3,959	\$244
Concept 4A Elevated	\$3,547	\$3,474	\$3,474	\$3,401	\$146
Concept 4B Bored Tunnel	\$5,577	\$5,504	\$5,347	\$5,274	\$303
Concept 4C Hybrid	\$5,537	\$5,464	\$5,367	\$5,294	\$244
Concept 5A Elevated	\$3,411	\$3,338	\$3,338	\$3,265	\$146
Concept 5B Bored Tunnel	\$5,136	\$5,063	\$4,906	\$4,833	\$303
Concept 5C Hybrid	\$5,027	\$4,954	\$4,856	\$4,783	\$244
Concept 6A Trolley from SDIA to 12th & Imperial Transit Center	\$1,516	\$1,450	N/A	N/A	\$65
Concept 6B Trolley from SDIA to 12th & Imperial Transit Center with extended trench	\$3,073	\$3,007	N/A	N/A	\$65
Concept 8A Elevated	\$2,159	\$2,085	\$2,085	\$2,012	\$146
Concept 8B Hybrid	\$3,293	\$3,220	\$3,122	\$3,049	\$244
Concept 9A Elevated	\$2,564	\$2,491	\$2,491	\$2,417	\$146
Concept 9B Hybrid	\$4,480	\$4,407	\$4,310	\$4,236	\$244
Concept 10A Elevated	\$2,385	\$2,311	\$2,311	\$2,238	\$146
Concept 10B Hybrid	\$4,043	\$3,970	\$3,873	\$3,800	\$244

Source: WSP 2025

Notes: SDIA = San Diego International Airport

Table 19 presents the low, mid-point, and high-end cost per mile for each of the concepts evaluated in Round 2.

Table 19: Cost per Mile

Concept Description	Cost in Millions (2025\$)		
	Low	Mid-Point	High
Concept 3A Elevated	\$712	\$838	\$1,089
Concept 3B Bored Tunnel	\$1,049	\$1,234	\$1,604
Concept 3C Hybrid	\$959	\$1,128	\$1,466
Concept 4A Elevated I	\$650	\$765	\$994
Concept 4B Bored Tunnel	\$1,093	\$1,286	\$1,672
Concept 4C Hybrid	\$1,015	\$1,195	\$1,553
Concept 5A Elevated	\$685	\$806	\$1,047
Concept 5B Bored Tunnel	\$1,134	\$1,335	\$1,735
Concept 5C Hybrid	\$1,046	\$1,230	\$1,599
Concept 6A Trolley from SDIA to 12th & Imperial Transit Center	\$333	\$392	\$509
Concept 6B Trolley from SDIA to 12th & Imperial Transit Center with extended trench	\$583	\$686	\$892
Concept 8A Elevated	\$783	\$921	\$1,197
Concept 8B Hybrid	\$1,181	\$1,390	\$1,807
Concept 9A Elevated	\$669	\$787	\$1,023
Concept 9B Hybrid	\$1,195	\$1,405	\$1,827
Concept 10A Elevated	\$745	\$876	\$1,139
Concept 10B Hybrid	\$1,271	\$1,495	\$1,944

Source: WSP 2025

Notes: SDIA = San Diego International Airport

APPENDIX C: CONCEPT REFINEMENTS

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Acronyms and Abbreviations

Acronym/Abbreviations	Definition
APM	Automated People Mover
ATM	automated teller machine
Board	San Diego Association of Governments Board of Directors
CONRAC	Consolidated Rental Car Center
GIS	Geographic Information System
LOSSAN	Los Angeles–San Diego–San Luis Obispo Rail Corridor
LRT	light rail transit
MTS	San Diego Metropolitan Transit System
OMSF	operations, maintenance, and storage facility
PTC	Port Transit Center
SANDAG	San Diego Association of Governments
Trolley	San Diego Trolley

1 Introduction

1.1 Background

The San Diego Association of Governments (SANDAG) completed the Concept Evaluation Study (Study) in July 2023, the purpose of which was to develop and evaluate concepts to create a regional transit connection to San Diego International Airport (SDIA). The Study was developed in response to input from the SANDAG Board of Directors (Board) and stakeholders. Seven concepts were evaluated in this Study that fell within three primary transit modes: automated people mover (APM) technology (referred to as Airport Transit Connector in the Study), San Diego Trolley (Trolley) light rail transit, and enhanced bus service.

Five concepts involved an APM, two of which were north-route-only concepts and three with north and south routes combined (with additional variations and features). In addition to the five APM concepts, one concept was studied for the Trolley mode and one concept was studied for the enhanced bus mode. Each concept previously studied is summarized in Table 1-1.

The Study evaluated the combined north and south routes for Concepts 3, 4, and 5; however, it was acknowledged that each route could also be advanced independently for future consideration based on additional analysis, partner agency input, and SANDAG Board feedback. For purposes of a high-level screening in the Study, an initial evaluation was performed on a south route only configuration of Concept 5 (SDIA to Civic Center), now referred to as Concept 10. Stakeholder feedback received after release of the study expressed the desire for prioritizing an equitable and convenient transit connection to the airport for South Bay travelers, as well as a direct connection to the downtown core and its dense supply of housing, jobs, existing transit riders, and tourist destinations. In response to this community and stakeholder feedback, this appendix includes an evaluation of the standalone south route concepts associated with Concepts 3, 4, and 5 using the same criteria as those used for Concepts 1-7 in the Study. These concepts are referred to as Concepts 8, 9, and 10 and are presented in Table 1-2.

Table 1-1: Concepts Included in the 2023 Concept Evaluation Study

Mode		Concept	Potential Features/Variations
APM	North Route Only ¹	Concept 1 SDIA to CONRAC/PTC	Concept 1A: SDIA to CONRAC/PTC Concept 1B: Concept 1A + direct access ramp to/from I-5 Concept 1C: Concept 1A + LOSSAN (COASTER and/or Surfliner) Platform
		Concept 2: SDIA to Old Town Transit Center	N/A
	North and South Routes Combined	Concept 3: SDIA to PTC/CONRAC and Santa Fe Depot	Concept A: Elevated Concept B: Bored Tunnel Concept C: Hybrid (elevated and bored tunnel)
		Concept 4: SDIA to PTC/CONRAC and Convention Center	
		Concept 5: SDIA to PTC/CONRAC and Civic Center	
Trolley	Concept 6: SDIA to 12th & Imperial Transit Center		N/A

Mode	Concept	Potential Features/Variations
Enhanced Bus	Concept 7: Route from SDIA to Old Town Transit Center and Route from SDIA to Santa Fe Depot and City College	N/A

Source: SANDAG 2023

Notes:

¹ For the APM concepts, the study started with the assumption that a north route was necessary to accommodate potential locations for a required vehicle maintenance and storage facility. For this reason, a full evaluation of south route only concepts was not included in the study, although some initial assessment was performed on a south route only configuration of Concept 5 (SDIA to Civic Center). However, SANDAG planned to evaluate additional options to accommodate the vehicle maintenance and storage facility and conduct further analysis of phasing the APM concepts, including starting with a south route only option.

APM = Automated People Mover; CONRAC = Consolidated Rental Car Center; LOSSAN = Los Angeles–San Diego–San Luis Obispo Rail Corridor; N/A = not applicable; PTC = Port Transit Center; SANDAG = San Diego Association of Governments; SDIA = San Diego International Airport

In coordination with local partner agencies, SANDAG also developed a new Trolley concept, referred to as Concept 6B. Concept 6B is similar to Concept 6 that was evaluated in the Concept Evaluation Study (Concept 6 is now referred to as Concept 6A). Both concepts would share the existing Trolley tracks with the Green Line from 12th & Imperial Transit Center to Santa Fe Depot and then operate on a new alignment where it would spur off the existing tracks near Hawthorn Street to SDIA. However, Concept 6A would operate on the existing Trolley tracks between Santa Fe Depot and Hawthorn Street whereas Concept 6B would extend the existing Trolley trench south passing under Ash, Beech, and Cedar Streets before ascending to tie into the existing at-grade tracks north of B Street. Both concepts would share tracks with the Blue and Green Line between Santa Fe Depot and Hawthorn Street. The concepts included in this appendix are shown in Table 1-2.

Table 1-2: Concepts Included in the 2026 Addendum

Mode	Concept		Variations
Trolley	Concept 6B: SDIA to 12th & Imperial Transit Center		Concept B: Spur tracks from SDIA to Hawthorn St; Extend existing Trolley trench south to B St./Santa Fe Depot; Share tracks from Santa Fe Depot to 12th & Imperial Transit Center
APM	South Route Only	Concept 8: SDIA to Santa Fe Depot	Concept A: Elevated Concept B: Hybrid (elevated and bored tunnel)
		Concept 9: SDIA to Convention Center	Concept A: Elevated Concept B: Hybrid (elevated and bored tunnel)
		Concept 10: SDIA to Civic Center	Concept A: Elevated Concept B: Hybrid (elevated and bored tunnel)

Source: SANDAG 2025

Notes:

APM = Automated People Mover; SDIA = San Diego International Airport

1.2 Evaluation Criteria

The Concept Evaluation Study utilized the criteria shown in Table 1-3. Since then, SANDAG has conducted additional analysis using a three round pare down process to reduce the number of concepts that could advance into an environmental clearance phase. Many of the criteria utilized in the pare down process are similar to those used in the 2023 Study, utilizing more current data. In particular, transit connectivity was considered in Round 1, the feasibility/complexity category was reflected in Round 2, and updated ridership forecasts were projected under Round 3. Additionally, the results included in the Concept Evaluation Study identified minimal differences in vehicle miles traveled, greenhouse gases, and adjacent development considerations between the concepts and therefore these criteria were not differentiators. Therefore, this appendix focuses on the criteria that were not otherwise reflected in the pare down process and that differentiate concepts.

Table 1-3: Evaluation Criteria

2023 Concept Evaluation Study		2026 Addendum Criteria
Category	Criteria	
Passenger Convenience and Ridership	- Regional connectivity - User experience - Ridership	- Included in Round 1 – Transit Connectivity - Included in Appendix C - Included in Round 3
Congestion of Airport Access	Traffic effects	N/A – not a differentiator
Vehicle Miles Traveled and Greenhouse Gases	- Regional vehicle miles traveled - Greenhouse gases Compared to No Project	- N/A – not a differentiator - N/A – not a differentiator
Feasibility/Complexity	- Right-of-way impacts - Construction effects and constructability - Major utility impacts - Geotechnical and seismic conditions - Regulatory considerations	- Included in Round 2 – Potential Right-of-Way Needs - Included in Round 2 – Construction Complexity - Included in Round 2 – Potential Major Utility Conflicts - Considered in Round 2 – Construction Complexity - Included in Round 2 – Compatibility
Cost	- Capital Costs in 2022 Dollars - Cost Per Rider - Cost Per Mile - Operations and Maintenance	- Included in Round 2 – Capital Investment Needs - Not included – Updated ridership only forecasted for 5 concepts in Round 3 - Included in Round 2 – Cost Per Mile - Included in Round 2 – Operations and Maintenance Needs/Requirements
Community Effects and Economic Benefits	- Community effects - Adjacent development considerations	- Surrounding Communities Included in Appendix C. Population and Housing, Jobs and Employment, and Commuting Origins are included in Round 1 – Travel Markets - N/A – not a differentiator

Source: WSP 2026

2 Concept 6B: Trolley from San Diego International Airport to 12th & Imperial Transit – Extended Trench and Three Grade Separations

2.1 Description of Concept

Concept 6B would feature an extension of the Trolley, providing a connection from SDIA to the existing 12th & Imperial Transit Center. Table 2-1 provides information on concept characteristics. The concept evaluated in the Addendum was developed in coordination with the Metropolitan Transit System (MTS).

From SDIA, Concept 6B would provide a new elevated alignment traveling east along Harbor Drive for 1.4 miles. At Laurel Street, the Concept 6B alignment would shift to at-grade using retaining walls for 0.2 mile before transitioning to a tunnel to continue beneath Hawthorn Street. South of Hawthorn Street, the underground alignment would turn east to connect with the existing Trolley Green and Blue Line tracks within MTS right-of-way between Pacific Highway and Kettner Boulevard. For Concept 6B, the existing trench containing the trolley tracks would be extended south beneath Cedar Street, Beech Street and Ash Street. South of Ash Street, the Concept 6B alignment would begin to ascend to tie into the existing at-grade tracks north of B Street before connecting to the existing Santa Fe Depot Station and continuing south along the existing Trolley Green Line tracks to the 12th & Imperial Transit Center, where it would connect directly to all three Trolley lines.

Similar to Concept 6A, this concept would provide access to the existing Trolley stations at Santa Fe Depot, Seaport Village, Convention Center, and Gaslamp Quarter, before terminating at the 12th & Imperial Transit Center. The existing County Center/Little Italy Station would be reconstructed within the extended trench. Two locations are under consideration for the reconstructed County Center/Little Italy Station – (1) in the same location as the existing station between Beech and Cedar Streets, and (2) a new location between Date and Fir Streets. Ultimately only one location would be constructed if this concept advances to environmental clearance and implementation. Additionally, a new Trolley SDIA station would be constructed at the transit-ready area, a designated space between Terminal 1 and Terminal 2 to where the rail terminus would be located, and an optional station is under consideration near Harbor Island. Figure 2-1 illustrates the concept alignment. Detailed plan sheets for the concept alignment are included in Section 9.

Table 2-1: Concept 6B Characteristics

Characteristic	
Length of alignment at-grade (miles)	0.2
Length of alignment on elevated structure (miles)	1.4
Length of alignment in tunnel (miles)	0.3
Length of alignment in reconstructed trench (miles)	0.5
Length of alignment on existing tracks (miles)	1.5
Total length of alignment (miles)	3.9
Number of stations	Up to 8 (5 existing, 1 reconstructed, up to 2 new)

Characteristic	
Minimum/shortest headways ¹	7.5 minutes

Source: WSP 2025

Notes:

¹ Headways will be determined during the environmental clearance phase, if this concept advances.

Figure 2-1: Concept 6B Trolley from San Diego International Airport to 12th & Imperial Transit Center with Extended Trench



Source: WSP 2025

2.2 User Experience

The evaluation of user experience relates to the station area environment and a passenger's experience on the vehicle considering elements such as ease of transfers, navigation, and passenger comfort. For the purpose of this analysis, the ease of transfers considered the distance and navigation to the nearest connecting services.

2.2.1 Drop-off/Pick-up, Navigation, and Transfer Convenience

The following sections summarize transfer convenience for each station along Concept 6B, including between modes of transit and by vehicle, as applicable. Concept 6B would include one new light rail transit (LRT) station, one new optional LRT station, and six existing LRT stations along the Trolley Green Line, two of which are also currently served by the Trolley Blue Line. Transfer convenience at these stations was evaluated in terms of distance between modes of transit and vehicular drop-off/pick-up locations and the LRT stations along the alignment that would serve SDIA. As design is advanced throughout subsequent phases of project development, it is assumed that wayfinding, in terms of signage and paths of travel, would be provided to direct passengers to transfer locations. Therefore, wayfinding is not evaluated on a station-by-station basis.

- **SDIA Station:** Vehicular pick-up and drop-off or transfers from the LRT to bus are not expected at this station. It is anticipated that passengers boarding or alighting the LRT at this station would be traveling to or from SDIA. The nearest entrance at Terminal 1 and Terminal 2 would require passengers to walk a minimum of 0.2 mile.
- **Harbor Island Station (Optional):** While connections at this location would be limited, this station would allow for access to the MTS Route 923 N Harbor Dr and Harbor Island Dr bus stop, walking 300 feet west along Harbor Drive to reach the westbound stop and 500 feet along Harbor Drive and Harbor Island Drive to reach the eastbound stop. This station would also create a direct pedestrian linkage across Harbor Drive to future development. Vehicular drop-off and pick-up are not anticipated at this station.
- **Existing Trolley Stations:** Concept 6B would interline with the Trolley Green and Blue Lines from Hawthorn Street to Santa Fe Depot and interline with the Trolley Green Line to the 12th & Imperial Transit Center. The total distance of interlining would be approximately two miles, with connections to six existing stations. Transfers to other Trolley lines would occur on the same platform with the same fare system and would not require a change in elevation. Considerable signage and navigation assistance is already in place at existing stations, which supports the ease of access at each station. However, passengers boarding at an existing Trolley Blue or Green Line Station to travel to SDIA would need to select the correct train, as the Trolley Blue and Green Line currently continue north at the County Center/Little Italy Station. This may confuse passengers at the station areas, and additional signage would be needed to communicate the multiple routes that serve each station.
- **County Center/Little Italy Station (Trolley Blue and Green Line):** The existing at-grade County Center/Little Italy Station would be below grade in the reconstructed trench in its current location. Connections and space for vehicular drop-off and pick-up would be limited. The nearest opportunities to transfer to connecting service from the existing station would be to the MTS bus Route 83 at Kettner Boulevard with a 500-foot walk and the MTS Routes 280 and 290 on Pacific Highway with a 600-foot walk. The nearest opportunities to transfer to connecting service from the relocated station would be to the MTS Routes 280 and 290 on Pacific Highway with a 400-foot walk and the MTS Route 83 at Kettner Boulevard with a 400-foot walk. Pedestrian access to the below-grade station within the trench would be provided by vertical circulation elements located at either end of the platforms, with access from West Beech and West Cedar Streets. Waterfront access would be

provided from West Beech and West Cedar Streets via the new bridges spanning the extended trench. For the alternative station location between Date and Fir Streets, station access would be provided by vertical circulation elements from Date and Fir Streets. Additional access from Pacific Highway would be provided via ramps and walkways extending beneath the Los Angeles–San Diego–San Luis Obispo Rail Corridor (LOSSAN) tracks to the station platforms. Waterfront access for this alternative would be provided from Pacific Highway.

- **Santa Fe Depot Station (Trolley Blue and Green Line):** This station would provide connections to Amtrak Pacific Surfliner, COASTER, and bus. Passengers would have access to the adjacent COASTER and Amtrak as well as access to MTS bus Routes 85, 215, 225, and 235 within a 200-foot walk. Access to MTS Routes 280, 290, 923, and 992 are within a 600-foot walk. Given the considerable amount of connecting services scattered among various on-street stops, navigating between transit services may be confusing. No dedicated transit parking facilities exist at Santa Fe Depot. There is an existing private parking lot adjacent to Santa Fe Depot which charges a fee for parking and a paid private underground parking structure beneath America Plaza that is accessible to the public. Vehicular drop-off and pick-up space are also provided along Kettner Boulevard.
- **Seaport Village Station (Trolley Green Line):** Connections and space for vehicular drop-off and pick-up at this location are limited; however, existing wayfinding is available to support the ease of navigation between the station area and surrounding destinations.
- **Convention Center Station (Trolley Green Line):** Connections and space for vehicular drop-off and pick-up at this location is limited; however, existing wayfinding is available to support the ease of navigation between the station area and surrounding destinations, including the Convention Center. The adjacent pedestrian plaza has ample space for station amenities and helps to demarcate the station area and connect to the Gaslamp Quarter, supporting ease of navigation.
- **Gaslamp Quarter Station (Trolley Green Line):** This station is located on Harbor Drive at 5th Avenue, providing a clear and direct connection to the entrance of the Convention Center. While space for vehicular drop-off and pick-up at this location is limited, the adjacent pedestrian plaza has ample space for station amenities and helps to demarcate the station area and connect to the Gaslamp Quarter, supporting ease of navigation.
- **12th & Imperial Transit Center (Trolley Green Line):** At this station, passengers have access to the Trolley Blue Line and Orange Line, as well as bus service on MTS bus Routes 12, 901, and 929 at the existing Trolley Plaza, within a 0.1-mile walk. There is an adjacent parking structure which charges a fee for parking. Existing wayfinding is available directing travelers between transit services. Dedicated space for vehicular drop-off and pick-up purposes is limited.

2.2.2 Station Amenities

The stations along this alignment would utilize existing facilities aside from the SDIA Station, the optional Harbor Island Station, and the reconstructed or relocated County Center/Little Italy Station. Current LRT stations typically provide amenities including shelters, seating, lighting, trash receptacles, transit service information, and ticket vending machines. It is assumed that new stations at SDIA and Harbor Island would have station amenities consistent with other MTS Trolley stations.

2.2.3 Fare Payment Method

Trolley passengers would pay their fare at off-vehicle ticket vending machines or by tapping the PRONTO card, PRONTO mobile app, or credit card on a validator at the platform prior to boarding a Trolley vehicle. No fare collection occurs on board so delay is minimized compared to systems where a passenger pays as they board.

2.2.4 Boarding Method

Passengers typically access Trolley service by stepping up from the platform onto the train, although ramps are available to bridge the gap and provide level boarding for wheelchair passengers or others needing assistance.

2.2.5 Luggage Accommodations

Trolley vehicles are not specifically designed for passengers carrying luggage but do provide space particularly in the sections of the vehicle with seats placed along the walls facing the middle. Traveling with luggage may be challenging as Trolley vehicles are not specifically designed for passengers with luggage; however, Trolley vehicles are equipped with ramps which can help facilitate baggage handling.

2.2.6 Reliability

This criterion was considered under Round 2 of the pare down process.

2.2.7 Ride Comfort

The Trolley vehicles provide a smooth ride with steel wheels against rail. This concept includes all the existing stops along the current Trolley Green Line alignment between 12th/Imperial and Santa Fe Depot and along the Trolley Green and Blue Line between Santa Fe Depot and County Center/Little Italy, so there would be stopping and starting. Non-airport passengers traveling shorter distances may utilize this service rather than waiting for a Blue or Green Line train, so there may be more crowding and boarding/alighting activity than a dedicated airport service.

2.3 Feasibility / Complexity

2.3.1 Construction Effects/Constructability

This section discusses constructability considerations associated with the major infrastructure elements featured in Concept 6B with the purpose of identifying probable construction methods, staging, sequences, traffic impacts, and temporary facilities that would be implemented during construction phase. While construction complexity was considered under Round 2 of the pare down process, this section provides additional information on the construction effects and phasing that were assumed for Concept 6B. Other construction approaches could be considered for Concept 6B if this concept advances into a future environmental clearance phase.

From SDIA, Concept 6B would consist of a new alignment that would transition from elevated to at-grade and then to a tunnel before connecting with the existing Trolley Green and Blue Line tracks in MTS right-of-way between Pacific Highway and Kettner Boulevard. Unlike Concept 6A at this connection, the existing Trolley Green and Blue Line tracks would not transition to an at grade configuration but would be reconstructed to remain in a trench to travel beneath Cedar Street, Beech Street, and Ash Street. South of Ash Street, the Concept 6B alignment would begin to ascend to tie into the existing at-grade tracks north of B Street before connecting to the existing Santa Fe Depot Station platforms and continuing south along the existing Trolley Green Line tracks to the 12th and Imperial Transit Center. The existing at-grade County Center/Little Italy Station would be reconstructed as a depressed station in the extended trench and vertical circulation would be provided to connect to the street level. Two locations are under consideration for the reconstructed County Center/Little Italy Station – (1) in the same location as the existing station between Beech and Cedar Streets, and (2) between Date and Fir Streets. Ultimately only one location would be constructed if this concept advances to environmental clearance and implementation.

The constructability aspects associated with the LRT guideway are similar to those for an APM system with the addition of an overhead catenary system, which increases the height of the vehicle's operating

envelope. Additionally, light rail vehicles have a more restrictive profile than APM vehicles. Combined, these aspects require cut-and-cover tunnel segments to be deeper and transitions between alignment types (e.g., from elevated to underground) longer.

Concept 6B requires a detailed construction sequence to extend the existing LRT trench south to Santa Fe Depot. Similar to Concept 6A, this concept would also require a complex grade separation where the alignment would spur under the existing LOSSAN tracks to operate on a new alignment to SDIA. Construction activities associated with the trench, reconstruction of the County Center/Little Italy Station, and spur connection point would take place in the highly constrained site conditions of a busy rail corridor. Construction would require use of absolute work windows¹ but could also result in interruption of passenger and freight service outside of absolute work windows. To maintain LRT and LOSSAN rail service (passenger and freight), a temporary shoofly² track would be built along California Street and within the rail right-of-way to the west of the existing tracks. The shoofly track would displace existing travel and on-street parking along California Street. The shoofly track would allow four sets of tracks to remain in operation during construction except when certain construction activities, like installing piles or placing girders could affect operations.

The construction of the cut and cover segment of the spur would affect the northwest corner of the property bordered by Hawthorn Street, Pacific Highway, Grape Street, and California Street. This property could also be used as a construction laydown site, depending on site conditions if this concept advances to implementation. Additional information on the construction sequencing is provided in the sections that follow.

2.3.1.1 Potential Construction Sequencing

The sections that follow summarize a potential approach to constructing the new alignment, the spur connection point, and the extended trench including the depressed County Center/Little Italy Station. The text that follows is organized by section of the alignment (i.e., new alignment, spur connection point, and trench) in order to present a potential sequence for each section. However, it is likely that construction activities would occur on multiple alignment sections at a time or that construction would begin on certain sections sooner than others. Other approaches would be considered during the environmental clearance phase if this concept advances.

New Alignment

The new alignment would be on an elevated structure at SDIA before transitioning to an at-grade alignment supported by retained fill by Laurel Street to an underground alignment under Hawthorn Street. Because elevated guideways require foundations, supports, and a guideway-supporting structure, an elevated guideway increases complexity, effort, and cost relative to an at-grade alignment. Construction can be sequential, start from multiple points along the alignment, or occur at multiple locations at once depending on schedule, resource availability, and ability to close work zones. Once conflicting utilities have been relocated and necessary traffic handling is set up, the columns and superstructure for the elevated guideway are then constructed. The station at SDIA and the optional station at Harbor Island would also be constructed.

¹ An absolute work window is a period of 48 hours during which Los Angeles–San Diego–San Luis Obispo Rail Corridor (LOSSAN) passenger and rail freight do not operate. The period usually begins after the last scheduled passenger train passes through the construction limits during late Friday evening/early Saturday morning and continues until Sunday evening/early Monday morning.

² A shoofly track is a temporary track used to maintain rail service.

The cut-and-cover section would require relocating or protecting in place utilities within the footprint of the tunnel. Similar to Concept 6A, the new Trolley alignment would pass underneath the 108-inch-diameter sewer-interceptor pipeline on Harbor Drive that is owned and operated by the City of San Diego. This important sanitary sewer pipeline would have to be supported in place with a shoring system while excavating under it for the cut-and-cover tunnel.

Construction of the walls for the cut-and-cover tunnel would require temporary partial traffic lane closures and/or removal of on-street parking. The temporary closures would be staged and sequenced to minimize construction impacts. Temporary decking would be installed after the walls have been built. Once the temporary decking is installed, affected traffic lanes and/or parking would be restored with the tunneling work proceeding under the decking from access at one or both ends of the tunnel; however, the working height would be limited thereby reducing production rate.

Spur Connection

To construct this concept, a spur connection must be completed via a cut-and-cover tunnel along the south side of Hawthorn Street, passing beneath the existing LOSSAN tracks. This tunnel would connect to the existing trench between Grape Street and Hawthorn Street. Additionally, a shoofly track would be constructed west of the LOSSAN tracks to provide freight and passenger rail operations during the construction phase. The potential phases for construction of the spur are provided in the sections that follow.

The construction of this spur could be completed in three phases and include the following activities.

Phase 1: Construction of the Cut-and-Cover Tunnel between Pacific Hwy and the LOSSAN Tracks

- **Relocation of Utilities:** Prior to construction, utilities, including a 15-inch sewer line, would be relocated.
- **Installation of Permanent Secant Pile Walls:** Permanent secant pile³ walls would be installed to form the north and south walls of the cut-and-cover tunnel.
- **Installation of Temporary Sheet Pile Walls:** Temporary sheet pile⁴ walls would be installed at the eastern and western extents of this phase of construction.
- **Temporary Decking:** Following the construction of the permanent and temporary walls, temporary decking would be placed to allow for the reopening of Hawthorn Street to traffic during the excavation and completion of the cut-and-cover tunnel.
- **Shoofly Track:** A new shoofly track would be constructed over the new cut-and-cover tunnel, just west of the existing southbound LOSSAN track.

Phase 2: Construction of the Cut-and-Cover Tunnel Beneath the Existing Southbound LOSSAN Track

- **Shift Track Operations:** Southbound LOSSAN track operations would be shifted to the newly constructed shoofly track.
- **Installation of Permanent Secant Pile Walls:** Permanent secant pile walls would be installed to form the north and south walls of the cut-and-cover tunnel.

³ A secant pile wall is a type of retaining wall constructed by drilling overlapping concrete piles to create a continuous barrier.

⁴ A sheet pile wall is a type of retaining wall constructed with interlocking sheets typically made of steel.

- **Installation of Temporary Sheet Pile Walls:** Temporary sheet pile walls would be installed at the western extent of this phase of construction.
- **Excavation and Construction:** Excavation and construction of the cut-and-cover tunnel segment would be completed.
- **New Track Installation:** The new southbound LOSSAN track would be installed over the newly constructed tunnel segment.

Phase 3: Construction of the Cut-and-Cover Tunnel Beneath the Existing Northbound LOSSAN Track and Connection to the Existing Trench

- **Shift Track Operations:** Northbound LOSSAN operations would be moved to the new southbound LOSSAN track.
- **Install Permanent Walls:** Permanent secant pile walls would be installed to form the north and south walls of the cut-and-cover tunnel.
- **Excavation and Construction:** The center wall of the trench would be excavated and constructed along this segment.
- **Retrofit Existing Trench Wall:** The existing trench wall would be retrofitted along the east side of the MTS trench.
- **Retrofit and Remove Walls:** The top portion of the existing western trench wall would be removed to place cross beams between the newly retrofitted north trench wall and the south wall of the cut-and-cover tunnel. The remainder of the existing western trench wall would be removed to create an opening and complete the track connection to the existing MTS tracks between Hawthorn and Grape Streets.
- **Install Top Slab and Replace Track:** The top slab would be installed and the northbound LOSSAN track replaced.
- **Return Track Operations:** The northbound and southbound LOSSAN operations would be returned to their final track locations.
- **Remove Shoofly Track:** The shoofly track would be removed and California Street reopened where applicable.

Trench Construction

Constructing the trench south of Grape Street would also necessitate a shoofly track along the west side of the MTS right-of-way to maintain LOSSAN and MTS operations. The trench would be built in halves, allowing one MTS track to operate within the trench during construction. This approach would allow for two MTS tracks and two LOSSAN tracks to remain operational throughout construction to the extent feasible except when certain construction activities encroach on the tracks. The following is a summary of the potential construction activities by phase.

Phase 1: Construction of shoofly

- **Close California Street:** Close California Street and construct a new shoofly track just west of the existing LOSSAN tracks.
- **Switch Track Operations:** Move the existing southbound LOSSAN operation onto the new shoofly track.
- **Modify Southbound Track:** Modify the southbound LOSSAN track as necessary and shift northbound LOSSAN operations onto the southbound LOSSAN track.

- **Electrify Northbound Track:** Modify the existing northbound LOSSAN track as necessary, including electrification to accommodate Trolley operations.
- **Shift Trolley Operations:** Shift the existing southbound Trolley operations onto the newly electrified track.
- **Shift Northbound Trolley Operations:** Shift existing northbound Trolley operations onto the existing southbound trolley track.

Phase 2: Construction of the east half of the trench

- **Install Permanent Walls:** Permanent secant pile walls would be installed to form the east wall of the new trench and the County Center Little Italy Station.
- **Construct Sheet Pile Walls:** Sheet pile walls would be constructed near the middle of the proposed trench to create lateral support for the construction zone.
- **Construct New Bridges:** Following the construction of the permanent and temporary walls, new bridges could be constructed at grade in halves by excavating to the depth of the bottom of the bridge, constructing the east abutment, and placing precast girders.
- **Excavation and Construction:** Necessary bracing would be installed and excavation and construction of the eastern half of the trench completed, including the northbound MTS track in its permanent location. Completion of the NB portion of the County Center Little Italy station as well as the east half of the new bridges could also take place simultaneously.

Phase 3: Construction of the west extents of the trench

- **Shift Trolley Operations:** Shift the northbound Trolley operations onto the newly constructed northbound tracks within the trench.
- **Install Permanent Walls:** Construct permanent secant pile walls to form the western wall of the new trench and the County Center Little Italy Station.
- **Construct New Bridges:** The completion of the northbound portion of the County Center Little Italy Station, as well as the east half of the new bridges, could also take place simultaneously.
- **Excavation and Construction:** Install necessary bracing between the sheet pile wall and new secant pile wall, and complete excavation and construction of the western side of the trench, including the southbound MTS track in its permanent location. Completion of the west half of the County Center Little Italy Station and new bridges can take place simultaneously.
- **Remove Bracing and Walls:** Remove bracing and the sheet pile wall.

Phase 4: Final Construction Activities

- **Shift Trolley Operations:** Move the southbound Trolley operations into the southbound Trolley tracks within the new trench.
- **Complete Station:** Complete construction of the depressed County Center Little Italy Station and vertical circulation elements.
- **Remove Electrification:** Remove electrification of the northbound LOSSAN track.
- **Move LOSSAN Operations:** Move LOSSAN operations onto tracks in their final locations.
- **Remove Shoofly Tracks:** Remove shoofly tracks and restore California Street where applicable.
- **Open California Street:** Open California Street to traffic and parking where applicable.

2.4 Surrounding Communities

The surrounding communities analysis identified the communities within each station area (0.5-mile buffer around each station). Communities were identified using ArcGIS and data from the SANDAG GIS (geographic information system) Open Data Portal.

Concept 6B would provide connections to the City of San Diego communities of SDIA, Harborview, Little Italy, Core-Columbia, Marina, Horton Plaza, East Village, and Gaslamp. The SDIA community would be accessible from the SDIA Station and Harbor Island Station. The County Center/Little Italy (Existing) Station Area would be within the communities of Little Italy and Core-Columbia. The County Center/Little Italy (Relocated) Station Area would also be within the community of Little Italy, as well as the community of Harborview. The Santa Fe Depot (Existing) Station Area would be within the communities of Little Italy, Marina, Core-Columbia, and Horton Plaza. The Seaport Village (Existing) Station Area would be within the communities of Marina, Core-Columbia, and Horton Plaza. The Convention Center (Existing) Station Area would be located within the communities of East Village, Gaslamp, Marina, and Horton Plaza. The Gaslamp Quarter (Existing) Station Area would be located within the communities. Table 2-2 summarizes the communities located within each of the station areas for Concept 6B.

Table 2-2: Surrounding Communities for Concept 6B

Station Area ¹	Communities
SDIA Station	SDIA
Harbor Island Station	SDIA
County Center/Little Italy (Relocated)	Harborview
County Center/Little Italy (Existing/Relocated)	Little Italy
County Center/Little Italy (Existing)	Core-Columbia
Santa Fe Depot (Existing)	Little Italy
	Marina
	Core-Colombia
	Horton Plaza
Seaport Village (Existing)	Marina
	Core-Columbia
	Horton Plaza
Convention Center (Existing)	East Village
	Gaslamp
	Marina
	Horton Plaza

Station Area ¹	Communities
Gaslamp Quarter (Existing)	Horton Plaza
	East Village
	Gaslamp
12th & Imperial (Existing)	East Village

Source: WSP 2025

Notes:

¹ Station Area is defined as a 0.5-mile buffer from each station centroid.

SDIA = San Diego International Airport

3 Concept 8A: Automated People Mover from San Diego International Airport to Santa Fe Depot—Elevated

3.1 Description of Concept

Concept 8A would feature a 2.5-mile high-frequency elevated APM in a dedicated right-of-way from SDIA to a terminus at a Santa Fe Depot APM Station on Broadway, creating a connection to the existing Santa Fe Depot and an optional Harbor Island APM Station and optional County Administration Building APM Station. This concept would require a connection to an operations, maintenance, and storage facility (OMSF), the location of which has yet to be determined. Table 3-1 provides information on concept characteristics.

Figure 3-1 shows the Concept 8A elevated alignment. From the SDIA Station located at the transit-ready area at the airport, the fixed guideway would follow Harbor Drive on an elevated structure before turning southeast at Hawthorn Street to connect to the optional County Administration Building APM Station and continuing south along Pacific Highway. South of B Street, the elevated alignment would curve to turn east along Broadway, connecting to the Santa Fe Depot APM Station located on Broadway at Kettner Boulevard.

Table 3-1: Concept 8A Characteristics

Characteristic	
Length of alignment at-grade (miles)	0
Length of alignment on elevated structure (miles)	2.5
Length of alignment in tunnel (miles)	0
Total alignment length (miles)	2.5
Number of stations ¹	2 ²
Minimum/shortest headways	2 minutes

Source: WSP and HDR 2025

Notes:

¹ Harbor Island and County Administration Building are potential third and fourth stations.

Figure 3-1: Automated People Mover Concept 8A San Diego International Airport to Santa Fe Depot – Elevated



Source: WSP and HDR 2026

3.2 User Experience

The evaluation of user experience relates to the station area environment and a passenger's experience on the vehicle considering elements such as ease of transfers, navigation, and passenger comfort. For the purpose of this analysis, the ease of transfers considered the distance and navigation to the nearest connecting services.

3.2.1 Drop-off/Pick-up, Navigation, and Transfer Convenience

The following sections summarize transfer convenience for each proposed station associated with this option, including between modes of transit and by vehicle, as applicable. Transfer convenience was evaluated in terms of distance between modes of transit and vehicular drop-off/pick-up locations and the proposed APM Station. As design is advanced throughout subsequent phases of project development, it is assumed that wayfinding, in terms of signage and paths of travel, would be provided to direct passengers to transfer locations. Therefore, wayfinding is not evaluated on a station-by-station basis.

SDIA APM Station: Vehicular pick-up and drop-off or transfers from the APM to bus are not expected at this station. It is anticipated that passengers boarding or alighting the APM at this station would be traveling to or from SDIA. The nearest entrance at Terminal 1 and Terminal 2 would require passengers to walk a minimum of 0.2 mile.

Harbor Island APM Station (Optional): While connections at this location would be limited, this station would allow for access to the MTS Route 923 N Harbor Drive and Harbor Island Drive bus stop, walking 300 feet west along Harbor Drive to reach the westbound stop and 500 feet along Harbor Drive and Harbor Island Drive to reach the eastbound stop. This station would also create a direct pedestrian linkage across Harbor Drive to future development on Harbor Island. Vehicular drop-off and pick-up are not anticipated at this station.

County Administration Building APM Station (Optional): This station would be located north of the County Administration Building and would allow for transfers to MTS bus Routes 923 and 992 on Harbor Drive and Routes 280 and 290 on Grape Street, each within a 300-foot walk.

Santa Fe Depot APM Station: The concept terminus at the Santa Fe Depot APM Station includes ample transfer opportunities, including eight bus routes, two light rail lines (i.e., Trolley Blue and Green Lines), Amtrak intercity rail, and COASTER commuter rail service. This station would be located along Broadway at Kettner Boulevard, southeast of the existing Santa Fe Depot, and passengers would have access to the connecting services with a 200-foot walk. Passengers exiting the APM Station would be in view of the existing Santa Fe Depot waiting room and ticket office building, a city landmark, which would support navigation. However, given the considerable amount of connecting services scattered among various on-street stops, navigating between transit services may be confusing and clear signage at the APM Station would be needed. Transfers to other transit services would also require a change in elevation. No dedicated transit parking facilities exist at Santa Fe Depot. There is an existing private parking lot adjacent to Santa Fe Depot that charges a fee for parking and a paid private underground parking structure beneath America Plaza that is accessible to the public. Vehicular drop-off and pick-up space are provided along Kettner Boulevard.

3.2.2 Station Amenities

Each station, as preliminarily designed, would provide ample space for shelters, seating, lighting, trash receptacles, and other amenities. Santa Fe Depot offers restrooms, a café, vending machines, and an ATM (automated teller machine).

3.2.3 Fare Payment Method

The APM fare concept has not yet been fully established. The 2023 Concept Study assumed that the APM would be fare free. Concept 8A was modeled as part of Round 3 assuming the same fare as the Trolley; however, the fare would ultimately be determined by the transit operator.

3.2.4 Boarding Method

It is assumed that the APM vehicles would provide level boarding (i.e., the floor of the vehicle is at the same level as the boarding platform), allowing passengers to step or roll directly onto the vehicle without a step up or down. This type of boarding is easier for passengers with luggage, as well as passengers with strollers, in wheelchairs, or with other mobility impairments compared to vehicles that do not have level boarding.

3.2.5 Luggage Accommodations

The APM vehicles are assumed to be designed with airport travel in mind, with space for luggage, available but minimal seating conducive to short trips, and ample hand-holds.

3.2.6 Reliability

This criterion was considered under Round 2 of the pare down process.

3.2.7 Ride Comfort

This concept is proposed to operate in a dedicated, fully separated right-of-way. The separated guideway minimizes potential conflicts with other vehicles, as well as the potential for additional stopping or starting at intersections.

3.3 Surrounding Communities

The surrounding communities analysis identified the communities within each station area (0.5-mile buffer around each station). Communities were identified using ArcGIS and the City of San Diego Downtown Community Plan, updated in May 2026.

Concept 8A would provide connections to the City of San Diego communities of SDIA, Park West/Bankers Hill, Harborview, Marina, Little Italy, Core-Colombia, and Horton Plaza. The SDIA APM Station and Harbor Island APM Station areas are within the SDIA community. The County Administration Building APM Station is within the Park West/Bankers Hill, Harborview, and Marina communities, while the Santa Fe Depot APM Station area is within the Little Italy, Marina, Core-Colombia, and Horton Plaza communities (Table 3-2).

Table 3-2: Surrounding Communities for Concept 8A

Station Area1	Communities
SDIA APM Station	SDIA
Harbor Island APM Station	SDIA
County Administration Building APM Station	Little Italy
	Cortez
Santa Fe Depot APM Station 2	Little Italy
	Marina

Station Area1	Communities
	Colombia
	Horton/Gaslamp
	Columbia

Source: WSP 2026

Notes:

¹ Station Area is defined as a 0.5-mile buffer from each station centroid.

² Under Concept 8A, the Santa Fe Depot APM Station would be located on Broadway.

APM = Automated people mover; SDIA = San Diego International Airport

4 Concept 8B: Automated People Mover from San Diego International Airport to Santa Fe Depot—Hybrid

4.1 Description of Concept

Concept 8B would provide a high-frequency APM alignment to a terminus at the Santa Fe Depot APM Station and would include optional Harbor Island and County Administration Building APM Stations. Concept 8B would feature a combination of at-grade, elevated, and underground alignment sections. Table 4-1 provides information on concept characteristics.

Figure illustrates the Concept 8B alignment. From the SDIA Station located at the transit-ready area at the airport, the fixed guideway would follow Harbor Drive on an elevated structure. As Harbor Drive curves south, the alignment would continue at-grade for 0.1 mile in a sloped transition from an elevated guideway to a tunnel in a retained cut and retained fill guideway. North of Hawthorn Street, the alignment would transition to a cut-and-cover tunnel, turning southeast beneath the Solar Turbines parking lot. The tunnel boring machine launch site for this concept would be located at the Solar Turbine parking lot between Hawthorn Street and Grape Street to the north and south, and Harbor Drive and Pacific Highway to the east and west. North of Grape Street, the alignment would transition to a bored tunnel before continuing south beneath Pacific Highway. South of Grape Street, the Concept 8B alignment would travel south beneath Pacific Highway before continuing east on Broadway to the Santa Fe Depot APM Station at Broadway and Kettner Boulevard.

Table 4-1: Concept 8B Characteristics

Characteristic	
Length of alignment at-grade (miles)	0.1
Length of alignment on elevated structure (miles)	1.5
Length of alignment in tunnel (miles)	0.9
Total alignment length (miles)	2.5
Number of stations ¹	2 ²
Minimum/shortest headways	2 minutes

Source: WSP and HDR 2025

Notes:

¹ Harbor Island and County Administration Building are potential third and fourth stations.

Figure 4-1: Automated People Mover Concept 8B San Diego International Airport to Santa Fe Depot – Hybrid



Source: WSP and HDR 2025

4.2 User Experience

The evaluation of user experience relates to the station area environment and a passenger's experience on the vehicle considering elements such as ease of transfers, navigation, and passenger comfort. For the purpose of this analysis, the ease of transfers considered the distance and navigation to the nearest connecting services.

4.2.1 Drop-off/Pick-up, Navigation, and Transfer Convenience

The following sections summarize transfer convenience for each proposed station associated with this option, including between modes of transit and by vehicle, as applicable. Transfer convenience was evaluated in terms of distance between modes of transit and vehicular drop-off/pick-up locations and the proposed APM Station. As design is advanced throughout subsequent phases of project development, it is assumed that wayfinding, in terms of signage and paths of travel, would be provided to direct passengers to transfer locations. Therefore, wayfinding is not evaluated on a station-by-station basis.

SDIA APM Station: Vehicular pick-up and drop-off or transfers from the APM to bus are not expected at this station. It is anticipated that passengers boarding or alighting the APM at this station would be traveling to or from SDIA. The nearest entrance at Terminal 1 and Terminal 2 would require passengers to walk a minimum of 0.2 mile.

Harbor Island APM Station (Optional): While connections at this location would be limited, this station would allow for access to the MTS Route 923 N Harbor Drive and Harbor Island Drive bus stop, walking 300 feet west along Harbor Drive to reach the westbound stop and 500 feet along Harbor Drive and Harbor Island Drive to reach the eastbound stop. This station would also create a direct pedestrian linkage across Harbor Drive to future development on Harbor Island. Vehicular drop-off and pick-up are not anticipated at this station.

County Administration Building APM Station (Optional): This station would be located north of the County Administration Building and would allow for transfers to MTS bus Routes 923 and 992 on Harbor Drive and Routes 280 and 290 on Grape Street, each within a 300-foot walk.

Santa Fe Depot APM Station: The concept terminus at the Santa Fe Depot APM Station includes ample transfer opportunities, including eight bus routes, two light rail lines (i.e., Trolley Blue and Green Lines), Amtrak intercity rail, and COASTER commuter rail service. This station would be located along Broadway at Kettner Boulevard, southeast of the existing Santa Fe Depot, and passengers would have access to the connecting services with a 200-foot walk. Passengers exiting the APM Station would be in view of the existing Santa Fe Depot waiting room and ticket office building, a city landmark, which would support navigation. However, given the considerable amount of connecting services scattered among various on-street stops, navigating between transit services may be confusing and clear signage at the APM Station would be needed. Transfers to other transit services would also require a change in elevation. No dedicated transit parking facilities exist at Santa Fe Depot. There is an existing private parking lot adjacent to Santa Fe Depot that charges a fee for parking and a paid private underground parking structure beneath America Plaza that is accessible to the public. Vehicular drop-off and pick-up space are provided along Kettner Boulevard.

4.2.2 Station Amenities

Each station, as preliminarily designed, would provide ample space for shelters, seating, lighting, trash receptacles, and other amenities. The existing Santa Fe Depot also offers restrooms, a café, vending machines, and an ATM.

4.2.3 Fare Payment Method

The APM fare concept has not yet been fully established. The 2023 Concept Study assumed that the APM would be fare free. Concept 8B was modeled as part of Round 3 assuming the same fare as the Trolley; however, the fare would ultimately be determined by the transit operator.

4.2.4 Boarding Method

It is assumed that the APM vehicles would provide level boarding (i.e., the floor of the vehicle is at the same level as the boarding platform), allowing passengers to step or roll directly onto the vehicle without a step up or down. This type of boarding is easier for passengers with luggage, as well as passengers with strollers, in wheelchairs, or with other mobility impairments compared to vehicles that do not have level boarding.

4.2.5 Luggage Accommodations

The APM vehicles are assumed to be designed with airport travel in mind, with space for luggage, available but minimal seating conducive to short trips, and ample hand-holds.

4.2.6 Reliability

This criterion was considered under Round 2 of the pare down process.

4.2.7 Ride Comfort

Concept 8B is proposed to operate in dedicated, fully separated right-of-way with elevated, at-grade, and below ground segments. The separated guideway minimizes potential conflicts with other vehicles, as well as the potential for additional stopping or starting at intersections. While the alignment would transition between grades, Concept 8B would employ best design practices to maintain an acceptable level of ride quality.

4.3 Surrounding Communities

The surrounding communities analysis identified the communities within each station area (0.5-mile buffer around each station). Communities were identified using ArcGIS and the City of San Diego Downtown Community Plan, updated in May 2026.

Concept 8B would provide connections to the City of San Diego communities of SDIA, Park West/Bankers Hill, Harborview, Marina, Little Italy, Core-Colombia, and Horton Plaza. The SDIA APM Station and Harbor Island APM Station areas are within the SDIA community. The County Administration Building APM Station is within the Park West/Bankers Hill, Harborview, and Marina communities, while the Santa Fe Depot APM Station area is within the Little Italy, Marina, Core-Colombia, and Horton Plaza communities (Table 4-2).

Table 4-2: Surrounding Communities for Concept 8B

Station Area ¹	Communities
SDIA APM Station	SDIA
Harbor Island APM Station	SDIA
County Administration Building APM Station	Little Italy
	Cortez
Santa Fe Depot APM Station 2	Little Italy
	Marina
	Colombia
	Horton/Gaslamp
	Columbia

Source: WSP 2026

Notes:

¹ Station Area is defined as a 0.5-mile buffer from each station centroid.

² Under Concept 8B, the Santa Fe Depot APM Station would be located on Broadway.

APM = Automated people mover; SDIA = San Diego International Airport

5 Concept 9A: Automated People Mover from San Diego International Airport to Santa Fe Depot Extended to Convention Center—Elevated

5.1 Description of Concept

Concept 9A would feature a 3.4-mile high-frequency elevated APM in a dedicated right-of-way from SDIA to a terminus at the Convention Center. This concept would also provide a Santa Fe Depot APM Station, creating a connection to the existing Santa Fe Depot and an optional Harbor Island APM Station and optional County Administration Building APM Station. This concept would require a connection to an OMSF, the location of which has yet to be determined. Table 5-1 provides information on concept characteristics.

Figure 5-1 shows the Concept 9A elevated alignment. From the SDIA Station located at the transit-ready area at the airport, the fixed guideway would follow Harbor Drive on an elevated structure before turning southeast at Hawthorn Street to connect to the optional County Administration Building APM Station and continuing south along Pacific Highway. South of B Street, the elevated alignment would curve to turn east along Broadway, connecting to the Santa Fe Depot APM Station, located between Broadway and Ash Street. A direct pedestrian connection would be provided from the APM Station to the nearest platform at Santa Fe Depot. At Broadway, the Concept 9A alignment would provide an elevated stub-ended spur east of Pacific Highway for potential future extension. At Market Street, Concept 9A would curve to travel southeast along Harbor Drive, adjacent to the existing San Diego Trolley (Trolley) Green Line tracks, to the Convention Center APM Station.

Table 5-1: Concept 9A Characteristics

Characteristic	
Length of alignment at-grade (miles)	0
Length of alignment on elevated structure (miles)	3.4
Length of alignment in tunnel (miles)	0
Total alignment length (miles)	3.4
Number of stations ¹	3 ²
Minimum/shortest headways	2 minutes

Source: WSP and HDR 2025

Notes:

¹ Harbor Island and County Administration Building are potential fourth and fifth stations.

Figure 5-1: Automated People Mover Concept 9A San Diego International Airport to Convention Center – Elevated



Source: WSP and HDR 2026

5.2 User Experience

The evaluation of user experience relates to the station area environment and a passenger's experience on the vehicle considering elements such as ease of transfers, navigation, and passenger comfort. For the purpose of this analysis, the ease of transfers considered the distance and navigation to the nearest connecting services.

5.2.1 Drop-off/Pick-up, Navigation, and Transfer Convenience

The following sections summarize transfer convenience for each proposed station associated with this option, including between modes of transit and by vehicle, as applicable. Transfer convenience was evaluated in terms of distance between modes of transit and vehicular drop-off/pick-up locations and the proposed APM Station. As design is advanced throughout subsequent phases of project development, it is assumed that wayfinding, in terms of signage and paths of travel, would be provided to direct passengers to transfer locations. Therefore, wayfinding is not evaluated on a station-by-station basis.

SDIA APM Station: Vehicular pick-up and drop-off or transfers from the APM to bus are not expected at this station. It is anticipated that passengers boarding or alighting the APM at this station would be traveling to or from SDIA. The nearest entrance at Terminal 1 and Terminal 2 would require passengers to walk a minimum of 0.2 mile.

Harbor Island APM Station (Optional): While connections at this location would be limited, this station would allow for access to the MTS Route 923 N Harbor Drive and Harbor Island Drive bus stop, walking 300 feet west along Harbor Drive to reach the westbound stop and 500 feet along Harbor Drive and Harbor Island Drive to reach the eastbound stop. This station would also create a direct pedestrian linkage across Harbor Drive to future development on Harbor Island. Vehicular drop-off and pick-up are not anticipated at this station.

County Administration Building APM Station (Optional): This station would be located north of the County Administration Building and would allow for transfers to MTS bus Routes 923 and 992 on Harbor Drive and Routes 280 and 290 on Grape Street, each within a 300-foot walk.

Santa Fe Depot APM Station: The Santa Fe Depot APM Station includes ample transfer opportunities, including eight bus routes, two light rail lines (i.e., Trolley Blue and Green Lines), Amtrak intercity rail, and COASTER commuter rail service. This station would be located along Broadway at Kettner Boulevard, southeast of the existing Santa Fe Depot, and passengers would have access to the connecting services with a 200-foot walk. Passengers exiting the APM Station would be in view of the existing Santa Fe Depot waiting room and ticket office building, a city landmark, which would support navigation. However, given the considerable amount of connecting services scattered among various on-street stops, navigating between transit services may be confusing and clear signage at the APM Station would be needed. Transfers to other transit services would also require a change in elevation. No dedicated transit parking facilities exist at Santa Fe Depot. There is an existing private parking lot adjacent to Santa Fe Depot that charges a fee for parking and a paid private underground parking structure beneath America Plaza that is accessible to the public. Vehicular drop-off and pick-up space are provided along Kettner Boulevard.

Convention Center APM Station: This terminus station would be located on Harbor Drive at 5th Avenue, providing a connection to the entrance of the Convention Center. The station would allow transfers to the existing Trolley Green Line Gaslamp Quarter Station, also located at Harbor Drive and 5th Avenue. Transfers to the Trolley would require a change in elevation. The Convention Center APM Station would be located adjacent to the Trolley Green Line tracks, allowing for easy navigation between stations for passengers. Vehicular drop-off and pick-up are not anticipated at this station.

5.2.2 Station Amenities

Each station, as preliminarily designed, would provide ample space for shelters, seating, lighting, trash receptacles, and other amenities. Santa Fe Depot offers restrooms, a café, vending machines, and an ATM. The pedestrian plaza adjacent to the existing Trolley Gaslamp Quarter Station and the Convention Center APM Station helps to demarcate the station area and allows ample space for station amenities.

5.2.3 Fare Payment Method

The APM fare concept has not yet been fully established. The 2023 Concept Study assumed that the APM would be fare free. Concept 9A was modeled as part of Round 3 assuming the same fare as the Trolley; however, the fare would ultimately be determined by the transit operator.

5.2.4 Boarding Method

It is assumed that the APM vehicles would provide level boarding (i.e., the floor of the vehicle is at the same level as the boarding platform), allowing passengers to step or roll directly onto the vehicle without a step up or down. This type of boarding is easier for passengers with luggage, as well as passengers with strollers, in wheelchairs, or with other mobility impairments compared to vehicles that do not have level boarding.

5.2.5 Luggage Accommodations

The APM vehicles are assumed to be designed with airport travel in mind, with space for luggage, available but minimal seating conducive to short trips, and ample hand-holds.

5.2.6 Reliability

This criterion was considered under Round 2 of the pare down process.

5.2.7 Ride Comfort

This concept is proposed to operate in a dedicated, fully separated right-of-way. The separated guideway minimizes potential conflicts with other vehicles, as well as the potential for additional stopping or starting at intersections.

5.3 Surrounding Communities

The surrounding communities analysis identified the communities within each station area (0.5-mile buffer around each station). Communities were identified using ArcGIS and the City of San Diego Downtown Community Plan, updated in May 2026.

Concept 9A would provide connections to the City of San Diego communities of SDIA, Park West/Bankers Hill, Harborview, Marina, Little Italy, Core-Colombia, Horton Plaza, East Village, and Gaslamp. The SDIA APM Station and Harbor Island APM Station areas are within the SDIA community. The County Administration Building APM Station is within the Park West/Bankers Hill, Harborview, and Marina communities, while the Santa Fe Depot APM Station area is within the Little Italy, Marina, Core-Colombia, and Horton Plaza communities. The Convention Center APM Station is located within the East Village, Gaslamp, Marina, and Horton Plaza communities. The Convention Center Station area is located within the East Village, Gaslamp, Marina, and Horton Plaza communities (Table 5-2).

Table 5-2: Surrounding Communities for Concept 9A

Station Area ¹	Communities
SDIA APM Station	SDIA
Harbor Island APM Station	SDIA
County Administration Building APM Station	Little Italy
	Cortez
Santa Fe Depot APM Station ²	Little Italy
	Marina
	Colombia
	Horton/Gaslamp
	Civic/Core
Convention Center APM Station	East Village
	Horton/Gaslamp
	Marina
	Columbia

Source: WSP 2026

Notes:

¹ Station Area is defined as a 0.5-mile buffer from each station centroid.

² Under Concept 9A, the Santa Fe Depot APM Station would be located on Pacific Highway Highway. APM = Automated people mover ; SDIA = San Diego International Airport

6 Concept 9B: Automated People Mover from San Diego International Airport to Santa Fe Depot Extended to Convention Center—Hybrid

6.1 Description of Concept

Concept 9B would provide a high frequency APM alignment to a new terminus at the Convention Center APM Station, including a Santa Fe Depot APM Station and optional Harbor Island and County Administration Building APM Stations. Concept 9B would feature at-grade, elevated, and underground alignment sections. Table 6-1 provides information on concept characteristics.

From the SDIA Station located at the transit-ready area at the airport, the Concept 9B fixed guideway would be on elevated structure along Harbor Drive. The alignment would transition to at-grade for 0.1 mile as Harbor Drive curves south. North of Hawthorn Street, the alignment would transition to a cut-and-cover tunnel traveling beneath the Solar Turbines parking lot, where the tunnel boring machine launch site for this concept would be located. South of Grape Street, the alignment would continue south beneath Pacific Highway and southeast beneath Harbor Drive to the Convention Center APM Station. The Santa Fe Depot Station would be located between Broadway and Ash Street. A direct pedestrian connection would be provided from the APM Station to the nearest platform at Santa Fe Depot. This concept would also provide a stub-ended spur at Broadway, east of Pacific Highway, for potential future extension as a cut-and-cover tunnel.

Table 6-1: Concept 9B Characteristics

Characteristic	
Length of alignment at-grade (miles)	0.1
Length of alignment on elevated structure (miles)	1.5
Length of alignment in tunnel (miles)	1.8
Total alignment length (miles)	3.4
Number of stations ¹	3 ²
Minimum/shortest headways	2 minutes

Source: WSP and HDR 2025

Notes:

¹ Harbor Island and County Administration Building are potential fourth and fifth stations.

Figure 6-1: Automated People Mover Concept 9B San Diego International Airport to Convention Center – Hybrid



Source: WSP and HDR 2026

6.2 User Experience

The evaluation of user experience relates to the station area environment and a passenger's experience on the vehicle considering elements such as ease of transfers, navigation, and passenger comfort. For the purpose of this analysis, the ease of transfers considered the distance and navigation to the nearest connecting services.

6.2.1 Drop-off/Pick-up, Navigation, and Transfer Convenience

The following sections summarize transfer convenience for each proposed station associated with this option, including between modes of transit and by vehicle, as applicable. Transfer convenience was evaluated in terms of distance between modes of transit and vehicular drop-off/pick-up locations and the proposed APM Station. As design is advanced throughout subsequent phases of project development, it is assumed that wayfinding, in terms of signage and paths of travel, would be provided to direct passengers to transfer locations. Therefore, wayfinding is not evaluated on a station-by-station basis.

SDIA APM Station: Vehicular pick-up and drop-off or transfers from the APM to bus are not expected at this station. It is anticipated that passengers boarding or alighting the APM at this station would be traveling to or from SDIA. The nearest entrance at Terminal 1 and Terminal 2 would require passengers to walk a minimum of 0.2 mile.

Harbor Island APM Station (Optional): While connections at this location would be limited, this station would allow for access to the MTS Route 923 N Harbor Drive and Harbor Island Drive bus stop, walking 300 feet west along Harbor Drive to reach the westbound stop and 500 feet along Harbor Drive and Harbor Island Drive to reach the eastbound stop. This station would also create a direct pedestrian linkage across Harbor Drive to future development on Harbor Island. Vehicular drop-off and pick-up are not anticipated at this station.

County Administration Building APM Station (Optional): This station would be located north of the County Administration Building and would allow for transfers to MTS bus Routes 923 and 992 on Harbor Drive and Routes 280 and 290 on Grape Street, each within a 300-foot walk.

Santa Fe Depot APM Station: The Santa Fe Depot APM Station includes ample transfer opportunities, including eight bus routes, two light rail lines (i.e., Trolley Blue and Green Lines), Amtrak intercity rail, and COASTER commuter rail service. This station would be located along Broadway at Kettner Boulevard, southeast of the existing Santa Fe Depot, and passengers would have access to the connecting services with a 200-foot walk. Passengers exiting the APM Station would be in view of the existing Santa Fe Depot waiting room and ticket office building, a city landmark, which would support navigation. However, given the considerable amount of connecting services scattered among various on-street stops, navigating between transit services may be confusing and clear signage at the APM Station would be needed. Transfers to other transit services would also require a change in elevation. No dedicated transit parking facilities exist at Santa Fe Depot. There is an existing private parking lot adjacent to Santa Fe Depot that charges a fee for parking and a paid private underground parking structure beneath America Plaza that is accessible to the public. Vehicular drop-off and pick-up space are provided along Kettner Boulevard.

Convention Center APM Station: This terminus station would be located on Harbor Drive at 5th Avenue, providing a connection to the entrance of the Convention Center. The station would allow transfers to the existing Trolley Green Line Gaslamp Quarter Station, also located at Harbor Drive and 5th Avenue. Transfers to the Trolley would require a change in elevation. The Convention Center APM Station would be located adjacent to the Trolley Green Line tracks, allowing for easy navigation between stations for passengers. Vehicular drop-off and pick-up are not anticipated at this station.

6.2.2 Station Amenities

Each station, as preliminarily designed, would provide ample space for shelters, seating, lighting, trash receptacles, and other amenities. Santa Fe Depot offers restrooms, a café, vending machines, and an ATM. The pedestrian plaza adjacent to the existing Trolley Gaslamp Quarter Station and the Convention Center APM Station helps to demarcate the station area and allows ample space for station amenities.

6.2.3 Fare Payment Method

The APM fare concept has not yet been fully established. The 2023 Concept Study assumed that the APM would be fare free. Concept 9B was modeled as part of Round 3 assuming the same fare as the Trolley; however, the fare would ultimately be determined by the transit operator.

6.2.4 Boarding Method

It is assumed that the APM vehicles would provide level boarding (i.e., the floor of the vehicle is at the same level as the boarding platform), allowing passengers to step or roll directly onto the vehicle without a step up or down. This type of boarding is easier for passengers with luggage, as well as passengers with strollers, in wheelchairs, or with other mobility impairments compared to vehicles that do not have level boarding.

6.2.5 Luggage Accommodations

The APM vehicles are assumed to be designed with airport travel in mind, with space for luggage, available but minimal seating conducive to short trips, and ample hand-holds.

6.2.6 Reliability

This criterion was considered under Round 2 of the pare down process.

6.2.7 Ride Comfort

Concept 9B is proposed to operate in a dedicated, fully separated elevated right-of-way with elevated, at-grade, and below ground segments. The separated guideway minimizes potential conflicts with other vehicles, as well as the potential for additional stopping or starting at intersections. While the alignment would transition between grades, Concept 9B would employ best design practices to maintain an acceptable level of ride quality.

6.3 Surrounding Communities

The surrounding communities analysis identified the communities within each station area (0.5-mile buffer around each station). Communities were identified using ArcGIS and the City of San Diego Downtown Community Plan, updated in May 2026.

Concept 9B would provide connections to the City of San Diego communities of SDIA, Park West/Bankers Hill, Harborview, Marina, Little Italy, Core-Colombia, Horton Plaza, East Village, and Gaslamp. The SDIA APM Station and Harbor Island APM Station areas are within the SDIA community. The County Administration Building APM Station is within the Park West/Bankers Hill, Harborview, and Marina communities, while the Santa Fe Depot APM Station area is within the Little Italy, Marina, Core-Colombia, and Horton Plaza communities. The Convention Center APM Station is located within the East Village, Gaslamp, Marina, and Horton Plaza communities. The Convention Center Station area is located within the East Village, Gaslamp, Marina, and Horton Plaza communities (Table 6-2).

Table 6-2: Surrounding Communities for Concept 9B

Station Area ¹	Communities
SDIA APM Station	SDIA
Harbor Island APM Station	SDIA
County Administration Building APM Station	Little Italy
	Cortez
Santa Fe Depot APM Station ²	Little Italy
	Marina
	Columbia
	Horton/Gaslamp
	Civic/Core
Convention Center APM Station	East Village
	Horton/Gaslamp
	Marina
	Columbia

Source: WSP 2026

Notes:

¹ Station Area is defined as a 0.5-mile buffer from each station centroid.

² Under Concept 9B, the Santa Fe Depot APM Station would be located on Pacific Highway.

APM = Automated people mover; SDIA = San Diego International Airport

7 Concept 10A: Automated People Mover from San Diego International Airport to Santa Fe Depot Extended to Civic Center—Elevated

7.1 Description of Concept

Concept 10A would feature a 2.9-mile high-frequency elevated APM in a dedicated right-of-way from SDIA to a terminus at a Civic Center APM Station on Broadway. It would also add a new Santa Fe Depot APM Station, creating a connection to the existing Santa Fe Depot and an optional Harbor Island APM Station and optional County Administration Building APM Station. Concept 10A is a variation on Concept 5A without the portion of the north route to the Port Transit Center (PTC) and the Consolidated Rental Car Facility (CONRAC). This option would require a connection to an OMSF, the location of which has yet to be determined. Table 7-1 provides information on concept characteristics.

Figure 7-1 shows the Concept 10A elevated alignment. From the SDIA Station located at the transit-ready area at the airport, the fixed guideway would follow Harbor Drive on an elevated structure before turning southeast at Hawthorn Street to connect to the optional County Administration Building APM Station and continuing south along Pacific Highway. South of B Street, the elevated alignment would curve to turn east along Broadway, connecting to the Santa Fe Depot APM Station located on Broadway at Kettner Boulevard. From the Santa Fe Depot APM Station, the alignment would continue east along Broadway to the Civic Center APM Station. The Civic Center APM terminus station would be located on Broadway, west of 3rd Avenue. A dedicated bicycle/pedestrian connection would provide a connection to the existing San Diego Trolley (Trolley) Blue and Trolley Orange Line Civic Center Station on C Street.

Table 7-1: Concept 10A Characteristics

Characteristic	
Length of alignment at-grade (miles)	0
Length of alignment on elevated structure (miles)	2.9
Length of alignment in tunnel (miles)	0
Total alignment length (miles)	2.9
Number of stations	3 ¹
Minimum/shortest headways	2 minutes

Source: WSP and HDR 2025

Notes:

¹ County Administration Building and Harbor Island are a potential fourth and fifth station.

Figure 7-1: Automated People Mover Concept 10A San Diego International Airport to Civic Center – Elevated



Source: WSP and HDR 2026

7.2 User Experience

The evaluation of user experience relates to the station area environment and a passenger's experience on the vehicle considering elements such as ease of transfers, navigation, and passenger comfort. For the purpose of this analysis, the ease of transfers considered the distance and navigation to the nearest connecting services.

7.2.1 Drop-off/Pick-up, Navigation, and Transfer Convenience

The following sections summarize transfer convenience for each proposed station associated with this option, including between modes of transit and by vehicle, as applicable. Transfer convenience was evaluated in terms of distance between modes of transit and vehicular drop-off/pick-up locations and the proposed APM Station. As design is advanced throughout subsequent phases of project development, it is assumed that wayfinding, in terms of signage and paths of travel, would be provided to direct passengers to transfer locations. Therefore, wayfinding is not evaluated on a station-by-station basis.

SDIA APM Station: Vehicular pick-up and drop-off or transfers from the APM to bus are not expected at this station. It is anticipated that passengers boarding or alighting the APM at this station would be traveling to or from SDIA. The nearest entrance at Terminal 1 and Terminal 2 would require passengers to walk a minimum of 0.2 mile.

Harbor Island APM Station (Optional): While connections at this location would be limited, this station would allow for access to the MTS Route 923 N Harbor Drive and Harbor Island Drive bus stop, walking 300 feet west along Harbor Drive to reach the westbound stop and 500 feet along Harbor Drive and Harbor Island Drive to reach the eastbound stop. This station would also create a direct pedestrian linkage across Harbor Drive to future development on Harbor Island. Vehicular drop-off and pick-up are not anticipated at this station.

County Administration Building APM Station (Optional): This station would be located north of the County Administration Building and would allow for transfers to MTS bus Routes 923 and 992 on Harbor Drive and Routes 280 and 290 on Grape Street, each within a 300-foot walk.

Santa Fe Depot APM Station: The Santa Fe Depot APM Station includes ample transfer opportunities, including eight bus routes, two light rail lines (i.e., Trolley Blue and Green Lines), Amtrak intercity rail, and COASTER commuter rail service. This station would be located along Broadway at Kettner Boulevard, southeast of the existing Santa Fe Depot, and passengers would have access to the connecting services with a 200-foot walk. Passengers exiting the APM Station would be in view of the existing Santa Fe Depot waiting room and ticket office building, a city landmark, which would support navigation. However, given the considerable amount of connecting services scattered among various on-street stops, navigating between transit services may be confusing and clear signage at the APM Station would be needed. Transfers to other transit services would also require a change in elevation. No dedicated transit parking facilities exist at Santa Fe Depot. There is an existing private parking lot adjacent to Santa Fe Depot that charges a fee for parking and a paid private underground parking structure beneath America Plaza that is accessible to the public. Vehicular drop-off and pick-up space are provided along Kettner Boulevard.

Civic Center APM Station: The Civic Center APM terminus station would be located on Broadway, west of 3rd Avenue and approximately 500 feet south of the existing Trolley Blue and Trolley Orange Line Civic Center Station on C Street. A dedicated bicycle/pedestrian connection between both stations would be provided along 3rd Avenue, which would allow for clear navigation for passengers traveling between each station area and to the Civic Center. The station would also provide direct access to bus stops on Broadway, between 2nd Avenue and 3rd Avenue serving nine MTS bus routes. At Broadway and 1st Avenue, passengers would have access to four additional bus routes within a 200-foot walk. Transfers to other transit services would require a change in elevation.

7.2.2 Station Amenities

Concept 10A would provide three new transit stations along the APM alignment, with the option to include up to two additional stations. Each station, as preliminarily designed, would provide ample space for shelters, seating, lighting, trash receptacles, and other amenities. In addition, the SDIA APM Station is adjacent to SDIA, which provides restrooms, air conditioning, and other amenities. The existing Santa Fe Depot also offers restrooms, a café, vending machines, and an ATM. The Civic Center station is located within a constrained area, but space would be available for amenities such as shelters, seating, and lighting.

7.2.3 Fare Payment Method

The APM fare concept has not yet been fully established. The 2023 Concept Study assumed that the APM would be fare free. Updated ridership modeling was not conducted for Concept 10A as part of Round 3, however, Concepts 8 and 9 were modeled assuming the same fare as the Trolley. The fare would ultimately be determined by the transit operator.

7.2.4 Boarding Method

It is assumed that the APM vehicles would provide level boarding (i.e., the floor of the vehicle is at the same level as the boarding platform), allowing passengers to step or roll directly onto the vehicle without a step up or down. This type of boarding is easier for passengers with luggage, as well as passengers with strollers, in wheelchairs, or with other mobility impairments compared to vehicles that do not have level boarding.

7.2.5 Luggage Accommodations

The APM vehicles are assumed to be designed with airport travel in mind, with space for luggage, available but minimal seating conducive to short trips, and ample hand-holds.

7.2.6 Reliability

This criterion was considered under Round 2 of the pare down process.

7.2.7 Ride Comfort

This concept is proposed to operate in a dedicated, fully separated right-of-way. The separated guideway minimizes potential conflicts with other vehicles, as well as the potential for additional stopping or starting at intersections.

7.3 Surrounding Communities

The surrounding communities analysis identified the communities within each station area (0.5-mile buffer around each station). Communities were identified using ArcGIS and the City of San Diego Downtown Community Plan, updated in May 2026.

Concept 10A would provide connections to nine City of San Diego communities: SDIA, Park West/Bankers Hill, Harborview, Marina, Little Italy, Core-Colombia, Horton Plaza, Gaslamp, and Cortez. This option would not provide direct connections to the Middletown community. The SDIA APM Station and Harbor Island APM station areas are within the SDIA community. The County Administration Building APM Station is within the Park West/Bankers Hill, Harborview, and Marina communities, while the Santa Fe Depot APM station area is within the Little Italy, Marina, Core-Colombia, and Horton Plaza communities. The Civic Center APM station area is within the Little Italy, Cortez, Marina, Core-Columbia, Horton Plaza, and Gaslamp communities (Table 7-2).

Table 7-2: Surrounding Communities for Concept 10A

Station Area ¹	Communities
SDIA APM Station	SDIA
Harbor Island APM Station	SDIA
County Administration Building APM Station	Little Italy
	Cortez
Santa Fe Depot APM Station ²	Little Italy
	Marina
	Columbia
	Horton/Gaslamp
	Civic/Core
Civic Center APM Station	Civic/Core
	Little Italy
	Cortez
	Marina
	Columbia
	Horton/Gaslamp
	East Village

Source: WSP 2026

Notes:

¹ Station Areas are defined as a 0.5-mile buffer from each station centroid.

² Santa Fe Depot APM Station would be located on Broadway.

APM = Automated people mover; SDIA = San Diego International Airport

8 Concept 10B: Automated People Mover from San Diego International Airport to Santa Fe Depot Extended to Civic Center–Hybrid

8.1 Description of Concept

Concept 10B would feature a 2.9-mile high-frequency APM in a dedicated right-of-way from SDIA to a terminus at a Civic Center APM Station on Broadway. It would also add a new Santa Fe Depot APM Station, creating a connection to the existing Santa Fe Depot and an optional Harbor Island APM Station and optional County Administration Building APM Station. Concept 10B is a variation on Concept 5C without the portion of the north route to PTC and CONRAC. This option would feature at-grade, elevated, and underground alignment sections and would require a connection to an OMSF, of which the location is yet to be determined. Table 8-1 provides information on concept characteristics.

Figure 8-1 shows the Concept 10B alignment. From the SDIA Station located at the transit-ready area at the airport, the fixed guideway would follow Harbor Drive on elevated structure followed by an at-grade alignment. The alignment would transition to a cut-and cover-tunnel north of Hawthorn Street as it curves southeast at the location of the optional County Administration Building APM Station. South of Grape Street, the alignment would continue in a bored tunnel before turning east to continue beneath Broadway and connect to the Santa Fe Depot APM Station and Civic Center APM Station. The Civic Center APM terminus station would be located on Broadway, west of 3rd Avenue. A dedicated bicycle/pedestrian connection would provide a connection to the existing Trolley Blue and Trolley Orange Line Civic Center Station on C Street.

Table 8-1: Concept 10B Characteristics

Characteristic	
Length of alignment at-grade (miles)	0.1
Length of alignment on elevated structure (miles)	1.5
Length of alignment in tunnel (miles)	1.3
Total alignment length (miles)	2.9
Number of stations	3 ¹
Minimum/shortest headways	2 minutes

Source: WSP and HDR 2022

Notes:

¹ County Administration Building and Harbor Island are a potential fourth and fifth station.

Figure 8-1: Automated People Mover Concept 10B San Diego International Airport to Civic Center – Hybrid



Source: WSP and HDR 2026

8.2 Passenger Convenience and Ridership

8.3 User Experience

The evaluation of user experience relates to the station area environment and a passenger's experience on the vehicle considering elements such as ease of transfers, navigation, and passenger comfort. For the purpose of this analysis, the ease of transfers considered the distance and navigation to the nearest connecting services.

8.3.1 Drop-off/Pick-up, Navigation, and Transfer Convenience

The following sections summarize transfer convenience for each proposed station associated with this option, including between modes of transit and by vehicle, as applicable. Transfer convenience was evaluated in terms of distance between modes of transit and vehicular drop-off/pick-up locations and the proposed APM Station. As design is advanced throughout subsequent phases of project development, it is assumed that wayfinding, in terms of signage and paths of travel, would be provided to direct passengers to transfer locations. Therefore, wayfinding is not evaluated on a station-by-station basis.

SDIA APM Station: Vehicular pick-up and drop-off or transfers from the APM to bus are not expected at this station. It is anticipated that passengers boarding or alighting the APM at this station would be traveling to or from SDIA. The nearest entrance at Terminal 1 and Terminal 2 would require passengers to walk a minimum of 0.2 mile.

Harbor Island APM Station (Optional): While connections at this location would be limited, this station would allow for access to the MTS Route 923 N Harbor Drive and Harbor Island Drive bus stop, walking 300 feet west along Harbor Drive to reach the westbound stop and 500 feet along Harbor Drive and Harbor Island Drive to reach the eastbound stop. This station would also create a direct pedestrian linkage across Harbor Drive to future development on Harbor Island. Vehicular drop-off and pick-up are not anticipated at this station.

County Administration Building APM Station (Optional): This station would be located north of the County Administration Building and would allow for transfers to MTS bus Routes 923 and 992 on Harbor Drive and Routes 280 and 290 on Grape Street, each within a 300-foot walk.

Santa Fe Depot APM Station: The Santa Fe Depot APM Station includes ample transfer opportunities, including eight bus routes, two light rail lines (i.e., Trolley Blue and Green Lines), Amtrak intercity rail, and COASTER commuter rail service. This station would be located along Broadway at Kettner Boulevard, southeast of the existing Santa Fe Depot, and passengers would have access to the connecting services with a 200-foot walk. Passengers exiting the APM Station would be in view of the existing Santa Fe Depot waiting room and ticket office building, a city landmark, which would support navigation. However, given the considerable amount of connecting services scattered among various on-street stops, navigating between transit services may be confusing and clear signage at the APM Station would be needed. Transfers to other transit services would also require a change in elevation. No dedicated transit parking facilities exist at Santa Fe Depot. There is an existing private parking lot adjacent to Santa Fe Depot that charges a fee for parking and a paid private underground parking structure beneath America Plaza that is accessible to the public. Vehicular drop-off and pick-up space are provided along Kettner Boulevard.

Civic Center APM Station: The Civic Center APM terminus station would be located on Broadway, west of 3rd Avenue and approximately 500 feet south of the existing Trolley Blue and Trolley Orange Line Civic Center Station on C Street. A dedicated bicycle/pedestrian connection between both stations would be provided along 3rd Avenue, which would allow for clear navigation for passengers traveling between each station area and to the Civic Center. The station would also provide direct access to bus stops on Broadway, between 2nd Avenue and 3rd Avenue serving nine MTS bus routes. At Broadway and 1st

Avenue, passengers would have access to four additional bus routes within a 200-foot walk. Transfers to other transit services would require a change in elevation.

8.3.2 Station Amenities

Concept 10B would provide three new transit stations along the APM alignment, with the option to include up to two additional stations. Each station, as preliminarily designed, would provide ample space for shelters, seating, lighting, trash receptacles, and other amenities. In addition, the SDIA APM Station is adjacent to SDIA, which provides restrooms, air conditioning, and other amenities. The existing Santa Fe Depot also offers restrooms, a café, vending machines, and an ATM. The Civic Center station is located within a constrained area, but space would be available for amenities such as shelters, seating, and lighting.

8.3.3 Fare Payment Method

The APM fare concept has not yet been fully established. The 2023 Concept Study assumed that the APM would be fare free. Updated ridership modeling was not conducted for Concept 10A as part of Round 3, however, Concepts 8 and 9 were modeled assuming the same fare as the Trolley. The fare would ultimately be determined by the transit operator.

8.3.4 Boarding Method

It is assumed that the APM vehicles would provide level boarding (i.e., the floor of the vehicle is at the same level as the boarding platform), allowing passengers to step or roll directly onto the vehicle without a step up or down. This type of boarding is easier for passengers with luggage, as well as passengers with strollers, in wheelchairs, or with other mobility impairments compared to vehicles that do not have level boarding.

8.3.5 Luggage Accommodations

The APM vehicles are assumed to be designed with airport travel in mind, with space for luggage, available but minimal seating conducive to short trips, and ample hand-holds.

8.3.6 Reliability

This criterion was considered under Round 2 of the pare down process.

8.3.7 Ride Comfort

This concept is proposed to operate in a dedicated, fully separated right-of-way. The separated guideway minimizes potential conflicts with other vehicles, as well as the potential for additional stopping or starting at intersections.

8.4 Surrounding Communities

The surrounding communities analysis identified the communities within each station area (0.5-mile buffer around each station). Communities were identified using ArcGIS and the City of San Diego Downtown Community Plan, updated in May 2026.

Concept 10B would provide connections to nine City of San Diego communities: SDIA, Park West/Bankers Hill, Harborview, Marina, Little Italy, Core-Colombia, Horton Plaza, Gaslamp, and Cortez. This option would not provide direct connections to the Middletown community. The SDIA APM Station and Harbor Island APM station areas are within the SDIA community. The County Administration Building APM Station is within the Park West/Bankers Hill, Harborview, and Marina communities, while the Santa Fe Depot APM station area is within the Little Italy, Marina, Core-Colombia, and Horton Plaza

communities. The Civic Center APM station area is within the Little Italy, Cortez, Marina, Core-Columbia, Horton Plaza, and Gaslamp communities (Table 8-2).

Table 8-2: Surrounding Communities for Concept 10B

Station Area ¹	Communities
SDIA APM Station	SDIA
Harbor Island APM Station	SDIA
County Administration Building APM Station	Little Italy
	Cortez
Santa Fe Depot APM Station ²	Little Italy
	Marina
	Columbia
	Horton/Gaslamp
	Civic/Core
Civic Center APM Station	Civic/Core
	Little Italy
	Cortez
	Marina
	Columbia
	Horton/Gaslamp
	East Village

Source: WSP 2026

Notes:

¹ Station Areas are defined as a 0.5-mile buffer from each station centroid.

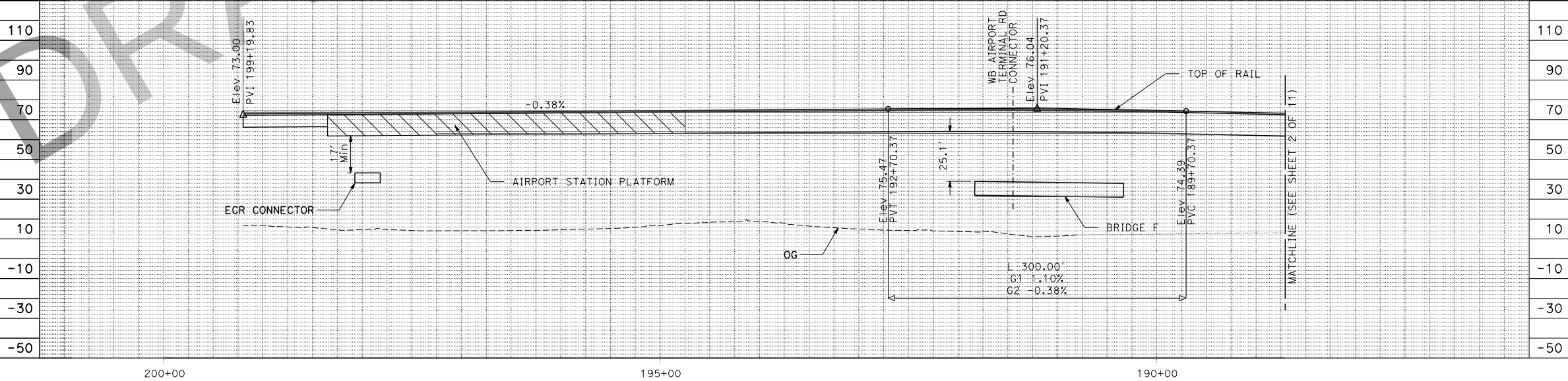
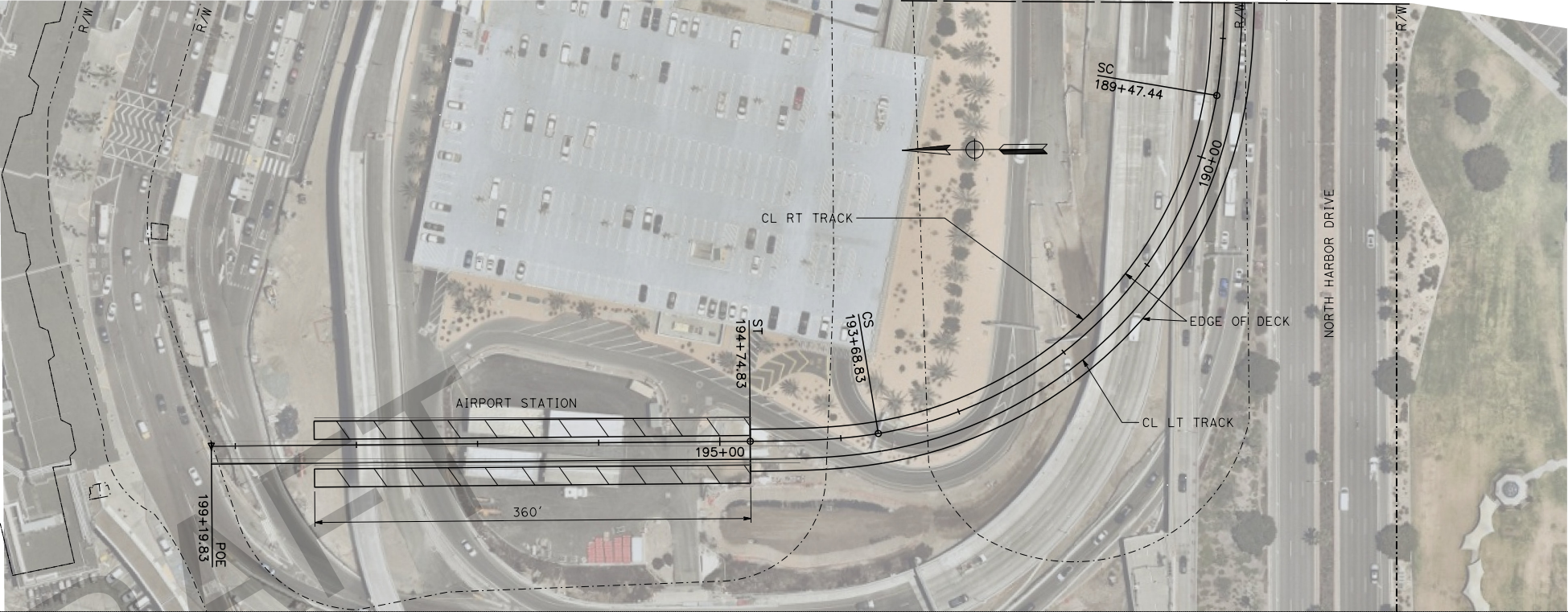
² Santa Fe Depot APM Station would be located on Broadway

APM = Automated people mover; SDIA = San Diego International Airport

9 Concept 6B Trolley from San Diego International Airport to 12th & Imperial Transit – Extended Trench and Three Grade Separation Plan Sheets

MATCHLINE (SEE SHEET 2 OF 11)

- LEGEND
- AERIAL
 - STATION
 - RIGHT-OF-WAY



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AIRPORT TRANSIT CONNECTION
PROJECT

CONCEPT 6B: TROLLEY FROM SDIA TO
12TH & IMPERIAL TRANSIT CENTER

CONTRACT NO.

DRAWING NO.

REV

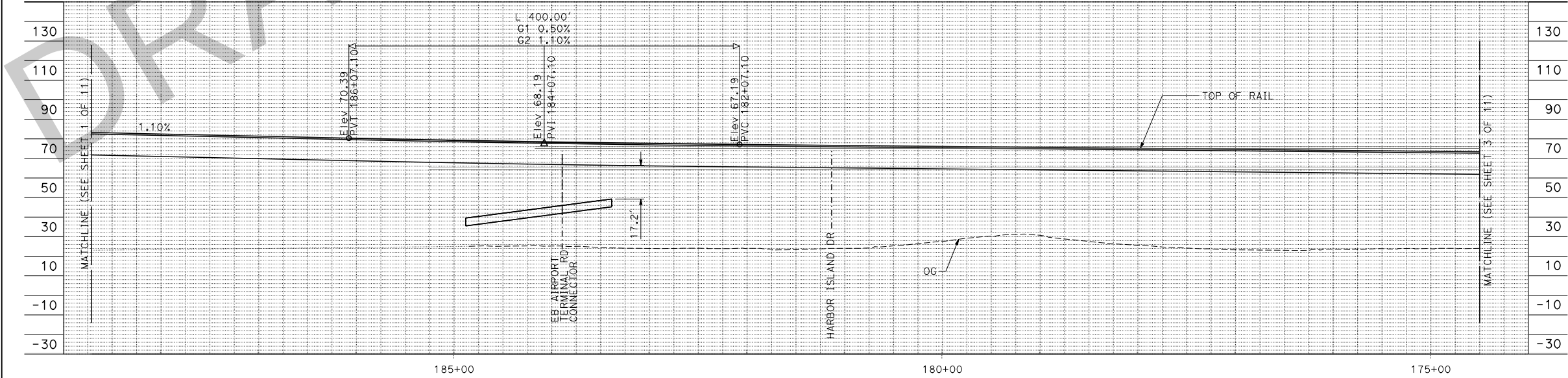
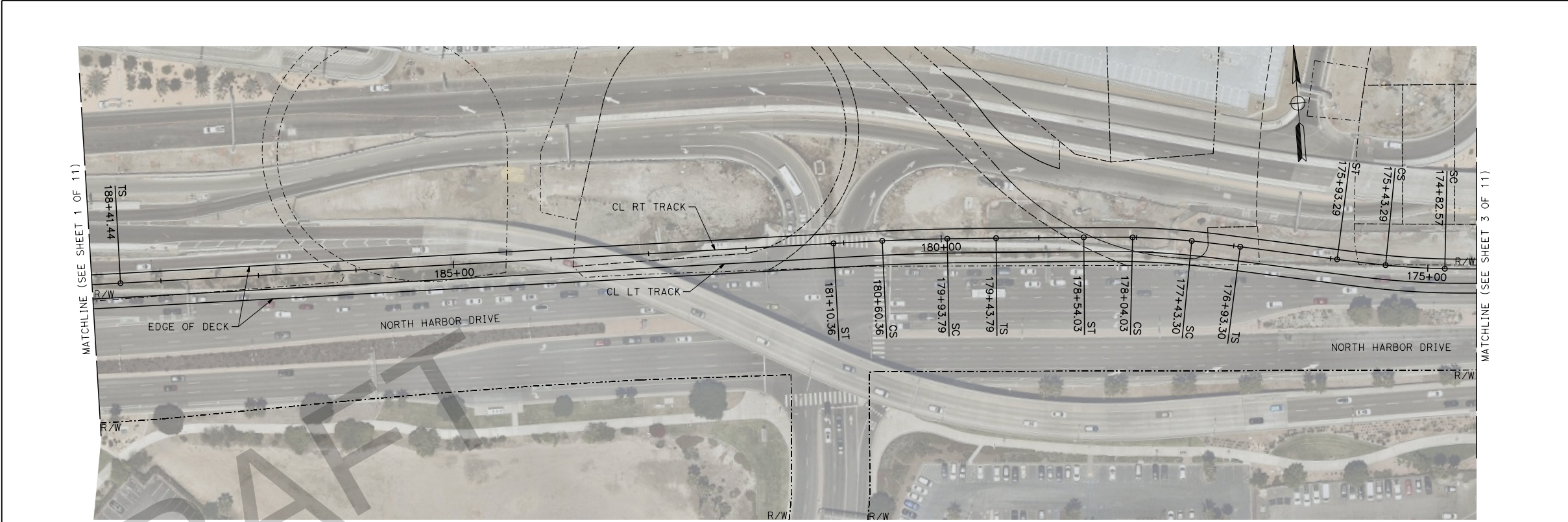
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1 OF 11

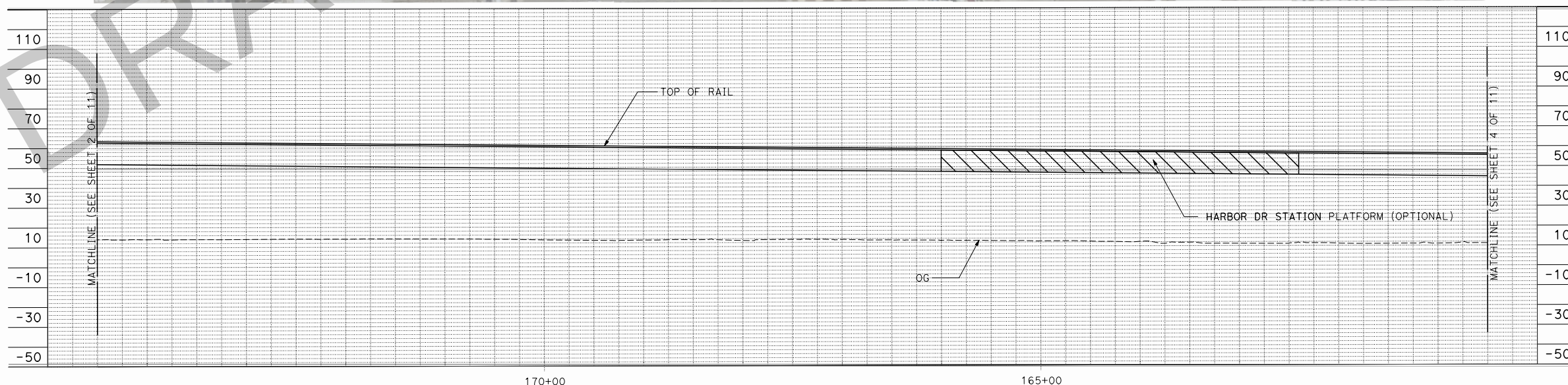
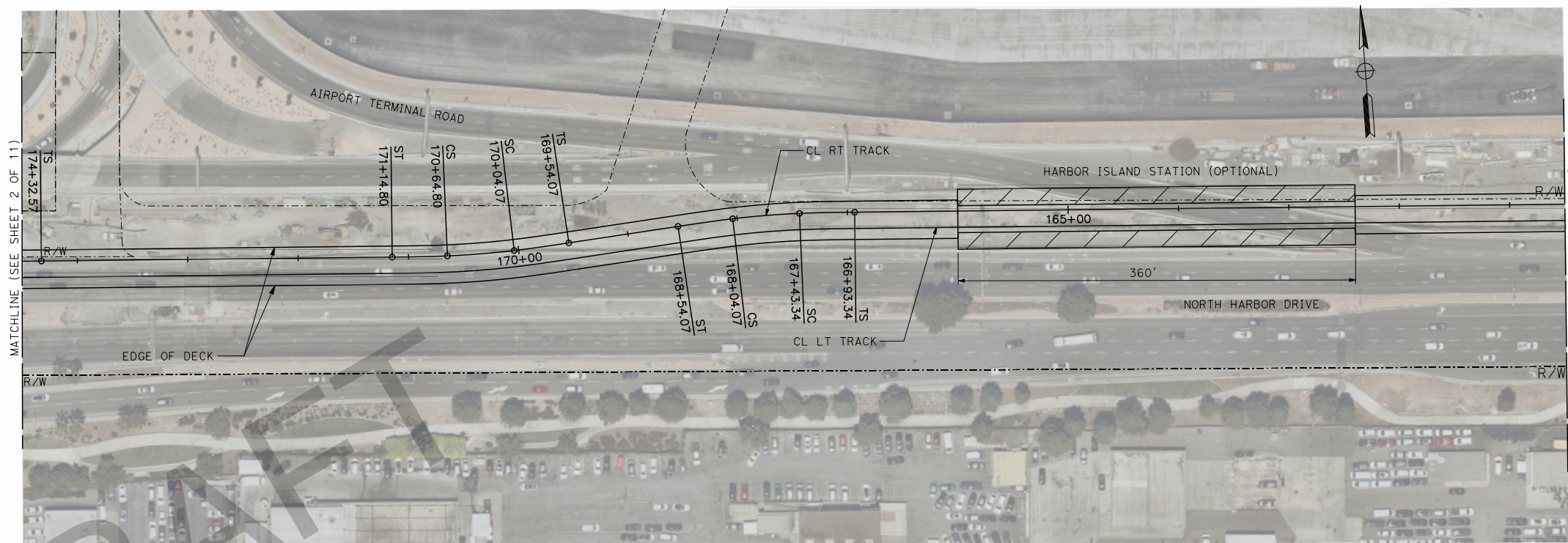


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**AIRPORT TRANSIT CONNECTION
PROJECT**
**CONCEPT 6B: TROLLEY FROM SDIA TO
12TH & IMPERIAL TRANSIT CENTER**

CONTRACT NO.	
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SCALE	HORIZ: 1" = 50' VERT: 1" = 25'
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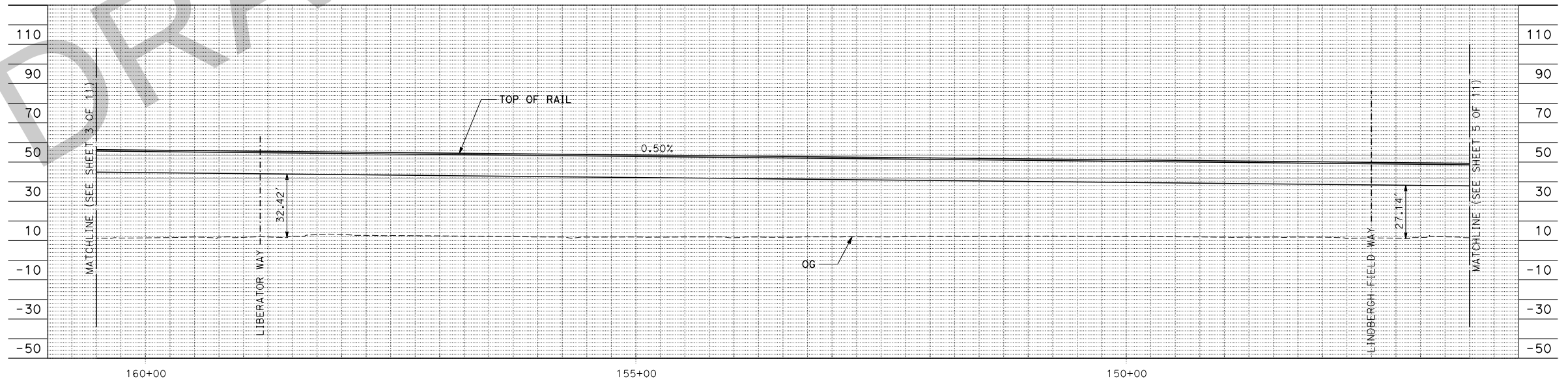
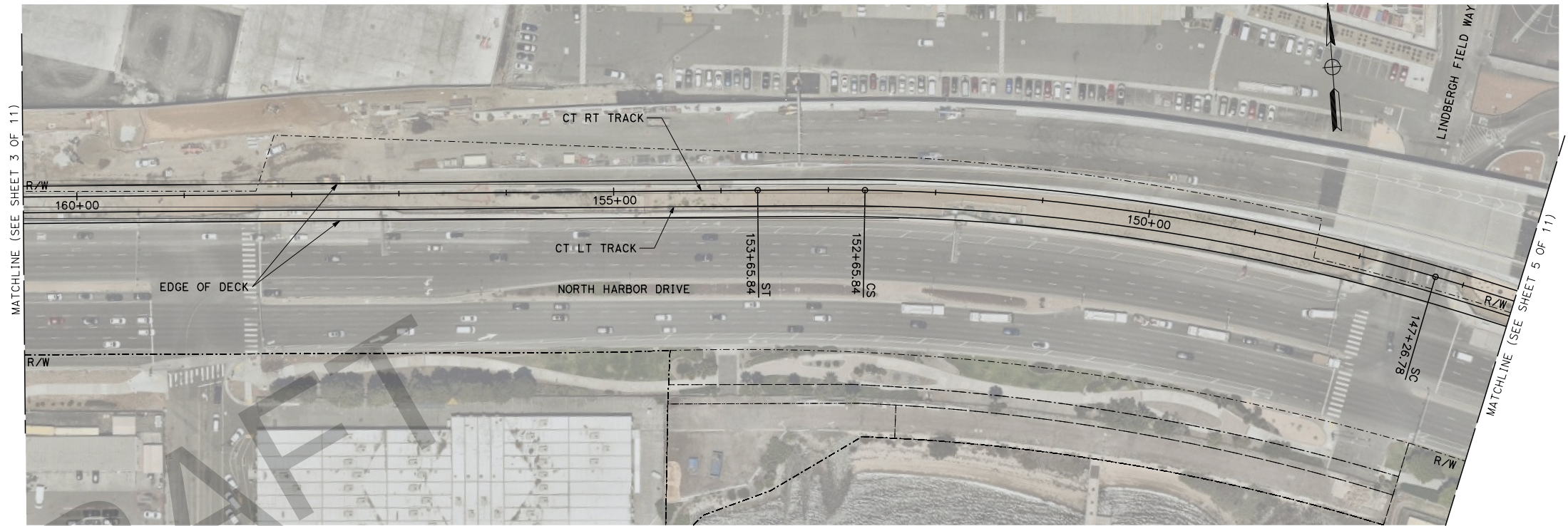


**AIRPORT TRANSIT CONNECTION
PROJECT**

**CONCEPT 6B: TROLLEY FROM SDIA TO
12TH & IMPERIAL TRANSIT CENTER**

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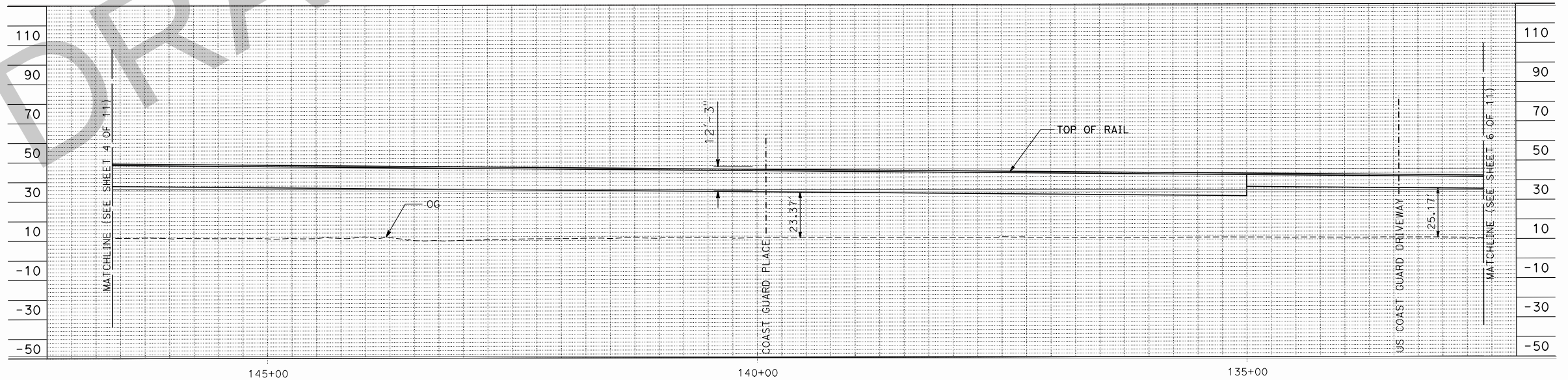
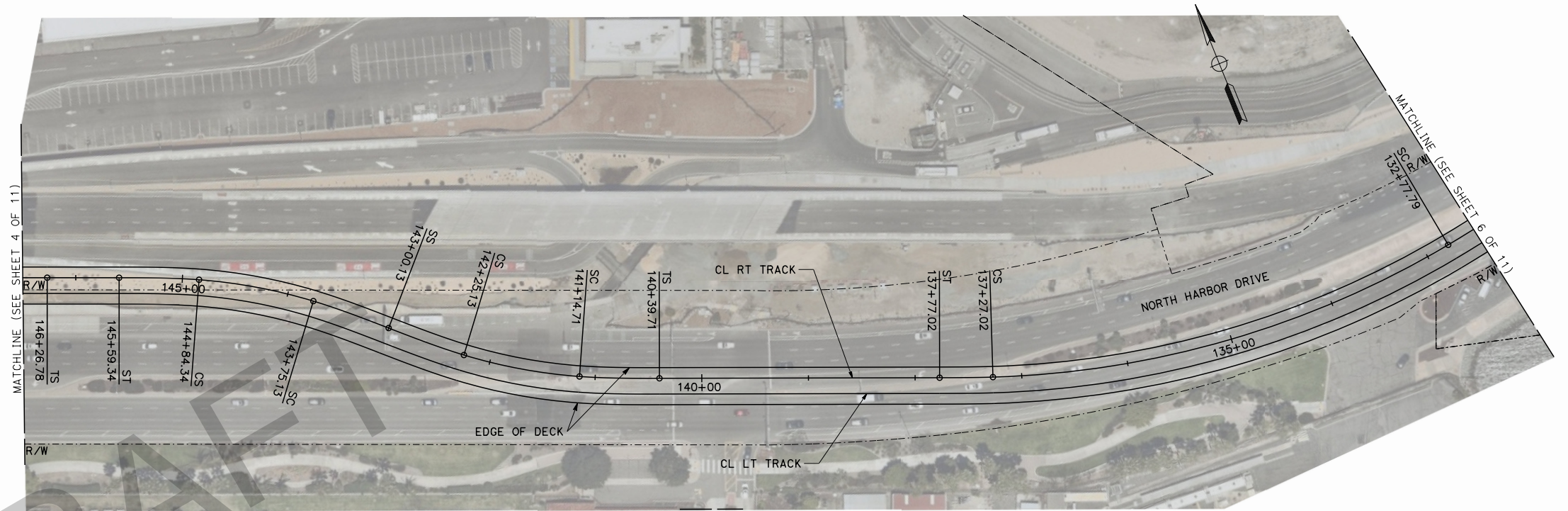
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**AIRPORT TRANSIT CONNECTION
PROJECT**

**CONCEPT 6B: TROLLEY FROM SDIA TO
12TH & IMPERIAL TRANSIT CENTER**

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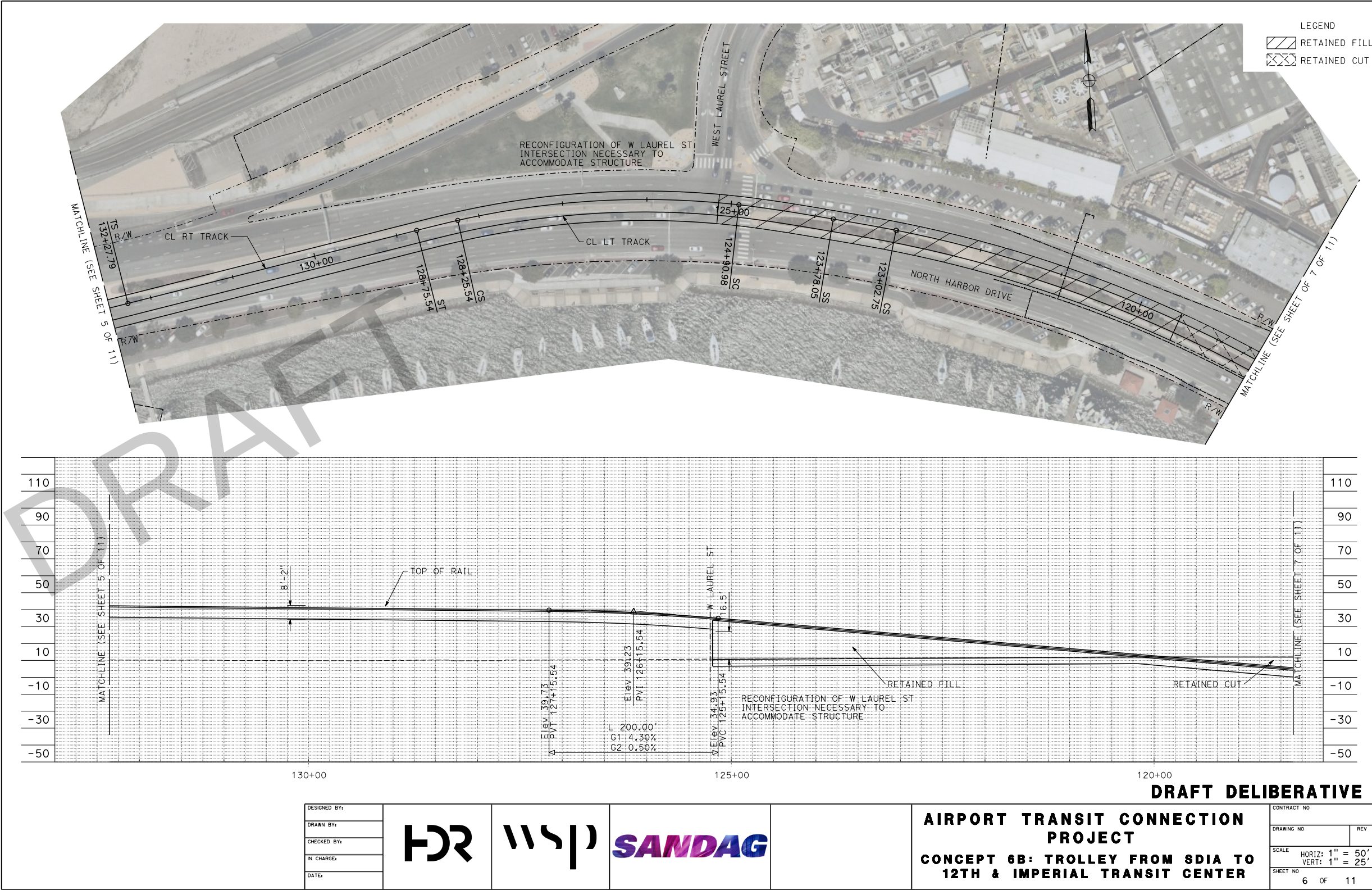
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**AIRPORT TRANSIT CONNECTION
PROJECT**

**CONCEPT 6B: TROLLEY FROM SDIA TO
12TH & IMPERIAL TRANSIT CENTER**

CONTRACT NO.	
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SHEET NO.	5 OF 11



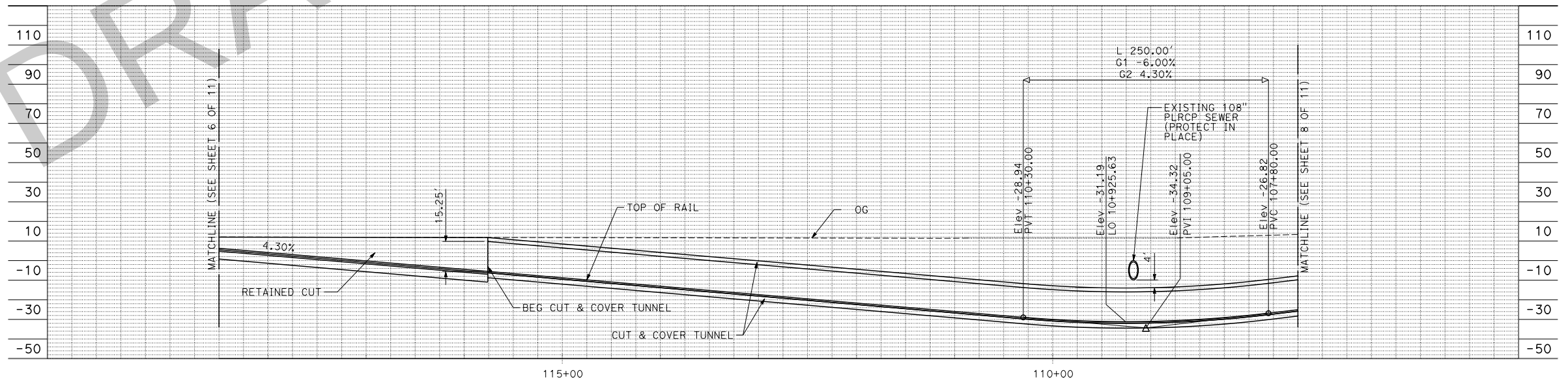
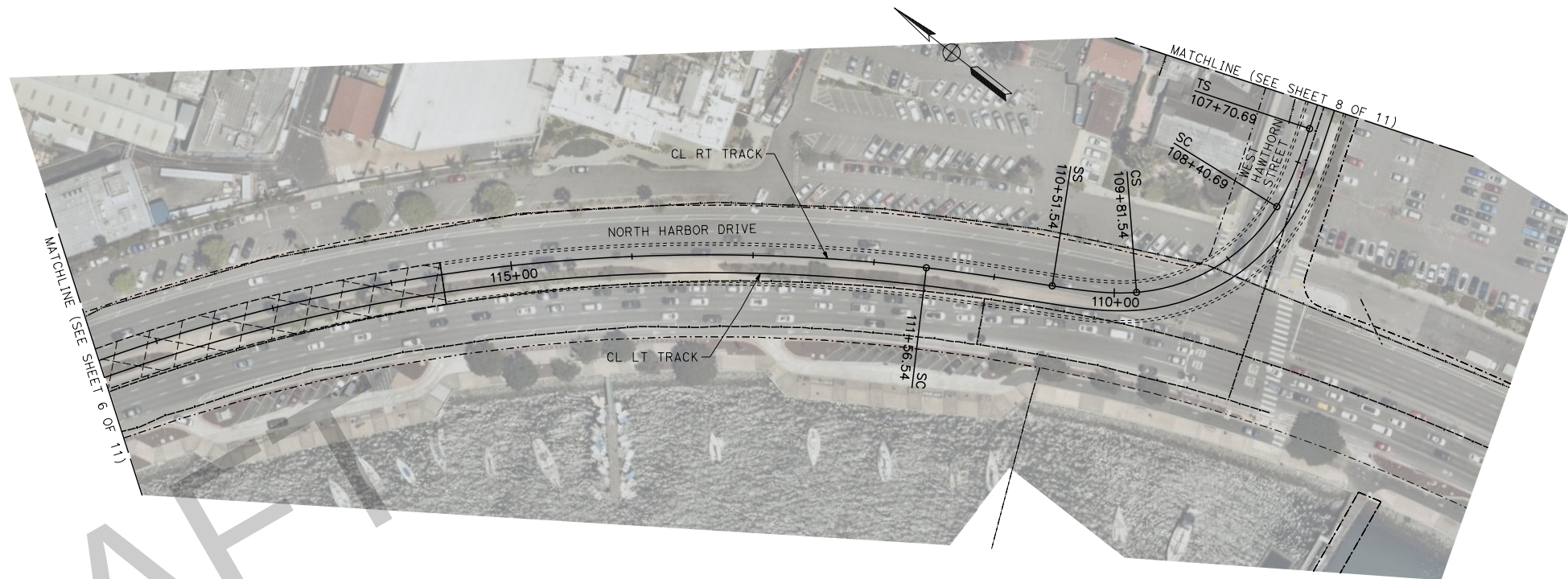
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**AIRPORT TRANSIT CONNECTION
PROJECT**
**CONCEPT 6B: TROLLEY FROM SDIA TO
12TH & IMPERIAL TRANSIT CENTER**

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SHEET NO.	HORIZ: 1" = 50' VERT: 1" = 25'
6 OF 11	DATE/TIME PLOTTED => 8-OCT-2025

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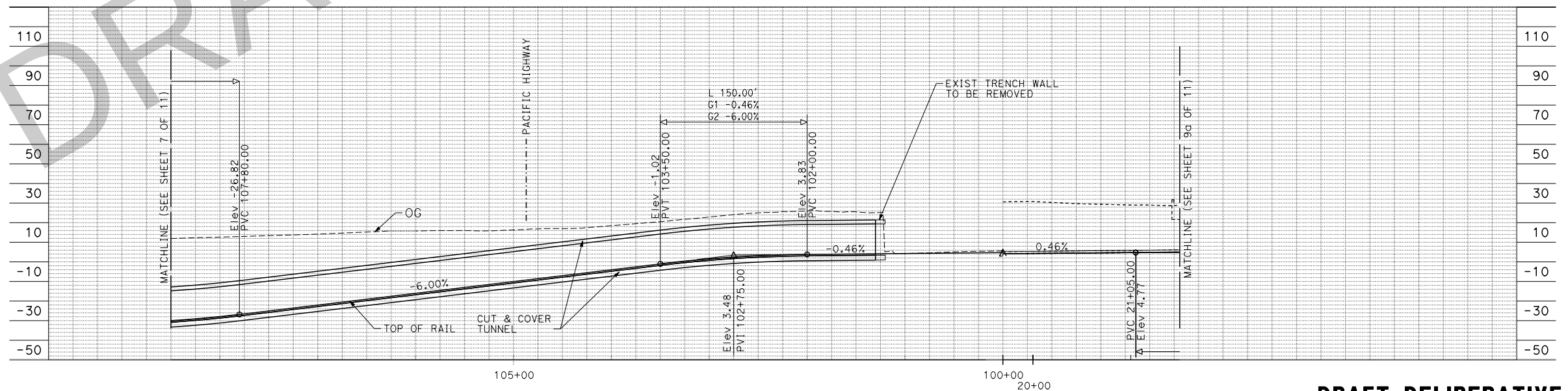
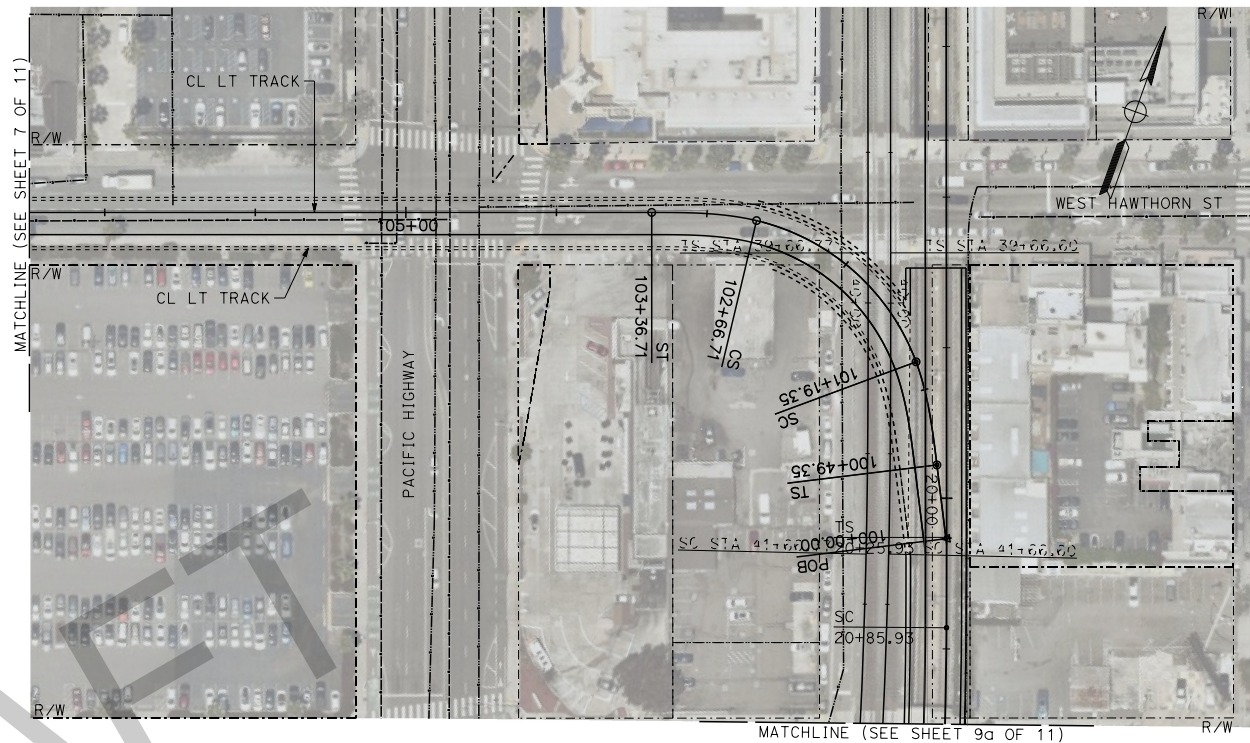
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12TH & IMPERIAL TRANSIT CENTER**

CONTRACT NO.	
DRAWING NO.	REV
SCALE	HORIZ: 1" = 50' VERT: 1" = 25'
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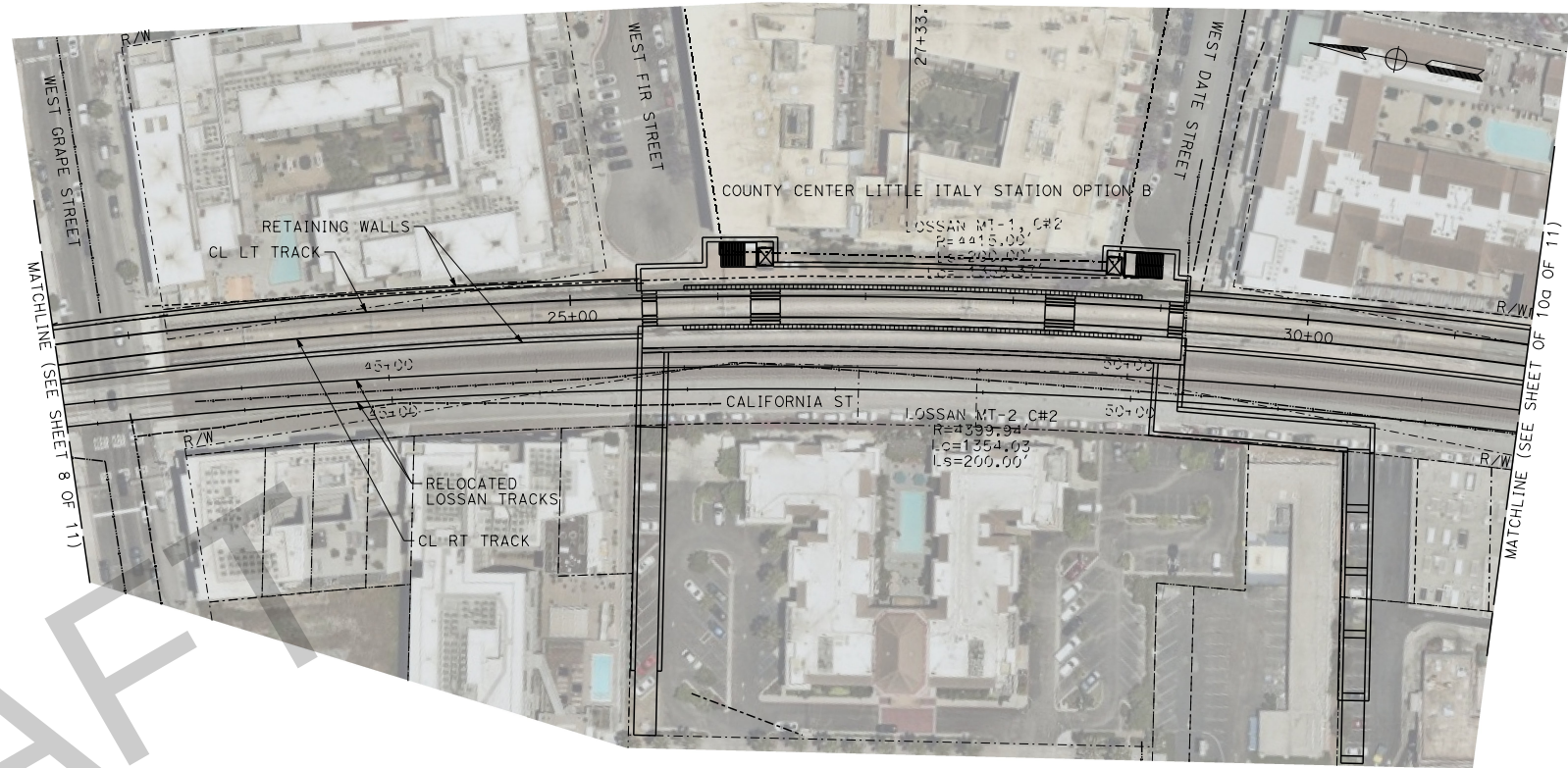
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**AIRPORT TRANSIT CONNECTION
PROJECT**
**CONCEPT 6B: TROLLEY FROM SDIA TO
12TH & IMPERIAL TRANSIT CENTER**

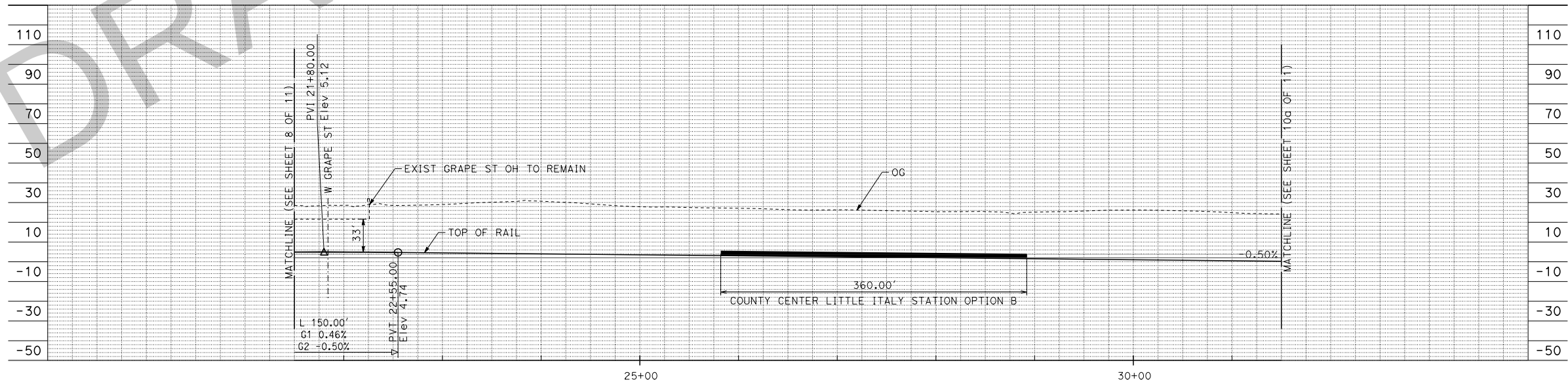
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DATE/TIME PLOTTED => 26-SEP-2025

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- NOTES
1. FOR STATION LAYOUT
SEE STATION SITE PLANS
 2. FOR CROSSING DETAILS
SEE ROADWAY PLANS



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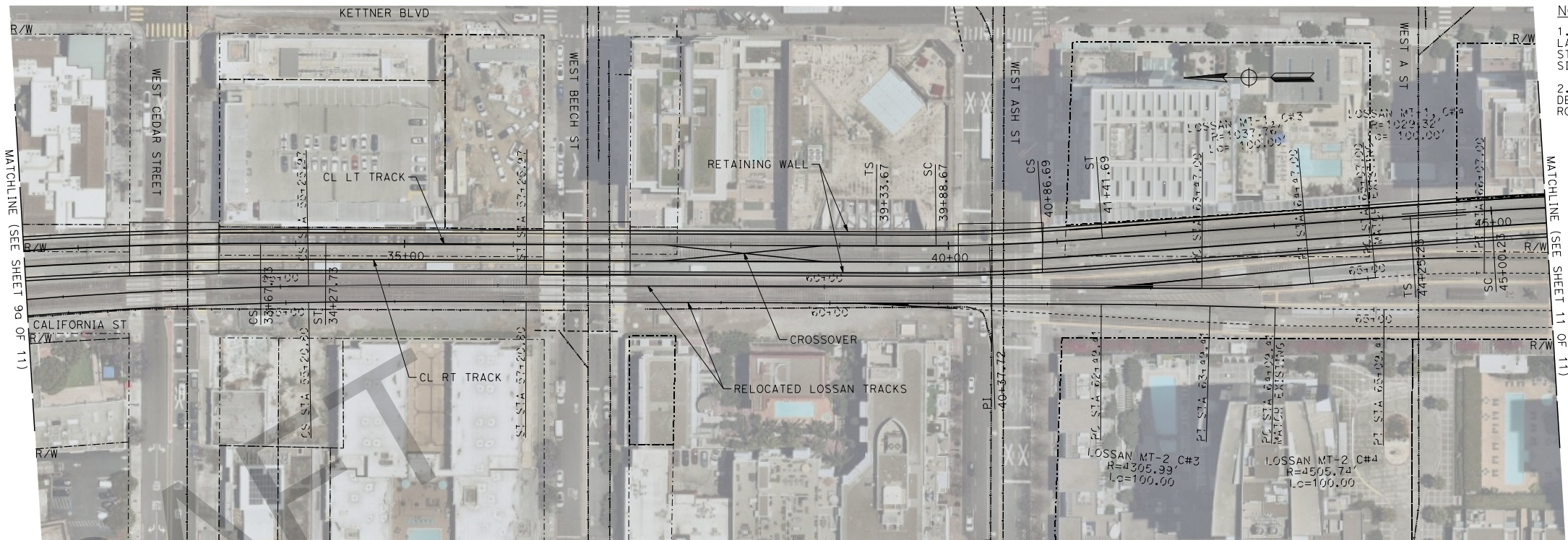
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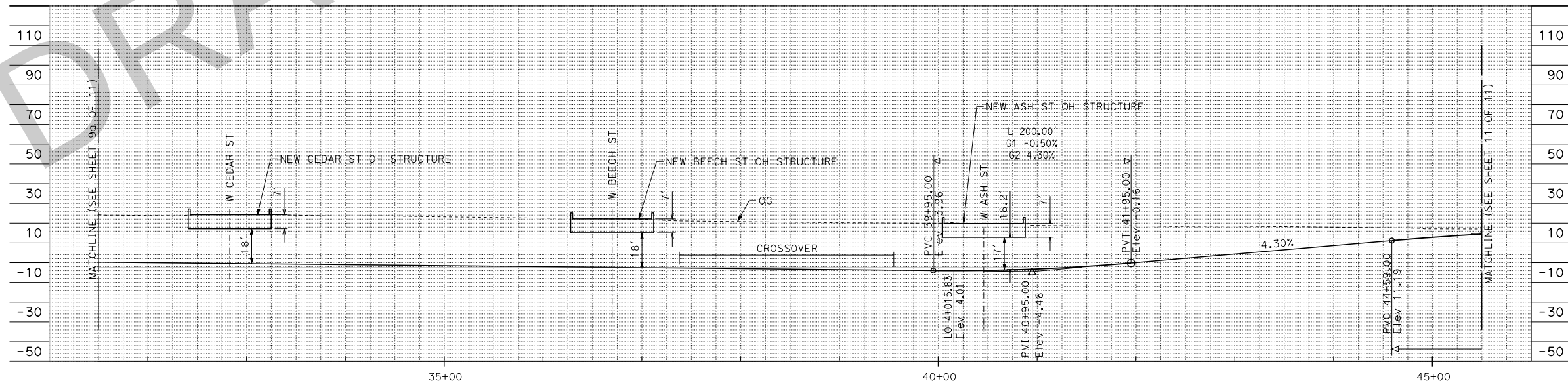
AIRPORT TRANSIT CONNECTION PROJECT

CONCEPT 6B: TROLLEY FROM SDIA TO 12TH &
IMPERIAL TRANSIT CENTER
RELOCATED COUNTY CENTER LITTLE ITALY STATION

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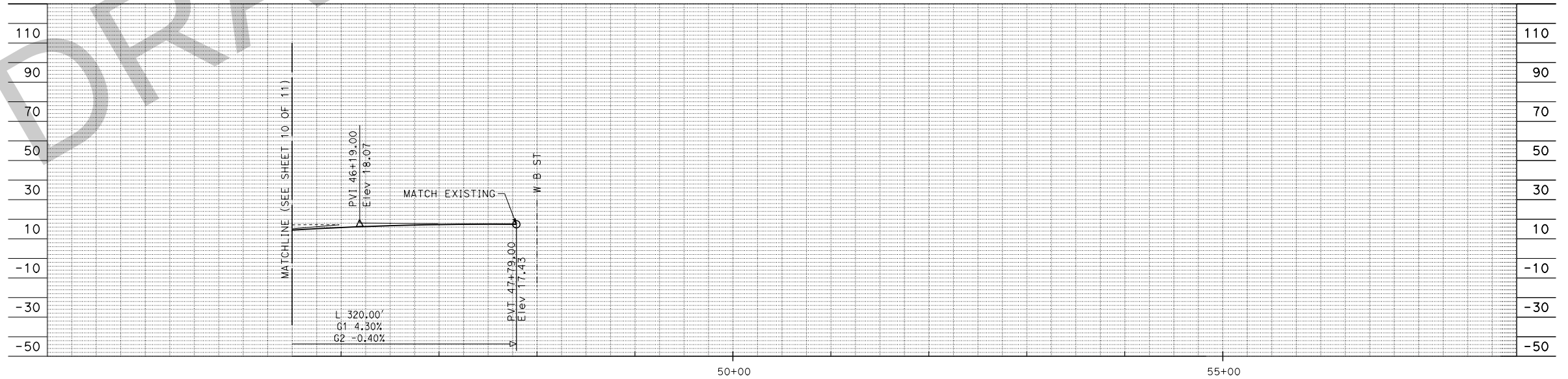
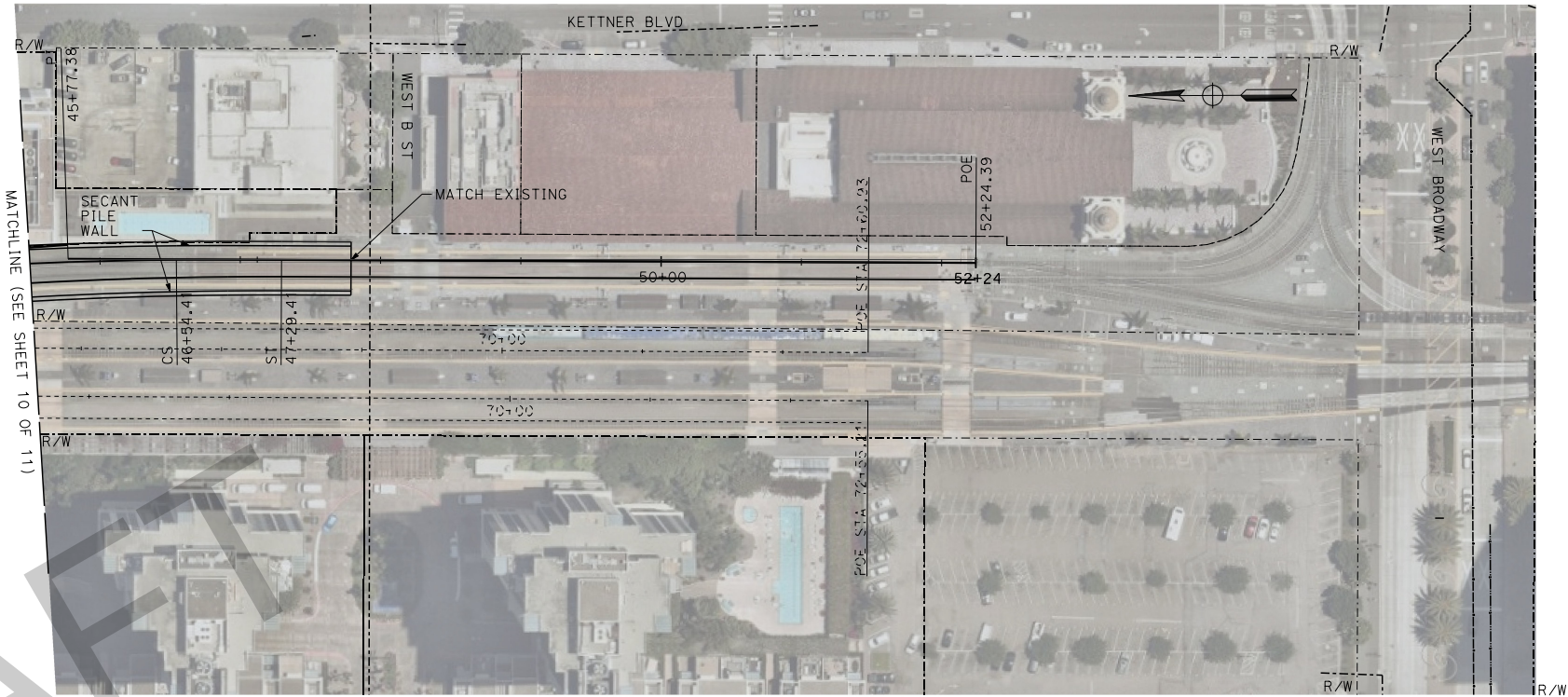


- NOTES**
1. FOR STATION LAYOUT, SEE STATION SITE PLANS
 2. FOR CROSSING DETAILS SEE ROADWAY PLANS



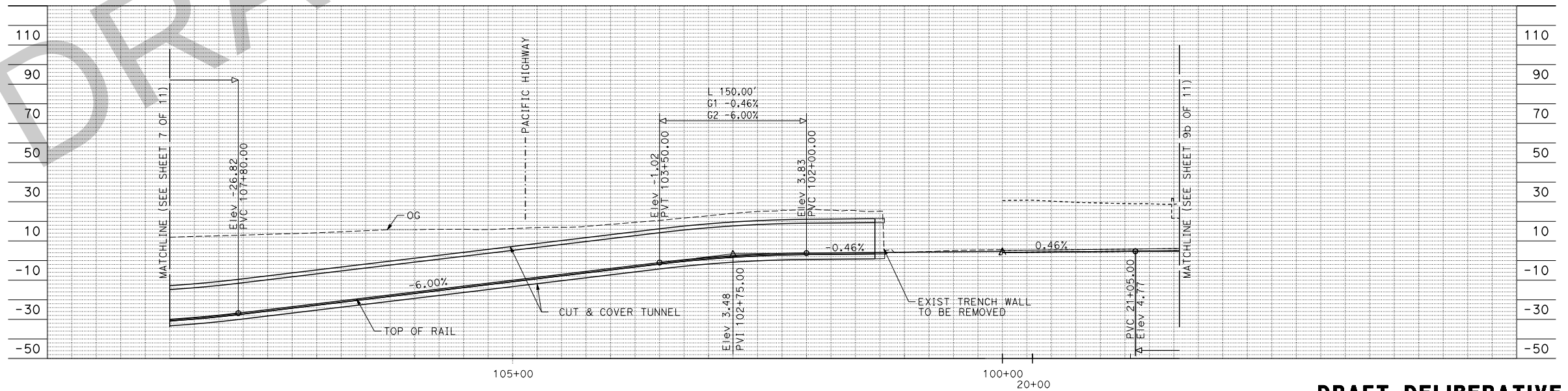
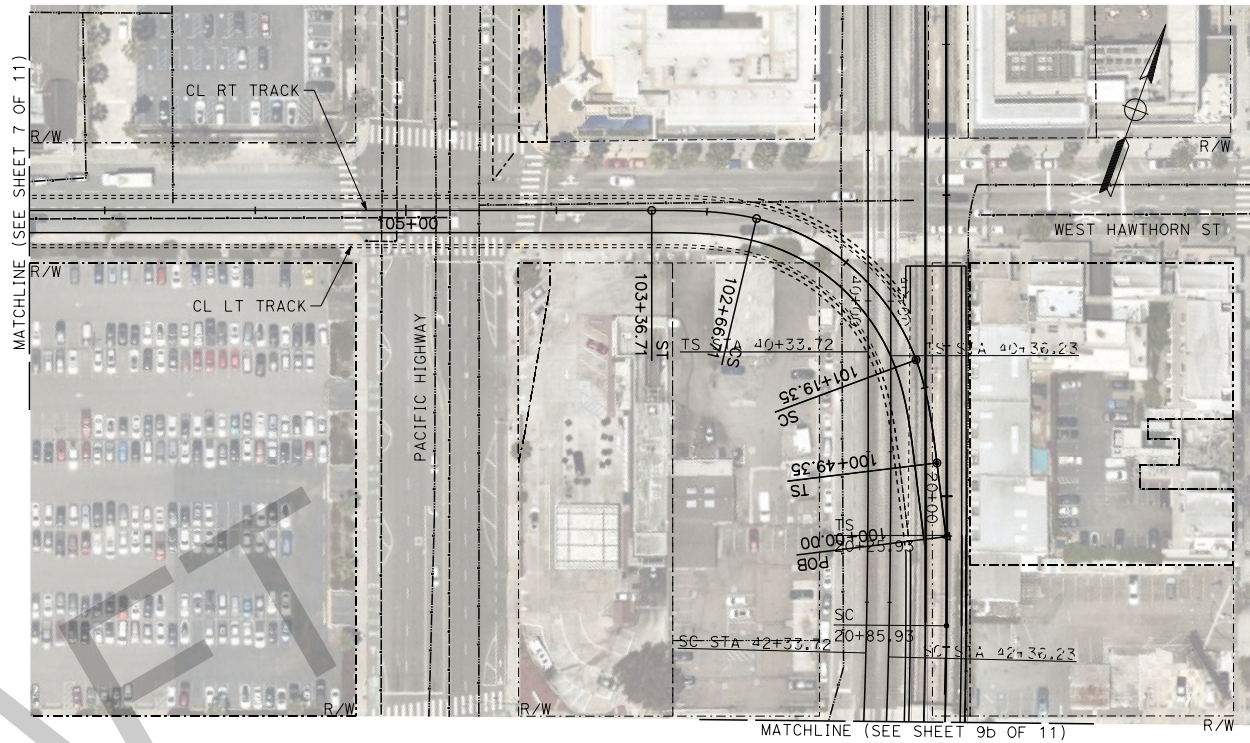
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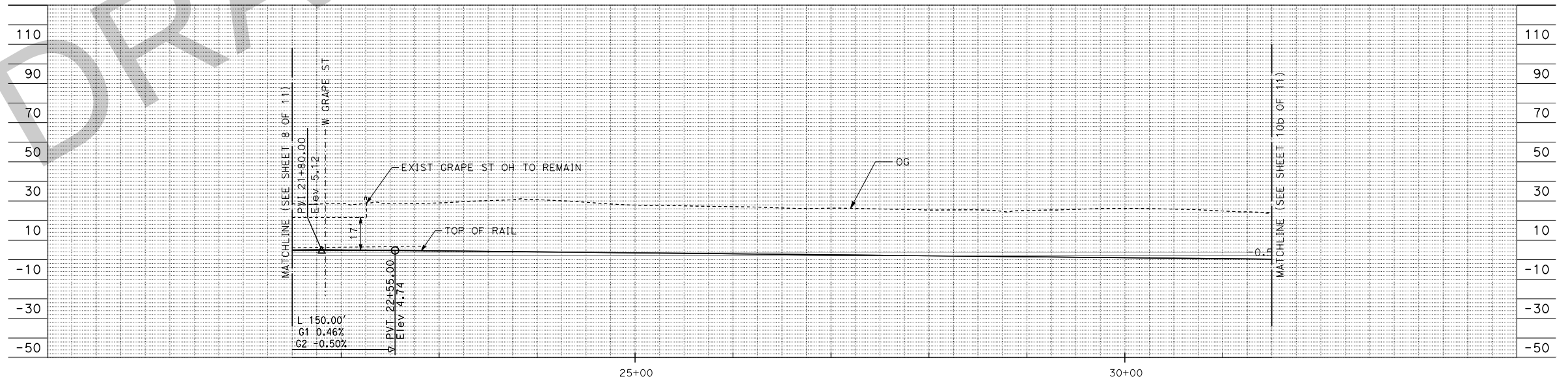
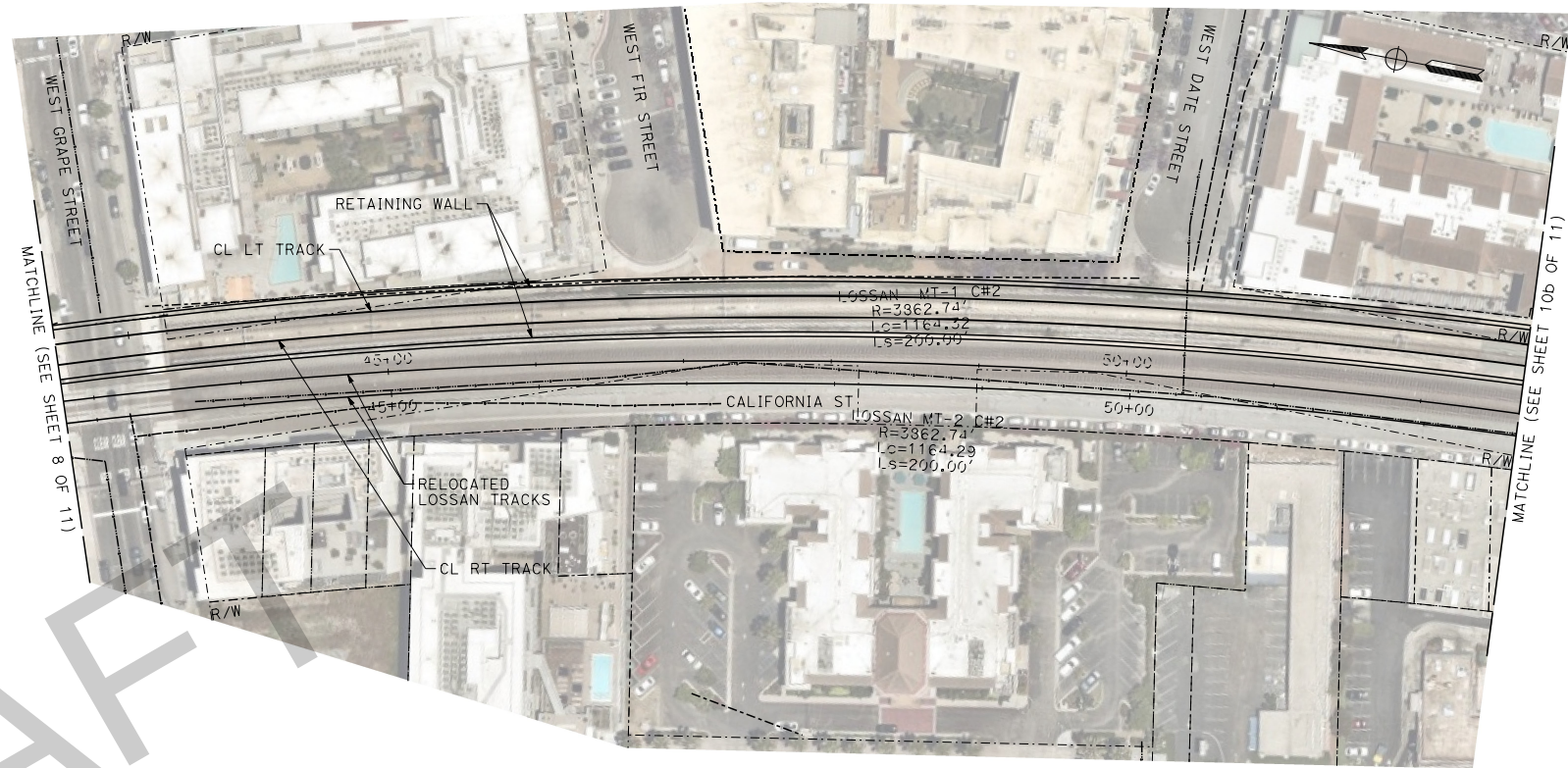
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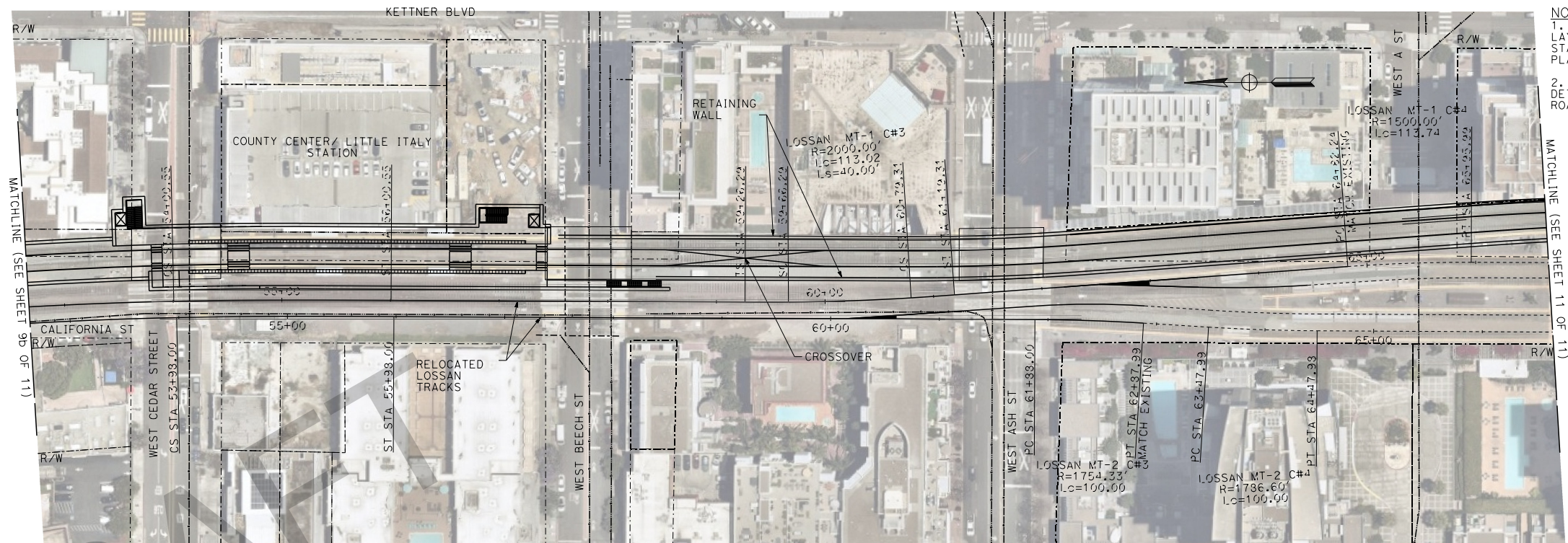
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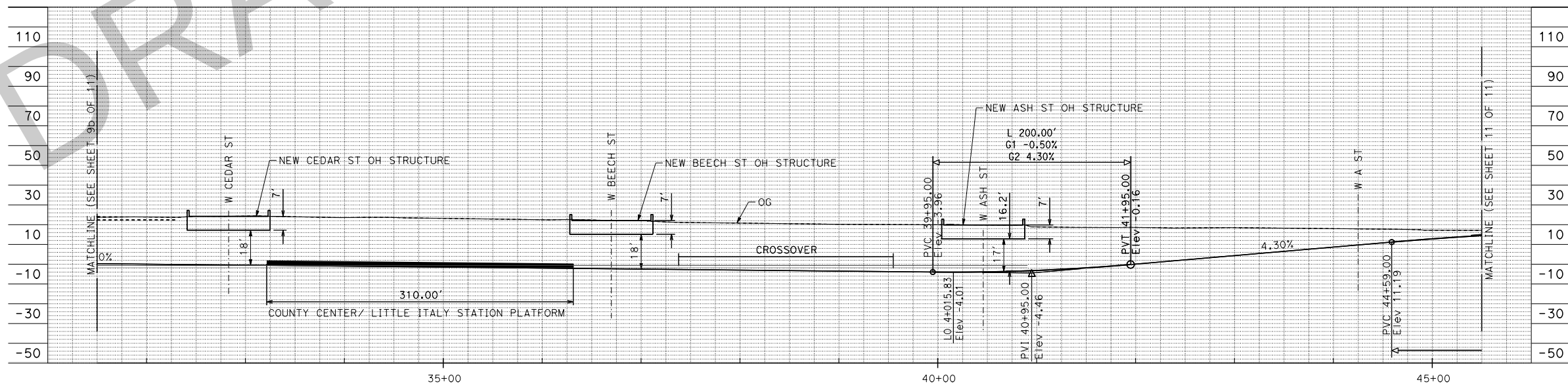


**AIRPORT TRANSIT CONNECTION
PROJECT**
**CONCEPT 6B: TROLLEY FROM SDIA TO
12TH & IMPERIAL TRANSIT CENTER**

CONTRACT NO.	
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SCALE	HORIZ: 1" = 50' VERT: 1" = 25'
SHEET NO.	9b OF 11



NOTES
1. FOR STATION LAYOUT, SEE STATION SITE PLANS
2. FOR CROSSING DETAILS SEE ROADWAY PLANS



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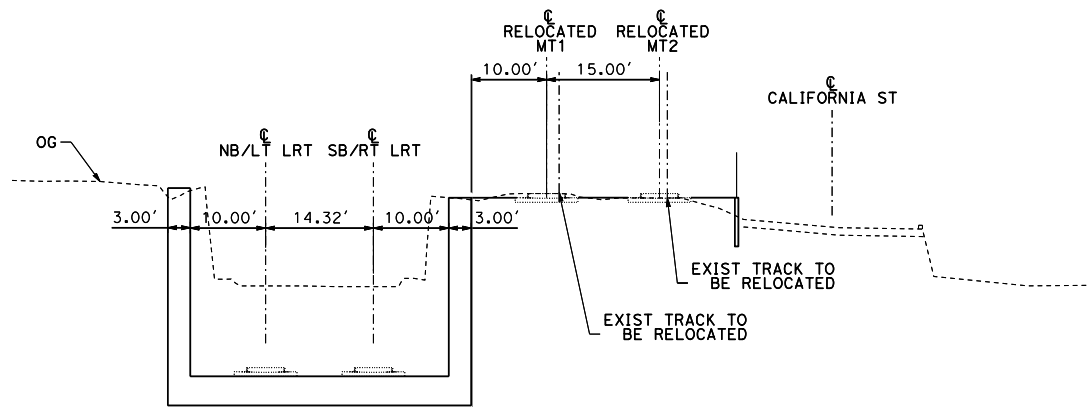
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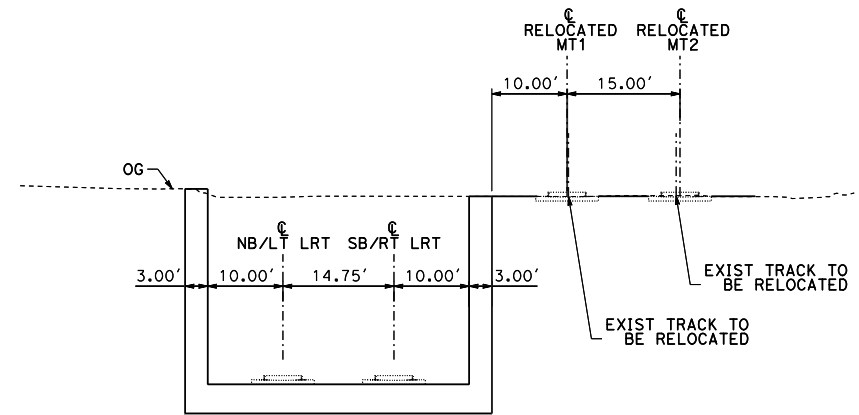
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**AIRPORT TRANSIT CONNECTION
PROJECT**
**CONCEPT 6B: TROLLEY FROM SDIA TO
12TH & IMPERIAL TRANSIT CENTER**

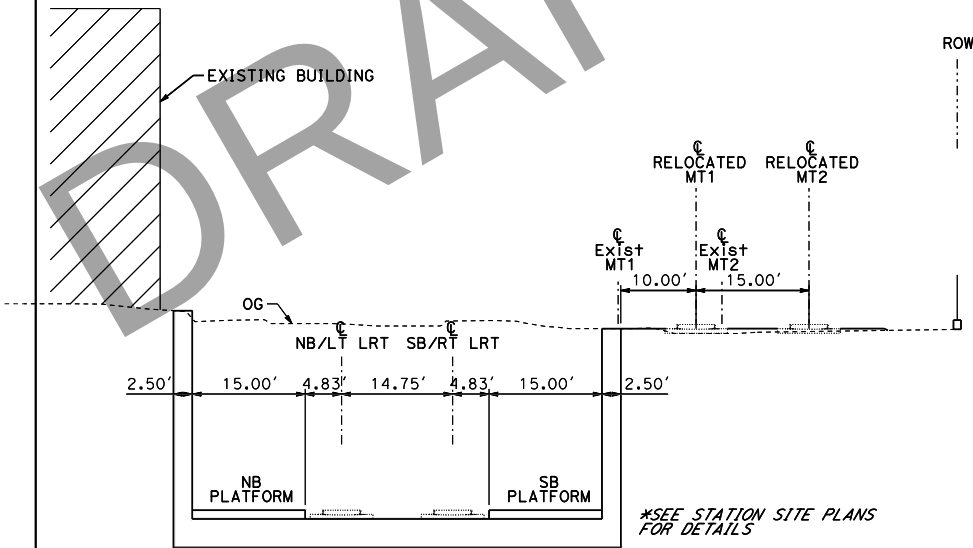
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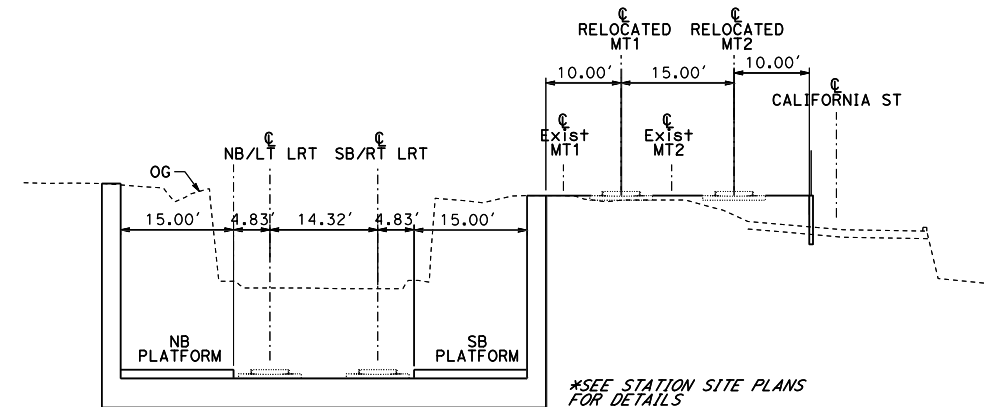
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TYPICAL SECTION SOUTH OF BEECH ST
SCALE: NTS



TYPICAL SECTION COUNTY CENTER LITTLE ITALY STATION
SCALE: NTS



TYPICAL SECTION COUNTY CENTER LITTLE ITALY STATION (OPTION A)
BETWEEN FIR ST AND DATE ST
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Appendix D:

Backup Information for Pare Down Process

1 Pare Down Round 1: Travel Markets

The tables in this appendix provide the detailed scores for each of the Travel Markets metrics considered in Round 1 of the pare down process.

Scores for residents (air passengers/employees) – Local

- Air passenger population within 1/3-mile walk (Table 1-1).
- Air passenger hard to reach population within 1/3-mile walk (Table 1-1).
- Air passenger population within 5-mile drive (Table 1-1).
- Air passenger hard to reach population within 5-mile drive (Table 1-1).
- Employee population within 1/3-mile walk (Table 1-2).
- Employee hard to reach population within 1/3-mile walk (Table 1-2).
- Employee population within 5-mile drive (Table 1-2).
- Employee hard to reach population within 5-mile drive (Table 1-2).

Scores for residents (air passengers/employees) – Regional

- Total population within 45 minutes by transit (Table 1-3).
- College/university population within 45 minutes by transit (Table 1-3).

Score for visitors – Local

- Number of jobs, hotel rooms, and amount of conference space within 1/3-mile walk (Table 1-4).
- Number of jobs, hotel rooms, and amount of conference space within 5-mile drive (Table 1-4).

Score for visitors – Regional

- Number of jobs, amusement jobs, hotel rooms, and amount of conference space within 45 minutes by transit (Table 1-4).

1.1 Resident Air Passengers – Local

Table 1-1 includes the scores for resident air passengers by concept. Scores were developed using a 1-9 ranking of the total population and the average of the individual rankings for the hard to reach population demographics. Within a 1/3-mile walk, Concept 6A-B received the highest score for total population and hard to reach population. Within a 5-mile drive, Concept 4A-C received the highest total population and hard to reach population score.

Table 1-1: Resident Air Passenger Scores – Local Catchment

Concepts	1/3-Mile Walk		5-Mile Drive	
	Population Score	Average Hard to Reach Population Score	Population Score	Average Hard to Reach Population Score
Concept 1A-C SDIA to CONRAC/PTC	1.00	1.25	1.00	1.00
Concept 2 SDIA to OTTC	2.00	1.75	2.00	2.75
Concept 3A-C SDIA to PTC/CONRAC and Santa Fe Depot	4.00	4.00	7.00	6.25
Concept 4A-C SDIA to PTC/CONRAC and Convention Center	6.00	6.25	9.00	9.00
Concept 5A-C SDIA to PTC/CONRAC and Convention Center	8.00	8.00	8.00	7.50
Concept 6A-B SDIA to 12th & Imperial Transit Center	9.00	9.00	3.00	4.25
Concept 8A-B SDIA to Santa Fe Depot	3.00	3.00	4.00	3.25
Concept 9A-B SDIA to Convention Center	5.00	5.00	6.00	6.50
Concept 10A-B SDIA to Civic Center	7.00	6.75	5.00	4.50

Source: WSP 2025

Notes: **Bold** text indicates the highest scores.

CONRAC = Consolidated Rental Car Center; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

Table 1-2 includes the scores for employees in the local catchment by concept. Scores were developed using a ranking of the total employee population and the average of the individual rankings for the hard to reach population demographics. Within a 1/2-mile walk, Concept 6A-B received the highest score for total population and hard to reach population. Within a 5-mile drive, Concept 4A-C received the highest total population and hard to reach population score.

Table 1-2: Employee Scores – Local Catchment

Concepts	1/2-Mile Walk		5-Mile Drive	
	Population Score	Average Hard to Reach Population Score	Population Score	Average Hard to Reach Population Score
Concept 1A-C SDIA to CONRAC/PTC	1.00	1.00	1.00	1.25
Concept 2 SDIA to OTTC	2.00	2.00	5.00	4.50
Concept 3A-C SDIA to PTC/CONRAC and Santa Fe Depot	4.00	4.00	7.00	6.50
Concept 4A-C SDIA to PTC/CONRAC and Convention Center	6.00	6.50	9.00	9.00
Concept 5A-C SDIA to PTC/CONRAC and Convention Center	8.00	7.50	8.00	8.00
Concept 6A-B SDIA to 12th & Imperial Transit Center	9.00	9.00	2.00	3.75
Concept 8A-B SDIA to Santa Fe Depot	3.00	3.00	3.00	2.00

Concepts	1/2-Mile Walk		5-Mile Drive	
	Population Score	Average Hard to Reach Population Score	Population Score	Average Hard to Reach Population Score
Concept 9A-B SDIA to Convention Center	5.00	5.50	6.00	6.00
Concept 10A-B SDIA to Civic Center	7.00	6.50	4.00	4.00

Source: WSP 2025

Notes: **Bold** text indicates the highest scores.

CONRAC = Consolidated Rental Car Center; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

1.2 Resident Air Passengers – Regional

Scores were developed using a ranking of the total population and the average of the individual ranks for the hard to reach population demographics. Table 1-3 summarizes the concept scores. Concept 8A-B received the highest scores for total population and college/university student population, including the hard to reach population.

Table 1-3: Resident Air Passenger Scores – Regional Catchment

Concepts	Total Population (45 Minutes Transit)		College/University Student Population (45 Minutes Transit)	
	Population Score	Average Hard to Reach Population Score	Population Score	Average Hard to Reach Population Score
Concept 1A-C SDIA to CONRAC/PTC	1.00	1.00	1.00	1.00
Concept 2 SDIA to OTTC	2.00	2.25	5.00	4.50
Concept 3A-C SDIA to PTC/CONRAC and Santa Fe Depot	6.00	6.00	4.00	4.50
Concept 4A-C SDIA to PTC/CONRAC and Convention Center	5.00	4.75	3.00	3.50
Concept 5A-C SDIA to PTC/CONRAC and Convention Center	3.00	3.00	2.00	2.50
Concept 6A-B SDIA to 12th & Imperial Transit Center	4.00	4.00	6.00	5.00
Concept 8A-B SDIA to Santa Fe Depot	9.00	9.00	9.00	9.00
Concept 9A-B SDIA to Convention Center	8.00	8.00	8.00	8.00
Concept 10A-B SDIA to Civic Center	7.00	7.00	7.00	7.00

Source: WSP 2025

Notes: **Bold** text indicates the highest scores.

CONRAC = Consolidated Rental Car Center; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

1.3 Visitors – Local and Regional

Each individual visitor metric received a ranking from 1-9 based on the total values. Local and regional catchment scores were developed using an average of these rankings (Table 1-4). Overall, for the visitor

local catchment metrics, Concept 6A-B received the highest score within the 1/3-mile walk radius and Concept 4A-C received the highest score within the 5-mile drive radius. Concept 10A-B received the highest visitor score within the regional catchment.

Table 1-4: Visitor Scores – Local and Regional Catchment

Concepts	Local Catchment Average Score	Local Catchment Average Score	Regional Catchment Average Score
	1/3-Mile Walk (Jobs, Hotel Rooms, Conference Space)	5-Mile Drive (Jobs, Hotel Rooms, Conference Space)	
Concept 1A-C SDIA to CONRAC/PTC	1.00	3.33	1.00
Concept 2 SDIA to OTTC	1.67	7.00	3.75
Concept 3A-C SDIA to PTC/CONRAC and Santa Fe Depot	3.67	7.00	5.25
Concept 4A-C SDIA to PTC/CONRAC and Convention Center	7.33	8.67	5.00
Concept 5A-C SDIA to PTC/CONRAC and Convention Center	6.67	6.33	4.75
Concept 6A-B SDIA to 12th & Imperial Transit Center	8.00	4.67	3.50
Concept 8A-B SDIA to Santa Fe Depot	3.00	1.33	4.75
Concept 9A-B SDIA to Convention Center	6.33	3.67	4.25
Concept 10A-B SDIA to Civic Center	6.00	1.67	7.50

Source: WSP 2025

Notes: **Bold** text indicates the highest scores

CONRAC = Consolidated Rental Car Center; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

2 Airport Travel Survey

The Airport Travel Survey, completed in November 2025, captured departing air passenger characteristics and origins; commuting employee characteristics and origins; current transit usage to the airport; travel party size; household income; and stated preferences for transit service times, transit service characteristics, and the importance of wait time. Results of the survey were also considered in the pare down process of this addendum.

Round 1 of the pare down process included a review of the size of population, employment, and visitor markets that the Airport Transit Connection (ATC) concept stations could serve as a proxy for the current and projected scale of resident, visitor, and employee activity to and from San Diego International Airport (SDIA). The evaluation in Round 1 considered air passengers and employees within a local catchment and regional catchment. In Fall 2024, SDIA had an average of 37,900 departing air passengers, 36,400 arriving air passengers, and 6,000 employees commuting to and from the airport. Departing air passengers, including those who reside in the San Diego region or in surrounding areas, including Tijuana and Baja California, and fly out of SDIA comprise 37% of the total departing air passengers. The San Diego region, and surrounding areas, draws more visitors to the region than resident travelers with 63% of the total departing air passenger market. The region is attractive as a vacation destination, for business travel, convention travel, university related travel, and visiting family/friends as the San Diego region has 3.29 million residents, not including surrounding area residents.

Following the Round 1 evaluation, the *Airport Travel Survey Final Report* (San Diego Association of Governments [SANDAG] 2026) detailing the survey process and results of the Airport Survey was completed. The results of the Airport Survey, which included a sample of 4,300 air passengers and 600 employees, provided additional insights into the relative importance of the population, employment, and visitor markets for the ATC Project. The SANDAG Airport Travel Survey identified several key travel origins (identified as SANDAG Major Statistical Areas [MSAs] Figure 2-1). The sections that follow summarize these results as they relate to the travel markets and metrics evaluated in Round 1.

Figure 2-1. SANDAG Major Statistical Areas



Source: SANDAG 2026

2.1 Employees

The sections that follow summarize the total results for employees as well as results within local and regional catchments.

2.1.1 Total

An average of 6,000 employees commute to and from the airport daily, representing almost 14% of the total travel market to or from the airport. Approximately 10% of those employees already take transit and nearly 77% take advantage of the relatively inexpensive employee parking by parking a personal vehicle (89% have access to free or reimbursed parking). Employees at SDIA often start early with shift times starting at 6 a.m. or earlier accounting for 17% of those surveyed and shift times ending between 7 p.m. and 2 a.m. accounting for 24% of those surveyed.

2.1.2 Local

Approximately 41% of employees live in the Central MSA¹ with 5% of the total employees living Downtown. Of those surveyed, 8% or less live within walking distance (0.5-mile) of a concept station, depending on the concept (Table 2-1). Of the employees that take transit, income is an influential factor—16% of people whose household earns less than \$50,000 a year take transit and 12% of people whose household earns between \$50,000 and \$100,000 a year take transit. Approximately 3% of employee respondents indicated they have no household vehicles.

Table 2-1: Surveyed Employees within Walking Distance of an Airport Transit Connection Stop

Concept	Percentage of Surveyed ¹ Employees within Walking Distance of an ATC Stop
Concept 1A-C SDIA to CONRAC/PTC	0%
Concept 2 SDIA to OTTC	1%
Concept 3A-C SDIA to PTC/CONRAC and Santa Fe Depot	6%
Concept 4A-C SDIA to PTC/CONRAC and Convention Center	7%
Concept 5A-C SDIA to PTC/CONRAC and Convention Center	8%
Concept 6A-B SDIA to 12th & Imperial Transit Center	8%
Concept 8A-B SDIA to Santa Fe Depot	5%
Concept 9A-B SDIA to Convention Center	6%
Concept 10A-B SDIA to Civic Center	7%

Source: WSP 2025

Notes: ¹ Surveyed records were expanded to represent the full employment workforce traveling to the airport on an average day.

ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

¹ The SANDAG MSA (Major Statistical Areas) comprise seven geographic areas within San Diego County: North County West, North County East, East County, North City, East Suburban, Central, South Suburban. Downtown is a focus area within the Central MSA.

2.1.3 Regional

The four MSAs with access to regional rail transit options, not including the Central MSA where the project is located, make up 53% of employees' home locations.

- **North City** – access to the UC San Diego Blue Line Trolley, Green Line Trolley, and COASTER; accounts for 21% of employees
- **South Suburban** – access to the UC San Diego Blue Line; accounts for 17% of employees
- **East Suburban** – access to Trolley Green and Orange Lines; accounts for 13% of employees
- **North County West** – access to the COASTER; accounts for 2% of employees

Of those surveyed, 57% on average live within 45 minutes of SDIA (Table 2-2) via transit. The consideration of a transit travel time of 45 minutes is consistent with the regional catchment used in the evaluation of Travel Markets in the addendum.

Table 2-2: Surveyed Employees Living within 45 Minutes of San Diego International Airport via Transit

Origin MSA of Employees	Percentage Surveyed	Average Percentage Living Within 45 Minutes of SDIA in 2050
Central	36%	82%
Downtown ¹	5%	100%
East County	0%	0%
East Suburban	13%	24%
North City	21%	63%
North County East	2%	0%
North County West	2%	0%
South Suburban	17%	36%
External ²	4%	0%
Total	100%	57%

Source: WSP 2025

Notes: ¹ Though it is within the Central MSA, the Downtown Focus Area is reported separately

² Locations outside of San Diego County

Totals may not sum due to rounding

MSA = Major Statistical Area; SDIA = San Diego International Airport

2.2 Departing Resident Air Passengers

The sections that follow summarize the total results for departing resident air passengers as well as results within local and regional catchments.

2.2.1 Total

An average of 14,000 residents travel to the airport daily, representing 32% of the total travel market to or from the airport. Auto travel dominates this market with 95% of the travel parties being dropped off by a relative, friend, or Transportation Network Companies (Rideshare)/Taxi or by parking a personal automobile.

2.2.2 Local

Approximately 27% of departing resident air passengers live in the Central MSA, of which 4% live in the Downtown focus area of the MSA. Of those surveyed, 9% or less live within walking distance (1/3 of a mile) of a concept station, depending on the concept (Table 2-3). Air passenger households tend to have higher income than the average regional population; however, the survey found that nearly 13% of people whose household earns less than \$50,000 a year are departing residents. Over 14% of departing resident travel parties who responded and answered the question regarding their age are 65 or older.

Approximately 17% of respondents who did not drive and park at the airport indicated they “Don’t have a car,” “Car was unavailable,” or “Unable or do not know how to drive or no driver’s license.” Approximately 5% of all respondents responded that their household does not own a vehicle.

Table 2-3: Surveyed Departing Resident Air Passengers within Walking Distance of an Airport Transit Connection Stop

Concept	Percentage of Surveyed ¹ Residents within Walking Distance of an ATC Stop
Concept 1A-C SDIA to CONRAC/PTC	0%
Concept 2 SDIA to OTTC	1%
Concept 3A-C SDIA to PTC/CONRAC and Santa Fe Depot	3%
Concept 4A-C SDIA to PTC/CONRAC and Convention Center	6%
Concept 5A-C SDIA to PTC/CONRAC and Convention Center	6%
Concept 6A-B SDIA to 12th & Imperial Transit Center	9%
Concept 8A-B SDIA to Santa Fe Depot	3%
Concept 9A-B SDIA to Convention Center	6%
Concept 10A-B SDIA to Civic Center	6%

Source: WSP 2025

Notes :¹ Surveyed records are expanded to represent the full departing air passenger enplanements at the airport on an average fall day.

ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

2.2.3 Regional

The four MSAs with access to regional rail transit options, not including the Central MSA where the project is located, make up 57% of resident air passenger home locations.

- **North City** – access to the UC San Diego Blue Line Trolley, Green Line Trolley, and COASTER; accounts for 29% of residents
- **North County West** – access to the COASTER; accounts for 11% of residents
- **East Suburban** – access to Green and Orange Lines; accounts for 9% of residents
- **South Suburban** – access to the UC San Diego Blue Line; accounts for 8% of residents

Of those surveyed, 47%, on average, would live within 45 minutes of SDIA using 2050 transit accessibility (Table 2-4).

Table 2-4: Surveyed Departing Resident Air Passengers Living within 45 Minutes of San Diego International Airport

Origin MSA of Departing Resident Air Passengers	Percentage Surveyed	Average Percentage Living Within 45 Minutes of SDIA in 2050
Central	22%	85%
Downtown ¹	4%	100%
East County	0%	0%
East Suburban	9%	33%
North City	29%	48%
North County East	7%	0%
North County West	11%	25%
South Suburban	8%	54%
External ²	9%	0%
Total	100%	47%

Source: WSP 2025

Notes: ¹ Though it is within the Central MSA, the Downtown Focus Area is reported separately

² Locations outside of San Diego County

Totals may not sum due to rounding

MSA = Major Statistical Area; SDIA = San Diego International Airport

Approximately 1% of departing air passengers originated from a college campus. While this is a small percentage, the Airport Survey did not cover peak travel periods for college students, nor did it ask about family visiting students.

2.2.4 External Markets

As shown in Table 2-4, approximately 9% of resident air passengers traveled to SDIA from a location outside of San Diego County. The survey found that a predominant share (51%) are from Mexico, with Riverside County accounting for 32%, and Orange and LA Counties combined accounting for 11%.

2.3 Departing Visitor Air Passengers

The sections that follow summarize the total results for departing visitor air passengers as well as results within local and regional catchments.

2.3.1 Total

An average of 23,700 visitors travel to the airport daily, representing approximately 54% of the total travel market to or from the airport. The visitor market had the following characteristics:

- Mode of Access: Auto travel dominated this market with 90% of travel parties using a rental car or being dropped off by a Rideshare/Taxi, relative, or friend.
- Travel Purpose:
 - Leisure/Family travel accounted for the majority of travelers with nearly 53% of the visitor market share.
 - Business travelers accounted for 31% of travelers and (a small portion of these travelers combined business with leisure travel).
 - About 15% of people traveled for other purposes.

- **Origin Location:** The majority of visiting travel parties (57%) left for the airport directly from a hotel while 35% left from a residence.

2.3.2 Local

Half of the visiting air passengers stay within the Central MSA. The Downtown focus area, within the Central MSA, receives 24% of the total visiting air passengers. Of those surveyed, up to 32% started their trip to the airport within walking distance (1/3 of a mile) of a concept station, depending on the concept (Table 2-5). The survey found that fewer visitors to San Diego have household incomes of \$50,000 or less (13%), compared to 15% of residents, for those who responded and answered the question. Approximately 11% of departing visitor air passengers who responded and answered the question regarding their age are age 65 or older.

Table 2-5: Surveyed Departing Visitor Air Passengers within Walking Distance of an Airport Transit Connection Stop

Concept	Percentage of Surveyed ¹ Visitors within Walking Distance of an ATC Stop
Concept 1A-C SDIA to CONRAC/PTC	1%
Concept 2 SDIA to OTTC	2%
Concept 3A-C SDIA to PTC/CONRAC and Santa Fe Depot	6%
Concept 4A-C SDIA to PTC/CONRAC and Convention Center	25%
Concept 5A-C SDIA to PTC/CONRAC and Convention Center	11%
Concept 6A-B SDIA to 12th & Imperial Transit Center	32%
Concept 8A-B SDIA to Santa Fe Depot	5%
Concept 9A-B SDIA to Convention Center	24%
Concept 10A-B SDIA to Civic Center	10%

Source: WSP 2025

Note: ¹ Surveyed records are expanded to represent the full departing air passenger enplanements at the airport on an average fall day.

ATC = Airport Transit Connection; CONRAC = Consolidated Rental Car Center; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport

2.3.3 Regional

The four MSAs with access to regional rail transit options, not including the Central MSA where the project is located, make up 40% of where visitors started their trip to the airport.

- **North City** – access to the UC San Diego Blue Line, Green Line, and COASTER; accounts for 26% of residents
- **North County West** – access to the COASTER; accounts for 8% of residents
- **South Suburban** – access to the UC San Diego Blue Line; accounts for 3% of residents
- **East Suburban** – access to Green and Orange Lines; accounts for 2% of residents

Of those surveyed, 73% would have started their trip within 45 minutes of SDIA using 2050 transit accessibility (Table 2-6).

Table 2-6: Surveyed Departing Visitor Air Passengers Living within 45 Minutes of San Diego International Airport

Origin MSA of Departing Visitor Air Passengers	Percentage Surveyed	Average Percentage Staying Within 45 Minutes of SDIA in 2050
Central	27%	92%
Downtown ¹	24%	100%
East County	0%	0%
East Suburban	2%	39%
North City	26%	79%
North County East	3%	0%
North County West	8%	22%
South Suburban	3%	62%
External ²	7%	0%
Total	100%	73%

Source: WSP 2025

Notes: ¹ Though it is within the Central MSA, the Downtown Focus Area is reported separately

² Locations outside of San Diego County

Totals may not sum due to rounding

MSA = Major Statistical Area; SDIA = San Diego International Airport

2.3.4 External Markets

The survey found that 7% of visitors used SDIA as the destination airport to get to other areas beyond the region.

2.4 Convention Center Attendees

The survey found that 10% of visitor air passenger respondents visited the Convention Center as part of their visit—whether to attend a conference or work as an exhibitor or meeting planner. The survey did not ask about other event or conference locations within the region, and this market percentage likely underrepresents the overall convention, meeting, and event market. The majority of air passengers who went to the convention center also stayed in downtown or started their trip back to SDIA from downtown (71%).

Of departing visitor air passengers who started their trip from a hotel, 58% originated from a hotel with conference space. However, this does not identify whether the visitors were staying there for the purpose of attending a conference or event.

2.5 Other Validation Categories

Other important metrics were explored in the survey that have bearing on the ATC travel markets and the transit connectivity evaluation in Round 1. Air passengers and employees who elected to continue into the stated preference portion of the survey were asked an additional series of questions. Stated preference respondents generally followed similar geographic origin locations as the revealed preference survey other than the following, which may influence some of the responses:

- **Employees** – Fewer employees from the Central MSA (7 percentage points) and more from South Suburban (5 percentage points)

- **Residents** – Fewer residents from South Suburban (4 percentage points) and External (3 percentage points) and more from Central (7 percentage points)
- **Visitors** – Fewer residents from North City (4 percentage points) and more from Downtown (4 percentage points) and North County West (3 percentage points)

Because stated preference questions ask what someone *would do* rather than what they *did*, responses are typically more positive and optimistic. To constrain this tendency, respondents were asked to respond based on the trip they had just made. Regarding connectivity/willingness to transfer, respondents were asked to imagine that a new airport transit service would have been accessible to them by connecting from existing transit. They were then asked how many transfers they would be willing to make. Approximately 82% of respondents indicated they would be willing to make at least one transfer. The number of people willing to make more than one transfer is significantly lower (Table 2-7).

Table 2-7: Respondents Willingness to Make Transit Transfers

Market Segment	Total Respondents		Willing to Make at Least One Transfer	Willing to Make More Than One Transfer
	Number	Percent		
Employees	156	21%	85%	26%
Residents	281	38%	83%	22%
Visitors	294	40%	79%	25%
Total	731	100%	82%	24%

Source: WSP 2025

Notes: Totals may not sum due to rounding

Regarding potential route termini, respondents were asked if the new airport transit service could connect them from SDIA to a specific station, how likely would they be to use it. The same question was given for three locations: Convention Center, Old Town Transit Center, and Santa Fe Depot. As shown in Table 2-8, Old Town Transit Center was favored (indicated by responses of “Likely” and “Very Likely”) by the three respondent market segments; however, the resident preference may be influenced by higher percentage of response from Central and North City MSAs. Visitor and Employee travel markets also preferred a southern destination such as the Convention Center; however, employee responses may be influenced by higher percentage of South Suburban respondents.

Table 2-8: Respondents Transit Route Termini Preference

Market Segment	Total Respondents		Convention Center	Old Town Transit Center	Santa Fe Depot
	Number	Percent			
Employees	151	23%	44%	46%	42%
Residents	263	41%	25%	45%	41%
Visitors	230	36%	43%	48%	38%
Total	644	100%	36%	46%	40%

Source: WSP 2025

Notes: Totals may not sum due to rounding

Respondents were asked “If you could design an airport-access transit system in San Diego, which features would you include?” Respondents were asked to rank eight potential features on a five-point scale from “Not Important” up to “Extremely Important”. Potential features included asking if not getting delayed by car traffic would be important. A majority of respondents indicated avoiding car traffic was

either very or extremely important (Table 2-9). Results also indicate that local residents and employees are more sensitive to reliability and time delays than visitors.

Table 2-9: Respondents Transit Preference for Avoiding Traffic

Market Segment	Total Respondents		Avoid Car Traffic
	Number	Percent	
Employees	160	21%	76%
Residents	293	39%	70%
Visitors	300	40%	51%
Total	753	100%	64%

Source: WSP 2025

Notes: Totals may not sum due to rounding

Respondents were asked to imagine that a new airport transit service was available for their trip to SDIA and it would have been accessible from their location on foot. They were then asked if they would have been willing to walk to the station. Response options varied in travel time amounts a respondent was willing to walk with a maximum of “no more than 15 minutes,” but also included a response for “Not willing to use the new service”. This question allows some understanding of the number of people not willing to consider using transit which is under 5% and demonstrates a high willingness to walk to a new transit service (Table 2-10). Overall, 35% of respondents were only willing to walk 5 minutes or less, 73% were only willing to walk 10 minutes or less, and 97% of respondents were willing to walk 15 minutes or less. Walk access time responses were similar across market segments.

Table 2-10: Respondents Not Interested in Walking to New Transit Service

Market Segment	Total Respondents		Not Interested in Walking to New Service
	Number	Percent	
Employees	160	21%	3%
Residents	293	39%	4%
Visitors	300	40%	2%
Total	753	100%	3%

Source: WSP 2025

Notes: Totals may not sum due to rounding

Respondents who were dropped off at SDIA were asked to imagine a new service where they could be dropped off at the terminal or dropped off at a stop on the new ATC service with a 5- to 10-minute direct transit ride to the airport. Respondents were reminded that being dropped off may save time for the person dropping them off. Respondents were given response likelihood options from highly unlikely to highly likely. While the number of responses were low due to segmenting by access mode, there is some indication people would be willing to be dropped off (Table 2-11).

Table 2-11: Respondent Preference for Transit Drop-Off Instead of Terminal

Market Segment	Total Respondents	Dropoff to ATC Station Highly Likely/Likely
Total	108	48%

Source: WSP 2025

Notes: Totals may not sum due to rounding

ATC = Airport Transit Connection

Rideshare/Taxi – Respondents who took a rideshare or taxi to the airport were asked what their likelihood would be to instead choose to get dropped off at an ATC stop with a 5- to 10-minute ride to the airport. Respondents were reminded that they may avoid an airport surcharge to access the airport by taking transit rather than rideshare or taxi. Response options were given from highly unlikely to highly likely. While the number of responses were low due to segmenting by access mode, residents generally were open to being dropped off, whereas visitors were less inclined (Table 2-12).

Table 2-12: Respondents Preference for Rideshare Drop-Off to Transit Instead of Terminal

Market Segment	Total Respondents		Rideshare/Taxi Dropoff to ATC
	Number	Percent	
Residents	85	52%	49%
Visitors	80	48%	29%
Total	165	100%	39%

Source: WSP 2025

Notes: Totals may not sum due to rounding

ATC = Airport Transit Connection

Airport Transit Use Elsewhere – Respondents were asked how many times they have used transit to access another airport in the last 12 months. Nearly 50% of respondents had used transit at another airport in the past 12 months (Table 2-13).

Table 2-13: Respondents Use of Transit at Other Airports

Market Segment	Total Respondents		Never	One or More Times
	Number	Percent		
Residents	1,011	42%	49%	51%
Visitors	1,409	58%	52%	48%
Total	2,420	100%	51%	49%

Source: WSP 2025

Notes: Totals may not sum due to rounding

3 Pare Down Round 2: Utilities

To further analyze the potential utility conflicts, a list of priority conflicts was identified for each concept. Priority utility conflicts are those that would have the largest potential effect on the project schedule and/or budget based upon size and location in relation to each concept, assuming the conflict could not be avoided through design. Table 3-1 through Table 3-3 outline the size and type of priority conflicts and provide a brief description of what the conflict would be, and Table 3-4 provides a summary of the total priority conflicts per concept.

Concepts 3A, 4A, and 5A could have the highest number of potential priority conflicts (9), while Concepts 3B, 4B, 5B, 6A, 8B, 9B, and 10B could have the fewest (5). Utilities within the buffer for bored tunnels were not included in this analysis as it is expected that the tunnel would be substantially deeper than the utilities, with the exception of specific locations such as the launch and retrieval sites for the tunnel boring machine and at stations. The results do include conflicts that may occur at potential column locations. These too may not occur depending on the final location of the columns. Further analysis would be required in future project phases to confirm potential priority conflicts at tunnel and column locations and potentially revise design of the alignment to avoid or minimize conflicts.

Table 3-1: Priority Utility Conflicts – Concepts 3A to 4C

Conflict	APM Concept 3A – Elevated South Route	APM Concept 3B – Bored Tunnel South Route	APM Concept 3C – Hybrid South Route	APM Concept 4A– Elevated South Route	APM Concept 4B– Bored Tunnel South Route	APM Concept 4C – Hybrid South Route
84" SD (Laurel & PH)	Parallel at tunnel & at-grade	Parallel at tunnel & at-grade	Parallel at tunnel & at-grade	Parallel at tunnel & at-grade	Parallel at tunnel & at-grade	Parallel at tunnel & at-grade
108" S (Harbor)	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns
60" SD (Harbor & Lindbergh)	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹
108" S (Harbor & Laurel)	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns
84" SD (Harbor & Laurel)	Crossing at column location ¹	N/A	Crossing at column location ¹	Crossing at column location ¹	N/A	Crossing at column location ¹
54" SD (Harbor & Laurel)	Crossing at column location ¹	N/A	Crossing at column location ¹	Crossing at column location ¹	N/A	Crossing at column location ¹
36" S (PH & Ash)	Parallel along ±10 columns	N/A	N/A	Parallel along ±10 columns	N/A	N/A
54" S (PH & Ash)	Crossing at column location ¹	N/A	N/A	Crossing at column location ¹	N/A	N/A
OH Lines (Kettner & Palm)	Crossing at grade	Crossing at grade	Crossing at grade	Crossing at grade	Crossing at grade	Crossing at grade
39" S (PH & Hawthorn)	N/A	N/A	N/A	N/A	N/A	N/A
54" S (A St)	N/A	N/A	N/A	N/A	N/A	N/A
Total	9	5	7	9	5	7

Source: WSP, HDR, GPM 2025; SanGIS August 2025

Notes: ¹ Conflict may not occur depending on column locations.

APM = Automated People Mover; N/A = not applicable; OH = Overhead Transmission Lines, PH = Pacific Highway; S = Sewer, SD = Storm Drain

Table 3-2: Priority Utility Conflicts – Concepts 5A to 6B

Conflict	APM Concept 5A – Elevated South Route	APM Concept 5B– Bored Tunnel South Route	APM Concept 5C – Hybrid South Route	Trolley Concept 6A	Trolley Concept 6B (Cedar St Option)	Trolley Concept 6B (Fir St Option)
84" SD (Laurel & PH)	Parallel at tunnel & at-grade	Parallel at tunnel & at-grade	Parallel at tunnel & at-grade	N/A	N/A	N/A
108" S (Harbor)	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns
60" SD (Harbor & Lindbergh)	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹
108" S (Harbor & Laurel)	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns
84" SD (Harbor & Laurel)	Crossing at column location ¹	N/A	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹
54" SD (Harbor & Laurel)	Crossing at column location ¹	N/A	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹
36" S (PH & Ash)	Parallel along ±10 columns	N/A	N/A	N/A	N/A	N/A
54" S (PH & Ash)	Crossing at column location ¹	N/A	N/A	N/A	N/A	N/A
OH Lines (Kettner & Palm)	Crossing at grade	Crossing at grade	Crossing at grade	N/A	N/A	N/A
39" S (PH & Hawthorn)	N/A	N/A	N/A	N/A	Crossing at trench location	Crossing at trench location
54" S (A St)	N/A	N/A	N/A	N/A	Crossing at trench location	Crossing at trench location
Total	9	5	7	5	7	7

Source: WSP, HDR, GPM 2025; SanGIS August 2025

Notes: ¹ Conflict may not occur depending on column locations.

APM = Automated People Mover; N/A = not applicable; OH = Overhead Transmission Lines, PH = Pacific Highway; S = Sewer, SD = Storm Drain

Table 3-3: Priority Utility Conflicts – Concepts 8A to 10B

Conflict	APM Concept 8A – Elevated	APM Concept 8B – Hybrid	APM Concept 9A – Elevated	APM Concept 9B– Hybrid	APM Concept 10A – Elevated	APM Concept 10B – Hybrid
84" SD (Laurel & PH)	N/A	N/A	N/A	N/A	N/A	N/A
108" S (Harbor)	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns	Parallel along ±10 columns
60" SD (Harbor & Lindbergh)	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹
108" S (Harbor & Laurel)	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns	Parallel along ±5 columns
84" SD (Harbor & Laurel)	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹
54" SD (Harbor & Laurel)	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹	Crossing at column location ¹
36" S (PH & Ash)	Parallel along ±10 columns	N/A	Parallel along ±10 columns	N/A	Parallel along ±10 columns	N/A
54" S (PH & Ash)	Crossing at column location ¹	N/A	Crossing at column location ¹	N/A	Crossing at column location ¹	N/A
OH Lines (Kettner & Palm)	N/A	N/A	N/A	N/A	N/A	N/A
39" S (PH & Hawthorn)	N/A	N/A	N/A	N/A	N/A	N/A
54" S (A St)	N/A	N/A	N/A	N/A	N/A	N/A
Total	7	5	7	5	7	5

Source: WSP, HDR, GPM 2025; SanGIS August 2025

Notes: ¹ Conflict may not occur depending on column locations.

APM = Automated People Mover; N/A = not applicable; OH = Overhead Transmission Lines, PH = Pacific Highway; S = Sewer, SD = Storm Drain

Table 3-4: Priority Utility Conflicts – Totals

Concept Description	Priority Conflicts Total
APM Concept 3A: SDIA to PTC/CONRAC and Santa Fe Depot – Elevated South Route	9
APM Concept 3B: SDIA to PTCCONRAC and Santa Fe Depot – Bored Tunnel South Route	5
APM Concept 3C: SDIA to PTCCONRAC and Santa Fe Depot – Hybrid South Route	7
APM Concept 4A: SDIA to PTC/CONRAC and Convention Center – Elevated South Route	9
APM Concept 4B: SDIA to PTC/CONRAC and Convention Center – Bored Tunnel South Route	5
APM Concept 4C: SDIA to PTC/CONRAC and Convention Center – Hybrid South Route	7
APM Concept 5A: SDIA to PTC/CONRAC and Civic Center – Elevated South Route	9
APM Concept 5B: SDIA to PTC/CONRAC and Civic Center – Bored Tunnel South Route	5
APM Concept 5C: SDIA to PTC/CONRAC and Civic Center – Hybrid South Route	7
Trolley Concept 6A: SDIA to 12th & Imperial Transit Center – existing tracks, spur tracks to SDIA	5
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA (Cedar St. Option)	7
Trolley Concept 6B: SDIA to 12th & Imperial Transit Center – extend existing trench south to B St/Santa Fe Depot; spur tracks to SDIA (Fir St. Option)	7
APM Concept 8A: SDIA to Santa Fe Depot – Elevated	7
APM Concept 8B: SDIA to Santa Fe Depot – Hybrid	5
APM Concept 9A: SDIA to Convention Center – Elevated	7
APM Concept 9B: SDIA to Convention Center – Hybrid	5
APM Concept 10A: SDIA to Civic Center – Elevated	7
APM Concept 10B: SDIA to Civic Center – Hybrid	5

Source: WSP, HDR, GPM 2025

Notes: APM = Automated People Mover; CONRAC = Consolidated Rental Car Center; OTTC = Old Town Transit Center; PTC = Port Transit Center; SDIA = San Diego International Airport