Circulation and Mobility Fact Sheets: How to Read Guide

This sheet serves as a "How to Read Guide" for the 21 fact sheets developed for the Caltrain corridor to compile existing conditions data. It will help readers digest the information provided on the corresponding fact sheets, fully defining each data point listed using icons and pictures that serve as helpful visual cues. The information we provide in this "How to Read Guide" will visually correspond with the areas on individual fact sheets where that graphic data is located. The 21 fact sheets depict the following areas:

- Caltrain Corridor-Wide
- San Francisco
- San Francisco/Brisbane to Colma Creek
- Colma Creek to Millbrae
- Millbrae
- Burlingame
- San Mateo
- Belmont and San Carlos
- Redwood City
- Atherton/Menlo Park
- Palo Alto
- Mountain View
- Sunnyvale
- Santa Clara
- San Jose to Caltrain/Union Pacific (UP) Line
- Caltrain/UP Line to Ford Road
- Ford Road to Metcalf Road
- Metcal Road to San Jose/Morgan Hill
- San Jose/Morgan Hill to East Middle Avenue
- East Middle Avenue to North of Las Animas Avenue
- Las Animas Avenue to North of 10th Street

1. Segment Name

Represents the identified segment of the Caltrain corridor

2. Segment Map

Displays the segment of the Caltrain corridor, Caltrain stations, equity priority communities (EPC), railroad crossings by type, the local transportation network, and key destinations. Additional details for the information displayed are described below.

- **EPC:** Represents census tracts that have a significant concentration of underserved populations such as households with low incomes and people of color[1]. More information is provided on Metropolitan Transportation Commission's (MTC) website here.

- **Corridor Crossings:** Differentiated by the following four crossing types listed[2]

  - **At-Grade:** A location where a roadway crosses railroad tracks on the same level
  - **At-Grade (Pedestrian):** A location where a pedestrian and/or bicycle path and railroad tracks cross each other at-grade
  - **Grade Separated:** A location where a roadway and railroad tracks cross each other at different levels
  - **Pedestrian Grade Separated:** A location where a pedestrian and/or bicycle path and railroad tracks cross each other at different levels
  - **Proposed New Grade Separated:** A location where a crossing does not currently exist but is proposed as part of active projects along the corridor.

- **Existing Transportation Network:** Existing bus transit routes and three levels of classified bicycle facilities[3].

- **Destinations:** The following listed destination types within one mile of the Caltrain corridor[4].

  - Airports
  - Public Places (community centers, courthouses, libraries, marketplaces, and city halls)
  - Healthcare Facilities (adult care, medical centers, and hospitals)
  - Hospitals with ER (emergency room service)
  - Fire Stations
  - Schools (public, private, and postsecondary)
  - Places of Worship
  - Landmarks (archaeological, art, attraction, battlefield, castle, fort, memorial, monument, ruins, and viewpoint)
  - Parks
  - Commercial Areas

Context

Corridor Crossings: Number of grade separated crossings (vehicle, pedestrian/bicycle), at-grade crossings, and pedestrian/bicycle grade-separated crossings located along the segment and within EPC[5].

- Supplementary crossing locations were included in addition to the identified 71 at-grade crossings to better understand circulation and mobility within jurisdictions. For example, the roadways that cross over the tunneled portion of the Caltrain corridor were included.

Stations: Stations within the segment and their approximate daily ridings[6].

Segment Information: Start and end of the segment (in mile post information per PCJPB track chart) and segment length (in miles).

Demand and Growth[7]

Daily Traffic (Average Annual) vs Roadway Segment Capacity: Vehicle demand vs the estimated capacity for roadways with at-grade crossings, roadways with grade separated crossings, and freeways that cross the corridor

Daily Traffic (Average Annual): Number of vehicles traveling on roadways that cross the Caltrain corridor within the segment in a day, averaged over a one-year period[8]

Roadway Segment Capacity: Planning level number of vehicles for the roadways that cross the Caltrain corridor within the segment can convey in a day[9]

- When traffic exceeds capacity, users experience increased wait times, queuing, and congestion on the roadway network.

Population: Estimated number of people and number of people per square mile based on 2018 census tracts within one mile of the Caltrain corridor[1]

Employment: Estimated number of jobs and number of jobs per square mile based on 2018 census blocks within one mile of the Caltrain corridor[10]

Anticipated Annual Growth (2015-2050): Compound annual growth in population and employment[11]

Equity

Seniors, People of Color, and Low Income Population: Percentage of the segment population who fit this category[1]

Household Income: Percentage of households within one mile of the Caltrain corridor by income range[18]

Area Median Income (AMI): Percentage of housing units within one mile of the corridor by AMI thresholds[19]

Connectivity

Crossings by Mode (Max Distance): Number of crossings along the segment by mode (vehicle, pedestrian[12], bicycle[13], and transit) measured by distance in miles between crossings[14]

Mode Split (All Trips): Percentage of all day weekday trips, by mode, that start/end within one mile of the Caltrain corridor[15]

Number of Trains in Peak Hour: Existing and future maximum number of trains operating on the Caltrain corridor for the segment during the peak hour[16]

Gate Down Time (Average Minutes in Peak Hour): Average existing and future gate down time estimates for at-grade crossings along the segment

- **Crossings >11 Min. Gate Down Time:** At-grade crossings along the segment with gate down time above 11 minutes[17]

Safety

Rail Crossing Incidents (2017-2021): Number of incidents between trains and roadway users (e.g., vehicle, pedestrian, and bicyclist)[20]

- **Incident Severity:** Degree of injury that resulted from the incident. Fatal incident resulted in death(s). Other incident resulted in injuries or no injuries.
- **Select Incident Types:** Select types based on incident report narrative. Car stalled incidents involved a vehicle being stalled, stuck, trapped, stopped or blocked on crossing. Apparent suicide incidents involved a user(s) attempting or succeeding in committing suicide. Other incidents involved drivers ignoring railroad gates or other reasons.

Street Traffic Incidents (2017-2021): Number of injury collisions between vehicles and other non-rail modes that occur on local roads within 250 feet of the railroad crossings along the segment[21]

- **Collision Severity:** Collision's degree of severity (highest level of injury in crash). Fatal collision resulted in death(s). Severe collision resulted in a serious injury. Other collision resulted with another visible injury or complaint of pain.
- **Collision Mode Involved:** Type of user involved in the collision including pedestrian, bicyclist, or vehicle only

Incidents/Crossings: Number of incidents divided by the total number of crossings along the segment

Footnotes:

1. *MTC EPC Data (Accessed December 2022).*

2. *Federal Rail Association (FRA) Crossing Inventory Data and Peninsula Corridor Joint Power Boards (PCJPB) Track Chart (Accessed December 2022).*

3. *MTC Transit and Bicycle Facilities Layers (Accessed December 2022).*

4. *Caltrans, California Health and Human Services, National Center for Education Statistics and Open Street Map (Accessed February 2023).*

5. *FRA Crossing Inventory and PCJPB Track Chart (Accessed March 2023); MTC EPC Data (Accessed December 2022).*

6. *Caltrain 2019 Annual Passenger Counts (Accessed January 2023).*

7. *Replica 2019 and 2021 Annual Average Daily Traffic (AADT), Caltrain 2020 Business Plan and Caltrans Functional Classification (Accessed January 2023).*

8. *Based on 2019 Replica model data, adjusted based on readily available daily traffic machine counts.*

9. *Based on the number of travel lanes, roadway classification, and theoretical capacities associated with roadway segment level of service (LOS) E.*

10. *Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) 2018 (Accessed January 2023).*

11. *MTC Plan Bay Area 2050 Model Forecast Data (Accessed January 2023).*

12. *Crossings for pedestrian mode include crossings where pedestrian access is provided (e.g., sidewalk in one or both directions) or the crossing is a designated pedestrian crossing.*

13. *Crossings for bicycle mode include crossings where Class I, II or IV are present at the crossing or the the crossing is a designated pedestrian crossing.*

14. *FRA Crossing Inventory and PCJPB Track Chart (Accessed March 2023); MTC Transit and Bike Facilities Layers (Accessed December 2022).*

15. *Replica Trips by Origin Data (Accessed March 2023).*

16. *Caltrain 2020 Business Plan and 2040 Long Range Service Vision (Accessed March 2023).*

17. *Caltrain 2020 Business Plan (Accessed March 2023).*

18. *2019 ACS 5-Year Estimates Table B19001 Block Group (Accessed April 2023).*

19. *U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy (CHAS) 2019 ACS 5-Year Average (Accessed April 2023).*

20. *FRA Safety Data (Highway-Rail Grade Crossing Accident/Incident Report) (Accessed February 2023).*

21. *Transportation Injury Mapping System (TIMS) (Accessed February 2023).*

Context

 8 Grade Separated Crossings

(5 in Equity Priority Communities)

 0 At-Grade Crossings

(0 in Equity Priority Communities)

 2 Pedestrian Crossings

(1 in Equity Priority Communities)
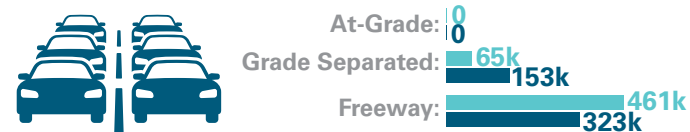
**South San Francisco Station
500 Riders**

◀ *San Francisco/Brisbane (MP 5.03)* **4.57 Miles** *Colma Creek (MP 9.60)* ◀

Demand and Growth

■ Daily Traffic (Average Annual)
■ Roadway Segment Capacity

At-Grade: 0 / 0

Grade Separated: 65k / 153k

Freeway: 461k / 323k

96,800 Population

4,900 - people/square mile

3.4% - Anticipated Annual Growth (2015-2050)

70,800 Employment

2,300 - jobs/square mile
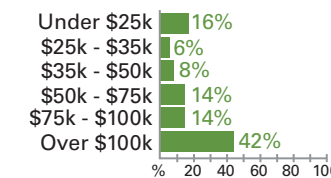
1.8% - Anticipated Annual Growth (2015-2050)

Equity

Population

Seniors **6.5%**

People of Color **83.1%**

Low Income **25.3%**
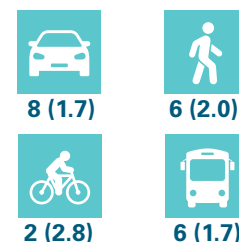
Income Ranges
(Total Household: 26,800)
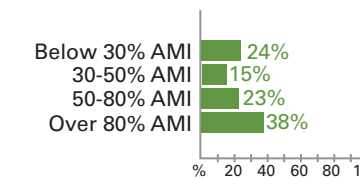
Under $25k	16%
$25k - $35k	6%
$35k - $50k	8%
$50k - $75k	14%
$75k - $100k	14%
Over $100k	42%

Area Median Income (AMI)
(Total Housing Units: 30,900)

Below 30% AMI	24%
30-50% AMI	15%
50-80% AMI	23%
Over 80% AMI	38%

Connectivity

Crossings by Mode
(Max Distance in Miles)

🚗 8 (1.7)   🚶 6 (2.0)

🚲 2 (2.8)   🚌 6 (1.7)

Mode Split (All Trips)

20% - Freight

57% - Driver/Passenger

1% - Taxi/TNC

1% - Public Transit

21% - Biking/Walking

of Trains
in Peak Hour

2018 **5**   🚆   2040 **12**

Gate Down Time
(Avg. Min. in Peak Hour)

2018 **0**   2040 **0**

🕐 Crossings >11 Min. Gate Down Time:

N/A
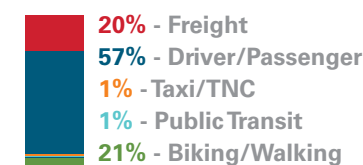
Safety

Rail Crossing Incidents
(2017-2021)

0 Total Rail Incidents

Incident Severity:

❌ Fatal: 0

❓ Other: 0

Select Incident Types:

🚗 Car Stall: 0

💗 Apparent Suicide: 0

❓ Other: 0

0.0 - Incidents/Crossing

Street Traffic Incidents
(2017-2021)

0 Total At-Grade | **5** Total Grade Separated

Collision Severity:

❌ Fatal: 0

⚠️ Severe: 2

❓ Other: 3

Collision Mode Involved:

🚶 Pedestrian: 0

🚲 Bicyclist: 0

🚗 Vehicle Only: 5

0.5 - Incidents/Crossing

San Francisco/Brisbane to Colma Creek

Caltrain | ▶▶ **Corridor Crossings** STRATEGY

LEGEND

— Caltrain Corridor
— Union Pacific (UP) Railroad Corridor
● Caltrain Stations (Label Provided)
▨ Equity Priority Communities

Corridor Crossings

○ At-Grade
○ At-Grade (Pedestrian)
○ Grade Separated
○ Pedestrian Grade Separated
○ Proposed New Grade Separated

Existing Transportation Network

— Transit Routes
— Class I/IV Bicycle Lane
— Class II Bicycle Lane
--- Class III Bicycle Lane

Destinations

✈ Airports (0)
🏛 Public Places (2)
➕ Healthcare Facilites (8)
ER Hospitals with ER (0)
🔥 Fire Stations (5)
🏫 Schools (19)
✡ Places of Worship (6)
📍 Landmarks (8)
🌳 Parks (24)
▨ Commercial Areas (38)

0   0.5   1   2 Miles

Map labels

San Bruno Ave
Geneva Ave
Bayshore
Guadalupe Canyon Pkwy
Bayshore Blvd
Valley Dr
101
Sister Cities Blvd
Forbes Blvd
South San Francisco
DNA Way
Grand Ave
Spruce Ave
Linden Ave
Airport Blvd
Produce Ave
El Camino Real
San Mateo Ave
380

Crossing Details				Railroad Safety						Street Traffic Incidents							Daily Traffic	Active Transportation		Transit		Demographic
Crossing Label	City	Crossing Type	Current Crossing Position	Total Rail Incidents	Incident Severity: Fatal	Incident Severity: Other	Incident Type: Apparent Suicide	Incident Type: Car Stall	Incident Type: Other	Total Collisions	Collision Severity: Fatal	Collision Severity: Severe	Collision Severity: Other	Collision Involved: Pedestrian	Collision Involved: Bicyclist	Collision Involved: Vehicle Only	Adjusted Replica Model AADT (2019)	Pedestrian Facilities Present	Bicycle Facilities Present	Transit Line	Transit Route(s)	Equity Priority Community (EPC)?
Bayshore Station Pedestrian Overcrossing	Brisbane	Pedestrian Crossing	Overcrossing	0	0	0	0	0	0	1	0	1	0	0	0	1	--	Yes	No	No	None	No
Tunnel Avenue	Brisbane	Grade Separated	Overcrossing	0	0	0	0	0	0	0	0	0	0	0	0	0	6,200	Yes	Class II	Yes	CM:BCP Shuttle	No
US Hwy 101	Brisbane	Grade Separated	Overcrossing	0	0	0	0	0	0	0	0	0	0	0	0	0	222,700	No	No	Yes	SM:398 SM:713 SM:FCX	No
Sierra Point Parkway Off Ramp	Brisbane	Grade Separated	Overcrossing	0	0	0	0	0	0	0	0	0	0	0	0	0	6,600	No	No	No	None	No
Oyster Point Boulevard	South San Francisco	Grade Separated	Overcrossing	0	0	0	0	0	0	1	0	0	1	0	0	1	21,100	Yes	No	Yes	CM:OPB Shuttle CM:OPC Shuttle CM:OPF Shuttle CM:UGB Shuttle CM:UGF Shuttle SI: Ferry Dock	Yes
Oyster Point Flyover	South San Francisco	Grade Separated	Overcrossing	0	0	0	0	0	0	0	0	0	0	0	0	0	5,300	No	No	No	None	Yes
E Grand Avenue	South San Francisco	Grade Separated	Overcrossing	0	0	0	0	0	0	2	0	1	1	0	0	2	17,400	Yes	No	Yes	CM:UGB Shuttle CM:UGF Shuttle	Yes
South San Francisco Station Pedestrian Undercrossing	South San Francisco	Pedestrian Crossing	Undercrossing	0	0	0	0	0	0	0	0	0	0	0	0	0	--	Yes	Yes	No	None	Yes
US Hwy 101	South San Francisco	Grade Separated	Overcrossing	0	0	0	0	0	0	0	0	0	0	0	0	0	226,100	No	No	Yes	SM:38 SM:398 SM:49 SM:713 SM:FCX SI: Ferry Dock	Yes
Airport Boulevard	South San Francisco	Grade Separated	Undercrossing	0	0	0	0	0	0	1	0	0	1	0	0	1	20,000	Yes	No	Yes	SM:38 SM:292 SM:397 CM:UGC Shuttle CM:UGF Shuttle	Yes

Context

4 Grade Separated Crossings
(2 in Equity Priority Communities)

2 At-Grade Crossings
(1 in Equity Priority Communities)

3 Pedestrian Crossings
(0 in Equity Priority Communities)
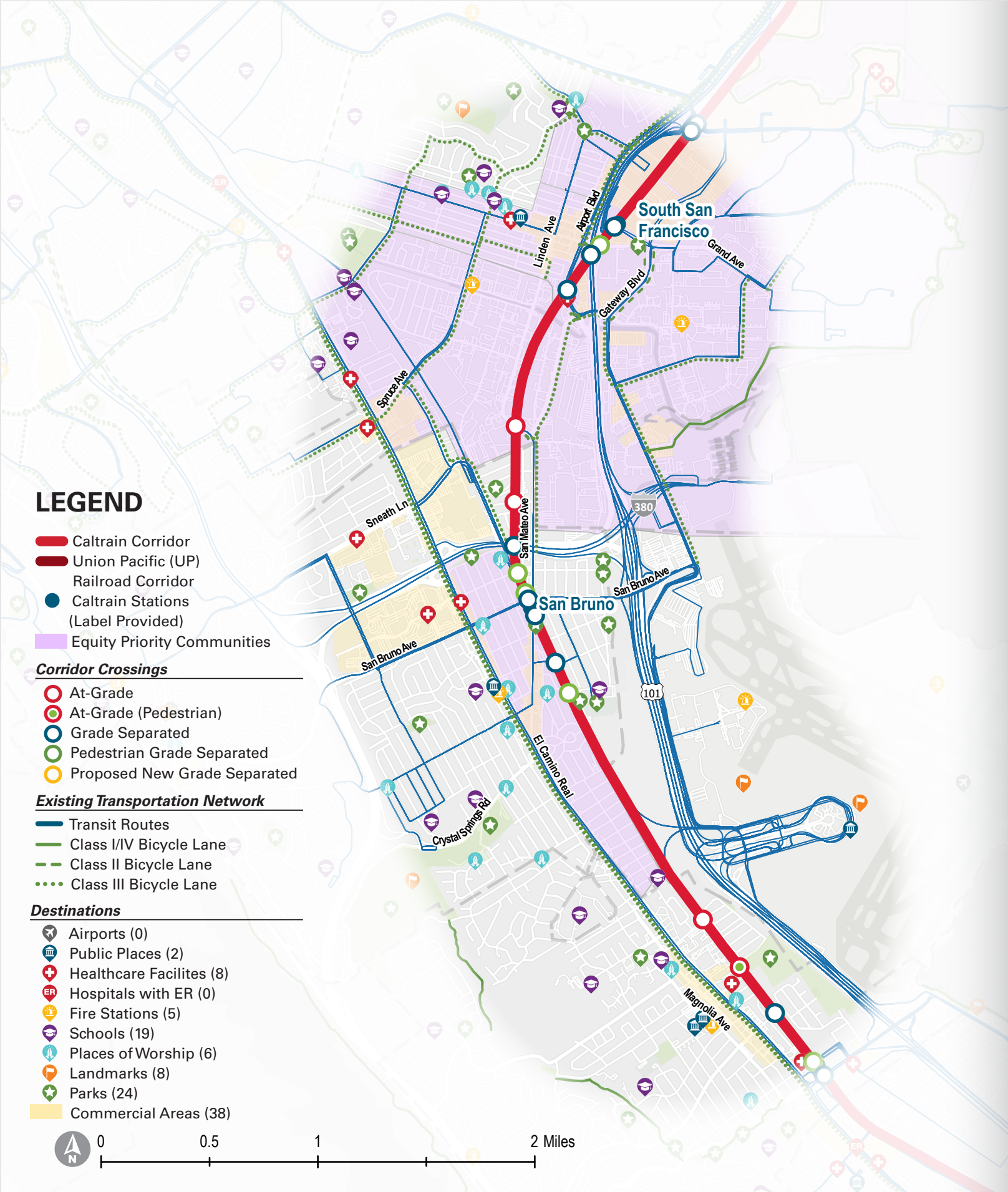
San Bruno Station
800 Riders

▶ Colma Creek (MP 9.60)　　　**2.81 Miles**　　　Millbrae (MP 12.41) ◀

Demand and Growth

■ Daily Traffic (Average Annual)
■ Roadway Segment Capacity

At-Grade: 10k / 15k
Grade Separated: 37k / 46k
Freeway: 186k / 162k

81,800 Population
4,800 - people/square mile
2.4% - Anticipated Annual Growth (2015-2050)

65,200 Employment
5,400 - jobs/square mile
1.1% - Anticipated Annual Growth (2015-2050)

Equity

Population

Seniors **7.0%**
People of Color **72.9%**
Low Income **20.3%**

Income Ranges
(Total Household: 26,400)
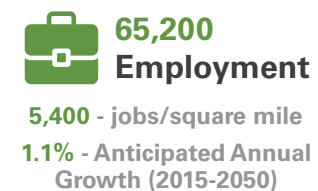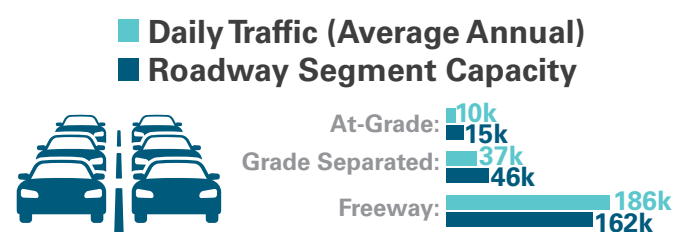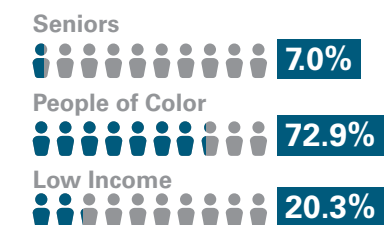
Under $25k — 11%
$25k - $35k — 5%
$35k - $50k — 8%
$50k - $75k — 12%
$75k - $100k — 14%
Over $100k — 50%

Area Median Income (AMI)
(Total Housing Units: 28,400)
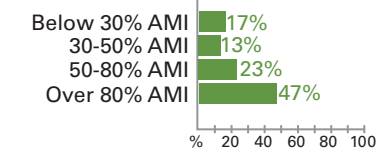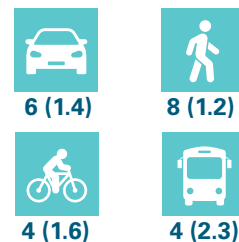
Below 30% AMI — 17%
30-50% AMI — 13%
50-80% AMI — 23%
Over 80% AMI — 47%

Connectivity

Crossings by Mode
(Max Distance in Miles)

🚗 6 (1.4)　🚶 8 (1.2)
🚲 4 (1.6)　🚌 4 (2.3)

Mode Split (All Trips)

15% - Freight
66% - Driver/Passenger
2% - Taxi/TNC
2% - Public Transit
15% - Biking/Walking

# of Trains
in Peak Hour

2018 **5** — 2040 **12**

Gate Down Time
(Avg. Min. in Peak Hour)

2018 **9** — 2040 **18**
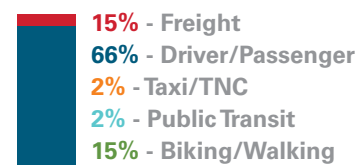
Crossings >11 Min. Gate Down Time: **N/A**

Safety

Rail Crossing Incidents
(2017-2021)

2 Total Rail Incidents

Incident Severity:
✕ Fatal: 1
? Other: 1

Select Incident Types:
🚗 Car Stall: 1
💙 Apparent Suicide: 0
? Other: 1
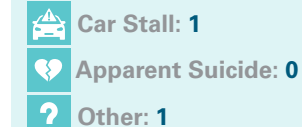
0.2 - Incidents/Crossing

Street Traffic Incidents
(2017-2021)

3 Total At-Grade | **17** Total Grade Separated

Collision Severity:
✕ Fatal: 0
⚠ Severe: 5
? Other: 15

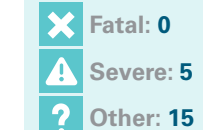**Collision Mode Involved:**
🚶 Pedestrian: 6
🚲 Bicyclist: 2
🚗 Vehicle Only: 12

2.2 - Incidents/Crossing

LEGEND

— Caltrain Corridor
— Union Pacific (UP) Railroad Corridor
● Caltrain Stations (Label Provided)
　 Equity Priority Communities

Corridor Crossings
○ At-Grade
○ At-Grade (Pedestrian)
○ Grade Separated
○ Pedestrian Grade Separated
○ Proposed New Grade Separated

Existing Transportation Network
— Transit Routes
— Class I/IV Bicycle Lane
-- Class II Bicycle Lane
··· Class III Bicycle Lane

Destinations
Airports (0)
Public Places (2)
Healthcare Facilites (8)
Hospitals with ER (0)
Fire Stations (5)
Schools (19)
Places of Worship (6)
Landmarks (8)
Parks (24)
Commercial Areas (38)

0 — 0.5 — 1 — 2 Miles

South San Francisco

San Bruno

Linden Ave
Airport Blvd
Grand Ave
Gateway Blvd
Spruce Ave
Sneath Ln
San Mateo Ave
San Bruno Ave
San Bruno Ave
El Camino Real
Crystal Springs Rd
Magnolia Ave
380
101

Colma Creek to Millbrae

Caltrain | Corridor Crossings STRATEGY

Crossing Details				Railroad Safety						Street Traffic Incidents							Daily Traffic	Active Transportation		Transit		Demographic
Crossing Label	City	Crossing Type	Current Crossing Position	Total Rail Incidents	Incident Severity: Fatal	Incident Severity: Other	Incident Type: Apparent Suicide	Incident Type: Car Stall	Incident Type: Other	Total Collisions	Collision Severity: Fatal	Collision Severity: Severe	Collision Severity: Other	Collision Involved: Pedestrian	Collision Involved: Bicyclist	Collision Involved: Vehicle Only	Adjusted Replica Model AADT (2019)	Pedestrian Facilities Present	Bicycle Facilities Present	Transit Line	Transit Route(s)	Equity Priority Community (EPC)?
Linden Avenue	South San Francisco	At-Grade	At-Grade	0	0	0	0	0	0	2	0	0	2	0	0	2	7,500	Yes	No	Yes	SM:141	Yes
Scott Street	San Bruno	At-Grade	At-Grade	2	1	1	0	1	1	1	0	0	1	1	0	0	2,900	Yes	No	No	None	No
I-380	San Bruno	Grade Separated	Overcrossing	0	0	0	0	0	0	4	0	1	3	1	1	2	186,000	No	No	Yes	SM:38 SM:120	No
Euclid Avenue Pedestrian Undercrossing	San Bruno	Pedestrian Crossing	Undercrossing	0	0	0	0	0	0	0	0	0	0	0	0	0	--	Yes	Yes	No	None	No
San Bruno Station Pedestrian Undercrossing	San Bruno	Pedestrian Crossing	Undercrossing	0	0	0	0	0	0	0	0	0	0	0	0	0	--	Yes	Yes	No	None	No
San Bruno Avenue	San Bruno	Grade Separated	Undercrossing	0	0	0	0	0	0	8	0	3	5	2	1	5	16,600	Yes	No	Yes	SM:49 SM:140 SM:141 SM:398 SM:ECR	Yes
San Mateo Avenue	San Bruno	Grade Separated	Undercrossing	0	0	0	0	0	0	4	0	1	3	2	0	2	13,900	Yes	No	No	None	Yes
Angus Avenue	San Bruno	Grade Separated	Undercrossing	0	0	0	0	0	0	1	0	0	1	0	0	1	6,700	Yes	Class II	Yes	SM:141	No
Sylan Avenue Pedestrian Undercrossing	San Bruno	Pedestrian Crossing	Undercrossing	0	0	0	0	0	0	0	0	0	0	0	0	0	--	Yes	Yes	No	None	No