

TECHNICAL APPENDIX

BART'S TOD Work Plan

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SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT

Technical Appendix: Evaluation Process for Prioritizing Development Sites

I. Introduction

This appendix presents the methodology BART has used to evaluate sites for development, along with the initial results of the evaluation. A draft list of evaluation criteria was released for public comment in February 2020 and vetted with a variety of stakeholders. Ultimately, the initial list of criteria was refined based on this feedback as well as availability of data for each site. The information used in the evaluation comes from a variety of sources, including BART interviews with local jurisdictions, local planning documents, analysis of market conditions, and other sources. This appendix has been released as a draft for public review, and BART will be seeking the input of local jurisdictions on the accuracy of the information used to evaluate the TOD priorities. Thus all findings may change as new information comes available from local jurisdictions.

The evaluation applies a series of screens to identify locations that are most promising for near-term development. BART has used this information to assist in determining where to move forward with development projects in light of its TOD policy goals and the viability of successful project delivery.

II. Prioritization of Sites for Development: Methodology

BART has evaluated its developable property using a ranking system that compares the relative strength of each station area with BART-owned property in three overall areas:

- A. TOD Market Readiness
- B. Local Support
- C. Infrastructure Needs

Each of these areas incorporates a number of defining factors. To the extent possible, BART utilized objective information in ranking its station areas. The approach to calculate each score is described below, and the draft scoring and results are provided in tabular form at the end of this Appendix.

A. TOD Market Readiness

TOD Market Readiness is evaluated based on relative market strength using standard indicators, the ability of the surrounding environment to accommodate a viable TOD project with reduced auto dependence, and efforts made by local jurisdictions to streamline the development process. It is calculated using three criteria which have been weighted based on their relative impact on the ability to

viably and rapidly deliver a TOD project.¹

Office/Multifamily Market Strength (75%)

TOD-Supportive Environment (10%)

Development Streamlining (15%)

Note that each station ultimately receives two TOD Market Readiness scores – one assuming office development, and one for multifamily residential. BART has considered both rankings in evaluating how development of a property might help to meet its TOD goals and has put thought to both encouraging balanced ridership patterns with job growth in the East Bay, and offering affordable housing opportunities in a range of communities (both of these topics are discussed in the TOD Work Plan).

Office/Multifamily Market Strength

Criteria to address: Ability to competitively deliver a viable project in the private sector

Approach

Using Costar^(TM) data, Strategic Economics evaluated both office and multifamily market trends in the BART station areas. Based on the results of the analysis, each station area was assigned an Office Market Strength and a Multifamily Market Strength score.

The scores were developed based on a variety of factors, listed below.

Office:

- Score of 1-6, with 6 for areas that are most desirable for office development, and 1 for areas that are least desirable:
- Per square foot rents in the station area
- Recent office development trends, assessed by new square feet of office construction
- Proximity to a highly educated workforce (masters degree or higher)
- Proximity to major regional job centers²
- Existing job density within one-half mile of station
- Highway access

Multifamily Residential:

- Score of 1-5 based on the expected feasibility of different development types, with 5 for areas where high-rise development is expected to be feasible: Per square foot effective rents in the station area
- Recent multifamily development trends, assessed by construction type

¹ Note that the criteria used in the property evaluation use a variety of scales (e.g., 0-1 or 1-3). To develop composite scores for each broad category, all individual scores were translated to a score of 0 -1 to ensure that they were weighted equally. The results of each composite score were then translated to a scale of 1-3 for reporting purposes.

² For the purpose of this analysis, regional job centers are defined as major office concentrations (as opposed to concentrations of household-serving jobs in retail and services).

Figure A-1. Office Market Score Summary

Score	Score Detail	Description
6	Most desirable	Highest existing job concentrations; greatest access to workforce; highest existing rents; densest and largest-scale of recent development.
5	Desirable	Adjacent to areas scoring a "6," plus great access to workforce; proximate to a large share of recent development activity; higher-than-average rents.
4	Moderate	May have a mix of the following factors: adjacency areas scoring a "5"; a large office inventory but limited recent development; high rents but limited recent office development; sufficient highway access if suburban; close proximity to an educated workforce; moderate market interest from developers and tenants.
3	Possible with Catalytic Project	Lower-than-average rents, but either close proximity to an educated workforce or market interest from select developers, users; Also may be more competitive due to BART Extension to San José.
2	Unlikely	Very low rents in an unproven office market; satisfactory or below-satisfactory access to an educated workforce; somewhat removed from existing and emerging office areas, but located along or near major highways and therefore better positioned to attract regional jobs in the future.
1	Very Unlikely	Site is too small or irregular to accommodate office; far from both established and emerging job concentrations; poor access to an educated workforce; very low rents; location is not well positioned to attract regional jobs.
Source: Costar ^(TM) , 2019; LEHD OnTheMap, 2017; ACS 5-year Estimates, 2013-2017; Strategic Economics, 2020.		

Figure A-2. Multifamily Residential Market Score Summary

Score	Highest Density Multifamily Building Type that is Potentially Feasible
5	High rise (9+ stories)
4	Mid-rise (6-8 stories)
3	Low-rise (4-5 stories)
2	Townhomes (up to 3 stories)
1	Multifamily development at any scale is unlikely to occur
Source: Costar ^(TM) , 2019; Strategic Economics, 2020.	

TOD-Supportive Environment (10%)

Criteria to Address: Does the station area support transit use, walking, and biking (including robust first mile connections, possibly reducing the need for on-site parking and meeting BART's TOD Policy goal of Transportation Choice?)

Approach

The "Walk Score®" and BART Access Place Type for each station were identified and assigned a ranking of 1 to 5 with higher Walk Scores and more urban access place types translating to higher scores. The average of the Walk Score® score and the Access Place Type score is the resulting TOD-Supportive Environment Score.

Figure A-3. "Walk Score®" Score Summary

Score	"Walk Score ®" Detail
5	91-100
4	81-90
3	61-80
2	41-60
1	40 or below
Source: Walkscore.com	

The BART Access Typologies were derived from station characteristics, scale, transportation setting and data from the 2015 Station Profile Survey data about how BART customers use various modes of transportation to access BART. Stations with high ridership, limited footprints, no parking, good transit access and high shares of customers walking and biking to BART were classified as "Urban;" stations with slightly less urban characteristics and limited parking were classified as "Urban with Parking;" stations with a high share of customers taking transit to work and higher levels of parking were classified as "Balanced intermodal;" and stations with a high share of customers driving to the station were "Auto Reliant" or "Auto Dependent." BART also evaluated changes in access between 2008 and 2015 – a period during which the share of BART customers walking and biking to the stations substantially increased. The BART Board adopted performance targets to increase the share of customers using "active access" modes, and BART worked together with the jurisdictions to assign aspirational place types to stations experiencing trends to support the performance targets. This evaluation uses these aspirational access place types.

Figure A-4. Access Place Type Score

Score	Access Place Type Detail
5	Urban
4	Urban with Parking
3	Balanced Intermodal
2	Intermodal- Auto-Reliant
1	Auto-Dependent
Source: BART Access Typology	

Development Streamlining (15%)

Criteria to Address: Are local policies in place to make development streamlining possible?

Stations in jurisdictions that have taken proactive approaches to streamlining permitting processes for development in their station areas receive a score of one, and jurisdictions without such provisions receive no points. This score was determined based on information from BART staff, and BART will be seeking feedback from local jurisdictions prior to completing the final work plan.

Results: TOD Market Readiness

The analysis results in two sets of TOD Market Readiness Scores, one for commercial and one for multifamily (Figures 5 and 6). It is important to note that BART may choose to prioritize projects such as affordable housing that are not dependent upon local market conditions. Prioritization by use is determined outside of this evaluation, considering factors that are described in the TOD Work Plan.

Figure A-5: TOD Market Readiness: Residential Scores (1-3)

Summary Scores by Station	
Station	TOD Market Readiness - Residential
Pittsburg/Bay Point	1
Pittsburg Center	1
North Concord/Martinez	1
Antioch	1
West Oakland	2
West Dublin/Pleasanton	2
Warm Springs/South Fremont	2
Union City	2
South Hayward	2
San Leandro	2
Richmond	2
Orinda	2
Lafayette	2
Hayward	2
Glen Park	2
Fruitvale	2
Fremont	2
El Cerrito Plaza	2
El Cerrito Del Norte	2
Dublin/Pleasanton-Pleasanton	2
Dublin/Pleasanton-Dublin	2

Daly City	2
Concord	2
Coliseum/Oakland Airport	2
Castro Valley	2
Bay Fair	2
Balboa Park	2
Rockridge	3
North Berkeley	3
Macarthur	3
Lake Merritt	3
Ashby	3
19th Street/Oakland	3
12th Street/Oakland City Center	3

Figure A-6: TOD Market Readiness: Commercial Scores (1-3)

Summary Scores by Station	
Station	TOD Market Readiness - Commercial
West Dublin/Pleasanton	1
San Leandro	1
Richmond	1
Pittsburg/Bay Point	1
Pittsburg Center	1
Orinda	1
North Concord/Martinez	1
Macarthur	1
Glen Park	1
Castro Valley	1
Balboa Park	1
Antioch	1
West Oakland	2
Warm Springs/South Fremont	2
Union City	2
South Hayward	2
Rockridge	2
North Berkeley	2
Lafayette	2
Hayward	2

Fruitvale	2
Fremont	2
El Cerrito Plaza	2
El Cerrito Del Norte	2
Dublin/Pleasanton-Pleasanton	2
Dublin/Pleasanton-Dublin	2
Daly City	2
Concord	2
Coliseum/Oakland Airport	2
Bay Fair	2
Ashby	2
Lake Merritt	3
19th Street/Oakland	3
12th Street/Oakland City Center	3

B. Local Support

BART has considered “local support” in several ways, focused around the extent to which local jurisdictions have prepared a site for the possibility of TOD. While zoning is one factor, adopting changes to the municipal code can take years and the existence of a plan might not signal community support in the short term. For this reason BART is also considering whether a local jurisdiction has expressed recent interest in development, and whether a community has been engaged in recent discussions about development of BART property. Lastly, to prevent the possible displacement of nearby low income residents, BART considers adoption of rent control measures as a key factor in preparing a community for new development. This is particularly of concern for communities with a high share of low income residents. The score for this category is based on four criteria, which are weighted equally:

- Local Jurisdiction Interest in Development (25%)
- Zoning (25%)
- Public Outreach (25%)
- Vulnerability to Displacement (25%)

Local Jurisdiction Interest in Development (25%)

Criteria to Address: Is the local jurisdiction in favor of transit-supportive development on BART’s property and in the surrounding area?

Approach

BART met with all 22 jurisdictions that have potential for new development in Spring 2019. TBased on feedback expressed by jurisdiction staff on the desired timing of development at BART stations, stations are scored 1-3. Stations receive a 3 if the jurisdiction is interested in development immediately.

Figure A-7. Local Jurisdiction Interest in Development Score Summary

Score	Score Detail
3	Immediate or Underway
2	Within 5-10 Years
1	Limited Interest/ Long-term Interest / No Interest
Source: BART meetings with local jurisdictions (2019); local planning documents.	

Zoning (25%)

Criteria to Address: Has the jurisdiction adopted a plan since 2000 that is supportive of transit-oriented development in the station area? If appropriate and feasible to build, has the jurisdiction voluntarily updated the area zoned density to meet or exceed the requirements of AB2923?

Approach: The Land Use Planning Score is based equally on two metrics: 1) The Plan Score reflects whether the jurisdiction has adopted a plan for development in the station area. 2) The Zoning Score reflects the degree to which existing zoning of the BART property is in line with AB 2923, with higher scores given for denser zoning standards.

Figure A-8. Plan Score Summary

Score	Score Detail
1	The jurisdiction has adopted a plan on future development that includes the station area
0.5	There is a plan in process but it is not yet adopted
0	The jurisdiction has not yet adopted a plan for future development that includes the station area
Source: BART staff.	

Figure A-9. Zoning Score Summary

Score	Score Detail
4	Property Zoned to Conform with AB 2923
3	Property Zoned for TOD but not AB 2923 Levels
2	Property Zoned but not Adequately
1	No Zoning
Source: BART Review of Jurisdictions' Existing Zoning Codes, 2020.	

Public Outreach (25%)

Criteria to Address: Has there been a recent public outreach process offering evidence of some local community support for development?

Approach

Stations where recent outreach or community organizing have indicated some local community support for development receive a "1" and other receive a "0". This score is based on BART agency knowledge of locations that have recently conducted outreach processes that identified general support for development, or where local neighbors have organized groups supporting development of BART property.

Figure A-10. Public Outreach Score Summary

Score	Score Detail
1	Local community support for development at station area, evidenced by recent public outreach process.
0	No recent public outreach process. Community sentiment on station area development is unknown.
Source: BART.	

Vulnerability to Displacement (25%)

Criteria to Address: Is the area expected to be vulnerable to displacement based on demographic characteristics? Does the jurisdiction have rent control policies in place?

Approach

Stations receive a score of 1-3 for vulnerability to displacement. The score is based on a combination of two factors: 1) the presence of rent control policies in the station’s jurisdiction; and 2) household incomes within a ½ mile radius of the station. Stations without rent control that have a high share of low-income households receive the lowest score.

Figure A-11. Vulnerability to Displacement Score Summary

Score	Score Detail
3	The station area’s jurisdiction has adopted rent control with rent increases allowed that are no more than the CPI
2	The station area’s jurisdiction does not have rent control that meets the above criteria; Less than 40% of households in the station area had incomes less than \$50,000
1	The station area’s jurisdiction does not have rent control that meets the above criteria; More than 40% of households in the station area had incomes less than \$50,000
Source: Local policy documents, 2020; ACS 5-year 2011-2015.	

Results: Local Support

The combined local support scores are shown in Figure A-12, below.

Figure A-12: Local Support Score (1-3)

Summary Scores by Station	
Station	Local Support
Lafayette	1
Antioch	1
West Dublin/Pleasanton	2
Union City	2
South Hayward	2
San Leandro	2
Rockridge	2
Pittsburg/Bay Point	2
Pittsburg Center	2
Orinda	2
North Concord/Martinez	2
North Berkeley	2
Macarthur	2
Hayward	2
Glen Park	2
Fruitvale	2
Fremont	2
Dublin/Pleasanton-Pleasanton	2
Dublin/Pleasanton-Dublin	2
Daly City	2
Concord	2
Castro Valley	2
Bay Fair	2
Balboa Park	2
West Oakland	3
Warm Springs/South Fremont	3
Richmond	3
Lake Merritt	3
El Cerrito Plaza	3
El Cerrito Del Norte	3
Coliseum/Oakland Airport	3
Ashby	3
19th Street/Oakland	3
12th Street/Oakland City Center	3

C. Implementation Barriers and Opportunities

This score addresses the cost and complexity of BART replacement parking needs and other infrastructure that would need to be addressed as part of development.

This score is based on the following two equally weighted factors.

- Scale of Potential Replacement Parking Need (50%)
- Other Infrastructure Needs (50%)

Scale of Replacement Parking Need (50%)

Criteria to Address: Is development at the station likely to require a significant amount of replacement parking?

Approach

Stations with high replacement parking need are typically more challenging to develop due to the high cost to provide structured parking. Stations were assigned a score from 1-5 based on the expected parking replacement need that would be required if the station were developed. The expected parking replacement need is based on a combination of:

1. The number of existing parking spaces at the station; and
2. A replacement parking factor developed based on BART’s Access Typology, with Urban with Parking stations expected to require the least parking and Auto Dependent stations expected to require the most.

The score is calculated by multiplying the total existing number of parking spaces at each station by the replacement parking factor. Stations with a high number of parking spaces and a high replacement parking factor result in a higher number, and stations with limited parking and a low replacement parking factor result in a lower number. It should be noted that this is not the expected number of replacement parking spaces needed at each station, but instead a number that represents a scale of need relative to other stations. The Replacement Parking Need Score was established as a scale of 1 -5 based on quintile breaks, with a “1” representing high replacement parking need and a “5” representing low replacement parking need.

Figure A-13. Replacement Parking Factor by Access Typology

Replacement Parking Factor	Access Typology
0.2	Urban
0.4	Urban with Parking
0.6	Intermodal
0.8	Intermodal-Auto-Reliant
1	Auto-Dependent

Figure A-14. Replacement Parking Score Summary

Score	Estimated Scale of BART Replacement Parking Need
5	174 or less (5th quintile)
4	175-390 (4th quintile)
3	391-833 (3rd quintile)
2	834-1,284 (2nd quintile)
1	1,285-3080 (1st quintile)

Source: BART; Strategic Economics, 2020.

Other Infrastructure Needs (50%)

Criteria to Address: What is the cost and complexity of other BART infrastructure needs that would need to be addressed as part of development?

Approach

BART staff evaluated the scale of other anticipated infrastructure needs at each station. High infrastructure needs are improvements costing tens of millions of dollars for which there is no obvious funding source, and includes items such as structural enhancements needed to protect the BART operating right of way; new vertical circulation such as elevators or escalators; or station modernization upgrades to meet the California Building Code. Medium improvements cost hundreds of thousands to several million dollars, and include items requiring horizontal site redesign, such as reconfiguration of bus intermodal facilities, or new civic / plaza spaces. Stations received a score of 1 to 3, with 3 being stations with the expected lowest needs.

Figure A-15. Other Infrastructure Needs Score Summary

Score	Score Detail
3	Low Infrastructure Needs
2	Medium Infrastructure Needs
1	High Infrastructure Needs

Source: BART, 2020

Results: Implementation Barriers and Opportunities

The combined implementation barriers and opportunities score for each station is shown in Figure 16, below.

Figure A-16: Implementation Barriers and Opportunities Score (1-3)

Summary Scores by Station	
Station	Implementation
Orinda	1
Lafayette	1
Fremont	1
Antioch	1
West Dublin/Pleasanton	2
Warm Springs/South Fremont	2
Pittsburg/Bay Point	2
North Concord/Martinez	2
North Berkeley	2
Macarthur	2
Lake Merritt	2
Glen Park	2
El Cerrito Del Norte	2
Dublin/Pleasanton-Pleasanton	2
Dublin/Pleasanton-Dublin	2
Daly City	2
Concord	2
Coliseum/Oakland Airport	2
Castro Valley	2
Bay Fair	2
Ashby	2
19th Street/Oakland	2
12th Street/Oakland City Center	2
West Oakland	3
Union City	3
South Hayward	3
San Leandro	3
Rockridge	3
Richmond	3
Pittsburg Center	3
Hayward	3
Fruitvale	3
El Cerrito Plaza	3
Balboa Park	3

III. Summary Scores

The scores for all categories are shown in Figure A-17, below. These scores were considered by BART as they prioritized stations in the TOD Work Plan.

Figure A-17: Summary Scores by Station

Station	TOD Market Readiness - Residential	TOD Market Readiness - Commercial	Local Support	Implementation
12th Street/Oakland City Center	3	3	3	2
19th Street/Oakland	3	3	3	2
Antioch	1	1	1	1
Ashby	3	2	3	2
Balboa Park	2	1	2	3
Bay Fair	2	2	2	2
Castro Valley	2	1	2	2
Coliseum/Oakland Airport	2	2	3	2
Concord	2	2	2	2
Daly City	2	2	2	2
Dublin/Pleasanton-Dublin	2	2	2	2
Dublin/Pleasanton-Pleasanton	2	2	2	2
El Cerrito Del Norte	2	2	3	2
El Cerrito Plaza	2	2	3	3
Fremont	2	2	2	1
Fruitvale	2	2	2	3
Glen Park	2	1	2	2
Hayward	2	2	2	3
Lafayette	2	2	1	1
Lake Merritt	3	3	3	2
Macarthur	3	1	2	2
North Berkeley	3	2	2	2
North Concord/Martinez	1	1	2	2
Orinda	2	1	2	1
Pittsburg Center	1	1	2	3
Pittsburg/Bay Point	1	1	2	2
Richmond	2	1	3	3
Rockridge	3	2	2	3
San Leandro	2	1	2	3
South Hayward	2	2	2	3
Union City	2	2	2	3
Warm Springs/South Fremont	2	2	3	2
West Dublin/Pleasanton	2	1	2	2
West Oakland	2	2	3	3

Figure A-18: TOD Market Readiness Criteria Detail

BART Stations with Developable Land	Office Market Strength Score (1-6)	Multifamily Market Strength Score (1-5)	Walkability Score (1-5)	Access Place Type Score (1-5)	Local Provisions for Development Streamlining Score (1=Yes, 0=No)
12th Street/ Oakland City Center	6	5	5	5	1
19th Street/ Oakland	6	5	5	5	1
Antioch	1	2	2	2	0
Ashby	5	5	5	4	0
Balboa Park	1	4	4	5	0
Bay Fair	4	3	3	3	0
Castro Valley	2	3	4	3	0
Coliseum/ Oakland Airport	3	3	2	3	0
Concord	3	3	3	3	0
Daly City	5	4	2	3	0
Dublin/ Pleasanton- Dublin	4	3	1	1	0
Dublin/ Pleasanton- Pleasanton	5	3	1	1	0
El Cerrito Del Norte	2	3	4	3	1
El Cerrito Plaza	3	3	5	4	1
Fremont	4	3	3	3	0
Fruitvale	3	3	5	4	0
Glen Park	1	4	5	5	0
Hayward	2	3	4	4	1
Lafayette	4	4	4	1	0
Lake Merritt	6	5	5	5	1
MacArthur	1	5	5	4	0
Millbrae	5	5	4	3	0
North Berkeley	4	5	4	4	0
North Concord/ Martinez	2	2	1	3	0
Orinda	1	4	2	1	0

Pittsburg/ Bay Point	1	2	1	2	0
Pittsburg Center	1	2	3	3	0
Pleasant Hill	4	4	3	3	0
Richmond	2	3	3	4	0
Rockridge	5	5	5	4	0
San Leandro	1	3	4	4	1
South Hayward	2	3	3	3	1
Union City	2	3	3	3	1
Walnut Creek	4	4	3	3	0
Warm Springs/ South Fremont	4	3	1	3	0
West Dublin/ Pleasanton	1	3	5	1	0
West Oakland	5	4	4	5	0

Source: BART, 2020; Strategic Economics, 2020.

Figure A-19: Local Support Criteria Detail

BART Stations with Developable Land	Local Interest in Development Score (1-3)	Adopted Plan Score (1=Yes, 0=No)	Ranking of Existing Zoning Score (0-4)	Public Outreach Process Score (1=Yes, 0=No)	Vulnerability to Displacement Score (1-3)
12th Street/ Oakland City Center	3	0.5	4	1	3
19th Street/ Oakland	3	0.5	4	1	3
Antioch	1	0.5	1	0	2
Ashby	3	0.5	2	1	3
Balboa Park	3	0	3	1	3
Bay Fair	3	1	3	1	1
Castro Valley	3	0	2	0	1
Coliseum/ Oakland Airport	3	1	4	1	3
Concord	3	1	3	0	1
Daly City	2	0	2	0	2
Dublin/ Pleasanton- Dublin	1	0.5	2	0	2

Dublin/ Pleasanton- Pleasanton	1	1	3	0	2
El Cerrito Del Norte	3	1	4	1	2
El Cerrito Plaza	3	1	3	1	2
Fremont	1	1	2	0	2
Fruitvale	3	0	2	0	3
Glen Park	3	0	1	0	3
Hayward	3	1	4	1	1
Lafayette	1	0	1	0	2
Lake Merritt	3	1	4	1	3
MacArthur	3	0	4	0	3
Millbrae	3	1	0		2
North Berkeley	3	0.5	1	1	3
North Concord/ Martinez	3	0.5	1	1	2
Orinda	3	0	0	1	2
Pittsburg/ Bay Point	2	1	3	1	1
Pittsburg Center	3	1	1	1	1
Pleasant Hill	1	1	3		2
Richmond	3	1	2	1	3
Rockridge	3	0	2	0	3
San Leandro	3	1	4	1	1
South Hayward	3	1	4	1	1
Union City	2	0.5	4	1	2
Walnut Creek	1	0	2		2
Warm Springs/ South Fremont	3	1	3	1	2
West Dublin/ Pleasanton	3	1	3	0	2
West Oakland	3	1	4	1	3

Source: BART, 2020; Strategic Economics, 2020.

Figure A-20: Implementation Barriers and Opportunities Criteria Detail

BART Stations with Developable Land	Estimated Scale of Replacement Parking Need (1=highest, 5=lowest)	Other Station Infrastructure Needs (1=high, 3=low)
12th Street/Oakland City Center	5	1
19th Street/Oakland	5	1
Antioch	2	1
Ashby	4	2
Balboa Park	5	3
Bay Fair	2	2
Castro Valley	3	2
Coliseum/Oakland Airport	3	2
Concord	1	2
Daly City	2	2
Dublin/Pleasanton-Dublin	1	2
Dublin/Pleasanton-Pleasanton	1	2
El Cerrito Del Norte	2	2
El Cerrito Plaza	4	3
Fremont	2	1
Fruitvale	4	3
Glen Park	5	1
Hayward	3	3
Irvington	5	1
Isabel Avenue	5	3
Lafayette	1	1
Lake Merritt	5	1
MacArthur	4	2
Millbrae	1	2
North Berkeley	4	2
North Concord/Martinez	2	3
Orinda	1	1
Pittsburg/Bay Point	1	3
Pittsburg Center	5	3
Pleasant Hill	1	3
Richmond	4	3
Rockridge	4	3
San Leandro	4	3
South Hayward	3	3
Union City	3	3
Walnut Creek	3	3
Warm Springs/South Fremont	2	3
West Dublin/Pleasanton	2	3
West Oakland	5	3

Figure A-21: Local Support- Vulnerability to Displacement Detail

Station	Share of Households with incomes less than \$50,000	Over 40% of households earn less than \$50,000 annually	Rent Control (Rent Increases No Greater than CPI)
12th Street/Oakland	68%	Yes	Yes
19th Street/Oakland	65%	Yes	Yes
Antioch	37%	No	No
Ashby	43%	Yes	Yes
Balboa Park	35%	No	Yes
Bay Fair	45%	Yes	No
Castro Valley	41%	Yes	No
Coliseum/Oakland Airport	75%	Yes	Yes
Concord	53%	Yes	No
Daly City	37%	No	No
Dublin/Pleasanton-Dublin	12%	No	No
Dublin/Pleasanton-Pleasanton	12%	No	No
El Cerrito Del Norte	36%	No	No
El Cerrito Plaza	33%	No	No
Fremont	19%	No	No
Fruitvale	65%	Yes	Yes
Glen Park	26%	No	Yes
Hayward	44%	Yes	No
Lafayette	35%	No	No
Lake Merritt	61%	Yes	Yes
MacArthur	46%	Yes	Yes
Millbrae	39%	No	No
North Berkeley	41%	Yes	Yes
North Concord/Martinez	29%	No	No
Orinda	19%	No	No
Pittsburg/Bay Point	53%	Yes	No
Pittsburg Center	80%	Yes	No
Pleasant Hill	30%	No	No
Richmond	67%	Yes	Yes
Rockridge	20%	No	Yes
San Leandro	42%	Yes	No
South Hayward	45%	Yes	No
Union City	23%	No	No
Walnut Creek	37%	No	No
Warm Springs/South Fremont	15%	No	No
West Dublin/Pleasanton	21%	No	No
West Oakland	68%	Yes	Yes

Source: ACS 5-year Estimates, 2011-2015; BART, 2020; Strategic Economics, 2020.

IV. Development Capacity of BART Properties

BART estimated the potential capacity of properties included in its long-term development portfolio to accommodate additional housing units and square feet of development. BART did not conduct a site specific analysis, but instead conducted this evaluation at the portfolio-wide scale. Steps to this methodology are described below.

Estimated Acreage of Developable Land

The starting point for estimating land was BART's [online GIS database](#). This includes properties within a half-mile radius of existing BART stations in Alameda, Contra Costa, San Francisco and San Mateo Counties. BART did not include Santa Clara County in this analysis as the Santa Clara Valley Transportation Authority (VTA) owns all properties near BART stations in that county.

BART eliminated properties with the following characteristics

- Existing vertical BART infrastructure that would impede development in the long term;
- Parcels that are too small to reasonably accommodate future development – unless they are contiguous with other developable properties.

Most BART properties are currently utilized as parking lots for BART customers. To account for the potential allocation of land to structured replacement parking, BART reduced the acreage per station using the following factors, that are determined by the assigned aspirational Station Access Place Type:

- Urban and Urban with Parking Stations: No reduction
- Balanced Intermodal Stations: Reduction of 1.5 acres
- Intermodal-Auto Reliant and Auto Dependent Stations: Reduction of 2 acres

Development Capacity

Allocation of Land to Residential vs Commercial Uses

While many BART developments include a mix of uses within a single building, for the purposes of this exercise, BART assumed a certain percentage of land at each station would be allocated to either residential or commercial uses. Consistent with BART's approach to land use, BART is flexible on the mix of uses at many stations but will not allow for residential only development at stations that will be preserved for job-generating uses, based on their potential economic competitiveness.

This capacity analysis utilized a "high housing" set of assumptions for land use, as BART determined that it could meet its commercial goal of 4.5 million square feet of office even with high housing estimates. For sites where BART either prioritizes housing or is flexible on use, BART assumed 100 percent of the site would be utilized for housing development. For sites where BART intends to pursue a commercial or mixed-use development only, BART assumed that 50 percent of the site would be utilized for commercial development. The exception to this was North Concord/Martinez, where BART assumed 35 percent of the site would be commercial, consistent with past negotiations with the City of Concord in preparation for development.

Residential Density

To estimate housing units, BART multiplied the assumed residential acreage by a density assumption of units per acre. BART's consultant, Perkins & Will, conducted physical analysis of three BART prototypical sites reflecting a small (1-2 acre), medium (2 to 10 acre) and large (greater than 10 acre) site. This analysis was used to establish estimated residential densities that factored in the internal circulation and open space needs of larger sites. Perkins & Will evaluated the potential density of these prototypical sites using the building heights assigned to each station area in Table 1 and Figure 1 of BART's 2017 TOD Guidelines. Per AB 2923, local jurisdictions must rezone BART property to conform to these heights, which are:

- Neighborhood/Town Center: 5 stories
- Urban Neighborhood/City Center: 7 stories
- Regional Center: 12 stories

If existing zoning exceeded the minimum requirements of AB 2923, BART utilized densities in existing zoning (note: current zoning for all regional center properties exceed BART's minimum requirements for height and density). The following density ranges were then applied to remaining stations. A density of 75 dwelling units per acre was used as the low end estimate because this is the required zoning for the Neighborhood/Town Center place type per AB 2923:

- Neighborhood/Town Center: 75 to 80 dwelling units per acre
- Urban Neighborhood/City Center: 120 to 170 dwelling units per acre

Commercial Development

To estimate commercial development, BART multiplied the assumed commercial acreage by a floor area ratio (FAR). BART assigned an FAR to each site to estimate potential commercial development. To calculate an FAR Perkins & Will completed its prototype analysis of small, medium, and large parcels for commercial development as described in the previous section. Larger parcels were able to accommodate a lower FAR due to circulation and open space needs. As with residential development, the Regional Center sites utilized existing zoning. Using this analysis, the following FAR assumptions were assigned to each station by AB 2923 place type:

- Neighborhood/Town Center: 1.6 to 2.3
- Urban Neighborhood/City Center: 2.8 to 4.2

Final Calculation

The final calculations for residential and commercial development, respectively, are as follows:

- Developable Square Feet of Land x Share of Land for Residential Use x Residential Density
- Developable Square Feet of Land x Share of Land for Commercial Use x Floor Area Ratio

Affordable Housing

This capacity estimate was consistent with BART's Board-adopted goal to ensure that at least 35 percent of all housing units are affordable, as well as BART's Board-adopted affordable housing policy that a minimum of 20 percent of units will be affordable in each station area. As such, BART assigned each station an assumed percentage of affordable housing using the following approach:

- 20% affordable for properties expected to accommodate a high-rise residential development (due to potential financing constraints with accommodating inclusionary units)
- 50-100% affordable for sites expected to accommodate a mid-rise development in areas where BART has been in discussions with jurisdictions about their goals (Ashby, North Berkeley, Balboa Park) or where sites are less than two acres (Glen Park, Rockridge, Pittsburg Center). Lake Merritt reflects the development currently proposed but not yet approved by BART.
- 20% for other properties that are two to five acres
- 35% for all properties larger than five acres other than those cited above

Development Phasing

To estimate the development capacity for the 2020-2025 period, BART added the potential capacity for all sites identified in that time in the TOD Work Plan.

To estimate potential capacity in the 2025 to 2030 period, under current and expanded staffing levels, BART assumed eight stations could be completed with current staffing and an additional eight stations could be completed with expanded staffing.

Figure A-22: Assumptions to Estimate Development Capacity of BART's Sites

Station Area	Assumptions				
	Developable Acreage	Density	FAR	%w Residential	% Affordable
12th St/Oakland City Center	1.1	500.0	15.0	100%	20%
19th St/Oakland	0.9	500.0	15.0	50%	20%
Antioch	27.3	75.0	1.6	100%	35%
Ashby	6.3	120.0	3.5	100%	50%
Balboa Park	1.2	170.0	4.2	100%	100%
Bay Fair	16.6	80.0	1.6	50%	35%
Castro Valley	9.7	75.0	1.6	100%	35%
Coliseum	5.6	120.0	4.2	100%	20%
Concord	9.3	80.0	2.0	50%	35%
Daly City	4.1	80.0	2.3	100%	20%
Dublin/ Pleasanton	13.9	80.0	1.8	50%	35%
El Cerrito del Norte	6.7	120.0	3.5	100%	35%
El Cerrito Plaza	7.5	120.0	3.5	100%	20%
Fremont	23.1	120.0	2.8	100%	35%
Fruitvale	3.1	158.0	3.5	100%	20%
Glen Park	0.8	170.0	4.2	100%	100%
Hayward	5.5	170.0	4.2	50%	35%
Lafayette	9.1	120.0	2.8	100%	35%
Lake Merritt	3.1	194.0	7.2	50%	44%
MacArthur	0.2	170.0	4.2	100%	20%
North Berkeley	9.3	120.0	3.5	100%	50%
North Concord/ Martinez	19.0	75.0	1.6	65%	35%
Orinda	8.0	75.0	2.8	30%	20%
Pittsburg Center	1.2	90.0	2.3	100%	100%
Pittsburg/Bay Point	27.3	75.0	1.6	100%	35%
Richmond	6.2	120.0	3.5	100%	20%
Rockridge	1.7	170.0	4.2	100%	100%
San Bruno	0.6	90.0	2.3	0%	20%

San Leandro	10.1	120.0	3.5	100%	35%
South Hayward	8.3	80.0	1.6	100%	20%
South San Francisco	3.7	80.0	2.0	100%	20%
Union City	13.0	75.0	4.2	100%	35%
Warm Springs	35.2	120.0	2.8	50%	35%
West Oakland	0.3	170.0	4.2	100%	20%
TOTALS	299.1				

Figure A-23: Estimated Development Capacity by Station

Station Area	Development Capacity		
	Total Housing Units	Affordable Housing Units	Commercial Sq Ft
12th St/Oakland City Center	557	111	0
19th St/Oakland	227	45	296,180
Antioch	2,044	716	0
Ashby	755	377	0
Balboa Park	209	209	0
Bay Fair	663	232	577,906
Castro Valley	728	255	0
Coliseum	674	135	0
Concord	372	130	405,089
Daly City	330	66	0
Dublin/Pleasanton	557	195	556,398
El Cerrito del Norte	810	283	0
El Cerrito Plaza	905	181	0
Fremont	2,768	969	0
Fruitvale	494	99	0
Glen Park	128	128	0
Hayward	470	165	505,979
Lafayette	1,088	381	0
Lake Merritt	302	133	487,844
MacArthur	40	8	0
North Berkeley	1,119	559	0
North Concord/Martinez	924	324	462,503
Orinda	180	36	683,021

Pittsburg Center	111	111	0
Pittsburg/Bay Point	2,047	717	0
Richmond	749	150	0
Rockridge	284	284	0
San Bruno	0	0	60,663
San Leandro	1,207	422	0
South Hayward	663	133	0
South San Francisco	295	59	0
Union City	973	341	0
Warm Springs	2,110	739	2,144,891
West Oakland	58	12	0
TOTALS	24,842	8,703	6,180,473
	Share affordable	35%	

V. Economic Impact Analysis*

*Economic Impact Analysis will be included in the final version of the work plan document.

