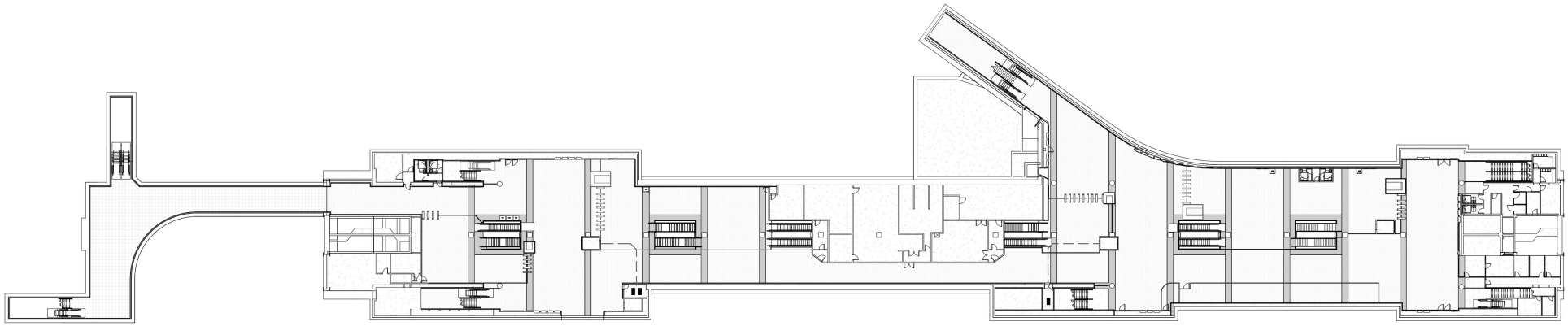

CIVIC CENTER STATION MODERNIZATION PLAN

EXISTING CONDITIONS REPORT

15% DESIGN CONCEPT SUMMARY

VIA

TABLE OF CONTENTS

LIST OF FIGURES

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EXECUTIVE SUMMARY

The following report compiles available station-related information for targeted input and discussion by BART Departments and stakeholders. The Civic Center Station Modernization Plan is made up of two sections. The first section consists of an Existing Conditions Report (Chapters 1-6) documenting issues and opportunities, station capacity and function, facility condition, and state of good repair.

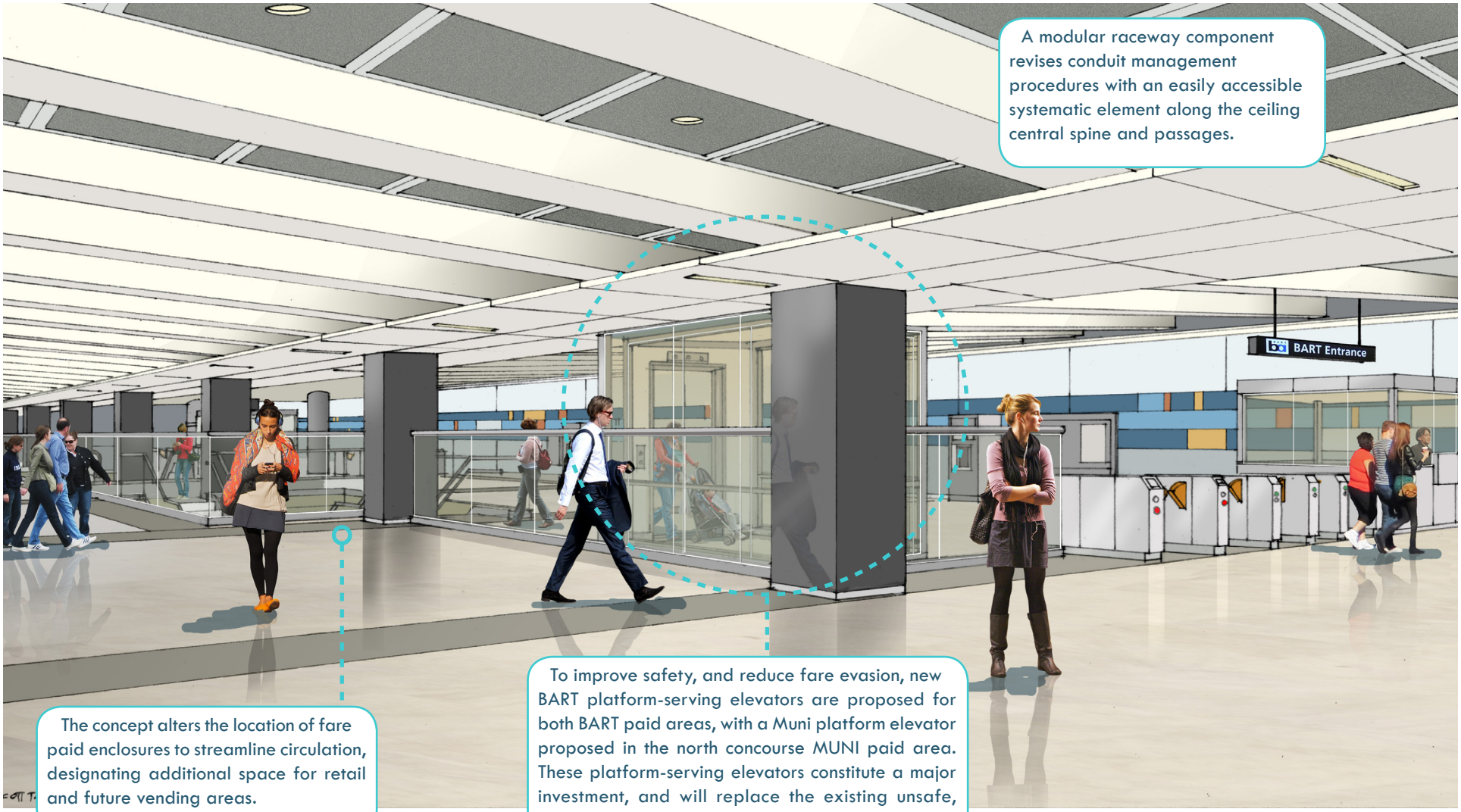
The second section is a Preliminary Design Concept (Chapter 7). This chapter is explores a series of project proposals vetted by both internal and external Technical Advisory Committees. Project proposals respond to the opportunities identified in the Existing Conditions Report. The Design Concept chapter is complimented by a set of preliminary drawings to the 15% level of design. While summary drawings are included in Chapter 7, full details are including in the drawing set. These drawings were also used for preliminary cost estimating and project prioritization. This report is intended to be conceptual only and will be updated to reflect new information and recommendations on a regular basis. A set of unresolved issues has also been included for further exploration. Recommendations *not* covered within this scope, that should be included in a future study include:

- **Coordination of systematic design issues** that impact BART's suite of underground stations such as wayfinding, universal access, prototypical ticketing wall and faregate technology;
- **Platform and concourse acoustics**: Further study is needed on sound levels and announcement intelligibility; with potential solutions, possibly similar to Powell Street Station;
- **Communications**: a thorough assessment of the existing systems in the station; similar to Powell Street Station studies;
- **Ventilation**: assessment of the station comfort ventilation system; similar to Powell Street Assessment.

Public Outreach

The project conducted several in-station public outreach events. Outreach was inclusive of minority, low-income, and limited English proficient (LEP) populations. Surveys were conducted on site (as coordinated with all four downtown stations), and accompanied by two sets of informational boards. The second BART Civic Center event was coordinated with the Canopy/Escalator Replacement Phase One improvements. The survey asked questions about specific improvements; additionally, there was a comment box for any other concerns riders might have, not addressed by the questions. In Civic Center, 98 percent of survey comments were related to safety, cleanliness, escalators and elevators.

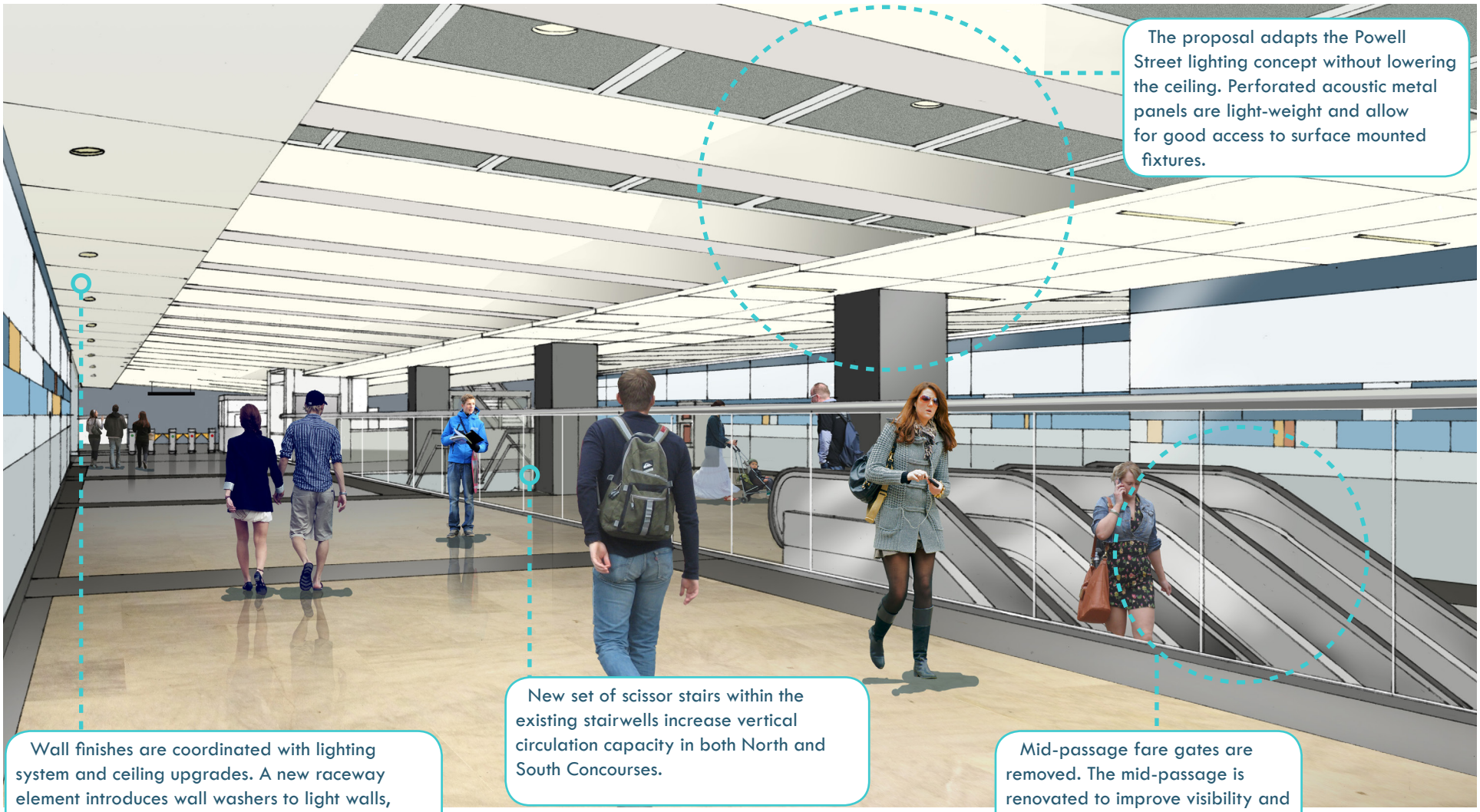
A Technical Advisory Committee external to BART has also been involved in the consideration of universal access, elevators, intermodal issues, entries, and coordination between BART and ongoing City-led mid market initiatives.



A modular raceway component revises conduit management procedures with an easily accessible systematic element along the ceiling central spine and passages.

The concept alters the location of fare paid enclosures to streamline circulation, designating additional space for retail and future vending areas.

To improve safety, and reduce fare evasion, new BART platform-serving elevators are proposed for both BART paid areas, with a Muni platform elevator proposed in the north concourse MUNI paid area. These platform-serving elevators constitute a major investment, and will replace the existing unsafe, joint-use elevator now in a remote location. With this improvement, BART aims to provide full redundancy, and designs should ensure that there is always a second option for egress and ingress if a primary platform elevator is out of service.


The proposal adapts the Powell Street lighting concept without lowering the ceiling. Perforated acoustic metal panels are light-weight and allow for good access to surface mounted fixtures.
Wall finishes are coordinated with lighting system and ceiling upgrades. A new raceway element introduces wall washers to light walls, advertising and information panels.
New set of scissor stairs within the existing stairwells increase vertical circulation capacity in both North and South Concourses.
This concept proposal also includes plans for an additional street to concourse elevator serving both BART and Muni customers in the South Concourse.
Mid-passage fare gates are removed. The mid-passage is renovated to improve visibility and reduce fare evasion. Transparent fare barriers are aligned with circulation elements at escalators and stairwells.

Opportunity for design treatments on the platform walls sre highlighted to help differentiate stations for passengers.

New scissor stairs and platform elevators allow for distribution of passengers, and accommodate ridership growth.

Platform lighting highlights the trackway edge and under stair dark spots reducing glare and hot spots. Central raceway element brings lighting to the central spine and humanizes the scale of the platform.

Platform changes accommodate three-door boarding at all BART stations.

1.0 LAND USE CONTEXT

Civic Center BART is located in San Francisco's mid-market district, at the junction of Downtown, and South of Market neighborhoods. It is a central, transit rich location, marking the current extent of the commercial core (Figure 1.1). The following section summarizes Civic Center Station land use context and relevant City of San Francisco initiatives.

Mid Market Redevelopment

Mid-market is one of San Francisco's most vivid examples of the rapid changes brought on by a booming tech industry. Beginning in 2011, the City inaugurated a series of mid-market revitalization efforts, including a payroll tax exemption for companies within the identified redevelopment area (see Figure 1.2).

As of 2015, the combination of City-led redevelopment actions, and a strong economy prompted eighteen software companies including Twitter, Uber, Yammer Spotify, Quip, Square, and Zen Desk to establish offices in the district. As a result, many of the formerly vacant or underutilized buildings between 6th and 9th Streets are undergoing renovation. Furthermore, the energy of an estimated 11,000 new employees is apparent. San Francisco's Office of Economics and Workforce Development (OEWD) reports that the central market vacancy rate fell from 30 percent in 2010 to 16 percent in 2014[1]. Bloomberg News reports that rents in mid market have increased 83 percent since the first quarter of 2010[2]. This shift in neighborhood character will impact Civic Center Station modernization by:

- Building momentum for new businesses to move into the area and activating the streets around Civic Center entrances; the area has three different Community Benefit Districts (CBDs) and a number of resident associations;
- Creating opportunities to collaborate with the Central Market Partnership to secure resources for neighborhood and public realm planning, as well as streetscape improvements and UN Plaza upgrades; and
- Generating momentum for connections between neighborhoods – Civic Center, Hayes Valley, the Tenderloin and SOMA.

In addition to its role as a new employment center, Civic Center has traditionally been a location rich in arts and entertainment venues – at least twelve venues are open in the district (See Figure 1.3). This is also the City's major location for civic celebration, events and activities.

1. City of San Francisco OEWD Community Meeting Presentation, January 2015; page viewed 4/4/15 http://investSF.org/neighborhoods/central-market/

2. http://www.bloomberg.com/news/articles/2014-04-03/twitter-tax-break-is-target-in-san-francisco-income-war

City Planning Initiatives - Civic Center Station Vicinity

Better Market Street (BMS)

The Better Market Street project (sponsored by San Francisco Public Works in coordination with Citywide Planning and SFMTA) analyzes Market Street mobility, including at the footprint of Civic Center Station on 7th and 8th Streets[3]. Now in Environmental Review, Market Street's proposed redesign has developed three options, including one option with auto restrictions and a 6.5' cycle track with 5' buffer along Market Street. BMS construction is currently expected to commence in 2018. Members of the SF Public Works BMS project team have participated on the Civic Center Technical Advisory Group.

Issues for Modernization

- Alterations to emergency exiting, vents or any changes to surface level (i.e. grade level elevator, or side walk surface) to be coordinated with BMS team
- As part of the BMS initiative the City has voiced strong interest in exploring opportunities to move patrons to the street more quickly to activate the street

Opportunities for Modernization

- As feasible, BART may leverage BMS to improve intermodal function of Civic Center station at the surface with improved transit boarding, wayfinding
- Leverage intersection improvements proposed at 8th/Market/Grove/Hyde for a signalized, diagonal crossing between the Orpheum entrance and the library

3. *http://bettermarketstreetSF.org/docs/BMS-Factsheet.pdf*

CENTRAL MARKET REDEVELOPMENT TIMELINE

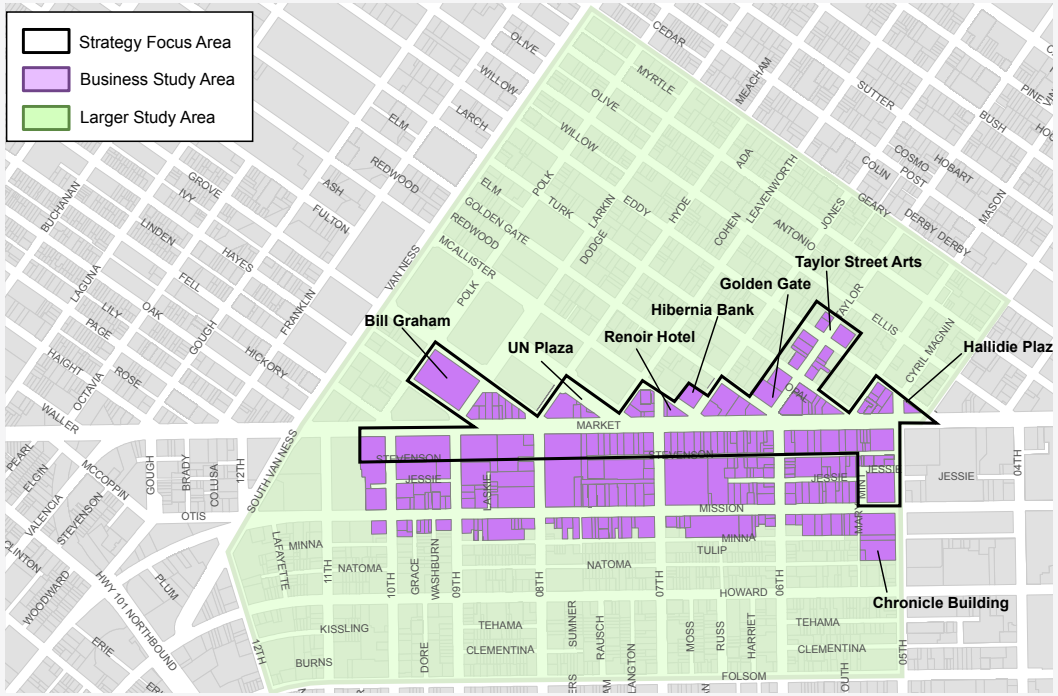
2010 Central Market Partnership managed by OEWD identifies mid-market as a dynamic area for employment, entertainment, and residential growth. This is a public/private initiative to renew and coordinate efforts to revitalize the Market Street neighborhood between 5th Street and Van Ness Avenue.

2011 The Central Market Economic Strategy targets Central Market and the adjacent neighborhoods for revitalization. City led, investments are directed towards activating the public realm, enhancing the creative arts comMUNIty, reducing vacancies, building comMUNIty capacity, and improving safety.

2012 Twitter opens its headquarters at 9th and Market with 800 employees. This space had been vacant for the past 50 years.

2014 The mid-market strategy is now being updated to engage with and build off of the catalysts already at play in mid-market

FIGURE 1.1 CENTRAL MARKET ECONOMIC STRATEGY STUDY AREA (SOURCE OEWD, 2011)



Civic Center Public Realm Plan

Sponsored by San Francisco Planning, the project began in January of 2014 with an estimated schedule of 1-1.5 year (2014-2015). The work plan will focus on pedestrian improvements at intersections on Grove/ Hyde and/or associated renovations at the surface level for transit riders.

Opportunities for Modernization

- BART coordination with this planning process may allow BART and San Francisco to find partnering opportunities, such as a potential investments to improve to entrances and/or street level interventions

Safer Market Street [4]

As one element of the San Francisco Vision Zero policy to eliminate all traffic-related fatalities, Safer Market Street aims to create a safer area for all street users, emphasizing safety at intersections with turn restrictions and decreased vehicle traffic between 3rd and 8th Streets.

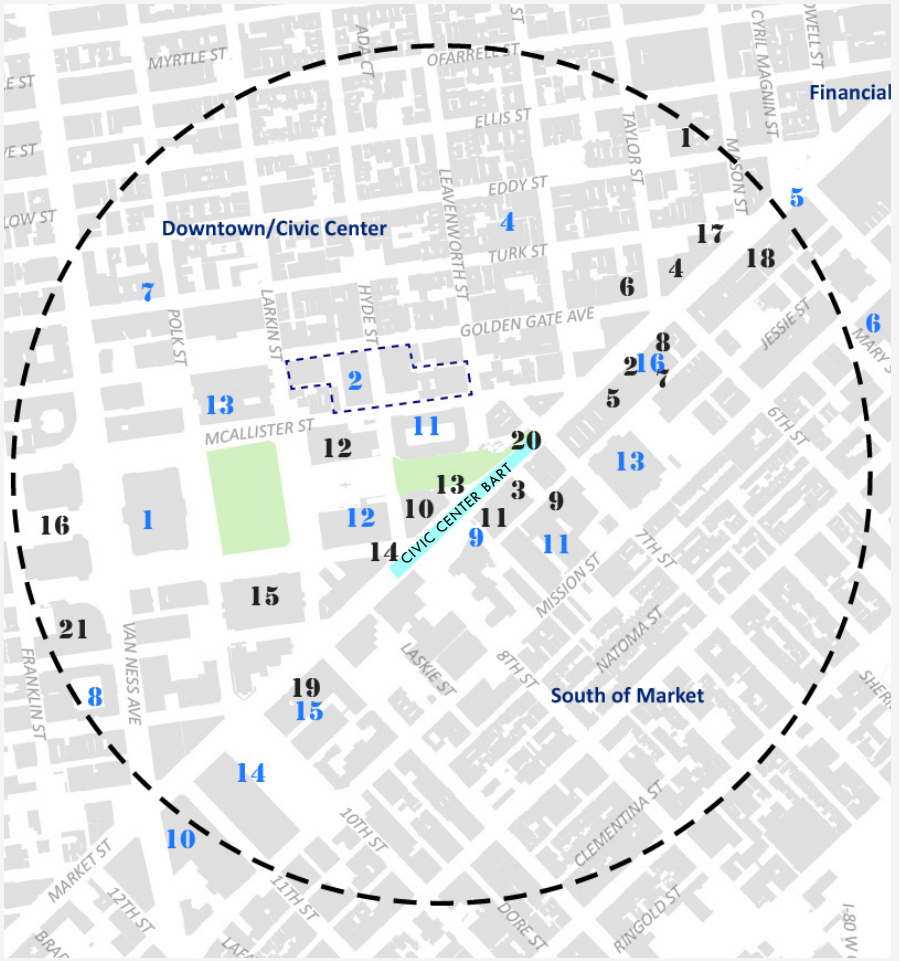
To efficiently guide vehicles through the area, new wayfinding signage will be developed and posted on streets approaching Market, directing drivers to key destinations such as highway on-ramps and landmarks. Safer Market Street also proposes a left turn restriction on Hyde/Market. BART will conduct on-going coordination with SFMTA.

4. http://sfmta.com/sites/default/files/projects/SMSpercent20factsheetpercent20v2.pdf

1 City Hall
2 Hastings
3 ZenDesk HQ
4 San Francisco City Academy
5 Hack Reactor
6 TechShop
7 City College of San Francisco
8 San Francisco Unified
9 SF Public Works
10 SFMTA
11 Federal Building
12 Public Library
13 Federal/State Law Courts
14 Uber/Square HQ
15 Twitter HQ

1 EXIT Theater
2 International Art Museum
3 ACT Strand New Building
4 Warfield Theater
5 App academy
6 Golden Gate Theater
7 SF Camera Work
8 Luggage Store Gallery
9 Alonzo King Lines Dance Center
10 The Art Institute of California
11 Theater Bay Area
12 Asian Art Museum
13 Orpheum Theater
14 KUNST OFF arts and Dance
15 Bill Graham Civic Auditorium
16 War Memorial/Opera House
17 950 Center for Arts and Education
18 Market Street Place
19 Market Square – Market Place
20 UN Plaza Renovations
21 SF Symphony

FIGURE 1.2 STATION VICINITY KEY USES



Employment and Institutional uses

Arts and Entertainment uses

Approximate 1/2 mile radius from Civic Center Station

West SOMA Plan

- This Plan, adopted in 2013, is now in implementation. It represents a first step to ending a development moratorium that has been in place since the citizen-based planning process that developed the plan began in 2005.

Market Octavia Plan

- Adopted 2007, this plan is now in implementation. The Market Octavia Plan includes high-rise residential and office zoning centered at Van Ness and Market.

San Francisco Development Pipeline

San Francisco Planning Department estimates that both West SOMA and Market Octavia may build out quicker than expected in response to the current economic upswing and housing shortage. According to the 2014 Q2 Pipeline Report the "hot spot" for much of this development is Market Street at various sections of it. While this may seem a response to the recent acceleration of technology companies locating in the area, many development projects here pre-date the last recession.

Residential and commercial projects near Civic Center station include:

1. Goodwill Redevelopment - 600 units*
2. Honda Dealership - 700 units*
3. NEMA (completed) - 754 units
4. 1066 Market - 300 units*
5. 100 Van Ness - 399 units
6. Trinity Place - 1,900 units (under construction)
7. City Place Project - 250,000 SF retail development at Market and 5th

** permitted project*

Public Safety

Central Market has a high volume of criminal activity and relative to other commercial districts, the neighborhood experiences higher concentrations of assault, robbery, and drug and alcohol violations. Improving public safety is a core mission for the Central Market Partnership.

5. City of San Francisco Planning Department, Development Pipeline Report Q 2 2014.

6. Neighborhood Profile, March, 3 2014, San Francisco Invest In Neighborhoods http://investsf.org/wordpress/wp-content/uploads/2014/03/Neighborhood-Profile-CENTRAL-MARKET.pdf

2.0 RIDERSHIP AND STATION ACCESS

2.1 CURRENT AND FUTURE RIDERSHIP

The BART Ridership Forecasting Model (updated in 2012) estimates ridership growth over time. The model is based on regional growth assumptions consistent with MTC's Plan Bay Area. Forecasted future downtown ridership is consistent with current distribution across stations, where Civic Center ridership numbers are slightly lower than other downtown stations. Table 2.0 and Figure 2.1 summarize Civic Center BART ridership forecasts for current and future years.

Table 2.1 Total Station Entries and Exits at Civic Center Station

Model Year	Total Station Entries[1]	Total Station Exits[1]
2014	21,260	21,766
2015	21,558	22,022
2025	26,747	26,791
2040	**32,807**	**32,942**

BART Ridership Forecasting Model – 2012 Update, Civic Center Station

With forecasted growth of approximately **50 percent over current baseline numbers by 2040**, BART's Civic Center ridership numbers will increase over time. However, because these forecast numbers are based on existing modeled growth, they do not account for more intense or concentrated development within in the Market Street corridor or any potential significant changes in land use and density around Civic Center.

In order to have a full understanding of how such changes might impact the station, this study includes a scenario wherein future commercial and residential densities around Civic Center are adjusted to Powell Street station area land uses, a station which operates more centrally within the City's commercial core. This is a useful snapshot to judge the high potential threshold for station capacity. Table 2.2 and Figure 2.2 summarize current and future year passenger exit numbers for Civic Center and additional future year station exits that may be expected with a Powell Street station area land use scenario.

Projected Ridership Growth

Civic Center Station is currently the fourth busiest BART station on system with 21,558 station entries and 22,022 station exits on an average weekday.

Table 2.3 summarizes the BART ridership projections for weekday passenger demands. (Note that only peak-hour ridership data for 2025 and 2040 were requested. 2014 and 2015 weekday total numbers are very close, and this analysis maintains 2014 as the baseline.)

Table 2.2 Total Station Exits at Civic Center Station and Additional Ridership Based on Powell Land Use Scenario for 2025 and 2040

Model Year	Civic Center Station Exit Projections[1]	Additional Station Exits adjusted to Powell Land Use Scenario for 2025 and 2040[2]
2014	21,766	
2015	22,022	
2025	26,791	**12,209**
2040	32,942	**14,954**

1 BART Ridership Forecasting Model – 2012 Update, Civic Center Station
2 BART Ridership Forecasting Model – 2012 Update, Powell Street Station

Figure 2.1 Total Station Entries and Exits at Civic Center Station, based on BART Ridership Forecasting Model

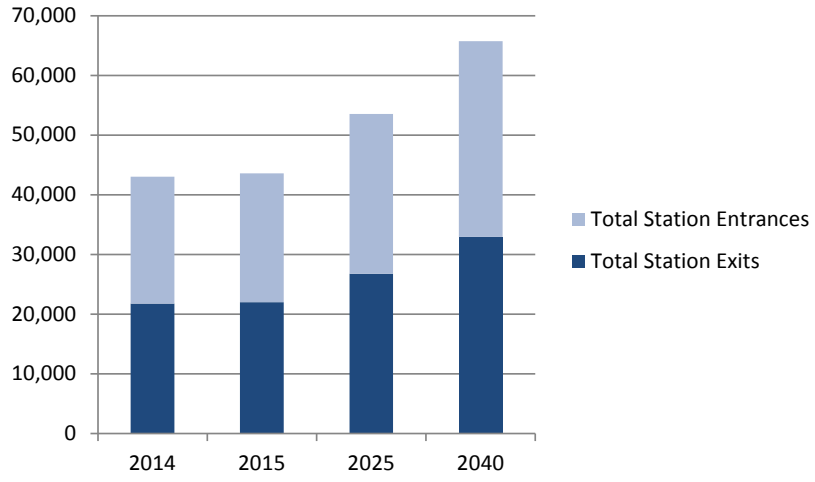


Figure 2.2 Total Station Exits at Civic Center Station and Additional Ridership Based on Powell Land Use Scenario for 2025 and 2040

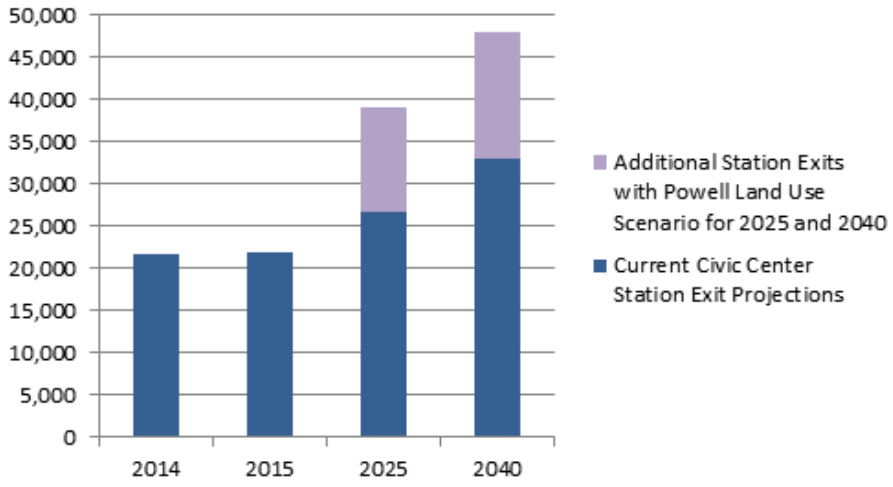


Table 2.3 Civic Center Projected Weekday Capacity Demands

Year	Period	Entries	Exits	Source
2014	Weekday total	21,260	21,766	2014 WKDY, BART Ridership Model output
	AM Peak	**1,033**	**4,081**	Sample of 2014 fare gate data on 3 non-event weekdays
	PM Peak	**4,870**	**1,314**	Sample of 2014 fare gate data on 3 non-event weekdays
2015	Weekday total	21,558	22,022	2015-1 WKDY, BART Ridership Model output
2025	Weekday total	26,747	26,791	2025-1 WKDY, BART Ridership Model output
	AM Peak	1,148	4,113	2025-4 AMPK, BART Ridership Model output
	PM Peak	4,745	1,585	2025-8 AMPK, BART Ridership Model output
2040	Weekday total	32,807	32,942	2040-1 WKDY, BART Ridership Model output
	AM Peak	**1,494**	**4,948**	2040-4 AMPK, BART Ridership Model output
	PM Peak	**5,665**	**2,119**	2040-8 PMPK, BART Ridership Model output

2.2 STATION ACCESS

Civic Center BART is uniquely positioned to function as a regional hub and gateway, with excellent transit connections to San Francisco's neighborhood and regional commute destinations. In addition to MUNI buses serving the entire city, Golden Gate Transit provides commuter service to Civic Center and 8th Street at Market Street is a primary AM pickup location for Peninsula and South Bay employer shuttles with a direct connection to southbound highways. The Civic Center station area is arguably better positioned to accommodate growth than other downtown station areas that are more fully built out and less conveniently located for regional access to the north and south. Figure 2.3 illustrates these regional connections.

However, while location and available capacity at Civic Center are ideal for intermodal connections and ridership growth, there are station access issues at the street level as well as intermodal challenges at the intersection of 8th and Market Streets (Figure 2.4).

Issues

- Both Golden Gate Transit and the MUNI/shuttle bus stops are located off of Market Street and are not visible from the nearest BART station entrances. The Golden Gate Transit bus stop on Hyde Street is a full block north of Market Street, requiring passengers to cross at least one street to reach the closest BART entrances at Hyde/Grove Streets.
- The MUNI/shuttle stop on 8th Street immediately south of Market is located on a narrow sidewalk cluttered with street furniture and crowded with waiting passengers during morning commute hours.
- Pedestrian access across 8th Street requires crossing four vehicle lanes, and the bus loading zone presents potential for conflict with bikes and merging vehicles.
- Figure 2.5 illustrates the existing 8th Street cross section, facing south, which is dominated by vehicles and does not provide adequate space for pedestrians and waiting passengers.

The wide right of way on 8th Street presents opportunities to improve intermodal access around Civic Center. Traffic volumes crossing Market Street on 8th Street have historically been comparable to those on 7th Street, which includes only two through lanes across Market Street.

Opportunities

- Support Road Diet on 8th Street
- Continue to coordinate with Safer Market Street, and Better Market Street surface level enhancements

FIGURE 2.3 REGIONAL ACCESS TO AND FROM CIVIC CENTER STATION

CIVIC CENTER SHUTTLE OPERATORS:

TRANSMETRO

BAUER'S IT

PURE LUXURY TRANSPORTATION

WEDRIVEU

SFO AIRPORTER/COMPASS

LOOP TRANSPORTATION

UCSF

FIGURE 2.4 SOUTH ENTRY PORTAL CHALLENGES

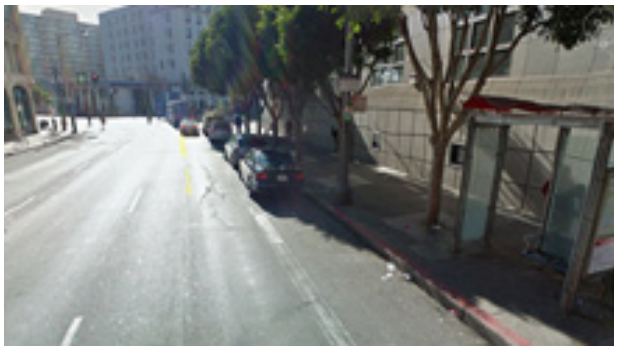
Options explored include wider sidewalks, a separated cycle track, a right-side transit loading island for MUNI and employer shuttles and left-side transit loading island for Golden Gate Transit (which would allow for the necessary left turn onto Mission without requiring the full block setback north of Market).

Figure 2.6 illustrates one potential cross section for 8th Street, consistent with the City's Transit First policy and dedicates more space to pedestrians, transit riders and bicyclists. This type of proposal also maintains three southbound through lanes across Market.

INTERMODAL ACCESS CHALLENGES NEAR CIVIC CENTER STATION

View of 8th Street MUNI/shuttle loading area, facing Market; sidewalk is narrow and crowded with waiting passengers

View of 8th Street, facing Market, while employer shuttles are actively loading



View of Golden Gate Transit stop on Hyde Street, facing Market; BART station is not visible from this location

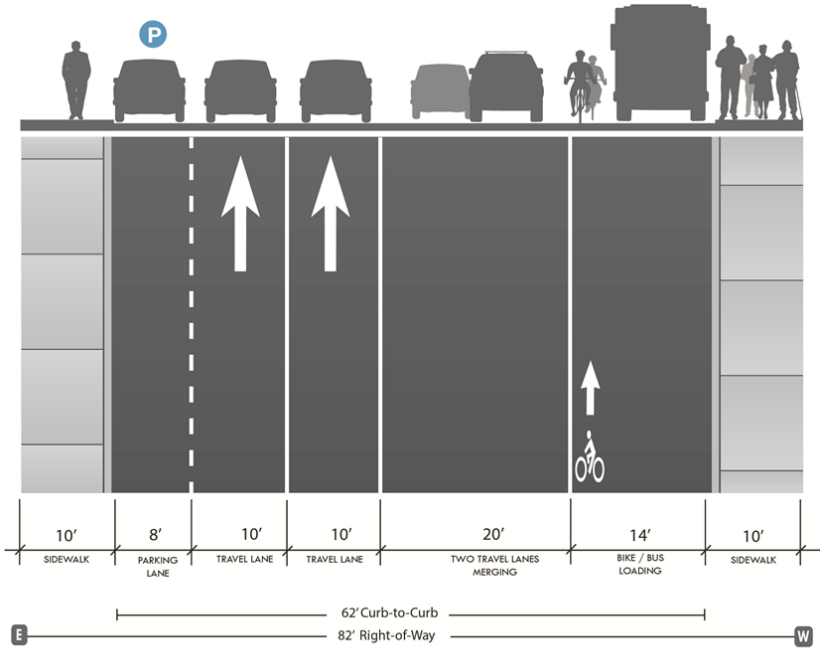


FIGURE 2.5 8TH STREET AT MARKET STREET, FACING SOUTH – EXISTING ALIGNMENT

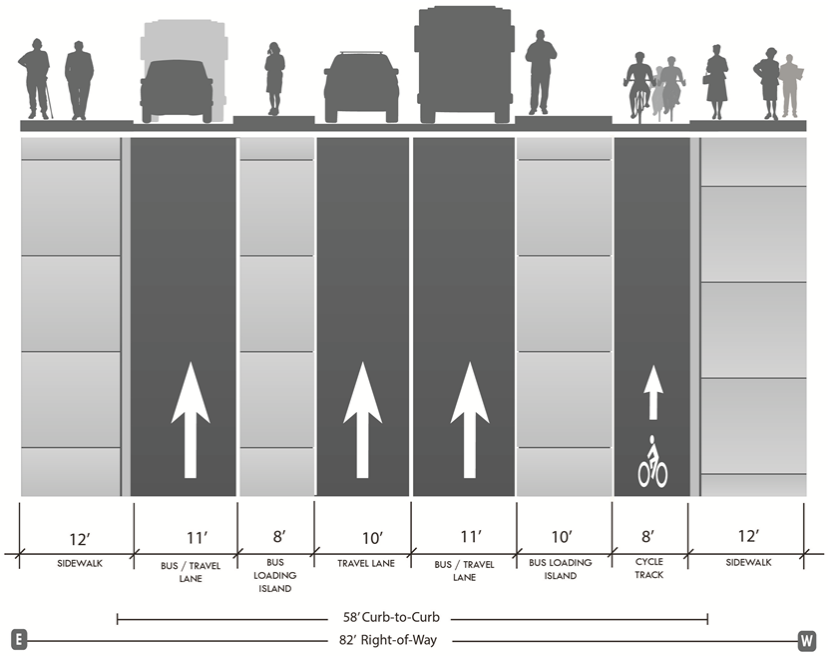


FIGURE 2.6 8TH STREET AT MARKET STREET, FACING SOUTH – POTENTIAL TRANSIT FIRST ALIGNMENT

2.3 PASSENGER SURVEYS

The project conducted surveys during AM and PM peak hours in partnership with the Civic Center Stakeholder Technical Advisory Group and the SFCTA to better understand how passengers access Civic Center Station from the street level.

During the AM peak period, 10,157 passenger exits account for 79 percent of station activity, and during the PM peak period, 9,238 passenger entries account for 75 percent of all station activity. Because AM exits are both higher volume and a greater portion of the total station activity, exit survey analysis is focused on the AM period.

Figure 2.8 summarizes AM peak period station exits by portals, grouped in pairs across Market Street. The most active exits are the UN Plaza/Mid-block pair, and the 8th/Grove/Hyde pair.

As shown in Figure 2.7, UN Plaza mid-block portal is the busiest AM exit (27 percent of total), followed by the Market and 8th Street-south portal (16 percent of total), and the Market and 7th Street and Market and 8th-north portals (15 and 14 percent, respectively).

Figure 2.7 Total Am Peak Period Exits Per Portal

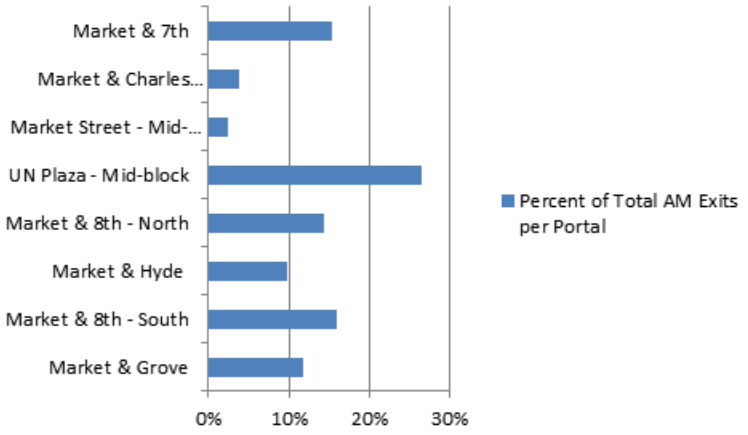
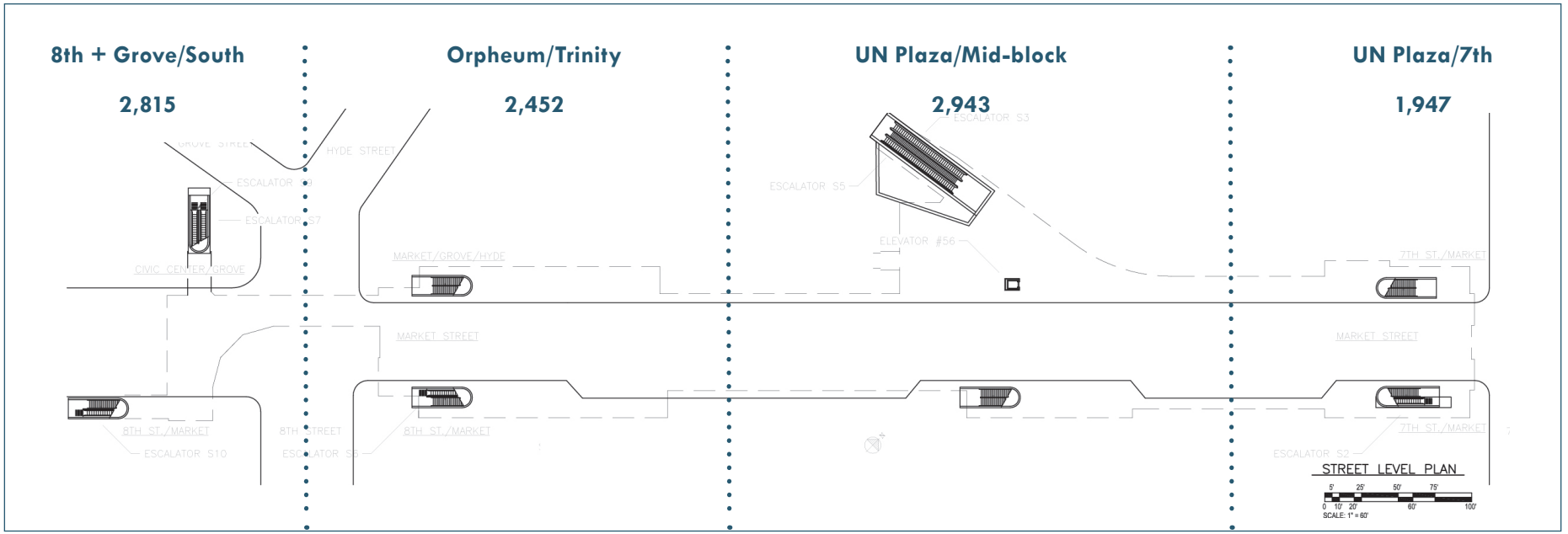


Figure 2.8 Am Peak Exit Pairs



3.0 VERTICAL CIRCULATION, CAPACITY & EGRESS

The following section describes the condition of vertical circulation, existing design capacity, and egress requirements with a focus on BART platforms and Fare paid areas. This chapter provides:

- Performance assessment of existing circulation;
- Design capacity per BART Facility Standards (BFS) (i.e the maximum number of passengers that can be accommodated on the platform using ridership assumptions);
- Vertical circulation capacity (maximum passenger throughput for stairs, escalators and elevators) in a comparison between CBC and CPUC codes for egress code requirements; and
- Fare gate capacity (maximum passenger throughput at the fare gates).
- Note that no changes are proposed to MUNI platforms. MUNI egress assumptions were made in co-ordination with staff to test concourse to street egress requirements only.

Existing Station Layout

Civic Center Station is a four-level underground station serving BART and MUNI platforms. Bus, shuttle and streetcar connections are located at street level. Concourse level is located one level below the street, the MUNI platform is two levels below the street, the BART platform is located three levels below the street. Access to the concourse is provided by six stair or stair/escalator entrances from Market Street, one stair/escalator entrance and an elevator entrance from UN Plaza, and one stair/escalator entrance from the Burger King Plaza (Civic Center/Grove). See figure 3.1 for an overview of station circulation elements.

Civic Center Station vertical circulation between the concourse and BART platform consists of four escalators, two daily use stairways. One elevator serves the BART and MUNI platforms. The elevator is located remotely at the north end of the BART platform and beyond the north end of the MUNI platform. In addition to the non-dedicated elevator, the MUNI platform has two escalators and two daily use stairs.

The MUNI platform operates both escalators in the up direction; the BART platform operates two escalators in the up direction and two in the down direction. Both station platform operations allow bicycles to be carried on the stairways. In practice, bicycles are also carried on the escalators. With the exception of the elevator, there is no provision for direct transfer between the platforms. Passengers transferring between MUNI and BART must exit and re-enter at the concourse level. There are floor openings between concourse and platforms at the stair and escalator wells and open balustrades allow for some visual connection between levels.

Stair and Escalator Performance Observations

- The location of the existing stairs at considerable distance from the BART platform ends results in poor distribution of waiting passengers and lack of use of the end sections. This results in dead-end areas of the platform where it is not possible to travel in either direction to an exit.
- As shown in Table 3.1, the field-measured flow rates on the existing escalators and elevators are significantly below the BFS standards and provide a poor level of service.

Table 3.1 Vertical Circulation Flow Rate

Vertical Circulation	BFS Standard	Rate FT/Min	Discrepancy
Escalators (BART Platform to Concourse)	90 FT/MIN	43 FT/MIN	47 FT/MIN
	67.5 PPM	32.25 PPM	35.25 PPM
Escalators (Street to Concourse)	90 FT/MIN	26 FT/MIN	64 FT/MIN
	67.5 PPM	19.3 PPM	48.2 PPM
Elevator (BART Platform to Concourse)	100 FT/MIN	48.9 FT/MIN	51.1 FT/MIN

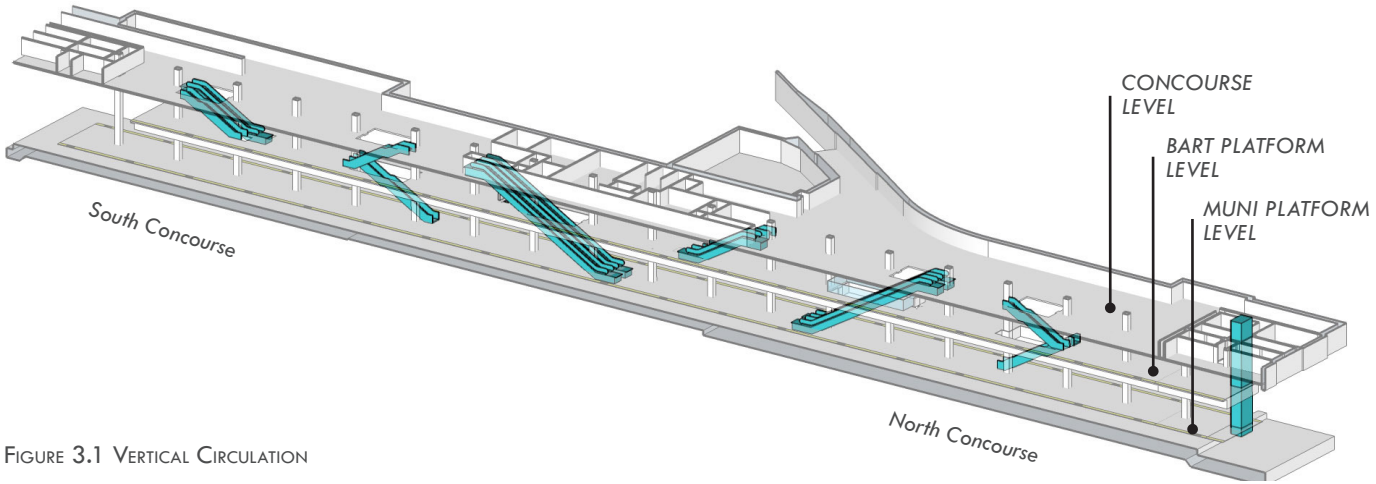


Figure 3.1 Vertical Circulation

Design Capacity Assessment: BFS Level of Service Standards

Level of Service (LOS) provides a measure of the pedestrian environment based on the freedom to select walking speed, ability to bypass slow-moving pedestrians and relative ease of cross- and reverse-flow at different levels of pedestrian concentration. The BFS specifies a quantitative measure of capacity in terms of a LOS for different public areas of the station. Table 3.2 summarizes the BFS required LOS, the area, and the calculated capacity of the primary public areas of the station.

Under normal conditions, the BFS calls for 7 SF per person (LOS C) as the minimum space for passengers waiting on the platform. LOS D conditions (5 SF per person) may apply only to short periods of time associated with delays or missed head ways. Below, Table 3.2 documents the "design capacity" of the BART platforms and concourse. Note that Table 3.3on the following page summarizes the calculation used for net platform area.

Table 3.2 Civic Center Existing Design Capacity - Concourse

	BFS Measure	Length(FT)	Width(FT)	Net Area Calculation	Design Capacity (persons)
Open Concourse	11.5 SF per person (LOS B)			19600 SF (less furniture, columns, fare gate arrays, escalators, etc.)	1704
Central Hallway	12 passenger per min per FT (LOS C)	243	12.25	2963 SF	
BART Primary Paid Area	5 to 7 SF per person (LOS C)			5951 SF	850 to 1190
BART Secondary Paid Area	5 to 7 SF per person (LOS C)			3615 SF	516 to 726
MUNI Primary Paid Area	5 to 7 SF per person (LOS C)			1844 SF	263 to 368
MUNI Secondary Paid Area	5 to 7 SF per person (LOS C)			931 SF	133 to 186
8th and Grove Entry Passage	12 passenger per min per FT (LOS C)			4038 SF	
BART Platform	7 SF per person (LOS C)			12,472 SF (less protective zone at edge 2', less unused train space)	1782

Table 3.3 Civic Center Existing Design Capacity - Platform

Component	Dimension
Platform length	685’
Platform width	33’
Gross platform area	22605 SF
Vertical circulation footprint	1333 SF
Run-off space at base of vertical circulation footprint	478 SF
Platform furniture and column footprints	200 SF
Protective zone at edge of the platform	2706 SF
Free passenger circulation space for platform length	2706 SF
Unused space at extreme ends of platform (half traincar length per end)	2310 SF
Net platform area	12, 472 SF

Platform Capacity Analysis - 2025 and 2040 Projections

The platform analysis indicates that Civic Center’s platform has sufficient waiting area to accommodate current and projected peak passenger loads during normal BART operations. However, 2040 load projections for delay conditions indicate that crowding on the platform approaches LOS E (less than 5 SF per person). More frequent train departures in 2040 would alleviate unacceptable crowding. Installation of Platform Edge Doors would also achieve increased levels of safety with a minor increase in platform area and would reduce unacceptable LOS E during delay conditions. Calculations of peak-period platform loading were based on the following conservative assumptions:

- Station ridership activity (Table 2.3)
- Peak 15 minute platform loads assumed to be 20 percent higher than the average loads in the peak hour
- Train frequency assumed to be 5-10 minutes on each line or an average waiting period of 7.5 minutes
- Delay conditions based on one missed headway or an average waiting time of 15 minutes

Table 3.4 Civic Center Platform Passenger Loads

Year	Civic Center Station Platform Projected Peak Passenger Load
2014/2015	Normal peak conditions - 1160 passengers; delay conditions - 2319 passengers.
2025	Normal peak conditions - 1187 passengers; delay conditions - 2374 passengers
2040	Normal peak load - 1460 passengers; delay conditions - 2919 passengers

3.1 EMERGENCY EGRESS ASSESSMENT – STAIR AND ESCALATOR CAPACITY

Civic Center's vertical circulation capacity must also be tested in relation to code requirements for fire and life safety. Code requirements for stations built *before* 1989 are governed by the 1989 National Fire Protection Association (NFPA) Code 130, which covers standards for fixed guideway transit and passenger rail systems using modified performance criteria (detailed in the CPUC agreement between BART and the Fire and Life Safety Committee March, 1989)). This CPUC agreement is **not** intended to be used for future planning. An incremental shift to CBC has been discussed for Station Modernization. See Table 3.5 for a comparison of methodologies.

The following analysis tests compare CPUC and CBC results, with a focus on the capacity of the **BART platforms and concourse**.

1. Egress results existing conditions – i.e. no change to number of exits/vertical circulation elements at design year 2025, and 2040.

2. Egress tests for additional elements (exit stairs/elevators) to meet code– i.e. daily use stairways, enclosed emergency stairways, escalators, elevators, and fare gates based on the projected ridership and peak hour activity in 2025 and 2040.

3. Egress tests for a **reduced number of street level entrances and impact of closure of the two 8th and Grove entrances** - current conditions and 2025, and 2040 ridership projections.

Note that a separate analysis was conducted to understand the impact of MUNI Passengers specifically on concourse egress, however a full analysis of MUNI passengers and platform needs is beyond the scope of this document.

TABLE 3.5 CBC REQUIREMENTS COMPARISON TO 1989 CPUC AGREEMENT

Link	Flow Constraints	CBC Requirement	1989 CPUC (NFPA – 130)
Platform to Fare Gate	Stair and escalator lanes (cannot use elevator)	4 mins to clear platform, one escalator discounted	6 mins to clear platform
Fare Gates to Street	Fare gate lanes, stair and escalator lanes (cannot use elevator)	6 mins to evacuate station, one escalator discounted	8 mins to evacuate station

Notes: Per CBC Section 433.3.4.1, vertical circulation elements shall be comprised of stairs or stair/escalator combinations. Escalators shall not account for more than half of the units of exit at any one level and must be paired in combination with stairs to be included in exiting capacity calculations. One escalator must be discounted from calculations. Station design must also ensure that the maximum distance from the most remote point on the platform to the nearest exit does not exceed 300 ft. End of platform stairs – required at underground stations within 20 feet of platform end.

Assessment of Civic Center Vertical Circulation Capacity - Stair Lanes

Vertical station capacity is measured via stair lane capacity. Code requirements define the required egress space at each link, and define the stair, escalator and elevator needs for code compliance. Existing stairs and escalators that connect the station concourses to the BART platform provide a total of 11 lanes (22-inch lanes) of egress width. The existing stairs and escalators that connect the north and south concourses to street level provide more than three times as much capacity.

The following tables documents total stair lane capacity in Civic Center.

Table 3.6 BART platform to concourse egress width

Platform to Concourse	Number/width of each type	22' Egress Lanes
Stairs	2 @ 62"/2.5 lanes	5
Escalators	3 @ 44" wide/2 lanes	(1 escalator discounted per code requirements) 6
Total Egress Lanes		11

Table 3.7 concourse to street egress width (excluding two south entrances)

Concourse to Street	Number/width of each type	22" Egress lanes
Stairs	6 @ 72" /3 lanes); 4 @ 56" /2.5 lanes	28
Escalators	3 @ 44"/2 lanes	6 (1 escalator discounted per code)
Total Egress Lanes		34

CPUC/1989 Agreement Civic Center Capacity Tests

For comparison purposes the team conducted the a test of vertical circulation egress requirements at the design years of 2025 and 2040. Assumptions for the CPUC calculation of Civic Center station egress width:

- 1989 CPUC (NFPA – 130) six minutes to clear platform
- 2014 egress width: current train load based on BART's current year ridership and PM peak-hour projections (train load of 2,000)
- 2025 egress width: 2025 platform load derived from percentage of total weekday station entries consistent with 2014 CPUC load numbers as nine percent of total weekday entries
- 2040 egress width: 2040 platform load derived from percentage of total weekday station entries consistent with 2014 CPUC load numbers as nine percent of total weekday entries.
- Egress capacity is generalized across the entire station assuming that passengers will use the nearest exits or shortest lines if queuing occurs. Therefore, details about exits by fare gate array or station portal are not considered in the capacity analysis.

Findings:

Table 3.8 indicates that Civic Center meets the CPUC requirement of 10 stair lanes for 2015 ridership projections, however, by 2025 the Station's 11 existing stairlanes will not support projected capacity.

Table 3.8 BART PM Peak Egress Capacity Requirements per CPUC and Future Year Ridership Forecasts

Design Year	PM Peak Passenger load	Required 22" Egress Lanes
2015	1,967	10
2025	2,475	12
2040	3,035	14.5

CBC Civic Center Capacity Tests

CBC relies upon a significantly more conservative estimate of passengers that must be accommodated in an emergency. As compared to CPUC, CBC calculations require arriving trainloads to be based on a full capacity peak direction train, and a proportionately full non-peak direction train, in addition to platform waiting loads. As such, projected waiting passenger numbers represent only a small portion of the total (just over ten percent). Assumptions applied for CBC Capacity tests:

- The full train capacity of a ten-car train was assumed for peak direction track load, and 80 percent of full capacity for off-peak direction track load. (Link load numbers were not available from BART, so the 80 percent off-peak assumption is based on the off-peak direction operating with loads that are close to those in the peak direction. This assumption could be updated based on additional BART data, but is a reasonable assumption based on the train capacities and projected BART operations.)
- Waiting passenger platform load to be based on a minimum of 12 minutes. Strict adherence to this results in much higher waiting passenger load as compared to CPUC.
- Crush load train capacities and PM peak forecasts are applied to waiting passengers for both BART and MUNI. 4,572 passengers in 2040 PM peak must be accommodated for emergency egress capacity.
- With queues, stair lane capacity is 35 people per minute per stair lane.

Findings:

Egress Test -- Concourse to Street: Concourse to street capacity is more than adequate to meet the 29-lane requirement, and if necessary could exclude the two south passage entrances the most distant from the platforms in 2025 and 2040 ridership years. With 34 stair lanes from the concourse to the street, the station provides an exit capacity of 1,190 people per minute. The exit capacity for all concourse stair lanes over the 5.08 minutes available to clear the station is calculated as (1,190 people per minute) * (5.08 minutes) = 6,045 people exit capacity. This total is approximately 32 percent higher than the conservative estimate of 4,572 total combined BART and MUNI passengers for the 2040 PM scenario.

Egress Test -- Platform to Concourse: Vertical circulation is significantly undersized to meet projected future demand. The 2040 CBC egress capacity calculation indicates a future requirement **of 29 emergency egress lanes** from BART platform to concourse. This represents an increase of **18 additional lanes or 396 inches (33 feet)** of additional egress width. This is a key factor for future crowding at stations, and need to maintain safe conditions both during normal operation and when unusual events and system delays occur. This analysis also confirms the findings of the SVRT high-level review (SVRT found that significant upgrades to core downtown stations are needed to keep pace with projected 2025 ridership and the completion of the Silicon Valley Extension).

A further CBC requirement is to locate stair additions to provide points of egress within 20 feet of both ends of the platform. This is not currently accommodated in Civic Center.

Table 3.9 PM Peak Egress Capacity Requirements per CBC and Future Year Ridership Forecasts

Design Year	PM Peak Passenger load	22" Egress Lanes	Existing Egress Lanes Concourse to Street	Existing Egress Lanes BART Platform to Concourse
2025	3,980	28.5	34	11
2040	4,572	29		

Station Modernization Circulation Opportunities

- Investigate options to add additional egress width via additional daily stairs, and escalators up to a maximum of 50 percent of egress width, and enclosed emergency stairs. (Initial assessment of the feasibility of egress stair additions at Civic Center station suggest that a maximum of six egress lanes can be added by internal stair additions, and that the remaining stair width required to meet projected 2040 egress requirements will need to be provided in new platform end enclosed emergency stair structures that will discharge directly at street level, bypassing the station concourse and fare gates.)
- Investigate an alternative of an 'engineering analysis' (CFD modeling) to prove the tenability of the unenclosed stair option
- Investigate an additional stair option using the existing open stairwells to add capacity, shorten and improve the platform circulation by providing better service to the ends of the platform
- Consider approaches for additional elevator capacity
- Consider addition of escalators at concourse to street entrances that are currently served by stairs only, e.g. Orpheum entrance

3.2 FARE GATE CAPACITY ASSESSMENT (BART)

Fare gate capacity should meet BFS requirements for Level of Service and also provide capacity to maintain the platform to concourse egress capacity. Table 3.10 below tabulates the current fare gate numbers at the north and south concourses. An accessible fare gate is required by the BFS at each gate array

Table 3.10 Fare Gate Capacity

Concourse	Standard Gates	Accessible Gates	Total Egress Lanes
North Concourse Total	**11**	**1**	**12**
North gate array (primary)	5	1	6
South gate array (secondary	6	0	6
South Concourse Total	**10**	**1**	**11**
South gate array	6	1	7
Corridor gate array	4	0	4
Totals	21	2	23

Emergency Egress Lane Requirements for Fare Gates

In order to minimize the required number of egress stair lanes required to clear the platform in 4 minutes or less, we have assumed that concourse fare gates will provide capacity equal to or greater than the platform to concourse stair lanes. If this is the case, there will be no bottleneck queues at concourse level, and only walking time will be included in the four-minute calculation of time to clear the platform. Note that egress lanes that are provided in enclosed emergency egress stairs that discharge directly at street level will have no impact on the concourse fare gate egress capacity requirements.

The sum of the existing 11 egress lanes and the potential addition of six internal egress stair lanes results in a future need for a minimum of **17 matching egress lanes at the BART fare gates.** The summary of existing fare gates in Table 3.10 above indicates that the current fare gate numbers meet the minimum egress lane requirements. If future emergency egress requirements will be met with more than eight internal stair/escalator lanes, additional fare gates will be needed to maintain the egress width and flow rate.

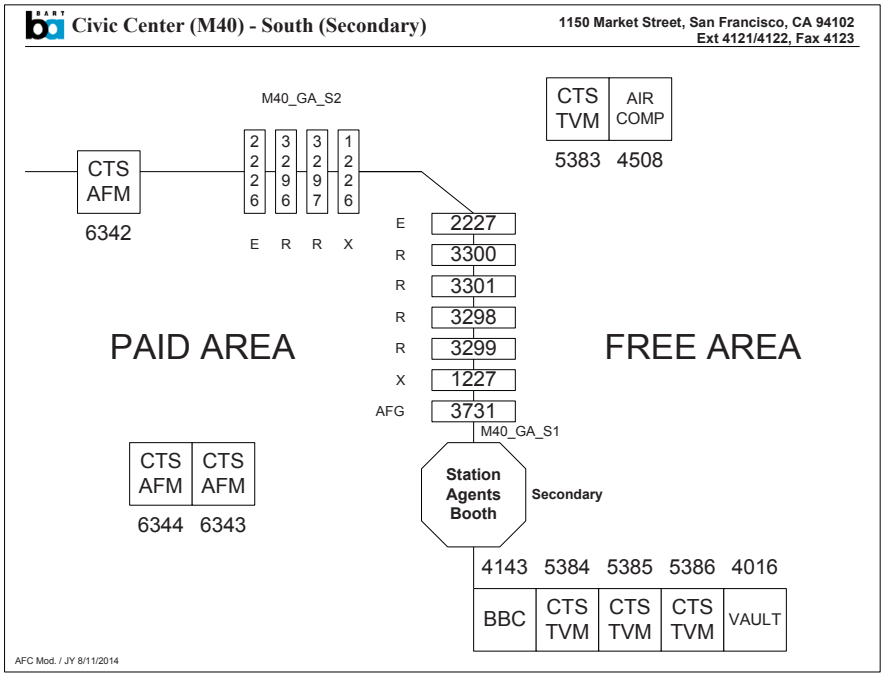
BFS and Level of Service Requirements for Fare Gates

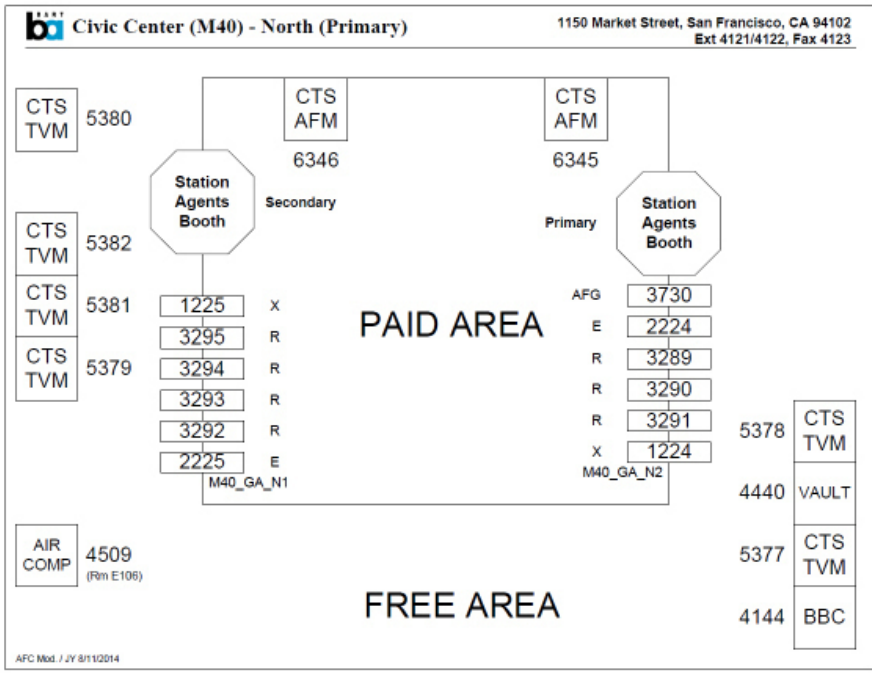
The BFS requires one accessible gate (36-inch minimum width) in each gate array to accommodate passage of wheelchairs and persons with special needs. In accordance with the table above, accessible gates should be added at the south BART gate array in the north concourse and at the corridor gate array in the south concourse. A total of two additional accessible fare gates are required to meet current BFS requirements (See Figure 3.2). Future requirements for accessible fare gates will be dependent on the number of fare gate arrays in the station modernization plans.

Station modernization objectives and opportunities

- Addition of accessible fare gates to meet BFS requirements
- Provide overall fare gate numbers consistent with future egress capacity needs and incremental strategies to add capacity.

FIGURE 3.11 FARE GATE LAYOUT AT CIVIC CENTER





4.0 FUNCTIONAL PLANNING

The following section assesses the function of major zones and uses within Civic Center Station. Observations are followed by issues and opportunities. This assessment is based on observations by VIA team members and BART personnel from station site tours, as-built drawing review, focused on-site observation and analysis of passenger movement, and platform use patterns. The team also conducted a series of interviews with BART staff on 11/20/2014 and 11/21/2014.

The VIA team considered the functional planning both from the point of view of a first-time station user and a commuter or regular daily user.

4.1 STREET LEVEL/ENTRIES

Civic Center is connected to the street by eight entrances, seven of which are located along Market Street and one entrance off-set in the UN Plaza. Roller doors lock the base of the escalator/stairwell, leaving the escalators accessible and exposed to the climate throughout the day. A BART/MUNI Escalator and Entry project is underway (2015) to enclose escalators and enable surface-level security. At Civic Center, the project funds a phase one enclosure at escalator S2 (Entry 6 on figure 4.1). Phase 2 will replace and cover each entrance at Civic Center.

Issues

- Escalators are damaged, often at night. Debris, refuse and human waste must be cleaned in the morning. According to the BART Customer Service Report (July 2014) there are many complaints about the duration and frequency of escalator failure. Confrontations with vagrants at the entries is typical during early morning station opening. BART staff notes that there is inadequate coverage from BART police to deter behavior. There are heavy cleaning demands related to water intrusion, trash and debris at entrances.
- Escalators do not meet current code requirements; this will be addressed with the entrance enclosure project.
- In some locations entries are set back from concourse by interior walls that extend past the base of escalators and stairs, contributing to poor sightlines.

UN Plaza Entrance and Passage

This is a civic-scaled entry located within UN plaza, set back from the main concourse. San Francisco's UN Plaza was designed in 1975 by Lawrence Halprin. Fulton Street at Hyde Street was closed to create this 2.5-acre pedestrian space as a part of the Market Street Reconstruction Project which coincided with building of Civic Center Station. The Plaza is enclosed by City Hall, the War Memorial Opera House, Asian Art Museum, Louise M. Davies Symphony Hall, and the main branch of the San Francisco Public Library.

Issues

- BART entrance bifurcates UN Plaza
- Poor lighting and visibility into concourse
- Escalator beyond useful life
- Entry lacks rain protection - storm drainage (problem identified by BART Maintenance and Engineering)
- Debris collects at base of walls
- Unsecured entry in evening hours
- Significant social problems in UN Plaza impacts safety and security of BART and BART patrons

FIGURE 4.1 STREET LEVEL

SOUTH CONCOURSE ENTRIES
A Civic Center/Grove
B 8th and Market - West (Hotel Whitcomb)
1. Market/Grove/Hyde (Orpheum Theater)
2. 8th/Market

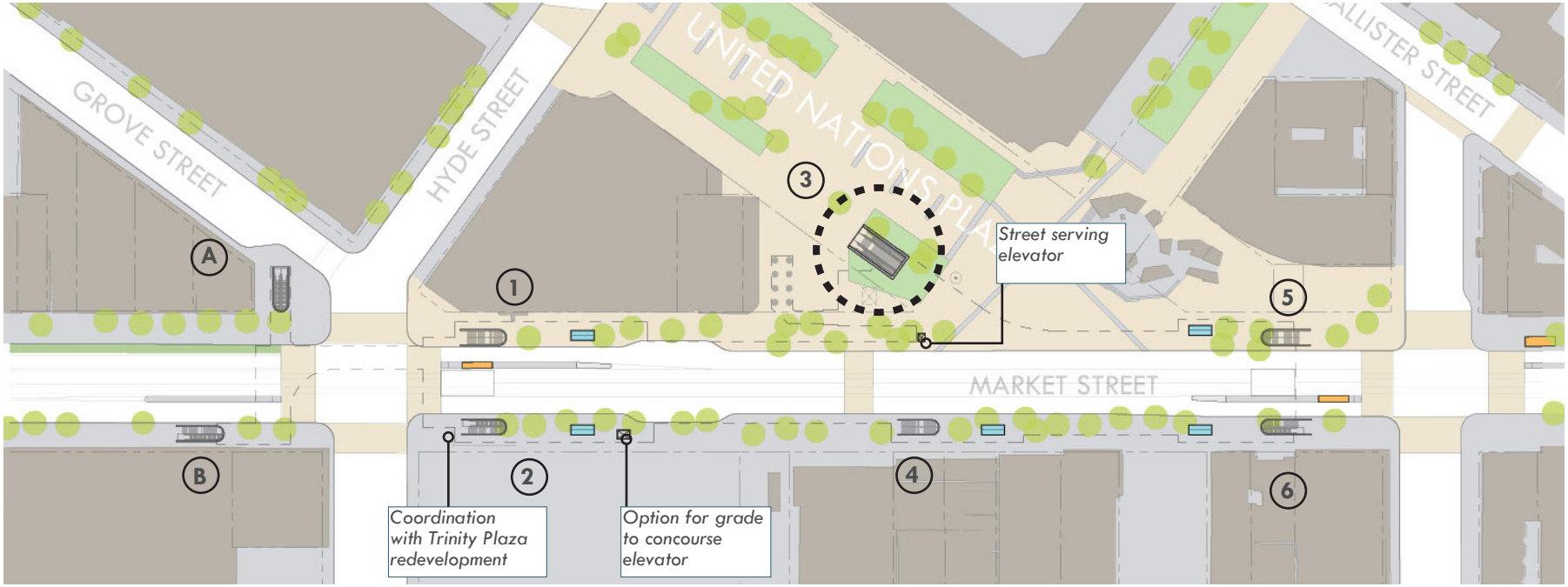
NORTH CONCOURSE ENTRIES
3. UN Plaza
4. Market
5. 7th and Market - North
6. 7th and Market - South

Area with potential for daylighting (9'x 14' maximum - per as-builts)

UN Plaza entrance

Station Box

MUNI stop



Opportunities

- Explore future entry redesign in partnership with the City of San Francisco for a programmed, secure, visible, 21st century entry. A re-envisioned station entry could provide staging to BART, shopping and an appropriate monumentality to the Plaza.
- Build upon Market Street Entry and escalator project, Better Market Street and other local initiatives. Create efficiencies by working with OEWD and/or DPW to complete environment review in coordination with other planned City initiatives.
- Design improvements at street-level could also have significant impacts to the condition inside the concourse, such as moving portal further into concourse and narrowing overall footprint (figures 4.2 - 4.4).

Station Entries and Historic Plazas Precedent: Malmo Station, Trianglen located inside a neo- classical plaza. Photo Credit: Swedish Association of Architects; winner of the 2011 Kasper Salin Award.

FIGURE 4.2 EXISTING UN PLAZA CIVIC CENTER ENTRY

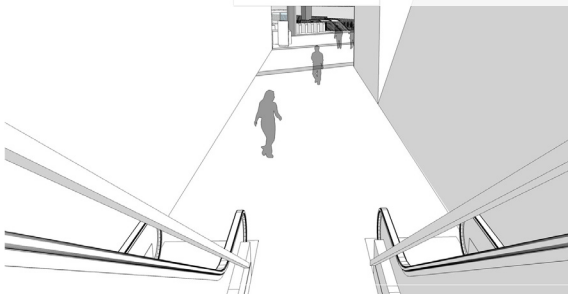


FIGURE 4.3 SHIFTED UN PLAZA CIVIC CENTER ENTRY

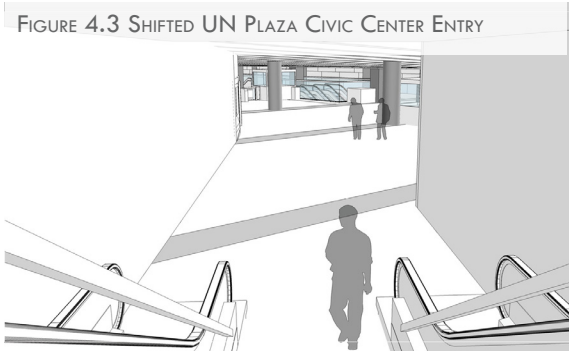
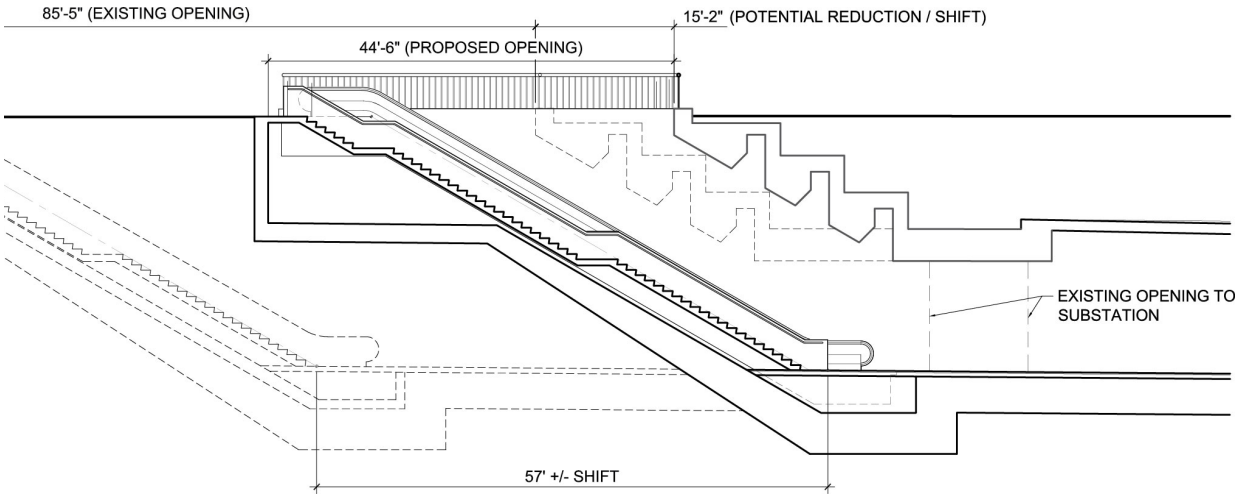


FIGURE 4.4 UN PLAZA EXISTING LOCATION SECTION OPPORTUNITY FOR POTENTIAL ENTRY SHIFT



South Corridor and Entries

In addition to a stairwell entrance at the Orpheum Theater, and two entrances at 8th and Market, the south concourse extends via an underground passage to the south side of 8th Street. Market/Grove/Civic Center is the closest exit to City Hall and is convenient to Market Street employers and Civic Center event venues. These entrances were designed to reduce pedestrian conflict by traveling under 8th, a busy multi-lane street.

Issues

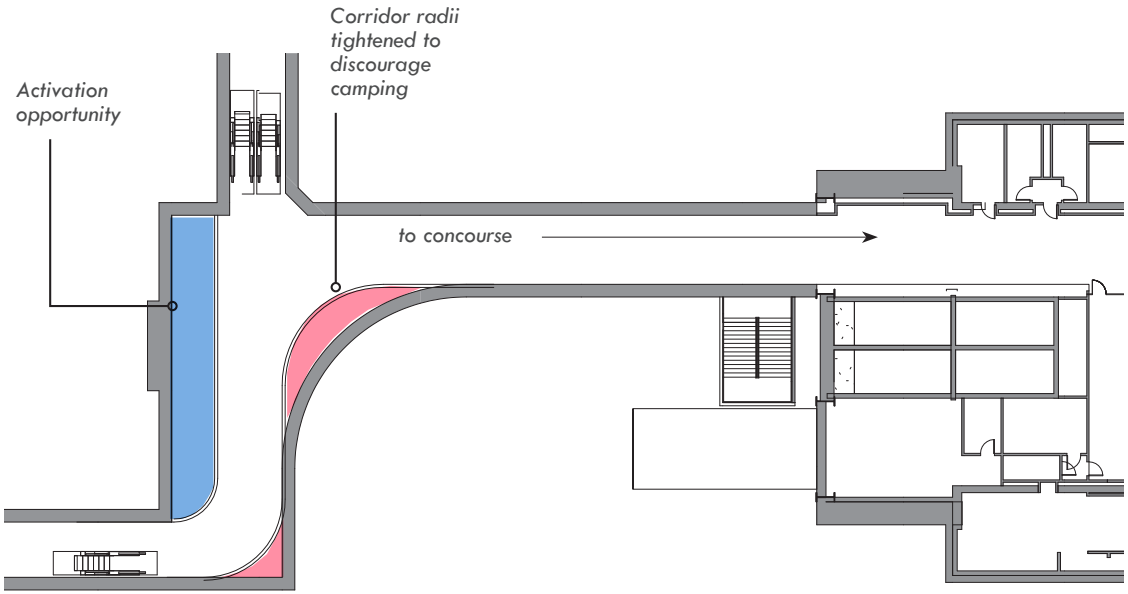
Safety

- Grove/Hyde/Market entry and its related underground passage is a "hotspot" for in-station panhandling.
- A blind corner to the far south of the passage is difficult to secure in the early morning and late evening hours.
- At the street-level, entries are the site of homeless encampments throughout the day.
- There is limited ability of staff to keep passage clear, including the enforcement of the "sit-lie" law. This may result in a safety hazard during an emergency.
- Significant fiscal and operational costs associated with maintaining and/or upgrading these entries to address all social and safety concerns.

Intermodal Access

- Limited functionality for regional transit connections, i.e. Golden Gate Transit and local transit. See also Chapter 2.0.

FIGURE 4.5 SOUTH ENTRY PASSAGE AND ENTRIES



Design Options

- Improve safety, security and activity in the passage and at entries such as narrowing of corridor (Figure 4.5)
- Lighting
- Retail or other activation
- Upgrades to wall finishes including clear route-finding and orientation to Civic Center destinations
- Partnerships for surface-level upgrades to 8th and Market intermodal connections, leveraging Better Market Street/Safer Market Street programs

Explore Timed Closures

- Consider the closure of this entrance during early AM and late PM hours. This opportunity could be combined with street-level redesign to address encampments.

Explore Programming and Partnerships

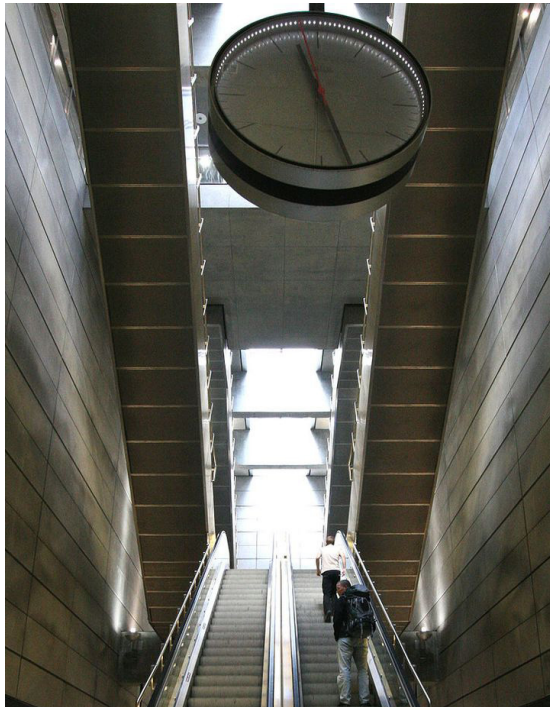
- Partnerships with private sector Mid-Market CBD, i.e. third-party commitment or Memorandum of Understanding for social services support/staffing. There is a precedent within BART at 16th street Station with trained, uniformed staff; i.e. community ambassadors.
- Art partnerships or in-station late-night programming
- Retail program or upgraded wayfinding for potential corridor activation

BART is also exploring options for permanent closure, internal roller shutter doors and Market Street sidewalk over-decking options in coordination with the City of San Francisco and stakeholders.

Daylighting at Entries

The original as-built plans for Civic Center include lofted ceilings at the station entries. These ceilings were initially designed to allow for daylighting. The project team explored opportunities for daylighting and presented these options to the External Technical Advisory Committee. There may be opportunity to further explore at select locations. Issues identified by the TAC: expense, complexity, limitations on sidewalk space, and drainage (see figure 4.1).

These locations may provide an excellent opportunity for light-related public art.



Daylighting allows for distinctive wayfinding elements at entries to connect to local destinations.

Precedent: daylighting on the Copenhagen Metro in a plaza space. Daylighting would require significant coordination between the BART modernization project and City agencies.

4.2 CONCOURSE FUNCTION

There are two concourses within Civic Center Station, connected by an interior passage (see Figure 4.7). Each concourse contains free circulation areas for ticket vending and secure fair-paid areas for both MUNI and BART. This section reviews issues and opportunities for these areas, provides an analysis of sightlines, required spaces (surge and queue spaces), and circulation performance assessment.

Sightlines and Safety

Figures 4.7 and 4.8 show existing concourse sightlines. Per BART security staff, Civic Center has significant fare evasion problems (specific incident numbers and reports are not available to the project team). The following conditions are related to the concourse visibility and sightlines according to BART security staff:

- South concourse booth decommissioning resulted in fare evasion increases
- There is extensive use of the remote elevator to move between the BART and Muni platforms
- There is a significant amount of fare evasion by use of the unlocked, de-alarmed swing door to enter/exit
- An increasing number of bikes on stairs and escalators create unsafe conditions
- Surrounding social problems impact safety within the BART station in lobby areas
- Fare barriers are low and easy to climb over

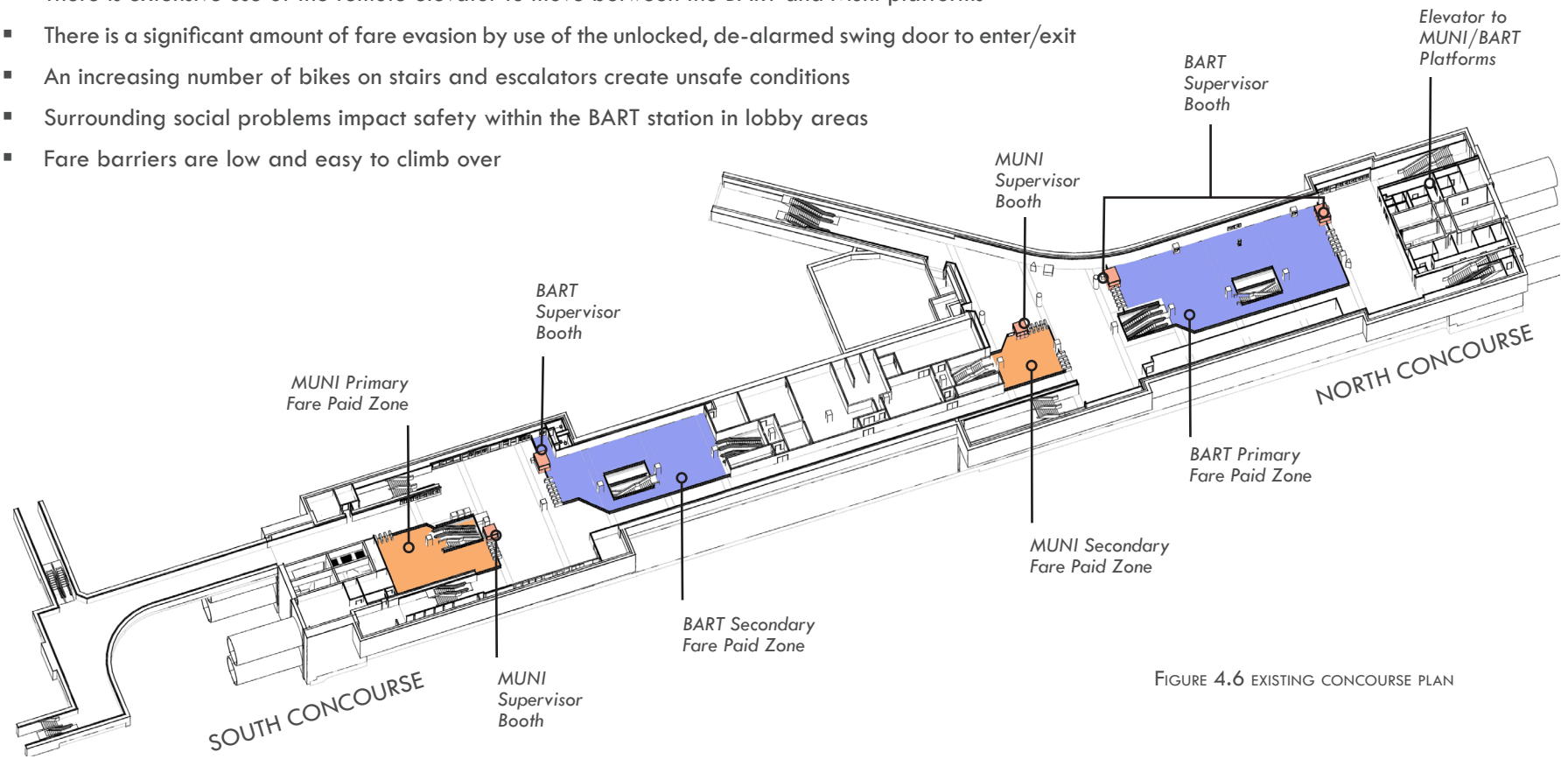


FIGURE 4.6 EXISTING CONCOURSE PLAN

Issues

- The UN Plaza entry is set back from supervisors' booth with limited sightlines
- Entry walls limit visibility to lobby areas
- The corridor connecting the east and west concourse has no direct sightlines from a BART station agent booth; however, this is a location for major mechanical facilities, limited ability to reorganize the hallway spaces

Opportunities

- Remove clutter and kiosks to improve sightlines
- Redesign of circulation elements, replacement of opaque walls and balustrades with transparent materials
- Explore shortening interior passageway by selective reductions to ancillary spaces where feasible
- Explore closing the interior passageway to reduce the overall concourse area with poor sightlines
- Improve activation of concourse with retail and other uses, such as performances
- Plan for fare barrier design improvements/ increase barrier height to 5' (as required in BFS)
- Redesign or removal of swing gates
- Redesign/replace platform elevators to be visible and within fare-paid zones (see vertical circulation options)

FIGURE 4.7 NORTH CONCOURSE SIGHTLINES

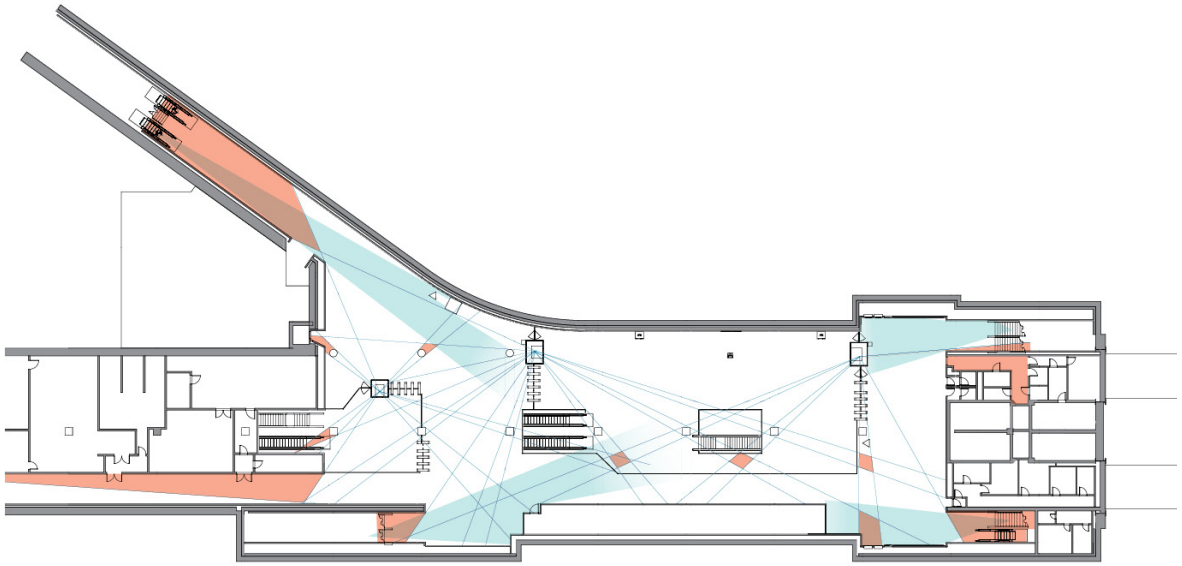
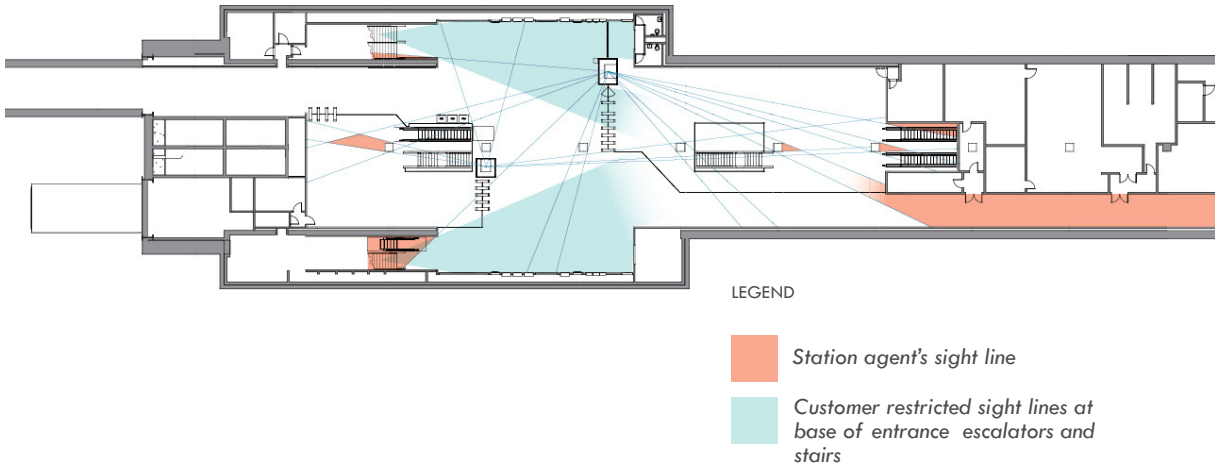


FIGURE 4.8 SOUTH CONCOURSE SIGHTLINES



BFS Required Surge Spaces and Queue Zones

The size of the concourse in any given station must satisfy required operational functions, expected patronage levels, and available site area. These basic dimensions are determined by the gateline width, run-off requirements, queuing space for automatic fare collection (AFC) facilities, circulation space and headroom. See Table 4.2 in the BART Facility Standards Architecture Criteria for details.

Figure 4.9 shows the existing required queue and surge areas.

Patrons lining up for tickets

South Concourse free concourse area

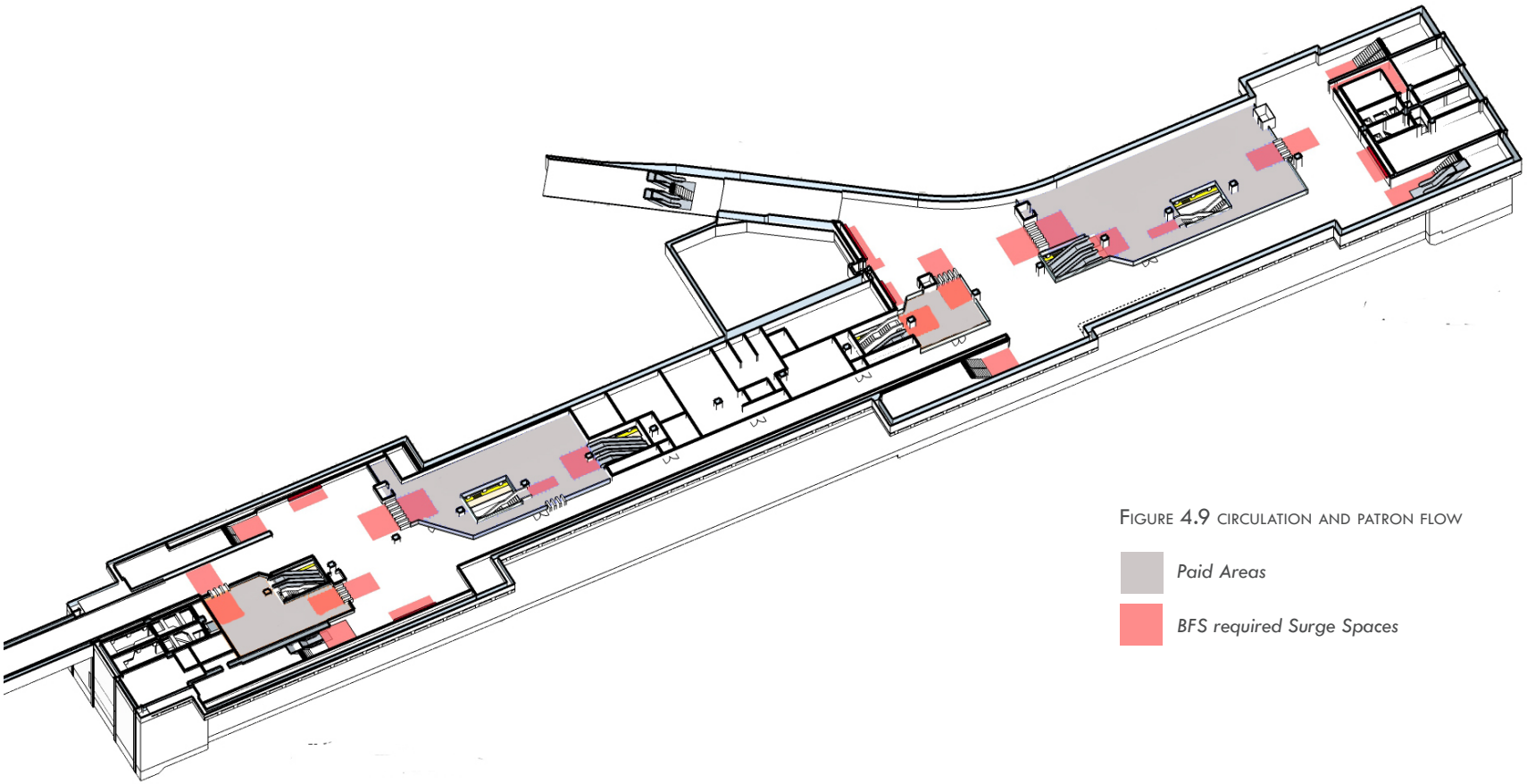


FIGURE 4.9 CIRCULATION AND PATRON FLOW

Paid Areas

BFS required Surge Spaces

Circulation and Patron Flow

Figure 4.10 and 4.11 show the general entry and exiting patterns within the station concourse. Metal picket barriers separate the path of travel between the BART and MUNI platform levels on stairwells and escalators. There is no direct transfer between the BART and MUNI platforms via stairs and escalators. Transferring passengers currently ascend to the concourse level, leave one system and enter the other before descending to platform level.

The diagram overlays queue and surge spaces and also highlights where cross flows mix on the Concourse level.

Issues

- Cross flows between BART and MUNI ticketing and patrons:
  - MUNI TVM queue conflicts with pedestrian passage connecting to and from the Grove/Hyde entrances
  - 8th and Market Street stair
  - Peak fare gate queues block pedestrian flow
- North concourse street elevator waiting area/ queue conflicts with pedestrian traffic to the MUNI TVMs.

Opportunities

- Improve circulation and flow as feasible by condensing, consolidating and separating ticketing functions.
- Provide circulation schemes that optimize travel for the first-time user from entrance to ticketing to fare gates.

FIGURE 4.10 ENTRY FLOW

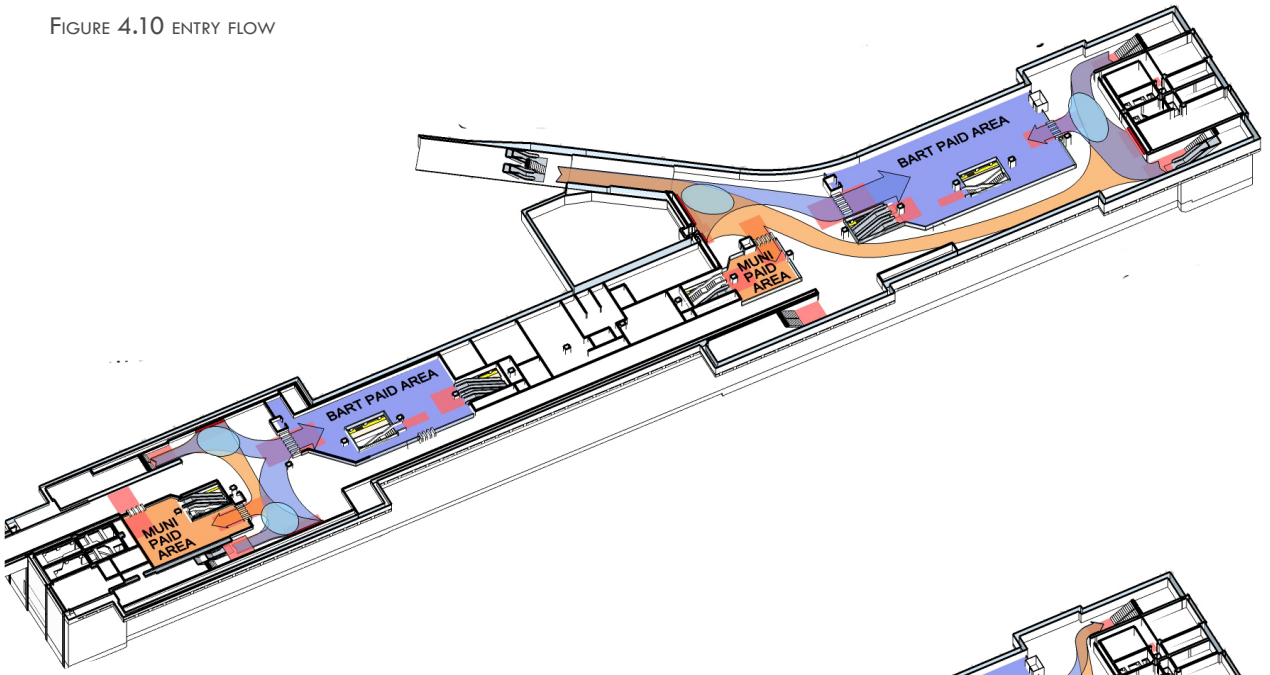
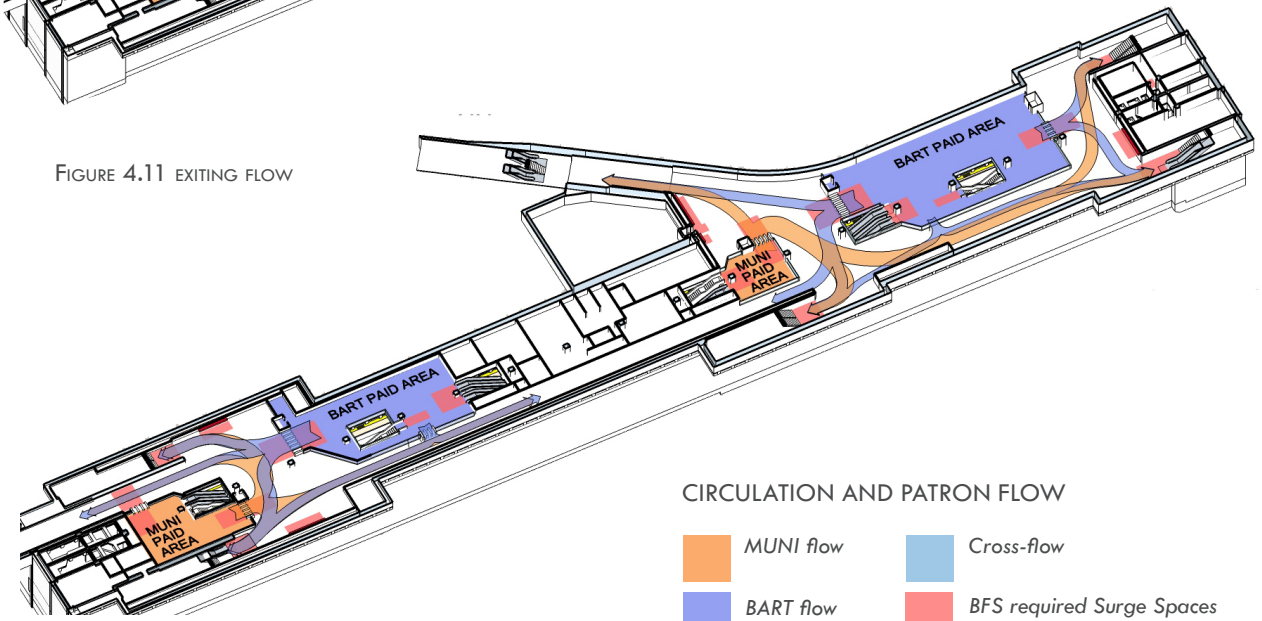


FIGURE 4.11 EXITING FLOW



4.3 PLATFORM FUNCTION

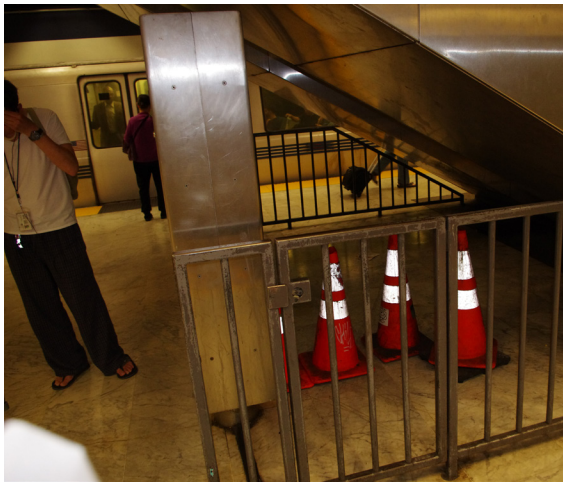
Safety and Security

Figure 4.12 shows the existing customer sightlines at the platform. Figure 4.13 shows the required surge spaces.

Issues

- Circulation elements: columns and stairs impede visibility on the platform.
- The remote elevator location is hidden behind columns at the far end of the platform; during off-peak hours this location is unsupervised.

Peak hour waiting queues at the train door positions near the base of escalators/stairs. Queues can extend across the width of the platform.



Under stairs -both CPTED and ADA issues

Circulation and Patron Flow

Figure 4.14 shows the general circulation pattern for inbound and outbound passengers during the AM peak. Detailed pedestrian simulation modeling is beyond the scope of this project.

Issues

- The vertical circulation elements (escalators and stairs) are focused to the middle (50% of total platform length) of the platform. Waiting patrons crowd in the central area at peak times causing bottlenecks and impeding flow.
- Queues obstruct pedestrian movement to the escalators and stairs as well as pedestrian flow along the platform.
- Round seating can cause conflict with people boarding trains and queues for stairs/ escalators at peak hours.

ADA access at elevator - remote location

Existing platform seating configuration

Figure 4.12 Platform Sightlines

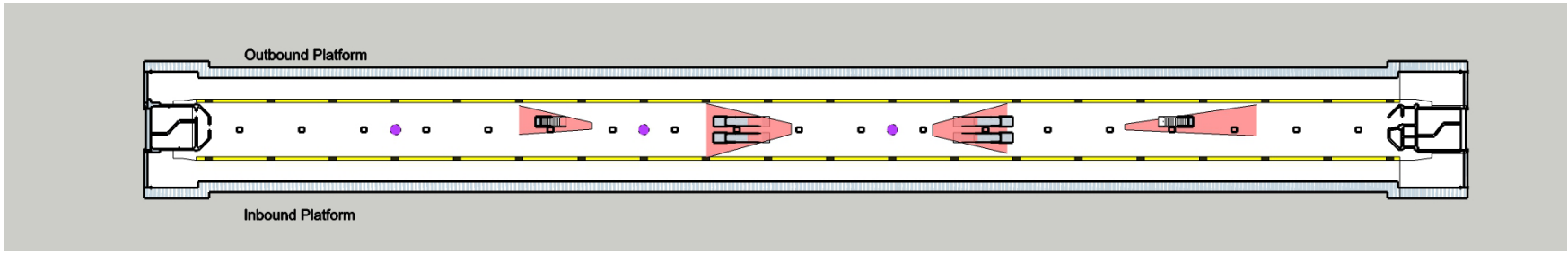
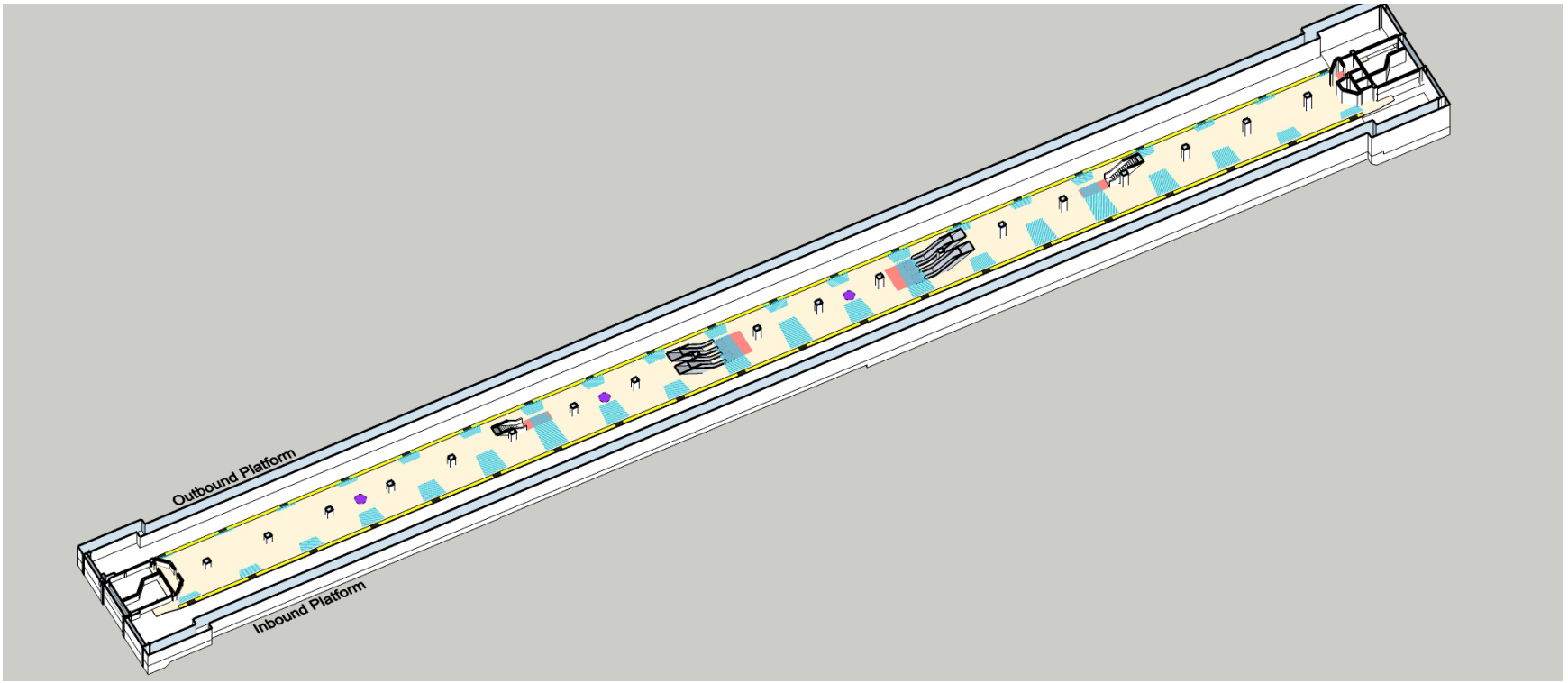


Figure 4.13 Platform Plan Surge Spaces



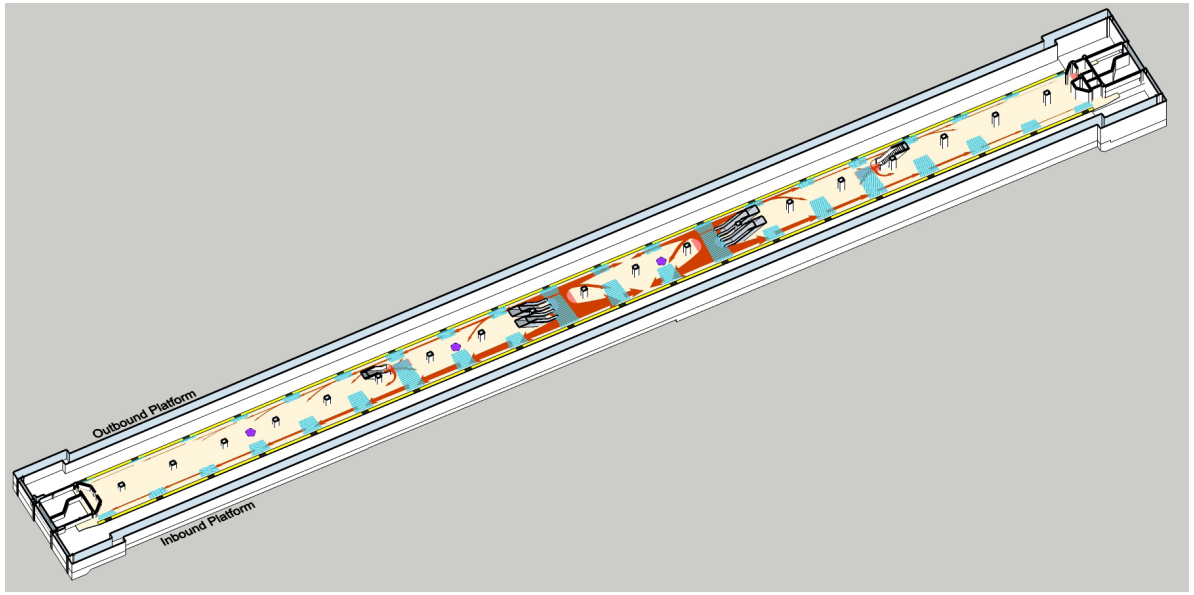
Platform Function

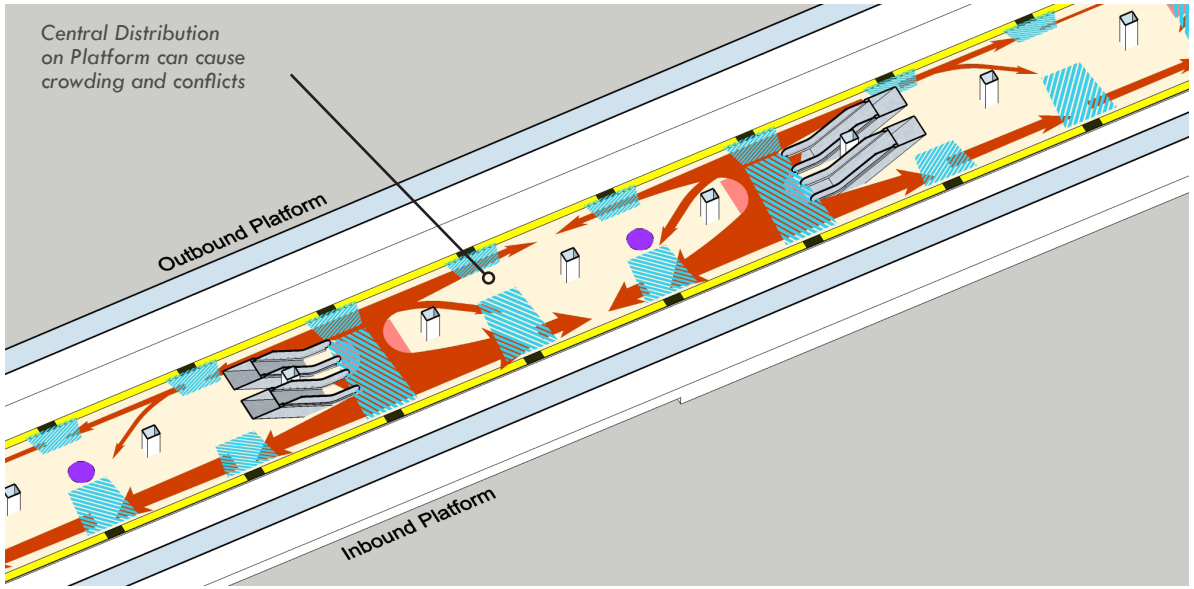
- There are poor platform acoustics and PA announcement intelligibility.
- A lack of maintenance or storage facilities at platform level was observed.

Opportunities

- Platform seating areas could be reconfigured and relocated to accommodate both additional circulation and new train car door positions.
- Apply train waiting zone markings to direct waiting passengers away from the escalator and stair queue areas.
- Explore acoustic absorption treatments/ upgraded PA announcement system.
- Add storage and/or janitorial locations on platform level - consider base of stair or other.
- Consider vertical circulation additions to promote redistribution of platform waiting to utilize full length of platform.

FIGURE 4.14 PLATFORM CIRCULATION AND PATRON FLOW





Elevators

Existing conditions (See Section 5.0 State of Good Repair, for code discussions):

- A single concourse-to-platform elevator is located at the far end of the north concourse and serves both MUNI and BART platforms below.
- A single concourse-to-street elevator is located on the south wall of the north concourse in the middle of the ticket vending wall.
- No elevator access from the south concourse either from concourse-to-grade or concourse-to-platforms.
- The north concourse platform elevator has the following issues:
  - not located within a fare paid zone(s)/subject to both BART and MUNI fare evasion;
  - within an L-shaped corridor and not visible from concourse; subject to heavy abuse, crime and safety concerns; and
  - poor visibility into concourse on arrival.
- BART platform has poor visibility and remote location.
- MUNI platform is hidden along a narrow walkway adjacent the trackway and an L-shaped corridor and is not visible from the platform or the access walkway.

Station Modernization Identified Objectives

- Make use of preliminary benchmark for one new platform-serving elevator in each concourse.
- Improve overall patron ability to use elevators including for bicycle access–i.e. the scale, size and visibility of elevator.
- Locate elevators within fare paid zone(s) for improved security; this may require reorganization of existing fare paid zones or additional fare paid zones specifically for elevators.
- Separate dedicated elevators serving MUNI and BART platforms to avoid fare evasion opportunities; consider that these elevators may provide redundancy for MUNI.
- Meet ADA requirements–a concourse-to-grade-serving elevator in the south concourse is desirable for universal access.
- Constructability–vertical circulation between the concourse and platform must be maintained at least at its present capacity at all times and fare collection functions must also be continuously maintained.
- Cost limitations–adding new elevators within the station box perimeter walls is preferred due to higher cost to construct outside of the station box.
- Locate new elevator at BART platform toward the center or at both ends of the platform to reduce travel distance for persons requiring vertical circulation by elevator.

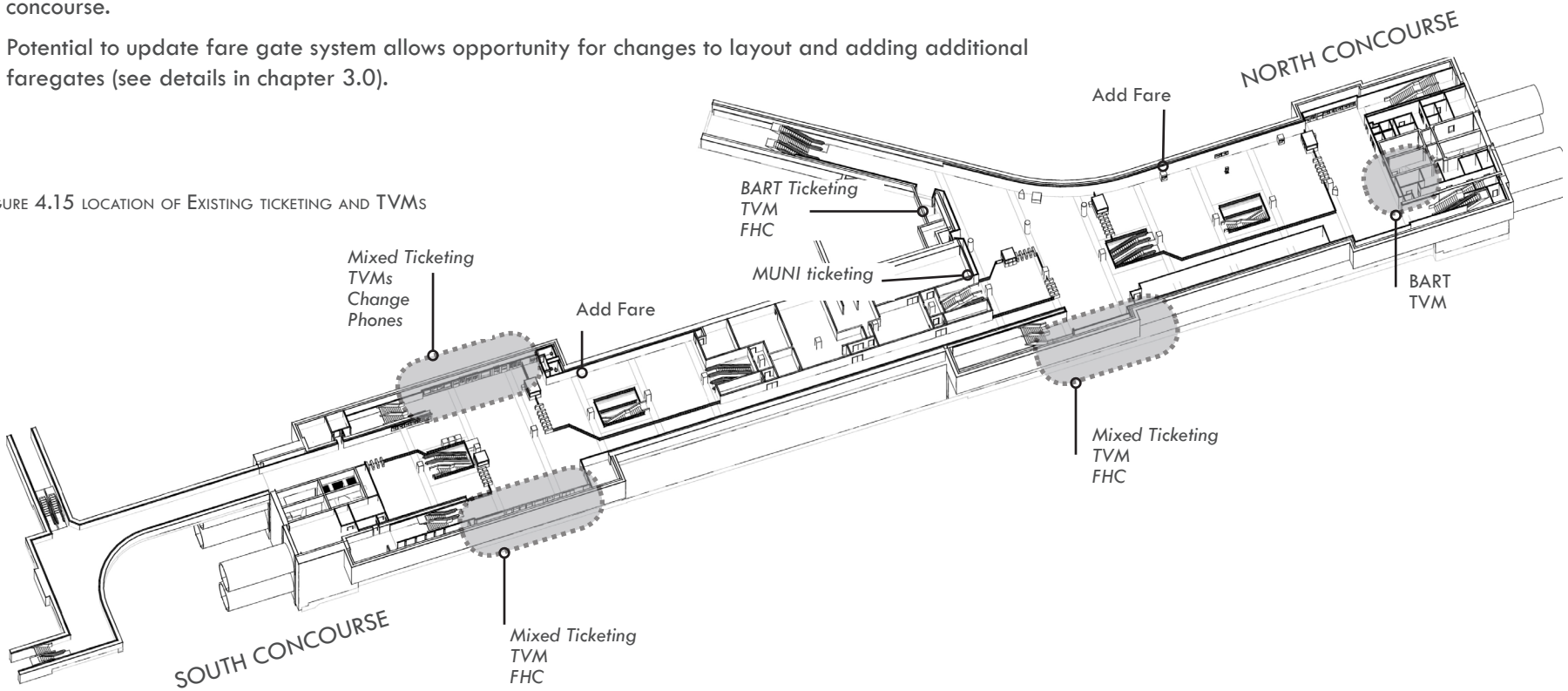
4.4 TICKETING AREAS AND FARE PAID ZONE

Both north and south concourses have fare paid areas for MUNI and BART, station agent booths and faregate arrays. The locations include freestanding and flush wall-mounted Ticket Vending Machines (TVMs). Station agents are located between or in close proximity to the TVMs. The diagram below shows that in Civic Center there are areas of mixed ticketing between BART and MUNI, many of the ticketing areas are intermixed with advertising panels, as well as other items such as wayfinding, phones, fire hose cabinet (FHC).

Issues

- Orientation is poor from UN Plaza entrance to TVM machines and ticketing.
- Existing fare evasion barriers are too low with excessive fare evasion through emergency swing gates.
- BART is exploring options for swing gate removal or operational changes. Swing gate issues that must be considered are: location, bike access and fire egress (e.g. open only from a panic bar on the interior mechanical operation from station agent booth). This issue is systematic throughout the downtown stations.
- MUNI TVMs are not visible from the South 8th/Market Street entrance or the passage from the north concourse.
- Potential to update fare gate system allows opportunity for changes to layout and adding additional faregates (see details in chapter 3.0).

FIGURE 4.15 LOCATION OF EXISTING TICKETING AND TVMS



Opportunities

- As feasible, reconfigure fair paid enclosure walls and gates to avoid fare evasion while maintaining sense of openness, transparency.
- Design for clear decision points to differentiate MUNI from BART ticketing; provide system information at appropriate points in the flow sequence.
- Align station agent's booth, new elevators and fare gate arrays for clarity of path.
- Organize TVMs and Information panels within consistent flush-mounted SS panel modules.
- Align fare paid zones with circulation elements and streamline fare paid zones to allow for more room for retail elements.

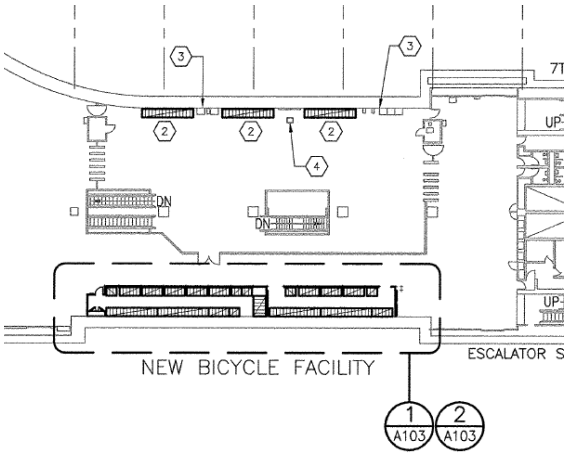
4.5 BIKE STATION AND STORAGE

The BART bike access target for Civic Center Station is 8% by 2023 (2013 BART Bike Parking Capital program). To help achieve this target, a bike station is now under construction in the north concourse. This is a self-serve BikeLink facility with 89 controlled spaces and 60 open bike rack spaces adjacent the station for a total of 149 new spaces. BikeLink will also contain space for bike-related retail, maintenance or community space. The full 2014 drawing set for the bike station has been reviewed and included into the Station Modernization program. The 2013 BART Bike Parking Capital Program recommends:

- 218 secure bicycle spaces
- Rack spaces for 60 bicycles
- Self-serve bicycle space 158
- Projected need of secure spaces 120-150

Opportunities

- Currently there are racks for 63 bicycles within the BART primary fare paid zone–transition these racks and consolidate rack design for more space to efficient bike racks concurrent to BikeLine project.
- Work with external partners to explore a street level bike station.
- Explore opportunities for secure bicycle storage as feasible in the south concourse.
- Upgrade entrances in the north concourse with bike stair channels.



4.6 ANCILLARY ROOMS AND EMPLOYEE FACILITIES

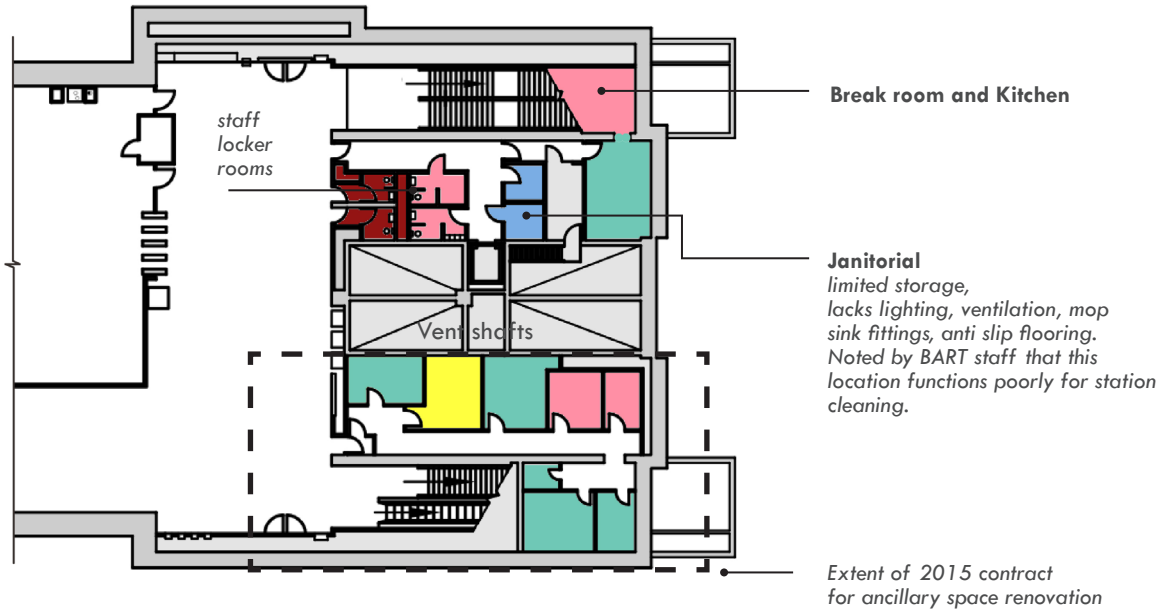
Ancillary rooms house a variety of facilities for BART employees. The following sections outline the condition of the north, middle and south concourse ancillary spaces.

Station modernization may explore removal of redundant systems and would regularize and optimize space where feasible.

North Concourse

This group of ancillary spaces has a large portion east of the vent shafts which was undefined in the initial station as-built drawings. These areas have since been retrofitted for staff use, including BART police, individual office rooms and a community room - see Figure 4.16. To the west of the vents are the employee break room/kitchen, staff bath/locker rooms and janitorial spaces. Employee service spaces are in poor condition. Portions of the north ancillary space will be renovated in 2015-2016.

FIGURE 4.16 NORTH ANCILLARY SPACE



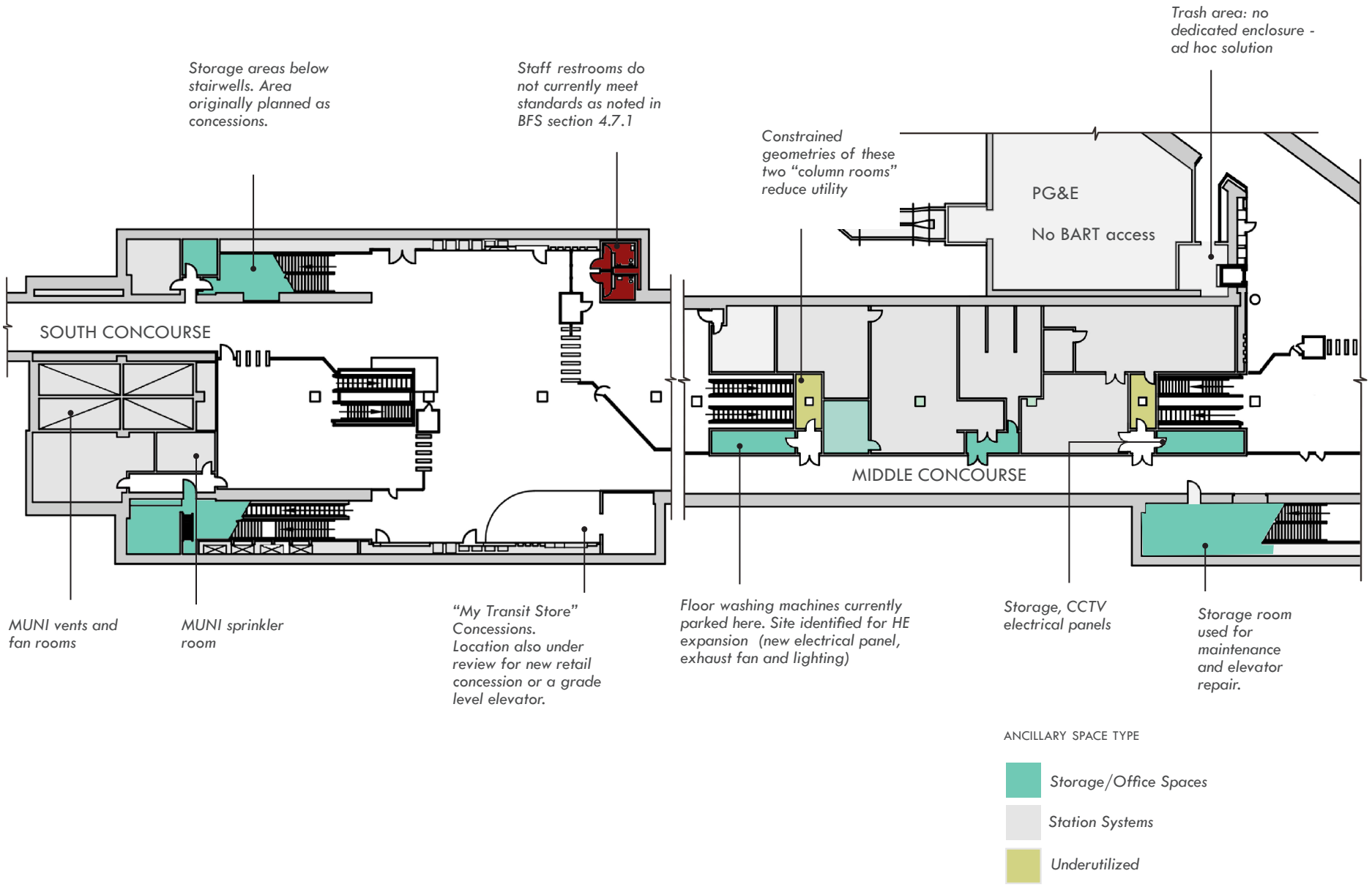
Issues

- Design of spaces does not serve current need and as a result, temporary solutions or even abandonment of the spaces can occur. Despite being a generous amount of space the result is that staff feel that there categorically isn't enough space to serve all needs in the station.
- Staff break room has water intrusion, does not meet all BFS requirements.
- PA speaker absent, lacks emergency (medical) storage and no outside access.
- Electrical fixtures in the kitchen area are obsolete.

Opportunities

- Prioritize and renovate locations for the most important station functions for improved ease of staff use, such as cleaning, maintenance rooms and janitorial.
- Improve functionality of janitorial spaces: accessible sinks, storage closets and shelving.
- Improve overall comfort for staff, including attention to air quality and lighting.

FIGURE 4.17 SOUTH AND MIDDLE CONCOURSE ANCILLARY SPACES



Middle Concourse/Passage

The middle concourse provides access to the machine control rooms, including fan room, ventilation, train control and electrical. There is limited opportunity in this area to alter hallway layout.

- A Head Room Expansion project has been identified for the storage room on the south end of the corridor.
- Moving/alterations may be undertaken as part of the Train Control Systems Upgrade project, but major repurposing is not likely.

South Concourse

Ancillary rooms in the south concourse are shown on the following page, the original as-built drawings with two areas for potential concessions. Additionally, the location of MUNI vents and machine control rooms abut the southern wall.

4.7 PUBLIC AND STAFF RESTROOMS

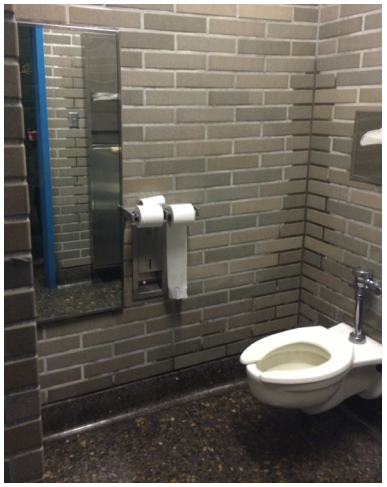
Staff locker rooms are located in the north concourse, accessible off of the corridor, and staff-accessible restrooms in the south concourse are located in the fare paid zone. Public restrooms were not accessible on the consultant team station tour. North concourse public restrooms have been closed since September 2011 and remain a security concern under the "yellow status" terror alert. Cleaning and maintenance have not been reviewed for this project. Neither MUNI FPZ has staff restrooms so MUNI staff must use the BART restrooms at the north or south concourse.

Issues

- Modernization alterations will invoke Title III, 2010 ADA updates to toilet rooms.
- There are security concerns about current designs. BART is currently negotiating with the City of San Francisco to supply secured restrooms at the street-level.

Opportunities

- Public restrooms will be considered for station modernization, however BART prefers, where feasible, to shift the location of public toilets to fare paid zones for better supervision and security.
- BART is currently developing a prototype for restrooms with transparency and sinks located to the exterior, allowing for improved security.
- Explore glass walls and/or timed entry or self-cleaning unisex restrooms. BART may also wish to explore attendants or charging a small fee for restroom use.



Staff locker room and toilets.

The current location of public restrooms is not possible to secure. With a restroom removal it would be possible to expand adjacent staff locker rooms - or janitorial facilities.

5.0 SPACE PLANNING: WAYFINDING, RETAIL AND ADVERTISING

Station Modernization can apply good spatial planning to rationalize patron flow and improve wayfinding as well as supplement additional revenue generation.

Station modernization objectives for space planning on the concourse include considering patron flow and decision-making points for wayfinding for the first time uses, clarification of relationships between MUNI and BART, and removal of excess or gaps in wall space and clustering information to provide clear decision making points. Additional objectives heard from staff are to consolidate the fare paid areas and to allow space for revenue generation in free lobby areas.

The following section documents the current conditions for wayfinding and signage as well as retail, advertising and public art.

5.1 WAYFINDING /SIGNAGE

The team completed an audit of the current location, scale, design and content of sign types for each of the entry walls.

System Information/Wayfinding Panel Organization

The current information panels located in the non-paid areas of the concourse are 50 inches wide and spaced one inch apart. An audit of the entries finds the following (See figure 4.1 for a map of entries):

- Regional transit information–this is a six-panel array in three locations at Civic Center: north concourse–one at entrance 3, one between entrances 4 and 6, and south concourse on corridor wall near entrance 1.
- Transit connection panels are located on wall at base of stairs/escalators at entries A, 5, B, 4.
- There are local area info panels at UN Plaza entrance and various locations.
- Late night bus services panel is located at entrances A and 5.
- BART System Maps are in various locations.

BART is in the process of cleaning up, de-cluttering and installing new signs as part of Phase 2 Wayfinding, managed by the District Architect. The Civic Center Sign Schedule (2014) provides for interim improvement for signage, including the replacement of all surface-mounted "blue plaque" signage at the concourse and platform level, and the addition of overhead directional (exit) signage at concourse-level stairs.

It also provides for the removal and replacement of existing black cabinet elevator signs. This program will help to remove existing duplicate signage, redundant information in the short term.

WAYFINDING SIGNAGE CRITERIA

BFS SECTION 4.1

First level – Transit and Wayfinding

Second level – Regulatory Signage

Third Level – Safety and Security signage

Fourth Level – Temporary Signage

Fifth Level – Advertising and Retail

Blue plaque signs to be replaced under 2014 Phase 2 Wayfinding Program

Civic Center Station is planned to receive new real-time displays as part of MTC/MUNI partnerships within the concourse free area. That project scope includes replacement of all the existing signs on new handlers and adding the information displays over the ticket machines and other locations.

Issues

- Wall panels, including map and signage information, ticketing information and other, do not follow patron flow or provide for clear decision-making for the first-time user. Signage can be added in an ad hoc fashion and is lacking a clear hierarchy of sign types or patron flow.
- At the station entrances and ticketing walls, many of the stainless steel panels are no longer employed for their intended use.
- MUNI signage is not well coordinated with BART signage.
- The BFS principle that wayfinding should be an "integral" part of the architecture and site design has not been applied.
- Universal design principles for wayfinding are weak at this station (see signage types in the BFS 1.7.11).
- Conflicts between advertising and wayfinding are observed.

Opportunities

- During wall refinishing, conduct a reorganization and consolidation of ticket wall panels to be consistent and systematic.
- Consider separating out the regional info panels; locate panels with information specific to ticketing close to the TVMS.
- Cluster information and apply hierarchy of directional signage pointing toward destination points in addition to street names.
- Improve and recommend placement of information (RTD) locator maps to exits.
- Use architectural integrated wayfinding to link the station to the institutions, e.g. Museum, Library, City Hall etc., such as color, materials, tile or integrated art.
- Eliminate ad hoc, superfluous panels and signs.
- Improve and redesign locations for information kiosks and declutter.

The current layout groups the regional information in three centrally located 6-fixed panel in addition to 2 dynamic panel arrays that are separate from but close to the ticket machines. The arrangement of information can feel ad hoc to the first time user.

5.2 ADVERTISING

BART relies upon advertising as a revenue source. The current Intersection Media Advertising franchise agreement brings in an estimated $10-14 million per year in additional revenue. Titan sells options for a variety of types of displays–posters, special media, illuminated displays, and station wraps identified at the concourse and platform level of Civic Center. This agreement will be rebid in 2018 following the space planning criteria in the Civic Center Station plan.

Opportunities

- Rationalize relationship between advertising, wayfinding and locational signage.
- De-clutter space and provide for hierarchy of information.
- Improve visibility in some locations for advertising signage and make use of digital screens.

Example of banner advertising found on the Concourse level. Advertising banners can compete with wayfinding and directional signage.

5.3 BART RETAIL PROGRAM

BART has recently adopted Station Retail Design and Development guidelines to guide all future space planning and retail build-out efforts. The Office of Planning and Development is responsible for developing, maintaining and updating these standards and judging compliance, including the applicability of referenced BART Facilities Standards.Additionally, Civic Center must conform to BART's Master Retail Policy (2011) and a Master Station Retail Vendor Program.

Beyond 2D advertising, BART is also looking to introduce automated retail, concierge and vendors. The design team has received an early draft of vending proposals for Civic Center. New contracts would be bid according to the Final Station Modernization Plan.

- The design team received and reviewed the TransMart Prototype Plan (5/20/2014) which shows an early design for modular, moveable kiosks.
- Kiosks are subject to the Retail Design and Development Guidelines.

Existing Retail

Civic Center BART has a "Transit Store" location in the south concourse. In February 2014, Metropolitan Coffee and Concessions (MCC) proposed a 950 SF Peet's Coffee & Tea facility in this location. The Real Estate Department assessed plans for 600 SF facility to be located within the existing public circulation space in the free area, with the remainder utilizing space currently occupied by My Transit Plus for transit ticket information/ purchase.

The Plan calls for the existing My Transit Plus ticket space to be relocated to a new kiosk to be constructed within the BART secondary paid area fronting onto the free area. The footprint of the new ticket kiosk is approximately 95 SF.

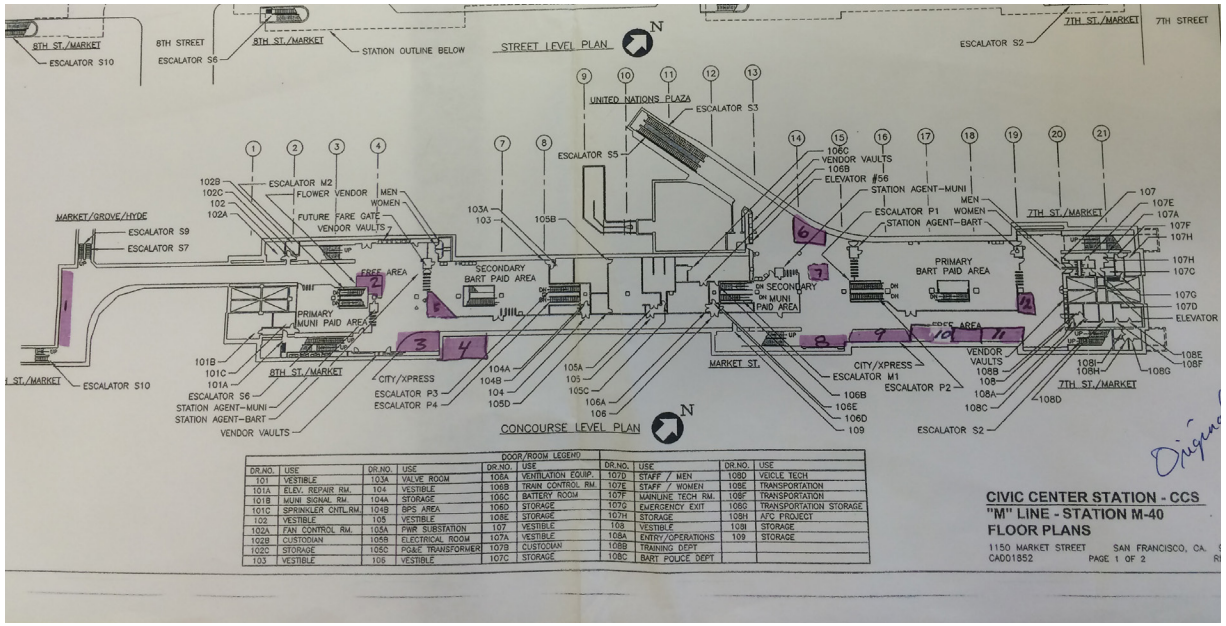
Issues

- The new ticket kiosk would result in the closure of one of the circulation paths within the BART paid area.
- "My Transit Store" retail in conflict for a potential location for a street-to-concourse elevator in the south concourse. Location not coordinated with planned vision for Civic Center Station.
- This location is under review for a new entry as coordinated with the Trinity Plaza Development.

Opportunities

- Identify new locations for concession and retail vending as feasible.
- Streamline concourse fare paid zones to allow for more room for concessions and keep patrons at the concourse level while awaiting trains.
- Ensure that vending and design are coordinated with long-term plans for concourse improvements.

FIGURE 5.1 TRANSMART CURRENT RETAIL/VENDING LOCATION (2014)



"My Transit Store" existing condition

5.4 PUBLIC ART

There is no identified performance space in Civic Center, but the station does have a share of ad hoc buskers and musicians during peak hours.

Opportunities

- Modernization Plan to specify locations for a formalized performance program in the station. For example, the London Underground uses music to assist wayfinding in their long transfer passages.
- Modernization Plan to specify spaces for graffiti and public art.
- Create working partnerships with local arts and civic organizations, e.g. the Asian Art Museum and San Francisco Library, to curate works within the station. This could be an ongoing exhibition of items from their collection and posters promoting their current exhibitions installed at concourse level.

MTA commissioned Sol Lewitt for a signature wall in 2009. Whirls and Twirls at 59th Street, Columbus Circle.

39 "pitches" are located in tube stops throughout central London. Auditions are held and a limited number of licences are available on a yearly basis.

Live performance at Templeton SkyTrain Station

5.5 TELEPHONES AND TWO-WAY COMMUNICATION SYSTEMS

Currently Civic Center has excess banks of phones in wall panel system as well as signage for phones.

Platform level radio antenna cable is currently exposed over the Civic Center trackway–this cable cannot be placed in conduit.

The consultant conducted a walk-through with BART staff to understand the general arrangement of conduit, and to understand the relationships between power, communications and other cables.

Issues

- CCTV cables lead into the station agent booths, making them hard to relocate.
- Conduits have been installed on an ad hoc basis throughout the station.

Opportunities

- Removal of excess public phones considered as part of modernization and wall panel refinishes and consolidation.
- Create a systematic approach to new communication (and other) conduit.

6.0 STATE OF GOOD REPAIR

The following chapter documents of the current condition, issues and opportunites for major materials and finishes at Civic Center Station.

Information was gathered on-site via observations of station conditions and issues as discussed with BART staff in a series of workshop meetings held in November 2014.

Station Entrances Interior and Exterior Finishes

The primary finish materials at the street-level entrances are granite and glazed tile on the entrance walls and board-formed concrete above the vertical circulation.

Issues

- Granite and tile is in fair condition and capable of being cleared of graffiti.
- Concrete is painted over in numerous locations; this conveys a sense of disrepair at the entrances.
- Balustrades are concrete.
- Side walls are clad with glazed brick tiles.
- Floor and balustrade surfaces are exposed to the weather and are subject to puddling of rainwater and maintenance closures at the base of escalators.

Opportunities

- Secure and upgrade entrances

Flooring

Issues

- Flooring at all levels is a combination of marble and terrazzo tiling. Both finishes comply with BFS standards and require an acceptable level of maintenance.
- Maintenance and engineering staff noted that anchoring through the floor can be challenging.
- Tactile wayfinding is not currently present.

Opportunities

- As flooring is in relatively good condition, only refinishing is recommended.

Station Entries Exterior

Station Entries Interior

Ceilings

Issues

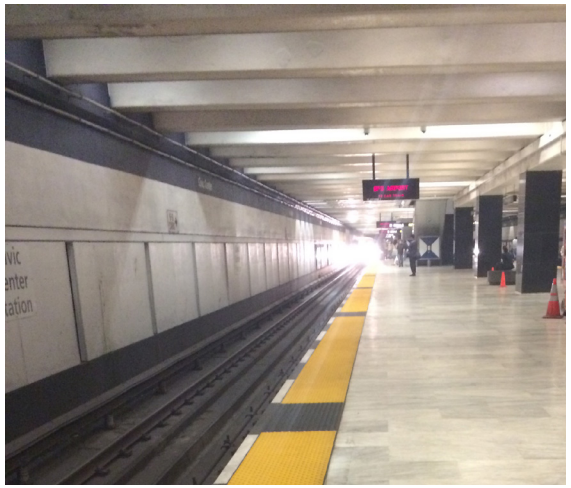
- Painted concrete ceilings on both platform and concourse levels accumulate dust and debris contributing to a sense of uncleanliness in the station.
- Suspended acoustic linear ceiling panels are painted light-gauge metal. These are dirty and in poor condition. Panels are often modified to accommodate conduit, leading to an inconsistent feel throughout the station.
- Stainless and metal linear ceilings are hard to maintain. Dirt and debris fall down from the space above during powerwashing. Panels also require hand wiping via a special contract.
- Civic Center has vaulted ceilings–maintenance staff must use lifts for cleaning.

Opportunities

- Ceiling and lighting system in need of replacement. Consider ceiling options that allow for concealment of electrical/mechanical systems as well as easier access for maintenance staff.
- Explore adding a drop-ceiling raceway system to accommodate electrical systems and conduits while being easier for staff to maintain.
- Explore an integrated conduit run set below the beams in a suspended ceiling cloud that would conceal the conduits–location depending on the best fit with existing power source distribution.

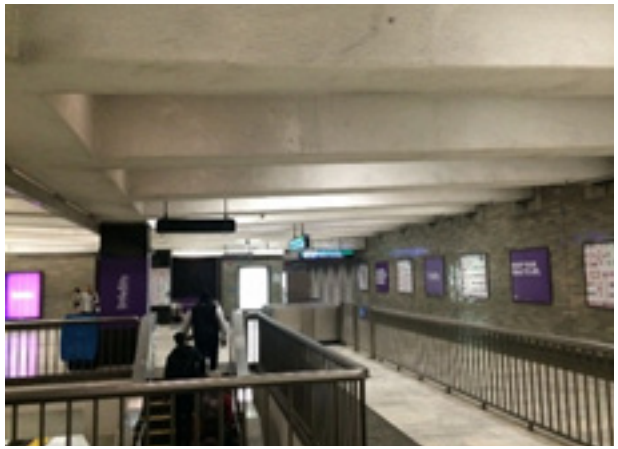
CONCOURSE FLOORING

PLATFORM FLOORING



Good existing condition of terrazzo tiling shown above.

CONCOURSE CEILING



PLATFORM CEILING

White stucco finishes accumulate break dust, power-washing is required on a regular basis. Repainting will be completed with Station Brightening Program.

Wall Finishes

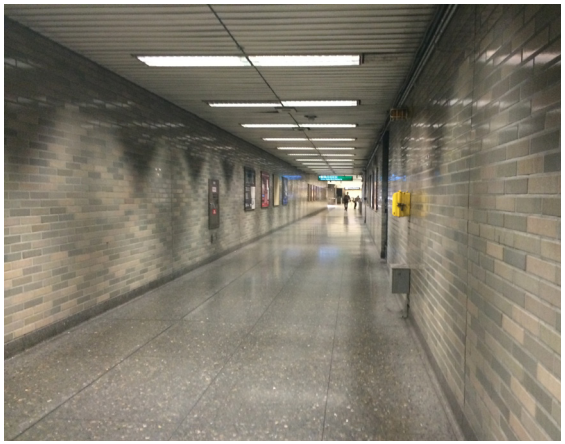
Issues

- Concourse-level wall treatment is glazed tile and stainless steel paneling. Wall tile appears to be in good condition and requires acceptable levels of maintenance.
- Glazed tile does not provide opportunities for concealment of conduit. Many conduits appear to have been surface-applied.
- Darkness of glazed tile contributes to cave-like feeling, especially in the corridor connecting the east/west areas of the concourse as well as the corridor to the elevator.
- Wall finishes are not coordinated with lighting elements.

Opportunities

- Consider new cladding that can be applied over the existing tile to avoid cost of stripping surfaces.
- Explore best practices of recent underground station renovations, e.g. Milan, Paris and Toronto.
- Consider methods to integrate design of finishes to support wayfinding and in-station orientation.
- Consider ways to conceal existing exposed conduits behind new wall treatments (see precedent images).
- Consider wall finishes in coordination with lighting treatments, and use reflectivity to provide balanced lighting approach.

EXISTING CONDITION WALL FINISHES



Grey, glazed tile is used as the main surface throughout the concourse level, while in good condition, tile contributes to dark interiors.

PRECEDENT WALL FINISHES

Union Station Toronto

Milan Metro

Fare Barriers

Issues

- Fare barrier guards between the free and paid areas are composed of steel railings and pickets. These are in good state of repair but contribute to a cage-like sense of enclosure throughout the station. There are some negative impacts to visibility.
- Fare barriers do not meet BFS requirements for guardrail heights: "Barriers shall be five (5) feet in height, see-through type, non-climbable" (section 4.1 Facility Design Criteria).

Opportunities

- Introduce new fare barriers, materials to increase visibility and a sense of openness throughout each level/the vertical circulation spaces.

CONCOURSE FARE BARRIERS

Metal picket rail guards

PRECEDENT FARE BARRIERS

TransLink Canada Line Skytrain

Lighting

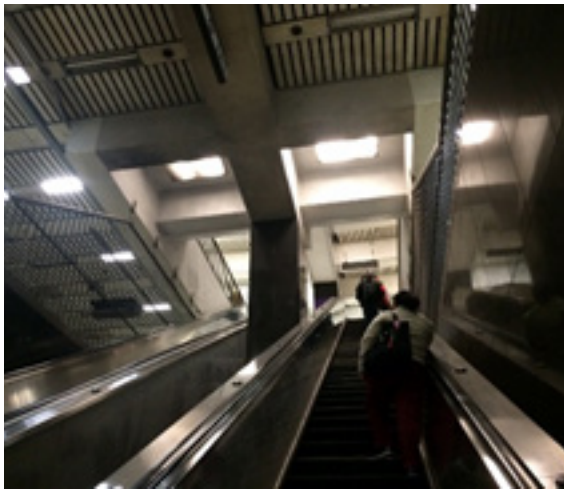
Issues

- Concourse interior lighting is non-uniform with glare and hot spots.
- Existing fixtures are directed at spaces rather than modeling wall surfaces, resulting in inefficient performance. Vertical circulation elements are poorly illuminated.
- The acoustic ceiling lighting fixtures at the entrances are in various states of function and repair, resulting in both inconsistent lighting and lowering the quality of the entrance experience.
- Many luminaires require cleaning.
- Many luminaires require replacement bulbs or tubes.

Opportunities

- Introduce energy efficient architectural lighting design with attention to circulation at both stairs and escalators.
- Initiate partnerships with LED lighting manufacturers.
- Revise lighting plan with reference to the Powell Street Design Guidelines.

Lighting Existing Condition Circulation



Lighting Existing Condition Trackway

Specialized equipment is needed to change lights over the trackway. Vertical circulation elements are very dark. Specialized equipment is needed for relamping and results in infrequent changes.

Elevators

Elevators are a key component to the vertical circulation of the station, not only for the ADA community, but also for those traveling with large packages, luggage and/or bicycles. Elevator maintenance is also a major consideration for the system. As part of Title VI Environmental Justice and the expanded definition of ADA "prompt repair," BART issues timely reports (in relevant languages) on elevator function.

The BART system consists of both hydraulic- and traction-powered elevators. The type of elevator will be important to any retrofit within Civic Center as it will impact the dimensions of the vertical shaft, its location within the structural systems, as well as pit depth and overrun height. While there is some limited interest in the potential benefits of Machine Room Less (MRL) elevators (now being developed by most manufactures) for purposes of this analysis, the design team considered only hydraulic elevators to remain conservative and within the current maintenance regime at the Agency.

Relevant BFS Standards and CBC Requirements

The BFS and California Code of Regulations have the following requirements (2010 California Building Code, 1116B.1.8):

- Elevators that serve different levels and are separated should be as close as possible. Note that this may have some influence on the proposed location of pairs of street-to-concourse/concourse-to-platform.
- Duplicate elevators are required where ridership exceeds 15,000 people per day.
- Elevator machine rooms are required to be not more than 100' away (this criteria assumes hydraulic elevators).

Additionally, the new elevator must meet ADA requirements:

- Allow for turning of a wheelchair
- Minimum inside clearances are 80" x 63" x 96"
- Minimum entrance clearances are 42" x 84"

Concourse to Platform Elevator Existing Condition

- North concourse: this elevator was added to Civic Center Station as a later retrofit and serves both BART and MUNI platforms.
- It does not meet current BFS regarding rate of travel (100 FT/minute). Test for elevator speed for rate of travel is closer to 50 FT/minute.
- Car and hoist-way doors are required to have a vision panel on each door (CBC Code Section 14, 1.06 – O).

BART PLATFORM ELEVATOR

STREET LEVEL ELEVATOR

- Elevator is in poor condition within the cab and subject to abuse and vandalism.
- Unsecured entry location, no sightlines from BART supervisor booth into the corridor. Elevator used for fare evasion between platforms.
- On MUNI platform, elevator is hidden along a narrow walkway adjacent the trackway–not visible from platform.

Concourse to Street Condition

- North concourse: the door opening/response time on the concourse causes is too fast for some in the ADA community due to location of the elevator call button and depth of elevator door. Changing the timing on the call button would allow for universal access.
- Height of elevator buttons noted as issue by ADA Committee.
- There is no elevator in the south concourse.

Precedents that were identified for elevator improvements at Civic Center Station include:

- Lake Merrit
- Ashby Station

Janitorial

Janitorial facilities in Civic Center Station are located in the north concourse.

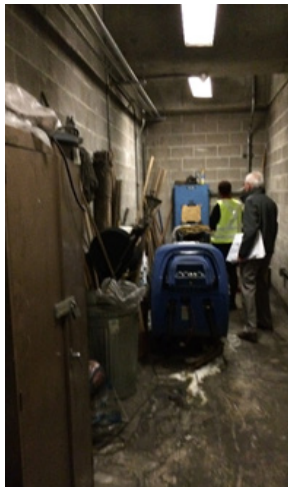
There is no designated enclosure for trash at Civic Center, therefore trash storage seems to be opportunist within ancillary spaces. During the station tour, trash was observed in several storage areas with its primary location adjacent the UN Plaza entrance.

Issues

- Refuse receptacles are of various types and levels of permanence, often insecure and poorly maintained.
- Temporary service equipment improperly stored openly in concourse while out of use.
- Access to storage closets and utility sinks needed in south concourse.
- Poor condition of storage closets, janitorial lacks storage, poor ventilation, lacks mop sink fittings and anti-slip flooring.
- No maintenance closets at platform level.

Opportunities

- Consider designated storage units for service equipment as per Powell Station. Consider the possibility of permanent, enclosed locations for refuse and recycling receptacles.
- Reassignment of storage spaces
- Explore janitorial or designate for reassignment at concourse level.
- Explore opportunities for maintenance at platform level.



Floor washing machines share space with other storage needs, multiple uses lack appropriate functionality. This site above has been identified for HE Expansion (new electrical panel, exhaust fan and lighting).

Janitorial and storage spaces are often mixed, rooms were never completed with finishes or shelving.

Ventilation

Issues

- The team observed poor ventilation in the ancillary spaces.
- While not monitored, it is likely that ventilation in ancillary/janitorial spaces does not meet BFS Mechanical - Stations and Station Sites Section 1.1.4 standard, which requires janitorial closets to be ventilated with 15 air changes per hour.
- Of the two designated janitorial closets, one has been supplemented with an air conditioner (shown at left).
- Ventilation in ancillary rooms will be improved with pending north ancillary space renovations.

Opportunities

See Appendix B for information on long term opportunities that tie together emergency egress needs and major ventilation systems.

AIR QUALITY


Janitorial closet

108 D


Internal corridor

Ventilation for janitorial and office spaces is in a state of disrepair with a reliance on various ad-hoc solutions (fans and air purifiers).

Water Intrusion

Issues

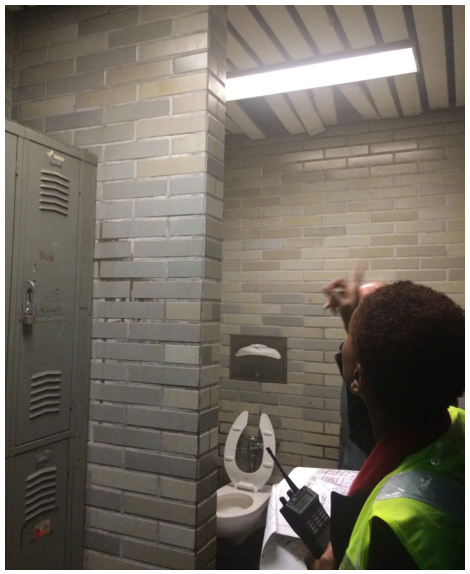
- Use of thick rubber mats at entrances to absorb water. In some areas the mats were replaced with stainless steel grates in a process of "winterization."
- Water intrusion was observed in the staff break room and staff locker rooms.

Opportunities

- Discussion with staff confirmed that the extent of water damage in breakrooms will require outside monitoring.
- Street level enclosures will support reduced water intrusion into concourse from street level entries.

STAFF BREAKROOM - WATER DAMAGE

Water intrusion evident in numerous locations throughout the ancillary spaces, specifically employee break room.



Ceiling and water damage were seen in the staff locker room.

7.0 DESIGN CONCEPT SUMMARY

The following chapter recommends a preliminary suite of vetted projects to guide Civic Center's 25 year modernization.

STATION DESIGN PRINCIPLES

CIRCULATION PERFORMANCE: Plan for peak period and emergency egress. Optimize vertical circulation to be secure, visible, and use the full length of platform to reduce conflict.

LOGICAL SEQUENCE OF FLOW: Improve space planning, and station function, clarify sequencing of system and ticketing information for the first time user, and as feasible, separate MUNI and BART passenger movements.

ENHANCE UNIVERSAL ACCESS to elevators, restrooms, way finding.

ACTIVATION OF CONCOURSE: Highlight opportunity spaces for retail, public art and performance uses.

MAINTENANCE + OPERATIONS: Provide more efficient use of employee ancillary spaces, with improved maintenance storage space on both concourse and platform.

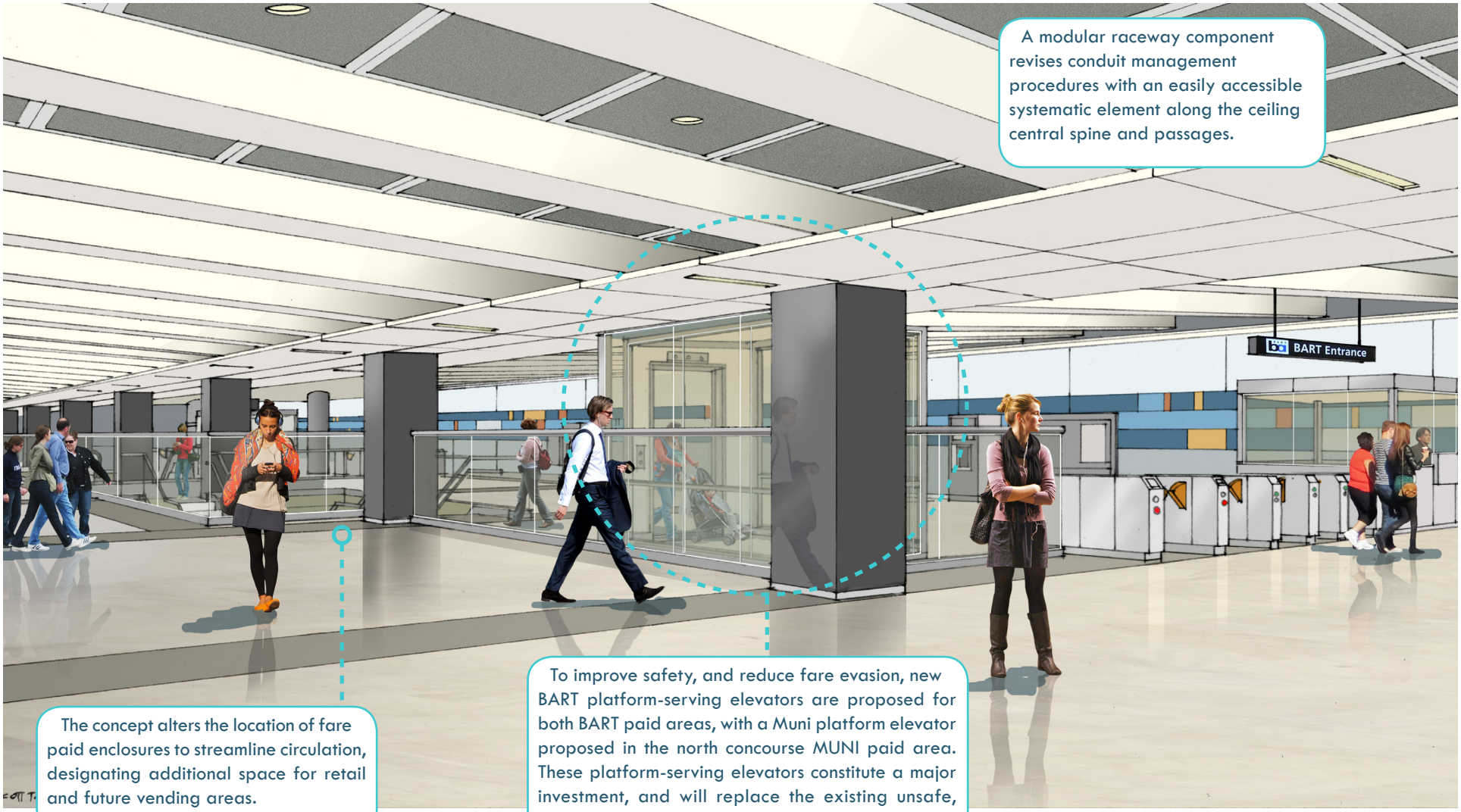
NEW MATERIALS AND FINISHES: Select durable, easy to clean, cost effective materials. Consider installation and ease of access for all improvements, especially re-lamping and cleaning. Materials sourced locally, have recycled content and can be re-used at end of life.

ARCHITECTURAL CHARACTER: Create designs that are transformative and modern; consistent with evolving mid-market neighborhood.

SAFETY: Improve natural surveillance, transparency and sightlines; eliminate low visibility or unused alcoves along the customer circulation routes, and create designs for cleanliness and clarity.

TRANSIT CONNECTIONS: Enhance interchange station role and explore feasibility of cross platform connections between MUNI and BART platforms. Coordinate with Better Market Street and Other city initiatives.

*No detailed survey has been conducted for the station, therefore associated drawings may be less accurate, and may not reflect all changes. As projects move forward into the 35 percent and detailed design phases, surveys will be conducted. Lastly, it is important to consider that future design decisions may be dependent on issues currently unresolved at this level of design completion.



A modular raceway component revises conduit management procedures with an easily accessible systematic element along the ceiling central spine and passages.

The concept alters the location of fare paid enclosures to streamline circulation, designating additional space for retail and future vending areas.

To improve safety, and reduce fare evasion, new BART platform-serving elevators are proposed for both BART paid areas, with a Muni platform elevator proposed in the north concourse MUNI paid area. These platform-serving elevators constitute a major investment, and will replace the existing unsafe, joint-use elevator now in a remote location. With this improvement, BART aims to provide full redundancy, and designs should ensure that there is always a second option for egress and ingress if a primary platform elevator is out of service.

The proposal adapts the Powell Street lighting concept without lowering the ceiling. Perforated acoustic metal panels are light weight and allow good access to surface-mounted fixtures.

Wall finishes are coordinated with lighting system and ceiling upgrades. A new raceway element introduces wall washers to light walls, advertising and information panels.

Scissor stairs within the existing stairwells increase vertical circulation capacity in both north and south concourses.

Mid-passage fare gates are removed. The mid passage is renovated to improve visibility and reduce fare evasion.

New transparent fare barriers are aligned with circulation elements at escalators and stairwells.

FIGURE 7.2 SOUTH CONCOURSE MID PASSAGE

FIGURE 7.3 PLATFORM UPGRADES

Opportunity for design treatments on the platform walls help differentiate stations for passengers.

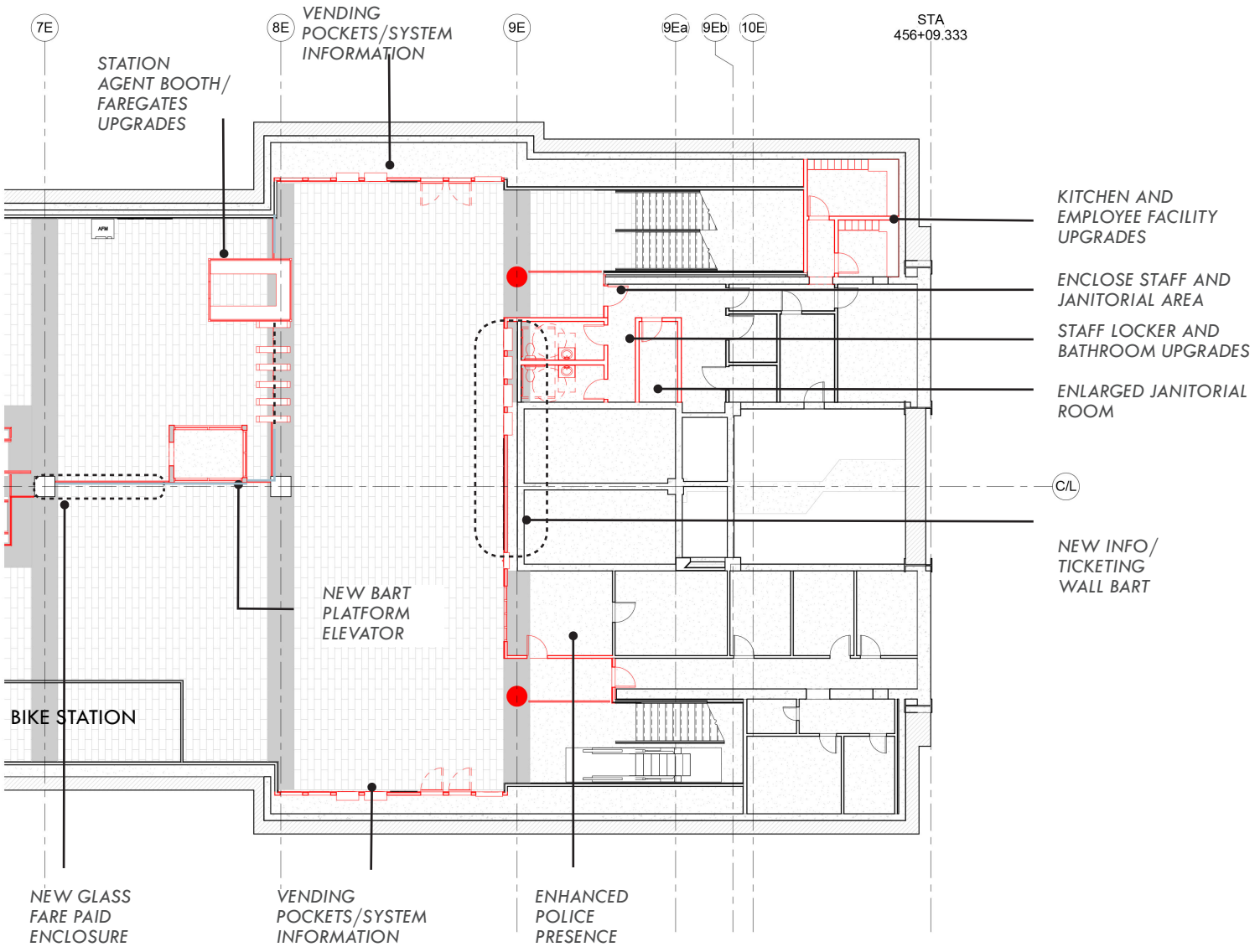
New scissor stairs and platform elevators allow for distribution of passengers and accommodate ridership growth.

Platform lighting highlights the trackway edge and under-stair dark spots, reducing glare and hot spots. Central raceway element brings lighting to the central spine and humanizes the scale of the platform.

Platform changes accommodate three-door boarding at all BART stations.

NORTH CONCOURSE/NORTH GATE LINE PROJECT SUMMARY

FIGURE 7.4



NEW/REVISED ELEMENTS

NORTH CONCOURSE/SOUTH GATE LINE PROJECT SUMMARY

FIGURE 7.5

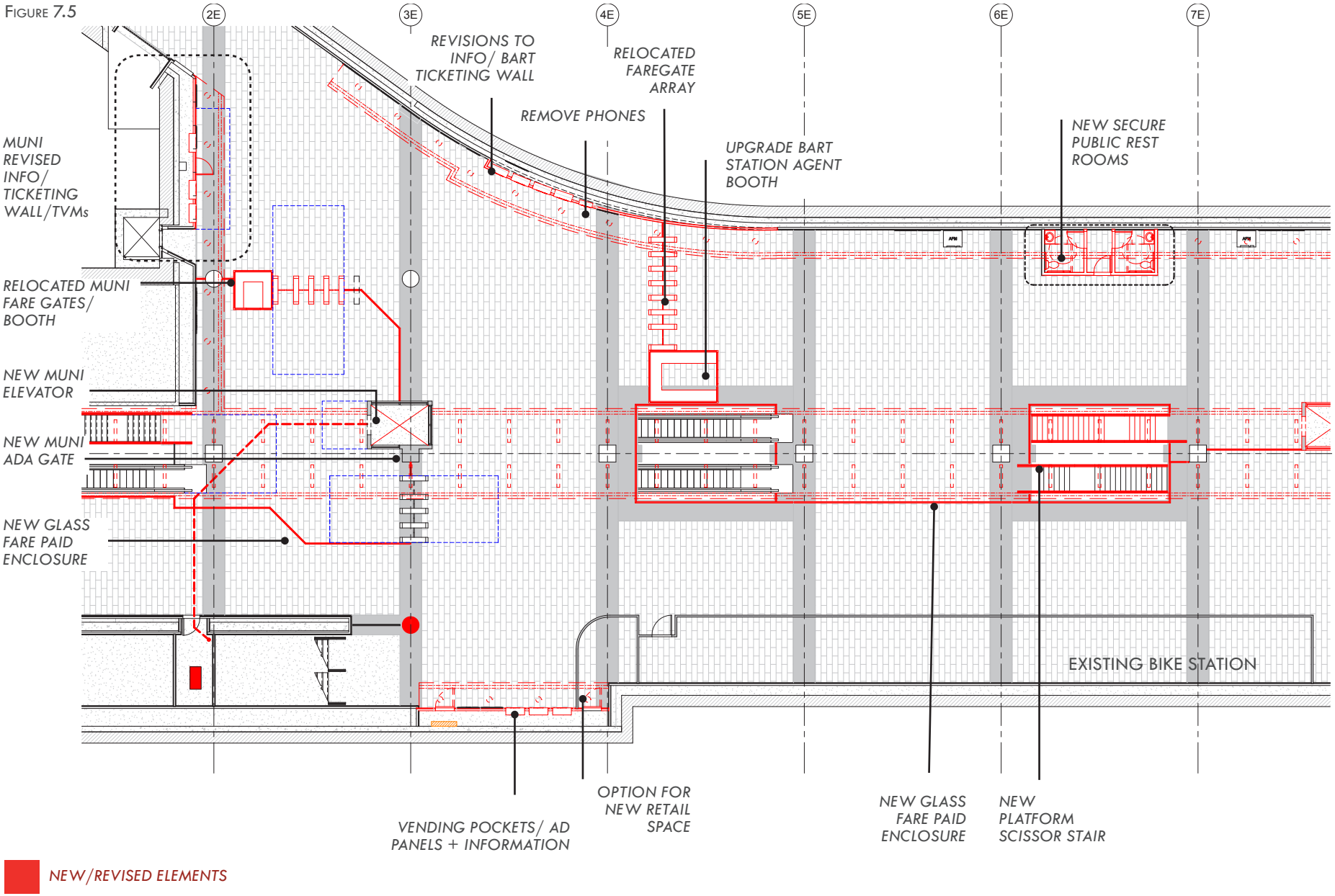
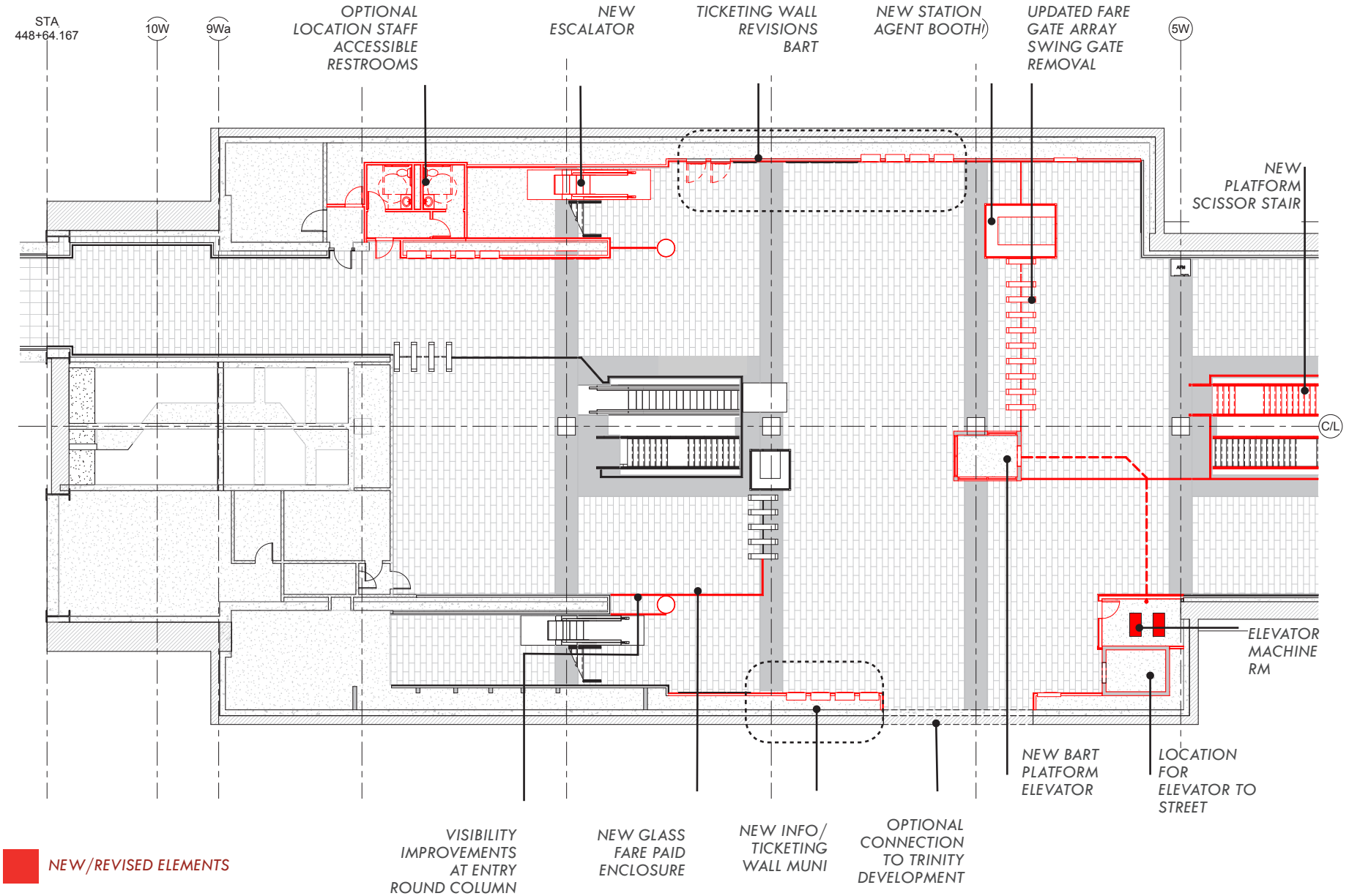


FIGURE 7.6


STA 448+64.167
10W
9Wa
OPTIONAL LOCATION STAFF ACCESSIBLE RESTROOMS
NEW ESCALATOR
TICKETING WALL REVISIONS BART
NEW STATION AGENT BOOTH
UPDATED FARE GATE ARRAY SWING GATE REMOVAL
5W
NEW PLATFORM SCISSOR STAIR
C/L
ELEVATOR MACHINE RM
NEW BART PLATFORM ELEVATOR
LOCATION FOR ELEVATOR TO STREET
VISIBILITY IMPROVEMENTS AT ENTRY ROUND COLUMN
NEW GLASS FARE PAID ENCLOSURE
NEW INFO/ TICKETING WALL MUNI
OPTIONAL CONNECTION TO TRINITY DEVELOPMENT
NEW/REVISED ELEMENTS

PROJECT LIST DESCRIPTION

The following list describes the projects included in the 15 percent drawing set attached unless otherwise noted.

7.1 CEILING REPLACEMENT

The team explored two options for upgrades to Civic Center's lofted ceilings: a baffle system and a perforated metal panel system. Any final design for ceiling replacement should be coordinated with lighting and systems upgrades, as well as wall finishes (reflectivity) and conduit concealment. BART staff have expressed a preference for Option B, outlined below.

Option A - Baffle System

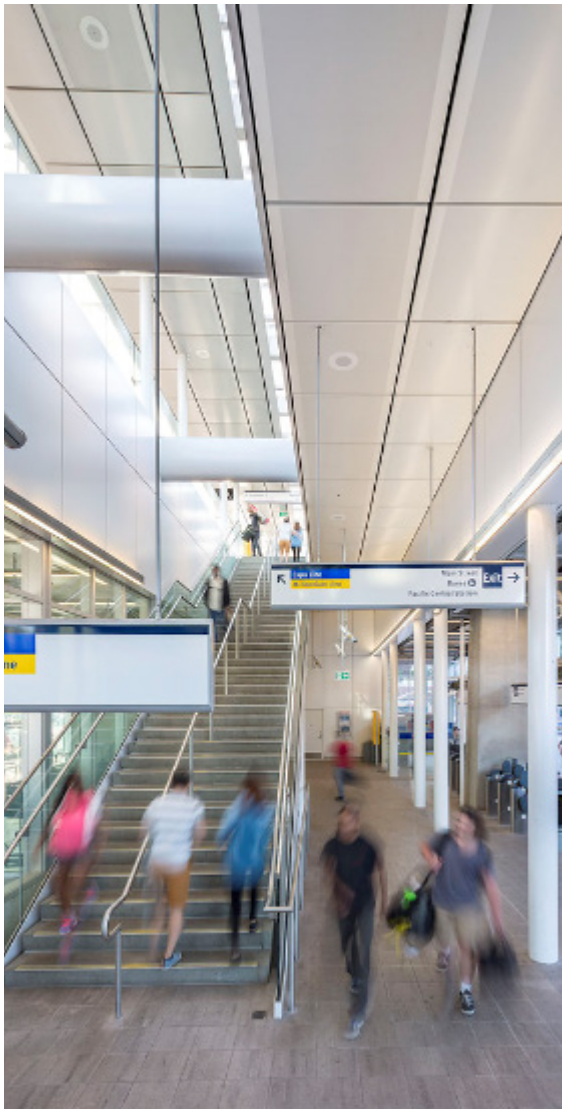
- Unistrut support system for rigid fixation of the ceiling support elements and baffles provides easy accessibility to mechanical, electrical and systems elements located above the architectural ceiling.
- Recommended baffles are 6" - 8" in height, spaced at 8" centers. Baffles conceal the lighting, PA and CCTV conduits, junction boxes and fire sprinkler pipes. Spacing is narrow enough to eliminate pigeon roosting issues.
- The entire length of baffles or key sections of baffles slide into a collapsed position to create a full-width opening for easy maintenance access system components.
- Class A fire rated

Option B - Perforated Metal Panels (Preferred)

- Suspended, light-weight grid ceiling allows access to surface-mounted lighting fixtures.
- Panel removal is typically required for access to the components mounted on the structural ceiling.
- Updates ceiling without losing height.

7.1.2 CONDUIT MANAGEMENT/RACEWAY

Conduit wiring of all types is bracketed to tile cladding through out the station. Staff have expressed interest in a more systematic, long-term approach to conduit management. As such, Civic Center's preliminary ceiling concept includes linear drop-ceiling raceways located along the central spine and perimeter walls that carry and conceal the main N/S electrical and systems conduits, as well as the radio antenna and IT systems cables. This drop-ceiling section acts as an accessible raceway for the main conduit runs that feed into the ceiling spaces between the beams. The generous width of the ceiling raceways allows for separate cable trays and physical separation between power cables and communications cables. Cable tray dividers can provide additional shielding of the Radiax cable.



East Main Street Station on the SkyTrain system was recently renovated using a perforated metal ceiling panel system. Photo Credit: VIA Architecture.

This design assumes that BART staff will develop new controls for conduit management as well as removal of obsolete components. The ceiling treatments were considered based on guidance from the Powell Street Modernization guidance, and require further resolution in the next design phase.

7.1.3 LIGHTING REPLACEMENT

The station's lighting concept as shown in the drawing set recommends a design with high lighting uniformity with good vertical luminance and absence of glare. Powell Station Improvement Guidelines and Powell Station Conceptual Lighting inform the proposal. Attributes of the preliminary lighting concept include:

- Additional downlighting features, especially at fare gates, and lower-level ambient lighting from pot lights.
- Continuous wall washer lighting to highlight walls, information panels and ticketing, as well as advertisements.
- Continuous cable tray at both sides of spine beam with 6" light fixtures.
- Lighting proposal highlights central stairs and escalators.
- Pot lights included opposite scissor stair to light stair below.

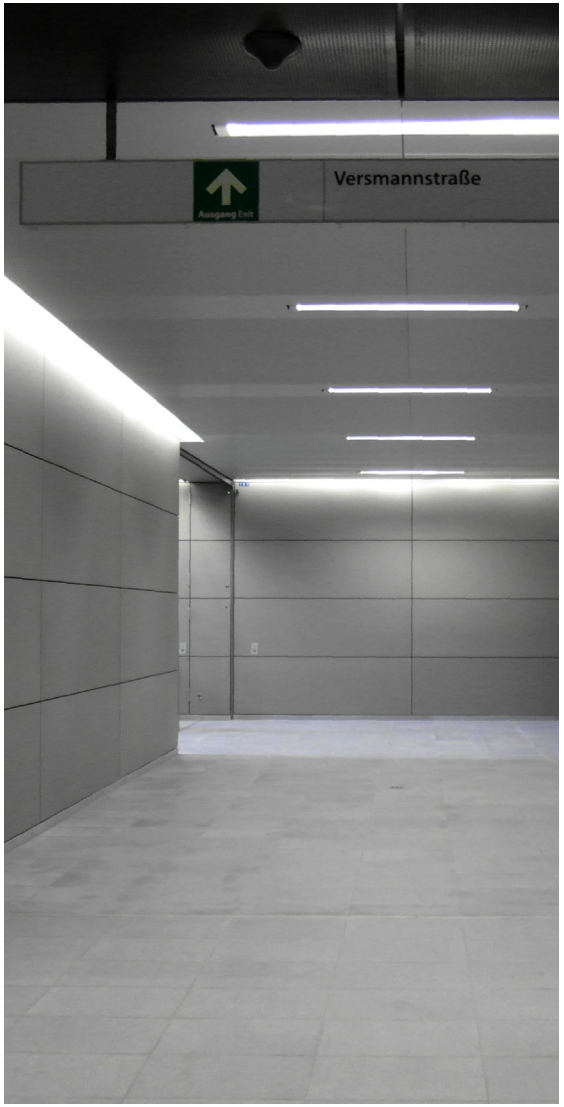
The final lighting scheme should be designed in combination with light-coloured finishes to create a perception of brightness without overly focusing on foot candles. The Lighting plan will apply LED fixtures as feasible, meeting identified sustainability and energy goals, as well as support long term maintenance.

7.1.4 PA SPEAKER REPLACEMENT (COORDINATED WITH CEILING REPLACEMENT)

- PA speaker is out of date and is recommended for replacement.
- BART will also explore adding absorption below trackway in subsequent scope.
- Powell Street Guidelines include an acoustic analysis that may be useful to this effort.

7.1.5 CCTV UPGRADES/RELOCATIONS (COORDINATED WITH CEILING REPLACEMENT)

- CCTV systems are recommended for upgrades as needed in coordination with ceiling replacement.
- Removal of CCTVs not in use to be coordinated at time of ceiling replacement.



HafenCity Station in Hamburg Germany uses wall washers for its corridor lighting scheme.

7.2 WALL REFINISHING

The Civic Center Concept design recommends the use of porcelain wall panels over existing wall tiles to freshen station appearance. The treatment extends the full length of the concourses and corridor passages extending to entrance stairs. A variety of color and design treatments are possible, including the blue and silver color palette.

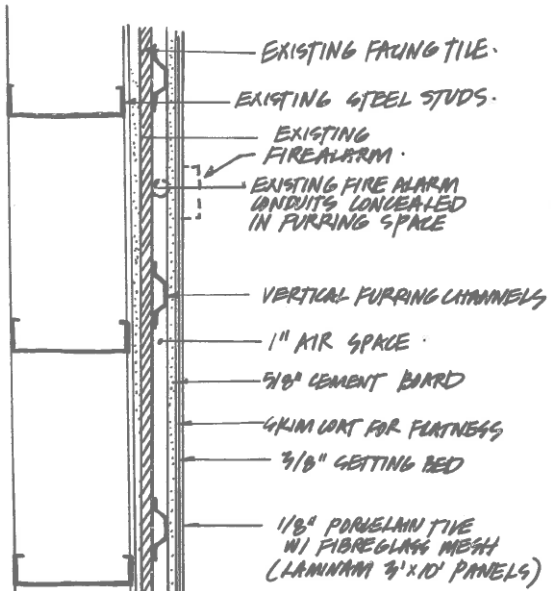
Final concepts (beyond this scope) may also include a design-oriented wayfinding approach to assist passengers and provide visual cues to key destinations. Attributes of wall finishes include:

- Reflectivity, color, design are coordinated with Station lighting upgrades;
- Concealment of existing fire alarm conduits in furring space behind wall panels;
- Integration with revised ticket vending/system info panels to wall system (i.e. ensure that ad frames can be affixed without cracking);
- Consistent module size (panel width) selected to accommodate equipment, advertising and signage;
- Integration with illuminated advertisement, BART wayfinding and regulatory signage while avoiding visual clutter.

Milanese Metropolitan renovated with Laminan Porcelain wall paneling.

7.3 PROTOTYPICAL TICKETING WALL AND SYSTEM INFORMATION

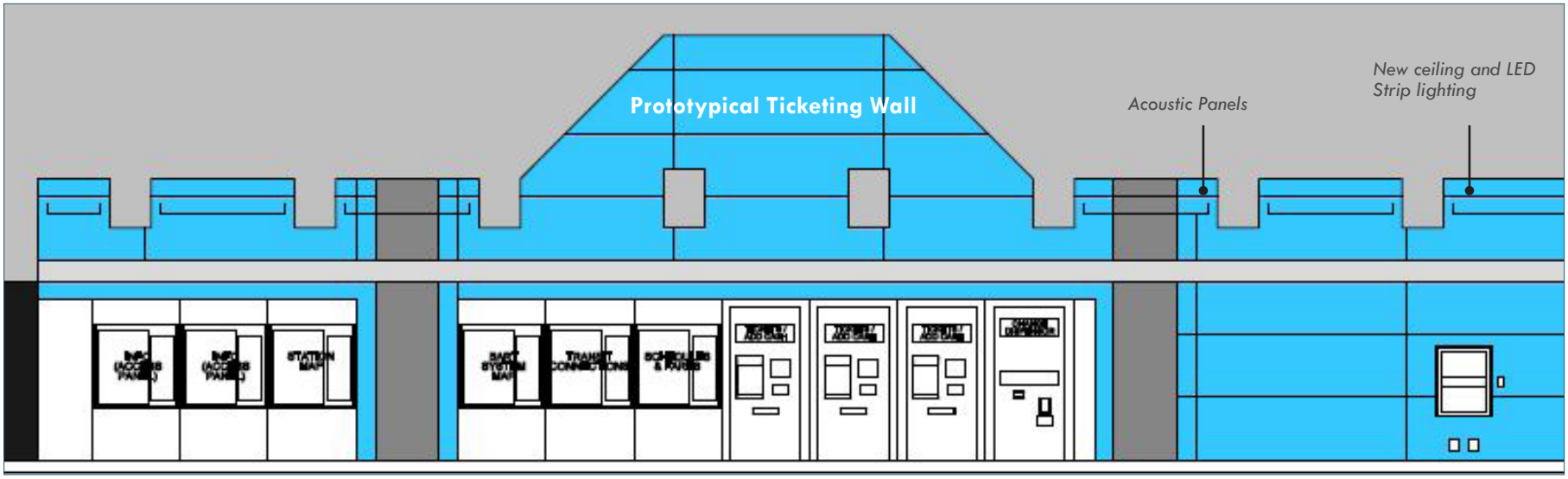
The design concept proposes to separate and reorganize MUNI and BART ticket and information walls for improved circulation, and reduced conflict. Additionally, to guide future changes, a prototypical ticketing wall based on a repeating module has been developed (see Figure 7.7). This prototypical wall seeks to regularize the layout of signage and information, and eliminates unnecessary panels, such as phones or blank panel areas. While this ticket and information wall should be distinct from all advertising, because these areas are slightly more compressed, the impact of actual wall space may be mitigated.



7.3.1 WAYFINDING SIGNAGE

BART is systematically updating its approach to wayfinding signage. Future updates to Civic Center signage must be coordinated with new circulation elements, wall finishes and ticket vending walls as well as fare paid area adjustments.

FIGURE 7.7 PROTOTYPICAL TICKETING WALL



DECISION MAKING IN THE STATION

Orienting Inside Station/ Entrance	Transfer + Connections/Exiting	The Neighborhood Area Map/Landmark	Choosing A Destination and Buying a Ticket
"Where am I?"	"What is the street intersection above?" "Where is the location of my stop?"	"What's here?"	"When does my train arrive?" "How do I buy a ticket?" "Do I need cash?"

ORIENTATION INFORMATION
Close To Exits

TICKETING AND SYSTEM INFORMATION
Close To Fare gates

7.4 RENOVATIONS TO BART AND MUNI FAREPAID AREAS/ STATION AGENT BOOTHS

The Existing Condition Report indicates that additional standard fare gates are not required for future egress capacity. However, updates to station agent booths and faregate systems are planned as part of district-wide upgrades. The proposal assumes that next generation BART fare gates will be introduced in 10-15 years. It also assumes the BART swing gate removal will be implemented once new technology allows fate gates to open automatically during an emergency. This provides an opportunity to relocate and revise entrances for better sightlines and comfort.

All BART Station agent booths will be replaced by an upgraded and slightly larger design to improve employee comfort and security, while also accommodating space restrictions in underground stations. This Design Concept includes both enlargement and relocations in North and South Concourses to better accommodate future elevator placement and agent sightlines.

As the main point of entry to the BART system, implementing any change to gate lines and booths significantly impacts customers during construction. These changes can also require large investments to relocate electrical and communications services embedded in the concourse floor slab. The services connecting the fare gates, cameras and escalators make the station agent's booth a "control center" of the station. Due to the expense of rerouting systems, the concept avoids changing gate lines where possible.

Furthermore, changes to gate lines and station agent booths are best clustered together to complete each gate line at one time with full upgrades before moving to the next. Attributes of the design proposal include:

- One new BFS-required accessible gate and one new standard gate included in the south gateline at the north concourse (total of eight gates).
- Removal of three fare gates in the south concourse mid-passage and addition of three fare gates in the south concourse gate line (total of 10 gates).
- The provision of new platform serving elevators will require changes to both MUNI and BART Farepaid gatelines, as shown.

BART staff have expressed interest in the application of etched glass. The Burien Transit Center etching (King County Metro) shown above was developed as an artist collaboration. Photo: VIA ARCHITECTURE

MUNI FAREPAID AREAS

The North Concourse MUNI farepaid area requires changes to the fare gates in order to accommodate a new secure concourse to platform elevator. The goal for elevator access for the Civic Center Modernization Plan is to ensure that both BART and Muni customers have access to two sets of redundant elevators for Street to Concourse access, and Concourse to BART and Muni platform access. The proposed design may be altered as new information and needs are developed. SFMTA will approve and work jointly with BART on the funding for the design and implementation of the Muni specific improvements, including TVM's, fare barriers, station

agent booths and a new Muni platform elevator within the Muni paid area. The goal of any new elevator construction is to provide redundancy so that access for customers is not interrupted when a single elevator is out of service. Ideally, the BART and Muni elevators would be designed, constructed and installed at the same time. However, if this is not achievable and the BART platform elevator project advances first:

- The current BART/Muni platform elevator at the east end of the station will convert into a Muni only elevator.
- The new BART platform elevator in the BART paid area will also serve the Muni platform, but only when the Muni platform elevator is out of service.

7.5 FARE PAID ENCLOSURES - STREAMLINE, UPGRADE AND REPLACE METAL PICKET RAILINGS

Fare paid enclosures are altered in both north and south concourses to streamline circulation and reduce less-used routes. Aligning fare barriers to directly abut circulation elements (escalators, proposed elevators) will also allow for more circulation space in the free concourse area with future opportunity for revenues from retail and vending.

Metal picket barriers are to be replaced with transparent material to improve visibility and sightlines throughout the station. Where visibility is not impacted, glass can also incorporate graphics. Glass etching could be designed primarily for safety (i.e. adding a color treatment stripe), as Metro Vancouver's TransLink has done, or incorporate unique art or design treatments in specific areas.

7.6 RESTROOMS

An objective for Civic Center Station Modernization and BART's other core stations is to re-open secure public restrooms. For this purpose, BART is experimenting with several restroom design options that will increase safety while also reducing vandalism and negative behaviors. Upgrades to Civic Center restroom facilities assume coordination with these designs. At this stage, this concept focuses primarily on *scale and location* of new facilities; i.e.

North Concourse

- Demolition of existing public restroom to be replaced with new secure facilities in the fare paid area.
- An option for this location is noted on Figure 7.5. Restroom consists of two 5'x7' ADA-compliant stalls.
- Staff restrooms and locker rooms are expanded as part of the north ancillary space renovations.

South Concourse

- The south gate line will be shifted to accommodate a future BART-to-platform elevator and new stair additions. To improve circulation, the proposal removes and provides an option to relocate the existing staff restrooms to an existing maintenance closet beneath the stair.

7.7 NORTH CONCOURSE ANCILLARY SPACE RENOVATIONS

Per the discussion in Section 4.9, the north ancillary space offers an opportunities to enhance janitorial and maintenance space, create better sightlines at entries and renovate break areas. Design Concept attributes include:

- Demolish wall extensions at base of stairs and escalators to open up sightlines; retain coiling grille security enclosures
- New staff locker rooms and improved restrooms
- Enlarged janitor room
- Renovated elevator machine room to add machines for two new elevators
- Relocate/renovate and expand police offices
- New storage room
- HVAC additions for restrooms and elevator machine rooms
- Fire sprinkler modifications to ancillary rooms
- Water intrusion repairs

BART has conducted a renovation of one portion of the ancillary space, as discussed in the previous section.

7.8 COMPLETE RENOVATIONS TO CENTRAL CORRIDOR

As stated in the Existing Conditions Report, the concourse central corridor lacks sightlines and would benefit from activation to reduce camping or other negative behaviors.

Design Concept attributes include:

- Renovate existing alcove for retail or video performance displays
- Relocate conduits and cables into drop-ceiling raceways
- Remove storage room at south concourse rm 104 A as feasible and refinish walls to improve sightlines and shorten the corridor

7.9 COORDINATE RETAIL, KIOSKS AND VENDING MACHINES

- Some coordination is required to balance BART's objective of more retail and activity in the free concourse areas, while also allowing for sufficient circulation. Ongoing coordination with BART Real Estate and TransMart retail roll-out project is required.
- Potential locations for retail are noted in attached drawing set.

FIGURE 7.8 CORRIDOR RENOVATION SKETCH

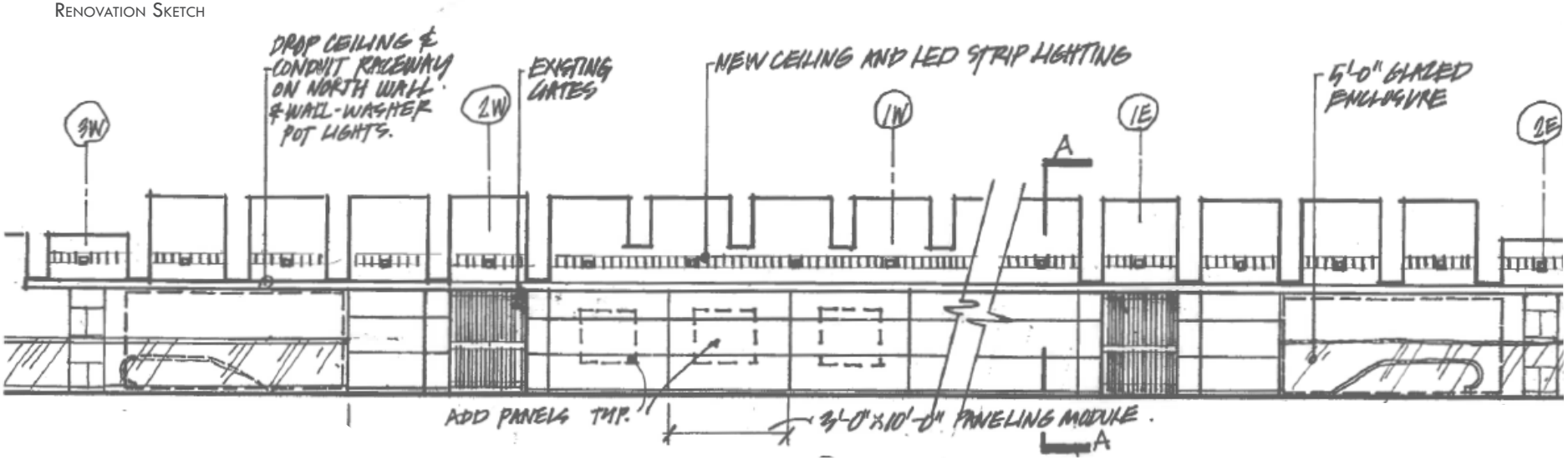
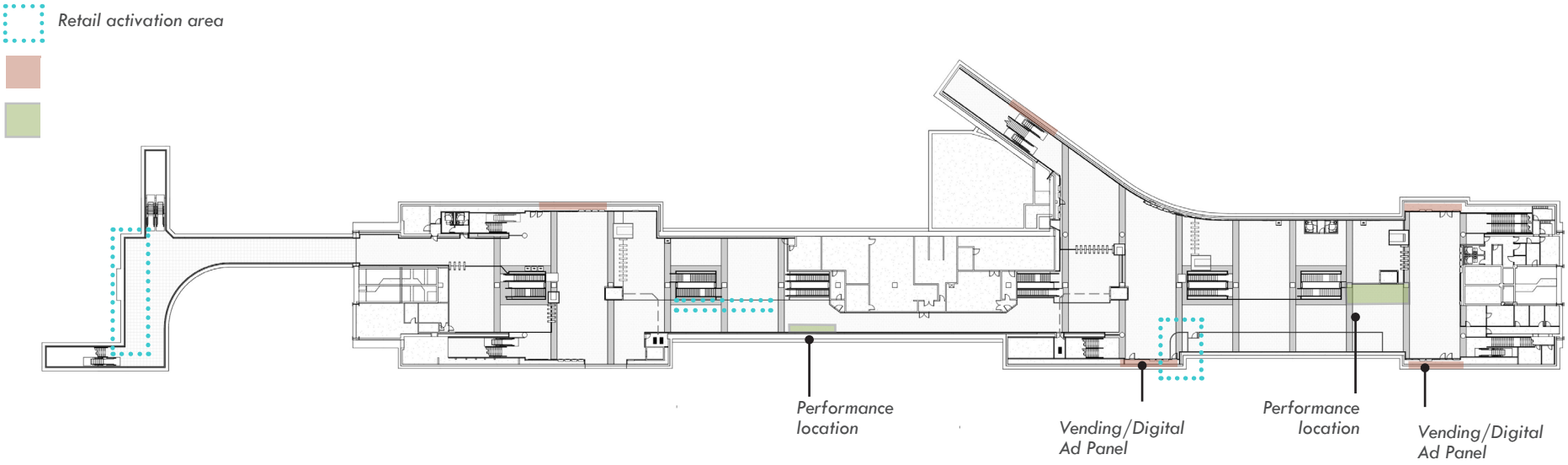


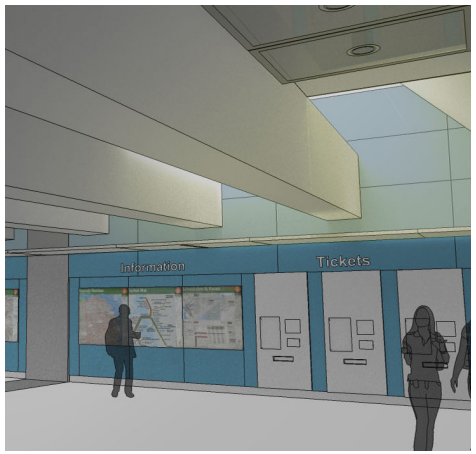
Figure 7.9 Art and Retail Activation



7.10 PUBLIC ART INTEGRATION

Suggested locations for public art are shown on Figure 7.9. There are also opportunities for collaboration with local stakeholders, civic organizations and arts organizations.

- Locations for possible video/performance have been identified in the North concourses as well as central passage.
- Clerestory spaces may provide opportunity for unique lighting or art installations.
- Art opportunities also include specific treatments to enhance orientation and wayfinding.



As shown, clerestories at entries may be an opportunity for unique lighting treatments.

Opportunities for design oriented wayfinding and treatments may also be developed for wall finishes.

CIRCULATION ENHANCEMENTS

Per the capacity study in Section 2.0, the following describes an incremental strategy to achieve additional stair lane capacity for BART platform to concourse egress requirements. Stair and potential elevator additions are proposed in a phased expansion of egress capacity. A summary of internal vertical circulation upgrades is shown in Figure 7.10. The initial addition of scissor stairs will meet 2025 ridership projections and would allow for the deferment of enclosed emergency stairs to a later phase, when confirmed ridership demands support both cost and necessary construction disruption.

7.11 NORTH AND SOUTH STAIR ADDITIONS

In order to improve platform distribution, and better accommodate CBC codes for platform-to-concourse egress (see Section 2.0) this plan proposes an additional stair in the each of the existing stairwells.

Design concept includes:

- Addition of 66-inch BART daily use stair into existing stairwell at south concourse/south end of platform;
- Addition of 66-inch daily-use stair into existing stairwell at north concourse/north end of platform;
- Replacement of metal picket guards with glass guards at all platform stairs;
- Stair channels for bicycle circulation and upgrades to existing stairs;
- Modern design using glass guards, integrated stair lighting;
- Tread refinishing on existing stairs.

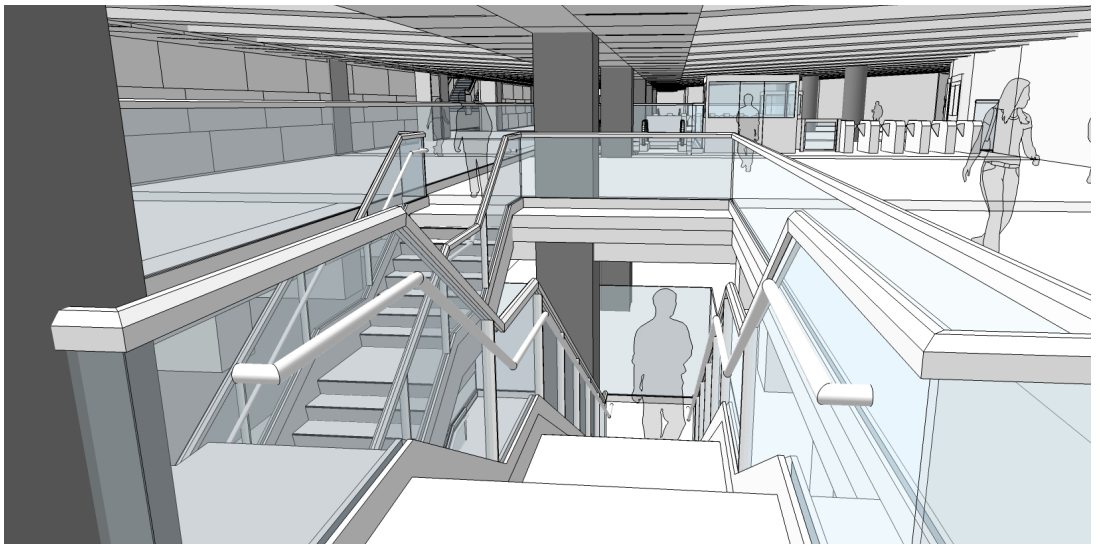


FIGURE 7.10 SCISSOR STAIR AT CONCOURSE LEVEL

The design team assumed that both scissor stairs make use of the same detailing and construction. The team also assumed that this project would require limited structural work beyond the members necessary to tie the new trusses into the existing structure.

- Trusses would be fabricated in the shop in sections and welded together on-site.
- Delivery of prefabricated sections to the platforms via MUNI/BART tracks.

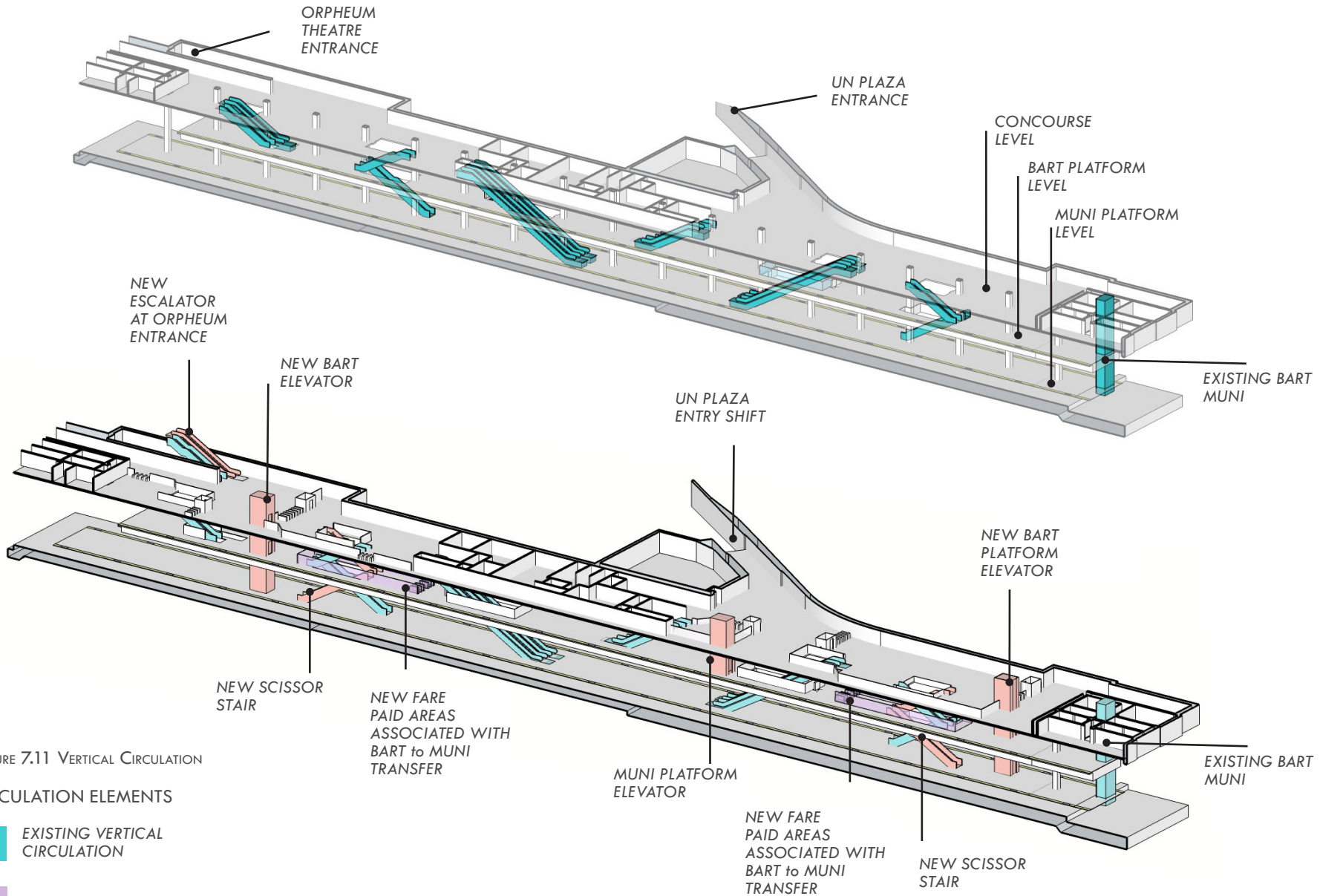


FIGURE 7.11 VERTICAL CIRCULATION

CIRCULATION ELEMENTS

- *EXISTING VERTICAL CIRCULATION*
- *FARE PAID AREAS*
- *NEW VERTICAL CIRCULATION*

7.12 ELEVATOR ADDITIONS: CONCOURSE TO PLATFORM

The design team evaluated a set of potential locations both in the MUNI and BART fare paid areas to add secure elevators. Locations were vetted by BART staff, and both External- and Internal-Technical Advisory Committees. The following describes the preferred option, as well as assumption and unresolved issues.

Preferred Option (as shown in Figures 7.4-7.6)

- BART platform elevator at south concourse/south end of platform in fare paid zone
- BART elevator at north concourse/north end of platform in fare paid zone
- MUNI elevator at north concourse/fare paid zone - note that no elevator can be provided in the south concourse due to conflict with existing emergency ventilation on the MUNI platform.
- The existing remote elevator located in the north ancillary space to be revised for maintenance and janitorial use and/or possible redundancy to either BART or MUNI platforms if one of the fare paid platform dedicated elevators is out of service. Additionally new BART elevators could provide redundant service for MUNI patrons if the MUNI elevator is out of service.

Assumptions

- The team initially examined feasible elevator shaft sizes and locations that could fit between the concourse and MUNI-level floor beams. This approach requires modifications only to a single beam at the roof structure. However, shaft size would be severely limited by the 6' 0" space between the beams. The resulting elevator shaft opening would not allow for an elevator that meets the BFS minimum elevator cab size, and severely limits the capacity and level of service.
- The preferred approach described in the drawing set requires modification of existing beams at the MUNI and concourse floor level to allow additional depth for the elevator shaft and a larger elevator cab.
- Per discussions with BART staff the proposed elevator hoist way and cab size is based on a r**oped hydraulic elevator application** that fits the physical constraints of the existing beam locations and column footings at the BART platform level and avoids the need for a cylinder hole.
- The modifications involve structural framing of the enlarged shaft opening supported on the elevator hoist way to be tied into the existing adjacent beams. The additional shaft depth will allow adequate elevator cab floor depth to meet the BFS requirements and to provide more loading capacity to meet the demands of the station ridership growth and accommodate customers with bicycles, luggage and/or strollers.
- More detailed plans include location adjustments to locate the elevator pist clear of the existing column footings at the BART platform level.

UBahn Platform Serving Elevator extends to the central platform with a transparent design.

Elevator Technology Issues

The design team explored both machine roomless elevators (MRL), and hydraulic elevators. This report does not recommend a specific technology, but recommends that BART, at an appropriate time, identify a technology that will be constructable, efficient and cost effective for the series of upcoming retrofits to elevators system-wide. As this issue remains unresolved at this time, Civic Center preliminary costing estimates both MRL and hydraulic technology options.

MRL

- The MRL type is the most flexible for elevator retrofits because the controllers are small and in many cases can be located within the elevator shaft. A large remote machine room is not required.
- MRL elevators travel at faster speeds than hydraulic elevators.
- MRL elevators avoid the use of hydraulic oil and the associated environmental concerns, including odors and disposal.
- BART staff concerns: Elevator maintenance staff currently believe that the MRL will not be heavy duty enough to sustain the wear and tear of BART, and have expressed a preference for an overhead traction model. Traction elevators typically require overhead machine rooms. The elevation of the station roof is not high enough to accommodate the machine room, so this type probably isn't feasible for Civic Center.

Hydraulic

- The roped hydraulic is the only type of hydraulic elevator that can be retrofitted in an underground station, because it doesn't require drilling a jack-hole. The proposed elevator locations in the fare paid zones do not accommodate space for an attached machine room, so remote machine rooms and in-floor or ceiling-mounted hydraulic pipelines are needed between the elevator shaft and machine room. Both the machine rooms and oil lines pose challenges that will require renovations to existing ancillary spaces and floor trenches (ceiling runs may be possible above the concourse ceiling for some of the elevators).

Unresolved issues

- Civic Center Modernization 15 percent design does not include a structural sub-consultant. Consultation with BART structural engineering staff cautioned that elevator additions require further resolution.
- BART structural informed the team that the Powell Station upgrades, with a new escalator enclosure, may also inform this issue. The Civic Center design team reviewed these as-builts in order to develop a more informed design proposal (Powell Street Station as-built structural drawing set, sheets 1S0013 SE21 and 1S0013 SE51 SE60).
- NFPA is considering using elevators for egress as a faster elevator option were considered; it might be possible to include elevator egress in the future.

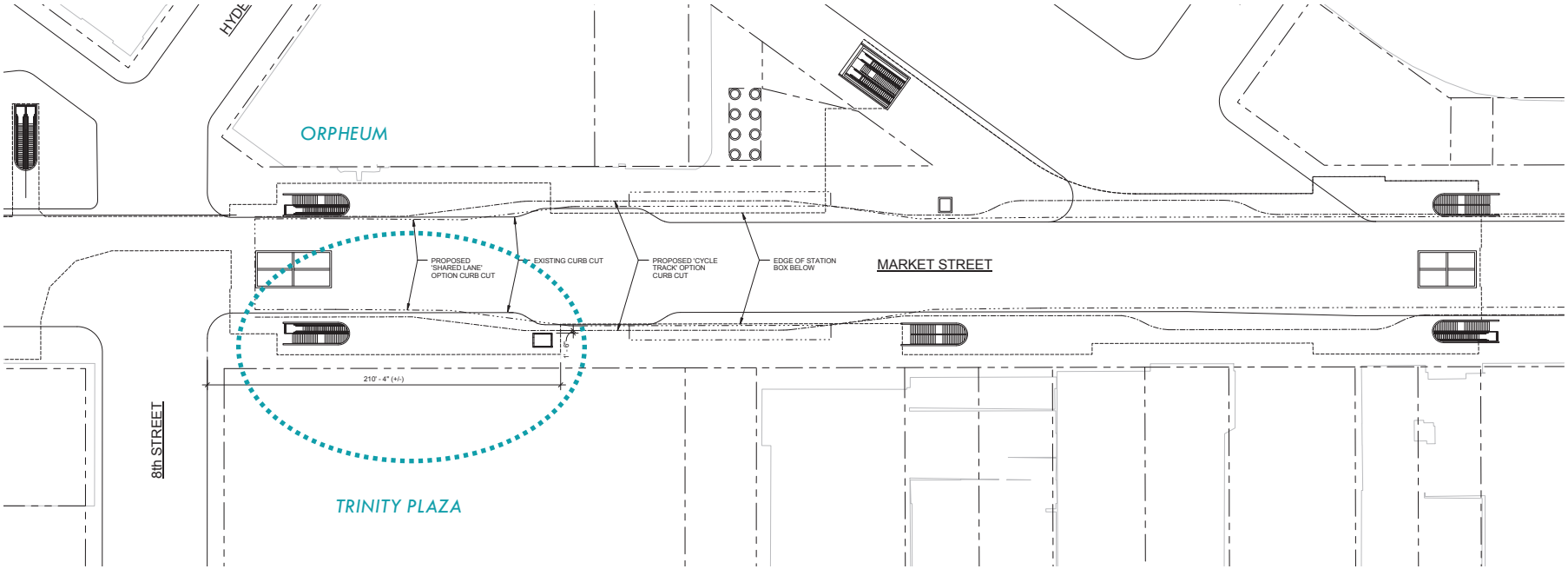
7.13 STREET ELEVATOR: CONCOURSE TO MARKET STREET

The design team studied a series of potential options to improve south concourse street level access. The BART street elevator must be located inside the existing station structural walls adjacent to the public area (circulation space between the BART and MUNI fare paid areas) of the concourse. Opportunities to shorten distances between platform-serving and street-serving elevators were explored as well as major structural constraints.

Unresolved Issues

- The future Market Street curb placement is unresolved at this time. A street level plan accounts for two approximate curb lines for both City Better Market Street project proposals: 'shared lane' and cycle track.' The elevator must provide a minimum of 18" to the curb. More clearance would be provided with the 'shared lane' option.
- Trinity Plaza redevelopment is seeking 2015-2016 building permit and may provide an option to coordinate for a new concourse entry and on the placement of the street elevator. This plan would also require revisions to BART entrance TVMs and ticketing walls as well as shift the gateline and agent booth to the north. There are structural and architectural issues related to the location of the existing vaulted ceiling in the station concourse in the vicinity of the proposed passage location that require further coordination.

FIGURE 7.12



7.14 ESCALATOR AND CANOPY PROJECT COORDINATION

Escalator replacement and an associated canopy is slated for Phase 1 at the Station's 8th and Market South entrance. All canopies and escalators at Civic Center will be replaced under the Phase 2 program.

Civic Center Station is the primary access point to the mid-market theater district. To improve overall access a new escalator (and canopy) is proposed for the 9th and Market Entrance (Orpheum Theater). This entrance may also act as a supplement and/or alternative to the existing 8th and Market south entry if this entrance has constrained hours.

7.15 RECONSTRUCTION OF THE UN PLAZA ENTRANCE

The proposal explores the cost and general feasibility of shifting the location of the entrance and escalator. Plans explore relocating entrance closer to the concourse and reduce BART footprint within UN Plaza. The cost estimate also includes:

- Rebuilt stair;
- Relocated or replaced up and down escalators.

Unresolved Issues

- Canopy design and coordination with the City of San Francisco on UN Plaza design/land transfer.
- This is at a concept level only and requires significant coordination with the City to ensure the proper civic scale of the entrance plaza and architectural treatment of the canopy to define a signature entrance to the station.

BART PLATFORM

A series of projects are included to upgrade and renovate the platform, as well as accommodate new train cars.

7.17 PLATFORM CEILING REPLACEMENT

The preliminary Design concept includes

- Fire sprinkler modifications as coordinated with ceiling replacement;
- Platform Lighting replacement with LED light fixtures and controls in coordination with ceiling replacement;
- Lighting coordinated with scissor stair additions;
- PA speaker replacement in conjunction with ceiling replacement;
- CCTV upgrades and relocations with platform ceiling replacement;
- Raceway to manage conduit and provide lighting along central spine.

7.18 FLOOR REFINISHING

Platform paving renovations completed to accommodate three-door train waiting positions. Note that this project schedule does not allow for direct coordination at platform level of door position drawings. This should be updated when information becomes available.

7.19 PLATFORM DESIGN UPGRADES

Recommended treatments include removal/replacement of round seating elements with linear back-to-back seating; improvement to display cases and BART information; track wall treatments; storage rooms and/or closets for maintenance equipment.

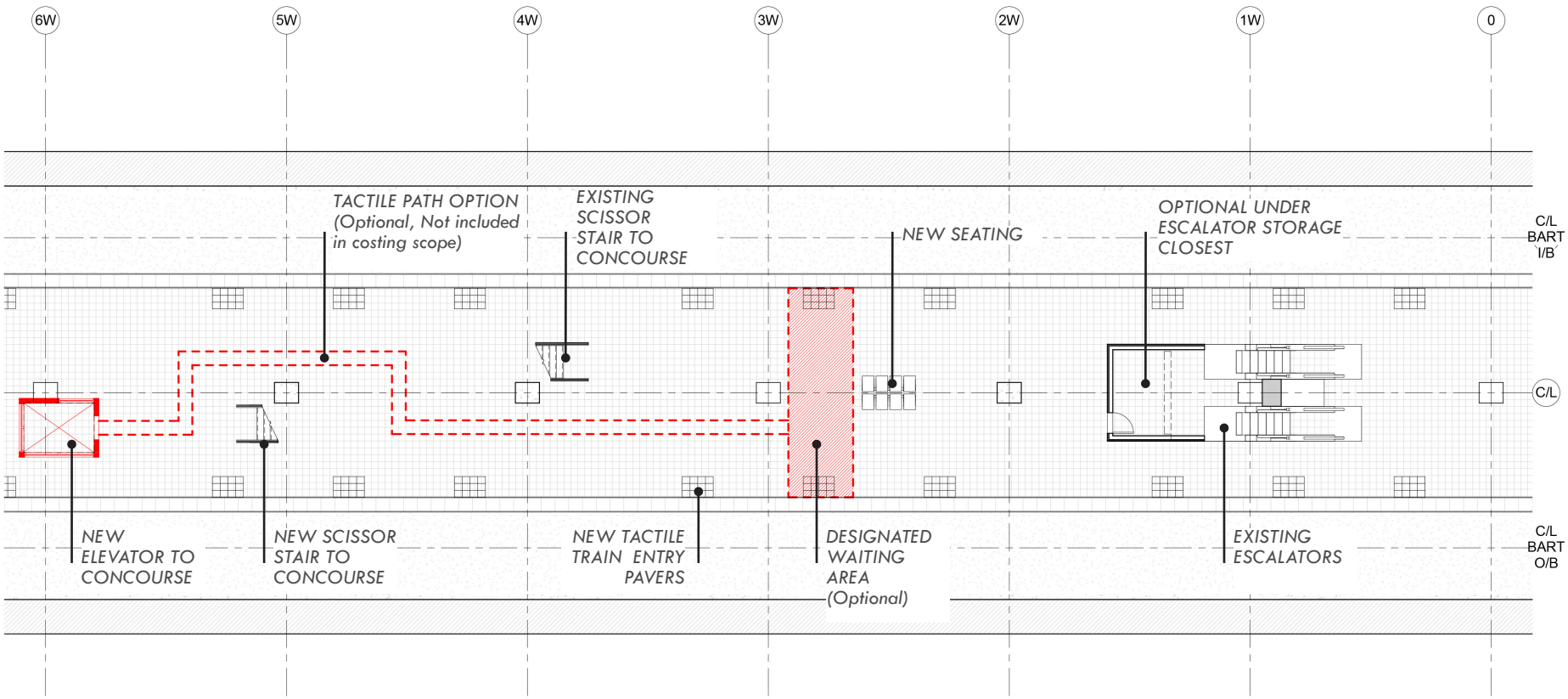
7.20 TACTILE WAYFINDING (NOT INCLUDED IN COSTING PACKAGE)

The Concept explores a designated waiting area at the platform in coordination with off-peak train loading locations, however a policy level decision may be needed before design work proceeds on this issue.

The design team coordinated a meeting between BART staff and Sound Transit to explore options for Tactile Path best practice. Shown above is the recently renovated Main Street SkyTrain Station.

BART SOUTH PLATFORM PLAN (EXCERPT)

FIGURE 7.13



7.21 EMERGENCY EGRESS AND ENCLOSED EMERGENCY STAIRS

This project explores options to accommodate code requirements for the end of station emergency stairs. Due to the design of the existing station box, emergency egress stairs and the update of the ventilation system must be considered in tandem. This is because a large, and potentially out-of-date ventilation system could be renovated with new, smaller fan rooms, etc. to allow for additional stairway egress. The existing emergency fans are original equipment. Fans have never been replaced, (they are maintained with blade replacement, etc.). If potential fan replacement is an option, then this project would enable the stairwell addition. This will require the next phase of engineering assessment.

Unresolved Issues

- City has concerns about pulling in air from street, which gives reason for relocation of the Market Street vent openings. However, in that case, new shafts would need to be constructed off the street. The north shaft relocation would likely be in UN Plaza. The only obvious south vent relocation option is the Market Street sidewalk, given that adjacency of the Orpheum Theatre and Trinity Plaza development will restrict future opportunities for incorporation into new building development.
- VIA recommends a Level 2 engineering assessment of fan relocation and constructability, including coordination with mechanical and structural consultants.
- This assessment was not included in the costing package.

7.22 EMERGENCY SYSTEM IMPROVEMENTS

- Modify undercar deluge system by providing hard-piping and control valves in new emergency stairs.
- Undercar deluge system requires manual hose hook-up to platform standpipe outlets. The hard-piping will improve the overall life safety performance of the underground Civic Center Station.
- Design for undercar deluge system was not included in the costing package.

7.23 PLATFORM SCREEN DOORS

The 2040 load projections for delay conditions indicate that crowding on the platform will approach LOS E conditions (less than 5 SF per person). More frequent train departures in 2040 would alleviate the potential for unacceptable crowding.

Installation of platform edge doors would achieve increased levels of safety and a minor increase in platform area which would help to reduce unacceptable LOS E during delay conditions.

Design for platform screen doors was not included in the costing package.

7.24 REACTIVATE STATION COMFORT VENTILATION SYSTEM

- VIA recommends further assessment
- Potential asbestos abatement
- Potential fan overhauls
- Ventilation air plenum maintenance or replacement
- Ventilation system design was not included in the costing package

7.25 MODIFICATIONS TO EMERGENCY VENTILATION SYSTEM (SEE ALSO EGRESS SYSTEM)

- Ventilation: assessment of the station comfort ventilation system, similar to Powell Street assessment, is recommended.
- Further consideration is needed for relocation of vent shafts out of the Market Street vehicular/ transit ROW.

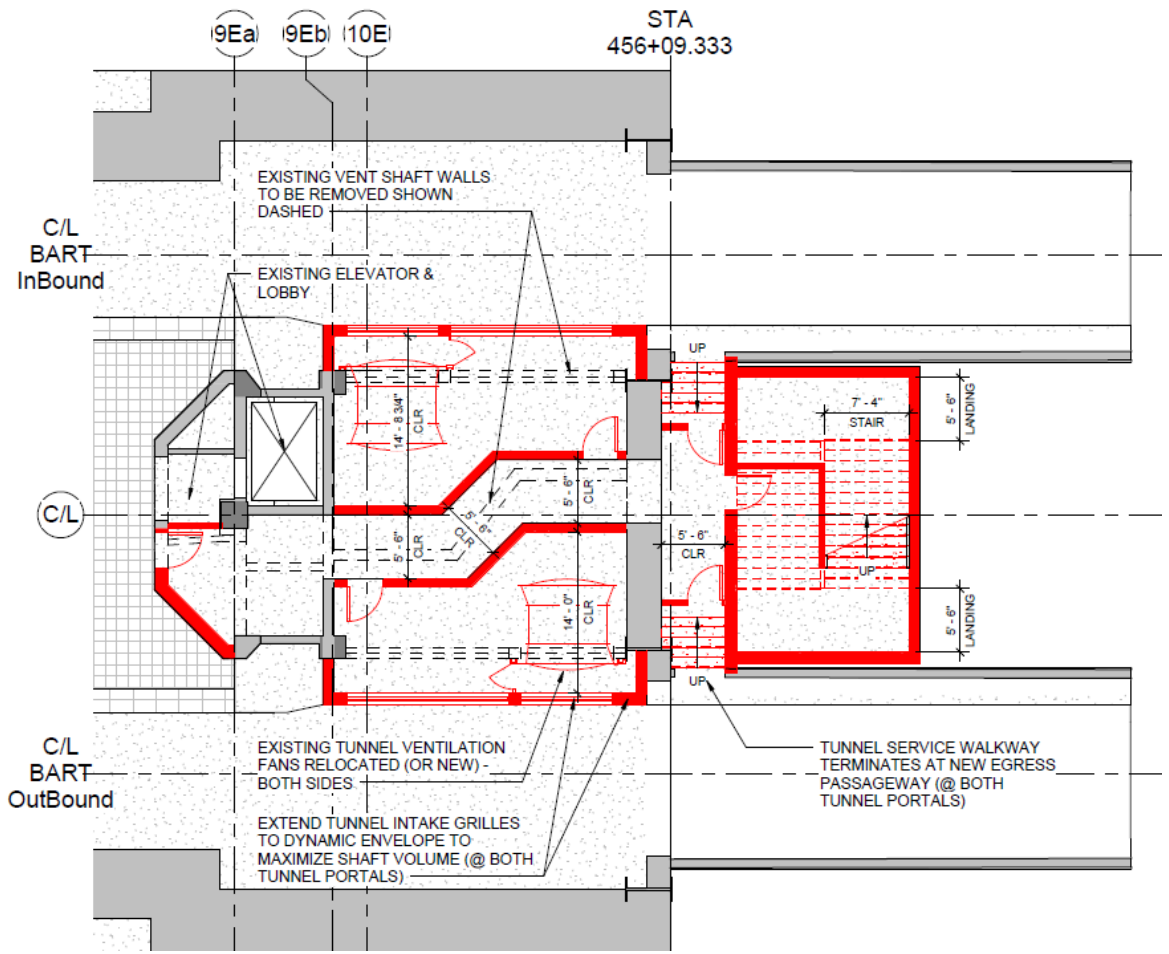


FIGURE 7.14 EMERGENCY EGRESS EXPLORATION

- Modifications needed to fan plant to accommodate enclosed emergency stairs at platform ends beyond station headwalls.
- This was not included in the costing package.

7.26 BART TO MUNI TRANSFER

Transfer options from the BART to MUNI platforms without ascending to concourse level was assessed and confirmed as feasible. Drawings of this scenario are shown in Figure 7.15.

- This scenario could also be completed before the full scissor stair and phased incrementally.
- A fare paid area is required in order to switch between systems (MUNI to BART), if Clipper becomes fully integrated this fare paid area, this would not be required.

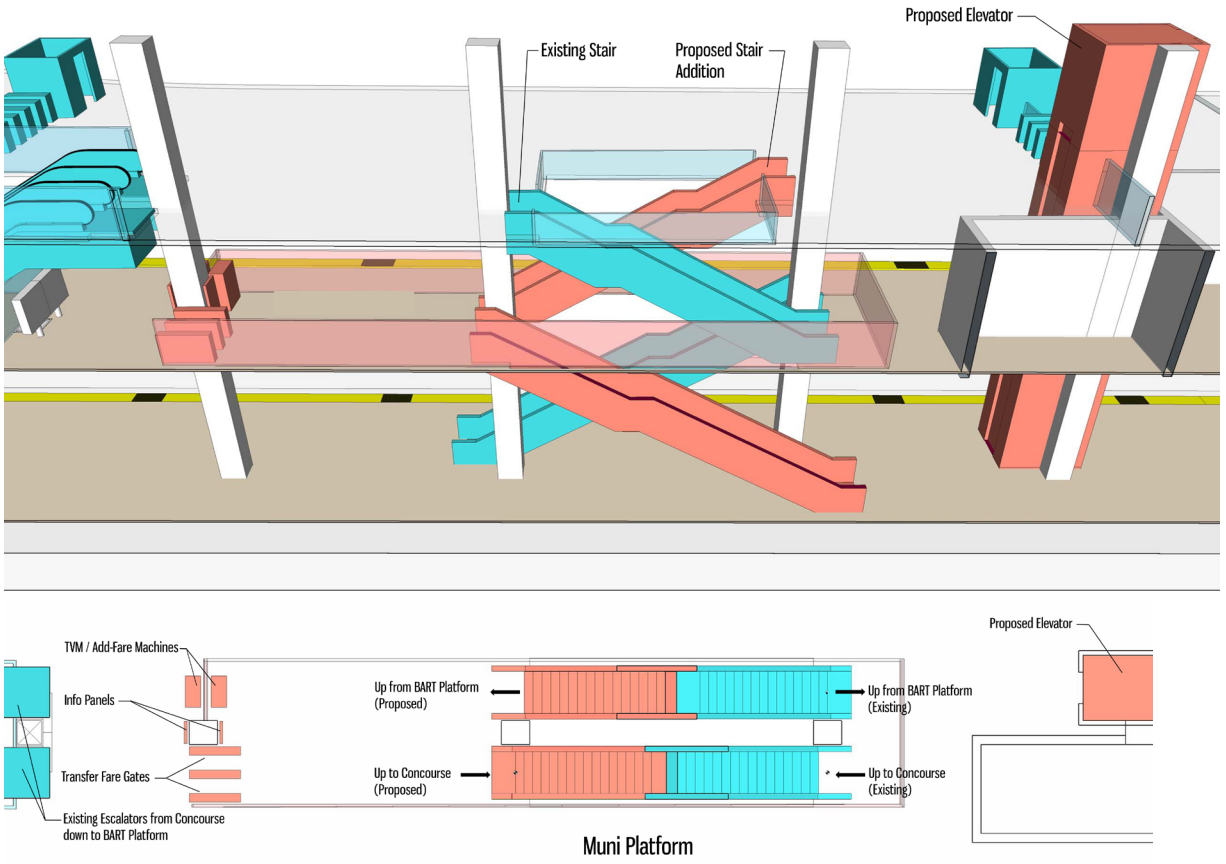


FIGURE 7.15

7.27 PRELIMINARY COST AND PHASING

The following information summarizes a Planning Level Construction Cost Estimate submitted by Martin Lee Corporation on 1/2016, and revised 7/2016. Preliminary costs are based on a drawing package to the 15% level of completion. The following phasing results from a prioritization process conducted internally by BART staff. For project descriptions refer to Chapter 7.0, and project locations - please refer to the Summary Figures located on pages 70-72 or the full costing package.

PROPOSED SEQUENCE	PROJECT DESCRIPTION	PRELIMINARY ESTIMATES
1	**MARKET STREET / ORPHEUM ENTRANCE UPGRADES** (This set of projects to also be timed with the Core Capacity TPSS / Train Modernization Project)	**HIGH PRIORITY**
	This phase bundles the new street canopy with partial stair and escalator replacement at Civic Center's Orpheum Entrance.	
	Install a new escalator (1)	$5,974,800
	Related escalator structural modifications (pit and overrun, balustrade wall, electrical modifications)	$530,551
	Partial stair replacement and modifications at entrance location	$440,450
	Approximately	**$6,950,000**
2	**NORTH AND SOUTH CONCOURSE CEILING REPLACEMENT / CONDUIT MANAGEMENT**	**HIGH PRIORITY**
	This phase bundles the concourse ceiling replacement with concourse lighting upgrades, a new central raceway for conduit management, as well as PA replacement.	
	Ceiling replacement with perforated acoustic panels	$7,690,000
	CCTV upgrades and relocations associated with ceiling replacement	
	PA Speaker Replacement	
	Concourse lighting replacement (2)	$4,010,000
	Conduit management system/ Cable relocations into raceway	$980,000
	Ceiling asbestos abatement (3)	$3,000,000
	(4) **Approximately**	**$15,680,000**

PROPOSED SEQUENCE	PROJECT DESCRIPTION	PRELIMINARY ESTIMATES
3	**STATION PLATFORM UPGRADES**	**HIGH PRIORITY**
	This phase bundles BART platform flooring upgrades with BART platform ceiling and lighting replacements. New wall cladding at the Platform level may also be bundled here, but has not been included in this preliminary cost estimate.	
	Floor refinishing and replacement of platform boarding area paving	$577,000
	Platform ceiling replacement; drop ceilings and raceways	$6,280,000
	Platform lighting replacement	$10,294,000
	Improvements to BART platform wall cladding (not included in costing scope)	
	Addition of small storage/maintenance rooms at BART platform	$248,000
	Removal and replacement of BART platform seating	$184,000
	Approximately	**$17,580,000**
4	**NORTH / SOUTH CONCOURSE AND PASSAGEWAY RENOVATIONS**	
	This phase bundles stair, flooring and ticket wall relocations with wall cladding and and lighting upgrades to both concourses and passageway. (5)	
	Complete existing stair upgrades (3 stairs)	$1,930,000
	Conmplete floor refinishing (Full Concourse)	$720,000
	Complete Ticket wall relocations and reconfiguration in both concourses	$3,000,000
	New wall cladding/ advertising panels in both concourses and corridor passage	$3,290,000
	Complete central passage renovations including lighting and finishes	$1,430,000
	Approximately	**$10,370,000**

PROPOSED SEQUENCE	PROJECT DESCRIPTION	PRELIMINARY ESTIMATES
5	**NORTH CONCOURSE | NORTH GATELINE IMPROVEMENTS BUNDLE (PARTIAL CLOSURES) - PHASE 1**	
	These projects requires partial closures in the North Concourse would require the ongoing use of South Concourse, and the North Concourse South fare gates, MUNI fare gates ticket walls and entrances. In sum, this phase bundle estimates starting renovations to the Northern (east) portion of the Concourse. (6)	
	North Concourse BART station agent booth replacement /relocation to accommodate elevator (North Station Agent Booth)	$1,840,000
	MUNI platform and ancillary space renovations (to accommodate elevator)	$330,000
	North faregates relocation and additions; Removal of metal picket railing and reconfiguration of fare paid enclosures with glass guards	$2,280,000
	North ancillary space renovations for staff facilities – partial or complete	$2,630,000
	Constrution of new public restrooms in North Concourse BART fare paid area	$730,000
	Miscellaneous concourse demolition	$310,000
	Installation of one Concourse to BART Platform Elevator in fare paid area	$5,340,000
	Approximately	**$13,460,000**

6	**NORTH CONCOURSE |SOUTH GATELINE IMPROVEMENTS BUNDLE (PARTIAL CLOSURES) - PHASE 2**	
	This phase completes work on the concourses, and assumes partial closures are feasible due to ongoing use of the new North Concourse/north fare gates and the South Concourse. Refers to 6E to 2E in Preliminary drawing set. These projects would require closure of the south fare gates.	
	North Concourse South gateline station agent booth replacement and relocation	$1,840,000
	North Concourse South faregates relocation and additions (assumes new technology and additional gates) Removal of metal picket railing and reconfiguration of fare paid enclosures with glass guards	$480,000
	Miscellaneous concourse demolition; renovations	$310,000
	This phase also includes the following MUNI Upgrades:	
	MUNI Station Agent Booth Upgrades (one booth)	$1,000,000
	MUNI Elevator to MUNI platform (North Concourse)	$4,150,000
	MUNI Fare paid area renovations	$650,000
	RECOMMENDED DEFERRED UNTIL FUNDING IS AVAILABLE	
	Installation of new internal stairs concourse to platform (scissor stair)	$1,620,000
	Approximately	**$10,050,000**

PROPOSED SEQUENCE	PROJECT DESCRIPTION	PRELIMINARY ESTIMATES
8	**SOUTH CONCOURSE CIRCULATION IMPROVEMENTS (West)**	
	Assumes partial closures possible due to ongoing use of north concourse. This phase could be scheduled to coincide with the Trinity Entrance Passage Construction . Trinity plaza entrance passage not be included in cost estimate. Refers to Line 9W to 3W in the Civic Center Preliminary Costing Drawing Set. (7)	
	Install new Street elevator and elevator machine room in South Concourse to improve ADA access	$4,580,000
	Install new South BART to Platform elevator (Hydraulic with new Elevator Machine Room), and conduct renovations to MUNI platform to accommodate elevator	$6,020,000
	One BART Station Agent booth replacement and relocation	$1,840,000
	Faregate and fare paid area relocation: demolish and install new faregates (10), removal of metal picket railing and reconfiguration of fare paid enclosures with glass guards; relocate MUNI TVM, new information panels	$4,010,000
	Demolish/relocate staff restrooms to accommodate additional fare gates and increased capacity	$80,000
	Miscellaneous demolition	$310,000
	DEFERRED UNTIL FUNDING IS AVAILABLE	
	Installation of new stairs to platform (scissor stair)	$4,030,000
	Approximately	**$20,870,000**

The following options are dependant on potential future configuration and operation changes and has been included for informational purposes only.

N/A	**SOUTH CORRIDOR ENTRANCES AND RENOVATIONS**	
	Option1 -closure of two south entrances and passage to south concourse –approximately $2.1 Million	**$2,096,196**
	Option 2 –Modifications to allow control of entrances and passage to allow reduced operating hours- (coil door, includes lighting and wall finishes)	**$1,500,000**
	Option 3 – Minor modifications to reduce vagrancy- (lighting wall finishes, retail space)	**$1,500,000**

Projects not included in Preliminary Construction Cost Report

- Transfer between BART and Muni platforms
- MUNI platform renovations for direct platform to platform transfers with a Clipper Card upgrade
- Completed upgrades to platform emergency egress capacity -i.e. end of platform enclosed emergency stairs and fan room renovations
- Relocation of vent shaft openings at street level
- BART Platform Screen Doors

NOTES

(1) Canopy is included in separate contract and not included in this estimate.

(2) Wall cladding and finishes should be designed to complement lighting upgrades. Wall cladding should be deferred to later phases after the completion of ticketwalls and major circulation construction.

(3) This line item was added as requested per Tim Chan 7-20-2016, not included in preliminary costing report

(4) Upgrades to Wi-Fi systems may also be bundled here, but are not included in this cost estimate. Costs for wi-fi can be assumed to be similar to Powell Street modernization.

(5) The central connecting passage and possibly the south entrance passage should be closed during major construction phases to provide staging and lay down space. The refinishing and lighting for these areas may need to wait until the north and south concourses are completed

(6) Upgrades to the fare gates and ticket walls and adding elevators and stairs while the station is operating likely requires temporary closure of one fare paid zone, if not an entire concourse, while the other one continues operation. If the north concourse goes first, the south concourse would remain open and would need to handle all of the customer load during the north concourse construction.

(7) The timing of the Trinity Plaza connection could influence the phasing of concourse closures, and may suggest that the major work on the south concourse (stairs, elevators, fare gates and ticketing walls, ceilings, walls and lighting coincide with the next Trinity Plaza construction phase. Otherwise there will be two major disruption phases at the south concourse). Starting with the South Concourse elevator installation will allow for decommissioning of the North Concourse elevator, before work commences.