

FINAL

IRVINGTON BART STATION

MEASURE BB PROJECT SCOPING REPORT

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City of Fremont
Alameda CTC Measure BB
Final Project Scoping Report

Acknowledgments

City of Fremont Staff

Hans Larsen – Public Works Director
Jim Pierson – Special Assistant
Mirabel Aguilar – Associate Civil Engineer
Rene Dalton – Associate Transportation Engineer
Roger Ravenstad – City Landscape Architect

BART Staff

Paul Medved – Group Manager
Susan Poliwka – Senior Planner - Stations
Zhiming Fan – Project Manager
Donna Lee – Principal Planner - Grants
David Silva – Principal Engineer

Consultant Team

Jeff Watson – Project Advisor, HNTB
Rick Phillips – Urban Design, HNTB
Daniel Parker-King – Civil Engineering, HNTB
Shams Bashar – Civil Engineering, HNTB
John Mountin – Civil Engineering, HNTB
Shannon Gaffney – Funding, HNTB
Adrian Filice – Funding & Project Development, HNTB
Kristen Johnson – Transportation Planning, HNTB
Rosanna McGuire – Environmental Planning, HNTB
Mike Davis – Environmental Planning, ICF International
Christine Fukusawa – Environmental Planning, ICF International

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Table of Contents

Section 1. Executive Summary	1
Section 2. Project Description	5
2.1 Purpose, Needs, and Benefits	7
2.1.1 Purpose	7
2.1.2 Needs	7
2.1.3 Benefits	9
2.2 Project Delivery	10
Section 3. Background and History	11
3.1 Timeline of Previous Studies and Plans	11
3.2 Other Related Projects	12
3.2.1 BART Warm Springs Extension (WSX)	12
3.2.2 East Bay Greenway (EBGW)	12
Section 4. Station Area & Existing Conditions	15
4.1 Site Plan	15
4.1.1 Existing WSX FEIS Site Map	15
4.2 Land Use	18
4.3 Environment	21
4.4 Transportation	22
4.5 Constraints and Opportunities	22
4.6 WSX Lessons Learned	25
Section 5. Concept Development	27
5.1 Base Assumptions	27
5.2 Bicycle and Pedestrian Access	28
5.2.1 Bicycle and Pedestrian Access and Circulation	28
5.2.2 East Bay Greenway	29
5.3 Options to Improve West Side Station Access	30
5.3.1 West Side Station Access Road Option 1 – Traffic Circle	31
5.3.2 West Side Station Access Road Option 2 – Bicycle and Pedestrian Greenway	31
5.3.3 West Side Station Access Road Option 3 – Infill Development	32
5.3.4 West Side Access Road Recommendations	33
5.4 Parking	34

5.5	Transit-Oriented Development (TOD)	35
5.5.1	Proposed Development	35
5.5.2	Development Opportunities	35
5.5.3	Property Acquisitions	37
5.6	Historic Properties	38
5.7	Stormwater Treatment and Retention	40
5.8	Wall Stabilizations	43
5.8.1	Gallegos Winery	43
5.8.2	Hill Slope Stabilization	44
5.9	Recommendations for Further Study	45
Section 6.	Environmental	46
6.1	Historic Properties	46
6.2	Level of Environmental Document Required	46
Section 7.	Project Delivery Plan	48
7.1	Project Management	48
7.1.1	Delivery Methods	48
7.2	Delivery Plan	49
7.3	Cost Estimate	49
7.4	Risks	50
7.5	Funding	51
7.5.1	Early History	51
7.5.2	Measure BB Background (2014)	51
7.5.3	Alameda CTC's 2017 Comprehensive Investment Plan (CIP)	52
7.5.4	Current Project Status	52
7.5.5	Other Funding Considerations	54
7.5.6	Funding Plan for Irvington BART Station	57
7.5.7	Funding Plan for EBGW Bicycle/Pedestrian Bridge at Irvington BART Station	57

Table of Figures

Figure 1: Irvington Station 2006 Conceptual Site Plan	6
Figure 2: City Fremont’s Priority Development Areas.....	8
Figure 3: City of Fremont’s East Bay Greenway Map.....	14
Figure 4: 2003 BART WSX SEIR Optional Irvington Conceptual Station Section (facing south).....	15
Figure 5: Irvington Station 2006 Conceptual Site Plan	17
Figure 6: Irvington Station Area Land Use Map	18
Figure 7: Irvington Community Plan Area Land Use Map.....	20
Figure 8: Historic Properties	21
Figure 9: Site Plan Constraints.....	24
Figure 10: Bicycle and Pedestrian Access.....	29
Figure 11: West Side Station Access	30
Figure 12: West Side Station Access Road Option 1 – Traffic Circle.....	31
Figure 13: West Side Station Access Road Option 2 – Bicycle/Pedestrian Greenway	32
Figure 14: West Side Station Access Road Option 3 – Infill Development.....	33
Figure 15: Potential Parking Locations.....	34
Figure 16: San Leandro BART TOD	35
Figure 17: Potential Future TOD and Retail Locations	36
Figure 18: Irvington Station Area TOD Overlay.....	36
Figure 19: Irvington Station Project Area.....	38
Figure 20: Gallegos Winery.....	39
Figure 21: Site Drainage.....	42
Figure 22: Historic Gallegos Winery Coffe Walls.....	43

Appendices

APPENDIX A	Detailed Cost Estimates
APPENDIX B	Additional Funding Sources
APPENDIX C	City of Fremont Funding Request for Irvington BART Station Scoping/Planning
APPENDIX D	Concept Plans

Section 1. Executive Summary

This Scoping Study defines the delivery strategy for the next phases of investment in the Irvington Bay Area Rapid Transit (BART) Station project, a collaborate effort between the City of Fremont (City) and the Bay Area Rapid Transit District (BART) to build an intermodal hub anchoring the historic Irvington District in Fremont.

The conceptual site planning presented in this study is designed to inform the next phase of station development work, which will include definition of the site plan, development of a station area plan, and the environmental process. The plans, designs, and conclusions contained within this report should be considered preliminary recommendations for further study during the next phase of project development.

Building a third BART station in Fremont is imperative to address the increased transportation needs of the growing City and provide convenient access to BART for new residents and employers. The new station will distribute BART demand over three Fremont stations while prioritizing multi-modal access within the City of Fremont and to the BART system. Transit-oriented development (TOD) opportunities will be explored and designed to enhance Fremont's quality of life by increasing housing, spurring economic development, and enhancing community access and connectivity.

The project will provide the following benefits to the City of Fremont, Alameda County, and the Bay Area region:

1. Increase Ridership and Relieve Congestion by Providing Additional Access to BART System
2. Utilize TOD Strategies to Increase Economic Activity in Irvington District PDA
3. Optimize Parking Capacity and Innovative Land-Use
4. Support a Clean Environment by Reducing Vehicle Miles Travelled (VMT) and Greenhouse Gas (GHG) emissions

The Irvington BART Station will be the “Central Station” in Fremont, located on an 18-acre site in the historic Irvington District approximately half-way between the existing Fremont BART station and the Warm Springs/South Fremont BART station. The new Irvington BART Station site development will include the station, bus bays, vehicle drop-off and pick-up (kiss and ride), paratransit access, pedestrian and bicycle access, parking, and transit-oriented mixed-use development. While not included in the original site plan, structured parking is considered for future development to consolidate parking needs in order to optimize land use for TOD. Two historic sites near the station, the Gallegos Winery and Ford House, provide adaptive reuse opportunities to incorporate plazas and open space in the overall site plan.

The Irvington BART Station area includes a portion of the East Bay Greenway (EBGW) trail: a proposed pedestrian bridge over BART and Union Pacific Railway tracks connecting two segments of the EBGW, increasing community and regional connectivity to the regional trail. The City is actively working on development of two other EBGW projects in Fremont, including the I-880

Bicycle/Pedestrian Bridge and Trail Project and the Central Park to Alameda Creek section of the EBGW. Each of the aforementioned projects is detailed in separate scoping studies currently under development.

In 2014, more than 70% of Alameda County voters approved Measure BB, a thirty-year sales tax measure dedicated to transportation improvements in Alameda County. Measure BB funds in the amount of \$120 million are dedicated to the Irvington BART Station Project. Alameda CTC's Comprehensive Investment Plan (CIP) 2016 Update programmed \$2.66 million to the Irvington BART Station in fiscal year 2017 to define the site plan, prepare a Station Area Plan, and update environmental documents in compliance with the California Environmental Quality Act (CEQA).

The Irvington Station project will be ready to advance into the preliminary engineering phase in fiscal year 2018 as demonstrated by the cost estimates, schedule, funding, and delivery plan refined in this Scoping Study. An overview of the Delivery Plan is provided in **Table 1** below. A detailed Project Delivery Plan can be found in Section 7 with detailed cost estimates included in this report as **Appendix B**.

Table 1: Irvington BART Station Project Delivery Summary

(in thousands, year of expenditure)

<i>Phase</i>	<i>Estimated Cost</i>	<i>Estimated Fiscal Year of Completion</i>	<i>Delivery Lead</i>
Scoping/Planning: Preliminary Engineering & Environmental	\$ 2,660	2018	City and BART
Preliminary Engineering	\$ 2,605	2019	BART
Right-of-Way	\$ 34,330	2020	City/BART
Final Design	\$ 9,336	2020	BART
Construction	\$ 86,339	2024	BART
Total Project Cost	\$ 135,270	2024	City/BART

The 2016 Alameda Countywide Transportation Plan's (CTP) Financially Constrained Projects and Programs List includes the Irvington BART Station at a total cost of \$140.3 million, funded with \$120 million in Measure BB allocations and \$20.3 million in future discretionary funds. The current cost estimate for the Irvington BART Station project is \$135.3 million, including escalation, agency costs, and risk costs in the appropriate phases, but excluding the costs associated with the East Bay Greenway. In support of the \$120 million Measure BB investment, the City of Fremont will be requesting \$15.3 million in future discretionary funding to complete the Irvington BART Station project.

The Irvington BART Station will include a bicycle/pedestrian bridge connecting two segments of the East Bay Greenway (EBGW) regional trail. The previously constructed segment from Central Park to just north of the Irvington Station runs along the west side of the BART and Union Pacific Railroad

(UPRR) tracks. The alignment for the segment between the Irvington Station and South Grimmer Boulevard on the east side of the BART and UPRR tracks was reserved by the Warm Springs Extension (WSX). A bicycle and pedestrian bridge at the Irvington BART Station is needed to connect the existing EBGW segment on the west side of the BART and UPRR tracks with the future segments of EBGW on the east side of the BART and UPRR tracks.

Table 2: EBGW Bicycle/Pedestrian Bridge at Irvington Station Project Delivery Summary
(in thousands, year of expenditure)

<i>Phase</i>	<i>Estimated Cost</i>	<i>Estimated Fiscal Year of Completion</i>	<i>Delivery Lead</i>
Final Design	\$ 1,508	2020	City
Construction	\$ 14,846	2024	City
Direct Project Costs	\$ 16,355	2024	City
Agency Costs	\$ 1,477	2024	City
Total Project Cost	\$ 17,832	2024	City

The City of Fremont is seeking \$16.4 million in Measure BB funding targeted towards the completion of three major regional trails, including EBGW, for this project. The City will provide a local contribution of \$1.5 million to support agency costs.

Section 2. Project Description

The project proposes to construct the new Irvington BART Station, an infill station in the City of Fremont approximately half-way between the existing Fremont BART station and the future Warm Springs/South Fremont BART station. The optional Irvington BART station was originally proposed as part of the Draft Supplemental Environmental Impact Report (SEIR) for the BART Warm Springs Extension (WSX) in March 2003, dependent on funding availability. The site plan (**Figure 1**) reflects the Draft 2003 SEIR/2006 Final EIS WSX Optional Irvington BART concept plan. The next phase of this project will determine the final site plan and surrounding access and development potential. This Scoping Study includes recommendations for further consideration during definition of the site plan, development of a Station Area Plan, and preparation of the environmental update.

The station area and associated station features will be designed and built according to the most current BART Facility Standards (BFS) and most recent BART policy recommendations. Pursuant to BART's Station Access Policy, the station area design will primarily prioritize pedestrians, then bicyclists, transit, vehicle drop-off and pick-up, and finally vehicle parking. The upcoming Station Area Plan and BART's Transit-Oriented Development Policy will inform design of the station area's TOD strategies in order to increase ridership, enhance quality of life around the station, and reduce the access mode share of automobiles by enhancing multi-modal access to the station.

Station Area

The Irvington BART station area will be located on an approximately 18-acre site in Fremont's historic Irvington neighborhood. The station will overlap the Union Pacific Railroad (UPRR) trackway parallel to Osgood Road, just south of Washington Boulevard. The station alignment will be along the existing BART railway extending from Fremont BART station, the end of the current Fremont BART line, underground below Central Park and parallel to the active UPRR tracks to the new Warm Springs/South Fremont Station, which is scheduled to complete construction in late 2016.

The new Irvington BART station area features will include:

- Irvington BART station with two-side entrance system
- Bus intermodal facilities for local and regional bus systems
- Vehicle Drop-Off and Pick-Up (Kiss and Ride) facilities
- Shared Mobility (i.e. Lyft and Taxi) facilities
- Vehicle parking access and facilities
- Bicycle and pedestrian access and facilities
- Bicycle parking/lockers
- Transit-oriented mixed-use development

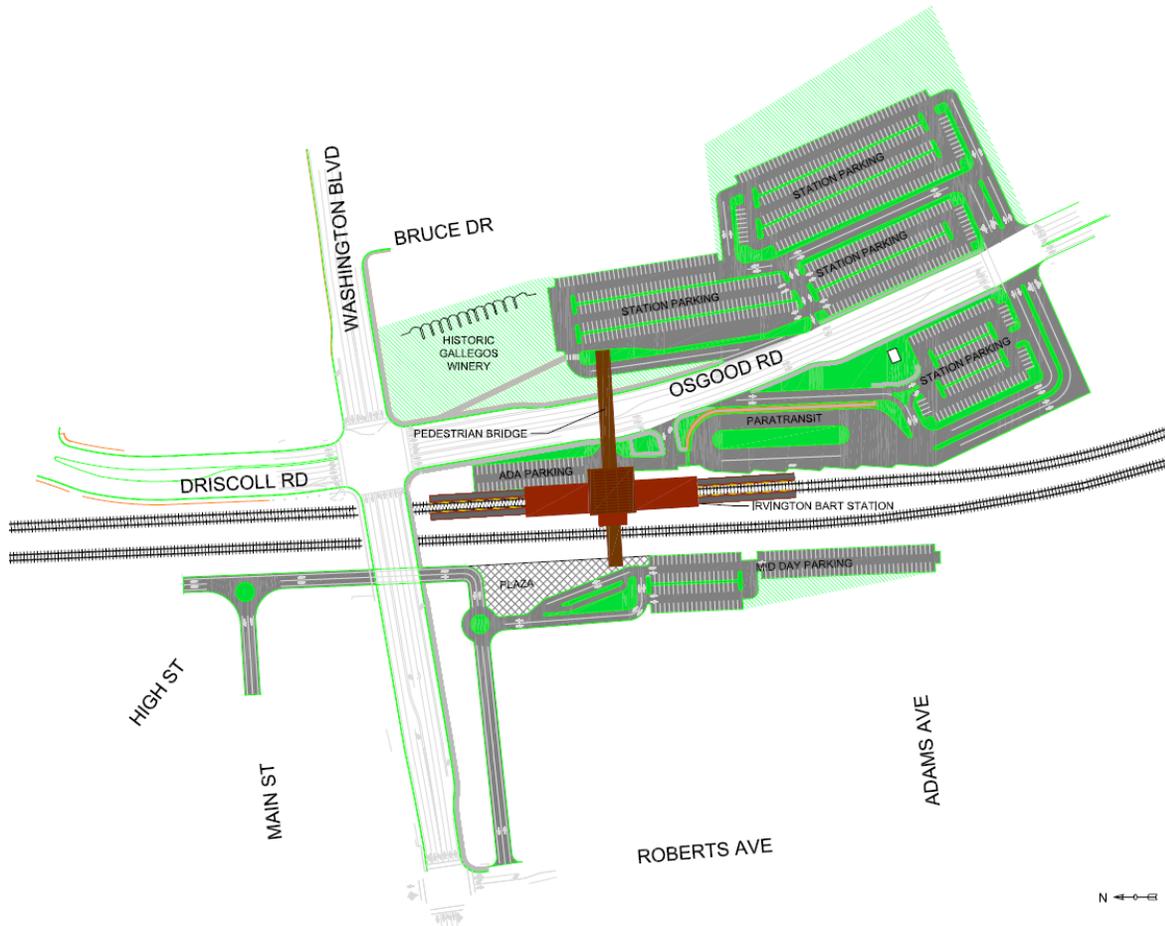
Several historic sites, including the Gallegos Winery and the Historic Ford House, are also located within the station area and will be protected and integrated into the station area plan. The Hayward Fault line intersects the station area at a north-south angle, along the hill slope east of Osgood Road.

Irvington BART Station

The proposed two-story, side-platform BART station design will feature an elevated concourse with pedestrian bridges extending to the east and west above Osgood Road and above the active UPRR trackway (see **Figure 1**). Station site access will be provided on both the east and west sides, from Osgood Road and from Roberts Avenue/Washington Boulevard. Elevated walkways from the parking facilities on the east side of Osgood Road and from multi-modal access facilities on the west side of Osgood can be accessed from stairs, escalators, and elevators. An elevated walkway over the active UPRR tracks will connect to a pedestrian plaza and parking facilities west of the station.

Each pedestrian bridge will lead from the central fare collection area at the elevated concourse level into the ground-level BART station platforms which will be constructed on the WSX extension alignment. The station platform will extend for a length of approximately 700 feet south of Washington Boulevard to accommodate 10-car trains. Fare collection facilities will be identical to those used in the existing BART system.

Figure 1: Irvington Station 2006 Conceptual Site Plan



Source: HNTB 2016 interpretation of Original Site Plan in BART Warm Springs 2006 FEIS

2.1 Purpose, Needs, and Benefits

2.1.1 Purpose

The construction of the new Irvington BART station will increase convenient multi-modal access to BART in the City of Fremont and southern Alameda County and facilitate transit-oriented development in the Irvington District Priority Development Area (PDA). The Irvington Station project is currently included in the Metropolitan Transportation Commission's (MTC) Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS). The purpose of the project in the RTP is to facilitate transit-oriented development in the Irvington area as well as relieve congestion at Fremont and Warm Springs/South Fremont BART Stations.

2.1.2 Needs

Although included in the original 1960s BART system plan, the Irvington BART Station was shown in the 2006 BART WSX Final EIS, and in the 1998 City of Fremont Redevelopment Plan, as an optional station due to inadequate funding. Available funding did not permit for the development of the station until the adoption of Measure BB in 2014, which committed \$120 million for the Irvington BART station. The current station planning effort builds off of previous community support and local planning for a station in the Irvington area.

BART Ridership Expansion

BART's ridership forecasts project up to 500,000 system-wide daily riders by 2025 and 600,000 daily riders by 2040, a nearly 40% increase from current estimates of 430,000 daily riders.¹ Based on FY2015-FY2024 estimates, ridership is expected to steadily increase between 1% and 2% annually, requiring additional system capacity improvements.² In order to accommodate new riders, the BART system will need to add additional stations, such as Irvington.

New Growth in the Irvington Priority Development Area

Significant new growth is also planned for the Irvington sub-area. As a part of the MTC/Association of Bay Area Governments (ABAG) Plan Bay Area, cities and counties nominated infill development areas near transit as Priority Development Areas (PDAs). PDA's are preferred, strategic locations for new growth in the nine-county Bay Area by 2040. The City of Fremont nominated the Irvington area as a PDA, indicating local commitment to developing more housing and amenities close in a pedestrian-friendly environment served by transit. A map of Fremont's PDAs is presented as **Figure 2**.

The 1,149 net acre Irvington District is categorized under the Plan Bay Area's PDAs as a *Transit Town Center*, a local-serving center of economic and community activity.³ The planned vision includes a walkable neighborhood with mixed use development, infill housing and walking and biking connectivity improvements around the proposed BART Station.⁴

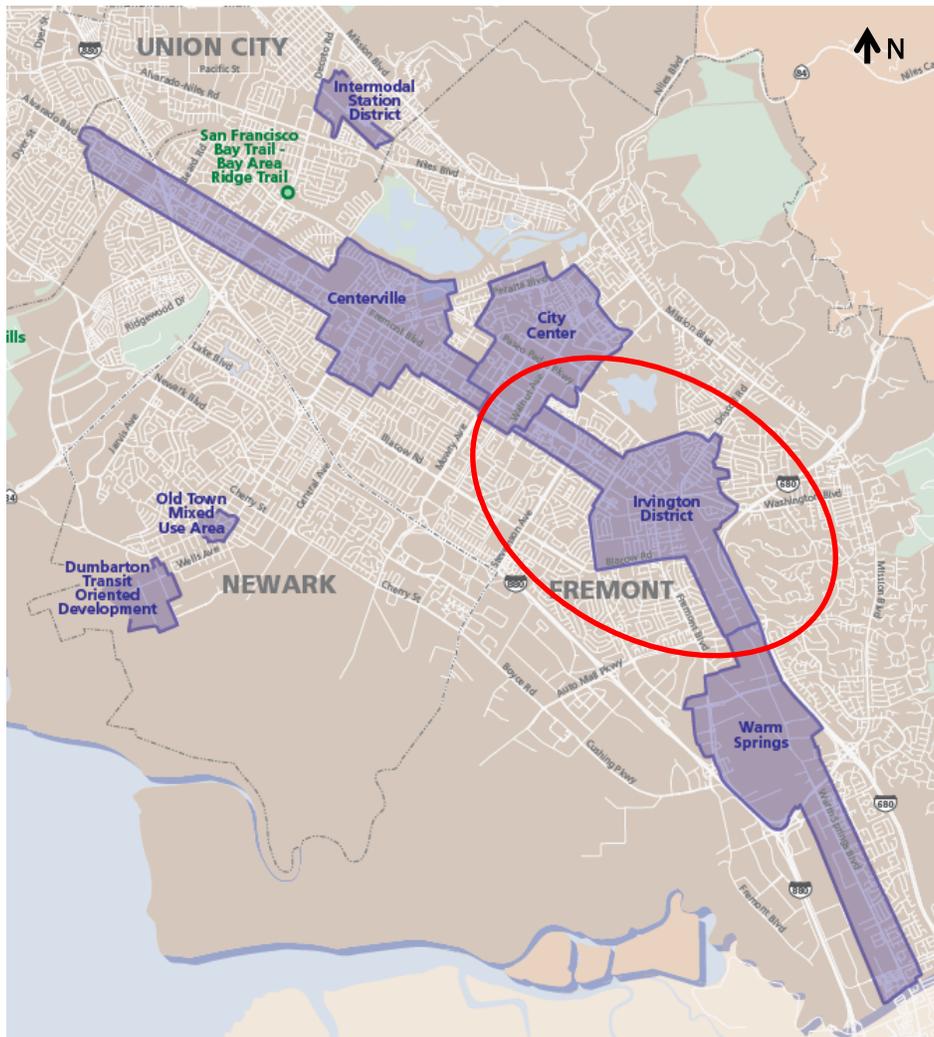
¹ BART, *Building a Better BART: Investing in the Future of the Bay Area's Rapid Transit System*, 5, July 2014.

² BART, *FY15-FY24 Short Range Transit Plan and Capital Improvement Program*, 4-5, October 2014.

³ Alameda County, *PDA Investment and Growth Strategy*, 2-4, March 2013.

⁴ MTC/ABAG, *Plan Bay Area, Visions for Priority Development Areas, Jobs-Housing Connection Strategy*, May 2012.

Figure 2: City Fremont's Priority Development Areas



Source: 2012 Alameda Countywide Transportation Plan

BART Parking Congestion

The Fremont BART Station is currently the only existing BART Station in Fremont and experiences tremendous parking congestion, some of which will be relieved when the Warm Springs/South Fremont Station opens later this year. Due to Fremont Station's location as the current end of the BART Fremont-Daly City line and its primarily suburban surrounding land use, the majority of riders access the station by auto-oriented modes, straining parking lot capacity and indicating the need for additional parking facilities and additional BART stations in Fremont, like Irvington Station. BART estimates that the Fremont BART station reaches capacity by 6:30am.⁵ By 2025, an additional approximately 3,200 spaces will be needed to accommodate BART core system parking demand.⁶

⁵ BART, Fremont Station, <http://www.bart.gov/stations/frmt>.

⁶ BART, Silicon Valley Rapid Transit Corridor Final EIR: BART Core System Parking Analysis, 5.2-3.

BART Bicycle and Pedestrian Connectivity

BART's Station Access Policy was adopted in June 2016 and includes the goals of encouraging new and emerging markets and strengthening TOD and sustainable communities to optimize the use of BART system capacity, while prioritizing the most sustainable modes. The Policy designates pedestrian access as the primary priority BART investment at the existing Fremont BART Station, with bicyclist, kiss and ride, and parking as a secondary priority. Pedestrian and bicycle access are the primary and secondary priorities system-wide.

2.1.3 Benefits

Increase Ridership and Relieve Congestion by Providing Additional Access to the BART System

The Irvington BART station will help expand BART ridership and relieve system congestion, adding a third local station in the City of Fremont and adding an additional 2,600 new daily BART trips. Irvington station will be an infill station providing increased access to the City of Fremont and the local Irvington community, and will serve as the penultimate station on the Fremont BART line in southern Alameda County, until the extension to Silicon Valley opens. Transit oriented residential and mixed use developments strategically co-located around access points to and from the station will capitalize on opportunities for value capture by creating "placemaking" destinations oriented around the station area.

Increased Transit-Oriented Development

As part of the Fremont General Plan, the City designated the area within a ½ mile radius of the proposed Irvington BART station as a Transit Oriented Development (TOD) area.⁷ Fremont's four TOD areas, Centerville, City Center, Irvington, and Warm Springs, concentrate on the city's highest density development near transit and mixed use commercial uses. More than 10,000 new housing units and more than 20,000 new jobs are planned for the City of Fremont's three PDAs – Centerville, City Center and Irvington District.⁸ In the Irvington District, more than 700 housing units and more than 16,000 square footage of commercial space had been built or were in the pipeline as of 2013.⁹ The new station will help provide convenient regional transit access to the area's new residents and employers, assisting in the creation of a Transit Town Center as designated in Plan Bay Area.

Optimized Parking Footprint

Evolving BART access priorities in addition to significant parking capacity pressures and transit-oriented development opportunities around the station area have resulted in a reevaluation of BART parking needs. The strategic use, location and allotment of parking can optimize land values around the station and support multi-modal access to the station such as walking, biking, or bus.

BART's Station Access Policy includes Station Typology for each station, though Irvington Station does not yet have a designated station type as it is not yet part of the BART system. However, as an infill station, Irvington will sit between two stations that are included in BART's Station Typology: Fremont and Warm Springs/South Fremont. The Fremont Station is currently categorized as intermodal – auto-reliant and the Warm Springs/South Fremont Station is categorized as auto

⁷ City of Fremont General Plan, 2-35, December 2011.

⁸ Alameda County, PDA Investment and Growth Strategy, 2-20, March 2013.

⁹ Alameda County, PDA Investment and Growth Strategy, 3-10, March 2013.

dependent. As a multi-modal transit town center conveniently located near an interstate, the Irvington BART site plan offers innovative strategies to create a pedestrian-friendly station area while providing sufficient parking to what is likely to be an intermodal – auto-reliant station.

Reduced Vehicle Miles Travelled (VMT) and Greenhouse Gas Emissions (GHG)

The proposed project is considered a regional air quality benefit, by decreasing emissions of local air quality contaminants and greenhouse gas emissions (GHG) with the reduction of vehicle miles traveled (VMT).¹⁰ The project will contribute to a healthier and cleaner environment and support regional pollution-reduction goals.

2.2 Project Delivery

The Irvington BART station project will be managed by the Bay Area Rapid Transit District (BART) and the City of Fremont. While the City will lead the site planning and Station Area Plan efforts, BART and the City will co-lead the environmental process. BART will become the lead for the design and construction phases, with coordination from the City of Fremont. Other stakeholders will be engaged during the environmental process and later phases as determined by BART and the City of Fremont.

Table 3: Delivery Lead

Phase	Lead
Scoping/Planning Site Plan Definition, Station Area Plan, Updated Environmental Document	<ul style="list-style-type: none"> • City will manage site plan, station area plan, and related community outreach • BART will manage the environmental process
Preliminary Design	BART
Right-of-Way (ROW)	City/BART – City will transfer rights to BART by deed or permanent easement.
Final Design	BART
Construction	BART
Operations and Maintenance	BART

¹⁰ BART, Draft Supplemental Environmental Impact Report, BART Warm Springs Extension, 3.11-15, March 2003.

Section 3. Background and History

3.1 Timeline of Previous Studies and Plans

The Irvington BART Station has been identified as a community need and incorporated in planning documents and studies for nearly 25 years. The City of Fremont has particularly focused on strengthening the historic Irvington District, one of Fremont's five original towns, while maintaining the history and cultural diversity of the community's character.

The following studies have supported project planning and development for the Irvington BART Station in order to get to the environmental update and site plan definition phase. A timeline of more recent project background and selected relevant supporting studies is below.

- 1992** BART Warm Springs Extension Environmental Impact Report (EIR) – Included both the Irvington and Warm Springs Stations along the planned extension of the Fremont BART line.
- 1993** Hayward Fault Investigation Report
- 2001** BART Warm Springs Funding Plan – Due to fiscal constraints, the funding plan included the Warm Springs BART Station only and relegated Irvington Station to “optional,” dependent on available funding.
- 2003** BART Warm Springs Supplemental Environmental Impact Report (SEIR) – Concluded construction of Irvington Station would be more cost effective if done in conjunction with construction of Warm Springs Station.
- 2003** Archaeological Testing at the Gallegos Winery – An archaeological testing program was implemented at the Gallegos Winery to mitigate impacts caused by the grade separation project at Washington Boulevard and Osgood Road (further discussed in **Section 3.2.2.**)
- 2005** Irvington Concept Plan – Included Irvington BART Station as a key element of the Irvington District.
- 2006** BART Warm Springs Final Environmental Impact Statement and 4(f)/6(f) Evaluation, BART Warm Springs released by BART and FTA in June 2006.
- 2008** Supplemental Fault-Rupture Assessment for the Irvington Station – Concluded Irvington Station location met all state requirements regarding proximity to the Hayward Fault.
- 2008** Irvington Station Cost Effective Construction Study – Determined elements of the Irvington project to construct with the Warm Springs Extension in order to make the future construction of Irvington station more cost effective. The City of Fremont's Redevelopment Agency funded \$2.4 million of early construction elements for Irvington Station as part of the Warm Springs Extension, thus saving an estimated \$15 million in future costs.

- 2010** Consolidated Amended Redevelopment Plan – The City of Fremont’s Redevelopment Agency proposed \$120 million in funding for the Irvington Station, in addition to the \$8.5 funding provided for land acquisition and preliminary design/construction. This funding was rescinded the following year when the State of California abolished Redevelopment Agencies.
- 2010** Partial Preliminary Engineering Letter Report
- 2011** The California State Legislature voted to eliminate Redevelopment Agencies.
- 2011** City of Fremont General Plan: Irvington Community Plan – Outlined strategies for development of the Irvington District and identified Irvington BART Station as a Special Study Area.
- 2013** Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) Plan Bay Area – Identified Irvington District as a Priority Development Area, designating the District as a preferred, strategic location for new growth in the Bay Area.

3.2 Other Related Projects

3.2.1 BART Warm Springs Extension (WSX)

The Warm Springs Extension to South Fremont and new Warm Springs/South Fremont BART Station is in its final phase of construction. Finishing work and systems testing are ongoing and will continue into late summer 2016. Final completion of the project is expected in late 2016.

3.2.2 East Bay Greenway (EBGW)

The East Bay Greenway was first conceived as part of the East Bay Regional Park District’s Master Plan in 2007. The EBGW is envisioned to be a regional bicycle and pedestrian trail travelling through Alameda County, encompassing the existing Ohlone Greenway at the northern end and ending at the southern Alameda County line in Fremont. From the Ohlone Greenway in Albany and Berkeley, the 37-mile EBGW trail will continue along BART and UPRR rights-of-way through Oakland, San Leandro, Hayward, Union City, and Fremont. The EBGW will increase community and regional access, open space, and public safety, as well as provide a viable commute alternative for pedestrians and bicyclists from Albany to Fremont.

The City of Fremont has been working with BART, UPRR and major developers over the last several years in order to support development of the EBGW trail throughout Fremont by undertaking the series of projects described below.

1. Central Park to Alameda Creek Project

The City has been working with UPRR to acquire the abandoned former Western Pacific Railroad Corridor between Central Park and the UPRR Niles subdivision tracks, approximately 2.5 miles of which will be used for the construction of the Central Park to Alameda Creek segment of the EBGW. The trail will travel from Central Park north along the abandoned UPRR alignment and then Orchard Drive and Mission Boulevard to the Alameda Creek Trail,

which will eventually connect to the planned EBGW alignment in Union City. This project is the subject of a separate scoping study funded by Measure BB through Alameda CTC.

2. Central Park Union Pacific Railroad Crossing

Over the last eight years, the City has been working with UPRR to construct a safe pedestrian crossing over the active tracks adjacent to Fremont's Central Park. Completed in March 2016, and funded by the City, the UPRR crossing provides a safe connection from Fremont's Central Park and its system of pedestrian and bicycle pathways to the existing Mission Creek trail. This bicycle/pedestrian crossing is a critical component of the EBGW trail system as it allows for safe crossing of the UPRR tracks, connecting the Central Park to Alameda Creek segment of the EBGW with an existing segment previously constructed by Fremont from Central Park to the future Irvington BART Station.

3. Central Park to Irvington BART Station

As part of the Washington Boulevard/Paseo Padre Parkway Grade Separation Project, the City relocated 1.8 miles of active UPRR tracks to align them with the future Warm Springs BART extension. As part of the project, the City acquired the former railroad alignment from UPRR and, in cooperation with BART, created the first section of the EBGW in Fremont; a Class I trail from Fremont's Central Park south, over Paseo Padre Parkway and continuing under the new Washington Boulevard overpass to the future Irvington BART Station, a distance of 1.25 miles.

4. Irvington BART Station to Warm Springs/South Fremont BART Station

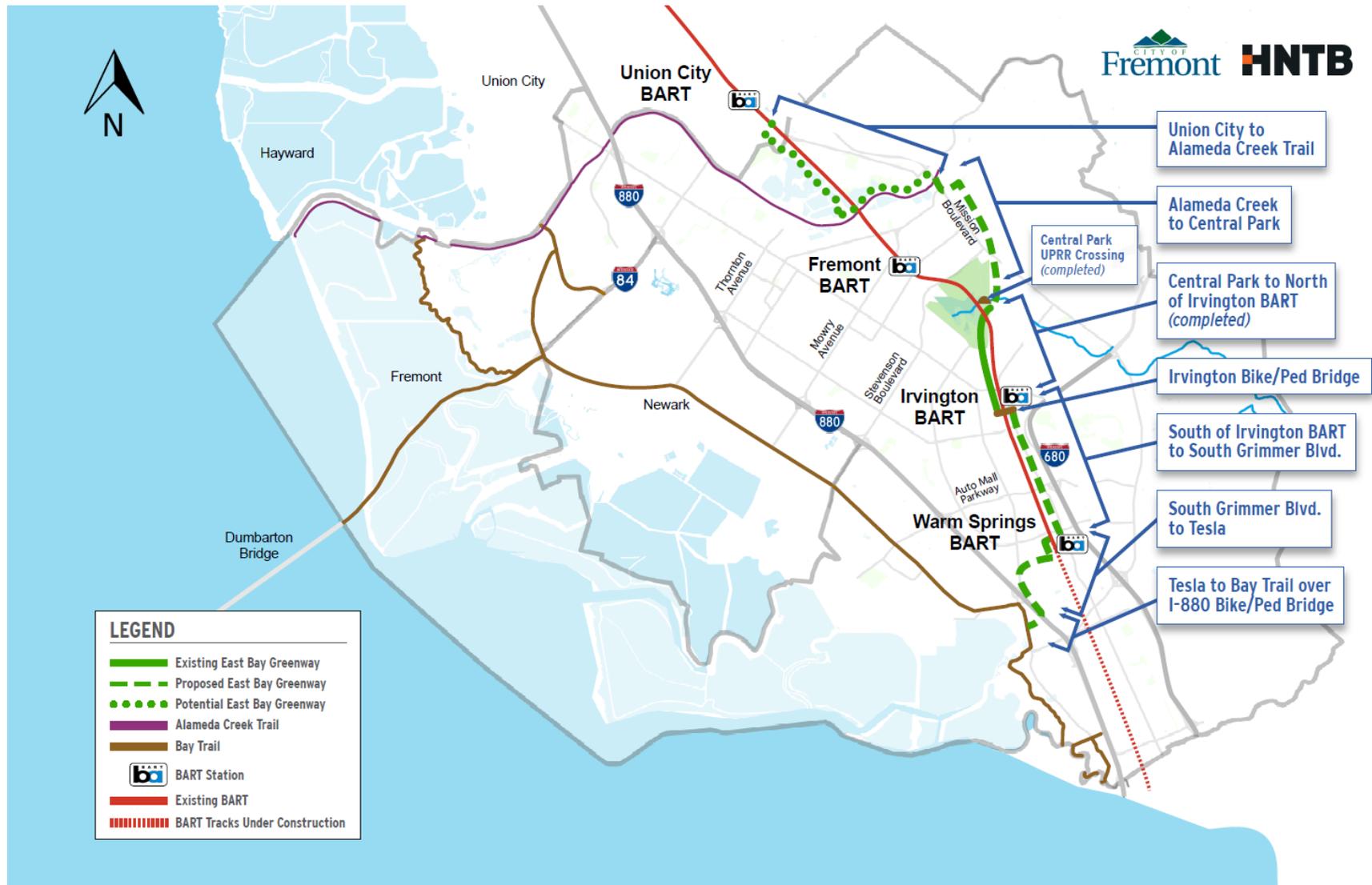
As part of the future Irvington BART Station, the trail will then move to the east side of the UPRR and BART tracks to the future EBGW trail alignment that was created as part of the Warm Springs BART extension. This future EBGW extension will extend south to South Grimmer Boulevard as well as the new Warm Springs/South Fremont BART Station and will add another 2.3 miles of Class I trail to the EBGW system. The Irvington BART Station is the subject of a separate scoping study funded by Measure BB through Alameda CTC.

5. I-880 Bicycle/Pedestrian Bridge and Trail Project

The City is actively working on the EBGW from the Warm Springs/South Fremont BART Station south to the Bay Trail and the Alameda County line. The project will consist of a 1.8 mile trail including a new architecturally significant bridge crossing I-880 in the City of Fremont's Innovation District. The I-880 Bicycle/Pedestrian Bridge and Trail Project will increase connectivity and access to new the Warm Springs/South Fremont BART Station. This project is the subject of a separate scoping study funded by Measure BB through Alameda CTC.

When each of the above projects is completed, approximately 8 miles of East Bay Greenway will have been completed in Fremont connecting the Nilas District in northern Fremont with the Bay Trail in southern Fremont. The EBGW trail will connect to several other trail systems and important features of the City such as Central Park, the Irvington and Warm Springs/South Fremont BART Stations, numerous neighborhoods, schools, and the largest employment areas of the City, including Fremont's new Innovation District including the Bay Side Business Park. The Alameda Creek Trail at the northern end will connect to the planned EBGW Trail alignment in Union City, and the I-880 Bicycle/Pedestrian Bridge and Trail at the southern end will connect to the San Francisco Bay Trail, completing the City of Fremont's portion of Alameda County's East Bay Greenway Trail (**Figure 3**).

Figure 3: City of Fremont's East Bay Greenway Map



Source: HNTB 2016

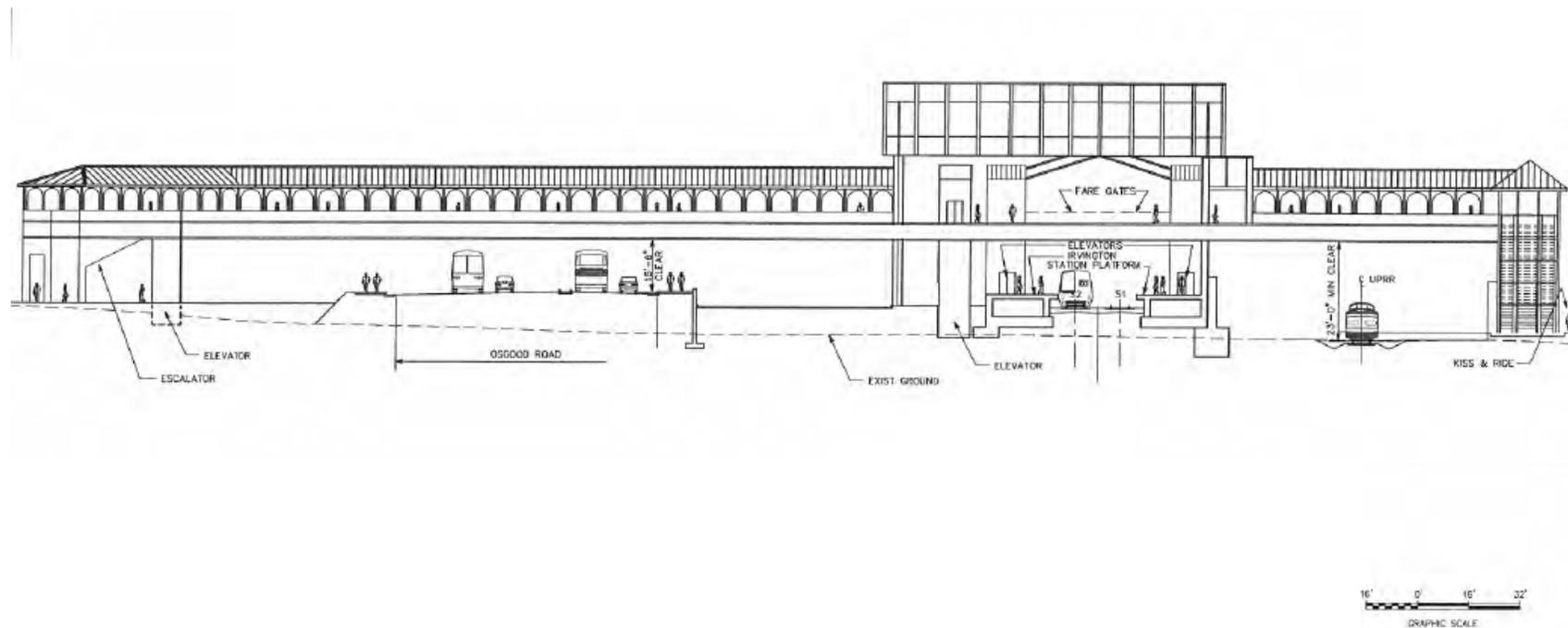
Section 4. Station Area & Existing Conditions

4.1 Site Plan

4.1.1 Existing WSX FEIS Site Map

The current Irvington BART station site plan was developed through the WSX FEIS and includes conceptual station designs and initial site plans for the optional Irvington BART Station. The current scoping study builds on the original site plan, beginning with base assumptions from the existing plan and evaluating new opportunities and constraints on the site.

Figure 4: 2003 BART WSX SEIR Optional Irvington Conceptual Station Section (facing south)



Source: BART Warm Springs SEIR, 2003

The original Irvington station site plan includes the following site elements (see **Figure 5**):

1. Station Platform and Concourse

The proposed two-story, side-platform BART station design will feature an elevated concourse with pedestrian bridges extending to the east and west above Osgood Road and above the active UPRR trackway. Station site access will be provided on both the east and west sides, from Osgood Road and from Roberts Avenue/Washington Boulevard. Elevated walkways from the parking facilities on the east side of Osgood Road and from multi-modal access facilities on the west side of Osgood can be accessed from stairs, escalators, and elevators. An elevated walkway over the active UPRR tracks will connect to a pedestrian plaza and parking facilities west of the station. Each walkway will lead from the central fare collection area at the concourse level into the ground-level BART station platforms which will be constructed on the WSX extension alignment. The station platform will extend for a length of approximately 700 feet south of Washington Boulevard to accommodate 10-car trains. Fare collection facilities will be identical to those used throughout the existing BART system.

2. Bus Facilities and Paratransit

Paratransit services are accommodated on the east side of the station, between the station and Osgood Road, and could be accommodated on either side of the station. Five bus bays are also located on the east side of the station near the paratransit services.

3. Taxi and Vehicle Pick-Up/Drop-Off

Taxi, Transportation Network Company (TNC), and vehicle pick-up/drop-off (Kiss-and-Ride) access will be provided on the west side of the station at the station entrance area. ADA parking and drop-off will be accommodated on the east side of the station near the entrance.

4. Parking

The site plan includes parking lots on the east side of Osgood Road, directly downhill of the Hayward Fault line, and between the station and Osgood Road, as well as three mid-day parking surface parking lots on the west side of the station, accommodating a total of 925 spaces.

5. Bicycle and Pedestrian Access and Amenities

Pedestrians will access the station from sidewalks on Washington Boulevard, Fremont Boulevard, and the west side of Osgood Road. A diagonal pedestrian walkway will connect from the east side of Osgood Road to the elevated pedestrian bridge over Osgood Road, across the front portion of the Historic Gallegos Winery.

Bicycles can access the station from north on Driscoll Road, the east on Washington Boulevard, the south from Osgood Road, and the west from Fremont/Washington Boulevard. Bike lockers are provided on both the east and west sides of the station near the station entrance.

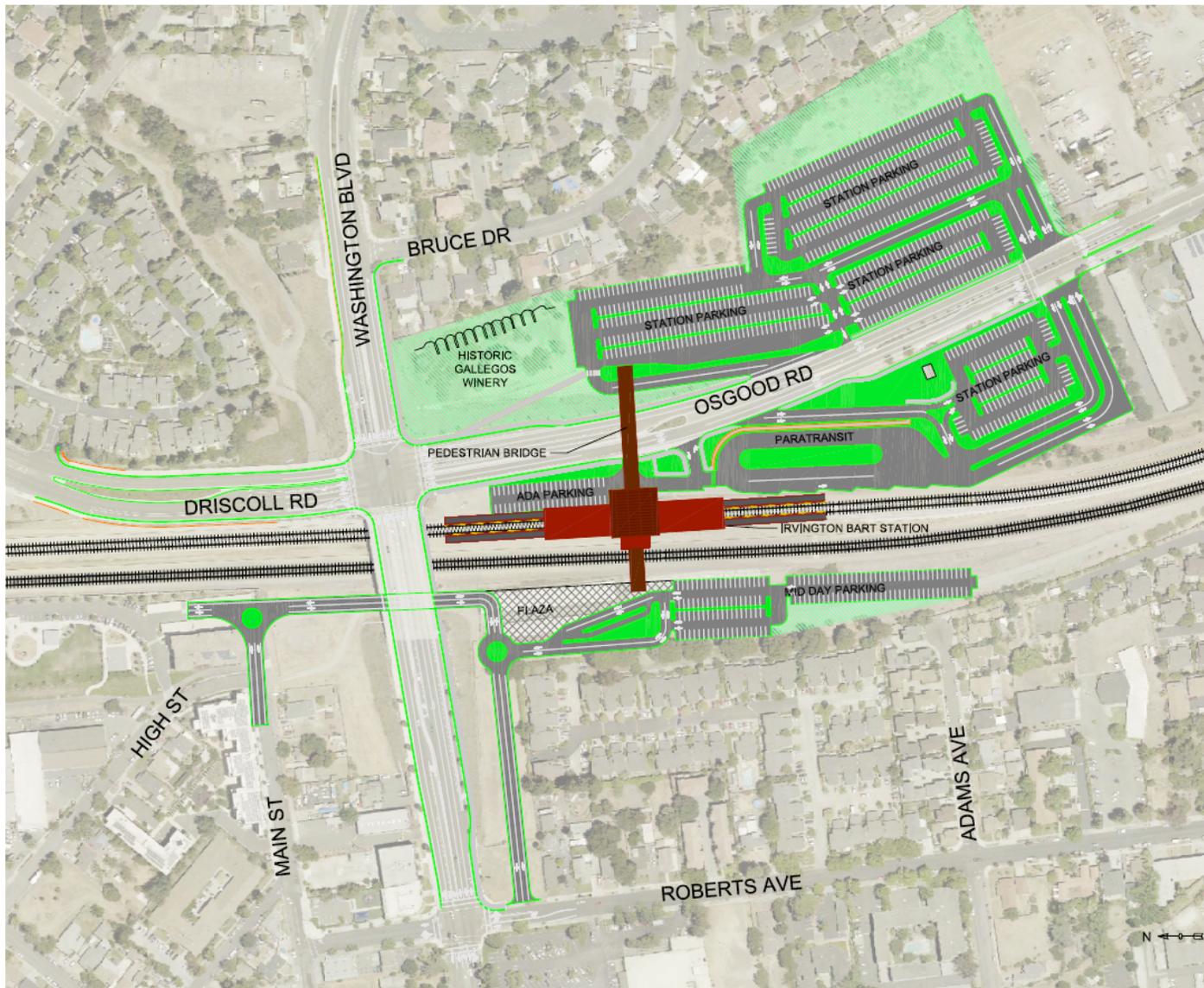
6. Vehicle Traffic Control and Access

A new signalized intersection will be located on Osgood Road at the southern end of the station. Two new traffic circles will be located at the intersection of High Street and Main Street, north of Washington Boulevard and at the west side station entrance.

7. Transit-Oriented Development

Transit-oriented development was not considered or included in the WSX FEIS Site Map or planning.

Figure 5: Irvington Station 2006 Conceptual Site Plan

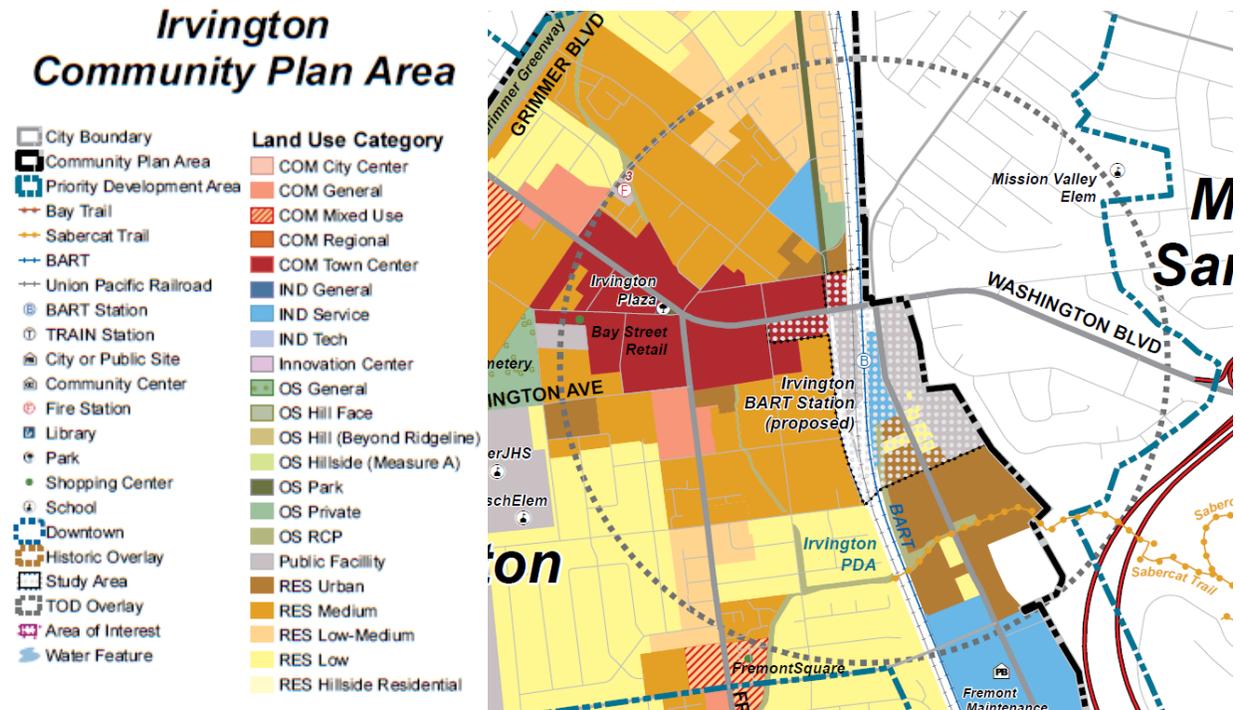


Source: HNTB interpretation of Original Site Plan in BART Warm Springs FEIS, 2006

4.2 Land Use

In the next phase of project development, the City of Fremont will prepare a Station Area Plan to provide a framework for future development around the Irvington BART Station. The project falls within the 4.84 square mile Irvington community area. The area around the proposed station is currently characterized primarily by commercial and residential land uses, including the Irvington Business District located around the “Five Corners” at Fremont Boulevard, Washington Boulevard and Bay Street, known as the heart of Irvington.

Figure 6: Irvington Station Area Land Use Map



Source: City of Fremont General Plan, December 2011

The land use categories for the areas directly surrounding Irvington Station as discussed in the City’s General Plan (Figure 6) are discussed below.

Commercial Town Center

The commercial town center land uses include the original City of Fremont business districts of Niles, Irvington, Centerville, and Mission San Jose, and the Warm Springs District neighborhood shopping centers. In Irvington, the largest concentration of commercial town center land uses are located directly northwest of the station and within the northwest area of the station area and are generally pedestrian-friendly destinations marked by distinct placemaking and “Main Street” amenities such as public art, plazas, and parks.

Including the TOD overlay, floor area ratio (FAR) increases up to 2.5 are permitted in the Town Center area. Minimum FARs of 0.5 and minimum residential densities of 30 units/acre also apply due to the joint TOD and Town Center designation.¹¹

¹¹ City of Fremont General Plan, 2-24, December 2011.

Industrial Service

Industrial services generally serve local businesses and residences and involve smaller scale industrial operations. One of these uses is located within the station area, directly east of the proposed station on the east side of Osgood Good. A permitted FAR of 0.35 applies.

Public Facility

Much of the land use within the station area is designated Public Facility, which generally applies to non-open space parcels owned by public agencies or utilities.¹² Allowable development intensity on Public Facility properties is determined on a case-by-case basis and a 45-foot height limit generally applies.¹³

Residential Urban

A portion of the southeast area of the station area is zoned for urban residential uses, including apartment buildings and condominiums that are generally four stories or more. Residential densities must exceed 30 units per net acre and may be as high as 70 units per net acre. Other compatible uses, such as schools, child care centers, parks, and religious facilities, can also be located in the area.¹⁴

Residential Medium

A large portion of the area surrounding Irvington Station is characterized by a mix of condominiums, flats, townhouses, garden apartments, and low-rise multifamily complexes. Net density generally ranges from 14.6 to 29.9 units per acre.¹⁵

Residential Low-Medium

A small portion of the area near Irvington Station is characterized by a mix of single-family homes and small multi-unit buildings. Net density generally ranges from 8.8 to 14.5 units per acre.¹⁶

Residential Low

A small portion of the area south of Irvington Station is characterized by subdivisions of detached homes. Net density generally ranges from 2.3 to 8.7 units per acre.¹⁷

Resources Conservation and Public Open Space

A small portion of open space lies within the greater station area on the east side of Osgood Road. These include areas located below the “Toe of the Hill” (TOH) and are owned by public or quasi-public agencies other than the City of Fremont including regional parks or Alameda County Flood Control areas.

¹² City of Fremont General Plan, 2-32, December 2011.

¹³ City of Fremont General Plan, 2-32, December 2011.

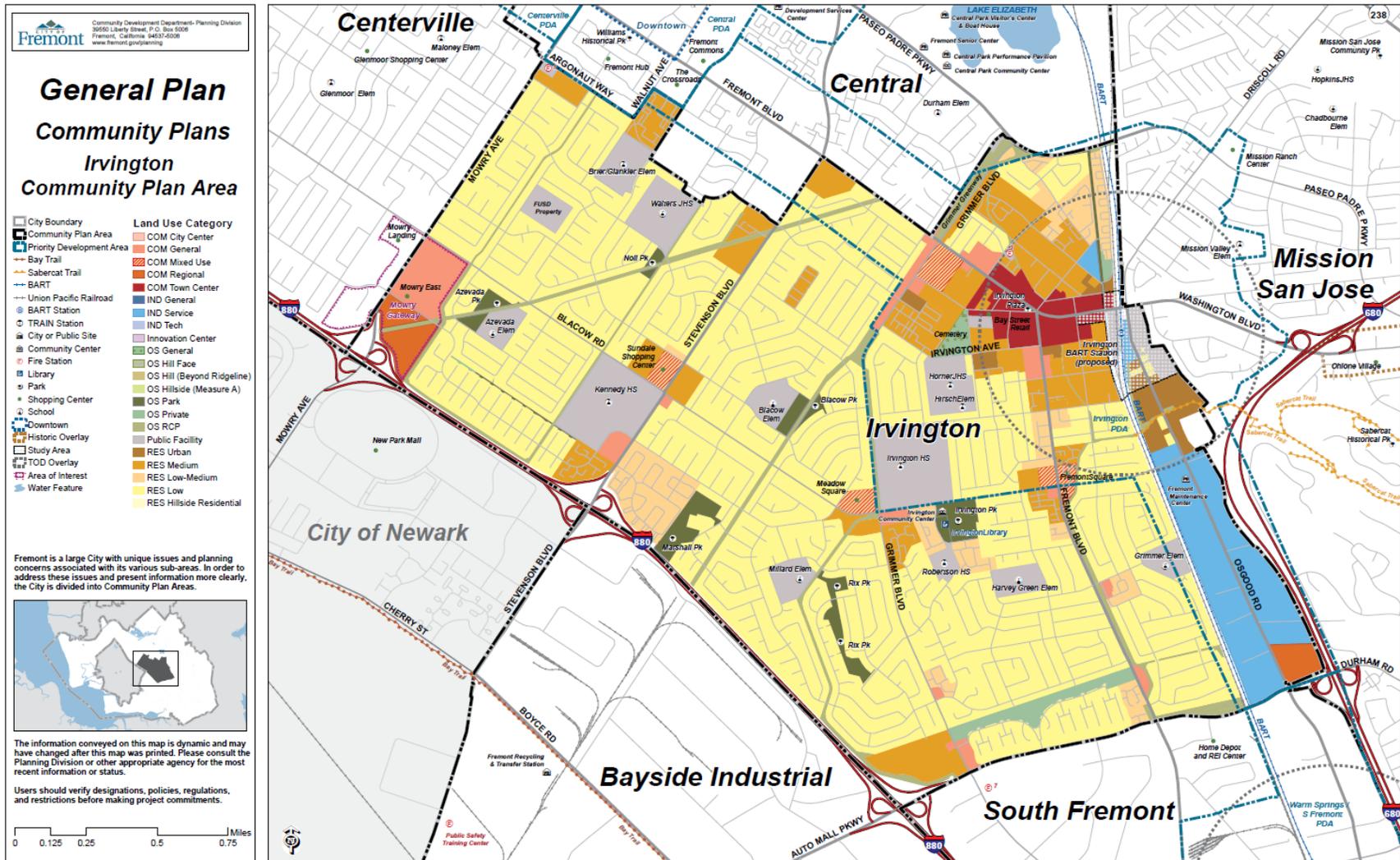
¹⁴ City of Fremont General Plan, 2-21, December 2011.

¹⁵ City of Fremont General Plan, 2-21, December 2011.

¹⁶ City of Fremont General Plan, 2-21, December 2011.

¹⁷ City of Fremont General Plan, 2-20, December 2011.

Figure 7: Irvington Community Plan Area Land Use Map



Source: City of Fremont General Plan, December 2011

4.3 Environment

Hayward Fault Line

The Hayward Fault line runs along the foot of the East Bay Hills from the San Francisco Bay north of Richmond to San Jose. The Fault line runs through the intersection of Washington Boulevard and Osgood Road, and runs east of Osgood under the old Gallegos Winery and follows along the eastern border of the Irvington BART Station area. A magnitude 6.8 earthquake, the last major quake to be caused by the fault, occurred in October 1868.¹⁸

Gallegos Winery

The Gallegos Winery was a three and a half story, 240 feet by 110 foot winery built in 1884 by Juan Gallegos on a 600-acre plot of land, approximately 100 yards east of the Union Pacific Railroad.¹⁹ For a short time in 1884, the Gallegos stone structure was the largest winery in the world and recognized as one of the first in California.²⁰ In 1906, the winery was significantly damaged in the 1906 San Francisco earthquake, caused by the San Andreas Fault, and subsequently condemned and demolished.²¹ The Gallegos Winery site is located on the Hayward Fault Line. Caves dug into the hillside aged the winery's finest wines and still remain on the site.²² Canary island date palm trees from the original winery also remain at the site (**Figure 8**).²³ Nesting birds were observed in the winery walls during site visits for the Washington Grade Separation Project.

Historic Ford House

The historic Ford House is a 1,455 square-foot single-family home constructed around 1895 at 41753 Osgood Road, directly east of the proposed station platform (**Figure 8**). The parcel was purchased by a private owner in 2013 and the structure remains unoccupied.

Figure 8: Historic Properties

Historic Gallegos Winery, facing east



Historic Ford House, facing west



¹⁸ University of California, Berkeley, Seismology Laboratory, The Hayward Fault, http://seismo.berkeley.edu/hayward/hayward_fault.html.

¹⁹ Department of Parks and Recreation, DPR523 Form, 159 Washington Boulevard, 4.

²⁰ Department of Parks and Recreation, DPR523 Form, 159 Washington Boulevard, 4.

²¹ A History of San Francisco Viticultural District, Ernest P. Peninou for the Wine Libraries Association, 2004, 4.

²² A Companion to California Wine: An Encyclopedia of Wine and Winemaking from the Mission Period to the Present, Charles L. Sullivan, 1998, 95.

²³ Landmark Trees, City of Fremont, 2012, 45.

4.4 Transportation

Alameda Contra-Costa Transit District (AC Transit)

The area is currently served by AC Transit bus lines 215, 212, 210 and 239 and supplementary lines 623, 624 and 625; however, service is likely to change substantially when the Warm Springs/South Fremont BART Station opens, and then again when the Irvington BART Station opens.

Santa Clara Valley Transportation Authority (VTA)

The area is currently served by VTA express bus route 180 with service to Great Mall in Milpitas, but this line will be rerouted to the Warm Springs/South Fremont BART Station once it opens.

Paratransit

The City of Fremont and East Bay Paratransit provide paratransit service to the area.

Commuter and Intercity Rail

Altamont Commuter Express (ACE) and Capitol Corridor provide commuter and intercity rail services, respectively, at the Centerville Station in Fremont.

Local Streets and Highways

Highways I-880 and I-680 border the station area on both the west and east sides. Main arterial streets within the station area include Washington Boulevard and Osgood Road/Driscoll Road. The portion of Washington Boulevard between Fremont Boulevard and I-680 experiences traffic volumes between 23,000 and 27,000 average annual daily traffic (AADT), and traffic on Osgood Road between Washington Boulevard and Auto Mall Parkway with roughly 20,000 AADT. The I-680/Washington Boulevard interchange is located approximately three-quarters of a mile away from the Irvington Station, providing convenient freeway access.

Union Pacific Railroad

One UPRR trackway runs north-south through the station area parallel to the BART tracks.

Bicycle and Pedestrian

Within the station area, Class II bike lanes and Class III bike routes exist on Washington Boulevard and a Class II bike lane exists on Osgood and Driscoll Roads. A segment of Fremont's existing East Bay Greenway multi-use trail follows the UPRR tracks parallel to the west side station entrance area and is a part of the larger regional EBGW trail network. The future continuation of the EBGW will pass over the UPRR and BART tracks in the vicinity of the Irvington BART Station before heading south along the east side of the BART tracks to the Warm Springs/South Fremont BART Station.

4.5 Constraints and Opportunities

4.5.1 Constraints

The biggest constraint for construction of the Irvington Station is that it will take place during active BART revenue service through Fremont, to the Warm Springs/South Fremont Station. The site also contains active UP tracks. Construction around these active trackways will increase construction costs, complicate phasing, and reduce schedule flexibility. Construction around an active trackway

requires a detailed workplan outlining specific equipment, work windows, number of workers, and proximity to the trackway. Workplans must be submitted in advance of work. Additional safety precautions will be required, including flaggers to monitor and warn workers of approaching trains.

There are several methods for performing work near/over trackway. When work takes place near an active trackway trains can be slowed. When work takes place on an active BART trackway, crossovers north and south of the site will allow for temporary single tracking. For work that requires work within both southbound and northbound trackways, UP and BART may allow for limited revenue shutdowns during nights and weekends. Approvals for any modification to revenue service will require advanced notice and approvals. Construction schedules will need to work around sports games, festivals, and peak revenue service. The difficulties involved with working near an active trackway is compounded, as the Irvington BART station will be constructed between, above, and around tracks owned by two different agencies. Working windows will need to be coordinated between both UP and BART.

Other constraints requiring consideration (**Figure 9**) in the next phase to update the site plan include:

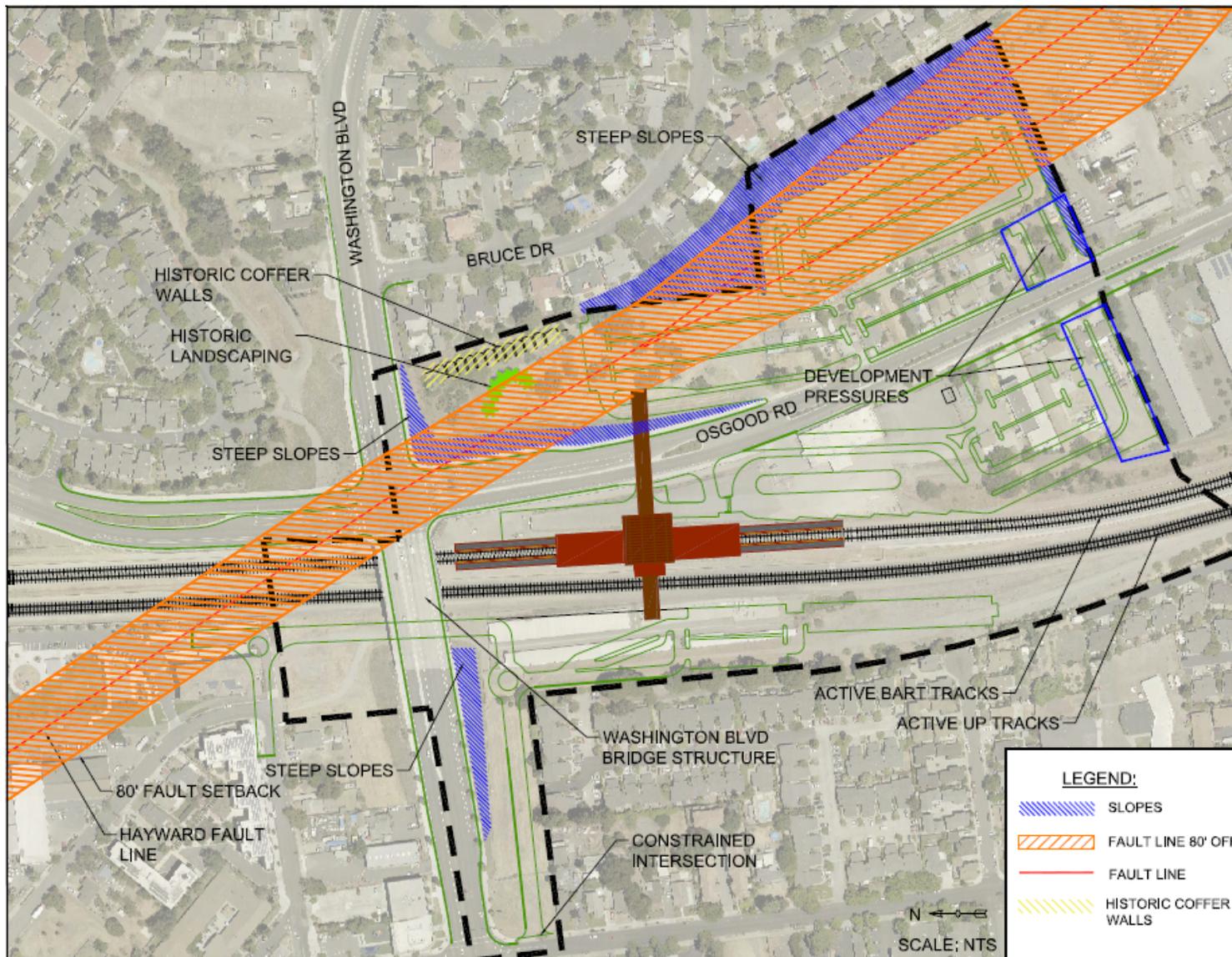
- 80-foot total envelope around the Hayward Fault line
- Storm-water Treatment and Retention space requirements
- Necessary Historic Coffey Wall Stabilization at Gallegos Winery
- Necessary Slope Stabilization
- Development pressure and lack of control over existing parcels needed for right-of-way acquisitions
- Constrained intersections

4.5.2 Opportunities

Opportunities to improve upon the existing site plan for Irvington Station exist and should be studied in the next phase of project development to define the site plan and develop the Station Area Plan. Potential opportunities to explore include:

- **Transit-oriented development (TOD)**
Potential for residential and commercial mixed use developments and allows for increased densities and higher floor area ratio (FAR)
- **Station Entry as Urban Design Gateway**
Enhanced urban design for streets/station entry gateways
- **Green and Open Space**
Integrate pedestrian-friendly and green space elements
- **Parking Optimization**
Reconfiguration of surface and possible structured parking options
- **Parking as noise buffer**
Use of parking structures to buffer noise increases for uphill residences
- **Gallegos Winery as reclaimed public space**
Adaptive reuse of the historic site for public space
- **Relocation of pick-up/drop-off areas**
Integrate circulation with open space areas

Figure 9: Site Plan Constraints



Source: HNTB 2016

4.6 Warm Springs BART Extension Lessons Learned

The scoping study team took the opportunity to sit down with the Warm Springs BART Extension (WSX) project's Architect of Record to consider lessons learned with BART from the perspective of the design team, and apply those to the development of the Irvington BART Station.

- **Management**

BART'S Management and Operations team are critical in all decision making.

- **Station Design**

In joint development projects between BART and local jurisdictions, like the City of Fremont, BART functions as lead management for station design in order to ensure development is consistent with BART Facility Standards (BFS).

- **Standards**

BART manages station design in alignment with the agency's highest priority standards related to operations, safety, maintenance, functionality, and BFS.

- **Delivery**

BART has used both the traditional Design-Bid-Build (D-B-B) process of project delivery and the Design-Build (D-B) alternative process. There are appropriate applications for both. Project delivery methods impact the design team and their effectiveness in the design and construction phases of the project. A well-defined project delivery method will enhance the efficiency of the design and construction teams in meeting BART's project goals and objectives.

- **Design Team Staffing and Integration**

Due to the complexity of BART station design, there is a preference for all design team members to have experience working with BART Facility Standards (BFS) in order to optimize design productivity. Inter-disciplinary coordination can be a challenge as it involves a large group of professionals who each have their own specific design criteria. Well-integrated construction documents will avoid conflict and confusion, which can cause schedule delays and costly change orders in the construction phase.

- **Station Access**

Design should provide for plentiful multi-modal access to the station, including ample space and curb length to handle congestion during peak hour pick-up and drop-off. As a multi-modal transit town center conveniently located near an interstate, BART's Station Access Policy is likely to designate Irvington Station as intermodal – auto-reliant. Based on this typology, investments should be made primarily in pedestrian access, with bicyclists, vehicle drop-off and pick-up, and transit as a secondary priority, and finally accommodating taxis, transit network companies, and parking. Private shuttles/buses should also be considered.

- ADA Accessibility is a key component of station access design. Incorporation with site planning and landscape design in the early stage of the project will minimize costly change orders during the construction phase.

- **Site Planning & Transit-Oriented Development**

Design should optimize land use to support transit-oriented development (TOD) by creating proper urban blocks that are conducive to incremental developments. Utility layouts should consider underground facilities and surface parking lots should be designed so they do not preclude a later conversion into multi-level structures when it is cost effective to do so, which may be after the station is operational. Natural orientation is preferred to signage as a wayfinding method. BART's TOD Policy should inform design of the station area's TOD strategies in order to increase ridership and enhance quality of life around the station, and BART's Station Retail Design and Development Standards should inform the placement and features of retail inside the station. Residential and commercial transit-oriented development opportunities exist in and around the Irvington BART Station, and several recent BART TOD projects can help guide development decisions:

- The Warm Springs TOD Village can serve as a model in equitable and efficient TOD for Irvington Station's development. A mix of housing types will be provided, including affordable housing for seniors, incorporating ground floor retail and interweaving open park spaces and urban plazas to enhance multi-modal access.
- The Pleasant Hill/Contra Costa Centre Station opened a new parking garage to increase parking capacity and provide space for conversion of the former station parking lot into the Contra Costa Centre transit village, increasing parking and economic vitality in the area surrounding the station. Additionally, a bicycle and pedestrian bridge was constructed over Treat Boulevard to connect to the Iron Horse Regional Trail and encourage pedestrian activity.
- The Fruitvale Transit Village is a good example of coordination with community preferences to create a mixed-use village with retail, community services, and mixed-income housing. This example can also provide a lesson on the need to study major connectivity pressures and access points in order to maximize value capture by locating retail along primary pedestrian and bicycle corridors.

- **Stormwater Treatment**

WSX stormwater retention and treatment utilizes an underground retention basin, which can serve as a model for the Irvington BART Station. Although construction cost of the underground retention basin is a concern, it could serve as a potential option for the Irvington Station due to above-ground site constraints.

- **On-Site Green Energy**

Station design should maximize energy efficiency and use of solar power to generate "green" power on-site. Station roof design should incorporate solar energy collectors to capture on-site green energy to supplement station power consumption. Proper planning and adequate budgeting will assure proper integration of green power into the station design.

- **Placemaking**

Station design should incorporate placemaking to establish Irvington BART Station as the heart of the Irvington Innovation District in order to enhance the surrounding community.

- **Safety and Security**

The best practice for providing a safe and secured environment for BART stations is to design the station with open sight lines ensuring that there are always visual surveillances from the public to all areas of the station.

Section 5. Concept Development

The purpose of this Scoping Study is to support Irvington BART Station in advancing to the next phases of project development. The recently funded Scoping/Planning phase to define the site plan and prepare a Station Area Plan also includes an update of the environmental documents. The following phases of project development will include preliminary and final design. Presented in this section are the opportunities and challenges that will require further consideration in the next phase of analysis. All conclusions should be considered preliminary at this point in project development.

5.1 Base Assumptions

Base Assumptions for concept development are derived from the BART WSX 2006 optional Irvington BART Station site plan and adapted for the current preliminary analysis. Some station elements will remain fixed, as proposed in the current site plan and are discussed below. Other elements are assumed to change following an analysis of changes since the 2006 plan, including local conditions, opportunities and constraints. BART policies and case studies of similar BART stations were also considered. The following base assumptions underlie the concepts presented in the Study analysis and recommendations for further study.

Design Assumptions

- Proposed BART Station area will remain consistent with the 2006 ROD (type, size, location);
- Project will not require major changes (alignment, profile, etc.) to existing track infrastructure;
- Project will not require major changes (alignment, profile, etc.) to Washington Blvd., Osgood Road, and Roberts Ave.;
- Project will not require major utility adjustments & relocations;
- Proposed BART Station will not require the purchase of special equipment (vehicles);
- Project will mitigate impacts to historic properties (Ford House & Gallegos Winery Site);
- Vehicle parking will be designed to accommodate best use of available space and not a specific number of spaces;
- Pedestrian and Bicycle access will be accommodated;
- Project site will need to accommodate on-site storm water retention.

Delivery Assumptions

- Project ROW acquisitions and costs will be consistent with information provided by City;
- Site plan definition and Station Area Plan in Scoping/Planning phase will be managed by City;
- Environmental process in Scoping/Planning phase will be co-led by BART and City;
- Design and construction phases will be managed by BART;
- Project is not anticipated to utilize federal funding – NEPA document not anticipated;
- Parking garage structure (design & cost) not included in cost estimate;
- Transit oriented development infrastructure (design & costs) not included in estimate;

- An annual escalation rate of 2% was utilized in calculating the Engineering Total Construction Cost;
- Construction will take place around operating BART and UPRR systems and work near the trackway will need to be staged around operations, occurring primarily at night;
- Project estimate was developed from programmatic level sketches and concepts – no engineering studies have been completed and therefore contingency levels have been appropriately sized to account for this.

Table 4: Estimated Station Area Calculations

Site Plan Elements	Square Feet	Acres
Station	60,000	1.4
Transit-oriented Development (TOD)	204,000	4.7
Parking Lots	331,000	7.6
Parking Structure	145,000	1.1
Open Space	126,000	2.9
Total Site	785,000	18.0

5.2 Bicycle and Pedestrian Access

5.2.1 Bicycle and Pedestrian Access and Circulation

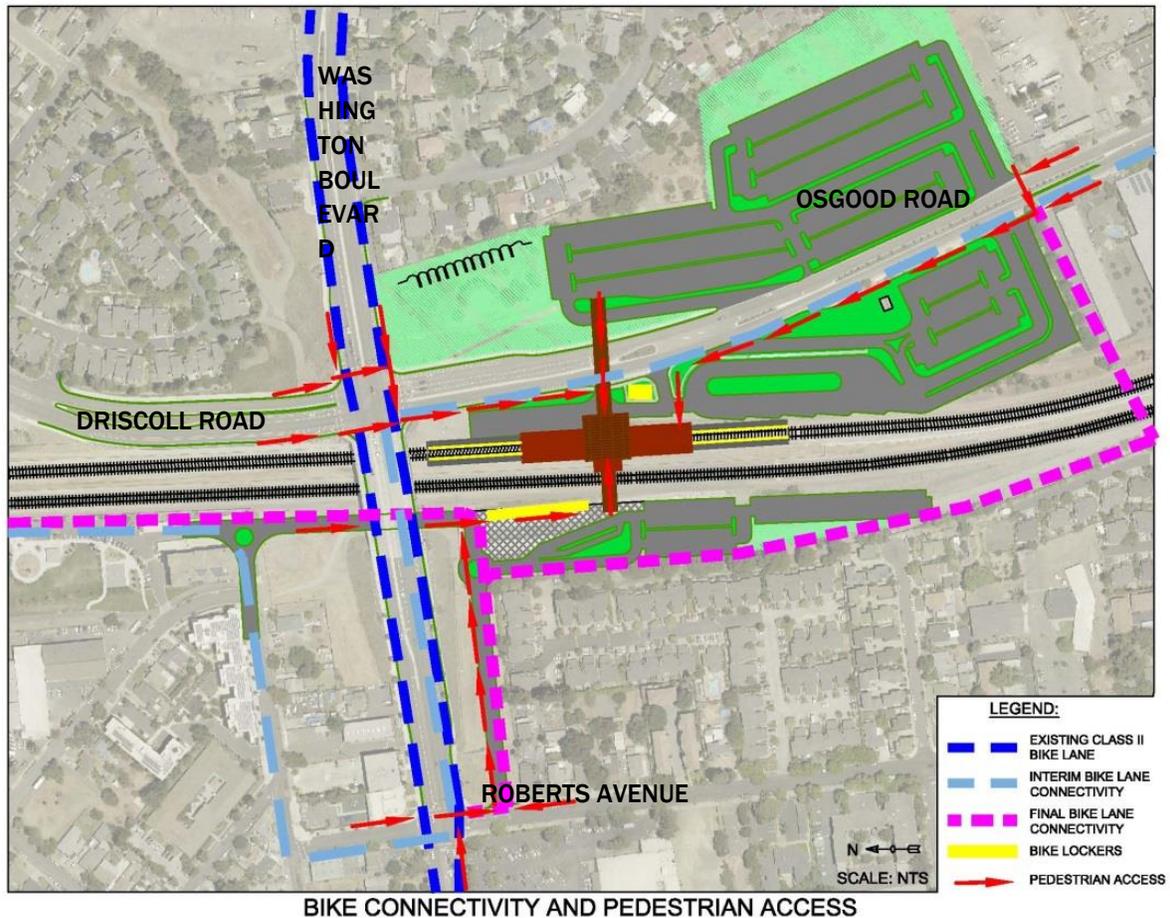
Pedestrians will access the station from sidewalks on Washington Boulevard, Fremont Boulevard, and the west side of Osgood Road (see **Figure 10**). Per the original site plan, a diagonal pedestrian walkway will connect from the east side of Osgood Road to the elevated pedestrian bridge over Osgood Road, across the front portion of the Historic Gallegos Winery. Bicycles can access the station from north on Driscoll Road, the east on Washington Boulevard, the south from Osgood Road, and the west from Washington Boulevard. Bike lockers could be provided on both the east and west sides of the station near the station entrance.

A segment of the East Bay Greenway will be incorporated into the proposed site plan in order to allow for the continuation of the EBGW trail network throughout the City of Fremont and Alameda County. As part of its Washington Boulevard/Paseo Padre Parkway Grade Separation Project, the City relocated 1.8 miles of active UPRR tracks to align them with the future Warm Springs BART extension. The City acquired the former railroad alignment from UPRR and in cooperation with BART created the first section of the EBGW in Fremont; a class 1 trail from Fremont’s Central Park south, over Paseo Padre Parkway and continuing under the new Washington Blvd. overpass to the future Irvington BART Station, a distance of 1.25 miles.

As part of the future Irvington Station, the trail will then move to the east side of the UPRR and BART tracks to the future trail alignment that was created as part of the Warm Springs BART extension.

This future EBGW extension will extend south to South Grimmer Boulevard and the new Warm Springs/South Fremont BART Station and add another 2.3 miles of class 1 trail to the EBGW system.

Figure 10: Bicycle and Pedestrian Access



Source: HNTB 2016

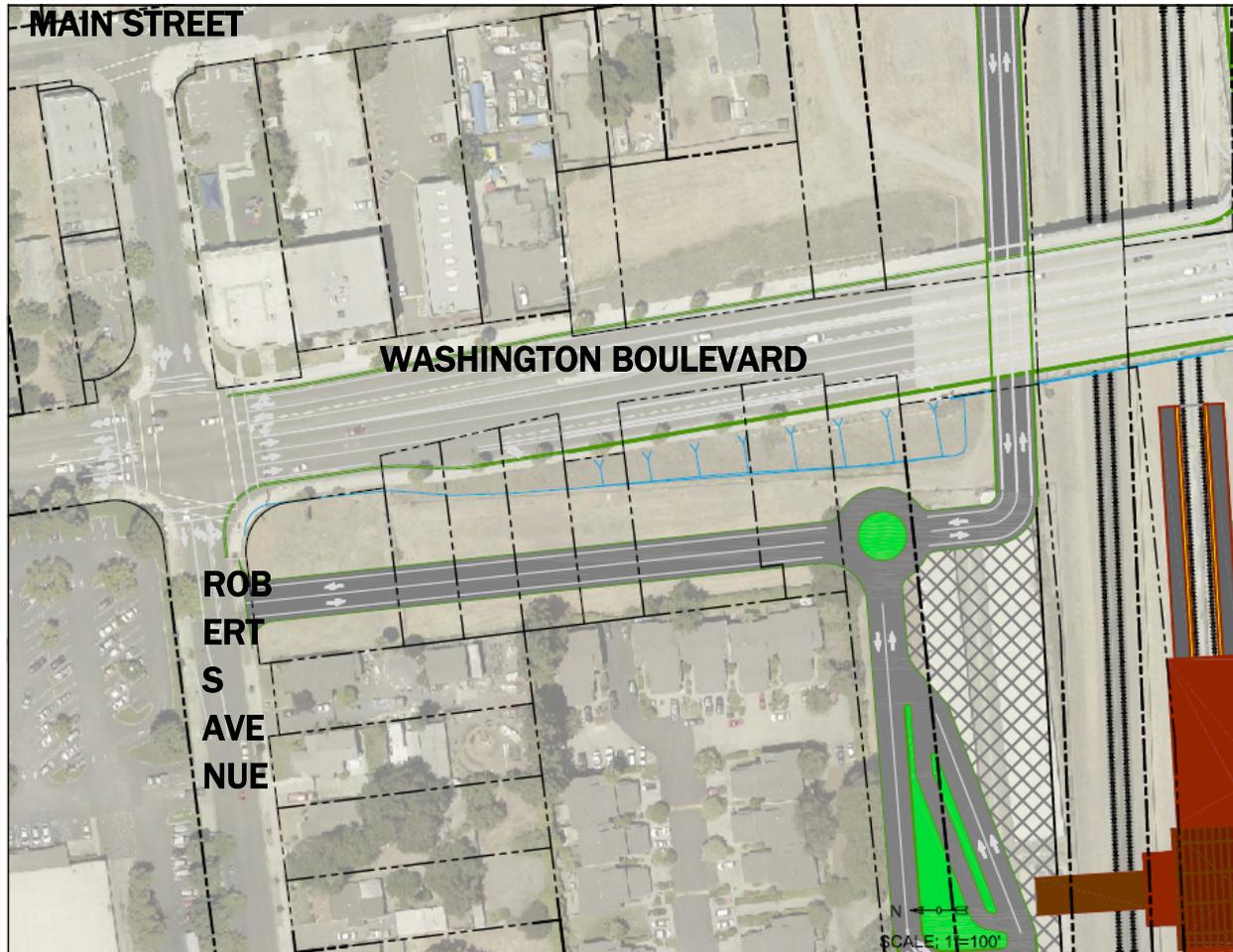
Phased Bike Path

The East Bay Greenway path connection should be designed in coordination with the station area design. Depending on the timing for the completion of the EBGW between Irvington and Warm Springs/South Fremont Stations, and the availability of funding for an Irvington bicycle and pedestrian bridge, a phased approach is possible to provide access to the regional EBGW and link to bicycle and pedestrian facilities within the Irvington BART station site.

- Option 1: Via Washington Boulevard and Osgood Road, if bridge funding is not available by the time the Irvington to Warm Springs/South Fremont Trail is constructed.
- Option 2: Via West Side Station Area with bicycle/pedestrian bridge over BART and active UPRR tracks.

5.3 Options to Improve West Side Station Vehicle Access

Figure 11: West Side Station Access



Source: HNTB 2016

Original Site Plan (Figure 11)

- Access via Main Street (north of Washington Boulevard), intersecting at Roberts Avenue.
- Proximity of Frontage Road to Roberts/Washington intersection limited to right-in/right-out only operations at Roberts Avenue. Any alternative that allows vehicles to use the roadway off of Roberts Avenue requires vehicles to use Main Street to either exit or enter from Roberts in order to return to the originating point.

Three potential options are presented to address west side access to Irvington Station:

- Option 1: Traffic Circle
- Option 2: Bicycle and Pedestrian Greenway
- Option 3: Infill Development

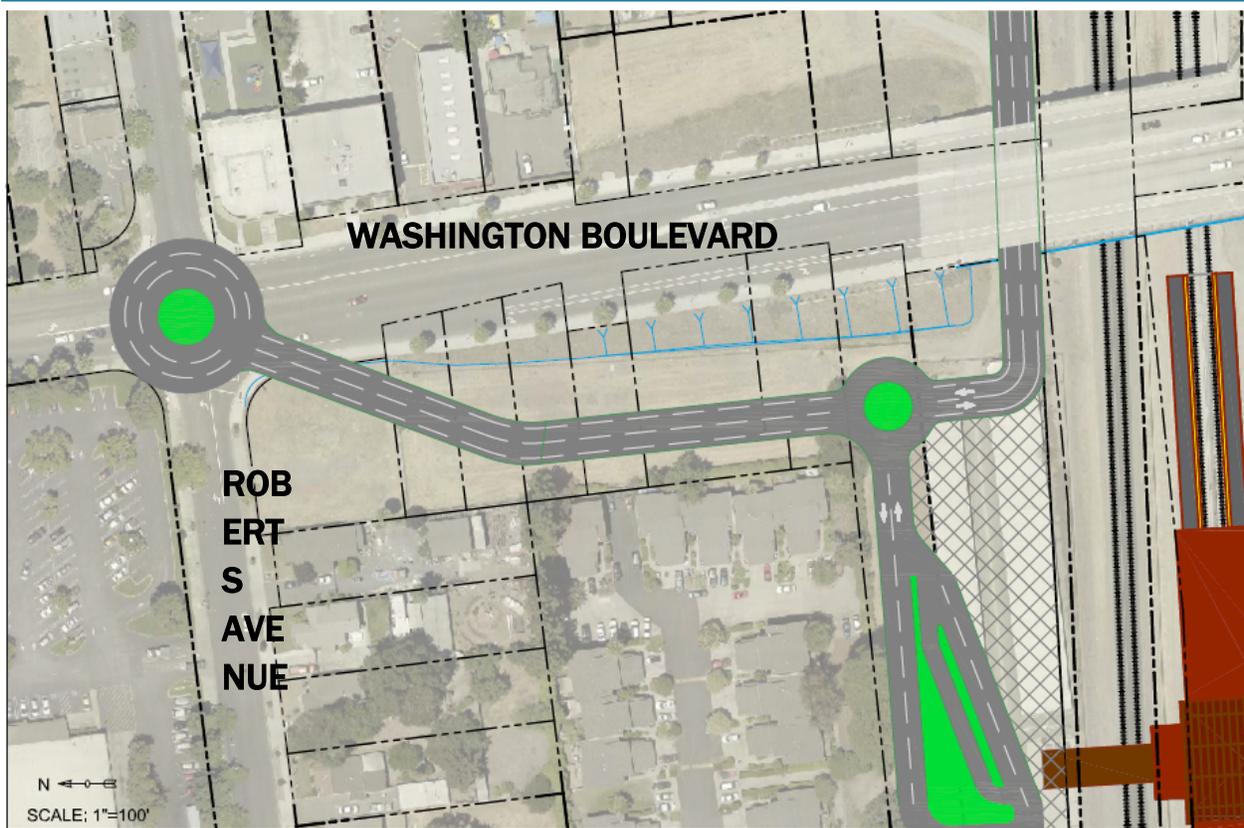
5.3.1 West Side Station Access Road Option 1 – Traffic Circle

Reconfigure Roberts Avenue/Washington intersection to construct a traffic circle incorporating Frontage road (Figure 12)

A Traffic circle intersection treatment is a potential option for this location; however, traffic circles generally limit pedestrian circulation and will only allow right-in access from Roberts Avenue. A Traffic Feasibility Study would be required to determine the impact on level of service at Washington Boulevard and Roberts Avenue and potential impact to bicycle and pedestrian access.

Due to the constraints on bicycle and pedestrian accessibility, ROW, and other feasibility issues, a traffic circle option is not recommended at this location.

Figure 12: West Side Station Access Road Option 1 – Traffic Circle



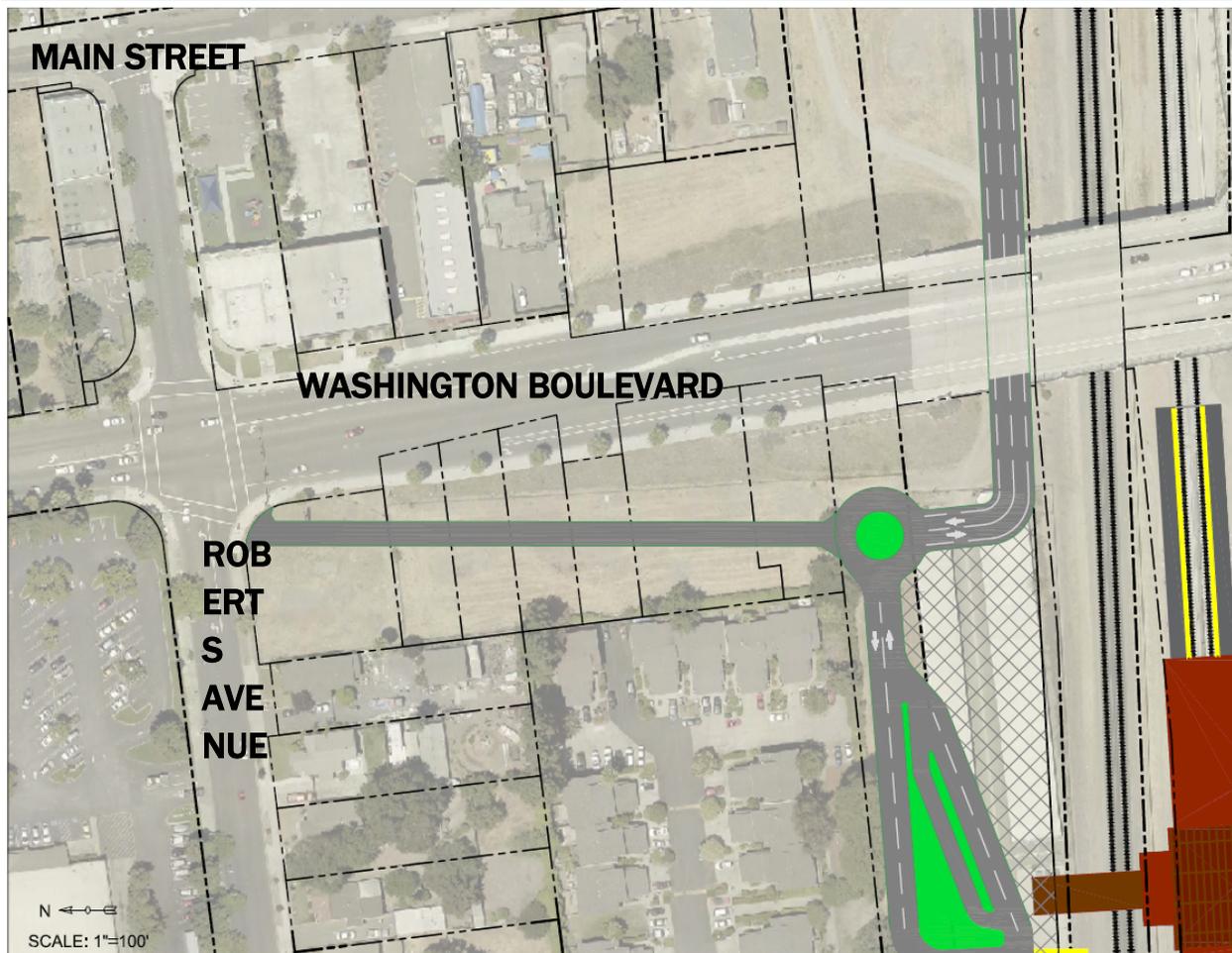
Source: HNTB 2016

5.3.2 West Side Station Access Road Option 2 – Bicycle and Pedestrian Greenway

Replace Frontage Road with bicycle/pedestrian “Greenway” (Figure 13)

A bicycle and pedestrian greenway could be constructed between Roberts Avenue and the west side station access plaza.

Figure 13: West Side Station Access Road Option 2 – Bicycle/Pedestrian Greenway



Source: HNTB 2016

5.3.3 West Side Station Access Road Option 3 – Infill Development

Replace Frontage Road backing up to Washington Boulevard with shared “complete street” (Figure 14)

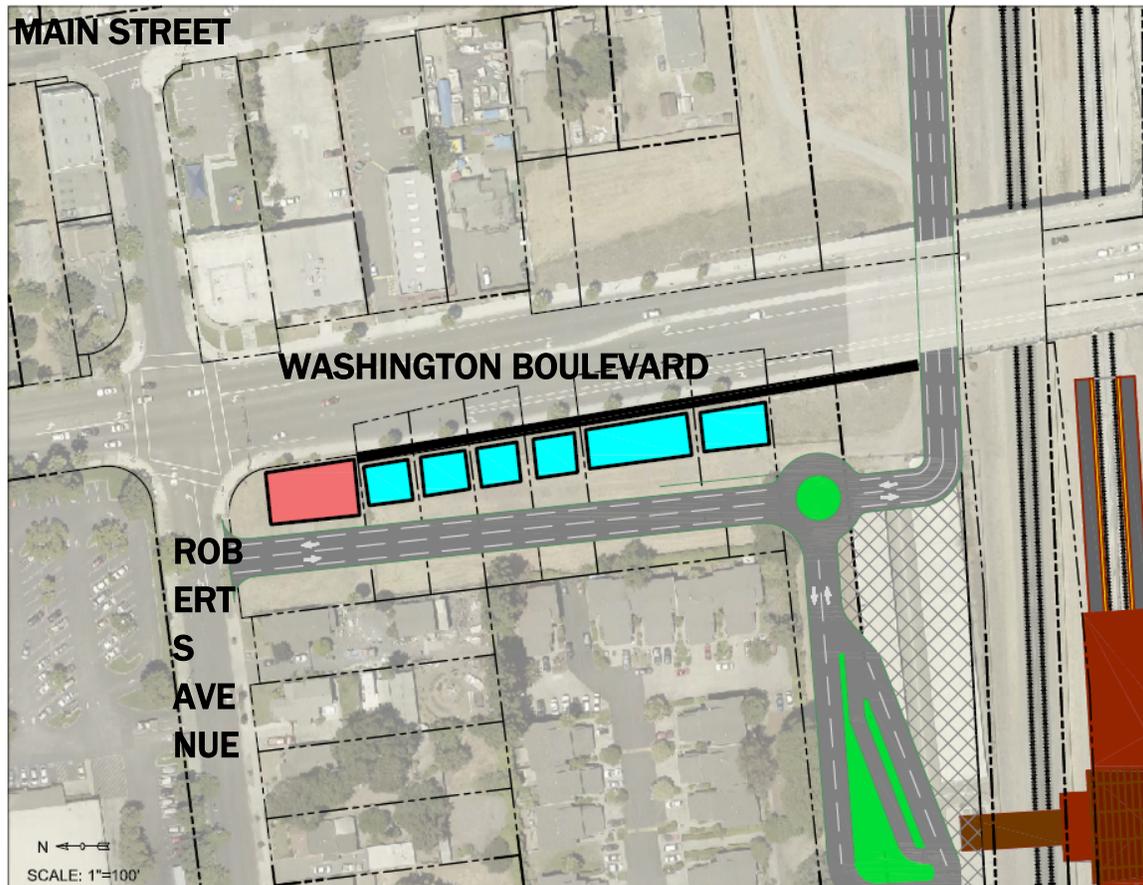
Promoting “gateway” retail uses along the Frontage Road and at the Roberts Avenue corner locates revenue generating uses directly along the main station access route. The complete street would be designed to accommodate bicyclists, pedestrians and vehicles, likely with a Class I bicycle path. A retaining wall will be required along west side of Washington in lieu of a side slope.

The complete street could incorporate a woonerf concept as shown in the picture to the right. The “woonerf” inspired *living street* employs the European street design concept pioneered in the Netherlands in which space is shared equally between all modes, while



prioritizing bicycle and pedestrian comfort and safety. The concept views the street space as a public space, designed with streetscape amenities and design treatments such as continuous curbs. Design speeds are also set to “walking speeds” as a traffic calming measure. The woonerf is usually enabled by complimentary adjacent land uses such as residential and/or commercial.

Figure 14: West Side Station Access Road Option 3 – Infill Development



Source: HNTB 2016

5.3.4 West Side Access Road Recommendations

Option 1: Traffic Circle

Option 2: Bicycle and Pedestrian Greenway

Option 3: Infill Development

- Option 1 is not recommended.
- Options 2 and 3 support enhanced connections between station and Irvington business district which optimize development opportunities and bicycle and pedestrian access
- Option 3 maximizes station value capture from locating mixed use development along the Frontage Road. Siting of mixed use developments include infill commercial and office along major station access routes is key to success of TOD strategies.
- Osgood side continues as main vehicular/transit access to station with secondary access from Roberts Avenue and Main Street.

5.4 Parking

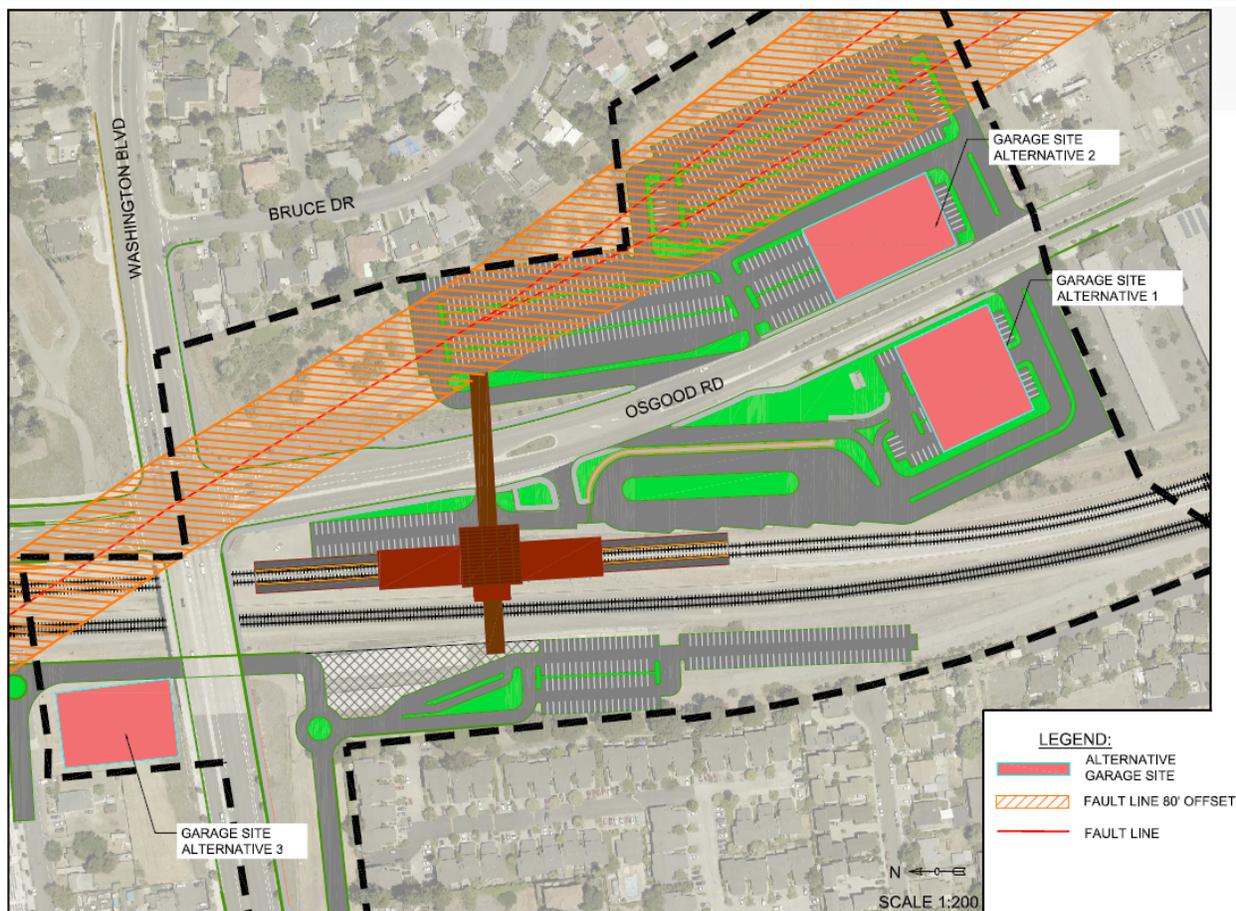
Potential parking reconfiguration to optimize station land use for transit-oriented development (Figure 15)

Nine-hundred and twenty-five (925) surface parking spaces were proposed in the 2006 WSX FEIS optional Irvington Station site plan, constraining land availability for other uses. The Hayward Fault line also intersects two proposed parking lots, which requires an updated assessment of structured parking options. Structured parking was not included in the original site plan and is considered here as a potential opportunity to optimize land use for TOD. The next phase of project development should further explore the advantages of both surface and structured parking, including the costs and trade-offs of developing structured and surface parking in the near- or short-term.

Structured and Surface Parking Mix

- Typical Design Assumptions:
 - 10x20 Parking
 - 80' setback from fault line (50' acceptable)
- Each potential garage location provides approximately 450 spaces based on BART examples (e.g.; MacArthur BART)

Figure 15: Potential Parking Locations



Source: HNTB 2016

5.5 Transit-Oriented Development (TOD)

5.5.1 Proposed Development

The City of Fremont has received a development proposal for one parcel within the station project area. The City has placed a Planning Study Area over the current station project area to allow time for more detailed site design to inform the City and BART regarding station site requirements.

In the future, maximum site utilization may be achieved by reconfiguring the parking layout to provide structured parking. Relocation of surface parking may prove to be a reasonable short-term option, although it may involve some additional property outside of the Irvington Station area. Structured parking alternatives would feasibly cover any potential displaced surface parking and strategically utilize the station area to provide more development opportunities along both sides of Osgood (Figure 17); however, structured parking may not be economically viable at this time.

Figure 16: San Leandro BART TOD



Source: BART 2016

5.5.2 Development Opportunities

The following land uses are permissible in the Irvington TOD overlay area (Figure 18). The overlay allows for increased densities and floor area ratio (FAR) to maximize development near transit.

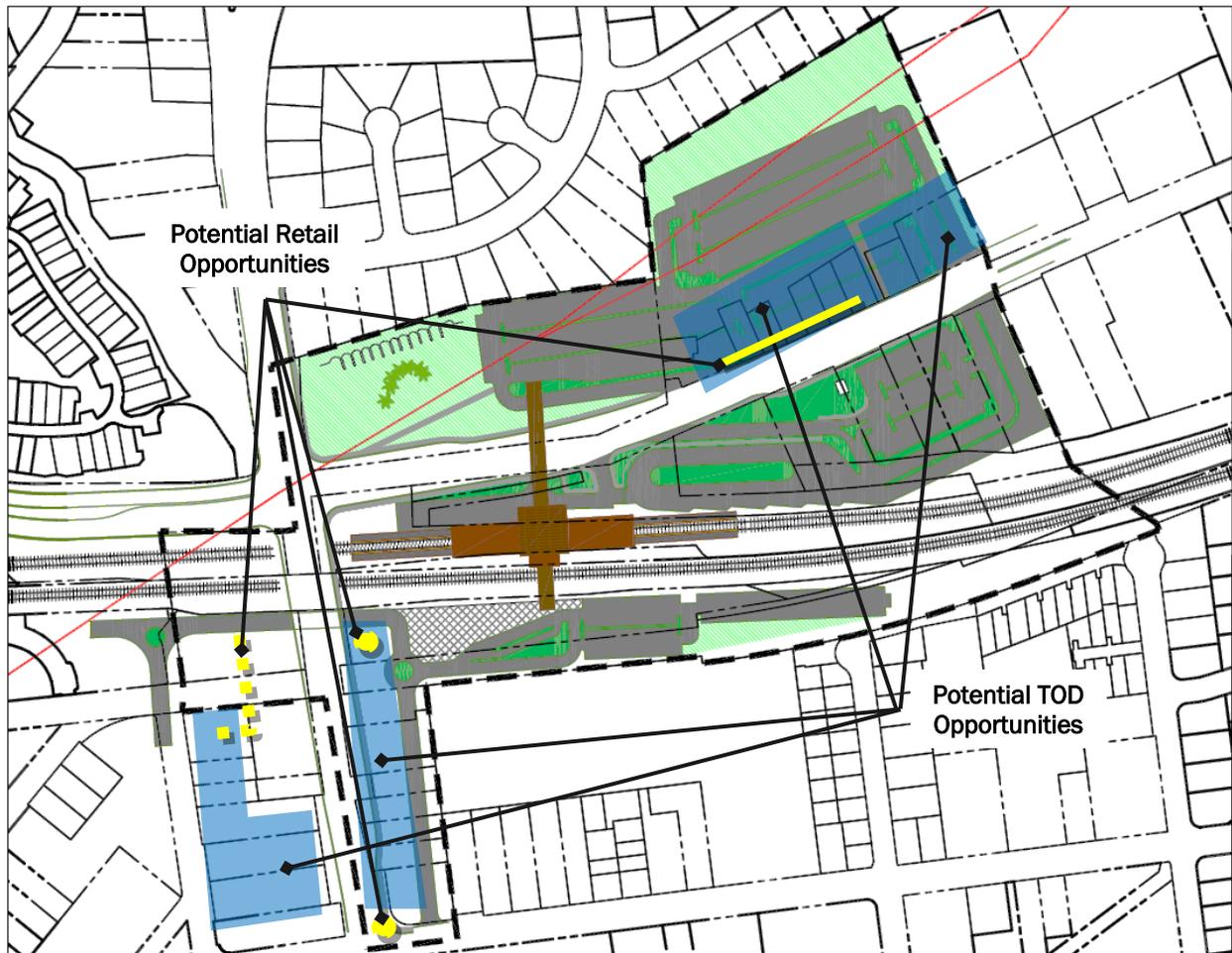
Commercial Town Center

- Maximum FAR of 1.25 for mixed-use projects with ground floor commercial and residential
- Minimum FARs of 0.5 and FAR increases up to 2.5 are allowed for TOD overlay area

Urban Residential

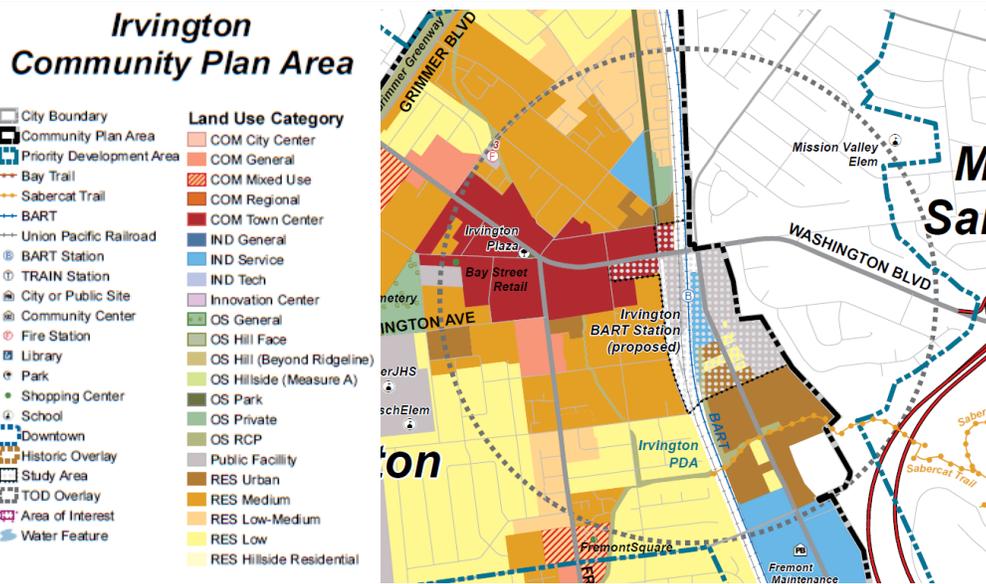
- Apartment buildings and condominiums generally greater than four stories
- Minimum residential density of 30 units per net acre and up to 70 units per net acre
- 625 to 1,450 square feet per unit
- Should include common open space and other shared amenities
- Mixed use development allowed under certain conditions

Figure 17: Potential Future TOD and Retail Locations



Source: HNTB 2016

Figure 18: Irvington Station Area TOD Overlay



Source: City of Fremont General Plan, December 2011

5.5.3 Property Acquisitions

As part of the Washington Grade Separation Project, the City of Fremont purchased parcels and cleared land along south side of Washington Boulevard. The private parcel at the southeast corner of Washington Boulevard and Roberts Avenue (41100 Roberts Avenue) was not acquired by the City since it was not necessary for the grade separation project. The City considered acquiring the parcel with redevelopment funds; however, there was no means to continue acquisition after the dissolution of California Redevelopment Agencies in 2011. The 15,311 square foot lot is currently listed as vacant commercial.

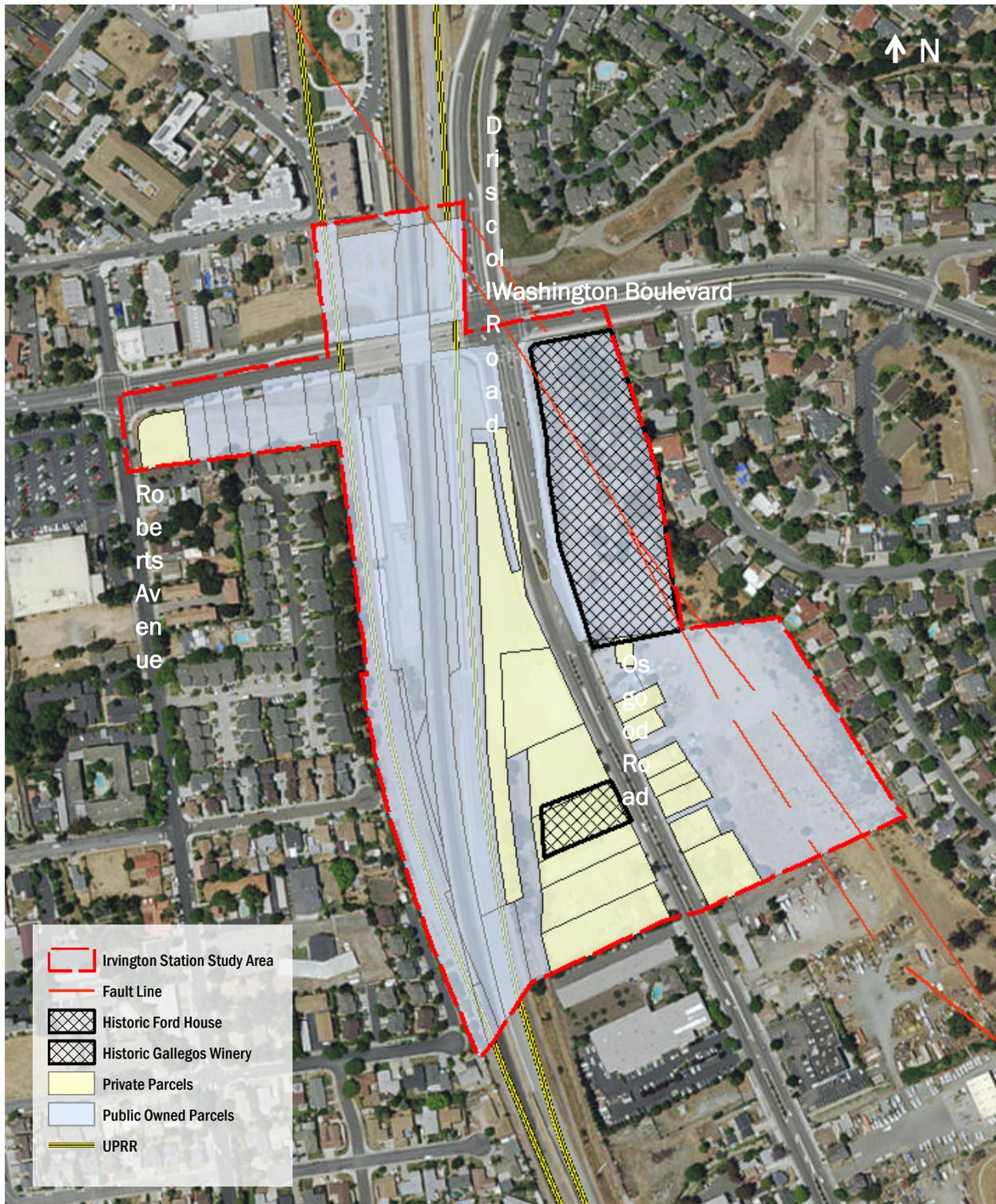
Required Parcels

It is anticipated that some parcels will need to be acquired for station plan development (**Figure 19**). Potential property acquisition involves the following private and publicly held parcels:

Table 4: Required Private and Public Parcels

BART Parcel	APN	Owner
Private Parcels to be acquired		
J-1064	525-0342-007	Betchart
J-1065	525-0342-001	Betchart
J-1001	525-0342-002	Betchart
J-1016	525-0342-03-2	Foster
J-1017	525-0342-04	Trettin
J-1018	525-0342-05	Chang
J-1019	525-0342-006-02	BofA
J-1009	525-0345-031-02	Bauer
J-1020	525-0345-032-11	Nielson
J-1021	525-0345-029-04	Wolfe
J-1022	525-0345-027-04	Hatsushi
J-1023	525-0345-026-04	Liu
J-1024	525-0345-021-04	Tan
J-1066	525-0345-025-04	Sangha
J-1067	525-0345-023-02	Hatsushi
High St	525-0195-001	vacant industrial
3553 Washington	525-0628-001	public facility
41100 Roberts	525-0600-018-05	vacant commercial
UPRR property on west side of realigned UP tracks	525-0342-008-02	public facility
Public Parcels		
J-1003	525-0342-008-02	COF (will transfer rights to BART by deed or permanent easement)
J-1004	525-0345-001-2	BART
J-1008	525-0345-032-08	BART
J-1010	525-0342-031-04	BART
J-1064-1A & -2A	525-0342-007	public facility
J-1513	525-0342-009-03	public facility
J-1514	525-0342-009-03	public facility
J-1515	525-0339-016-01	public facility

Figure 19: Irvington Station Project Area



Source: HNTB 2016

5.6 Historic Properties

As part of the BART WSX MOA, adaptive reuse options for the Historic Ford House must be explored (See **Section 6.1**). The historic Gallegos Winery has not been officially designated for reuse, however, rehabilitation strategies which activate or reuse the space while preserving the site's historic properties can be considered and are supported by the State Historic Preservation Office and the Secretary of the Interior's Standards for the Treatment of Historic Properties. The City of Fremont General Plan also encourages the adaptive use and rehabilitation of historic buildings when the original use is no longer feasible.

Gallegos Winery (Figure 20)

Opportunities

- Bioretention area/Bioswale
- Reclaimed cultural space
 - Performing Arts
 - Cultural Festivals
- Interpretative garden or public park
 - Seating Areas
 - Public Art
 - Interpretative displays about the site's historic significance

Constraints

- Hayward Fault line through historic site
- Due to increased public use, potential increase in noise levels close to residences

Figure 20: Gallegos Winery



Source: HNTB 2016

Ford House

Similar to the Historic Gallegos Winery, the Historic Ford House setting can be enhanced to tie into potential parks, plazas, and public open spaces within the station area. Reuse options will need to be determined in consultation with BART and the City of Fremont.

5.7 Stormwater Treatment and Retention

RWQCB Stormwater Treatment Requirements

Operation and construction of the Irvington Station will need to comply with the City of Fremont's MS-4 Permit (SF Bay Region Municipal Regional Stormwater NPDES Permit Order R2-2015-0049 NPDES Permit No CAS612008). Irvington Station would require creation or replacement of over 10,000 square feet of impervious surface and would therefore be considered a Regulated Project. Regulated Projects are required to implement low impact development (LID) source control, site design, and to treat stormwater onsite or at a joint stormwater treatment facility.

Each Regulated Project is required to implement at least the following design strategies onsite:

1. Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;
2. Conserve natural areas, including existing trees, other vegetation, and soils;
3. Minimize impervious surfaces;
4. Minimize disturbances to natural drainages; and
5. Minimize stormwater runoff by implementing one or more of the following site design measures:
 - Direct roof runoff into cisterns or rain barrels for reuse.
 - Direct roof runoff onto vegetated areas.
 - Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
 - Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
 - Construct sidewalks, walkways, and/or patios with pervious pavement systems.
 - Construct driveways, bike lanes, and/or uncovered parking lots with pervious pavement systems.

Regulated Projects are required to treat 100% of the amount of runoff (as identified by volume or flow hydraulic calculations) with LID treatment measures for stormwater harvesting and use, infiltration, evapotranspiration, and biotreatment/bioretenion. Green roofs may be considered biotreatment systems that treat roof runoff only. Compliance can also be achieved through LID treatment at an offsite location or by payment of in-lieu fees. The project is not located in an exempt area for hydromodification requirements. It may be required to match post-project flows and durations to pre-project patterns for smaller, more frequent rain events.

Existing Site Conditions

The proposed Irvington Station is located within the Laguna Creek Watershed, which starts in the foothills of the Diablo Range and flows across the flatlands and into Mud Slough and Coyote Creek and eventually into South San Francisco Bay. Washington Creek runs underneath the project in an underground culvert/storm drain and flows into an engineered channel of Sabercat Creek to the south of the project site. Site elevations range from 20-50 feet above sea level. The topography of most of the site is flat, at around 20-25 feet elevation, with the majority of the elevation change occurring on the slope to the west of the houses along Bruce Drive and Middlefield Avenue.

Approval of the stormwater management system by the ACFCD is required to ensure that station operation will not exacerbate either upstream or downstream flooding. Construction of additional storage facilities such as detention basins needs review and permission of City of Fremont and ACFCD. Currently, Laguna Creek downstream of the project is undergoing improvements to increase its capacity. Its current design is able to contain a 15-year design storm with 1 foot of freeboard. With the planned upgrades, it will be able to convey a FEMA 100-year design storm. Construction is planned in phases from December 2016-November 2024. Development of a drainage master plan for Zone 6 (Fremont) is underway by the Alameda County Flood Control District (ACFCD). Currently the project is just outside the FEMA Special Flood Hazard Areas.

Project changes affecting drainage and stormwater management

Construction of Irvington BART Station and project area would result in rework of existing impervious areas as well as creation of new impervious surfaces, particularly if parking structures are included. In order to treat the stormwater runoff from impervious surfaces, additional drainage, infiltration, and/or storage features will be required.

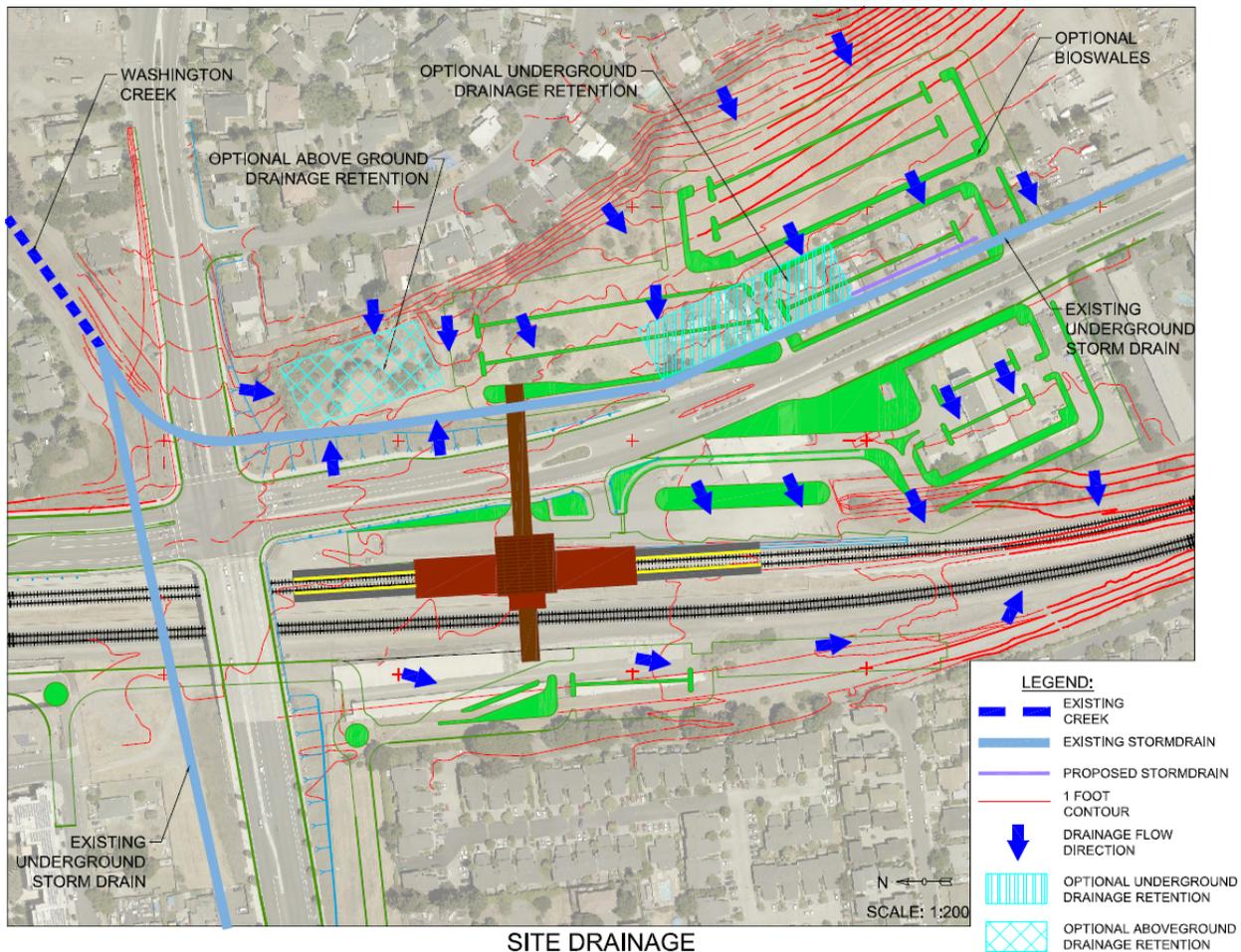
If structured parking is ever utilized, the Irvington BART Station may qualify under Category C Special Project Criteria for Transit-Oriented Development, if it meets the minimum floor-to-area ratio (FAR) of 2:1. As a Category C Project, the Station could qualify for a reduced percentage of required LID treatment. For any Special Project, the allowable incentive LID Treatment Reduction Credit is the maximum percentage of the amount of runoff, that may be treated with one or a combination of the following two types of non-LID treatment systems:

- Tree-box-type high flowrate biofilters
- Vault-based high flowrate media filters

The total maximum LID Treatment Reduction Credit allowed is based on Location, Density, and Minimized Surface Parking. Due to the location of development at a transit hub, Irvington Station would qualify for 50% Location Credit. Density Credits will increase from 10% with FARs over 2:1.

Surrounding open spaces, including Gallegos site could serve as a bioretention/biotreatment area. The Gallegos site could provide up to about 70,000 square feet of treatment if the full site is designed for stormwater retention and infiltration. Smaller biofiltration swales and bioretention areas can be distributed around the Station Campus, including the parking areas.

Figure 21: Site Drainage



Flood Control and Hydromodification

An additional requirement is hydromodification management, keeping post-project peak runoff rates at pre-project rates. Typically this requirement can be met by constructing properly sized retention facilities that receive runoff from the development and meter flows out to the downstream drainage facility. For the Irvington Station, retention facilities can be located underneath the larger surface parking lots, but cannot be constructed under the TOD areas or future parking structures.

BART stations require design and implementation of management systems to mitigate for peak design runoff. The BART WSX Extension stored approximately one million gallons in an underground retention structure under approximately 20,000 square feet of parking lot. Metered outlets control the outflow of stored water. Further study is needed to determine whether underground retention is feasible for the Irvington Station (Figure 21); however, cost estimates include possible below-grade retention options.

5.8 Wall Stabilizations

Two potential sites needing wall stabilization were identified:

- Historic Gallegos Winery brick coffer walls require reinforcement
- Stabilization of slopes for structured parking and uphill residences

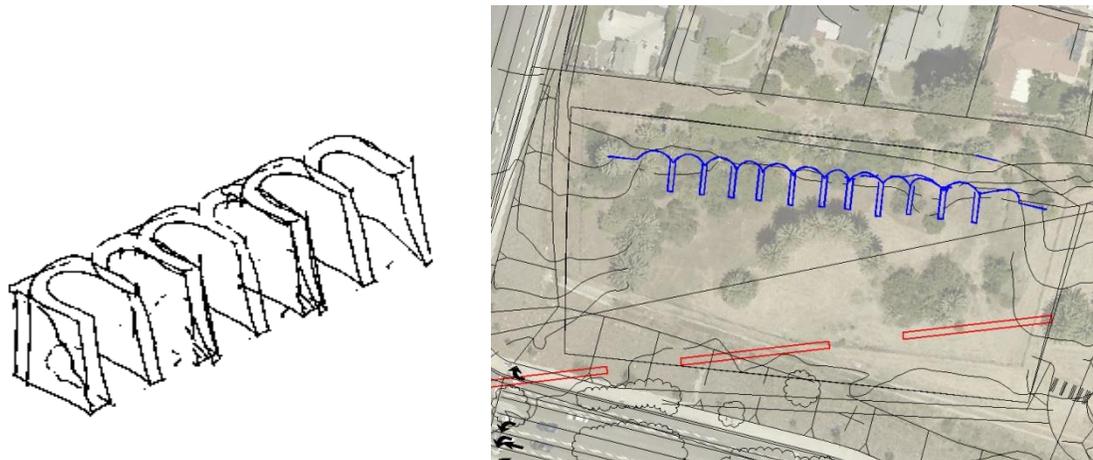
Retaining walls may also be required to allow for the developments on the north and south sides of Washington Boulevard near the west side station entrance.

5.8.1 Gallegos Winery

Issues

- The historic coffer wall in Gallegos Winery ruins was built in late 1800's (**Figure 20**)
- Typical unreinforced brick wall
- Wall undergoes the gradual weathering caused by combined forces of wind and rain
- Cracks, spalling, erosion and loose and crumbling mortar occur with the wall as it ages
- Existing walls and palm trees at Gallegos winery site under protection; City relocated historic circle of palm trees as part of Washington Boulevard Grade Separation
- Proximity of existing housing behind the wall

Figure 22: Historic Gallegos Winery Coffered Walls



Source: HNTB 2016

Repair Strategies

The retrofit of the historic wall will achieve two goals:

- Seismic upgrading to provide adequate life-safety protection
- Preserving the historic features of the wall

A comprehensive repair strategy would include the following measures:

- Repair the mortar joints where there is evidence of deterioration such as disintegrating mortar, cracks in mortar joints.
- Repair cracks or infilling small holes in brick using a cementitious patching material
- Remove any brick which has deteriorated, shifted, or is damaged beyond repair

- Rebuild brickwork to match existing bonding patterns and use salvaged brick where possible
- Install steel bar anchors in brick walls

5.8.2 Hill Slope Stabilization

Due to the proximity of the slope to the Hayward Fault line, slope stabilization measures should be included as part of the current project or as a separate project. There are three options suitable to this site for hill slope stabilization:

Method 1	Soil Nail
Advantage	Most effective to prevent sliding; Parking Lot can be pushed back as far as possible, most cost-effective at approximately \$120 per square foot.
Disadvantage	Only applicable to some soil types and existing soils are unknown at this time.
Method 2	Bench
Advantage	Series of steps cut into slope. Effective in reducing shallow failure.
Disadvantage	Not efficient in improving overall slope stability. Requires large excavation
Method 3	Strengthen Slope
Advantage	Apply synthetic reinforcement materials (plastic polymer) on the slope to form a lightweight, high tensile-strength grid.
Disadvantage	Requires re-grading before plastic mesh reinforcement is used.

A combination of methods 1 and 2 could be appropriate for this situation, pending further analysis during the preliminary engineering phase.

5.9 Recommendations for Further Study

The existing site plan reflects the 2003 SEIR/2006 FEIS WSX Optional Irvington BART concept plan. The next phase of this project will determine the final site plan and study the surrounding access needs and development potential. The following project elements have been considered in this study and are recommended for further consideration during development of the site plan, Station Area Plan, and environmental update.

- Bicycle and Pedestrian Access
 - Analysis of Bicycle and Pedestrian Access Pressures
 - East Bay Greenway Trail Access
- Pick-up/Drop-off Access
 - Location of bus intermodal facilities
 - Location of kiss-and-ride facilities
- West Side Station Access Improvement Opportunities
 - Traffic Impact Analysis
- Parking Options
 - Surface Parking Lots
 - Locating future structured parking sites for potential TOD opportunities
- Potential Future TOD Opportunities
 - Transit-oriented mixed-use development
 - Sites for potential first-floor retail frontage
- Potential Open Spaces, Plazas, or Parks
- Stormwater Treatment and Retention
 - Identify potential underground location for 1-million gallon retention basin
- Historic Properties Adaptive Reuse Alternatives for Gallegos Winery and Ford House
 - Performing Arts & Cultural Festivals
 - Interpretative garden or public park
 - Seating Areas
 - Public Art
 - Informational Displays of Historical Significance
- Wall Stabilizations
 - Stabilization of Gallegos Winery Wall
 - Stabilization of Hill Slopes

Section 6. Environmental

6.1 Historic Properties

Two historic properties are located within the station area: the Gallegos Winery, on the east side of Osgood Road at Washington Boulevard, and the Ford House, on the west side of Osgood Road south of the Irvington Station.

Historic Gallegos Winery

The Gallegos Winery is currently enclosed with BART-installed protective fencing. In a Memorandum of Agreement for the BART Warm Springs Project, BART, on behalf of FTA, agreed to stabilize and preserve the structural remains of the winery and historic palm trees, if feasible, pursuant to the Secretary of the Interior's Standards.²⁴

Historic Ford House

While the BART Warm Springs 2003 SEIR found that that the site lacks historical significance and is therefore ineligible for the California Registry of Historic Places (CRHR), the 2006 FEIS recommended adaptation of the Ford House for reuse. Additionally, the Memorandum of Agreement for the BART Warm Springs Project stipulates that adaptive reuse options will be explored for the building in the event the Irvington BART Station is constructed and that documentation be undertaken in accordance with the 2000 Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) Guidelines.²⁵

6.2 Level of Environmental Document Required

CEQA

An independent program level EIR process will be included in the Irvington BART Station Area Plan, which will be prepared by the City of Fremont in the next phase of project development. This would provide updates to the Warm Springs BART Extension Supplemental EIR completed in 2006 and incorporate the prior SEIR by reference. If the proposed program includes acquisition of new parcels not previously included in the 2006 EIR, it will require additional study of potential impacts in the new study area.

A project level Supplemental EIR focused around the Irvington BART Station project is recommended in order to capture potential new environmental effects and additional feasible mitigation measures of the proposed project not addressed in the 2006 Master SEIR. If major changes are anticipated that would change the impacts addressed in the 2006 Master SEIR, such as land acquisition outside the original station area, a Subsequent EIR will be required.

Appendix C includes further detail regarding the anticipated next steps of the environmental process.

²⁴ Memorandum of Agreement for the BART WSX Project, 6.

²⁵ Memorandum of Agreement for the BART WSX Project, 7.

Additional studies including the following will be required:

- Visual
- Traffic
- Cultural
- Noise
- Hazardous Materials (possible)
- Air Quality (possible)
- Storm Water

NEPA (Environmental Assessment)

The project is not expected to require federal funding. However, if the project does utilize federal funds, it is recommended that a NEPA Environmental Assessment/Finding of No Significant Impact (EA/FONSI) be conducted. This would include updates to the BART Warm Springs Extension NEPA review to reflect additional parcels and station project areas; however, trends of changes from the previous assessment may be incorporated in the updated NEPA.

Section 7. Project Delivery Plan

7.1 Project Management

The Irvington BART station project is a collaborative effort between the Bay Area Rapid Transit (BART) District and the City of Fremont.

The City of Fremont will manage planning and development around the station area, including land use, architectural and transportation planning, in order to integrate the station with the greater City of Fremont planning vision. The next phase of the project will include the site plan definition and Station Area Plan, which will be managed by the City.

BART will manage the design phase in order to uphold operational and safety standards, and will coordinate with the City of Fremont to acquire any remaining properties needed for site build-out. Development proposals involving land within the station project area will be purchased in BART's name and approved by the City. The next phase of the project will include the environmental update, which will be co-managed by BART and the City.

7.1.1 Delivery Methods

The City and BART both prefer using Design-Bid-Build for the Irvington BART Station. Design-Bid-Build (D-B-B) is a traditional process of project delivery with three key components:

- **Design** The project's sponsor agency can either perform the design work internally or contract with an engineering firm to perform the design services by preparing drawings and specifications.
- **Bid** The agency then engages contractors in a competitive bidding process in order to procure a construction contractor.
- **Build** The agency guarantees to the contractor that the drawings and specifications are complete, accurate, and free of errors, and manages the contractor through project delivery.

Design-Build (D-B) is an alternative process that streamlines project delivery by engaging one contractor to provide both design services and construction services, eliminating the bidding process in between the two phases. As opposed to D-B-B, where the contracting agency assumes the risk of verifying the design plans and specifications, D-B places the risk of accuracy verification on the Design-Build contractor; however, design changes after the preliminary design is done and the project is bid are often much more expensive to accommodate.

Utilizing a D-B process can save time, money, and improve project quality due to continuous involvement of the design team throughout project development; however, contractors may not allocate enough budget to keep the designer engaged at the right level throughout the project. There can be other drawbacks to the D-B method of project delivery. As large design-build contracts are too big for smaller local firms to pursue and lead, D-B favors large national engineering firms with the capacity to undertake and manage larger projects. Elimination of the low bid contractor selection

criteria can increase project costs. Finally, the D-B process can undermine the inherent checks and balances associated with independent design and construction teams, disrupting traditional quality assurance/control achieved through the D-B-B process.

7.2 Delivery Plan

The Scoping/Planning phase is comprised of preliminary conceptual engineering and environmental work, including development of the final Site Plan, Station Area Plan, and updated CEQA document. Assuming a Supplemental EIR for the environmental task, the Scoping/Planning phase will be completed by the end of 2017. The Preliminary Engineering phase will consist of the work needed to complete PE and will take place in 2018. ROW acquisitions of parcels to be determined by the Scoping/Planning phase are scheduled to be acquired by the end of 2019. PS&E will be finalized by June 2020 and the project will then go out to bid for construction in 2020. Construction of this project, including final testing and commissioning, will be completed by the end of 2023 (Table 6).

Table 6: Irvington BART Station Delivery Plan

2015	2016	2017	2018	2019	2020	2021	2022	2023
Scoping/Planning: PE & Environmental			Led by City of Fremont					
		ROW Acquisition						
Led by BART		Complete PE						
		Final Design						
				Bid				
		Construction						
						Testing and Commissioning		

7.2.1 Cost Estimate

A detailed cost estimate is included in this report as **Appendix A**, and a cost estimate summary for the Irvington BART Station and its EBGW Bicycle/Pedestrian Bridge are provided in **Table 7** and **Table 8**, respectively.

Table 7: Irvington BART Station Cost Estimates Summary* (YOE)

<i>Phase</i>	<i>Estimated Cost</i>	<i>Estimated Fiscal Year of Completion</i>	<i>Delivery Lead</i>
Scoping/Planning	\$ 2,660	2018	City and BART
Preliminary Engineering	\$ 2,605	2019	BART
Right-of-Way	\$ 34,330	2020	City/BART
Final Design	\$ 9,336	2020	BART
Construction	\$ 86,339	2024	BART
Total Project Cost	\$ 135,270	2024	City/BART

Table 8: EBGW Bicycle/Pedestrian Bridge Cost Estimates Summary* (YOE)

<i>Phase</i>	<i>Estimated Cost</i>	<i>Estimated Fiscal Year of Completion</i>	<i>Delivery Lead</i>
Final Design	\$ 1,508	2020	City
Construction	\$ 14,846	2024	City
Direct Project Costs	\$ 16,355	2024	City
Agency Costs	\$ 1,477	2024	City
Total Project Cost	\$ 17,832	2024	City

7.3 Risks

The project has identified and included costs for low and medium risks. Each level of risk corresponds to a percentage allowance, which is applied to the applicable costs and added to the total project costs. Potential risks have been determined to be low and are identified below:

Hazardous Materials – The project is adjacent to an active UP corridor. The area under the UPRR track is under order to be cleaned by the former owner and is underway. The project intends to remove and relocate a small amount of hazardous materials. There is a low level risk that costs could increase due to additional mitigation.

Contaminated Materials – A small area of the site in the immediate vicinity of the active UP corridor will likely have contaminated soils. There is a low level risk that costs could increase due to additional mitigation.

Utilities – The project has identified and incorporated costs for identified utility relocation. Kinder-Morgan high pressure jet fuel pipeline under the old UPRR alignment on the west side of the tracks is now owned by the City. As utility mapping is advanced there is a low level risk for additional costs related to unforeseen utility relocations.

Geotechnical and/or Seismic –The project scope makes assumptions related to the geotechnical conditions for the retrofit/restoration of the Gallegos Winery Walls, for slope stabilization, and for the

construction of several structures. There is a low-level risk that the existing soil conditions in these locations may require a more costly/robust seismic design. The project is proposing a pedestrian bridge extending over both an active UP track, and Osgood Road. This bridge will tie into the multistory Irvington station. Since these elevated structures are within 500' of the Hayward fault the project will require extensive studies, which may result in additional construction costs.

Environmental – There is a low-level risk that additional environmental documentation or mitigation regarding noise, visuals, and historic preservation will be required for this project. Additional mitigations may be required for the historic preservation of the Gallegos Winery and the Ford House.

Property Acquisition – There is a low-level risk of increasing costs for property acquisition.

Security and Safety – There is a low-level risk of security and safety issues. Additional mitigation may be required to address issues resulting from a nearby homeless encampment.

Community Impacts – Construction of a new BART station and Transit Oriented Development will impact the residents in the neighborhoods surrounding the station. There is a low-level risk that there will be additional costs related to these impacts. Mitigation may be required related to the noise and visual impacts to the surrounding community. An increase in roadway traffic and parking on the arterial and residential roadway immediately surrounding the station may also require mitigation.

7.4 Funding

7.4.1 Early History

The Irvington BART Station was originally identified in 1992 as a planned BART station along the Warm Springs Extension in Fremont. Due to fiscal constraints, in 2001 the Irvington station was relegated from “planned” to “optional” depending on available funding, which the City of Fremont was tasked with identifying.

In 2008, the City of Fremont undertook the Irvington Station Cost Effective Construction Study to determine elements of the Irvington project to construct with the Warm Springs Extension in order to make the future construction of Irvington station more cost effective. The City paid \$252,000 of Redevelopment funding to design and construct two under track elements for the future station as part of the WSX construction. This work saved an estimated \$13.1 million (in 2008 dollars) of future construction costs.

In 2010, the City of Fremont’s Redevelopment Agency proposed \$120 million in funding to construct the Irvington BART Station. In 2011, California’s state legislature voted to dissolve Redevelopment Agencies, eliminating funding for the Irvington Station.

7.4.2 Measure BB Background (2014)

In November 2014, more than 70% of Alameda County voters approved Measure BB, a sales tax measure dedicated to supporting transportation projects in Alameda County. Measure BB augments

the existing Measure B half-cent transportation sales tax by an additional half-cent and extends the full-cent tax through spring of 2045.

Expenditures of Measure BB funds are governed by the Transportation Expenditure Plan (TEP), which allocated \$120 million for the Irvington BART Station project. One of the goals of Measure BB funding is expansion of BART, bus, and commuter rail to provide reliable, safe, and fast services throughout Alameda County. The TEP outlines investments of \$710 million in BART System Modernization and Expansion over the 30-year measure, of which \$120 million is for the Irvington BART Station.

Measure BB dedicates 8% of total available funding to bicycle and pedestrian projects, an increase from the previous transportation sales tax in Alameda County, Measure B, which dedicated 5% of funding to such projects²⁶. This increase in funding of 3 percentage points of total Measure BB funds, or \$264 million in 2014 dollars, is targeted specifically to funding the completion of three major inter-jurisdictional trails – including the East Bay Greenway.

7.4.3 Alameda CTC's 2017 Comprehensive Investment Plan (CIP)

To create a short term implementation plan in support of the TEP, Alameda CTC develops a 5-year Comprehensive Investment Plan (CIP) including a 2-year Allocation Plan to distribute the available funding to Alameda County's prioritized transportation projects. The CIP includes programming and allocations for federal, state, and local funds, including Measure BB revenue. The 2015 CIP and Allocation Plan were developed and adopted in May 2015 and updated in spring 2016.

The 2016 CIP Update programmed \$2.66 million for the site plan definition, Station Area Plan, and updated environmental document for the Irvington BART Station project in fiscal year 2017. Development of the 2017 CIP is currently underway and funding allocations in the Allocation Plan will be for fiscal years 2018 and 2019, when the Irvington BART Station will be entering the design phase. The CIP will also include funding needs for future project phases and additional projects for fiscal years 2020-2222, though these costs are included for planning purposes only as they are beyond the 2 year Allocation Plan.

7.4.4 Current Project Status

This project is currently included in the CIP 2016 Update, which programmed \$2.66 million for the environmental update and site plan definition in fiscal year 2017, leaving \$117.34 million in funding available for future phases. The next phase of this project will include the site plan definition and Station Area Plan managed by the City of Fremont, and the environmental process managed by BART. Preliminary Design is scheduled to begin in fiscal year 2018 and Final Design is expected to be complete by the end of fiscal year 2020.

²⁶ Alameda CTC, *Alameda County's 20-Year Transportation Expenditure Plan, (Measure B), July 2000.*
Alameda CTC, *2014 Alameda County Transportation Expenditure Plan, (Measure BB), January 2014.*

Funding for projects is prioritized in the CIP based on project readiness for implementation and regional significance as demonstrated by recent planning efforts. The CTP develops a financially constrained list of CTP projects and programs ready for short-term implementation, and identified the Irvington BART Station as a Tier 1 fully funded regional project, with a year of expenditure project cost of \$127 million. As Measure BB identified \$120 million for the Irvington BART Station, the CTP proposed additional regional funding of \$7 million for the project. The cost estimate prepared as a part of this scoping study has identified escalation costs amounting to \$7.3 million.

Additionally, the Irvington BART Station project has now been updated to include a bicycle and pedestrian bridge which supports connectivity to another major regional project currently under development in Fremont: the East Bay Greenway (EBGW). The EBGW is featured in the CTP and throughout the vision system in Alameda’s Countywide Bicycle Plan, running along the abandoned UPRR corridor and existing BART line, stretching from Albany to the southern county line in Fremont. The cost to construct this bridge is approximately \$18 million.

Table 9: CIP Scoring Criteria – Irvington BART Station

Scoring Criteria	Supporting Project Details
<p>Readiness Delivery Criteria: The project must have a well-defined funding plan, budget and schedule; implementation of the project phase must be feasible; governing body approval and community support must be demonstrated; and the agency must have the ability to coordinate among internal and external agencies, as applicable.</p>	<ul style="list-style-type: none"> ▪ The City of Fremont is currently coordinating to refine cost estimates, schedule, and a funding plan in this Scoping Report. This project is a joint venture between the City of Fremont managing the site plan definition and Station Area Plan and BART managing the environmental process, station design, and construction. ▪ Alameda CTC has programmed \$2.66 million in fiscal year 2017 funding for the site plan definition, station area plan, and environmental update for Irvington Station. The City of Fremont will manage the site plan definition and BART and the City will co-lead the environmental update. ▪ The City of Fremont and BART have the staff and resources necessary to coordinate internally and externally with agencies and organizations as needed.
<p>Needs and Benefits Criteria: The project need must be clearly defined and demonstrate how the transportation improvement will benefit intended users by increasing connectivity, improving access, supporting well-maintained transportation facilities/equipment (as applicable); promote innovation and a multimodal system;</p>	<ul style="list-style-type: none"> ▪ This project promotes an innovative and system by building an infill station to expand and distribute ridership demands over three BART stations in Fremont. ▪ This project promotes a multi-modal system by increasing connectivity to the East Bay Greenway project, designated as a Countywide Priority in the Countywide Transportation Plan. The Irvington BART Station will provide pedestrians and bicyclists with a connection to the larger EBGW corridor that is envisioned to stretch from Albany to Fremont.

Scoring Criteria	Supporting Project Details
improve safety; support a clean environment; and strengthen the economy.	<ul style="list-style-type: none"> ▪ Many of BART's riders park at the station and commute on transit, reducing the length of vehicle trips and providing environmental benefits related to air quality and the reduction of greenhouse gas emissions to the surrounding communities, the City of Fremont, and the Bay Area. ▪ The Irvington Station will provide the surrounding community with increased connections to jobs and schools in the Irvington District PDA.
Project/Program Sustainability Criteria: The project must demonstrate the ability to be maintained beyond project completion.	<ul style="list-style-type: none"> ▪ BART will pay for and manage the maintenance and operations of the Irvington BART Station. ▪ The City of Fremont will manage and maintain the streets and roads around the station, including the bicycle and pedestrian connection to the EBGW.
Matching and Leveraging Funds Criteria: The project must have secured funding from other sources or demonstrate how it will leverage other funds for use on the project.	<ul style="list-style-type: none"> ▪ The City of Fremont intends to support transit-oriented development around the station in order to increase ridership and leverage other revenue for the Irvington BART Station and development. ▪ BART will manage maintenance and operations of the station using a mix of fares, parking fees, and other available funding.
Other Funding Features: As applicable, the project must incorporate complete streets and other requirements mandated by other funding sources/programs.	<ul style="list-style-type: none"> ▪ As the Irvington BART Station will be owned and operated by BART, the station will be built according to BART Facility Standards and be consistent with BART's Station Access and TOD policies and Design Guidelines and Standards. ▪ This project is consistent with the City of Fremont's Complete Streets Policy adopted in 2013. ▪ This project is being developed consistent with Alameda CTC's funding guidelines.

7.4.5 Other Funding Considerations

Funding for major transportation projects is commonly derived from several programs at the local, state, and federal levels. Decreases in federal and state funding have led California cities and counties to provide an increasingly larger percentage of funding for transportation projects. Alameda County has had a number of successful measures dedicated to funding transportation projects, including Measure BB. Due to the decrease in federal funding, the City is pursuing local and state funding sources for the Irvington BART Station project, rather than relying on federal sources.

While there are federal constraints at every level, the Irvington BART station project is eligible for a number of funding sources. Appendix B includes a table of potential funding sources at the local and state level.

Transit-Oriented Development

This project will create opportunities for transit-oriented development (TOD) around the new BART station. TOD plans can incorporate a variety of housing and retail in mixed-use development strategically located around transit to generate a pedestrian-oriented environment that encourages the use of public transportation.

Effective TOD efforts around BART stations allow community residents easy walking access to a range of goods and services adjacent to transit, reducing traffic and pollution and increasing ridership. This can be seen in the new Warm Springs TOD Village, which provides a mix of housing types including affordable housing for seniors, and can serve as a model in equitable and efficient TOD for Irvington Station's development. The Warm Springs TOD village incorporates ground floor retail and interweaves open park spaces and urban plazas to enhance multi-modal access.

As ridership increases, use of commercial development increases, creating a mutually beneficial relationship between transit and land use. This symbiotic relationship increasing economic activity around transit also spurs an increase in property values. There may be opportunities for the City of Fremont and BART to generate funds for the project by obtaining a portion of the increased land values driven up by these new developments.

Further analysis is needed to determine the value capture strategies that can best be utilized for this project. Strategies to consider include the following:

- Tax Increment Financing (TIF) – Taxes on increases in assessed property values are used to finance redevelopment.
- Special Assessment Districts – Also known as Benefit Assessment Districts, a fee is charged to property owners to finance public improvements that benefit the property.
- Property-Based Business Improvement Districts – A self-imposed and self-governed property tax assessment enacted by a Business Improvement District in order to fund development enhancements that augment city services.
- Development Fees – Charges assessed to new development to finance new infrastructure needs or to mitigate any negative effects new development may have on the community.
- Joint Development – A partnership between public agencies and private developers can include a requirement that the developer build a portion of the station, reducing the cost of the project.
- Lease of land – Developable land owned by the City and BART in the vicinity of the transit station can be sold or leased as property values rise, capturing the added value.
- Sale or Lease of Development Rights or Air Rights – The City and BART can also enter into long-term leases with developers for ground, air, or subsurface development rights.
- Lease of Commercial Space and Parking – BART can develop and retain ownership of commercial space in and around the station and lease it out at market rates. Partnerships with BART for shared use parking should also be explored.

In developing a TOD strategy for Irvington BART Station, considerations should be made for BART's planning policies, particularly regarding station access and TOD, as well as successes and lessons learned regarding recent TOD developments around BART stations. Opportunities exist to better understand travel and access patterns in order to maximize placement of commercial and retail opportunities along major pedestrian and bicycle corridors. This should be further studied in the next phase of project development.

7.4.6 Funding Plan for Irvington BART Station

Table 10: Funding Plan for Irvington BART Station

	Alameda CTC's 5-Year Comprehensive Investment Plan 2017							TOTAL	
	2-Year Allocation Plan								
	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	
Project Cost Estimate by Phase									
Scoping/Planning	\$ 1,773,000	\$ 887,000							\$ 2,660,000
Preliminary Engineering/Design		\$ 1,303,000	\$ 1,303,000						\$ 2,605,000
Right-of-Way			\$ 22,887,000	\$ 11,443,000					\$ 34,330,000
Final Design			\$ 6,224,000	\$ 3,112,000					\$ 9,336,000
Construction					\$ 14,390,000	\$ 28,780,000	\$ 28,780,000	\$ 14,390,000	\$ 86,339,000
TOTAL PROJECT COSTS	\$ 1,773,000	\$ 2,190,000	\$ 30,414,000	\$ 14,555,000	\$ 14,390,000	\$ 28,780,000	\$ 28,780,000	\$ 14,390,000	\$135,270,000
Prospective Funding Sources									
Alameda CTC - Measure BB Irvington BART	\$ 1,773,000	\$ 2,190,000	\$ 30,414,000	\$ 14,555,000	\$ 14,390,000	\$ 28,780,000	\$ 27,900,000		\$ 120,000,000
Local Discretionary Funding (per CTP)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 880,000	\$ 14,390,000	\$ 15,270,000
TOTAL PROSPECTIVE FUNDING	\$ 1,773,000	\$ 2,190,000	\$ 30,414,000	\$ 14,555,000	\$ 14,390,000	\$ 28,780,000	\$ 28,780,000	\$ 14,390,000	\$135,270,000

Note: Slight differences in totals are due to rounding.

7.4.7 Funding Plan for EBGW Bicycle/Pedestrian Bridge at Irvington BART Station

Table 11: Funding Plan for EBGW Bicycle/Pedestrian Bridge at Irvington BART Station

	Alameda CTC's 5-Year Comprehensive Investment Plan 2017							TOTAL	
	2-Year Allocation Plan								
	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	
Project Cost Estimate by Phase									
Final Design			\$ 1,005,000	\$ 503,000					\$ 1,508,000
Construction					\$ 2,474,000	\$ 4,949,000	\$ 4,949,000	\$ 2,474,000	\$ 14,846,000
DIRECT PROJECT COST	\$ -	\$ -	\$ 1,005,000	\$ 503,000	\$ 2,474,000	\$ 4,949,000	\$ 4,949,000	\$ 2,474,000	\$ 16,354,000
Program Costs			\$ 246,000	\$ 246,000	\$ 246,000	\$ 246,000	\$ 246,000	\$ 246,000	\$ 1,477,000
TOTAL PROJECT COSTS	\$ -	\$ -	\$ 1,251,000	\$ 749,000	\$ 2,720,000	\$ 5,195,000	\$ 5,195,000	\$ 2,720,000	\$ 17,831,000
Prospective Funding Sources									
Alameda CTC - Measure BB Major Trails	\$ -	\$ -	\$ 1,005,000	\$ 503,000	\$ 2,474,000	\$ 4,949,000	\$ 4,949,000	\$ 2,474,000	\$ 16,354,000
City of Fremont - Measure BB Local Dist.	\$ -	\$ -	\$ 246,000	\$ 246,000	\$ 246,000	\$ 246,000	\$ 246,000	\$ 246,000	\$ 1,477,000
TOTAL PROSPECTIVE FUNDING	\$ -	\$ -	\$ 1,251,000	\$ 749,000	\$ 2,720,000	\$ 5,195,000	\$ 5,195,000	\$ 2,720,000	\$ 17,831,000

Note: Slight differences in totals are due to rounding.

APPENDICES

APPENDIX A

Detailed Cost Estimates

Project Cost Estimate Summary

Project Sponsor: **City Of Fremont**
 Project Name: **Irvington BART Station**

DATE: **June 23, 2016**
 REV: **1**

Project location and brief description:

The project estimate includes updating the site plan, environmental work, design, ROW acquisition costs, and construction of the station, which includes the following elements: excavation, paving for parking, drainage basin, hill slope stabilization, traffic handling, roadside management, and the BART station structure.

TYPE OF ESTIMATE: **Initial**
 PREPARED BY: **HNTB**

SUMMARY OF PROJECT OUTLAY COSTS	STATION	BIKE / PED BRIDGE	
I. ROADWAY } II. STRUCTURES } ETCC	\$ 60,466,036	\$ 11,997,984	
III. RIGHT OF WAY	\$ 34,329,925	\$ -	
IV. CONCEPTUAL ENGINEERING STUDIES	\$ 1,063,262	\$ -	
V. ENVIRONMENTAL STUDIES	\$ 850,610	\$ -	
VI. DESIGN ENGINEERING	\$ 6,911,204	\$ 1,371,357	
VII. DESIGN SERVICES DURING CONSTRUCTION...	\$ 797,447	\$ 158,234	
VIII. CONSTRUCTION STAKING	\$ 1,329,078	\$ 263,723	
IX. CONSTRUCTION MANAGEMENT	\$ 6,911,204	\$ 1,371,357	
X. RISK BASED ALLOWANCES	\$ 15,168,694	\$ 1,192,026	
DIRECT PROJECT COSTS (Sum of ETCC and sections III through X)	\$ 127,827,460	\$ 16,354,680	
XI. AGENCY MANAGEMENT	\$ 7,442,835	\$ 1,476,846	
TOTAL PROJECT COSTS	\$ 135,270,295	\$ 17,831,526	\$ 153,101,821

Irvington Station				
Phase	Direct Cost	Risk Factors	Agency Costs	Total
Scoping/Planning	\$ 1,900,000	\$ -	\$ 760,000	\$ 2,660,000
Preliminary Engineering/Environmental Studies	\$ 1,077,134	\$ 1,490,638	\$ 37,447	\$ 2,605,219
Final Design (PS&E)	\$ 5,847,942	\$ 608,130	\$ 2,879,668	\$ 9,335,741
Right of Way Capital	\$ 33,293,750	\$ -	\$ -	\$ 33,293,750
Right of Way Support	\$ 900,000	\$ -	\$ 136,175	\$ 1,036,175
Utility Relocation and Protection	\$ -	\$ -	\$ -	\$ -
Construction Capital	\$ 60,466,036	\$ 13,069,926	\$ -	\$ 73,535,961
Construction Support	\$ 9,037,729	\$ -	\$ 3,765,720	\$ 12,803,449
TOTALS	\$ 112,522,591	\$ 15,168,694	\$ 7,579,010	\$ 135,270,295

Bike / Ped Bridge @ Irvington Station				
Phase	Direct Cost	Risk Factors	Agency Costs	Total
Scoping/Planning	\$ -	\$ -	\$ -	\$ -
Preliminary Engineering/Environmental Studies	\$ -	\$ -	\$ -	\$ -
Final Design (PS&E)	\$ 1,371,357	\$ 137,136	\$ 639,967	\$ 2,148,459
Right of Way Capital	\$ -	\$ -	\$ -	\$ -
Right of Way Support	\$ -	\$ -	\$ -	\$ -
Utility Relocation and Protection	\$ -	\$ -	\$ -	\$ -
Construction Capital	\$ 11,997,984	\$ 1,054,890	\$ -	\$ 13,052,874
Construction Support	\$ 1,793,313	\$ -	\$ 836,879	\$ 2,630,192
TOTALS	\$ 15,162,654	\$ 1,192,026	\$ 1,476,846	\$ 17,831,526

TOTAL \$ 153,101,821

Project Cost Estimate Summary, Sections I through XI

SPONSOR: City Of Fremont
PROJECT: Irvington BART Station

DATE: June 23, 2016
REV: 1

Indicates Sponsor Input

I. ROADWAY	UNIT	ALLOWANCE	PROPONENT PRICE	TOTAL COST
I.1 Total Earthwork	LS	N/A	\$ 3,062,000	\$ 3,062,000
I.2 Total Pavement Structural Section	LS	N/A	\$ 6,006,000	\$ 6,006,000
I.3 Total Drainage	LS	N/A	\$ 1,208,000	\$ 1,208,000
I.4 Total Specialty Items	LS	N/A	\$ 2,497,500	\$ 2,497,500
I.5 Total Traffic Items	LS	N/A	\$ 1,160,500	\$ 1,160,500
I.6 Total Planting and Irrigation	LS	N/A	\$ 670,000	\$ 670,000
I.7 Total Roadside Management	LS	N/A	\$ 417,500	\$ 417,500
I.8 Minor Items (5-10% of total cost of items I.1 thru I.7)	LS	10%	--	\$ 1,502,150
I.9 Roadway Mobilization (10% of total cost of items I.1 thru I.8)	LS	10%	--	\$ 1,652,365
I.10 Roadway Additions				
Supplemental Work (5-10% of total cost of items I.1 thru I.8)	LS	10%	--	\$ 1,652,365
Roadway Contingency (5-20% of total cost of items I.1 thru I.8)	LS	20%	--	\$ 3,304,730
TOTAL FOR SECTION I. ROADWAY				\$ 23,133,110

II. STRUCTURES	STRUCTURE TYPE	UNIT	TOTAL AREA	PROPONENT UNIT PRICE	TOTAL COST
II.1a	Multi-Use Path Struct. over RR (includes 25% conti. & 10% mob.)	SF	0	\$ 787	\$ -
II.1b	Multi-Use Path Ramps to Struct. (includes 25% conti. & 10% mob.)	SF	0	\$ 390	\$ -
II.2	BART Station (with structures)	SF	70000	\$ 429	\$ 30,030,000
II.3	Parking Gargage Structure (6 levels)	SF	206250	\$ -	\$ -
TOTAL FOR SECTION II. STRUCTURES					\$ 30,030,000

TCC TOTAL CONSTRUCTION COST (TCC) - SUM OF SECTIONS I. ROADWAY AND II. STRUCTURES \$ 53,163,110

III. RIGHT OF WAY	UNIT	ALLOWANCE	PROPONENT PRICE	CONTINGENCY 25%	TOTAL COST
III.1	OVERALL ROW	LS	\$ 27,235,000	\$ 6,808,750	\$ 34,043,750
III.2	Misc ROW Costs (Consultant Fees, etc.)	LS	\$ 286,175		\$ 286,175
TOTAL FOR SECTION III. RIGHT OF WAY					\$ 34,329,925

ENGINEERING AND MANAGEMENT COSTS

Note: Depending on the project's level of development, Sections IV through VI may not be applicable.

	ALLOWANCE	TCC	TOTAL COST
IV. CONCEPTUAL ENGINEERING STUDIES	2.0%	\$ 53,163,110	\$ 1,063,262
V. ENVIRONMENTAL STUDIES	1.6%	\$ 53,163,110	\$ 850,610
VI. DESIGN ENGINEERING	13%	\$ 53,163,110	\$ 6,911,204
VII. DESIGN SERVICES DURING CONSTRUCTION (DSDC)	1.5%	\$ 53,163,110	\$ 797,447
VIII. CONSTRUCTION STAKING	2.5%	\$ 53,163,110	\$ 1,329,078
IX. CONSTRUCTION MANAGEMENT	13%	\$ 53,163,110	\$ 6,911,204
XI. AGENCY MANAGEMENT	14%	\$ 53,163,110	\$ 7,442,835

X. RISK BASED ALLOWANCES

RISK CATEGORY	ALLOWANCE (APP. A)	APPLICABLE COSTS	TOTAL COST
XI.1 Utilities (sum sections I.2, III)	Low 10%	\$ 40,335,925	\$ 4,033,593
XI.2 Geotechnical and/or Seismic (sum sections I.1 thru I.4, II)	Low 5%	\$ 42,803,500	\$ 2,140,175
XI.3 Environmental (section I.4, I.6, III, IV, V)	Low 10%	\$ 39,411,297	\$ 3,941,130
XI.4 Site Access and Traffic Control (sum sections I.1, I.5, I.7, I.9, II)	Low 5%	\$ 36,322,365	\$ 1,816,118
XI.5 Hazardous Materials (sum sections I.1 thru I.4, III)	Low 5%	\$ 47,103,425	\$ 2,355,171
XI.6 Controversy and/or Environmental Justice (sum sections IV, V, VI)	Low 10%	\$ 8,825,076	\$ 882,508

Project Cost Estimate Summary, Sections I through XI

SPONSOR: City Of Fremont
PROJECT: Irvington BART Station

DATE: June 23, 2016
REV: 1

Indicates Sponsor Input

XI.7 Other Issues (sponsor defined allowance and sections)	0%	\$ -
TOTAL FOR SECTION X. RISK BASED ALLOWANCES		\$ 15,168,694

ESCALATION

	VALUE	
1. Anticipated year to begin construction, N_{start} :	2021	
2. Estimated construction duration (in years)	3	
3. Number of years to midpoint of construction, N_{Δ}	6.50	
4. Annual Escalation Rate, AER (percentage)	2.0%	
5. Total Construction Cost (TCC)	\$ 53,163,110	ESCALATED
6. Total Escalation	1.14	TCC
	=====	=====
ESCALATED TOTAL CONSTRUCTION COST (ETCC)	\$ 60,466,036	\$ 60,466,036

To escalate the TCC to midpoint of construction:

$$\text{Total Escalation} = (1 + AER)^{N_{\Delta}}$$

where: $N_{\Delta} = N_{mid} - N_{current}$

$$N_{mid} = \frac{\text{duration}}{2} + N_{start}$$

$$\text{ESCALATED TOTAL CONSTRUCTION COST (ETCC)} = \text{TCC} \times \text{Total Escalation}$$

Example: Determine N_{Δ} , number of years to midpoint of construction.

First: Determine the year that construction would be at a midpoint. Divide the estimated construction duration in half and add to the anticipated year that construction will begin.

- '1. Anticipated year to begin construction 2020
- '2. Estimated construction duration 4

$$N_{mid} = \frac{4}{2} + 2020 = 2022$$

Second: The number of years to midpoint of construction equals the difference between the midpoint year of construction and the current year.

$$N_{\Delta} = 2022 - 2011 = 11$$

TOTAL PROJECT COSTS = SUM OF ETCC AND SECTIONS III THROUGH X = \$ 127,827,460

Project Cost Estimate Section I. Roadway, Subsections 1-7

SPONSOR: City Of Fremont
PROJECT: Irvington BART StationDATE: June 23, 2016
REV: 1

GROUP CODE	ITEM DESCRIPTION	UNIT	PRICE	QUANTITY	TOTAL COST
01 EARTHWORK					
01	SITE EXCAVATION	CY	\$30.00	67,000	\$2,010,000
01	CLEARING & GRUBBING	LS	\$150,000.00	1	\$150,000
01	ROUNDING (CONTOUR GRADING)	CY	\$60.00	6,700	\$402,000
01	DIFFERING SITE CONDITIONS	LS	\$500,000.00	1	\$500,000
SUBTOTAL FOR ITEM 01 EARTHWORK					=====
					\$3,062,000
02 PAVEMENT STRUCTURAL SECTION					
02	ASPHALT CONCRETE PAVEMENT - Surface Parking Lots	SF		10 350,000	\$3,500,000
02	ASPHALT CONCRETE PAVEMENT - Bike Path	SF		8 6,000	\$48,000
02	ASPHALT CONCRETE PAVEMENT - Access Roads	SF		12 133,500	\$1,602,000
02	ASPHALT CONCRETE PAVEMENT (Bus Areas)	CY		500 200	\$100,000
02	CONCRETE SIDEWALK (Misc.)	SF		8 32,000	\$256,000
02	MISC ITEMS	LS	500000	1	\$500,000
02				0	0
02				0	0
SUBTOTAL FOR ITEM 02 PAVEMENT STRUCTURAL SECTION					=====
					\$6,006,000
03 DRAINAGE					
03	CONCRETE GUTTER (Roadway)	LF	\$60.00	6,800	\$408,000
03	BASIN (On site)	LS	\$350,000.00	1	\$350,000
03	BMPs	LS	\$150,000.00	1	\$150,000
03	MISC. DRAINAGE ITEMS	LS	\$300,000.00	1	\$300,000
SUBTOTAL FOR ITEM 03 DRAINAGE					=====
					\$1,208,000
04 SPECIALTY ITEMS					
04	RETAINING WALLS (@ Washington Blvd.)	LF	\$75.00	2,000	\$150,000
04	REPAIR WALL @ WINERY	LF	\$250.00	350	\$87,500
04	HILL SLOPE STABILIZATION	SF	\$40.00	20,000	\$800,000
04	WATER POLLUTION CONTROL	LS	\$100,000.00	1	\$100,000
04	RELOCATE UTIL POLES	EA	\$8,000.00	20	\$160,000
04	RELOCATE MISC UTIL	LS	\$350,000.00	1	\$350,000
04	MISC PROPERTY DEMO & REMOVALS	LS	\$850,000.00	1	\$850,000
SUBTOTAL FOR ITEM 04 SPECIALTY ITEMS					=====
					\$2,497,500
05 TRAFFIC ITEMS					
05	RELOCATE STREET LIGHTING (POLES)	EA	\$2,000.00	10	\$20,000
05	TRAFFIC STRIPING	LF	\$2.50	10,200	\$25,500
05	TRAFFIC SIGNALS - RELOCATE SIGNAL POLES (Washington)	EA	\$75,000.00	4	\$300,000
05	ROADSIDE SIGNS	EA	\$500.00	30	\$15,000
05	TRAFFIC HANDLING	LS	\$800,000.00	1	\$800,000
05			\$0.00		\$0
05			\$0.00		\$0
05			\$0.00		\$0
05			\$0.00		\$0
SUBTOTAL FOR ITEM 05 TRAFFIC ITEMS					=====
					\$1,160,500
06 PLANTING AND IRRIGATION					
06	PLANTING	LS	\$500,000.00	1	\$500,000
06	REPLACEMENT PLANTING	LS	\$50,000.00	1	\$50,000
06	IRRIGATION MODIFICATION	LS	\$20,000.00	1	\$20,000
06	FACILITIES	LS	\$100,000.00	1	\$100,000
06			\$0.00		\$0
06			\$0.00		\$0

SPONSOR: City Of Fremont
 PROJECT: Irvington BART Station

DATE: June 23, 2016
 REV: 1

GROUP CODE	ITEM DESCRIPTION	UNIT	PRICE	QUANTITY	TOTAL COST
06			\$0.00		\$0
06			\$0.00		\$0
06			\$0.00		\$0
SUBTOTAL FOR ITEM 06 PLANTING AND IRRIGATION					=====
					\$670,000
07 ROADSIDE MANAGEMENT AND SAFETY SECTION					
07	EROSION CONTROL	LS	\$150,000.00	1	\$150,000
07	CHAIN LINK FENCE	LF	\$55.00	3,000	\$165,000
07	CHAIN LINK FENCE GATE	EA	\$1,000.00	10	\$10,000
07	BOLLARDS	EA	\$250.00	50	\$12,500
07	DRIVEWAY TREATMENTS	EA	\$2,000.00	10	\$20,000
07	STREET INTERSECTIONS	EA	\$10,000.00	6	\$60,000
SUBTOTAL FOR ITEM 07 ROADSIDE MANAGEMENT AND SAFETY SECTION					=====
					\$417,500
TOTAL FOR SECTIONS I.1 THROUGH I.7 =					\$15,021,500

APPENDIX B

Additional Funding Sources

Alameda CTC Funding Sources

Alameda CTC selects the appropriate funding source(s) to allocate to projects prioritized in the CIP. The Allocation Plan includes 3 types of funding streams²⁷:

Direct Local Allocations – Direct allocations to local jurisdictions and transit operators to be used at the discretion of the grant recipients upon eligible activities and projects

Capital Allocations – Capital projects specifically named in the TEP, like the Irvington BART Station

Program Allocations – Discretionary grant programs administered by the Alameda CTC for which eligible projects may compete

Elements of the Irvington BART Station and its connections to the East Bay Greenway are eligible for Measure BB funding through all three of these programs: direct local distributions, capital allocations, and program allocations. Elements of the project are eligible for other discretionary funding sources administered by Alameda CTC through program allocations, including Transportation Fund for Clean Air funds. The Alameda CTC administered funding sources for which project elements of the Irvington BART Station are eligible are discussed below.

Measure BB: Capital Allocations for BART Station Modernization and Expansion

Measure BB invests \$710 million in BART Station Modernization and Expansion, with \$120 million dedicated directly to Irvington BART Station. As of the CIP 2016 Update, the Allocation Plan includes \$2.66 million for the environmental update and site plan definition of the Irvington BART Station in fiscal year 2017 with \$117.34 million remaining in Measure BB funds dedicated to this project.

Measure BB: Capital Allocations for Completion of Major Trails

Three percent of Measure BB funding is targeted towards the completion of three major trails in the region: the Iron Horse trail, the Bay Trail, and the East Bay Greenway spanning from Oakland to Fremont. These projects are intended to increase pedestrian and bicycle options, provide access to more open space, and improve public safety in neighborhoods adjacent to these three major trails. The Central Park to Alameda Creek segment of the East Bay Greenway will improve network connectivity and access to Fremont's largest community park, Central Park. The project will support community health and reduce greenhouse gas emissions by increasing pedestrian and bicycle trips through the community.

The total revenue available over the 30-year measure for development of these three major trails is anticipated to be \$264 million. The Alameda Countywide Pedestrian Plan identifies a need of \$508 million to complete these three major trails²⁸, so funding for these projects is likely to be competitive. Investments will be made by phase and prioritized through the biennial development of Alameda CTC's CIP.

Measure BB: Direct Local Allocations

Alameda CTC is currently distributing direct local allocations to cities in Alameda County on a monthly basis. Monthly distributions are based on population and support local streets and roads, bicycle and pedestrian, and paratransit projects and programs. Elements of the Irvington BART Station project related to streets and roads and bicycle and pedestrian facilities around the station are eligible for funding through this category.

²⁷ Alameda CTC, Comprehensive Investment Plan FY16, p. 24-25

²⁸ Alameda CTC, Alameda Countywide Pedestrian Plan, p. 88

As identified in the TEP, the CIP allocates 3% of Measure BB revenues directly to cities in Alameda County to support bicycle and pedestrian projects²⁹. The City of Fremont's projected direct allocation for bicycle and pedestrian projects for fiscal year 2016 is anticipated to be approximately \$550,000³⁰.

Elements of this project are also eligible for funding through the direct local distributions of the Local Streets Maintenance and Safety Program. Funds in this program may be used for any local streets and roads transportation need based on priority. The City of Fremont's direct allocation for streets and roads projects for fiscal year 2016 is anticipated to be approximately \$2 million³¹.

It should be noted that both of these direct programs may be oversubscribed, with many projects competing for the funding.

Measure BB: Countywide Discretionary Funds

The passage of Measure BB established the Community Developments Investments Program, which invests 4% of total funding available, an anticipated \$300 million over the 30-year measure, in sustainable projects that increase transportation connectivity to jobs and schools³². This new funding program supports the coordination of planning transportation systems and land use development to address growing demand and development of housing and communities, particularly in Priority Development Areas (PDA) in Alameda County. The Irvington BART Station is within the Irvington District PDA in the 4.84 square mile Irvington community area. Projects funded through this program will enhance areas around BART stations and bus transfer hubs slated for new development in order to develop and support multi-modal communities.

The Bicycle and Pedestrian Grant Program is a competitive, discretionary, grant program guided by the priorities outlined in the Countywide Bicycle Plan and Countywide Pedestrian Plan. Measure BB, through its TEP, directs 2% of revenue towards funding the implementation and maintenance of bicycle and pedestrian facilities, anticipated to be \$154 million over the 30-year measure³³. Bicycle and pedestrian elements of the Irvington BART Station project increase connectivity to the East Bay Greenway, featured throughout the "vision system" of the Alameda Countywide Bicycle and Pedestrian Plans.

The Implementation Guidelines for the Bicycle and Pedestrian Safety program from Measure BB include the following eligible uses for funding capital projects:

- New pedestrian facilities (e.g. sidewalks, curb ramps, countdown signals, accessible signals)
- Improvements to existing pedestrian facilities
- New bikeways
- Improvements or upgrades to existing bikeways
- Maintenance of bicycle and pedestrian facilities
- Crossing improvements for pedestrians and bicycles (at intersections, interchanges, railroad crossings, freeways, etc.)
- Bicycle parking facilities, including construction, maintenance, and operations
- ADA on-street improvements
- Signage for bicyclists and/or pedestrians

²⁹ Alameda CTC 2014 Alameda County Transportation Expenditure Plan, January 2014

³⁰ Alameda CTC MEASURE BB SALES & USE TAX REVENUE ALLOCATIONS FY16

³¹ Alameda CTC MEASURE BB SALES & USE TAX REVENUE ALLOCATIONS FY16

³² Alameda CTC 2014 Alameda County Transportation Expenditure Plan, January 2014

³³ 2014 Alameda County Transportation Expenditure Plan, January 2014

- Improvements for pedestrian and bicycle access to, from, and at transit facilities
- Traffic calming projects
- All phases of capital projects, including feasibility studies, planning, and environmental

Transportation Fund for Clean Air

Transportation Fund for Clean Air (TFCA) is a local fund source of the Bay Area Air Quality Management District (Air District) which derives revenue from a \$4 vehicle registration fee collected in Alameda County. Projects that result in the reduction of motor vehicle emissions and meet Air District requirements for project cost effectiveness are eligible for TFCA funding.

Of TFCA funding available, the Air District programs 60% and allocates 40% to Alameda CTC for programming. Alameda CTC distributes 70 percent of annual funding to the cities and county and 30 percent is available for transit-related projects. Approximately \$2 million in TFCA funding is programmed annually.

Vehicle Registration Fee

The Measure F Alameda County Vehicle Registration Fee (VRF) Program was approved by the voters in November 2010, with 63 percent of the vote. The \$10 annual VRF fee generates approximately \$11 million per year.

The goal of the VRF program is to sustain the County's transportation network and reduce traffic congestion and vehicle related pollution. The program includes four categories of projects with the following funding distributions:

- Local Road Improvement and Repair Program (60 percent)
- Transit for Congestion Relief (25 percent)
- Local Transportation Technology (10 percent)
- Pedestrian and Bicyclist Access and Safety Program (5 percent)

Alameda CTC distributes an equitable share of the funds among the four planning areas of the county using a formula weighted 50 percent by population of the planning area and 50 percent by registered vehicles in the planning area.

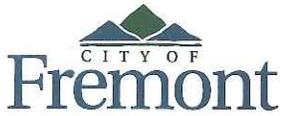
Other State and Local Sources

Name	Source	Administered By	Category	Description/Purpose	Who May Apply?	Approximate Funding Available
Active Transportation Program (ATP)	Federal and state funds	Caltrans	Bicycle and Pedestrian	Signed into law in September 2013, the ATP consolidates existing federal and state transportation programs into a single program focused on Active Transportation. Programs consolidated include the Transportation Alternatives Program, Bicycle Transportation Account, and State Safe Routes to Schools.	50% of program funding is distributed to the state for statewide competitive program, 40% is distributed to MPOs in urban areas with populations greater than 200,000 for competitive program	\$128.7 million in California in FY2015.
Regional Surface Transportation Program	FHWA	Caltrans	Roadways/ Highways, Bridges, Transit, Pedestrian and Bicycle	Flexible funding for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.	States and localities	\$851.7 million to California in FY2014, 76% must be spent in 11 urbanized areas

Name	Source	Administered By	Category	Description/Purpose	Who May Apply?	Approximate Funding Available
State Transportation Improvement Program (STIP)	Federal and California	California Transportation Commission, working with regional/county/metropolitan planning agencies.	Transit, Roadways/Highways	STIP is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the State Highway Account and other funding sources, including federal.	Local agencies	The FY2016 fund estimate (which includes funding amounts through FY2021, covering multiple years) was recently cut by a total of \$801 million dollars, and includes \$250 million for Rail and Transit projects and \$1.7 billion for Roadways and Highways.

APPENDIX C

City of Fremont Funding Request for Irvington BART Station Scoping/Planning



Public Works Department

39550 Liberty Street, P.O. Box 5006, Fremont, CA 94537-5006
42551 Osgood Road, Fremont, CA 94539 (Maintenance Center)
www.fremont.gov

February 12, 2016

Mr. Art Dao
Executive Director
Alameda County Transportation Commission
1111 Broadway, Suite 800
Oakland, CA 94607

Subject: Funding for Next Phase of the Irvington BART Station

Dear Mr. Dao:

As you know, the Irvington BART Station is one of the projects specifically included in the 2014 Measure BB Transportation Expenditure Plan. Although most of the Station site is owned by either BART or the City of Fremont, based on the current station site plan, 17 parcels are still in private ownership. Requests to develop some of these parcels have already occurred. The City Council has established a Planning Study Area for the properties in the immediate vicinity of the Irvington Station to provide time for the City and BART to update the site plan, define the ultimate property needs, and determine the compatibility of the proposed developments with the station needs. The Study Area may be able to hold off development of the station site for up to 18 months, but not much more. Therefore, it is critical that ACTC, BART and the City of Fremont take the necessary steps needed to rework the outdated site plan and environmental document to establish the property needs and be prepared to appropriately respond to current and future development proposals.

Recently, two different developers who own or control parts of the station site, as well as additional land outside the station boundaries, have approached the City requesting approval to construct transit supportive developments on these parcels. Although the City would like to approve as much transit supportive development in this area as possible, it has informed both developers that additional analysis will be required before the City and BART can determine if the Irvington Station is still feasible without these parcels. Thus the City finds itself in the difficult situation of not wanting to allow development that may impact the future station, but at the same time not having the ability or resources to revise the site plan or acquire the properties.

The most recent site plan concept for the Irvington Station was completed more than 13 years ago. Since that time a great number of changes have occurred that will require a complete reanalysis of the site plan. The changing site plan and the fact that the project's State environmental clearance is nearly 13 years old will require new environmental documentation. Completion of these two steps, the new site plan and environmental document, is estimated to cost \$2.66 million.

Jim Pierson of our staff has discussed this issue with James O'Brien who informed Mr. Pierson that it may be possible to include funding for the site planning and environmental work in ACTC's current FY 15/16 CIP when it is updated in May. Recognizing the critical need for this next step to be completed as



Civic Facilities

510 494-4700 / 510 494-4751 fax

Engineering

510 494-4700 / 510 494-4721 fax

Maintenance Center

510 979-5700 / 510 979-5708 fax

Transportation Engineering

510 494-4745 / 510 494-4751 fax

Art Dao
Subject: Funding for Next Phase of the Irvington BART Station
February 12, 2016
Page 2 of 2

quickly as possible, the City is hereby requesting that ACTC allocate \$2.66 million of Measure BB sales tax funding for the next phase of the Irvington BART Station when ACTC updates its current CIP in May.

Attached is a more thorough explanation of this issue along with a scope and cost estimate document prepared by our consultant HNTB. This next phase of the station development would be a closely coordinated effort between BART and the City of Fremont with the City taking the lead on the site planning and BART being the lead for the environmental document and all future phases of the project. According to our schedule, if the requested funding is approved in May, BART and the City would complete this work by December 2017. Although the environmental work would not be completed until the end of this next phase, the specific parcels needed for the revised site plan and the compatibility of existing development proposals will be determined much earlier. This will allow ACTC, BART and the City to determine the appropriate next steps for the project, whether that be allowing the developments to proceed or acquiring one or more of the properties in question.

If you have any questions in this regard, please do not hesitate to contact me or Jim Pierson at 510-494-4748 or 510-494-4772 respectively. Thank you for your consideration of this request.

Sincerely,



Norm Hughes
Public Works Director

C: Mayor Harrison
Fred Diaz
Hans Larsen
Jim Pierson
James O'Brien, ACTC

Irvington BART Station

Request for Funding for Site Planning and Environmental Update

Background

The most recent concept design for the Irvington BART Station (attached) was completed sometime prior to the 2003 Supplemental Environmental Impact Report for the Warm Springs BART Extension Project which makes the site plan more than 13 years old. Although much of the property called for in that plan has been acquired by the City of Fremont or BART, 17 parcels continue to be in private ownership. Recently, two different developers who own or control parts of the station site as well as additional land outside of the station boundaries have approached the City requesting approval to construct transit supportive developments on these properties. Although the City would like to approve as much transit supportive development in this area as possible, with both projects wanting to utilize property that is currently shown to be needed for the Irvington Station, the City has told the developers that additional analysis would be needed to determine if the site plan could be modified to allow their developments to proceed. If the site plan cannot be modified to remove these critical properties, the City will be placed in the difficult situation of trying to stop the developments even though they are on private property.

To determine whether the station site plan can be revised to exclude these two private parcels, much additional work is needed to establish a plan that incorporates the numerous changes that have incurred in the past 13+ years. Further, whether or not the site plan revision shows these parcels are still required or not, it is imperative that the City and BART be in a position to quickly respond to all future development proposals and ensure that nothing precludes the future station development. To be in such a position requires not only the updated site plan, but also an updated environmental document and then ultimately, the necessary funding to acquire the remaining properties.

In order to begin this critical process, the City of Fremont and BART are requesting Measure BB funding to complete the site plan revision and update the CEQA clearance for the station. To move forward with this phase as soon as possible, we are requesting Measure BB funding from ACTC's current FY 15/16 CIP.

Scope of Work

To establish and formally adopt a new site plan, the information used to lay out the current plan must be updated and several new regional and state requirements must be addressed. The new plan will require new traffic analysis, patronage information and mode and direction of arrival and departure data. It will also utilize BART's new access priorities that accommodate pedestrians first, then bicycles, transit, kiss and ride and finally parking. Opportunities to use additional City-owned parcels will be evaluated along with the possibility of constructing a parking structure to reduce the current size of the site in an attempt to allow more space for more transit supportive development. An economic analysis of these options will be required to make the most cost-effective decision.

In addition to updating the information used to generate the current plan, the revised plan will have to accommodate new regulatory requirements including the many new storm water regulations. The prior site layout did not account for storm water treatment or retention, which must now be included and could have a substantial impact on the site. Further, the City, BART and ACTC have undertaken a cooperative effort to develop the East Bay Greenway trail project. The East Bay Greenway will enter the

Irvington BART station site from the north on the west side of the UPRR and BART tracks using an existing trail previously created by the City and BART as part of the Washington Blvd. Grade Separation Project. As part of the Warm Springs BART Extension Project the trail will extend south of the station using space on the east side of the BART tracks. Therefore, as part of the new station site plan, the East Bay Greenway trail must not only be accommodated north to south through the site, but must also move from west to east over the UPRR and BART tracks, likely on a new pedestrian/bicycle structure.

The primary parking area for the Irvington Station sits east of Osgood Road between the road and a large embankment with homes above. BART has determined that additional analysis regarding the stability of this embankment is required to ensure it will remain structurally sound. This analysis must be conducted in this phase because additional stabilization could impact the eastern part of the station site.

The City has also applied for funding to complete a Station Area Plan for the land uses around the Irvington Station in order to make the best planning decisions to support the station. It is hoped that the timing of this Plan will allow it to be closely coordinated with the new station site plan. In addition, the City is proposing to utilize the updated environmental document for the Irvington Station to provide the environmental clearance for the Station Area Plan. This would be an efficient approach to these two projects by coordinating the environmental work as well as the public outreach processes. It would also be less confusing and impactful on the public.

Recognizing that the SEIR was approved in 2003 and the FEIS in 2006, it is imperative that there be updated environmental clearance prior to acquiring the remaining private properties. At this point, it is thought that only the CEQA document would need to be updated as there is no intention of utilizing federal funding for the station. If it is later determined that federal funding should be sought, a NEPA update could be initiated at that time. Due to the age of the SEIR and the fact that the Irvington station was previously part of the much larger Warm Springs Extension environmental clearance, a substantial update is anticipated. BART and the City have agreed that the City would lead the site planning effort and BART will be the lead agency for the update of the EIR.

To accommodate all these efforts, the current scoping project consultant, HNTB, has estimated the cost of this phase to be \$2.66 million including City and BART staff support and appropriate contingencies. If funding for this next phase can be approved in May 2016 as requested, a new consultant team could be under way by no later than September 2016 and all work completed by December 2017. The environmental update along with the associated public processes and approvals is what drives this schedule.

The City of Fremont and BART therefore request that ACTC include \$2.66 million in FY 2016 Measure BB funding when it approves updates to the current CIP in May 2016. Attached is a Project phase summary sheet which briefly describes the overall elements of the scope of work along with their associated budget.

Irvington BART Station

Site Plan Definition / Environmental Update

Phase Description:

Establish a revised site and access plan that reflects various changes that have occurred since the prior plan was developed and accommodate, to the extent possible, transit supportive development in the area that would otherwise impact the existing site plan. This phase will update the environmental document for the station and complete the environmental analysis for the City's Station Area Plan. Completion of this phase will allow the acquisition of the remaining privately held parcels of land that are within the historic station site to proceed as soon as funding is available.

Phase Schedule: Sept. 2016 to Dec. 2017

Phase Tasks & Costs:

Project Data Review, Collection & Studies

\$400,000

- Base Mapping
- Economic Land Use Study to determine economics of alternative property use proposals
- Coordination with and support of City's Station Area Plan
- Utility Investigation & Report (Level QL-D investigation)
- Geotechnical Investigation & Report
- Multi-modal Travel Demand / Forecast Study to determine new mode of arrival data, etc.

Project Concept Refinement

\$650,000

- Agency Coordination - UPRR, BART, City, utility companies, etc.
- Stakeholder Outreach Workshops - (3)
- Refine Design Parameters
 - Landuse Plan
 - Updated BART requirements and standards
 - Urban Design / Placemaking
 - Complete Streets
 - Sustainability
 - Slope & Existing Wall Stabilization (including wall treatments in historic winery area and other retaining wall /steep slopes in project area)
 - Stormwater Management
- Develop Project Alternatives (assumes up to three alternatives)
 - Parking Lots (possibly including garage alts) & Access Roads
 - Kiss and Ride facilities
 - Bus intermodal facilities
 - Station Aesthetics
 - Continuation of East Bay Greenway ped/bike trail along BART/UPRR corridor (requires trail to move from west side to east side of UP and BART tracks)
 - Strengthening of Existing Steep Slope and Winery Wall
 - Stormwater Treatment & Retention
- Develop Construction Phasing & Estimate
 - Update Implementation and Funding Plan

Irvington BART Station

Environmental Document

\$850,000

- Initial Study (IS) + CEQA Study - Review Changes to Area
- Coordination with City Station Area Plan
- Focused EIR (CEQA)
 - Environmental Tech. Studies (Visual, Traffic, Cultural, Noise)
 - Draft Document
 - Final Document
 - Public Outreach (Scoping, Hearing)
- Project Re-evaluation Document (NEPA) - *if federal funds are included in project*

Consultant Cost Subtotal

\$1,900,000

Agency Charges (40% Consultant Cost)

\$760,000

Phase Total

\$2,660,000

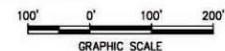
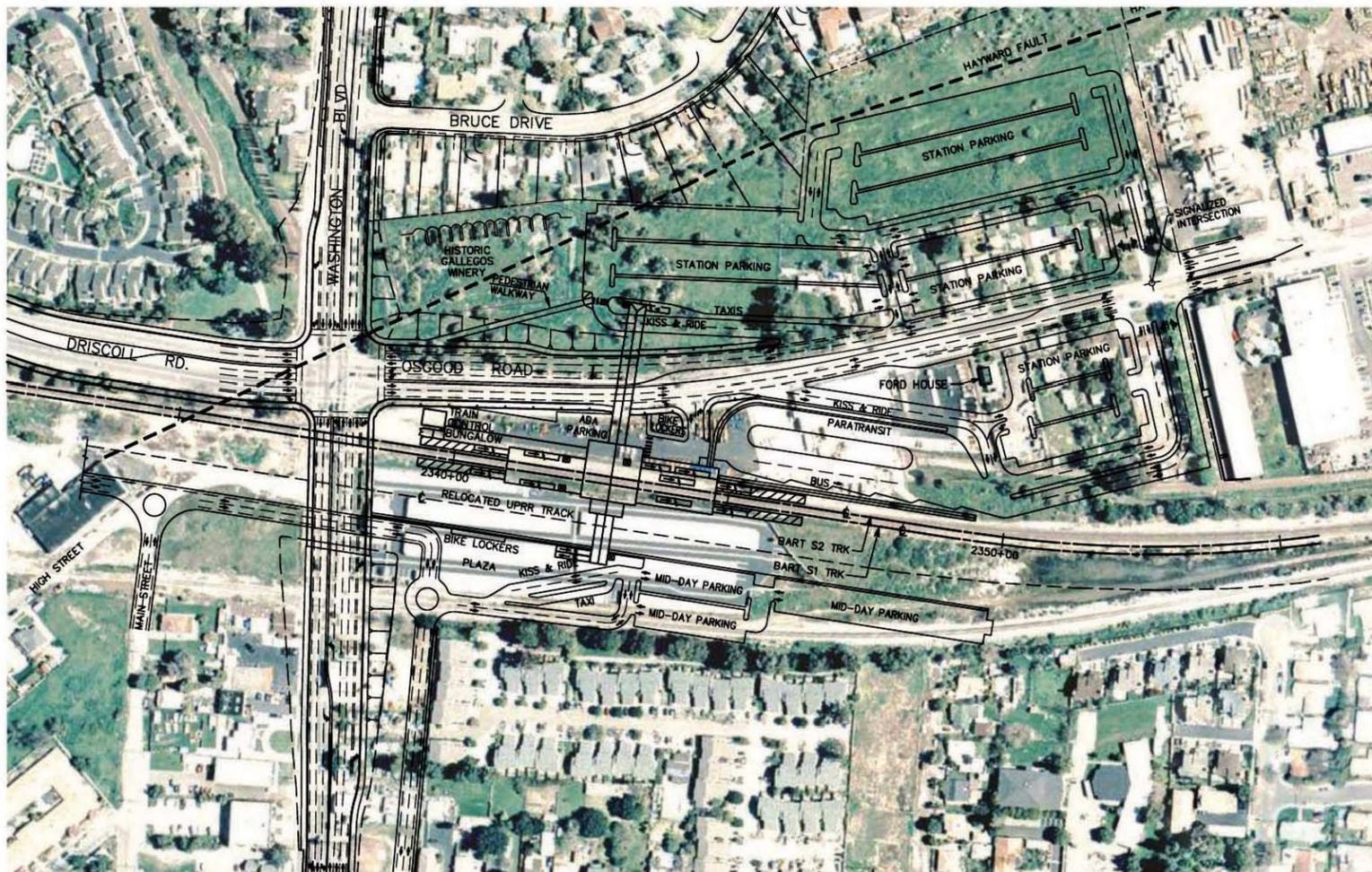


Figure 3-8a
Conceptual Site Plan
Optional Irvington Station

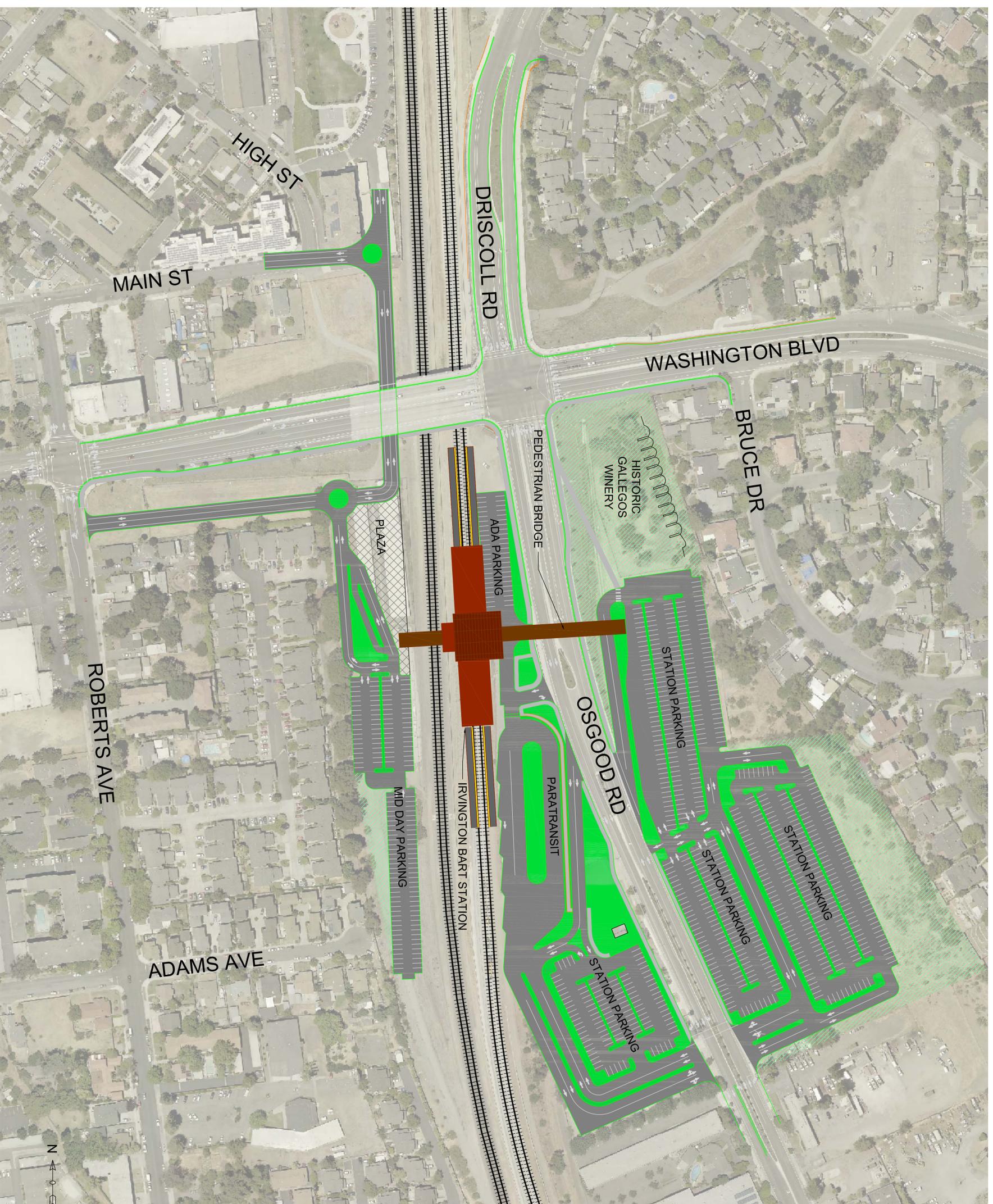
Source: Parsons Brinckerhoff 2003.

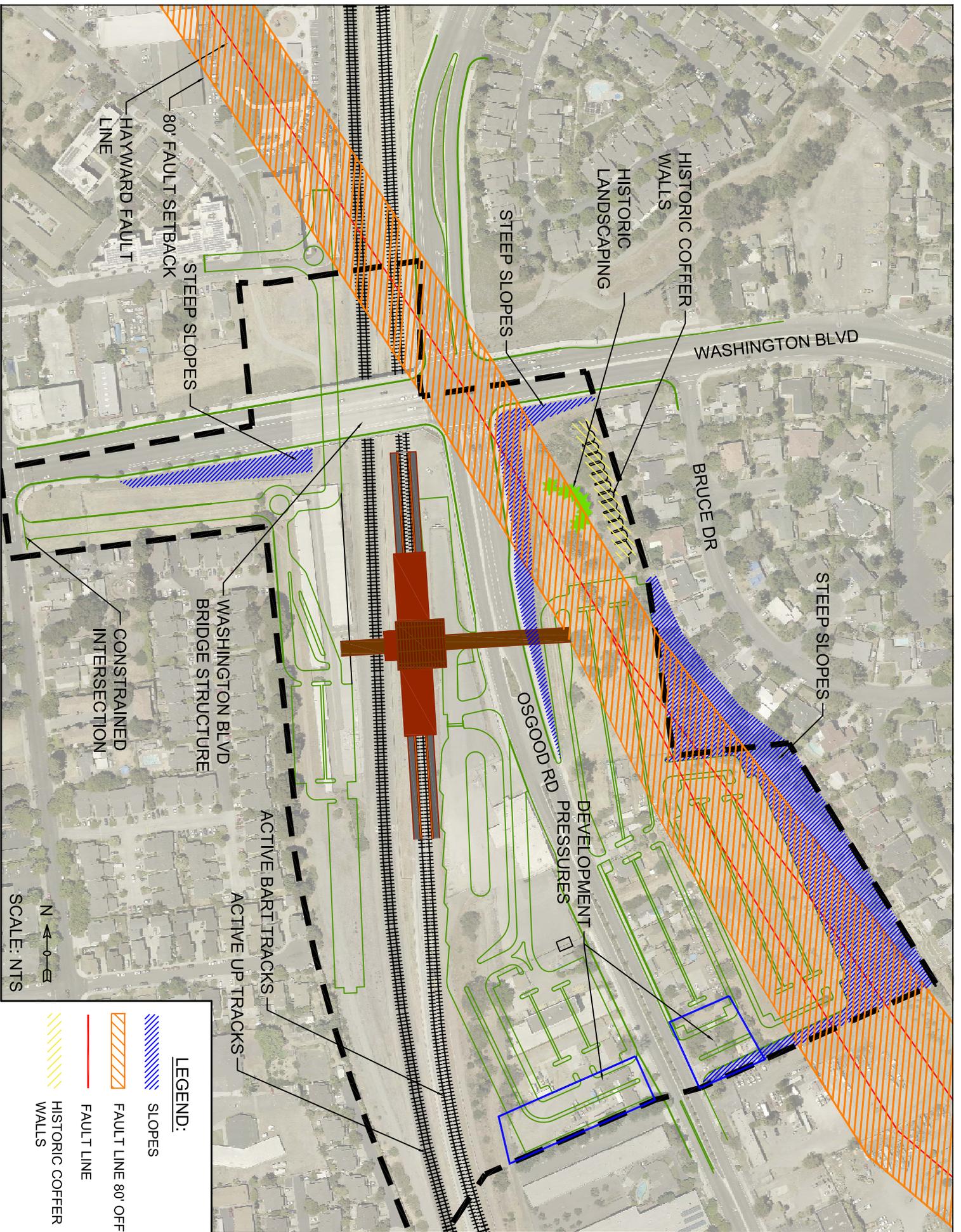
APPENDIX D

Concept Plans

IRVINGTON BART STATION

TBD





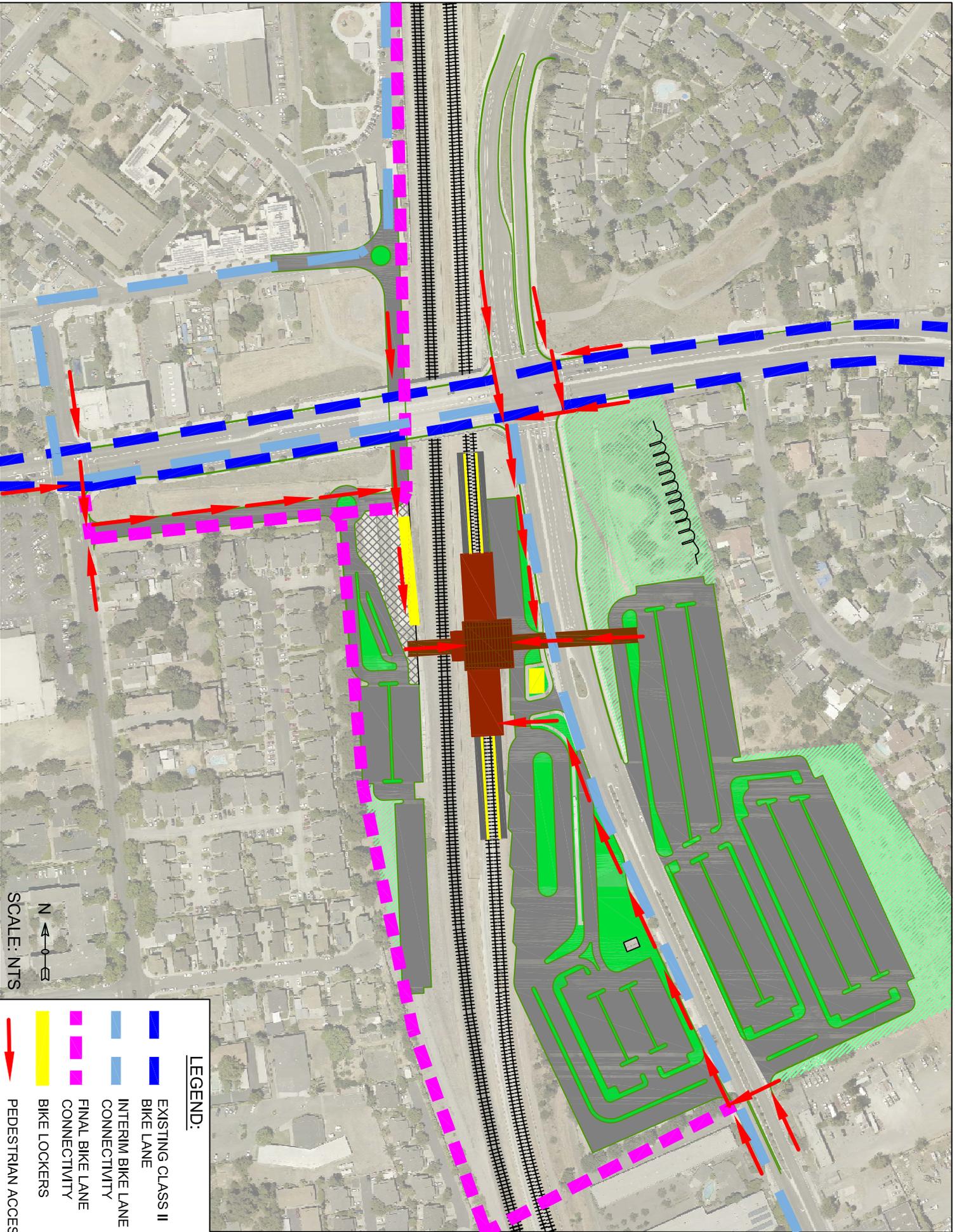
CONSTRAINTS

LEGEND:

-  SLOPES
-  FAULT LINE 80' OFFSET
-  FAULT LINE
-  HISTORIC COFFER WALLS

N
 ← 0 →
 SCALE: NTS

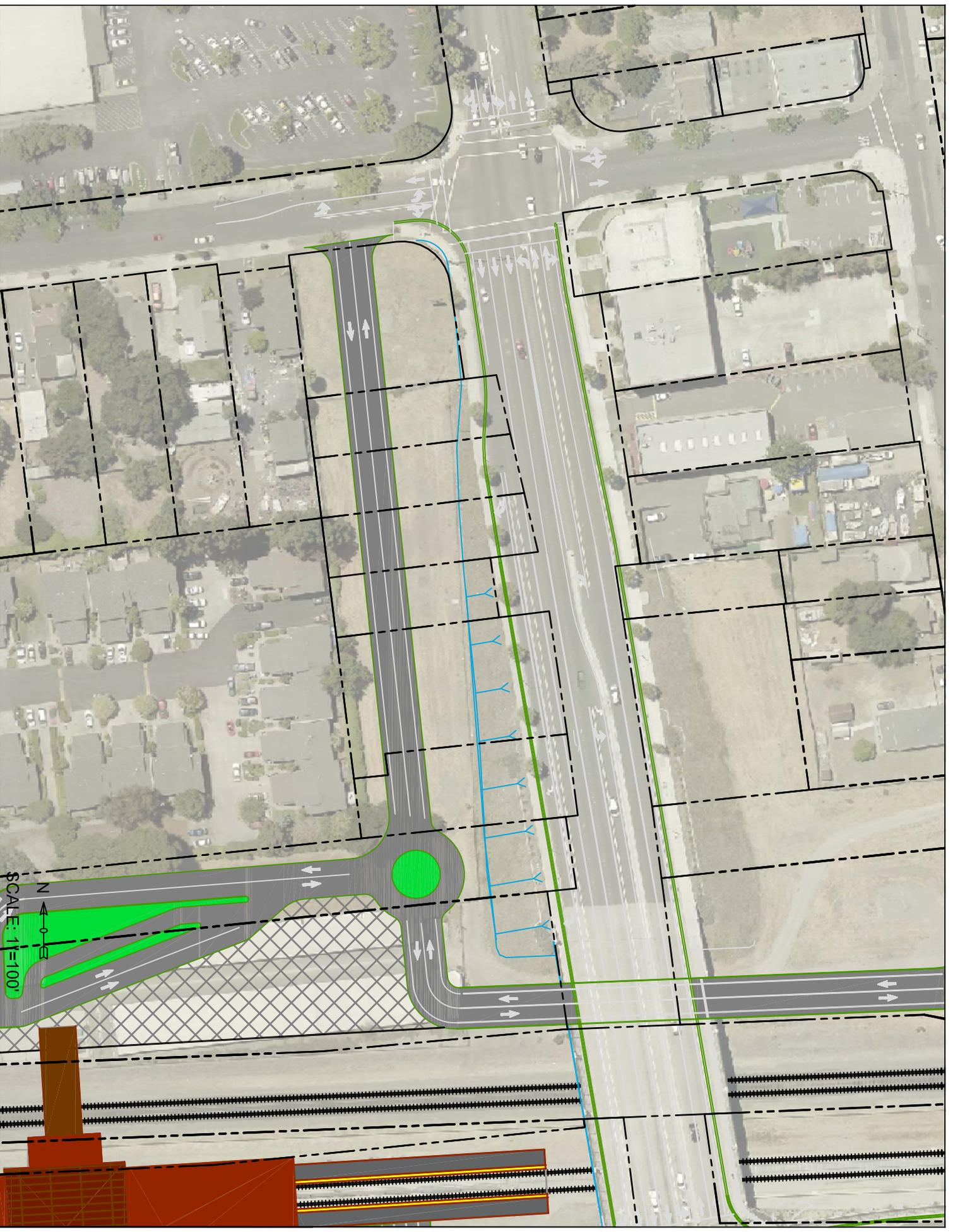
BIKE CONNECTIVITY AND PEDESTRIAN ACCESS



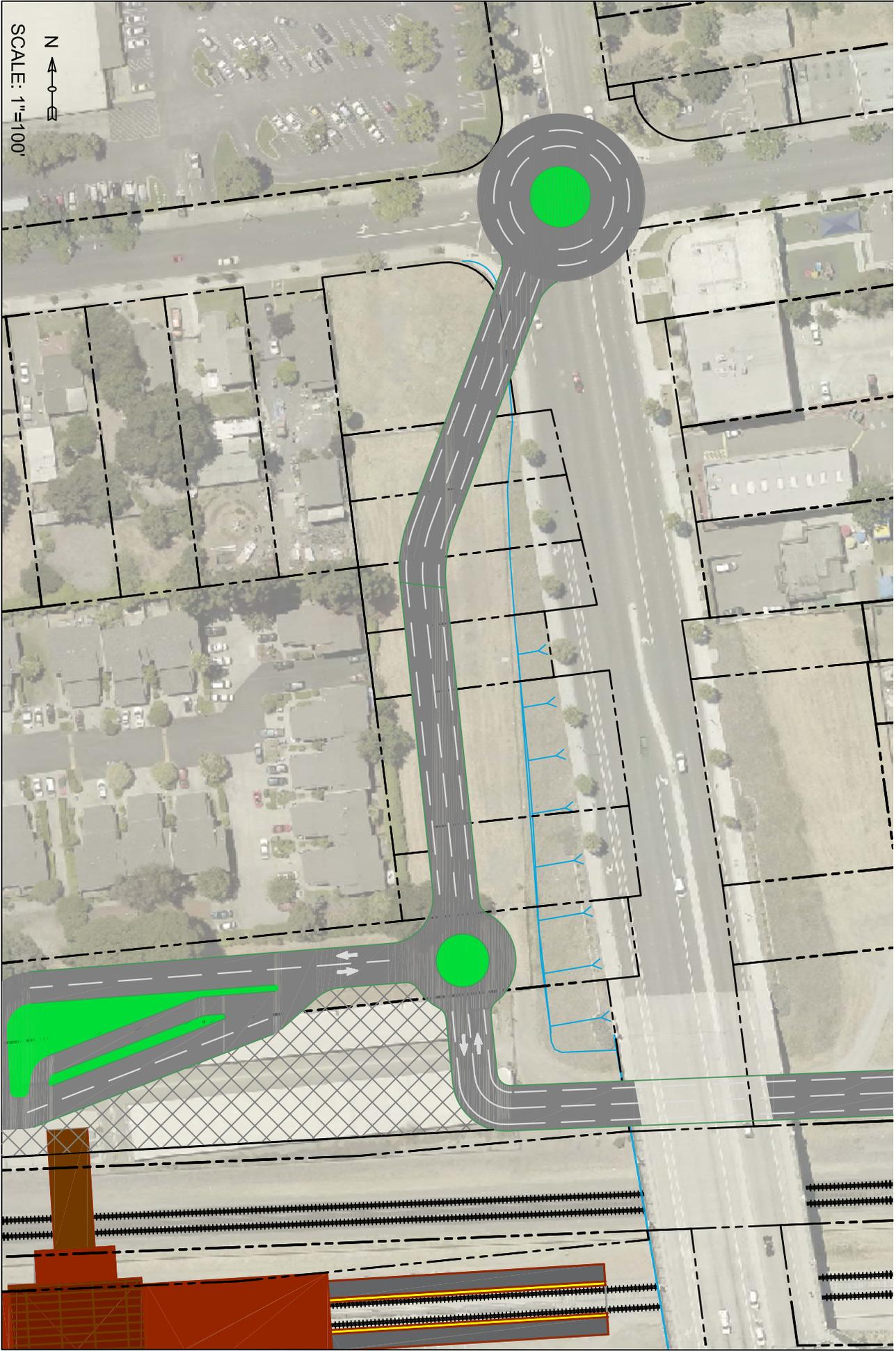
LEGEND:

-  EXISTING CLASS II BIKE LANE
-  INTERIM BIKE LANE CONNECTIVITY
-  FINAL BIKE LANE CONNECTIVITY
-  BIKE LOCKERS
-  PEDESTRIAN ACCESS

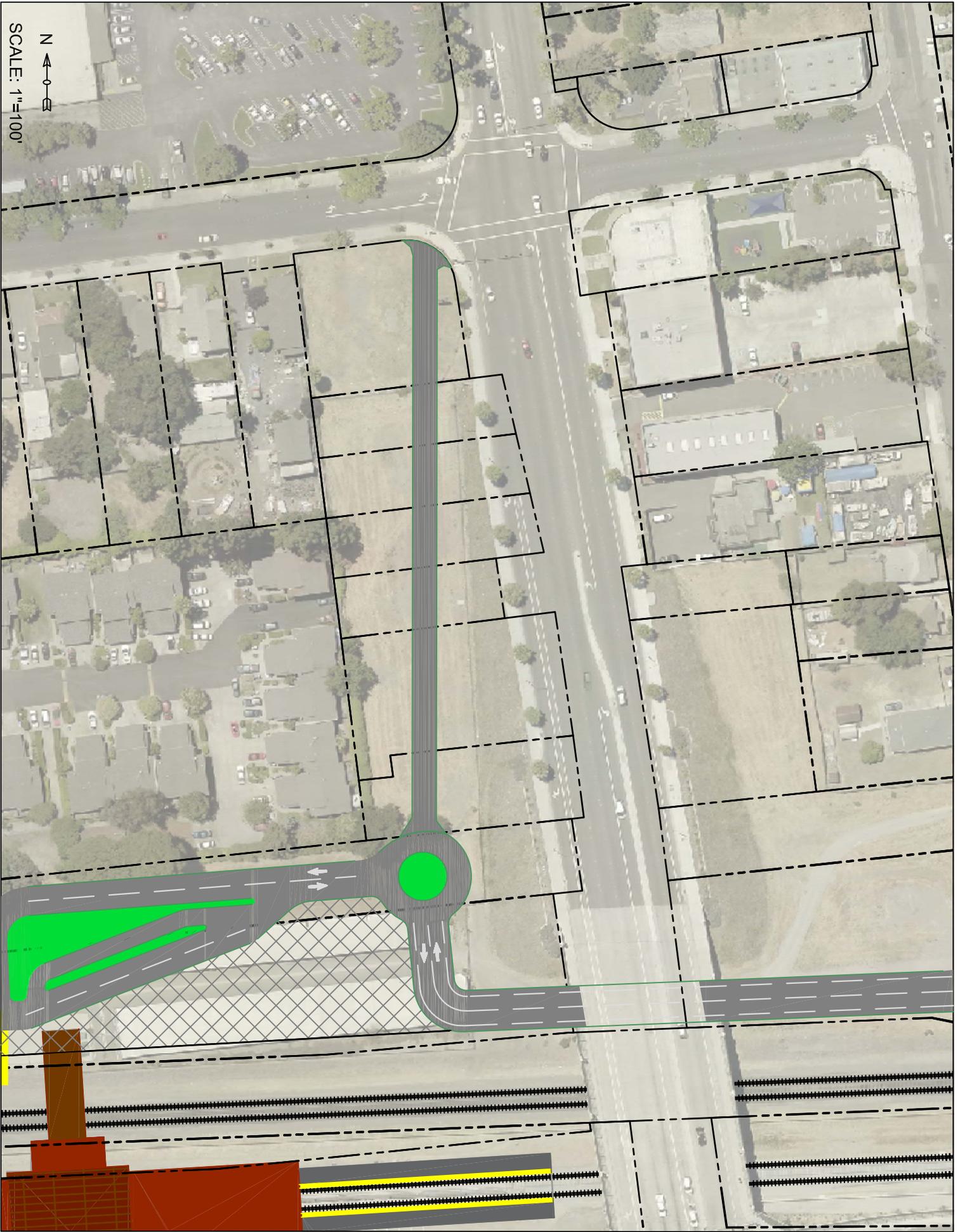
WEST SIDE ACCESS ROAD



N
SCALE: 1=100'

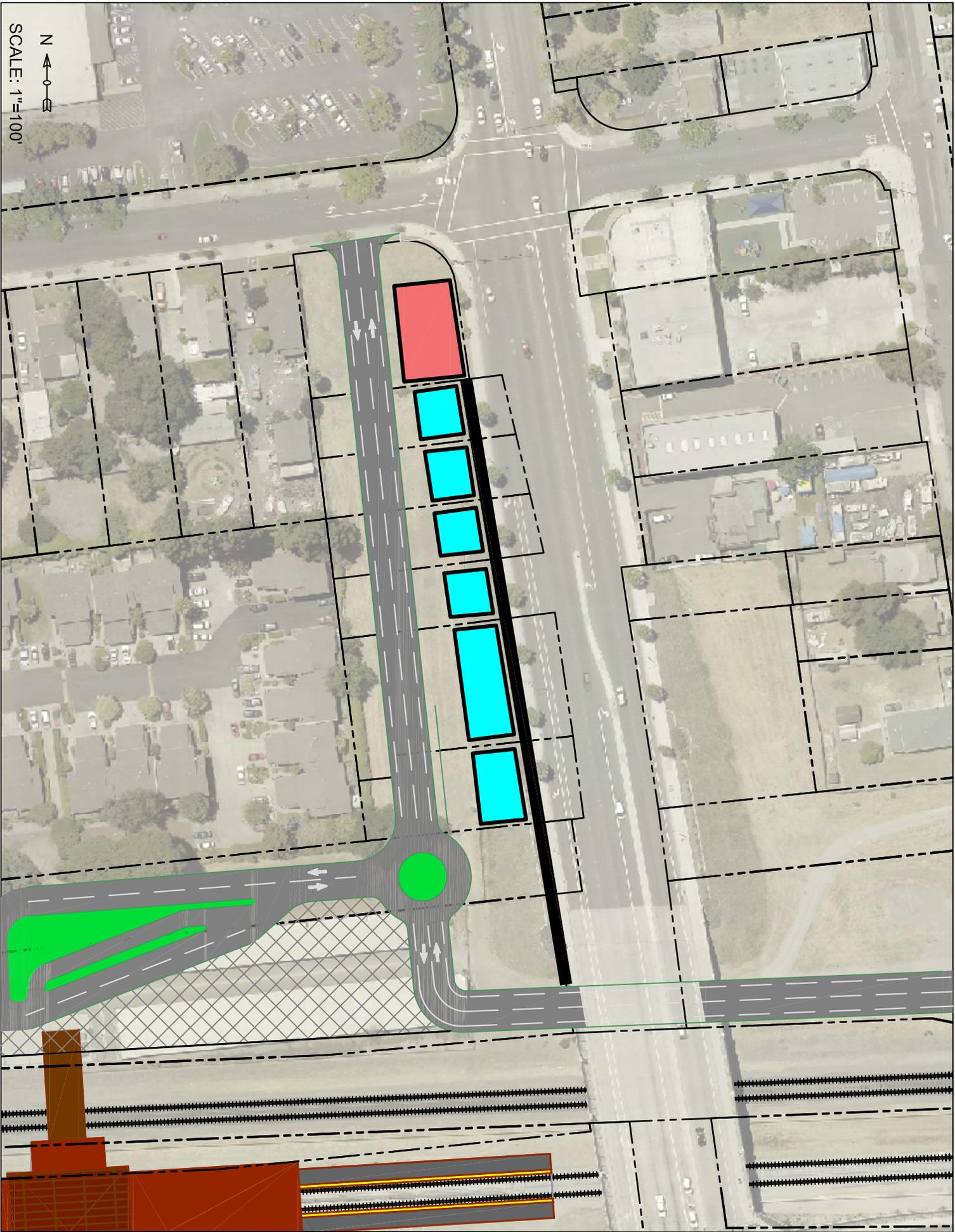


WEST SIDE ACCESS ROAD TRAFFIC CIRCLE



SCALE: 1"=100'

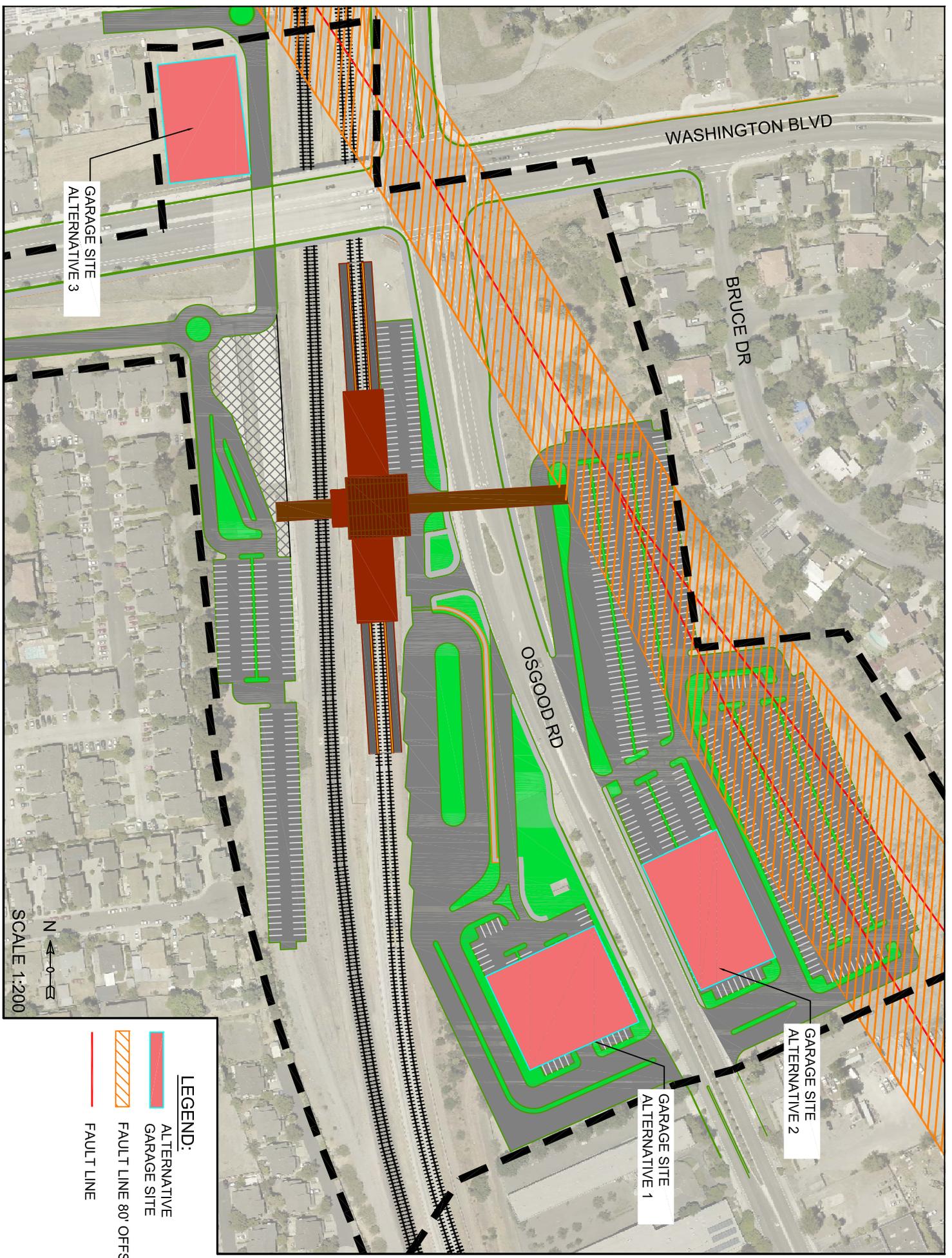
WEST SIDE ACCESS ROAD DEVELOPMENT



SCALE: 1"=100'

WEST SIDE ACCESS ROAD DEVELOPMENT

PARKING ALTERNATIVES



GARAGE SITE
ALTERNATIVE 3

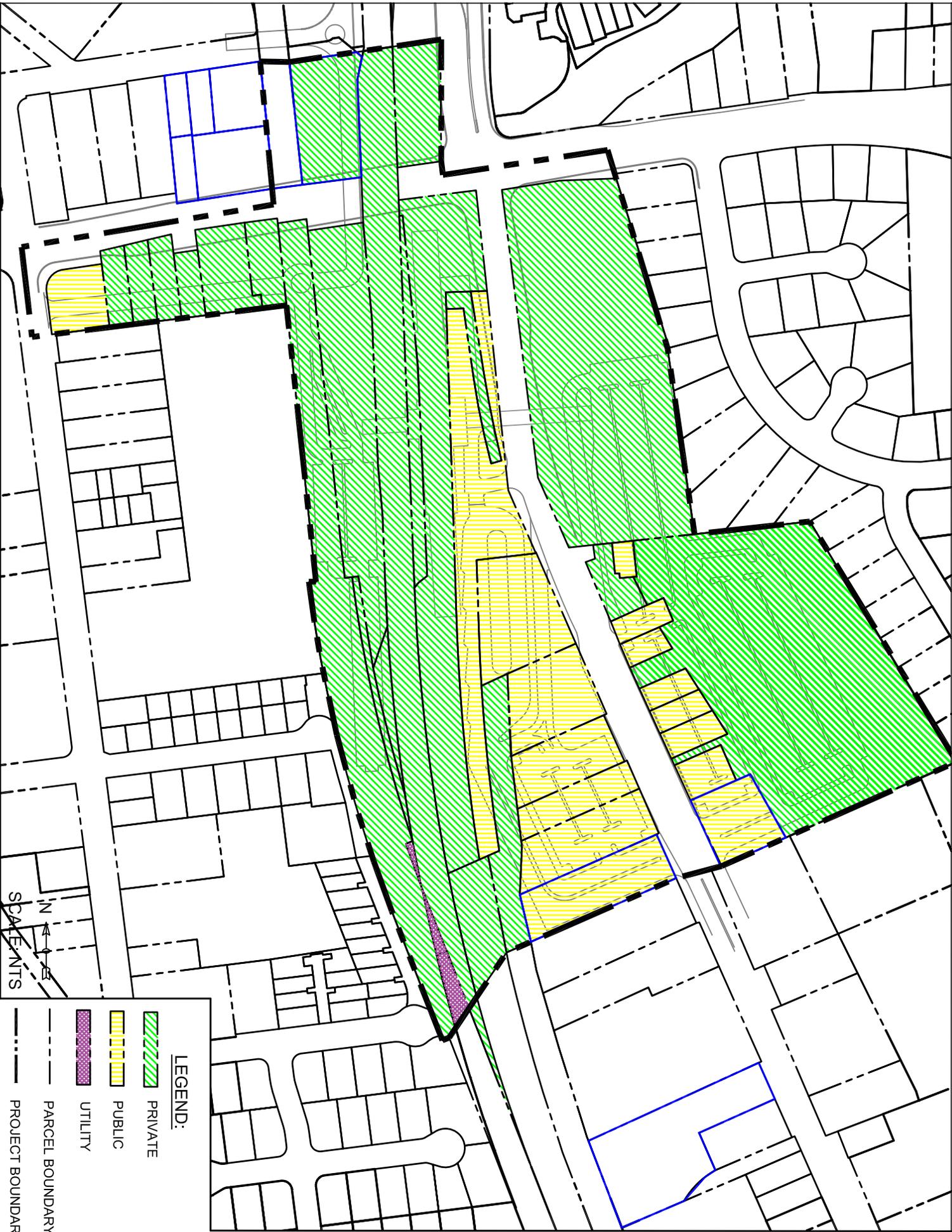
GARAGE SITE
ALTERNATIVE 1

GARAGE SITE
ALTERNATIVE 2

SCALE 1:200
N

- LEGEND:**
- ALTERNATIVE GARAGE SITE
 - FAULT LINE 80' OFFSET
 - FAULT LINE

STUDY AREA PARCEL MAP



LEGEND:

PRIVATE

PUBLIC

UTILITY

PARCEL BOUNDARY

PROJECT BOUNDARY

REDEVELOPMENT AREAS

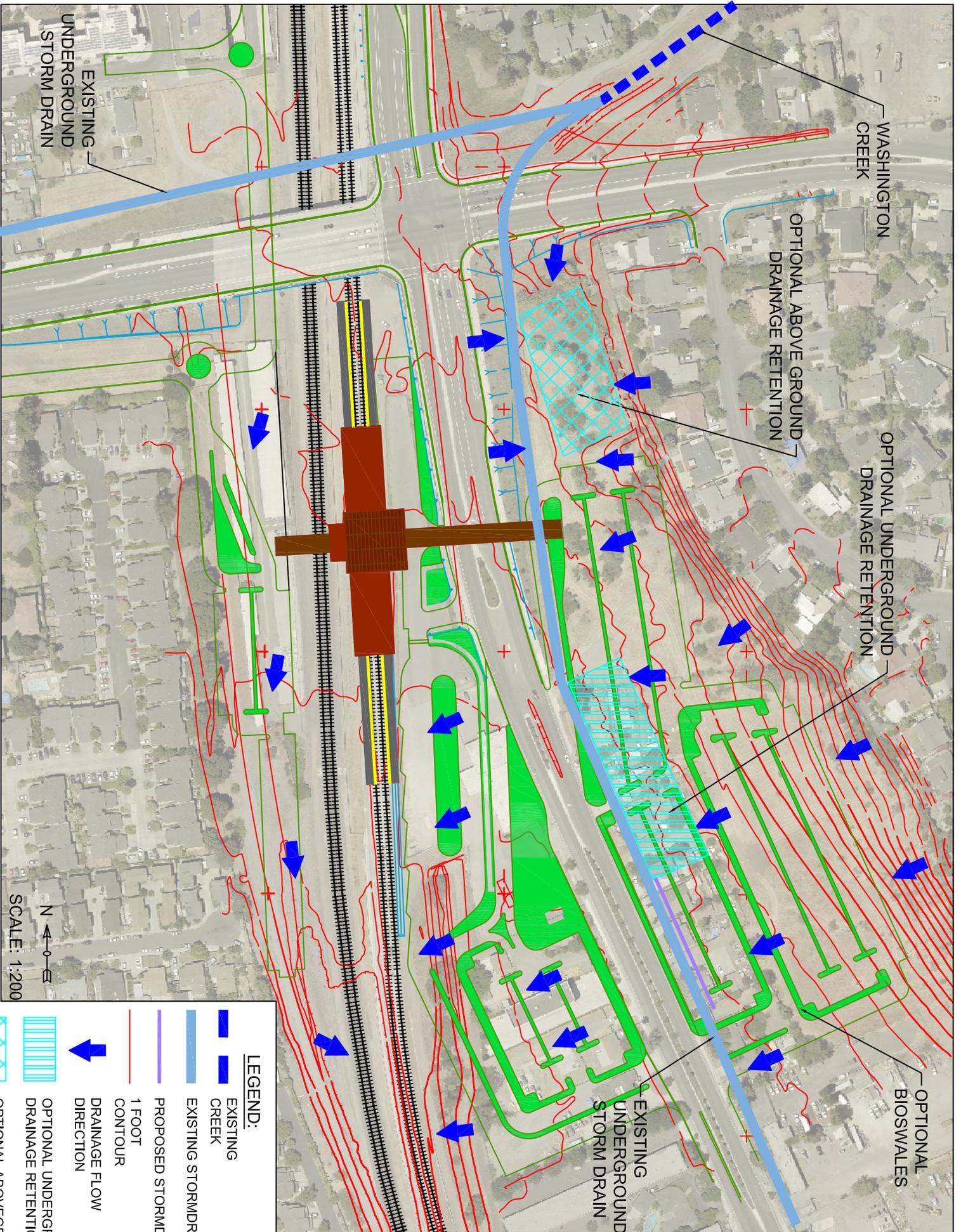
SCALE IN FEET

GALLEGOS WINERY



SCALE: 1"=80'





SITE DRAINAGE

- LEGEND:**
-  EXISTING CREEK
 -  EXISTING STORMDRAIN
 -  PROPOSED STORMDRAIN
 -  1 FOOT CONTOUR
 -  DRAINAGE FLOW DIRECTION
 -  OPTIONAL ABOVEGROUND DRAINAGE RETENTION
 -  OPTIONAL UNDERGROUND DRAINAGE RETENTION

SCALE: 1:200
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