APPENDIX K

Locally Preferred Alternative Reports

CITY OF INGLEWOOD
OFFICE OF THE CITY MANAGER

Inglewood All-America City 2009

DATE: December 14, 2021

TO: Mayor and Council Members

FROM: Public Works Department

SUBJECT: Set a Public Hearing for CEQA Exemption & Selection and Adoption of a Locally Preferred Alternative for the Inglewood Transit Connector Project

RECOMMENDATION:
It is recommended that the Mayor and Council Members take the following actions:

1. Set a public hearing for January 25, 2022, at 2:00 p.m., to receive public comments to determine if the Inglewood Transit Connector Project (ITC) is exempt from the California Environmental Quality Act (CEQA) under Public Resources Code section 21080, subdivision (b)(12), and California Code of Regulations, Title 14 ("State CEQA Guidelines") section 15275, subdivision (b), as a "facility extension not to exceed four (4) miles in length, which [is] required for the transfer of passengers from or to exclusive public mass transit guideway or busway public transit services."

2. Select the Market Street-Manchester Boulevard Alignment – an approximately 1.6-mile, three-station, fully elevated, electrically powered Automated Transit System that will connect directly to the Metro K-Line Downtown Inglewood Station to the City's sports and entertainment areas – as the Inglewood Transit Connector (ITC) Project Locally Preferred Alternative (LPA).

BACKGROUND:
As Inglewood continues to transform into a major regional employment and activity center, the number of vehicle trips in and around the City is increasing, with more anticipated in the future. Accordingly, the City is working to manage this growth sustainably and responsibly, ensuring that residents, businesses, employees, and visitors have convenient and efficient access to transit and the City's new destinations and resources.

In 2018, the City partnered with Los Angeles County Metropolitan Transportation Authority (Metro) to perform a focused analysis of viable transit connections from the Metro K Line to Hollywood Park, to address these critical mobility issues. With the City's input, Metro completed the City of Champions/Inglewood NFL Focused Analysis of Transit Connection on August 8, 2017 (Attachment No. 1). The Metro study analyzed the following: 1) Interlined Operability Connection from the Metro rail system in a subway under Prairie Avenue, which also would jointly operate on a portion of the Crenshaw/LAX Line; and 2) independent operability options for independent services that could provide a connection from the Metro Rail system at nearby Metro stations along the Crenshaw Line to the NFL Stadium. As part of the analysis conclusion, the City and Metro agreed that Interlined

SPH-2.

Operability Connection was infeasible, due to the costs and complexity created on the Metro Rail system.

Consistent with Metro's recommendations, the City continued to analyze several independent operability facility extensions connecting transit riders to the City's activity centers. In June 2018, the City prepared the "Envision Inglewood: Locally Preferred Alternative Report." The LPA report evaluated four (4) independent last-mile, fixed-guideway transit connector options and transit technologies against key screening criteria and the City's stated goals and objectives. The LPA report recommended the Market-Manchester Alignment for further study, as the alternative would provide a direct connection between the downtown and major City activity centers.

The City initiated the environmental clearance process pursuant to CEQA in 2018, with the Market-Manchester Alignment as the proposed Project and released a Draft EIR in December 2020. Based on additional feedback received during the Draft EIR comment period, the City continued collaborating with the community and key stakeholders to refine the design of the Project to address stakeholder concerns and reduce environmental impacts. As a result of this ongoing consultation process, the City further refined the Project and has recirculated the Draft EIR on November 15, 2021, to disclose and evaluate these changes.

CEQA EXEMPTION:

The California State Legislature has determined that certain activities are exempt from the requirements for environmental review under CEQA. (See, e.g., Cal. Pub. Resources Code, § 21080, subd. (b).). The proposed ITC Project qualifies for a statutory exemption. In particular, CEQA provides a statutory exemption for "[f]acility extensions not to exceed four (4) miles in length, which are required for the transfer of passengers from or to exclusive public mass transit guideway or busway public transit services." (Pub. Resources Code, § 21080, subd. (b)(12); see also State CEQA Guidelines, § 15275(b).) The proposed Project meets this definition.

The proposed ITC Project will operate as a "facility extension" of the existing Metro K light-rail line by providing a 1.6-mile light rail transit facility, including the Market Street/Florence Avenue Station with a passenger walkway connection to the existing Metro K-Line Downtown Inglewood Station. At 1.6 miles in length, the proposed Project does not "exceed four (4) miles in length." The proposed Project is "required for the transfer of passengers" to close the last-mile gap between the Metro K-Line and existing and new major housing, employment, and activity centers in the City of Inglewood. Finally, the proposed Project will transfer passengers "from or to [an] exclusive public mass transit guideway" by transferring passengers from and to the Metro K-Line Downtown Inglewood Station. Therefore, the proposed Project is exempt from CEQA under that statutory exemption for facility extensions, as set forth in Public Resources Code section 21080, subdivision (b)(12).

Although the proposed Project is statutorily exempt from CEQA, the City has nevertheless voluntarily elected to prepare a full environmental impact report to provide a comprehensive analysis of the proposed Project's potential environmental effects, analyze alternatives to the proposed Project, identify mitigation measures to avoid or substantially reduce the proposed Project's potentially significant environmental impacts, and to obtain public and agency input regarding the proposed Project and its potential impacts on the environment. Notably, the City

Council's determination that the Project is exempt from CEQA is not related to the selection of a Locally Preferred Alternative as recommended in item 2, below. The City is not approving the ITC Project at this time, it is only proposing to determine whether the project is exempt from CEQA. The purpose of the January 25, 2022 hearing is to provide the public with an opportunity to comment on whether the ITC Project qualifies for the statutory exemption.

LOCALLY PREFERRED ALTERNATIVE (LPA) ADOPTION:

The City of Inglewood (City) is the lead agency for the (CEQA) EIR, and the Federal Transit Administration (FTA) is the lead agency for the National Environmental Policy Act (NEPA) clearance. As lead agency for CEQA, the City has prepared an environmental analysis in the form of a Recirculated Draft EIR for the Inglewood Transit Connector Project (ITC Project). Selection of a Locally Preferred Alternative is a step in the federal funding and NEPA process required by FTA. FTA's regulations define "locally preferred alternative" as an "alternative evaluated through the local planning process, adopted as the desired alternative by the appropriate State and/or local agencies and official boards through a public process and identified as the preferred alternative in the NEPA process." (49 C.F.R. § 611.105.) Selection of an LPA for purposes of the federal process is not an approval of the ITC Project, nor does it affect the City's ability to reject or deny the Project or to adopt mitigation measures, other conditions of approval, modifications to the Project, or alternatives to the Project.

City action on the selection of the LPA for the ITC Project will support the preparation of the Environmental Assessment (EA) for NEPA and support the City's activities to meet the critical schedule to be operational before the 2028 Summer Olympic Games. The selection of the LPA and the preparation of the CEQA and NEPA environmental documents, collectively, is a key milestone in the project delivery process.

DISCUSSION:

A detailed discussion of each alternative is provided in the attached Locally Preferred Alternative Report (Attachment No. 2) and the Executive Summary of the Recirculated Draft EIR (Attachment No. 3). The full Recirculated Draft EIR is available on the Project Website. A description and factors to consider for each alternative are described below:

1. *2018 METRO WORK: CITY OF CHAMPIONS/INGLEWOOD NFL FOCUSED ANALYSIS OF TRANSIT CONNECTION STUDY*

Automated People Mover (APM) At-Grade Alignment

An at-grade transit system along Market Street was initially considered but determined to be infeasible because it would result in significant traffic impacts, would not have the capacity to meet peak ridership demands, and would be more costly to build and/or operate than the proposed Project. The at-grade system presented many engineering challenges. An at-grade transit system was considered from Florence Avenue with a trench into a tunnel at Manchester Boulevard to avoid traffic impacts to intersections. The 700-1,000 feet transition trench from at-grade to a tunnel would bifurcate Market Street with 20-25 feet track level change, and the direct transition from grade to an elevated guideway was deemed infeasible given the 700-1,000 feet (not including transitions) minimum ramp length required.

Interlined Operability (Subway Scenario)
An interlined operability scenario was also initially considered but determined to be infeasible, due to impacts on Metro's mainline. This scenario studied a direct connection from the Metro K-Line in a subway under Prairie Avenue. However, existing and proposed operations on the Metro K Line constrain the modification or expansion of service required to allow an interlined system.

2. *CITY OF INGLEWOOD STUDY: ENVISION INGLEWOOD LOCALLY PREFERRED ALTERNATIVE REPORT*

As part of the Envision Inglewood planning study, the City evaluated several last-mile, fixed-guideway transit connector options in the Locally Preferred Alternative Report. The LPA report evaluated several conceptual transit alternatives:

- Alternative A: Market-Manchester Street Alignment
- Alternative B: Fairview Heights Alignment
- Alternative C: Arbor Vitae Alignment
- Alternative D: Century Blvd Alignment

Alternative A: Market-Manchester Street Alignment
Alternative A was selected for further study, as the proposed Project in the Draft EIR based on reviewing these alternatives as the Proposed Project. As described below, Alternatives B, C, and D were eliminated from further consideration.

Alternative B: Fairview Heights Alignment
The Fairview Heights alignment would be an aerial alignment running approximately one-half mile along Florence Avenue between Prairie Avenue transition south and then running along Prairie Avenue for approximately one and three-quarter miles between Florence Avenue to Century Boulevard, for a total length of approximately 2.2 miles providing service to the Forum and Hollywood Park, including SoFi Stadium, and the Inglewood Basketball and Entertainment Center. This alternative was eliminated from further consideration for potential impacts because of potential impacts to utilities along Florence Avenue and impacts to the Inglewood Cemetery.

Alternative C: Arbor Vitae Alignment
The Arbor Vitae Alignment (Alternative C) would be an aerial alignment running approximately two (2) miles along Arbor Vitae Street from Aviation Boulevard to Prairie Avenue. It transitions north to the Forum and south along Prairie Avenue approximately one-half mile to Century Boulevard. This alignment would provide service to The Forum, Hollywood Park, including SoFi Stadium, and the Inglewood Basketball and Entertainment Center. Additionally, Alternative C would provide the opportunity to directly connect to the Los Angeles International Airport and its Landside Access Modernization Program (LAMP). Although this alternative connects to a planned multimodal hub, it would not provide development opportunities in the downtown/commercial district of Inglewood because it will not serve the area.

As outlined in the LPA report, this alternative was eliminated from further consideration for the following reasons:

- Crossing over and under the I-405 would require coordination with the California Department of Transportation, Los Angeles Department of Transportation, and Los Angeles World Airports. This alignment does not present the opportunity for integration with local economic activity, current and future transit-oriented development, and other initiatives in Inglewood's downtown/commercial district.

- The right-of-way along Arbor Vitae ranges from 100 feet to 66 feet, narrowing the right-of-way east of Eucalyptus Avenue. Given the narrow right-of-way, this concept would potentially require the acquisition of the existing small business and possibly cause residential displacement.

- Alternative C may potentially have adverse economic and fiscal impacts to local businesses along Arbor Vitae Street, due to potentially reduced visibility, potential loss of on-street parking during construction, and potential permanent removal of on-street parking spaces to accommodate the alignment.

Alternative D: Century Blvd Alignment

The Century Boulevard Alignment (Alternative D) would be an aerial alignment running for approximately two (2) miles along Century Boulevard from Aviation Boulevard to Prairie Avenue, where it transitions north along Prairie Avenue for approximately one (1) mile to the south of Manchester Boulevard. This alternative was eliminated from further consideration as outlined in the LPA Report. To connect to the multimodal hub, Alternative D would be required to cross the I-405 on the south side of the new consolidated rental car facility under development west of the I-405 Freeway and north of Century Boulevard as part of the LAX Landside Access Modernization. The transition from an elevated segment to below grade under the I-405 or above-grade over the I-405 would not be feasible, due to the short distance available and the real estate constraints between Century Boulevard and the LAX Manchester Square development.

APM At-Grade Alignment

An at-grade transit system along Market Street was initially considered but determined to be infeasible because it would result in significant traffic impacts, would not have the capacity to meet peak ridership demands, and would be more costly to build and/or operate than the proposed Project. The at-grade system presented many engineering challenges. An at-grade transit system was considered from Florence with a trench into a tunnel at Manchester Blvd to avoid traffic impact intersections. The 700-1,000 feet transition trench from at-grade to a tunnel would bifurcate Market Street with 20-25 feet track level change, and the direct transition from grade to an elevated guideway was deemed infeasible given the minimum ramp length required 700-1,000 feet (not including transitions).

The City also evaluated a range of transit technologies to determine the viable automated transit system classes of technologies that can potentially meet the anticipated requirements for the ITC Project.

- Personal Rapid Transit (PRT) Large and Small Monorails
- Cable-propelled APMs
- Self-propelled Rubber – Tired APMs
- Large Steel Wheel-Rail APMs

3. SUMMARY OF PUBLIC OUTREACH

As summarized in Attachment No. 2, the City of Inglewood has held over 100 community and stakeholder outreach meetings over the past 3.5 years during the planning, environmental, and design process. Stakeholders have included property and landowners adjacent to the proposed Project, including but not limited to business and property owners along Market Street, Stadco LA, LLC (SoFi Stadium Owner), Steve Ballmer (owner of the Forum and Inglewood Basketball and Entertainment Center), the Rams and the Chargers. The City also engaged with local Inglewood block clubs, neighborhood watch groups, and HOAs, such as the Renaissance HOA, Carlton Square HOA, Briarwood HOA, Regent Street HOA, and the Hyde Park Village HOA. The City also presented at local community groups and organizations, including but not limited to the NCAAP Inglewood Chapter, Inglewood Airport Area Chamber of Commerce, Rotary Club of Inglewood, Inglewood Unified School District, local churches, and community-based nonprofits, including the Social Justice Learning Center Institute, Move LA, The Enrichment Center, and the Coalition for Clean Air.

At the meetings, residents and local business owners expressed significant interest in and support for the Market Street - Manchester Boulevard Alignment. The overarching themes summarized below emerged as priority interests and needs the community would like to see addressed by the proposed Project, including but not limited to creating economic development opportunities along the corridor, specifically Downtown Inglewood; increasing transit options for residents and visitors; connecting communities and residents to jobs and educational opportunities, services, and destinations locally and regionally; reducing traffic congestion and the growing demand on the existing roadway networks on both event and non-event days; providing a transit system that preserves existing traffic lanes along Prairie Avenue and Manchester Avenue for vehicular traffic; reducing potential impacts to local businesses during construction; ensuring stations are designed to promote safety, and be easy to access for multiple modes including pedestrians, bicyclists, and park-and-ride users.

LOCALLY PREFERRED ALTERNATIVE ADOPTION

Based on the technical evaluation and public stakeholder input, the Market Street - Manchester Blvd Alignment is recommended as the Locally Preferred Alternative (LPA) for the ITC Project. This alternative would minimize utility relocations, potential impacts on historic resources, and construction impacts on adjacent commercial and residential uses along the alignment. Benefits of the ITC Project include providing a convenient, reliable, time-certain transit connectivity to the City's major employment, housing, and activity centers from the regional Metro Rail system, achieving new economic and air quality benefits to the City of Inglewood and Southern California region.

NEXT STEPS

Staff recommends the Mayor and Council Members to determine the ITC Project is exempt from CEQA, pursuant to Public Resources Code § 21080, subd. (b)(12). Separately, staff recommends the Mayor and Council Members adopt the LPA as described above. After selecting an LPA, staff will continue to complete the Project's Final EIR, pursuant to CEQA and initiate work on the Project's Environmental Assessment (EA), pursuant to NEPA.

Following the completion of CEQA review, the City of Inglewood City Council will consider whether to approve the Project. Although not required to do so, if the City Council decides to approve the Project, the City Council will certify the Final EIR and adopt CEQA Findings of Fact. If the Project is approved, the City will also file a CEQA Notice of Determination (NOD) and a CEQA Notice of Exemption (NOE) for the Project.

Staff anticipates returning to City Council in early 2022 for Project Certification for Final EIR, and will continue to work with FTA, in consultation with LA Metro as partner to the project Joint Powers Authority, to complete the NEPA process.

DESCRIPTION OF ANY ATTACHMENTS:

Attachment No. 1 – 2017 Metro Work: City Of Champions/Inglewood NFL Focused Analysis of Transit Connection Study
Attachment No. 2 – 2018 City Of Inglewood Study: Envision Inglewood Locally Preferred Alternative Report
Attachment No. 3 – Recirculated Draft Environmental Impact Report (2021)

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APPROVAL VERIFICATION SHEET

DEPARTMENT HEAD/
ASSISTANT CITY MANAGER APPROVAL: _____
Louis A. Atwell. PW Director/Asst. City Mngr.

CITY MANAGER APPROVAL: _____
Artie Fields, City Manager

ATTACHMENT NO. 1

Metro Study

Link to be provided with Public Hearing Staff Report

ATTACHMENT NO. 2

City of Inglewood Study

Link to be provided with Public Hearing Report

ATTACHMENT NO. 3

5.0 ALTERNATIVES

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) Guidelines require an Environmental Impact Report (EIR) to include a discussion of a reasonable range of alternatives to a project that would "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the proposed Project and evaluate the comparative merits of the alternatives" (State CEQA Guidelines Section 15126.6). An EIR is not required to consider every conceivable alternative to a proposed project. Rather, a reasonable range of potentially feasible alternatives needs to be considered that will foster informed decision-making and public participation.

Key provisions of the State CEQA Guidelines on alternatives (Section 15126.6(b) through (f)) are excerpted below to explain the foundation and legal requirements for the analysis of alternatives in this Recirculated Draft EIR.

- *[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the proposed objectives or would be more costly. (15126.6(b))*
- *The specific alternative of "no project" shall also be evaluated along with its impact. (15126.6(e)(1))*
- *The "no project" analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. (15126.6(e)(2))*
- *The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making. (15126.6(f))*
- *Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent). (15126.6(f)(1))*

- *[For alternative locations,] only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR. (15126.6(f)(2)(A))*
- *If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location. (15126.6(f)(2)(B))*
- *An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. (15126.6(f)(3)).*

5.2 SIGNIFICANT IMPACTS OF THE INGLEWOOD TRANSIT CONNECTOR PROJECT

In accordance with Section 15126.6(b) of the State CEQA Guidelines, the alternatives in this section have been selected to evaluate means for avoiding or substantially reducing the significant impacts of the proposed Inglewood Transit Connector Project (proposed Project or ITC Project) identified in **Section 4.0: Environmental Impact Analysis** of this Recirculated Draft EIR.

Table 5.0-1: Environmental Impact Summary presents a summary of findings for each topic analyzed in this EIR for the proposed Project. As shown, impacts related to biological resources, hazards and hazardous materials, hydrology and water quality, noise and vibration, tribal cultural resources, and utilities and service systems were determined to have significant impacts prior to mitigation.

Table 5.0-1
Environmental Impact Summary

Topic	Significant Impact?	Mitigated to Less than Significant?	Unavoidable Significant Impact?
Aesthetics	No	No	No
Air Quality	Yes	Yes	No
Biological Resources	Yes	Yes	No
Cultural Resources	No	No	No
Energy Resources	No	N/A	No
Geology and Soils	Yes	Yes	No
Greenhouse Gas Emissions	No	N/A	No
Hazards and Hazardous Materials	No	N/A	No
Land Use and Planning	No	N/A	No
Noise and Vibration	No	Yes	No
Population, Employment and Housing	No	N/A	No
Transportation	No	N/A	No
Tribal Cultural Resources	Yes	Yes	No
Utilities and Service Systems	Yes	Yes	No

Measures are identified to mitigate Project impacts to less than significant, with the exception of short term air emissions during construction of the Project.

5.3 PROJECT OBJECTIVES

As identified in the State CEQA Guidelines, the achievement of Project objectives was considered in determining potentially feasible alternatives that would avoid or substantially lessen any significant effects of the proposed Project.

The City's goals and objectives for the Inglewood Transit Connector Project are as follows:

- Provide direct and convenient connection to the Metro regional transit system for local residents and the region to access the City's new major employment, commercial, and activity centers;
- Close the "last mile gap" to the regional transit system by providing passengers with the ability to transfer to or from destinations and the Metro K Line;
- Provide sufficient transit connection capacity between the Metro regional transit system and the City's new major activity centers with enhanced travel time certainty and sufficient capacity to meet peak ridership demands to encourage transit as a travel mode choice;
- Maintain existing roadway capacity;
- Reduce the City's traffic congestion and alleviate growing demand on the existing roadway network on both major arterials and residential streets for both nonevent and event days;
- Encourage intermodal transportation systems by providing convenient, reliable time-certain transit;
- Increase transit mode split, reduce vehicle trips, and reduce per-capita vehicle miles traveled to the City's major activity centers, with corresponding improvement in air quality, public health, and reductions in greenhouse gas emissions from transportation sources in accordance with the City's goals, the SCAG 2020-2045 RTP/SCS, and State policies with respect to climate change and land use;
- Support the ongoing economic revitalization, including through the creation of public parking facilities;
- Encourage redevelopment and investment within the City in areas served by the proposed Project;
- Provide safe, reliable, and convenient access to businesses in the City so that they are accessible to their workforce and customers;
- Connect the Inglewood community and citizens to jobs, education, services, and destinations within the City and within the region by providing transit within safe and accessible walking distances; and
- Support regional efforts to become more efficient, economically strong, equitable, and sustainable.

5.4 ALTERNATIVES

Alternatives presented in this section consist of potential alternatives that were initially considered but screened-out from further consideration due to their infeasibility or inability to meet the basics objectives of the Project, and) design alternatives/variations selected for further evaluation. As required by CEQA, the No Project alternative is also addressed in this section.

5.4.1 Alternatives Eliminated from Further Consideration

This section describes preliminary alternatives to the proposed Project initially considered early in the planning process for the ITC Project and the reasons why these alternatives are not evaluated further in this EIR.

Alternative Alignments

As part of the Envision Inglewood planning study,[1] the City evaluated several independent last-mile, fixed-guideway transit connector options in the Locally Preferred Alternative (LPA) Report,[2] comparing these options against key screening criteria and evaluating each option against the City's stated goals and objectives. The LPA Report evaluated the following four conceptual transit alternatives, all consisting of an elevated Automated Transit System (ATS):

- Alternative A: Market-Manchester Street Alignment (proposed Project)
- Alternative B: Fairview Heights Alignment
- Alternative C: Arbor Vitae Alignment
- Alternative D: Century Blvd Alignment

Alternative A was selected based on the review of these alternatives as the proposed Project.

As described in detail below, Alternatives B, C, and D were eliminated from further consideration.

Alternative B: Fairview Heights Alignment

The City identified an independent elevated ATS alternative connecting directly to the Fairview Heights Metro K (Crenshaw/LAX) Line station along Prairie Avenue as shown in **Figure 5.0-1: Location of Alternative Alignments in the LPA Report**. The Fairview Heights Alignment (Alternative B) would be an aerial alignment running approximately one-half mile along Florence Avenue between Prairie Avenue and

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1 City of Inglewood, *Envision Inglewood: Connecting People, Places, and the Future (May 2018)*, accessed March 2019, http://envisioninglewood.org/.

2 City of Inglewood, *Envision Inglewood: Locally Preferred Alternative Report (June 2018)*, accessed March 2019, http://envisioninglewood.org/wp-content/uploads/2018/07/Envision-Inglewood-Locally-Preferred-Alternative-Report.pdf.

West Boulevard, transitioning south and then running along Prairie Avenue for approximately 1.75 miles between Florence Avenue to Century Boulevard for a total length of approximately 2.2 miles providing service to the Forum, the Los Angeles Sports and Entertainment District (LASED), and the Inglewood Basketball and Entertainment Center (IBEC).

This alternative would be dual lane and include four stations. The station locations were identified based on connections to traffic generators/development. This alternative includes potential intermodal center locations to capture road-based traffic, such as buses, transportation network companies (TNCs), taxis, and private vehicles, and facilitate a convenient transfer to the ITC. These potential intermodal centers would provide an opportunity to limit the amount and type of road-based traffic into the area, especially during special events.

As outlined in the LPA Report, this alternative was eliminated from further consideration for a variety of reasons including conflicts with, and impacts to, a variety of utility facilities. Based on preliminary research, utilities as well as lateral connections to these pipes from adjacent properties were identified along Florence Avenue. These existing utilities include sewer, gas, and water mains along these streets, which would pose obstacles for placement of guideway columns. In addition, various utility crossings at the curve alignment transition at Florence Avenue and Prairie Avenue would need to be avoided. While Alternative B would be located primarily within the street right-of-way, limited roadway width exists on Prairie Avenue between Florence Avenue and Manchester Boulevard to accommodate the elevated ATS structure. Potentially significant property impacts to the Inglewood Cemetery are anticipated because the alignment transitions from Florence Avenue, which has a wide right-of-way of 125 feet, to Prairie Avenue, which has a right-of-way of 78 feet. Furthermore, the right-of-way on Prairie Avenue decreases to less than 70 feet south of Regent Street. This would potentially further impact the Inglewood Cemetery and potentially conflict with utility infrastructure.

Alternative C: Arbor Vitae Alignment

The Arbor Vitae Alignment (Alternative C) concept would be an aerial alignment running approximately 2 miles along Arbor Vitae Street from Aviation Boulevard to Prairie Avenue, where it transitions north to the Forum, and south along Prairie Avenue for approximately one-half mile to Century Boulevard as shown in

Figure 5.0-1. This alignment would provide service to the Forum, LASED and SoFi Stadium and the IBEC. Additionally, Alternative C presents the opportunity to directly connect to the Los Angeles International Airport (LAX) and its Landside Access Modernization Program (LAMP), which includes parking opportunities; a consolidated rental car center; and a planned regional multimodal hub served by Metro's K and C (Green) Lines, various Metro, and municipal bus lines, and the LAX ATS. Although this alternative

connects to a planned multimodal hub, it would not provide development opportunities are limited in the downtown/commercial district of Inglewood because it will not serve the area.

As with other alternatives, Alternative C also provides opportunities for possible intermodal center locations to capture road-based traffic, such as buses, TNCs, taxis, and private vehicles, and to facilitate a convenient transfer to the ITC.

As outlined in the LPA Report, this alternative was eliminated from further consideration for the following reasons:

- Crossing over and under the I-405 would require coordination with the California Department of Transportation, Los Angeles Department of Transportation, and Los Angeles World Airports. This alignment does not present the opportunity for integration with local economic activity, current and future transit-oriented development, and other initiatives in the downtown/commercial district of Inglewood.
- The right-of-way along Arbor Vitae ranges from 100 feet to 66 feet, with a narrowing of the right-of-way east of Eucalyptus Avenue. Given the narrow right-of-way, this concept would potentially require acquisition of existing small business and possibly cause residential displacement. While the proposed Project would require some small business acquisition, the scale of the acquisition for this alternative, and its impact to residential properties, would be more extensive.
- Alternative C may potentially have adverse economic and fiscal impacts to local businesses along Arbor Vitae Street due to potentially reduced visibility, potential loss of on-street parking during construction, and potential permanent removal of on-street parking spaces to accommodate the alignment. The narrow width of the right-of-way would further reduce visibility of with project implementation as compared to the proposed alignment. Additionally, while the proposed Project is anticipated to remove some on-street parking spaces as well, the narrow right-of-way of this alternative is anticipated to impact existing on-street parking more extensively.
- Substantial utility lines were identified as part of preliminary research for this alignment alternative in addition to overlapping footprints with the selected alignment, including an 8- to 10-inch sewer pipe along the centerline of Arbor Vitae Street between Eucalyptus Avenue and La Brea Avenue. Therefore, impacts to utilities would be more significant than the proposed alignment.
- Together, these utilities pose significant obstacles as they may require either realignment of the ATS guideway or utility relocation would not be considered infeasible at this stage. Underground electrical lines, including vaults, are primarily concentrated along or adjacent to sidewalks and do not pose a major impediment. Nongravity-flow utilities, including water service lines, may be required to be relocated.

SOURCE: City of Inglewood - 2018; Meridian Consultants - 2019

FIGURE **5.0-1**

Location of Alternative Alignments in the LPA Report

208-001-18

Alternative D: Century Boulevard Alignment

The Century Boulevard Alignment (Alternative D) would be an aerial alignment running for approximately two miles along Century Boulevard from Aviation Boulevard to Prairie Avenue, where it transitions north along Prairie Avenue for approximately 1 mile to south of Manchester Boulevard (see **Figure 5.0-1**). This alternative would provide service to the Forum, LASED, and IBEC. Alternative D provides the opportunity to directly connect to a regional multimodal hub served by Metro's K and C Lines, various Metro, and municipal bus lines, and the LAX ATS system.

As with other alternatives, Alignment D also provides opportunities for possible intermodal center locations to capture road-based traffic, such as buses, TNCs, taxis, and private vehicles, and to facilitate a convenient transfer to the ITC.

As outlined in the LPA Report, this alternative was eliminated from further consideration for the following reasons:

- To connect to the multimodal hub, Alternative D would be required to cross the I-405 on the south side of the new consolidated rental car facility under development west of the I-405 Freeway and north of Century Boulevard as part of the LAX Landside Access Modernization. The transition from an elevated segment to below grade under the I-405 or above-grade over the I-405 would not be feasible due to the short distance available and the real estate constraints between Century Boulevard and the LAX Manchester Square development. Additionally, a bridge crossing over I-405 onto Century Boulevard would impede over or under clearance.
- Crossing over and under the I-405 would require coordination with the California Department of Transportation, Los Angeles Department of Transportation, and Los Angeles World Airports. This alignment does not present the opportunity for integration with local economic activity, current and future transit-oriented development, and other initiatives in the downtown/ commercial district of Inglewood.

ATS At-Grade Alignment

An at-grade transit system along Market Street was initially considered but determined to be infeasible because it would result in significant traffic impacts, would not have the capacity to meet peak ridership demands, and would be more costly to build and/or operate than the proposed Project. The at-grade system presented many engineering challenges. An at-grade transit system was considered from Florence with a trench into a tunnel at Manchester Blvd to avoid traffic impact intersections. The 700-1,000 feet transition trench from at-grade to a tunnel would bifurcate Market Street with 20-25 feet track level change, and the direct transition from grade to an elevated guideway was deemed infeasible given the minimum ramp length required 700-1,000 feet (not including transitions).

East/west traffic from Manchester Boulevard to the 405 freeway would be significantly impacted by an at-grade system. Congestion during peak periods could create conflicts with an at-grade, fixed-guideway transit service, which would degrade transit service. Controlled crossings would be required for pedestrians across the at-grade line. An at-grade system would also bifurcate Market Street from just south of Regent Street to Manchester Avenue, creating a long guideway trench and physical barrier in downtown Inglewood since the structure of the tracks would physically disconnect existing connections between different parts of a community. To avoid these impacts, a tunnel would be needed to allow Manchester Boulevard to cross under the at-grade guideway. Construction of this tunnel would increase the construction cost for this alternative and also result in indirect land use impacts to the character of Market Street, particularly to the southern portion of Market Street in downtown. Tunneling may also adversely impact existing faults in and around the City.

An at-grade system would require a 3-car train at least 210 to 270 feet long. The capacity of this train would require headways during events that could not be achieved. Due to this constraint, this system could not meet peak capacity demands. A Driver/Operator would also be required for an at-grade system, which would further add to the cost to operate the system.

Interlined Operability (Subway) Scenario

An Interlined Operability Scenario was also initially studied by LA Metro and the City of Inglewood and determined to be infeasible due to the cost and complexity of this type of system and extension of the Metro K Line. The scenario studied included a connection from the K Line in a subway under Prairie Avenue, which also would jointly operate on a portion of the K Line.

Existing and proposed operations on the Metro K and C (Green) Lines constrain the modification or expansion of service required to allow an interlined system. The K Line is designed to support up to 5-minute minimum headways. This maximizes the service potential for these lines but does not allow for additional capacity to serve a new branch for the Project. For this reason, Metro concluded that any scenario involving integration with the K Line or the C Line would require upgrades to the entire Metro system to accommodate increased train frequency. City's activity centers at the Forum and LASED area; and was ultimately determined to be infeasible.

Alternative Technologies

The City evaluated a range of driverless transit technologies to determine the viable classes of technologies that could potentially meet the anticipated requirements for the ITC, as outlined in the LPA Report.[3] These requirements include the ability to meet projected ridership demand in terms of peak-

3 City of Inglewood, *Envision Inglewood: Locally Preferred Alternative Report.*

hour demand or line capacity. The projected ridership demands vary between 500 passengers per hour per direction (pphpd) during the weekday commute hours to approximately 9,000-10,000 pphpd during special events.

Only driverless technologies were analyzed because their shorter (more frequent) headways are more likely to meet the anticipated line capacity demands, as well as fit within the geometric constraints given the short system route and the high peak ridership demands from special events and game days at the key ridership generators. The range of such technologies are considered to be a class of Automated Guideway Transit or ATS Systems. Differentiation is primarily based on the size of the vehicles, guideway mounting, and propulsion and guidance systems.

The Project's transit technology is a form of light rail technology that can be steel-wheel/steel rail, rubber tired or magnetically levitated, supported on dual rails (that may be steel rail or concrete plinths) or straddling or suspended from a single beam/rail such as in a monorail type technology that will operate within a dedicated trainway. Power distribution will be through a third rail instead of overhead catenary to avoid additional visual impacts due to the overhead catenary system wires and support structures. It will be fully automated (i.e., driverless) which is necessary to operate at the tight headways to meet the projected ridership needs. The vehicles are smaller than traditional heavy rail technology so as to successfully maneuver the tight curves driven by the site-specific conditions. This type of technology is often times also referred to as automated guideway transit, automated people movers or simply monorails; regardless of the terminology used, it is a form of a light rail technology.

The driverless technologies considered were evaluated against the following criteria to provide a preliminary assessment of viable systems suitable for further evaluation and consideration:

- Ability to fit within the site-specific constraints;
- Ability to meet anticipated ridership demand in terms of peak-hour demand or line capacity;
- Flexibility of operations in terms of different train lengths, which would be longer during peak periods and shorter during off-peak periods to maintain the appropriate frequency and service levels.
- Ability to expand the fleet size with minimal or no disruption to ongoing normal passenger service during peak operational hours;
- Technical ability to meet the intended purpose; and
- Viability/availability of technology suppliers as measured by (1) longevity of business providing new systems and continued operations and maintenance; (2) at least one technology application proven in passenger service; and (3) applications of comparable size/scale to the proposed ITC Project.

As discussed in the LPA Report and summarized below, transit technologies ruled out from further consideration included Personal Rapid Transit (PRT) and Small Monorail ATSs.

Personal Rapid Transit (PRT)

PRT systems are designed to provide nonstop, origin-to-destination service to individuals or small groups of passengers via multiple cars operating in a network. Vehicles are typically 10 to 15 feet long, include a four- to six-passenger seated capacity, and have low headroom. PRT systems operate at low speeds (less than 25 miles per hour [mph]) and, to date, network size has been very limited.

To accommodate such a high-vehicle volume that would be necessary for anticipated ridership of the proposed Project, the infrastructure at the stations and bypass lanes would be substantially larger than for larger vehicle ATS systems. For these reasons, this alternative technology was eliminated from further consideration.

The City's Downtown TOD Plan envisioned an aerial personal rapid transit system, noted as SKY Tran, and stated that it could travel at-grade and at slow speeds along Market Street, could detach from guideway and run on wheels on the ground, and then system could then travel above-grade or in a dedicated lane on Manchester Blvd and through the Forum and Hollywood Park parking lots. The system could then return to a low-speed, at-grade alignment through the commercial areas of Hollywood Park. Finally, the system could continue in an aerial alignment east along Century Boulevard, serving the shopping centers there, and south along Crenshaw Boulevard to the Metro Green Line Crenshaw station. Additionally, the Downtown TOD Plan noted that a potential route would be along La Brea Avenue instead of Market Street and had a capacity of 12,000 persons per hour per direction and could cost up to $10 million per mile.

The SKY Tran is a suspended system that uses small pods suspended from a monorail. While there are some agreements for future installations, SKY Tran does have an operational system either in the US or abroad at this time. Additionally, it is not proven that Sky Tran's capability has the capacity to carry 12,000 pphpd and the dual-mode (suspended and street modes) operations. Additionally, SKY Tran's current design does not meet the American Society of Civil Engineers' ATS standards and does not have any provisions for emergency evacuation from the pods, as is recommended by the National Fire Protection Association. While not the SKY Tran is not precluded from future procurement, all technology providers must demonstrate compliance with technical specifications, proven track record and demonstrate is capable of carrying about 500 pphpd to 9,000 pphpd.

It should be noted that in the last decade other innovative technologies such as autonomous vehicles (AVs) have proposed very high frequency operations, but they have not been able to meet the anticipated timeline of development and the projected performance. AVs are currently in pilot projects and have been

able to demonstrate very limited operations and very low capacities (about 300- 500 pphpd). These pilot AV systems run on simple dedicated routes outside public roads and typically have speeds limited to 15 mph. For these reasons, this alternative technology was eliminated from further consideration.

Small Monorail

Small monorail technology provides line-haul-type service connecting multiple stations. These systems may be operated as a shuttle or pinched loop, with multiple trains following each other and stopping at every station before turning back at the end of the line. Small monorail systems are applied in geographically compact areas and may either operate on top of the guideway or be suspended from the guideway. Vehicles on these systems are typically 15 to 20 feet long and include capacity for 12 to 20 passengers, with operating speeds ranging from 20 to 30 mph.

As determined in the LPA Report, small monorail systems would not be able to meet peak-hour ridership demand and are not a sufficiently flexible length for train operation; thus, such a system would provide adequate capacity. For these reasons, this alternative technology was eliminated from further consideration.

Maintenance and Storage Facility (MSF) Relocation Alternative

The Maintenance and Storage Facility (MSF) Relocation Alternative was initially considered but not carried forward for further analysis because it would not avoid or substantially lessen any of the significant impacts identified for the proposed Project.

With this alternative, the MSF and power distribution system (PDS) substations would be located on the 9-acre site at 250 N. Market Street adjacent to the proposed Market Street/Florence Avenue station rather than at the 5.5-acre site at 500 E. Manchester Boulevard. All other Project components would remain the same.

Under the proposed Project, the site at 500 E. Manchester Boulevard would be partially acquired and the existing commercial building containing the Vons grocery store and other businesses and site improvements would be demolished to accommodate the MSF and PDS substations (with the Vons to be rebuilt at the corner of Manchester Boulevard and Hillcrest Boulevard). Under the MSF Relocation Alternative, the partial property acquisition at 500 E. Manchester Boulevard would not be required. This would avoid the temporary construction impacts associated with these demolition activities and the construction of the MFS and PDS substations at this location. However, demolition of the commercial buildings and site improvements would occur at 250 N. Market Street and the new MSF and PDS substation would be built on this property. As a result, the temporary construction impacts resulting from demolition activities and construction of the MSF and PDS substation would not be avoided or substantially lessened

but would occur at the property as 250 N. Market Street. Additionally, the MSF and PDS substation would reduce the proposed public parking in the Market Street area that is designed to support ridership and access to the ITC Project and the downtown Market Street area.

5.4.2 Alternatives Considered

Alternatives carried forward for further consideration include the following:

- Alternative 1: No Project
- Alternative 2: Bus Rapid Transit (BRT) System
- Alternative 3: Market Street Pedestrian Promenade
- Alternative 4: 4th Station Alternative
- Alternative 5: Prairie Avenue Single Station Alternative
- Alternative 6: Maintenance and Storage Facility (MSF) Site Alternative

5.4.2.1 Alternative 1: No Project

The No Project Alternative considers conditions if the proposed Project is not built. No new transportation infrastructure would be built within the Project study area, aside from transportation projects that are currently under construction or funded for construction and operation by 2027. These projects include transit projects funded by Measure R, Measure M, and specified in the Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Existing infrastructure and future planned and funded projects assumed under the No Project alternative include:

- Metro K Line –Currently under construction (2021), operating start date (Fall 2022)
- Implementation of the Citywide Event Transportation Management and Operations Plan
- Street improvements being constructed as part of the Los Angeles International Airport Landside Access Modernization Program and the Inglewood Basketball and Entertainment Center (IBEC) projects.
- Existing Bus Service – Metro Rapid and Metro Local

Existing public transit and private transportation operators would continue to provide service. Public transit operators would likely increase service in response to the projected growth in the number of visitors and residents that would occur as result of new and proposed major activity centers being developed in the City in the Downtown and Hollywood Park areas.

The LASED at Hollywood Park includes SoFi Stadium and additional development allowed by the Hollywood Park Specific Plan. Higher density mixed-use development is also planned in the vicinity of the

Metro Downtown Inglewood station near Florence Avenue and Market Street being developed within the Crenshaw/Imperial TOD Plan Area. These projects and improvements would reasonably be expected to occur in the foreseeable future if the proposed Project were not approved based on current plans.

Throughout 2020, the City of Inglewood developed a Citywide Transportation Management and Operations Plan (TMOP) focused on addressing future traffic demands that may result from events at the stadium. The Inglewood TMOP establishes a plan that provides public information, reduces unwarranted traffic through adjacent neighborhoods, and promotes the use of alternative modes of transportation as described below.

City of Inglewood Event Park and Ride Shuttle Program and Intermodal Transit Facility at Hollywood Park

To address the limited pre-sold on-site parking available at SoFi Stadium, the City has established a remote parking and shuttle program, known as the I Park & Go Program, that considers comprehensive access, circulation and traffic management for residents, visitors, and businesses on NFL game days and during large special events.

Given the growing event-day demand of the City's I Park & Go Program, the City would not only continue the use at the ITF Lot but also utilize the vacant lot at the southwest corner of Prairie Avenue and Manchester Boulevard given the limited capacity for increased shuttles at the City's ITF Lot.

Event Transit Service

The City has established a partnership and received support from Metro, Big Blue Bus (Santa Monica), GTrans (Gardena), and Torrance Transit to expand transit service. Under the No Project alternative, the City would work cooperatively with Metro and other municipal bus operators to increase and enhance transit service to City of Inglewood destinations through more frequent headways, additional route options, and other improvements by 2021, if possible. The TMOP addresses both Pre-Event and Post-Event conditions associated with SoFi Stadium at Hollywood Park. The Pre-Event scenario includes bus routes along Pincay Drive, Kareem Court, and Century Boulevard. The Post-Event scenario includes bus routes along Prairie Avenue, Manchester Avenue, Crenshaw Boulevard, Pincay Drive, Kareem Court, and Century Boulevard.

5.4.2.2 Alternative 2: Bus Rapid Transit (BRT) System

Bus rapid transit (BRT) is a public transit system designed to provide improved capacity and reliability relative to a conventional bus system. Typically, a BRT system includes roadway lanes that are dedicated to buses, with signal priority to buses at intersections where buses may interact with other traffic, with

enhanced coordinated flow. BRT systems typically include design features to optimize passenger boarding and alighting activities, as well as ticket purchases. A BRT corridor is a section of roadway or contiguous roadways served by the uniquely-branded buses along routes with a minimum length of approximately 1.5 to 2 miles.

Under this alternative, the City would construct and operate a BRT system that would connect the Forum, the SoFi Stadium, the Performance Arena, the IBEC and the Hollywood Park mixed uses to the Metro K Line Downtown Inglewood station. The proposed route of this alternative would be a loop route starting along Florence Avenue to travel east to North Prairie Avenue where it would turn south along Prairie Avenue to the Inglewood Transit Center Facility at Prairie Avenue and Arbor Vitae adjacent to the Hollywood Park site, and then return via Prairie Avenue northbound to travel westbound along Manchester Boulevard to Market Street to traverse northbound to Florence Avenue. The BRT would be located entirely within the public right-of-way. This route is generally consistent with the route as described in the City's New Downtown and Fairview Heights Transit Oriented Development Plan and Design Guidelines.[4]

Along the alignment, one eastbound travel lane along Florence Avenue between Market Street and Prairie Avenue; one southbound travel lane along Prairie Avenue between Florence Avenue and Manchester Boulevard; two lanes (one lane in each direction) along Prairie Avenue between Manchester Boulevard and the Inglewood Transit Center Facility; one westbound travel lane along Manchester Boulevard between Prairie Avenue and Market Street; and one northbound lane along Market Street between Manchester Boulevard and Florence Avenue would all be converted (from the existing mixed flow traffic lanes) to provide the Bus-only lane to accommodate the BRT alternative thereby reducing roadway lane capacities for mixed-flow traffic.

BRT systems typically include the following features:

- Dedicated lanes and alignment:
  - Separate lanes to avoid congested roadways.
  - Dedicated bus-only lanes for faster travel and ensure that buses are not delayed by mixed traffic congestion. Separate rights of way may be used. Transit malls or 'bus streets' may also be created in city centers.

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4 City of Inglewood, *New Downtown and Fairview Heights Transit Oriented Development Plan and Design Guidelines,* November 1, 2016

- Off-board fare collection
  - Fare prepayment at the station, instead of on board the bus, eliminates the delay caused by passengers paying on board.
- Intersection treatment
  - Prohibit turns for mixed-flow traffic across the bus lane to reduce delays to the buses, in most cases. Transit Bus priority will often be provided at signalized intersections (using Transit Priority System (TPS) modules at all upgraded signal controllers at intersections along the alignment) to coordinate them to reduce delays by extending the green phase or reducing the red phase in the required direction compared to the normal sequence. Potential additional communication equipment to transmit and receive signals between the intersections and the City's Transportation Management Center may also be provided, as part of this alternative. Equipment to track the locations of the buses and closed-circuit television cameras may also be required / provided at the intersections along the alignment to provide the required monitoring.
- Platform-level boarding
  - Station platforms/stops would be convenient for quick and easy boarding, making them fully accessible for wheelchairs and baby strollers, with minimal delays.

Passenger loading areas would include stops at the following locations:

- Market Street/Florence Avenue in close proximity to the Metro K Line Downtown Inglewood Station. This BRT stop would provide connections to and from the regional light rail system;
- The Forum on Prairie Avenue;
- The City's Intermodal Transit Facility at Hollywood Park providing access to the SoFi Stadium, Hollywood Park Development Site, and IBEC.

High-capacity bus vehicles such as articulated buses may be used; these may have multiple doors for fast entry and exit. To reduce greenhouse gas emissions, vehicles may be electric or alternative fuel technology.

Under the BRT alternative, the proposed Project would not be built and none of the transit infrastructure, street provisions and activities would occur.

5.4.2.3 Alternative 3: Market Street Pedestrian Promenade

Under the Market Street Pedestrian Promenade Alternative, the proposed Project and all of its components would be constructed and would operate. With this alternative, Market Street between Florence Avenue and Manchester Boulevard would be entirely closed to vehicular traffic as shown in **Figure 5.0-2: Alternative 3: Market Street Pedestrian Promenade.** Regent and Queen streets would have barricades to prevent traffic turning onto Market Street in both directions. East-west traffic along Regent Street and Queen Street would be allowed without being able to turn on to Market Street. Traffic would

be diverted to surrounding streets including La Brea Avenue and Locust Street. The establishment of this pedestrian promenade would encourage pedestrian activity by improving walkability within Downtown Inglewood.

5.4.2.4 Alternative 4: 4th Station Alternative

This alternative considers the addition of a fourth station to the ATS as proposed at Manchester Boulevard, east of the Market Street/Manchester Boulevard intersection as shown in **Figure 5.0-3: Alternative 4: 4th Station Alternative – Manchester Boulevard Station**.

The station configuration would consist of a center platform with vertical circulation to an elevated passenger walkway located under the station platform level. Passengers would have access to the station through an elevated passenger walkway. As with the other ITC stations, this additional station would consist of a center platform configuration with the platform located at level 3 (approximately 50 feet above the existing grade). Passengers would access the platform from a mezzanine (at level 2) connected by elevated passenger walkways to vertical circulation elements to provide access to the sidewalk (at level 1) on the north side of Manchester Boulevard. Providing this additional station in Downtown would:

1. Support ongoing economic revitalization in Downtown Inglewood;
2. Provide a direct connection from Downtown Inglewood to the regional rail system, the Forum, the LASED, including SoFi Stadium, and the IBEC; and
3. Enhance the connection of Inglewood and residents to jobs, education, services, and destinations within the City and within the region; and support regional efforts to become more efficient, economically strong, equitable, and sustainable.

5.4.2.5 Alternative 5: Prairie Avenue Single Station Alternative

The proposed Project modifies and relocates Prairie Avenue to the east to maintain the current roadway capacity. The relocation of Prairie Avenue and the need for a passenger station connection on the sidewalk/ground level affects properties located east of Prairie Avenue. This Alternative avoids affecting these properties by consolidating the two proposed stations on Prairie Avenue into a single station that would be located adjacent to the City's Intermodal Transit Facility at the City's Civic Center site. Passengers would connect to the ground/sidewalk level within the City-owned Civic Center site. **Figure 5.0-4: Alternative 5: Prairie Avenue Single Station Alternative** illustrates this alternative.

This Alternative maintains Prairie Avenue within its existing right-of-way; however, one to two lanes would be lost, thereby reducing the capacity of the roadway. Specifically, one travel lane in each direction along Prairie Avenue between Arbor Vitae and La Palma, one lane in the southbound direction between

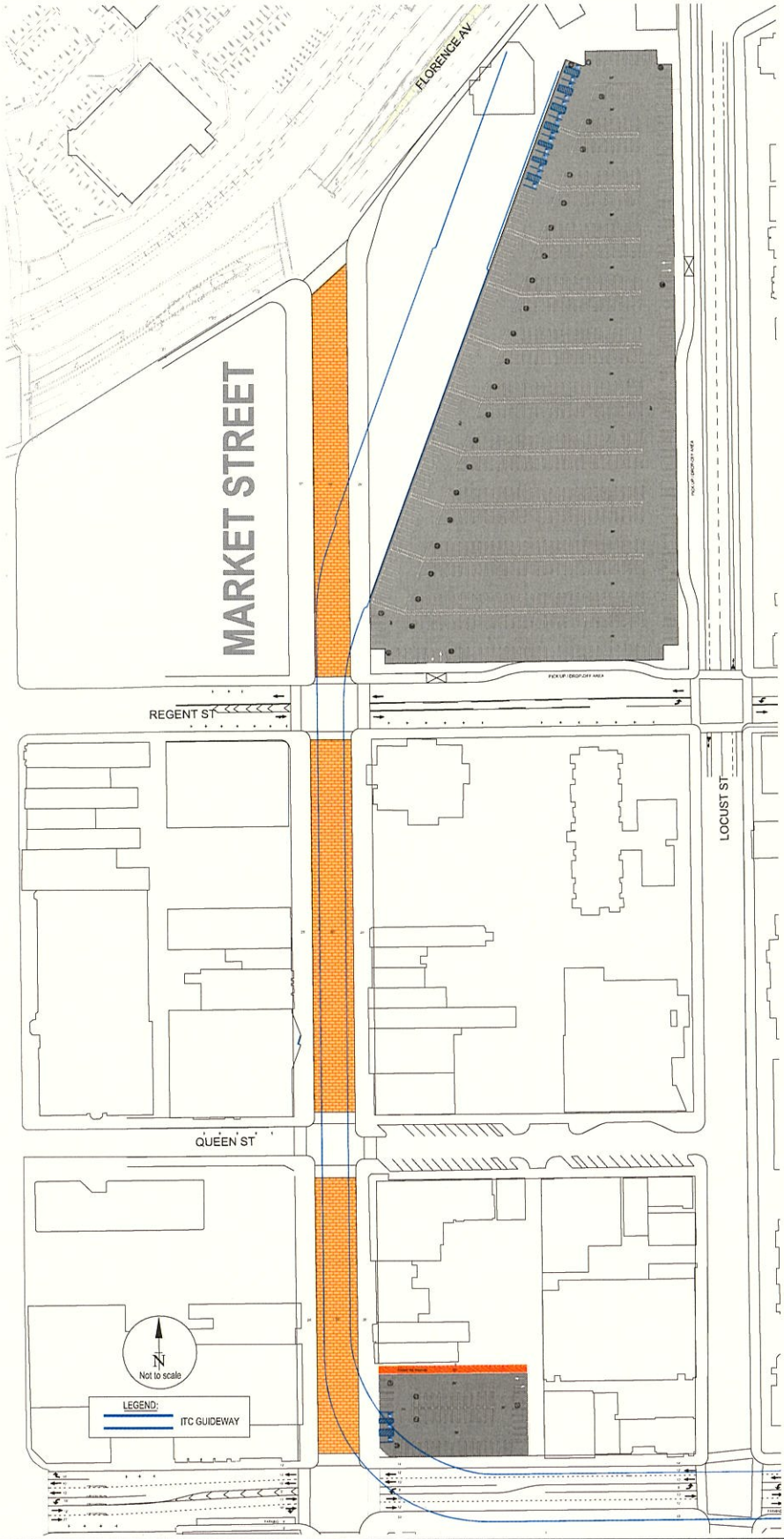
La Palma and Pincay Drive, and one lane in each direction between Pincay Drive and Manchester Boulevard would be lost under this Alternative 5: Prairie Avenue Single Station Alternative.

5.4.2.6 *Alternative 6: Maintenance and Storage Facility (MSF) Site Alternative*

The proposed Project involves siting the MSF within the southeastern portion of the site at 500 E. Manchester Boulevard closest to the corner of Nutwood Street and Spruce Avenue that contains a Vons grocery store and gas station, with other businesses, including a private gym, bank branch and coffee shop located in the building with Vons. This siting of the MSF requires removal of the gas station currently located on the Vons site in order to provide for short-term construction staging to construct the MSF and, thereafter, to provide parking.

This Alternative moves the MSF to the northwestern portion of this property closest to the south corner of Hillcrest Boulevard and Manchester Boulevard as shown in **Figure 5.0-5: Alternative 6: Maintenance and Storage Facility Alternative.** The site containing the MSF would be approximately 14,000 SF in size.

This alternative would have the same elevated profile and footprint of the MSF and its supporting facilities (e.g., access, circulation, employee parking, etc.). With this alternative, the existing gas station would remain on the site. Under this Alternative, the building containing the grocery store and other businesses would be demolished. With the Project, a replacement Vons store would be built on the corner of Manchester Boulevard and Hillcrest Boulevard. With this alternative a replacement Vons store would not be built on this site.

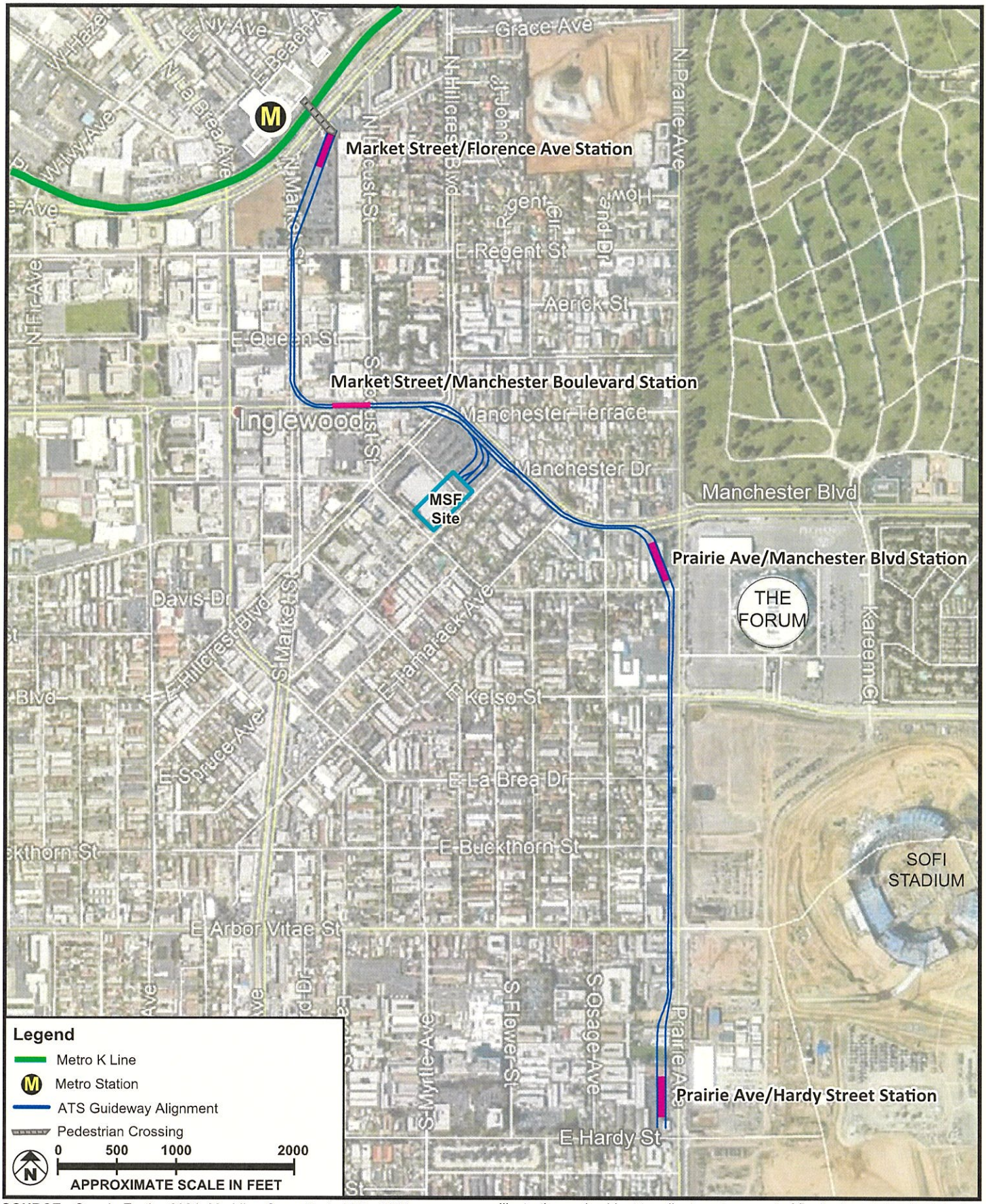


SOURCE: Google Earth - 2020; Meridian Consultants LLC - 2020

FIGURE **5.0-2**

Figure 5.0-2: Alternative 3: Market Street Pedestrian Promenade

208-001-18



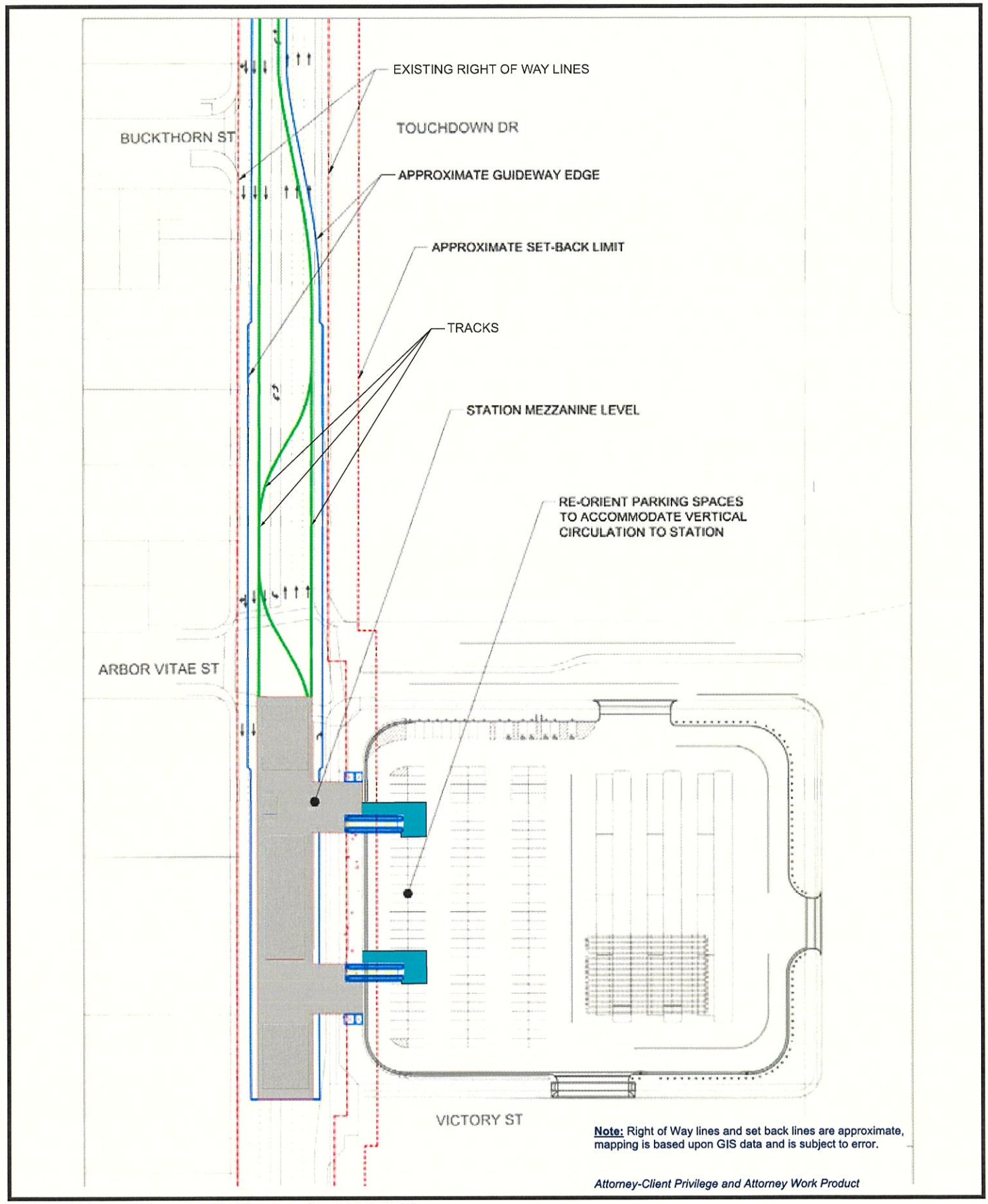
SOURCE: Google Earth - 2021; Meridian Consultants LLC - 2021

Illustrative and subject to adjustments as part of finalization during final design

FIGURE **5.0-3**

Alternative 4 - 4th Station on Current Alignment

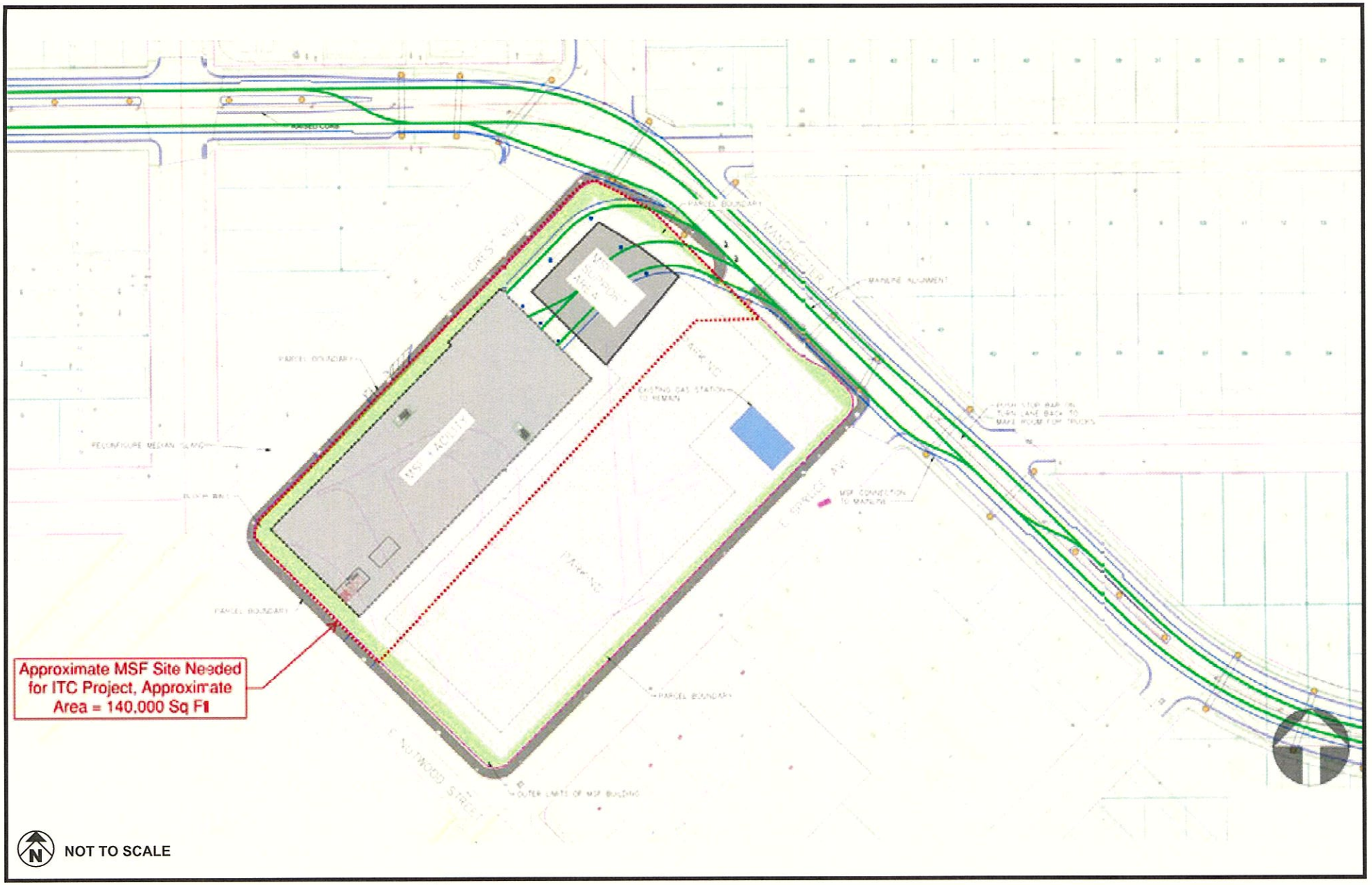
251-003-20



SOURCE: Google Earth - 2020; Meridian Consultants LLC - 2020

FIGURE **5.0-4**

Alternative 5 - Prairie Ave Single Station Alternative



SOURCE: Gannett Fleming, Inc. - 2021; Meridian Consultants - 2021

FIGURE **5.0-5**

Alternative 6: Maintenance and Storage Facility Relocation Alternative

251-003-20

5.5 EVALUATION OF ALTERNATIVES

5.5.1 Alternative 1: No Project

1. Aesthetics

The proposed Project would not result in significant impacts to the aesthetic character of the community during construction or operation with implementation of the project design features in the ITC Construction Commitment Program (CCP) and ITC Design Standards and Guidelines (Design Guidelines). With Alternative 1, the proposed Project would not be built and existing visual characteristics along Market Street, Manchester Boulevard and Prairie Avenue would be maintained. As such, there would be no impact to the existing aesthetic character of the community because construction and operation of the Project would not occur. The Project would change the visual characteristics of the areas located along the proposed alignment but would not result in significant impacts. For this reason, neither this alternative or the Project would result in significant aesthetic impacts.

2. Air Quality

Under the proposed project, mitigation measures would be required to reduce construction-related air quality impacts to less-than-significant levels. Under Alternative 1, no emissions related to construction activities and associated vehicular travel from construction activities or construction-related vehicle trips would occur. For this reason, even without mitigation, Alternative 1 would not conflict with implementation of the applicable air quality plan or exceed the thresholds established by the SCAQMD for criteria air pollutants.

Operation of the proposed Project would reduce vehicle miles traveled (VMTs) throughout the City which would result in the beneficial effect of reducing air quality emissions from vehicle trips. Under Alternative 1e, the proposed Project would not be built and VMTs throughout the City and region would not be reduced. As such, operational air quality emissions would be greater with the Alternative 1.

3. Biological Resources

There are approximately 502 trees located along the proposed Project alignment. Removal and/or trimming of trees could result in significant impacts to protected migratory or nesting birds, or raptors. Measures are identified to mitigate these impacts to less than significant for the proposed Project. Alternative 1 would avoid these impacts. Thus, no impacts associated with biological resources would occur with Alternative 1, and impacts would be reduced in comparison to the proposed Project.

4. Cultural Resources

The proposed Project would not result in significant impacts to historic resources on Market Street or the other segments. Alternative 1 would maintain the existing views and structures of the historic buildings and would result in no impacts to existing historical resources within the Project area since construction and operation of the proposed Project would not occur. Neither this alternative nor the Project would result in significant impacts to cultural resources.

5. Energy Resources

Under Alternative 1, no energy resources such as electricity, natural gas, or petroleum would be consumed for construction. Operation of the proposed Project would consume a maximum net increase of 23,852,3876 kilowatt-hours (kWh) of electricity per year. As such, Alternative 1 would reduce operational electricity impacts. However, once operational, the proposed Project would result in a net decrease of 3,608,205 thousand British thermal units (kBTU) of natural gas per year.

The proposed Project would be consistent with the Inglewood Energy and Climate Action Plan (ECAP) and General Plan which sets goals to reduce emissions through increased energy efficiency, renewable energy generation, improved transit options, and reduced consumption and waste. The proposed Project would reduce VMTs which would reduce annual petroleum-based fuel consumption by 580,949 to 1,379,509 gallons per year. As such, Alternative 1 would increase impacts related to natural gas and petroleum-based fuel consumption Compared in comparison to the proposed Project.

6. Geology and Soils

Alternative 1 would not involve the construction of any new transportation facilities. The Project is proposed in an area subject to groundshaking from earthquake events that may occur on faults in the region. Potentially active faults cross the proposed alignment for the Project. Measures are identified to mitigate potential impacts associated with these conditions to less than significant. Impacts related to construction of the Project, including the potential for construction activities to encounter and impact paleontological resources and an increase in the potential for erosion, would be avoided. Measures are identified to mitigate the potential impacts of the Project on paleontological resources to less than significant. Under Alternative 1, no new transportation infrastructure would be built within the project study area, aside from related transportation projects that are currently under construction or funded for construction and operation by 2027. This alternative would avoid these potential impacts.

7. Greenhouse Gas Emissions

Alternative 1 would not involve any construction activity that would generate greenhouse gas (GHG) emissions. Operation of the proposed Project would reduce VMTs which would result in a beneficial effect

on GHG emissions. Under this alternative, the proposed Project would not be built and VMTs would not be reduced. As such, operational GHG emissions would be greater with the No Project Alternative. The proposed Project would be consistent with the CARB 2017 Scoping Plan Update, SCAG's 2020-2045 RTP/SCS, the ECAP, and General Plan which sets goals to reduce GHG emissions by increasing energy efficiency and improving transit infrastructure. While Alternative 1 would not be inconsistent with these plans, it would not achieve the goals of these plans as well as the proposed Project.

8. Hazards and Hazardous Materials

With the No Project Alternative, no new construction would occur along the proposed Project alignment that could result in the potential for exposure to hazards or hazardous materials and all existing uses would continue to operate. Construction of the Project would include the demolition of existing buildings that may contain asbestos-containing materials (ACM) and lead based paint (LBP). Construction activities may also encounter underground storage tanks and soil that may be contaminated. The ITC CCP requires the preparation of plans defining protocols and actions to address this potential and avoid significant impacts. Alternative 1 would not involve the demolition of the existing buildings that would be removed to implement the Project, which may have the potential release hazardous materials, such as ACMs, LBP, and other potentially hazardous building materials. Additionally, Alternative 1 would not generate any construction emissions which may release Toxic Air Contaminants (TACs) at schools within one-quarter mile. Under this alternative, no construction activities would occur that would have the potential to conflict with emergency response plans or evacuation routes due to street and/or lane closures. As such, Alternative 1 would reduce the potential for impacts associated with hazards and hazardous materials in comparison to the proposed Project. The Project does, however, include project design features that would avoid impacts related to hazards and hazardous materials and, for this reason, this alternative would not lessen or avoid any significant impacts.

9. Land Use and Planning

The No Project Alternative would not include the construction of the ATS and no changes to the land use pattern and character of the community would result from the construction or operation of additional transportation facilities. The proposed Project would remove traffic from existing roadways without diminishing the existing traffic capacity or the number of lanes that would exist with Alternative 1. Without the Project, congestion on roadways would increase more than with the Project, which would have an indirect effect on the character of the community.

Alternative 1 would be consistent with policies and goals in applicable plans as the existing character of the community would be maintained. The primary purpose of the Circulation Element of the City's General Plan is to ensure the provision of adequate street access and traffic capacity. The proposed Project would

further this goal by reducing congestion on the City's street network. As street congestion will increase without the proposed Project, the No Project Alternative would not achieve policies and goals related to reducing congestion.

10. Noise and Vibration

No construction from the Project would occur along the proposed Project alignment with the No Project Alternative. No noise or groundborne vibration impacts from construction would occur and temporary noise and vibration impacts during construction impacts would be avoided. Therefore, Alternative 1 would avoid the noise and vibration impacts during Project construction. Operation of the proposed Project would reduce the amount of vehicle traffic on streets throughout the City, which would reduce roadway noise compared to this Alternative. Operation of the Project proposed trains would result in potential noise level increases from a low of 0.1 A-weighted decibel (dBA) to a high of 1.8 dBA, and operation of the proposed MSF would result in potential increases in noise levels around this facility ranging from no increase to a high of 3.9 dBA. Under Alternative 1, the Project would not be built or operate and these noise increases would not occur. As such, Alternative 1 would have a less than significant noise and vibration impact, and reduced construction and operational impacts in comparison to the proposed Project.

11. Population, Employment, and Housing

The proposed Project would have no direct impact on housing as the proposed Project does not include the construction or demolition of any housing units. The proposed Project would impact existing employment opportunities in the City as commercial uses that would be displaced by the proposed Project are estimated to be approximately 464 jobs. However, the proposed Project would result in a net increase of for approximately 11,052[5] Full Time Equivalent (FTE) jobs through the Greenhouse Gas Reduction Funds, as estimated by the Job Co-Benefits calculation (see **Section 4.11 Population, Employment, and Housing**). The number of jobs that will be supported by the proposed Project in the region is within the projected regional trends in the SCAG 2020-2045 RTP/SCS data and the jobs that will benefit from the proposed Project will not directly translate into additional population growth in the region. As such the proposed Project would have a less than significant impact on employment and population growth.

No changes to existing population, employment, and housing trends within the City and the region would occur with the No Project Alternative. As such, Alternative 1 would not directly or indirectly substantially induce population or employment growth in the City or the region. While the No Project Alternative would avoid the direct loss of local employment opportunities that would result from the Project, the additional

5 11,516 minus 464 in numbers of jobs displaced.

jobs that would be supported by the construction and operation of the Project would not occur. Thus, more jobs would be created and supported under the proposed Project than under Alternative 1, and like Alternative 1, the proposed Project would not significantly impact population or housing.

12. Transportation

Under Alternative 1, the proposed Project would not be built and none of the transit infrastructure and street improvements and activities would occur. Existing public transit operators and private transportation would continue to provide service in the City, and these services would likely expand operations in response to the expected growth in visitors and residents within the major activity centers in the City of Inglewood. The less than significant construction transportation effects or disturbances from the proposed Project would not occur with Alternative 1.

The City would implement its TMOP to provide future transit connectivity. The TMOP addresses traffic conditions and transportation needs before and after events at SoFi Stadium at Hollywood Park. While transit modes such as buses will be critical transportation options to access the City's event centers, these modes will still compete with existing roadway traffic and may not provide a convenient time-certain connectivity compared to an elevated rail connection such as the proposed Project. This alternative will not provide any operational benefits in comparison to those provided by the proposed Project. The congestion and delays on the roadway system areawide would remain under Alternative 1 compared to the improvement in congestion and roadway traffic flows anticipated as part of the proposed Project.

In addition, the substantial reductions in VMT and related reductions in GHG and air pollutant emissions that would be provided by the proposed Project would not be realized with the No Project Alternative. No operational benefits associated with reduction in VMT, reduced traffic flows or reduction in congestion would occur compared to the proposed Project, and a critical first/last mile gap between the City's housing, employment and activity centers and the regional Metro regional system would still exist

13. Tribal Cultural Resources

The proposed Project would have a less than significant impact on Tribal Cultural Resources (TCRs). No TCRs were identified in the records around the Project site and no sensitive resources were identified. Nonetheless, the proposed Project would include construction which would have the potential to unearth subsurface resources not previously identified. Given the level of urban development in Inglewood, the likelihood of unearthing TCRs is low, but it is still a possibility. With the No Project Alternative, no construction would occur and this potential impact to TCRs would be avoided.

14. Utilities and Service Systems

With the No Project Alternative, no new construction would occur along the proposed Project alignment and all existing uses would continue to operate as they currently do. As such, no utility lines would need to be removed or relocated along Market Street, Manchester Boulevard, or Prairie Avenue. Alternative 1 would avoid construction impacts on utilities. Once operational, the proposed Project would not require further utility upgrades or relocation of utility infrastructure.

Operation of the proposed Project would consume a maximum net increase of 23.85 million kWh of electricity per year. Operation of the proposed Project would also result in a net decrease of 3.61 million kBTU of natural gas per year, and a net decrease of 71.86 acre-feet per year (afy) of water per year. With the No Project Alternative, this increase in electricity use would not occur, but the decrease in natural gas and water use that would result from the proposed Project would also not occur.

Relationship to Project Objectives

The No Project Alternative would not meet any of the City's objectives for the proposed Project, except that it would maintain existing roadway capacity along Market Street.

5.5.2 Alternative 2: Bus Rapid Transit (BRT) System

1. Aesthetics

The proposed Project would not result in significant impacts to the aesthetic character of the community during construction or operation with implementation of the project design features in the ITCCCP and ITC Design Guidelines.

With Alternative 2, the proposed ATS guideway would not be built and existing visual characteristics along Market Street, Manchester Boulevard and Prairie Avenue would generally be maintained. As such, there would generally be little to no impact to the aesthetic character of the community because the BRT would be contained within the existing roadway system. For this reason, no potentially significant impact to the visual character of the area would occur with Alternative 2. The proposed Project would change the visual characteristics of the areas located along the proposed alignment but would not result in significant impacts. While Alternative 2 would result in fewer changes to the visual character of the area than the proposed Project, neither this alternative nor the proposed Project would result in significant aesthetic impacts.

2. Air Quality

The BRT System would require some modifications to existing streets in order to create dedicated transit lanes and stops but this construction would be less than the demolition and construction activities

associated with the proposed Project. This alternative would not conflict with implementation of the applicable air quality plans and unmitigaetd construction emissions would be substantially reduced compared to the proposed Project.

Though this Alternative would reduce VMTs, it would only be able to provide approximately 20 percent of the ridership capacity compared to the proposed Project. Moreover, Alternative 2 would reduce daily traffic volumes (ADTs) along key roadway corridors and VMTs on an average weekday basis to a lesser degree than the proposed Project. Specifically, typical weekday nonevent and daily VMT in the City would be reduced by an amount equivalent to 20 percent to 25 percent of those of the proposed Project. Moreover, under Alternative 2 the existing uses that would be removed by the proposed Project would remain operational and would not be replaced by the proposed Project components which generate less air pollutant emissions than the existing uses. As such, Alternative 2 would increase operational air quality impacts in comparison to the proposed Project.

3. Biological Resources

Approximately 502 trees are present along the proposed Project alignment which may require removal during construction of the proposed Project. The BRT System Alternative would only involve minor modifications to existing streets along the public right-of-way where BRT-only lanes along the route are implemented and BRT stops are constructed. Alternative 2 would not, therefore, require the same amount of potential tree removals as the proposed Project. Similar to the proposed Project, operation of Alternative 2 would not diminish the chances for long-term survival of bird species or their habitats and no additional tree and/or ornamental vegetation removals would occur. As such, Alternative 2 would result in similar operational impacts compared to the proposed Project.

4. Cultural Resources

The proposed Project would not result in significant impacts to historic resources on Market Street or the other segments. Alternative 2, which would involve minor modifications of existing streets, construction of bus stops, and the operation of a Bus Rapid Transit system, would also not result in significant impacts to cultural resources. For this reason, neither this alternative nor the Project would result in significant impacts to cultural resources.

5. Energy Resources

With Alternative 2, the proposed Project would not be built. No demolition or construction activities, which would consume energy resources would occur, except along the public right-of-way where BRT-only lanes and bus stops along the route would be located. As such, Alternative 2 would reduce construction impacts to energy resources. Operation of the proposed Project would consume a maximum

net increase of 23.85 million kWh of electricity per year. Alternative 2 would reduce operational electricity impacts. However, the proposed Project would result in a net decrease of 3.61 million kBTU of natural gas per year. Alternative 2 would not require demolition of existing land uses and would reduce traffic along key roadway corridors and VMT on an average weekday basis to a lesser degree than the proposed Project. For this reason, Alternative 2 would increase impacts related to natural gas and petroleum-based fuel consumption. The proposed Project would be consistent with the ECAP and General Plan which sets goals to reduce emissions through increased energy efficiency, renewable energy generation, improved transit options, and reduced consumption and waste. Alternative 2 would address the goals and policies within these plans by improving transit options but to a lesser degree than the proposed Project.

6. Geology and Soils

Under Alternative 2, impacts related to geology and soil conditions, including paleontological resources, would be less compared to the proposed Project. The Project is proposed in an area subject to groundshaking from earthquake events that may occur on faults in the region. Potentially active faults cross the proposed alignment for the Project. Measures are identified to mitigate potential impacts associated with these conditions to less than significant. Because Alternative 2 would occur in the location as the proposed Project, the geological and soils conditions that would be encountered in construction of Alternative 2 would be the similar as with the proposed Project, but because substantially less construction would be required, potential risks associated with ground-shaking would be reduced as compared to the proposed Project. During operations, potential risks from seismic events would be reduced with an at-grade system as no aerial structures would be built. Because there would be substantially less construction with an at-grade BRT system, the potential for accidental discovery of paleontological resources would decrease.

7. Greenhouse Gas Emissions

Under Alternative 2, the proposed Project would not be built. No demolition or construction activities which would produce GHG emissions would occur, except along the public right-of-way where BRT-only lanes and bus stops along the route would be located. As such, Alternative 2 would reduce construction GHG impacts compared to the proposed Project.

Though this alternative would reduce VMT, it would only be able to provide approximately 20 percent of the ridership capacity of the proposed Project. Alternative 2 would reduce traffic along key roadway corridors and VMT on an average weekday basis to a lesser degree than the proposed Project. Specifically, typical weekday nonevent and daily VMT in the City would be reduced by an amount equivalent to 20 percent to 25 percent of those of the proposed Project. Additionally, dedicated bus lanes would take away roadway carrying capacity for private vehicles and increase local traffic congestion. As such, Alternative 2

would not decrease operational GHG emissions to the same degree as the proposed Project.

Similar to the proposed Project, Alternative 2 would be consistent with the CARB 2017 Scoping Plan Update, SCAG 2020-2045 RTP/SCS, the ECAP, and General Plan which sets goals to reduce GHG emissions by improving transit infrastructure. However, Alternative 2 would improve transit infrastructure at a lesser degree compared to the proposed Project and would not result in more energy efficient uses being developed in place of the less energy efficient existing uses.

8. Hazards and Hazardous Materials

With the BRT Transit system alternative, the proposed Project would not be built. No construction of the guideway and stations in conjunction with the MSF and PDS substations would occur. Construction of the Project would include the demolition of existing buildings that may contain ACM and LBP. Construction activities may also encounter underground storage tanks and soil that may be contaminated. The ITC CCP requires the preparation of plans defining protocols and actions to address this potential and avoid significant impacts. Alternative 2 would not involve the demolition of existing buildings, which may have the potential release hazardous materials, such as ACMs, LBP, and other potentially hazardous building materials. Additionally, Alternative 2 would generate a lower amount of construction emissions which may release TACs at schools within one-quarter mile. Transportation of hazardous materials during construction of the proposed Project would also not likely occur with this alternative. The potential for accidental release of hazardous materials in the environment would be significantly lessened when compared to the proposed Project.

Operation of the proposed Project would include the use and storage hazardous materials during operation typical of those used in an industrial setting. Compliance with federal, State, and local laws and regulations relating to transport, storage, disposal, and handling of hazardous materials would minimize any potential for accidental release or upset of hazardous materials during station operation. Under Alternative 2, operation of a BRT system would include the use and storage of similar materials. As such, operational impacts under Alternative 2 would be similar to those of the proposed Project.

9. Land Use and Planning

Alternative 2 would not include the construction of the ATS system or any of the associated supporting facilities. The proposed Project would remove traffic from existing roadways without diminishing the existing traffic capacity or the number of lanes. With the BRT system alternative, an existing lane of travel would be dedicated for use by buses along the route, which would reduce the lane capacity for other vehicles and increase local traffic congestion for passenger vehicles in the community. This increase in

congestion on roadways under Alternative 2 would have an indirect effect on the character of the community.

Alternative 2 would be generally consistent with all existing goals, plans, and policies as it would maintain the majority of the infrastructure in the surrounding communities, allowing the goals and objectives of the existing plans to be carried out generally. Notwithstanding, in certain locations there could be conflicts with the design of existing roadways, roadway capacity, and the City's circulation element and amendments to City documents may be needed to avoid these conflicts. Land use impacts would be similar with this alternative and the proposed Project.

10. Noise and Vibration

Under Alternative 2 the proposed Project would not be built. No demolition or construction activities which would produce noise or groundborne vibration impacts would occur, except along the public right-of-way where BRT-only lanes and bus stops are located. As such, construction noise and vibration impacts would be reduced. Though this alternative would reduce VMT, it would only be able to provide approximately 20 percent of the ridership capacity compared to the proposed Project. Alternative 2 would reduce traffic volumes along key roadway corridors and VMT on an average weekday basis to a lesser degree than the proposed Project. Specifically, typical weekday nonevent and daily VMT in the City would be reduced by an amount equivalent to 20 percent to 25 percent of those of the proposed Project. With the proposed Project, operation of the ATS trains would result in noise levels increases from a low of 0.1 dBA to a high of 1.8 dBA, and operation of the proposed MSF would result in noise increases ranging from no increase to a high of 3.9 dBA. Under Alternative 2, the ATS would not be built or operate and these noise increases would not occur. However, increased bus traffic on these roadways would increase the local noise levels and, as such, noise and vibration impacts associated with operation of Alternative 2 would be similar to the proposed Project.

11. Population, Employment, and Housing

The proposed Project would have no direct impact on housing as the proposed Project does not include the construction or demolition of any housing units. The proposed Project would impact existing employment opportunities in the City as commercial uses that would be displaced by the proposed Project are estimated to be approximately 464 jobs. However, the proposed Project would result in a net increase of approximately 11,052[6] FTE jobs, as estimated by the Job Co-Benefits calculation (see **Section 4.11 Population, Employment, and Housing**). The number of jobs that will be supported by the proposed Project in the region is within the projected regional trends in by the SCAG 2020-2045 RTP/SCS data and

6 11,516 minus 464 in numbers of jobs displaced.

the jobs that will benefit from the proposed Project will not directly translate into additional population growth in the region. As such the proposed Project would have a less than significant impact on inducing employment and population growth.

Alternative 2 would maintain the existing population and housing trends within the City and the region while having a minor impact on employment by hiring personnel for the BRT System construction and operation. As such, Alternative 2 would not significantly impact population or employment growth in the City or the region. As such, Alternative 2 would have similar impacts on population and housing conditions, although the beneficial effects of this alternative would be substantially reduced as compared to the proposed Project.

12. Transportation

Under Alternative 2, the City would construct and operate a BRT system that would connect the LASED, including the Performance Arena, other mixed uses in the Hollywood Park Specific Plan area, SoFi Stadium, the Forum, and the IBEC to the K Line Downtown Inglewood station. Under this alternative, the proposed Project would not be built. No demolition or construction activities would occur, except along the public right-of-way where BRT-only lanes and bus stops along the route would be located. As such, Alternative 2 would reduce impacts associated with the construction of transportation facilities.

One to two roadway lanes would be lost to mixed traffic flow along the BRT alternative route depending upon location. With a maximum potential headway of approximately 3 minutes at peak times, Alternative 2 would only be able to provide approximately 20 percent of the capacity compared to the proposed Project. The proposed plan amendments included in the proposed Project would not occur. The area would continue to be used by the existing commercial, recreational, and other uses.

Alternative 2 would provide operational benefits by reducing traffic volumes along key roadway corridors and VMT on an average weekday basis to a lesser degree than the proposed Project. Specifically, typical weekday nonevent and daily VMT in the City would be reduced by an amount equivalent to 20 percent to 25 percent of those of the proposed Project. The estimated daily BRT ridership with Event Conditions would be approximately 20 percent of the projected proposed Project ridership. Sufficient transit connection capacity between the Metro's regional transit system and the City's new major activity centers and entertainment venues would not be provided by this alternative. Additionally, this alternative would reduce the roadway capacities along Florence Avenue, Prairie Avenue, Manchester Boulevard and Market Street, consequently, increasing traffic congestion areawide. In comparison, the proposed Project would not reduce roadway capacities compared to existing conditions and would improve congestion and traffic flows areawide. As such, Alternative 2 would obtain limited operational benefits while substantially

worsening traffic flows and congestion Transportation impacts of Alternative 2 would be increased as compared to the proposed Project.

13. Tribal Cultural Resources

The proposed Project would have a less than significant impact on Tribal Cultural Resources (TCRs), No TCRS were identified in the records around the Project site and no sensitive resources were identified. Nonetheless, the proposed Project would include construction which would have the potential to unearth subsurface resources not previously identified. Given the level of urban development in Inglewood, the likelihood of unearthing TCRs is low but it is still a possibility. Alternative 2 would eliminate the need to construct the ATS and this potential impact to TCRs would be avoided. TCR impacts for Alternative 2 would be reduced as compared to the proposed Project.

14. Utilities and Service Systems

Under Alternative 2 the proposed Project would not be built. No demolition or construction activities would occur, except along the public right-of-way where BRT-only lanes and bus stops along the route are located. As such, no utility lines would need to be removed or relocated along Market Street, Manchester Boulevard, or Prairie Avenue, which would reduce construction impacts.

Once operational, the proposed Project and Alternative 2 would not require further utility upgrades or relocation of utility infrastructure, except for potential electric charging infrastructure. However, as discussed previously, operation of the proposed Project would consume a maximum net increase of 23.85 million kWh of electricity per year. Alternative 2 would reduce operational electricity demands in comparison to the proposed Project. However, operation of the proposed Project would result in a net decrease of 3.61 million kBTU of natural gas per year, and a net decrease of 71.86 afy of water per year. Alternative 2 would not result in similar reductions in utility demands.

Relationship to Project Objectives

The BRT System Alternative would meet some, but not all of the City's objectives for the proposed Project. The objectives to provide a direct and convenient connection to the Metro regional transit system, encourage intermodal transportation systems by providing convenient, safe, and reliable transit and convenient access to businesses in the City would be met by this alternative. However, the objective related to providing sufficient transit connection capacity between Metro's regional transit system and the City new major activity centers would, although not be met by this alternative, would still result in limited increased transit mode split, limited reduction in vehicle trips, and consequently, limited reduction in per-capita vehicle miles traveled to the City's major activity centers. The BRT System Alternative would also partially meet the City's objectives to support the ongoing economic revitalization within the

Downtown TOD Plan area and encourage redevelopment and investment within the City in areas served by the proposed Project, but not to the same degree as the proposed Project.

This alternative would partially meet the City's objective to support regional efforts to become more efficient, economically strong, equitable, and sustainable. Though the BRT System Alternative would provide limited operational benefits by reducing traffic volumes along key roadway corridors, it would also reduce the roadway capacities along Florence Avenue, Prairie Avenue, Manchester Boulevard and Market Street, consequently increasing traffic congestion throughout the City. As such, this alternative would not meet the City's objectives to maintain existing roadway capacity or reduce the City's traffic congestion and alleviate growing demand on the existing roadway network on both major arterials and residential streets for both nonevent and event days.

5.5.3 Alternative 3: Market Street Pedestrian Promenade

1. Aesthetics

With this alternative, the proposed Project and all of its components would be constructed and operate, but Market Street between Florence Avenue and Manchester Boulevard would be closed to vehicular traffic. Alternative 3 would require the placement of barricades to prevent vehicle access. These barricades would need to be designed in a manner which would not degrade the existing visual character of Downtown. As the ATS system as proposed would be constructed with this alternative, the aesthetic impacts of the proposed Project would be similar to the proposed Project.

2. Air Quality

Construction under Alternative 3 would be similar to the proposed Project. During construction, the proposed Project would not exceed the significance threshold for any criteria pollutant after mitigation, and impacts would be less than significant. Therefore, similar to the proposed Project, Alternative 3 would not conflict with implementation of the applicable air quality plans and would not exceed thresholds established by the SCAQMD for criteria air pollutants.

Operational impacts associated with Alternative 3 would be similar to the proposed Project as the Pedestrian Promenade would not generate additional air quality emissions. Moreover, reductions to daily traffic volumes along key roadway corridors and reductions to VMT on an average weekday basis with event would occur similar in magnitude to those associated with the proposed Project. As such, Alternative 3 would result in similar operational impacts compared to the proposed Project.

3. Biological Resources

Approximately 502 trees along the proposed Project alignment may require removal during construction of the proposed Project. The addition of a Pedestrian Promenade would not require tree removals and would likely include the planting of additional trees. As such, impacts to biological resources during construction would be reduced compared to the proposed Project. Alternative 3 would not diminish the chances for long-term survival of bird species or their habitats and no additional tree and/or ornamental vegetation removals would be required. As such, Alternative 3 would result in similar operational impacts compared to the proposed Project.

4. Cultural Resources

Closing a portion of Market Street in downtown Inglewood to vehicle use, which would occur with Alternative 3, would not result in an significant impacts to historic resources located on Market Street. Conversion of this portion of Market Street to a pedestrian mall would not result in any additional direct or indirect impacts to historic or other cultural resource impacts compared to the proposed Project, nor would it substantially reduce the cultural resources impacts of the proposed Project. Neither this alternative nor the Project would result in significant impacts to cultural resources.

5. Energy Resources

Energy demand from construction activities under Alternative 3 would be similar to the proposed Project as the ATS system would be built as proposed. The additional construction required to create the pedestrian mall would only increase these impacts incrementally. Reductions to daily traffic volumes along key roadway corridors and reductions to VMT on an average weekday basis would occur similar in magnitude to those associated with the proposed Project. As such, Alternative 3 would result in similar operational impacts compared to the proposed Project.

6. Geology and Soils

Under Alternative 3, the proposed Project would be built but would include a pedestrian promenade on Market Street between Florence Avenue and Manchester Boulevard. Impacts related to geology and soils conditions, including paleontological resources, would be similar to those identified for the proposed Project. Geology and soils conditions that would be encountered in construction of Alternative 3 would be the same as with the proposed Project. The Potrero Fault lies approximately one-quarter mile to the east of the project study area; however, compliance with the California Building Code would avoid the creation of seismic hazards. Ground-disturbing activity and the potential for accidental discovery of paleontological resources would continue to be potentially significant with Alternative 3. Alternative 3

would implement similar measures as the proposed Project to mitigate the potential impacts on paleontological resources to less than significant.

7. Greenhouse Gas Emissions

Construction under Alternative 3 would be similar to the proposed Project and would result in a similar level of GHG emissions. Reductions to daily traffic volumes along key roadway corridors and reductions to VMT on an average weekday basis would occur similar in magnitude to those associated with the proposed Project. Therefore, similar to the proposed Project, Alternative 3 would be consistent with the CARB 2017 Scoping Plan Update, SCAG's 2020-2045 RTP/SCS, the ECAP, and General Plan which sets goals to reduce GHG emissions by increasing energy efficiency and improving transit infrastructure. Operational GHG impacts would be similar to the proposed Project.

8. Hazards and Hazardous Materials

Under Alternative 3, the proposed Project would be built but would include the pedestrian promenade. Construction under Alternative 3 would be similar to the proposed Project. Construction of the guideway and stations in conjunction with the MSF and PDS substations would involve the demolition of existing buildings, which may have the potential release hazardous materials, such as ACMs, LBP, and other potentially hazardous building materials. The additional construction activities required to create the pedestrian promenade would be minor. Similar to the proposed Project, construction activities under Alternative 3 would likely cause the temporary closure of travel lanes, roadways segments, and sidewalks along the elevated guideway and stations within the street rights-of-way.

Under Alternative 3, operation of the ATS would include the use and storage of hazardous materials typical of those used in an industrial setting, similar to the proposed Project. Alternative 3 would not interfere or impair with the City's ability to increase public awareness or make any improvements to emergency services and warning systems during operation. Converting this portion of Market Street to a pedestrian promenade would not involve the use of handling of any hazardous materials. With adherence to the federal, State, and local safety requirements, Alternative 3 would not conflict with the requirements of an emergency response plan or emergency evacuation plan, similar to the proposed Project. As such, operational impacts under Alternative 3 would be similar to the proposed Project.

9. Land Use and Planning

Alternative 3 would modify existing traffic patterns and connections within the community. Vehicular connections would be reduced as Market Street between Florence Avenue and Manchester Boulevard would be closed. Vehicular traffic would need to be rerouted around the closed pedestrian promenade which may increase local traffic volume for adjacent streets. The connection between different parts of

the community would not be diminished in a substantial manner as the street segment that would be closed only includes three blocks. Alternative 3 would not, therefore, divide the community physically but may contribute to additional ground level traffic surrounding the closure.

Alternative 3 would be generally consistent with all existing goals, plans, and policies as it would maintain the majority of the infrastructure in the surrounding community, allowing the goals and objectives of the existing plans to be carried out generally. Additionally, closure of Market Street would enable the activation and programming of Market Street, which could include open air markets, creative retail and concession spaces, recreational and open space areas, and locations for public art and locations for public gathering. This Alternative could achieve City's objective for economic development of Market Street. Conflicts with the design of existing roadways, roadway capacity, and the City's circulation element may exist and appropriate design and amendments proposed for City documents would be needed to avoid conflicts with existing plans and policies. The land use impacts of this alternative and the proposed Project would be similar and less than significant.

10. Noise and Vibration

Construction under Alternative 3 would be similar to the proposed Project. It is anticipated that the development of a Pedestrian Promenade along Market Street would not result in substantial noise or vibration impacts as it would eliminate vehicle travel along Market Street between Florence Avenue and Manchester Boulevard which would reduce roadway noise. Moreover, reductions to daily traffic volumes along key roadway corridors and reductions to VMT on an average weekday basis with event would occur similar in magnitude to those associated with the proposed Project. The operational impacts of the Project would be less than significant. As such, operational noise and vibration impacts would be reduced in comparison to the proposed Project.

11. Population, Employment, and Housing

The proposed Project would have no direct impact on housing as the proposed Project does not include the construction or demolition of housing units. The proposed Project would impact existing employment opportunities in the City as commercial uses that would be displaced by the proposed Project are estimated to be approximately 464 jobs. However, the proposed Project would result in a net increase of approximately 11,052[7] FTE jobs through the Greenhouse Gas Reduction Funds, as estimated by the Job Co-Benefits calculation (see **Section 4.11 Population, Employment, and Housing**). The number of jobs that will be supported by the proposed Project in the region is within the projected regional trends in the SCAG 2020-2045 RTP/SCS data and the jobs that will benefit from the proposed Project will not directly

7 11,516 minus 464 in numbers of jobs displaced.

translate into additional population growth in the region. As such the proposed Project would have a less than significant impact on inducing employment and population growth.

Converting a portion of Market Street to a pedestrian mall would not result in any additional direct or indirect impacts to population, employment, and housing. Alternative 3 would maintain the existing population, employment, and housing trends within the City and the region. As such, Alternative 3 would not directly or indirectly substantially induce population in the City or the region. Employment support and would be similar to the proposed Project under Alternative 3.

12. Transportation

Construction under Alternative 3 would be similar to the proposed Project. The proposed Project and all of its components would be constructed and operational. Market Street between Florence Avenue and Manchester Boulevard would be reconfigured to eliminate vehicular traffic north and south on Market Street. Cross traffic would be allowed on Regent Street and Queen Street without any turns to/from Market Street. The closure of Market Street would divert traffic to the surrounding streets including La Brea Avenue and Locust Street. Since the current traffic along Market Street is very low, this diversion of Market Street traffic can be accommodated along adjacent parallel streets. The operation of the ATS would be the same as planned for the proposed Project.

Similar to the proposed Project, Alternative 3 would result in operational benefits. Reductions to daily traffic volumes along key roadway corridors and reductions to VMTs on an average weekday basis would occur similar in magnitude to those associated with the proposed Project. Additionally, this alternative is estimated to result in transit ridership similar to the proposed Project. Finally, Alternative 3 would provide similar operational benefits as those of the proposed Project relative to reduction in traffic congestion and improvement of traffic flows along key roadway facilities areawide.

13. Tribal Cultural Resources

The proposed Project would have a less than significant impact on Tribal Cultural Resources (TCRs), No TCRs were identified in the records around the Project site and no sensitive resources were identified. Nonetheless, the Project as proposed would include construction which would have the potential to unearth subsurface resources not previously identified. Given the level of urban development in Inglewood, the likelihood of unearthing TCRs is low but it is still a possibility. Converting a portion of Market Street to a pedestrian promenade would not result in any additional impacts.

14. Utilities and Service Systems

Construction and operation under Alternative 3 would be similar to the proposed Project. Closing a portion of Market Street to vehicle traffic would only involve minor above ground street improvements. For this reason, impacts related to the construction or relocation of water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities would be similar compared to the proposed Project.

Relationship to Project Objectives

The Market Street Pedestrian Promenade Alternative would meet most of the City's objectives for the proposed Project since the proposed Project would still be built and reductions to daily traffic volumes along key roadway corridors and reductions to VMTs on an average weekday basis with event would occur similar in magnitude to those associated with the proposed Project. However, Alternative 3 would have not meet the City's objective to maintain existing roadway capacity along Market Street.

5.5.4 Alternative 4: 4th Station Alternative

1. Aesthetics

Under the 4th station alternative, impacts to visual character under aesthetics would be similar to the proposed Project. The proposed Project would not result in significant impacts to the aesthetic character of the community during construction or operation with implementation of the project design features in the CCP and Design Guidelines. The addition of a 4th station east of the intersection of Market Street and Manchester Boulevard would not result in any additional visual impacts as this station would be integrated into the design of the ATS consistent with the Design Guidelines.

2. Air Quality

Under Alternative 4, the proposed Project would be built but would include an additional station along Manchester Boulevard. During construction, the proposed Project would not exceed the significance threshold for any criteria pollutant after mitigation, and impacts would be less than significant. The construction of a 4th station would require additional construction activities including operation of off-road heavy-duty equipment and on-road trucks for hauling which would increase air quality emissions. Though Alternative 4 would implement similar mitigation measures as the proposed Project, it would increase construction impacts.

Operation of the ATS with a 4th station would not result in any additional operational air quality emissions. Operational air quality impacts would be similar with this alternative and the proposed Project.

3. Biological Resources

Approximately 502 trees are located along the proposed ATS alignment that may require removal during construction of the proposed Project. The 4th station would be located along the guideway within the public right-of-way along Manchester Boulevard. With Alternative 4, no additional properties would need to be acquired and no additional demolition of buildings or site improvements would be required. Alternative 4 would not require an increase in tree removals or disturbance of nesting raptors or migratory birds. For this reason, impacts to biological resources during construction would be similar compared to the proposed Project. Moreover, operation of Alternative 4 would not diminish the chances for long-term survival of bird species or their habitats and no additional tree and/or ornamental vegetation removals would be planned. As such, Alternative 4 would result in similar operational impacts compared to the proposed Project.

4. Cultural Resources

Alternative 4 would have impacts on cultural resources similar to the proposed Project. Alternative 4 would construct the ATS guideway on the same alignment with the same dimensions as the proposed Project. The additional station would not result in any additional impacts because the additional station and this segment of the guideway would be constructed above the nearby historic resource, the Bank of America building at 320 Manchester Boulevard. The Bank of America building would retain its ability to convey its historical significance without additional indirect impact to the view of its primary façade. As such impacts to cultural resources would be similar for Alternative 4 and the proposed Project.

5. Energy Resources

Under Alternative 4, the proposed Project would be built but would include an additional station along Manchester Boulevard. Construction of a 4th station would result in an incremental increase in energy resource consumption for electricity and petroleum-based fuels for construction of this station. However, this increase would be minimal and temporary, similar to the proposed Project. Nonetheless construction impacts to energy resources would increase incrementally compared to the proposed Project.

Operation of a 4th station would increase consumption of energy resources including electricity and natural gas. This alternative would result in reductions to daily traffic volumes along key roadway corridors and VMT on an average weekday basis would occur similar in magnitude to those estimated for the proposed Project, although the addition of a 4th station could incrementally increase ridership. As such, this alternative would result in a reduction of petroleum-based fuel consumption from vehicle travel similar or to a slightly greater degree than the proposed Project. The addition of one station would not increase energy resource consumption to a level of significance.

6. Geology and Soils

Under Alternative 4, the proposed Project would be built but would include an additional station along Manchester Boulevard. Impacts related to geology and soils conditions, including paleontological resources, and potential conflict with an emergency evacuation plan, would be similar to those described for the proposed Project. Geology and soils conditions that would be encountered in construction of Alternative 4 would be the same as with the proposed Project. The Potrero Fault lies approximately one-quarter mile to the east of the project study area; however, compliance with the California Building Code would avoid the creation of seismic hazards. Ground-disturbing activity and the potential for accidental discovery of paleontological resources would continue to be potentially significant under Alternative 4. Alternative 4 would implement similar measures as the proposed Project to mitigate the potential impacts on paleontological resources to less than significant.

7. Greenhouse Gas Emissions

Under Alternative 4, the proposed Project would be built but would include an additional station along Manchester Boulevard. Construction of a 4th station would require additional construction activities including operation of off-road heavy-duty equipment and on-road trucks for hauling which would increase GHG emissions. However, similar to the proposed Project, these emissions would be temporary in nature and cease once the Project is complete. Nonetheless, construction related GHG emissions would increase under Alternative 4.

Operation of a 4th station would incrementally increase operational GHG emissions. However, this alternative would result in reductions to daily traffic volumes along key roadway corridors and VMT on an average weekday basis would occur similar in magnitude to those estimated for the proposed Project. As such, this alternative would result in a net negative GHG emissions associated with vehicle travel. The addition of one station would not increase operational GHG emissions to a level of significance. Moreover, similar to the proposed Project, Alternative 4 would be consistent with the CARB 2017 Scoping Plan Update, SCAG 2020-2045 RTP/SCS, the ECAP, and General Plan which sets goals to reduce GHG emissions by increasing energy efficiency and improving transit infrastructure. Nonetheless, operational GHG emissions would increase incrementally with Alternative 4.

8. Hazards and Hazardous Materials

Under Alternative 4, the proposed Project would be built but would include an additional station along Manchester Boulevard. Although construction of an additional station would increase construction activities compared to the proposed Project, construction impacts under Alternative 4 would be similar to those of proposed Project. Construction of the guideway and four stations in conjunction with the MSF and PDS substations would still involve the demolition of existing buildings, which may have the potential

release hazardous materials, such as ACMs, LBP, and other potentially hazardous building materials. Furthermore, excavations of potentially contaminated soils may occur during construction of Alternative 4 as a result of prior uses on some of the sites, similar to the proposed Project.

Under Alternative 4, operation would include the use and storage of hazardous materials typical of those used in an industrial setting, similar to the proposed Project. Alternative 4 would not interfere with or impair the City's ability to increase public awareness or make any improvements to emergency services and warning systems during operation. With adherence to the federal, State, and local safety requirements, Alternative 4 would not conflict with the requirements of an emergency response plan or emergency evacuation plan, similar to the proposed Project. As such, operational impacts under Alternative 4 would be similar when compared to the proposed Project.

9. Land Use and Planning

Alternative 4 would build an ATS similar to the proposed Project with a 4th station located on Manchester Boulevard. The proposed Project would not physically divide the community with its elevated guideways and maintenance of existing roadway capacity and roadway connections. Alternative 4 would have an alignment and elevated guideways similar to the proposed Project. As such, Alternative 4 would also maintain the existing roadway capacity and roadway connections. Alternative 4 could activate foot traffic and interest on Market Street and help reinvigorate the Downtown business area. Alternative 4 will have a similar impact on physically dividing the community as the proposed Project.

Alternative 4 would be generally consistent with the existing plans, policies and guidelines in the City and the greater region. Alternative 4 would require the same amendments to the Land Use Element, Circulation Element, Safety Element, Environmental Justice Element, and the Inglewood Municipal Code as the proposed Project to incorporate the ATS into the language of the existing plans, policies, and guidelines within the City. As such, land use impacts of Alternative 4 would be similar to the proposed Project with neither this alternative nor the proposed Project resulting in significant land use impacts.

10. Noise and Vibration

Under Alternative 4, the proposed Project would be built but would include an additional station along Manchester Boulevard. Construction of a 4th station would require additional construction activities including operation of off-road heavy-duty equipment and on-road trucks for hauling which could increase construction noise and vibration levels. Though Alternative 4 would implement similar mitigation measures as the proposed Project, it would increase construction noise and vibration impacts.

Alternative 4 would result in reductions to daily traffic volumes along key roadway corridors and VMT on an average weekday basis would occur similar or slightly increased in magnitude to those estimated for

the proposed Project. As such, this alternative would result in similar or slightly increased roadway noise levels as the proposed Project. The addition of one station would not increase operational noise or vibration levels to a level of significance.

11. Population, Employment, and Housing

The proposed Project would have no direct impact on housing as the proposed Project does not include the construction or demolition of any housing units. The proposed Project would impact existing employment opportunities in the City as commercial uses that would be displaced by the proposed Project are estimated to be approximately 464 jobs. However, the proposed Project would result in a net increase of for approximately 11,052[8]FTE jobs as estimated by the Job Co-Benefits calculation (see **Section 4.11 Population, Employment, and Housing**). The number of jobs that will be supported by the proposed Project in the region is within the projected regional trends in the SCAG 2020-2045 RTP/SCS data and the jobs that will benefit from the proposed Project will not directly translate into additional population growth in the region. As such the proposed Project would have a less than significant impact on inducing employment and population growth.

Alternative 4 would have a similar effect on the population and employment trend as the ATS would be constructed and the same displacement of jobs and hiring of ATS personnel would occur. As such, Alternative 4 would have similar population, employment, and housing impacts as the proposed Project.

12. Transportation

Under Alternative 4, the proposed Project would be built but would include an additional station along Manchester Boulevard. Construction of a 4th station would require additional construction activities including operation of off-road heavy-duty equipment and on-road trucks for hauling which could increase transportation effects and disruptions.

The weekday daily VMT would be reduced in the Future Opening Year (2027) with Event conditions similar to the VMT reductions estimated for the proposed Project. The estimated daily ITC ridership during Future Opening Year (2027) with NFL Event conditions are estimated to be approximately 29,300 passengers similar to the proposed Project. The weekday daily VMT would be reduced in the Future Horizon Year (2045) with Event conditions similar to the VMT reductions estimated for the proposed Project. The estimated daily ITC ridership during Future Horizon Year (2045) with an NFL Event conditions are estimated to be approximately 34,650 passengers, similar to the proposed Project. Additionally, daily traffic volumes would decrease along key travel corridors such as Prairie Avenue, Manchester Boulevard

8 11,516 minus 464 in numbers of jobs displaced.

and Century Boulevard, thereby reducing congestion and improving travel conditions on a system-wide basis.

Similar to the proposed Project, Alternative 4 would result in operational benefits. Reductions to daily traffic volumes along key roadway corridors and VMTs on an average weekday basis would occur similar in magnitude to those estimated for the proposed Project. This alternative is estimated to result in ITC ridership similar to the proposed Project. Improved traffic flows and reduction in congestion along key travel corridors, similar to those associated with the proposed Project would occur with Alternative 4.

13. Tribal Cultural Resources

The proposed Project would have a less than significant impact on Tribal Cultural Resources (TCRs). No TCRs were identified in the records around the Project site and no sensitive resources were identified. Nonetheless, the Project as proposed would include construction which would have the potential to unearth subsurface resources not previously identified. Given the level of urban development in Inglewood, the likelihood of unearthing TCRs is low but it is still a possibility. The 4th station alternative would have a similar impact to TCRs as the proposed Project since extensive construction and excavation of soil would be required to construct the ATS structure and the 4th station. Similar impacts to the TCRs would result from the proposed Project and Alternative 4.

14. Utilities and Service Systems

The 4th station would be located along the guideway within the public right-of-way along Manchester Boulevard. Under Alternative 4, no additional properties would need to be acquired and no additional demolition of buildings and site improvements would be required. As such impacts related to the construction or relocation of water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities would be similar to the proposed Project.

Relationship to Project Objectives

The 4th Station Alternative would meet all of the City's objectives for the proposed Project since the proposed Project would still be built and reductions to daily traffic volumes along key roadway corridors and reductions to VMTs on an average weekday basis with event would occur similar in magnitude to those associated with the proposed Project.

5.5.5 Alternative 5: Prairie Avenue Single Station Alternative

1. Aesthetics

Under Alternative 5, the proposed Project would not result in significant impacts to the aesthetic character of the community during construction or operation with implementation of the project design

features in the ITCCCP and Design Guidelines. Similarly, Alternative 5 would travel down the same alignment with the same proposed and elevated guideway across the frontage of the buildings on Market Street. No additional impacts on the visual character of downtown would result from the consolidation and relocation of the single station along Prairie Avenue.

2. Air Quality

Under Alternative 5, the proposed Project would be built but the two proposed stations along Prairie Avenue would be consolidated into a single station that would be located adjacent to the City's Civic Center site. The construction of a single station along Prairie Avenue instead of two stations would result in less construction activities compared to the proposed Project. Similar to the proposed Project, Alternative 5 would not conflict with implementation of the applicable air quality plans or exceed thresholds established by the SCAQMD for criteria air pollutants. Moreover, Alternative 5 would implement similar mitigation measures as the proposed Project and would reduce construction air quality emissions.

Operation of a single station along Prairie Avenue instead of two stations would slightly decrease operational air quality emissions. However, under Alternative 5, mobile operational benefits would be less than those associated with the proposed Project. Reductions to daily traffic volumes along key roadway corridors and VMTs on an average weekday basis would occur, but approximately 15 percent less in magnitude than those associated with the proposed Project. As such, operational air quality emissions associated mobile sources would increase compared to the proposed Project.

3. Biological Resources

Approximately 502 trees which may require removal during construction of the proposed Project exist along the proposed Project alignment. With Alternative 5, no additional properties would need to be acquired and no additional demolition of buildings or site improvements would be required. The guideway would still be constructed along the same segment of Prairie Avenue compared to the proposed Project. As such, Alternative 5 would not require an increase or decrease in tree removals or disturbance of nesting raptors or migratory birds. As such, impacts to biological resources during construction would be similar compared to the proposed Project. Similar to the proposed Project, operation of Alternative 5 would not diminish the chances for long-term survival of bird species or their habitats and no additional tree and/or ornamental vegetation removals would be planned. As such, Alternative 5 would result in similar operational impacts compared to the proposed Project.

4. Cultural Resources

Alternative 5 would have a less than significant impact on cultural resources, similar to the proposed Project. The consolidated and relocated station on Prairie Avenue would have no impact and would not be located near any identified historical resources. As such, impacts to cultural resources would be similar for Alternative 5 and the proposed Project.

5. Energy Resources

Under Alternative 5, the proposed Project would be built but the two proposed stations along Prairie Avenue would be consolidated into a single station that would be located adjacent to the City's Civic Center site. Construction of a single station in place of two stations would result in an incremental decrease of energy resource consumption for electricity and petroleum-based fuels associated with operation of the station.

Operation of a single station along Prairie Avenue instead of two stations would also slightly decrease operational energy resource consumption. However, under Alternative 5, mobile operational benefits would be less than those associated with the proposed Project. Reductions to daily traffic volumes along key roadway corridors and VMTs on an average weekday basis would occur, but approximately 15 percent less in magnitude than those associated with the proposed Project. As such, Alternative 5 would result in an increase in petroleum-based fuel consumption compared to the proposed Project.

6. Geology and Soils

Under Alternative 5, the proposed Project would be built but the two proposed stations along Prairie Avenue would be consolidated into a single station that would be located adjacent to the City's Civic Center site. Impacts related to geology and soils conditions, including paleontological resources, and potential to conflict with an emergency evacuation plan, would be similar to those described for the proposed Project. Geology and soils conditions that would be encountered in construction of Alternative 5 would be the same as with the proposed Project. The Potrero Fault lies approximately one-quarter mile to the east of the project study area; however, compliance with the California Building Code would avoid the creation of seismic hazards. Ground-disturbing activity and the potential for accidental discovery of paleontological resources would continue to be potentially significant under Alternative 5 and would require the same mitigation measures as identified for the proposed Project in order to reduce the impact to less than significant.

7. Greenhouse Gas Emissions

The construction of a single station along Prairie Avenue instead of two stations would result in a reduction in the level of construction activities compared to the proposed Project. As such Alternative 5 would reduce construction related GHG emissions.

Operation of a single station along Prairie Avenue instead of two stations would also slightly decrease GHG emissions resulting from operation of the stations. However, under Alternative 5, mobile operational benefits would be less than those associated with the proposed Project. Reductions to daily traffic volumes along key roadway corridors and VMTs on an average weekday basis would occur, but approximately 15 percent less in magnitude than those associated with the proposed Project. However, similar to the proposed Project, Alternative 5 would be consistent with the CARB 2017 Scoping Plan Update, SCAG 2020-2045 RTP/SCS, the ECAP, and General Plan which sets goals to reduce GHG emissions by increasing energy efficiency and improving transit infrastructure. Nonetheless, operational GHG emissions associated mobile sources would increase compared to the proposed Project.

8. Hazards and Hazardous Materials

While construction of a single station along Prairie Avenue instead of two stations would result in a reduction in the level of construction activities compared to the proposed Project, construction impacts under Alternative 5 would be similar to those of the proposed Project. Construction of the guideway and stations in conjunction with the MSF and PDS substations would still involve the demolition of existing buildings, which may have the potential release hazardous materials, such as ACMs, LBP, and other potentially hazardous building materials. Furthermore, excavations of potentially contaminated soils may occur during construction of Alternative 5 as a result of prior uses on some of the sites, similar to the proposed Project. Similar to the proposed Project, construction activities under Alternative 5 would likely cause the temporary closure of travel lanes, roadways segments, and sidewalks along the elevated guideway and stations within the street rights-of-way.

Under Alternative 5, operation would include the use and storage of hazardous materials typical of those used in an industrial setting, similar to the proposed Project. Alternative 5 would not interfere or impair with the City's ability to increase public awareness or make any improvements to emergency services and warning systems during operation. With adherence to the federal, State, and local safety requirements, Alternative 5 would not conflict with the requirements of an emergency response plan or emergency evacuation plan, similar to the proposed Project. As such, operational impacts under Alternative 4 would be similar when compared to the proposed Project.

9. Land Use and Planning

Alternative 5 would involve building and operating an ATS system similar to the proposed Project while consolidating the two proposed stations on Prairie Avenue to one single station adjacent to the Civic Center Site on Prairie Avenue. The proposed Project would not physically divide the community with its elevated guideways and maintenance of existing roadway capacity and roadway connections. Alternative 5 would have a similar alignment and elevated guideways similar to the proposed Project. As such, Alternative 5 would also maintain the existing roadway capacity and roadway connections. Alternative 5 would have a similar impact on physically dividing the community as the proposed Project.

Alternative 5 would be generally consistent with the existing plans, policies and guidelines in the City and the greater region. Alternative 5 would include the same amendments to the Land Use Element, Circulation Element, Safety Element, Environmental Justice Element, and the Inglewood Municipal Code as the proposed Project to incorporate the ATS into the language of the existing plans, policies, and guidelines within the City. As such, the policy consistency impacts of Alternative 5 would be similar to the proposed Project.

10. Noise and Vibration

The construction of a single station along Prairie Avenue instead of two stations would result in a reduction in the level of construction activities compared to the proposed Project. For this reason, Alternative 5 would reduce construction related noise and vibration levels.

Operation of a single station along Prairie Avenue instead of two stations would also slightly decrease operational noise and vibration levels. However, under Alternative 5, mobile operational benefits would be less than those associated with the proposed Project. Reductions to daily traffic volumes along key roadway corridors and VMTs on an average weekday basis would occur, but approximately 15 percent less in magnitude than those associated with the proposed Project. As such, operational noise and vibration impacts associated mobile sources would increase compared to the proposed Project.

11. Population, Employment, and Housing

The proposed Project would have no direct impact on housing as the proposed Project does not include the construction or demolition of any housing units. The proposed Project would impact existing employment opportunities in the City as commercial uses that would be displaced by the proposed Project are estimated to be approximately 464 jobs. However, the proposed Project would result in a net increase of for approximately 11,052[9]FTE jobs through the Greenhouse Gas Reduction Funds, as estimated by the

9 11,516 minus 464 in numbers of jobs displaced.

Job Co-Benefits calculation (see **Section 4.11 Population, Employment, and Housing**). The number of jobs that will be supported by the proposed Project in the region is within the projected regional trends in the SCAG 2020-2045 RTP/SCS data and the jobs that will benefit from the proposed Project will not directly translate into additional population growth in the region. As such the proposed Project would have a less than significant impact on inducing employment and population growth.

Alternative 5 would have a similar effect on the population and employment trend as the ATS would be constructed as planned. Alternative 5 would have a similar impact to the population, employment, and housing resource as compared to the proposed Project.

12. Transportation

Under Alternative 5, the proposed Project would be built but the two proposed stations along Prairie Avenue would be consolidated into a single station that would be located adjacent to the City's Civic Center site. The proposed Project modifies and relocates Prairie Avenue to the east to maintain the current roadway capacity. This relocation in conjunction with the need for a passenger station connection to the sidewalk/ground level affects properties located east of Prairie Avenue. Alternative 5 avoids affecting these properties by consolidating the two proposed stations along Prairie Avenue into a single station that would be located adjacent to the Intermodal Transit Facility at the City's Civic Center site. This alternative maintains Prairie Avenue within its existing right-of-way; however, one to two lanes would be lost reducing the capacity of the roadway. Specifically, one travel lane in each direction along the Prairie Avenue roadway between Arbor Vitae and La Palma, one lane in the southbound direction between La Palma and Pincay Drive, and one lane in each direction between Pincay Drive and Manchester Boulevard would be lost under Alternative 5.

Under Alternative 5, operational benefits would be less than those associated with the proposed Project. Reductions to daily traffic volumes along key roadway corridors and VMTs on an average weekday basis would occur, but approximately 15 percent less in magnitude than those associated with the proposed Project. Alternative 5 is estimated to result in transit ridership equivalent to approximately 75 percent of the transit ridership associated with the proposed Project. However, due to a reduction in capacities along Prairie Avenue, traffic flow and congestion in the surrounding area would be worse under Alternative 5 compared to the proposed Project.

13. Tribal Cultural Resources

The proposed Project would have a less than significant impact on Tribal Cultural Resources (TCRs), No TCRS were identified in the records around the Project site and no sensitive resources were identified. Nonetheless, the Project as proposed would include construction which would have the potential to

unearth subsurface resources not previously identified. Given the level of urban development in Inglewood, the likelihood of unearthing TCRs is low but it is still a possibility. Alternative 5 would result in similar potential impacts to TCRs as the proposed Project since excavation of soil would be required to construct the ATS system along the proposed alignment, including a single station on Prairie Avenue. Similar impacts to the TCRs are anticipated for the proposed Project and Alternative 5.

14. Utilities and Service Systems

The proposed Prairie station under Alterative 5 would be located within the City's Civic Center site. The guideway would still be constructed along the same segment of Prairie Avenue compared to the proposed Project. As such, impacts related to the construction or relocation of water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities would be similar compared to the proposed Project.

Relationship to Project Objectives

Alternative 5 would meet, or partially meet, most of the City's objectives for the proposed Project. Alternative 5 would reduce the City's traffic congestion and alleviate growing demand on the existing roadway network, although to a slightly lesser degree than the proposed Project. Specifically, the Prairie Avenue Single Station Alternative would result in a reduction in capacities along Prairie Avenue, and traffic flow and congestion on a system-wide basis would be increased compared to those estimated for the proposed Project. However, several of the City's objectives would be met to the same extent as under the proposed Project. For example, be eliminating one of the stations, Alternative 5 would not meet the objective of encouraging intermodal transportation systems by providing convenient, reliable time-certain transit to the same degree as would the proposed Project. Eliminating a station would also not meet the objective of providing convenient access to businesses, and to connect the City by providing transit within safe and accessible walking distances to the same degree as would the proposed Project.

5.5.6 Alternative 6: Maintenance and Storage Facility Relocation Alternative

1. Aesthetics

The proposed Project would not result in significant impacts to the aesthetic character of the community during construction or operation with implementation of the project design features in the ITC CCP and Design Guidelines. Similarly, Alternative 6 would travel down the same alignment with the same proposed and elevated guideway across the frontage of the buildings on Market Street. No additional impacts on the visual character of downtown would result from moving the MSF to the northwestern portion of the Vons site closest to the south corner of Hillcrest Boulevard and Manchester Boulevard.

2. Air Quality

Construction under Alternative 6 would be similar to the proposed Project. During construction, the proposed Project would not exceed the significance threshold for any criteria pollutant after mitigation, and impacts would be less than significant. Similar to the proposed Project, Alternative 6 would not conflict with implementation of the applicable air quality plans and would not exceed thresholds established by the SCAQMD for criteria air pollutants.

Operational impacts associated with Alternative 6 would be similar to the proposed Project as the ATS would be built as proposed. Moreover, reductions to daily traffic volumes along key roadway corridors and reductions to VMT on an average weekday basis with event would occur similar in magnitude to those associated with the proposed Project. As such, Alternative 6 would result in similar operational impacts compared to the proposed Project.

3. Biological Resources

Approximately 502 trees which may require removal during construction of the proposed Project exist along the proposed Project alignment. With Alternative 6, no additional properties would need to be acquired and no additional demolition of buildings or site improvements would be required. As such, impacts to biological resources during construction would be similar compared to the proposed Project. Similar to the proposed Project, operation of Alternative 6 would not diminish the chances for long-term survival of bird species or their habitats and no additional tree and/or ornamental vegetation removals would be planned. As such, Alternative 6 would result in similar operational impacts compared to the proposed Project.

4. Cultural Resources

Alternative 6 would have a less than significant impact on cultural resources, similar to the proposed Project. The relocated MSF on the northwest portion of its site would have no impact on cultural resources and would not be located near any identified historical resources. For this reason, impacts to cultural resources would be similar for Alternative 6 and the proposed Project.

5. Energy Resources

Energy demand from construction activities under Alternative 6 would be similar to the proposed Project as the ATS would be built as proposed. Reductions to daily traffic volumes along key roadway corridors and reductions to VMT on an average weekday basis would occur similar in magnitude to those associated with the proposed Project. As such, Alternative 6 would result in similar operational impacts compared to the proposed Project.

6. Geology and Soils

Impacts related to geology and soils conditions, including paleontological resources, would be similar to those identified for the proposed Project. Geology and soils conditions that would be encountered in construction of Alternative 6 would be the same as with the proposed Project. The Potrero Fault lies approximately one-quarter mile to the east of the project study area; however, compliance with the California Building Code would avoid the creation of seismic hazards. Ground-disturbing activity and the potential for accidental discovery of paleontological resources would continue to be potentially significant with Alternative 6. Alternative 6 would implement similar measures as the proposed Project to mitigate the potential impacts on paleontological resources to less than significant.

7. Greenhouse Gas Emissions

Construction under Alternative 6 would be similar to the proposed Project and would result in a similar level of GHG emissions. Reductions to daily traffic volumes along key roadway corridors and reductions to VMT on an average weekday basis would occur similar in magnitude to those associated with the proposed Project. Therefore, similar to the proposed Project, Alternative 6 would be consistent with the CARB 2017 Scoping Plan Update, the SCAG 2020-2045 RTP/SCS, the ECAP, and General Plan which sets goals to reduce GHG emissions by increasing energy efficiency and improving transit infrastructure. Operational GHG impacts would be similar to the proposed Project.

8. Hazards and Hazardous Materials

Under Alternative 6, the MSF would be relocated to the northwestern portion of the Vons site. Construction under Alternative 6 would be similar to the proposed Project. Construction of the guideway and stations in conjunction with the MSF and PDS substations would involve the demolition of the existing building, which may have the potential release hazardous materials, such as ACMs, LBP, and other potentially hazardous building materials. Similar to the proposed Project, construction activities under Alternative 6 would likely cause the temporary closure of travel lanes, roadways segments, and sidewalks along the elevated guideway and stations within the street rights-of-way. Construction of Alternative 6, however, would not involve demolition of the existing gas station at the MSF site, thereby resulting in a slightly reduced potential for the potential release of hazardous materials.

Under Alternative 6, operation of the ATS would include the use and storage of hazardous materials typical of those used in an industrial setting, similar to the proposed Project. Alternative 6 would not interfere or impair with the City's ability to increase public awareness or make any improvements to emergency services and warning systems during operation. With adherence to the federal, State, and local safety requirements, Alternative 6 would not conflict with the requirements of an emergency response

plan or emergency evacuation plan, similar to the proposed Project. As such, operational impacts under Alternative 3 would be similar to the proposed Project.

9. Land Use and Planning

Alternative 6 would include the construction and operation of an ATS system similar to the proposed Project while moving the MSF along Hillcrest Boulevard between Manchester Boulevard and Nutwood Street. With this alternative the existing gas station on this property would be retained, but the existing commercial building containing the grocery store and other businesses would be demolished. Under the proposed Project a replacement Vons store would be constructed on the corner of Manchester Boulevard and Hillcrest Boulevard. Under Alternative 6, however, a replacement grocery store would not be provided on this site. Nevertheless, the community is served by other grocery stores and the loss of this store is not considered a significant land use impact for this reason.

The proposed Project would not create a physical division of the existing community as the ATS guideway and stations would be elevated and the existing configuration of travel lanes on Market Street, Manchester Boulevard and Prairie Avenue would be maintained.

Alternative 6 would be generally consistent with the existing regional and local land use plans and policies. Alternative 6 would require the same amendments to the Land Use Element, Circulation Element, Safety Element, Environmental Justice Element, and the Inglewood Municipal Code as the proposed Project to incorporate the ATS system into these plans and regulations.

10. Noise and Vibration

Construction under Alternative 6 would be similar to the proposed Project and would result in similar noise levels. Moreover, Alternative 6 would implement similar mitigation measures as the proposed Project to reduce construction noise and vibration impacts to less than significant. Alternative 6 would result in reductions to daily traffic volumes along key roadway corridors and VMT on an average weekday basis would occur similar in magnitude to those estimated for the proposed Project. As such, this alternative would result in similar roadway noise levels as the proposed Project. Neither this alternative or the proposed Project would result in significant noise and vibration impacts.

11. Population, Employment, and Housing

The proposed Project would have no direct impact on housing as the proposed Project does not include the construction or demolition of housing units. The proposed Project would impact existing employment opportunities in the City as commercial uses that would be displaced by the proposed Project are estimated to be approximately 464 jobs. However, the proposed Project would result in a net increase of

approximately 11,052[10] FTE jobs through the Greenhouse Gas Reduction Funds, as estimated by the Job Co-Benefits calculation (see **Section 4.11 Population, Employment, and Housing**). The number of jobs that will be supported by the proposed Project in the region is within the projected regional trends in the SCAG 2020-2045 RTP/SCS data and the jobs that will benefit from the proposed Project will not directly translate into additional population growth in the region. As such the proposed Project would have a less than significant impact on inducing employment and population growth.

Alternative 6 would result in the demolition of the existing Vons grocery store and other businesses on site (with the exception of the existing gas station). It is possible that these businesses might choose not to relocate, which would result in corresponding job losses. Overall, alternative 6 would maintain the existing population, employment, and housing trends within the City and the region. As such, Alternative 6 would not directly or indirectly substantially induce population in the City or the region. Employment support and would be similar to the proposed Project under Alternative 6.

12. Transportation

Construction under Alternative 6 would be similar to the proposed Project. The proposed Project and all of its components would be constructed and operate. The operation of the ATS would be the same as planned for the proposed Project.

Similar to the proposed Project, Alternative 6 would result in operational benefits. Reductions to daily traffic volumes along key roadway corridors and reductions to VMTs on an average weekday basis would occur similar in magnitude to those associated with the proposed Project. Additionally, this alternative is estimated to result in transit ridership similar to the proposed Project. Finally, Alternative 6 would provide similar operational benefits as those of the proposed Project relative to reduction in traffic congestion and improvement of traffic flows along key roadway facilities areawide.

13. Tribal Cultural Resources

The proposed Project would have a less than significant impact on Tribal Cultural Resources (TCRs), No TCRs were identified in the records around the Project site and no sensitive resources were identified. Nonetheless, the Project as proposed would include construction which would have the potential to unearth subsurface resources not previously identified. Given the level of urban development in Inglewood, the likelihood of unearthing TCRs is low but it is still a possibility. Relocating the MSF to the northwestern portion of the Vons site would not result in any additional impacts.

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10 11,516 minus 464 in numbers of jobs displaced.

14. Utilities and Service Systems

Construction and operation under Alternative 6 would be similar to the proposed Project. For this reason, impacts related to the construction or relocation of water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities would be similar compared to the proposed Project.

Relationship to Project Objectives

Alternative 6 would meet most of the City's objectives since the proposed Project would still be built and reductions to daily traffic volumes along key roadway corridors and reductions to VMTs on an average weekday basis with event would occur similar in magnitude to those associated with the proposed Project. Alternative 6, however, would not meet the objective to encourage redevelopment and investment within the City in areas served by the Project to the same degree as would the proposed Project because Alternative 6 would not include replacement of the existing Vons grocery store on the MSF site.

5.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR is required to identify the Environmentally Superior Alternative from among the range of reasonable alternatives that are evaluated. CEQA Guidelines section 15126.6(e)(2) requires that an environmentally superior alternative be designated and states that if the Environmentally Superior Alternative is the No Project alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Table 5.0-2: Alternatives Summary, identifies the ability of the Alternatives to meet the Project Objectives.

Table 5.0-2
Alternatives Summary

	Project Objectives	Alternatives Considered Does the Alternative meet the Project Objectives? Alternative 1 No Project	Alternative 2 Bus Rapid Transit (BRT) System	Alternative 3 Market Street Promenade	Alternative 4 4th Station Alternative	Alternative 5 Prairie Single Station Alternative	Alternative 6 Maintenance and Storage Facility Relocation Alternative
1	Provide direct and convenient connection to the Metro regional transit system for local residents and the region to access the City's new major employment, commercial, and activity centers;	No	Yes	Yes	Yes	Yes	Yes
2	Close the "last mile gap" to the regional transit system by providing passengers with the ability to transfer to or from destinations and the Metro K Line;	No	Yes	Yes	Yes	Yes	Yes
3	Provide sufficient transit connection capacity between the Metro regional transit system and the City's new major activity centers with enhanced travel time certainty and sufficient capacity to meet peak ridership demands to encourage transit as a travel mode choice;	No	Partial	Yes	Yes	Yes	Yes
4	Maintain existing roadway capacity;	Yes	Partial	Yes, except on Market Street	Yes	Yes, except on Prairie Ave	Yes
5	Reduce the City's traffic congestion and alleviate growing demand on the existing roadway network on both major arterials and residential streets for both nonevent and event days	No	Partial	Yes	Yes	Partial	Yes
6	Encourage intermodal transportation systems by providing convenient, reliable certain transit	No	Yes	Yes	Yes	Yes	Yes
7	Increase transit mode split, reduce vehicle trips, and reduce per-capita vehicle miles traveled to the City's major activity centers, with corresponding improvement in air quality, public health, and reductions in greenhouse gas emissions from transportation sources in accordance with the City's goals, the SCAG 2020-2045 RTP/SCS, and State policies with respect to climate change and land use;	No	Yes	Yes	Yes	Yes	Yes
8	Support the ongoing economic revitalization, including through the creation of public parking facilities;	No	Partial	Yes	Yes	Yes	Yes
9	Encourage redevelopment and investment within the City in areas served by the proposed Project;	No	Yes	Yes	Yes	Yes	Partial
10	Provide safe, reliable, and convenient access to businesses in the City so that they are accessible to their workforce and customers;	No	Yes	Yes	Yes	Yes	Yes
11	Connect the Inglewood community and citizens to jobs, education, services, and destinations within the City and within the region by providing transit within safe and accessible walking distances; and	No	Yes	Yes	Yes	Yes	Yes
12	Support regional efforts to become more efficient, economically strong, equitable, and sustainable.	No	Yes	Yes	Yes	Yes	Yes

Of the alternatives evaluated in this Recirculated Draft EIR, the Environmentally Superior Alternative is considered to be Alternative 2, the Bus Rapid Transit (BRT) System Alternative. The Project would not result in any significant impacts and, for this reason, Alternative 2 would not avoid any significant impact that would result from the Project as proposed. Alternative 2 is considered the Environmentally Superior Alternative because it would lessen impacts to the greatest degree of the alternatives evaluated. The BRT System Alternative would, however, not meet the City's basic objectives for the proposed Project.

With the BRT System Alternative, the proposed Project would not be constructed. No demolition or construction activities would occur, except along the public right-of-way where BRT-only lanes along the route are implemented. The BRT System Alternative would avoid all significant construction related effects and impacts identified for the proposed Project.

Unlike the No Project Alternative, the BRT System Alternative would meet some of the City's objectives including providing a direct and convenient connection to the Metro regional transit system, encouraging intermodal transportation systems by providing convenient transit, and providing safe, reliable, and convenient access to businesses in the City. The BRT System Alternative would also meet the City's objectives to support the ongoing economic revitalization, growth opportunities within the Downtown TOD Plan area, and encourage redevelopment and investment within the City in areas served by the proposed Project. The BRT System Alternative would not, however, create additional public parking to support ongoing economic revitalization efforts. The proposed Project would create additional public parking facilities in three locations along the proposed Alignment. In addition, the objective to provide sufficient transit connection capacity between Metro's regional transit system and the City's new major activity centers would not be met by this BRT alternative, resulting in limited increased transit mode split, limited reduction in vehicle trips, and consequently, limited reduction in per-capita vehicle miles traveled to the City's major activity centers. The estimated daily BRT ridership with Event Conditions would be approximately 20 percent of the projected ridership for the proposed ATS, providing transit options, increasing transit mode split, reducing vehicle trips, and reducing per capita vehicle miles traveled to the City's major activity centers. The BRT System Alternative would also not meet the City's objectives to maintain existing roadway capacity, reduce the City's traffic congestion and alleviate growing demand on the existing roadway network on both major arterials and residential streets for both nonevent and event days.

Envision Inglewood Locally Preferred Alternative Report

ENVISION Inglewood

Connecting People, Places, and the Future

JUNE 2018

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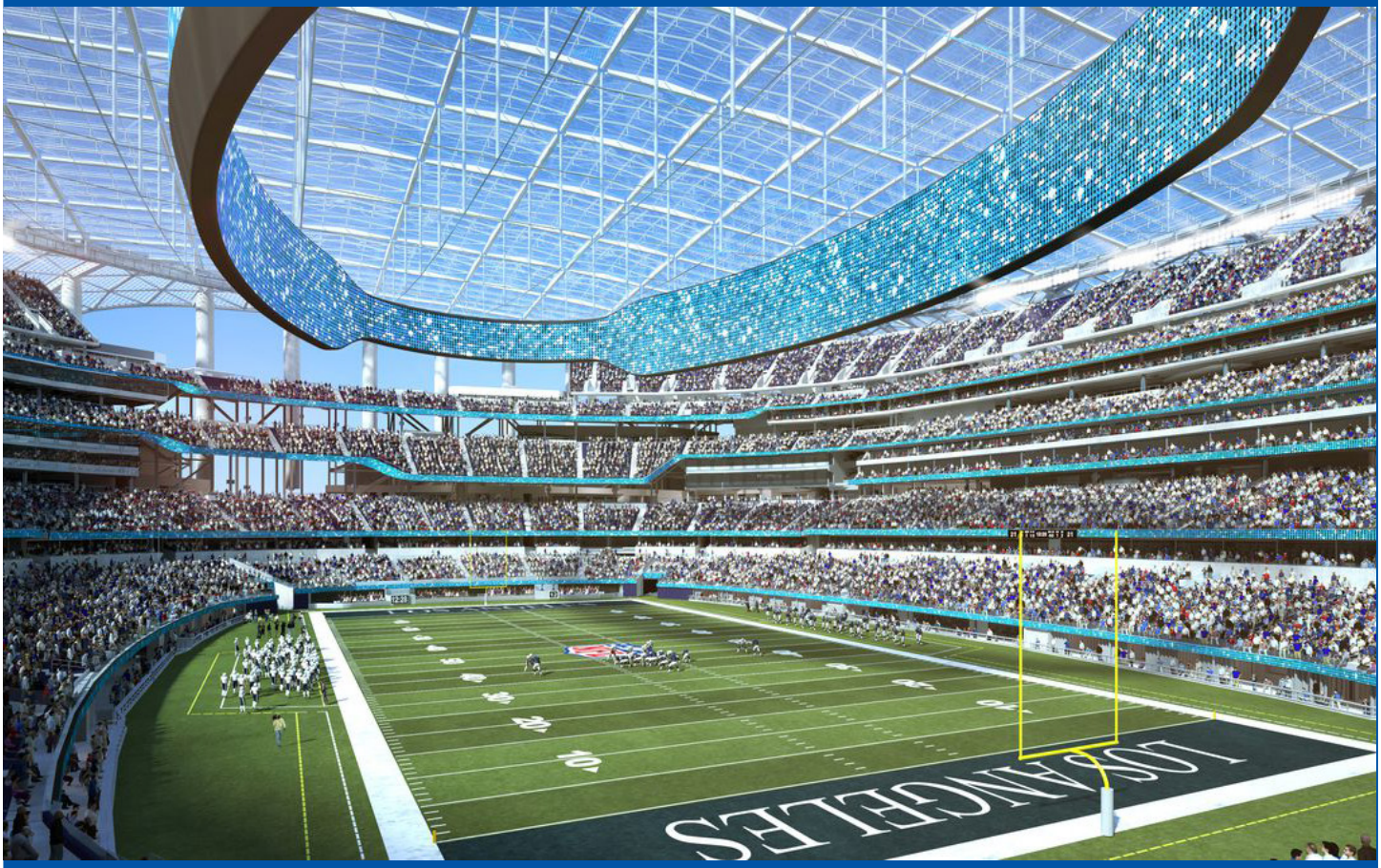
1. INTRODUCTION



1.1 BACKGROUND

An exciting transformation for the City of Inglewood is underway as it becomes "The City of Champions" and is redefined as a world-class sports and entertainment center in the greater Los Angeles region. As of August 2017, sales tax revenue in the City of Inglewood increases have outpaced the Los Angeles County average, and property values are up more than 100% since 2012. These accomplishments have been driven by a number of completed and on-going projects in the City. The Metro Crenshaw/LAX Line is set to open in 2019, which will enhance transit access to the City. The Forum's revitalization now actively hosts the largest entertainment acts in the country. The redevelopment of approximately 298 acres at Hollywood Park includes new residential, commercial, and recreational uses, and at the centerpiece is the construction of the Los Angeles Rams and Los Angeles Chargers new National Football League (NFL) stadium.

Additionally, in 2018, the Los Angeles Clippers of the National Basketball Association (NBA) announced a proposal to relocate their headquarters, training facilities and new arena to the City, and a new Los Angeles Philharmonic state-of-the-art music and cultural campus for the Youth Orchestra Los Angeles (YOLA) designed by renowned architect Frank Gehry, will also be headquartered in Inglewood. All of these new venues are bringing new energy and opportunity to the City and are contributing to its social and economic well-being.

As investment in Inglewood has burgeoned in the last several years, it has injected the local economy with new jobs, retail, entertainment and residential opportunities. As Inglewood is transformed into a major regional activity center, it also means that the number of trips in and around the City are anticipated to increase. Based on historic traffic counts, traffic volumes have been increasing at the rate of 1.5% per year and many key intersections and key highway corridors are already experiencing congestion. According to the traffic study for the Hollywood Park Stadium Alternative Project performed by Linscott Law & Greenspan in 2015, while roughly 85% of patrons are anticipated to use privately-owned vehicles and 15% will rely on transit or charter buses for stadium events and games, these modes will still compete to utilize the same traffic corridors within the City that may be physically constrained or congested. Moreover, Southern California Association of Government's (SCAG) 2016 RTP/SCS Regional Travel Demand Forecasting Model projects substantial socioeconomic and demographic growth throughout the six-county southern California region. According to SCAG, population, housing and employment growth are expected throughout the cities of Los Angeles, Inglewood, Culver City, unincorporated areas of Los Angeles County and portions of the South Bay Cities consisting of El Segundo, Hawthorne and others. The City is working to manage this growth in a sustainable and responsible way, ensuring that residents, businesses and visitors have convenient and efficient access to new destinations and resources.

Figure 1.1-1: Youth Orchestra of Los Angeles (YOLA)

Source: LA Phil/YOLA

Building on the tremendous progress the Los Angeles County Metropolitan Transportation Authority (Metro) has made to develop the County's regional rail network and to create more transportation options associated with the opening of the Crenshaw/LAX Line, Inglewood's existing transportation infrastructure and circulation system should be updated, capacity should be increased on major arterial streets where possible, Metro and municipal bus operations and service should be enhanced, and most importantly, the Metro Rail system should connect directly to the City's major activity centers.

To address these critical mobility issues, Inglewood has

partnered with Metro to perform a focused analysis of viable transit connection options from the Metro Crenshaw/LAX light rail line to the Los Angeles Stadium and Entertainment District at Hollywod Park development (LASED). With the City's input, Metro explored how best to connect Inglewood's future LASED to Metro's rail system via a high-capacity transit connection. The Metro study analyzed 1) an Interlined Operability connection from the Crenshaw/LAX Line in a subway under Prairie Avenue, which also would jointly operate on a portion of the Crenshaw/LAX Line, and 2) Independent Operability options for independent services that could provide a connection from the Metro Rail system at nearby Metro stations along the Crenshaw line to the NFL Stadium. At the conclusion of the study, the City and Metro agreed that the Interlined Operability Scenario is infeasible due to its cost and complexity that would be created on the Metro Rail system.

Consistent with Metro's recommendations, Inglewood has continued to analyze several Independent Operability transit connections to the City's activity centers. The City has assembled an experienced consultant team to continue to define the transit connection concepts, initiate the environmental analysis and clearance process, launch a stakeholder engagement process, and develop an overall project implementation and delivery strategy, which will include the pursuit of an Enhanced Infrastructure Financing District. This report describes the City's further examination and comparative analysis of alternative transit connection concepts, a more detailed analysis of transit ridership potential, rough-order-of-magnitude project cost estimates, and a brief discussion of a project implementation strategy. Based on a deeper understanding of The City's mobility goals and objectives, this report includes a recommendation for the City's preferred conceptual alignment for the Inglewood

Figure 1.1-2: Los Angeles Stadium and Entertainment District at Hollywood Park (LASED)
City of Inglewood Revitalization Rendering

Source: LASED Website, 2018

Transit Connector Project. The Inglewood Transit Connector Project will be further defined as part of the environmental review process, and develop project delivery and implementation strategies.

1.2 INGLEWOOD TRANSIT CONNECTOR GOALS AND OBJECTIVES

The City of Inglewood provides a compeling example of what communities can accomplish when leaders, local organizations and citizens join forces to change the status quo and improve the quality of life. In recent years, the City has made great strides to improve the quality and delivery of essential public services and update its transportation infrastructure. Today, Metro is working to complete the construction of the Crenshaw/LAX Line into Inglewood by 2019, increasing access to public transportation for local residents. Stations at Aviation/Century, Westchester/Veterans, Downtown Inglewood, Fairview Heights, Hyde Park, Leimert Park, MLK Jr., and Expo/Crenshaw are currently under construction. The Metro Crenshaw/LAX will extend light rail transit from the existing Metro Expo Line Station at Crenshaw/Exposition Boulevards to the Metro Green Line station at Aviation/Century Boulevards, and will provide a transit connection to Los Angeles International Airport (LAX) via the City of Los Angeles' Automated People Mover (APM) system at the Airport Metro Connector 96th Street Transit Station. The approximately 8.5 mile light rail transit line will include two stations in Inglewood including the Fairview Heights station and the Downtown Inglewood station. As the City experiences a historic revitalization and benefits from Metro's major transit investment, it is important to synergize and build upon the new development occurring within City boundaries.

The City is now also working diligently to prepare for the LASED opening and is developing a comprehensive Inglewood Sports and Entertainment Center Transportation Management and Operations Plan (TMOP). Preliminary analysis indicates that Stadium events could generate over 10,000 additional trips in the AM peak hours, and over 15,000 additional trips during the PM peak hours. The Stadium will provide more than 9,000 parking spaces, consistent with the Hollywood Park Specific Plan requirements, and will also rely on off-site satellite parking with event shuttle service. Yet, while buses, Transportation Network Companies, taxis, shuttles, and other modes will be critical transportation options to access the City's event centers, these modes will still compete with existing roadway traffic and may not provide a convenient time-certain connectivity compared to an elevated rail connection. The physical capacity of the exisiting local and regional roadway network may challenge the ability of visitors to conveniently access the City's amenities. While a comprehensive satellite parking and shuttle program is being developed for operation on the Stadium's opening day, requisite staging areas will still entail drop-off and pick-up facilities at each end, potentially diverting valuable real estate from its hightest and best use. Additionally, even if patrons elect to use transit to Inglewood, the City's new sports and entertainment centers are located approximately 1.5 to 2 miles away from regional transit, leaving a critical last-mile gap.

Accordingly, the City is wholly committed to providing world-class transportation connections to its new state-of-the-art sports and entertainment center and is working diligently to define and propose a last-mile fixed guideway transit connector, referred to as the Inglewood Transit Connector Project. Mobility and direct transit access to the City's new activity centers are critical top priorities, especially given local and regional goals to increase transportation choices, reduce greenhouse gas emissions, improve air quality and human health, and encourage sustainable development patterns. Specifically, the City's goals and objectives for the Inglewood Transit Connector Project are to:

- Encourage intermodal transportation systems by providing convenient, reliable, time-certain transit service and direct transit accessibility and connectivity to the City's major activity centers.
- Reduce the City's traffic congestion and alleviate growing

Figure 1.2-1: Existing Metro Connections to the City of Inglewood

Source: Trifiletti Consulting, 2018

demand on the existing roadway network for both event and non-event days.

- Increase transit mode split and reduce trips and overall vehicle miles traveled to the City's major activity centers, which will improve overall air quality, public health, environmental outcomes and reduce greenhouse gas emissions.
- Activate and synergize with development and redevelopment within the City and enhance the City's economic development, social cohesion, equity and community resilience.
- Connect its community and citizens to jobs, education, services, destinations within the City and within the region, and support regional efforts to become more efficient, economically strong, equitable and sustainable.

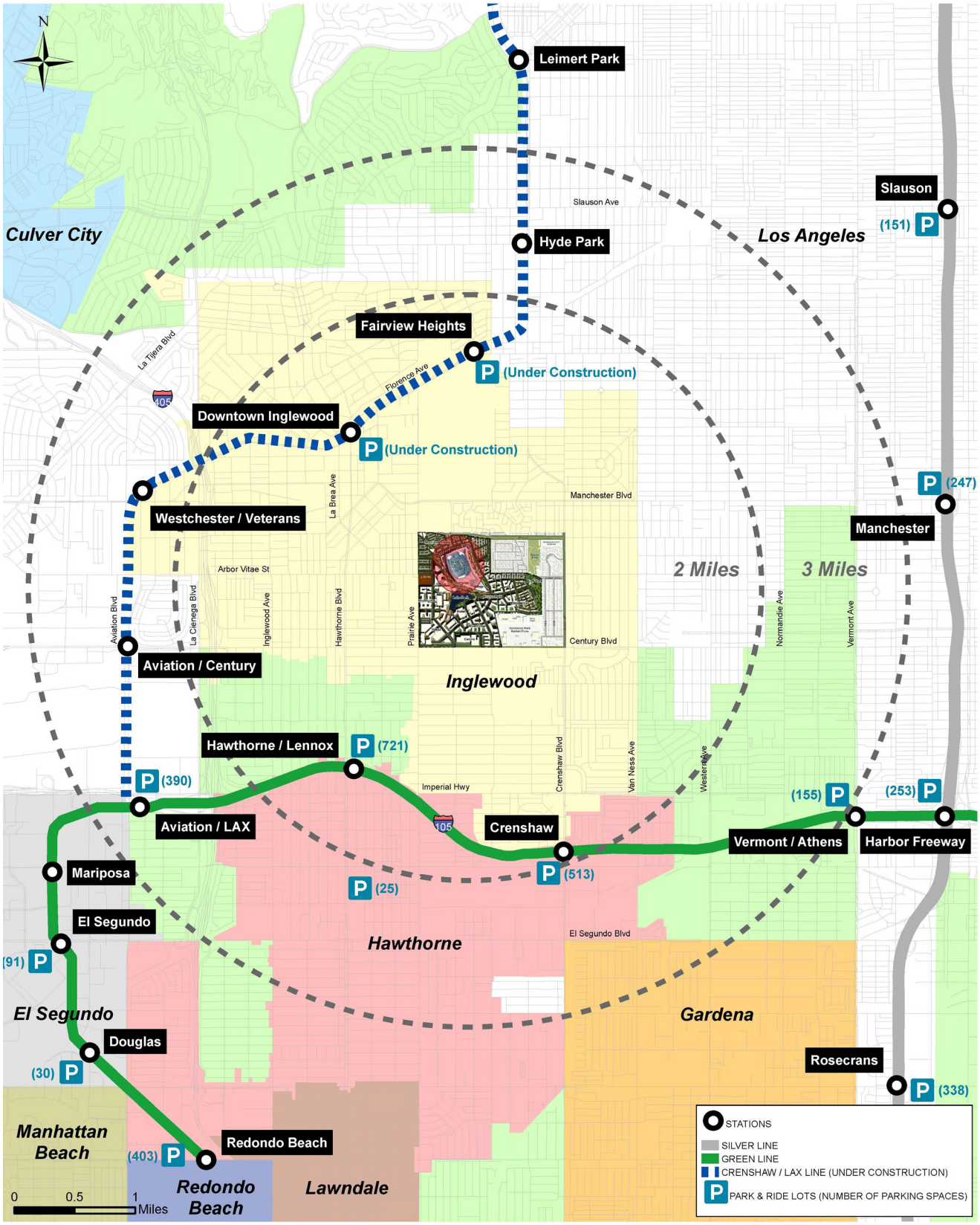
The City has evaluated several independent last-mile fixed guideway transit connector options, comparing these options against key screening criteria and evaluating each option against the City's stated goals and objectives. The City recognizes that an efficient and effective transportation network is essential to achieving the full benefits of this ongoing and widespread investment.

Table 1.2-1: Metro Rail Stations Near City of Inglewood

METRO RAIL STATIONS NEAR CITY OF INGLEWOOD	APPROXIMATE WALKING DISTANCE TO HOLLYWOOD PARK NFL STADIUM
Aviation/Century	2.5 miles
Westchester/ Veterans	2.2 miles
Downtown Inglewood	1.3 miles
Fairview Heights	1.7 miles
Aviation/LAX	3.5 miles
Hawthorne/Lennox	1.8 miles

Source: Google Maps, 2018

Figure 1.2-2: Metro Park & Ride Lots Within Study Area



Source: Trifiletti Consulting, 2018

1.3 INGLEWOOD MOBILITY PLAN

Working in collaboration with the Southern California Association of Governments (SCAG), Metro, Caltrans, and surrounding transportation agencies and municipalities, the City has launched several parallel and coordinated transportation planning and programming efforts. The City of Inglewood's Circulation Element from the City's General Plan, which was adopted in 1992, will also be updated to reflect the City's long-range infrastructure needs and updated transportation goals, objectives, plans and projects. The Mobility Plan will include performance measures aligned with the City's vision, goals, and objectives, and will include short-term and long-term transportation improvements and policy recommendations designed to improve and enhance the City's local and regional transportation networks. The Inglewood Transit Connector Project will be proposed as the centerpiece and backbone of the Inglewood Mobility Plan.

Figure 1.3-1: Envision Inglewood Website - Mobility Plan Illustration

1.4 EXISTING AND FUTURE LAND USE AND TRANSPORTATION CONDITIONS

Located a few miles from downtown Los Angeles, the Silicon Beach tech corridor in West Los Angeles and just east of the Los Angeles International Airport and Gateway to Los Angeles hotel and business district, the City of Inglewood is a centrally located area that is seeing new construction and renewed economic development.

The following important projects under construction or proposed within the City are highlighted below.

1.4.1 Los Angeles Stadium and Entertainment District at Hollywood Park (LASED)

The LASED project, a new mixed-use, master planned community on the site of the former Hollywood Park racetrack and equestrian training facility, started construction in 2014 and is slated for completion by 2023. The project will transform underutilized asphalt lots and the former racetrack into a vibrant mixed-use community. The project includes a number of new uses including 2,500 residential units, 890,000 square feet of retail, 780,000 square feet of office and a 300-room hotel, as well as 25 acres of new recreational and park amenities for the City. The signature component of the project is new 75,000-seat NFL stadium, which includes a 6,000-seat performance venue that will be home to both the NFL Los Angeles Rams and Los Angeles Chargers teams. The stadium is set to open in 2020.

Figure 1.4-1: Los Angeles Stadium and Entertainment District at Hollywood Park (LASED) Site Plan

Source: City of Inglewood

According to Moody's Analytics, the LASED project is expected to generate nearly $1 billion in tourist expenditures for the City, pump $3.8 billion per year into the local economy, and add $18.7 to $28 million annually to the City's general fund. The LASED project includes roadway infrastructure upgrades, to modernize traffic systems with intelligent traffic signal systems (ITS) and a state-of-the-art traffic management command center, and implement physical mitigation measures at various intersections along Prairie Avenue and Century Boulevard.

1.4.2 The Forum

Constructed in 1967, The Forum, a multi-purpose indoor arena, has served for decades as one of the region's premier sports and entertainment venues. In 2014, The Forum completed a multi-million-dollar renovation and was added to the National Register of Historic Places. The Forum now actively hosts the largest entertainment acts in the country and is scheduled to host events during the 2028 Summer Olympic games.

1.4.3 The Proposed Inglewood Basketball and Entertainment Center

In June 2017, the NBA's Los Angeles Clippers team announced a proposal to construct a new arena and sports facility in Inglewood designed to host the team and other non-sporting events. In February 2018, the City initiated the environmental clearance process for the proposed project by releasing the Notice of Preparation (NOP) for a Draft Environmental Impact Report (EIR). The proposed project is located on approximately 27 acres and includes an 18,000 fixed seat arena, an approximately 85,000-square foot team practice and athletic training facility, approximately 55,000 square feet of LA Clippers team office space, approximately 25,000-square foot sports medicine clinic for team and potential general public use, approximately 40,000 square feet of retail and other ancillary uses that would include community and youth-oriented space, an outdoor plaza with an approximate area of 260,000 square feet including landscaping, outdoor basketball courts, outdoor community gathering space, and parking facilities sufficient to meet the needs of the proposed uses.

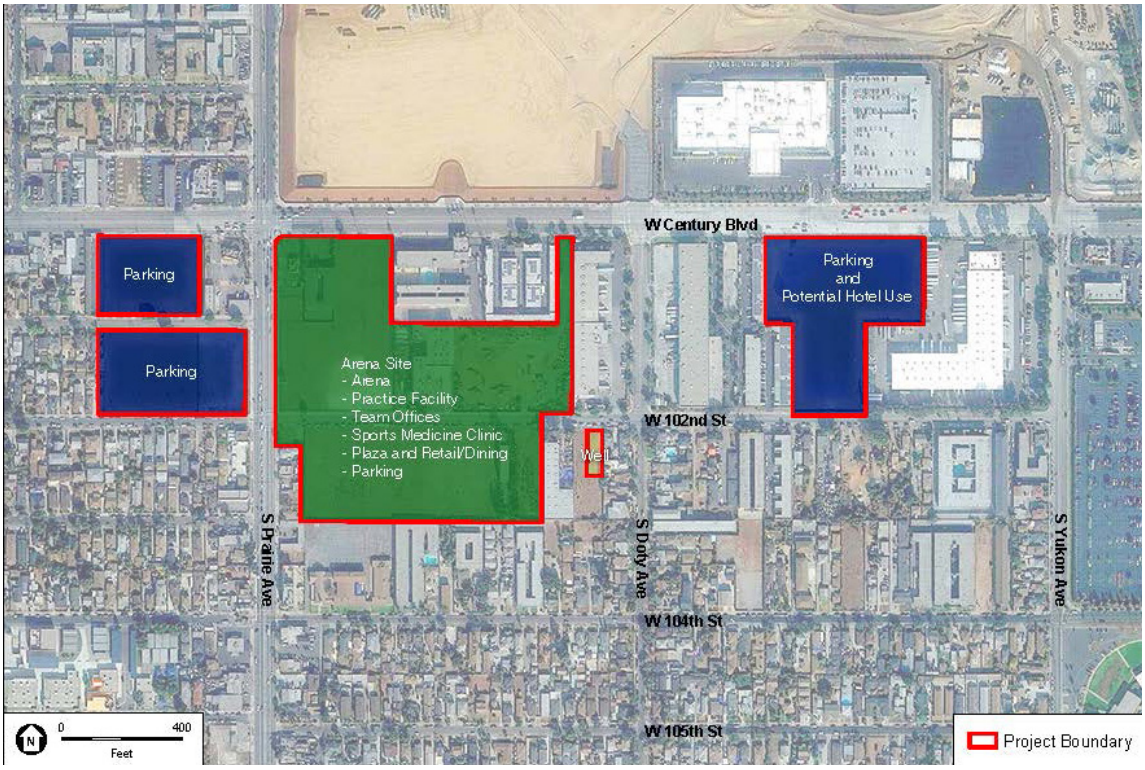
Figure 1.4-2: Los Angeles Stadium and Entertainment District at Hollywood Park (LASED) Rendering

Source: LASED Website, 2018

Figure 1.4-3: The Forum

Source: City of Inglewood, 2018

Figure 1.4-4: Proposed Inglewood Basketball and Entertainment Center Preliminary Site Plan



Source: City of Inglewood, Notice of Preparation, 2018

1.4.4 Market Street

The City of Inglewood is also working to revitalize downtown Inglewood in time to synergize with the future Metro Crenshaw/LAX station. The City is encouraging the design and development of new residential, mixed-use and retail oriented projects along Inglewood's Market street along with signage, marketing, landscaping and traffic calming improvements. Situated in the heart of Inglewood's Historic Core, The Miracle Theater was once connected to greater Los Angeles by the Red Car system. Today's Metro Crenshaw/LAX line will stop in downtown Inglewood just three blocks from The Miracle on Market Street. Classic theaters throughout Los Angeles are currently being re-energized as vital cultural venues. In the late 1940s through the early 1960s, Inglewood's Market Street hosted Hollywood film premieres at several movie houses including The Fox Theater, The United Artist's Theater, and The Ritz Theater. Built in 1937, The Ritz (now revived as The Miracle) is once again home to local and international entertainment. Featuring music, movies, comedy, and community events, The Miracle Theater provides a venue for arts and culture on Market Street.

Figure 1.4-5: Screening of HBO Series, *Insecure: Season 2,* Miracle Theater on Market Street, Fall 2017

Source: Miracle Theater Website, 2018

1.5 EXISTING FREEWAY/ ARTERIAL ROADWAYS

Four major interstate highways serve the Inglewood area, including the Santa Monica Freeway (I-10) and Glenn Anderson Freeway (I-105), running east/west, the San Diego Freeway (I-405) running north/south and the Harbor Freeway (I-110) running north/south just east of the Study Area. The I-10, I-105, I-110 and the I-405 experience high levels of congestion, particularly during peak commute periods. I-105 and I-405 experience heavy traffic throughout the day as they provide regional access to West Los Angeles and Los Angeles International Airport.

The roadway system in the City is primarily a grid that includes arterials, collectors, and local roads. A major arterial thoroughfare is a high-capacity urban road with the primary function of delivering traffic from collector roads to freeways or expressways, and between urban centers at the highest level of service possible.

According to the City of Inglewood 1992 Circulation Element, the following streets within in the City are classified as major arterials:

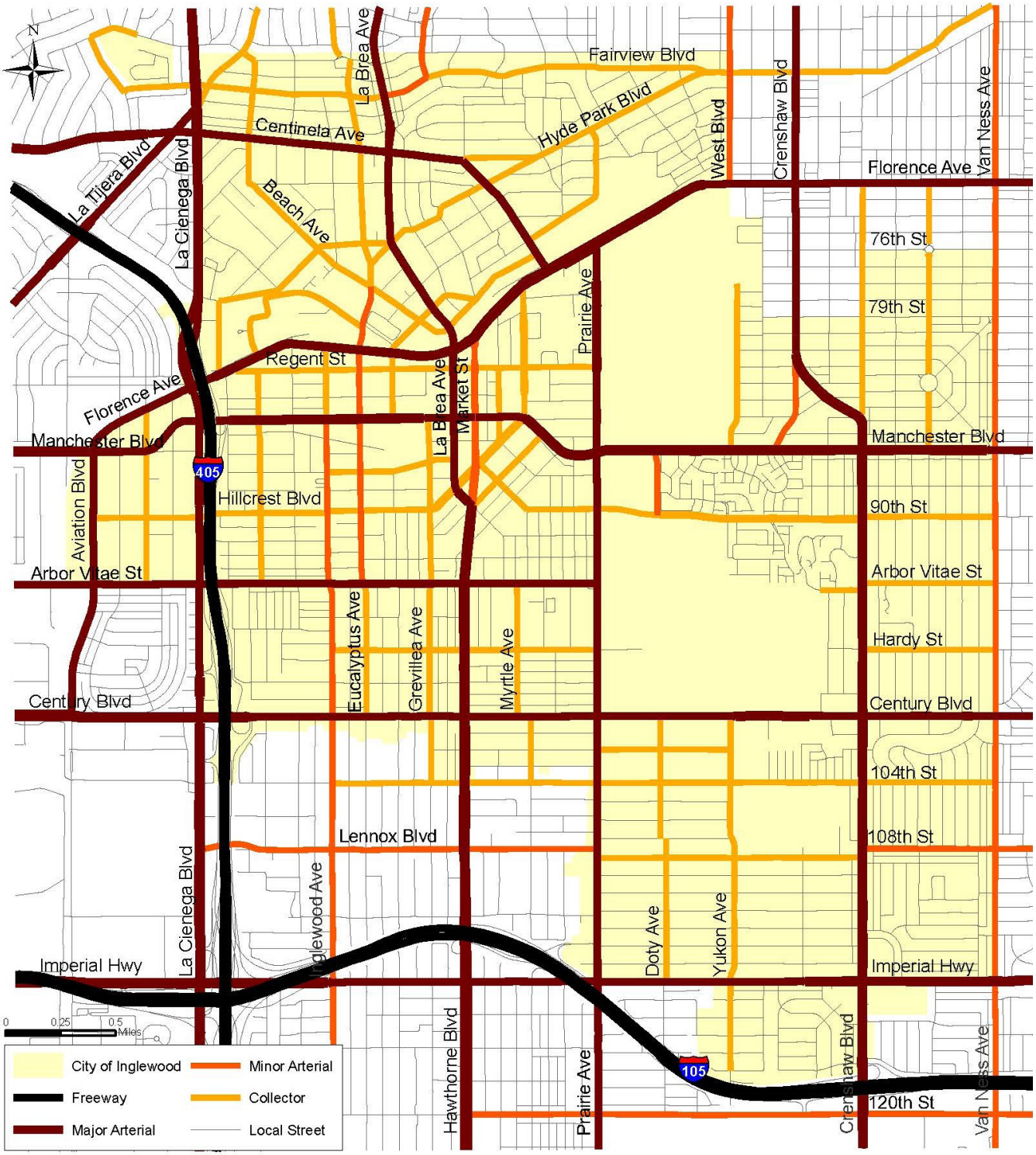
1. Arbor Vitae Street
2. Centinela Avenue
3. Century Boulevard
4. Crenshaw Boulevard
5. Florence Avenue
6 Hawthorne Boulevard
7. Imperial Highway
8. La Brea Avenue
9. La Cienega Boulevard
10. Manchester Boulevard
11. Prairie Avenue

Minor or secondary arterials are similar to major arterials except that they may be discontinuous within the city, may carry less traffic volume and/or may serve as extensions of other major arterials. According to the City of Inglewood 1992 Circulation Element, the following streets within the Study Area is classified as a minor arterial:

1. Crenshaw Drive
2. Eucalyptus Avenue (Beach to Arbor Vitae)
3. Fairview Boulevard (La Brea to Overhill)
4. Kareem Court (Forum Road)
5. Inglewood Avenue (south of Manchester)
6. Lennox Boulevard
7. Market Street (Florence to La Brea)
8. Overhill Drive
9. Van Ness Avenue
10. West Boulevard (north of Florence)
11. 108th Street (east of Crenshaw)

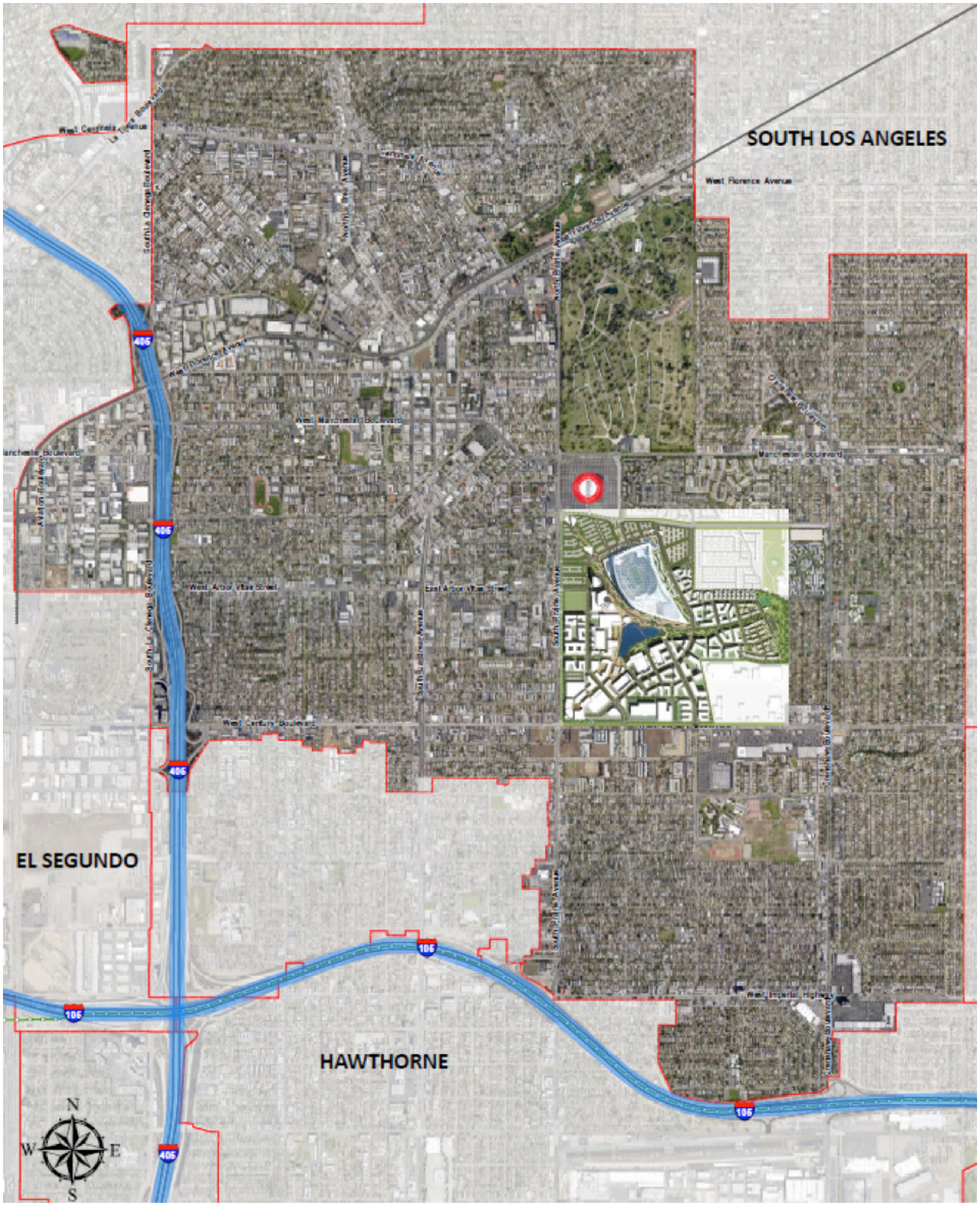
Figure 1.5-1 illustrates Inglewood's freeway and roadway system (arterial, collector, and local streets).

Figure 1.5-1: City of Inglewood General Plan: Circulation Element, 1992



Source: City of Inglewood, 1992

Figure 1.5-2: City of Inglewood, 2018



Source: Trifiletti Consulting, 2018

1.6 FUTURE FREEWAY/ ARTERIAL ROADWAYS

Several roadway improvements within the City of Inglewood are either programmed or under construction. They include:

- Century Boulevard Corridor Improvements.
- Prairie Avenue Corridor Improvements.
- Florence Avenue and Centinela Avenue Roadway Segment Improvements.
- Citywide Intelligent Transportation System (ITS) Improvements.
- Other intersection improvements.

Several regional improvements outside the City's jurisdiction that would have a positive impact on traffic flow, network connectivity and circulation are either proposed as mitigations or are being planned as part of the SCAG's RTP/ SCS and Metro's Long Range Transportation Plan (LRTP). They include:

- I-405 Improvements.
- La Cienega Boulevard Corridor Improvements.
- I-105 Fast-Track Implementation Improvements
- Other improvements.

Additionally, several specific intersection improvements are anticipated as project design features or traffic mitigations required as part of the Hollywood Park Development Project, including but not limiting to, at the following intersections:

- Re-stripe eastbound Arbor Vitae approach.
- Modifications of traffic signal improvements at Arbor Vitae/Prairie, Hardy/Prairie, Prairie/Century, Doty/ Century and Yukon/Century.
- Upgrade seven intersections with ITS traffic signal improvements per the EIR including Crenshaw/Century, Prairie/Century, Doty/Century, Yukon/Century, Club Drive/Century, 11th Ave/Century and Van Ness/Century
- Install southbound right-turn lane at Crenshaw and Century Boulevards.
- New private access road to the Hollywood Park Casino.

1.7 INGLEWOOD EXISTING TRANSIT

Transit service in Inglewood is provided by Metro and the City of Inglewood. The characteristics of bus services in the City of Inglewood are summarized in Table 1.7-1and Table1.7-2, while Figures 1.7-2 and 1.7-3 illustrate existing transit routes for all bus and rail lines within the City.

A combination of Metro Local and Rapid buses provide service to the City of Inglewood, with limited service during weekends and evenings. Inglewood is currently serviced by City-operated I-Line and Metro transportation agencies. The Metro lines serving Inglewood include: Lines 40, 102, 110, 111, 115, 117, 120, 126, 209, 210, 211, 212/312, 217, 442, 607, 625, 710, and 740. These lines connect the City of Inglewood to the greater Los Angeles region. Metro's new LAX/Crenshaw is currently under construction and will provide service to Inglewood at the Downtown Inglewood Station at Florence Avenue and Market Street. An additional Crenshaw/LAX will be built immediately adjacent to the City of Inglewood at Westchester/Veteran at the southwest border of the City.

As part of the City's Mobility Plan and Event Transportation Management and Operations Plan, the City is working with Metro and other municipal bus operators to increase and enhance transit service to City of Inglewood destinations.

Table 1.7-1: Metro Bus Service in the City of Inglewood

OPERATOR	ROUTE	SERVICE AREA		ANNUAL ROUTE RIDERSHIP
		FROM/TO	TO/FROM	
Metro	40	Downtown Los Angeles	South Bay Galleria	8,649
	102	LAX City Bus Center	South Gate	33
	110	Playa Vista	Bell Gardens	2,840
	111	LAX	Norwalk Station	4,305
	115	Playa Del Rey	Norwalk Station	8,734
	117	City Bus Center	Downey	9,359
	120	LAX	Whittwood Town Center	1,177
	126	Manhattan Beach & Valley Dr.	Hawthorne Station	3
	209	Wilshire Center	Athens	88
	210	Hollywood/Vine Station	South Bay Galleria	4,452
	211	Redondo Beach	Inglewood	413
	212	Hawthorne/Lennox Station	Hollywood/Vine Red Line Station	10,788
	442	Hawthorne/Lennox Station	Downtown Los Angeles	118
	607	Inglewood Transit Center	Inglewood Transit Center	87
	710	Wilshire Center	South Bay Galleria	3,761
	740	Jefferson Park	South Bay Galleria	1,734

Source: Metro, 2018

Note: This data is for all Metro bus routes that pass through the City of Inglewood, is limited to activity that occurs within City boundaries, and includes boarding and alighting on weekdays and weekends.

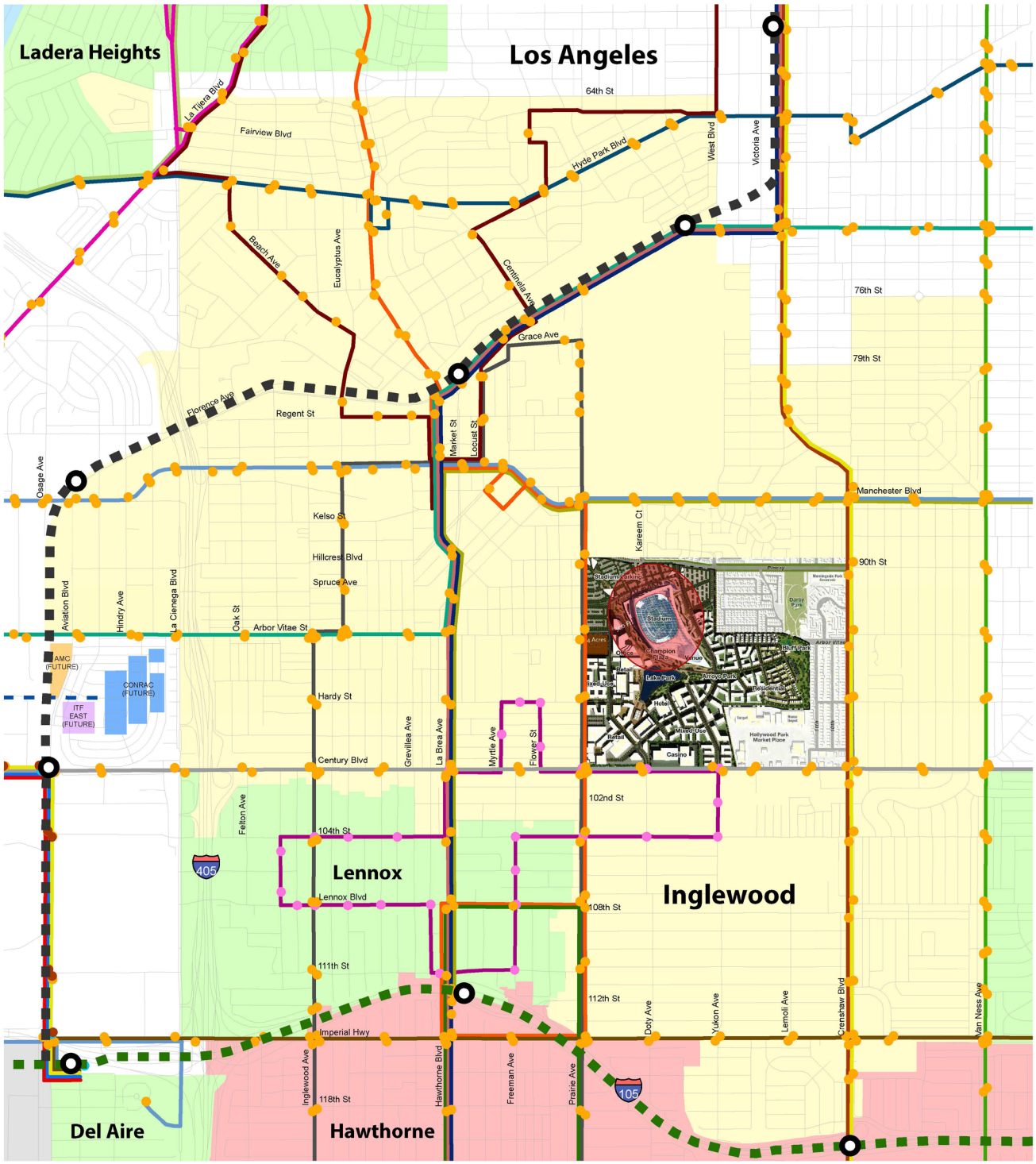
Table 1.7-2: Exisiting and Future Rail Service in the City of Inglewood

METRO RAIL LINE	DESCRIPTION
Metro Crenshaw/LAX Line	The Crenshaw/LAX transit line, currently under construction, has two stations located in the City of Inglewood – the Downtown Inglewood Station at the intersection of Florence Avenue and La Brea Avenue and the Fairview Heights Station at Florence Avenue and West Boulevard.
Metro Green Line	The Metro Green Line currently terminates at the Redondo Beach Station to the south and Norwalk Station to the east. It provides transfer service to the Blue Line, Silver Line and several Metro bus lines traveling north – south. Metro's Expenditure Plan identifies the extension of the Green Line to Torrance at Crenshaw Boulevard. The project is anticipated to be completed by 2030.

Source: Metro, 2018

Figure 1.7-1 Envision Inglewood Website Illustration

Figure 1.7-2: Metro Bus Transportation Network in the City of Inglewood



Source: Raju Associates, 2018

Figure 1.7-3: Current Metro Rail Conectivity Throughout the City of Inglewood

Source: Trifiletti Consulting, 2018

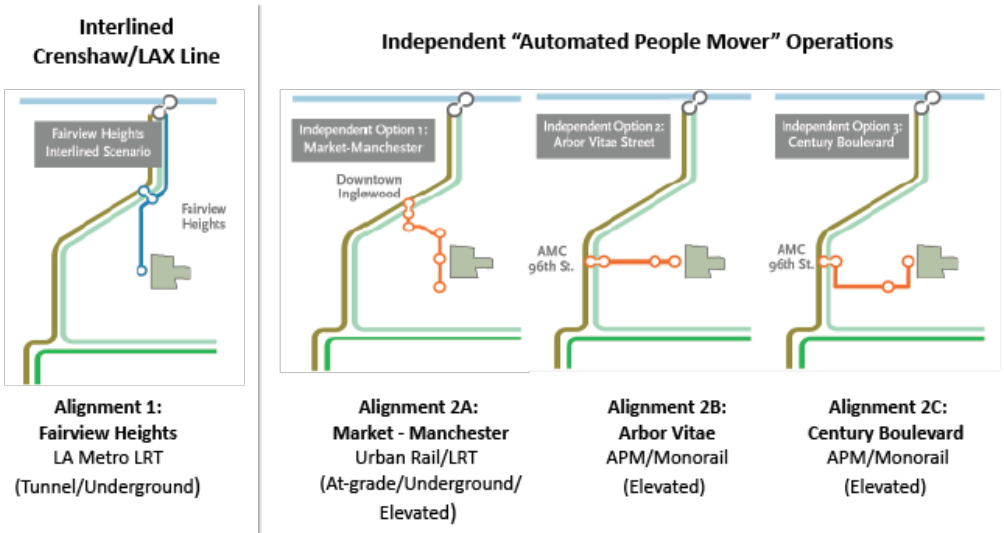
1.8 METRO CITY OF CHAMPIONS/ INGLEWOOD (NFL) PROJECT STUDY

Metro completed the City of Champions/Inglewood (NFL) Project Focused Analysis of Transit Connection Study in July 2017. Metro's study analyzed a potential underground rail transit connection from the under-construction Metro Crenshaw/LAX Fairview Heights at-grade light rail station at Florence south Prairie Avenue to the NFL Stadium/ Hollywood Park mixed-use development. The study evaluated the feasibility of using high-capacity transit technology to serve the Los Angeles Stadium and Entertainment District at Hollywood Park under an Interlined Operability Scenario and Independent Operability Scenarios. The Metro study concluded the following, summarized below and in Figure 1.8-1:

- Alignment 1 Fairview Heights: The Interlined Operability Scenario looked at a branch from the Crenshaw/LAX Line in a subway under Prairie Avenue.
- Alignment 2A Market-Manchester: An independent urban rail transit connection to Downtown Inglewood to leverage Market Street in In glewood's historic core and to promote economic development opportunities in the City.
- Alignment 2B Arbor Vitae: An independent automated people mover transit connection to the Airport Metro Connector 96th Street Transit Station via Arbor Vitae Street to provide connections to LAX and Metro's major multi-modal hub at the AMC 96th Street Transit Station.
- Alignment 2C Century Boulevard: An independent automated people mover transit connection to the Airport Metro Connector 96th Street Transit Station via Century Boulevard to provide connections to LAX and Metro's major multi-modal hub at the AMC 96th Street Transit Station.

Regarding the Independent Operability Scenario, other alternatives, which could be considerably less costly, were not studied, because of the City's concern that congestion during peak periods at the entertainment/stadium district could create conflicts with at-grade, fixed – guideway transit service, degrading transit service. Future "Long term" connections to the Green Line and Hawthorne were identified but not recommended for further study at this phase and were not included in Metro's analysis.

Figure 1.8-1: Metro Transit Alternatives



Source: Metro/AECOM, 2017

Table 1.8-1: Summary of Metro City of Champions/Inglewood (NFL) Project Study Findings

		INTERLINED WITH CRENSHAW/LAX LINE	INDEPENDENT		
			OPTION 1: DOWNTOWN VIA MARKET-MANCHESTER	OPTION 2: ARBOR VITAE	OPTION 3: CENTURY
CAPACITY GOAL	MAXIMUM CAPACITY	5,400 passengers/hr	13,500 passengers/hr	18,000 passengers/hr	
	PROJECTED RIDERS[1]	Average Weekday: 3,734 riders/day	Average Weekday: 3,158 riders/day	Average Weekday: 1,740 - 3,803 riders/day	
		Event: 4,130 - 15,000 attendees/event	Event: 3,900 - 14,300 attendees/event	Event: 6,120 - 24,180 attendees/event	
COST	CAPITAL COST (2017$)[2]	$1,333 - $1.960 billion	$497-$746 million	$561-$990 million	$563 million - $1.049 billion
	OPERATION & MAINTENANCE COST (2017$)[3]	$13.6-$22.5 million/year	$11.2-$17.1 million/year	$9.9-$14.3 million/year	$11.0-$17.1 million/year
TECHNOLOGY/MODE		Underground LRT	Urban Rail	APM/Monorail	
STATIONS		Fairview Heights, Development	Market North, Market South, Manchester, Forum, Development	AMC, La Brea, Development	AMC, La Cienega, La Brea, Century/Prairie, Development
DISTANCE (mi)		1.8[4]	1.2	2.1	2.8
AVG SPEED (mi/hr)		35.6[4]	14.9	32.7	24.6
ONE-WAY TRAVEL TIME (min.)		3.0[4]	4.8	3.8	6.8
POTENTIAL RIGHT-OF-WAY ACQUISITION (acres)		22	15	33	19
PRIVATE/PUBLIC PARTNERSHIP OPPORTUNITIES		Low	High	High	High

1. Range reflects differences in attendance between teams, varying mode splits, and parking utilization (for Independent Option 2 & 3)
2. Range reflects a low and high capacity operating plan as well as uncertainty and contingency due to current stage of design
3. Range reflects a low and high capacity operating plan
4. Based on the new branch from Fairview Heights Station to the Development

Source: Metro/AECOM

The Metro study concluded that interlined operations with the Crenshaw/LAX line offered some advantages associated with a one-seat ride (thus avoiding passenger transfers) inter-operability and maintenance of fleet. However, the Metro study found a one-seat ride would introduce complexities to Metro regional network operations due to the introduction of an additional route to Los Angeles Stadium and Entertainment District at Hollywood Park. The operational headways for the overlapping routes must account for the route demands, which differ. For example, the special events/ game-day ridership demands on the Inglewood Transit Connector are exponentially higher than the peak hour demands of the other Metro rail routes. Metro deemed the Interlined Operability alternative not feasible due to the costs and operational impacts on the regional system.

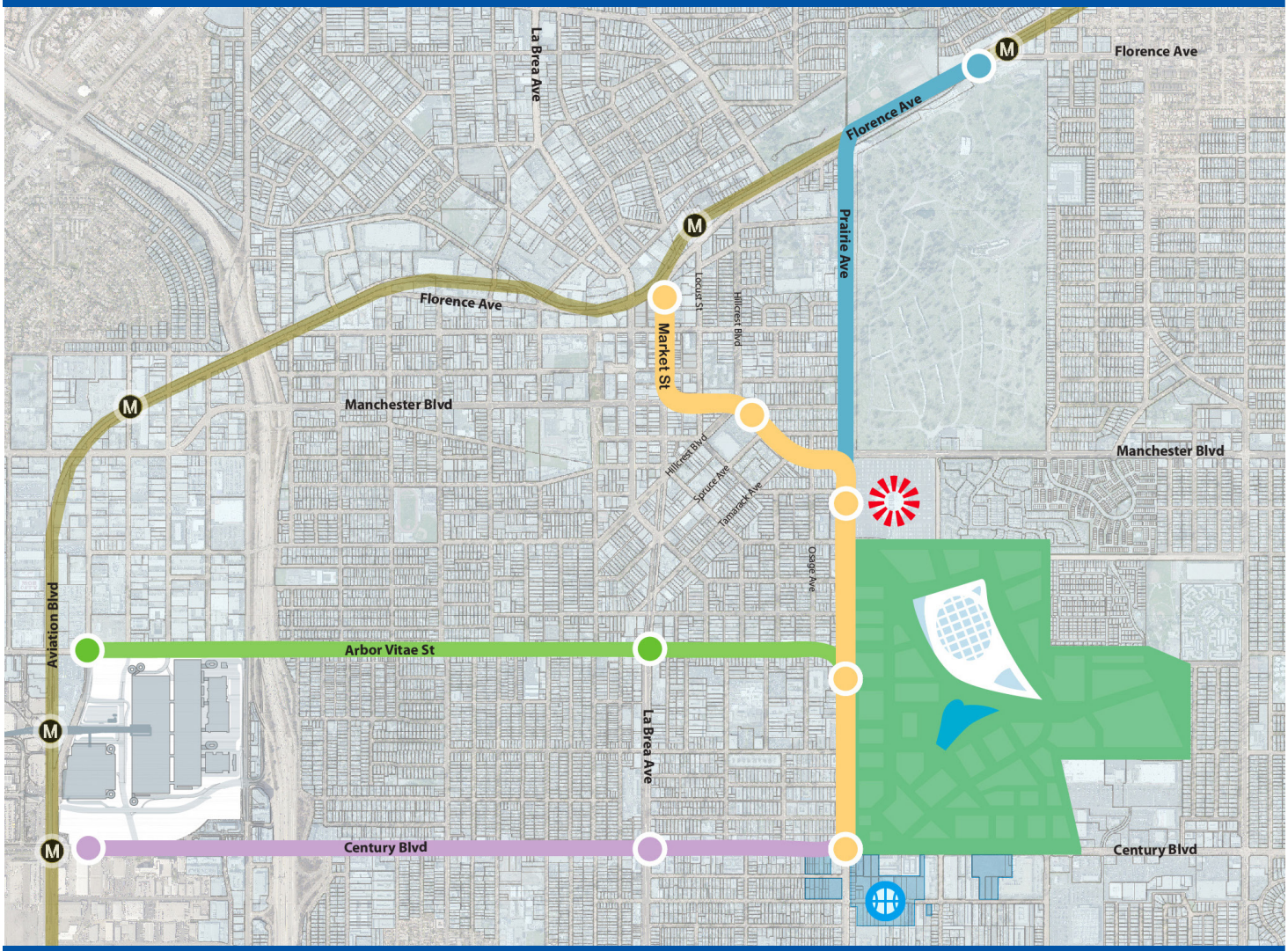
The Metro study concluded the following:

- The existing and planned venues within the City of Inglewood are major traffic generators with a high event driven transit mode share.
- Independent APM operations would better serve the event driven ridership.
- The single seat interlined operation would introduce complexities and added costs to the mainline rail operations.
- While Metro deemed the Interlined Option not viable, it recommended that the City further develop independent automated people mover options to serve major development sites.
- A public-private-partnership strategy and an Enhanced Infrastructure Financing District is recommended, especially since Measure M and the Metro Long Range Transportation Plan do not earmark funding for such a project.

Figure 1.8-2: Iconic Market Street Sign

Source: Olivia Niland for Neon Tommy, 2014

2. INGLEWOOD TRANSIT CONNECTOR ALTERNATIVES



2.1 INGLEWOOD TRANSIT CONNECTOR ALTERNATIVES

To build upon the work initiated by Metro, the City refined the Inglewood Transit Connector Alternatives to achieve the City's goals and objectives. Accordingly, this Study evaluates the following four conceptual transit alternatives, all consisting of elevated APM Systems:

- Alternative A: Market-Manchester Alignment
- Alternative B: Fairview Heights Alignment
- Alternative C: Arbor Vitae Alignment
- Alternative D: Century Boulevard Alignment

This Study is evaluating for overall project feasibility, and therefore it should be stressed that each alternative is based on a conceptual, preliminary design. Engineering would undoubtedly result in shifts and modifications to the overall project design, including stations, platforms and support facilities. Yet, preliminary conceptual designs are provided so that various alternative concepts can be compared with one another and feasibility issues can be identified.

Each of the alternatives described in Sections 2.2 through 2.5 provide an assessment of APM technologies with key findings on the candidate technologies that would be viable for the Inglewood Transit Connector Project. The specific technology is expected to be selected through a competitive procurement process and is not dependent on the selection of the preferred alignment. A number of alternative features and project characteristics are expected to be comparable to each other. These non-differing characteristics are 1) station size, configuration and locations/distances serving the key traffic generators; 2) guideway right-of-way and elevations; 3) maintenance and storage facilities; and 4 passenger convenience/amenities. It is assumed for purposes of this analysis that each station and station access will be comparable across the Alternatives. This Report also includes specific details associated with each of these non-differentiating characteristics.

Los Angeles Clippers

2.2 ALTERNATIVE A: MARKET-MANCHESTER ALIGNMENT

The Market-Manchester Alignment (Alternative A) is an aerial alignment that runs approximately one-quarter of a mile along Market Street between Florence Avenue and Manchester Boulevard, where it transitions east along Manchester Boulevard for approximately half a mile to Prairie Avenue. The alignment continues for approximately one mile south of Manchester Boulevard along Prairie to Century Boulevard. This Alternative provides service to downtown Inglewood, The Forum, Los Angeles Stadium and Entertainment District at Hollywood Park, and the proposed Inglewood Basketball and Entertainment Center. This is the shortest alignment concept in comparison to other options. The mainline length of this alternative is approximately 1.8 miles, dual-lane, and includes an anticipated five stations as illustrated in Figure 2.2-1. The station locations and number were identified to provide connections to the traffic generators/development, and potential opportunities for further development/investment.

Alternative A (see Figure 2.2-1) is designed to connect major development sites to Metro LAX/Crenshaw line station at downtown Inglewood and presents an opportunity for integration with local economic activity, current and future transit-oriented development, and other initiatives in the downtown/commercial district of Inglewood. Unlike the 2017 Metro study's urban rail technology and at-grade segment at Market Street, the City's option is proposed to be elevated so that the Inglewood Transit Connector would not compete for the same roadway network as other road-based vehicles.

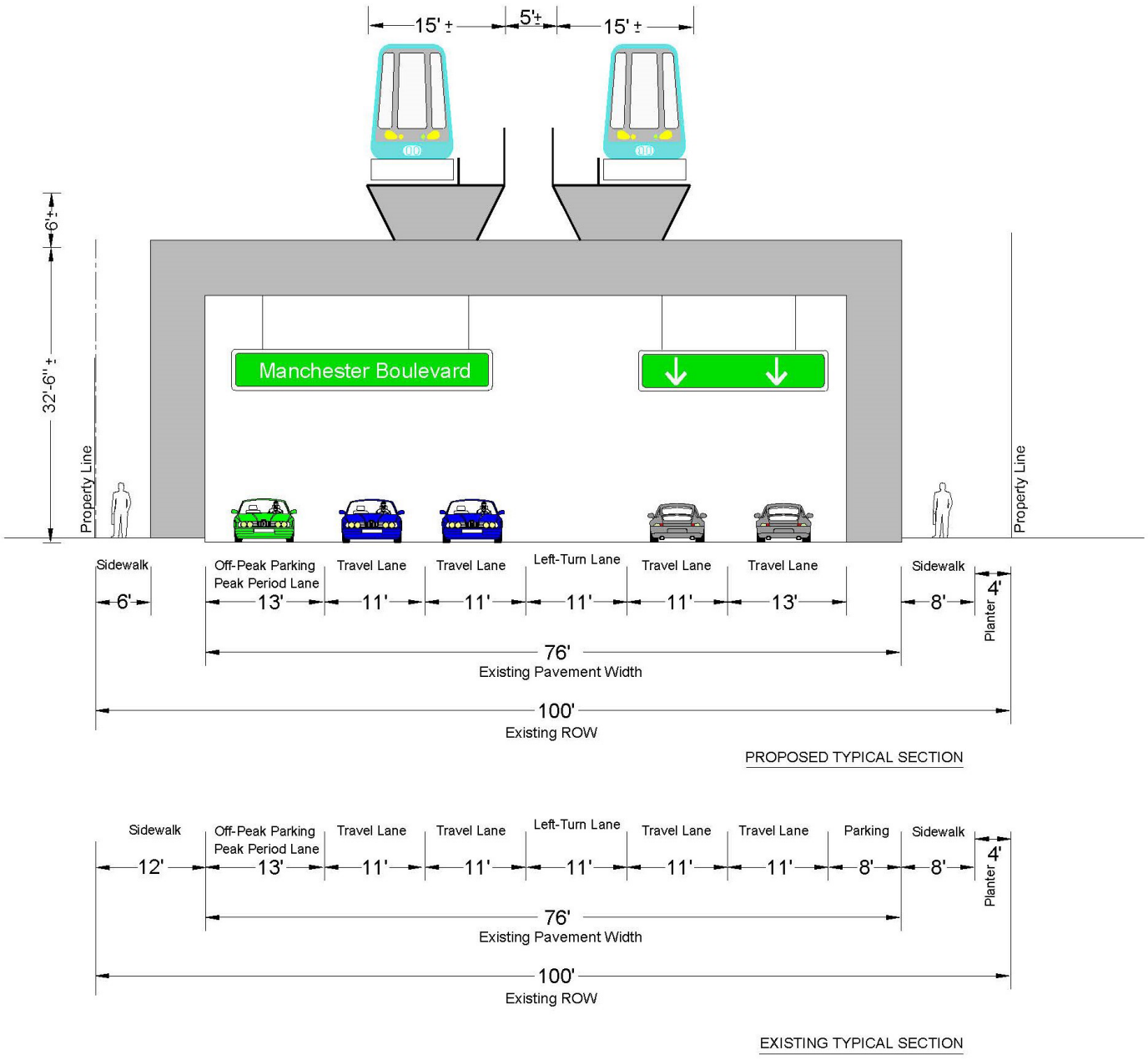
Possible intermodal facility locations to capture road-based traffic such as buses, transportation network comapnies (TNCs), taxis, and private vehicles, and facilitate a convenient transfer to the Internet Transit Connector have been identified (see Figure 2.2-1). These potential intermodal facilities provide an opportunity to limit the amount and type of road-based traffic into the area especially during special events. Such limits may be voluntary, based on convenience, and/or controlled through regulatory policies such as possible congestion pricing for access.

Source: City of Inglewood

Figure 2.2-1: Alternative A: Market-Manchester Alignment

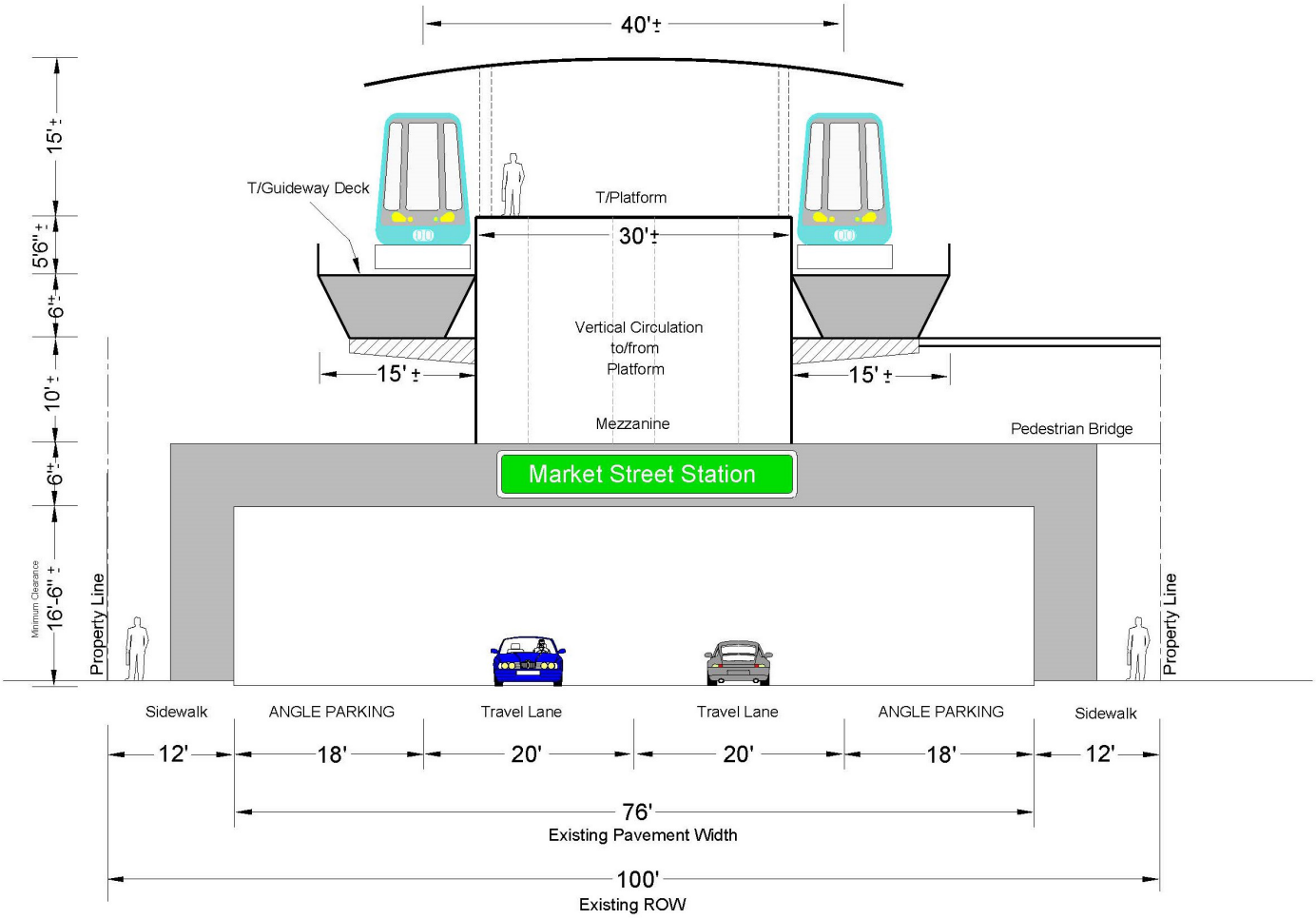
Source: Trifiletti Consulting, 2018

Figure 2.2-2: Alternative A: Market-Manchester Alignment
Manchester Boulevard, Looking West in Between Stations



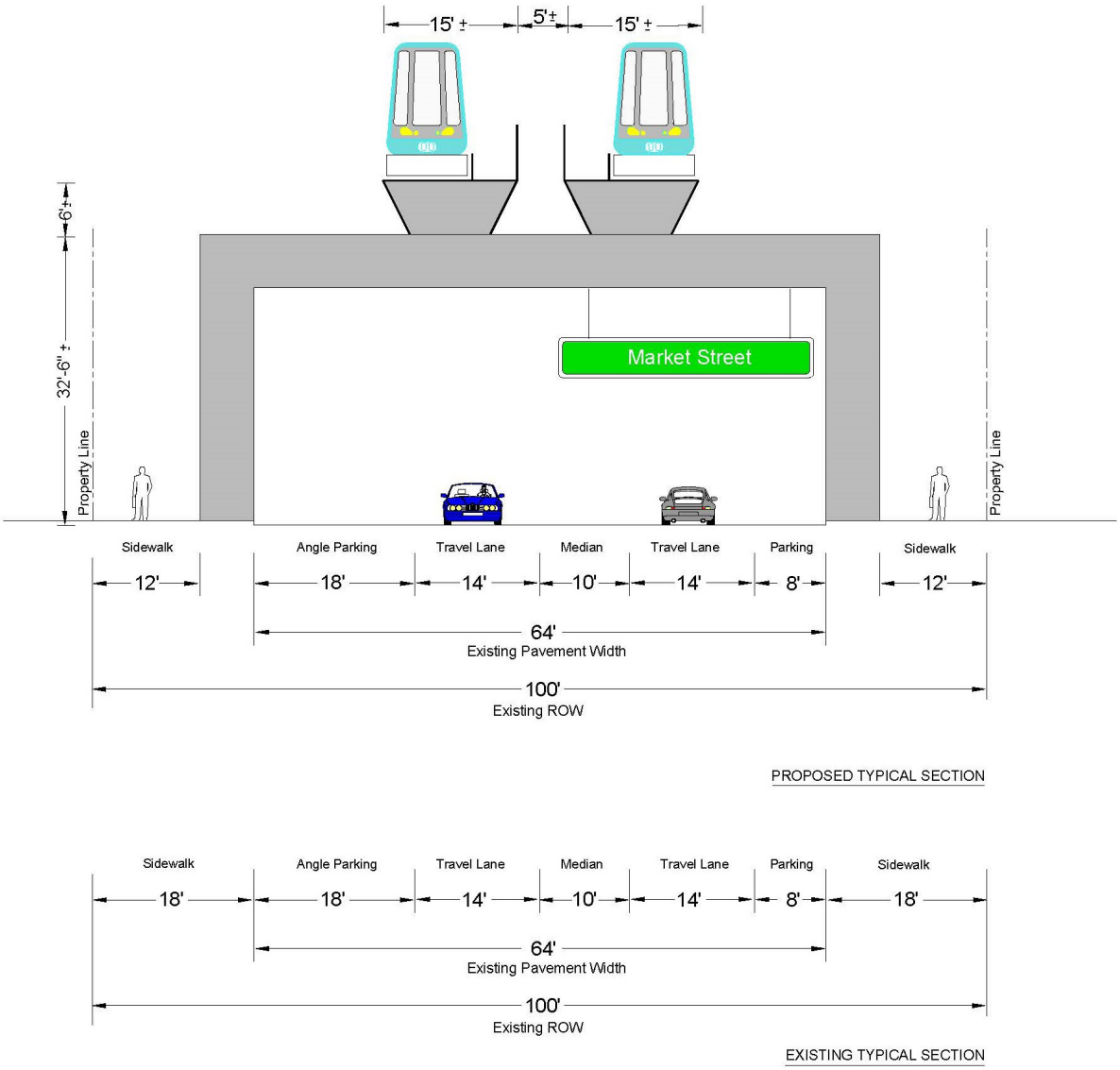
Source: Raju Associates, 2018

Figure 2.2-3: Alternative A: Market-Manchester Alignment
Manchester Boulevard, Looking West at Station



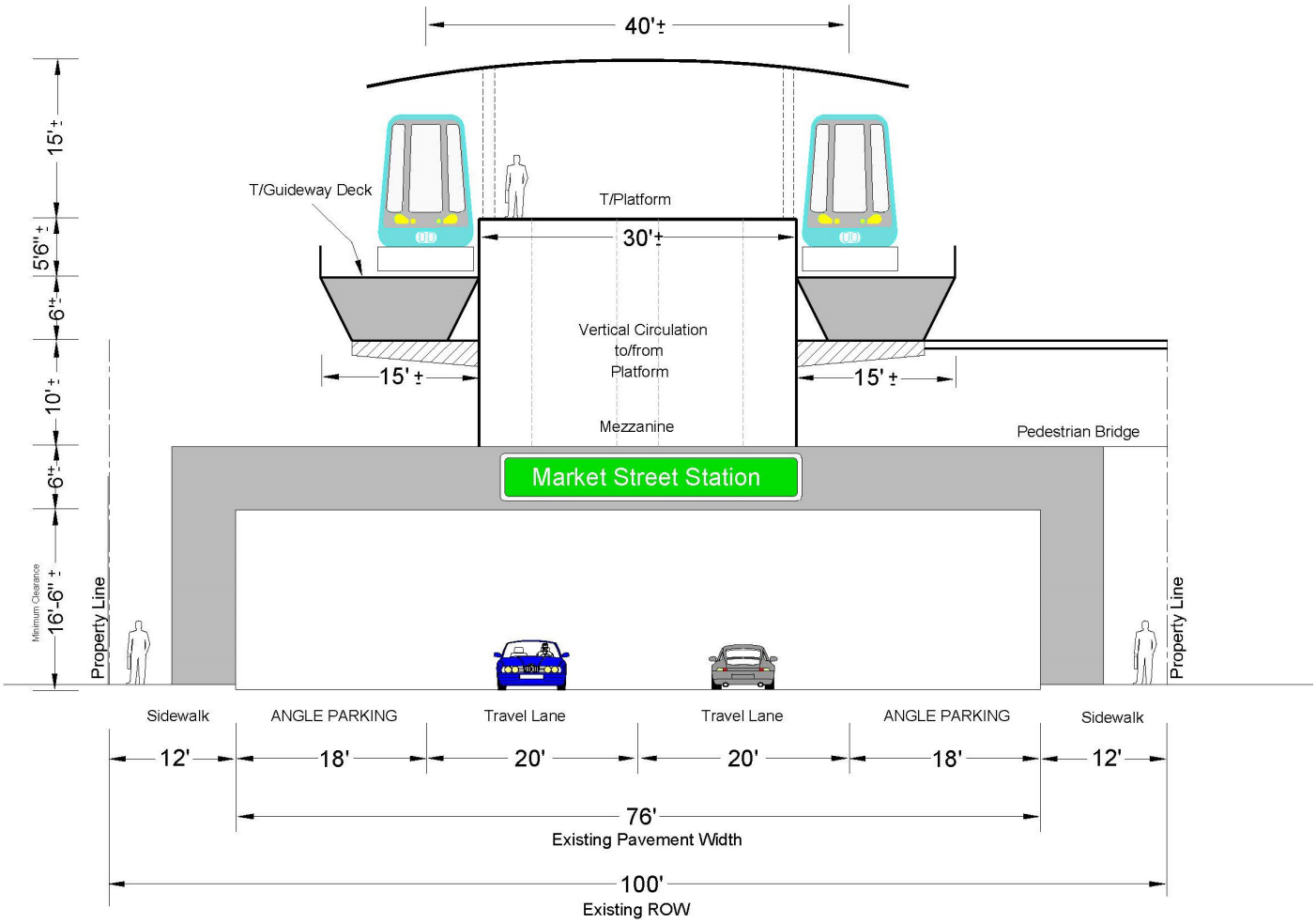
Source: Raju Associates, 2018

Figure 2.2-4: Alternative A: Market-Manchester Alignment
Market Street, Looking North between Regent St and Queen St



Source: Raju Associates, 2018

Figure 2.2-5: Alternative A: Market-Manchester Alignment
Market Street Looking North at Station



Source: Raju Associates, 2018

2.3 ALTERNATIVE B: FAIRVIEW HEIGHTS ALIGNMENT

The City identified an independent elevated APM System as a refined alternative connecting directly to the Fairview Heights Station along Prairie Avenue. The Fairview Heights Alignment (see Figure 2.3-1) is an aerial alignment that runs approximately one-half mile along Florence Avenue between Prairie Avenue and West Boulevard. The alignment then transitions south along Prairie Avenue for approximately one and three-quarter miles between Florence Avenue to Century Boulevard. This Alternative provides service to downtown Inglewood, The Forum, LASED, and the proposed Inglewood Basketball and Entertainment Center. The mainline length of this alternative is approximately 2.2 miles, dual lane, and includes an anticipated four stations as illustrated in Figure 2.3-1. The number of stations and their locations were identified based on providing connections to traffic generators/development. Further development opportunities are limited by Edward Vincent Jr. Park, Inglewood Cemetery, and residential areas; furthermore, Alternative B would not service the downtown Inglewood area.

A possible intermodal facility location to capture road-based traffic such as buses, TNCs, taxis, and private vehicles, and facilitate a convenient transfer to the ITC has been identified. This potential intermodal facility provides an opportunity to limit the amount and type of road-based traffic into the area especially during special events. Such limits may be voluntary based on convenience, and/or regulatory through policies including possible congestion pricing for access.

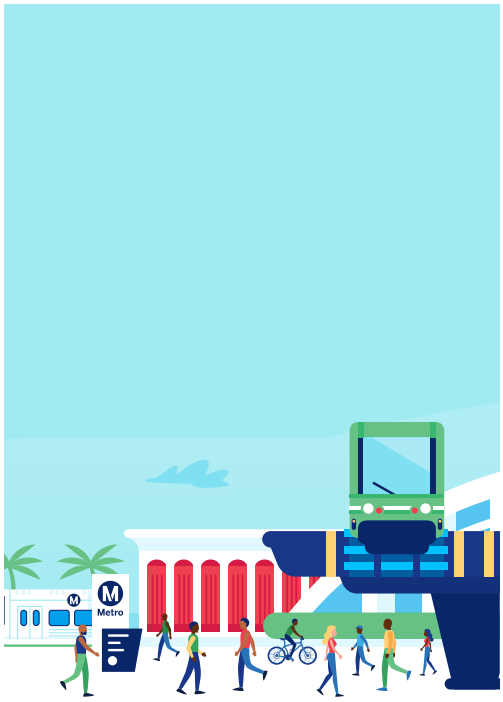
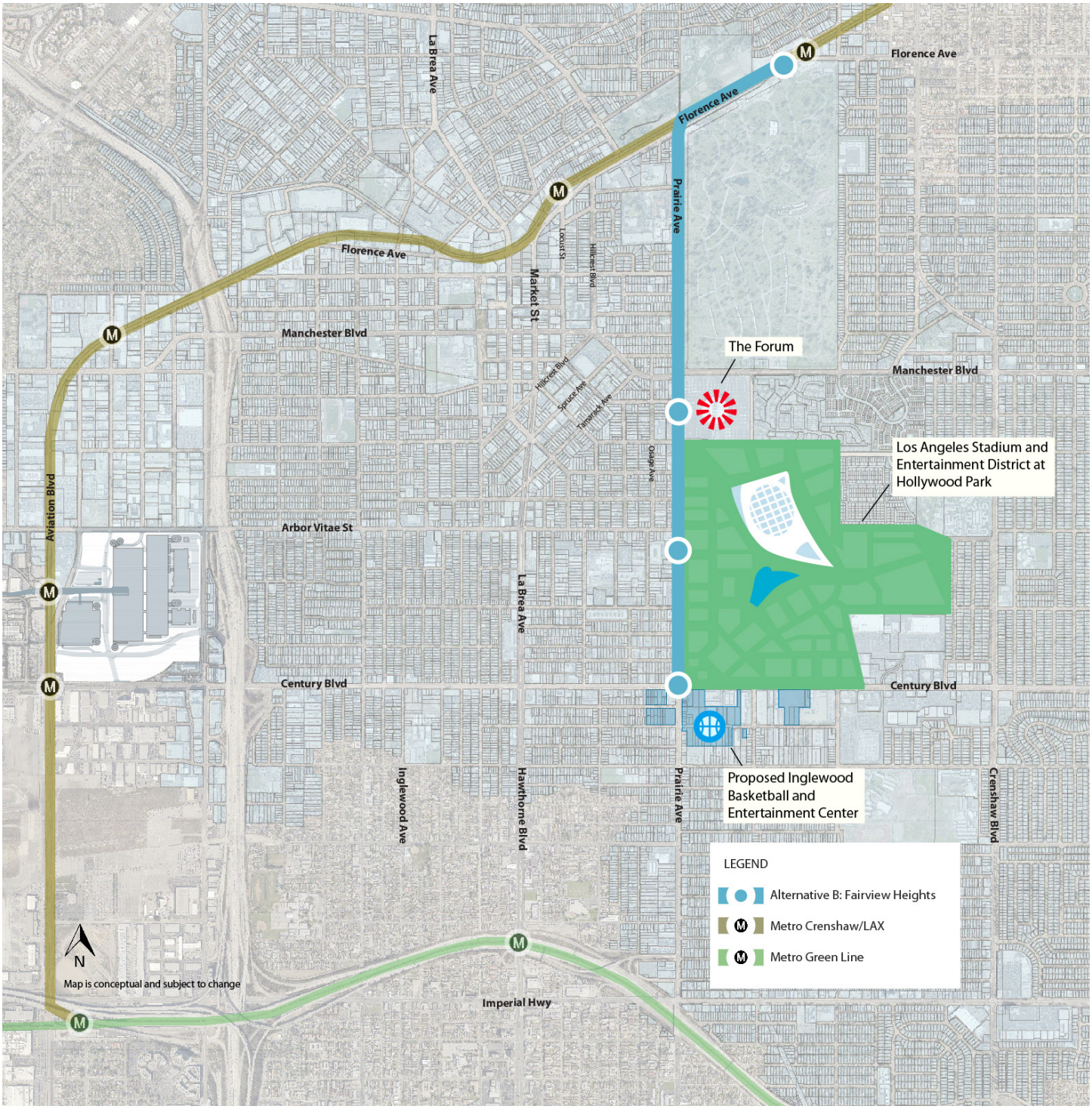
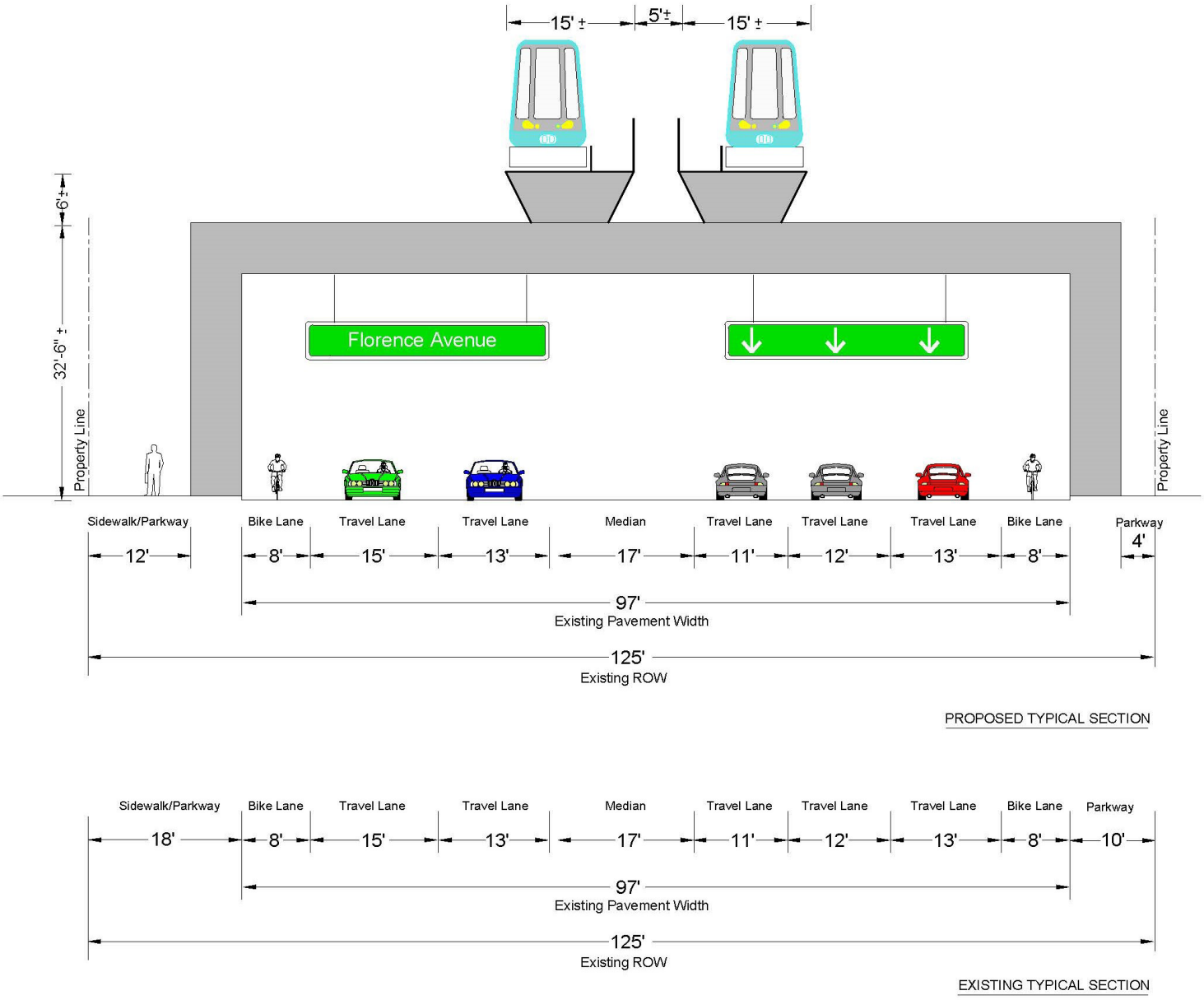


Figure 2.3-1: Alternative B: Fairview Heights Alignment



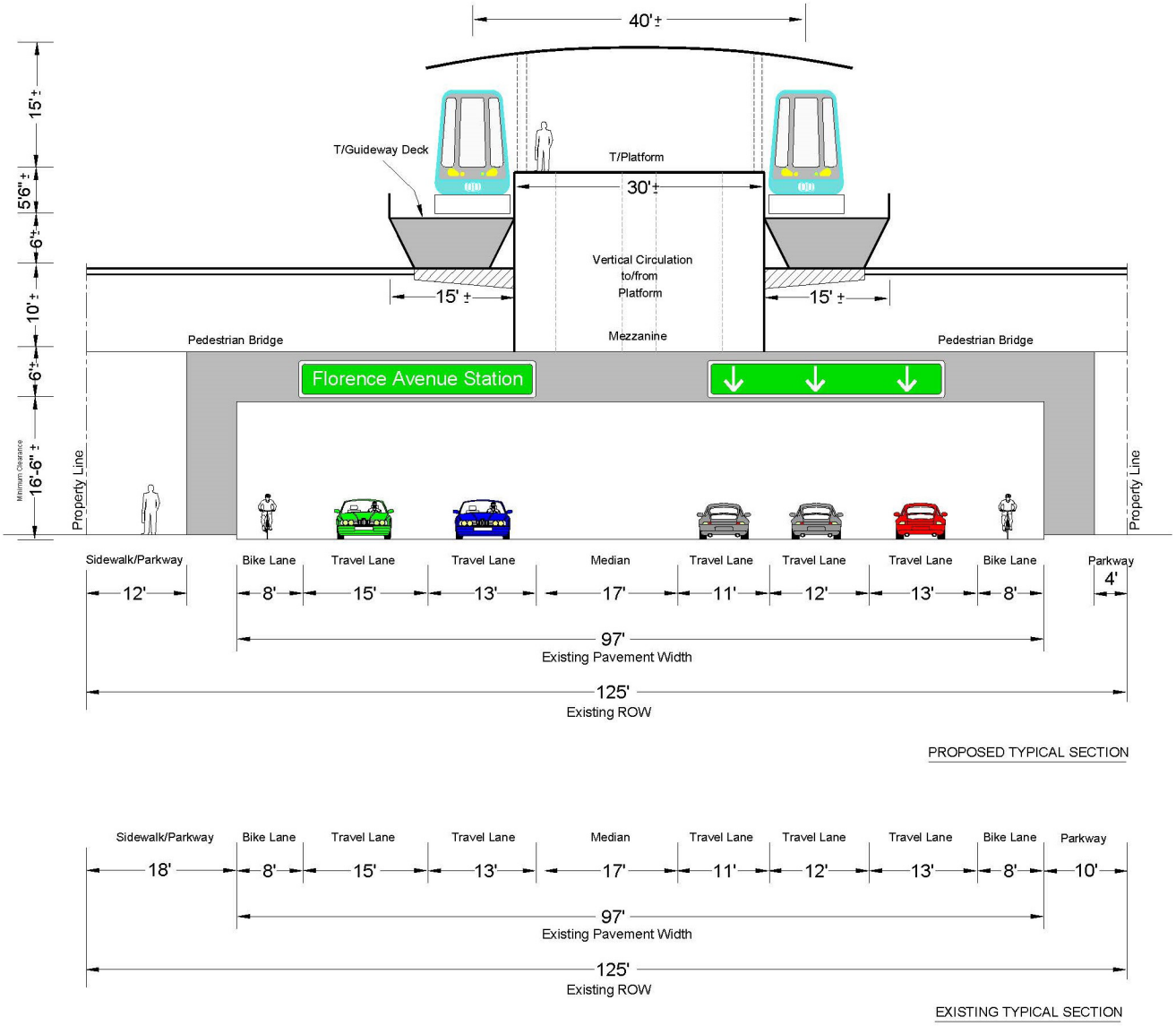
Source: Trifiletti Consulting, 2018

Figure 2.3-2: Alternative B: Fairview Heights Alignment
Florence Avenue, Looking West in Between Stations



Source: Raju Associates, 2018

Figure 2.3-3: Alternative B: Fairview Heights Alignment
Florence Avenue, Looking West at Station



Source: Raju Associates, 2018

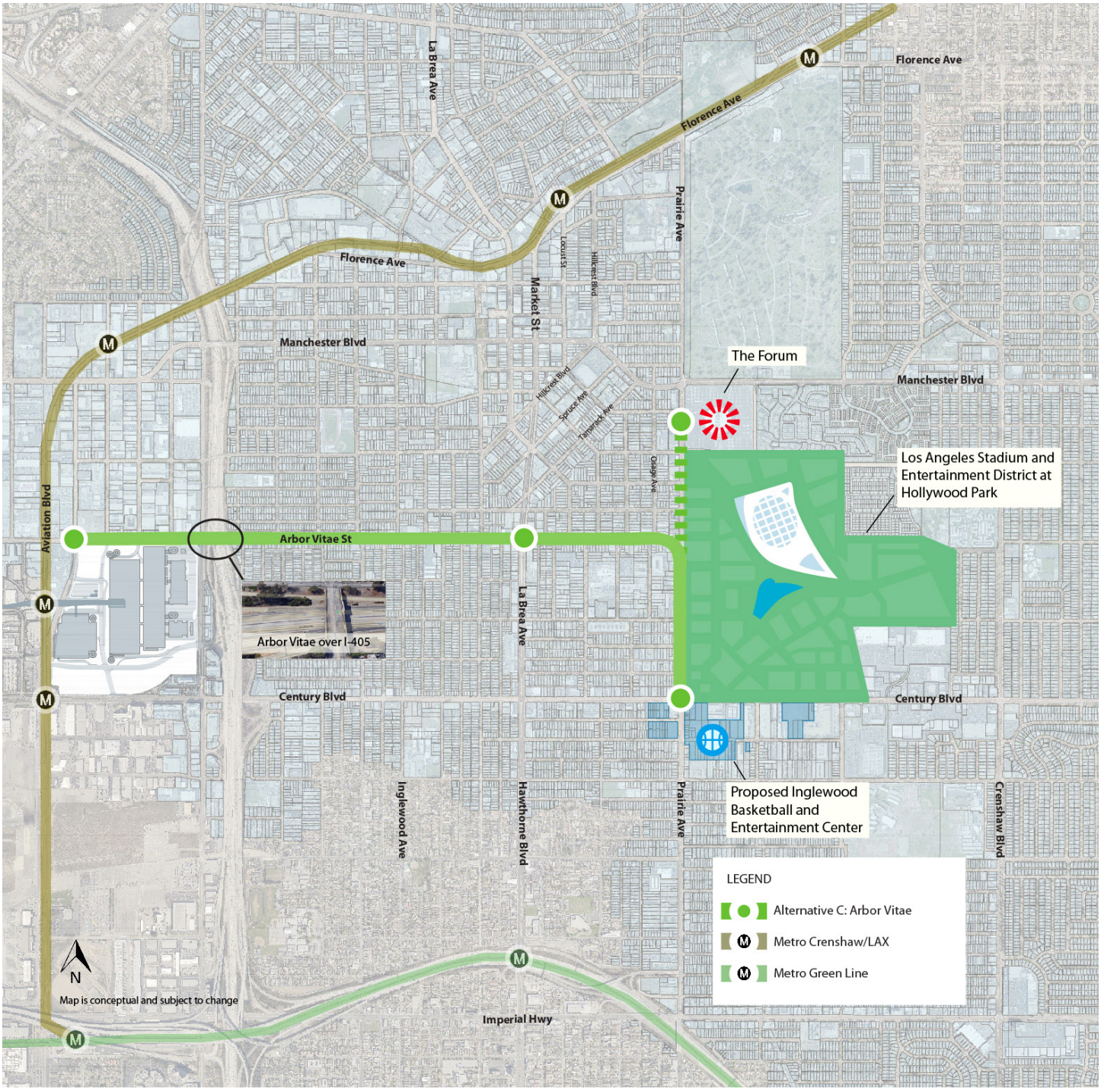
2.4 ALTERNATIVE C: ARBOR VITAE ALIGNMENT

The Arbor Vitae Alignment (Alternative C) is an aerial alignment concept that runs approximately two miles along Arbor Vitae Street from Aviation Boulevard to Prairie Avenue, where it transitions south, and potentially north, along Prairie Avenue for approximately one half mile to Century Boulevard. This Alternative provides service to The Forum, LASED, and the proposed Inglewood Basketball and Entertainment Center. Alternative C presents the opportunity to directly connect to the Los Angeles International Airport (LAX) and its Landside Access Modernization Program (LAMP) that includes substantial parking opportunities, a consolidated rental car center, planned regional multi-modal hub served by both Metro's Crenshaw/LAX and Green Lines, various Metro and municipal bus lines, and the LAX Automated People Mover system. Although this alternative connects to a planned multi-modal hub, development opportunities are limited in downtown Inglewood since it will not serve the area.

Crossing over the I-405 and a narrow right-of-way along Arbor Vitae Street poses significant obstacles for Alternative C. Crossing over the I-405 requires coordination with Caltrans, Los Angeles Department of Transportation and Los Angeles World Airports. However, since Arbor Vitae Street crosses over the I-405, the complexity of the coordination is expected to be less than the Century Boulevard Alignment (Alternative D). East of La Brea Avenue, the roadway section only includes one through-lane in each direction and one parallel parking lane. This section would require significant modifications to accommodate the alignment and create potential major impacts to existing small businesses as well as possible neighborhood displacement.

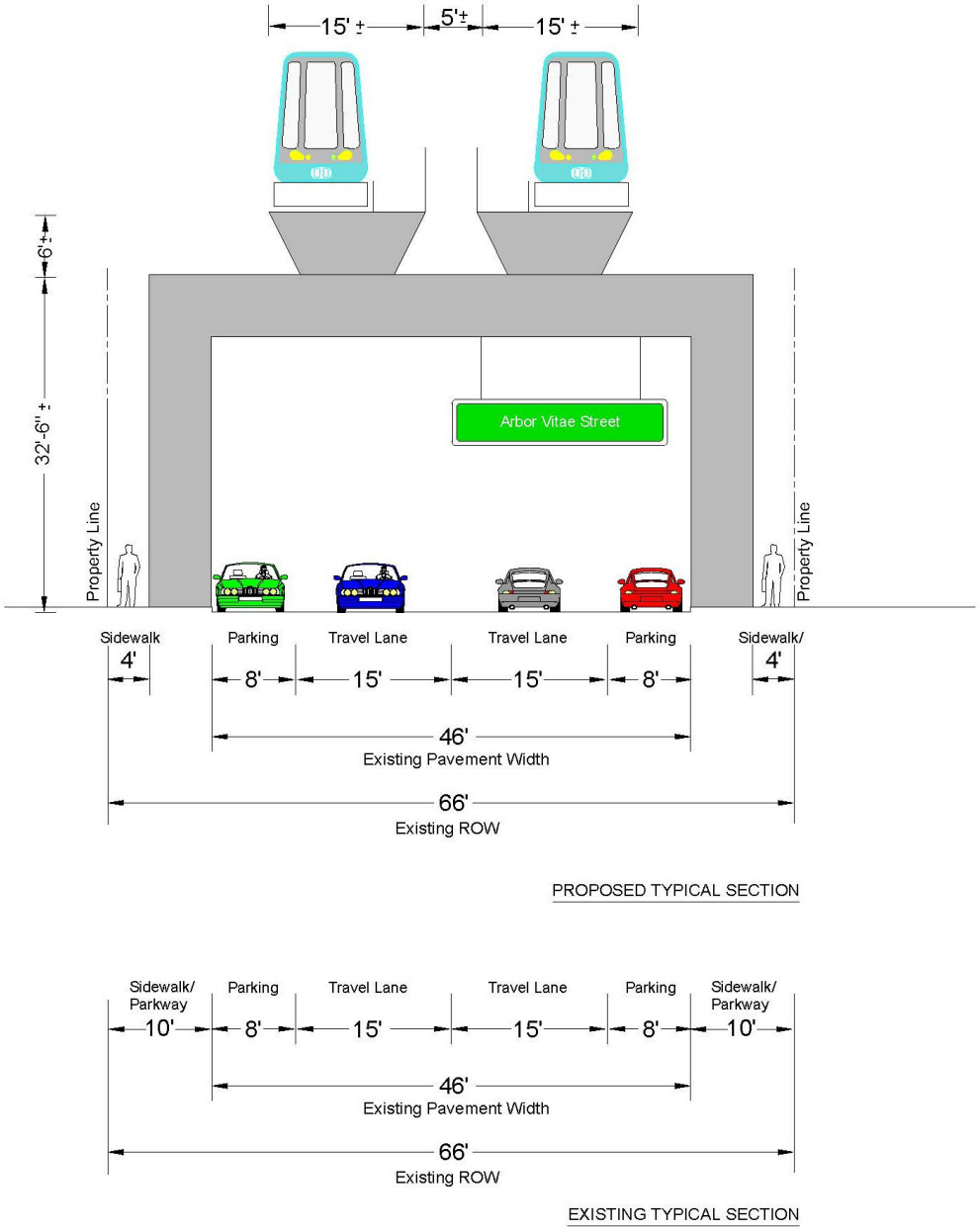
Possible intermodal facility locations to capture road-based traffic such as buses, TNCs, taxis, and private vehicles and facilitate a convenient transfer to the ITC have been identified. These potential intermodal facilities provide an opportunity to limit the amount and type of road-based traffic into the area especially during special events; such limits may be voluntary based on convenience, and/or controlled through regulatory policies including possible congestion pricing for access.

Figure 2.4-1: Alternative C: Arbor Vitae Alignment



Source: Trifiletti Consulting, 2018

Figure 2.4-2: Alternative C: Arbor Vitae Alignment
Arbor Vitae Street, Looking West in Between Stations



Source: Raju Associates, 2018

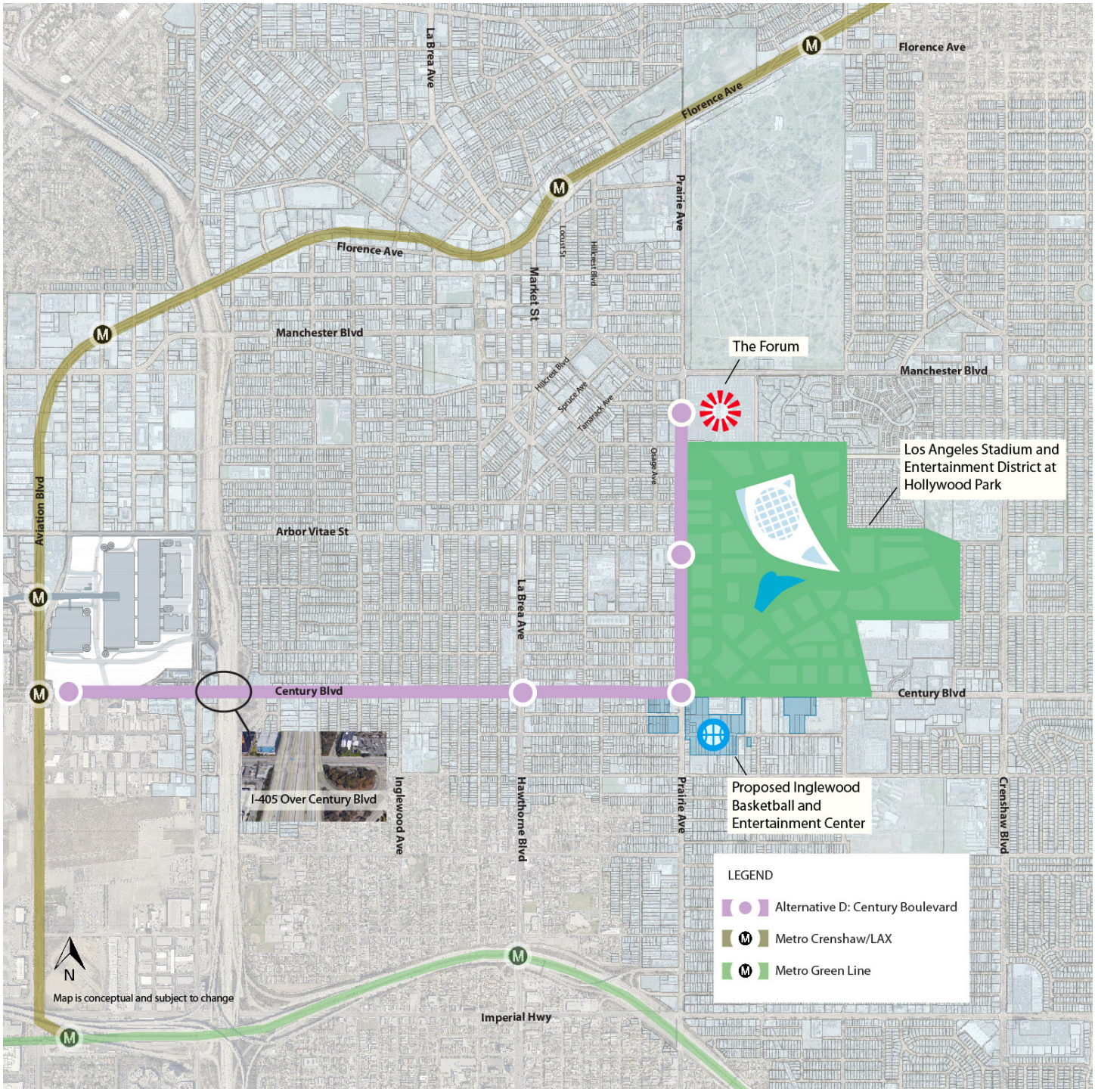
2.5 ALTERNATIVE D: CENTURY BOULEVARD ALIGNMENT

The Century Boulevard Alignment (Alternative D) is an aerial alignment concept that runs approximately two miles along Century Boulevard from Aviation Boulevard to Prairie Avenue, where it transitions north along Prairie Avenue for approximately one mile to south of Manchester Boulevard. This Alternative provides service to The Forum, LASED, and the proposed Inglewood Basketball and Entertainment Center. Alternative D provides the opportunity to directly connect to a regional multimodal facility served by Metro's Crenshaw/ LAX and Green Lines, various Metro and municipal bus lines, and the LAX automated people mover (APM) system.

To connect to the multimodal facility, Alternative D would be required to cross the I-405 on the south side of the LAX LAMP development near Manchester Square. A preliminary review indicates that the transition from an elevated segment to a level sufficient under the I-405 may not be feasible due to the short distance available and the real estate constraint between Century Boulevard and the LAX LAMP development at Manchester Square. Crossing over and under the I-405 would require coordination with Caltrans, Los Angeles Department of Transportation and Los Angeles World Airports. This alignment does not present the opportunity for integration with local economic activity, current and future transit-oriented development, and other initiatives in downtown Inglewood.

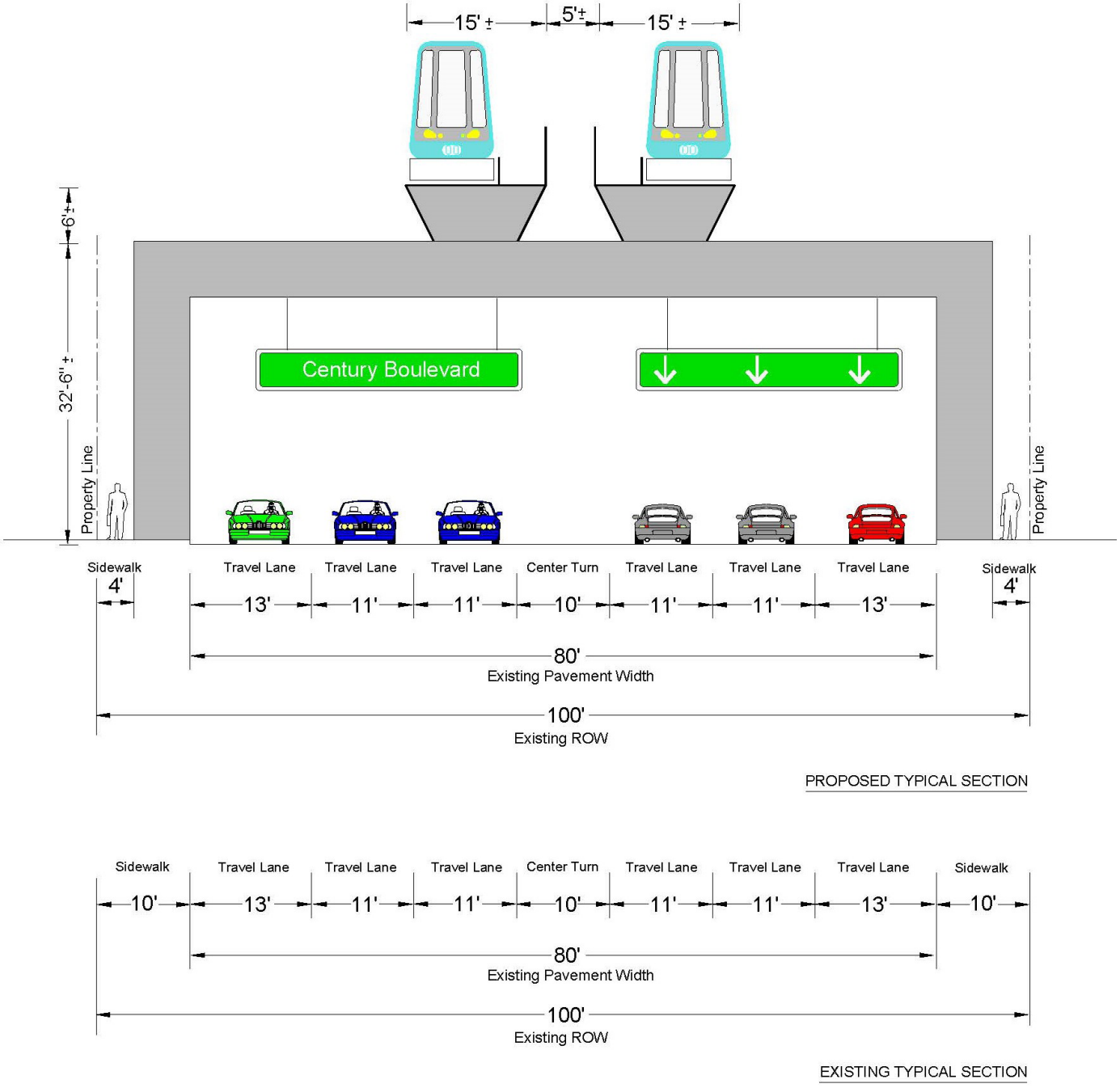
Possible intermodal facitlity locations to capture road-based traffic such as buses, TNCs, taxis, and private vehicles and facilitate a convenient transfer to the ITC have been identified (see Figure 2.5-1). These potential intermodal facilities provide an opportunity to limit the amount and type of road-based traffic into the area especially during special events. Such limits may be voluntary based on convenience and/or controlled by regulatory policies including possible congestion pricing for access.

Figure 2.5-1: Alternative D: Century Boulevard Alignment



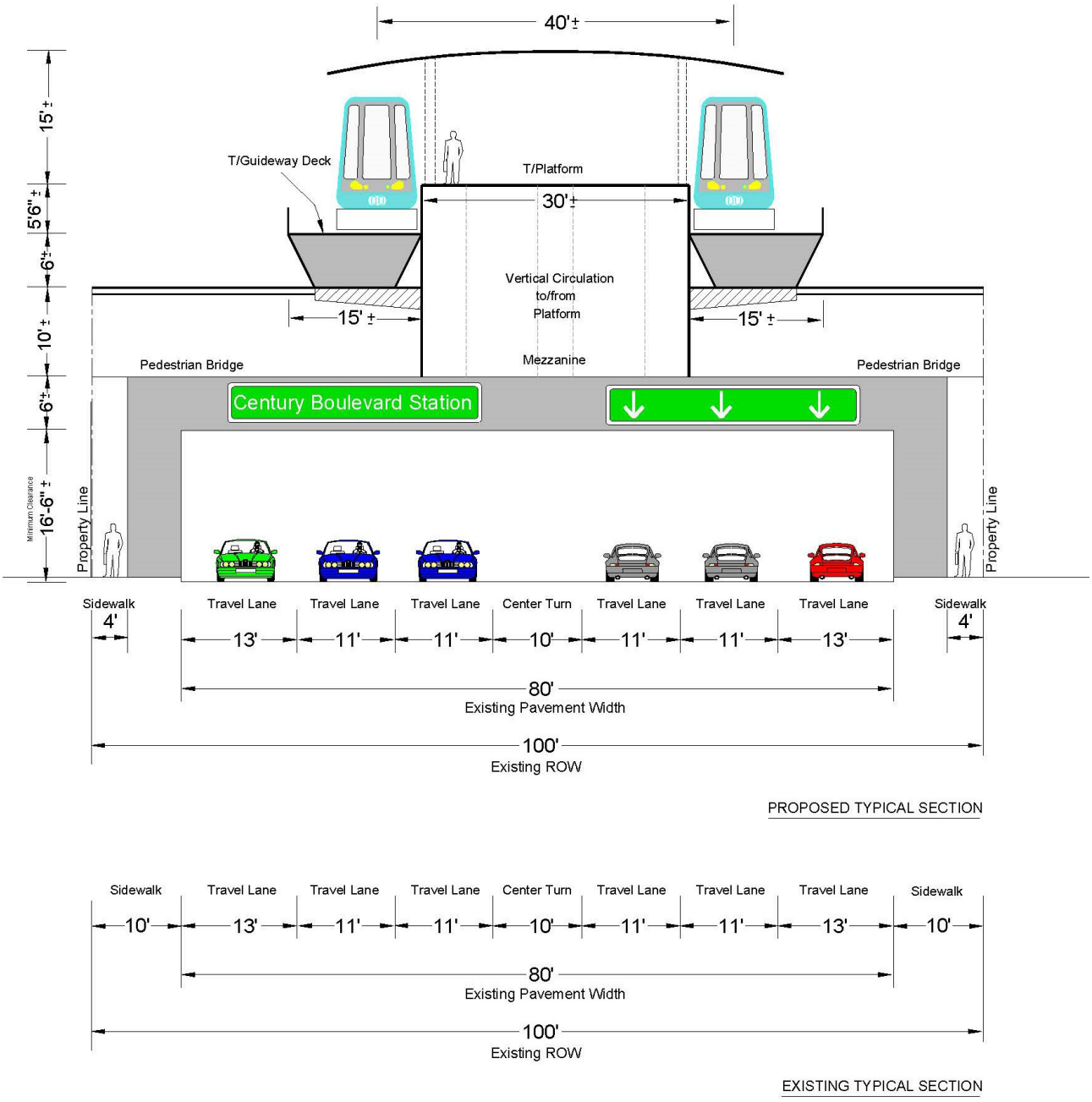
Source: Trifiletti Consulting, 2018

Figure 2.5-2: Alternative D: Century Boulevard Alignment
Century Boulevard, Looking West in Between Stations



Source: Raju Associates, 2018

Figure 2.5-3: Alternative D: Century Boulevard Alignment
Century Boulevard, Looking West at Station



Source: Raju Associates, 2018

2.6 TRANSIT TECHNOLOGY ASSESSMENT

The City also evaluated a range of transit technologies to determine the viable classes of technologies that can potentially meet the anticipated requirements for the Inglewood Transit Connector. Driverless technologies have been presumed as these are similar to manually operated technologies except that with an automated train control system, the driverless technologies can be operated at shorter (more frequent) headways. The system performance requirements will be established after the selection of the locally preferred alternative and further project development. Such system requirements will drive the ultimate selection of the optimal technology. Manually operated technologies have been removed from consideration as they will not be able to meet the operational requirements (i.e. short headways) to meet the anticipated line capacity demands, nor fit within the geometric constraints given the short system route and the high peak ridership demands from special events and game days at the key ridership generators.

The range of such technologies are considered to be a class of Automated Guideway Transit or APM Systems. Differentiation is primarily based on the size of the vehicles, guideway mounting, propulsion and guidance systems. The candidate transit technologies are:

- Personal Rapid Transit (PRT)
- Large and Small Monorails
- Cable-propelled APMs
- Self-propelled Rubber-Tired APMs
- Large Steel Wheel-Rail APMs

Table 2.6-1 provides a summary of the typical characteristics of the different potential technologies.

Table 2.6-1: Summary of Technology Specifications of Modes Considered

MODES	TYPICAL APPLICATION AND OPERATIONS	TYPICAL CAR LENGTH (ft)	TYPICAL CAR CAPACITY (Pax/car at 2.7 to 3.5 sf/pax)	TYICAL OPERATING SPEEDS (mph)	GUIDEWAY/ ALIGNMENT ROW CHARACTERISTICS
Personal Rapid Transit (PRT)	Designed to provide nonstop, origin-to-destination service to individuals or small groups of passengers with multiple cars operating in a network. To date, network size has been very limited.	10 to 15 feet	Small (max four to six passengers seated)	Typical low operating speed (less than 25mph) but some suppliers claim up to 40 mph	Five to seven feet per guideway (excluding emergency walkway) Min. turning radius capability of 16 feet, but preferable 20-25 feet or higher.
Small Monorails	Provides line haul type service connecting multiple stations. May be operated as a shuttle or pinched loop with multiple trains following each other stopping at every station before turning back at the end of line stations. Applied when geographically compact area. May operate on top of the guideway, or be suspended from the guideway.	15-20 feet (typical trains can be six to eight cars long)	12 to 20	20 to 30 mph	Seven to eight feet per guideway (excluding emergency walkway) includes vehicle overhang. Min. turning radius capability of 50 feet, but preferable 150 feet or higher. At turnback – requires guideway structure movement to switch tracks.
Large Monorails	Provides line haul type service connecting multiple stations. May be operated as a shuttle or pinched loop with multiple trains following each other stopping at every station before turning back at the end of line stations. Applied when geographically compact area. May operate on top of the guideway, or be suspended from the guideway.	40 feet (typical trains can be four to five cars long)	55 to 70	30 to 55 mph	12 feet per guideway
Cable Propelled APMs	Provides line haul service connecting multiple stations. Applied when geographically compact area. Typically operated as a shuttle where trains operate on their track shuttling back and forth between the end-of-line stations. Trains are "pulled" by cables with "cars" attached to the cable with grips. Cable drives between station pairs. Detachable grips available with some technology suppliers – to facilitate multiple trains operating behind each other with trains turning back at end of line stations. Requires that station pair distances be roughly uniform to maintain synchronized operations.	25-30 feet (typical trains can be up to five to seven cars long)	35 to 55	25 to 30 mph	10 to 12 feet per guideway (excluding emergency walkway) Min. turning radius capability of 75 feet, but preferable 150 feet or higher.
Self Propelled Rubber-Tired APMs	Provides line haul type service connecting multiple stations. Typically operated in a pinched loop with multiple trains following each other stopping at every station before turning back at the end of line stations; can also be operated in shuttle operations where a train shuttles back and forth on same track between the stations. Applied when geographically compact area. Typically applied when operational flexibility is required, and when system is implemented in phases – as future expansion is more easily accommodated compared to monorails or cable propelled technologies. Applied at airports (landside and airside), as well as downtown circulators.	40-42 feet (typical two to four car trains, but up to six car trains)	50 to 75	30 to 50 mph	12 feet per guideway (excluding emergency walkway) Min. turning radius capability of 75 feet, but preferable 150 feet or higher.

Source: Trifiletti Consulting, 2018

Figure 2.6-1: Personal Rapid Transit Examples - Heathrow Airport, Morgantown, WV and Masdar, UAE

Source: Heathrow Airport

Source: Morgantown, WV

Personal Rapid Transit - Key Considerations:

- Small, limited operating systems with limited capacities.
- Small cars with limited interior capacity, maximum of 4 to 6 passengers, and low headroom.
- Low operating speed, less than 25 mph.
- Only three small starter systems with very limited complexity and capacity, though this technology has been developed for over 30 years.
- Operating headway and resulting system capacity remains controversial. PRT suppliers claim that the operating headways can be as close as 0.5 seconds to get higher capacities. However, this has not been service proven, even on a test track, with a representative operating fleet and guideway configuration. To accommodate such a high vehicle volume, the infrastructure at the stations and bypass lanes would be substantially larger than for larger vehicle APM systems.

Source: Masdar, UAE

Figure 2.6-2: Small Monorail Guideway and Switch Examples

Source: Bombardier Monorail at Newark Airport

Source: Bombardier Monorail at Newark Airport

Small Monorails - Key Considerations

- Small vehicles/cabins with single doors.
- Longer, narrower vehicles for same number of passengers.
- Fixed vehicle length.
- Limited flexibility to extend train length by coupling due to front and tail car nose.
- Relatively small guideway but large guideway replacement switches.

Figure 2.6-3: Large Monorail Guideway and Switch Examples

Source: Bombardier Monorail in Las Vegas

Large Monorails - Key Considerations

- Larger cabins with one or two bi-parting door sets.
- Fixed vehicle length.
- Limited flexibility to extend train length by coupling due to front and tail car nose.
- Inefficient vehicle floor use due to bogies – longer vehicle per number of passengers.
- Relatively small guideway but massive guideway replacement switches.
- Ability to support competitive procurement with the number of active suppliers with technically mature and/or ready for deployment technologies.

Source: Bombardier Monorail in Las Vegas

Figure 2.6-4: Cable-Propelled APM Examples

Source: BART, Oakland International Airport

Source: Aerotrén, Mexico City International Airport

Figure 2.6-5: Self-Propelled APM Examples

Source: Bombardier Innovia 100, George Bush (Houston) Intercontinental Airport

Source: Bombardier Innovia 200, Phoenix Sky Harbor International Airport

Figure 2.6-6: Large Steel Wheel-Rail APM Examples

Source: Bombardier Innovia ART 300 APM System at JFK

Self Propelled Large Steel Wheel Rail APM - Key Considerations:

- Vehicles typically longer than rubber-tired vehicles, 55 feet compared to 40 feet.
- Flexible train length: one to six cars.
- Shuttle, loop, and pinched loop operating modes.
- Higher operating speeds, typically 50 to 60 mph.
- Generally applied to urban/metro systems that are longer and have more stations.
- Steel wheel-rail noise, particularly in curves.

2.7 TECHNOLOGY EVALUATION

Technologies were evaluated against a set of defined criteria to provide a preliminary assessment of viable systems that are suitable for further evaluation and consideration.

- Ability to fit within the site-specific constraints.
- Ability to fit the scope and scale of the project.
- Ability to meet anticipated ridership demand, in terms of peak hour demand or line capacity.
- Flexibility of operations in terms of different train lengths
    - Train lengths would be longer during peak periods and shorter during off-peak periods to maintain the same frequency and service levels.
- Ability to expand the fleet size with minimal or no disruption to ongoing normal passenger service during peak operational hours.
- Ability to extend the system with minimal or no disruption to ongoing passenger service.
- Viability/availability of technology suppliers as measured by 1) longevity of business providing new systems and continued operations and maintenance; 2) at least one technology application proven in passenger service; and 3) applications of comparable size/scale to the Inglewood Transit Connector proposed project.

Table 2.7-1 Summary of How Each Technology is Evaluated According to the Criteria

CRITERIA	PRT	SMALL MONORAIL	LARGE MONORAIL	CABLE-PROPELLED	RUBBER-TIRED APM	LARGE STEEL-WHEEL RAIL APM
Ability to fit within site specific constraints/ geometry	Yes	Yes	Yes	Yes	Yes	Maybe
Fits the project scope and scale	No	No	Maybe/Yes	No	Yes	Maybe
Ability to meet peak hour ridership (line capacity)	No	No	Maybe/Yes	No	Yes	Yes
Flexible train length operations	No	No	No	No	Yes	Yes
Expand fleet size with minimal to no disruption	Yes	Yes	Yes	No	Yes	Yes
Extend system with minimal to no disruption	Yes	Yes	Yes	No	Yes	Yes
Viability/availability of suppliers	Yes	Yes/Limited	Yes	Yes	Yes	Yes
Maintain consideration for the Inglewood Transit Connector Project	No	No	Yes	No	Yes	Maybe

Source: Trifiletti Consulting, 2018

The analysis concluded that PRT, small monorails, and cable-propelled APMs are not appropriate for the Inglewood Transit Connector project. To determine the viability of steel wheel-rail APMs, further analysis is required. Although steel wheel-rail APMs could provide the passenger capacity necessary to meet the demand generated by the activity centers and have been successfully applied to larger systems in the US such as the JFK Air Train, which is more than ten miles long with eight stations, the technology cannot accommodate the tight right-of-way, and curves, including a minimum turning radius of 120 feet, which is anticipated for the proposed project alternatives. Therefore, it is highly unlikely that steel wheel-rail APMs will be suitable for the Inglewood Transit Connector Project.

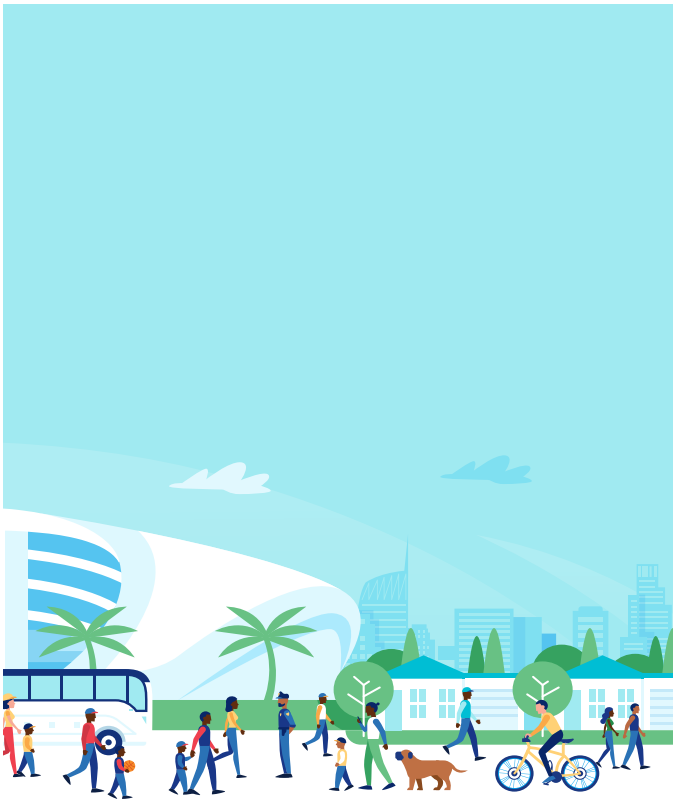
Large monorail systems can provide the necessary passenger capacity for both event and non-event days to newly constructed, under construction, and proposed activity centers. However, train lengths are not readily adjustable, and technology suppliers may not have the ability to fit their technology within the project's constraints, such as the line capacity/demand requirement, the tight right-of-way, and curves anticipated for the proposed alternatives. These are not technical flaws, but they may have an impact on the commercial competitiveness, as a total cost of ownership, of the monorail technology. This is not definitively known and further evaluation, including technology maturity and readiness for deployment is recommended as part of the further project definition process for the locally preferred alternative.

2.8 STATIONS

APM stations accommodate passengers boarding/de-boarding to and from the APM vehicles. Station platforms also provide the required space for passengers to circulate between the station platform and the adjacent facilities. Stations are required to be fully accessible to passengers with disabilities.

Each of the alternatives are described in Sections 2.2 through 2.5. Section 2.6 provides details of the technology assessment of APM technologies with key findings on the candidate technologies applicable to the project; the specific technology is expected to be selected through a competitive procurement process that is not alternative dependent.

Since all the alternatives consist of elevated APM systems, typical station configurations and requirements will be similar and are not differentiators between the different alternatives. Any adjustments to station locations and configurations at this stage would apply equally to each of the alternatives. Station location and configurations will be refined and adjusted for the selected preferred alternative as the project is further developed, in coordination with the activity generator facility designs, site specific passenger access/egress concepts, and to address utility and right-of-way constraints for the preferred alternative.



At this time, the anticipated locations of stations have been established for each of the alternatives and illustrated in Figures 2.2-1, 2.3-1, 2.4-1, 2.5-1. The station locations were primarily designed to serve the key event and activity generators in the City.

Because ridership projections for the alternatives are comparable, as described in Section 3, the station occupant load at the key stations can be expected to be similar. The worst case loading for any station is governed by life safety constraints to address a scenario where two fully loaded trains are brought to the same station under an emergency or failure mode. NFPA-130 establishes life safety requirements for fixed guideway transit systems. It requires that all passengers must be evacuated to a point of safety within a set amount of time. For normal operational conditions, the station must be designed in a manner to ensure that all de-boarding passengers are able to get off the station platform before the arrival of the next train. Specific station designs will be site-specific and will be defined as the project development progresses for the preferred alternative.

Typical station descriptions provided below are based on accommodating a large class of automated guideway transit vehicles; the transit technology most likely to be applied to the project. Due to the variation that may occur between technologies within this class, the station configuration can be expected to be adjusted as part of the design development phase once the transit system technology has been selected.

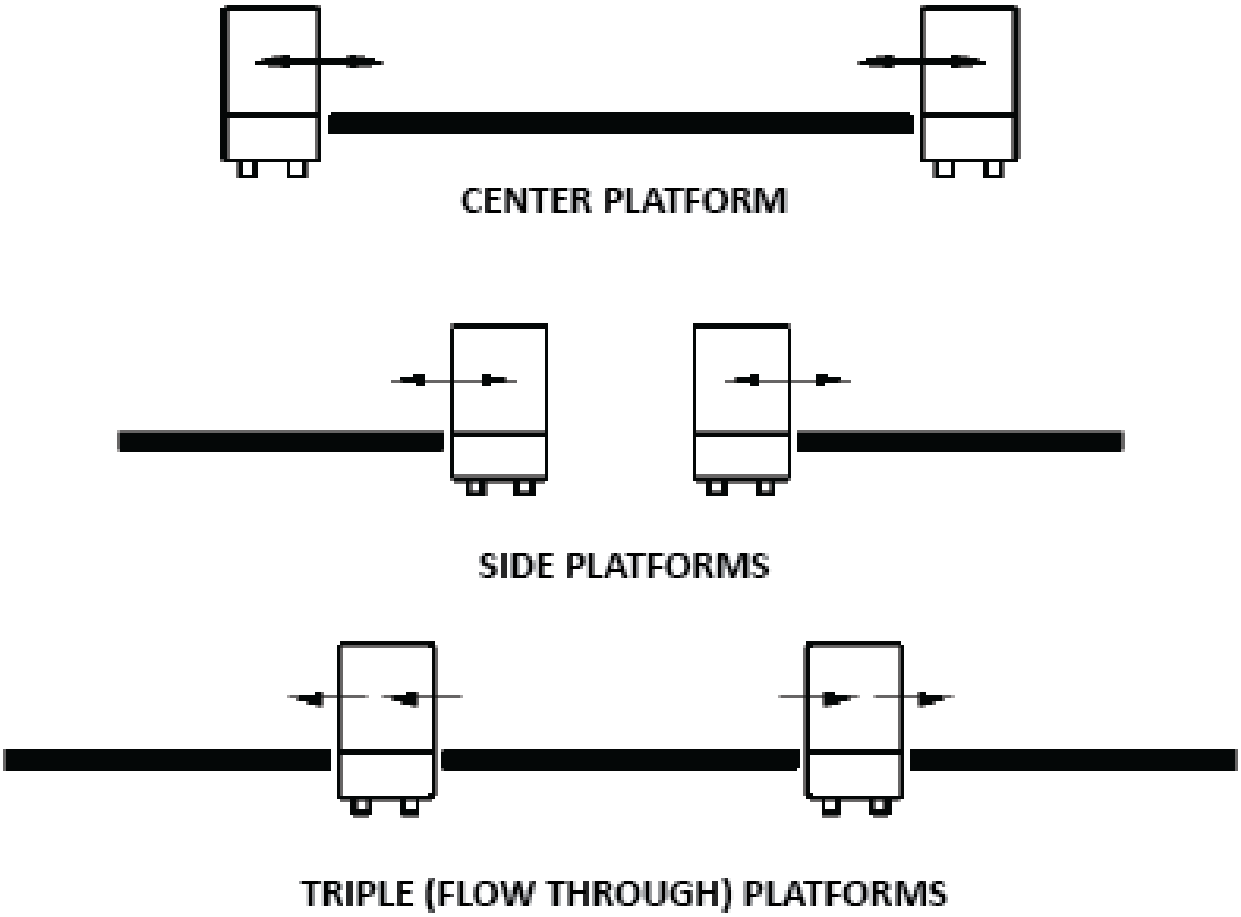
2.8.1 Platform Configurations

Many different platform configurations are possible. Some configurations are more appropriate than others dependent upon the location within the system and the type of facility or area served by the station, security and passenger flow considerations, level of service, cost, and other factors. As described below, and illustrated in Figure 2.8-1 platform configurations may be:

1. Center Platforms - are located between relatively widely spaced guideways and serve as both boarding and de-boarding platforms for passengers traveling in either direction on the System.
2. Side Platforms - are located outside guideways. Each side platform generally serves as a boarding and de-boarding platform for passengers traveling in one direction only on a pinched-loop system, and in either direction on shuttle systems.
3. Triple (flow through) Platforms - combine a center platform with side platforms. Side platforms usually serve de-boarding passengers and the center platform serves as a boarding platform. Triple platforms are sometimes referred to as flow through platforms because the flow of boarding and de-boarding passengers is through APM vehicles.

Center platforms can be more compact in size and less expensive than comparable side or triple platforms because center platforms generally require less infrastructure. Additionally, they provide a consistent and easier wayfinding scheme for passengers, where the decision on direction of travel is made once the passenger is on the platform. The specific platform configuration is expected to be defined in coordination with the activity generators and site specific requirements related to ability to fit the station. Since all alternatives serve the same activity centers within the City's business district, it is reasonable to expect that the station configurations will remain consistent across each of the different alternatives. For the purpose of this, center platform configuration is assumed since it is the most compact in size and thus expected to have the least physical impact compared to the other platform configurations.

Figure 2.8-1: Typical Platform Configurations



Source: Trifiletti Consulting, 2018

Vertical circulation can be provided at one end (single end-loaded) or both ends (double end-loaded) of station platforms, or within the length of the platform (center loaded) for any of these platform configurations:

- Single end-loaded platforms only provide this circulation from one end of the station platform.
- Double end-loaded platforms permit passengers to move from the platform to adjacent facilities, and vice versa, from both ends of the station platform.
- Center loaded platforms require additional platform width since the vertical circulation cores disrupts the circulation within the platform.

For the purpose of this study, platforms are assumed to be either single or double end-loaded to provide the most compact, in size, station platform to minimize the physical impact of the stations.

A mezzanine level is anticipated under the station platform. This mezzanine will provide connectivity to the adjacent facilities through pedestrian walkways.

2.8.2 Station Equipment /Amenities

All stations will be equipped with Public Address systems, static and dynamic signage to provide information to passengers, CCTV to enable central control operators to surveil the operations of each station and make announcements, adjustments and/or take other action as appropriate, as well as emergency telephones and blue light stations in case of emergencies. Since the station platforms are transitory spaces, amenities such as seating and concessions will not be provided at the platform level, but may be provided at the mezzanine level.

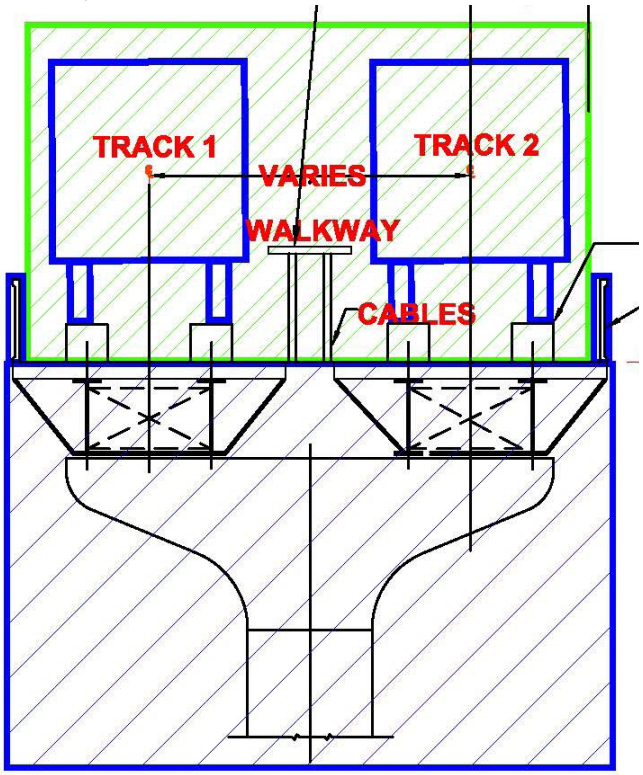
2.8.3 Platform Dimensions

Station platforms are anticipated to be approximately two hundred feet long, excluding vertical circulation, to accommodate the anticipated longest train, and thirty feet wide to accommodate passenger queuing and circulation. A minimum ceiling height of twelve feet would be provided in APM stations to accommodate CCTV cameras and dynamic graphics above the automated platform doors.

2.8.4 Vertical Circulation

Vertical circulation consists of fixed stairs, escalators and elevators. Sufficient vertical circulation elements will be provided to assure that under normal circumstances all de-boarding passengers can clear the platform before the next train arrives. Additionally, all code prescribed emergency egress requirements must be satisfied.

Figure 2.8-2 – Example of Emergency Walkway Along Trainway Between Stations



2.9 MAINTENANCE AND STORAGE FACILITY REQUIREMENTS

All of the alternatives are aerial APM Systems. The selected technology will be applicable equally to each of the alternatives and is not a differentiator between them. Each of the alternatives will require a Maintenance and Storage Facility (M&SF) to perform regular and preventive maintenance of the transit operating system, for storage of the vehicle fleet, as well as for the operations control center where automated train operations are monitored and controlled. The specific design of the M&SF will be driven by the selected M&SF site, which will depend on the alternative selected.

Road access to the M&SF is required for employees, visitors, suppliers, and emergency vehicles. Accommodations must be made for a delivery entrance to load and unload equipment, materials and parts from tractor-trailer trucks. Roadway access is also required near the M&SF to allow APM vehicles to be delivered. In addition, stopping positions for firefighting equipment must be provided adjacent to the Maintenance Facility.

Appropriate space should be provided to allow adequate maneuvering by these ground vehicles. Anticipated M&SF requirements are noted below to define the project requirements. Depending on the available site, the M&SF may be split to fit onto the available site(s); however, a consolidated M&SF is more efficient and preferable.

The M&SF is expected to be an elevated structure that will accommodate the following functions: 1) support of system operations, 2) vehicle storage, and 3) APM system maintenance. Additionally, the transit system operations and maintenance administrative facilities would be co-located within the M&SF.

The following functional areas are required at the M&SF:

- Service and inspection shops.
- Major repair area.
- Vehicle storage areas.
- Inspection and service bays, including under vehicle bays.
- Equipment and materials storage areas.
- Offices, lunch/break areas, restrooms, locker areas, personnel wash facilities.
- Loading platforms, paint booth, and other areas based on design information to be provided by the selected System Supplier.

Design of the facility would also include access roadways, landscaping, exterior lighting, parking, signage, and means of controlling access into and out of the M&SF such as secure fencing. The M&SF design would include the guideway and an access platform at the vehicle floor level with stairs to grade to allow Operations and Maintenance (O&M) personnel access into APM vehicles and other facilities infrastructure, such as lighting required to accommodate the train receiving and departure tracks and its operation.

2.9.1 Operations

Automated system operations will be monitored and controlled from a Central Control Facility within the M&SF. Central Control Operators monitor the system operations aided by CCTV coverage, and alarms that will identify and notify any issues within the system. Depending on the type of issue and/or alarm, the Central Control Operators remotely implement corrective actions to return the system to normal operations as quickly as possible. Additionally, Central Control Operators are the key interface with emergency response. All responses and actions are procedurally defined in the System Operations Plan, the System Safety Program Plan and other documents that are jointly developed by the System Supplier and the Owner's Safety and Security Committee during project implementation.

All equipment for communications, train control, power distribution, SCADA, CCTV, whether along the system train-way, at stations or other locations is connected to equipment at the Central Control Facility.

2.9.2 Maintenance

Maintenance performed on system equipment includes:

- Service: the periodic replacement of consumables and expendables and adjustment of parts to their nominal position, required tolerance, setting, and output.
- Cleaning: interior and exterior cleaning of accumulated trash, dirt, and grime, including graffiti.
- Inspection: periodic inspection of parts, appurtenances and subsystems subject to deterioration and failure.
- Repair: the repair or replacement of a part that has been damaged, has failed, or is nearing the end of its service life.
- Maintenance Information Management and Scheduling: the processing of maintenance information, work reports, failure reports, and system performance data needed to manage the system maintenance program effectively and efficiently.

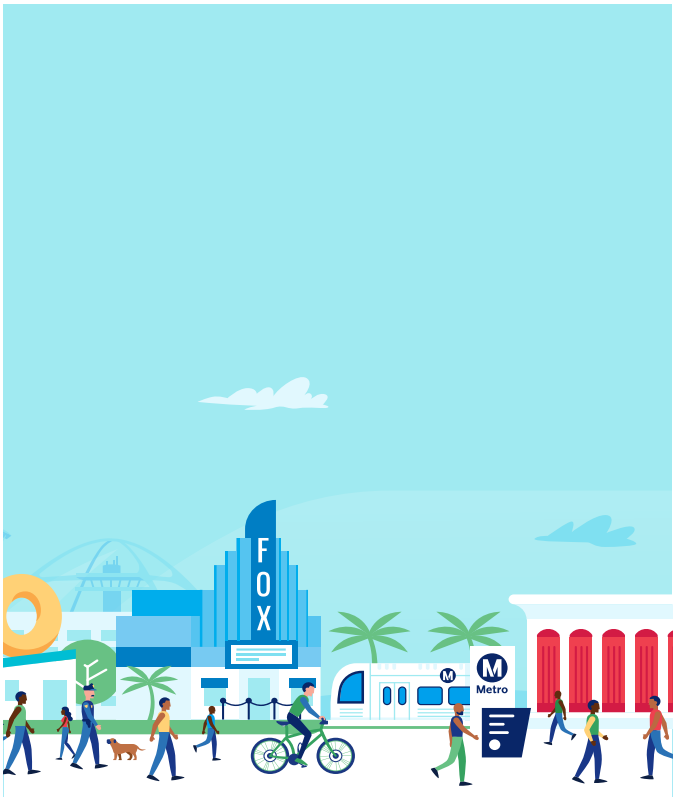
Maintenance facilities include an automatic car wash for vehicle exterior cleaning, maintenance pits with under vehicle access, electronics and mechanical and lubrication workshops, tool and equipment storage, spare parts and consumables storage, shipping/receiving areas, freight elevator, hoists, administrative offices, employee locker rooms/facilities, and sufficient parking.

2.9.3 Spatial Requirements

Approximately four to six acres is estimated to accommodate the M&SF functions as described. Access and egress tracks to and from the M&SF to the mainline would be developed for the preferred alternative. Based on available sites, the M&SF may be functionally split; however, consolidating functions into a fully functional M&SF provides the most efficient and cost-effective solution.

The following overhead clearances are required for the M&SF:

- A minimum vertical clearance of ten feet is required in the shop and shipping/receiving areas.
- A minimum vertical clearance of eight feet is required in office areas.
- A minimum vertical clearance of twenty feet is required in the vehicle heavy maintenance area and designated highbay areas.
- A minimum vertical clearance of fourteen feet is required in the propulsion power substation.



3. PRELIMINARY RIDERSHIP PROJECTIONS

3.1 RIDERSHIP METHODOLOGY

For the purposes of selecting a Locally Preferred Alternative Project, preliminary transit ridership was developed to provide a basis of comparison between alternative concepts for the Inglewood Transit Connector. Further ridership analysis will be completed and refined as part of the future environmental analysis and project definition work.

While the City utilized the early ridership analysis performed by Metro, it updated the ridership analysis with more current available information. The analysis also recognized that the Inglewood Transit Connector Project would be different from a traditional urban/metro regional transit system:

- Compared to a traditional urban/metro transit system which provides regional connectivity, the Inglewood Transit Connector would provide the last-mile connectivity, with relatively small route lengths of approximately one to three miles, between the Metro system to key facilities and trip generators within the City of Inglewood.
- Key trip generators are the various venues within the Inglewood Sports and Entertainment District including the NFL Stadium, The Forum, and the Los Angeles Stadium and Entertainment District at Hollywood Park. The travel demands and ridership are largely driven by scheduled events with peak demands expected to be multiple times higher than those for normal work days and weekends.

To better understand potential future ridership, the City sought to establish the anticipated demands over the course of a year to account for fluctuation over months, weeks and days of the week, and to provide a foundation for developing the anticipated operational scenarios and the appropriate technology, and to provide data in support of the estimation of rough order of magnitude costs.

The typical regional planning models used for estimating ridership on a typical urban/metro transit system were supplemented with additional analysis and models. This study adopted the horizon year of 2040 to maintain consistency with the Southern California Association of Government's (SCAG) Regional Transportation Plan 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy RTP/SCS. SCAG'S RTP utilizes the horizon year of 2040 and provides policy direction for specific improvements, sets forth a transportation plan and sustainable communities strategy for 2040 conditions. This study and related plans need to be consistent with the regional transportation plan and forecasting. Given preliminary available information and data, this Report provides a concept planning level estimate of the anticipated users of the Inglewood Transit Connector system for:

1. Non-event normal day anticipated users based on a calibrated and validated regional travel demand model for the typical work weekday and weekend days. The estimates address the hourly distribution over the day, per direction, with origin and destination to estimate non-event normal day peak ridership.
2. Event day anticipated users, which was informed by preliminary data regarding anticipated events, distribution of the events over the year, days of week, time of day, as well as anticipated attendees, anticipated transportation modes and arrival and departure profiles to and from the events.
    - Event based information was tabulated based on event venue, size and type of event, day and time, and anticipated transportation mode.
    - For event based anticipated transit system users, the City developed estimates of peak hour demand and direction, the duration and time of the peak hour, and the anticipated duration of the event-based demand. This should be established for each event.

A preliminary total anticipated user demand was identified by overlapping the non-event normal day ridership with preliminary event-based ridership estimates. The overall ridership estimation is based on initial assumptions that will be refined and researched as the Inglewood Transit Connector Project moves into the project definition and environmental clearance phase, and as other proposed projects are more fully defined.

The preliminary ITC transit ridership analysis included the following scenarios:

1. Weekday non-event conditions.
2. Weekend non-event conditions.
3. Weekday/weekend event conditions individually at the The Forum, NFL Stadium, the 6,000-seat Performance Arena, and the proposed Inglewood Basketball and Entertainment Center.
4. Estimation of overall yearly non-event and event conditions ridership using information on low and high estimates during events and the number of such events over an entire year. Additionally, average event conditions along with non-event conditions ridership estimates for each of the alignment alternatives under consideration were also developed.

The weekday non-event conditions were simulated using the latest SCAG 2016 RTP/SCS Model, the SCAG 2012 Regional Model including updates to SED databases and transit networks to reflect the various Inglewood Transit Connector alternatives, as well as operational scenarios and associated transit base-network changes. The weekend day non-event conditions were estimated by normalizing weekday ridership estimates using specific weekday and weekend day transit utilization in the study area, provided by Metro.

The event-day conditions were simulated using a spreadsheet-based model based on Metro's mode-split model and actual data related to the event attendees' zip-code information. The NFL game attendees included information on ticket sales data while all other attendees at events at all venues included information on distribution of population by zip-code derived from the SCAG 2012 Regional Model.

3.2 TRANSIT RIDERSHIP RESULTS

Model simulations were performed, and transit ridership estimate results were compiled for each of the alignment alternatives.

3.2.1 Non-Event Normal Conditions

Table 3.2-1 presents the ridership estimates for each alternative on a non-event normal commuter weekday. alternatives A and D have the highest non-event, normal commuter weekday ridership with roughly about 2,000 more riders than Alternatives B and C.

Travel demand models are not available for weekend days. However, transit service characteristics and demand data are available for all days of the week. Transit ridership and service characteristics in 2017 available on weekdays, Saturdays and Sundays were utilized to compute the related utilization of the transit system. Table 3.2-2 and Table 3.2-3 present weekend non-event day estimates for Saturday and Sunday per each alternative.

3.2.2 Event Day Conditions Forecast

Tables 3.2-4, 3.2-5, 3.2-6, and 3.2-7 provide a summary of event ridership profiles for each of the four proposed alternatives. These tables include ridership profiles for both low and high estimates, broken down by types of events at each of the venues.

Based on preliminary ridership analysis, the following key observations can be made:

1. The peak ridership estimate is projected for an LA Rams NFL game high-estimate departure period for all Inglewood Transit Connector alignment alternatives. The variation in peak ridership estimates during that peak timeframe between these alignment alternatives is less than +/- 5%.
2. The ridership projections for the Market-Manchester and Century Boulevard alignments indicate that the maximum ridership estimate occurs on an NFL game event day and is equivalent to 8,985 riders occurring in the one-hour period after the game.

Detailed ridership estimates for each of the Inglewood Transit Connector alignment alternatives by venue and type of event including profiles of arrivals and departures are provided in Appendix B.

Table 3.2-1: Year 2040 Line Level Ridership (Non-Event, Normal Commuter Weekday) Estimates

	RIDERSHIP (ON LINE)		
	PEAK TOTAL	OFF-PEAK TOTAL	TOTAL
Alternative A: Market-Manchester Alignment	3,717	1,252	4,969
Alternative B: Fairview Heights Alignment	2,118	938	3,057
Alternative C: Arbor Vitae Alignment	2,340	1,056	3,396
Alternative D: Century Blvd Alignment	4,194	1,789	5,982

Table 3.2-2: Year 2040 Line Level Ridership (Normal Commuter Weekend – Saturday)

	2040 RIDERSHIP TOTAL	AM 6am – 9am	BASE 9am – 3pm	PM 3pm – 7pm	NT 7pm – end
Alternative A: Market-Manchester Alignment	3,228	412	1,397	918	501
Alternative B: Fairview Heights Alignment	1,986	253	859	565	308
Alternative C: Arbor Vitae Alignment	2,206	281	955	627	343
Alternative D: Century Blvd Alignment	3,886	495	1,682	1,105	604

Table 3.2-3: Year 2040 Line Level Ridership (Normal Commuter Weekend – Sunday)

	2040 RIDERSHIP TOTAL	AM 6am – 9am	BASE 9am – 3pm	PM 3pm – 7pm	NT 7pm – end
Alternative A: Market-Manchester Alignment	2,773	348	1,183	777	424
Alternative B: Fairview Heights Alignment	1,681	214	728	478	261
Alternative C: Arbor Vitae Alignment	1,868	238	808	531	290
Alternative D: Century Blvd Alignment	3,290	420	1,424	936	511

Source: Raju Associates, 2018

This study is consistent with the SCAG Regional Transportation Plan, and automated people mover system will be designed to accommodate future ridership consistent with the regional transportation plan forecasting.

Table 3.2-4: Market-Manchester Alignment
Event Ridership Profile Summary

VENUE	EVENT	NO. OF EVENTS	SERVICE HOURS	RIDERSHIP ESTIMATE PROFILES							
				LOW ESTIMATE				HIGH ESTIMATE			
				ARRIVAL[1]		DEPARTURE[2]		ARRIVAL[1]		DEPARTURE[2]	
LASED	NFL Game	20	8	> 2 hours 1-2 hours < 1 hour	731 1,453 3,276	During Game 1-2 hours < 1 hour	546 4,368 546	> 2 hours 1-2 hours < 1 hour	1,504 2,989 6,739	During Game 1-2 hours < 1 hour	1,123 8,985 1,123
	Medium Event	8	6	1-2 hours < 1 hour	1,382 1,843	< 1 hour 1-2 hours	2,534 691	1-2 hours < 1 hour	3,554 4,738	< 1 hour 1-2 hours	6,515 1,776
	Small Event	20	6	1-2 hours < 1 hour	353 461	< 1 hour 1-2 hours	637 177	1-2 hours < 1 hour	1,513 1,974	< 1 hour 1-2 hours	2,731 757
THE FORUM	Large Event	37	6	1-2 hours < 1 hour	415 553	< 1 hour 1-2 hours	760 207	1-2 hours < 1 hour	1,036 1,382	< 1 hour 1-2 hours	1,901 519
	Medium Event	29	6	1-2 hours < 1 hour	277 369	< 1 hour 1-2 hours	506 138	1-2 hours < 1 hour	711 948	< 1 hour 1-2 hours	1,303 355
	Small Event	16	6	1-2 hours < 1 hour	138 184	< 1 hour 1-2 hours	254 69	1-2 hours < 1 hour	474 632	< 1 hour 1-2 hours	868 237
PROPOSED INGLEWOOD BASKETBALL AND ENTER-TAINMENT CENTER*	Clippers Game	44	7	1-2 hours < 1 hour	519 691	< 1 hour 1-2 hours	950 259	1-2 hours < 1 hour	1,096 1,461	< 1 hour 1-2 hours	2,009 548
	Large Event	31	6	1-2 hours < 1 hour	415 553	< 1 hour 1-2 hours	760 207	1-2 hours < 1 hour	1,096 1,461	< 1 hour 1-2 hours	2,009 548
	Medium Event	13	6	1-2 hours < 1 hour	277 369	< 1 hour 1-2 hours	506 138	1-2 hours < 1 hour	711 948	< 1 hour 1-2 hours	1,303 355
	Small Event	17	6	1-2 hours < 1 hour	138 184	< 1 hour 1-2 hours	254 69	1-2 hours < 1 hour	474 632	< 1 hour 1-2 hours	868 237
PERFORMANCE ARENA	Event	75	6	1-2 hours < 1 hour	138 184	< 1 hour 1-2 hours	254 69	1-2 hours < 1 hour	355 474	< 1 hour 1-2 hours	652 178

[1] Arrivals occuring prior to the event, travel southbound
[2] Departures occuring post-event, travel northbound

* Note: Preliminary assumptions regarding events were estimated for proposed Inglewood Basketball & Entertainment Center but will be further developed during its environmental clearance process.

Source: Raju Associates, 2018

Table 3.2-5: Fairview Heights Alignment
Event Ridership Profile Summary

VENUE	EVENT	NO. OF EVENTS	SERVICE HOURS	RIDERSHIP ESTIMATE PROFILES							
				LOW ESTIMATE				HIGH ESTIMATE			
				ARRIVAL[1]		DEPARTURE[2]		ARRIVAL[1]		DEPARTURE[2]	
LASED	NFL Game	20	8	> 2 hours 1-2 hours < 1 hour	731 1,453 3,276	During Game 1-2 hours < 1 hour	546 4,200 714	> 2 hours 1-2 hours < 1 hour	1,504 2,989 6,739	During Game 1-2 hours < 1 hour	1,123 8,640 1,469
	Medium Event	8	6	1-2 hours < 1 hour	1,341 1,789	< 1 hour 1-2 hours	2,460 671	1-2 hours < 1 hour	3,449 4,599	< 1 hour 1-2 hours	6,325 1,725
	Small Event	20	6	1-2 hours < 1 hour	343 447	< 1 hour 1-2 hours	618 171	1-2 hours < 1 hour	1,470 1,916	< 1 hour 1-2 hours	2,651 1,725
THE FORUM	Large Event	37	6	1-2 hours < 1 hour	403 537	< 1 hour 1-2 hours	737 201	1-2 hours < 1 hour	1,006 1,342	< 1 hour 1-2 hours	1,845 503
	Medium Event	29	6	1-2 hours < 1 hour	268 358	< 1 hour 1-2 hours	492 134	1-2 hours < 1 hour	690 920	< 1 hour 1-2 hours	1,265 345
	Small Event	16	6	1-2 hours < 1 hour	134 179	< 1 hour 1-2 hours	245 67	1-2 hours < 1 hour	460 613	< 1 hour 1-2 hours	844 230
PROPOSED INGLEWOOD BASKETBALL AND ENTER-TAINMENT CENTER*	Clippers Game	44	7	1-2 hours < 1 hour	503 671	< 1 hour 1-2 hours	922 252	1-2 hours < 1 hour	1,063 1,418	< 1 hour 1-2 hours	1,950 532
	Large Event	31	6	1-2 hours < 1 hour	403 537	< 1 hour 1-2 hours	737 201	1-2 hours < 1 hour	1,063 1,418	< 1 hour 1-2 hours	1,950 532
	Medium Event	13	6	1-2 hours < 1 hour	268 358	< 1 hour 1-2 hours	492 134	1-2 hours < 1 hour	690 920	< 1 hour 1-2 hours	1,265 345
	Small Event	17	6	1-2 hours < 1 hour	134 179	< 1 hour 1-2 hours	245 67	1-2 hours < 1 hour	460 613	< 1 hour 1-2 hours	844 230
PERFORMANCE ARENA	Event	75	6	1-2 hours < 1 hour	134 179	< 1 hour 1-2 hours	245 67	1-2 hours < 1 hour	345 460	< 1 hour 1-2 hours	632 172

[1] Arrivals occuring prior to the event, travel southbound
[2] Departures occuring post-event, travel northbound

* Note: Preliminary assumptions regarding events were estimated for proposed Inglewood Basketball & Entertainment Center but will be further developed during its environmental clearance process.

Source: Raju Associates, 2018

Table 3.2-6: Arbor Vitae Alignment
Event Ridership Profile Summary

VENUE	EVENT	NO. OF EVENTS	SERVICE HOURS	RIDERSHIP ESTIMATE PROFILES							
				LOW ESTIMATE				HIGH ESTIMATE			
				ARRIVAL[1]		DEPARTURE[2]		ARRIVAL[1]		DEPARTURE[2]	
LASED	NFL Game	20	8	> 2 hours 1-2 hours < 1 hour	694 1,381 3,112	During Game 1-2 hours < 1 hour	519 4,419 519	> 2 hours 1-2 hours < 1 hour	1,428 2,840 6,402	During Game 1-2 hours < 1 hour	1,067 8,537 1,067
	Medium Event	8	6	1-2 hours < 1 hour	1,306 1,741	< 1 hour 1-2 hours	2,395 653	1-2 hours < 1 hour	3,358 4,477	< 1 hour 1-2 hours	6,157 1,679
	Small Event	20	6	1-2 hours < 1 hour	334 435	< 1 hour 1-2 hours	602 167	1-2 hours < 1 hour	1,431 1,865	< 1 hour 1-2 hours	2,580 715
THE FORUM	Large Event	37	6	1-2 hours < 1 hour	392 522	< 1 hour 1-2 hours	718 196	1-2 hours < 1 hour	980 1,306	< 1 hour 1-2 hours	1,795 489
	Medium Event	29	6	1-2 hours < 1 hour	261 348	< 1 hour 1-2 hours	479 131	1-2 hours < 1 hour	672 895	< 1 hour 1-2 hours	1,231 335
	Small Event	16	6	1-2 hours < 1 hour	131 174	< 1 hour 1-2 hours	239 65	1-2 hours < 1 hour	448 597	< 1 hour 1-2 hours	821 224
PROPOSED INGLEWOOD BASKETBALL AND ENTER-TAINMENT CENTER*	Clippers Game	44	7	1-2 hours < 1 hour	489 653	< 1 hour 1-2 hours	898 245	1-2 hours < 1 hour	1,035 1,380	< 1 hour 1-2 hours	1,899 518
	Large Event	31	6	1-2 hours < 1 hour	392 522	< 1 hour 1-2 hours	718 196	1-2 hours < 1 hour	1,035 1,380	< 1 hour 1-2 hours	1,899 518
	Medium Event	13	6	1-2 hours < 1 hour	261 348	< 1 hour 1-2 hours	479 131	1-2 hours < 1 hour	672 895	< 1 hour 1-2 hours	1,231 335
	Small Event	17	6	1-2 hours < 1 hour	131 174	< 1 hour 1-2 hours	239 65	1-2 hours < 1 hour	448 597	< 1 hour 1-2 hours	821 224
PERFORMANCE ARENA	Event	75	6	1-2 hours < 1 hour	131 174	< 1 hour 1-2 hours	239 65	1-2 hours < 1 hour	335 448	< 1 hour 1-2 hours	616 168

[1] Arrivals occuring prior to the event, travel eastbound
[2] Departures occuring post-event, travel westbound

* Note: Preliminary assumptions regarding events were estimated for proposed Inglewood Basketball & Entertainment Center but will be further developed during its environmental clearance process.

Source: Raju Associates, 2018

Table 3.2-7: Century Boulevard Alignment
Event Ridership Profile Summary

VENUE	EVENT	NO. OF EVENTS	SERVICE HOURS	RIDERSHIP ESTIMATE PROFILES							
				LOW ESTIMATE				HIGH ESTIMATE			
				ARRIVAL[1]		DEPARTURE[2]		ARRIVAL[1]		DEPARTURE[2]	
LASED	NFL Game	20	8	> 2 hours 1-2 hours < 1 hour	783 1,557 3,510	During Game 1-2 hours < 1 hour	585 4,680 585	> 2 hours 1-2 hours < 1 hour	1,504 2,989 6,739	During Game 1-2 hours < 1 hour	1,123 8,985 1,123
	Medium Event	8	6	1-2 hours < 1 hour	1,088 2,142	< 1 hour 1-2 hours	2,718 412	1-2 hours < 1 hour	2,610 5,141	< 1 hour 1-2 hours	6,525 989
	Small Event	20	6	1-2 hours < 1 hour	280 536	< 1 hour 1-2 hours	684 107	1-2 hours < 1 hour	1,121 2,142	< 1 hour 1-2 hours	2,735 429
THE FORUM	Large Event	37	6	1-2 hours < 1 hour	326 643	< 1 hour 1-2 hours	816 124	1-2 hours < 1 hour	761 1,499	< 1 hour 1-2 hours	1,904 289
	Medium Event	29	6	1-2 hours < 1 hour	218 428	< 1 hour 1-2 hours	543 82	1-2 hours < 1 hour	522 1,028	< 1 hour 1-2 hours	1,305 198
	Small Event	16	6	1-2 hours < 1 hour	108 214	< 1 hour 1-2 hours	272 41	1-2 hours < 1 hour	348 685	< 1 hour 1-2 hours	870 131
PROPOSED INGLEWOOD BASKETBALL AND ENTER-TAINMENT CENTER*	Clippers Game	44	7	1-2 hours < 1 hour	408 803	< 1 hour 1-2 hours	1,020 155	1-2 hours < 1 hour	805 1,585	< 1 hour 1-2 hours	2,012 305
	Large Event	31	6	1-2 hours < 1 hour	326 643	< 1 hour 1-2 hours	816 124	1-2 hours < 1 hour	805 1,585	< 1 hour 1-2 hours	2,012 305
	Medium Event	13	6	1-2 hours < 1 hour	218 428	< 1 hour 1-2 hours	543 82	1-2 hours < 1 hour	522 1,028	< 1 hour 1-2 hours	1,305 198
	Small Event	17	6	1-2 hours < 1 hour	108 214	< 1 hour 1-2 hours	272 41	1-2 hours < 1 hour	348 685	< 1 hour 1-2 hours	870 131
PERFORMANCE ARENA	Event	75	6	1-2 hours < 1 hour	108 214	< 1 hour 1-2 hours	272 41	1-2 hours < 1 hour	261 514	< 1 hour 1-2 hours	653 99

[1] Arrivals occuring prior to the event, travel eastbound
[2] Departures occuring post-event, travel westbound

* Note: Preliminary assumptions regarding events were estimated for proposed Inglewood Basketball & Entertainment Center but will be further developed during its environmental clearance process.

Source: Raju Associates, 2018

3.2.3 Average Annual Ridership Estimates

The average annual ridership estimates were developed for each of the four Inglewood Transit Connector alignment alternatives as follows:

1. Average weekday and weekend day, Saturday and Sunday, non-event-based ridership estimates were expanded by the number of days of their respective occurrences.
2. Average event-day ridership estimates for each of the types of events at each of the venues were expanded by the number of instances that they occur in a given year.
3. Combination of the above two ridership estimates.

Table 3.7-8 through Table 3.7-10 summarizes the average annual ridership for each of the four alternatives.

Table 3.2-8: Event Day Annual Ridership by Alignment

	EVENT ANNUAL RIDERSHIP				
	LASED	THE FORUM	IBEC	PERFORMANCE ARENA	TOTAL
Alternative A: Market-Manchester Alignment	409,230	184,538	353,992	78,148	1,025,908
Alternative B: Fairview Heights Alignment	404,652	179,132	280,276	75,860	939,920
Alternative C: Arbor Vitae Alignment	387,974	174,368	350,184	73,842	986,368
Alternative D: Century Blvd Alignment	420,248	189,684	374,150	80,328	1,064,410

Source: Raju Associates, 2018

Table 3.2-9: Overall Total Annual Ridership by Alignment

ALIGNMENT	ANNUAL RIDERSHIP
Alternative A: Market-Manchester Alignment	2,578,120
Alternative B: Fairview Heights Alignment	1,894,826
Alternative C: Arbor Vitae Alignment	2,047,055
Alternative D: Century Blvd Alignment	2,933,147

Source: Raju Associates, 2018

Table 3.2-10: Annual Non-Event Related Ridership Estimates

	NUMBER OF DAYS	DAILY RIDERSHIP/ANNUAL RIDERSHIP			
		Alternative A: Market-Manchester Alignment	Alternative B: Fairview Heights Alignment	Alternative C: Arbor Vitae Alignment	Alternative D: Century Blvd Alignment
Weekdays (all Weekdays in the year)	250	4,969/ 1,242,250	3,057/ 764,220	3,396/ 848,878	5,982/ 1,495,567
Saturdays (all Saturdays in the year)	52	3,228/ 167,849	1,986/ 103,259	22,206/ 114,698	3,886/ 202,076
Sundays (all Sundays in the year)	52	2,733/ 142,113	1,681/ 87,427	1,868/ 97,112	3,290/ 171,093
Total Annual		1,552,212	954,906	1,060,687	1,868,737

Source: Raju Associates, 2018

Figure 3.2-1: The Miracle on Market Street

Source: Aero Collective Website, 2018

4. COMPARISON ANALYSIS OF ALTERNATIVES

To identify the the City of Inglewood's locally preferred alternative project, the following screening criteria were established:

- Connection between Metro and key City venues
- Passenger convenience
- Cost and feasibility
- Total costs – Capital and Operations & Maintenance
- Ability to fit within the public right of way constraints and ability to resolve conflicts with utilities
- Ridership potential
- Synergistic Economic Development within the City
- Required Major Coordination Efforts

4.1 PASSENGER CONVENIENCE

Passenger convenience is measured by the criteria defined below:

1. Reliable Connection to Inglewood Activity Centers: convenient service with minimum delay, wait, and travel times to LASED, The Forum, and the proposed Inglewood Basketball and Entertainment Center.
2. Regional Connectivity: ease of transferring to and from the Metro Rail system and potential intermodal facilities that would be served by various Metro and municipal bus lines
3. Safety and Security: all the alternatives are elevated APM systems that will operate within a defined right-of-way. All Fixed Guideway Transit Systems, such as the APM, are subject to oversight by the California Public Utilities Commission (CPUC) which will determine whether the system is safe to carry passengers and issue the operating certificate.

Each of the alternatives are described in Section 2.2 through 2.5. Section 2.6 provides details of the technology assessment of APM technologies with key findings on the candidate technologies applicable to the project. The specific technology is expected to be selected through a competitive procurement process, which is not alternative dependent. Multiple characteristics of the alternatives are expected to be comparable to each other across the alternatives, and will not provide any differentiation between them.

For the selection of the Locally Preferred Alternative (LPA), passenger convenience is expected to be similar among all alternatives, and therefore, is a non-differentiating characteristic because:

- All alternatives will provide a time-certain travel experience, i.e. reliable connection to the key traffic generators.
- All alternatives will provide a transfer connection to Metro and each alternative will be designed to include an intermodal facility that would serve various Metro and municipal bus lines.
- Station locations, configurations, access and amenities will be comparable across all alternatives.
- All alternatives will be subject to CPUC requirements.

4.2 COST AND FINANCIAL FEASIBILITY

As the Inglewood Transit Connector Project is refined, cost estimates will be updated and developed. Nonetheless, to assist the comparative analysis of alternative concepts, in project evaluation, the City developed preliminary cost estimates based on a conceptual level project definition for each of the alternatives. System cost estimates considered demand, capacity, and technology needs.

APM systems are comprised of two major elements, the Operating System and Fixed Facilities, which are integrated into a fully functional total system. The Operating System consists of vehicles, running track, guideway equipment, propulsion power, automatic train control and communications subsystems, station and wayside equipment, maintenance equipment and other elements. Fixed Facilities include guideway infrastructure, stations, buildings for the Maintenance and Storage Facilities (M&SF), Command and Control Facilities, propulsion power substations and other facilities upon which Operating System elements are installed by the APM system supplier.

Estimates of probable costs for the APM Operating System and the Fixed Facilities were prepared for each of the Alternatives, based on a concept level definition and are presented herein.

4.3 CAPITAL COSTS

4.3.1 APM Operating System Capital Cost

APM Operating Systems are proprietary designs that are typically procured as complete packages. The major subsystems, such as vehicles, tracks, switches and control systems, station equipment, from different suppliers cannot be mixed to form a system. Operating Systems are typically procured under a turnkey design, supply and installation contract. The Operating System of an APM application is specially configured using supplier developed equipment designs that are applied to satisfy site-specific requirements. As a result, costs within the APM industry vary widely on a project by project basis as APM suppliers implement their unique proprietary technology for a particular system. Costs for different projects by the same supplier may also vary significantly because of differences in fleet size, capacity requirements, and performance requirements. Probable capital costs for the APM Operating System were developed and estimated based on historical cost information and applied to this project considering factors such as guideway length, configuration and number of passenger stations, size of the M&SF, number of propulsion power substations and fleet size.

Globally, there are likely only a handful APM Operating System suppliers with technically mature technologies capable of providing a system that will meet the anticipated performance requirements of this project within the site specific constraints. A competitive procurement environment is essential and inherently assumed in developing the estimate of probable costs.

4.3.2 Fixed Facility Cost Estimates

In contrast with the Operating System, there are a substantially larger number of potential entities capable of designing and building the fixed facilities elements. The estimated probable cost of the fixed facility elements was developed based on a concept level definition of the different fixed facility elements including similar transit projects within the Los Angeles Metropolitan area. Estimated unit costs for the different elements are noted below:

- Aerial guideway, per linear feet of dual lane: $7,000 per linear foot.
- Stations, including pedestrian bridge to sidewalks, and excluding Operating System elements: $20 M per station.
- Maintenance and Storage Facility, excluding Operating System elements: $40 M.
- Utility infrastructure: $2,000 per linear foot of dual lane.

Table 4.3-1: Capital Cost Estimate (Conceptual) - 2018$

	Alternative A: Market-Manchester Alignment	Alternative B: Fairview Heights Alignment	Alternative C: Arbor Vitae Alignment	Alternative D: Century Blvd Alignment
System Length	1.8 route miles	2.2 route miles	3.0 route miles	3.1 route miles
Number of Stations	5	4	5	5
Traction Power Substations	2	2	3	3
Number of Cars ("Generic") Operating Fleet/Total Fleet	28/32	28/32	28/32	28/32
APM OPERATING SYSTEM CAPITAL COST ESTIMATE				
Guideway, Wayside, ATC, Power and Communication Systems and Maintenance Equipment	$62 M	$70 M	$90 M	$93 M
Rolling Stock/Fleet	$75 M	$75 M	$75 M	$75 M
Other Costs not included above including but not limited to other equipment, System Supplier's PM/Engineering/T&C, bonds, insurance, etc. (at 30%)	$42 M	$43.5 M	$49.5 M	$50.4 M
Subtotal Estimate of Operating System Probable cost	$179M	$188.5 M	$214.5 M	$218.4
FIXED FACILITY COST ESTIMATE (CONCEPTUAL) – 2018$				
Stations and Ped bridges structure and Building systems	$100 M	$80 M	$ 100 M	$ 100 M
Aerial Guideway (incl. columns, foundations)	$66.6 M	$ 81.3 M	$110.9 M	$ 114.6 M
Maintenance and Storage Facility Structure and Building Systems	$40 M	$ 40 M	$ 40 M	$ 40 M
Utility Infrastructure, Traction and building power substations, housekeeping power equipment and distribution (downstream from utility connection points)	$19 M	$23 M	$31.7 M	$ 32.7 M
Other Costs not included above such as and including DB Contractor's engineering/CM/etc, bonds, insurance etc. (est. 30%)	$68 M	$ 68 M	$ 85 M	$ 86 M
SubTotal – Estimate of Fixed Facility Probable cost	$293.6 M	$ 292.3 M	$ 367.6 M	$ 373.3 M
Subtotal (Operating System + Fixed Facilities)	$472.6 M	$480.8 M	$582.1 M	$591.7 M
Contingency (30%)	$141.8 M	$144.3 M	$174.6 M	$177.5 M
TOTAL ESTIMATED PROBABLE CAPITAL COST (2018$) [1, 2]				
TOTAL COST [1, 2]	$614.4 M	$625.1 M	$756.7 M	$ 769.2 M

1. Right of way acquisition, environmental and physical mitigations, parking/intermodal center costs and costs of other infrastructure are not included since these are not defined and subject to future analysis and input from other city and regional transportation plans/studies.
2. Owner soft costs not included – Owner soft costs cover Owner's management costs including Owner retained consultants etc.

Source: Pacifica Services, Trifiletti Consulting, 2018

4.3.3 Operations and Maintenance Cost Estimates

Operations and maintenance cost estimates are provided for each of the alternatives below.

There are two components: 1) APM Operating System operations and maintenance, and 2) Fixed Facility/ infrastructure operations and maintenance.

The APM Operating System operations and maintenance cost estimates address the operations and maintenance of the Operating System components including the vehicles, the automatic train control system, the traction and auxiliary power distribution systems and communication systems, all of which are the components that when fully integrated, provide the reliable and safe transportation service that is desired. Staffing consists of central control operators, supervisors, mechanical and electrical shop technicians, as well as management, administrative and janitorial staff necessary for the APM Operating System. Costs for regular preventive maintenance, as well as spare parts and consumables are included, however, costs for major overhauls and capital asset replacement are not included. The typical design service life of an APM Operating System is approximately 25 to 30 years. Major overhauls and capital asset replacement can be expected to occur at year fifteen of service. Considering that the Operating System characteristics are similar for all the alternatives, the major overhaul and capital asset replacement costs are considered to be approximately comparable and not expected to change the comparative costs between the alternatives. Since the project is at a conceptual definition phase, the estimate of probable cost is based on a concept level operations plan considering the fleet and anticipated annual fleet miles.

Fixed Facility operations and maintenance cost estimates address the following scope of work: regular inspections and routine repairs to the infrastructure, ncluding guideway structure, station structure, maintenance and storage facility structure, power substation structure, and the electro-mechanical systems within that are not part of the APM Operating System. These electro-mechanical systems include housekeeping power systems, building heating-ventilation-air-conditioning systems, escalators and elevators, fire management systems, and other similar building management systems. An estimate of probable annual O&M costs for the Fixed Facilities is approximately 1.5% of the total Fixed Facility capital cost.

Estimates of probable annual operations and maintenance costs are shown in Table 4.3-2.

Table 4.3-2: Annual Operations and Maintenance Cost Estimate (Conceptual) – 2018$

	Alternative A: Market-Manchester Alignment	Alternative B: Fairview Heights Alignment	Alternative C: Arbor Vitae Alignment	Alternative D: Century Boulevard Alignment
System Length	1.8 route miles	2.2 route miles	3.0 route miles	3.1 route miles
Number of Stations	5	4	5	5
Traction Power Substations	2	2	3	3
#Number of Cars ("Generic") Operating Fleet/Total Fleet	28/32	28/32	28/32	28/32
ESTIMATE OF FIXED FACILITY ANNUAL O&M COSTS (EXCLUDING UTILITIES)				
Estimate of Fixed Facility Annual O&M Costs (excluding Utilities)	$5 M	$5 M	$6 M	$6 M
ESTIMATE OF OPERATING SYSTEM ANNUAL O&M COSTS				
Operating System Annual O&M Cost Estimate (excl Utilities, mid-life overhauls and capital asset replacement/ rejuvenation)	$6 M			
Estimates annual reserve for mid life overhaul, capital asset rejuvenation etc.	$3 M			
Sub Total – Estimate of Annual O&M Costs including reserves for Operating System capital asset rejuvenation	$14 – $15 M			
Contingency (30%)	$ 4.2 - $ 4.5 M			
Total Estimate of Annual O&M Costs including reserves for Operating System capital asset rejuvenation [1]	$18.2 - $19.5 M			

1. Assumes a Design-Build-Operate-Maintain delivery strategy with a 25 to 30-year term with Contractor responsible for all operations/maintenance of contractor delivered assets. Does not include cost of utilities or Owner soft costs.

Source: Pacifica Services, Trifiletti Consulting, 2018

4.4 ENGINEERING AND PHYSICAL FEASIBILITY

Physical constraints and engineering feasibility are key factors to selecting the Locally Preferred Alternative for the Inglewood Transit Connector Project. Because all alternatives are elevated APM systems with similar design and constructability aspects, this section focuses on areas where the alignment characteristics differ, specifically the available right-of-way and location of underground utilities.

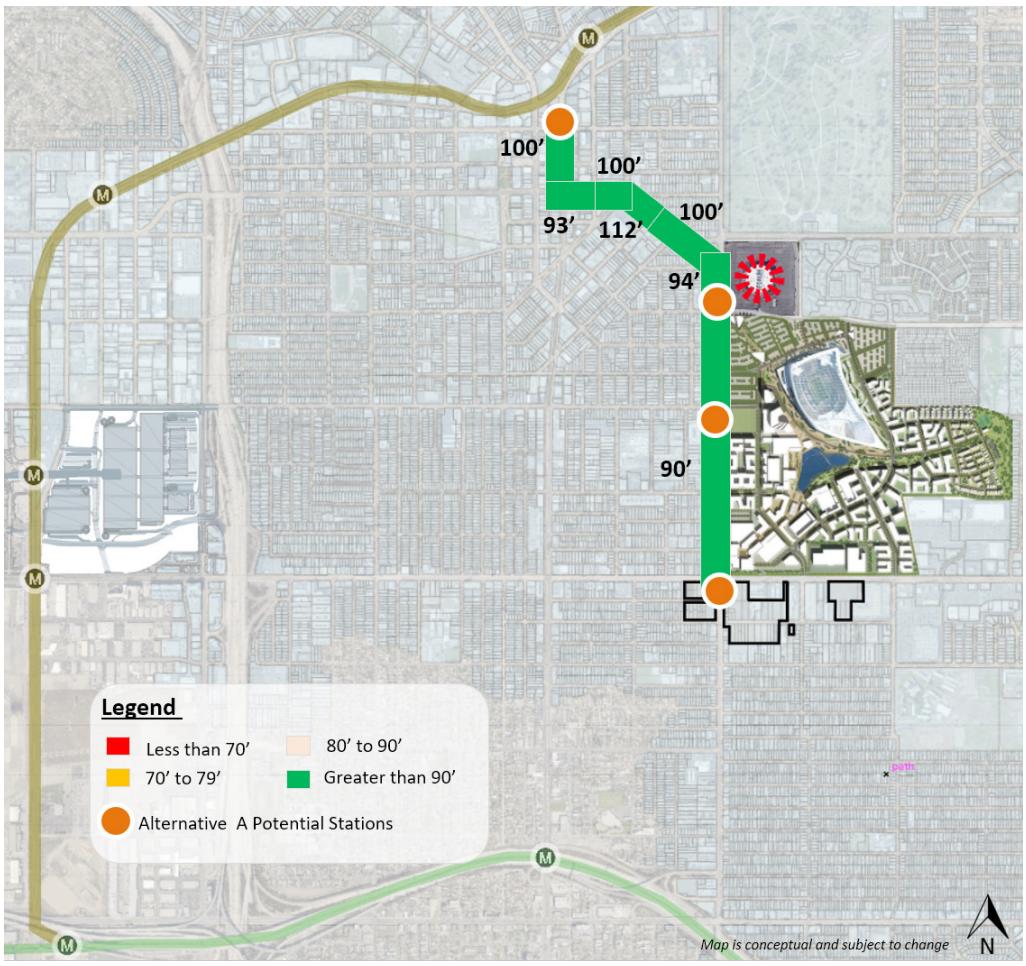
4.4.1 Ability to Fit Within the Right-of-Way

This section summarizes a preliminary analysis on the right-of-way acquisitions that may be required for the Project alternatives. The four alternatives have stations along their respective alignments that may involve redevelopment in the areas adjacent to the stations. In addition to station areas, additional property acquisitions may be required for Maintenance Storage Facilities and traction power stations. As part of the detailed design and environmental review analysis of the preferred alternative, specific property acquisition requirements will be established for the preferred alternative as part of the next stage of the project development during the EIR phase.

Alternative A: Market-Manchester Alignment:

The right-of-way along Alternative A ranges from approximately 93 feet to 112 feet, thus minimal property acquisitions due to utilities are anticipated. The alignment would be located primarily on the street right-of-way with the exception of a segment on the northeast quadrant of Market Street and Manchester Boulevard where the alignment transitions east onto Manchester Boulevard from Market Street. Potential acquisition or right-of-way easement requirements at the southwest quadrant of Prairie Avenue and Arbor Vitae Street are projected.

Figure 4.4-1 Alternative A: Right-of-Way Analysis

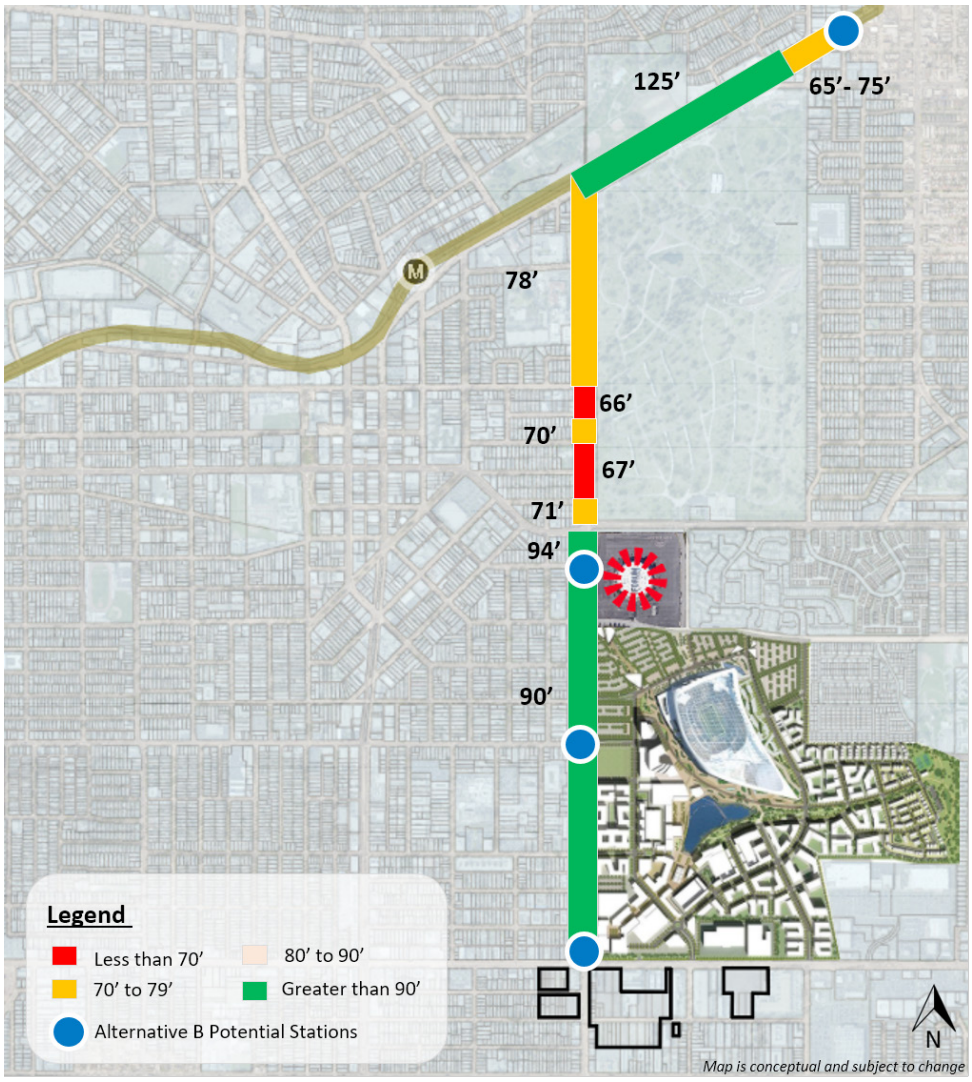


Source: Trifiletti Consulting, Raju Associates, 2018

Alternative B: Fairview Heights Alignment:

Although Alternative B is located primarily within the street right-of-way, there is limited roadway width between Florence Avenue and Manchester Boulevard (Figure 4.4-2). Potentially significant property impacts to the Inglewood Cemetery are anticipated because the alignment transitions from Florence Avenue which has a wide right-of-way of 125 feet, to Prairie Avenue, which has a right-of-way of 78 feet. Furthermore, the right-of-way of Prairie Avenue decreases to less than 70 feet south of Regent Street. This would potentially further impact the Inglewood Cemetery and would potentially conflict with utility infrastructure.

Figure 4.4-2: Alternative B: Right-of-Way Analysis

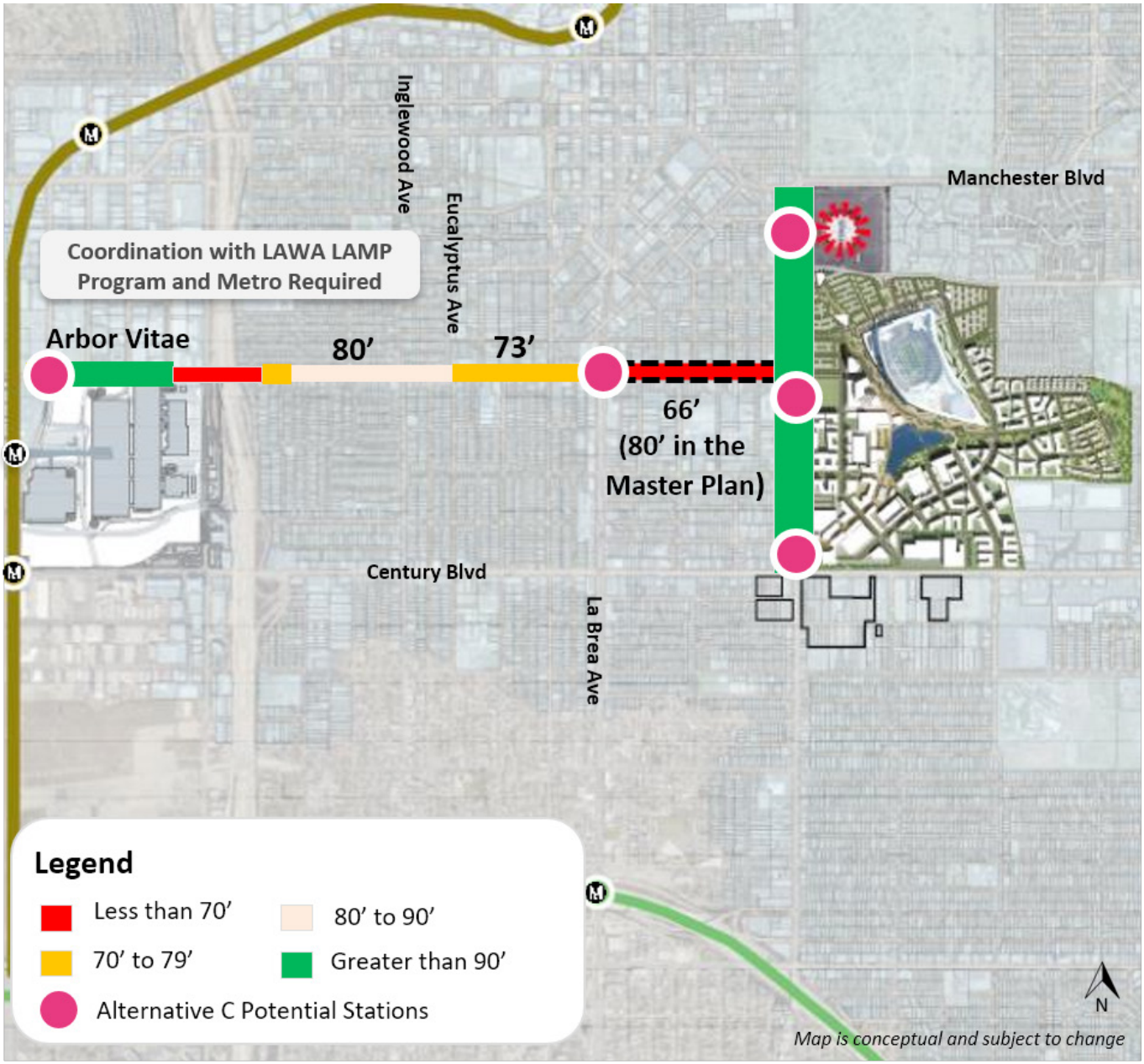


Source: Trifiletti Consulting, Raju Associates, 2018

Alternative C: Arbor Vitae Alignment:

Alternative C: Arbor Vitae Alignment right-of-way ranges from 100 feet to 66 feet, narrowing of the right-of-way east of Eucalyptus Avenue (Figure 4.4-3). Given the narrow right-of-way, this concept would potentially require acquisition of existing small business and possible neighborhood displacement. It would also potentially have adverse economic and fiscal impacts to local businesses along Arbor Vitae due to potentially reduced visibility, potential loss of on-street parking during construction and potential permanent removal of on-street parking spaces to accommodate the alignment.

Figure 4.4-3: Alternative C: Right-of-Way Analysis

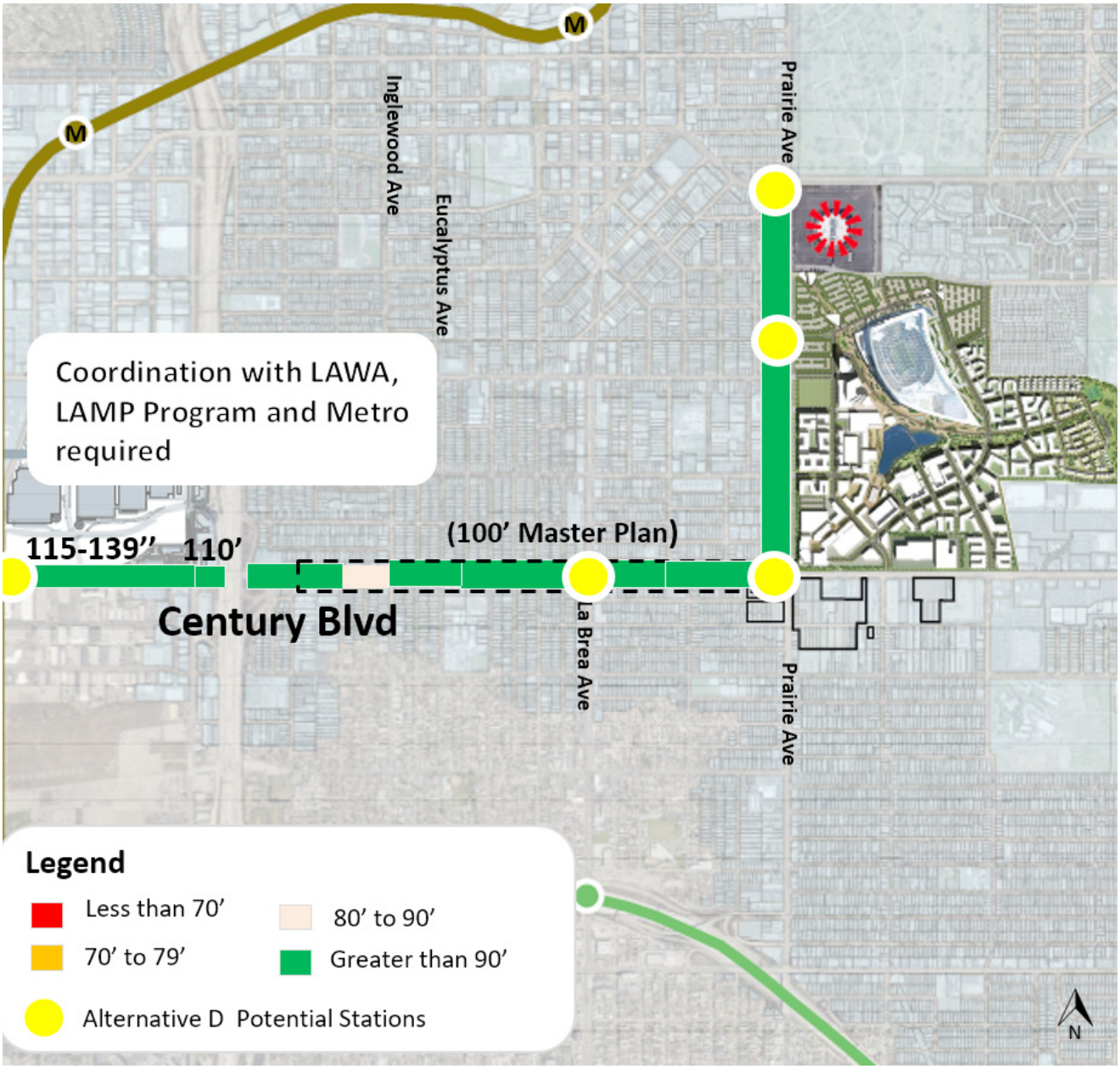


Source: Trifiletti Consulting, Raju Associates, 2018

Alternative D: Century Boulevard Alignment:

Alternative D has a wide right-of-way of at least 100 feet (Figure 4.4-4) and a continuous center median. Major utilities are located along Century Boulevard and may pose significant conflicts. Major property acquisitions or a major utility relocation effort are required if Alternative D is the selected alternative. Although Century Boulevard has a wide right-of-way of at least 100 feet and a continuous medium, major utilities are located along Century Boulevard and pose significant conflicts that may require a major utility relocation effort or property acquisitions to avoid utilities. Additionally, the I-405 crosses Century Boulevard with a single 100-foot bridge span impeding over or under clearance.

Figure 4.4-4: Alternative D: Right-of-Way Analysis



Source: Trifiletti Consulting, Raju Associates, 2018

4.4.2 Ability to Address/Resolve Underground Utility Conflicts

Utility information has been provided from the following agencies and utility purveyors:

- City of Inglewood
- Southern California Gas Company, Transmission Department
- Southern California Gas Company, Northwest Distribution Region
- Los Angeles Department of Water and Power
- Los Angeles Department of Public Works
- West Basin Municipal Water District

For the purpose of selecting a Locally Preferred Alternative, the available utility information was examined by overlaying the transit alignment alternatives to determine whether there were any fatal flaws. For this analysis, a fatal flaw is deemed to be a utility conflict that could not be resolved through design to avoid the conflict or by providing for a technically viable utility relocation. A conflict resolution that requires the relocation of a major utility, i.e. a utility that serves a regional base, is considered technically non-viable. The utility identification and assessment process consisted of requests for information from various agencies and utility purveyors. Data obtained included existing and planned major utilities within the project limits. Data and utility maps were prepared for major identified utilities. These maps have been incorporated into preliminary project concept plans for each alternative concept and included in Appendix A.

Available data did not provide exact utility locations in terms of plan and profile; rather, exact utility locations will be determined during project implementation by utilizing ground penetrating radar and/or other methods. During the environmental review of the locally preferred alternative, the City will perform a more comprehensive utility analysis, including depths, width of utilities, material makeup, condition of utility, and clearance requirements to address potential significant impacts and mitigation measures.

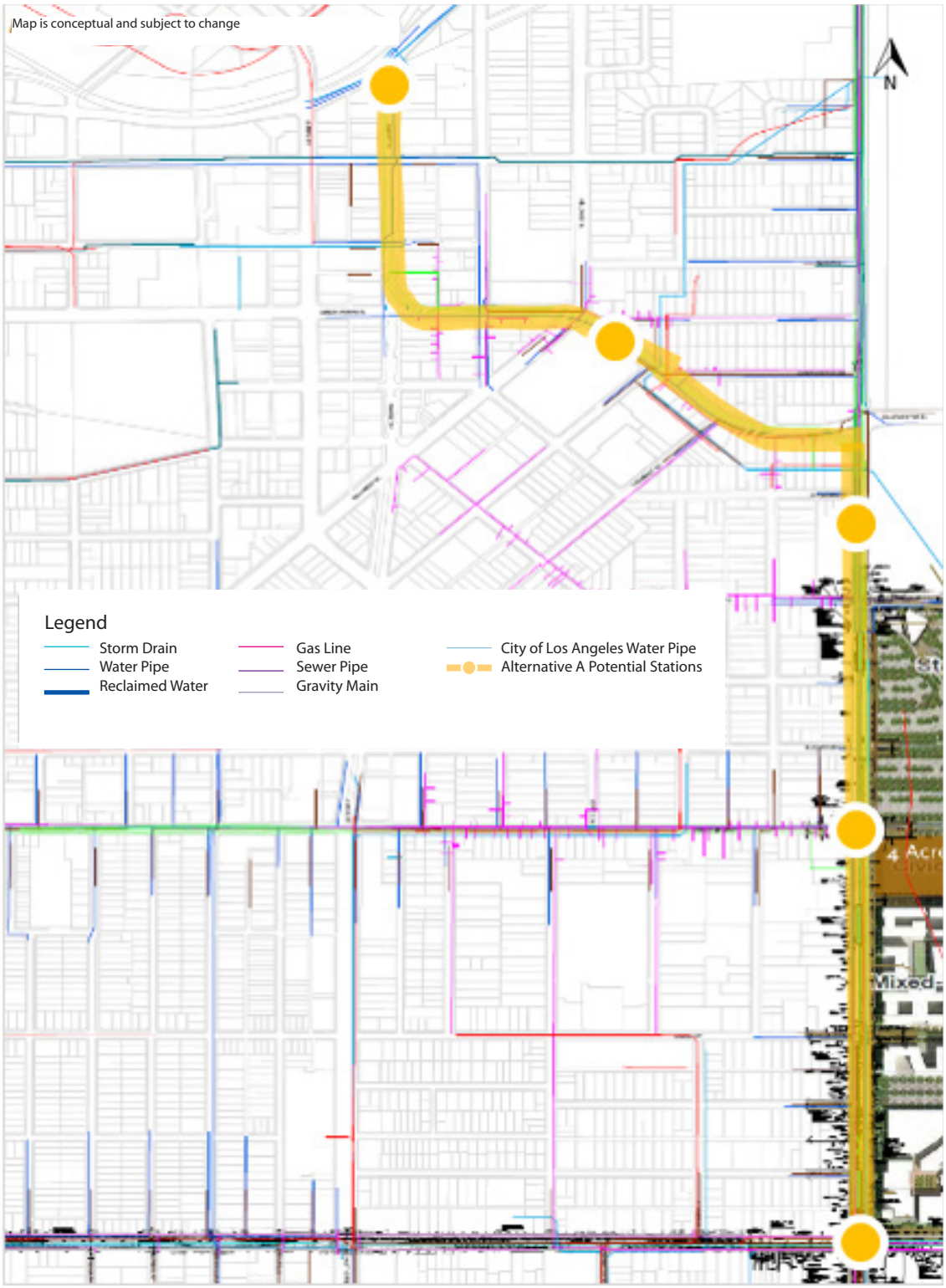
Alternative A: Market–Manchester Alignment:

Potential obstacles along the Alternative A alignment include a 36-inch West Basin Water District recycled water line at street centerline and several utilities within fifteen feet along Prairie Avenue. A large 60-inch Department of Water and Power (DWP) main pipe and a 33-inch storm drain line are located on the east side of Prairie Avenue, approximately 20 to 40 feet from centerline. Underground electrical lines, including vaults, are primarily concentrated along or adjacent to easterly and westerly sidewalks and do not pose a major impediment to the Alternative A alignment.

Existing utilities along the northern portion of the alignment pose minimal obstacles for placement of guideway columns. However, due to the span of utilities tie-ins and crossings along Manchester Boulevard at Hillcrest Boulevard, Spruce Avenue, Manchester Drive and Manchester Terrace, placement of guideway columns in this alignment should avoid relocation of gravity flow utilities including sewer and storm drains.

Utilities along the Alternative A route do not pose as major conflicts, and these conflicts could be resolved as there is sufficient roadway width along Market Street, Manchester Boulevard and Prairie Avenue (see Figure 4.4-5). As part of the detailed design of the preferred alternative, the City will conduct site investigations to determine exact utility locations and coordinate column placements to avoid or resolve conflicts, or relocate based on costs versus benefits.

Figure 4.4-5: Utilities Along Alternative A: Market-Manchester



Source: Trifiletti Consulting, Raju Associates, 2018

Alternative B: Fairview Heights Utility Analysis:

Based on preliminary research, minor utility pipes, as well as lateral connections to these pipes, from adjacent properties, have been identified along Florence Avenue. Existing utilities, including sewer, gas and water mains along these streets pose minimal obstacles for placement of guideway columns; however, various utility crossings at the curve alignment transition at Florence Avenue and Prairie Avenue should be avoided.

Several utilities along Prairie Avenue have been identified within close proximity, approximately fifteen feet, to this preliminary project alignment alternative. A 36-inch recycled water line travels along the easterly side of Prairie Avenue and transitions to the centerline of the street at Grace Avenue. A large 60-inch LADWP water main and a 33-inch storm drain line are located toward the southerly end of the alignment on the east side of Prairie Avenue, approximately twenty to forty feet from centerline. These utilities may pose significant obstacles but would not be considered to render the alignment infeasible at this stage.

Underground electrical lines, including vaults, are primarily concentrated along or adjacent to easterly and westerly sidewalks and do not pose a concern. Non-gravity flow utilities, including water service lines, may be relocated vertically, i.e. lowered, in lieu of horizontal relocation. Utility crossings including electrical and relatively large sized storm drain lines are primarily found at street intersections. Extensive utility crossings have been identified south of Manchester Boulevard, at Kelso Street/Pincay Drive, and north of Arbor Vitae Street. Guideway column placements should be avoided near these utility crossings and street intersections.

Utilities along alternative B pose a significant obstacle but relocations are not considered infeasible at this stage. As part of the detailed design of the preferred alternative, the City will conduct site investigations to determine exact utility locations and coordinate column placements to avoid or resolve conflicts.

Figure 4.4-6: Utilities along Alternative B: Fairview Heights Alignment

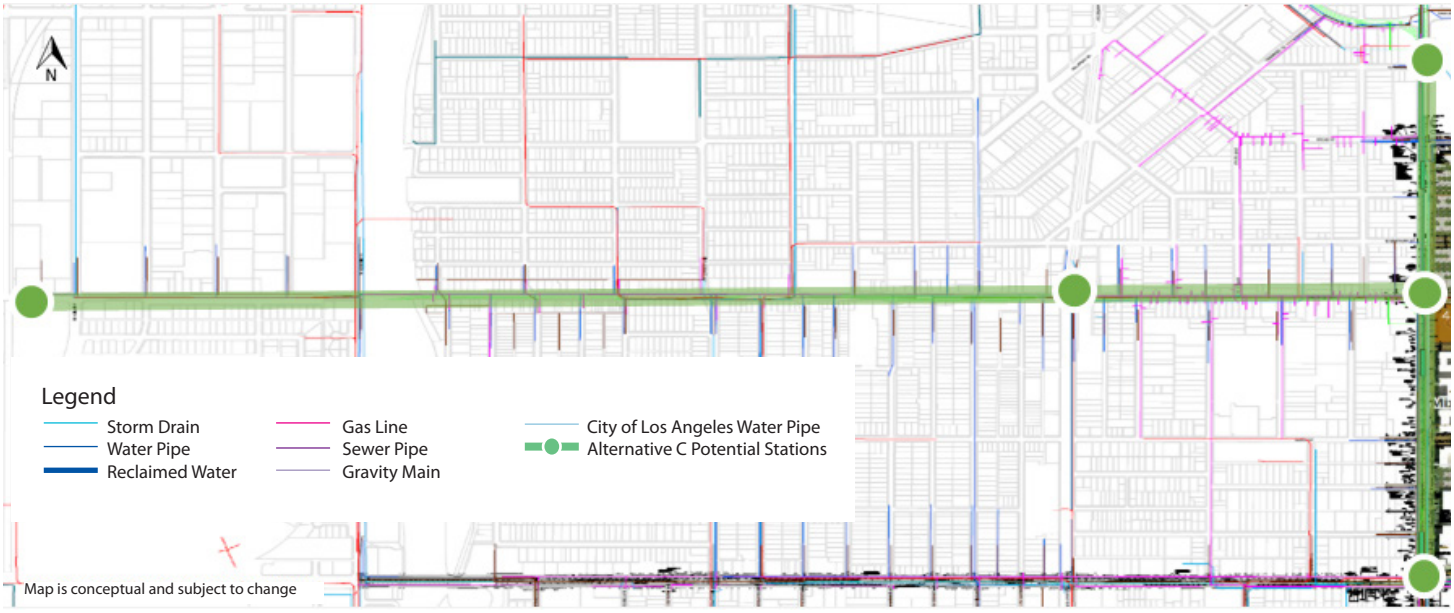
Source: Trifiletti Consulting, Raju Associates, 2018

Alternative C: Arbor Vitae Utility Analysis:

The most significant utilities identified as part of preliminary research for this alignment alternative includes an eight to ten inch sewer pipe along the centerline of Arbor Vitae Street between Eucalyptus Avenue and La Brea Avenue, a 36-inch recycled water line along Prairie Avenue centerline within fifteen feet of the preliminary alignment. A large 60-inch DWP water main and a 33-inch storm drain line are located at the east side of Prairie, approximately twenty to forty feet from centerline. Together, these utilities may pose significant obstacles but relocation would not be considered infeasible at this stage. Underground electrical lines, including vaults, are primarily concentrated along or adjacent to sidewalks and do not pose a major impediment. Non-gravity flow utilities, including water service lines, may be relocated vertically, i.e. lowered, in lieu of horizontal relocation.

Due to narrowing of the right-of-way east of Eucalyptus Avenue (Figure 4.4-7), there are potential major impacts to existing small businesses and possible neighborhood displacement. During detailed design of the preferred alternative, the City will conduct site investigations for exact utility locations and coordinate column placements to avoid or resolve conflicts or relocate utilities based on cost versus benefit to the project.

Figure 4.4-7: Utilities Along Alternative C: Arbor Vitae Alignment



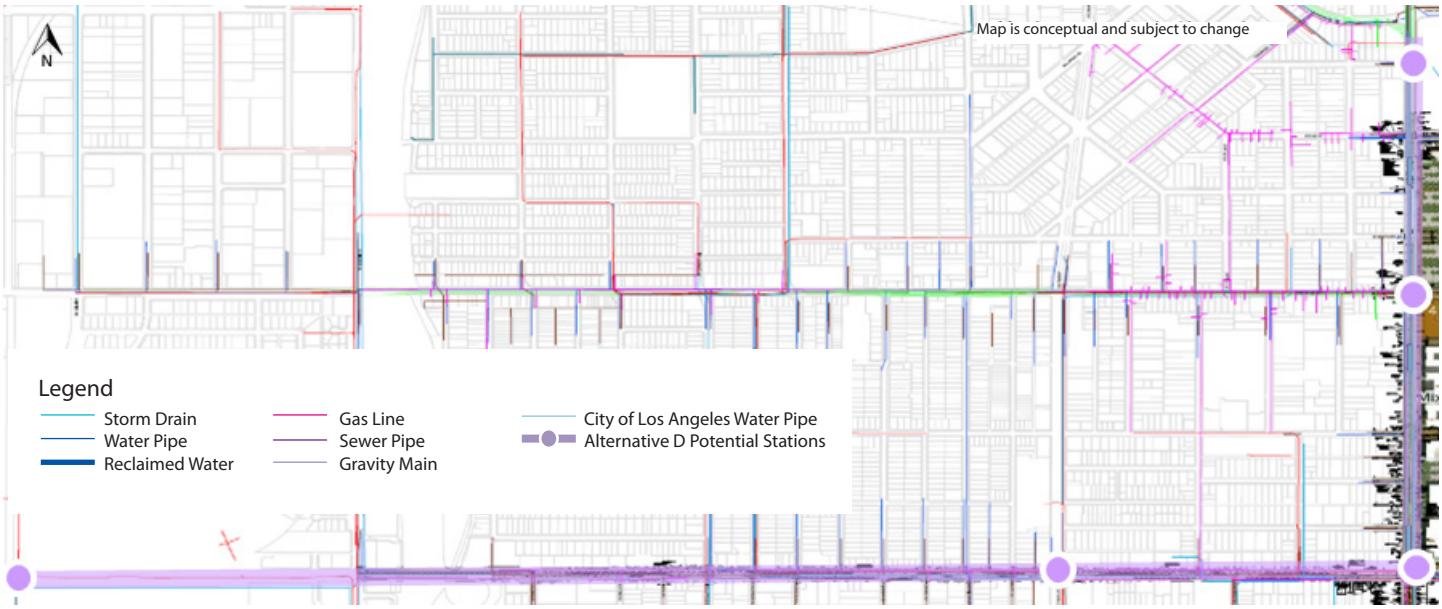
Source: Trifiletti Consulting, Raju Associates, 2018

Alternative D: Utilities Along Century Boulevard:

Overhead power lines are located along and crossing Century Boulevard from east of Felton Avenue to Condon Avenue. Clearance requirements for these power lines should be considered when evaluating this alignment. Additional underground electrical lines are located along Alternative D including crossings between Grevillea and Burn Avenue and at the intersection of Prairie Avenue and Century Boulevard. Figure 4.4-8 illustrates utilities located along alternative D at a high level.

Although Century Boulevard has a wide right-of-way of at least 100 feet (Figure 4.4-8) and a continuous center median, major utilities are located along Century Boulevard and pose significant conflicts that may require a major utility relocation effort or property acquisitions to avoid utilities. Major property acquisitions or a major utility relocation effort are required if Alternative D is the selected alternative. Additionally, the I-405 crosses Century Boulevard with a single 100-foot bridge span impeding over or under clearance. As part of the detailed design of the preferred alternative, the City will conduct site investigations to determine exact utility locations and coordinate column placements to avoid or resolve conflicts or relocate utilities based on cost versus benefit to the project.

Figure 4.4- 8: Utilities along Alternative D: Century Boulevard Alignment



Source: Trifiletti Consulting, Raju Associates, 2018

4.5 OPERATIONAL ANALYSIS

Ridership analysis supports the following assumptions for the development of sufficient information for a conceptual definition of probable costs, and preliminary conceptual APM system performance, (i.e., travel times and operations):

- Because ridership projections between the different alternatives vary only marginally, the highest projections were assumed for fleet sizing and operations.
- Normal day service: approximately sixteen hours a day from 5 AM to 9 PM.
- Highest per direction ridership projection is approximately 400 passengers-per-hour-per-direction. Over a year, this equates to 5,840 service hours.
- When special events service hours are considered, the net annual service hours for normal day service is 3,940 hours.
- Special event ridership estimates range between low and high, and reflect the anticipated arrival and departure profile for attendees. The required service hours are a maximum of eight hours for NFL Game Day, and six hours for the other events.
- For the purposes of this study, service requirements were assumed based on no overlap between special events. While some overlap may occur, it is expected that this would be addressed as part of service scheduling once events calendars are better defined as part of regular service coordination between the ITC and the venues.

4.5.1 Car Capacity and Travel Times

The estimated APM peak hour ridership is used as an initial basis to determine operational capacity needs and fleet requirements. One other variable in estimating system capacity is the estimated space that passengers will occupy while riding the APM system. Because the Inglewood Transit Connector is the last mile urban transit connector, a passenger space allocation of 2.7 square feet per passenger has been assumed; this is consistent with urban metro systems.

Different technologies have different size cars, and therefore different passenger capacity per car. For the purpose of this analysis, an average APM car has been assumed to provide a capacity of between 75 and 90 passengers per car. This assessment is subject to update based on further project development for the preferred alternative.

The dwell time at each station depends on the number of boarders and de-boarders at each station. An average dwell time of 30 seconds has been assumed for each station. While this is sufficient for the average APM car with dual door sets on each side of the car, this assumption also provides for some operational flexibility wherein station dwell times can be adjusted based on the actual boarding and de-boarding at the stations.

Operation of a train over the system for the different alternatives was estimated based on preliminary track geometry and limits on velocity, acceleration and jerk, which is the rate of acceleration. A maximum cruise speed of 50 mph was assumed with speed limits applied in sections of the route to prevent speed surges, or spikes, that would be uncomfortable for passengers. Dwell times of 30 seconds were assumed for each station stop, and then adjusted to achieve round trip times that are equally divisible by the desired minimum operating headway capability. The resulting estimated round-trip times for each of the alternatives are:

- Alternative A: Market-Manchester:
    - Round Trip Time: 770 seconds
- Alternative B: Fairview Heights:
    - Round Trip Time: 710 seconds
- Alternative C: Arbor Vitae (T-alignment to equitably serve all sites):
    - Round Trip Time: 750 seconds
- Alternative D: Century Boulevard:
    - Round Trip Time: 760 seconds

The round-trip time is driven not only by the route length but also the geometry, which places speed limits, and the number of stations.

4.5.2 Fleet Estimate

Line capacity is normally defined as the number of passengers-per-hour-per-direction (PPHPD) that the system can carry past any particular point. Determining factors are the operating headway capability and the passenger capacity per train, which is the number of cars per train, or the train length. Preliminary train simulations indicate that the round-trip times between the different alternatives are within 10% of each other. The number of operating trains must be a whole number. For the purpose of this study, the longest round-trip time of 770 seconds has been used to establish the line capacities based on different operating fleet and headway scenarios. Assuming that a generic train car can carry 75 passengers, the line capacities for varying headways and train lengths are provided below:

Table 4.5-1 Estimated Line Capacities

NUMBER OF TRAINS	HEADWAY (SECONDS)	LINE CAPACITY 4-CAR TRAIN (PPHPD)	LINE CAPACITY 2-CAR TRAIN (PPHPD)	LINE CAPACITY 1-CAR TRAIN (PPHPD)
8	96.3	11,221	5,610	2,805
7	110.0	9,818	4,909	2,455
6	128.3	8,416	4,208	2,104
5	154.0	7,013	3,506	1,753
4	192.5	5,610	2,805	1,403
3	256.7	4,208	2,104	1,052
2	385.0	2,805	1,403	701
1	770.0	1,403	701	351

Source: Trifiletti Consulting, Raju Associates, 2018

Operating Fleet Scenario to Meet Anticipated Demands: The high ridership projections are used as the basis to determine the operating fleet; variation in the ridership over the day and/or special event duration is not considered at this stage of concept planning. This approach provides for robust concept planning, sufficient flexibility to respond to ridership refinement as better data and information is available, and establishes a conservative estimate for the fleet size, and capital and operations/maintenance costs. It establishes a conservative business case for evaluation in making appropriate project related policy decisions.

Table 4.5-2 Estimated Line Capacities

SERVICE	DEMAND (PPHPD)	NORMAL PLUS SPECIAL EVENT DEMAND (PPHPD)	OPERATING FLEET	CAPACITY PROVIDED (PPHPD)	NUMBER OF ANNUAL SERVICE HOURS
Normal Day	400	400	Operate 2-1 car trains at 385 s headways (total 2 cars operating)	701	3940
Small Events	870	1270	Operate 4-1 car trains at 192.5 s headways (total 4 cars operating)	1403	648
Medium and Large Events incl. Clipper Games	2012	2412	Operate 4-2 car trains at 192.5 s headways (total 8 cars operating)	2805	924
NFL Stadium Small Event	2735	3135	5-2 car trains operating at 154 s headways	3506	120
NFL Stadium Medium Event	6525	6925	5-4 car trains operating at 154 s headways	7013	48
NFL Stadium Game Day	8985	9385	7-4 car trains operating at 110 s headways (total 28 car operating fleet)	9818	160

Source: Trifiletti Consulting, Raju Associates, 2018

Based on the above analysis, the following assumptions are being used to develop rough order of magnitude costs and will support the next level of planning and project definition work:

- Fleet Size: 32 generic cars (28 operating fleet cars, plus 4 spare cars).
- Maximum Cruise Speed: At least 50 mph.
- Minimum Operating Headway: Not greater than 110 seconds.
- Maximum Round Trip Time: 770 seconds (12 minutes 50 seconds).
- Station Dwell Times: 30 seconds.
- Train Operations: Ability to operate different length trains from 1-car (approx. 45 feet long) to up to a 4-car train (approx. 175 feet long train).
- Operating Headways:
  - Normal Day and Weekend – no less frequently than 6 – 6 ½ minutes.
  - Special Events – no less frequently than between 1 ½ to 3 ½ minutes depending the special event.

5. INGLEWOOD TRANSIT CONNECTOR RECOMMENDED ALIGNMENT

The Market–Manchester Alignment (Alternative A) is recommended for further study, as the alternative would provide a direct connection between downtown Inglewood and the major activity centers. Alternative A presents the opportunity for integration with local economic activity, current and future transit-oriented development and other initiatives in the downtown/commercial district of Inglewood. This alternative would also minimize utility relocations, and construction impacts to the adjacent commercial and residential uses along the alignment.

The alignment is approximately 1.8 miles of dual-lane guideway with five anticipated stations. The anticipated stations were identified with the objective of serving traffic generators, current, proposed or potential, with an intuitive and convenient connection. The exact station locations and number of stations will be refined as part of the future environmental impact report (EIR) phase in coordination with the City, stakeholders and through the continuing public outreach process. At this time, the anticipated station locations are:

- Market Street/Downtown Inglewood Crenshaw/LAX Metro Station.
- Manchester Boulevard at or near Market Street.
- The Forum.
- Los Angeles Stadium and Entertainment District at Hollywood Park.
- Proposed Inglewood Basketball and Entertainment Center.

The other alternatives were not recommended for future consideration as they are fundamentally inconsistent with community goals. Alternative B would require one major transition from Florence Avenue onto Prairie Avenue that would potentially impact the Inglewood Cemetery and does not generate economic development opportunities within the City. Alternative C is located primarily on Arbor Vitae Street whose right-of-way ranges from 100 feet to 66 feet. This would potentially require acquisition of existing small businesses and possible neighborhood displacement. It would have adverse economic and fiscal impacts to local businesses along Arbor Vitae Street due to potentially reduced visibility, potential loss of on-street parking during construction and potential permanent removal of on-street parking spaces to accommodate the alignment. In addition to design challenges, Alternative D is located along a corridor that contains major utilities which may potentially pose significant conflicts that may require a major utility relocation effort or property acquisitions along Century Boulevard to avoid utilities.

Alternative D presents the opportunity to directly connect to a regional multimodal facility served by Metro's Crenshaw/LAX and Green Lines, various Metro and municipal bus lines, and the LAX APM system. However, to connect to the multimodal facility, the alignment would have to cross the I-405 on the south side of the LAX APM system. Crossing over the I-405 would require coordination with Caltrans, the Los Angeles Department of Transportation and Los Angeles World Airport and would pose design challenges as the transition from an elevated segment to a level sufficient under the I-405 may not be feasible due to the short distance available and the real estate constraint between Century Boulevard and the LAX LAMP Manchester Square development.

Table 5.0-1 presents key characteristics for each alternative. Summary of the key findings and conclusions of the screening analysis are listed below:

- For the Fixed Guideway Transit Alternatives, the preferred technology is an Automated People Mover technology, which could be rubber tired, steel wheel or monorail technology.
- All alternative alignments provide a comparable level of passenger service and convenience, including connectivity to Metro and the key traffic generators within the City.
- While alternatives A and D demonstrate the greatest ridership potential for "normal" non-event days, the degree to which each of the alternatives is able to relieve road-based congestion and improve overall air quality is generally comparable. The potential ridership for alternatives A and D have heavier ridership than the Alternatives B and C, however, challenges associated with Alternative D, including the utility relocation challenges, challenges with crossing the I-405 freeway, project costs,

- The total cost of ownership for Alternatives A and B is lowest, and is comparable. Because ridership potential is comparable, these two Alternatives offer the lowest cost per rider.

While each of the alternatives can be constructed, the impacts during construction, and the duration of construction varies. This relative measure of construction impacts is, in the context of this report, termed constructability. The impacts during construction are driven by 1) length of alignment, 2) extent of underground utility (which introduce conflicts to be resolved) and 3) traffic impacts due to construction work affecting roadways.

All alternatives traverse Prairie Avenue, as such it is the remaining segments of the alignment that are the differentiators. Alternative A has little or no major utility within the corridor, has a sufficiently wide right of way and the shortest alignment. Thus, it is best in terms of constructability. Alternative D (Century Boulevard) and Alternative C (Arbor Vitae Street) are the least attractive. While Century Boulevard is wide, there are major utilities along the corridor and a narrow sidewalk - this will likely impact the roadway travel lanes and possibly impact properties to place foundations and columns. Arbor Vitae Street is a narrow right-of-way, and will impact properties during construction and also traffic along a narrow right of way. Additionally, both alternatives cross the I-405 introducing construction logistical and traffic mitigation challenges. Alternative B, north of Prairie Avenue is a narrow right-of-way - during construction, impacts to the cemetery and the residences are expected. While Alternative B is more attractive than C or D, it is less attractive than Alternative A.

Underground options were preliminarily reviewed and discarded due to the significantly higher costs, but more importantly due to conflicts with the major underground utilities along Prairie Avenue - which is common to all alternatives. Transitioning from an underground to an elevated option along Prairie would cutoff major roadways at the transition - a fatal flaw to traffic circulation and capacity.

The Market–Manchester Alternative (Alternative A) performs well on a number of key measures including projected high annual ridership (2,578,120), minimal conflicts related to utility and construction impacts, and provides economic opportunities for downtown Inglewood.

Furthermore, based on outreach efforts conducted during the phase of study, stakeholders and representatives from local jurisdictions indicated their support for Alternative A. Initial stakeholder meetings were conducted, includiing meetings with the Inglewood City Council, block clubs, neighborhood watch groups, Inglewood Rotary, businesses, merchant groups, and early feedback has indicated support for Alternative A. As part of the environmental clearance process robust stakeholder outreach will be continued and conducted to help define the Inglewood Transit Connector Project, including project design, stakeholder locations, intermodal facilities, and over all interface with the City's major activity centers and pedestrian realm.

Therefore, it is recommended that the Alternative A: Market-Manchester, be advanced as the preferred alternative for further review as part of the environmental review process.

Table 5.0-1: Screening Results of the Inglewood Transit Connector Alternatives

	Alternative A: Market-Manchester Alignment	Alternative B: Fairview Heights Alignment	Alternative C: Arbor Vitae Alignment	Alternative D: Century Blvd Alignment
Length of System (approximately)	1.8 miles	2.2 miles	3 miles	3.1 miles
Connection to Metro	Yes at Downtown Inglewood Station	Yes at Fairview	Yes	Yes
Service to Key Venues	Comparable	Comparable	Comparable	Comparable
Right-of-way impacts/ability to resolve	Minimal	Potential impact to Inglewood Cemetery	Potential impacts to small businesses and residences	Property acquisitions likely due to major utility relocations
Potential impacts, based on available roadway width	Minimal	Potential impact to Inglewood Cemetery	Potential impacts to small businesses and residences	Property acquisitions likely due to major utility relocations
Utility Conflicts/ability to resolve with relocations	Minimal/Good	Minimal/Good (with potential impacts to Inglewood Cemetery)	Minimal/Good (with potential impacts to small businesses and residences)	Major/Limited (major utilities with impacts driving property acquisitions)
Annual Ridership	2,578,120	1,894,826	2,047,055	2,933,147
Passenger Convenience	Comparable	Comparable	Comparable	Comparable
Synergistic Economic Development within City	Good	Limited	Limited	Limited
Required Major Coordination Efforts	Coordinate with Metro	Coordinate with Metro	Coordinate with Metro, LAWA and Caltrans (I-405)	Coordinate with Metro, LAWA and Caltrans (I-405)
Estimate of Probable Capital Cost (2018 $) [1, 2]	$614.4M	$625.1M	$756.7M	$ 769.2M
Estimate of Probable Annual O&M Cost (2018 $) [3]	$18.2 - $19.5 M			

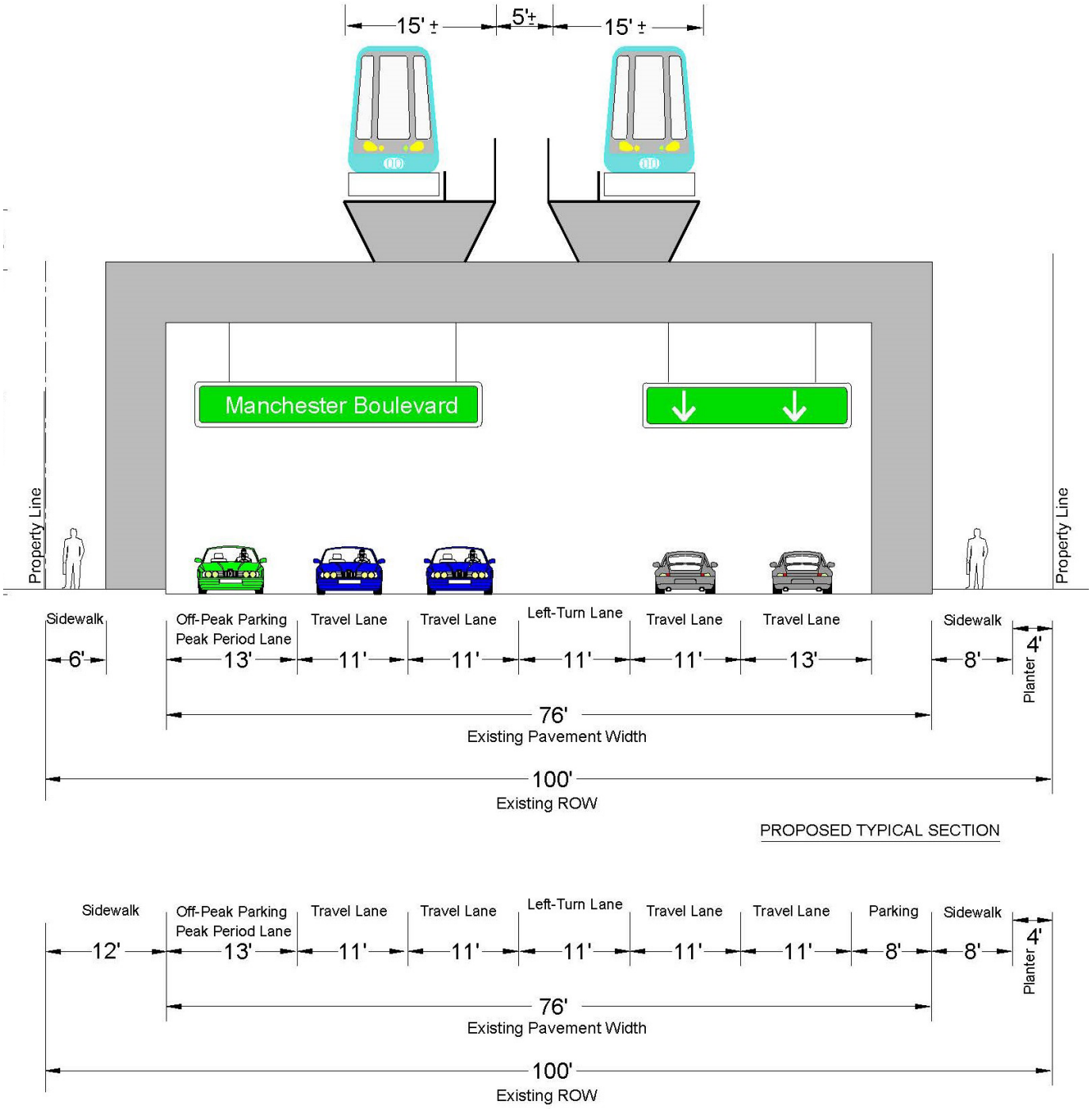
1. Right of way acquisition, environmental and physical mitigations, parking/intermodal center costs and costs of other infrastructure are not included since these are not defined and subject to impacts/influence from other city and regional transportation plans/studies.
2. Owner soft costs not included – Owner soft costs cover Owner's management costs including Owner retained consultants etc.
3. Assumes a Design-Build-Operate-Maintain delivery strategy with a 25-30 year term with Contractor responsible for all operations/maintenance of contractor delivered assets. Does not include cost of utilities or Owner soft costs.

Source: Raju Associates, Trifiletti Consulting, Pacifica Services, 2018

Figure 5.0-1: Alternative A: Market-Manchester Alignment

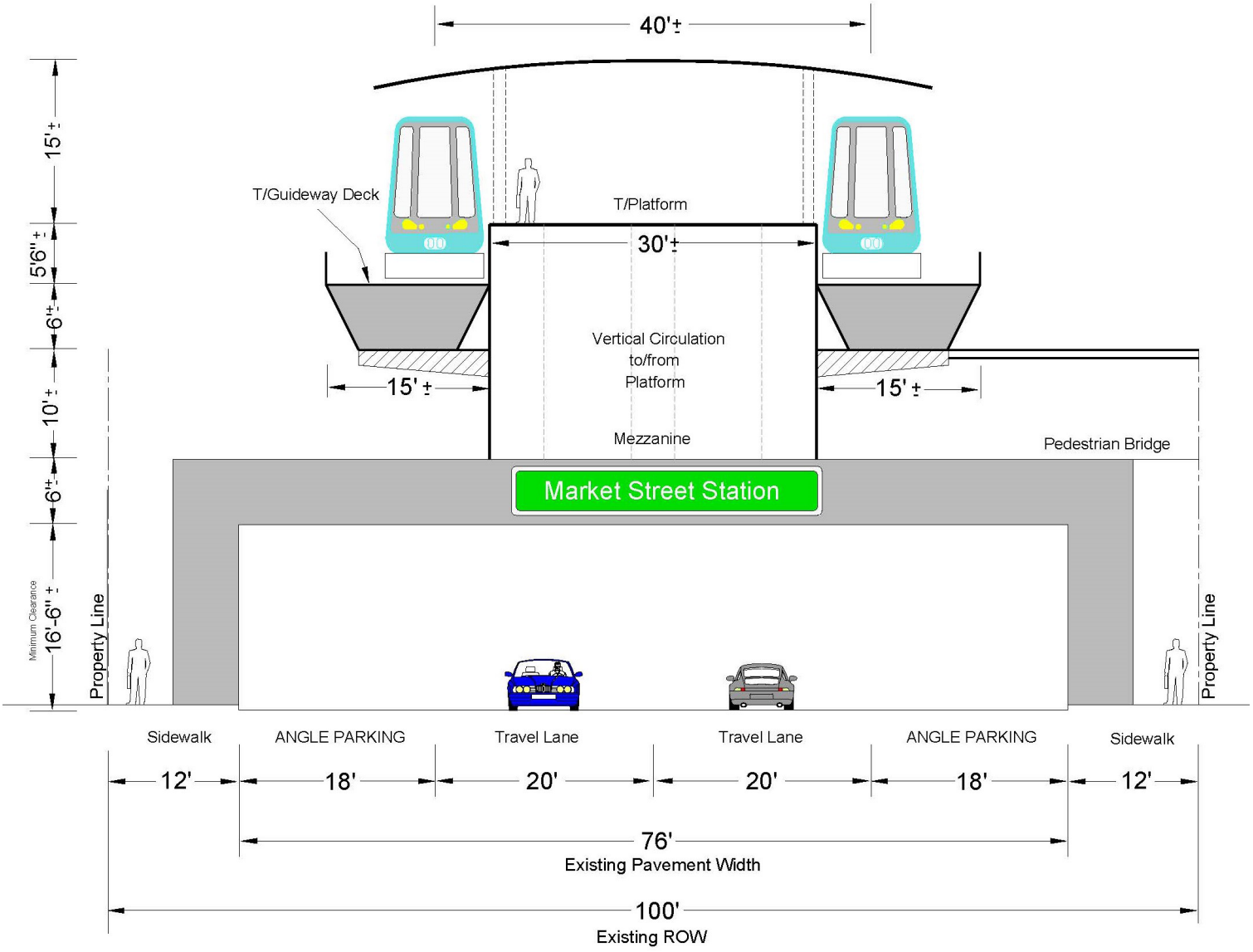
Source: Trifiletti Consulting, 2018

Figure 5.0-2: Alternative A: Market- Manchester Alignment
Manchester Boulevard, Looking West in Between Stations



Source: Raju Associates, 2018

Figure 5.0-3: Alternative A: Market-Manchester Alignment
Market Street, Looking West at Station



Source: Raju Associates, 2018

Intermodal facilities are preliminarily located at each end of the alignment, at Market Street and near the Prairie/Century intersection. The objective is to provide an opportunity for passengers on buses, shared ride vehicles, TNCs, and taxis to conveniently transfer to the APM system for the final journey into the City. This strategy is consistent with the objective of relieving traffic demands within the City's commercial district by providing a convenient transfer to the final destination. This also alleviates additional demand on real estate currently used for parking that can now be utilized for its highest and best use. The intermodal facilities will be appropriately sized to accommodate traffic projections that will vary based on special events and is likely to consist of a surface lot with convenient vehicle access and egress and curb cuts to facilitate short-term stopping to pick up or discharge passengers to and from the APM system. Specifics will be developed as part of the environmental impact report (ERI) phase of the Project and in coordination with the City, stakeholders and input from public outreach programs.

6. NEXT STEPS
7. FUNDING/FINANCING STRATEGY
8. PROCUREMENT STRATEGY

6. NEXT STEPS

The City will further define the Market-Manchester Alignment as the locally preferred alternative, and will now launch the environmental review process pursuant to the California Environmental Quality Act (CEQA). The specific configurations and station locations, intermodal facilities and other various technical and design characteristics will be identified and developed in coordination with the key City departments and stakeholders, including the community, residential, civic organizations, business groups and potentially impacted property owners. The project definition work and the environmental analysis will also include coordination with third-party agencies including but not limited to Metro, Los Angeles County Regional Planning and Public Works, Caltrans, SCAG, and the City of Los Angeles. Public engagement will continue throughout the environmental and public process.

To support the environmental and project delivery process, the City will conduct and include engineering and other technical studies and will continue to assess and identify potential project designs, environmental impacts, operational profiles, cost estimates, ridership and overall environmental benefits. This further analysis will supplement this report and produce more detailed project benefits and description designed to be fully integrated into the transit network and transportation system. Next steps include launching the environmental process pursuant to CEQA, which includes releasing the Notice of Preparation and commencing the preparation of a Draft Environmental Impact Report.

7. FUNDING/FINANCING STRATEGY

The Project shall seek funding as a special district and form an Enhanced Infrastructure Finance District (EIFD). The project shall seek the EIFD formation concurrently with the environmental process through CEQA and fulfill subsequent requirements of the EIFD along with the requirements of the environmental process. The City will also explore and seek all available public funds at the local, state and federal level, and will also develop innovative project delivery strategies to establish public-private partnerships and/or joint funding and development tools.

8. PROCUREMENT STRATEGY

The Metro study concluded and recommended a public-private-partnership/concessionaire strategy to deliver the project, primarily due to Metro's inability to fund the project, which is not included in either the Measure M Expenditure Plan or the Metro Long Range PTransportation Plan. It is critical to understand that such a strategy still requires the Owner to have sufficient debt capacity/revenue generation capacity/strategy to provide the back stop on the contract. Additionally, the City must consider its own strategy for entering into such a transaction, including but not limited to establishing a special purpose entity, or identifying policies to assure financing to support the back-stop on the contract. To that end, consultation with stakeholders, the City's legal counsel and policy makers is essential as the strategy is developed further for the City's locally preferred alternative for the Inglewood Transit Connector Project.

9. APPENDICES

Appendix A: Utility Analysis Memo
Appendix B: Ridership Memo
Appendix C: Cost Estimates Memo
Appendix D: July 2017 Transit Connection Study

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ATTACHMENT A: UTILITY EXHIBITS

1.0 INTRODUCTION

As the City of Inglewood is transforming into a world-class, major regional activity center, the number of trips or vehicle mile traveled (VMT) in and around the City are anticipated to increase. Since 2010, traffic has increased by 128,066 (11%) vehicles per day within the City of Inglewood based on the latest Annual Daily Traffic studies. That is approximately an increase of 18,295 (1.57%) daily vehicles per year. The existing transportation infrastructure and circulation system is outdated, capacity should be increased as major arterials street and highways are highly congested, and there remains no direct connection from the Countywide Metro Rail System to the newly completed, under construction, and future activity centers. To address these critical issues, the City of Inglewood is now studying the development of a major mass transit project connecting the Metro Rail System to the proposed activity centers. The City is also preparing a comprehensive mobility plan to identify policy recommendations, infrastructure improvements and the program requirements necessary to move people across a multimodal transportation environment, and best prepare for the future development in the City.

This Study evaluates the following four conceptual transit alternatives:

- Option A: Market Street Alignment
- Option B: Fairview Heights Alignment
- Option C: Arbor Vitae Alignment
- Option D: Century Blvd Alignment

The key objectives of this report are to identify, and present potential utility-related impacts associated with four conceptual alignment alternatives that have been further reviewed as part of the Inglewood Transit Connector Study.

1.1 Methodology

This study represents a preliminary identification of existing utilities based on acquired record drawings and existing City of Inglewood database (Table 1). Available data did not provide for exact utility locations in terms of plan and profile; rather, exact utility locations will be determined for the selected locally preferred alternative by utilizing ground penetrating radar and/or other methods. Such information will be critical to project design as part of the project implementation process. The City of Inglewood will select a locally preferred alternative project and will further define and review as part of environmental clearance process pursuant to the California Environmental Quality Act (CEQA).

For the purpose of this initial technical evaluation, the available utility information was examined by overlaying the transit alignment alternatives to determine whether there were any “fatal flaws.” A “fatal flaw” is deemed to be utility conflict that could not be resolved through design to avoid the conflict or by providing for a technically viable utility relocation. For the purpose of this study, a conflict resolution that required the relocation of a major utility (i.e. a utility that serves a regional base) was considered technically non-viable.

The utility identification and assessment process consisted of requests for information from various agencies and utility purveyors. Obtained data included existing and planned major utilities within the project limits. Data and utility maps were prepared for major identified utilities. These maps have been incorporated into preliminary project concept plans for each alternative concept (see Attachment A).

Using the preliminary utility identification maps, limits and extent of critical areas were identified. Critical areas are referenced as the areas within the project limits where the presence of utilities could significantly impact the project's environmental footprint, construction cost, or overall project schedule.

Utility information was provided from the following agencies and utility purveyors:

1. City of Inglewood
2. Southern California Gas Company, Transmission Department
3. Southern California Gas Company, Northwest Distribution Region
4. Los Angeles Department of Water and Power
5. Los Angeles Department of Public Works
6. West Basin Municipal Water District

Utility data was collected from October 2018 to December 2018. For a more detailed breakdown of data collected and format, please see Table 1.

This study identifies the major impacts for the conceptual alignments. During the environmental review of the locally preferred alternative, the City will perform a more comprehensive utility analysis, including depths, width of utilities, material makeup, condition of utility, and clearance requirements to address potential significant impacts and mitigation measures.

Table 1: Utility Inventory

Type of Utility	Agency	Date Received	Summary of Data	Data Missing
Water/ Sewer	City of Inglewood Public Works Department (GIS Department)	10/26/2017	City owned water and sewer utilities including geo-reference as-built plans for water utilities. City also provided information for sewers.	None
	Los Angeles Department of Water and Power (LADWP)	11/21/2017	As-built plans for water utilities within the proposed project area.	None
	Los Angeles County Waterworks District	10/26/2017	GIS files of storm drain facilities.	Dimensions: Diameter of water pipes
	West Basin Municipal Water District	11/20/2017	West Basin facility sites and recycled water lines.	None
Electrical	SoCal Edison	11/29/2017	Electrical utilities along Century Blvd.	Electrical utilities along Arbor Vitae, Market Street, Manchester Blvd.
Gas	SoCal Gas, Transmission Department	11/14/2017	Received a letter signed by Luis Ramos, Planning Pipeline Assistant stating that there are no major transmission gas lines or facilities in the vicinity of the proposed project area.	None
	SoCal Gas, Northwest Distribution Region	11/21/2017	SoCal Gas Facilities within the project area.	None

1.2 Summary of Findings

An overall summary of the preliminary analysis and findings include:

1. Utilities identified in this preliminary analysis do not present fatal flaws, but will require design strategies for future consideration to avoid relocation of major systems, i.e. 60-inch water main line, LADWP vaults and the high voltage transmission lines. Identified utility conflicts appear resolvable through design strategies to avoid potential conflict or through a technically viable relocation of minor utilities. Major utility conflicts can be resolved through design of the Inglewood Transit Connector to avoid such conflicts.
2. The most noteworthy utility impacts are attributed to major utilities along the centerline of streets and/or within proximity of the projected transit alignments which may pose obstacles in the placement of the guideway columns. Such conflicts appear to be resolvable through column placement to avoid the utilities during design.
3. Numerous but minor utility lines and lateral connections are in close proximity to the transit alignment alternatives. These utilities may be sleeved through foundations in lieu of relocations; through column/foundation placements to avoid the conflicts; or through relocations.

A detailed description of findings per alignment alternative is included in this report

2.0 UTILITY ANALYSIS PER OPTION

2.1 Option A: Market-Manchester Street Alignment

The Market-Manchester Street Alignment (Option A) is an aerial alignment that runs approximately one quarter of a mile along Market Street between Florence Avenue and Manchester Blvd where it transitions east along Manchester Blvd for approximately half a mile to Prairie Ave. The alignment continues for approximately one mile south of Manchester Blvd along Prairie to Century Blvd providing service to Downtown Inglewood, the Forum, the Hollywood Park Development (NFL Stadium), and the Basketball and Entertainment Center.

Option A (see Figure 1) was developed to connect major development sites to the Metro's LAX Crenshaw LRT line station at Downtown Inglewood. Option A presents an opportunity for integration with local economic activity, current and future transit-oriented development, and other initiatives in the area.

Figure 1: Option A: Market-Manchester Street Alignment

Legend

- Option A Market-Manchester
- Metro Crenshaw Line
- Metro Green Line
- Possible Intermodal Facility

2.1.1 Option A Utility Analysis

There are various types of utilities throughout the northern portion of Market Street, Manchester Boulevard, and Prairie Avenue. As shown in Figure 2, several utility companies maintain the operation of water, sewer, power, cable and phone services in the corridor.

The potable water in the City of Inglewood is supplied by the City, Golden State Water Company, and Cal - America Water Company. Water pipes are located along Market Street, Manchester Boulevard, and Prairie Avenue. The Department of Water and Power (DWP) and the West Basin Municipal Water District also have major pipe lines, 60-inch and 36-inch along Prairie Avenue.

The main lines of the storm drain system in the City of Inglewood are jointly maintained by the Los Angeles County Flood Control District (LACFCD) and the City of Inglewood. The storm drains lines along Prairie Avenue consist of Reinforced Concrete Pipe (RCP) and Reinforced Concrete Box (RCB).

The existing sewer system in the City of Inglewood is owned by both the City and the County and information was provided by the City of Inglewood. Electrical power is supplied by the Southern California Edison Company and the City's Natural gas is provided by the Southern California Gas Company (Transmission Department and Northwest Distribution Region). Market Street, Manchester Boulevard, and Prairie Avenue are well covered with a natural gas facility network and the existing gas lines range in sizes from 1 to 8 inches.

Preliminary Analysis

Potential obstacles along the Option A alignment include a 36-inch (West Basin Water District) recycled water line at street centerline and several utilities within 15 feet along Prairie Avenue. A large 60-inch Department of Water and Power (DWP) main pipe and a 33-inch storm drain line are located on the east side of Prairie, approximately 20 to 40 feet from centerline. Underground electrical lines, including vaults, are primarily concentrated along or adjacent to easterly and westerly sidewalks do not pose a major impediment to the Option A alignment. Non-gravity flow utilities, including water service lines, may be relocated vertically (lowered) in lieu of horizontal relocation. Utility crossings including electrical and storm drain lines, are primarily found at street intersections and between Kelso Street/Pincay Drive, and Arbor Vitae Street along Prairie Avenue.

Existing utilities along the northern portion of the alignment pose minimal obstacles for placement of guideway columns. However, due to the span of utilities tie-ins and crossings along Manchester Boulevard at Hillcrest, Spruce Avenue, Manchester Drive and Manchester Terrace, placement of guideway columns this alignment should avoid relocation of gravity flow utilities including sewer and storm drains.

In short, utilities along Option A pose minimal conflicts that can be resolved as there is sufficient roadway width (see Figure 3) along Market Street, Manchester, and Prairie. As part of the detailed design of preferred alternative, the City will conduct site investigations to determine exact utility locations and coordinate column placements to avoid/resolve conflicts or relocate based on cost/benefits.

Figure 2: Utilities along Option A: Market-Manchester

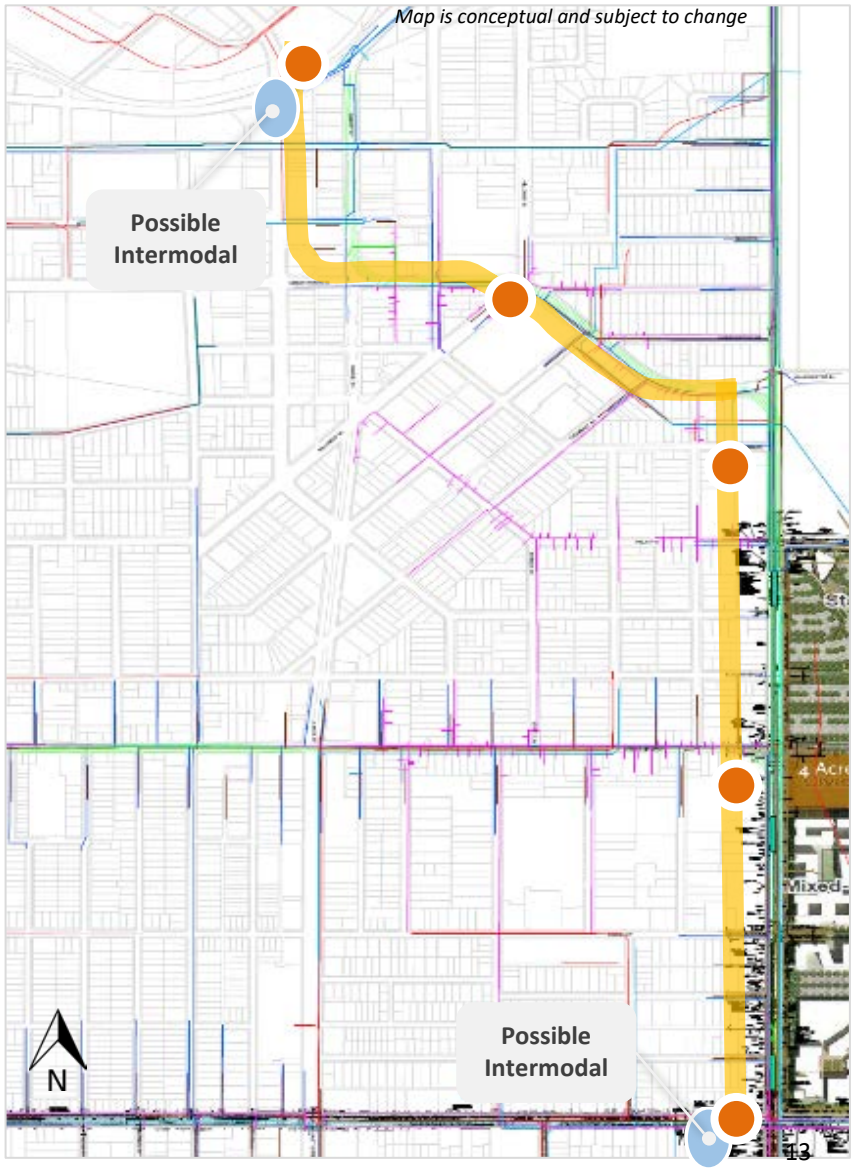


Figure 3: Option A: Right-of-Way Analysis

Legend

- Less than 70'
- 70' to 79'
- 80' to 90'
- Greater than 90'
- Option A Potential Stations

Table 2: Existing Utilities in Inglewood
Option A: Market Street Alignment

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
MARKET STREET						
B-1	14	Florence Ave	Regent St	509’	8" water pipe, east side of street	100’
B-1	15	Regent St	Queen St	542’	8" water pipe, east side of street, switching to the west side (curb) of street at Queen St	100’
B-2	16	Queen St	Manchester Blvd	423’	8" water pipe, east side of street, west side (curb) of street	100’
MANCHESTER BOULEVARD						
B-2	18	Market St	Locust St	415’	12" water pipe south curb of street 8” sewer pipe, center of street Gas line running across at alley and Locust St Numerous connections to the lines	93’
B-2	19	Locust St	Hillcrest Blvd	446’	12” water pipe south curb of street 8” sewer pipe, center of street Gas line running across at Hillcrest Numerous connections to the lines	100’
C-1	20	Hillcrest Blvd	Spruce Ave	535’	12” water pipe south curb of street 8” sewer pipe, center of street Numerous connections to the lines	112’
C-1	21	Spruce Ave	Tamarack Ave	477’	12” water pipe south curb of street Gas line, south curb of street across at Spruce	100’

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
C-2	22	Tamarack Av	Prairie Ave	741’	12” water pipe south curb of street 8” sewer pipe, south side of street Gas line located at the south curb of street	100’
PRAIRIE AVENUE						
E-1	26	Manchester Blvd	Nutwood St	377’	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60” DWP line on east side Large 36” recycled water Storm drain and gas lines	94’
E-2	27	Nutwood St	Kelso St- Pincay Dr	654’	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60” DWP line on east side Large 36” recycled water Storm drain and gas lines 10”CIP	90’
E-3	28	Kelso St- Pincay Dr	La Palma Dr	536’	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60” DWP line on east side Large 36” recycled water Storm drain and gas lines 10” CIP	90’

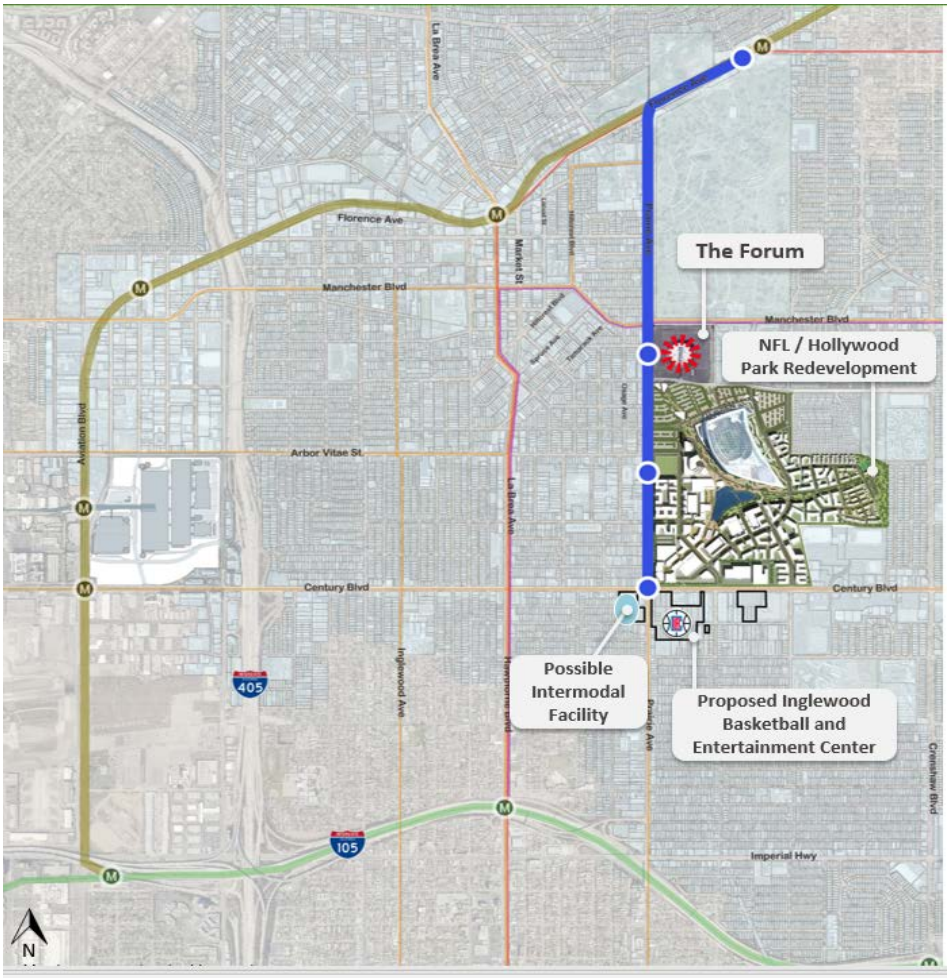
Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
E-4 E-5	**29**	**La Palma Dr**	**Arbor Vitae St**	**939'**	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60" DWP line on east side Large 36" recycled water Storm drain and gas lines 10"CIP	**90'**
E-6 E-7	30	Arbor Vitae St	Hardy St	1346'	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60" DWP line on east side Large 36" recycled water Storm drain and gas lines 8" AC 8" Sewer Pipes	90'
E-8 E-9 E-10	31	Hardy St	Century Blvd	1295'	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60" DWP line on east side Large 36" recycled water Storm drain and gas lines 8" AC 8" Sewer Pipes	90'

2.2 Option B: Fairview Heights Alignment

The Fairview Heights Alignment (Option B) is an aerial alignment that runs approximately one-half mile along Florence Avenue between Prairie Avenue and West Boulevard. The alignment then transitions south along Prairie Avenue for approximately one and three-quarter miles between Florence Avenue to Century Boulevard providing service to Downtown Inglewood, the Forum, the Hollywood Park Development (including NFL Stadium), and the Clippers Arena.

Option B (see Figure 4) was initially conceptualized as part of the June 2016 Metro study to connect the Metro Rail network with Metro owned and operated light rail service directly to the Development. However, the Metro study concluded that the Fairview Heights alignment was infeasible because of its high cost and complexity. Nevertheless, the City of Inglewood is further studying the alignment as part of their Initial Study for the Inglewood Transit Connector as independently owned system that is not interlined with the Metro's LAX Crenshaw LRT line. The Fairview Heights Alignment provides a connection between the LAX Crenshaw LRT Line at Fairview Heights / West Station and the Entertainment District.

Figure 4: Option B: Fairview Heights Alignment



2.2.1 Option B Utility Analysis

There are various types of utilities throughout the northern portion of Market Street, Manchester Boulevard, and Prairie Avenue. As shown in Figure 3, several utility companies maintain the operation of water, sewer, power, cable and phone services in the corridor.

The potable water in the City of Inglewood is supplied by the City, Golden State Water Company, and Cal-America Water Company. Water pipes are located along Market Street, Manchester Boulevard, and Prairie Avenue. The Department of Water and Power (DWP) and the West Basin Municipal Water District also have major pipe lines, 60-inch and 36-inch along Prairie Avenue.

The main lines of the storm drain system in the City of Inglewood are jointly maintained by the Los Angeles County Flood Control District (LACFCD) and the City of Inglewood. The storm drains lines along Prairie Avenue consist of Reinforced Concrete Pipe (RCP) and Reinforced Concrete Box (RCB).

The existing sewer system in the City of Inglewood is owned by both the City and the County and information was provided by the City of Inglewood. Electrical power is supplied by the Southern California Edison Company and the City's Natural gas is provided by the Southern California Gas Company (Transmission Department and Northwest Distribution Region. Florence Avenue and Market Street are well covered with a natural gas facility network and the existing gas lines range in sizes from 1 to 8 inches. Figure 5 illustrates utilities located along Option B at a high level. For a more detailed description of the utilizes please see Attachment A and B.

Preliminary Analysis

Based on preliminary research, minor utility pipes as well as lateral connections to these pipes from adjacent properties have been identified along Florence Avenue. Existing utilities, including sewer, gas and water mains, along these streets pose minimal obstacles for placement of guideway columns; however, various utility crossings at the curve alignment transition at Florence Avenue and Prairie Avenue should be avoided.

Several utilities along Prairie Avenue have been identified within close proximity, approximately 15 feet, to this preliminary project alignment alternative. A 36-inch recycled water line travels along the easterly side of Prairie Avenue and transitions to the centerline of the street at Grace Avenue. A large 60-inch DWP water main and a 33-inch storm drain line are located toward the southerly end of the alignment on the east side of Prairie, approximately 20 to 40 feet from centerline. These utilities may pose significant obstacles but would not be considered infeasible at this stage.

Underground electrical lines, including vaults, are primarily concentrated along or adjacent to easterly and westerly sidewalks and do not pose a concern. Non-gravity flow utilities, including water service lines, may be relocated vertically (lowered) in lieu of horizontal relocation. Utility crossings including electrical and relatively large sized storm drain lines, are primarily found at street intersections. Extensive utility crossings have been identified south of Manchester Boulevard, at Kelso Street/Pincay Drive, and north of Arbor Vitae Street. Guideway column placements should be avoided near these utility crossings and street intersections.

In short, utilities along Option B pose a significant obstacle but relocations are not considered infeasible at this stage. However, although Option B is located with the street right-of-way, there is limited roadway width between Florence Avenue and Manchester Boulevard (Figure 6), and potential property impacts to Inglewood Cemetery are anticipated. As part of the detailed design and environmental review analysis of the preferred alternative, the City will conduct site investigations for exact utility locations and coordinate column placements to avoid/resolve conflicts or relocate utilities based on cost/benefit to the project.

Figure 5: Utilities along Option B: Fairview Heights

Figure 6: Option B: Right-of-Way Analysis

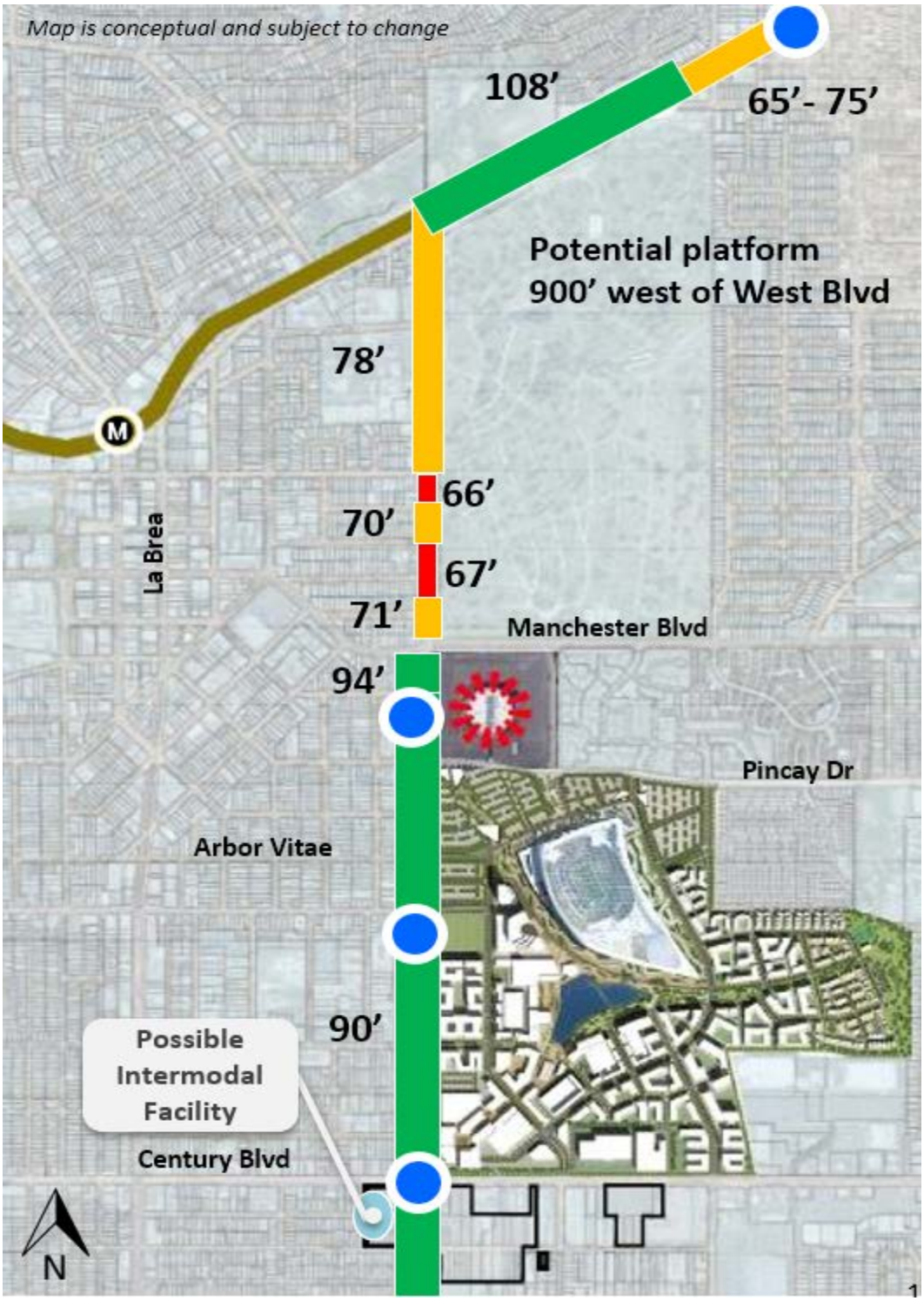


Table 3: Existing Utilities in Inglewood
Option B: Fairview Heights Alignment

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
FLORENCE AVENUE						
G-1	42	High St	West Blvd	986’	12” water pipe, south side of street Gas line (not shown) Existing underground telecommunication lines, north side of street (not shown)	65’ – 75’
G-2	43	Prairie Ave	High St	1955’	Gas line (not shown) Existing underground telecommunication lines, north side of street (not shown)	108’
PRAIRIE AVENUE						
G-3	44	Florence Ave	Grace Ave	884’	Large 36” recycled water pipe, e/o center 12” water pipe, e/o center line 8” sewer pipe, near center of street Storm drain and gas lines	78’
G-4 G-5	45	Grace Ave	Regent St	1459’	Large 36” recycled water pipe, e/o center 12” water pipe, e/o center line 8” sewer pipe, near center of street 24” sewer pipe, west side of street 12” wager pipe, west side of street Gas Line	78’

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
G-6	46	Regent St	Aerick St	358’	Large 36” recycled water pipe, e/o center 12” water pipe, east side of street 12” sewer pipe, west side of street 12” water pipe, west side of street Gas Line	66’
G-6	47	Aerick St	Queen St	335’	Large 36” recycled water pipe, e/o center 12” water pipe, east side of street 12” sewer pipe, west side of street 12” water pipe, west side of street Gas Line	70’
G-6 G-7	48	Queen St	Manchester Ter	360’	Large 36” recycled water pipe, e/o center 12” water pipe, east side of street 12” sewer pipe, west side of street 12” water pipe, west side of street Gas Line	64’
G-7	49	Manchester Ter	Manchester Dr	357’	Large 36” recycled water pipe, e/o center 12” water pipe, east side of street 12” sewer pipe, west side of street 12” water pipe, west side of street Gas Line	67’
G-7	50	Manchester Dr	Manchester Blvd	408’	Large 36” recycled water pipe, e/o center 12” water pipe, east side of street 12” sewer pipe, west side of street 12” water pipe, west side of street Gas Line	71’

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
G-8	51	Manchester Blvd	Nutwood Ave	377’	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60” DWP line on east side Large 36” recycled water Storm drain and gas lines 10”CIP	94’
E-2	27	Nutwood St	Kelso St-Pincay Dr	654’	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60” DWP line on east side Large 36” recycled water Storm drain and gas lines 10” CIP	90’
E-3	28	Kelos St-Pincay Dr	La Palma Dr	536’	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60” DWP line on east side Large 36” recycled water Storm drain and gas lines 10” CIP	90’
E-4 E-5	29	La Palma Dr	Arbor Vitae St	939’	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60” DWP line on east side Large 36” recycled water Storm drain and gas lines 10” CIP	90’
E-6 E-7	30	Arbor Vitae St	Hardy St	1346’	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60” DWP line on east side Large 36” recycled water Storm drain and gas lines 8” AC	90’

					8” Sewer Pipes	
E-8 E-9 E-10	31	Hardy St	Century Blvd	1295’	Large electrical (16kva, 17.5 kva, 50 kva) lines Large 60” DWP line on east side Large 36” recycled water Storm drain and gas lines 8” AC 8” Sewer Pipes	90’

2.3 Option C: Arbor Vitae Avenue Alignment

The Arbor Vitae Alignment (Option C) is also an aerial alignment that runs approximately 2 miles along Arbor Vitae St from Aviation Boulevard to Prairie Avenue where it transitions south (and potentially north) along Prairie Avenue for approximately half a mile to Century Boulevard providing service to the Forum, the Hollywood Park Development (NFL Stadium), and the Clippers Arena. Option C is the most direct connection between these venues and development to the Metro Airport Connector 96th Street Transit Station and presents opportunity for future connection to a planned regional multi-modal hub served by both Metro's Crenshaw/LAX and Green Line, various Metro and municipal bus lines, and LAWA's APM system.

Figure 7: Option C: Arbor Vitae Alignment

Legend

- Option C: Potential Stations
- Metro Crenshaw Line
- Metro Green Line
- Possible Intermodal Facility

2.3.1 Option C Utility Analysis

There are various types of utilities throughout the northern portion of Market Street, Manchester Boulevard, and Prairie Avenue. As shown in Figure 3, several utility companies maintain the operation of water, sewer, power, cable and phone services in the corridor.

The potable water in the City of Inglewood is supplied by the City, Golden State Water Company, and Cal - America Water Company. Water pipes are located along Market Street, Manchester Boulevard, and Prairie Avenue. The Department of Water and Power (DWP) and the West Basin Municipal Water District also have major pipe lines, 60-inch and 36-inch along Prairie Avenue.

The main lines of the storm drain system in the City of Inglewood are jointly maintained by the Los Angeles County Flood Control District (LACFCD) and the City of Inglewood. The storm drains lines along Prairie Avenue consist of Reinforced Concrete Pipe (RCP) and Reinforced Concrete Box (RCB).

The existing sewer system in the City of Inglewood is owned by both the City and the County and information was provided by the City of Inglewood. Electrical power is supplied by the Southern California Edison Company and the City's Natural gas is provided by the Southern California Gas Company (Transmission Department and Northwest Distribution Region). Arbor Vitae, and Prairie Avenue are well covered with a natural gas facility network and the existing gas lines range in sizes from 1 to 8 inches. Figure 8 illustrates utilities located along Option C at a high level. For a more detailed description of the utilities please see Attachment A and B.

Preliminary Analysis

The most significant utilities identified as part of preliminary research for this alignment alternative include an 8 to 10-inch sewer pipe along the centerline of Arbor Vitae Street between Eucalyptus Ave and La Brea Ave, 36-inch recycled water line along Prairie Ave street centerline that has been identified within 15 ft to the preliminary alignment, large 60-inch DWP water main and a 33-inch storm drain line are located at the east side of Prairie, approximately 20 to 40 feet from centerline (see Figure 8). Together, these utilities may pose significant obstacles but would not be considered infeasible at this stage.

Underground electrical lines, including vaults, are primarily concentrated along or adjacent to sidewalks do not pose a major impediment. Non-gravity flow utilities, including water service lines, may be relocated vertically (lowered) in lieu of horizontal relocation.

In short, due to narrowing of the right-of-way east of Eucalyptus Ave (shown in Figure 9), there are potential major impacts to existing small businesses and possible neighborhood displacement. During detailed design of the preferred alternative, the City will conduct site investigations for exact utility locations and coordinate column placements to avoid/resolve conflicts or relocate utilities based on cost/benefit to the project.

Figure 8: Utilities along Option C: Fairview Heights

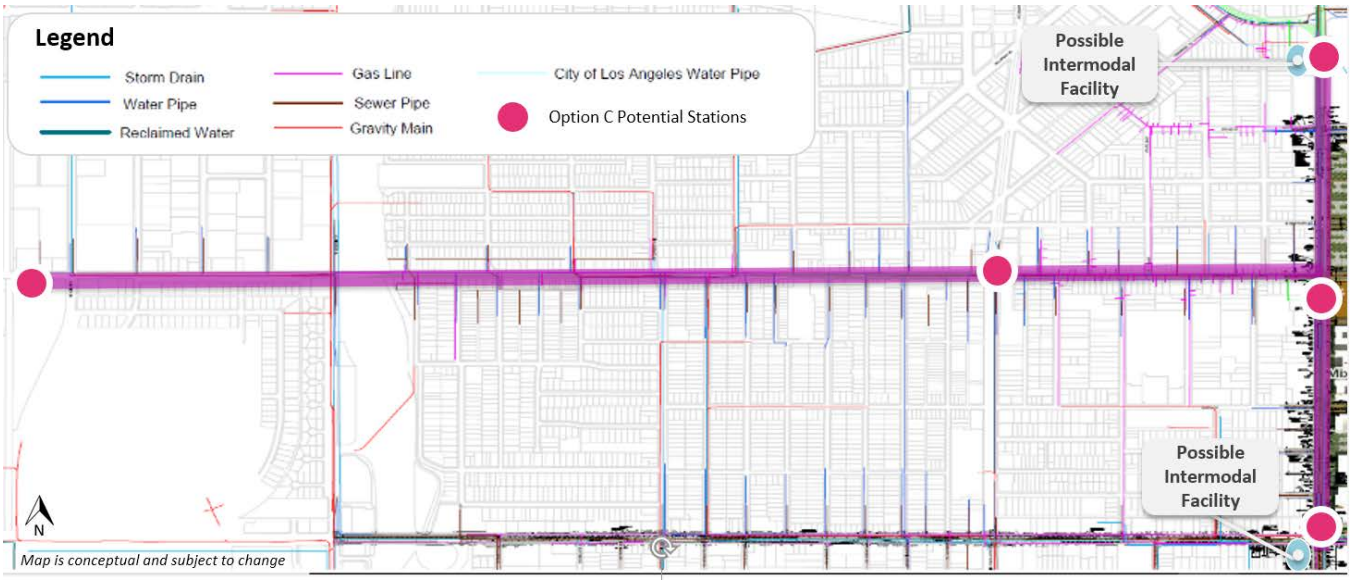


Figure 9: Option C Right-of-Way Analysis

Legend

- Less than 70'
- 70' to 79'
- 80' to 90'
- Greater than 90'
- Option C Potential Stations

Table 4: City of Inglewood Utilities
Option C: Arbor Vitae Alignment

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
ARBOR VITAE STREET						
A-1	1	Aviation Blvd	Isis Ave	507’	12” water pipe, centerline of street 8-10” sewer, north side of street Gas line, centerline of street	75’
A-1	2	Isis Ave	e/o Glasgow Ave	1320’	12” water pipe, centerline of street 8-10” sewer, north side of street Gas line, centerline of street	117’
A-1	3	e/o Glasgow Ave	La Cienega Blvd	235’	12” water pipe, centerline of street 8-10” sewer, north side of street Gas line, centerline of street	66’
A-2	4	La Cienega Blvd	w/o Ash Ave	474’	12” water pipe, north side of street Gas line, north side of street	66’
A-2	5	w/o Ash Ave	Kenwood St	518’	12” water pipe, north side of street Gas line, north side of street	70’
A-2	6	Kenwood St	Cedar Ave	935’	12” water pipe, north side of street Gas line, north side of street	80’
A-2	7	Cedar Ave	Inglewood Blvd	652’	12” water pipe, north side of street 8” sewer pipe, south side of street Gravity main, south of center line	80’
A-3	8	Inglewood Blvd	Eucalyptus Ave	665’	12” water pipe, north side of street 8” sewer pipe, south side of street Gravity main, south of center line	73’
A-3	9	Eucalyptus Ave	Walnut St	910’	12” water pipe, north side of street 8” sewer pipe, centerline of street	73’
A-3	10	Walnut St	La Brea Ave	1086’	12” water pipe, north side of street 8” sewer pipe, centerline of street Gas line, north side of street	73’

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
A-4	11	La Brea Ave	Myrtle Ave	1300’	12” water pipe, north side of street 8” sewer pipe, centerline of street Storm drain, south of street Gravity main, south of center line Gas line, north side of street	66’ (80’- Master Plan)
A-5	12	Myrtle Ave	Flower St	468’	12” water pipe, north side of street 8” sewer pipe, centerline of street Storm drain, south of street Gravity main, south of center line Gas line, north side of street	66’ (80’- Master Plan)
A-5	13	Flower S	Prairie Ave	885’	12” water pipe, north side of street 8” sewer pipe, centerline of street Gas line, north side of street	66’ (80’- Master Plan)
PRAIRIE AVENUE						
E-6 E-7	30	Arbor Vitae	Hardy St	1346’	Large electrical (16kva, 17.5kva, 50kva) lines Large 60” DWP line on east side Large 36” recycled water Storm drain and gas lines	90’
E-8 E-9 E-10	31	Hardy St	Century Bl	1295’	Large electrical (16kva, 17.5 kva, 50kva) lines Large 60” DDWP line on east side Large 36” recycled water Storm drain and gas lines 8” AC 8” Sewer Pipes	90’

2.4 Option D: Century Boulevard Alignment

The Century Boulevard Alignment (Option D) is an aerial alignment that runs approximately 2 miles along Century Boulevard from Aviation Boulevard to Prairie Avenue where it transitions north along Prairie for approximately one mile to south of Manchester Boulevard providing service to the Forum, the Hollywood Park Development (NFL Stadium), and Inglewood's Basketball and Entertainment Center.

Figure 10: Option D: Century Blvd Alignment

Legend

- Option D Century Boulevard
- Metro Crenshaw Line
- Metro Green Line
- Possible Intermodal Facility

2.4.1 Option D Utility Analysis

There are various types of utilities throughout Century Boulevard and Prairie Avenue. As shown in Figure 11, several utility companies maintain the operation of water, sewer, storm drain, power, cable, and phone services in the corridor.

The potable water in the City of Inglewood is supplied by the City, Golden State Water Company, and Cal - America Water Company and have water pipes located along Prairie Blvd and Century Blvd. The Department of Water and Power (DWP) and the West Basin Municipal Water District also have major pipe lines, 60 inches and 36-inch waterline along Prairie Ave and Century Blvd.

The main lines of the storm drain system in the City of Inglewood are jointly maintained by the Los Angeles County Flood Control District (LACFCD) and the City of Inglewood. Numerous storm drain lines and catch basin connections are located at intersections.

The existing sewer system in the City of Inglewood is owned by the City and the County and information was provided by the City of Inglewood. Electrical power is supplied by the Southern California Edison Company and the City's Natural gas is provided by the Southern California Gas Company. Utility information was gathered by Transmission Department and Northwest Distribution Region. Century Boulevard and Prairie Avenue are well covered with natural gas facility network and the existing gas lines range in sizes from 1 to 8 inches.

Overhead power lines are located along and crossing Century Boulevard from east of Felton Avenue to Condon Avenue. Clearance requirements for these power lines should be considered when evaluating this alignment. Additional underground electrical lines are located along Option D including crossings between Grevillea and Burn Ave and at the intersection of Prairie Avenue and Century Blvd. Figure 11 illustrates utilities located along Option D at a high level. For a more detailed description of the utilities please see Attachment A.

Preliminary Analysis

In short, although Century Boulevard has a wide ROW of at least 100 feet (illustrated in Figure 12) and continuous center median, major utilities are located along Century Blvd and pose significant conflicts. Major property acquisitions or a major utility relocation effort are required if Option D is the selected alternative. The Interstate 405 freeway crosses Century Boulevard with a single 100-foot bridge span cross Interstate 405 over or under.

As part of the detailed design of preferred alternative, the City will conduct site investigations to determine exact utility locations and coordinate column placements to avoid/resolve conflicts or relocate based on cost/benefits.

Figure 11: Utilities along Option C: Century Blvd

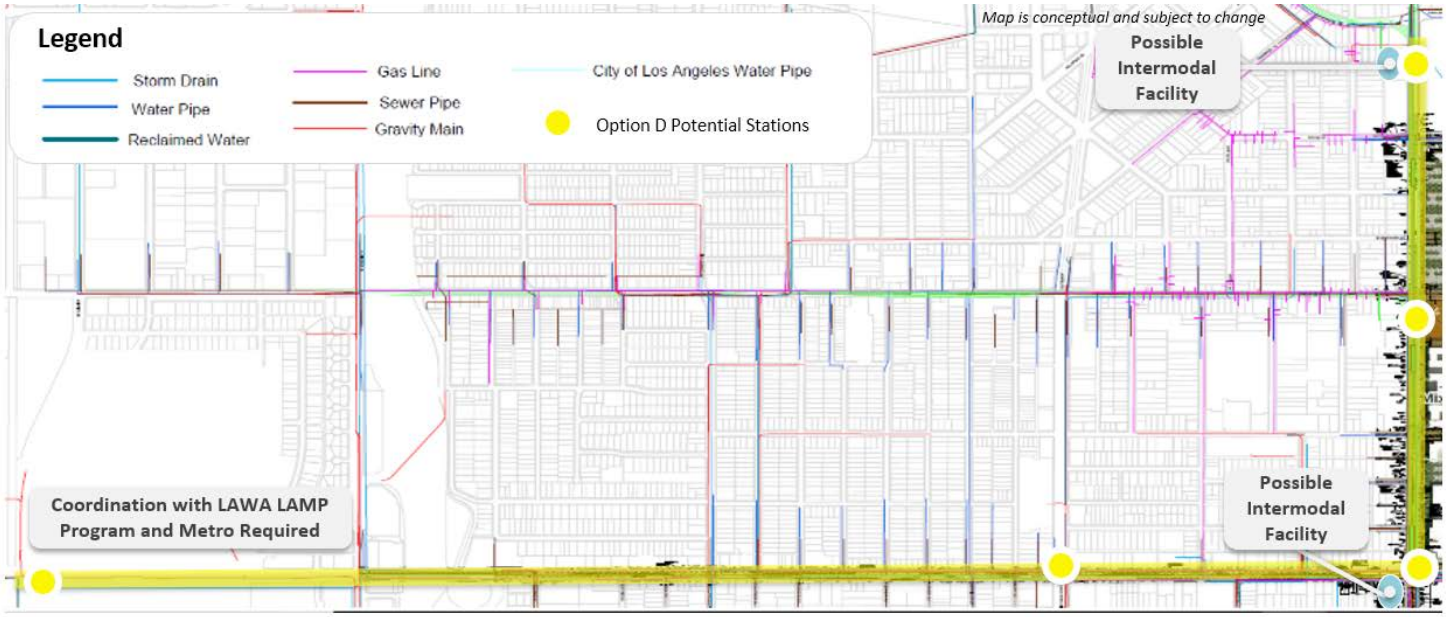


Figure 12: Option C Right-of-Way Analysis

Legend

- Less than 70'
- 70' to 79'
- 80' to 90'
- Greater than 90'
- Option C Potential Stations

Table 5: City of Inglewood Utilities
Option C: Century Blvd Alignment

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
CENTURY BOULEVARD						
F-1	33	Aviation Blvd	La Cienega Blvd	2476’	N/A	115-139’
F-1	34	La Cienega Blvd	I-405 NB Ramps	1042’	36” L.A. water pipe, near center of street 16” water pipe, north side of street 10” sewer pipe, north side of center line Numerous small utilities, SS, T, G, W	110’
F-2	35	I-405 NB Ramps	Felton Ave	287’	36” L.A. water pipe, near center of street 16” water pipe, north side of street 10” sewer pipe, north side of center line Numerous small utilities, SS, T, G, W 27” sewer line, 21” sewer line 10” sewer line and 8” sewer line	100’
F-3	36	Felton Ave	Burl Ave	991’	36” L.A. water pipe, near center of street 16” water pipe, north side of street 10” sewer pipe, near center of street Numerous small utilities, SS, T, G, W 27” sewer line, 21” sewer line 10” sewer line and 8” sewer line	91’ (100’ Master Plan)

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
F-4	37	Burl Ave	Inglewood Ave	334’	36” L.A. water pipe, near center of street 16” water pipe, north side of street 10” sewer pipe, near center of street Numerous small utilities, SS, T, G, W 27” sewer line, 21” sewer line 10” sewer line and 8” sewer line Gravity main, north side of street	82’ (100’ Master Plan)
F-4	38	Inglewood Ave	Condon Ave	673’	36” L.A. water pipe, near center of street 16” water pipe, north side of street 10” sewer pipe, near center of street Numerous small utilities, SS, T, G, W 27” sewer line, 21” sewer line 10” sewer line and 8” sewer line Gravity main, north side of street	95’ (100’ Master Plan)
F-5 F-6	39	Condon Ave	Hawthorne Blvd	1928’	36” L.A. water pipe, near center of street 16” water pipe, north side of street 10” sewer pipe, near center of street Numerous small utilities, SS, T, G, W 27” sewer line, 21” sewer line 10” sewer line and 8” sewer line Gravity main, north side of street	100’

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
F-7	40	Hawthorne Blvd	Myrtle Ave	1091’	36” L.A. water pipe, near center of street 16” water pipe, north side of street 10” sewer pipe, near center of street Numerous small utilities, SS, T, G, W 27” sewer line, 21” sewer line 10” sewer line and 8” sewer line	100’
F-8 F-9	41	Myrtle Ave	Prairie Ave	1559’	36” L.A. water pipe, near center of street 16” water pipe, north side of street 10” sewer pipe, near center of street Numerous small utilities, SS, T, G, W 27” sewer line, 21” sewer line 10” sewer line and 8” sewer line Gravity main, south of center line	100’
PRAIRIE AVENUE						
E-1	26	Manchester Blvd	Nutwood St	377’	Large electrical (16kva, 17.5kva, 50kva) lines Large 60” DWP line on east side Large 36” recycled water Strom drain and gas lines	94’
E-2	27	Nutwood St	Kelso St – Pincay Dr	654’	Large electrical (16kva, 17.5kva, 50kva) lines Large 60” DWP line on east side Large 36” recycled water Strom drain and gas lines 10”CIP	90’

Exhibit	Segment ID	To	From	Segment Length (ft)	Utilities	Right-of-Way (ROW)
E-3	28	Kelso St-Pincay Dr	La Palma Dr	536’	Large electrical (16kva, 17.5kva, 50kva) lines Large 60” DWP line on east side Large 36” recycled water Strom drain and gas lines 10” CIP	90’
E-4 E-5	29	La Palma Dr	Arbor Vitae St	939’	Large electrical (16kva, 17.5kva, 50kva) lines Large 60” DWP line on east side Large 36” recycled water Strom drain and gas lines 10” CIP	90’
E-6 E-7	30	Arbor Vitae St	Hardy St	1346’	Large electrical (16kva, 17.5kva, 50kva) lines Large 60” DWP line on east side Large 36” recycled water Strom drain and gas lines 8” AC 8” Sewer Pipes	90’
E-8 E-9 E-10	31	Hardy St	Century Bl	1295’	Large electrical (16kva, 17.5kva, 50kva) lines Large 60” DWP line on east side Large 36” recycled water Strom drain and gas lines 8” AC 8” Sewer Pipes	90’

2.5 CONCLUSIONS

Based on a preliminary review and inventory of existing utilities and information currently available located within the vicinity of the proposed alignments, various utility relocations obstacles, right-of-way impacts, and design considerations have been identified.

In addition to typical surface improvements, it is anticipated that existing utility infrastructure elements at various locations will need to be reconfigured or protected in place to accommodate the transit project components, including guideway slabs, columns, footings, and supporting infrastructure.

As noted above, the most significant utility impacts are attributed to major utilities along the centerline of streets and/or within close proximity of the projected transit alignments as they may pose obstacles in the placement of the guideway columns. Conflicts with existing utility infrastructure identified in this preliminary analysis can be avoided through design, avoided, or through technically viable relocation. This analysis identifies design requirements for future consideration to avoid relocation of major systems, i.e. 60-inch water main line, LADWP vaults and the high voltage transmission lines. Numerous but minor utility lines and lateral connections are located in close proximity to the transit alignments. These utilities, if cannot be avoided, may be sleeved through foundations in lieu of relocations.

TECHNICAL MEMORANDUM

Inglewood Transit Connector Project - Ridership Analysis

This memorandum documents the summary of results and analysis of the projected ridership for the Inglewood Transit Connector Project. The methods used to estimate the anticipated ridership for each proposed alignment and the resulting ridership projections that are used as the basis of comparison between the alignments currently under study by the City of Inglewood are also provided in this memo.

RIDERSHIP ANALYSIS

This analysis took into consideration the unique qualities of the Inglewood Transit Connector that make it different from a traditional urban/metro regional transit system. These qualities include:

- Compared to a traditional urban/metro transit system which provides regional connectivity, the Inglewood Connector provides the "final mile" connectivity between the Los Angeles Metro system to key facilities and trip generators within the City of Inglewood; based on the different alignments under consideration, the route length is small (approximately 1 to 3 miles).

- Key trip generators are the various venues within the Inglewood Sports and Entertainment District including the NFL Stadium, The Forum, a Performance Arena and the Inglewood Basketball and Entertainment Center (Clippers Facility). The travel demands will be driven by scheduled events with peak demands expected to be multiple times higher than normal work day and weekend demands.

The goal is to develop and establish the anticipated demands over the year (which are expected to fluctuate over months, weeks and days of the week) to provide a basis for developing the anticipated operational scenarios, the appropriate technology and to provide data in support of developing rough order of magnitude costs as part of a techno-economic viability analysis.

As such, the typical regional planning models used for estimating ridership on a typical urban/metro transit system must be supplemented with additional analysis and models. The following key issues must be addressed, to the extent possible given the available information / data, to provide a reasonable concept planning level estimate of the anticipated users of the Inglewood Connector transit system:

1. Establish “non-event normal day” anticipated users (based on a calibrated and validated regional travel demand model) for the typical work weekday and weekend days. The estimates should address the hourly distribution over the day (per direction) with origin / destination such that the non-event normal day peak ridership can be estimated.

2. Establish “special events (event day)” anticipated users. This will be informed by specific data on the anticipated events, distribution of the events over the year, days of week, time of day, as well as anticipated attendees, their anticipated transportation mode and their arrival/departure profiles to the events.

   Event based information should be tabulated based on the venue of the event, the type of event (ex: small, medium and large), the day and time of the event and anticipated transportation mode.

3. For event based anticipated transit system users, develop estimates of peak hour demand (and direction), the duration/length and time of the peak hour, and the anticipated duration of the event-based demand. This should be established for each event.

4. Establish the total anticipated user demand by overlapping the “non-event normal day” ridership with event-based ridership estimates. This should, to the extent possible, be established over days of the week, weeks of the month and months of the year.

RIDERSHIP METHODOLOGY

Having established the requirements and parameters for ridership estimation, a detailed ridership estimation methodology was developed.

This section provides a summary of the ridership estimation methodology as well as the analyses and discussion of results associated with simulation of the Inglewood Connector Alignment Alternatives. The overall ridership estimation process involves the following scenarios:

1. Weekday non-event conditions
2. Weekend non-event conditions
3. Weekday/Weekend Event conditions individually at the Forum, NFL Stadium, the 6,000-seat Performance Arena, and the Inglewood Basketball and Entertainment Center (IBEC)
4. Estimation of overall yearly non-event and event conditions' ridership using information on low and high estimates during events and the number of such events over an entire year. Additionally, average event conditions along with non-event conditions ridership estimates for each of the alignment alternatives under considerations have also been developed

The Weekday non-event conditions were simulated using the latest Southern California Association of Governments (SCAG) 2016 RTP / SCS Model, the SCAG 2012 Regional Model including updates to SED databases and transit networks to reflect the various Inglewood Connector transit alternatives as well as operational scenarios and associated transit base-network changes. The Weekend days non-event conditions were estimated by normalizing weekday ridership estimates using specific weekday and weekend day transit utilization in the study area, provided by Metro.

The Event-day conditions were simulated using a spreadsheet-based model based on the METRO's mode-split model and actual data related to the event attendees' zip-code information. The NFL game attendees included information on the ticket sales data while all other attendees at events at all venues included information on distribution of population by zip-code derived from the SCAG 2012 Regional Model.

Details of the modeling process used as part of the ridership estimation process are provided in the following section.

Weekday Non-Event Conditions Forecasts

The Southern California Association of Governments 2012 Regional Model (Model) is a complex, state-of-the-art regional travel demand forecasting model that has been used as the base model for this work effort. The Model is a four-step trip-based model including Trip Generation, Trip Distribution, Mode Split and Assignment sub-models. The Model covers all six-county region within the southern California area, and divides the Model area into 4,109 Tier 1 sequential internal Traffic Analysis Zones (TAZs) and 11,267 Tier 2 sequential internal TAZs. Detailed Socio-economic and Demographic (SED) input data are included within the Model set-up files.

The SCAG Trip Generation Models estimate the number of trips produced and attracted within each TAZ (a geographic area that forms the fundamental unit of analysis for the entire process) on a daily basis. The trip production models are cross-classification models while the trip attraction models are regression models. The trip generation models estimate the amount of travel beginning and ending in each production zone (home) and attraction zone (non-home) for each of the trip purposes. The SCAG model estimates the trip ends at Tier 2 zone levels.

The SCAG Trip Distribution Models estimate the person trips associated between each pair of zones at Tier 2 zone level and prepare trip tables (matrices) by trip purpose. Most of the trip purpose trip distribution models are destination choice models, except for Home-based School and Home-based College University trip purposes that are gravity models.

The SCAG Mode Split Models take the zone-to-zone person trips from the trip distribution models and determine the various travel modes that these person trips take: non-motorized modes (walk and bike), auto modes (drive alone and carpool) and transit modes (drive, walk, and walk and drive access). The SCAG mode-choice model uses a nested-logit formulation.

The SCAG Time-of-Day Choice Models convert the peak/off-peak production-attraction trip tables (PA) from Mode Choice models to time-of-day origin-destination (OD) format using trips-in-motion diurnal factors. Additionally, Heavy Duty Truck Models are applied to generate trip tables for each of the Light, Medium and Heavy- Heavy Duty Trucks and these trip tables are aggregated with the above trip tables and internal-external and external-to-external trip tables to create the OD trip tables for auto assignment. Transit trip tables in Production-Attraction format for peak (AM and PM) and off-peak conditions are also prepared for transit assignment.

The SCAG Assignment Models include the Highway Assignment and Transit Assignment procedures. Assignment models include a static, multi-class user equilibrium highway assignment to the highway network and a multi-path (Pathfinder) transit assignment to the transit network. The transit assignment involves loading transit trips in production-attraction format, and for two time periods, peak and off-peak to the transit network.

The SCAG Model set-up includes detailed geo-referenced highway and transit networks with specific attributes that are necessary to conduct the model simulation runs along with numerous associated assumptions and parameters. The Model performs the Trip Generation, Distribution and Mode Split Steps at Tier 2 zone level and then conducts the PA to OD and Traffic Assignment Steps at Tier 1 level.

Additional details associated with the SCAG Model can be found in the document *SCAG Regional Travel Demand Model and 2012 Model Validation, prepared by SCAG, March 2016*.

The following updates to the Model were performed:

1. **Update of Socio-Economic & Demographic Input files:**
    a. Compilation of Related Projects and Geo-coding the same to identify the SCAG Tier 1 TAZ and Tier 2 TAZ that these Projects fall within

    b. Computation of the SED / Demographic data growth in the Model (between Current and Future (2040) conditions) at both Tier 1 and Tier 2 TAZ levels

    c. Computation of SED / Demographic data growth at the geo-referenced Tier 1 and Tier 2 TAZ levels due to the Related Projects

    d. Comparison of the SED / Demographic data growth in the Model with the corresponding growth identified due to the Related Projects at both the Tier 1 and Tier 2 TAZ levels

    e. Reconciliation and update of the SED input files at both TAZ levels. There are several (thirteen) files with numerous fields that are updated as part of this process to maintain consistency between the various files used as input to the modeling process

Details of related projects including location, type of use, size and associated updates of the SED input databases as well as a detailed discussion of growth projections within the study area are provided in the Technical Memorandum included as Attachment A to this document.

2. Update of Transit Network Route System and Stops Input Files:

Several Inglewood Transit Connector alignment options are evaluated. They include:

1. Market-Manchester-Prairie Alignment
2. Arbor Vitae – Prairie Alignment
3. Century Boulevard – Prairie Alignment, and
4. Florence Avenue – Prairie Alignment

The transit network route system and stops files were updated to reflect the base transit network updates including the operational scenarios associated with the Crenshaw-LAX Transit line, and other overall regional transit network updates. Next, each of the above Inglewood Connector transit alignment alternatives were implemented in the SCAG Model. Details of the transit network updates to reflect each of the above alternative alignments including line attributes and stop attributes associated with each of them are provided in Attachment B.

Future (2040) Transit Ridership Estimates for Non-Event Normal Weekday Conditions

For each of the alignment alternatives, model simulations were performed, and transit ridership estimate results were compiled. These estimates were normalized to Metro Model estimates based on the trip productions and attractions within the Inglewood Sports and Entertainment District. The final transit ridership estimates for each of the alignment alternatives on a non-event normal weekday are presented in Table 1. Additionally, time of day estimates by the hour were derived based on the estimated percentages of travel in the service area during various hours of a typical weekday. These hourly transit ridership estimates for each of the alignment alternatives are included in Attachment C.

TABLE 1
YEAR 2040 LINE LEVEL RIDERSHIP (NON-EVENT, NORMAL COMMUTER WEEKDAY) ESTIMATES

	Ridership (on-line)		
	Peak Total (40% AM/60% PM)	Off-Peak Total (80% MD/20% NT)	Total
ITC Market-Manchester Alignment APM	3,717	1,252	4,969
ITC Fairview Heights Alignment APM	2,118	938	3,057
ITC Arbor Vitae Alignment APM	2,340	1,056	3,396
ITC Century Alignment ITC	4,194	1,789	5,982

Weekend Day Non-Event Conditions Forecasts

Travel demand models are not available for weekend days. However, transit service characteristics and demand data are available for all days of the week. Observed transit ridership and service characteristics in the year 2017 available on weekdays, Saturdays and Sundays were utilized to compute the relative utilization of the transit system. Utilizing these percentages of weekend day transit supply and demand in relationship to similar parameters for the weekday, ridership estimates for each of the alignment alternatives were derived for Saturday and Sunday conditions. These weekend non-event day estimates for Saturday and Sunday, derived as noted above, are presented in Tables 2 and 3, respectively.

Event Day Conditions Forecasts

As noted earlier, event-day conditions are simulated using a set of 'special events' spreadsheet-based models for each type of event at each venue. These 'special events' models involve the following key steps:

- Establish transit accessibility using service characteristics and data available within the Metro's Transportation Analysis Model.

- Compile data containing ZIP code information of home game ticket sales for the 2016 LA Rams season to establish the locations and where the largest numbers of attendees to the LA Rams NFL home-games were traveling from.

- Compile data containing ZIP code information of population distribution from the SCAG 2012 Regional Model to establish the locations and where the largest numbers of attendees to all the various types of events (other than NFL games) at each of the venues were traveling from.

- Identify assumptions relative to baseline mode shares of eligible attendees for all types of events at each of the venues. For NFL games, the mode shares were developed based on observed data from other NFL Stadiums. For the other types of events, a conservative baseline mode share was assumed to identify an applicable range of eligible attendees in the model.

TABLE 2
YEAR 2040 LINE LEVEL RIDERSHIP (NORMAL COMMUTER WEEKEND - SATURDAY)

	2040 Ridership Total	AM 6-9 12.75%	Base 9-3 43.28%	PM 3-7 28.44%	NT 7-End 15.53%
ITC Market-Manchester Alignment APM	3,228	412	1,397	918	501
ITC Fairview Heights Alignment APM	1,986	253	859	565	308
ITC Arbor Vitae Alignment APM	2,206	281	955	627	343
ITC Century Alignment ITC	3,886	495	1,682	1,105	604

TABLE 3
YEAR 2040 LINE LEVEL RIDERSHIP (NORMAL COMMUTER WEEKEND - SUNDAY)

	2040 Ridership Total	AM 6-9 12.75%	Base 9-3 43.28%	PM 3-7 28.44%	NT 7-End 15.53%
ITC Market-Manchester Alignment APM	2,733	348	1,183	777	424
ITC Fairview Heights Alignment APM	1,681	214	728	478	261
ITC Arbor Vitae Alignment APM	1,868	238	808	531	290
ITC Century Alignment ITC	3,290	420	1,424	936	511

The special events model is similar to the "Events-Based Model" used in the *City of Champions (NFL) Focused Analysis of Transit Connection Study prepared by METRO and AECOM, July 2017*. The input data and some of the assumptions used in the model relative to the venue-based events have been updated and refined for use in this Study. The walk-access to transit was limited to two or fewer transfers, while the drive access to transit was limited to one or fewer transfers.

The special events model was applied for each type of event at each of the venues to estimate ridership for each of the Inglewood Connector Alignment Alternative, after the transit accessibility and mode splits were established. A low and high baseline transit mode share was applied for each of type of event coincident with a low and high attendance at each of the venues to produce a low and high estimate of ridership associated with types of events at each of the venues for each of the Alignment Alternatives.

A discussion of the assumptions, parameters and results associated with each type of event at each of the venues (NFL Stadium, The Forum, IBEC-Clippers, and 6,000-seat Performance Arena) for the four transit connector alignment alternatives follows.

NFL Stadium Events and Ridership Estimates

The Stadium venue is anticipated to host the following types of events, for the purposes of estimating ridership for the four Inglewood Connector transit alignment alternatives:

- NFL home game for the LA Rams
- NFL home game for the LA Chargers
- Medium-sized Events
- Small-sized Events

The NFL Stadium within the Inglewood Sports and Entertainment District would have 72,000 seats, with approximately 10,000 parking spaces on-site. A brief description of each of the above, follows.

There would be 10 NFL LA Rams home games. For a LA Rams home game, it is anticipated that a low estimate of attendance would be 60,000 and a high estimate of attendance would be 72,000. The range of employees for a low and high attendance LA Rams NFL home game is anticipated to be 5,000 to 6,000 employees, respectively. The transit connector ridership ranged from a low of approximately 4,800 to a high of 10,300 on a LA Rams home game day. The profiles of arrivals and departures based on observations at other NFL Stadia were also applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

It is anticipated that there would be 10 NFL LA Chargers home games. For estimating the LA Chargers home games ridership, a low and high estimate of 45,000 to 54,000 attendees were assumed with employees ranging from 3,750 to 4,500. The transit connector ridership ranged from a low of approximately 3,500 to a high of 7,800 on a LA Chargers home game day. The profiles of arrivals and departures based on observations at other NFL Stadia were also applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

It is anticipated that there would be 8 Medium-sized events. For Medium-sized events at the Stadium venue, assumptions relative to attendance ranged from a low of 40,000 to a high of 60,000 with employees ranging from 2,000 to 3,000, respectively. The transit connector ridership ranged from a low of approximately 2,900 to a high of 7,900 on a Medium-sized event day. The profiles of arrivals and departures based on events at other venues were also applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

It is anticipated that there would be 20 Small-sized events. For Small-sized events, attendance figures were assumed to be between 10,000 and 25,000 with employees ranging from 600 to 1,500, respectively. The transit connector ridership ranged from a low of approximately 725 to a high of 3,300 on a Small-sized event day. Again, the profiles of arrivals and departures based on events at other venues were also applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

The Forum Events and Ridership Estimates

The Forum venue is anticipated to host the following types of events, for the purposes of estimating ridership for the four Inglewood Connector transit alignment alternatives:

- Large-sized Event
- Medium-sized Event
- Small-sized Events

Based on the Forum events breakdown in 2017, it is anticipated that 37 large-sized events, 29 medium-sized events, and 16 small-sized events would occur, for the purposes of estimating overall annual ridership associated with the four Inglewood Connector transit alignment alternatives. A brief description of the assumptions, parameters and ridership for each of the above three types of events follows.

For a large-sized event at the Forum, it is anticipated that a low estimate of attendance of 12,000 and a high estimate of attendance of 17,500 would occur. The range of employees for a low and high attendance Forum large-sized event is anticipated to be 600 to 875 employees, respectively. The transit connector ridership ranged from a low of approximately 870 to a high of 2,300 on a Forum large-sized event day. The profiles of arrivals and departures for arenas were applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

For a medium-sized event at the Forum, it is anticipated that a low estimate of attendance of 8,000 and a high estimate of attendance of 12,000 would occur. The range of employees for a low and high attendance Forum medium-sized event is anticipated to be 400 to 600 employees, respectively. The transit connector ridership ranged from a low of approximately 580 to a high of 1,600 on a Forum medium-sized event day. The profiles of arrivals and departures for arenas were applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

For a small-sized event at the Forum, it is anticipated that a low estimate of attendance of 4,000 and a high estimate of attendance of 8,000 would occur. The range of employees for a low and

high attendance Forum small-sized event is anticipated to be 200 to 400 employees, respectively. The transit connector ridership ranged from a low of approximately 290 to a high of 1,055 on a Forum small-sized event day. Again, the profiles of arrivals and departures for arenas were applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

Inglewood Basketball and Entertainment Center (IBEC-Clippers) Events and Ridership Estimates

The IBEC venue is anticipated to host the following types of events, for the purposes of estimating ridership for the four Inglewood Connector transit alignment alternatives:

- NBA Game
- Large-sized Event
- Medium-sized Event
- Small-sized Events

Based on the anticipated IBEC events, an assumption that 44 NBA (Clippers) games, 31 large-sized events, 13 medium-sized events, and 17 small-sized events has been made. These event statistics are utilized in the estimation of overall annual ridership associated with the four Inglewood Connector transit alignment alternatives. A brief description of the assumptions, parameters and ridership for each of the above four types of events follows.

For an IBEC NBA game event, it is anticipated that a low estimate of attendance of 15,000 and a high estimate of attendance of 18,500 would occur. The range of employees for a low and high attendance IBEC NBA game event is anticipated to be 750 to 925 employees, respectively. The transit connector ridership ranged from a low of approximately 1,090 to a high of 2,440 on an IBEC NBA game event day. The profiles of arrivals and departures for basketball arenas were applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

For an IBEC large-sized event, it is anticipated that a low estimate of attendance of 12,000 and a high estimate of attendance of 18,500 would occur. The range of employees for a low and high

attendance IBEC large-sized event is anticipated to be 600 to 925 employees, respectively. The transit connector ridership ranged from a low of approximately 870 to a high of 2,440 on an IBEC large-sized event day. The profiles of arrivals and departures for arena events were applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

For an IBEC medium-sized event, it is anticipated that a low estimate of attendance of 8,000 and a high estimate of attendance of 12,000 would occur. The range of employees for a low and high attendance IBEC medium-sized event is anticipated to be 400 to 600 employees, respectively. The transit connector ridership ranged from a low of approximately 580 to a high of 1,580 on an IBEC medium-sized event day. The profiles of arrivals and departures for arena events were applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

For an IBEC small-sized event, it is anticipated that a low estimate of attendance of 4,000 and a high estimate of attendance of 8,000 would occur. The range of employees for a low and high attendance IBEC small-sized event is anticipated to be 200 to 400 employees, respectively. The transit connector ridership ranged from a low of approximately 290 to a high of 1,055 on an IBEC small-sized event day. Again, the profiles of arrivals and departures for arenas were applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

Performance Arena Events and Ridership Estimates

The Performance Arena venue is anticipated to host approximately 75 events in a calendar year. The Arena has 6,000 seats. These assumptions are used for the purposes of estimating Performance Arena ridership for the four Inglewood Connector transit alignment alternatives.

A brief description of the assumptions, parameters and ridership for an event at the Performance Arena follows.

For a Performance Arena Event, it is anticipated that a low estimate of attendance of 4,000 and a high estimate of attendance of 6,000 would occur. The range of employees for a low and high

attendance Performance Arena event is anticipated to be 200 to 300 employees, respectively. The transit connector ridership ranged from a low of approximately 290 to a high of 800 on a Performance Arena event day. The profiles of arrivals and departures for performance arenas were applied to the ridership estimates to obtain the hourly distribution of ridership patterns associated with patrons' arrivals and departures for each of the four transit alignment alternatives.

Discussion of Ridership Results

Tables 4-1, 4-2, 4-3, and 4-4 provide a summary of event ridership profiles for each of the four Inglewood Connector transit alignment alternatives. These tables include ridership profiles for both low and high estimates, broken down by types of events at each of the venues.

Table 4-1 provides a summary of event ridership profiles for the Market-Manchester Prairie Alignment Alternative, while Table 4-2 provides the same information for the Arbor Vitae-Prairie Alignment Alternative. Table 4-3 provides the summary of event ridership profiles for the Century-Prairie Alignment Alternative while Table 4-4 provides the same information for the Florence-Prairie Alignment Alternative.

From these tables, the following key observations can be made:

1. All Alignment Alternatives serve all the Sports and Entertainment District Venues, by design.

2. The peak ridership estimate is projected for the LA Rams NFL game high estimate departure timeframe for all Inglewood Connector Alignment Alternatives. The variation in peak ridership estimates during that peak timeframe between these Alignment Alternatives is less than +/- 5%.

3. The ridership projections for the Market-Manchester-Prairie and Century-Prairie Alignments indicate that the maximum ridership estimate occurs on an NFL Rams game event day and is equivalent to 8,985 riders occurring in the one-hour timeframe after the game.

Detailed ridership estimates for each of the Inglewood Connector Alignment Alternatives by venue and type of event including profiles of arrivals and departures are provided in separate tables enclosed in Attachment D. These tables are provided for each type of event and indicate for each type of event at each venue, the hourly distribution of patronage associated with each of the four Inglewood Connector Alignment Alternatives.

TABLE 4-1
MARKET-MANCHESTER-PRAIRIE APM ALIGNMENT - EVENT RIDERSHIP PROFILE SUMMARY

VENUE	EVENT	NO. OF EVENTS	SERVICE HOURS	RIDERSHIP ESTIMATE PROFILES							
				LOW ESTIMATE				HIGH ESTIMATE			
				ARRIVAL[1]		DEPARTURE[2]		ARRIVAL[1]		DEPARTURE[2]	
NFL Stadium	NFL Game	20	8	> 2 hours 1-2 hours < 1 hour	731 1,453 3,276	During Game < 1 hour 1-2 hours	546 4,368 546	> 2 hours 1-2 hours < 1 hour	1,504 2,989 6,739	During Game < 1 hour 1-2 hours	1,123 8,985 1,123
	Medium Event	8	6	1-2 hours < 1 hour	1,382 1,843	< 1 hour 1-2 hours	2,534 691	1-2 hours < 1 hour	3,554 4,738	< 1 hour 1-2 hours	6,515 1,776
	Small Event	20	6	1-2 hours < 1 hour	353 461	< 1 hour 1-2 hours	637 177	1-2 hours < 1 hour	1,513 1,974	< 1 hour 1-2 hours	2,731 757
The Forum	Large Event	37	6	1-2 hours < 1 hour	415 553	< 1 hour 1-2 hours	760 207	1-2 hours < 1 hour	1,036 1,382	< 1 hour 1-2 hours	1,901 519
	Medium Event	29	6	1-2 hours < 1 hour	277 369	< 1 hour 1-2 hours	506 138	1-2 hours < 1 hour	711 948	< 1 hour 1-2 hours	1,303 355
	Small Event	16	6	1-2 hours < 1 hour	138 184	< 1 hour 1-2 hours	254 69	1-2 hours < 1 hour	474 632	< 1 hour 1-2 hours	868 237
IBEC	Clippers Game	44	7	1-2 hours < 1 hour	519 691	< 1 hour 1-2 hours	950 259	1-2 hours < 1 hour	1,096 1,461	< 1 hour 1-2 hours	2,009 548
	Large Event	31	6	1-2 hours < 1 hour	415 553	< 1 hour 1-2 hours	760 207	1-2 hours < 1 hour	1,096 1,461	< 1 hour 1-2 hours	2,009 548
	Medium Event	13	6	1-2 hours < 1 hour	277 369	< 1 hour 1-2 hours	506 138	1-2 hours < 1 hour	711 948	< 1 hour 1-2 hours	1,303 355
	Small Event	17	6	1-2 hours < 1 hour	138 184	< 1 hour 1-2 hours	254 69	1-2 hours < 1 hour	474 632	< 1 hour 1-2 hours	868 237
Performance Arena	Event	75	6	1-2 hours < 1 hour	138 184	< 1 hour 1-2 hours	254 69	1-2 hours < 1 hour	355 474	< 1 hour 1-2 hours	652 178

[1] Arrivals occurring prior to the event, travel southbound.
[2] Departures occurring post-event, travel northbound.

TABLE 4-2
ARBOR VITAE-PRAIRIE APM ALIGNMENT - EVENT RIDERSHIP PROFILE SUMMARY

VENUE	EVENT	NO. OF EVENTS	SERVICE HOURS	RIDERSHIP ESTIMATE PROFILES							
				LOW ESTIMATE				HIGH ESTIMATE			
				ARRIVAL[1]		DEPARTURE[2]		ARRIVAL[1]		DEPARTURE[2]	
NFL Stadium	NFL Game	20	8	> 2 hours 1-2 hours < 1 hour	694 1,381 3,112	During Game < 1 hour 1-2 hours	519 4,149 519	> 2 hours 1-2 hours < 1 hour	1,428 2,840 6,402	During Game < 1 hour 1-2 hours	1,067 8,537 1,067
	Medium Event	8	6	1-2 hours < 1 hour	1,306 1,741	< 1 hour 1-2 hours	2,395 653	1-2 hours < 1 hour	3,358 4,477	< 1 hour 1-2 hours	6,157 1,679
	Small Event	20	6	1-2 hours < 1 hour	334 435	< 1 hour 1-2 hours	602 167	1-2 hours < 1 hour	1,431 1,865	< 1 hour 1-2 hours	2,580 715
The Forum	Large Event	37	6	1-2 hours < 1 hour	392 522	< 1 hour 1-2 hours	718 196	1-2 hours < 1 hour	980 1,306	< 1 hour 1-2 hours	1,795 489
	Medium Event	29	6	1-2 hours < 1 hour	261 348	< 1 hour 1-2 hours	479 131	1-2 hours < 1 hour	672 895	< 1 hour 1-2 hours	1,231 335
	Small Event	16	6	1-2 hours < 1 hour	131 174	< 1 hour 1-2 hours	239 65	1-2 hours < 1 hour	448 597	< 1 hour 1-2 hours	821 224
IBEC	Clippers Game	44	7	1-2 hours < 1 hour	489 653	< 1 hour 1-2 hours	898 245	1-2 hours < 1 hour	1,035 1,380	< 1 hour 1-2 hours	1,899 518
	Large Event	31	6	1-2 hours < 1 hour	392 522	< 1 hour 1-2 hours	718 196	1-2 hours < 1 hour	1,035 1,380	< 1 hour 1-2 hours	1,899 518
	Medium Event	13	6	1-2 hours < 1 hour	261 348	< 1 hour 1-2 hours	479 131	1-2 hours < 1 hour	672 895	< 1 hour 1-2 hours	1,231 335
	Small Event	17	6	1-2 hours < 1 hour	131 174	< 1 hour 1-2 hours	239 65	1-2 hours < 1 hour	448 597	< 1 hour 1-2 hours	821 224
Performance Arena	Event	75	6	1-2 hours < 1 hour	131 174	< 1 hour 1-2 hours	239 65	1-2 hours < 1 hour	335 448	< 1 hour 1-2 hours	616 168

[1] Arrivals occurring prior to the event, travel eastbound.
[2] Departures occurring post-event, travel westbound.

TABLE 4-3
CENTURY-PRAIRIE APM ALIGNMENT - EVENT RIDERSHIP PROFILE SUMMARY

VENUE	EVENT	NO. OF EVENTS	SERVICE HOURS	RIDERSHIP ESTIMATE PROFILES							
				LOW ESTIMATE				HIGH ESTIMATE			
				ARRIVAL[1]		DEPARTURE[2]		ARRIVAL[1]		DEPARTURE[2]	
NFL Stadium	NFL Game	20	8	> 2 hours 1-2 hours < 1 hour	783 1,557 3,510	During Game < 1 hour 1-2 hours	585 4,680 585	> 2 hours 1-2 hours < 1 hour	1,504 2,989 6,739	During Game < 1 hour 1-2 hours	1,123 8,985 1,123
	Medium Event	8	6	1-2 hours < 1 hour	1,088 2,142	< 1 hour 1-2 hours	2,718 412	1-2 hours < 1 hour	2,610 5,141	< 1 hour 1-2 hours	6,525 989
	Small Event	20	6	1-2 hours < 1 hour	280 536	< 1 hour 1-2 hours	684 107	1-2 hours < 1 hour	1,121 2,142	< 1 hour 1-2 hours	2,735 429
The Forum	Large Event	37	6	1-2 hours < 1 hour	326 643	< 1 hour 1-2 hours	816 124	1-2 hours < 1 hour	761 1,499	< 1 hour 1-2 hours	1,904 289
	Medium Event	29	6	1-2 hours < 1 hour	218 428	< 1 hour 1-2 hours	543 82	1-2 hours < 1 hour	522 1,028	< 1 hour 1-2 hours	1,305 198
	Small Event	16	6	1-2 hours < 1 hour	108 214	< 1 hour 1-2 hours	272 41	1-2 hours < 1 hour	348 685	< 1 hour 1-2 hours	870 131
IBEC	Clippers Game	44	7	1-2 hours < 1 hour	408 803	< 1 hour 1-2 hours	1,020 155	1-2 hours < 1 hour	805 1,585	< 1 hour 1-2 hours	2,012 305
	Large Event	31	6	1-2 hours < 1 hour	326 643	< 1 hour 1-2 hours	816 124	1-2 hours < 1 hour	805 1,585	< 1 hour 1-2 hours	2,012 305
	Medium Event	13	6	1-2 hours < 1 hour	218 428	< 1 hour 1-2 hours	543 82	1-2 hours < 1 hour	522 1,028	< 1 hour 1-2 hours	1,305 198
	Small Event	17	6	1-2 hours < 1 hour	108 214	< 1 hour 1-2 hours	272 41	1-2 hours < 1 hour	348 685	< 1 hour 1-2 hours	870 131
Performance Arena	Event	75	6	1-2 hours < 1 hour	108 214	< 1 hour 1-2 hours	272 41	1-2 hours < 1 hour	261 514	< 1 hour 1-2 hours	653 99

[1] Arrivals occurring prior to the event, travel eastbound.
[2] Departures occurring post-event, travel westbound.

TABLE 4-4
FLORENCE-PRAIRIE APM ALIGNMENT - EVENT RIDERSHIP PROFILE SUMMARY

VENUE	EVENT	NO. OF EVENTS	SERVICE HOURS	RIDERSHIP ESTIMATE PROFILES							
				LOW ESTIMATE				HIGH ESTIMATE			
				ARRIVAL[1]		DEPARTURE[2]		ARRIVAL[1]		DEPARTURE[2]	
NFL Stadium	NFL Game	20	8	> 2 hours 1-2 hours < 1 hour	731 1,453 3,276	During Game < 1 hour 1-2 hours	546 4,200 714	> 2 hours 1-2 hours < 1 hour	1,504 2,989 6,739	During Game < 1 hour 1-2 hours	1,123 8,640 1,469
	Medium Event	8	6	1-2 hours < 1 hour	1,341 1,789	< 1 hour 1-2 hours	2,460 671	1-2 hours < 1 hour	3,449 4,599	< 1 hour 1-2 hours	6,325 1,725
	Small Event	20	6	1-2 hours < 1 hour	343 447	< 1 hour 1-2 hours	618 171	1-2 hours < 1 hour	1,470 1,916	< 1 hour 1-2 hours	2,651 735
The Forum	Large Event	37	6	1-2 hours < 1 hour	403 537	< 1 hour 1-2 hours	737 201	1-2 hours < 1 hour	1,006 1,342	< 1 hour 1-2 hours	1,845 503
	Medium Event	29	6	1-2 hours < 1 hour	268 358	< 1 hour 1-2 hours	492 134	1-2 hours < 1 hour	690 920	< 1 hour 1-2 hours	1,265 345
	Small Event	16	6	1-2 hours < 1 hour	134 179	< 1 hour 1-2 hours	245 67	1-2 hours < 1 hour	460 613	< 1 hour 1-2 hours	844 230
IBEC	Clippers Game	44	7	1-2 hours < 1 hour	503 671	< 1 hour 1-2 hours	922 252	1-2 hours < 1 hour	1,063 1,418	< 1 hour 1-2 hours	1,950 532
	Large Event	31	6	1-2 hours < 1 hour	403 537	< 1 hour 1-2 hours	737 201	1-2 hours < 1 hour	1,063 1,418	< 1 hour 1-2 hours	1,950 532
	Medium Event	13	6	1-2 hours < 1 hour	268 358	< 1 hour 1-2 hours	492 134	1-2 hours < 1 hour	690 920	< 1 hour 1-2 hours	1,265 345
	Small Event	17	6	1-2 hours < 1 hour	134 179	< 1 hour 1-2 hours	245 67	1-2 hours < 1 hour	460 613	< 1 hour 1-2 hours	844 230
Performance Arena	Event	75	6	1-2 hours < 1 hour	134 179	< 1 hour 1-2 hours	245 67	1-2 hours < 1 hour	345 460	< 1 hour 1-2 hours	632 172

[1] Arrivals occurring prior to the event, travel southbound.
[2] Departures occurring post-event, travel northbound.

Average Annual Ridership Estimates

The average annual ridership estimates for each of the four Inglewood Connector transit alignment alternatives were developed taking into consideration the following:

1. Average weekday and weekend day (Saturday and Sunday) non-event-based ridership estimates that are then expanded by the number of days of their respective occurrences

2. Average event-day ridership estimates for each of the types of events at each of the venues that are then expanded by the number of instances that they occur in a given year

3. Combination of the above two ridership estimates

Table 5 summarizes the average annual ridership for each of the four Inglewood Connector Transit Alignment Alternatives.

TABLE 5
Event Day Annual Ridership by Alignment

	Event - APM Annual Ridership				
	NFL Stadium	The Forum	IBEC	Perfomance Arena	TOTAL
Fairview Heights APM Alignment	404,652	179,132	280,276	75,860	939,920
Arbor Vitae APM Alignment	387,974	174,368	350,184	73,842	986,368
Market-Manchester APM Alignment	409,230	184,538	353,992	78,148	1,025,908
Century APM Alignment	420,248	189,684	374,150	80,328	1,064,410

Annual Non-Event Related Ridership Estimates

		Daily Ridership / Annual Ridership			
	Number of Days	Market-Manchester	Florence-Prairie	Arbor Vitae-Prairie	Century Blvd-Prairie
Weekdays	250	4,969	3,057	3,396	5,982
All Weekdays in the year		1,242,250	764,220	848,878	1,495,567
Saturdays	52	3,228	1,986	2,206	3,886
All Saturdays in the year		167,849	103,259	114,698	202,076
Sundays	52	2,733	1,681	1,868	3,290
All Sundays in the year		142,113	87,427	97,112	171,093
Total Annual		**1,552,212**	**954,906**	**1,060,687**	**1,868,737**

OVERALL TOTAL ANNUAL RIDERSHIP BY ALIGNMENT

ALIGNMENT	ANNUAL RIDERSHIP
Market-Manchester APM Alignment	2,578,120
Florence-Prairie APM Alignment	1,894,826
Arbor Vitae-Prairie APM Alignment	2,047,055
Century-Prairie APM Alignment	2,933,147

Attachment A

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MEMORANDUM

TO: Mr. Louis A. Atwell
Director of Public Works, City of Inglewood

FROM: Srinath Raju, Raju Associates, Inc.
Lisa Trifiletti, Trifiletti Consulting, Inc.

SUBJECT: Projected Growth in Land-use, Socio-Economic and Demographic Variables
Westside Area of L.A. County including Inglewood & neighboring Jurisdictions

DATE: May 5, 2018 **REF:** RA541SED

This memorandum details the current and future projections of socio-economic and demographic variables within the westside of Los Angeles County including the City of Inglewood and neighboring jurisdictions including the Cities of Hawthorne, El Segundo and portions of other South Bay Cities and Culver City, the westside of the City of Los Angeles and unincorporated areas of the County of Los Angeles. These projections include a list of related projects assembled include the project name, address and type and size of land use, and associated growth projections. Additionally, the Southern California Association of Governments (SCAG's) 2016 RTP/SCS provides socio-economic and demographic data projections for growth that have been normalized to account for the related projects in various jurisdictions. A discussion of each of these elements follows.

BACKGROUND

The environmental studies associated with the LAX-Crenshaw Light Rail Line included the Draft EIS/EIR published in September 2009; Supplemental DEIS / Recirculated DEIR published in February 2011; Final EIS/EIR published in August 2011; A Record of Decision (ROD) published in

December 2011; a Supplemental Environmental Assessment published in July 2012 and a Finding of No Significant Impact (F.O.N.S.I) published in September 2012.

The METRO's travel demand model was utilized to obtain the transit performance measures for various Project and Alternative scenarios. The METRO's travel demand model used the SCAG's 2008 RTP Model Socio-Economic and Demographic Data available at that time, to produce the transit forecasts and other transit performance measures. Both base year and future year (2030) conditions were forecast using the METRO's Model. Since that time, SCAG has updated its growth projections as part of the 2012 RTP/SCS and 2016 RTP/SCS planning efforts, and consequently, METRO has also updated its growth projections for use in the METRO's updated travel demand forecasting model consistent with the SCAG's projections.

GROWTH DUE TO RELATED PROJECTS

Research associated with cumulative development projects within the Study Area including the City of Inglewood and its neighboring jurisdictions (referred to as westside of Los Angeles County) has been conducted and a detailed list of these projects, their specific geographic locations, types and sizes of proposed uses and the source of the information has been compiled. These related projects include mostly all the approved development projects in various stages of development, final design, permitting and/or construction and occupancy; current development projects for which applications have been filed and environmental/CEQA clearances are under review by the various jurisdictions; and current development projects for which applications have been filed with the jurisdictions and environmental studies are currently under way.

Table A shows the list of related projects in the westside Los Angeles County Study Area and the source of this information. These related projects listed in Table A are shown in Figure A depicting their geographic location relative to various jurisdictions and the overall street system.

TABLE A
LIST OF RELATED PROJECTS WITHIN STUDY AREA

ID NO.	MAP NO.	PROJECT	ADDRESS	PROJECT DESCRIPTION
City of Inglewood [2]				
1	1	Starbucks Drive Thru Kiosk	1740 Centinela Avenue	Construct 900 s.f. Starbucks drive through kiosk
2	2	Commercial Building	721 N. La Brea Avenue	To demolish 1,210 s.f. and add 1,312 s.f. to an existing commercial building
3	3	Condominiums	329 E. Hazel Street	To allow the development of 4-unit Condo with 10 parking spaces per SP-1229
4	4	Parking Lot Improvement	2616-2878 W. Imperial Highway	Renovation and adding 13,000 s.f., façade and parking lot Improvement of an existing shopping center
5	5	Condominiums	501 E. 99th Street	SPR for 12 new condominiums
6	6	Apartments	704 N. Market Street	12 new residential apartment units
7	7	Senior Center	111 N. Locust Street	New Senior Center
8	8	Condominiums	664 E. Manchester Terrace	Four (4) new residential condominiums
9	9	Apartments	844 N. Centinela Avenue	Four (4) new residential apartment units
10	10	Apartments	125 E. Spruce Avenue	Seven (7) new apartment units with semi-subterranean parking.
11	11	Manufacturing/Warehouse with Office	234 W. Hyde Park Boulevard	Construct new 140,185 s.f. manufacturing/warehouse building including 7,500 s.f. of office space.
12	12	Parking Lot	279 W. Beach Avenue	To allow development of 190 parking spaces
13	13	Townhomes	573 1/2 E. Hyde Park Place	Construct three townhomes with 6 enclosed parking spaces.
14	14	Senior Housing	508 S. Eucalyptus Avenue	40-unit senior affordable housing development.
15	15	Residental Project	575 E. Hyde Park Boulevard	Three-unit two-story residential building
16	16	Office Project	401 W. Arbor Vitae Street	Addition of four new offices in office complex and one new bathroom, demolish existing bathroom and existing office space, and add 4 new parking spaces.
17	17	Townhomes	333 N. Prairie Avenue	PAD to allow the 310 townhome units at the former Daniel Freeman site.
18	18	Commercial Building	408 E. Warren Lane	New 2 story 2,542 s.f. commercial building
19	19	Gas Station w/ Mini-Mart	8307 S. La Cienega Boulevard	To construct a new 3,636 square foot structure (mini market and retail space) at an existing gas station operation.
20	20	Mixed-Use Project	D3 SITE (La Brea Avenue/Florence Avenue	241 Units; 40,000 s.f. retail
21	21	Centinela Hospital	555 W. Hardy Street	1. West Tower: Upgrades including the remodel of the main building entrance and the south elevation and seismic upgrades in compliance with SB 1953. 2. Electrical Upgrade: A campus-wide electrical upgrade that includes construction of a new 5,900 s.f. repair shop building and 4,200 s.f. electrical yard with three emergency generators and a 16,000 gallon underground fuel tank for 72 hour emergency power at the northeast corner of the campus on Flower Street. 3. Emergency Department: A new 2,400 s.f. addition and redesigned front entrance to the Emergency Department including new admitting, triage, and waiting areas, and expanding the capacity of the Emergency Department by eight beds (total of 52 beds). 4. Loading and Delivery Areas: Other upgrades that includes the demolition of two building (totaling 6,200 s.f.), the partial demolition of a 4,670 s.f. building, addition, or rehabilitation of various buildings and relocation of the delivery and loading areas from the emergency room area to the rear of the campus.
22	22	Hollywood Park Project	1050 S. Prairie Avenue	80,000-seat sport stadium; 6,000-seat performance venue; 2,500 du; 890,000 s.f. retail; 780,000 s.f. office; 120,000 s.f. casino, 300-room hotel; 25 acres open space; 4 acre civic site.
23	23	Apartments	417-433 Centinela Avenue	116-Unit Apartment Project
24	24	Residental Project	3660 W. 107th Street	New 3 Dwelling Units with 6 car garage
25	25	Congregate Care	614 E. Hyde Park Boulevard	18-Bed Congregate Living Facility
26	26	Apartments	921 N. Edgewood Street	38-Unit Apartment
27	27	Townhomes	113-133 Plymouth Street	20-Unit Townhome Development
28	28	Condominiums	316 Hardy Street	5-Unit Condominium Development
29	29	Self-Storage Project	705-715 N. Centinela Avenue	81,613 s.f. , approx. 400-unit, 5 Story Self-Storage
30	30	Retail Space	101,125,139,140,150 Market Street	40,000 s.f. retail and 150 parking spaces
31	31	Hotel Project	11111 S. Prairie Avenue	120-Room Hotel
32	32	Murphy Bowl Project (Clippers)	Yukon Avenue/Century Boulevard	Proposed potential 18,500-seat venue with associated ancillary uses
33	33	Imperial/Crenshaw TOD	Imperial Highway/Crenshaw Boulevard	Transit Oriented Development Plan, 1/2 mile around Imperial x Crenshaw intersection
34	34	Westchester/Veterans TOD	Florence Avenue/Hindry Avenue	Transit Oriented Development Plan, 1/2 mile around Westchester/Veterans Station
35	35	Downtown (Florence/La Brea) TOD	Florence Avenue/La Brea Avenue	Transit Oriented Development Plan
36	36	Fairview Heights (Florence/West) TOD	Florence Avenue/West Boulevard	Transit Oriented Development Plan
37	37	Hollywood Park Phase II	1050 S. Prairie Avenue	Approximately 5,750,000 s.f. of commercial use
City of Los Angeles				
38	212	Mixed-Use: Residential, Retail & Office	601 S. Ocean Front Walk	Mixed-Use: SFDU (Joint Live/Work), 5,254 sf Retail & 22,738 sf Office.
39	38	Marina Island Mixed-Use: Apartment & Office	5000 S. Beethoven Sttreet	Mixed-Use: 156-Unit Apartment and 33,484 sf Office.
40	39	Office Project	12575 Beatrice Street	250,000 s.f. office. Existing 23,000 s.f. office to be removed.
41	40	Coffee without Drive Through	3006 S. Sepulveda Boulevard	Proposed 2,023 sf Starbucks Coffee Shop wiothout Drive Through within Shopping Center.
42	41	Mixed-Use: Apartment & Restaurant	3644 S. Overland Avenue	New Mixed-Use: 92-Unit Apartment & 1,573 sf Restaurant use (110 spaces).
43	42	Bakery with Retail & Restaurant	320 E. Sunset Avenue	Change of Use from 4,675 sf Commercial Office to 6,000 sf Bakery/Retail/Restaurant (4,737 sf In + 1,263 sf In & Out Seating area).
44	43	Mixed-Use: Condominium & Retail	4363 S. Lincoln Boulevard	Consultation: proposed 10-Story, 80 Condominium Units & 15,100 sf Supermarket.
45	44	Hotel	9800 S. Sepulveda Boulevard	Change of Use from 118,490 sf Office (9-Story Bldg.) to 178-Guest Room Hotel with Restaurant & Spa (The "O" Hotel).
46	45	Mixed-Use: residential & retail	13488 W. Maxella Avenue	Tha Villa Marina Mixed-Use: 244 Condominium Units and 9,000 sf Retail.
47	46	Sterling West School	5206 W. Thornburn Street	New 50-Student Private School (Grades 3-12).
48	47	Ballona Wetlands Ecological Reserve Restoration Project	Ballona Wetlands	Restoration of wetlands/ecological reserve, 600-acres.
49	48	Wrapper Office Building Project	5790 W. Jefferson Boulevard	Construct10-story 150,761 s.f. office building.
50	49	Playa Vista Phase I	Jefferson Boulevard b/t Lincoln Boulevard and Centinela Avenue	Includes 3,246 d.u., 1,570,000 s.f. of office use, 25,000 s.f. of retail use and 65,000 s.f. of community serving use.
51	50	Playa Vista Plant Site (Spruce Goose)	Campus Center Drive/Bluff Creek Drive	Includes 1,129,900 s.f of production and staging support and 572,050 s.f. of office use.
52	51	The Village at Playa Vista (Phase II)	s/o Jefferson Boulevard/Westlawn Avenue	include 2,600 d.u., 175,000 s.f. of office use,150,000 s.f. of retail use, and 40,000 s.f. of community serving uses.
53	103	Mixed-use office & retail	11955 W Washington Boulevard	Mixed-use with 41 ksf office & 9.5 ksf retail. Existing vacant building to be removed.
54	104	Mixed-use Apartment & Retail	9901 Washington Boulevard	(Preliminary) 131-unit apartment & 12 ksf retail. Existing 16.9 ksf retail to be removed.
55	105	Mixed-use Apartment, office, retail, and restaurant	10601 Washington Boulevard	126-unit apartment, 23 ksf office, 9 ksf retail, 9 ksf restaurant. Existing 10 ksf office to be removed.
56	106	Mixed-use condominium and retail	3115 S. Sepulveda Boulevard	(Preliminary) 175-unit condominium & 28 ksf retail. Existing 28 ksf discount store to be removed.
57	107	Condominium	11131 Rose Avenue	227-unit condominium. Existing 89-unit apartment to be removed
58	178	Mixed-use Apartment & Retail	3425 Motor Avenue	115-unit apartment and 975 sf retail. Existing 15 apartment units, 2 single family dwellings and 3.3 ksf office to be demolished.
59	179	Hotel & Restaurant Project	305 Ocean Front Walk	24-room hotel and 2 ksf high-turnover restaurant.
60	180	Restaurant & Retail	10612 National Boulevard	1,726 sf Coffee Shop (Coffee Bean) including 250 sf Outdoor Seating. Existing vacant lot.
61	181	LADPW Maintenance Yard	3233 Thatcher Avenue	Improve/expansion of the existing LADPW maintenance yard plus addition of 30 new employees to site.

TABLE A
LIST OF RELATED PROJECTS WITHIN STUDY AREA

ID NO.	MAP NO.	PROJECT	ADDRESS	PROJECT DESCRIPTION
62	182	Apartment	7280 W Manchester Avenue	126-unit apartment in-lieu of 24 ksf retail space of the previously approved/entitled Decron mixed-use development.
63	183	Proposed Airport Parking	6225 W Century Boulevard	Construct a 1,726-stall airport parking facility with shuttle bus service.
64	184	Mixed-use apartment, retail and restaurant	6719 Pacific Avenue	Mixed-use 35-unit townhomes, 2 ksf specialty retail and 2 ksf restaurant uses.
65	185	Mixed-use condominium and retail	138 Culver Boulevard	Mixed-use with 72-unit condominium, 13 ksf retail space & 1.5 ksf restaurant.
66	186	MTA Bus Facility	10701 S. La Cienega Boulevard	MTA bus facility at LAX parking lot B (on 23.1 acre parcel).
67	187	LMU Master Plan	1 LMU Drive	Increase enrollment capacity to 7,800 students.
68	188	Car Wash	9204 Airport Boulevard	15 ksf car wash to replace existing car rental facility.
69	189	Starbucks w/o Drive Thru	12404 Venice Boulevard	Existing 2.8 specialty retail to be replaced. 2,195 sf Starbucks Coffee Shop w/o Drive Thru.
70	190	Residential & Retail	580 Venice Boulevard	(Preliminary) 5-unit residential plus 5.7 ksf retail space.
71	191	Apartment	4100 Del Rey Avenue	77-unit apartment building.
72	192	Restaurant	1020 W, Venice Boulevard.	Proposed House of Pies Sit-Down Restaurant land use (3,895 sf).
73	193	Mixed-Use: Apartment & Office	4140 S. Glencoe Avenue	New 4-story, 67-Unit Apartment & 3,211 sf Office Building over 2-level parking garage (VTT-72107).
74	194	Mixed-Use: Apartment & Retail	7407 S. La Tijera Boulevard	New 140-Unit Apartment & 2,600 sf Retail.
75	195	Mixed-Use: Hotel, Retail & Restaurant uses	1027 S. Abbot Kinney Boulevard	New 92-Guest Room Hotel, 3,000 sf Retail & 2,072 sf Restaurant.
76	196	Apartment	4090 S. Del Rey Avenue	New 4-Story, 51-Unit Apartment Building over 3-level parking garage.
77	197	Mixed-Use: Condominium & Office	4210 S. Del Rey Avenue	Proposed 136 Condominium Units & 20,000 sf Commercial Office.
78	198	Fast Food Restaurant with Drive Through	8521 S. Sepulveda Boulevard	New 3,999 sf Chick-fil-A Fast Food with Drive Through Restaurant.
79	199	OTIS College of Arts & Design	9045 S. Lincoln Boulevard	Relocation & Consolidation of existing OTIS College Campus students, faculty & staff.
80	200	Mixed-Use: Condominium & Office	4091 S. Redwood Avenue	67 Condominium Units & 7,525 sf Commercial Office Building providing 141 parking spaces.
81	201	Apartment	3822 S. Dunn Drive	7-story, 86-Unit Apartment building over ground floor parking garage.
82	202	Office	12777 W. Jefferson Boulevard	Commercial Office Expansion (49,950 sf).
83	203	Apartment	8740 S. La Tijera Boulevard	New 137-Unit Apartment building to replace existing 215-student Westchester Secondary Charter School.
84	204	Coffee Shop with Drive Through	9829 W. Venice Boulevard	Coffee Bean & Tea Leaf Coffee Shop with Single-Lane Drive Through to replace existing Rally's with Dual-Lane Drive Through.
85	205	Jefferson & La Cienega Mixed-Use Development Project	3221 S. La Cienega Boulevard.	Converting existing ABC Lot to a Mixed-Use: 1,218-Unit Apartment, 200,000 s.f. Office, 50,000 s.f. Grocery Store, 30,000 s.f. Retail & 20,000 s.f. Restaurant project.
86	206	LAUSD Elementary School	2224 S. Walgrove Avenue	New 567-Student Elementary School (K-5) Immersive Mandaring Language program.
87	207	Coffee Shop without Drive Through	8400 S. Lincoln Boulevard	Starbucks Coffee Shop (without Drive Through) within Shopping Center (1,522 sf In + 150 sf Out).
88	208	Mixed-Use: Apartment, Mini-Warehouse & Office	4040 S. Del Rey Avenue	New 195-Unit Apartment; 15,000 sf Office & 80,000 sf Mini-Warehouse (Option 1) or 235-Unit Apartment & 15,000 sf Office (Option 2 Preferred).
89	209	Charter Middle School	8540 S. La Tijera Boulevard	525 students
90	210	Howard Hughes Center	6801 Center Drive	600-unit apartment and 488,659 s.f. remaining development potential
91	211	LAX Landside Access Modernization Program (LAMP)	Los Angeles Internation Airport	Landside Access Modernization Program
92	213	LAX Northside Project	Westchester Parkway b/t Pershing Drive and Sepulveda Boulevard	2.32 million s.f. of development including office, research & development, community/civic uses, recreation and open space.
93	214	Mixed-Use: Apartment & Automotive Dealership	5747 South Mesmer Avenue	New 400-Unit Apartment & 250,000 sf Automotive Dealership (West LA Hooman - 5 Auto Dealers)
Culver City				
94	52	Entrada Creative Office	6161 W. Centinela Boulevard	281,209 s.f. office
95	53	Bentley Condos	3873 Bentley Avenue	3 new condominium dwelling units, resulting in 2 net new dwellings.
96	54	Mixed Use Project	6221 Bristol Parkway	Includes 750 d.u. apartments and 21,000 s.f. retail. Existing 60,157 s.f. retail to be removed.
97	55	Pennylane Mixed-Use	11924 Washington Boulevard	3,750 s.f. restaurant, 11,250 s.f. retail, and 98-unit apartment. Existing 26,445 s.f. office/commercial to be removed.
98	56	Residential	3837 Bentley Avenue	Addition of 3 new attached condominiums (net addition of two units)
99	57	Lorcan O'Herlihy Architects	3434 Wesley Street	New TOD Mixed Use project with 15 dwelling units, and 14,237sq. ft. of office/gallery on a vacant lot.
100	58	Residential Project	3906 Sawtelle Boulevard	Addition of one (1) new unit to an existing triplex
101	59	Harbor Freight	4545 Sepulveda Boulevard	28,534 s.f. retail
102	60	Westside Bake and Tires	4215 Sepulveda Boulevard	Convert existing 2,068 s.f. retail building into auto repair facility with three service bays.
103	61	Residential Project	3832 Bentley Avenue	Four (4) new attached 2-story residential condominium dwelling units (net addition of three (3) units) with subterranean parking
104	62	Office and Production Services building (Sony) and parking addition.	10202 Washington Boulevard	New 8-story, 218,450 s.f. office building, a new 4- story, 51,716 s.f. Production Services support building, and expansion of an existing parking structure. Total demolition of 57,642 s.f. Net New square feet is 212,524 s.f.
105	63	Residential	4109-4111 Duquesne Avenue	Addition of 2 residential units to existing duplex.
106	64	Three unit condominium/ townhome Redevelopment	4241 Duquesne Avenue	New three detached condominium/ townhomes, resulting in two net new residential dwelling units
107	65	Residential Project	4180 Duquesne Avenue	New 2-story, 4-unit condominium development
108	66	Office (Sony)	10202 Washington Boulevard	New 22,929 s.f. 4- story office building (net new 9,875 s.f.).
109	67	The Wende Museum	10808 Culver Boulevard	Tenant improvements to convert existing 12,596 s.f. armory building into a museum
110	68	Residential Project	4234 Sawtelle Boulevard	Three (3) unit condominium with subterranean parking
111	69	Commercial Building	11198 Washington Place	New 3,850 s.f. commercial building and 500 s.f. outdoor dining.
112	70	Office and Retail Building (Culver Pointe)	5800 Bristol Parkway	281,400 s.f. office
113	71	Gas Station Car Wash	11197 Washington Place	Conversion of existing vehicle repair and mini-mart into drive-through car wash and construction of new 2,500 s.f. convenience store.
114	72	Parcel B	9300 Culver Boulevard	118,000 G.S.F. of office, retail, and restaurant space.
115	73	Retail/Office	5450 Sepulveda Boulevard	14,000 s.f. commercial/retail building
116	74	TOD	8770 Washington Boulevard	Planned Development/TOD Mixed Use with 31,240 SF retail/restaurant and 115 2-story residential units
117	75	Mixed-Use Project	11281 Washington Place	New 4-story mixed-use project with 4,898 s.f. retail and 14 residential dwelling units.
118	76	Globe Housing Project	4044-4068 Globe Avenue	A total of 10 new, for sale, residential dwelling units on currently vacant land. The site was previously developed with 7 single family homes.
119	77	Residential Project	4227 Ince Boulevard	Subdivision of one (1) parcel into three (3) lots with two (2) units per lot, totaling six (6) dwelling units, resulting in five (5) net new units.
120	78	Kayvon Mixed-Use Project	12712-12718 Washington Boulevard	New 4-story mixed-use building with 5 for lease residential units, 3,414 s.f. retail, and subterranean parking. Approximately 2,340 s.f. existing/previous commercial uses.
121	79	Retail/Restaurant Project	8511 Warner Drive	Five level parking structure with retail/restaurant. 51,520 s.f. of retail/restaurant uses. Parking Structure -307,522 s.f.
122	80	Residential Project	4034 La Salle Avenue	New 2-story, 4-unit condominium development
123	81	Residential Project and Nursing Home	3814 Lenawee Avenue	New 8 single family dwelling units and 95 unit, 110 bed, assisted living and memory care.
124	82	Residential Project	3961 Tilden Avenue	Five (5) new attached 2-story residential condominium dwelling units (net addition of two (2) units) with subterranean parking.
125	83	Shell Car Wash	11224 Venice Boulevard	New 3,150 s.f. commercial building, which includes a 2,285 s.f. convenience store and 864 s.f. automated car wash facility.
126	84	The Culver Studios	9336 Washington Boulevard	Net increase of 413,127 s.f. of office and support facilities.
127	85	Residential Project	4118 Wade Street	New 4-unit townhome subdivision
128	86	Mixed-Use Project	9355 Culver Boulevard	Three story mixed use building consisting of a ground level salon, mezzanine, and office totaling 2,947 s.f., and four residential units on the third floor.

TABLE A
LIST OF RELATED PROJECTS WITHIN STUDY AREA

ID NO.	MAP NO.	PROJECT	ADDRESS	PROJECT DESCRIPTION
129	87	Costco Expansion [6]	13463 Washington Boulevard	A 31,023 s.f. expansion of an existing 142,152 s.f. retail warehouse and demolition of an existing 63,213 s.f. grocery store/supermarket. Addition of two fuel pumps at existing fueling station.
130	88	Mixed-Use Project	3710 & 3750 S.Robertson Boulevard	141-unit apartment, 30,000 s.f. retail, 64,200 s.f. office. Existing FedEx distribution center to be removed.
131	89	Office and Retail	11012-11014 Washington Boulevard	Two story office and retail building totaling 3.385 ksf.
132	90	Baldwin Site Mixed-Use Project	12803 Washington Boulevard	Mixed-use project consisting of 37 dwelling units and 7,293 s.f. of retail.
133	91	Office Project	12038 Washington Boulevard	New 2,685 s.f. office building.
134	92	Mixed-use Project	9735 Washington Boulevard	New 4-story 166,254 s.f. retail and office building, with 55,477 s.f. office, 12,379 s.f. retail and restaurant, and 228 parking spaces.
135	93	Office Building	9919 Jefferson Boulevard	New 3-story, 62,558 sq. ft., office and research and development (laboratory) building, as well as a five (5) level parking structure containing 398 parking spaces, and associated site improvements
136	94	Washington & Helms Mixed-Use Development	Helms Avenue & Washington Boulevard	262-unit apartment, 69,500 s.f. office, 22,000 s.f. retail, 5,000 s.f. restaurant. Existing manufacturing, retail, auto body, residential uses to be removed.
137	95	Residential Project	12464 Washington Place	New 3-unit residential condominium subdivision (net addition of two (2) units) with on-grade parking garages
138	96	Residential Project	4115 Lincoln Avenue	New 2-unit condominium
139	97	Residential Project	3603 Wesley Street	Two new units with reduced backup aisle from parking spaces.
140	98	Mixed-Use Project	8777 Washington Boulevard	Construct 4,500 s.f. of retail and 128,000 s.f. of office use. Demolish existing 12,485 s.f. of retail use and 4,731 s.f. of restaurant use.
141	99	Mixed-Use Project	8888 Washington Boulevard	Construct new office building with 59,325 s.f. of office use, 2,878 s.f. of retail, and 3,184 s.f. of restaurant. Demolish existing 9,992 s.f. auto repair shop.
142	100	Market Hall Project	NW & NE corner of Centinela Avenue / Washington Boulevard	15,526 s.f. specialty retail, 14,680 s.f. quality restaurant and 5,210 s.f. high-turnover restaurant
143	101	Triangle Site - Washington/National TOD	Corner of Washington Boulevard/National Boulevard	Transit oriented development to include 200 d.u, mid-rise apartments, 148-room hotel, 201,000 s.f. office, 24,000 s.f. specialty retail, 10,000 s.f. of high-turnover restaurant & 10,000 s.f. quality restaurant.
144	102	Office & Retail Project	10000 Washington Boulevard	Renovation of existing 9-story office building. Convert ground floor lobby space to office, retail and restaurant space. New construction includes a new stand-alone 3,115 s.f. one-story restaurant building and a second floor within the atrium to add 5,500 s.f. of office space.
City of El Segundo				
145	108	Raytheon Campus Specific Plan Office Park Expansion	2100 El Segundo Boulevard	2,089,000 s.f. existing with 2,142,457 s.f. Office Park expansion for total or 4,231,547 s.f. proposed
146	109	Hotel	888, 892 and 898 N. Sepulveda Boulevard	5-story 190-room, 107,090 g.s.f. hotel on vacant parcel and operate Airport Park and Ride facility on existing 840-space parking structure.
147	110	Convert existing warehouse to office	2265 E. El Segundo Boulevard	Convert 3,050 s.f. existing warehouse to office use.
148	111	Rock and Brew Restaurant Expansion	139-147 Main Street	Expansion/Remodel. Increase outdoor dining from 2,205 s.f. to 3,333 s.f., plus one stall parking reduction.
149	112	Toppings Pizza	2161 E. El Segundo Boulevard	Admin Use Permit for a restaurant that is described as "new."
150	113	Wiseborn School District H.S.	201 N. Douglas	335,000 s.f. Total for new High School after demo of 90k - 170,000 s.f.. New H.S. to contain 180,000 to 240,000 s.f. of building area and an enrollment of 1,200 students.
151	114	Convert parking to Hotel	199 Continental Boulevard	152 Room Hotel, 71,000 s.f. (Existing parking lot)
152	115	4 unit Condo	711 Main Street	Current 2-unit 2,758 s.f. residential to be expanded to 4-unit with 6,963 s.f.
153	116	Office	400 Duley Road	73,000 s.f. Office on vacant parcel
154	117	Hotel Addition	525 N. Sepulveda	Add 6,952 s.f. to 98,548 s.f. existing hotel
155	118	Industrial Addition	750 S. Douglas	Add 4,986 s.f. to existing 15,076 s.f. Industrial Building
156	119	Corporate Office and Athletic Training Facility	2275 Mariposa Avenue	120,380 s.f. Total New - 52,000 s.f. Corp. Office plus 68,380 s.f. Athletic Training Facility
157	120	New Office	500 S. Douglas and 2330 Utah Avenue	New 78,000 s.f. office to replace existing 52,000 s.f. industrial use.
158	121	Office	123 Nevada Street	New 4-unit commercial office Condominium converted from 1,700 s.f. Industrial
159	122	Office and Private Hotel	2125 Campus Drive	121,450 s.f. Hotel and 63,550 s.f. office replacing vacant land
160	123	Office Boeing S-50 Building Addition	1700 E. Imperial Avenue	Addition of 96.898 s.f. to existing 169,390 s.f. Building
161	124	4-unit condominium	535 Indiana Street	4-unit condominium to replace 1 single-family unit
162	125	Data Center / Office	445 N Douglas Street	223,000 s.f. (106,000 s.f. Office and 117,000 s.f. Warehouse Industrial Data Center
163	126	Office	2350 E El Segundo Boulevard	1740 ksf office, 75 ksf retail, 7 ksf child care center, 7 ksf medical/dental office, 19 ksf health club, 75 ksf restaurant, 100 room hotel, 25 ksf light industrial, 75 ksf research & development, 65 ksf technology/telecommunications.
164	127	El Segundo Corporate Campus	710 N. Nash Street	611,545 s.f. Office Plus 13,660 s.f. Retail on currently vacant parcel.
165	128	Office	1950 E. Grand Avenue	93.569 ksf office.
166	129	Medical Office	1700 E. Grand Avenue	80.050 ksf medical office, 24.930 ksf office.
167	130	Hotel	101 Continental Boulevard	167 room hotel.
168	131	Industrial Uses	215 California Street	82.429 ksf industrial uses.
169	132	Data Center / Office	444 N. Nash Street	Demo: 11,769 New Construction: 75,435 SF New Total: 180,422 SF Data Center
170	133	LA Air Force Base - Area A	SE Aviation Boulevard	525 unit condominium, remove existing 835 ksf office.
171	134	Hotel	1960 E. Grand Avenue	150 room hotel.
172	135	Residential	425-429 Indiana Street	8 residential units.
173	136	Condominium	616-620 W. Imperial Hwy	12 unit condominiums.
174	137	Condominium	301, 303, 305 W. Palm Avenue	7 unit condominiums, remove existing 9 unit apartments.
175	138	Plaza El Segundo	NE Sepulveda Boulevard	425 ksf retail shopping center.
176	139	Mattel Grand Way Project - Phase II	455 Continental Boulevard and 1955 E. Grand Avenue	New 14-story 300,000 s.f. R&D office tower and 810-space parking structure (+55,000 s.f.) 355,000 s.f. Total
177	140	Shopping Center	820 - 850 S. Sepulveda Boulevard	71,343 s.f. Shopping Center plus 25,627 s.f. Restaurant and 27,338 s.f. Office Use
178	141	Walgreens	NE Sepulveda Boulevard	67 ksf retail.
179	142	Parking Structure	525 N. Sepulveda Boulevard	1029 space 328.532 ksf parking structure.
180	143	Office/Industrial Condo Project	222 Kansas Street	55 unit 89.249 ksf office/industrial condominium, existing 93.473 ksf.
181	144	Mixed-Use Commercial	141 Main Street	12.550 ksf mixed-use commercial.
182	145	Warehouse, Office, Manufacturing	900, 950 Sepulveda Boulevard & 960, 901 - 915 Selby Street	20.819 ksf warehouse, 139.558 ksf office, 14.025 ksf manufacturing; from existing 80.165 ksf warehouse, 72.084 ksf office, 2.554 ksf manufacturing.
183	146	Lifeguard Station	105 Vista del Mar	1.4 ksf lifeguard station.
184	147	Senior Assisted Living Facility	540 E. Imperial Highway	304 Senior Housing Residential units or 58 single and multi-family (175,000 s.f.); previously 22.5 ksf school.
185	148	Indoor Ice Rink	555 N. Nash Street	17.315 ksf indoor ice rink.
186	149	Office	116 W. El Segundo Boulevard	38 ksf office.
187	150	In-N-Out Burger Fast-food Restaurant with Drive-Thru	600-630 N. Sepulveda Boulevard	Existing Sizzler (sit-down dining) to become 3.714 ksf fast-food restaurant with drive-thru.
188	215	Light Industrial [3]	123 Lomita Street	10.764 ksf light industrial
189	216	General Office [3]	2130 E. Maple Avenue	20.955 ksf general office
190	217	Research and Development [3]	140 Sheldon Street	7.692 ksf research and development
191	218	Driving Range [3]	400 S. Sepulveda Boulevard	37.991 ksf driving range
192	219	Restaurant [3]	2171-2191 Rosecrans Avenue	13.57 ksf restaurant
City of Manhattan Beach				
193	151	Walgreens	2400 N. Sepulveda Boulevard	15 ksf retail.

TABLE A
LIST OF RELATED PROJECTS WITHIN STUDY AREA

ID NO.	MAP NO.	PROJECT	ADDRESS	PROJECT DESCRIPTION
194	152	Mixed-use Retail, Office, Coffee Shop	1000 N. Sepulveda Boulevard	23 ksf medical office, 0.7 ksf pharmacy, 1.7 ksf coffee shop; remove 5.4 ksf restaurant.
195	153	Mixed-use office & retail	222 N. Sepulveda Boulevard	12 ksf office, 1 ksf retail; remove existing 5 ksf auto repair .
196	154	Rite-Aid	1100 Manhattan Beach Boulevard	13 ksf retail, remove 8.6 ksf office.
197	155	Bank and Retail	1129 N. Sepulveda Boulevard	4 ksf bank, 2 ksf retail.
198	156	Retail Space	1700 Rosecrans Avenue	10 ksf retail, replace existing 10 ksf warehouse.
199	157	Gas Station w/ Mini-Mart	1002 Manhattan Beach Boulevard	Expand and remodel 1.785 ksf gas station with mini-mart to 2.4 ksf.
200	158	Bank	400 Manhattan Beach Boulevard	Remodel existing 5.59 ksf bank to 5.68 ksf.
201	159	Manhattan Beach County Library	1320 Highland Avenue	Demo existing 12.3 ksf; new 21.5 ksf.
202	160	Manhattan Academy	1826 Manhattan Beach Boulevard	Convert building to 36-student private school 4.517 ksf classrooms and 1.595 ksf play area.
203	161	Manhattan Village Mall	3200 N. Sepulveda Boulevard	Retail shopping center 3 component 124 ksf expansion .
204	162	Chevron	Aviation Boulevard	Demo existing; new 5.18 ksf foodmart, carwash, gas .
205	163	Louie Tomaro Office	2617 N. Sepulveda Boulevard	Demo 2 houses, new 8.8 ksf office.
206	164	Manhattan Beach Work Lofts	1300 Highland Avenue	Former Good Stuff; new 15 ksf commerical/office condominiums.
207	165	Mixed-Use Building	3912 Highland Avenue	Demo 1 apartment and 400 sf retail; New 1 unit condominium and 700 sf medical office.
208	166	Chalk Preschool	1030 Manhattan Beach Boulevard	Demo 4.38 ksf office, add 6 classrooms totaling 4.191 ksf. Enrollment of 91 students.
City of Lawndale				
209	167	Lawndale Annex	14899 Aviation Boulevard	289 unit condominium.
County of Los Angeles				
210	168	Proposed Avaition Station Project	11604 Aviation Boulevard (County Project)	Lot 1: 281-Unit Condo/Townhomes, 5 ksf Retail/Commercial; Lot 2: 112-Unit Apartment & 21.5 ksf Retail/Commercial.
211	169	West Los Angeles Community College Master Plan	Overland Avenue at Freshman Drive	Approx. 291,300 sq. ft. of new building and renovation. Anticipate future student population of approx. 18,904 students and 1,248 employees by Fall 2022. Project includes second access road, parking structures, landscaping and development of athletic facilities
212	170	Lennox Charter High School	11044 and 11111 Freeman Avenue	560 students
213	171	Marina Expressway Homes	Marina Expressway Eastbound & Mindanao Way	28 Single family condominiums
214	172	Marina del Rey Local Coastal Plan	1 Marina Expressway (County Project)	Marina Del Rey Local Coastal Program (MDR LCP) Amendment. Development inlcudes residential: 2,044 d.u., hotel: 505 rooms, retail: 273,741 s.f., restaurant: 1,323 seats, congregate care: 129 d.u., office: 26,000 s.f., dry storage space: 375 spaces, and library: 3,000 s.f.
215	220	Senior Housing [4]	1252 W 105th Street	74 Unit, 100% affordable senior housing in the R-2 Zone
216	221	Laundromat [4]	11034 S Western Avenue	new use laundromat for a total 4,983 s.f.
217	222	Athens Vista Apartments [4]	1248 W 105th Street	74-unit apartment
218	223	Residential [4]	5550 S La Brea Avenue	32-unit apartment
219	224	Office addition to Child Care Center [4]	3816 W 54th Street	New 2nd floor office space 1,196 s.f.
220	225	Mixed-Use [4]	11810 Bandera Street	100-unit affordable housing apartment, 5,260 s.f. child care center, 7,200 s.f. office
221	226	Residential [4]	13204 Salinas Avenue	94 condominiums
222	227	Residential [4]	1212 W 107th Street	22-unit apartment
223	228	Hotel [4]	12000 S Western Avenue	44-room hotel
224	229	School [4]	11130 S Western Avenue	11,662 sf school
225	230	Hotel [4]	11814 Aviation Boulevard	128-room hotel
226	231	Residential [4]	1743 Imperial Highway	39-unit apartment
227	232	Residential [4]	1423 W 120th Street	57 condominiums
228	233	Residential [4]	1509 W 102nd Street	12-unit apartment
229	234	Residential [4]	1539 102nd Street	10-unit apartment
230	235	Residential [4]	8910 S Normandie Avenue	6-unit apartment
231	236	Commercial [4]	10601 S Vermont Street	4,500 s.f. coin laundry and self-service car wash
232	237	Residential [4]	215 E El Segundo Boulevard	9 single-family homes
233	238	Auto Repair [4]	9223 S Vermont Avenue	2,858 s.f. auto mechanic shop
234	239	Warehouse [4]	12804 Spring Street	4,096 s.f. warehouse
City of Hawthorne				
235	173	360 South Bay	SE corner of Aviation Boulevard and El Segundo Boulevard	610 Condominiums
236	174	Condominiums / Office	13806 Hawthorne Boulevard	171 units and 32,500 sq. ft of office space
237	175	Prestige Villas	4500 West 116th Street	116 condominium units
238	176	Single Family Homes	14000 Yukon Avenue	6 units
239	240	Downtown Hawthorne Specific Plan	The area boundaries include the I-105 Freeway on the north, Prairie Avenue, Freeman Avenue and its extension through residential neighborhood to the city limits on the south, and Ramona Avenue and Inglewood Avenue on the west. In addition to the major north-south arterial Hawthorne Boulevard, the DHSP area includes the east-west segments of Imperial Highway, 120th Street, El Segundo Boulevard, and Rosecrans Avenue	The DHSP designates five land use areas (Residential, Commercial, Hospitality, Mixed-Use and Public/Quasi Public) and four opportunity sites known as Transformative Projects. The four Transformative Projects in the DHSP are sites identified for new and catalytic development and investment and are listed below.
240	241	Civic Center		A public-private partnership opportunity that can have a mix of civic, hotel, retail and housing uses that frame a community gathering space
241	242	South Bay Ford		A mid-scale mixed-use development that helps catalyze the southern portion of Hawthorne Boulevard. Medium and higher density residential development
242	243	St. Joseph's Plaza		A underutilized corner that can become a new, dynamic public space. No set dates. DT Hawthorne Specific Plan design ideas suggest a local plaza for the community.
243	177	Hawthorne Mall Site		Proposed Outlet but no set date for development - currently a shuttered mall
244	244	Green Line Specific Plan Project (Dinerstein Companies Residential)	SE corner of Crenshaw Boulevard and Jack Northop Avenue	230 d.u. apartments and 3,700 sq.ft. of restaurant
245	245	Icon at Rosecrans	14135 Cersie Avenue	127 d.u. apartments
City of Gardena				
246	246	Industrial [6]	1720 West 135th Street	100,438 sf industrial building

Source:
[1] Traffic Study for the Landside Access Modernization Program (LAMP) DEIR, September 2016, unless otherwise noted.
[2] City of Inglewood.
[3] Traffic Impact Study, Continental Grand Campus Specific Plan DEIR, September 2017.
[4] Los Angeles County Department of Regional Planning website.
[5] City of Hawthorne, Planning website.
[6] Final Environmental Impact Report, Green Line Mixed-Use Specific Plan, June 2017.

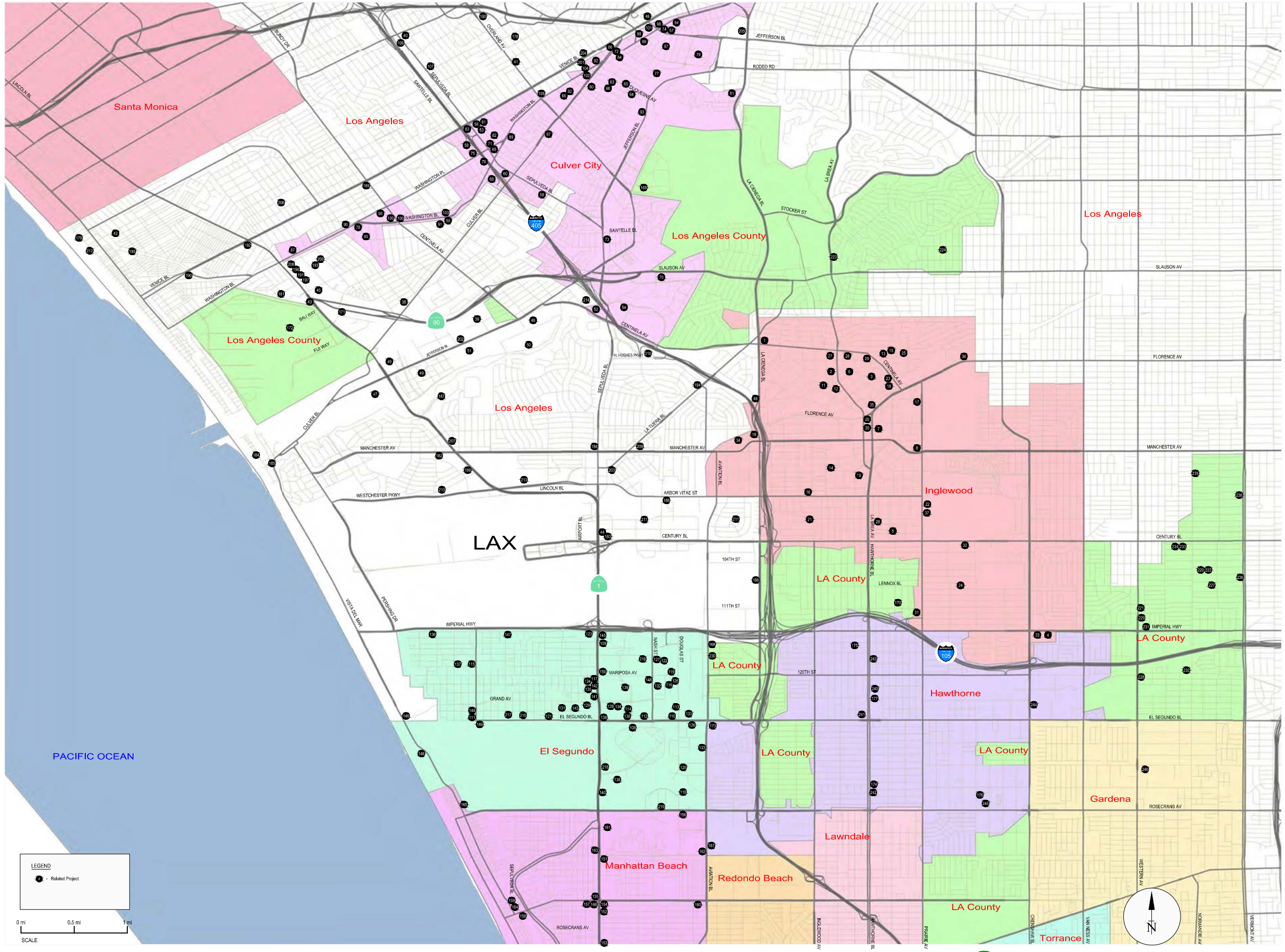

FIGURE A
RELATED PROJECTS WITHIN THE STUDY AREA

RAJU Associates, Inc.

From Table A and Figure A, it can be observed that a total of 246 development projects have been identified within this study area. Of these related development projects, 56 projects are located within the City of Los Angeles to the north and north-west of the City of Inglewood, 51 projects are located in the City of Culver City north of the City of Inglewood, 37 projects are located within the City of Inglewood, 77 projects are located within the South Bay including the Cities of El Segundo, Manhattan Beach, Hawthorne, Gardena and Lawndale to the south and south-west of the City of Inglewood and 25 projects are located within the unincorporated area of the County of Los Angeles scattered all around the City of Inglewood.

An analysis of the related projects growth in Population, Households and Total Employment was conducted. A summary of the analysis of growth due to related projects is shown in Table B. From Table B, it can be observed that the total growth associated with the related projects within the Study Area relative to Population was approximately 82,000; relative to Households was 27,100; and that associated with Total Employment was 94,530.

An analysis of related project's growth in Population and Households within each of the jurisdictions, summarized in Table B, indicates that the City of Los Angeles within the Study area (based on projects located mostly west, north and northwest of the City of Inglewood) accounted for 39% to 40% of the overall related project's Population and Household growth, while the City of Inglewood accounted for 36% to 37%;, Culver City (located north of the City of Inglewood) accounted for 7% of the overall related project's growth, while the unincorporated areas of Los Angeles County accounted for 9% to 10%; and portions of the South Bay Cities included in the related projects list (located south and south-west of the City of Inglewood) accounted for 8% of the overall related project's Population and Household growth.

An analysis of growth in Total Employment by jurisdiction, indicated in Table B, shows that the City of Los Angeles within the Study area (based on projects located mostly west, north and northwest of the City of Inglewood) accounted for 34% of the overall employment growth reflected in the related projects, while the City of Inglewood accounted for 36%; Culver City (located north of the City of Inglewood) accounted for 8% of the overall related project's employment growth, while unincorporated areas of Los Angeles County accounted for 1%; and portions of the South Bay Cities included in the related projects list (located south and south-west of the City of Inglewood) accounted for 21% of the overall related project's employment growth.

TABLE B: SUMMARY OF GROWTH DUE TO RELATED PROJECTS

Jurisdiction	Total Population Growth	Total Household Growth	Total Employment Growth
City of Los Angeles[1]	31,728	10,702	32,244
Inglewood	29,785	9,928	33,756
Culver City	5,596	1,788	7,399
LA County Total[1]	7,862	2,481	1,319
South Bay Total[1]	6,865	2,187	19,811
Total Study Area	**81,836**	**27,086**	**94,529**

Note: 1. Only portions of areas in these jurisdictions within the Study Area are included

In summary, analysis of the overall related project's substantial growth in population, housing and employment indicates that this growth is spread out across all the jurisdictions within this Study Area including City of Los Angeles, Inglewood, Culver City, unincorporated areas of Los Angeles County and portions of the South Bay Cities consisting of El Segundo, Hawthorne and others.

OVERALL REGIONAL GROWTH

The SCAG's 2016 RTP/SCS Regional Travel Demand Forecasting Model provides socio-economic and demographic growth projections throughout the six-county southern California region. An evaluation of the year 2040 growth projections within the westside Los Angeles County Study Area was conducted including verification and updates to account for the related projects described in the preceding section.

Figures B, C and D depict the updated year 2040 growth in Population, Households and Total Employment, respectively, within the westside Los Angeles County Study Area. These figures not only present the magnitude of growth relative to the key socio-economic and demographic variables but also indicate the distribution of growth within this Study Area.

Table C summarizes the overall growth in the key socio-economic and demographic variables for each of the jurisdictions within the Study Area by the year 2040. It can be observed from Table C, that the total overall growth within the Study Area relative to Population was approximately 368,500; relative to Households was approximately 62,600; and that associated with Total Employment was approximately 297,200.

From Table C, it can be observed that the percentage growth in overall Population across the Study Area is estimated to occur across the various jurisdictions in the following manner:

Portions of the City of Los Angeles → 77%
City of Inglewood → 11%
Culver City → 2%
Unincorporated areas of Los Angeles County → 4%
Portions of the South Bay Cities → 6%

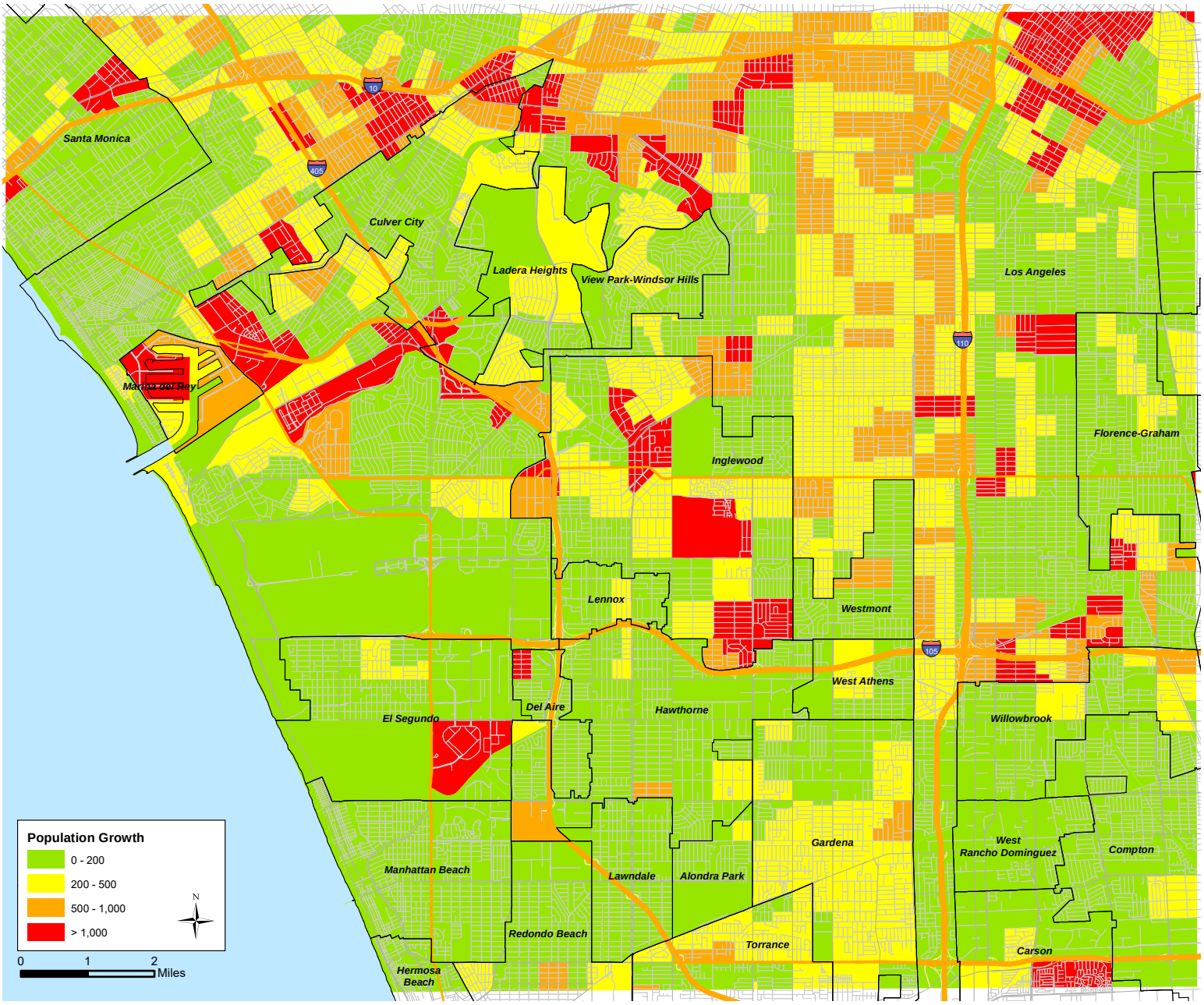

FIGURE B
UPDATED POPULATION GROWTH IN STUDY AREA

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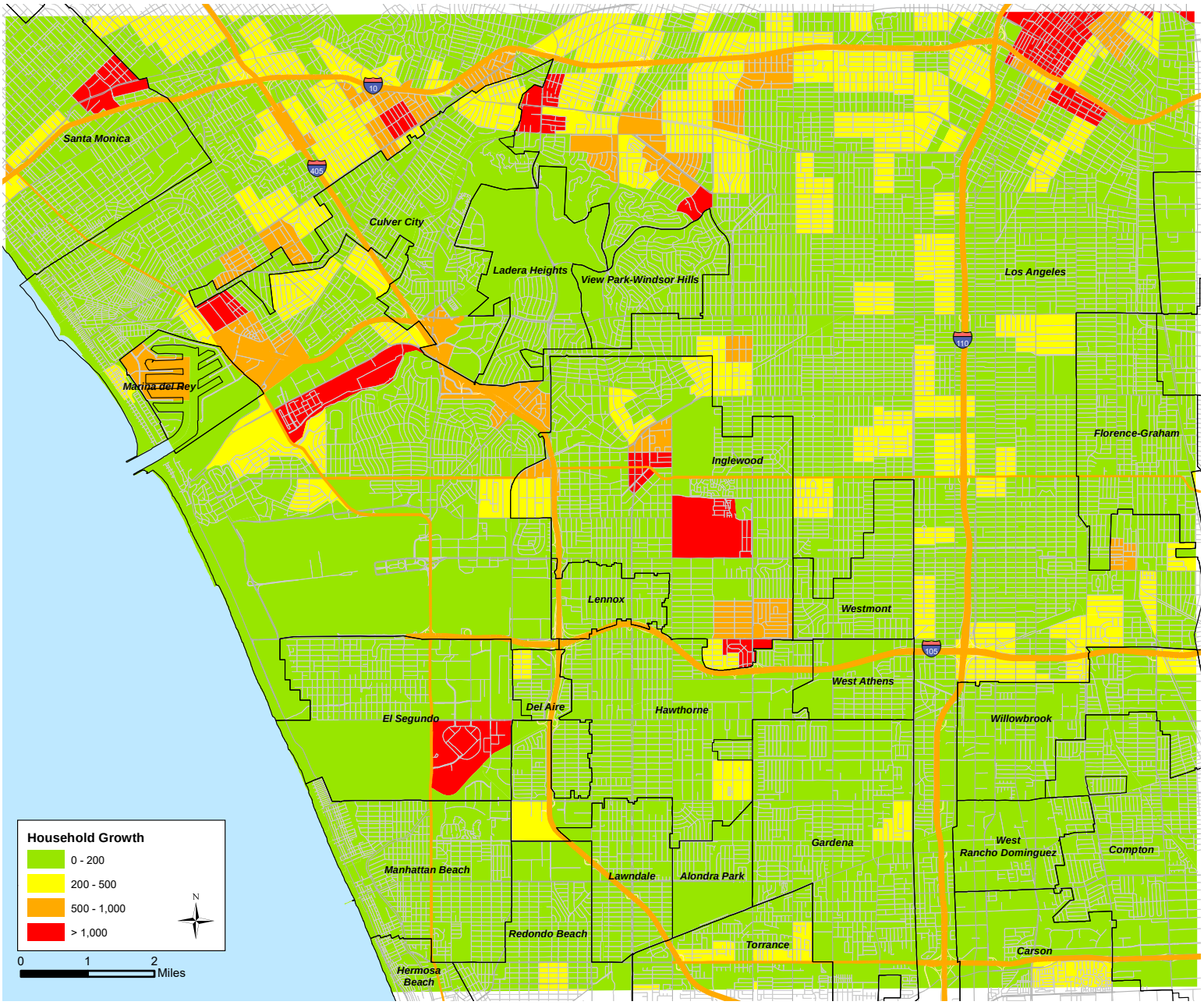


FIGURE C
UPDATED HOUSEHOLD GROWTH IN STUDY AREA

RAJU Associates, Inc

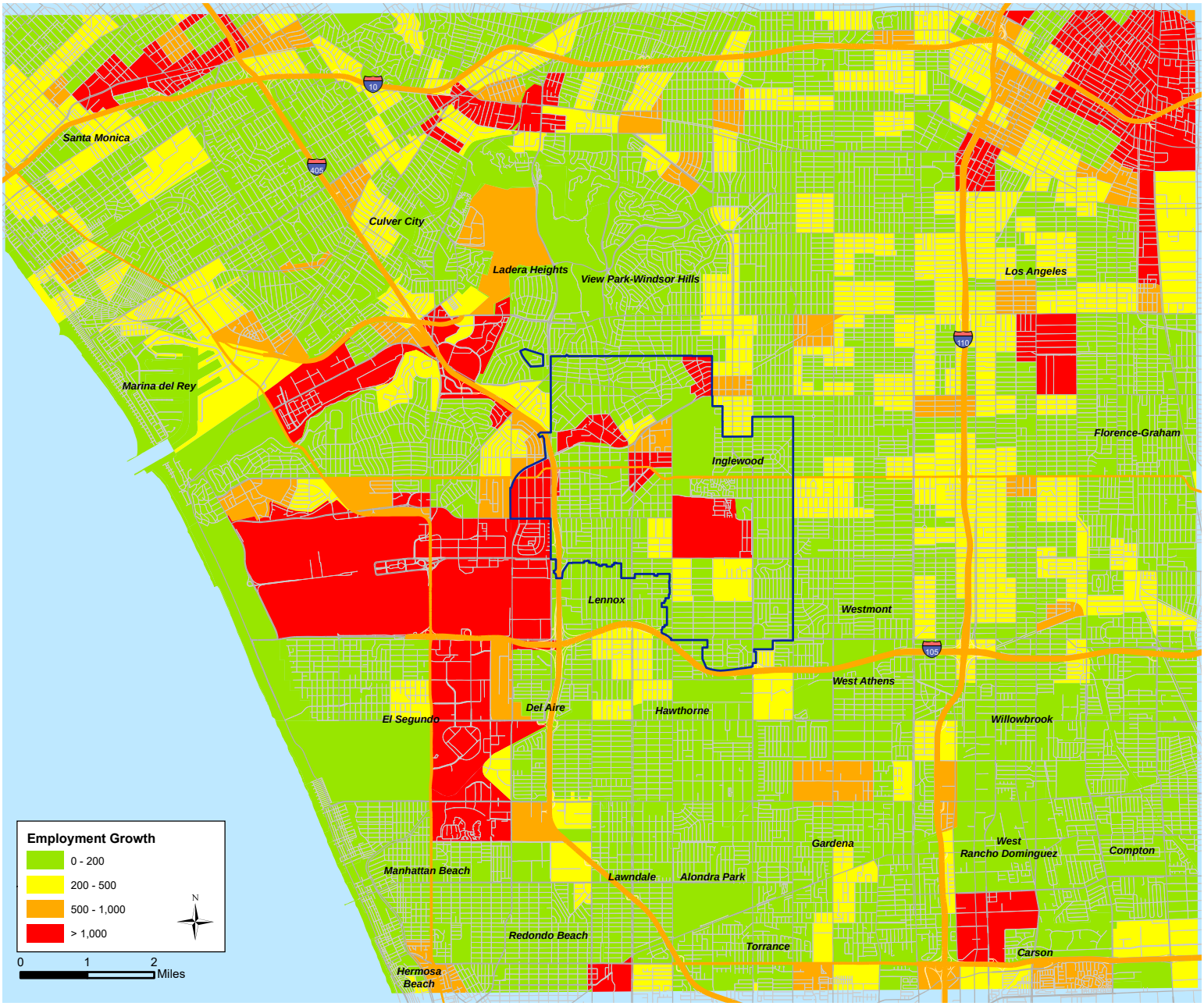


FIGURE D
UPDATED EMPLOYMENT GROWTH IN STUDY AREA

RAJU Associates, Inc.

TABLE C: SUMMARY OF OVERALL GROWTH WITHIN STUDY AREA

Jurisdiction	Total Population Growth	Total Household Growth	Total Employment Growth
City of Los Angeles[1]	284214	131405	202569
Inglewood	38601	13530	38724
Culver City	7301	2540	13715
LA County[1]	16428	6222	4261
South Bay[1]	21985	8877	37954
Total within Study Area	368529	162574	297223

Note: 1. Only portions of areas in these jurisdictions within the Study Area are included

Similarly, from Table C, it can be observed that the percentage growth in overall Households within the Study Area would be distributed across the various jurisdictions in the following manner:

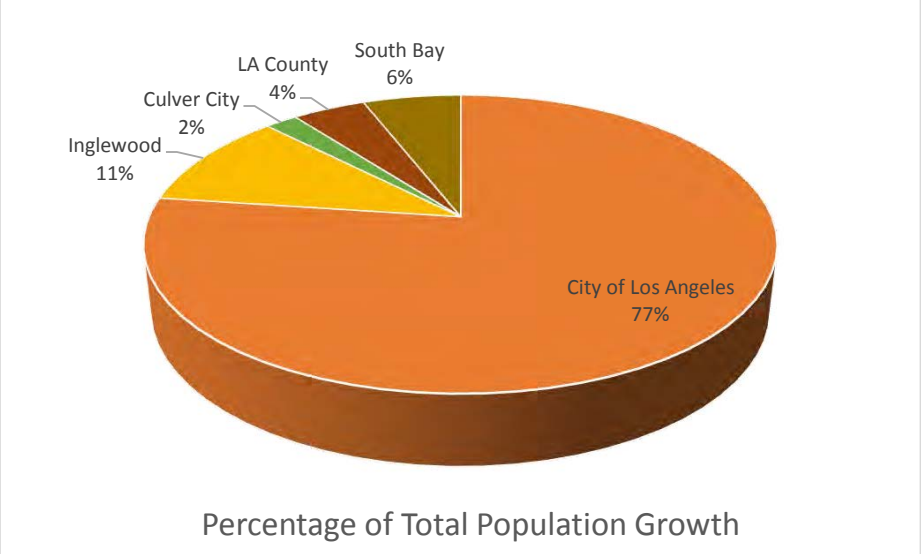
Portions of the City of Los Angeles → 81%
City of Inglewood → 8%
Culver City → 2%
Unincorporated areas of Los Angeles County → 4%
Portions of the South Bay Cities → 5%

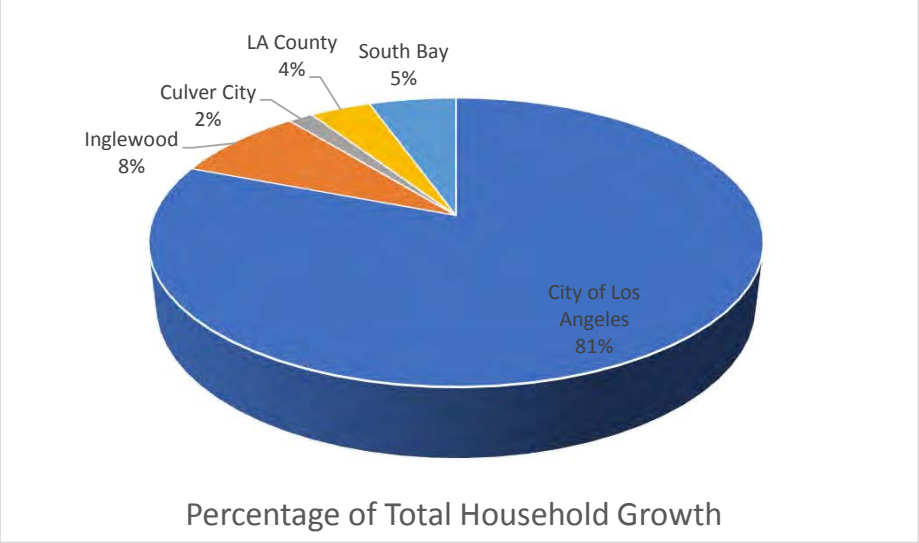
Finally, Table C data indicates that the percentage growth in overall Total Employment within the Study Area would be distributed across the various jurisdictions in the following manner:

Portions of the City of Los Angeles → 68%
City of Inglewood → 13%
Culver City → 5%
Unincorporated areas of Los Angeles County → 1%
Portions of the South Bay Cities → 13%

Figure E provides pie-charts indicating the breakdown of population growth, household growth and employment growth by jurisdiction within the study area.

In summary, analysis of the overall Study Area's substantial growth in population, housing and employment (including those associated with the related projects) indicates that this growth is spread out across all the jurisdictions including City of Los Angeles, Inglewood, Culver City, unincorporated areas of Los Angeles County and portions of the South Bay Cities consisting of El Segundo, Hawthorne and others.





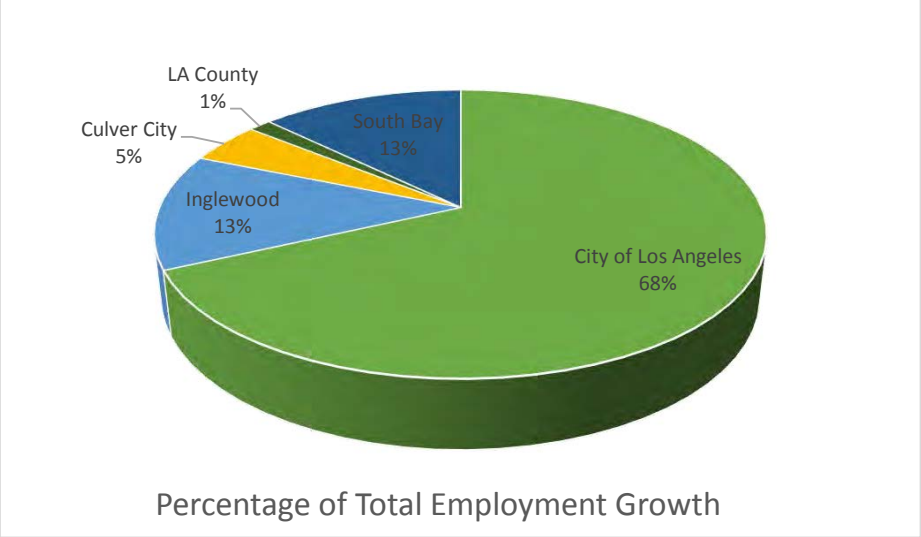


FIGURE E: DISTRIBUTION OF OVERALL GROWTH WITHIN STUDY AREA

Attachment B

Inglewood Transit Corridor Project Non-Event Day Ridership Model Technical Specifications

The following weekday **non-event scenarios** were simulated using the SCAG 2016 RTP / SCS Travel Demand Forecasting Model:

1. Future (2040) No-Project Conditions – Scenario 1
2. Future (2040) Alignment 1 (Market-Manchester-Prairie) Conditions - Scenario 2
3. Future (2040) Alignment 1 (Arbor Vitae-Prairie) Conditions - Scenario 3
4. Future (2040) Alignment 1 (Century-Prairie) Conditions - Scenario 4
5. Future (2040) Alignment 1 (Florence-Prairie) Conditions - Scenario 5

Specific technical specifications for each of the non-event scenario above are provided below:

1. Future (2040) No Project Conditions – Scenario 1

- Updated Socio-Economic Data (SED) database including updates to reflect related project growth. Related Project growth estimation and comparison to original model SED involved 5 steps;
  - Estimation of SED associated with each Related Project
  - Geocoding of Related Projects
  - Determination of T1 & T2 zone that Related Project falls in
  - Determination of growth in model SED data at T1 and T2 levels and comparison of the same to Related Project SED, and
  - Determination of needed updates of SED data for each of the Related Projects at both T1 and T2 levels
- 78 Tier 1 TAZ data were updated in the SED database
- 98 Tier 2 TAZ data were updated in the SED database

- Thirteen SED files including two files with 65 variables, and others with varying numbers of direct SED updates and secondary or joint distribution variables were involved
- The Future (2040) transit route system & stops databases (transit network) used in SCAG 2016 RTP/SCS Model were used as the base transit network for the Future (2040) No-Project Baseline Simulation

2. Future (2040) Alignment 1 (Market-Manchester-Prairie) Conditions – Scenario 2

- Utilize the updated SED database available from the Scenario 1 above.
- Prepare the transit network update to reflect the proposed ITC alignment alternative:
  - Route system is moved to the desired line geographic file, if needed.
  - Ensure that the transit route system files are consistent with the highway GIS file
  - Code route system geographic edits
    - Add the Market-Manchester-Prairie TC Route
    - Add the TC Route stops
      - Market / Florence
      - Market / Manchester
      - Manchester / Prairie (The Forum)
      - Prairie / S of Arbor Vitae (NFL Stadium)
      - Prairie / Century (IBEC - Clippers)
- Edit the route and route stop attributes using information provided in the attribute table (TS-1)
- Run "Fix Routes" utility, set up model simulation run with appropriate specifications and conduct model simulation

3. Future (2040) w/Project Alignment 2 (Arbor Vitae – Prairie) Conditions – Scenario 3

- Updated (2040) SED database generated in scenario 1 are used.
- Prepare the transit network update to reflect the proposed ITC alignment alternative:
  - Route system is moved to the desired line geographic file, if needed.
  - Ensure that the transit route system files are consistent with the highway GIS file
  - Code route system geographic edits
    - Add the Arbor Vitae-Prairie TC Route
    - Add the TC Route stops
      - Arbor Vitae / Aviation
      - Arbor Vitae / La Brea
      - Arbor Vitae / Prairie (The Forum)
      - Prairie / S of Arbor Vitae (NFL Stadium)
      - Prairie / Century (IBEC-Clippers)
- Edit the route and route stop attributes using information provided in the attribute table (TS-1)
- Run "Fix Routes" utility, set up model simulation run with appropriate specifications and conduct model simulation

4. Future (2040) w/Project Alignment 3 (Century – Prairie) Conditions – Scenario 4

- Updated (2040) SED database generated in scenario 1 are used.
- Prepare the transit network update to reflect the proposed ITC alignment alternative:
  - Route system is moved to the desired line geographic file, if needed.
  - Ensure that the transit route system files are consistent with the highway GIS file
  - Code route system geographic edits
    - Add the Century-Prairie TC Route
    - Add the TC Route stops
      - Century / Aviation
      - Century / La Cienega

- Century / Prairie (IBEC-Clippers)
- Prairie / S. of Arbor Vitae (NFL Stadium)
- Prairie / Pincay (The Forum)

- Edit the route and route stop attributes using information provided in the attribute table (TS-1)
- Run "Fix Routes" utility, set up model simulation run with appropriate specifications and conduct model simulation

5. Future (2040) w/Project Alignment 4 (Florence – Prairie) Conditions – Scenario 5

- Updated (2040) SED database generated in scenario 1 will be used.
- Prepare the transit network update to reflect the proposed ITC alignment alternative:
  - Route system is moved to the desired line geographic file, if needed.
  - Ensure that the transit route system files are consistent with the highway GIS file
  - Code route system geographic edits
    - Add the Fairview Heights (Florence) -Prairie TC Route
    - Add the TC Route stops
      - Florence / Fairview Heights Station
      - Prairie / Manchester (The Forum)
      - Prairie / S of Arbor Vitae (NFL Stadium)
      - Prairie / Century (IBEC-Clippers)
- Edit the route and route stop attributes using information provided in the attribute table (TS-1)
- Run "Fix Routes" utility, set up model simulation run with appropriate specifications and conduct model simulation

Table TS-1 -1

ALIGNMENT 1 **MARKET MANCHESTER PRAIRIE**

ROUTE SYSTEM DATA

DIRECTION	S	N
FIRST STATION	DWNTN INGLEWOOD	PRAIRIE CENTURY
LAST STATION	PRAIRIE CENTURY	DWNTN INGLEWOOD
MODE_DESCRIPTION	2LR	2LR
MODE	11	11
LONG NAME	INGLWD TR CONN ALT 1	INGLWD TR CONN ALT 1
DIST	1.78	1.78
FARE_TYPE	1	1
FARE_INDEX	1	1
BASE_FARE_NOTE	FREE	FREE
PK_INIT_WAIT	2	2
OP_INIT_WAIT	5	5
AM_FREQ	45	45
AM_HDWY	4	4
MD_FREQ	36	36
MD_HDWY	10	10
PM_FREQ	60	60
PM_HDWY	4	4
EVE_FREQ	12	12
EVE_HDWY	10	10
NT_FREQ	30	30
NT_HDWY	18	18
PK_HEADWAY	4	4
OP_HEADWAY	10	10
AM_INIT_WAIT	2	2
MD_INIT_WAIT	5	5
PM_INIT_WAIT	2	2
EVE_INIT_WAIT	5	5
NT_INIT_WAIT	9	9

STOP ATTRIBUTES

LOCATION	S1
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	999
OP_RAIL_TIME	999

LOCATION	S2
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	1.6
OP_RAIL_TIME	1.6

LOCATION	S3
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	1
OP_RAIL_TIME	1

LOCATION	S4
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	0.85
OP_RAIL_TIME	0.85

LOCATION	S5
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	1.03
OP_RAIL_TIME	1.03

Table TS-1 -2

ALIGNMENT 2 **ARBOR VITAE PRAIRIE**

ROUTE SYSTEM DATA

DIRECTION	E	W
FIRST STATION	AMC ARBOR VITAE	PRAIRIE CENTURY
LAST STATION	PRAIRIE CENTURY	AMC ARBOR VITAE
MODE_DESCRIPTION	2LR	2LR
MODE	11	11
LONG NAME	INGLWD TR CONN ALT 2	INGLWD TR CONN ALT 2
DIST	2.99	2.99
FARE_TYPE	1	1
FARE_INDEX	1	1
BASE_FARE_NOTE	FREE	FREE
PK_INIT_WAIT	2	2
OP_INIT_WAIT	5	5
AM_FREQ	45	45
AM_HDWY	4	4
MD_FREQ	36	36
MD_HDWY	10	10
PM_FREQ	60	60
PM_HDWY	4	4
EVE_FREQ	12	12
EVE_HDWY	10	10
NT_FREQ	30	30
NT_HDWY	18	18
PK_HEADWAY	4	4
OP_HEADWAY	10	10
AM_INIT_WAIT	2	2
MD_INIT_WAIT	5	5
PM_INIT_WAIT	2	2
EVE_INIT_WAIT	5	5
NT_INIT_WAIT	9	9

STOP ATTRIBUTES

LOCATION	S1
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	999
OP_RAIL_TIME	999

LOCATION	S2
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	3.3
OP_RAIL_TIME	3.3

LOCATION	S3
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	1.06
OP_RAIL_TIME	1.06

LOCATION	S3
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	2.5
OP_RAIL_TIME	2.5

LOCATION	
MODE	
MODE_DESC	
PK_RAIL TIME	
OP_RAIL_TIME	

Table TS-1 -3

ALIGNMENT 3 CENTURY PRAIRIE

ROUTE SYSTEM DATA

DIRECTION	E	W
FIRST STATION	AMC CENTURY	PRAIRIE PINCAY(GWF)
LAST STATION	PRAIRIE PINCAY(GWF)	AMC CENTURY
MODE_DESCRIPTION	2LR	2LR
MODE	11	11
LONG NAME	INGLWD TR CONN ALT 3	INGLWD TR CONN ALT 3
DIST	3.05	3.05
FARE_TYPE	1	1
FARE_INDEX	1	1
BASE_FARE_NOTE	FREE	FREE
PK_INIT_WAIT	2	2
OP_INIT_WAIT	5	5
AM_FREQ	45	45
AM_HDWY	4	4
MD_FREQ	36	36
MD_HDWY	10	10
PM_FREQ	60	60
PM_HDWY	4	4
EVE_FREQ	12	12
EVE_HDWY	10	10
NT_FREQ	30	30
NT_HDWY	18	18
PK_HEADWAY	4	4
OP_HEADWAY	10	10
AM_INIT_WAIT	2	2
MD_INIT_WAIT	5	5
PM_INIT_WAIT	2	2
EVE_INIT_WAIT	5	5
NT_INIT_WAIT	9	9

STOP ATTRIBUTES

LOCATION	S1
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	999
OP_RAIL_TIME	999

LOCATION	S2
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	3.78
OP_RAIL_TIME	3.78

LOCATION	S3
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	1.03
OP_RAIL_TIME	1.03

LOCATION	S4
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	0.82
OP_RAIL_TIME	0.82

LOCATION	
MODE	
MODE_DESC	
PK_RAIL TIME	
OP_RAIL_TIME	

ALIGNMENT FLORENCE (FAIRVIEW HTS) PRAIRIE

ROUTE SYSTEM DATA

DIRECTION	S	N
FIRST STATION	FLORENCE FAIRVIEW HTS	PRAIRIE CENTURY
LAST STATION	PRAIRIE CENTURY	FLORENCE FAIRVIEW HTS
MODE_DESCRIPTION	2LR	2LR
MODE	11	11
LONG NAME	INGLWD TR CONN ALT 4	INGLWD TR CONN ALT 4
DIST	2.22	2.22
FARE_TYPE	1	1
FARE_INDEX	1	1
BASE_FARE_NOTE	FREE	FREE
PK_INIT_WAIT	2	2
OP_INIT_WAIT	5	5
AM_FREQ	45	45
AM_HDWY	4	4
MD_FREQ	36	36
MD_HDWY	10	10
PM_FREQ	60	60
PM_HDWY	4	4
EVE_FREQ	12	12
EVE_HDWY	10	10
NT_FREQ	30	30
NT_HDWY	18	18
PK_HEADWAY	4	4
OP_HEADWAY	10	10
AM_INIT_WAIT	2	2
MD_INIT_WAIT	5	5
PM_INIT_WAIT	2	2
EVE_INIT_WAIT	5	5
NT_INIT_WAIT	9	9

STOP ATTRIBUTES

LOCATION	S1
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	999
OP_RAIL_TIME	999

LOCATION	S2
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	2.23
OP_RAIL_TIME	2.23

LOCATION	S3
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	0.96
OP_RAIL_TIME	0.96

LOCATION	S4
MODE	11
MODE_DESC	2LR
PK_RAIL TIME	1.1
OP_RAIL_TIME	1.1

LOCATION	
MODE	
MODE_DESC	
PK_RAIL TIME	
OP_RAIL_TIME	

Attachment C

YEAR 2040 LINE LEVEL RIDERSHIP (NORMAL COMMUTER WEEKDAY)

	Ridership (on-line)																				
	Total	Peak		Off-Peak		26%	37%	37%	15%	15%	16%	17%	18%	19%	25%	26%	26%	23%	29%	25%	20%	15%	11%
		AM	PM	MD	NT	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM
ITC Market-Manchester Alignment APM	4,969	1,487	2,230	1,002	250	382	551	554	345	335	351	376	395	429	251	256	260	235	73	62	51	36	28
Northbound						78	112	112	70	68	175	188	197	214	200	204	207	187	58	31	25	18	14
Southbound						305	439	441	275	267	175	188	197	214	51	52	53	48	15	31	25	18	14
ITC Fairview Heights Alignment APM	3,057	847	1,271	751	188	218	314	316	197	191	200	214	225	244	188	192	195	176	54	47	38	27	21
Northbound						44	64	64	40	39	100	107	113	122	150	153	155	140	43	23	19	14	11
Southbound						174	250	252	157	152	100	107	113	122	38	39	39	36	11	23	19	14	11
ITC Arbor Vitae Alignment APM	3,396	936	1,404	845	211	241	347	349	217	211	221	236	249	270	212	216	219	198	61	52	43	31	24
Westbound						49	70	71	44	43	110	118	124	135	169	172	175	158	49	26	21	15	12
Eastbound						192	276	278	173	168	110	118	124	135	43	44	44	40	12	26	21	15	12
ITC Century Alignment ITC	5,982	1,677	2,516	1,431	358	431	621	625	390	378	396	424	446	484	359	366	371	336	104	89	73	52	40
Westbound						87	126	127	79	77	198	212	223	242	286	291	296	268	83	44	36	26	20
Eastbound						344	495	498	311	301	198	212	223	242	73	74	75	68	21	44	36	26	20

YEAR 2040 LINE LEVEL RIDERSHIP (NORMAL COMMUTER WEEKEND - SATURDAY)

	2040 Ridership Total	AM 6-9	Base 9-3	PM 3-7	NT 7-End	26%	37%	37%	15%	15%	16%	17%	18%	19%	25%	26%	26%	23%	29%	25%	20%	15%	11%
						6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM
ITC Market-Manchester Alignment APM	3,228	412	1,397	918	501	106	152	153	216	210	220	235	247	269	230	234	238	215	145	124	102	73	57
						51	73	74	104	101	105	113	119	129	111	113	114	103	70	60	49	35	27
						55	79	80	113	109	114	122	129	140	120	122	124	112	76	65	53	38	29
ITC Fairview Heights Alignment APM	1,986	253	859	565	308	65	94	94	133	129	135	145	152	165	142	144	146	132	89	77	63	45	35
						31	45	45	64	62	65	69	73	79	68	69	70	64	43	37	30	22	17
						34	49	49	69	67	70	75	79	86	74	75	76	69	46	40	33	23	18
ITC Arbor Vitae Alignment APM	2,206	281	955	627	343	72	104	105	148	143	150	161	169	184	157	160	163	147	99	85	70	50	39
						35	50	50	71	69	72	77	81	88	76	77	78	71	48	41	33	24	19
						38	54	54	77	74	78	84	88	95	82	83	85	77	52	44	36	26	20
ITC Century Alignment ITC	3,886	495	1,682	1,105	604	127	183	185	261	252	264	283	298	323	277	282	286	259	175	150	123	88	68
						61	88	89	125	121	127	136	143	155	133	136	137	124	84	72	59	42	33
						66	95	96	135	131	138	147	155	168	144	147	149	135	91	78	64	46	35

YEAR 2040 LINE LEVEL RIDERSHIP (NORMAL COMMUTER WEEKEND - SUNDAY)

	2040 Ridership Total	AM 6-9	Base 9-3	PM 3-7	NT 7-End	26%	37%	37%	15%	15%	16%	17%	18%	19%	25%	26%	26%	23%	29%	25%	20%	15%	11%
						6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM
ITC Market-Manchester Alignment APM	2,733	348	1,183	777	424	90	129	130	183	177	186	199	209	227	195	199	201	182	123	105	86	62	48
						46	66	66	93	91	95	102	107	116	99	101	103	93	63	54	44	31	24
						44	63	64	90	87	91	98	103	111	96	97	99	89	60	52	42	30	24
ITC Fairview Heights Alignment APM	1,681	214	728	478	261	55	79	80	113	109	114	123	129	140	120	122	124	112	76	65	53	38	30
						28	40	41	57	56	58	62	66	71	61	62	63	57	39	33	27	19	15
						27	39	39	55	54	56	60	63	69	59	60	61	55	37	32	26	19	14
ITC Arbor Vitae Alignment APM	1,868	238	808	531	290	61	88	89	125	121	127	136	143	155	133	136	138	125	84	72	59	42	33
						31	45	45	64	62	65	69	73	79	68	69	70	64	43	37	30	22	17
						30	43	43	61	59	62	67	70	76	65	66	67	61	41	35	29	21	16
ITC Century Alignment ITC	3,290	420	1,424	936	511	108	155	156	221	214	224	240	252	274	235	239	242	219	148	127	104	74	58
						55	79	80	112	109	114	122	129	140	120	122	124	112	75	65	53	38	29
						53	76	77	108	105	110	118	124	134	115	117	119	108	73	62	51	36	28

Attachment D

NFL STADIUM VENUE

RIDERSHIP PROFILE

NFL Stadium - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - NFL Games - L.A. RAMS	60,000	72,000	60,000	72,000	60,000	72,000	60,000	72,000
Employees - NFL Games - L.A. Rams	5,000	6,000	5,000	6,000	5,000	6,000	5,000	6,000
Based on 2016 Rams Ticket Sales - NFL Games								
Walk Only Transit Access [a]	24%	24%	30%	30%	25%	25%	23%	23%
Drive Only Transit Access [b]	5%	5%	3%	3%	5%	5%	5%	5%
Walk and Drive Transit Access	31%	31%	25%	25%	30%	30%	32%	32%
% of Attendees with Transit Access	60%	60%	57%	57%	60%	60%	60%	60%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - NFL Games (Rams)	5,040	10,368	4,788	9,850	5,040	10,368	5,400	10,368
Employees using APM	420	864	399	821	420	864	450	864

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
> 2 hours (7%-Attendee, 90%-Personnel)	353	726	378	778	731	1,504
1-2 hours (28%-Attendee, 10%-Personnel)	1,411	2,903	42	86	1,453	2,989
< 1 hour (65%-Attendee, 0%-Personnel)	3,276	6,739	0	0	3,276	6,739
Departure Pattern						
During Game (10%-Attendee, 10%-Personnel)	504	1,037	42	86	546	1,123
< 1 hour (80%-Attendee, 40%-Personnel)	4,032	8,294	168	346	4,200	8,640
1-2 hours (10%-Attendee, 50%-Personnel)	504	1,037	210	432	714	1,469

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
> 2 hours (7%-Attendee, 90%-Personnel)	335	689	359	739	694	1,428
1-2 hours (28%-Attendee, 10%-Personnel)	1,341	2,758	40	82	1,381	2,840
< 1 hour (65%-Attendee, 0%-Personnel)	3,112	6,402	0	0	3,112	6,402
Departure Pattern						
During Game (10%-Attendee, 10%-Personnel)	479	985	40	82	519	1,067
< 1 hour (80%-Attendee, 40%-Personnel)	3,830	7,880	319	657	4,149	8,537
1-2 hours (10%-Attendee, 50%-Personnel)	479	985	40	82	519	1,067

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
> 2 hours (7%-Attendee, 90%-Personnel)	353	726	378	778	731	1,504
1-2 hours (28%-Attendee, 10%-Personnel)	1,411	2,903	42	86	1,453	2,989
< 1 hour (65%-Attendee, 0%-Personnel)	3,276	6,739	0	0	3,276	6,739
Departure Pattern						
During Game (10%-Attendee, 10%-Personnel)	504	1,037	42	86	546	1,123
< 1 hour (80%-Attendee, 40%-Personnel)	4,032	8,294	336	691	4,368	8,985
1-2 hours (10%-Attendee, 50%-Personnel)	504	1,037	42	86	546	1,123

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
> 2 hours (7%-Attendee, 90%-Personnel)	378	726	405	778	783	1,504
1-2 hours (28%-Attendee, 10%-Personnel)	1,512	2,903	45	86	1,557	2,989
< 1 hour (65%-Attendee, 0%-Personnel)	3,510	6,739	0	0	3,510	6,739
Departure Pattern						
During Game (10%-Attendee, 10%-Personnel)	540	1,037	45	86	585	1,123
< 1 hour (80%-Attendee, 40%-Personnel)	4,320	8,294	360	691	4,680	8,985
1-2 hours (10%-Attendee, 50%-Personnel)	540	1,037	45	86	585	1,123

NFL Stadium Los Angeles Chargers - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - NFL Games - L.A. Chargers	45,000	54,000	45,000	54,000	45,000	54,000	45,000	54,000
Employees - NFL Games - L.A. Chargers	3,750	4,500	3,750	4,500	3,750	4,500	3,750	4,500
Based on 2016 Rams Ticket Sales - NFL Games								
Walk Only Transit Access [a]	24%	24%	30%	30%	25%	25%	23%	23%
Drive Only Transit Access [b]	5%	5%	3%	3%	5%	5%	5%	5%
Walk and Drive Transit Access	31%	31%	25%	25%	30%	30%	32%	32%
% of Attendees with Transit Access	60%	60%	57%	57%	60%	60%	60%	60%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - NFL Games (Chargers)	3,780	7,776	3,591	7,387	3,780	7,776	4,050	7,776
Employees using APM	315	648	299	616	315	648	338	648

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
> 2 hours (7%-Attendee, 90%-Personnel)	265	544	284	583	549	1,127
1-2 hours (28%-Attendee, 10%-Personnel)	1,058	2,177	32	65	1,090	2,242
< 1 hour (65%-Attendee, 0%-Personnel)	2,457	5,054	0	0	2,457	5,054
Departure Pattern						
During Game (10%-Attendee, 10%-Personnel)	378	778	32	65	410	843
< 1 hour (80%-Attendee, 40%-Personnel)	3,024	6,221	126	259	3,150	6,480
1-2 hours (10%-Attendee, 50%-Personnel)	378	778	158	324	536	1,102

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
> 2 hours (7%-Attendee, 90%-Personnel)	251	517	269	554	520	1,071
1-2 hours (28%-Attendee, 10%-Personnel)	1,005	2,068	30	62	1,035	2,130
< 1 hour (65%-Attendee, 0%-Personnel)	2,334	4,802	0	0	2,334	4,802
Departure Pattern						
During Game (10%-Attendee, 10%-Personnel)	359	739	30	62	389	801
< 1 hour (80%-Attendee, 40%-Personnel)	2,873	5,910	239	492	3,112	6,402
1-2 hours (10%-Attendee, 50%-Personnel)	359	739	30	62	389	801

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
> 2 hours (7%-Attendee, 90%-Personnel)	265	544	284	583	549	1,127
1-2 hours (28%-Attendee, 10%-Personnel)	1,058	2,177	32	65	1,090	2,242
< 1 hour (65%-Attendee, 0%-Personnel)	2,457	5,054	0	0	2,457	5,054
Departure Pattern						
During Game (10%-Attendee, 10%-Personnel)	378	778	32	65	410	843
< 1 hour (80%-Attendee, 40%-Personnel)	3,024	6,221	252	518	3,276	6,739
1-2 hours (10%-Attendee, 50%-Personnel)	378	778	32	65	410	843

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
> 2 hours (7%-Attendee, 90%-Personnel)	284	544	304	583	588	1,127
1-2 hours (28%-Attendee, 10%-Personnel)	1,134	2,177	34	65	1,168	2,242
< 1 hour (65%-Attendee, 0%-Personnel)	2,633	5,054	0	0	2,633	5,054
Departure Pattern						
During Game (10%-Attendee, 10%-Personnel)	405	778	34	65	439	843
< 1 hour (80%-Attendee, 40%-Personnel)	3,240	6,221	270	518	3,510	6,739
1-2 hours (10%-Attendee, 50%-Personnel)	405	778	34	65	439	843

NFL Stadium Medium Events - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - NFL Stadium Medium Events	40,000	60,000	40,000	60,000	40,000	60,000	40,000	60,000
Employees - NFL Stadium Medium Events	2,000	3,000	2,000	3,000	2,000	3,000	2,000	3,000
Based on Population								
Walk Only Transit Access [a]	21%	21%	28%	28%	23%	23%	23%	23%
Drive Only Transit Access [b]	4%	4%	2%	2%	4%	4%	4%	4%
Walk and Drive Transit Access	28%	28%	22%	22%	27%	27%	28%	28%
% of Attendees with Transit Access	53%	53%	52%	52%	55%	55%	55%	55%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - NFL Medium Events	2,981	7,666	2,902	7,462	3,071	7,897	3,296	7,909
Employees using APM	149	383	145	373	154	395	165	395

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	1,192	3,066	149	383	1,341	3,449
< 1 hour (60%-Attendee, 0%-Personnel)	1,789	4,599	0	0	1,789	4,599
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	2,385	6,133	75	192	2,460	6,325
1-2 hours (20%-Attendee, 50%-Personnel)	596	1,533	75	192	671	1,725

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	1,161	2,985	145	373	1,306	3,358
< 1 hour (60%-Attendee, 0%-Personnel)	1,741	4,477	0	0	1,741	4,477
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	2,322	5,970	73	187	2,395	6,157
1-2 hours (20%-Attendee, 50%-Personnel)	580	1,492	73	187	653	1,679

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	1,228	3,159	154	395	1,382	3,554
< 1 hour (60%-Attendee, 0%-Personnel)	1,843	4,738	0	0	1,843	4,738
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	2,457	6,318	77	197	2,534	6,515
1-2 hours (20%-Attendee, 50%-Personnel)	614	1,579	77	197	691	1,776

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	923	2,215	165	395	1,088	2,610
< 1 hour (60%-Attendee, 0%-Personnel)	2,142	5,141	0	0	2,142	5,141
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	2,636	6,327	82	198	2,718	6,525
1-2 hours (20%-Attendee, 50%-Personnel)	330	791	82	198	412	989

NFL Stadium Small Events - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - NFL Stadium Small Events	10,000	25,000	10,000	25,000	10,000	25,000	10,000	25,000
Employees - NFL Stadium Small Events	600	1,500	600	1,500	600	1,500	600	1,500
Based on Population								
Walk Only Transit Access [a]	21%	21%	28%	28%	23%	23%	23%	23%
Drive Only Transit Access [b]	4%	4%	2%	2%	4%	4%	4%	4%
Walk and Drive Transit Access	28%	28%	22%	22%	27%	27%	28%	28%
% of Attendees with Transit Access	53%	53%	52%	52%	55%	55%	55%	55%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - NFL Small Events	745	3,194	725	3,109	768	3,290	824	3,296
Employees using APM	45	192	44	187	46	197	49	198

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	298	1,278	45	192	343	1,470
< 1 hour (60%-Attendee, 0%-Personnel)	447	1,916	0	0	447	1,916
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	596	2,555	22	96	618	2,651
1-2 hours (20%-Attendee, 50%-Personnel)	149	639	22	96	171	735

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	290	1,244	44	187	334	1,431
< 1 hour (60%-Attendee, 0%-Personnel)	435	1,865	0	0	435	1,865
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	580	2,487	22	93	602	2,580
1-2 hours (20%-Attendee, 50%-Personnel)	145	622	22	93	167	715

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	307	1,316	46	197	353	1,513
< 1 hour (60%-Attendee, 0%-Personnel)	461	1,974	0	0	461	1,974
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	614	2,632	23	99	637	2,731
1-2 hours (20%-Attendee, 50%-Personnel)	154	658	23	99	177	757

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	231	923	49	198	280	1,121
< 1 hour (60%-Attendee, 0%-Personnel)	536	2,142	0	0	536	2,142
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	659	2,636	25	99	684	2,735
1-2 hours (20%-Attendee, 50%-Personnel)	82	330	25	99	107	429

THE FORUM VENUE

RIDERSHIP PROFILE

The Forum Large Events - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - The Forum Large Events	12,000	17,500	12,000	17,500	12,000	17,500	12,000	17,500
Employees - The Forum Large Events	600	875	600	875	600	875	600	875
Based on Population								
Walk Only Transit Access [a]	21%	21%	28%	28%	23%	23%	23%	23%
Drive Only Transit Access [b]	4%	4%	2%	2%	4%	4%	4%	4%
Walk and Drive Transit Access	28%	28%	22%	22%	27%	27%	28%	28%
% of Attendees with Transit Access	53%	53%	52%	52%	55%	55%	55%	55%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - The Forum Large Events	894	2,236	871	2,176	921	2,303	989	2,307
Employees using APM	45	112	44	109	46	115	49	115

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	358	894	45	112	403	1,006
< 1 hour (60%-Attendee, 0%-Personnel)	537	1,342	0	0	537	1,342
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	715	1,789	22	56	737	1,845
1-2 hours (20%-Attendee, 50%-Personnel)	179	447	22	56	201	503

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	348	871	44	109	392	980
< 1 hour (60%-Attendee, 0%-Personnel)	522	1,306	0	0	522	1,306
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	696	1,741	22	54	718	1,795
1-2 hours (20%-Attendee, 50%-Personnel)	174	435	22	54	196	489

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	369	921	46	115	415	1,036
< 1 hour (60%-Attendee, 0%-Personnel)	553	1,382	0	0	553	1,382
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	737	1,843	23	58	760	1,901
1-2 hours (20%-Attendee, 50%-Personnel)	184	461	23	58	207	519

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	277	646	49	115	326	761
< 1 hour (60%-Attendee, 0%-Personnel)	643	1,499	0	0	643	1,499
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	791	1,846	25	58	816	1,904
1-2 hours (20%-Attendee, 50%-Personnel)	99	231	25	58	124	289

The Forum Medium Events - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - The Forum Medium Events	8,000	12,000	8,000	12,000	8,000	12,000	8,000	12,000
Employees - The Forum Medium Events	400	600	400	600	400	600	400	600
Based on Population								
Walk Only Transit Access [a]	21%	21%	28%	28%	23%	23%	23%	23%
Drive Only Transit Access [b]	4%	4%	2%	2%	4%	4%	4%	4%
Walk and Drive Transit Access	28%	28%	22%	22%	27%	27%	28%	28%
% of Attendees with Transit Access	53%	53%	52%	52%	55%	55%	55%	55%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - The Forum Medium Events	596	1,533	580	1,492	614	1,579	659	1,582
Employees using APM	30	77	29	75	31	79	33	79

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	238	613	30	77	268	690
< 1 hour (60%-Attendee, 0%-Personnel)	358	920	0	0	358	920
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	477	1,227	15	38	492	1,265
1-2 hours (20%-Attendee, 50%-Personnel)	119	307	15	38	134	345

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	232	597	29	75	261	672
< 1 hour (60%-Attendee, 0%-Personnel)	348	895	0	0	348	895
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	464	1,194	15	37	479	1,231
1-2 hours (20%-Attendee, 50%-Personnel)	116	298	15	37	131	335

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	246	632	31	79	277	711
< 1 hour (60%-Attendee, 0%-Personnel)	369	948	0	0	369	948
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	491	1,264	15	39	506	1,303
1-2 hours (20%-Attendee, 50%-Personnel)	123	316	15	39	138	355

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	185	443	33	79	218	522
< 1 hour (60%-Attendee, 0%-Personnel)	428	1,028	0	0	428	1,028
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	527	1,265	16	40	543	1,305
1-2 hours (20%-Attendee, 50%-Personnel)	66	158	16	40	82	198

The Forum Small Events - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - The Forum Small Events	4,000	8,000	4,000	8,000	4,000	8,000	4,000	8,000
Employees - The Forum Small Events	200	400	200	400	200	400	200	400
Based on Population								
Walk Only Transit Access [a]	21%	21%	28%	28%	23%	23%	23%	23%
Drive Only Transit Access [b]	4%	4%	2%	2%	4%	4%	4%	4%
Walk and Drive Transit Access	28%	28%	22%	22%	27%	27%	28%	28%
% of Attendees with Transit Access	53%	53%	52%	52%	55%	55%	55%	55%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - The Forum Small Events	298	1,022	290	995	307	1,053	330	1,055
Employees using APM	15	51	15	50	15	53	16	53

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	119	409	15	51	134	460
< 1 hour (60%-Attendee, 0%-Personnel)	179	613	0	0	179	613
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	238	818	7	26	245	844
1-2 hours (20%-Attendee, 50%-Personnel)	60	204	7	26	67	230

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	116	398	15	50	131	448
< 1 hour (60%-Attendee, 0%-Personnel)	174	597	0	0	174	597
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	232	796	7	25	239	821
1-2 hours (20%-Attendee, 50%-Personnel)	58	199	7	25	65	224

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	123	421	15	53	138	474
< 1 hour (60%-Attendee, 0%-Personnel)	184	632	0	0	184	632
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	246	842	8	26	254	868
1-2 hours (20%-Attendee, 50%-Personnel)	61	211	8	26	69	237

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	92	295	16	53	108	348
< 1 hour (60%-Attendee, 0%-Personnel)	214	685	0	0	214	685
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	264	844	8	26	272	870
1-2 hours (20%-Attendee, 50%-Personnel)	33	105	8	26	41	131

INGLEWOOD BASKETBALL AND ENTERTAINMENT CENTER (IBEC)

RIDERSHIP PROFILE

IBEC Los Angeles Clippers Game - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - NBA Game	15,000	18,500	15,000	18,500	15,000	18,500	15,000	18,500
Employees - NBA Game	750	925	750	925	750	925	750	925
Based on Population								
Walk Only Transit Access [a]	21%	21%	28%	28%	23%	23%	23%	23%
Drive Only Transit Access [b]	4%	4%	2%	2%	4%	4%	4%	4%
Walk and Drive Transit Access	28%	28%	22%	22%	27%	27%	28%	28%
% of Attendees with Transit Access	53%	53%	52%	52%	55%	55%	55%	55%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - NBA Game	1,118	2,364	1,088	2,301	1,152	2,435	1,236	2,439
Employees using APM	56	118	54	115	58	122	62	122

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	447	945	56	118	503	1,063
< 1 hour (60%-Attendee, 0%-Personnel)	671	1,418	0	0	671	1,418
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	894	1,891	28	59	922	1,950
1-2 hours (20%-Attendee, 50%-Personnel)	224	473	28	59	252	532

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	435	920	54	115	489	1,035
< 1 hour (60%-Attendee, 0%-Personnel)	653	1,380	0	0	653	1,380
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	871	1,841	27	58	898	1,899
1-2 hours (20%-Attendee, 50%-Personnel)	218	460	27	58	245	518

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	461	974	58	122	519	1,096
< 1 hour (60%-Attendee, 0%-Personnel)	691	1,461	0	0	691	1,461
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	921	1,948	29	61	950	2,009
1-2 hours (20%-Attendee, 50%-Personnel)	230	487	29	61	259	548

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	346	683	62	122	408	805
< 1 hour (60%-Attendee, 0%-Personnel)	803	1,585	0	0	803	1,585
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	989	1,951	31	61	1,020	2,012
1-2 hours (20%-Attendee, 50%-Personnel)	124	244	31	61	155	305

IBEC Large Events - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance -IBEC Large Events	12,000	18,500	12,000	18,500	12,000	18,500	12,000	18,500
Employees - IBEC Large Events	600	925	600	925	600	925	600	925
Based on Population								
Walk Only Transit Access [a]	21%	21%	28%	28%	23%	23%	23%	23%
Drive Only Transit Access [b]	4%	4%	2%	2%	4%	4%	4%	4%
Walk and Drive Transit Access	28%	28%	22%	22%	27%	27%	28%	28%
% of Attendees with Transit Access	53%	53%	52%	52%	55%	55%	55%	55%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - IBEC Large Events	894	2,364	871	2,301	921	2,435	989	2,439
Employees using APM	45	118	44	115	46	122	49	122

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	358	945	45	118	403	1,063
< 1 hour (60%-Attendee, 0%-Personnel)	537	1,418	0	0	537	1,418
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	715	1,891	22	59	737	1,950
1-2 hours (20%-Attendee, 50%-Personnel)	179	473	22	59	201	532

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	348	920	44	115	392	1,035
< 1 hour (60%-Attendee, 0%-Personnel)	522	1,380	0	0	522	1,380
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	696	1,841	22	58	718	1,899
1-2 hours (20%-Attendee, 50%-Personnel)	174	460	22	58	196	518

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	369	974	46	122	415	1,096
< 1 hour (60%-Attendee, 0%-Personnel)	553	1,461	0	0	553	1,461
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	737	1,948	23	61	760	2,009
1-2 hours (20%-Attendee, 50%-Personnel)	184	487	23	61	207	548

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	277	683	49	122	326	805
< 1 hour (60%-Attendee, 0%-Personnel)	643	1,585	0	0	643	1,585
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	791	1,951	25	61	816	2,012
1-2 hours (20%-Attendee, 50%-Personnel)	99	244	25	61	124	305

IBEC Medium Events - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - IBEC Medium Events	8,000	12,000	8,000	12,000	8,000	12,000	8,000	12,000
Employees - IBEC Medium Events	400	600	400	600	400	600	400	600
Based on Population								
Walk Only Transit Access [a]	21%	21%	28%	28%	23%	23%	23%	23%
Drive Only Transit Access [b]	4%	4%	2%	2%	4%	4%	4%	4%
Walk and Drive Transit Access	28%	28%	22%	22%	27%	27%	28%	28%
% of Attendees with Transit Access	53%	53%	52%	52%	55%	55%	55%	55%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - IBEC Medium Event	596	1,533	580	1,492	614	1,579	659	1,582
Employees using APM	30	77	29	75	31	79	33	79

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	238	613	30	77	268	690
< 1 hour (60%-Attendee, 0%-Personnel)	358	920	0	0	358	920
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	477	1,227	15	38	492	1,265
1-2 hours (20%-Attendee, 50%-Personnel)	119	307	15	38	134	345

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	232	597	29	75	261	672
< 1 hour (60%-Attendee, 0%-Personnel)	348	895	0	0	348	895
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	464	1,194	15	37	479	1,231
1-2 hours (20%-Attendee, 50%-Personnel)	116	298	15	37	131	335

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	246	632	31	79	277	711
< 1 hour (60%-Attendee, 0%-Personnel)	369	948	0	0	369	948
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	491	1,264	15	39	506	1,303
1-2 hours (20%-Attendee, 50%-Personnel)	123	316	15	39	138	355

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	185	443	33	79	218	522
< 1 hour (60%-Attendee, 0%-Personnel)	428	1,028	0	0	428	1,028
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	527	1,265	16	40	543	1,305
1-2 hours (20%-Attendee, 50%-Personnel)	66	158	16	40	82	198

IBEC Small Events - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - IBEC Small Events	4,000	8,000	4,000	8,000	4,000	8,000	4,000	8,000
Employees -IBEC Small Events	200	400	200	400	200	400	200	400
Based on Population								
Walk Only Transit Access [a]	21%	21%	28%	28%	23%	23%	23%	23%
Drive Only Transit Access [b]	4%	4%	2%	2%	4%	4%	4%	4%
Walk and Drive Transit Access	28%	28%	22%	22%	27%	27%	28%	28%
% of Attendees with Transit Access	53%	53%	52%	52%	55%	55%	55%	55%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - IBEC Small Event	298	1,022	290	995	307	1,053	330	1,055
Employees using APM	15	51	15	50	15	53	16	53

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	119	409	15	51	134	460
< 1 hour (60%-Attendee, 0%-Personnel)	179	613	0	0	179	613
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	238	818	7	26	245	844
1-2 hours (20%-Attendee, 50%-Personnel)	60	204	7	26	67	230

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	116	398	15	50	131	448
< 1 hour (60%-Attendee, 0%-Personnel)	174	597	0	0	174	597
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	232	796	7	25	239	821
1-2 hours (20%-Attendee, 50%-Personnel)	58	199	7	25	65	224

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	123	421	15	53	138	474
< 1 hour (60%-Attendee, 0%-Personnel)	184	632	0	0	184	632
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	246	842	8	26	254	868
1-2 hours (20%-Attendee, 50%-Personnel)	61	211	8	26	69	237

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	92	295	16	53	108	348
< 1 hour (60%-Attendee, 0%-Personnel)	214	685	0	0	214	685
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	264	844	8	26	272	870
1-2 hours (20%-Attendee, 50%-Personnel)	33	105	8	26	41	131

PERFORMANCE ARENA VENUE

RIDERSHIP PROFILE

Performance Arena Events - 2040 Transit Accessible Attendees Estimate

	Fairview Heights Alignment		Arbor Vitae Alignment		Market-Manchester Alignment		Century Alignment	
	Low Estimate	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**	**Low Estimate**	**High Estimate**
Attendance - Performance Arena Event	4,000	6,000	4,000	6,000	4,000	6,000	4,000	6,000
Employees - Performance Arena Event	200	300	200	300	200	300	200	300
Based on Population								
Walk Only Transit Access [a]	21%	21%	28%	28%	23%	23%	23%	23%
Drive Only Transit Access [b]	4%	4%	2%	2%	4%	4%	4%	4%
Walk and Drive Transit Access	28%	28%	22%	22%	27%	27%	28%	28%
% of Attendees with Transit Access	53%	53%	52%	52%	55%	55%	55%	55%
Transit Mode Share of Attendees with Transit Access	14%	24%	14%	24%	14%	24%	15%	24%
Attendees using APM - Performance Arena Event	298	767	290	746	307	790	330	791
Employees using APM	15	38	15	37	15	39	16	40

[a] Walk Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 2 or fewer transfers
[b] Drive Access to Transit - From Off-Peak Transit Skims, path to Stadium includes 1 or fewer transfers

	Fairview Heights Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	119	307	15	38	134	345
< 1 hour (60%-Attendee, 0%-Personnel)	179	460	0	0	179	460
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	238	613	7	19	245	632
1-2 hours (20%-Attendee, 50%-Personnel)	60	153	7	19	67	172

	Arbor Vitae Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	116	298	15	37	131	335
< 1 hour (60%-Attendee, 0%-Personnel)	174	448	0	0	174	448
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	232	597	7	19	239	616
1-2 hours (20%-Attendee, 50%-Personnel)	58	149	7	19	65	168

	Market-Manchester Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	123	316	15	39	138	355
< 1 hour (60%-Attendee, 0%-Personnel)	184	474	0	0	184	474
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	246	632	8	20	254	652
1-2 hours (20%-Attendee, 50%-Personnel)	61	158	8	20	69	178

	Century Alignment					
	Event Attendee		Stadium Personnel		Total	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Arrival Pattern						
1-2 hours (40%-Attendee, 100%-Personnel)	92	221	16	40	108	261
< 1 hour (60%-Attendee, 0%-Personnel)	214	514	0	0	214	514
Departure Pattern						
< 1 hour (80%-Attendee, 50%-Personnel)	264	633	8	20	272	653
1-2 hours (20%-Attendee, 50%-Personnel)	33	79	8	20	41	99

PACIFICA SERVICES INC.

Inglewood Transit Connector Automated People Mover Alignments Cost Study

Background

The City of Inglewood is studying four options to extend an elevated automated people mover (APM) system from areas near the Los Angeles County Metropolitan Transportation Authority's (Metro) Crenshaw/LAX Light Rail Line to the NFL / Hollywood Park redevelopment area. As part of this study Pacifica Services Inc. was asked to estimate the total project cost of each option as described in the Envision Inglewood presentation document:

Option A, Market-Manchester

- 2 route miles of aerial structure
- 5 aerial stations, 5 pedestrian bridges, 20 escalators and 10 elevators
- 3 power substations
- 2 intermodals and 1 elevated maintenance facility

Option B, Fairview

- 1.4 route miles of aerial structure
- 4 aerial stations, 4 pedestrian bridges, 16 escalators and 8 elevators
- 3 power substations
- 1 intermodal and 1 elevated maintenance facility

Option C, Arbor Vitae

- 3.1 route miles of aerial structure
- 5 aerial stations, 4 pedestrian bridges, 20 escalators and 10 elevators
- 4 power substations
- 2 intermodal and 1 elevated maintenance facility

Option D, Century Blvd.

- 3.2 route miles of aerial structure
- 5 aerial stations, 4 pedestrian bridges, 20 escalators and 10 elevators
- 4 power substations
- 2 intermodal and 1 elevated maintenance facility

The source documents also include a City of Inglewood utility analysis by Pacifica Services Inc. (Pacifica) and email communications describing the aerial guideway and sub-structure, station type and quantities, escalator and elevator quantities per station, quantities of substations and intermodals per option and the size of the elevated maintenance yard (all options). See attached Exhibit files.

Estimate Qualifications and Exclusions

The estimate is developed according to professional standards established by American Society of Professional Estimators (ASPE) and The Association for The Advancement Of Cost Engineering (AACE). It is level 5 rough order magnitude cost derived using gross unit measurements (e.g. track-foot of aerial guideway, square foot of maintenance facility, etc). Level 5 costs are for early planning stages that comprise up to 2% of the total project life cycle; the accuracy range at level 5 is between -50% and +100%. The estimate unit measures are defined as follows: RM = route mile, Sf = square foot, Sp = parking Space, Ea = each, Ls = lump sum.

On request of the client, the electrical power and system's costs are included in the estimate, Exhibit 1, and excluded from the estimate, Exhibit 2. The estimate detail is organized by structures, electrical, intermodal and maintenance facility, street utilities, professional services and contingency. Approximately 10% of the identified hard costs is inserted for scope not yet defined (scope gap line item in estimate), but necessary to achieve the intent of the project. Some examples include excessive hazardous materials, demolition, traffic signals, roadway improvements, miscellaneous equipment. Professional services (soft costs) are 35% of the direct construction costs and contingency is 30% of total direct and soft costs. Furthermore, the project delivery method is design-build, and a project schedule was not provided.

As the project evolves, each estimate line item should be assigned a separate contingency according to the risk factor for that work. The above percentages are typical for Metro rail projects at the planning stage. Exclusions include real estate, people mover, finance charges and escalation.

The unit prices are in 2018 dollars and are gleaned from numerous sources including, but not limited to, the LAX Amendment Study Report Appendix G, Leyland Saylor, Miami Dade Metro-Mover Expansion Study, San Jose ATN Feasibility Study, UCLA Joint Financing Strategies for the Metro to LAX Airport Connector Project and internal cost data. The $87.5M/Rm cost for systems is from the 2012 LAX Amendment study.

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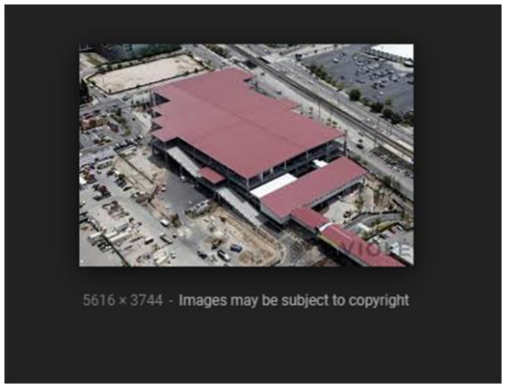
Intermodal Cost

The intermodal pricing is derived from the 2012 bid to construct the Regional Intermodal Transit Center at Bob Hope Airport. According to the project description, this facility is 850,000 square feet and serves multiple modes of transportation. The RITC accommodates airport public parking, rental cars, regional buses, bicycles, and a connection to the heavy rail line at the Bob Hope Airport Station. The airport public parking component replaces the revenue from spaces lost with the development of this facility. The rental car component includes ready/return spaces, a customer service building, and multi-floor and elevated facilities for car maintenance, fueling, and washing. The regional bus component provides connectivity to the airport and the heavy rail line, making this facility a truly intermodal complex for the Southern California area. To accommodate this land-strapped site within the growing Burbank-Glendale-Pasadena market, a 1,200-linear-foot elevated walkway with moving sidewalks provides safe transport to travelers from the RITC to airport terminals. The RITC's unique structural design was built to withstand a maximum critical seismic event (MCE). The project also integrates a four-megawatt roof-mounted solar facility that will help achieve the LEED Gold certification desired by the Airport Authority.

Features Include:
Airport public parking (1,200 spaces)
Rental car consolidated facility (2,000 spaces) Regional
bus component
Unique structural design built to withstand a maximum critical seismic event
Four-megawatt roof-mounted solar facility



The RITC bid escalated to today's dollars is equal to approximately $150 to $200 per square foot of site area. Multiplied by the estimated size of the Inglewood intermodal site, 250,000 square foot, this facility's cost is priced at $50M.

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Costs for Operations And Maintenance

O&M expenses are excluded from the project costs. According to past studies, MTA can expect O&M costs to increase less than 1% of total project costs (2018 collars):

Option	Yearly O&M Increase
Market-Manchester	$11.4M
Fairview	$7.4M
Arbor Vitae	$14M
Century Blvd	$14.5M

Note the estimated O&M costs are for infrastructure only and exclude the operating system.

Indirect Costs

Per the client's request, Exhibit 2 indirect costs are broken out - DB engineering, soft = approximately 40% hard costs; professional services = approximately 21% of hard costs plus DB indirect. Unit prices and overheads are adjusted to reflect the indirect splits.

Conclusion

To substantiate the estimate Pacifica compared the route mile cost for the 2 mile Market-Manchester option to the cost to construct (design-build of contract) the 2.25 mile LAWA APM project. At $1B per route mile, the LAWA APM is greater and more complex than Inglewood Market-Manchester Option A and includes six stations, much larger intermodal and parking facilities and a new rental car facility. Taking into account these differences among others, the Market-Manchester (Exhibit 1, Option A) cost per route mile, $600M to $700M, is reasonable.

PACIFICA SERVICES INC.

Exhibit 2

Inglewood Transit Connector - Automated People Mover
Option A - Market-Manchester
Conceptual Cost Estimate

Description	Quantity	Unit	Unit Cost	Total Cost
Civil/Structural				**$270,070,714**
Aerial Structure	2	Rm	$81,000,000	$160,380,000
Aerial Station With Mezzanine	5	Ea	$15,750,000	$78,750,000
Pedestrian Bridge	5	Ea	$1,575,000	$7,875,000
Parking Structures (3)	905	Sp	$22,500	$20,365,714
Parking Lot	2	Ea	$1,350,000	$2,700,000
Intermodal/Maintenance Facility				**$151,668,000**
Intermodal	2	Ea	$45,000,000	$90,000,000
Elevated Maintenance Facility	89,200	Sf	$540	$48,168,000
Vehicle Storage, Car Wash Equipment	50,000	Sf	$270	$13,500,000
Other				**$72,956,250**
Street Utilities	2	Rm	$900,000	$1,800,000
Escalator (4 per station)	20	Ea	$630,000	$12,600,000
Elevator (2 per station)	10	Ea	$360,000	$3,600,000
Scope Gap (hazardous mat'l, demolition, traffic signal, street improvement, etc)	2	Rm	$27,478,125	$54,956,250
Design Build Soft Costs And Engineering				**$198,619,513**
Design Building Engineering	1	Ls	$74,204,245	$74,204,245
Design Build Soft Costs	1	Ls	$124,415,268	$124,415,268
Professional Services				**$143,516,097**
Project Management for Design and Construction	1	Ls	69,331,448	$69,331,448
Construction Administration & Management	1	Ls	$34,665,724	$34,665,724
Legal; Permits; Review Fees by other agencies, cities, etc.	1	Ls	$27,732,579	$27,732,579
Surveys, Testing, Investigation, Inspection	1	Ls	$1,386,629	$1,386,629
Start up	1	Ls	$10,399,717	$10,399,717
Sub-Total				**$836,830,573**
Contingency (30%)	1	Ls	$251,049,172	$251,049,172
Total Project Cost (w/o Escalation, Finance Charges, Power & Systems)				**$1,087,879,746**

PACIFICA SERVICES INC.

Inglewood Transit Connector - Automated People Mover
Option B - Fairview Heights
Conceptual Cost Estimate

Description	Quantity	Unit	Unit Cost	Total Cost
Civil/Structural				**$196,952,143**
Aerial Structure	1.4	Rm	$81,000,000	$111,375,000
Aerial Station With Mezzanine	4	Ea	$15,750,000	$63,000,000
Pedestrian Bridge	4	Ea	$1,575,000	$6,300,000
Parking Structures (3)	603	Sp	$22,500	$13,577,143
Parking Lot	2	Ea	$1,350,000	$2,700,000
Intermodal/Maintenance Facility				**$106,668,000**
Intermodal	1	Ea	$45,000,000	$45,000,000
Elevated Maintenance Facility	89,200	Sf	$540	$48,168,000
Vehicle Storage, Car Wash Equipment	50,000	Sf	$270	$13,500,000
Other				**$49,018,696**
Street Utilities	1.4	Rm	$1,350,000	$1,856,250
Escalator (4 per station)	16	Ea	$630,000	$10,080,000
Elevator (2 per station)	8	Ea	$360,000	$2,880,000
Scope Gap (hazardous mat'l, demolition, traffic signal, street improvement, etc)	1.4	Rm	$24,874,506	$34,202,446
Design Build Soft Costs And Engineering				**$144,235,835**
Design Building Engineering	1	Ls	$52,895,826	$52,895,826
Design Build Soft Costs	1	Ls	$91,340,009	$91,340,009
Professional Services				**$102,853,057**
Project Management for Design and Construction	1	Ls	49,687,467	$49,687,467
Construction Administration & Management	1	Ls	$24,843,734	$24,843,734
Legal; Permits; Review Fees by other agencies, cities, etc.	1	Ls	$19,874,987	$19,874,987
Surveys, Testing, Investigation, Inspection	1	Ls	$993,749	$993,749
Start up	1	Ls	$7,453,120	$7,453,120
Sub-Total				**$599,727,731**
Contingency (30%)	1	Ls	$179,918,319	$179,918,319
Total Project Cost (w/o Escalation, Finance Charges, Power & Systems)				**$779,646,051**

PACIFICA SERVICES INC.

Inglewood Transit Connector - Automated People Mover
Option C - Arbor Vitae
Conceptual Cost Estimate

Description	Quantity	Unit	Unit Cost	Total Cost
Civil/Structural				**$363,625,714**
Aerial Structure	3.1	Rm	$81,000,000	$253,935,000
Aerial Station With Mezzanine	5	Ea	$15,750,000	$78,750,000
Pedestrian Bridge	5	Ea	$1,575,000	$7,875,000
Parking Structures (3)	905	Sp	$22,500	$20,365,714
Parking Lot	2	Ea	$1,350,000	$2,700,000
Intermodal/Maintenance Facility				**$151,668,000**
Intermodal	2	Ea	$45,000,000	$90,000,000
Elevated Maintenance Facility	89,200	Sf	$540	$48,168,000
Vehicle Storage, Car Wash Equipment	50,000	Sf	$270	$13,500,000
Other				**$76,328,600**
Street Utilities	3.1	Rm	$360,000	$1,128,600
Escalator (4 per station)	20	Ea	$630,000	$12,600,000
Elevator (2 per station)	10	Ea	$360,000	$3,600,000
Scope Gap (hazardous mat'l, demolition, traffic signal, street improvement, etc)	3.1	Rm	$19,032,258	$59,000,000
Design Build Soft Costs And Engineering				**$236,943,990**
Design Building Engineering	1	Ls	$88,743,347	$88,743,347
Design Build Soft Costs	1	Ls	$148,200,643	$148,200,643
Professional Services				**$171,513,225**
Project Management for Design and Construction	1	Ls	82,856,630	$82,856,630
Construction Administration & Management	1	Ls	$41,428,315	$41,428,315
Legal; Permits; Review Fees by other agencies, cities, etc.	1	Ls	$33,142,652	$33,142,652
Surveys, Testing, Investigation, Inspection	1	Ls	$1,657,133	$1,657,133
Start up	1	Ls	$12,428,495	$12,428,495
Sub-Total				**$1,000,079,529**
Contingency (30%)	1	Ls	$300,023,859	$300,023,859
Total Project Cost (w/o Escalation, Finance Charges, Power & Systems)				**$1,300,103,388**

PACIFICA SERVICES INC.

Inglewood Transit Connector - Automated People Mover
Option D - Century Boulevard
Conceptual Cost Estimate

Description	Quantity	Unit	Unit Cost	Total Cost
Civil/Structural				**$368,080,714**
Aerial Structure	3.2	Rm	$81,000,000	$258,390,000
Aerial Station With Mezzanine	5	Ea	$15,750,000	$78,750,000
Pedestrian Bridge	5	Ea	$1,575,000	$7,875,000
Parking Structures (3)	905	Sp	$22,500	$20,365,714
Parking Lot	2	Ea	$1,350,000	$2,700,000
Intermodal/Maintenance Facility				**$151,668,000**
Intermodal	2	Ea	$45,000,000	$90,000,000
Elevated Maintenance Facility	89,200	Sf	$540	$48,168,000
Vehicle Storage, Car Wash Equipment	50,000	Sf	$270	$13,500,000
Other				**$78,142,250**
Street Utilities	3.2	Rm	$675,000	$2,153,250
Escalator (4 per station)	20	Ea	$630,000	$12,600,000
Elevator (2 per station)	10	Ea	$360,000	$3,600,000
Scope Gap (hazardous mat'l, demolition, traffic signal, street improvement, etc)	3.2	Rm	$18,684,063	$59,789,000
Design Build Soft Costs And Engineering				**$239,603,689**
Design Building Engineering	1	Ls	$89,683,645	$89,683,645
Design Build Soft Costs	1	Ls	$149,920,045	$149,920,045
Professional Services				**$185,923,813**
Project Management for Design and Construction	1	Ls	83,749,465	$83,749,465
Construction Administration & Management	1	Ls	$41,874,733	$41,874,733
Legal; Permits; Review Fees by other agencies, cities, etc.	1	Ls	$33,499,786	$33,499,786
Surveys, Testing, Investigation, Inspection	1	Ls	$1,674,989	$1,674,989
Start up	1	Ls	$25,124,840	$25,124,840
Sub-Total				**$1,023,418,467**
Contingency (30%)	1	Ls	$307,025,540	$307,025,540
Total Project Cost (w/o Escalation, Finance Charges, Power & Systems)				**$1,330,444,007**

PACIFICA SERVICES INC.

Exhibit 1

Inglewood Transit Connector - Automated People Mover
Option A - Market-Manchester
Conceptual Cost Estimate

Description	Quantity	Unit	Unit Cost	Total Cost
Civil/Structural				**$300,078,571**
Aerial Structure	2	Rm	$90,000,000	$178,200,000
Aerial Station With Mezzanine	5	Ea	$17,500,000	$87,500,000
Pedestrian Bridge	5	Ea	$1,750,000	$8,750,000
Parking Structures (3)	905	Sp	$25,000	$22,628,571
Parking Lot	2	Ea	$1,500,000	$3,000,000
Electrical Power/Systems				**$168,500,000**
Substation (pre-fabricated)	3	Ea	$3,500,000	$10,500,000
Power Distribution & Systems (ATC, comm., lighting, FLS, command/control, etc)	2	Rm	$70,000,000	$140,000,000
Escalator (4 per station)	20	Ea	$700,000	$14,000,000
Elevator (2 per station)	10	Ea	$400,000	$4,000,000
Intermodal/Maintenance Facility				**$168,520,000**
Intermodal	2	Ea	$50,000,000	$100,000,000
Elevated Maintenance Facility	89,200	Sf	$600	$53,520,000
Vehicle Storage, Car Wash Equipment	50,000	Sf	$300	$15,000,000
Other				**$82,000,000**
Street Utilities	2	Rm	$1,000,000	$2,000,000
Scope Gap (hazardous mat'l, demolition, traffic signal, street improvement, etc)	2	Rm	$40,000,000	$80,000,000
Professional Services				**$267,434,500**
Professional Services (35%)	1	Ls	$267,434,500	$267,434,500
Sub-Total				**$986,533,071**
Contingency (30%)	1	Ls	$295,959,921	$295,959,921
Total Project Cost (w/o Escalation, Finance Charges)				**$1,282,492,993**

PACIFICA SERVICES INC.

Inglewood Transit Connector - Automated People Mover
Option B - Fairview Heights
Conceptual Cost Estimate

Description	Quantity	Unit	Unit Cost	Total Cost
Civil/Structural				**$219,248,214**
Demolition, Clearing	1.4	Rm	$300,000	$412,500
Aerial Structure	1.4	Rm	$90,000,000	$123,750,000
Aerial Station With Mezzanine	4	Ea	$17,500,000	$70,000,000
Pedestrian Bridge	4	Ea	$1,750,000	$7,000,000
Parking Structures (3)	603	Sp	$25,000	$15,085,714
Parking Lot	2	Ea	$1,500,000	$3,000,000
Electrical Power/Systems				**$122,900,000**
Substation (pre-fabricated)	3	Ea	$3,500,000	$10,500,000
Power Distribution & Systems (ATC, comm., lighting, FLS, command/co	1.4	Rm	$70,000,000	$98,000,000
Escalator (4 per station)	16	Ea	$700,000	$11,200,000
Elevator (2 per station)	8	Ea	$400,000	$3,200,000
Intermodal/Maintenance Facility				**$118,520,000**
Intermodal	1	Ea	$50,000,000	$50,000,000
Elevated Maintenance Facility	89,200	Sf	$600	$53,520,000
Vehicle Storage, Car Wash Equipment	50,000	Sf	$300	$15,000,000
Other				**$59,026,786**
Street Utilities	1.4	Rm	$1,500,000	$2,062,500
Scope Gap (hazardous mat'l, demolition, traffic signal, street improve)	1.4	Rm	$41,428,571	$56,964,286
Professional Services				**$181,893,250**
Professional Services (35%)	1	Ls	$181,893,250	$181,893,250
Sub-Total				**$701,588,250**
Contingency (30%)	1	Ls	$210,476,475	$210,476,475
Total Project Cost (w/o Escalation, Finance Charges)				**$912,064,725**

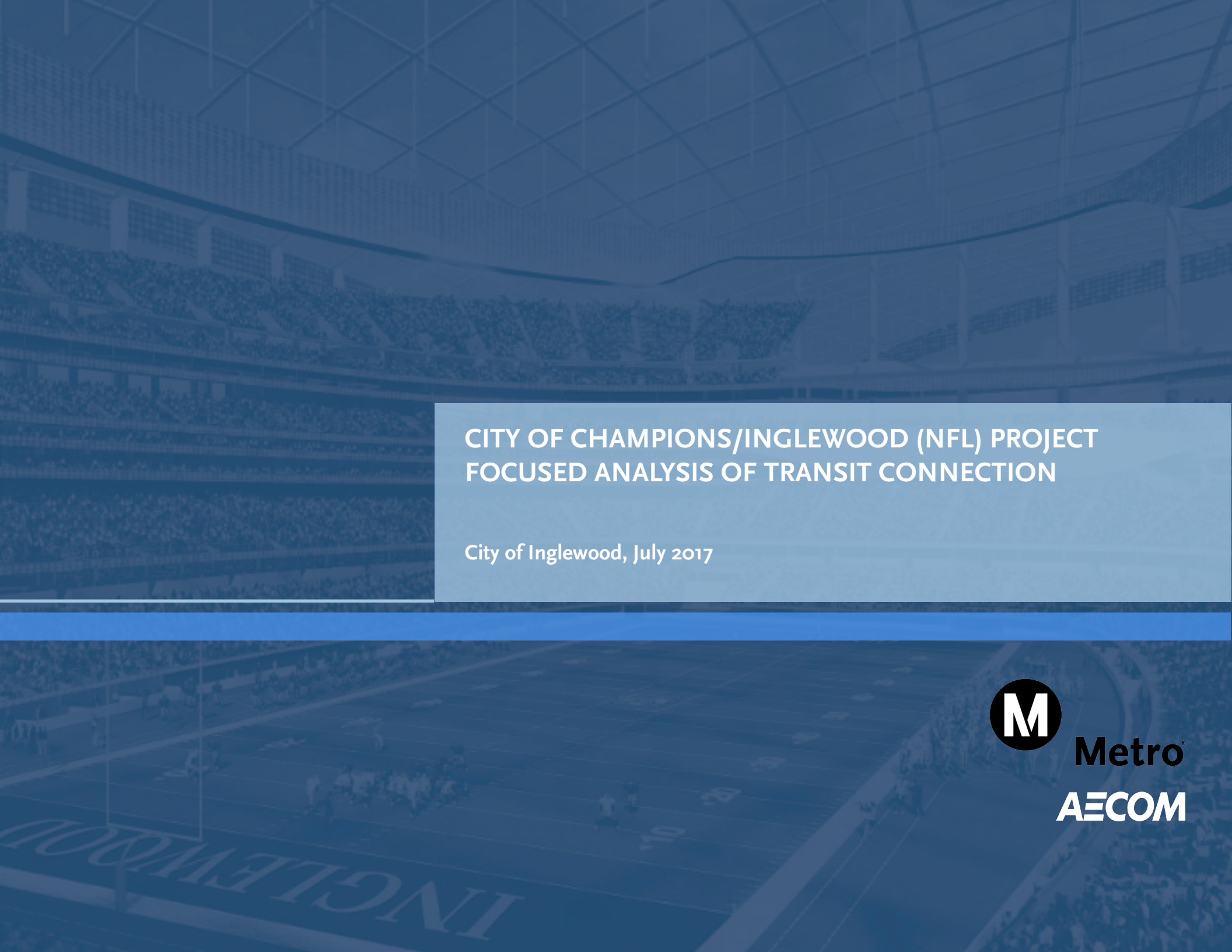
PACIFICA SERVICES INC.

Inglewood Transit Connector - Automated People Mover
Option C - Arbor Vitae
Conceptual Cost Estimate

Description	Quantity	Unit	Unit Cost	Total Cost
Civil/Structural				**$404,028,571**
Aerial Structure	3.1	Rm	$90,000,000	$282,150,000
Aerial Station With Mezzanine	5	Ea	$17,500,000	$87,500,000
Pedestrian Bridge	5	Ea	$1,750,000	$8,750,000
Parking Structures (3)	905	Sp	$25,000	$22,628,571
Parking Lot	2	Ea	$1,500,000	$3,000,000
Electrical Power/Systems				**$249,000,000**
Substation (pre-fabricated)	4	Ea	$3,500,000	$14,000,000
Power Distribution & Systems (ATC, comm., lighting, FLS, command/co	3.1	Rm	$70,000,000	$217,000,000
Escalator (4 per station)	20	Ea	$700,000	$14,000,000
Elevator (2 per station)	10	Ea	$400,000	$4,000,000
Intermodal/Maintenance Facility				**$168,520,000**
Intermodal	2	Ea	$50,000,000	$100,000,000
Elevated Maintenance Facility	89,200	Sf	$600	$53,520,000
Vehicle Storage, Car Wash Equipment	50,000	Sf	$300	$15,000,000
Other				**$78,754,000**
Street Utilities	3.1	Rm	$400,000	$1,254,000
Scope Gap (hazardous mat'l, demolition, traffic signal, street improve)	3.1	Rm	$25,000,000	$77,500,000
Professional Services				**$315,105,900**
Professional Services (35%)	1	Ls	$315,105,900	$315,105,900
Sub-Total				**$1,215,408,471**
Contingency (30%)	1	Ls	$364,622,541	$364,622,541
Total Project Cost (w/o Escalation, Finance Charges)				**$1,580,031,013**

Inglewood Transit Connector - Automated People Mover
Option D - Century Boulevard
Conceptual Cost Estimate

Description	Quantity	Unit	Unit Cost	Total Cost
Civil/Structural				**$408,978,571**
Aerial Structure	3.2	Rm	$90,000,000	$287,100,000
Aerial Station With Mezzanine	5	Ea	$17,500,000	$87,500,000
Pedestrian Bridge	5	Ea	$1,750,000	$8,750,000
Parking Structures (3)	905	Sp	$25,000	$22,628,571
Parking Lot	2	Ea	$1,500,000	$3,000,000
Electrical Power/Systems				**$253,300,000**
Substation (pre-fabricated)	4	Ea	$3,000,000	$12,000,000
Power Distribution & Systems (ATC, comm., lighting, FLS, command/co	3.2	Rm	$70,000,000	$223,300,000
Escalator (4 per station)	20	Ea	$700,000	$14,000,000
Elevator (2 per station)	10	Ea	$400,000	$4,000,000
Intermodal/Maintenance Facility				**$168,520,000**
Intermodal	2	Ea	$50,000,000	$100,000,000
Elevated Maintenance Facility	89,200	Sf	$600	$53,520,000
Vehicle Storage, Car Wash Equipment	50,000	Sf	$300	$15,000,000
Other				**$82,142,500**
Street Utilities	3.2	Rm	$750,000	$2,392,500
Scope Gap (hazardous mat'l, demolition, traffic signal, street improve)	3.2	Rm	$25,000,000	$79,750,000
Professional Services				**$319,529,375**
Professional Services (35%)	1	Ls	$319,529,375	$319,529,375
Sub-Total				**$1,232,470,446**
Contingency (30%)	1	Ls	$431,364,656	$431,364,656
Total Project Cost (w/o Escalation, Finance Charges)				**$1,663,835,103**



CITY OF CHAMPIONS/INGLEWOOD (NFL) PROJECT FOCUSED ANALYSIS OF TRANSIT CONNECTION

City of Inglewood, July 2017

Metro

AECOM

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Cover picture: HKS Architects

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Metro

August 8, 2017

Louis A. Atwell, PE
Director of Public Works
City of Inglewood
One Manchester Boulevard
Inglewood, CA 90301

Re: Notice of Study Completion and Transmittal for City of Champions/Inglewood (NFL) Focused Analysis of Transit Connection

Dear Mr. Atwell:

The Los Angeles County Metropolitan Transportation Authority (Metro) prepared the aforementioned Study in the role of a consultant to the City of Inglewood. Metro is transmitting the final deliverable for the Study, with one hardcopy and one electronic copy on CD enclosed. The files in the enclosed CD have also been uploaded to the Dropbox site.

The City requested Metro to prepare a focused analysis study of a transit connection from the Metro Crenshaw/LAX light rail line to the Inglewood NFL Stadium/Hollywood Park mixed-use development. The Study explores how to connect Inglewood's future entertainment/stadium district to Metro's rail system via a high-capacity transit connection:

- Interlined Operability Scenario: studied connection from the Crenshaw/LAX Line in a subway under Prairie Avenue, which also would jointly operate on a portion of the Crenshaw/LAX Line; and
- Independent Operability Scenario: studied three options for independent services that provide a connection to the Metro Rail system at a Metro station.

Metro prepared this Study based on the City's direction that the connection be primarily grade-separated to the maximum extent possible and principally to serve the entertainment district/stadium site. Cost and ridership estimates are provided in the Study. The City and Metro agreed that the Interlined Operability Scenario is infeasible due to its cost and complexity. With regard to the Independent Operability Scenario, other alternatives, which could be considerably less costly, were not studied, because of the City's concern that congestion during peak periods at the entertainment/stadium district could create conflicts with at-grade, fixed-guideway transit service, degrading transit service.

Also, included in this Study was the initial exploration of the potential to establish an Enhanced Infrastructure Financing District (EIFD) to assist the City in funding the capital costs of building the fixed guideway transit connection. This was specifically included to facilitate the City's future consideration of a public-private partnership as a project financing and delivery option. Of the several findings outlined, an essential provision of EIFD formation requires that any included project(s) must be cleared by the appropriate California Environmental Quality Act (CEQA) environmental

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document—likely an Environmental Impact Report (EIR)—prior to the establishment of the EIFD to be eligible for funding. The EIFD should be in place prior to opening the stadium and/or related facilities to capture the value of those improvements to provide maximum financial capacity for the transit connection project.

To explore a transit connection further, Metro recommends that the City of Inglewood should undertake the following steps, which must occur expeditiously for an EIFD to be utilized effectively:

- Determine one or more potential transit connection projects to further evaluate, either from those included in the Independent Operability Scenario set of options, or a new alternative not previously studied;
- Select one or more transit projects to be environmentally-cleared pursuant to CEQA (note that NEPA clearance would also be required should federal funds be sought);
- Initiate the EIFD process concurrently with the CEQA process;
- Establish the EIFD prior to opening the stadium and/or related facilities.

Stakeholder and public outreach are highly recommended. The owner of the Los Angeles Rams and entertainment/stadium district developer, along with the County of Los Angeles, are two crucial stakeholders in the EIFD process.

As a reminder, this potential connection is not included in Metro's Long Range Transportation Plan and as such, no Metro funding is identified for it, including any entitlement and pre-construction activities.

Thank you for the opportunity to prepare the Study. Metro staff would be happy to present the Study to Honorable Mayor and Metro Board Second Vice-Chair James Butts, should you find that helpful. Please contact David Mieger, Executive Officer, at 213-922-3040 to arrange the presentation and to discuss any clarifying questions about the Study.

Sincerely,

Therese McMillan, Chief Planning Officer
Countywide Planning and Development

Enclosures: Final Study Report and Appendices

cc: Honorable Mayor and Vice Chair James Butts, City of Inglewood and Metro Board of Directors
Mike Bohlke, Transportation Deputy for Vice Chair Butts, City of Inglewood
Artie Fields, City Manager, City of Inglewood
Phillip A. Washington, Metro CEO
Stephanie Wiggins, Metro Deputy CEO
Manjeet Ranu, Metro Countywide Planning and Development
Calvin Hollis, Metro Countywide Planning and Development
David Mieger, Metro Countywide Planning and Development
Metro Vendor/Contract Management Contract Administrator

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E: Travel Demand Modeling Methodology and Results
F: Construction Impacts Summary
G: Existing Utilities in City of Inglewood
H: Environmental Scan Summary
I: Traffic Information and Potential Impacts
J: Cost Estimating Memo
K: Operating Statistic Worksheets and Assumptions
L: Engineering Drawings

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EXECUTIVE SUMMARY

The Los Angeles County Metropolitan Transportation Authority (Metro), in the role of a consultant to the City of Inglewood, performed a focused analysis (Study) of a 1-2 mile transit connection from the Metro Crenshaw/LAX light rail line to the Inglewood NFL Stadium/Hollywood Park mixed-use development. This study explores the implementation of a convenient, reliable, high-capacity transit service, presents different opportunities for connecting to the regional Metro Rail system, and analyzes potential costs and impacts for two operability scenarios based on the following goals:

- **Reliability:** Convenient service with minimum delay, wait, and travel times
- **Connectivity:** Ease of transferring to and from the Metro Rail system
- **Capacity:** The ability to serve 20,000 passengers/hour event travel demand

The Interlined Operability Scenario looked at a branch from the Crenshaw/LAX Line in a subway under Prairie Avenue. The Independent Operability Scenario looked at three options for services "independent" of, but providing connection to the Metro Rail system.

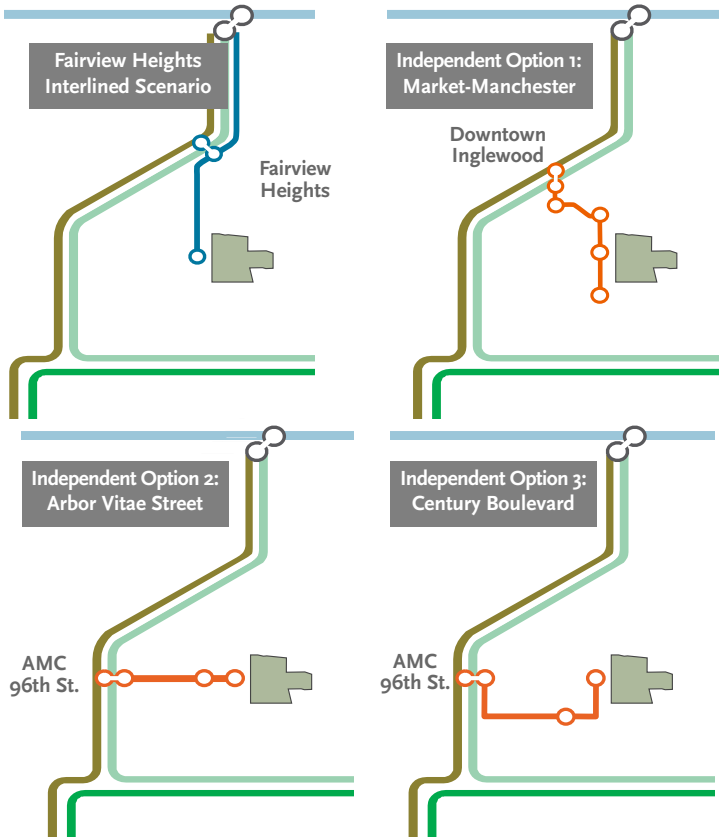
- **Option 1: An independent "urban rail"** transit connection to Downtown Inglewood to leverage Market Street in Inglewood's historic core and promote economic development opportunities in the City.
- **Option 2 & 3: An independent "automated people mover"** transit connection to the Airport Metro Connector 96th Street Transit Station via either Arbor Vitae Street (Option 2) or Century Boulevard (Option 3) to provide connections to LAX and Metro's major multi-modal hub at AMC 96th Street Transit Station.

Scenarios and Options considered for this Study are illustrated in **Figure ES-1**, and the technical specifications of the modes analyzed are summarized in **Table ES-1**.

Modes	Typical Train Length	Weight /Car	Capacity /Train	Speed	Examples
Light Rail	289 Feet (3-Car)	122,250 lb	450	25 - 65 mph	LA Metro LRT
Urban Rail	198 Feet (3-Car)	80,570 lb	450	5 - 55 mph	Rome Tram
APM	252 Feet (6-Car)	52,100 lb	600	5 - 35 mph	DFW Skylink
Monorail	240 Feet (6-Car)	48,000 lb	600	30 - 55 mph	Las Vegas Monorail

Source: AECOM

Table ES-1 Mode Specifications



Source: AECOM

Figure ES-1 Scenarios and Options Considered

The draft final report is divided into three parts:

- Part I - Introduction, Project Goals, and Operability Scenarios defines operability scenarios and options considered for the transit connection
- Part II - Operability Scenarios Evaluation explores impacts caused by the transit connection
- Part III - Funding, Financing, & Delivery presents strategies for implementation

The findings of this study is summarized as below (**Table ES-2**).

		Interlined with Crenshaw/ LAX Line	Independent		
			Option 1: Downtown via Market-Manchester	Option 2: Arbor Vitae Street	Option 3: Century Boulevard
Capacity Goal	Maximum Capacity:	5,400 passengers/hour	13,500 passengers/hour	18,000 passengers/hour	
	Projected Riders[1]:	Average Weekday: 3,734 riders/day	Average Weekday: 3,158 riders/day	Average Weekday: 1,740 - 3,803 riders/day	
		Event: 4,130 - 15,000 attendees/event	Event: 3,900 - 14,300 attendees/event	Event: 6,120 - 24,180 attendees/event	
Cost	Capital Cost (2017$)[2]	$1.333 - $1.960 billion	$497 - 746 million	$561 million - 990 million	$563 million - 1.049 billion
	Operating & Maintenance Cost (2017$)[3]	$13.6 - 22.5 million/year	$11.2 - 17.1 million/year	$9.9 - 14.3 million/year	$11.0 - 17.1 million/year
Technology/Mode		Underground LRT	Urban Rail	APM/Monorail	
Stations		Fairview Heights, Development[4]	Market North, Market South, Manchester, Forum, Development	AMC, La Brea, Development	AMC, La Cienega, La Brea, Century/Prairie, Development
Distance (mi.)		1.8[4]	1.2	2.1	2.8
Average Speed (mi./hr)		35.6[4]	14.9	32.7	24.6
One-Way Travel Time (min.)		3.0[4]	4.8	3.8	6.8
Potential Right-of-Way Acquisition (acres)		22	15	33	19
P3 Opportunities		Low	High	High	High

Note:
1. Range reflects differences in attendance between teams, varying mode splits, and parking utilization (for Independent Option 2&3)
2. Range reflects a low and high capacity operating plan as well as uncertainty and contingency due to current stage of design.
3. Range reflects a low and high capacity operating plan.
4. Based on the new branch from Fairview Heights Station to the Development.

Source: AECOM, Connetics Transportation Group

Table ES-2 Summary of Study Findings

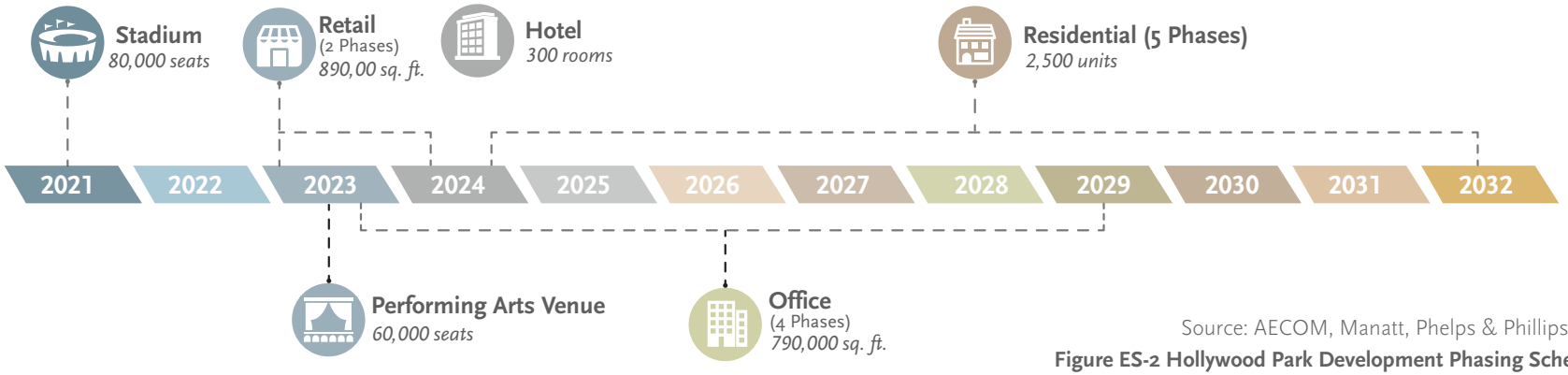
The City and Metro agreed that the Interlined Operability Scenario is infeasible due to its cost and complexity. With regard to the Independent Operability Scenario, other alternatives, which could be considerably less costly, were not studied, because of the City's concern that congestion during peak periods at the Development could create conflicts with at-grade, fixed-guideway transit service, degrading transit service.

The Enhanced Infrastructure Finance District (EIFD)is a new funding tool established in 2014, which has extraordinary flexibility, extensive reach of its powers, and high ability to combine multiple sources of revenue in addition to tax increment, as well as to integrate them into a locally-developed financial business plan. This capacity to bundle multiple revenue streams including development and user fees, bond funds federal and state grants and myriad other sources serves to enhance the revenue available to the EIFD to fund proposed projects.

As a major potential funding source, EIFD was assessed to see if there is sufficient financial capacity available to support operation and maintenance of the transit connection. This will also inform the decision as to whether, when utilized in connection with a project governance vehicle such as a Public Private Partnership (P3) or similar project delivery strategy, this strategy can attract the scale of private investment needed to operate as a stand-alone enterprise.

P3 benefits arise from optimizing risk allocation, aligning incentives for performance, and taking a project life-cycle perspective. Potential funding and P3 delivery options that could support and accelerate the delivery of the transit connection have been explored in this Study.

Implementation of the Hollywood Park Development has a major role on the timing and amount of projected tax increment and project-generated revenue to the City and thus its availability to the EIFD. The current schedule for development phasing is shown in **Figure 3.1-2**. A preliminary approximation of the total amount of potential net bondable proceeds is summarized in **Table 3.1-1**.



Source: AECOM, Manatt, Phelps & Phillips, LLP

Figure ES-2 Hollywood Park Development Phasing Schedule

	Max. 47.9% County and 14% City to EIFD	County 20% and City 14% to EIFD	County 10% and City 14% to EIFD	No County Share and City 14% to EIFD
Projected Year 5 & cum. through year. 4	$158,000,000	$82,000,000	$62,600,000	$33,800,000
Projected Year 10 & cum. through year. 9	$277,600,000	$159,5000,000	$108,400,000	$64,100,000
Projected Year 15 & cum. through year. 14	$428,200,000	$231,700,000	$163,000,000	$100,700,000
Projected Year 20 & cum. through year 19	$574,900,000	$314,400,000	$224,800,000	$128,100,000

Note: Assumes 30 year term and build-out as projected – Assume 1.35 coverage, 6% rate and 12% cost of issuance.

Source: Manatt, Phelps & Phillips, LLP

Table ES-3 City of Inglewood Projected Net Bond Proceeds

To explore a transit connection further, the City of Inglewood should undertake the following steps, which must occur expeditiously for an EIFD to be utilized effectively:

- Determine one or more potential transit connection projects to further evaluate, either from those included in the Independent Operability Scenario set of options, or a new alternative not previously studied;
- Select one or more transit projects to be environmentally-cleared pursuant to California Environmental Quality Act (CEQA) and possibly the National Environmental Protection Act (NEPA) should federal funds be sought;
- Initiate the ElFD process concurrently with the CEQA process;
- Establish the EIFD prior to the stadium opening and/or related development.
- Engage stakeholders and conduct public outreach.The owner of the Los Angeles Rams and the Development developer, along with the County of Los Angeles, are two crucial stakeholders in the El FD process.

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PART I

INTRODUCTION, PROJECT GOALS & OPERABILITY SCENARIOS

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1.1 INTRODUCTION

In November 2016, the Los Angeles County Metropolitan Transportation Authority (Metro), as a consultant to the City of Inglewood (the Project Team), initiated the City of Champions/Inglewood (NFL) Project Focused Analysis of Transit Connection (Study). This study analyzes a potential underground rail transit connection from the under-construction Metro Crenshaw/LAX Fairview Heights At-Grade Light Rail Transit (LRT) station at Florence Avenue south on Prairie Avenue to the City of Champions/Inglewood (NFL) Stadium/ Hollywood Park Development (Development), anticipated to open in 2019 and 2020, respectively, (**Figure 1.1-1**).

This Study evaluates the feasibility of using high capacity transit technology to serve the Development under either of two Operability Scenarios, either as a branch of the Metro transit network ("Interlined") or as a stand-alone system that connects via transfer to the Metro network ("Independent"). Other interim multi-modal and traffic management studies for access to the Development are being performed separately by the City of Inglewood.

The Independent Operability Scenario was expanded to include study of connections to either the Downtown Inglewood or AMC 96th Street stations along the Crenshaw/LAX Line.

Source: Metro, AECOM

Figure 1.1-1 City of Champions/Inglewood (NFL) Project Focused Analysis of Transit Connection Study Area Map

1.1.1 METRO CRENSHAW/LAX LINE

The Metro Crenshaw/LAX LRT Line extends 8.5 miles between the Metro Green Line and Expo Line, and is planned to open in 2019. In the City of Inglewood, the Crenshaw/LAX Line runs primarily at- or above-grade in a former railroad right-of-way (ROW) with two stations (Downtown Inglewood and Fairview Heights) located within the city (Downtown Inglewood and Fairview Heights) . The proposed Airport Metro Connector (AMC) 96th Street Transit Station, being built and operated by Los Angeles World Airport (LAWA) to provide access to future Automated People Mover (AMP), is anticipated to open in 2023.

1.1.2 HOLLYWOOD PARK DEVELOPMENT

The 238-acre Development is located in the City of Inglewood on the site of the former Hollywood Park Racetrack and equestrian training facility. The mixed-used development is proposed to include an 80,000-seat NFL stadium, a 6,000-seat performance venue, 2,500 residential units, retail, office and hotel, as well as recreational amenities (**Figure 1.1-2**, **Table 1.1-1**). The Stadium is expected to be complete in 2020.

In addition to 16-20 regular and pre-season professional football games, the Stadium will accommodate a variety of sporting and entertainment events year-round. The 2022 "Super Bowl" is planned to be held at the Stadium . Also, after a July 2017 vote by the International Olympic Committee, Los Angeles will tentatively host either the 2024 or 2028 Olympic Games. As part of the bid concept, the proposed Stadium will accommodate the opening ceremonies, among other events, with the nearby Forum also serving as a venue. This study also takes into consideration the safety, security and crowd control associated with serving peak major event travel demand.

Source: City of Inglewood

Figure 1.1-2 Hollywood Park Development Site Plan

Type of Use	Capacity / Sq. Footage
Stadium	Up to 80,000 seats
Performance Venue	6,000 seats
Residential	2,500 units
Retail	890,000 SF
Office Space	780,000 SF
Hotel	300 rooms
Neighborhood Parks & Recreational Amenities	25 acres

Source: City of Inglewood

Table 1.1-1 Hollywood Park Development Land Use

1.1.3 CLIPPERS ARENA

In June 2017, the Clippers National Basketball Association (NBA) Team announced the team is finalizing plans for a new arena that would seat up to 20,000 people located in the City of Inglewood near the intersection of Century Boulevard and Prairie Avenue, adjacent to the Development.

1.1.4 LOS ANGELES INTERNATIONAL AIRPORT

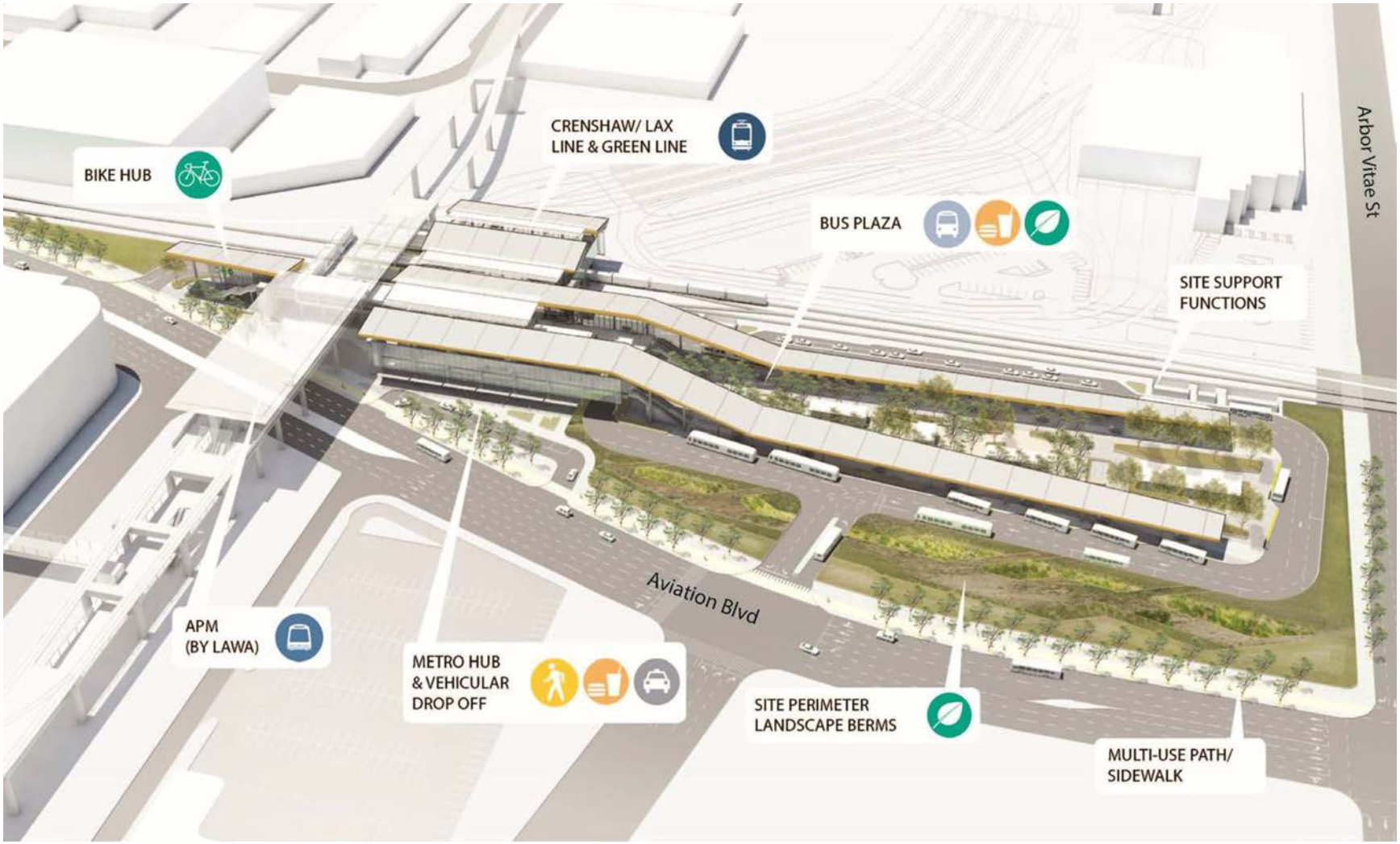
Access challenges and increasing congestion at Los Angeles International Airport (LAX) have prompted Los Angeles World Airports (LAWA) to develop the Landside Access Modernization Program (LAMP). The LAMP proposes to improve the ground transportation system at LAX by introducing an Automated People Mover (APM) to connect the airport terminals to several new multi-modal facilities including parking, a consolidated rental car facility (CONRAC), and the Metro AMC 96th Street Transit Station (**Figure 1.1-3**). The first phase, including the APM, is planned to open in 2023.

Metro will build the AMC 96th Street Transit Station on the Crenshaw/LAX Line to facilitate convenient transfers to the LAMP, also opening in 2023 (**Figure 1.1-4**). The station is planned to include:

- Three light rail platforms to be served by the Crenshaw/LAX Line and an extension of the Metro Green Line
- Metro and municipal bus transfer facility
- Bicycle "hub" with secure parking
- Pedestrian plaza
- Passenger vehicle pick-up and drop-off area
- Metro transit center/terminal building

Source: Los Angeles World Airports' Landside Access Modernization Program Study

Figure 1.1-3 Landslide Access Modernization Program Proposed Improvements



Source: Metro

Figure 1.1-4 AMC 96th Street Transit Station Aerial Rendering

Passengers, visitors, airport employees and others will be able to transfer from the at-grade LRT Platforms to be served by Metro Green & Crenshaw Lines, bus plaza, bike hub and dropoff to the elevated LAWA's APM via an elevated mezzanine.

1.2 PROJECT GOALS AND NEED - RELIABILITY, CONNECTIVITY, CAPACITY

Mobility and access to a major new activity center requires special consideration, especially given local and regional goals to increase transportation choice, reduce greenhouse gas emissions, and encourage compact development patterns.

The Development is 1.3 to 2.3 miles from the regional, high capacity rail system (either the Metro Crenshaw/LAX or Green Lines), farther than is reasonably walkable. A transit link would connect thousands of spectators to the rail network, while also providing an alternative to traveling by car via the I-405 freeway and other congested roadways in the area.

In addition, the study considers the compatibility of the options with local and regional plans, and the ability to encourage and support economic development in surrounding areas of Inglewood.

As a starting point, and based on national experience with transit service to major professional sports events, a target capacity was established to serve peak demand at the Development. With the knowledge that Metro served between 14% and 26% of Rams' games attendees at Los Angeles Memorial Coliseum during the 2016 season, and policy goals set at other locations for emptying the stadium after an event within one hour, it was calculated that the service should be able to serve 25% of the stadium capacity per hour. Therefore, for the study the **target capacity was set at** 25% of the 80,000 stadium capacity, or **20,000 passengers per hour.**

1.3 OPERABILITY SCENARIOS CONSIDERED

In developing options for the transit connection, the idea of both "interlined" and "independent" operating scenarios were considered. An **interlined** scenario (**Table 1.3-1**) would function as a branch of the Metro Rail network with Metro-owned-and-operated light-rail service directly to the Development. In order to complete a full set of possible scenarios, options were developed and organized into two sets of categories:

1. Implementation timeline:
   - Short term – minimum investment required to serve Development but often impacts level of service along existing lines
   - Upgrades to Crenshaw/LAX – adds capacity to the Crenshaw/LAX line to serve the Development
   - Long Term – extends the project to connect both north and south

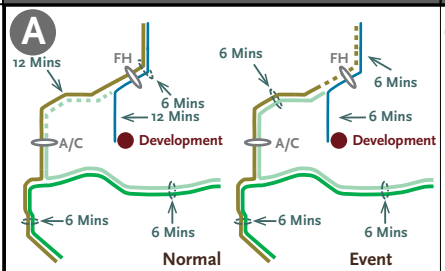
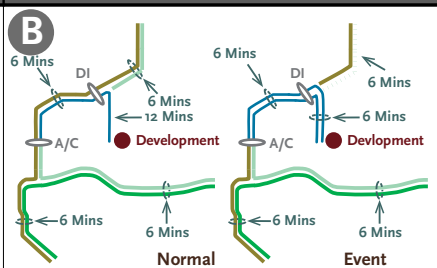
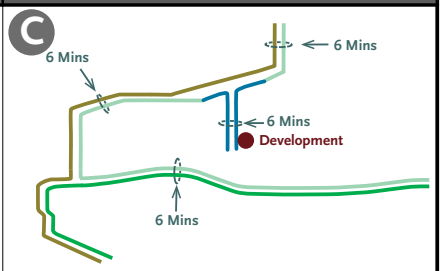
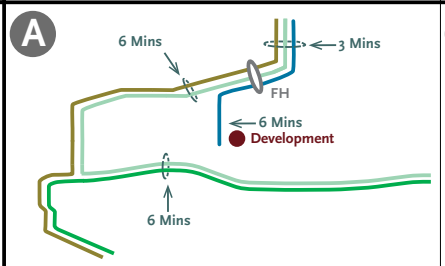
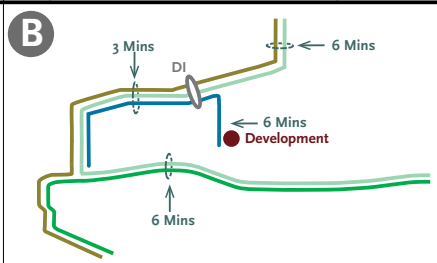
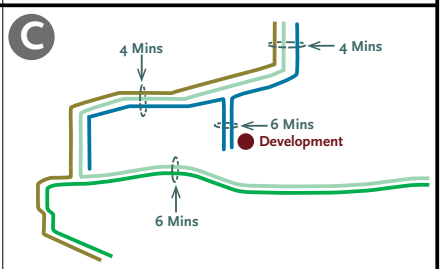
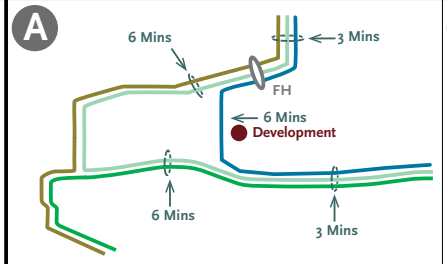
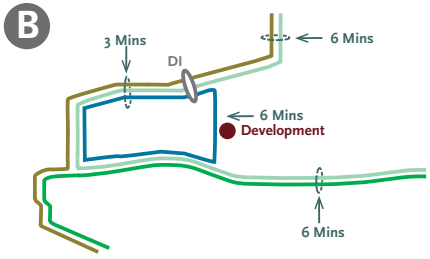
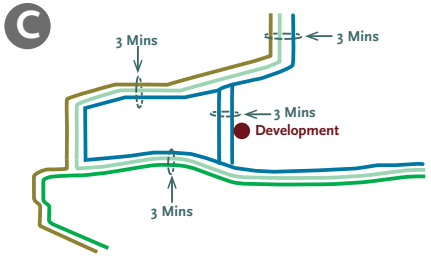
2. Directionality:
   - "A" - east-oriented – interlined via Fairview Heights Station
   - "B" - west-oriented – interlined via Downtown Inglewood Station
   - "C" - both east- and west-oriented

Alternatively, an **independent** scenario (**Table 1.3-2**) would function as a point-to-point service, "shuttling" passengers from the Development to the Metro rail network. Several "operability scenarios" were developed to explore the opportunities and challenges associated with a variety of route options. Future ("Long Term") connections to the Green Line and Hawthorne were identified but not recommended for further study and are not included in this analysis. These connections can be explored at a later date.

These options were screened based on certain criteria to yield the following options considered in the Study. Detailed discussion is provided in Appendix A.

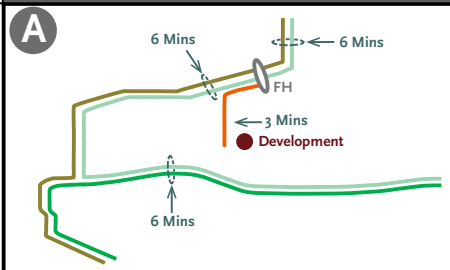
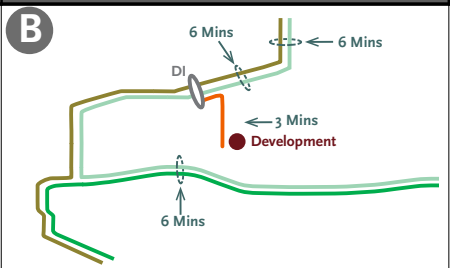
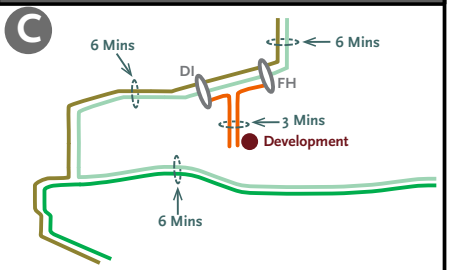
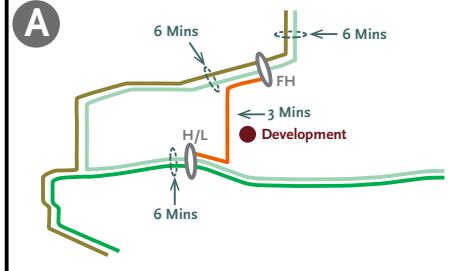
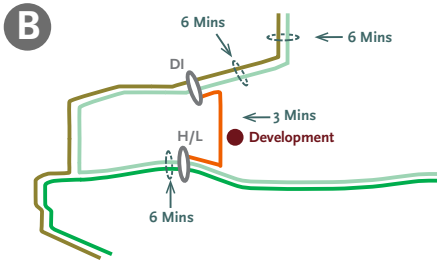
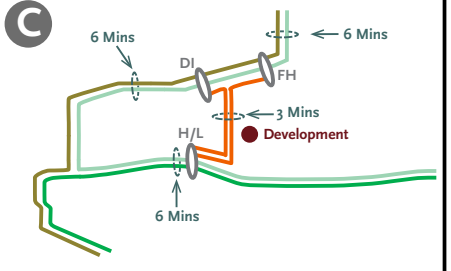
THE PROJECT'S PRIMARY GOALS INCLUDE:

- **RELIABILITY**: Convenient service with minimum delay, wait, and travel time
- **CONNECTIVITY**: Ease of transferring to and from the regional high-capacity transit network
- **CAPACITY**: The ability to serve peak travel demand to and from the Development

	North-Oriented (Fairview Heights Connection)	South-Oriented (Downtown Inglewood Connection)	2-Way Oriented (North and South Connection)
Short-term			
Normal Headways	12 Minutes	12 Minutes	6 Minutes
Event Headways	6 Minutes	6 Minutes	6 Minutes
Max Train Length	2 - 3 Cars	2 - 3 Cars	2 - 3 Cars
Opportunities & Challenges	- Major cost to upgrade FH Station for turning and terminating - Accommodation for major transfers at FH Station on Game Day	- Major cost to upgrade DI Station for turning and terminating - Accommodation for major transfers at DI Station on Game Day - Integration opportunities with businesses in Inglewood	- Major cost for the 3-way junction at Prairie/Florence - Does not require upgrades to DI or FH Stations
Upgrades to Crenshaw/LAX			
Normal Headways	12 Minutes	12 Minutes	6 Minutes
Event Headways	3 - 6 Minutes	3 - 6 Minutes	3 Minutes
Max Train Length	3 - 5 Cars	3 - 5 Cars	3 - 5 Cars
Opportunities & Challenges	- Upgrades to tunnel & signaling systems and/or platform length on Crenshaw/LAX line north of Fairview Heights Station - Tail tracks required at Expo/Crenshaw	- Upgrades to tunnel & signaling systems and/or platform length on Crenshaw/LAX and Green Line south of DI Station	- Upgrades to tunnel & signaling systems and/or platform length on all lines in this area
Long-term			
Normal Headways	12 Minutes	12 Minutes	6 Minutes
Event Headways	3 - 6 Minutes	3 - 6 Minutes	3 Minutes
Max Train Length	3 - 5 Cars	3 - 5 Cars	3 - 5 Cars
Opportunities & Challenges	- Upgrades to tunnel & signaling systems and/or platform length on both Crenshaw/LAX and Green Line - Tail tracks required at Expo/Crenshaw and Green Line Stations	- Upgrades to tunnel & signaling systems and/or platform length on both Crenshaw/LAX and Green Line	- Upgrades to tunnel & signaling systems and/or platform length on both Crenshaw/LAX and Green Line

Source: AECOM

Table 1.3-1 Range of Interlined Operability Scenarios

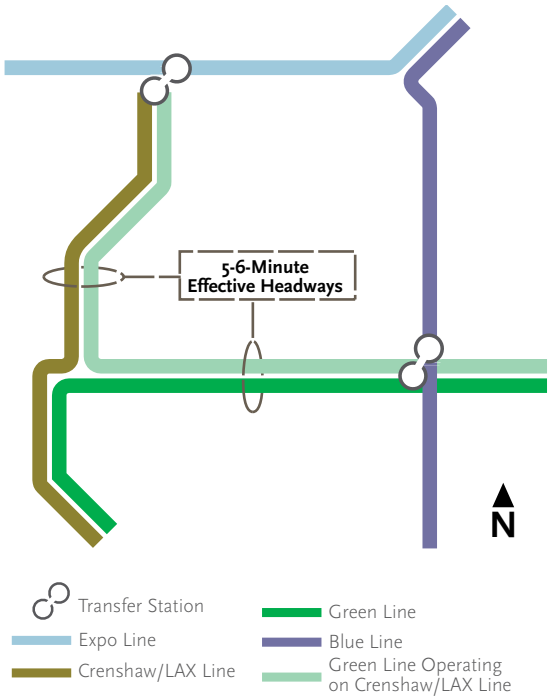
	North-Oriented (Fairview Heights Connection)	South-Oriented (Downtown Inglewood Connection)	2-Way Oriented (North and South Connection)
Short-term			
Normal Headways	6 Minutes	6 Minutes	6 Minutes
Event Headways	3 Minutes	3 Minutes	3 Minutes
Max Train Length	3 - 5 Cars	3 - 5 Cars	3 - 5 Cars
Opportunities & Challenges	- Major cost to upgrade FH Station for turning and terminating - Accommodation for major transfers at FH Station	- Major cost to upgrade DI Station for turning and terminating - Accommodation for major transfers at DI Station - Integration opportunities with businesses in Inglewood	- Major cost for the 3-way junction at Prairie/Florence - Accommodation for transfers at both Stations - Low cost effectiveness due reduced headways at split
Long-term			
Normal Headways	6 Minutes	6 Minutes	6 Minutes
Event Headways	3 Minutes	3 Minutes	3 Minutes
Max Train Length	3 - 5 Cars	3 - 5 Cars	3 - 5 Cars
Opportunities & Challenges	- Major cost to upgrade FH Station for turning and terminating - Accommodation for major transfers at FH Station - Major junction at Green Line and/or stations' expansions	- Major cost to upgrade DI Station for turning and terminating - Accommodation for major transfers at DI Station - Major junction at Green Line and/or stations' expansions	- Major cost for the 3-way junction at Prairie/Florence - Accommodation for major transfers at both Stations - Low cost effectiveness due reduced headways at split

Source: AECOM

Table 1.3-2 Range of Independent Operability Scenarios

1.3.1 INTERLINED SCENARIO

Existing and proposed operations on the Metro Crenshaw/LAX and Green Lines constrain the modification or expansion of service required to serve the Development. The Crenshaw/LAX Line is designed to support up to 5-minute minimum headways. The existing Green Line is also designed to operate at minimum 5-minute headways. The base network assumes the combined Crenshaw/LAX and Green Lines operate as three services on three branches terminating at Expo/Crenshaw, Redondo Beach, and Norwalk (**Figure 1.3-1**). As shown, each of the three services would operate at 10-12 minute headways, for effective headways on each branch of 5-6 minutes. This maximizes the service potential for these lines but **does not allow for additional capacity to serve a branch to the Development.** Therefore, any scenario involving integration with the Crenshaw/LAX Line or the Green Line requires upgrades to accommodate increased train frequency to provide service to the Development. An interlined LRT service to the Expo Line connecting the Development via the Fairview Heights Station along Prairie Avenue and requiring upgrades to the Crenshaw/LAX Line alignments and stations (**Figure 1.3-2**) was selected for the Study evaluation by the Project Team, because it is the most direct branch alignment from the Crenshaw/LAX Line and serves significant travel demand from the Westside, Central Los Angeles, and points further north and east via Downtown Los Angeles.



Source: AECOM
Figure 1.3-1 Base Metro Network

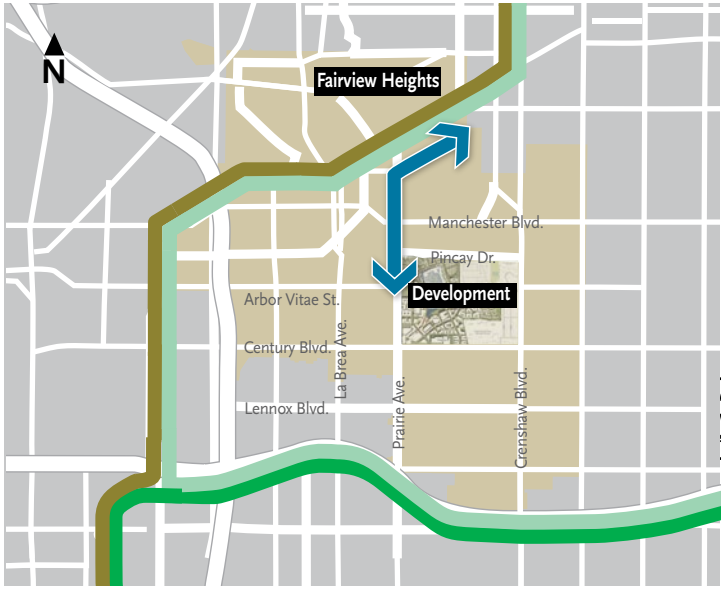
1.3.2 INDEPENDENT SCENARIO

Independent scenarios operate with the primary objective of providing reliable point-to-point service between the Crenshaw/LAX Line and the Development. Connections south to the Green Line and Hawthorne were identified as opportunities for future extension but not specifically included in this analysis.

The screened independent options include the following:

- Option 1 (Market-Manchester)
  Option 1 connects the Downtown Inglewood Station to the Development via Market St and Manchester Blvd. This option is recommended for study because it presents an opportunity for integration with local economic activity, transit-oriented development, and other initiatives in the area (**Figure 1.3-3**).
- Option 2 (Arbor Vitae)
  Option 2 connects the Metro AMC 96th Street Transit Station to the Development Station along the shortest route via Arbor Vitae Street (**Figure 1.3-4**). This option presents an opportunity to connect to a planned regional multi-modal hub served by both Metro's Crenshaw/LAX and Green Lines 13 different Metro and municipal lines, and LAWA's APM system.
- Option 3 (Century)
  Option 3 connects the Metro AMC 96th Street Transit Station to the Development Station via Century Boulevard (**Figure 1.3-5**). Century Boulevard is a major arterial, which is more compatible with a potential transit service. In addition to the AMC 96th Street Transit Station, this option presents the opportunity to connect to hotels and businesses along Century Boulevard.

An independent connection to the Fairview Heights station along the same alignment as the Interlined Scenario was not considered, as Fairview Heights is not an ideal location for event crush- or peak-load transfers and does not provide access to significant activity centers, multi-modal options, and is biased towards trips coming from the north (transfers from the Green Line and points south to the stadium would be circuitous via Fairview Heights).



Source: AECOM

Figure 1.3-2 Interlined Scenario

Source: AECOM

Figure 1.3-3 Option 1: Market-Manchester

Source: AECOM

Figure 1.3-4 Option 2: Arbor Vitae

Source: AECOM

Figure 1.3-5 Option 3: Century

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PART II

OPERABILITY SCENARIOS EVALUATION

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The Operability Scenarios discussed in Part I were evaluated on several technical areas of study that would assist in providing more information to determine the most reliable, effective and efficient transit service that also meets the goals of the Project. Below includes discussions for both the Interlined and Independent Operability Scenarios and the related options on the following technical areas: Guideway Configuration and Mode, Station Design and Connectivity, Operating Capacity, Ridership, Construction Methods and Impacts, Traffic Impacts, Maintenance and Storage Facilities, Right-of-Way Acquisition, Utility Conflicts and Relocation, Rail Systems, Environmental Scan and Potential Mitigation Requirements, Safety and Security, Capital and Operating Costs.

A summary of the findings of these technical areas can be found in Section 2.14.

2.1 Guideway Configuration and Mode

The initial definition of the interlined and independent options considered was based on the need to provide a reliable transit service that minimizes delay, wait and travel times. This is accomplished primarily through definition of the guideway configuration and technology characteristics. Discussion of the guideway configurations and technology modes are discussed in this section.

2.1.1 Guideway Configuration

The following section describes how reliable transit connection options were developed by determining the best location and configuration for the transit "guideway" or track structure.

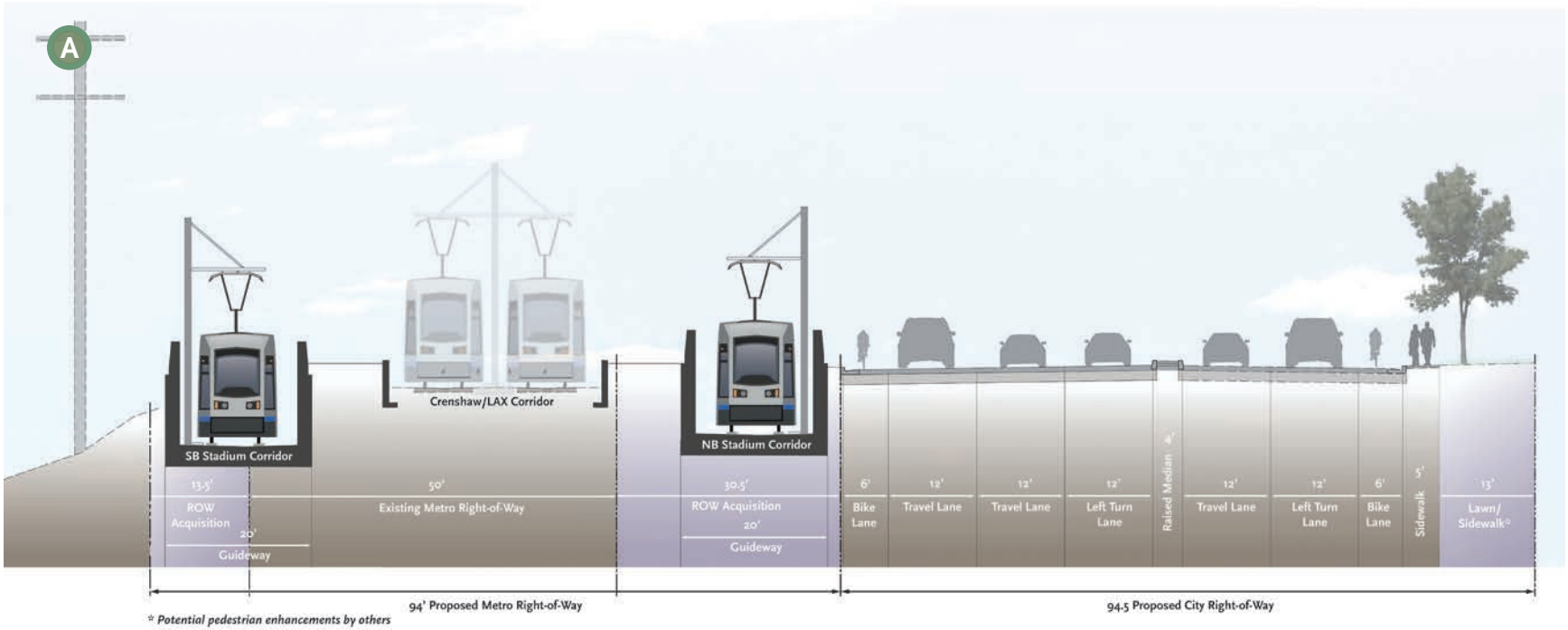
Source: AECOM

Figure 2.1-1 Fairview Heights Interlined Option

Interlined Scenario

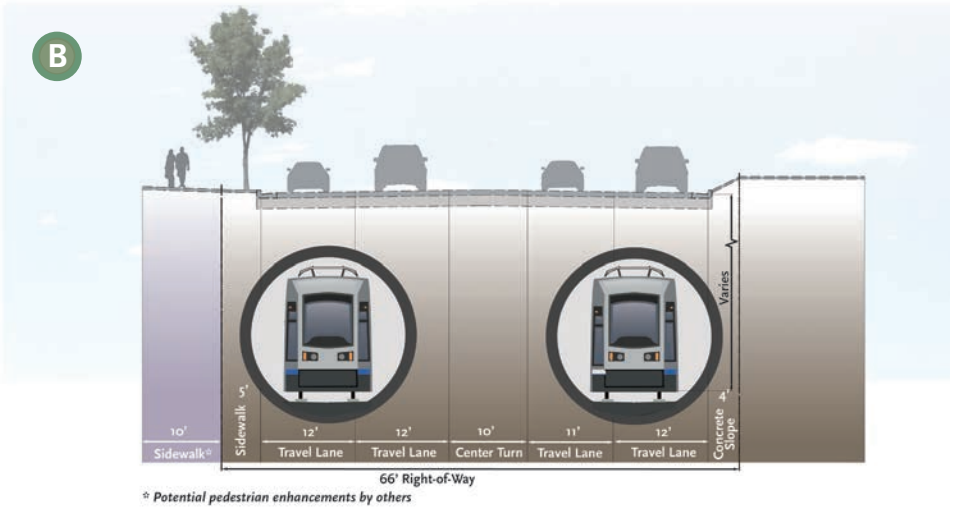
The Fairview Heights Interlined Scenario is assumed to include a fully exclusive, underground guideway from the junction point with the Metro Crenshaw/LAX Line to the Development (**Figure 2.1-1**, **Figure 2.1-2**, **Figure 2.1-3**). By being fully underground, the guideway:

- Avoids traffic impacts and delays along Prairie Avenue and at intersections with Florence Avenue, Manchester Boulevard, Pincay Drive, and Arbor Vitae Street
- Reduces noise, vibration, and visual impacts to residential neighborhoods along Prairie Avenue, The Forum, and the Inglewood Park Cemetery



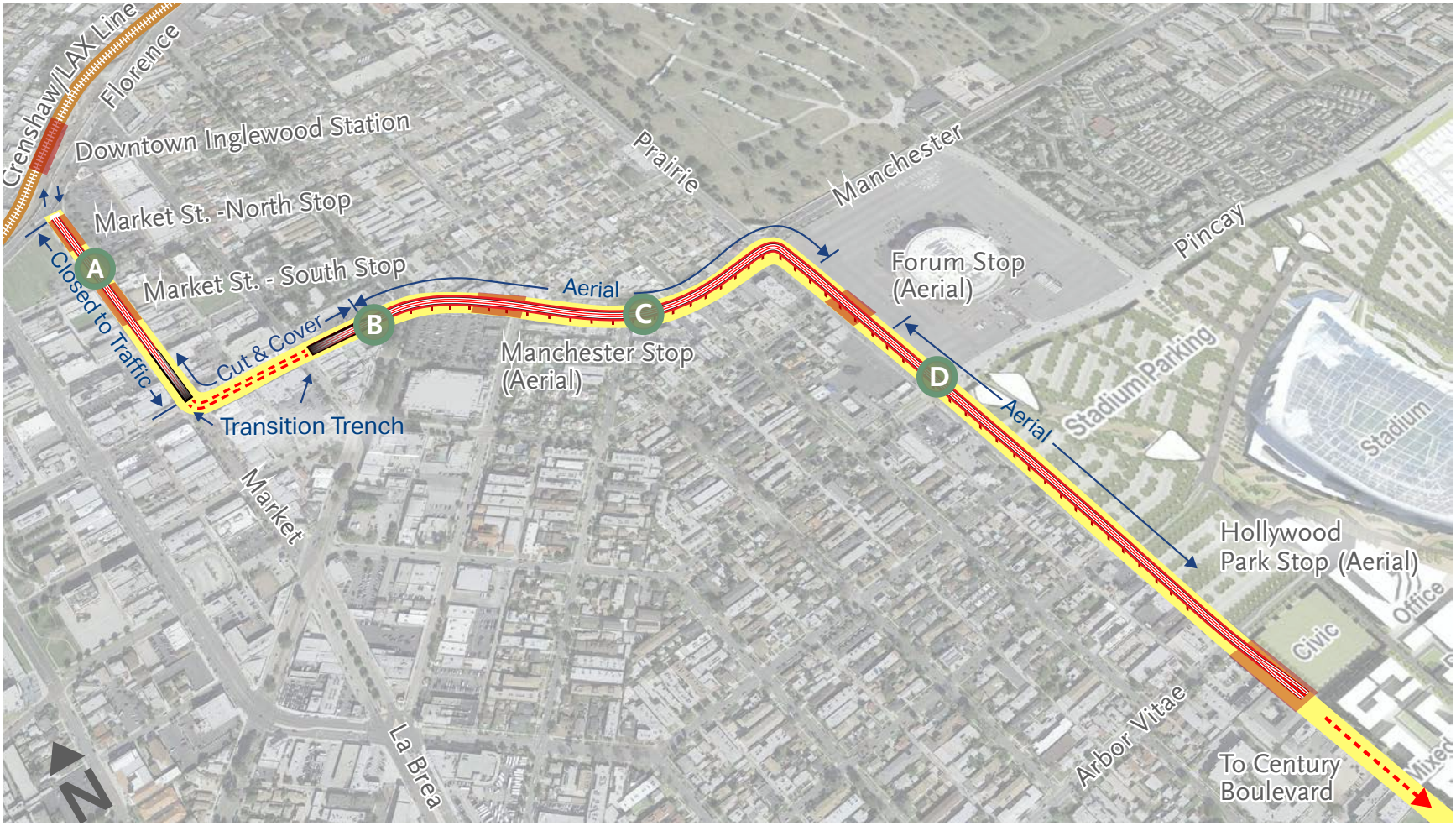
Source: AECOM

Figure 2.1-2 Florence Avenue Looking Northeast



Source: AECOM

Figure 2.1-3 Prairie Avenue North of Manchester Boulevard Looking North



Source: AECOM

Figure 2.1-4 Option 1: Market-Manchester

Independent Scenario

Option 1: Market-Manchester

Option 1 was developed to connect to Downtown Inglewood Station along the Crenshaw/LAX Line. It is the shortest distance from the Development to the Crenshaw/LAX line and would create additional economic activity in Inglewood's historic center.

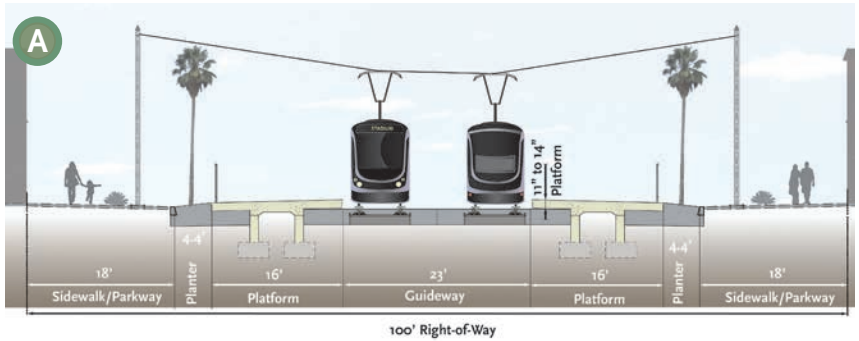
The guideway configurations were assumed to be:

Market Street: At-grade in a new pedestrian and transit mall to be compatible with urban environment and help encourage economic activity (**Figure 2.1-6**)

Market Street - Manchester Boulevard turn: Underground tunnel to avoid traffic impacts at intersection with Manchester Boulevard and visual impacts to Market Street (**Figure 2.1-7**)

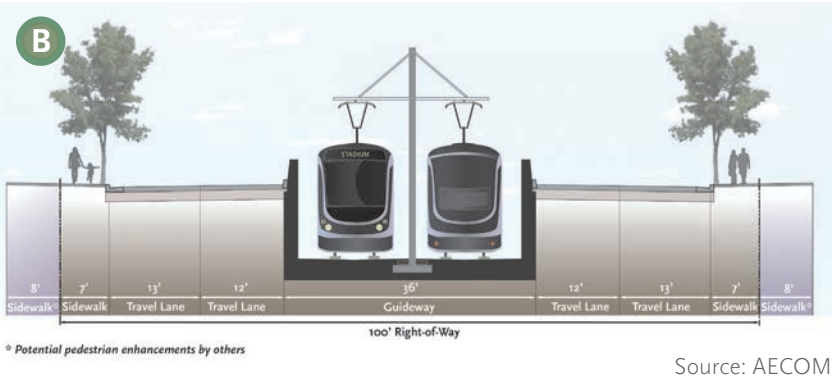
Manchester Boulevard: Elevated, aerial guideway to avoid traffic impacts on Manchester Boulevard and at intersections (**Figure 2.1-5**)

Prairie Avenue: Elevated, aerial guideway to avoid traffic impacts on Prairie Avenue and at intersections (**Figure 2.1-8**)



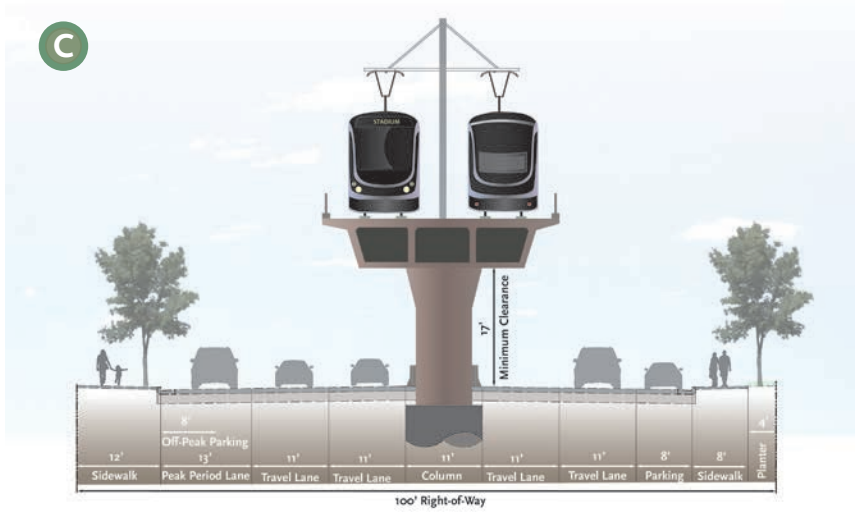
Source: AECOM

Figure 2.1-5 Market St. Looking North



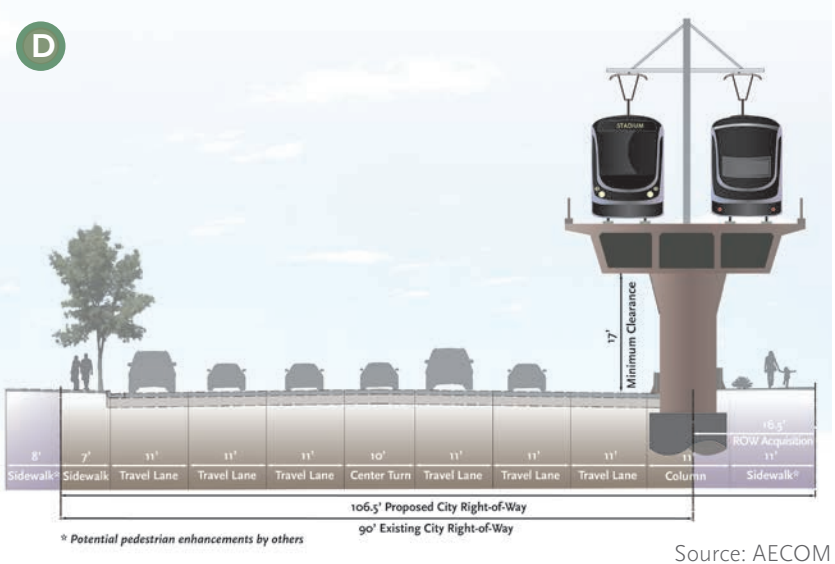
Source: AECOM

Figure 2.1-6 Manchester Blvd. Near Hillcrest Blvd. Looking West



Source: AECOM

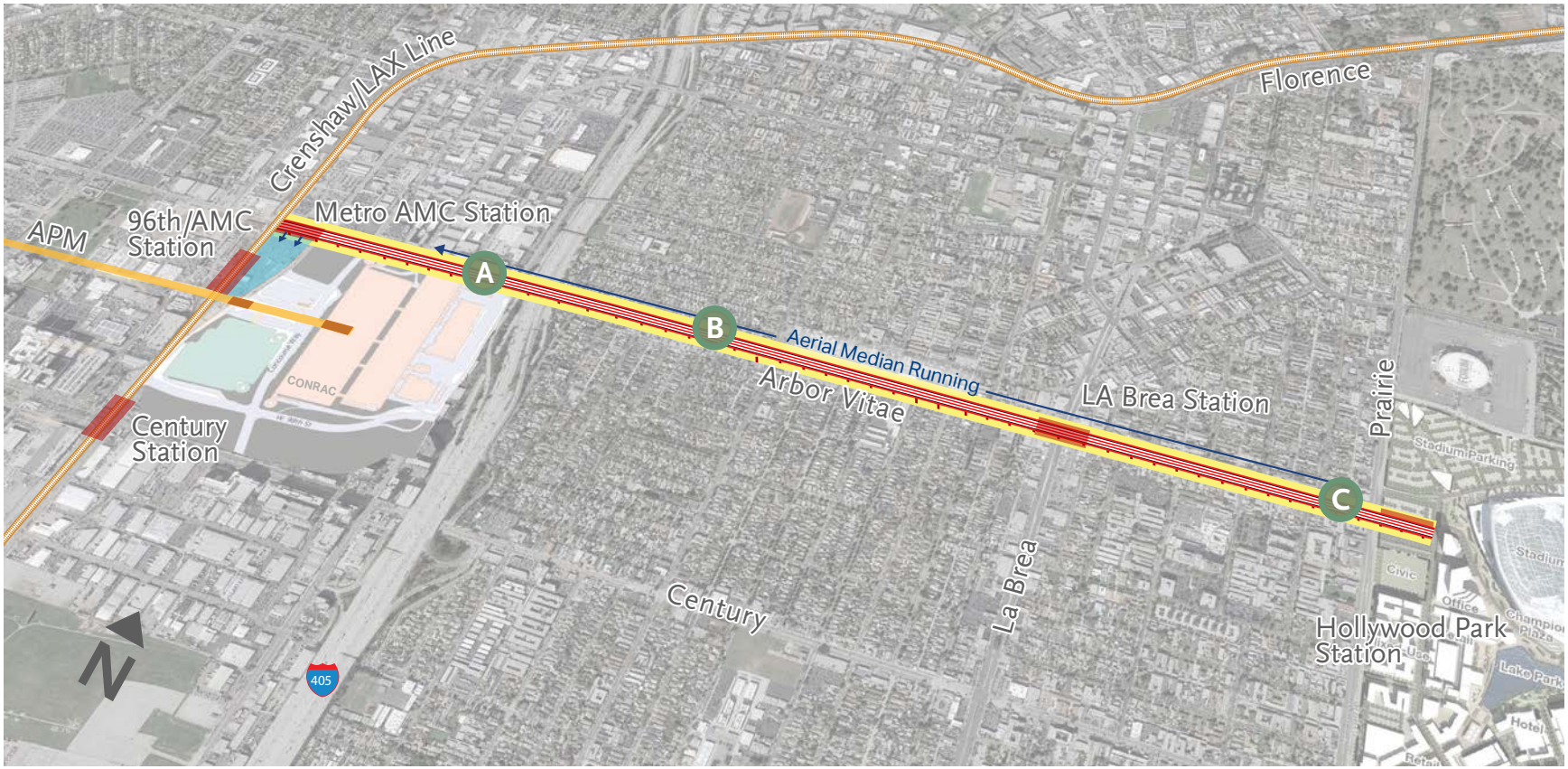
Figure 2.1-7 Manchester Blvd. Looking West



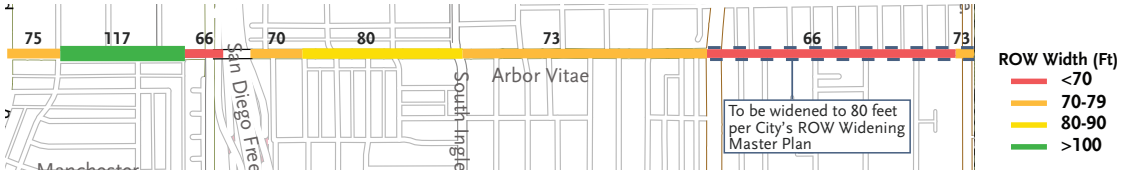
Source: AECOM

Figure 2.1-8 Prairie Ave. S. of Manchester Blvd. Looking North

Aerial guideways minimize operational impacts to the transit service but can cause impacts at guideway column locations to existing medians and/or turning lanes and have aesthetic impacts. The underground turn onto Market Street from Manchester Boulevard avoids impacting Market Street visually, but has "transition trenches" where the guideway enters and exits the tunnel which will impact traffic lane geometry on Manchester Boulevard. It is not anticipated that any through traffic capacity would be impacted, but lane widths and parking may be affected. On Prairie Avenue, the aerial guideway can be located within or on the east side of the ROW within the Forum and Development properties to minimize.



Source: AECOM
Figure 2.1-9 Option 2: Arbor Vitae

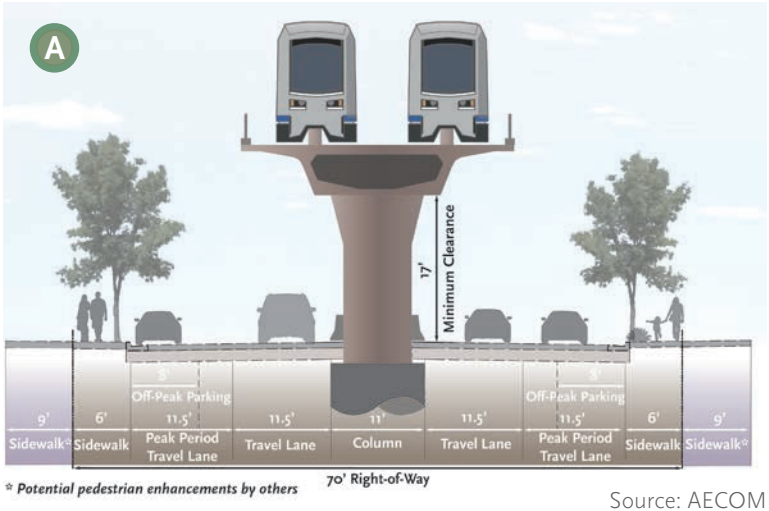


Source: AECOM
Figure 2.1-10 Arbor Vitae ROW Widths

Independent Scenario

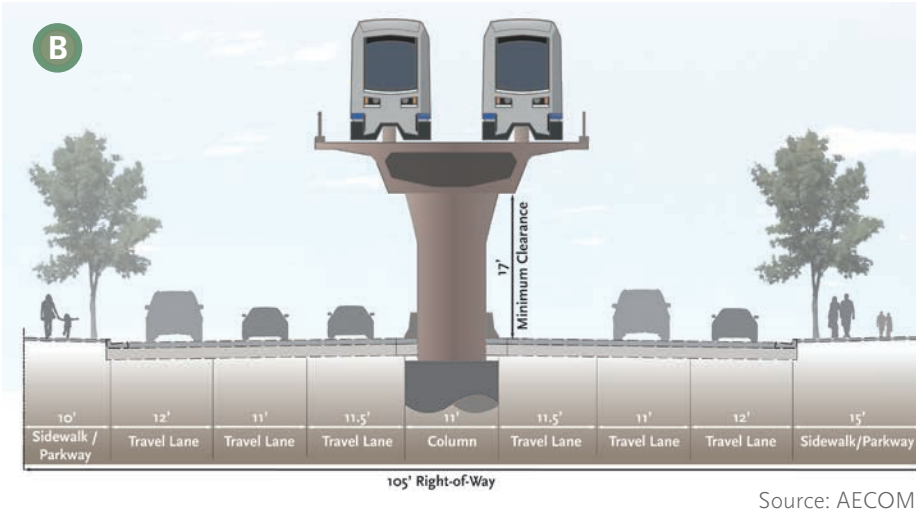
Option 2: Arbor Vitae

The Arbor Vitae option is the most direct connection from the Development to the AMC 96th Street Transit Station. It is assumed to feature a completely exclusive, elevated aerial guideway (**Figure 2.1-9** through **Figure 2.1-14**). Neighborhood-scale commercial and residential uses line Arbor Vitae. To be cost-effective, an underground guideway was not considered for this option. This option requires further noise, vibration, and visual impacts evaluation as part of the environmental review to be prepared by the City of Inglewood.



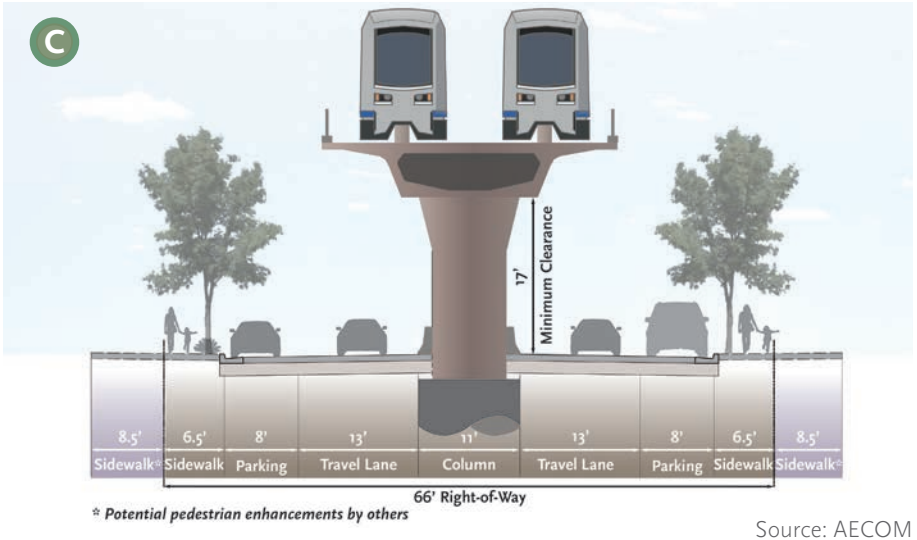
Source: AECOM

Figure 2.1-11 Arbor Vitae West of La Brea Looking West



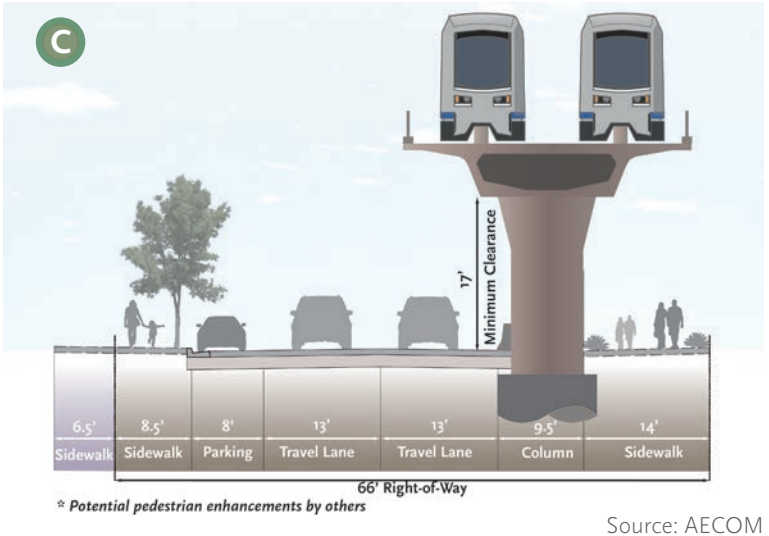
Source: AECOM

Figure 2.1-12 Arbor Vitae West of La Cienega Looking West (Future LAMP Section)



Source: AECOM

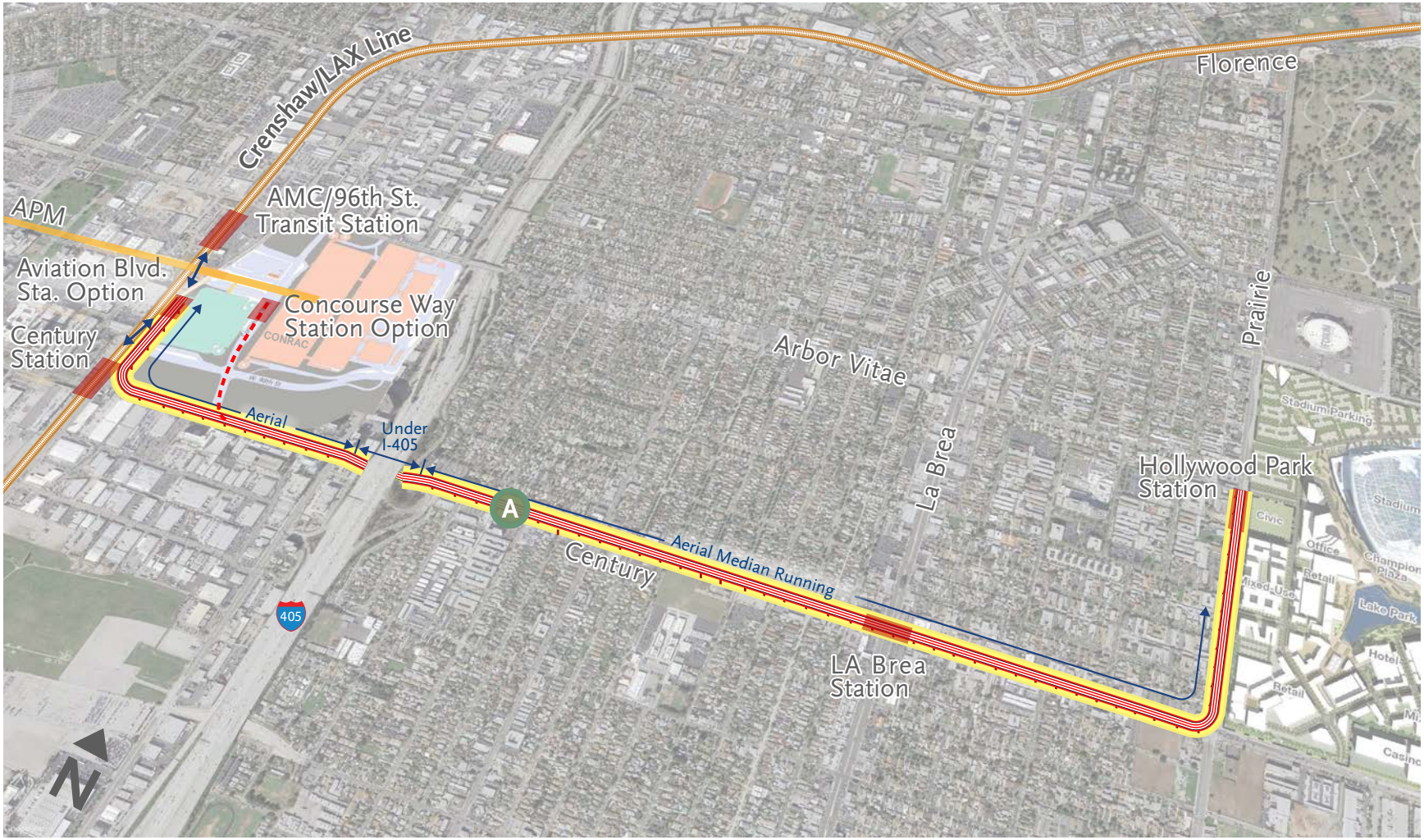
Figure 2.1-13 Arbor Vitae East of La Brea Looking West - Center Running Option



Source: AECOM

Figure 2.1-14 Arbor Vitae East of La Brea Looking West - Side Running Option

Aerial guideways minimize operational impacts to the transit service but can cause impacts at guideway column locations to existing medians and/or turning lanes. West of La Brea Avenue, Arbor Vitae Street includes a center two-way left-turning lane that is adequate for placement of guideway columns. East of La Brea Avenue, the roadway section only includes one through lane in each direction and parallel parking lanes. This section of Arbor Vitae street would require significant modification to accommodate the guideway columns.



Source: AECOM
Figure 2.1-15 Option 3: Century Boulevard

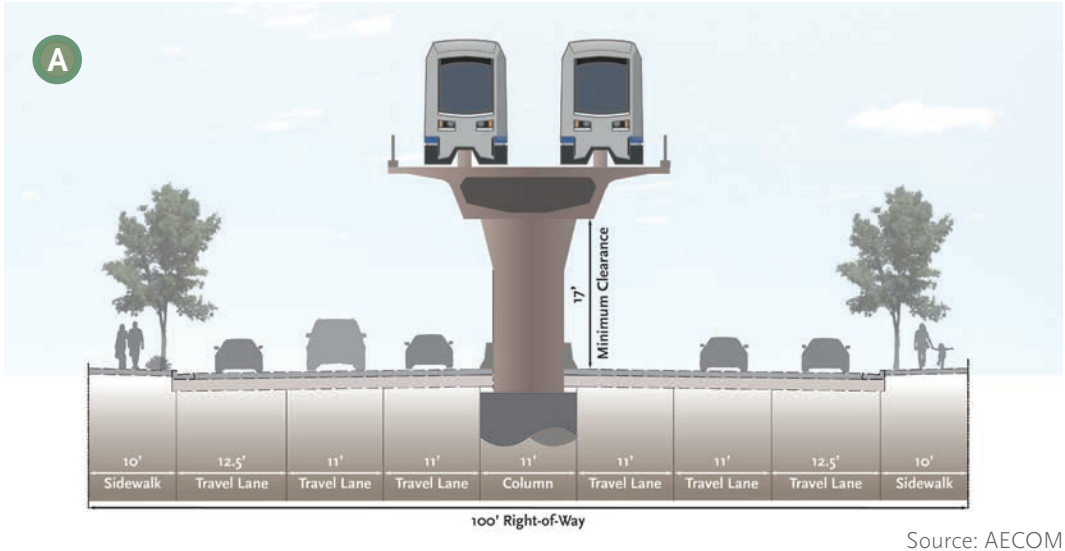
Independent Scenario

Option 3: Century

The Century Independent Option was developed as an alternative to Arbor Vitae Street. Century Boulevard has a wider ROW, continuous center median and a center two-way left-turn lane, and is lined by larger-scale commercial uses. It is also assumed to feature a completely exclusive, elevated aerial guideway (**Figure 2.1-15**, **Figure 2.1-16**, **Figure 2.1-17**). The Interstate 405 freeway crosses Century Boulevard with a single 100-foot span bridge. The elevated transit guideway could drop into the median of Century Boulevard to pass under the I-405 without affecting the bridge structure and with minor impacts to the existing lane configuration. Vertical clearance requirements, traffic impacts, and utility impacts for this crossing need to be studied further.

Source: http://www.monorailsaustralia.com.au/highpoint.html

Figure 2.1-16 Example Aerial Monorail Guideway



Source: AECOM

Figure 2.1-17 Century Boulevard Looking East

2.1.2 Technology / Mode

For the purpose of this transit connection project, fixed-guideway technologies with high capacity and urban compatibility are being explored. For the Interlined Scenario, LRT was considered. Urban Rail, Automated People Mover (APM), and Monorail were considered for the Independent Scenario Options (**Table 2.1-1**).

Interlined Scenario

LRT is a high capacity transit system operating in two to three car trains with power provided by overhead wires. The Fairview Heights Interlined Option would utilize the same type of LRT vehicles as the Crenshaw/LAX Line, adding additional LRT cars to the Metro fleet.

Independent Scenario

Urban Rail is a high capacity transit system similar to low-floor light rail, European tram or modern streetcar technologies that can operate as single cars or multiple car trains, depending on demand. It is also powered by overhead wires, and usually intended for shorter trips with frequent stops. For Option 1, this technology is being considered for flexibility of station and guideway configuration and ability to fit within surrounding urban context, especially in Downtown Inglewood.

An APM system is a high capacity transit system that usually operates over a limited distance. Vehicles are automated (i.e. driverless). APM vehicles have a similar minimum turning radius to LRT and urban rail vehicles. Monorail can also be automated, and operates on a single elevated rail or beam guideway. While monorail has the smallest guideway footprint (3-4 feet) among the four modes, and can accommodate a roadway grade of up to 10%, it also requires the largest minimum turning radius (120 feet).

APM and monorail technologies are considered for Options 2 and 3. Both systems could provide the necessary passenger capacity for game days to/from the Development. To minimize visual impacts to the communities nearby the two alignments will be fully aerial.

Modes	Train Length	Weight /Car	Capacity /Train	Speed	Examples
Light Rail	289 Feet (3-Car)	122,250 lb	450	25 - 65 mph	 LA Metro LRT
Urban Rail	198 Feet (3-Car)	80,570 lb	450	5 - 55 mph	 Rome Tram
APM	252 Feet (6-Car)	52,100 lb	600	5 - 35 mph	 DFW Skylink
Monorail	240 Feet (6-Car)	48,000 lb	600	30 - 55 mph	 Las Vegas Monorail

Source: AECOM

Table 2.1-1 Technology Specifications of Modes Considered

2.1.3 Travel Times

Travel times were calculated for each option considered based on the assumed guideway characteristics, alignment geometry, station locations and associated dwelling time, the particular technology's acceleration and deceleration rates and maximum speeds, as well as any anticipated delay in the operating environment.

Interlined Scenario

For the Interlined Scenario, the travel time for the new segment from the Fairview Heights Station to the Development Station was calculated based on the methodology above (**Table 2.1-2**); and from Fairview Heights Station to Expo/Crenshaw Station, the travel time of the Crenshaw/LAX Line in Metro's regional travel demand model was deployed. For the entire segment between the Development and Expo/Crenshaw Station, the calculated travel time is 15:03 minutes, with an average speed of 21.2 miles per hour.

Independent Scenario

For the three independent options, one-way run-times range from about 3.8 minutes to 6.8 minutes. Variations largely reflect the number of stations, project mileage, and alignment geometry. For instance, Option 1 has the lowest average speed at around 15 mph; whereas the average speed of Option 2 is around 32 mph for an assumed straight alignment with no turns.

The majority of the alignment in Option 1 is grade-separated; the only potential delay is on Market street. For this study's purpose, it is assumed that transit service has priority over crossing vehicular traffic at Queen and Regent Streets.

Subsequent refinement of Option 2 runtime can incorporate alternative alignments at the AMC 96th Street Transit Station or LAWA's APM, which may lengthen the runtime and decrease the average speed.

Detailed station-to-station travel times are included in Appendix B.

Option	Stations	Mode	Distance (Mi)	One-Way Time (Min)	Average Speed (Mph)
Interlined Scenario					
Fairview Heights	Fairview Heights, Development	LRT	1.78	3.0	35.60
Independent Scenarios					
Option 1: Market-Manchester	Market North, Market South, Manchester, Forum, Development	Urban Rail	1.23	4.8	14.90
Option 2: Arbor Vitae	AMC/96th St., La Brea, Development	APM/Monorail	2.06	3.8	32.70
Century	AMC, La Cienega, La Brea, Century/Prairie, Development	APM/Monorail	2.77	6.8	24.60

Source: Connetics Transportation Group

Table 2.1-2 One-Way Travel Times for Project Options (in Minutes)

2.2 Station Design & Connectivity

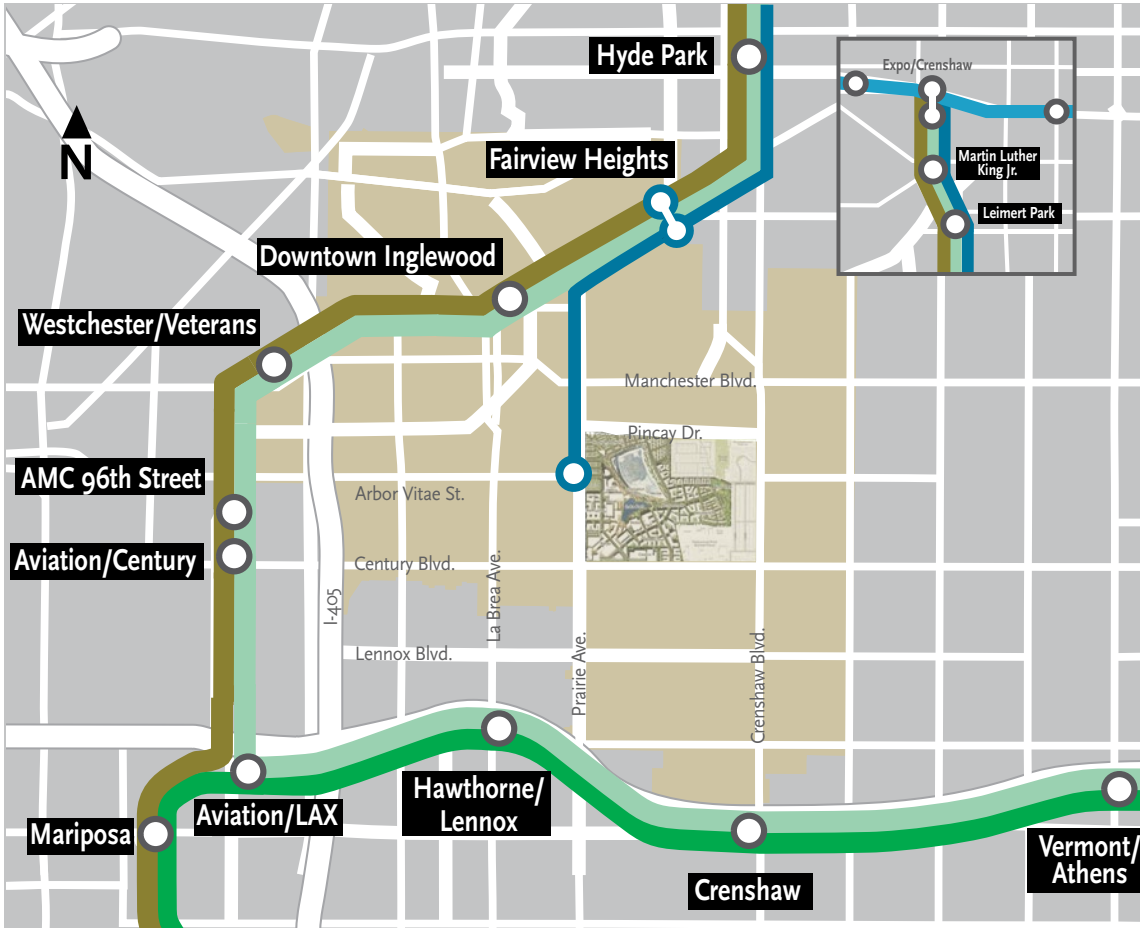
One of the goals of the Project is to provide a direct connection from the Development to the regional rail network by providing transfer service to a Metro rail station. The discussion below describes station design elements and associated station capacity that will successfully connect the Development to the Metro rail system and/or other multi-modal services to provide convenient transit access.

2.2.1 Station Design

Interlined Scenario

As an extension of the Crenshaw/LAX line (**Figure 2.2-1**), the station at Development is intended to be an underground terminal. As part of this transit line, the design of this station would include components from Metro's "kit-of-parts". An entry plaza would be provided which would also include elements from the kit such as a glass canopy at the portal (**Figure 2.2-2**).

In this interlined scenario, consideration would be given to the increased number of patrons aggregated from other connecting transit lines during event days. Those station plazas and sheltered waiting areas would be reviewed and modified to accommodate patrons transferring from other transit service lines to the Crenshaw/Expo line to reach the Development. Additional signage at those connecting stations would be provided to guide event patrons to the platforms for the Crenshaw/LAX line that would streamline their travel to the Development.



Source: AECOM

Figure 2.2-1 Interlined scenario

Source: Metro

Figure 2.2-2 Example Entry Plaza with Metro's Kit-of-Parts

Independent Scenario

Option 1: Market-Manchester

In this option (**Figure 2.2-3**), Market Street is closed to vehicular traffic during events (**Figure 2.2-4**). Stations on Market Street may be designed as sidewalk extensions. Design considerations include:

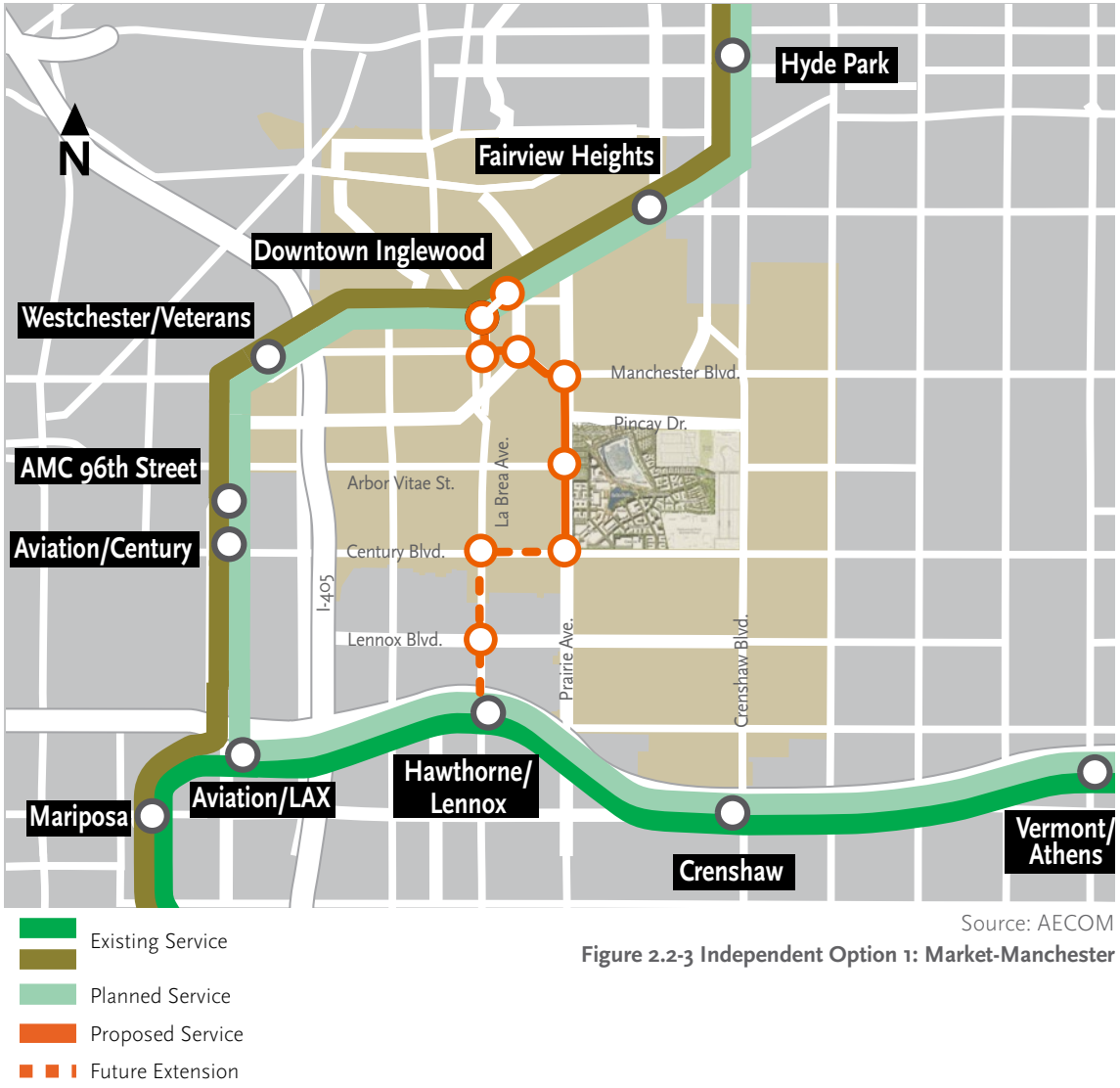
- Safety barriers at the boarding platforms and sidewalks to encourage patrons to cross at dedicated crossings where urban rail and pedestrian movements can be coordinated
- Sightlines of the transit operator
- Further safety measures such as crossing guards may be required on an event day
- Ramps may be required to transition from existing grades to the boarding height depending on the height of the vehicle

The Market Street North Station places the at-grade station is in close proximity to the Downtown Inglewood Station of the Crenshaw/LAX Line. This adjacency would allow the patrons to transfer to and from the Development and Crenshaw/LAX line. The primary design focus is the safe access across Florence Avenue to both stations.

One option to completely segregate pedestrians from vehicular traffic is aerial pedestrian bridges that would span over Florence Avenue to connect the Development station to the plaza at the Crenshaw/LAX station. Stairs and elevators will be provided on both sides of the street.

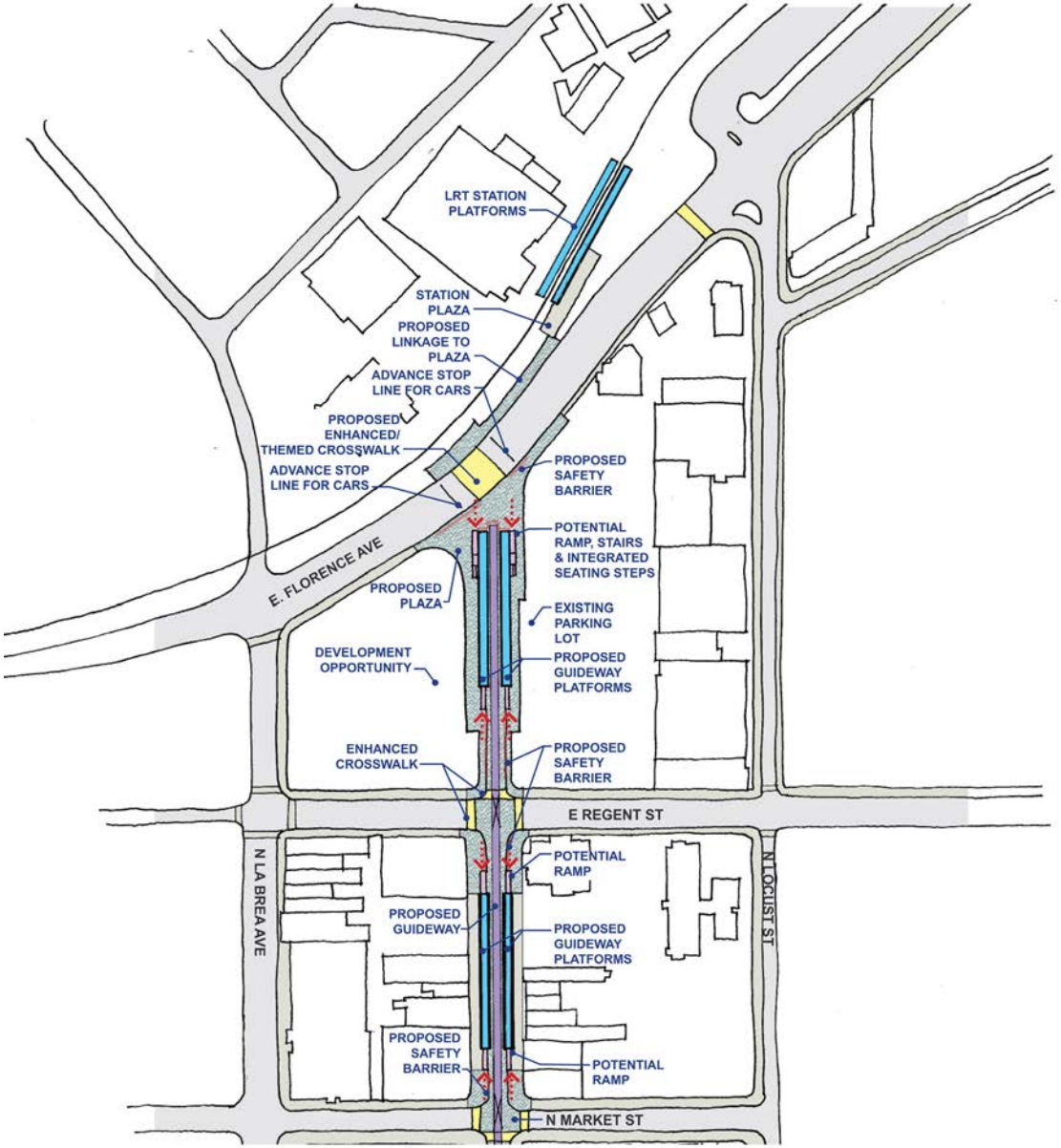
Source: https://www.denver.org/things-to-do/fall-winter/free-fall/

Figure 2.2-4 Example Transit Mall



Source: AECOM

Figure 2.2-3 Independent Option 1: Market-Manchester



Source: RAW International

Figure 2.2-5 Option 1: Market-Manchester Northern Terminus Area Sketch

Alternatively, a signature intersection may be designed at Market Street and Florence Avenue to provide at-grade pedestrian access (with a well governed crossing). Additional traffic studies are needed to identify the size of the queuing areas, ensure safe and efficient pedestrian crossings, and to minimize adverse impacts to vehicular traffic on Florence Avenue. In addition, sidewalk bulb-outs, bike boxes, two-stage queue boxes for bicyclists, median refuge islands, and advance stop lines could all serve as traffic-calming measures.

Another option to segregate vehicular and pedestrian traffic but still provide safe and ease of access from the Market Street North Station to the Downtown Inglewood Station of Crenshaw/LAX Line is to realign Florence Avenue. The roadway would descend below grade near Market Street and a pedestrian overpass with a maximum slope of 1:12 spanning over the depressed roadway will allow pedestrians to cross without stairs. In this configuration, neither vehicular nor pedestrian movements will be interrupted.

In addition to stations at the Development and Century Boulevard, stations could be located to provide local access along Manchester Boulevard and at The Forum. These stations would be similar to elevated light-rail stations with access to the platforms provided by bridges, escalators, elevators and stairs to adjacent access plazas (**Figure 2.2-6**).

Source: http://prr4ever.blogspot.com/2016/06/16-06-14-photos-san-diego-trolley.html

Figure 2.2-6 Example Aerial Guideway

Option 2: Arbor Vitae

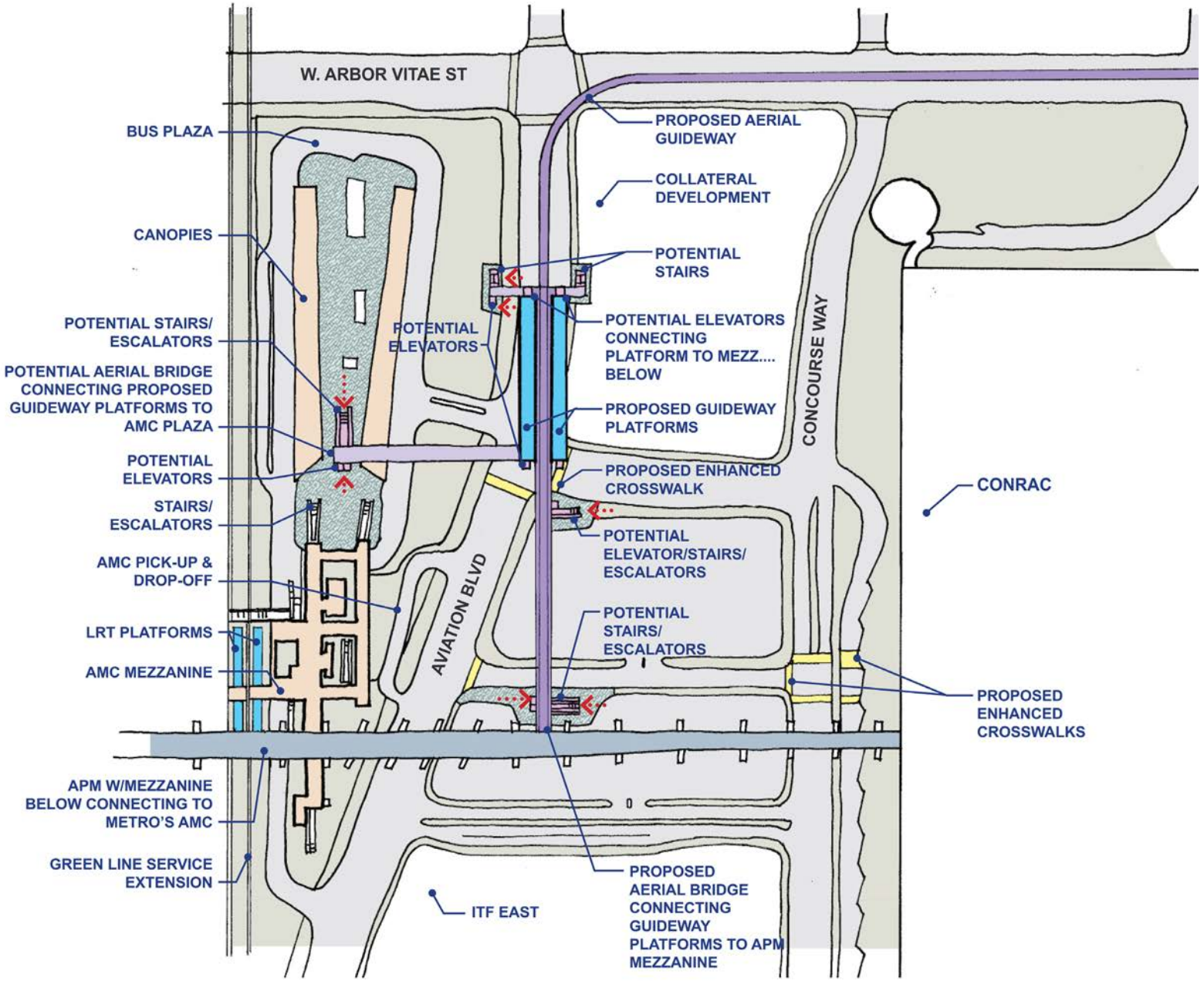
An aerial station on Arbor Vitae would be median running with pedestrian bridges and vertical circulation devices to the sidewalks below. This station is in close proximity to the Metro AMC 96th Street Transit Station, including the regional bus transfer center, LAWA's APM and CONRAC. As such, clear way-finding would be provided to direct patrons to transit modes for regional connectivity.

An alternative is to route the guideway from Arbor Vitae Street south along Concourse Way to provide a station that connects to LAWA's APM concourse (**Figure 2.2-8**). This aerial station would require its own vertical devices for access and egress. The capacity, ingress and egress strategy from the concourse would need to be reconsidered to accommodate the combined ridership from the APM and Development line.

At the Development station, there would be multiple platforms with redundant vertical circulation to provide ease of access and egress from the station on event day (**Figure 2.2-9**). Part of the station would be located over Prairie Avenue and align east/west with Arbor Vitae Street. Vertical access by means of stairs, escalators and elevators would be provided either on Arbor Vitae Street or Prairie Avenue. An optional station at La Brea Avenue would provide additional local access along a major existing travel corridor within Inglewood.

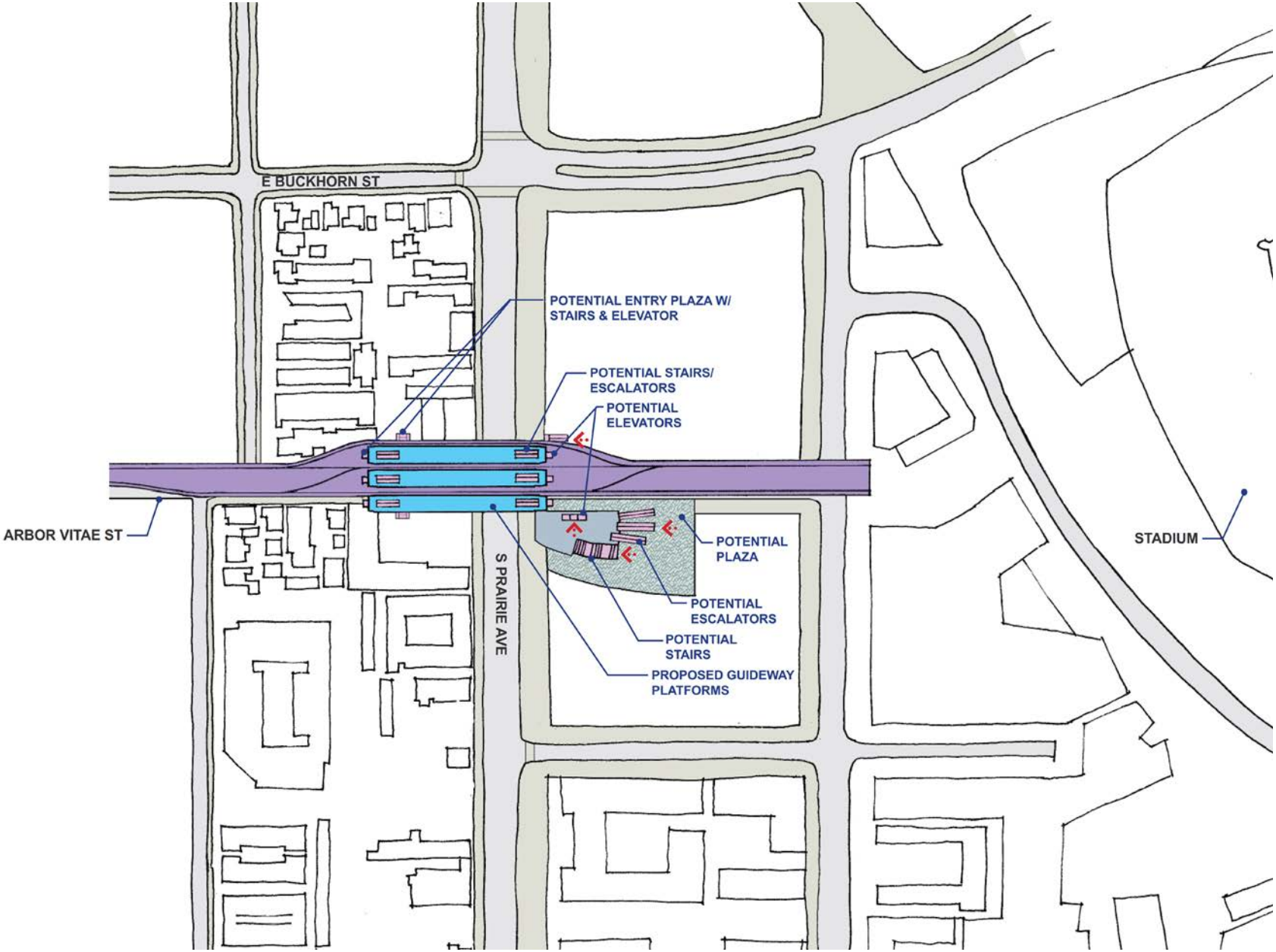
Source: AECOM

Figure 2.2-7 Independent APM/Monorail on Arbor Vitae



Source: RAW International

Figure 2.2-8 Option 2 Arbor Vitae AMC Terminus Area Sketch



Source: RAW International

Figure 2.2-9 Option 2 Arbor Vitae Development Terminus Area Sketch

Independent Scenario

Option 3: Century

An aerial station on Aviation Way routed from Century Blvd (**Figure 2.2-10**) would have similar design considerations as the Arbor Vitae independent scenario.

A proposed aerial station would also be located at the intersection of Century Boulevard and South La Brea Avenue. This station would require pedestrian bridges connecting the platform to vertical circulation on the north and/or south sides of Century Boulevard.

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Source: AECOM

Figure 2.2-10 Independent APM/Monorail on Century

2.2.2. Station Capacity

Station design capacity is established by passenger demand volumes under typical peak conditions in addition to demands that increase during special events, service disruptions and emergency evacuation situations. These additional factors would be considered in evaluating station capacity:

- Occupant load
- Design of the platform
- Configuration and number of tracks
- Capacity of trains, service headways, ridership
- Level of service
- Access to station and platform(s)
- Egress capacity, emergency evacuation strategy

Interlined Scenario

A new underground station at the Development will provide adequate queuing and waiting spaces without impediments to station access and egress. Overflow areas at the concourse and plaza levels may be required to relieve congestion on the platforms on event days. Additional considerations for emergency lighting and HVAC at underground egress paths would also be provided.

The Fairview Heights and Expo/Crenshaw stations need to be evaluated to accommodate normal daily ridership as well as the surge of event day ridership. However, the maximum train load would not exceed maximum passenger capacity for the largest capacity train operating on that track during the peak period, despite game day surge.

Egress at an underground station at Development would be provided by stairs, elevators and escalators that are in alignment with the platforms.

Independent Scenario

Option 1: Market-Manchester

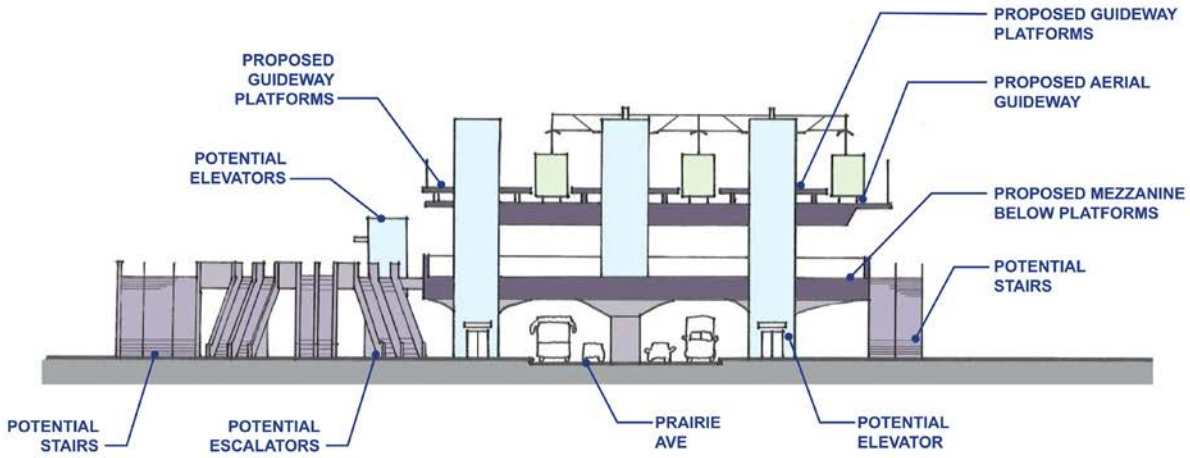
Option 1 includes at-grade stations. Design considerations for capacity would be similar to the aforementioned scenarios for each type of station. The North Market Street station places the at-grade station in close proximity to the Metro Crenshaw/LAX Line station north of Florence Ave. This adjacency would allow the patrons to transfer to and from the Development and Crenshaw/LAX line. The platform and queuing areas may need to be oversized to accommodate an influx of patrons transferring between the two transit lines. Egress at an aerial station at the Development would be provided by stairs, elevators and escalators that are located adjacent or in alignment with the platforms. Paths of egress which involve track crossing would be avoided. A concourse/mezzanine level would be required to egress passengers off the center platform onto pedestrian bridges that would descend to the north and south sidewalks below on Arbor Vitae. Egress from the two side platforms would be directly to grade via stairs, elevators and escalators.

Option 2: Arbor Vitae

The terminus station at Arbor Vitae (**Figure 2.2-11**) could either be standalone or connected to the AMC/96th Street station via the concourse level. In the scenario where the Development station is directly connected to the LAWA APM and concourse (**Figure 2.2-12**), the peak-period calculations contributing to occupant load may differ greatly from an emergency situation and thus impact station capacity and egress. Passengers who typically pass through to the airport or CONRAC via LAWA's APM may be required to exit at the Development station. The same is true in reverse. Egress at an aerial station at the Development would be provided by stairs, elevators and escalators that are located adjacent or in alignment with the platforms. Paths of egress which involve track crossing would be avoided. A concourse/mezzanine level would be required to egress passengers off the center platform onto pedestrian bridges that would descend to the north and south sidewalks below on Arbor Vitae. Egress from the two side platforms would be directly to grade via stairs, elevators and escalators.

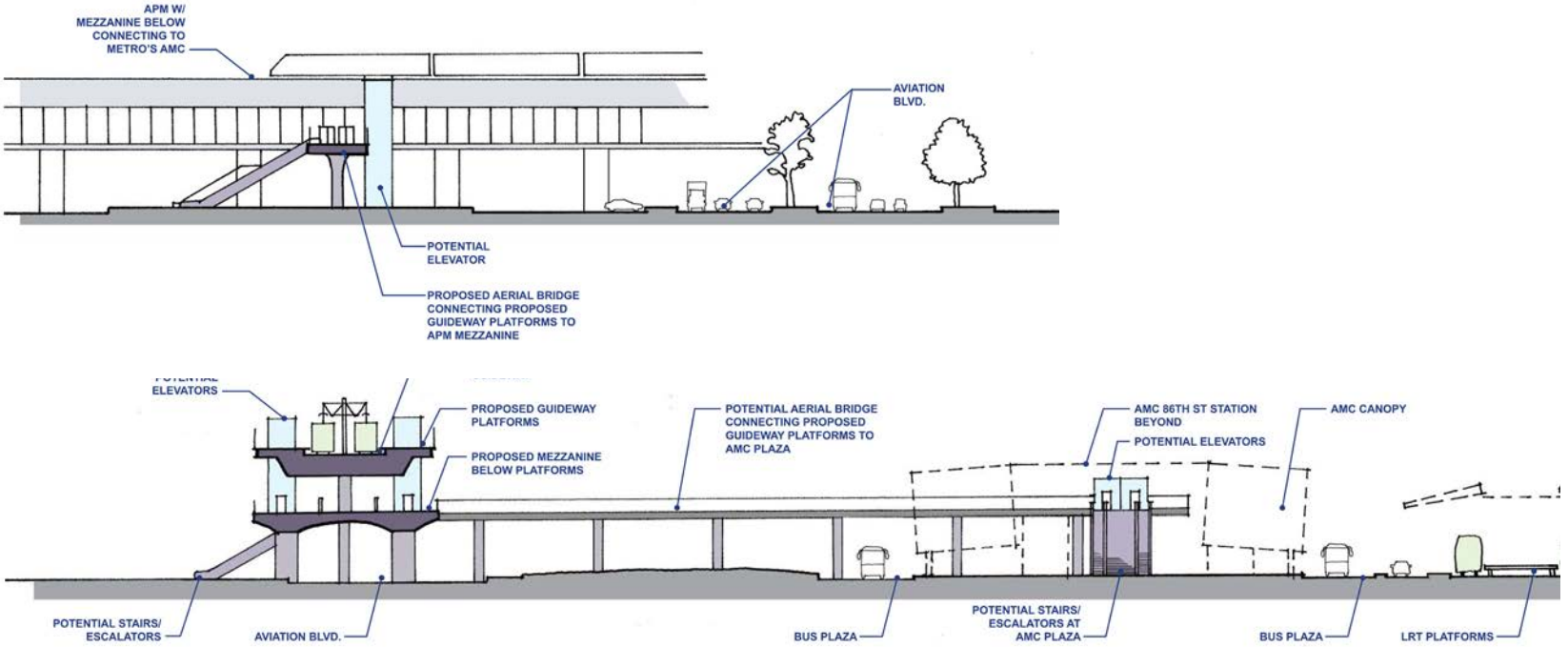
Option 3: Century

Station capacity considerations for Option 3 stations via Century are similar to the Arbor Vitae Independent Option.



Source: RAW International

Figure 2.2-11 Option 2 Arbor Vitae AMC Terminus Area Sketch



Source: RAW International

Figure 2.2-12 AMC 96th Street Transit Center Access

2.3 Operating Plan

One of the Project's primary goals is to accommodate the capacity of those traveling to and from the Development via public transportation. The Project must have the ability to serve peak travel demand during major events. This section presents an operating plan for both the Interlined and Independent Scenarios considered in this Study.

A high-capacity transit connection should be justified by anticipated travel demand, which in turn must be satisfied by the proposed operating plan. This is an iterative process with the following steps:

1. Set a peak-capacity goal to define conceptual service requirement
2. Develop conceptual operating plan to meet conceptual service requirement
3. Evaluate travel demand (ridership) and adjust operating plan as necessary

Station capacity is also crucial because of the special considerations associated with serving peak event loading, crowds, queuing, and fire-life safety (emergency evacuation).

With the knowledge that Metro served between 14% and 26% of Rams' games attendees at the Coliseum, and policy goals set at other locations for emptying the stadium after an event within one hour, it was calculated that the service should be able to serve 25% of the stadium capacity per hour. Therefore, for the study the target capacity was set at 25% of the 80,000 stadium capacity, or 20,000 passengers per hour.

Interlined Scenario

The Fairview Heights Interlined Option provides a new LRT branch from Metro's Crenshaw/Green Line to serve the Development via the station at Prairie/Arbor Vitae. The branch junction occurs south of the Fairview Heights station near Florence Avenue.

Routine Service

For routine service, the Project is envisioned to operate between the Expo/Crenshaw station and the Development at 5-minute peak period headways and 10-minute midday and evening headways, tapering to 20-minute headways at night (**Figure 2.3-1**). The service levels on this branch match the No-Build headways for the combined Crenshaw/LAX and Green Line service. This means that for the segment from Fairview Heights Station to the Expo/Crenshaw Line, the combined service frequencies between the Crenshaw/LAX, Green and Inglewood NFL lines would be 2.5 minutes in the peak and 5 minutes in the off peak. Capital improvements are required in this segment to accommodate the increased frequencies from the Crenshaw/LAX Line as currently designed.

With peak period headways at 5 minutes, the resulting twelve trains per hour serving this branch provide more than enough capacity given the interlined scenario serves one new market at the Development. Passenger loads are likely to be accommodated by single-car trains with this level of service. A refinement to the operating plan can be considered for 10-minute, all-day service tapering to 20-minute night service.

Special Event Service

For event days including NFL football games, additional service shall be scheduled and trains lengthened to their maximum (3-car) to accommodate peak demand over a certain period. Service is most needed after events as passengers tend to leave the event during a short time frame, whereas arrivals (particularly on weekends) are usually more dispersed. This study assumes a 9-hour period of event service:

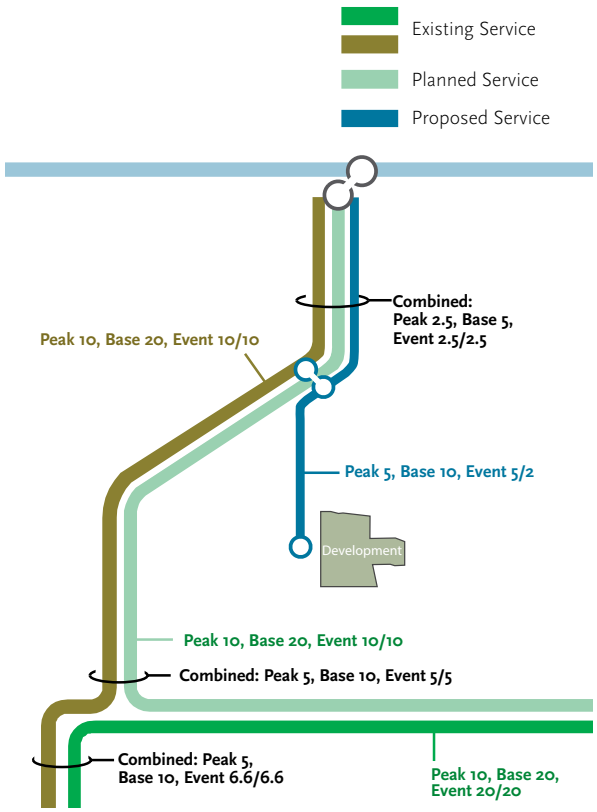
- a 6-hour period covering several hours before to mid-way through the event, and
- a 3-hour period mid-way through the event extending up to a couple hours past the event.

This event service span is consistent with that associated with the Rams games at the Coliseum during the 2016 NFL season.

NFL games are expected to occur on Sunday, Saturday or Monday & Thursday nights. For the 9-hour event service period, the following level of service is proposed (**Figure 2.3-1**):

- Development branch: 5 minute headways
- Crenshaw/LAX Line (Expo/Crenshaw to South Bay): 10 minute headways
- Green Line North (Expo/Crenshaw to Norwalk): 10 minute headways
- Expo Line (east west): 10-minute headways (5 minutes during weekday afternoon peak)
- Green Line South (Norwalk to South Bay): 20 minute headways (10 minutes during weekday afternoon peak)

Specifics of the service plans for this and all other scenarios are provided in Appendix D.



Source: Connetics Transportation Group, AECOM

Figure 2.3-1 Interlined Option Operating Concept

Independent Scenarios (Options 1 through 3)

The independent options assume a stand-alone line connecting the Development with Metro's rail network.

Routine Service

For routine service, the Project is envisioned to operate at 5-minute peak headways, 10-minute midday and evening headways, tapering to 20-minute night service. These service levels are set to be compatible with planned headways for the combined Crenshaw/LAX and Green Line service.

With peak period headways at 5 minutes, the resulting twelve trains per hour provide more than enough capacity for the forecasted travel demand. Passenger loads are likely to be accommodated by single-car trains with this level of service. A refinement to the operating plan can be considered for 10-minute, all-day service tapering to 20-minute night service.

Special Event Service

For event days including NFL football games, additional service shall be scheduled and trains lengthened to their maximum per station platform design (6-car trains for APM or monorail, and 3-car trains for urban rail). The analysis for Independent Scenario Options also assumes a 9-hour period of event service similar to the Interlined Scenario, and the service span is also consistent with the event service associated with the Rams games at the LA Coliseum during the 2016 NFL season.

Post-event service provides the "worst case" where the most service is needed, since passengers are more likely to leave the event during a short time frame, whereas arrivals (particularly on weekends) tend to be more dispersed. Since the independent options are not constrained by sharing track with other services, the post-event period can be designed at very tight headways to provide the most capacity. The frequency of operations is limited by:

- Operational considerations of how long it takes to turn trains around at each end and safely load and unload crush loads, and
- Considerations of whether passenger loads can be distributed effectively at the terminus of the line.

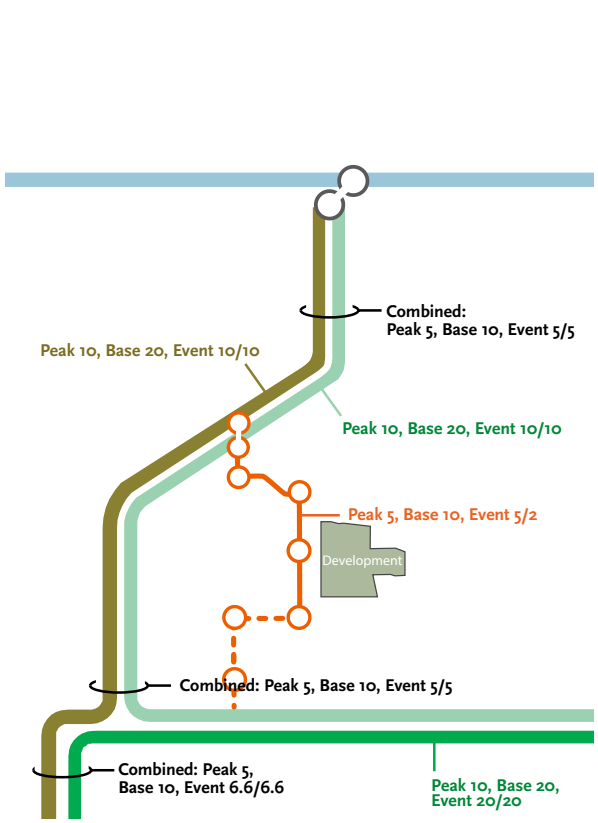
NFL games are expected to occur on Sunday, Saturday or Monday & Thursday nights. For the 9-hour event service period, the following level of service is proposed to provide the greatest capacity possible and allowing times for efficient loading and unloading passengers at each end of the line:

- Options 1 through 3: 5-minute headways pre- and during event; 2 minute headways mid- to post-event
- Crenshaw/LAX Line (Expo/Crenshaw to South Bay): 10-minute headways
- Green Line North (Expo/Crenshaw to Norwalk): 10-minute headways
- Expo (east west) Line: 10-minute headways (5 minutes during weekday afternoon peak)
- Green Line South (Norwalk to South Bay): 20 minute headways (10 minutes during weekday afternoon peak)

For Option 1 (**Figure 2.3-2**), passenger loads in Downtown Inglewood can be distributed toward the South Bay (via the Crenshaw/LAX Line southbound to El Segundo and eventually

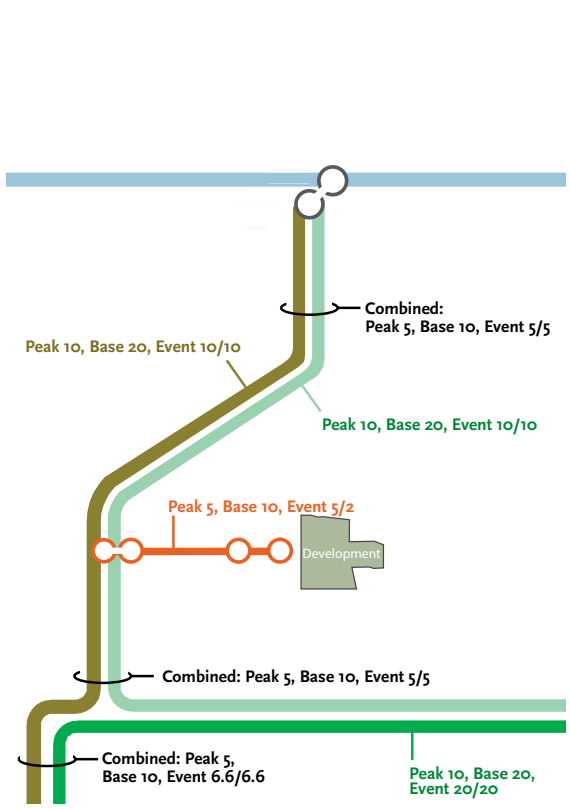
Torrance), communities to the south and east (via Green Line to Norwalk), and the Westside, downtown and East Los Angeles (via Crenshaw/LAX Line northbound to Expo/Crenshaw), with opportunities to further transfer onto other major transit lines serving the county and greater region. Connection to bus routes are limited since the Inglewood Transit Center is served by only a limited number of Metro and municipal lines compared to the AMC 96th Street Transit Station.

For Options 2 & 3 (**Figure 2.3-3 and Figure 2.3-4**) passenger loads at AMC 96th Street Transit Station can be distributed toward the South Bay (via Crenshaw/LAX Line southbound to El Segundo and eventually Torrance), communities to the south and east (via Green Line to Norwalk), and the Westside, downtown and East Los Angeles (via Crenshaw/LAX and Green Line northbound to Expo/Crenshaw), with opportunities to further transfer onto other major transit lines serving the county and greater region. Passengers will also be able to take advantage of a wide array of bus transit routes serving the AMC 96th Street Transit Station, as well as the airport via LAWA's APM.



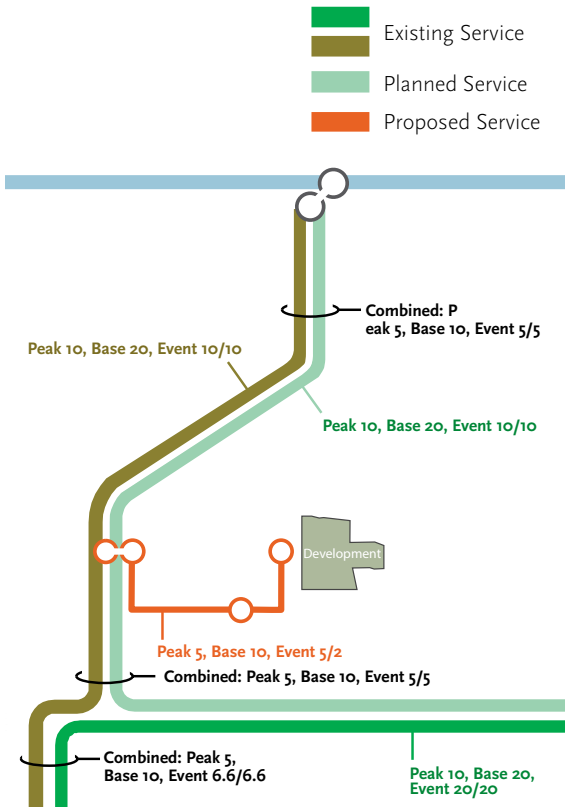
Source: Connetics Transportation Group, AECOM

Figure 2.3-2 Option 1: Market-Manchester Operating Concept



Source: Connetics Transportation Group, AECOM

Figure 2.3-3 Option 2: Arbor Vitae Operating Concept



Source: Connetics Transportation Group, AECOM

Figure 2.3-4 Option 3: Century Operating Concept

2.4 Ridership Analysis

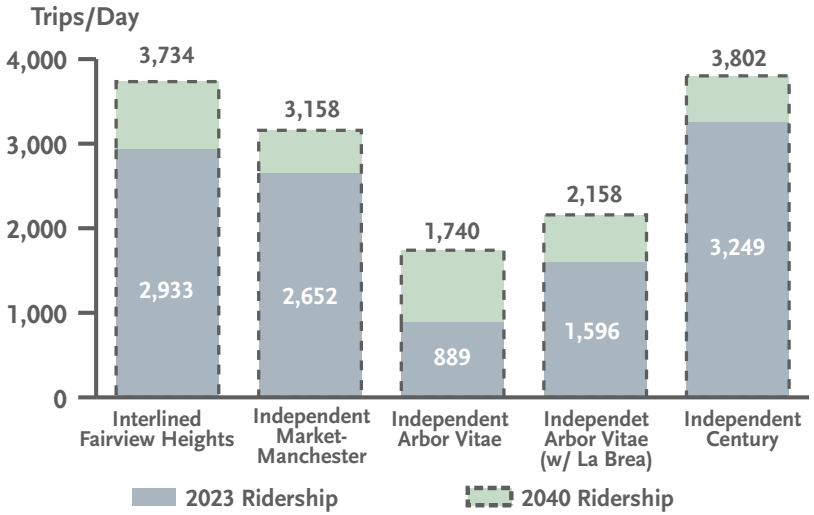
Based on the operating plan described above, an analysis of travel demand to estimate future ridership of both the Interlined and Independent Scenarios was evaluated. The Metro model was used to perform this analysis, which does not include special event forecasts. A separate model was developed for special events ridership forecasts.

2.4.1 Ridership Forecasts

This section documents the results of the travel demand forecasting process for both scenarios and related options. Included in this section is a description of the types of data used to assess and compare the scenarios, followed by additional model results for each option. The subsequent section presents a comparison of the performance of the scenarios and related options across a set of key performance indicators. Transit ridership is evaluated by a range of statistics that depict the ability of a project to attract riders and the ability of the bus and rail system to serve the traveling public. Key statistics for this project include:

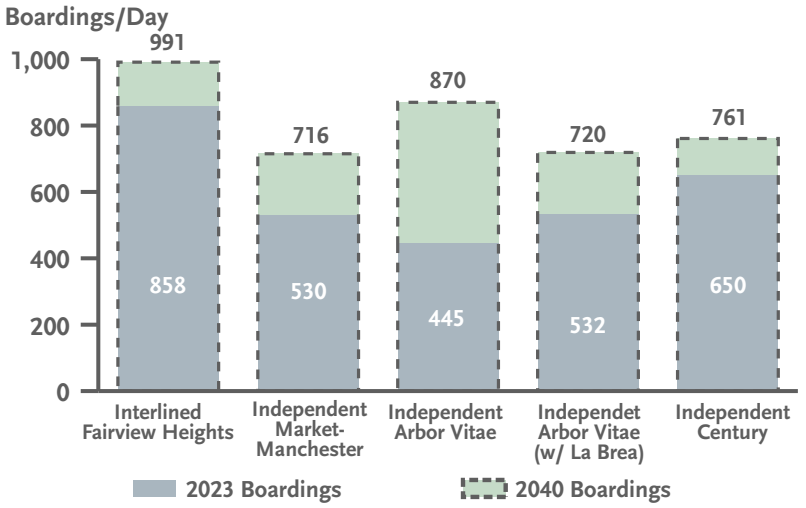
- **Boardings**: Boardings represent the number of times a traveler boards a new transit vehicle. With this statistic, a commuter driving to a train station and taking the train downtown counts as one boarding. A traveler walking from home to a bus and then transfers to another bus or train counts as two boardings. It can be measured at the route or station level and provides the most intuitive understanding of whether a project is able to attract ridership.
- **Trips on the Project**: Trips on the Project are a subset of the boarding statistic and represent those boardings making use of a new transit project. Trips on the Project are equal to the Administration (FTA) uses this measure to quantify ridership for New Starts project evaluations.
- **Station Boardings**: Station boardings are the number of boardings occurring at each station and can also show the modes of access and egress (e.g., walk, bus, park-and-ride or kiss-and-ride) to and from a station. This statistic provides information on the locations where the project is forecasted to attract demand. It is also useful in understanding the impacts that each station may have on the surrounding community.

The projected transit ridership of each of the Development transit options for the rail system and other Metro lines are shown in the tables below (**Figure 2.4-1**). Ridership projections by line are included in Appendix E.



Source: AECOM

Figure 2.4-1 Year 2023 and 2040 Typical Weekday Trips on Project



Source: AECOM

Figure 2.4-2 Year 2023 and 2040 Typical Weekday Average Station Boardings

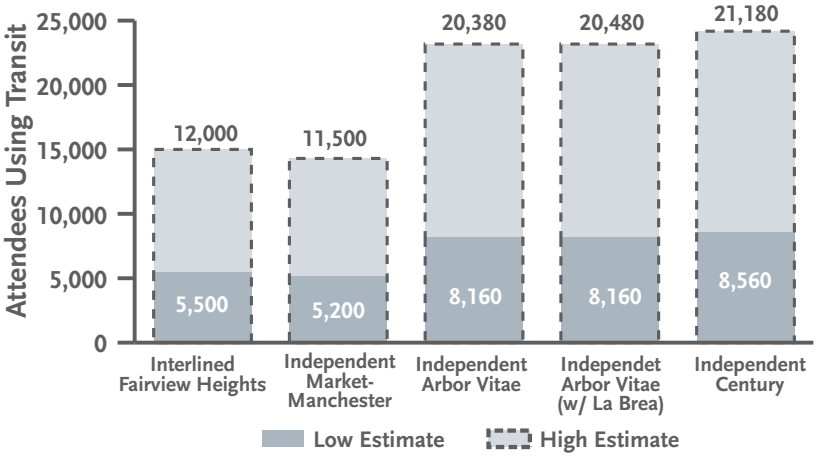
The interlined option essentially acts as a one station branch off of the Crenshaw/LAX Line, so trips on the project only include trips the new station is responsible for which is inbound ons and outbound offs at the station. As boardings are calculated as total ons added to total offs divided by two, and there are only inbound ons and outbound offs at the Development station, the interlined option's trips on the project are equal to the stations boardings multiplied by two. For Year 2023 and Year 2040 average weekday trips on the project, Option 3 has the highest weekday trips on the project with multiple stops through a higher density area along Century Boulevard. Option 2 has the lowest ridership with only two to three stops on the project. The 2040 forecasts increase trips on the project by 500 to 900 with the largest increase occurring on Option 2.

For station boardings, the interlined option has the highest station boardings at the Development of all the options with 1,500 in 2023 and 1,900 in 2040. The rest of the options have between 400 and 550 in 2023 and 700 to 900 in 2040 (**Figure 2.4-2**). Option 3 has the highest trips on the project due to the higher number of stations and alignment along Century Boulevard. Option 2 the lowest trips on the project as they are not interlined with the existing transit network and would include only a single new station at the Development. The difference in ridership between the APM and monorail technology are negligible as their difference in the model reflects a minor change in run-times.

2.4.2 Events-Based Forecasts

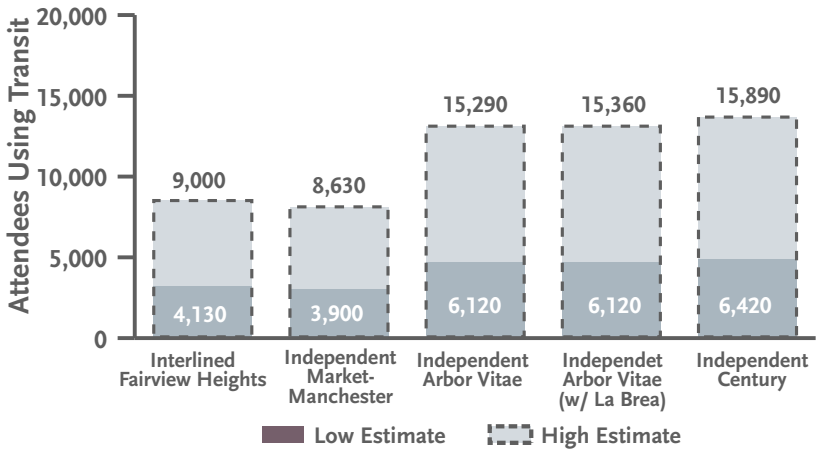
For the events based forecasts, a low-range and a high-range estimates were used for each of the scenarios which assumed a high and low average Rams and Chargers game attendance, transit mode shares, and of LAMP parking availability (**Figure 2.4-3, Figure 2.4-4**). These projections are based on one NFL team playing their home games at the stadium at the Development. Option 1 has the lowest estimate as it does not have the access to LAMP parking. Option 3 has the highest estimate due to access to the LAMP remote parking lots and high transit accessibility. Note that "attendees using transit" does not reflect boardings over a specific time period although it may be inferred that each attendee using transit will make a round-trip thus accounting for two boardings during an event day.

The options with LAMP parking have the highest game day usage with access to 3,200 to 9,500 remote parking spaces.



Source: AECOM

Figure 2.4-3 Year 2040 Rams Game Transit Usage Projection



Source: AECOM

Figure 2.4-4 Year 2040 Chargers Game Transit Usage Projection

2.5 Construction Methods and Impacts

This section presents an overview of the construction methods that would be used for the various guideway configurations of the Operability Scenarios as conceptually designed for this study.

A high level overview of the procedures is presented for each construction method, potential temporary and permanent traffic impacts, and temporary and permanent ROW acquisitions.

At-grade, aerial and underground guideway construction will have impacts to different extents in different scenarios (**Table 2.5-1**). Detailed descriptions of construction potential impacts are provided in Appendix F.

Construction Method	Interlined Scenario	Independent Scenario
At-Grade Guideway Construction Impacts	Along Florence Avenue where the alignment merges with the existing Crenshaw/LAX Line, consisting of two single-track at-grade guideway alignments on either side of the main line and two single track junctions into the main line.	Option 1: Market-Manchester: On Market Street in Downtown Inglewood between Florence Avenue and Manchester Boulevard,two at-grade stations would be constructed at the Development, the Forum, and two on Market Street.
Aerial Guideway Construction Impacts	N/A	Option 1: Market-Manchester: Along Manchester Boulevard between Locust Street and Prairie Avenue and on Prairie Avenue, an aerial structure would be constructed on Manchester Boulevard near Hillcrest Boulevard. Option 2: Arbor Vitae: On Arbor Vitae along the entire alignment between Prairie Avenue and the Crenshaw/LAX line. Two aerial stations would be constructed with one at each end of the alignment. Option 3: Century: Along the entire alignment on Prairie Avenue, Century Boulevard and parallel to the existing Crenshaw/LAX line. Two aerial stations would be constructed with one at each end of the alignment.
Cut & Cover Construction Impacts	Underground at the Development.	Option 1: Market-Manchester: A short underground segment on Manchester Boulevard between Market and Locust Streets. Guideway transitions from an underground to at-grade configuration would be constructed either end of the underground segment, on Manchester Boulevard and Market Street, creating two permanent open trenches with retaining walls.
Bored Tunnel Construction Impacts	Along Prairie Avenue from the Development station to Florence Avenue. Requires 4 to 6 acres for TBM launch, which could potentially occur at the Development station construction site. Guideway transitions on the north side of Florence Avenue adjacent to Edward Vincent Jr Park, creating two permanent open trenches with retaining walls on either side of the Crenshaw/ LAX line.	N/A

Source: AECOM

Table 2.5-1 Construction Impacts Summary

2.6 Traffic Impacts

Interlined Scenario

The Interlined Option will be fully underground along Prairie, and will transition back to at-grade on Florence and connect to the Crenshaw/LAX Line south of the Fairview Heights Station. Even though the alignment will not directly interfere with at-grade traffic flow, the proposed service increase on this spur and on the Crenshaw/LAX Line (2.5-minute headways) during events might result in significant traffic impacts at at-grade crossings along the Crenshaw/LAX upstream alignment. According to the Park Mesa Heights Grade Separation Study, Crenshaw/Slauson is the most problematic intersection (with high sensitivity to induced traffic) along the Park Mesa Heights at-grade alignment section, and queues and delays caused by the Crenshaw/Slauson have significant spill-over impacts on intersections nearby. Therefore, with the proposed service increase, additional study is required to define the feasibility of at-grade operation, but it is assumed that grade separation is required at Slauson Avenue. A summary of potential needs for grade separation of and traffic impacts due to service increase on Crenshaw/LAX Line is included in Appendix I.

Independent Scenario

All of the options evaluated are grade-separated except for Market Street in Downtown Inglewood. Market Street, Regent Street and Queen Street require further analysis to determine any impacts to traffic operations downtown.

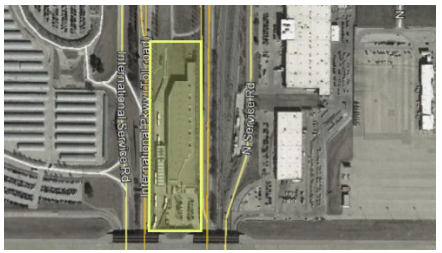
2.7 Maintenance and Storage Facilities

Each of the Operability Scenarios would require a maintenance and storage facility (MSF) to accommodate the new transit connection. Different fixed-guideway technologies have different space requirements for maintenance and storage facilities. As such, a discussion of the possible MSF facilities needs for each of the Operability Scenarios is discussed in the section below.

Many airport connectors deploy APM technology, and as **Table 2.7-1** presents, MSFs are usually located at some low-density urban area along the line (like those of AirTrain JFK, Sky Train, and BART) or at one terminus of the line (like Skylink's MSF). Miami Metromover's system has a downtown-based MSF, which is at the point where the-two loops split to run in adjacent parallel streets.

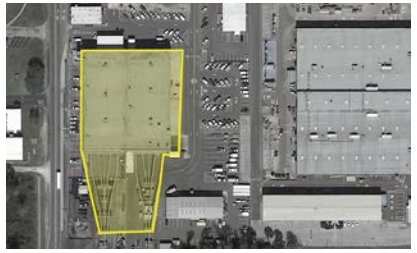
Some international practices were explored for Monorail system MSFs as the U.S. has limited experience in operating Monorail systems. As can be seen from site aerials included in **Table 2.7-2**, while generally still depending on the feet size and line length, the monorail systems usually require less maintenance bays, and therefore can be more compact in yard size and layout. Monorail MSFs are usually located at a terminus of the system.

While APM and Monorail are often deployed as shuttle systems for point-to-point or shorter trips, Urban Rail systems usually serve as local circulating systems. As shown in **Table 2.7-3**, Urban Rail MSFs can be either at the end of a line, next to a station on the line, or along the line.

System	No.	Name	City	# of Vehicles	MSF Size (acre)	Line Length (Mile)	Site Aerial
APM	1	AirTrain JFK	New York, New York	32	14	8.1	
	2	SkyTrain	Vancouver, Canada	298	22	49.5	
	3	Skylink	Dallas, Texas	64	10	4.8	
	4	BART Airport Line	Oakland, California	12	2.2	3.2	
	5	Miami Metromover	Miami, Florida	29	1.6	4.4	

Source: AECOM

Table 2.7-1 APM MSF Examples

System	No.	Name	City	# of Vehicles	MSF Size (acre)	Line Length (Mile)	Site Aerial
Monorail	1	Las Vegas Monorail	Las Vegas, Nevada	9	0.9	3.9	
	2	Disney World Monorail	Orlando, Florida	12	1.9	14.7	
	3	Sao Paulo Line 15	Sao Paulo, Brazil	378	14	17	
	4	Palm Jumeirah Monorail	Palm Jumeirah, Dubai	27	3.6	3	
	5	Kuala Lumpur Monorail	Kuala Lumpur Malaysia	24	3.7	5.3	

Source: AECOM

Table 2.7-2 Monorail MSF Examples

System	No.	Name	City	# of Vehicles	MSF Size (acre)	Line Length (Mile)	Site Aerial
Urban Rail	1	El Paso Streetcar	El Paso, Texas	6	0.8	5.0	
	2	Sun Link	Tucson, Arizona	8	1.1	3.9	
	3	Oklahoma City Streetcar	Oklahoma City, Oklahoma	7	2.5	6.9	
	4	Cincinnati Bell Connector	Cincinnati, Ohio	5	1.9	3.6	

Source: AECOM

Table 2.7-3 Urban Rail MSF Examples

System	No.	Name	City	# of Vehicles	MSF Size (acre)	Line Length (Mile)	Site Aerial
Urban Rail	5	QLINE	Detroit, Michigan	6	1.5	3.3	
	6	METRORail	Houston, Texas	76	45 *30 - Maintenance* *11- Storage 1* *4- Storage 2*	23.8	
	7	Nantes Tramway	Nantes, France	91	7	27.5	

Source: AECOM

Table 2.7-3 Urban Rail MSF Examples (Continued)

Interlined Scenario

LRT vehicles typically require more storage and maintenance space than smaller, APM vehicles. When taking the averages of the collected data, one acre of a maintenance site facility can accommodate about 3 LRT vehicles, 8 automated people mover (APM) vehicles, 6 monorail vehicles, or 5 urban rail (tram/urban rail) vehicles (**Table 2.7-5**).

Minimum site size requirements for average MSF sites can be calculated by dividing the fleet size from the operating plan by the average vehicle per acre requirements given above (**Table 2.7-6**). The Interlined Scenario would need at least 13 acres, the Independent Scenarios on Arbor Vitae or Century would need at least 5 to 7 acres, and the Independent Urban Rail Scenario would need at least 5 acres.

It should be noted that the actual space requirements can vary widely, depending on the shape of the site, the type of site (heavy maintenance, light maintenance, storage only, etc.), engineering layout, undeveloped space, price and availability of real-estate, proximity to main line, and other factors. Additionally, the acquisition of land is typically based on property tract lines instead of exact square footage, which results in purchasing more land than needed due to the full parcel takes.

2.7.1 Maintenance Facility Strategies

As part of this feasibility study, a preliminary MSF siting exercise was performed to identify site options that could potentially accommodate MSFs for the Project Options. Multiple solutions were presented for the scenarios, including the following strategies:

- **New MSF-only Parcel**
  Under this strategy, an all-new MSF would be built on land acquired for that purpose. Underutilized commercial properties or industrial lots within the vicinity of the line are potential candidate sites for a MSF to serve this Project.
- **Joint Development Site**
  Under this strategy, a new MSF would be built as part of a larger mixed-use development as part of a Public Private Partnership (PPP). This delivery strategy typically involves a rail operating agency and a property developer joining into agreement to develop a plot of land. The operating agency may purchase the parcels and construct the MSF and then lease land to property developers who could then build a development on top of adjacent to the MSF. Alternatively, the property can be sold to the property developer and then the operating agency could lease the land from the developer for the MSF site. Metro has several examples of PPP developments within the existing system. Underutilized commercial properties or industrial lots within the vicinity of the line are potential candidate sites for a MSF to serve this Project.

Mode	Average MSF Size # of Vehicles/acre
LRT	3*
APM	8**
Monorail	6**
Urban Rail	5**

* Average based on Metro Design Standards
** Averages based on collection of data for similar projects around US

Source: AECOM

Table 2.7-5 MSF Needs of Different Modes

Scenario	Fleet Size	Minimum Acreage Requirement*
Interlined: LRT	36	13
Independent: Option 1	23	5
Independent: Option 2	38	5 to 7
Independent: Option 3	38	5 to 7

* Actual MSF acreage can be greater due to site shape, type, layout, real-estate availability, proximity to main line, and parcel sizes.

Source: AECOM

Table 2.7-6 MSF Needs for Project

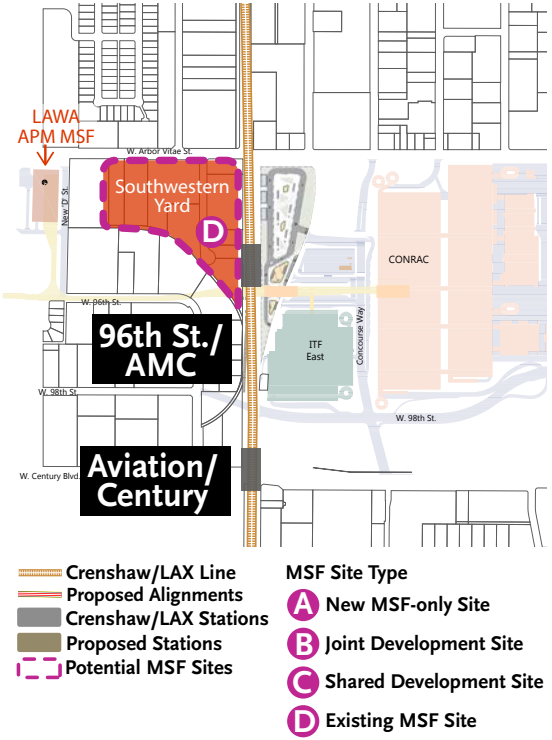
- **Shared Site with nearby Developments**
  The project study area contains several additional sites within larger, undeveloped properties that could be suitable for a MSF, such as the Forum, the Development, or LAWA APM development sites. This strategy would involve entering into agreement with an existing owner to either purchase a partial ROW easement or lease a portion of the site from the property owner.
- **Existing MSF Facility**
  Under this strategy, an existing MSF would be utilized with a non-revenue connection from this project. The existing MSF would need to be either expanded or reconfigured to accommodate the additional fleet size.

2.7.2 Potential MSF Locations

Interlined Scenario

The Interlined Scenario's rail vehicles would be an addition to Metro's Crenshaw/LAX Line LRT fleet. It is assumed for the purpose of this analysis that the Southwestern Yard would be utilized by the additional fleet for maintenance and storage purposes. The Southwestern Yard (**Figure 2.7-1**) would likely require an expansion in order to accommodate the storage and maintenance of additional LRT vehicles needed for the Development connector.

This yard would likely require an expansion to accommodate the increased fleet size of up to 13 acres. Adjacent properties include commercial businesses, airline cargo shipment companies, and temporary vehicle storage for rental car companies. Car rental storage parcels may be ideal candidates as these areas may become obsolete following the completion of the Consolidated Rental Car Facility (CONRAC) in development by LAX. If it is determined that this yard cannot accommodate a yard expansion, additional options would be explored such as expanding the Green Line maintenance yard or constructing a new maintenance yard for the additional fleet.



Source: AECOM

Figure 2.7-1 MSF Site for the Interlined Option

Independent Scenario

Option 1: Market-Manchester

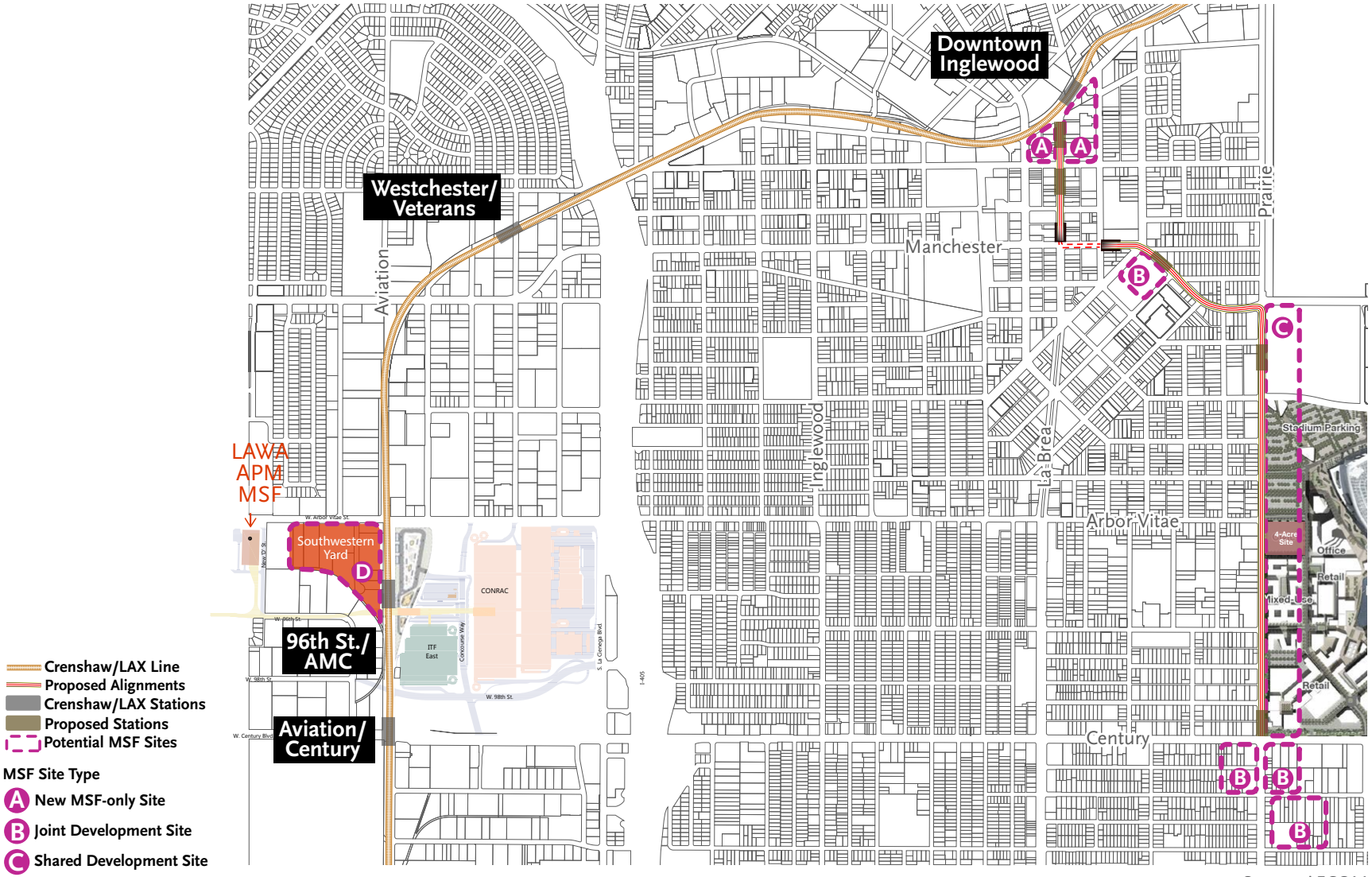
Option 1 would utilize use "urban rail" technology, assumed to be similar to tram, urban rail, or low-floor LRT. The MSF area required for urban rail systems can be less than that of typical Metro LRT. Eight potential MSF site options have been identified for the Independent Market-Manchester Option (**Figure 2.7-2**). Urban rail and LRT technologies generally have similar maintenance and storage requirements and can be compatible operationally, meaning that an existing Metro facility, such as the new Southwestern Yard, could accommodate vehicles from the Market-Manchester Option. This would require a "non-revenue" track connection to the Crenshaw/LAX line and also assumes that capacity is available at the Southwestern Yard. Another option would be for a Metro facility to assume specific, occasional "heavy maintenance" duties without storing or maintaining the entire fleet.

One site has been identified as being a potential for a joint development opportunity on East Manchester Boulevard between East Hillcrest Boulevard and Spruce Avenue. This MSF option assumes the opportunity for PPP for a mixed-use development in which the MSF would be designed and operated within the same property as a development.

One potential site has been identified as a location for a MSF site within a shared development. The site location is along South Prairie Avenue between West Manchester Boulevard, within the Development. This option would require re-programing a portion of the Hollywood Development and Development site.

The following five sites have been identified that could be used as a MSF site that exclusively serves the fleet independent of other transit systems.

- Southwest corner of intersection between South Prairie Avenue and West Century Boulevard
- Southeast corner of intersection between South Prairie Avenue and West Century Boulevard
- Along South Prairie Avenue between West 102nd Street and West 104th Street
- Southwest corner of East Florence Avenue and North Market Street
- Southeast corner of East Florence Avenue and North Market Street



Source: AECOM

Figure 2.7-2 Potential MSF Sites of Independent Option 1: Market-Manchester

Option 2: Arbor Vitae & Option 3: Century Boulevard

Option 2 uses an APM or Monorail technology along an aerial alignment. Four possible MSF site options have been identified for the Independent Arbor Vitae Option (**Figure 2.7-3**).

The following two sites have been identified near Arbor Vitae and the Crenshaw/LAX alignment could be used as a MSF site that exclusively serves the fleet independent of the LAWA APM system.

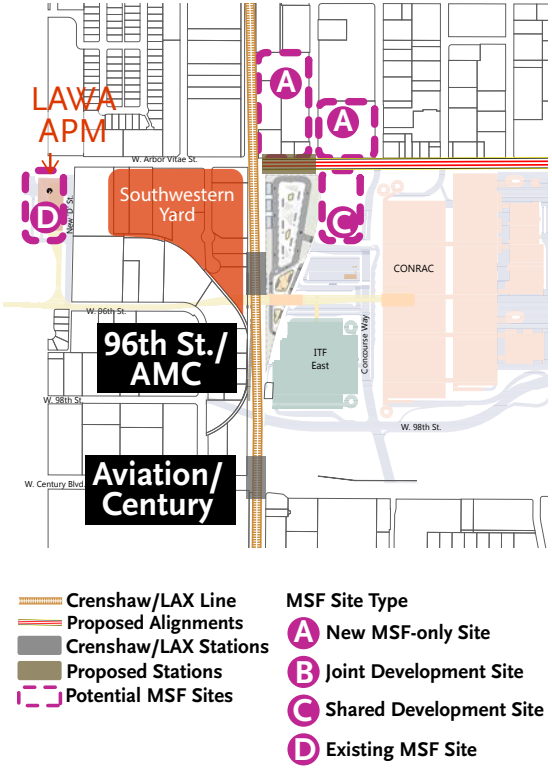
- Northeast corner of intersection between West Arbor Vitae Street and Aviation Boulevard
- Along westbound Arbor Vitae Street between Isis Avenue and Hindry Avenue

These parcels are currently occupied by car rental facilities which could be ideal candidates following the completion of the CONRAC facility.

A potential location for a MSF site within a shared development has been identified along eastbound Arbor Vitae Street between Isis Avenue and Hindry Place north of LAWA CONRAC. This site would be located with the LAX CONRAC area developments and would require agreements with LAX to lease and program the use of this space.

If the Independent Arbor Vitae Scenario uses an APM technology, it has the potential to be designed to be compatible with the LAWA APM maintenance facility. This would provide for the opportunity to utilize the same facility as the APM located at 93rd Street and Bedford Avenue. This facility may need to be expanded or reconfigured to accommodate the increased fleet size. This option would require complete system integration between the Development and LAX.

This option could add the requirement that LAX would need to operate the entire system for security and continuity purposes.

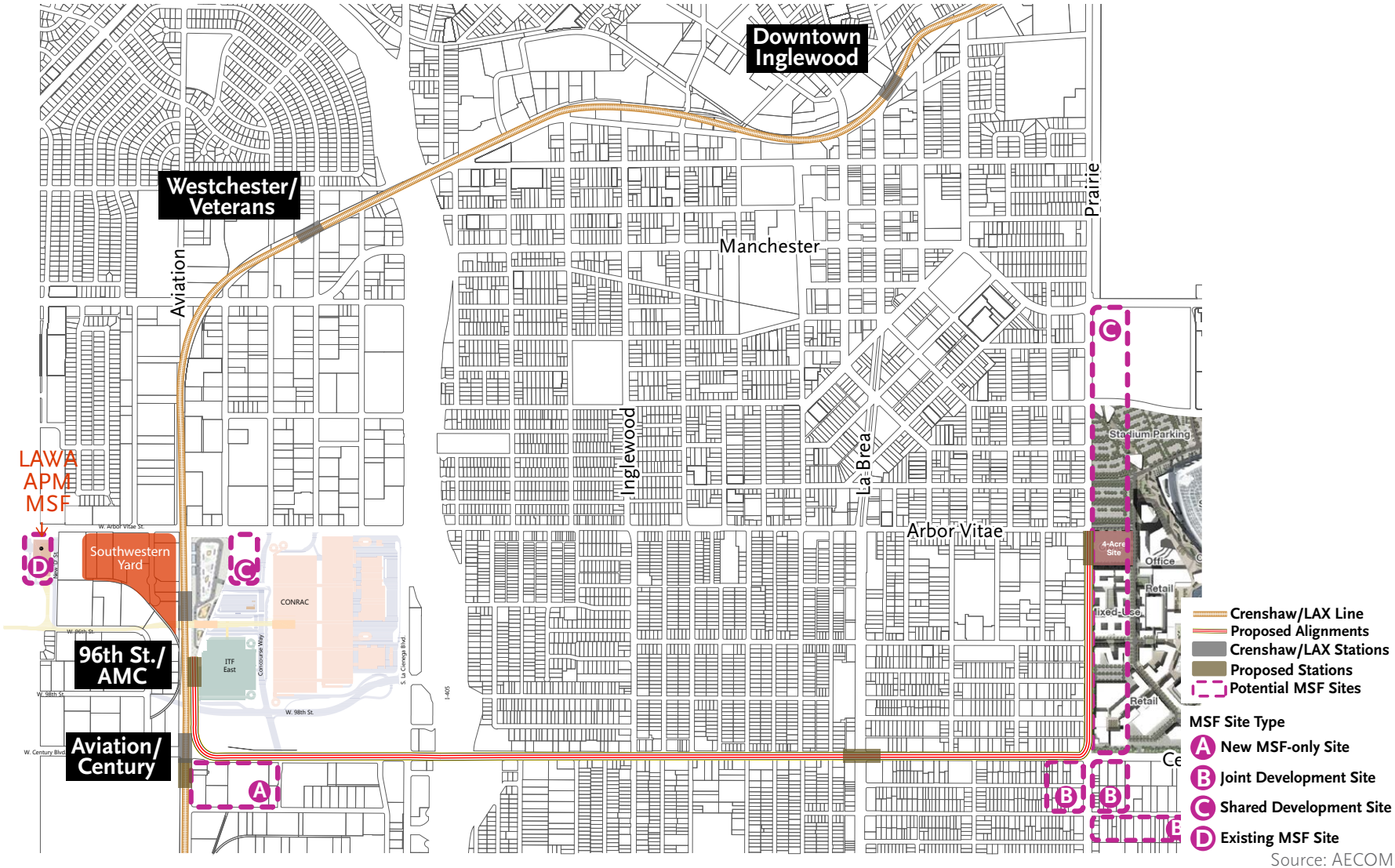


Source: AECOM

Figure 2.7-3 Potential MSF Sites of Independent Option 2: Arbor Vitae

Option 3: Century

Option 3 would also use APM or Monorail technology. Seven potential MSF site options have been identified for the Independent Century Option (**Figure 2.7-4**).



Source: AECOM

Figure 2.7-4 Potential MSF Sites of Independent Option 3: Century Boulevard

Four potential sites have been identified that could be the location of new MSF sites that would serve as an exclusive independent MSF.

- Southwest corner of intersection between South Prairie Avenue and West Century Boulevard
- Southeast corner of intersection between South Prairie Avenue and West Century Boulevard
- Along West 102nd Street between South Prairie Avenue and South Doty Avenue
- Opposite Aviation/Century Station between West Century Boulevard and West 102nd Street

These parcels are currently occupied by car rental facilities which could be ideal candidates following the completion of the CONRAC facility.

Two potential locations for a MSF site within a shared development have been identified. One site is located along eastbound Arbor Vitae Street between Isis Avenue and Hindry Place north of LAWA CONRAC. This site would be located with the LAX CONRAC area developments and would require agreements with LAWA to lease and program the use of this space. The second site is along South Prairie Avenue between West Manchester Boulevard, within the Development. This option would require re-programing a portion of the Hollywood Development and Development site to be a MSF.

As discussed above for Option 2, for the APM technology for Option 3, there is an opportunity to utilize the same facility as the APM is located at 93rd Street and Bedford Avenue.

2.8 Right-Of-Way Acquisition

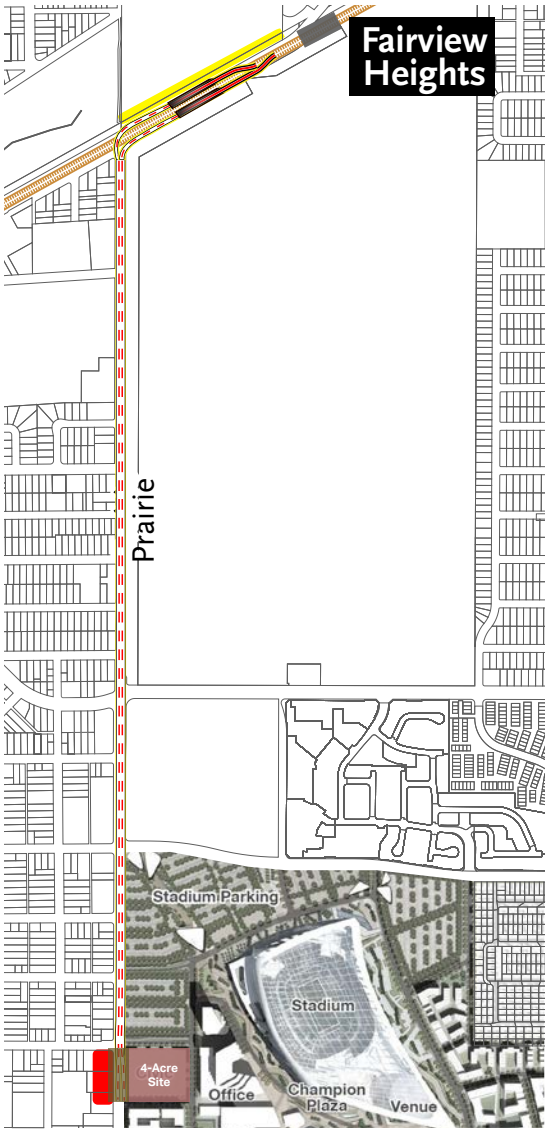
2.8.1 Right-of-Way Requirements and Constraints

This section summarizes the right-of-way (ROW) acquisitions that may be required for the Project Operability Scenarios (**Table 2.8-1**).

ROW acquisition will be required for delivering several components of the options. As mentioned previously, temporary construction staging areas will be required for tunneling, material lay-down, equipment storage, and project field offices. In the section above, multiple potential maintenance and storage facility (MSF) locations are presented that would require ROW acquisition for new MSF sites or expansion of existing MSF sites. Additionally, ROW acquisition may be required at station locations and station developments along the alignments.

Interlined Scenario

The underground guideway along Prairie Avenue requires additional right-of-way for construction, the junction with the Crenshaw/LAX Line, and potentially at the Development station. Temporary sites for tunnel boring machine launch and retrieval will be required during construction near the Crenshaw/LAX Line junction. The 4-acre Development station site can be used for this purpose at the south end, for example. The junction with the Crenshaw/LAX Line requires additional ROW along Florence Avenue and the Edward St. Vincent Jr. Park(**Figure 2.8-1**). If a station access plaza is provided on the west side of Prairie Avenue from the underground station additional parcels will be required.



Source: AECOM

Figure 2.8-1 Interlined Option ROW Needs

Independent Scenario

Option 1(**Figure 2.8-3**), Option 2 (**Figure 2.8-4**) and Option 3 (**Figure 2.8-5**) have stations along their respective alignment which may involve re-development of the areas adjacent to the stations.

Traction Power

In addition to station area and MSF ROW acquisitions, additional ROW acquisition may be required for traction power substations. While all of the options operate on DC electric current supplied from traction power supply substations (TPSS), LRT and urban rail operate with an overhead contact system (OCS), and APM and monorail use electrified channels attached to or enclosed within the guideway (**Figure 2.8-2**). Typical loading requirements require substations spaced at approximately half-mile intervals along the alignment. The substations can be located in locations along the alignment, including parking structures, in adjacent parcels, in the MSFs, or in underground vaults. The final size and spacing of the substations will require a detailed analysis based on vehicle, frequency of service and headways, alignment profile, passenger stations, and the speed and load cycle over specific time intervals, which determine the actual utility power demands.

Source: AECOM

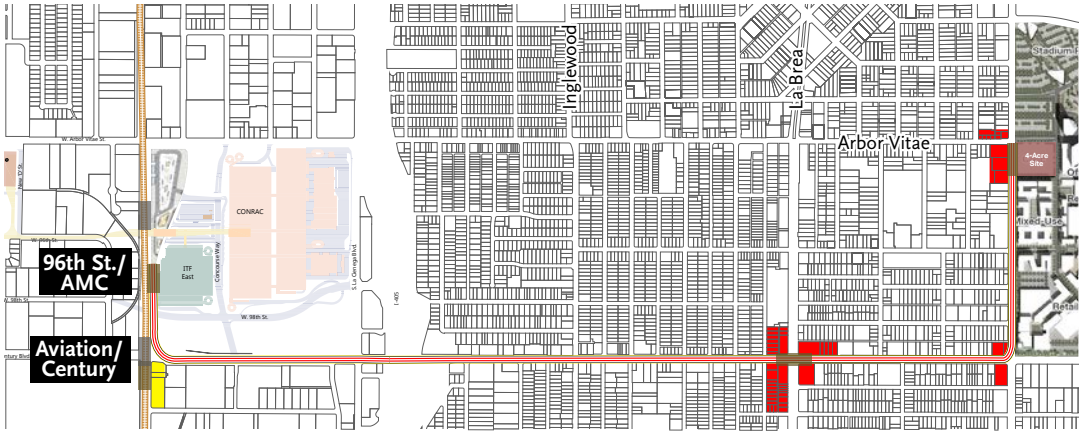
Figure 2.8-2 Example Traction Power Substation

Source: AECOM

Figure 2.8-3 Independent Option 1: Market-Manchester ROW Needs

Source: AECOM

Figure 2.8-4 Independent Option 2: Arbor Vitae ROW Needs



Source: AECOM

Figure 2.8-5 Independent Option 3: Century Boulevard ROW Needs

ROW Needs	Interlined	Independent		
	Fairview Heights	Option 1: Market-Manchester	Option 2: Arbor Vitae	Option 3: Century
Construction Staging and TBM Assembly	6 to 8 Acres at TBM launch site and TBM extraction site.	2 Acres along alignment	No acquisition: Assumes using temporary construction staging area near LAX/APM Construction site.	No acquisition: Assumes using temporary construction staging area near LAX/APM Construction site.
Maintenance & Storage Facility	Minimum 13 Acres expansion on existing MSF Yard	Minimum 5 Acres New Yard, Joint Development, Shared Development, or existing yard expansion	Minimum 7 Acres New Yard or Joint Development	Minimum 7 Acres New Yard or Joint Development
Stations / Station Area Development / Traction Power Substations	Up to 4 Acres at Near Hollywood Park Station	Up to 8 Acres at Prairie/Century, Prairie/ Arbor Vitae, and Manchester/Hillcrest	Up to 26 Acres at Arbor Vitae/Prairie, Arbor Vitae/La Brea, and Arbor Vitae/Aviation	Up to 12 Acres at Century/Prairie, Century/La Brea, and Century/Aviation
Total Estimated ROW Acquisitions	22 Acres	15 Acres	33 Acres	19 Acres

Source: AECOM

Table 2.8-1 ROW Needs for all Options

2.9 Utility Conflicts and Relocation

Existing infrastructure along the alignments of the Options would need to be reconfigured to accommodate the new rail guideway structures. In addition to surface improvement, utility infrastructure under the surface will likely be in conflict with guideway structures and will need to be reconfigured to accommodate the guideway slabs, footings, and other components. This section summarizes a preliminary investigation of subsurface utility infrastructure along the Operability Scenario routes.

2.9.1 General Utility Relocation Impacts of Typical Construction Methods

Completion of any proposed interlined or independent alignment would involve general utility relocation. The extent of removal and re-installation depends on the construction methods used to build the scenarios and related options. Typical construction methods include underground, at-grade, aerial, cut-and-cover, tunnel portals, and bored-tunnel construction. Each method presents a unique set of utility impacts that require specific mitigation measures and further investigation during the environmental phase.

At-Grade Construction

Civil roadway and transit infrastructure typically requires minor modification, adjustment, and relocation of any utilities within the envelope of the proposed improvements, including utility mains, service laterals, and any other appurtenances such as valves, meters, etc. Exclusive at-grade transit guideways are typically cleared of parallel utilities. Crossing utilities may be protected (such as sleeved or encased), lowered, or left in place depending on the depth of the utility and loading due to the transit vehicle.

Aerial Construction

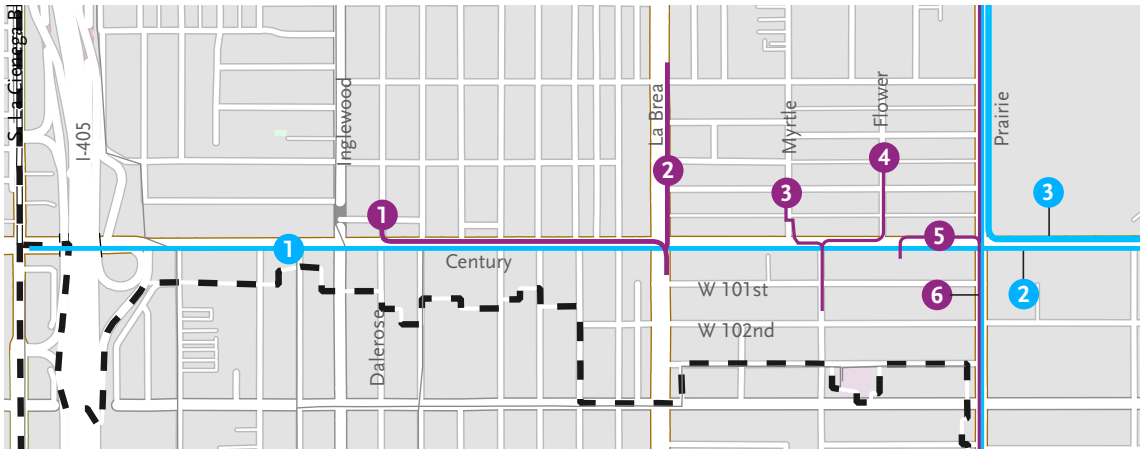
Exclusive aerial transit guideways require the clearance of utilities for deep column foundations. Aerial structures could result in the replacement of utilities only at the location of column foundations or relocation of utilities along the entire length of the alignment, depending on relation of the utilities to the footings. Overhead electrical and telecommunications utilities affected by an aerial guideway may be relocated elsewhere or underground.

Cut-and-cover Construction & Tunnel Portals

Cut-and-cover and tunnel portal sections typically require the full utility relocation from curb-to-curb for the length of the alignment. In some circumstances, utilities can be maintained and protected by being suspended over cut-and-cover boxes.

Bored-tunnel Construction

Bored tunnels typically avoid utility impacts except for major relocations at tunnel/launch station and other cut and cover excavations (see previous). Utility relocations are typically limited to TBM launching and extraction pits and underground stations.



Water Lines
1. 36" Water Line (LADWP)
2. 60" Water Line (LADWP)
3. 36" REC. Water Line in 54" Casing (West Basin Municipal Water Dist.)

Sewer Lines
1. 102" RCP Sewer Line
2. 60" RCP Sewer Line
3. 21" RCP Sewer Line
4. 4'(W) X 4'(D) R.C. ARCH Sewer Line
5. 42" RCP Sewer Line
6. 39" RCP Sewer Line

Source: AECOM

Figure 2.9-1 Non-City-owned Water and Sewer Lines on Century Boulevard

2.9.2 Utility Impact Feasibility Analysis of Options

Interlined Scenario

The interlined scenario will create the following utility impacts:

- At-grade construction impacts (as described above) for the junction with the Crenshaw/LAX Line near Fairview Heights
- Cut-and-cover and bored-tunnel construction impacts (as described above) for the launch and retrieval sites for the tunnel under Prairie Avenue, the extension of the Crenshaw/LAX Line northern terminus at Expo/Crenshaw for the additional tail tracks and crossover, and tunnel ventilation upgrades to the Crenshaw/LAX Line.

Independent Scenario

Options 1, 2, and 3 will have general utility impacts as described above along the length of the alignments. The cut-and-cover transition from Market Street to Manchester Boulevard will require complete relocation of utilities in the area of the excavation. In other areas, impacts are typically limited to relocating parallel utility lines running underneath the transit guideway and/or relocating access manholes, valves, and other infrastructure that falls within the guideway.

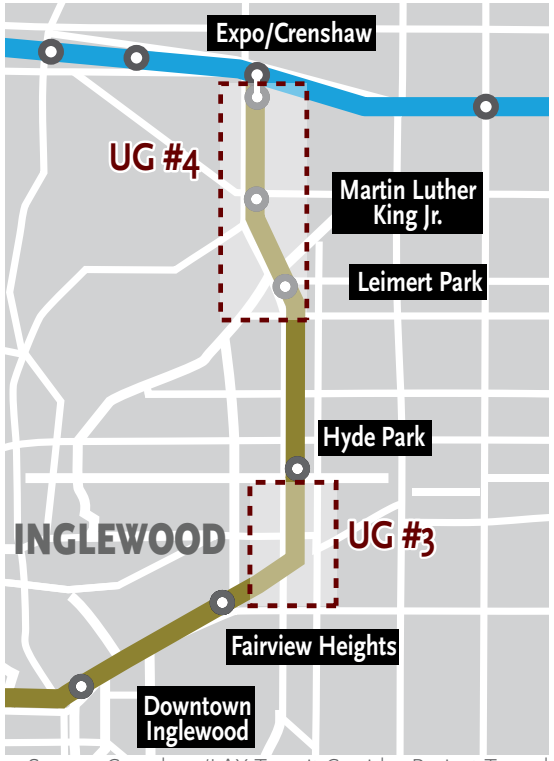
Option 3 will impact major utilities that exist on or are adjacent to the proposed alignment along Century Boulevard. For example, there are major water and sewer lines running down Century Boulevard (Figure 2.9-1). A full description of water, sewage, storm drain, electrical, natural gas, and hazardous liquid utilities impacts found on major alignment corridors in the Appendix G.

2.10 Rail Systems

The operability scenarios present unique transit systems requirements that will need to be satisfied to provide the level of service indicated in the operating plan. Tunnel ventilation and rail signaling in particular are critical systems for maintaining reliable, high-frequency service. Requirements for rail systems are typically not defined at this stage of conceptual study – the purpose of this section is primarily to analyze any impacts to the Metro Crenshaw/LAX Line, which is currently under construction.

2.10.1 Interlined

The under-construction Crenshaw/LAX Line guideway and facilities have been designed to maintain operational headways for the Crenshaw/LAX Line only. The interlined scenario would have additional trains connecting to and operating on the Crenshaw/LAX Line between Fairview Heights station and Expo/Crenshaw Station. The addition of more trains onto the Crenshaw/LAX Line would require upgrades to the existing infrastructure to accommodate the additional trains. Among the most crucial systems that would require upgrading would be the ventilation systems for the underground segments of the Crenshaw/LAX line and the train control and signaling for the length of the shared alignment. The number and length of ventilation zones, traction power blocks, the type of signaling system, and other factors are all affected by the operational headway.



Source: Crenshaw/LAX Transit Corridor Project Tunnel Ventilation Modeling Report

Figure 2.10-1 Schematic of Alignments and Underground Segments

Ventilation

This section summarizes the ventilation systems that would need to be upgraded from what is currently being built to support additional service to the Development. The interlined Scenario adds additional service to two underground guideway sections of the Crenshaw/LAX Line currently under construction, designated by that project as "UG#3" and "UG#4" (**Figure 2.10-1**). An analysis was performed to determine necessary changes to the existing ventilation zones to allow for a reduced headway on the Crenshaw/LAX Line and meet

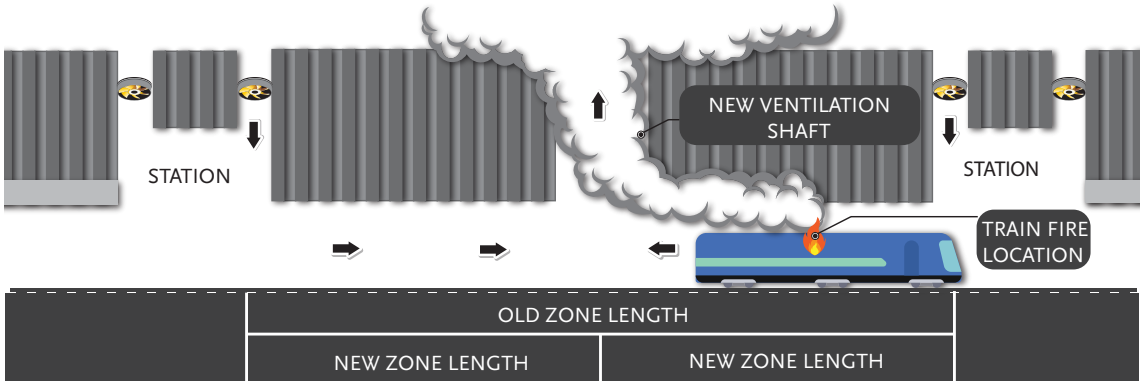
the Metro Rail Design Criteria (MRDC) for tunnel sections UG#3 and UG#4. Adding ventilation zones could allow trains to run at shorter headways.

The location of ventilation elements for UG#3 and UG#4 were determined from track plan and profile files, and the 2015 ventilation reports.

According to the MRDC Fire/Life Safety Criteria Rev. 1, 2.3.9.2, only one train is allowed per ventilation zone and a ventilation zone is defined as a section of tunnel between two ventilation shafts and/or portals. This requirement is one of the constraints on train throughput. Each ventilation zone becomes essentially a fixed signal block. Only one train can pass through each zone at a time. Creating shorter zone lengths increases the throughput of a particular tunnel section by allowing more trains to be in the tunnel simultaneously.

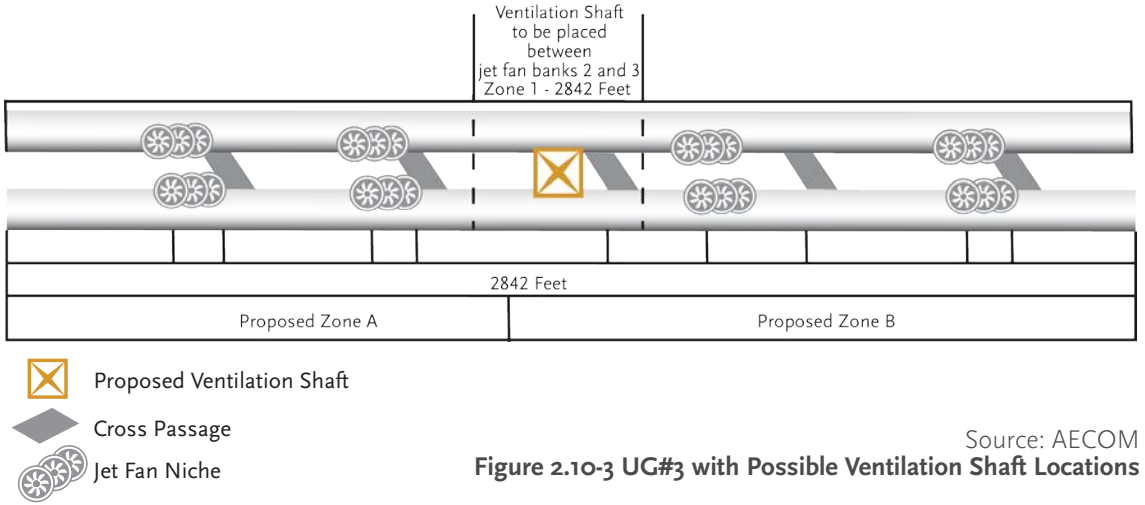
The only option available for reducing headway from a fire life safety and ventilation perspective is to divide existing ventilation zones into multiple shorter zones. This can only be accomplished by introducing portals or ventilation shaft inlets to the tunnels. For tunnels UG#3 and UG#4, adding additional shafts or portals between stations would increase the number of ventilation zones, allowing more trains to be in the tunnel concurrently. The additional tunnel ventilation zones will also impact the signaling system and traction power blocks, which should correspond to the limits of the ventilation zones.

According to a longitudinal section with a new ventilation shaft showing the reduction in ventilation zone length and possible emergency fan operation in a fire emergency, the new shorter ventilation zones would reduce the headway of that section (**Figure 2.10-2**).



Source: AECOM

Figure 2.10-2 Addition of Ventilation Shaft



Source: AECOM

Figure 2.10-3 UG#3 with Possible Ventilation Shaft Locations

UG#3 has a total distance of 2,970 feet and has no ventilation shafts. Therefore, according to MRDC, UG#3 is a single ventilation zone and only one train may be located within the tunnel at any time. An average speed throughout the tunnel that exceeds 13.5 mph must achieve headways of 2.5 minutes or less. If the average speed exceeds 13.5 mph, an additional ventilation shaft will not be required to UG#3 currently consists of one ventilation zone (**Figure 2.10-3**). With the current design, there can only be one train in the tunnel at any time. Therefore, a new ventilation shaft will be required between jet fan banks 2 and 3 if the minimum headway is determined to be insufficient.

UG#4 is a tunnel with three underground stations; Crenshaw/Expo (the terminus); Crenshaw/Vernon; and Crenshaw/MLK. Currently, the tunnel sections between the stations and the stations are individual ventilation zones with an additional zone near the Expo/Crenshaw station at the crossover. Based on the running times between stations and the dwell times (**Table 2.10-1**), the operational headway for UG#4 could possibly be decreased to 2.5 minutes by the addition of new ventilation shafts between the Development and the Crenshaw/LAX line (**Figure 2.10-4**).

Ventilation Zone	Run Time	Dwell Time	Total Time
Expo to MLK	2:40	0:20	3:00
MLK to Vernon	2:40	0:20	3:00

Source: AECOM

Table 2.10-1 Run and dwell times for tunnel segments in UG#4

Signals/Operations

The interlined scenario adds additional service for the approximately 3.5 mile segment from Fairview Heights to Expo/Crenshaw. The combined maximum service frequencies between the Crenshaw, Green and Inglewood NFL lines would be 2.5 minutes.

The constraints that the signal system has on the headway include the train separation requirements due to the tunnel ventilation zones, (discussed in the previous section) the track circuit block boundaries, and the turn-back capabilities at the terminal stations.

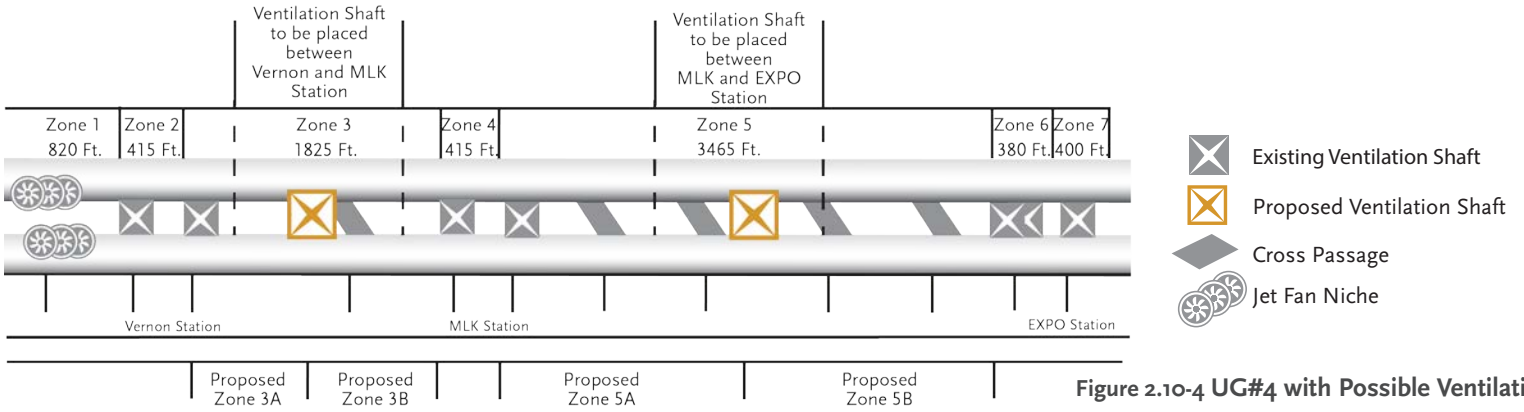
The Crenshaw/LAX Line utilizes a cab/no wayside (except at interlockings) signal system. The track circuits consist of AF-900/AF-904 Style digital FSK circuits, with digital cab signaling providing Automatic Train Control (ATC) functionality. These track circuit blocks are typically limited to an average length of 750'-1000', therefore making them conducive to close operating headways.

The Crenshaw/Exposition Station currently includes a diamond crossover on the south side of the station platforms for turn-back moves. Due to the increased headway requirements, a new tail track and/or crossover on the north end of the station platforms is assumed to be required to allow Crenshaw and/or Green Line trains to turn-back on north end crossovers, while the new Inglewood Development branch trains could turn-back on the south side of the station (during event service). The new Development branch line would occur just south of the Fairview Heights station. The Crenshaw line currently includes an interlocking at this location that could be extended/modified to include the additional crossovers/turnouts required for the new branch.

2.10.2 Independent Scenario

Independent Scenario

Requirements for rail systems are typically not defined at this stage of conceptual study. These systems will be designed as a project advances towards implementation. Costs are now included for these items at a rough-order-of-magnitude conceptual level.



Source: AECOM

Figure 2.10-4 UG#4 with Possible Ventilation Shaft Locations

2.11 Environmental Scan and Potential Mitigation Requirements

An environmental scan was conducted for the Scenarios. This section provides a preliminary analysis of the potential environmental impacts. The analysis also includes a comparison of the socio-economic factors, land use characteristics and potential visual effects .

The following conceptual-level assessment identifies likely environmental impacts related to Project Scenarios and related option implementation. The intent is to analyze the Project Options based on potential environmental impacts and/or identify areas that need further study. The document also provides streamlining for the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents.

The analysis employs a 150-foot wide study area on either side of the study scenarios (Study Area). This assessment includes identification of existing conditions, and a discussion of potential environmental effects based on relevant applicable standards and thresholds. The analysis addresses key issues included in the CEQA Guidelines supplemented by NEPA requirements.

2.11.1 Environmental Scan Summary

The Scenarios and related Options share similarities for a majority of the environmental impacts. All operating scenarios are anticipated to have no impact on the following environmental topics: Agriculture and Forestry Resources, Mineral Resources, Population and Housing, and Air Quality during Operations.

The Scenarios and related Options are anticipated to result in less than significant impacts with mitigation incorporated to the following environmental topics: Biological Resources, Greenhouse Gas (GHG) Emissions, Public Services, Utilities, Hazards/Hazardous Materials, Geology and Soils, and Tribal Cultural Resources. At least one scenario has moderate to high potential for significant impacts for all the remainder of the environmental categories. Further study is required for both air quality impacts and geology and soils in the next phase of study. The full environmental scan table with all findings is given in Appendix H.

Below includes a brief description the environmental issues with **high potential for significant impacts** for each of the Operability Scenarios.

Interlined Scenario

- Cultural Resources – due to close proximity to a cemetery

Independent Scenario

Option 1: Market-Manchester

- No environmental issue has high potential for significant impacts

Option 2: Arbor Vitae

- Visual Character – due to aerial structures along Arbor Vitae
- Light and Glare – due to the illumination of trains due to the proximity of light sensitive residential uses along the alignment.
- Land Use Compatibility – The introduction of a transit line on Arbor Vitae Street could limit circulation pathways along local north-south streets and may limit direct access to the existing driveways. Option 2 along Arbor Vitae would likely create a barrier that would divide an existing community
- Noise / Vibration Impacts – The highest potential for noise impacts is along Arbor Vitae Street because it has the highest number of Category 2 receptors and a narrow street width
- Circulation System - reduction in lane widths and potential turn limits may impact major intersections like La Cienega/Arbor Vitae and Inglewood/Arbor Vitae, that are currently operating at Level of Service (LOS) E or worse during peak hours. In addition, structural columns supporting the elevated guideway along turn-lanes may introduce intersection sight-distance challenges to drivers of vehicular traffic

Option 3: Century

- No environmental issue has high potential for significant impacts

2.12 Safety & Security

A planning-level Preliminary Hazard Analysis (PHA), based on the FTA Hazard Analysis Guidelines for Transit Projects (HAGTP), Final Report, January 2000, has been performed to assess the level of risk associated with each of the scenarios under study, and to determine if any one of the scenarios tends toward a higher safety risk than any of the others.

The analysis found that the Interlined Scenario and Independent Scenario Option 1 are believed to have the greatest potential for risk. Further, resolution of issues related to NFPA 130 compliance for the Interlined Scenario is expected to involve more costly design solutions (including potential HVAC and egress modifications), and/or implementation of special operational procedures than the other independent Options 2 and 3. All of the options have risks associated with the movement of large numbers of people nearby to special events of significance.

The focus of the Preliminary Hazard Analysis for this project was to identify hazards inherent to the design of the scenarios and identify suitable measures to control or mitigate for the hazard. While this analysis has considered security elements related to each of the various scenarios, a specific Threat & Vulnerability Analysis is not part of the scope of this assessment. However, it is important to note that there may be additional safety and security issues associated with Options 2 and 3, as these options will connect to the future Airport Metro Connector 96th Street Transit Station with direct access to LAX infrastructure via LAWA LAMP improvements such as the APM.

Based on risk, high-level safety concerns that might differentiate one alternative from another have been identified (**Table 2.12-1**).

#	Issue	Interlined Fairview Heights LRT	Independent Market-Manchester Street Urban Rail	Independent Arbor Vitae APM/ Monorail	Independent Arbor Vitae APM/ Monorail	Independent Century APM/ Monorail	Potential Mitigation Measures	Significant Cost Impacts
1	Increased potential for pedestrian/vehicle incidents at new, at-grade crossings, particular at transfer points		X				Perform diagnostic review of crossings, close coordination with CPUC on implementation of pedestrian safety treatments – warning gates, warning flashers, channelization, driveway closures, medians, signage, etc.; Consider street closures during major events.	
2	Emergency egress from aerial guideways.		X	X	X	X	Provide maintenance/emergency egress walkway, point of safety, associated area(s) of refuge, and access to grade; Coordinate with local Fire/EMS on best locations for elevated guideway access/ body removal points beyond NFPA requirements	
3	Point of safety and emergency egress off trackway in tunnel.	X	X				Provide maintenance/emergency egress walkway and associated area of refuge.	
4	Increased vehicular queuing at new at-grade crossings		X				Perform traffic safety analysis, Implement signal interconnection, traffic loops, signal pre-emption, roadway reconfiguration; Consider street closures during major events.	
5	Potential for increased risk to pedestrian and vehicular safety during construction	X	X	X	X	X	Prepare detailed construction sequencing plans; Provide changeable message signs with adequate advance notice to start of project; Provide advance warning to construction information – time/location/alternate routes.	

Source: AECOM

Table 2.12-1 PHA Risks Summary Matrix

#	Issue	Interlined Fairview Heights LRT	Independent Market-Manchester Street Urban Rail	Independent Arbor Vitae APM/ Monorail	Independent Arbor Vitae APM/ Monorail	Independent Century APM/ Monorail	Potential Mitigation Measures	Significant Cost Impacts
6	Potential for increased incidents due to introduction of new transit system (e.g. traffic control, signage, channeling devices, etc.).	X	X	X	X	X	Perform local public outreach in advance of construction, including educational programs in nearby schools for grade-crossing safety, how to ride transit safely, safety at stations Link to Metro's transit safety programs for kids and teens.	
7	Potential for crush loads of passengers during post-event service.	X	X	X	X	X	Provide adequate platform area; Perform egress analysis; Encourage methods/activities for crowd dispersal; Provide adequate personnel at Stations (SOPs); Review platform furnishing locations; Consider street closures during events; Consider sharing CCTV feeds with local police at key stations feeding the Development and analytics to respond to atypical crowd movement patterns	
8	Potential conflicts with pedestrians crossing the track mid-block for at-grade portion of urban rail alternative (particularly an issue during post-event service as people exit urban rail)		X				Consider use of pedestrian channelization devices; Provide adequate marked crossings; Develop SOPs for operations through areas of heavy pedestrian activity; Provide staffing to ensure track is clear to allow for continuous, uninterrupted service;	

Source: AECOM

Table 2.12-1 PHA Risks Summary Matrix (Continued)

#	Issue	Interlined Fairview Heights LRT	Independent Market-Manchester Street Urban Rail	Independent Arbor Vitae APM/ Monorail	Independent Arbor Vitae APM/ Monorail	Independent Century APM/ Monorail	Potential Mitigation Measures	Significant Cost Impacts
9	Potential increased risks on monorail/ APM, due to driverless vehicles: - Cyber Attacks - Difficulty determining responsibility for accidents - Difficulty addressing incidents onboard vehicle			X	X	X	Provide emergency call system on vehicle; Provide "Conductor" onboard train; Consider platform and vehicle security issues especially for the off-peak/night time hours – duress communications, lighting, eliminate areas for a person to obscure oneself, etc.	
10	Increased safety considerations around the secured perimeter of venues, including the increased security required to screen personal vehicles	X	X	X	X	X	1. Preserve enough distance between the station and the secured perimeter to ensure sufficient space for queuing, monitoring and screening; 2. Identify opportunities for pre-screening before spectators board the train: Create/enable a screening checkpoint at the main transfer point to create a "bubble to bubble" service, with witch spectators could be guided directly into the venue, potentially without the need for additional screenings, although random screenings would still be advised. Security screening on the Interlined Scenario may be more problematic than for other scenarios. 3. Recommend venues in the area consider the Department of Homeland Security safety certification, which could provide further consideration on the connection between transit and the venue; 4. Encourage increased mode share on transit through public outreach.	X
11	Ticketing Issues: Crowd management Device reliability & maintenance	X	X	X	X	X	Carefully consider the location of ticketing machines to avoid disruption to the pedestrian flow, particularly post-event. Consider on-line ticketing methods.	

Source: AECOM

Table 2.12-1 PHA Risks Summary Matrix (Continued)

#	Issue	Interlined Fairview Heights LRT	Independent Market-Manchester Street Urban Rail	Independent Arbor Vitae APM/ Monorail	Independent Arbor Vitae APM/ Monorail	Independent Century APM/ Monorail	Potential Mitigation Measures	Significant Cost Impacts
12	New line may impact NFPA 130 egress calculations	X					Review analyses previously performed for existing stations; Provide additional means of egress, if required.	X
13	Potential increase to time of tenability, which may increase required ventilation capacity.	X					Review capacities of existing system: Provide system modifications and/ or additional egress routes to achieve adequate time of tenability.	X
14	Shortened ventilation zones in the tunnel may be required, with a higher risk of affecting a non-fire train, and of misidentifying fire zone.	X					Provide a design for a more complex/ modified ventilation system, including additional shafts, fans, ventilation equipment, etc.	X
15	Pedestrian access to non-public areas of tunnel	X	X				Provide Intrusion Detection System (IDS) & signage; Integrate tunnel IDS into CCTV system to provide alerts to OCC.	
16	Potential for human contact with 3rd Rail/Hot Rail			X	X	X	Consider installation of Platform Screen Gates (PSGs); Provide warning signage.	
17	Pedestrian access to non-public areas of guideway		X	X	X	X	IDS & signage; Integrate guideway IDS into CCTV system to provide alerts to OCC	
18	Pedestrian access to areas beneath guideway, particularly at transitions, susceptible to vandalism and vagrancy.		X	X	X	X	Consider the installation of security lighting, fencing, or other means to discourage vandalism and vagrancy beneath the guideway.	
19	Public access to Maintenance Facility in joint-use development scenario		X				Consider the use of security fencing, Intrusion Detection System (IDS), regulatory signage; Carefully consider optimal locations for site egress/access	
	Unweighted Score:	**10**	**14**	**10**	**10**	**10**		

Source: AECOM

Table 2.12-1 PHA Risks Summary Matrix (Continued)

2.13 Capital and Operating Costs

The following section describes the Capital and Operating Costs of each of the Operability Scenarios.

2.13.1 Capital Cost Estimates

Rough-order-of-magnitude (ROM) capital costs were prepared for four operability scenarios, including the following interlined scenario and three independent scenarios (**Table 2.13-1**):

- Interlined Option
  - Fairview Heights – Underground LRT
- Independent Options
  - Option 1: Market-Manchester - Urban Rail
  - Option 2: Arbor Vitae – Aerial APM/Monorail
  - Option 3: Century – Aerial APM/Monorail

The rough-order-of-magnitude cost estimates presented in this memo are based on conceptual alignment drawings considered to be within a 0-5% level of design. Due to the preliminary nature of the design, the costs are presented in a range of costs that could be expected given the known project requirements and constraints. Rough-order-of-magnitude estimates could vary by as much as +/- 30% from the final project cost, and should be used for conceptual planning purposes only. It is the intention of the estimate to capture the fair market value under stable economic and bidding conditions for an average project with similar attributes within the Los Angeles area.

The low range represents the low end of an expected cost range based on the lower middle range of similar projects and standard contingencies. The high range represents the upper middle range of average costs for similar projects. Several factors could cause the actual project to increase in cost, such as designing the system to a level of design greater than standard, right-of-way acquisition issues, contractor bidding market, and material fluctuations. All costs listed are in current year (2017) dollar value and do not cost escalation between the current year and year of expenditure (YOE). Cost escalation should be added to these totals at a rate of 2 to 4% of the total project value per year to the mid-point of the construction schedule. If the mid-point of construction is 2024, the total project cost would increase by 15% to 30%.

Scenario and Option	Length (Route Miles)	Unit Cost/Mile (Millions in 2017$)		$ Capital Cost (Millions in 2017$)	
		Low	High	Low	High
Interlined Scenario	1.7	$ 800	$ 1,176	$ 1,358	$ 1,997
Option 1: Market-Manchester	1.8	$ 280	$ 419	$ 497	$ 746
Option 2: Arbor Vitae	2.1	$ 349	$ 468	$ 561	$ 982
Option 3: Century	2.8	$ 286	$ 375	$ 563	$ 1,049

Source: AECOM

Table 2.13-1 Project Operability Scenarios - Capital Cost Estimate Totals

The Independent Option 1 is the lowest cost compared to the other scenarios, followed by the Independent Option 2 and 3. The Interlined LRT Underground Scenario is by far the highest due to the fact that this scenario is underground, while the other scenarios are aerial. In general, capital cost and capital cost per mile are driven by alignment distance and the percentage of underground alignment. The cost of constructing bored tunnel guideway can be up to 2 to 3 times the cost of constructing aerial guideway.

Longer alignments typically have slightly lower cost per mile due to efficiencies involved with static, lump sum costs, spread out along the alignment. When comparing the unit cost per mile, it can be seen that the Interlined option clearly has the highest cost per mile due to the fact that it is mostly underground. Among the aerial Independent APM/Monorail options, it can be seen that the Independent Century Option has a lower cost per mile than the Independent Arbor Vitae Option, due to the project length. The Independent Urban Rail

cost has the lowest cost per mile due to the fact that the costs for urban rail components are less than APM/Monorail systems (**Figure 2.13-1**).

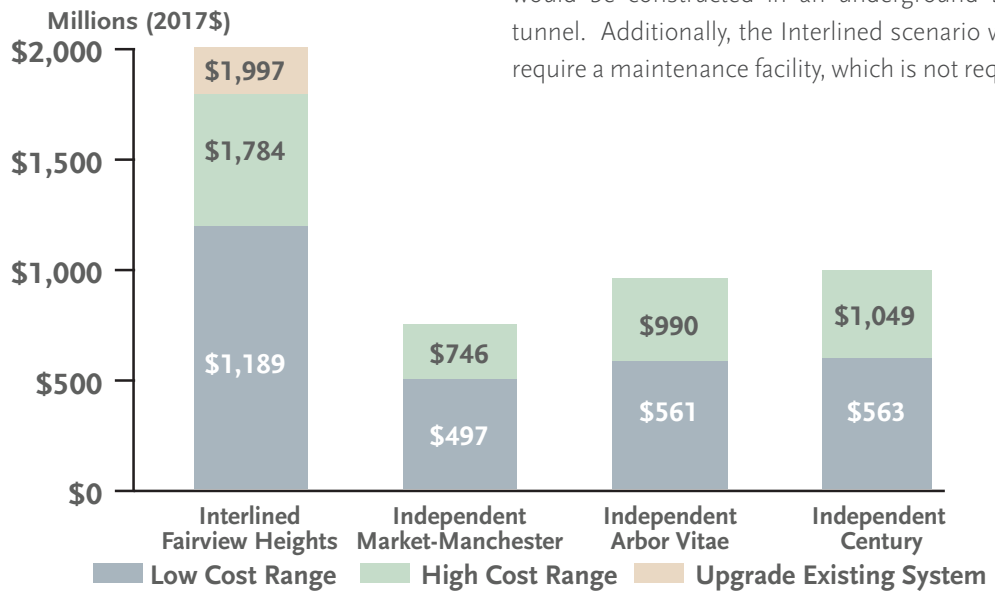
The Independent Urban Rail option is the least expensive and the Interlined scenario is the most expensive. The Urban rail option is within a $497 to $746 Million range, the Independent Arbor Vitae Option is within a $561-$990 Million range, the Independent Century Option is within a $563 Million to $1 Billion range, and the Interlined Option is within a $1.2 to $1.8 Billion range plus upgrades to existing Metro system that would raise the total to up to nearly $2 Billion.

2.13.2 Capital Cost Comparison to Referenced Projects

As part of this analysis, the total estimated capital costs were compared to referenced projects in order to validate the estimates and to provide a frame of reference for the expected level of design. The cost per mile of the Interlined LRT scenario and the independent Urban Rail scenario are compared against existing Metro LRT systems in place (**Figure 2.13-2**). The referenced Metro costs have been escalated to current year (2017) for accurate comparison.

The unit cost per mile for the Interlined LRT underground scenario is comparable to the Regional Connector project (**Figure 2.13-2**). Similar to the Regional Connector, the Interlined LRT underground scenario is approximately 2 miles and would be constructed in an underground bored tunnel. Additionally, the Interlined scenario would require a maintenance facility, which is not required for the Regional Connector. which the regional connector the cost per mile of the Interlined LRT scenario and the independent Urban Rail scenario compared to existing Metro LRT systems in place. The referenced Metro costs have been escalated to current year (2017) for accurate comparison. The Interlined LRT Underground scenario can be assumed to have a similar level of design to this project.

The unit cost per mile for the Independent Urban Rail scenario is comparable to the Crenshaw/LAX LRT project. Similar to the Crenshaw/LAX line, the Independent Urban Rail scenario would be constructed with multiple guideway types, including aerial, at-grade, and underground guideway. The Independent Urban Rail scenarios can be assumed to have a similar level of design, with a slightly lighter vehicle and systems components.

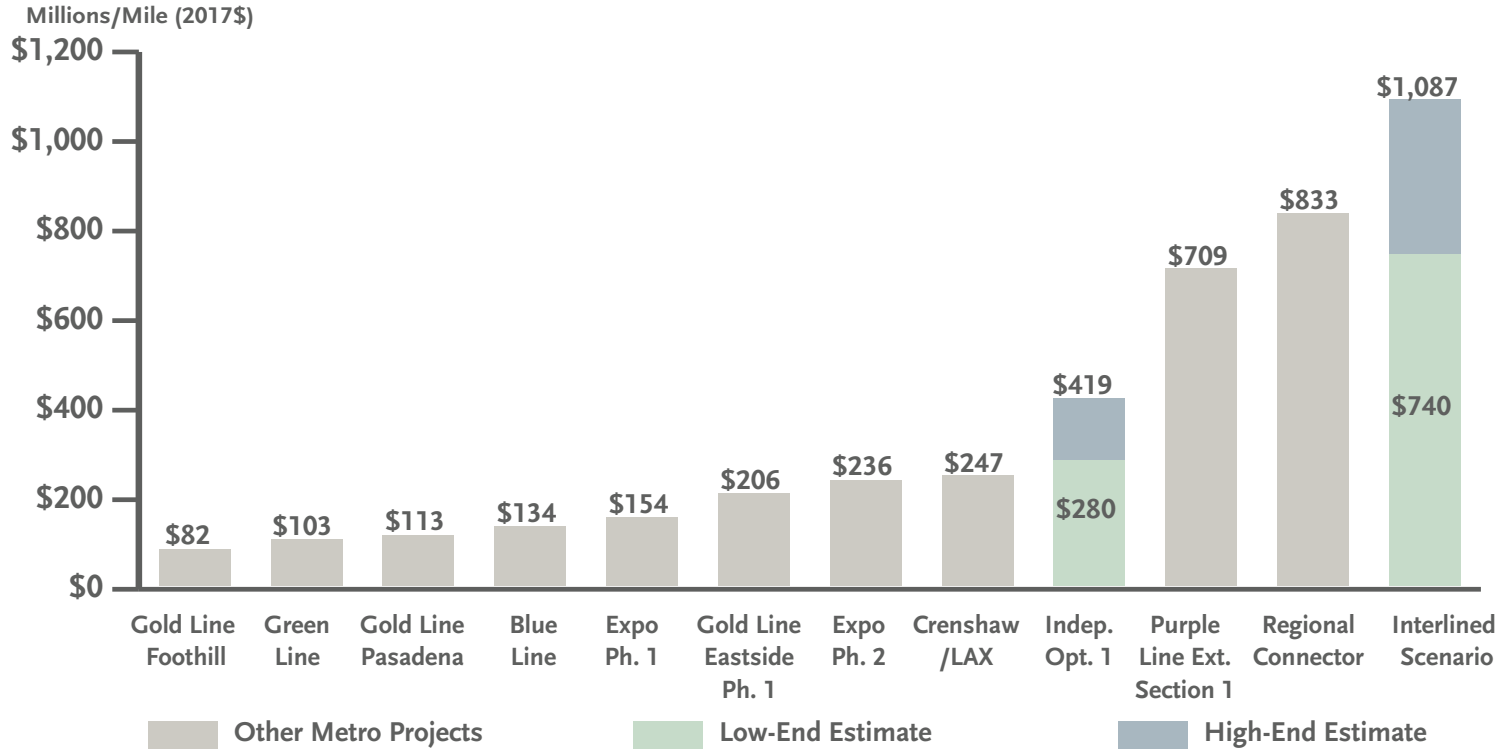


Source: AECOM

Figure 2.13-1 Capital Cost Range

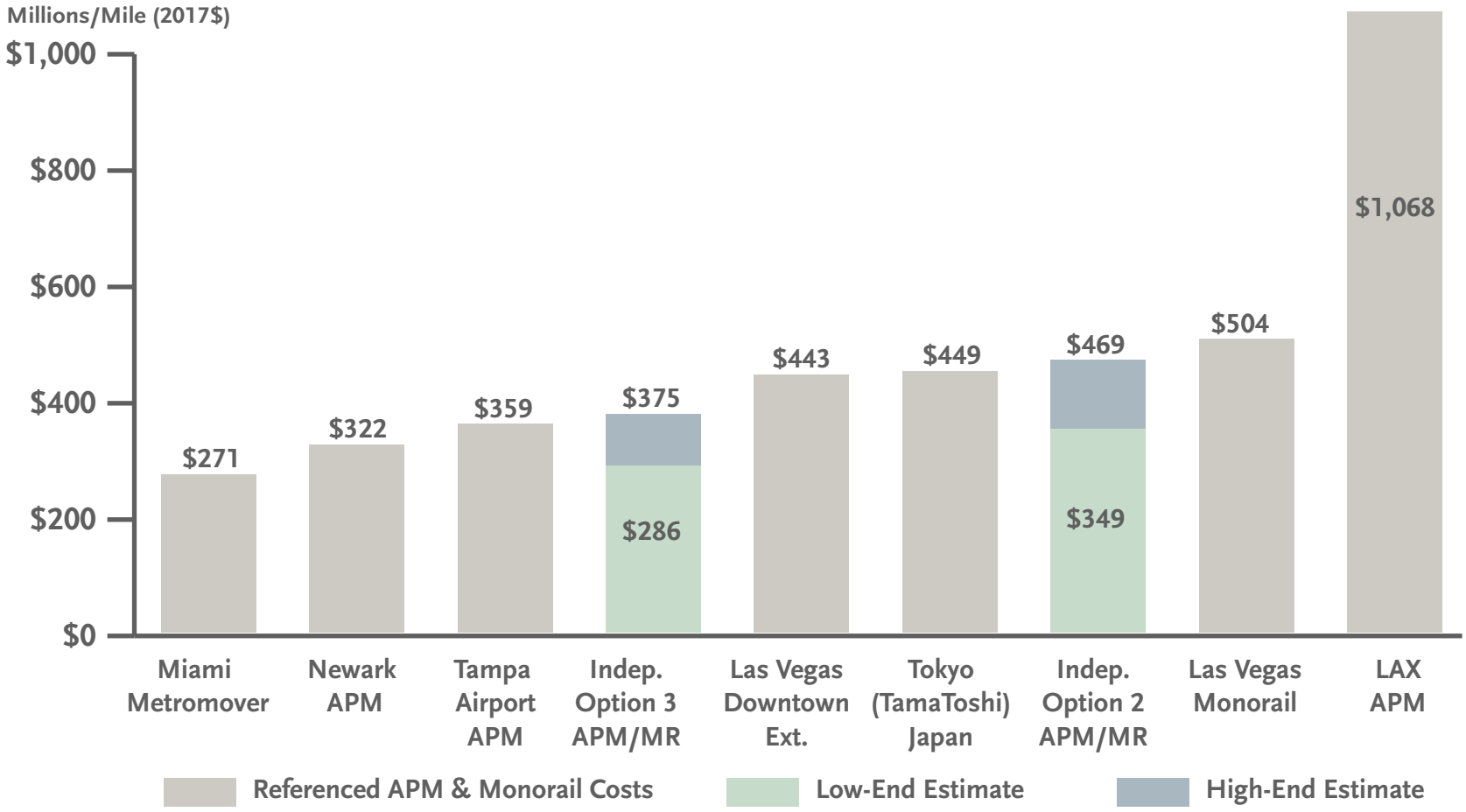
The cost per mile of the Independent APM/ Monorail scenarios compared to existing APM and Monorail projects are present on the next page, which the exception of the LAX APM cost, which is a conceptual engineering estimate. The referenced costs have been escalated to current year (2017) and adjusted to Los Angeles market for accurate comparison.

The unit costs per mile for the Independent APM/ Monorail scenarios have a range in cost that can be comparable to simple people movers (**Figure 2.13-3**), such as the Tampa APM at the low end and the Las Vegas Monorail at the high end. Despite the difference in unit cost, both Independent APM/ Monorail scenarios could be within this range of design. For the purpose of this study, both the APM/Monorail scenarios are assumed to have the same level of design and assumptions for guideway type, station design, and vehicle type. The reason for the variance between the two APM/Monorail scenarios is due to the difference in project length and right-of-way acquisition. As the project length increases, the cost per mile decreases slightly. Additionally, the greater right-of-way acquisition on the Arbor Vitae option increases the unit cost for that scenario.



Source: AECOM

Figure 2.13-2 LRT/Urban Rail Cost per Mile Comparison (2017$ Millions)



Source: AECOM

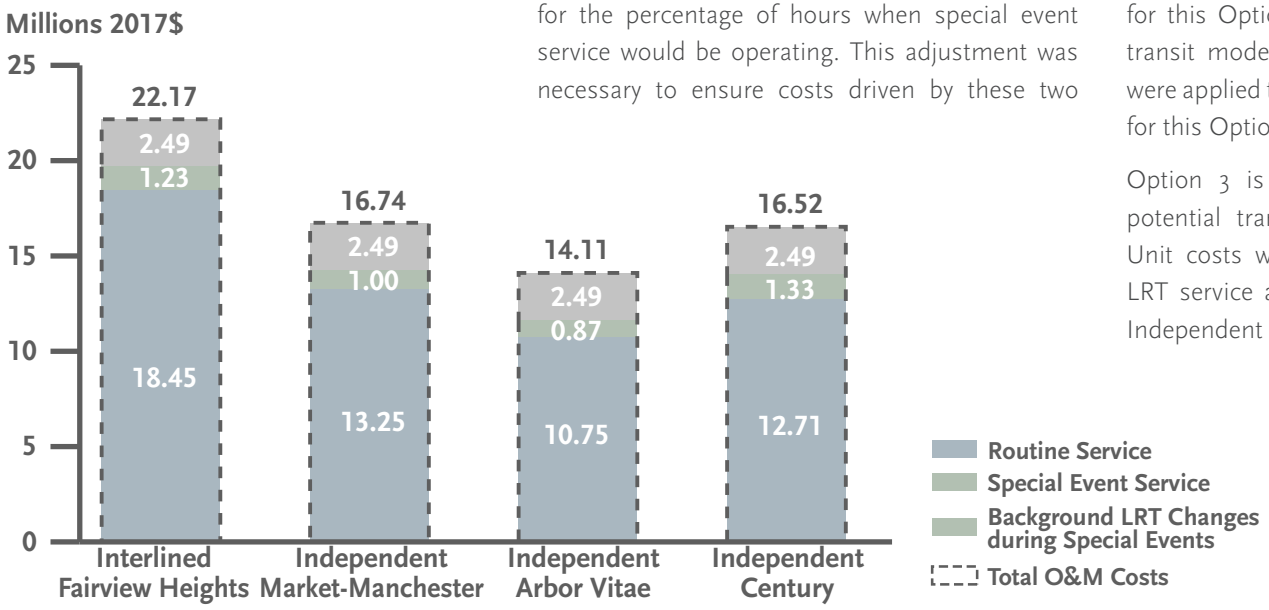
Figure 2.13-3 APM/Monorail Cost per Mile Comparison (2017$ Millions)

2.13.3 Operating and Maintenance Cost Estimates

Annual operating and maintenance (O&M) costs have been estimated with spreadsheet models that tie costs to the level of service that is to be operated and facilities that are to be maintained. Specifically, the cost allocation models assume that each operating expense incurred is driven by a key supply variable such as revenue-hours, revenue-miles or number of vehicles operated during peak periods. Unit costs are developed and applied to future service statistics. The result is an estimated annual O&M cost that is specific for the test scenario (**Figure 2.13-4**).

The interlined scenario reflects LRT service that operates as a branch of the Crenshaw/LAX Line and Green Line north pattern, proceeding from the Expo/Crenshaw LRT station, then branching at Fairview Heights to continue on Prairie Avenue until terminating at Arbor Vitae Street. Service and facility statistics were calculated for routine service based on 5-minute peak headways and 10-minute midday headways, with evenings tapering from 10 to 20 minutes. Besides routine service, special event service statistics are added representing 50 special events a year, with 9 hours of increased service for each special event. Special event service also assumes supplementation of background LRT service on the Crenshaw/LAX Line and Green Line north pattern.

Unit costs were applied to LRT service and facility statistics for the interlined scenario. Consideration was also given to costs related to potential yard expansion to accommodate additional LRT vehicles. For special events, costs driven by peak cars and stations were adjusted to account for the percentage of hours when special event service would be operating. This adjustment was necessary to ensure costs driven by these two variables are not over estimated, for these unit costs are based on annual cost characteristics. Detailed cost estimates for 2023 and 2040 are presented in Appendix K.



Source: AECOM

Figure 2.13-4 O&M Costs for Scenarios and Options

Independent Scenarios

For the Independent Options, service and facility statistics were calculated for routine service and for special event service. Additional event service is also assumed for background LRT service on the Crenshaw/LAX Line and Green Line north pattern. For special events, costs driven by peak cars and stations were adjusted to account for the percentage of hours when special event service would be operating. Detailed cost estimates for 2023 and 2040 are presented in Appendix K.

Option 1 reflects use of Urban Rail. Unit costs were applied to urban rail service and facility statistics for this Option. Option 2 includes two potential transit modes – APM and monorail. Unit costs were applied to APM and monorail facility statistics for this Option.

Option 3 is also under consideration for two potential transit modes – APM and monorail. Unit costs were applied to APM, monorail and LRT service and facility statistics for the Century Independent Option.

2.14 Summary / Findings

This section presents a summary of findings from the analysis performed on each of the Operability Scenarios as part of this feasibility study related to the following topics within the report:

2.1 Guideway Configuration and Mode
2.2 Station Design & Connectivity
2.3 Operating Capacity
2.4 Ridership Analysis
2.5 Construction Methods and Impacts
2.6 Traffic Impacts
2.7 Maintenance and Storage Facility
2.8 Right-Of-Way Acquisition
2.9 Utility Conflicts and Relocation
2.10 Rail Systems
2.11 Environmental Scan and Potential Mitigation Requirements
2.12 Safety & Security
2.13 Capital and Operating Costs

Recall that the goal of the service is to provide:

- **Reliability**: Convenient service with minimum delay, wait, and travel times
- **Connectivity**: Ease of transferring to and from the regional high-capacity transit network
- **Capacity**: The ability to serve peak travel demand to and from the Development

Both the interlined and independent scenarios are capable of reliable, convenient service with connectivity to the Metro Rail system from the Development. However, the scenarios yield differing capacity, ridership, and cost characteristics.

In general, the interlined scenario has the highest cost and the least capacity of the scenarios considered. Alternatively, the three independent scenario options meet the capacity goal for lower cost (**Table 2.14-1**).

The complete findings or results pertaining to each operability scenario and option for each topic are summarized below (**Table 2.14-2**).

Cost & Capacity Summary	Interlined Scenario	Independent Scenario		
		Option 1	Option 2	Option 3
	Via Fairview Heights - Prairie	Downtown Inglewood via Market-Manchester	AMC 96th St. Transit Station via Arbor Vitae	AMC 96th St. Transit Station via Century
Capacity Target	25% of 80,000 stadium capacity per hour = 20,000 passengers/hour			
Maximum Operating Capacity	5 minute peak headway = 5,400 passengers/hour	2 minute peak headway = 13,500 passengers/hour	2 minute peak headway = 18,000 passengers/hour	
Event Forecast (2040)- Attendees Using Transit per Event	4,130 - 15,000 attendees	3,900 - 14,300 attendees	6,120 - 23,180 attendees	6,420 - 24,180 attendees
Capital Cost Estimates (2017 $)	$1.333 - 1.960 billion	$416 - 624 million	$561 - 990 million	$563 million - 1.049 billion
Operating & Maintenance Cost (2017 $)	$22.2 million/year	$16.7 million/year	$14.0 - 14.1 million/year	$16.4 - 16.5 million/year

Source: AECOM

Table 2.14-1 Cost and Capacity Summary for Scenarios

		Interlined Scenario	Independent Scenario		
			Option 1	Option 2	Option 3
	Description	Via Fairview Heights - Prairie	Downtown Inglewood via Market-Manchester	AMC 96th St. Transit Station via Arbor Vitae	AMC 96th St. Transit Station via Century
	Alignment	Junction branching from Crenshaw/LAX south of Fairview Heights Station; underground along Prairie Avenue	Market Street - Manchester Boulevard - Prairie Avenue	Prairie Avenue to Aviation Boulevard via Arbor Vitae Street	Prairie Avenue to Aviation Boulevard via Century Boulevard
2.1	Guideway Configuration and Mode				
	Guideway Configuration	Fully Exclusive	Fully Exclusive Pedestrian/vehicle crossing on Market Street at Queen Street and Regent Street	Fully Exclusive	
	Technology / Mode	Metro Light Rail	Urban Rail (similar to european tram, streetcar, low-floor light rail)	Automated People Mover (APM) (including monorail)	
	Distance (route-miles)	1.5 miles (branch) - 5.3 miles (to Expo Line)	1.2 miles	2.1 miles	2.8 miles
	Travel Time (minutes)	3 minutes	5 minutes	4 minutes	7 minutes
	Average Speed (mi/hr)	21 mi/hr	15 mi/hr	33 mi/hr	25 mi/hr

Source: AECOM

Table 2.14-2 Findings or Results of Operability Scenarios and Options by Topic

		Interlined Scenario	Independent Scenario		
			Option 1	Option 2	Option 3
2.2	Station Design & Connectivity				
	Termini	• Upgraded Crenshaw/ LAX Terminus at Expo Line • New Terminus at Development	• New terminus on Market Street • New terminus at Development	• New terminus at AMC 96th St. Transit Station • New terminus at Development	• New terminus at AMC 96th St. Transit Station • New terminus at Development
	Station Design	• Assumed 270-feet platforms • Metro's "kit of parts" station design • Accommodation on plazas and waiting areas for patrons transferring from other transit service lines • Additional signage at connecting stations to guide event patrons to platforms to streamline travel	• Assumed 270' platforms • At-grade stations would be designed as an extension of existing sidewalks; safety barriers and other safety measures to encourage pedestrians to cross at dedicated crossings	• Assumed 270' platforms • Capacity, ingress and egress strategy from the LAWA concourse need to accommodate combined ridership from APM, AMC/96th St. Station and the Project; Station could be interlined with the developments on the site, currently slated for collateral development; vertical access needs to be provided on Arbor Vitae/Prairie Ave	• Assumed 270' platforms • Capacity, ingress and egress strategy from the LAWA concourse would need to accommodate combined ridership from APM, AMC 96th Street Transit Station and the Project; vertical access needs to be provided to the aerial station
2.3	Operating Capacity				
	Capacity Target	25% of 80,000 stadium capacity per hour = 20,000 passengers/hour	25% of 80,000 stadium capacity per hour = 20,000 passengers/hour		
	Train Consist	3 - Metro light rail vehicles	3 - low-floor urban rail vehicles	6 - 40-50' APM cars/segments	
	Train Capacity	150 passenger/vehicle = 450 passengers/train	150 passenger/vehicle = 450 passengers/train	100 passenger/car = 600 passengers/train	
	Maximum Operating Capacity	5 minute peak headway = 5,400 passengers/hour	2 minute peak headway = 13,500 passengers/hour	2 minute peak headway = 18,000 passengers/hour	

Source: AECOM

Table 2.14-2 Findings or Results of Operability Scenarios and Options by Topic (Continued)

		Interlined Scenario	Independent Scenario		
			Option 1	Option 2	Option 3
2.4	Ridership Analysis				
	Weekday Ridership Forecast (2040)	3,734 riders/day	3,158 riders/day	2,158 riders/day	3,802 riders/day
	Event Forecast (2040)- Attendees Using Transit per Event	4,130 - 15,000 attendees	3,900 - 14,300 attendees	6,120 - 23,180 attendees (assumes use of up to 25-75% LAX "ITF" parking)	6,420 - 24,180 attendees (assumes use of up to 25-75% LAX "ITF" parking)
2.5	Construction Methods and Impacts				
	Construction Methods and Impacts	Bored tunnel, cut & cover, and at-grade guideway and station construction	Cut & cover, at-grade, and aerial guideway and station construction	Aerial guideway and station construction	
2.6	Traffic Impacts				
	Permanent Traffic Impacts	Impact to at-grade crossings on Crenshaw/ LAX line. Slauson Avenue assumed to require grade separation	Full closure of Market Street to traffic with at-grade crossings at Regent Street and Queen Street. Some intersection turning movements may be impacted by aerial guideway/station columns	Some intersection turning movements may be impacted by guideway/station columns	
2.7	Maintenance and Storage Facilities				
	Vehicle Fleet Size (during maximum operations)	36 light rail vehicles	23 urban rail vehicles	38 APM cars/segments	
	Maintenance and Storage Facility (MSF) Size	13 acres	5 acres	5 - 7 acres	
	Maintenance Facility Strategies	Shared with existing/ expanded Metro facility	New joint-development/mixed-use redevelopment site or shared with existing/expanded Metro facility (requires non-revenue connection)	All-new redevelopment site (e.g. formal rental car lot), new joint development/mixed-use redevelopment site, or shared with LAWA APM	
	Potential MSF Locations	Metro Crenshaw/LAX Southwestern Yard or other	· Downtown Inglewood redevelopment site(s) · Other Inglewood infill site(s) · Forum or Hollywood Park sites · Metro Crenshaw/LAX Southwestern Yard or other	· Former LAX rental car lots · Hollywood Park sites · LAWA APM facility	

Source: AECOM

Table 2.14-2 Findings or Results of Operability Scenarios and Options by Topic (Continued)

		Interlined Scenario	Independent Scenario		
			Option 1	Option 2	Option 3
2.8	Right-Of-Way Acquisition				
	Right-Of-Way Acquisition - Construction/Staging	6 - 8 acres	2 acres	minimal	
	Right-Of-Way Acquisition - MSF	13 acres	5 acres	7 acres	
	Right-Of-Way Acquisition - Stations, Systems	up to 4 acres	up to 8 acres	up to 26 acres	up to 12 acres
	Right-Of-Way Acquisition - Total	22 acres	15 acres	33 acres	19 acres
2.9	Utility Conflicts and Relocation				
	Utility Conflicts and Relocation	Miscellaneous impacts due to cut & cover and at-grade construction	Miscellaneous impacts due to cut & cover and at-grade construction	Miscellaneous impacts due to support column construction for aerial guideway and stations	
2.10	Rail Systems				
	Ventilation	Assumed that increased ventilation capacity (additional vent shafts) are required for Crenshaw/LAX Line tunnel segments “UG3” and “UG4”	n/a		
	Signals/Operations	Assumed minor upgrades to Crenshaw/LAX systems to accommodate interlined service	n/a		

Source: AECOM

Table 2.14-2 Findings or Results of Operability Scenarios and Options by Topic (Continued)

		Interlined Scenario	Independent Scenario		
			Option 1	Option 2	Option 3
2.11	Environmental Scan and Potential Mitigation Requirements				
	Environmental Scan - High Potential for Significant Impacts	Cultural Resources – due to close proximity to a cemetery.	No environmental issue has high potential for significant impacts	• Visual Character – due to aerial structures along Arbor Vitae • Light and Glare – due to the illumination of trains due to the proximity of light sensitive residential uses along the alignment. • Land Use Compatibility – The introduction of a transit line on Arbor Vitae Street could limit circulation pathways along local north-south streets and may limit direct access to the existing driveways. • Noise / Vibration Impacts – The highest potential for noise impacts is along Arbor Vitae Street because it has the highest number of Category 2 receptors and a narrow street width • Circulation System - reduction in lane widths and potential turn limits may impact major intersections that are currently operating at Level of Service (LOS) E or worse during peak hours. In addition, structural columns supporting the elevated guideway along turn-lanes may introduce intersection sight-distance challenges to drivers of vehicular traffic.	No environmental issue has high potential for significant impacts

Source: AECOM

Table 2.14-2 Findings or Results of Operability Scenarios and Options by Topic (Continued)

		Interlined Scenario	Independent Scenario			
			Option 1	Option 2	Option 3	
2.12	Safety & Security					
	Safety & Security	Impacts to safety & security systems (fire life safety) on Crenshaw/LAX line as-designed (currently under construction). Fire-life safety systems require evaluation. Also, risks associated with movement of large passenger loads to special events.	Interface with pedestrians and vehicles along Market Street. Also, risks associated with movement of large passenger loads to special events.	Interface with Metro AMC 96th Street Transit Station and LAWA APM. Also, risks associated with movement of large passenger loads to special events.		Interface with Metro AMC 96th Street Transit Station and LAWA APM. Also, risks associated with movement of large passenger loads to special events.
2.13	Capital and Operating Costs					
	Capital Cost Estimates (2017 $)	$1.333 - 1.960 billion	$416 - 624 million	$561 - 990 million		$563 million - 1.049 billion
	Operating and Maintenance Cost - Routine	$18.5 million/year	$13.3 million/year	$10.2 - 10.7 million/year		$12.0 - 12.7 million/year
	Operating and Maintenance Cost - Special Event	$1.2 million/year	$1.0 million/year	$0.9 - 1.3 million/year		$1.3 - 1.9 million/year
	Operating and Maintenance Cost - Background Metro	$2.5 million/year	$2.5 million/year			
	Operating and Maintenance Cost - Total	$22.2 million/year	$16.7 million/year		$14.0 - 14.1 million/year	$16.4 - 16.5 million/year

Source: AECOM

Table 2.14-2 Findings or Results of Operability Scenarios and Options by Topic (Continued)

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PART III

FUNDING, FINANCING & DELIVERY

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Public Private Partnership (P3) benefits arise from optimizing risk allocation, aligning incentives for performance, and taking a project life-cycle perspective. This section presents a summary of potential funding and P3 delivery options that could support and accelerate the delivery of the transit connection. The analysis presented in this section includes a high-level summary of the formation process and financial assessment of Enhanced Infrastructure Finance Districts (EIFD), as well as an early identification of a range of governance and delivery options.

3.1 EIFD Formation and Financial Analysis

In June of 2011, Governor Brown signed into law two bills that effectively dissolved all California Redevelopment Agencies (RDAs). Among the many responsibilities of the RDA's was to improve or build new infrastructure to address the needs of the cities and communities. Since the dissolution of RDA's, California cities have struggled to improve and build the new infrastructure necessary for its growing population. However, in September 2014 a new bill, SB 68, was signed by the Governor, authorizing local agencies to create Enhanced Infrastructure Finance Districts (EIFD's). While also allowing the use of Tax Increment Financing (TIF), the newly authorized EIFD's differ significantly from the former RDA financing structures both in flexibility and scope. As with previous forms of "TIF", the principle taxing authority (here the County of Los Angeles) must consent to any use of its portion of tax increment. Therefore, Inglewood's formation of a new EIFD, would only allow it to direct the funds derived from its own share of tax increment to the EIFD and the County's voluntary agreement to participate will be necessary in order to secure any portion of the County's tax increment share for the proposed EIFD. As a result, local governments are clearly encouraged to partner on infrastructure development in order to maximize EIFD's financial capacity.

An additional and highly significant positive aspect of the newly created EIFD's is the extraordinary flexibility and reach of its powers and the ability to combine multiple sources of revenue in addition to tax increment and integrate them into a locally-developed financial business plan. This capacity to bundle multiple revenue streams including development and user fees, bond funds federal and state grants and myriad other sources serves to enhance the revenue available to the EIFD to fund proposed projects.

The following assessment and analysis provides an application of this new tool to the specific proposed project and determines if there is sufficient financial capacity available to support its operation and maintenance. This will also inform the decision as to whether, when utilized in connection with a project governance vehicle such as a P3 or similar project delivery strategy, whether this strategy can attract the scale of private investment needed to operate as a stand-alone enterprise.

3.1.1 EIFD Formation Process

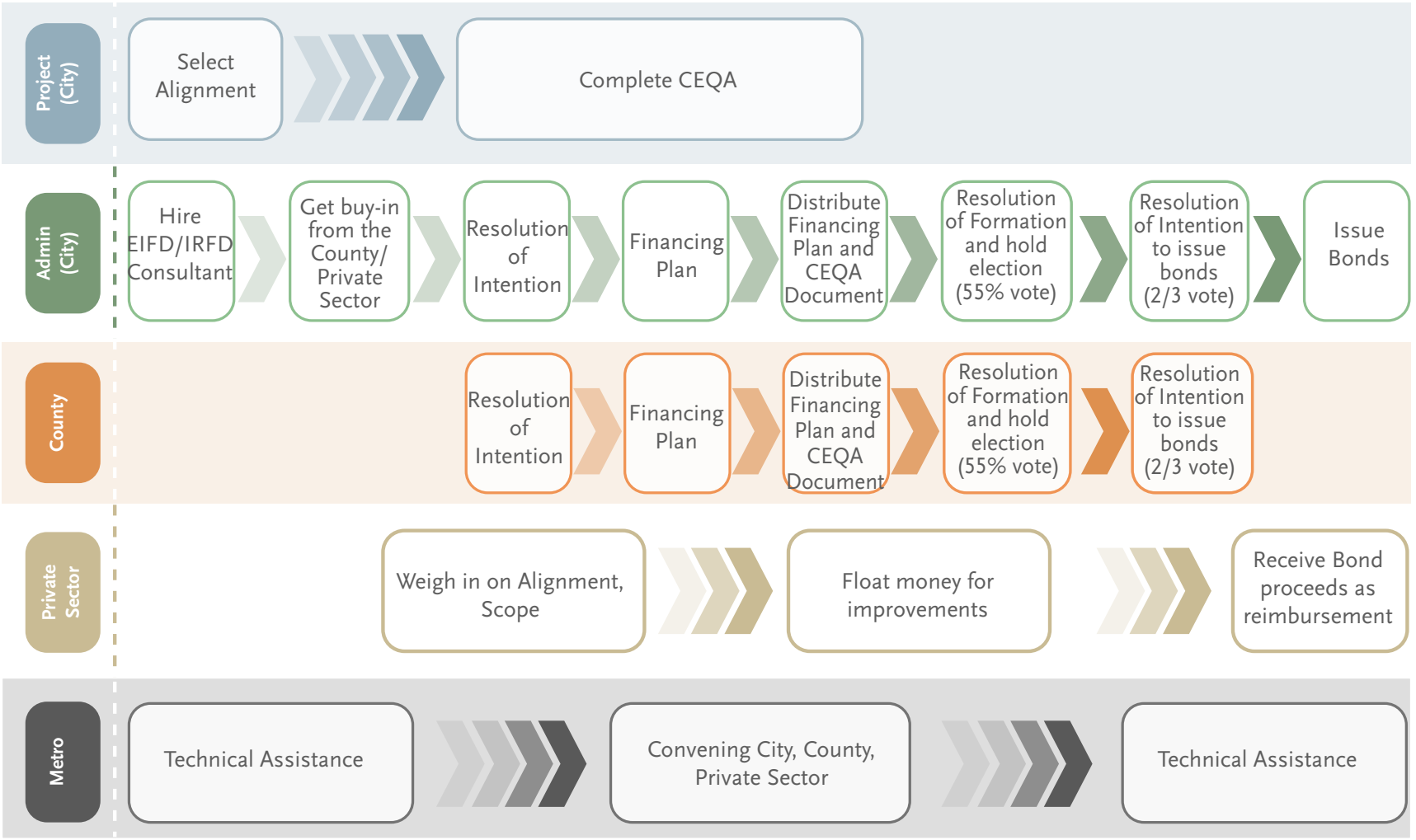
In order to form an EIFD, the Initiating Public Agency (IPA), in this case the City of Inglewood, must first adopt a resolution to establish the District and appoint the Public Financing Authority ("PFA"). The same process also must be followed by any other participating legislative bodies. The resolution identifies the proposed project and project area, along with district members, and appoints the individual PFA members. The PFA, which is the governing board of the EIFD, is a separate stand-alone governmental entity with relatively extensive powers. Its basic tasks include:

- Preparation of the Infrastructure Financing Plan ("IFP") that details the investment program and funding streams for the project
- Scheduling of a public hearing to review the IFP
- Proposal of a resolution to adopt the IFP and form the EIFD
- Approval of the IFP and officially establishment of the EIFD

In addition, an environmental review of the project is concurrently conducted and is presented as part of the public hearing process. A graphic presentation of the EIFD formation process and sequencing is presented as shown below (**Figure 3.1-1**).

Both the environmental review and the formation of the EIFD will need to take place before the completion of the first phase of the Development to take advantage of any tax increment generated.

Initial contacts with the County have occurred and await County Board of Supervisors approval of proposed County guidelines for tax increment utilization and EIFD governance participation, which will affect the identity of EIFD district members The project area is currently defined by City of Inglewood Ordinance No. 15-10 - City of Champions Revitalization Initiative, subject to potential consideration of areas encompassed by the proposed Clippers NBA stadium, also.



Source: Metro

Figure 3.1-1 EIFD Formation Process

3.1.2 Financial Assessment

In order to assess the potential availability of revenue to the EIFD to fund the project, the following was prepared:

- Tax increment projections
- City of Inglewood additional revenue projections to be derived from the Development
- Listing of potential additional EIFD revenue sources
- Table illustrating potential bonding capacity

In viewing the revenue and bond projections in this section, it is important to keep in mind the following:

A. Both the amount of potential tax increment and the revenue to the City of Inglewood are projections based on full build-out of all project improvements within the EIFD and within the projected time-frames established by the Developer and City.

Delays in construction of the improvements could result in major effects on the timing and amount of projected tax increment and project-generated revenue to the City and thus its availability to the EIFD. The current schedule for development phasing, adjusted for the recently announced one-year delay due to unusually inclement weather, is shown in **Figure 3.1-2**.

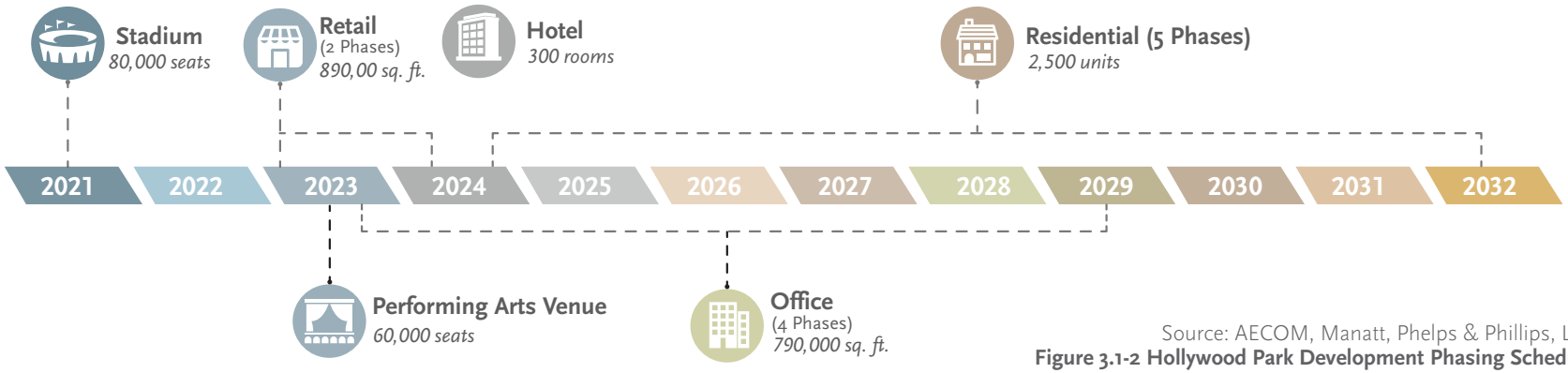
In order to assess the potential for both property tax increment and additional revenue streams generated by the project, the following project formation documents were reviewed:

- City of Inglewood ordinance adopting the initiative measure creating the City of Champions Revitalization Initiative
- Amended and Restated Development Agreement between the City and the project developers
- Owner Participation Agreement between the City and the developer defining the developers installation and rights to repayment for certain infrastructure improvements
- City of Inglewood Initiative Report relating to the proposed financial arrangements between the City and the developer
- City of Inglewood Budget for 2016-2017
- Other relevant documents

In addition, numerous meetings were conducted with City of Inglewood and County of Los Angeles officials to further clarify and assess the potential revenue generation available to the proposed EIFD.

B. Receipt by the EIFD of any portion of the County's share of tax increment is dependent upon the agreement by the County. The County, in its sole discretion, may choose whether and to what extent (in terms of percentage of tax increment funds) if any, it chooses to participate. The County is in the process of formulating guidelines for its EIFD participation.

The guidelines have not yet been published but are likely to require that in each instance the case be made as to the County-wide benefit that an EIFD-sponsored project would entail in order to allow the County to assess the magnitude of its participation by way of contribution of tax increment. In addition, the County guidelines may contain requirements for County membership on the EIFD PFA and/or other requirements relating to affordable housing that may further complicate the County's agreement to provide tax increment.



Source: AECOM, Manatt, Phelps & Phillips, LLP

Figure 3.1-2 Hollywood Park Development Phasing Schedule

C. The state Recognized Obligations Payment Schedule ("ROPS") indicated the obligation to pay former RDA debt is a senior obligation on both the City and County share of current tax as well as future tax increment. The City has recently re-issued bonds for two former redevelopment areas of the City totaling around $60 million and the remaining RDA obligation for former debt within the proposed EIFD area is about $14 million. Even though two of the former RDA areas are outside the proposed EIFD boundaries, the law requires that the total amounts of all former RDA debt be aggregated and thus the full amounts of all three are senior obligations to any proposed EIFD use.

The current City 14% share of property tax as well as the full 47.9% County retained share are both committed to repayment of the approximately $74 million former RDA debt. In addition, any increment to the current property tax amounts the County and City receive are likewise fully committed to repayment of the RDA debt and no tax increment will be available to the EIFD (or the transportation project) until the former RDA debt is fully retired. The current debt is being repaid at the rate of approximately $11 million per year. The proposed redevelopment as well as the general overall rise in property values throughout the City will substantially and quickly inflate the amount of repayment and thus retirement of the senior obligations. It is, therefore, difficult to assess the date at which these senior obligations will be repaid since they are dependent on both the projected rise in EIFD area property taxes as well as the overall rise in City-wide property tax share.

Tax Increment

Having established the issues, above, the following projected tax increment and project revenue are theoretically available to the EIFD under various tax increment contribution scenarios, again assuming full build out as scheduled and phased.

While more refined calculations will need to be made to adjust dates and amounts to reflect the date of RDA senior debt repayment the tables may be instructive as an indication of the amounts available to pay down the senior RDA debt, and as a guide to potential tax increment once that debt is retired.

A preliminary approximation of the total amount of net bondable tax increment available under four different circumstances was developed, which is dependent upon the extent of County participation in making tax increment available to the EIFD (**Table 3.1-1**).They are based upon relatively conservative projections as to the date and phasing of project build-out and do not represent the currently available tax increment. As noted, delay in phasing or non-build scenarios would have a negative effect on availability.

As noted above, the "ROP" repayment obligation is likely to somewhat diminish the available net bond proceeds in early years but is not subject to calculation due to the uncertainty of both City-wide tax collection amounts and County willingness to continue contribution of all or a portion of its tax share.

In addition, tax increment revenue representing additional required coverage ratio, to the extent not utilized for bond repayment, may also be available as additional revenue at later project stages.

	Max. 47.9% County and 14% City to EIFD	County 20% and City 14% to EIFD	County 10% and City 14% to EIFD	No County Share and City 14% to EIFD
Projected Year 5 & cum. through year. 4	$158,000,000	$82,000,000	$62,600,000	$33,800,000
Projected Year 10 & cum. through year. 9	$277,600,000	$159,5000,000	$108,400,000	$64,100,000
Projected Year 15 & cum. through year. 14	$428,200,000	$231,700,000	$163,000,000	$100,700,000
Projected Year 20 & cum. through year 19	$574,900,000	$314,400,000	$224,800,000	$128,100,000

Note: Assumes 30 year term and build-out as projected – Assume 1.35 coverage, 6% rate and 12% cost of issuance.

Source: Manatt, Phelps & Phillips, LLP

Table 3.1-1 City of Inglewood Projected Net Bond Proceeds

Revenue Projections

In addition to potential tax increment revenue, the project's additional streams of income will also inure to the City's benefit. These include ticket tax revenue from both the NFL teams as well as from the proposed entertainment venue, revenue generated by hotel taxes, sales tax revenue from both retail and entertainment venues and other sources emanating from the project. Some portion of this revenue may be available to the EIFD at the City's discretion, but is dependent on the City's prior commitments and plans.

The amount of project-generated revenue to the City of Inglewood is subject to an annual (guaranteed) "cap" of $25 million (adjusted for inflation). The amount actually available to the EIFD however, is somewhat less as certain project-related City expenses (fire, police, and traffic expenses, etc.) must be deducted.

The remainder of revenue, if any, above the $25 million, goes to the project developer until reimbursement for certain public improvement costs, park operations and maintenance and event public safety are satisfied. The potential for additional annual revenue to the City is attained as illustrated in the following scenarios.

A. One-Team Scenario

Projected City of Inglewood net revenue rises irregularly from initial Development completion through year 3, averaging at approximately $13.5 million per year and then gradually rises to $28 million per year through year 16 when developer infrastructure reimbursement is projected to be satisfied. The amounts to the City are then projected to increase to a year 17 total of $35 million and gradually rise to $43 million annually by year 20. Total net general fund impact approximately is approximately $670 million (**Table 3.1-2**)

B. Two-Team Scenario

The addition of revenue from a second NFL team provides additional project revenue to the City and could allow the re-imbursement to Developer to occur by as many as ten years sooner and thus additional revenue from years 11-25 could increase the total available revenue. However, amounts in this category are sensitive to both the ticket sales tax cap ($15 million annually), which under the current agreement does not increase under the two-team scenario, the potential for additional ancillary team product, food and retail sales, other terms and conditions which are expected to be further clarified with City officials and the developer.

C. Additional Los Angeles Clippers Development

The City has recently executed an Exclusive Negotiating Agreement (ENA) with the Los Angeles Clippers for the construction and operation of a professional basketball facility on a site near the projected EIFD. The City has indicated considering adding the projected site to the EIFD. If the ENA results in a final agreement of constructionand operation, additional revenue from ticket sales, retail taxes, as well as tax increment could become available. Depending on timing, there may be considerations of modifying the EIFD area to include the new NBA Clippers arena development.

While beyond the scope of the current study, additional funding vehicles such as the formation of an Infrastructure Revitalization Finance District ("IRFD") to allow cooperative funding and phased annexation in connection with the EIFD were explored. However the use of an IRFD is an unlikely prospect due to the restrictions contained in the IRFD legislation which requires that the "project" lie in redevelopment and former redevelopment project areas, a restriction not present in the EIFD legislation. As the likely "project" traverses many areas of the City not part of redevelopment areas this vehicle is likely unavailable.

City of Inglewood Project Revenue			City Re-imbursements		Pre-Expense Net	Additional City Expenses		Total Net General Fund Impact
Total City Project Revenues	One-time construction impact fees	Total Net to City Before Re-imbursements	Operating cost reimbursement to Developer	Capital Cost re-imbursement to Developer	Net to City after re-imbursements	Sales tax diversion	City annual expenses	
$1,282,969,963	$55,483,245	$1,338,455,208	($260,873,770)	($133,142,123)	$944,473,315	($14,008,394)	($260,373,518)	$670,055,855

Source: Manatt, Phelps & Phillips, LLP

Table 3.1-2 City of Inglewood General Fund - Total 25-Year Projected Project Revenue

Additional Potential Sources of EIFD Funding

As noted, an EIFD can utilize multiple funding sources along with tax increment. Those sources include, but are not limited to, the ones listed below. The City of Inglewood 2016-2017 Budget Plan was also reviewed to determine potential sources. As with the additional project revenue detailed in the previous section, they are subject to both the City's willingness to devote the City–controlled revenue to the EIFD revenue stream, prior commitments of those funds to other projects and, in the case of federal, state or other grants, on the availability and success in procurement of such potential sources. Potential funding sources include:

- Vehicle License Fee property tax backfill
- Development agreement/impact fees
- User fees
- City/County/Special District Loans
- Benefit assessments
- Proposition 1 bond funds
- GHG reduction funds (state)
- DOT/EPA/DOE funds (fed)
- Prop A local return
- Prop C Transportation Returns
- Measure R local return
- Off-site parking revenue
- AQMD funds
- Gas Tax Bill
- USDOT "FAST" Act
- Measure M Local Return
- Fare Revenue

While some of these sources may be substantial (e.g. $10.7 million from Motor Vehicle backfill annually, $2 million from Prop. A local return and Prop. C revenues annually), they are dependent upon the extent of prior City budget commitments and the City's willingness to devote to the EIFD.

Bonding Capacity

As the preceding discussions illustrate, any definitive projection of bonding capacity or a definitive timeline for formation of an EIFD are somewhat premature.

As one of the early steps in formation is the preparation of a "financing plan" for the project, several major pre-cursers to the plan are yet needed. They include, among other matters:

- The definition of and costs of both construction and operation of the transportation project
- Commitment from the County relating to its willingness to contribute tax increment and the amount thereof
- Commitment from the City as to the availability of and extent to which they are willing and able to contribute revenue from the project and from other uncommitted City-controlled sources

In addition, substantial work toward obtaining commitments from other sources (e.g., grants, state and federal programs, etc.,) as well as potential commitments from the Hollywood Park Development project developer and other stakeholder parties should also be undertaken.

As a further matter, the relationship between the transportation project governance and the EIFD governance needs to be carefully defined and coordinated – matters which await a final determination as to the options for project delivery and related matters.

3.1.3 Funding Summary

The EIFD is envisioned to be structured as one created by the City of Inglewood with the participation of the County of Los Angles in order to maximize the capture of tax increment and also to allow the capture of as many available additional revenue streams as may be available.

The bulk of potential EIFD funding emanates from two principal sources; a)tax increment, and; b) additional City of Inglewood general fund revenue generated by the proposed stadium and surrounding area development projects. A "very best scenario" aggregates $574 million in available bond proceeds and $670 million in additional City revenue derived from the project. Additional revenue from other qualified sources could further augment potential EIFD revenue.

However, as noted in the principle discussion of each of the tax increment and City revenue projection sections, significant uncertainties need to be resolved and the need for County and City commitments need to be established in order to craft a credible "Infrastructure Financing Plan" as required in the formation of an EIFD.

In the case of tax increment, the most critical factors are the percentage, if any, of potential tax increment the County is willing to contribute to the EIFD, the timing and completion of the phased construction of the stadium and surrounding development and the retirement timing of former Redevelopment Area debt.

In the case of City project-generated additional revenue (as well as additional eligible EIFD revenue sources), the total amount available will be

dependent on the extent of the City's contribution of these funds and potential prior budgetary commitments

It should be further noted that while the potential bond and development revenue may be substantial, this revenue is somewhat small during initial years and early funding sources need to be explored in order to support bond debt and initial formation expenses. These may, for example, include Bond Anticipation Notes, seed loans from City/County or other public agencies and institutions, and developer contributions/loans.

It should be further noted that among other important matters, the amassing of funding sources needs to be carefully coordinated with the analysis of project delivery method. As one primary example, the EIFD statute prohibits use of EIFD funds for normal maintenance and operation hence the contract with a presumed private operator would have to be carefully constructed to separate EIFD funds – usable only for construction – and a separate funding stream usable for operation and maintenance. One such option is, of course, fare revenue.

3.2 Preliminary P3 Project Delivery Options Analysis

In planning to procure, develop, finance, operate and maintain a fixed guideway transit system, two of the key issues that should be addressed as early in the planning process as possible are the optimal approaches to Project Governance and Project Delivery.

Addressing these questions at the outset will help drive answers to other important questions, including:

- How much preliminary engineering to do (and not to do) before further procurement
- How much should (and should not) be spent on project development before the owner achieves a high level of confidence of what the project will actually cost to build and operate;
- How much time it will take to complete the project (and opportunities to accelerate)
- What sources of funds will be available for the project (and when and how they will be routed)
- How to allocate risks between the owner and the contractors (including plan for early risk mitigation)

This section of the report will address a range of governance and delivery options that might be considered for the Project and a decision-making process that might be useful for the latter. Recommendations are outside the scope of this analysis and decisions will be reliant in part on legal issues that have not been researched.

3.2.1 Project Governance

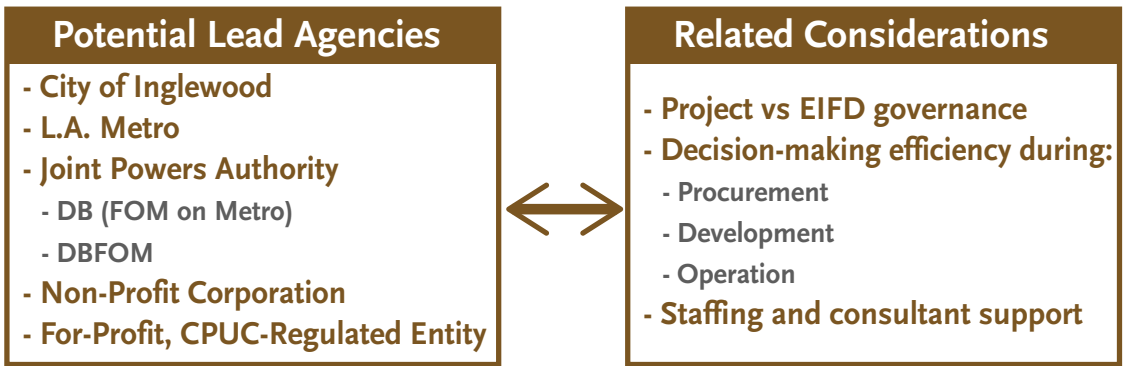
Among the important early decisions for a planned transit project are what entity or entities will be the:

- Owner
- Lead agency for environmental clearance and permitting
- Acquirer of real estate
- Contributor of funds; the issuer of debt
- Procurer and overseer of any services and supplies outsourced to contractors, consultants and vendors
- Provider of any other owner-retained functions.
- While often the above roles are aggregated within a single public entity, sometimes they are allocated by intergovernmental agreements among more than one public entity. Sometimes too, key responsibilities are carried out by non-public entities, subject to governmental regulation and/or outsourced private entities, subject to contractual oversight.

The aim should be to select the right entity or combination of entities that will achieve project goals, taking into consideration, among other factors, applicable law, potential sources of funding and financing and the extent of capabilities to carry out the functions efficiently and effectively.

Among the options to consider for one or more lead project roles area are (Figure 3.2-1):

- **City of Inglewood**: The City is a charter law city within the County of Los Angeles and has broad powers to carry out public works within its boundaries, either by itself or in combination with other public and private entities. Other cities within LA County and the State of California own and operate transit projects. One example is an APM system at LAX, currently being developed by the City of Los Angeles.
- **Los Angeles County Metropolitan Transportation Authority**: LA Metro is the primary public transit agency within the County of Los Angeles and as such carries out all governing entity functions for many fixed guideway transit projects.



Source: Nossaman LLP, AECOM

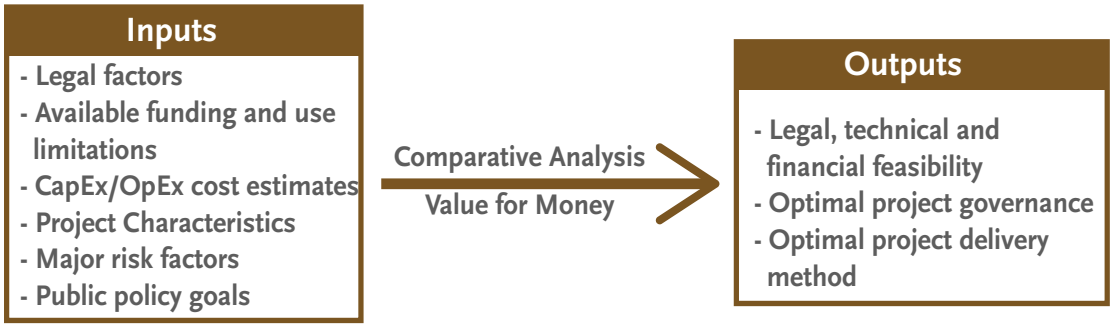
Figure 3.2-1 P3 Project Governance

- **Joint Powers Authority**: The term is applied to an entity formed, and participated in, by more than one public body, each of which has the powers to carry out the responsibilities of the joint entity. There are actually two different kinds of entities to which this label is commonly applied: one formed by agreement pursuant to the Joint Exercise of Powers Act; and one formed by special statutory enactment. Sometimes JPAs are used only for design and construction of a transit project, with another entity assuming responsibility for operations and maintenance.
- **Non-Profit Corporation**: To carry out key functions, sometimes transit projects and other public works are structured to rely for their governance on a non-profit corporation formed under state law and operating within the constraints of the federal and state taxing authorities. Such entities can be specially created by a public body, with approval of the articles of incorporation and the bylaws, or enabled by a lease, franchise or other agreement between the public body and the non-profit. The choice usually depends upon the degree of control over, or independence from, the project the involved public agencies wish to establish.
- **For-Profit Company**: There are circumstances under which a transit system is susceptible to being owned and operated by a for-profit company, which would be regulated by the California Public Utilities Commission.

Among the factors to take into account in selecting among governance options are (Figure 3.2-2):

- **For-Profit Company**: There are circumstances under which a transit system is susceptible to being owned and operated by a for-profit company, which would be regulated by the California Public Utilities Commission.
- **Legal considerations**: There are a number of legal issues that typically need to be sorted out in arriving out the list of available governance options and then selecting from that list the optimal entity or combination of entities. We have provided to LA Metro and the City a preliminary list of such issues to consider.
- **Sources of funding**: How funding is to be sourced and routed into a project should be taken into account in determining project governance. For the Expo and Gold Lines developed by JPAs, LA Metro and the relevant JPA entered into funding and finance agreements. Similarly for the Inglewood project, an EIFD is under consideration and governance for the project's delivery will need an interface with EIFD governance.
- **Decision-making efficiency**: Capital-intensive and large rail transit projects require careful and efficient management and decision-making. This need starts in the development and carries through the environmental, project definition, procurement, construction and operation phases.
- **Organizational capability**: Undertaking the development of a rail transit system effectively is time and resource intensive, requiring significant expertise and capability. Deciding on optimal project governance should include a careful analysis of organizational capability to carry out retained governing entity functions and oversight of outsourced functions.

Established rail transit agencies exist to provide such resources, but there have been successful governing entities that: (a) had not previously delivered rail transit but effectively expanded their functions to do so; or (b) were newly created for the mission-specific job of delivering rail transit. Each option carries with it varying degrees of internal staff and consultant team capabilities, all with necessary qualifications.



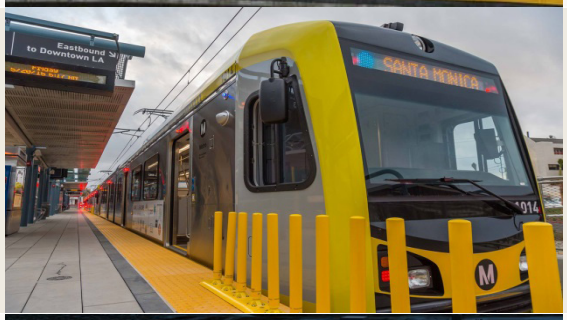
Source: Nossaman LLP, AECOM

Figure 3.2-2 Decision-Making Process for Project

Project Name	Location	Project Governance	Delivery Method	Picture
Las Vegas Monorail[1]	Las Vegas, NV	Non-Profit	P3 Revenue Risk	
Angels Flight[2]	Los Angeles, CA	Non-Profit	P3 Revenue Risk	
Napa Valley Wine Train[3]	Napa, CA	For Profit	P3 Revenue Risk	
Heathrow Express (UK)[4]	London, UK	For Profit	P3 Revenue Risk	

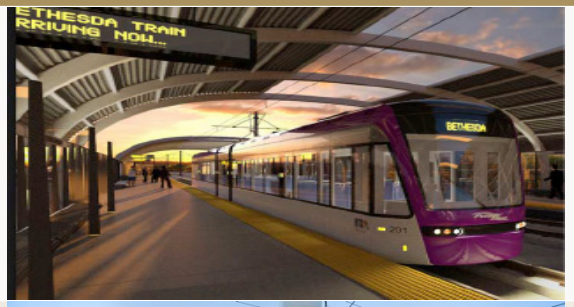
Source: Nossaman LLP, AECOM

Table 3.2-1 Example P3 Projects

Project Name	Location	Project Governance	Delivery Method	Picture
Gold Line[5]	Los Angeles, CA	JPA	Design-Build (Lump Sum)	
Expo Line[6]	Los Angeles, CA	JPA	Design-Build (Lump Sum)	
LAWA APM[7]	Los Angeles, CA	Municipal	P3 Performance Contract	
Purple Line[8]	Los Angeles, CA	Transportation Agency	Design-Bid-Build	

Source: Nossaman LLP, AECOM

Table 3.2-1 Example P3 Projects (Continued)

Project Name	Location	Project Governance	Delivery Method	Picture
Maryland Purple Line[9]	MD	Transportation Agency	P3 Performance Contract	
Houston Metro Solutions 2[10]	Houston, TX	Transportation Agency	PDA	
DFW Airport APM[11]	Dallas, TX	Transportation Agency	Design-Build-Operate-Maintain	

Picture Sources:
1, 5, 7, 9: Nossaman LLP
2: https://cdn.vox-cdn.com/thumbor/vLSrXijYPmS6ajaMtrxShlhkOeM=/0x0:1280x853/1200x800/filters:focal(538x325:742x529)/cdn.vox-cdn.com/uploads/chorus_image/image/55452705/61681400009_7afbf9ba80_o.0.jpg
3: http://winetrain.com/wp-content/uploads/2014/03/Napa-Valley-Wine-Train-Napa-Valley-Sign.jpg
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6: http://assets.inhabitat.com/wp-content/blogs.dir/1/files/2016/05/Los-Angeles-Metro-Santa-Monica.jpg
8: https://i.ytimg.com/vi/rKe8NKeJwBk/maxresdefault.jpg
10: https://upload.wikimedia.org/wikipedia/commons/5/54/METRO_Light_Rail3.jpg
11: http://www.bombardier.com/content/dam/Websites/bombardiercom/Projects/Innovia-APM-Dallas-2527_L.jpg/_jcr_content/renditions/original

Source: Nossaman LLP, AECOM

Table 3.2-1 Example P3 Projects (Continued)

3.2.2 Decision-Making Process for Project Delivery

One of the most important decisions made about a rail transit project is the plan to be used in contracting for its delivery and operation (Figure 3.2-2). There are a wide range of delivery options available. No one option is suitable for every project. Once the list of suitable options is delineated, a decision can then be made as to which is optimal.

3.2.3 Project Delivery

Rail transit projects in the United States historically have been awarded through conventional contracting, whereby the governing entity and its engineers design the project to 100% plans and specifications, divide the work up into multiple biddable construction packages, make awards to lowest responsible bidders, manage the contracts and their interfaces, pay contractors on progress, accept completed work and operate and maintain the completed system.

Over the last 10-15 years, the industry has opened to other forms of contracting. While many projects continue to be delivered conventionally, governing entities in a range of circumstances have sought to shift more risk and responsibility to the private sector, bundling together into single contracts project elements (i.e. civil, systems, vehicles) and/or project functions (i.e. design, construction, finance, operations, maintenance).

This has resulted in an array of now commercially accepted delivery methods, each of which has its own suitability criteria. Among the project delivery options to consider as alternatives to conventional delivery are:

- Progressive Design-Build / Construction Manager / General Contractor / Construction Management-at-Risk with public finance, operations and maintenance
- Design-Build (lump sum) with public finance, operations and maintenance
- Design-Build-Operate-Maintain
- P3 Performance Payment Contract
- P3 Revenue Risk Contract
- Pre-Development Agreement, which can lead to DB, DBOM or P3 option

P3 Performance Payment Contract

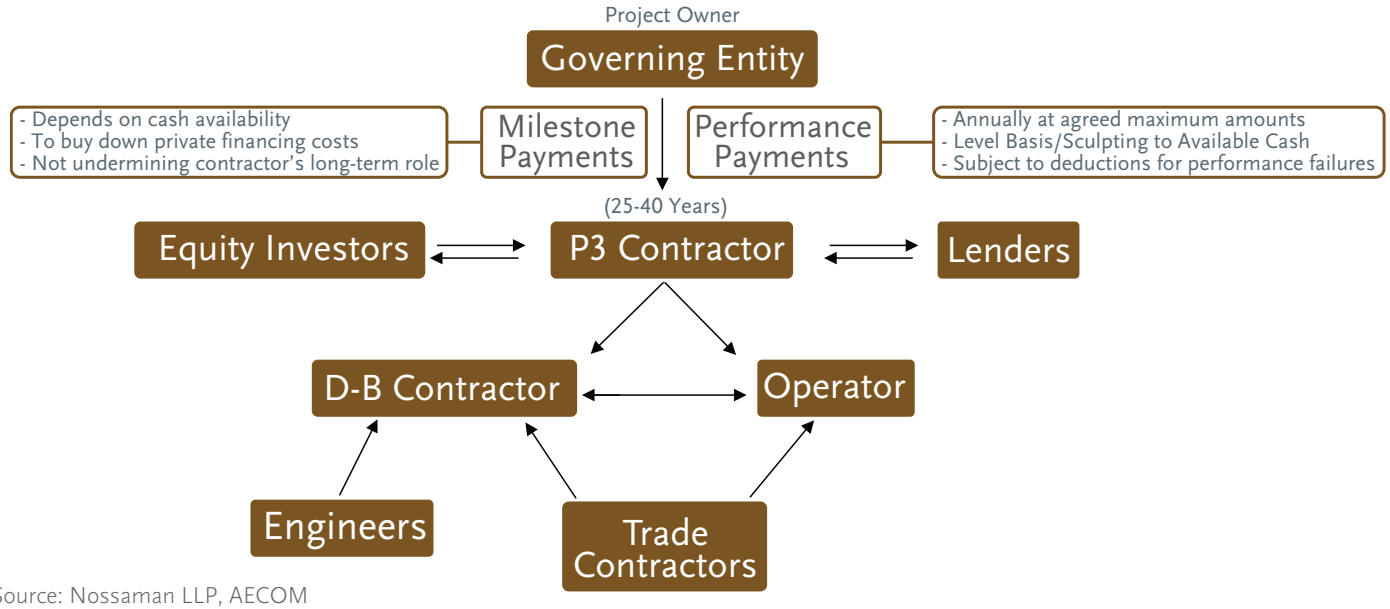
The key attributes of a P3 Performance Payment Contract are:

- Employing technical requirements well short of final design, focused more on performance/outcome based specifications, less on means and methods regulation, on maximizing private sector innovation opportunities and on capturing lifecycle cost efficiencies.
- Selecting the contractor on a best value basis, using lowest life-cycle cost as the price factor, along with technical factors.
- Procurements that can incentivize inclusionary practices for hiring, training and subcontracting at levels exceeding conventional procurements, favoring selection of contractors with favorable track records.
- Upon award, obligating the contractor to complete the project and to carry out operations and maintenance over the project's useful life (typically 25-35 years).
- Upon project completion, the governing entity making payments to the contractor over the duration of the contract at agreed maximum annual amounts, typically on a level basis, although amenable to sculpturing to match available cash.
- Providing, importantly, that the annual payment amounts are subject to deductions to the extent of any under-performance (e.g. safety, availability, maintenance, and other performance indices).
- Permitting the governing entity to make milestone payments, if cash is available, to buy down private financing costs, but typically not to the extent of undermining the contractor's long term "skin in the game".
- Governing entity, at all times, keeping project ownership, with the contractor handling the project back at the end of the term in a condition meeting contractually established specifications.
- Generally shifting more risks to contractors than conventional contracts, creating more cost and schedule certainty, as long as the governing entity timely carries out its retained responsibilities (e.g., ROW delivery).
- Particularly for $200 million to $2.5 billion capital projects, there is significant market interest in P3 Performance Payment Contracts, at commercially reasonable pricing, from internationally experienced companies.

The suitability criteria for Performance Payment Contracts generally include one or more of the following:

- The project's capital costs are sufficiently large enough to offer material economies of scale.
- The project is sufficiently complex to offer the governing entity significant benefits from shifting integration risk (i.e. between design and implementation, among civil construction, systems and vehicles).
- Governing entity will benefit from, and therefore want to incentivize:
  - Life-cycle cost efficiencies
  - Capital Expenditure (CapEx) and Operating Expenditure (OpEx) cost certainty
  - Cost savings and quality gains from private sector innovation
  - On-time or accelerated completion
- Operations, routine maintenance and/or capital maintenance can be efficiently separated from any existing systems.
- Outsourcing the operations and maintenance component doesn't create unmanageable collective bargaining agreement or related labor issues.
- A modest increase in cost of private capital (typically 90% debt/10% equity) over public sector borrowing is outweighed by:
- Shifting risks to a contractor, which can best manage and price
- Paying only to the extent the project performs as promised
- Contractor having financial "skin in the game," creating protection akin to a long-term "super-warranty".
- The project may have significant fare-box and advertising revenue potential, but the governing entity wishes to retain revenue risk and opportunity.
- The specified system and vehicle specifications can be set to attract sufficient competition (or, if not, consideration can be given acquiring that scope through a separate procurement and "stapling" that contract to the P3 Performance Payment Contract).

The major components and steps of the P3 Performance Payment Contract strategy is illustrated below (**Figure 3.2-3**).



Source: Nossaman LLP, AECOM

Figure 3.2-3 Performance Payment Contract Strategy

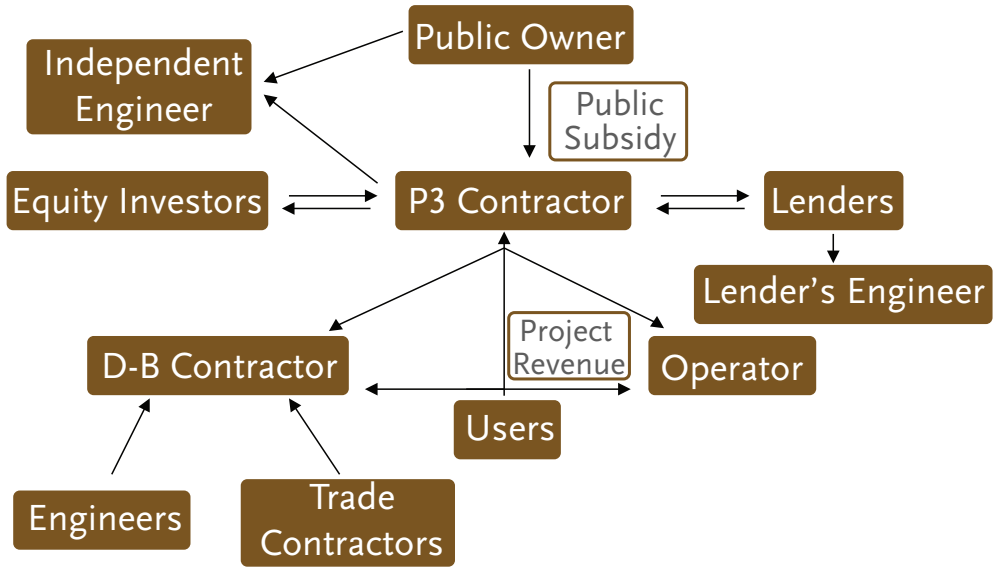
P3 Revenue Risk Contract

The key attributes of a P3 Revenue Risk Contract are similar to a P3 Performance Payment Contract, with certain refinements, including:

- Selecting the contractor on a best value basis, with lowest net present value public subsidy as the price factor, along with other technical factors.
- Instead of receiving performance payments, compensates the contractor through application of project revenues to CapEx, OpEx and finance costs, as supplemented by government funding only as agreed in advance.
- Maximizes the advancement of capital for construction from future project revenues (more than investment grade project revenue bonds would secure) and minimizes the need for other funding.
- Protects the governing entity (but not the contractor) from risk of revenue under-performance.
- Shares any actual revenue over-performance between the governing entity and the contractor.
- Employs a contract duration typically longer (40-50 years) than the 25-35 year duration of a Performance Payment Contract.
- Generally shifts more project-related risks to the contractor than a P3 Performance Payment Contract.
- Market interest is not as deep as for P3 performance payment contracts, but generally is still sufficient for real competition.

The suitability criteria for a P3 Revenue Risk Contract are similar to a P3 Performance Payment Contract, with refinements, generally including:

- - When fare-box and other project revenues are projected to exceed projected operations and maintenance costs (e.g. fare plan with premium pricing opportunities; cost of developing/operating infrastructure low relative to potential revenues; significant advertising and/or other project-generated ancillary revenues)
- - The governing entity is willing to allow private operator flexibility to set rates within contractual parameters
- - Higher cost of capital (typically 65-75% debt, 25-35% equity), compared to P3 performance contract, is outweighed by shifting risk of project revenue under-performance and securing more up-front capital for construction from future project revenues
- - Bidders able to attract equity/debt sufficient to meet P3 contract obligations
- The major components and steps of the P3 Performance Payment Contract strategy is illustrated below (**Figure 3.2-4**).



Source: Nossaman LLP, AECOM

Figure 3.2-4 Revenue Risk Contract Strategy

Pre-Development Agreement

In hard-bid procurements, whether conventional or alternative, governing entities engage with firms capable of delivering and financing their project only when preliminary engineering, environmental clearance and feasibility analyses have progressed sufficiently to the point that the project is well-defined and funded. Governing entities sometimes feel such delivery methods produce less than optimal outcomes, reflecting inadequate innovation or unaffordability.

In such instances, governing entities seek to bring a developer into the project definition process and feasibility analysis at a much earlier stage, in an effort to capture expertise and innovation directly from companies that has actually delivered such projects before.

This form of project delivery, via early contractor involvement, is frequently called a Pre-Development Agreement. Among the key attributes of a PDA are:

- Deploying a competitive procurement to select a developer, completed well before the environmental process and preliminary engineering are complete
- Selecting a developer based on qualifications, conceptual development/ finance plans and an offer to cost-share during the pre-feasibility phase
- Upon award, the governing entity and selected developer collaborating on a joint work plan seeking to achieve and accelerate project legal, technical and financial feasibility
- An agreement including "off ramps" at key points if either party wishes to terminate
- The governing entity retaining complete control over the environmental process and all other decision-making, using developer expertise for technical and financial innovation
- The governing entity owning all work-product
- If the joint work plan results in a project that the governing entity deems feasible, the parties entering into good faith negotiations for a contractually limited period on the terms of an implementation agreement
- The government sponsor sometimes securing a confidential "shadow bid" to use as a reference in the negotiations
- If an implementation agreement is not reached satisfactory to the governing entity, it may terminate and pursue other means of project delivery
- If an agreement is reached, it may take the form of any delivery option, including Design-Build, Design-Build-Operate-Maintain, P3 Performance Payment Contract or P3 Revenue Risk Contract
- If project is deemed infeasible or negotiations unsuccessful, the governing entity may or may not be obligated to compensate the developer, depending upon initial PDA commitments

Among the suitability criteria favoring use of a PDA are:

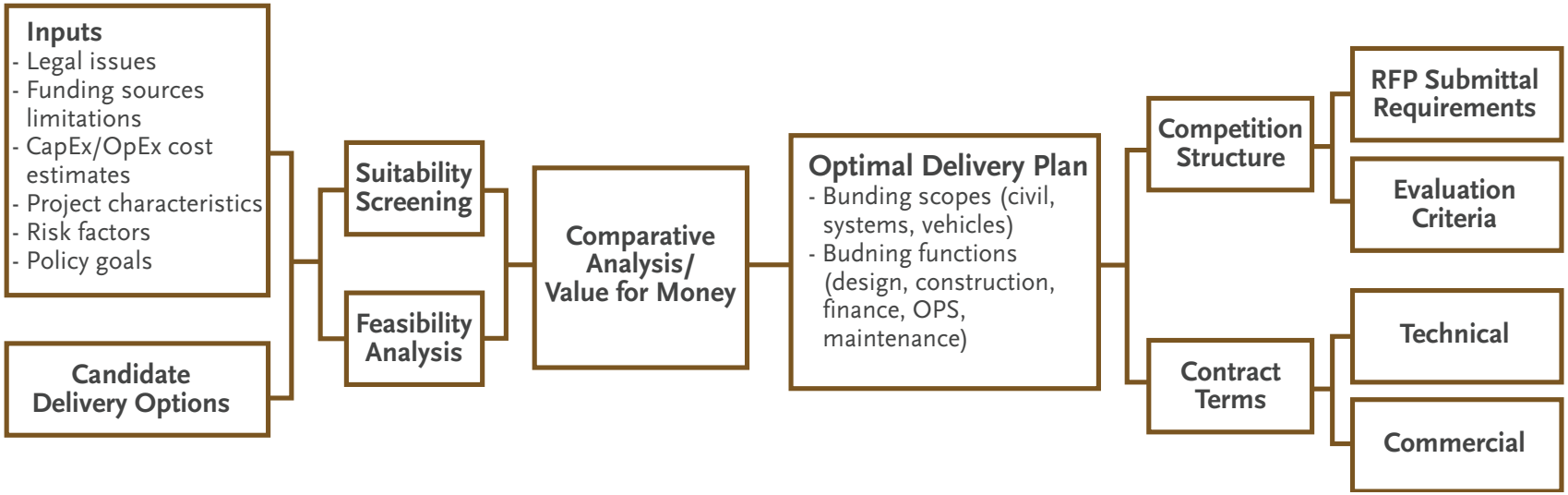
- Governing entity sees value in securing developer innovation and sweat equity during the project definition/feasibility/concept phase, much earlier than other forms of project delivery
- The benefit of early contractor involvement justifies reliance on a qualifications-based competition process, with subsequent negotiations in lieu of hard-bid price competition

3.2.4 Delivery Strategy Summary

There are multiple approaches to implementing a project. However, the right approach to provide the highest likelihood of success will be based on City of Inglewood's objectives.

Ascertaining this optimal approach for a given project depends upon careful establishment of the public policy goals the project is to serve, an assessment of the project's own unique characteristics and an understanding of its legal and financial constraints. Like other endeavors, these inputs are then properly subject to metrics, both qualitative and quantities, in the form of what is called a Value for Money Analysis . This leads to choosing, from among available options, the optimal governance and project delivery method.

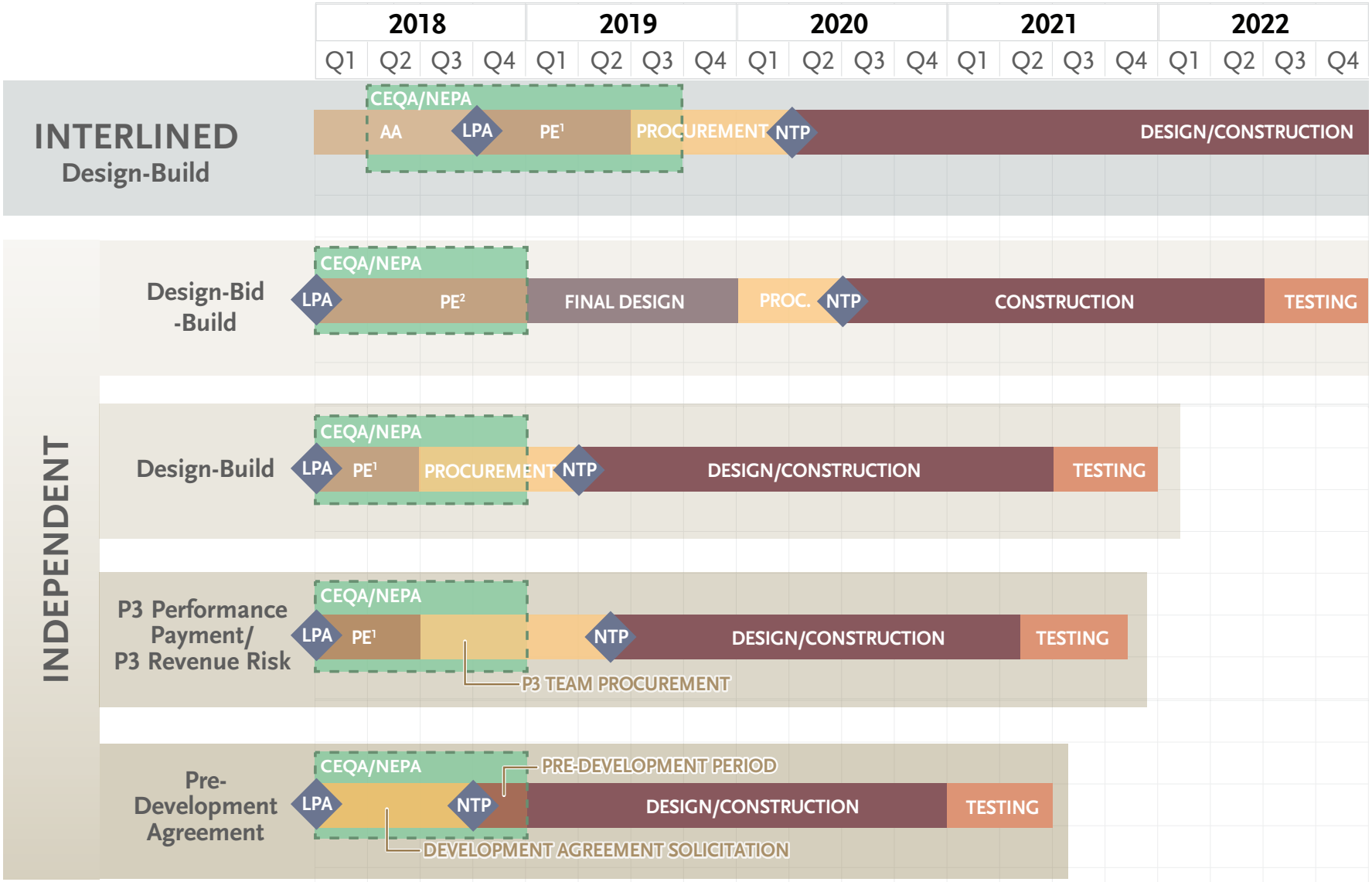
When chosen, the outputs are the procurement documents themselves, as depicted below (**Figure 3.2-5**).



Source: Nossaman LLP

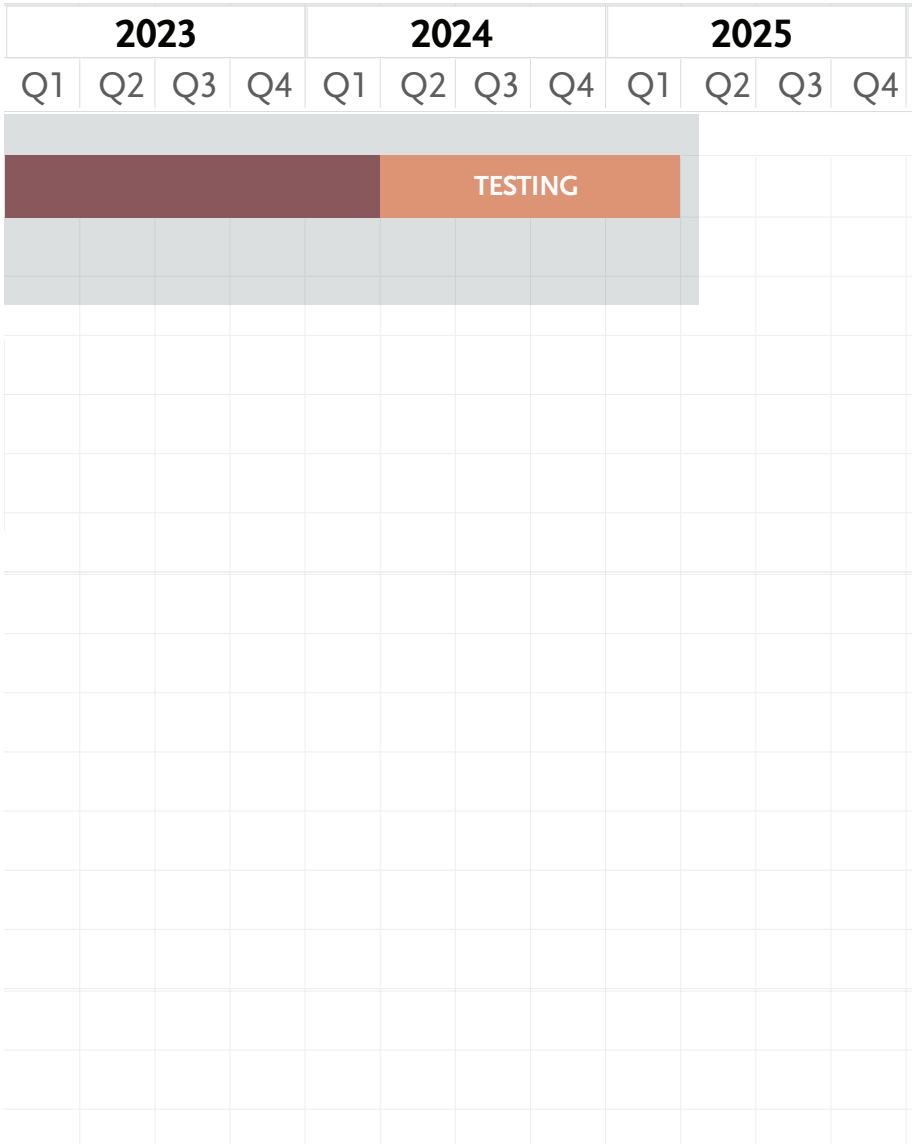
Figure 3.2-5 P3 Delivery Strategy Summary

3.3 Preliminary Project Delivery Schedule



Source: AECOM

Figure 3.3-1 Project Delivery Schedule under Different Methods



Abbreviations:

AA: Alternative Analysis

PE: Preliminary Engineering

LPA: Locally Preferred Alternative

NTP: Notice to Proceed

P3: Public Private Partnership

Notes:

1. PE in support of CEQA/NEPA and DB bridging documents.
2. PE to advance design and in support of CEQA/NEPA.

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PART IV

NEXT STEPS

In order to advance implementation of an independent operability scenario, the City of Inglewood should seek environmental and financial consulting to resolve the following:

A. Environmental Clearance

Potential project(s) will need to be cleared through the California Environmental Quality Act (CEQA) and possibly the National Environmental Protection Act (NEPA) should federal funds be sought.

B. Implementation of Financing District

County of Los Angeles Participation: It will be critical to enter into early discussions with the County of Los Angeles to determine the extent of its willingness to participate in tax increment funding, the retirement of former Redevelopment Agency obligations and to determine how any restrictions (e.g., affordable housing requirements in the EIFD area) may affect the financing plan. All of these recommended steps will be needed to remove the current funding level uncertainties and to move toward formation of a viable and credible Infrastructure Financing Plan, formation of an EIFD and eventual project delivery.

City Budget Analysis: The City will need to analyze its budget requirements to determine the extent to which it can contribute additional stadium project revenue and other City- controlled revenue (e.g., Proposition and Vehicle Tax License tax backfill etc.) to the EIFD. It must also aggressively pursue and establish any federal and state grants, loans and other funding sources at the earliest possible date.

C. Engage Developer

The City will need to consult with the developers of the stadium and surrounding venues and housing need to be initiated to assure coordination of effort and compliance with any potential development requirements. This should also include further in-depth discussion with the potential NBA stadium developer and exploration of the timing and feasibility of EIFD inclusion or some form of adjunct project or EIFD start-up funding.

D. Public & Stakeholder Outreach

Outreach/ workshops with public and private stakeholders should be conducted to build project support and transparency that will carry through to project delivery.

Both the environmental review and the formation of the EIFD will need to take place before the completion of the first phase of the Development to take advantage of any tax increment generated. Therefore, schedule needs to be maintained to assure completion of environmental and the initial steps to EIFD formation are adequately accounted for. This potential connection is not included in Metro's Long Range Transportation Plan and as such, no Metro funding is identified for it, including any entitlement and pre-construction activities.