Appendix G:

Sustainability Projects

Sustainability Projects

Introduction

The Sustainability Projects are independent scopes of work that SFMTA can implement to improve the performance of its facilities and reduce its operating costs. Since the other projects in this report will lead to the reconstruction of several facilities, the sustainability projects focus upon four facilities that will remain largely unaltered through 2030 - Flynn, Green, Green Annex, and Muni Metro East (MME).

The goal of this section of the report is to call attention to sustainability projects that promote employee health, safety and productivity and/or have a short financial payback. There are many improvements that SFMTA could make to its facilities. To narrow focus, we only include projects with especially high benefit for employees and/or financial payback from utility savings of less than 10 years.

Project Summary

Flynn	Description	SF	Cost/sf	Total Savings/sf/yr	Payback (Years)	Employee Benefits
Ventilation/Fan/Lighting Control	Install programmable time clocks to schedule and zone fans/lights	256,447	$0.50	$0.15	3.3	Single location for switching/scheduling equipment on/off, time saver
Lighting Replacement	Replace HID with induction fixtures & integrated daylight on/off sensors	239,021	$2.50	$0.61	4.1	Instant start, dimmable, good color, long lamp life means few burned out lights
Comfort System Replacements	Install new multi-zone split units for office/gilley	17,426	$8.00	-	-	Comfort for employees
Area-Weighted Average Cost & Savings			**$1.69**	**$0.36**	**5**	
Green						
Ventilation/Fan/Lighting Control	Install programmable time clocks for fans/lights	109,211	$0.50	$0.09	5.6	Single location for switching/scheduling equipment on/off, time saver
Ventilation System Replacements	Replace abandoned/unhealthy rooftop heaters and exhaust fans	45,000	$5.50	-	-	Provides healthy, code-required ventilation
Lighting Replacement	Replace HID with induction fixtures & integrated daylight on/off sensors	109,211	$2.50	$0.50	5.0	Instant start, dimmable, good color, long lamp life means few burned out lights
Comfort System Replacements	Install new multi-zone split units for offices	10,000	$8.00	-	-	Comfort for employees
Area-Weighted Average Cost & Savings			**$2.40**	**$0.24**	**10**	
Green Annex						
Ventilation/Fan/Lighting Control	Install programmable time clocks for boiler and rooftop AHUs	29,238	$0.50	$0.26	1.9	Single location for switching/scheduling equipment on/off, time saver
Repair/Replace Comfort Units	Repair/replace rooftop AHUs	25,947	$6.00	-	-	
Air/Water System Balance	Balance existing HVAC systems, repair distribution as needed	29,238	$1.00	-	-	Reduce noise at diffusers, improve comfort in all offices
Boiler Replacement	Replace existing boiler	29,238	$1.00	$0.11	9.1	
Skylight Replacement	Replace blocked skylight with clerestory, schedule some lights off during day	14,619	$20.50	-	-	Fill floor 2 with controlled natural light, manual turn off lights during the day
Area-Weighted Average Cost & Savings			**$4.12**	**$0.08**	**49**	
MME						
Ventilation/Fan/Lighting Control	Install programmable time clocks for fans/lights	130,125	$0.50	$0.13	3.8	Single location for switching/scheduling equipment on/off, time saver
Compressor Installation	Install compressors	45,136	$0.04	-	-	Restore cooling to office areas
Lighting Replacement	Replace HID with induction fixtures & integrated daylight on/off sensors	84,989	$2.50	$0.50	5.0	Instant start, dimmable, good color, long lamp life means few burned out lights
Photovoltaic System	Utilize roof area to generate electricity onsite	130,125	$56.00	$0.94	59.6	Potential to extend Woods PV partnership with SFPUC
Variable Speed Pumping	Install variable speed drives for hot water pumps	45,136	$1.30	$0.05	28.1	
Area-Weighted Average Cost & Savings			**$17.51**	**$0.42**	**41**	
Other						
Presidio - Time Clock	Install programmable time clocks for fans/lights		$0.50	$0.10	5.0	
Presidio - Air/Water Balance	Balance existing HVAC systems, repair distribution as needed		$1.00	-	-	Proper heating control so boilers can run more than 3hrs per day if needed
Presidio - Area-Weighted Average Cost & Savings			**$1.50**	**$0.10**	**15**	
Woods - Ventilation	Install/repair exhaust to mezzanine machine shop		$0.10	-	-	Healthy air for employees
Woods - Area-Weighted Average Cost & Savings			**$0.10**	**-**	**-**	

Sustainability Criteria

The design team has created performance criteria that characterize effective maintenance and support facilities. At the high level, these criteria aim to help SFMTA by:

- helping to create environments that promote employee health, safety and productivity, and
- reducing utility cost and environmental impact.

We intend for these criteria to be a tool for SFMTA during design and renovation of its facilities and to help describe the framework we used to arrive at these sustainability projects.

Report Structure

We introduce sustainability projects at the four main facilities in the following sequence:

1. **Sustainability Criteria** - what sustainability objectives should SFMTA facilities strive to achieve?
2. **Existing Systems -** how do the existing systems support SFMTA?
3. **Projects -** what can SFMTA do to make existing systems better align with the sustainability criteria?
4. **Appendix -** what products and vendors are able to help SFMTA implement the projects?

We group together all projects not associated with these four facilities that will continue service beyond 2030. In general, investments in facilities that will not continue to serve SFMTA are less attractive. We have included these projects because they directly address the health and wellness of employees and/or provide very attractive financial return in the near term.

Assumptions/Disclaimers

The findings in this report are based upon two brief site visits per facility and one interview with an SFMTA building engineer. The goal of this report is to call attention to high priority sustainability projects and describe them at a high level. Additional review of existing conditions and engineering calculations should be conducted prior to implementing these projects.

All pricing is based upon vendor estimates and engineering judgment. Actual costs may vary substantially from those assigned to projects. We assume $0.04/kWh for electricity cost and $0.90/therm for natural gas cost. Financial performance for many measures improves dramatically if one uses market pricing ($0.15/kWh or more) for electricity.

1 Sustainability Criteria

These sustainability criteria should serve as a guide for all SFMTA's facilities - whether new or existing.

Envelope

Roof
- >78 solar reflective index

Roof insulation
- entirely above deck – R-20 continuous
- metal building – R-13 + R-13
- single rafter – R-38

Wall insulation
- metal building – R-19
- steel framed – R-13 + R-3.8 continuous
- mass – R-7.6 continuous

Industrial Doors
- High emissivity paint (south/west)
- R-4.75 rigid insulation in roll up doors
- Roll up < 1 minute

Skylights/Clerestory
- 5-7% prismatic/diffusing glazing to avoid glare/high contrast
- SHGC for skylights <=0.19
- U-value for skylights/clerestory <=0.5
- Splay skylights if more than 2' deep
- AVOID painting over skylights

Windows
- SHGC <0.25
- U-value <0.45
- 45% exterior shading coverage

Lighting

Surface Reflectance
- Ceiling: 50-70%
- Walls: 40-60%
- Furnishings: 25-45%
- Floor: 20%

Energy Use
- Exceed ASHRAE 90.1-2010

Light Level
- Meet ANSI/IES RP-7-1983, American National Standard Practice for Industrial Lighting, Appendix A

Low Bay Criteria
- Visual comfort probability (VCP) > 70
- Unified glare rating (UGR) <= 19
- CRI > = 82
- >=84 lumens/watt
- Lamp life >20,000 hrs
- Color Temp 4000K-5000K
- Program start ballasts (prevent cycling burnout)
- Ballast should be dimmable or stepped with lighting
- Task/ambient lighting for areas requiring more than 30 footcandles

Low Bay Technologies
- T8 linear fluorescent
- Compact fluorescent
- LED

High Bay Type
- Program start ballast
- CRI > = 82
- >=84 lumens/watt
- Lamp life >20,000 hrs
- Color Temp 4000-5000K
- Lumen maintenance > 70%
- Fixture-integrated or system daylight control
- No noticeable buzzing or flickering
- Task/ambient lighting for areas requiring more than 30 footcandles

High Bay Technologies
- LED high bay (not good near benzene or other organics)
- Fluorescent induction
- T8/T5HO linear fluorescent

Lighting Control

- Manual on/auto off for scheduled, steadily-occupied environments – occupancy sensors for other areas
- Task lighting on occupancy sensors or manual on/auto off
- Daylighting dimming
- Dim to 1.2 times normal lit levels (people expect more light with daylighting)
- Daylighting zone = 0.7*ceiling height in every direction

HVAC

Zoning
- By type/time of use
- Co-locate similar use schedules within system boundaries
- Use a system clock to turn the system on/off when unoccupied

Heating System - low bay
- Forced draft boiler - 85% minimum efficiency, compliant with BAAQMD Reg 9, Rule 7 limits
- Variable refrigerant heat pumps
- Convective hydronic heaters
- AVOID unit heaters

Heating System - high bay
- Forced draft boiler - 85% minimum efficiency, compliant with BAAQMD Reg 9, Rule 7 limits
- Radiant mass slab is ideal
- Convective hydronic heaters
- Gas infrared heater where other solutions do not work
- AVOID air-based heating

Heat recovery
- Capture flue gas heat from steam wash with air-to-water heat exchanger

Ventilation
- Variable air volume exhaust/ makeup air with heat recovery
- Vary airflow by scheduling to match ventilation load or by air quality sensing
- Meet ASHRAE 62.1 ventilation requirements

General
- Premium efficiency motors
- Variable frequency drives for motors >5hp
- 100% OA economizers for cooling units over 5 tons
- Explore geothermal heat exchange where possible

Plug Loads

- Vending – Energy Star, delamp display lighting
- EnergyStar appliances and office equipment
- Use energy management software for office equipment

Energy Management

Building Management System
- Include all major electrically-powered equipment

Demand Response/TOU Pricing
- Configure operations strategy to shift electrical demand during off-peak hours where possible
- Wire loads to plan for demand response capacity - isolate loads that can be turned off for 1-2 hours or 4-8 hours

Renewables

Solar Energy
- Explore incentives and evaluate payback
- Exhaust all opportunities to use solar hot water prior to installing solar electric (higher efficiency)
- Orient solar collectors or PV panels at latitude for maximum annual production

Wind Energy
- Investigate for unobstructed sites in wind class 3 or above (average wind >11.5mph)

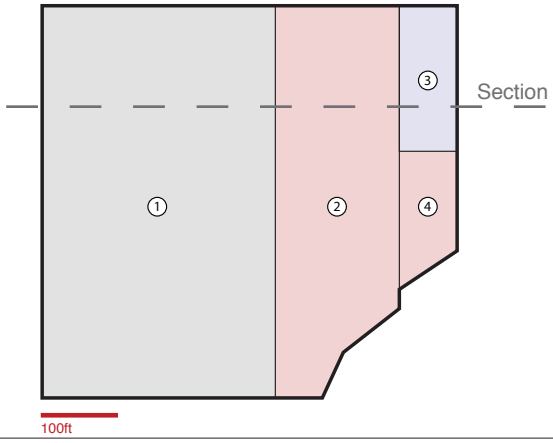
Comfort

- Comply with ASHRAE Standard 55 thermal comfort recommendations in consistently occupied spaces
- Provide warm clothing options for employees, including insulated shoes
- Use floor mats where employees stand on mass floors for long periods of time

Water

- Recycle 80+% of wash water
- Install low flow/no flow toilets and urinals
- Install aerators on lavatories
- Collect rainwater for wash cycle

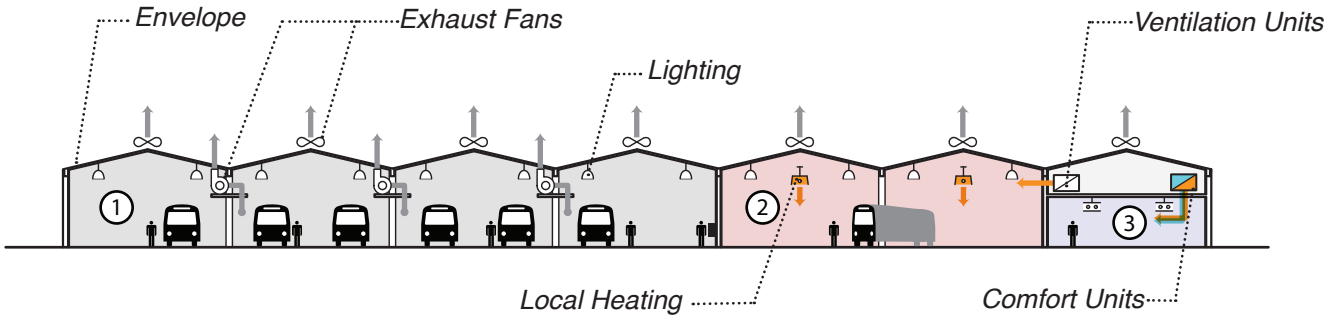
Function



- no services
- ventilation only
- heating only
- heating & ventilation
- heating, ventilation, + cooling

1. fuel/wash/parking
2. maintenance
3. operations + dispatch
4. office + support

Systems



Description

Ventilation Units

- 4x20,000cfm (10hp) fans + gas-fired heaters
- Pressurize maintenance area to protect from parking area fumes
- Operate on a timer from 6am-4:30pm

Local Heating

- ~800ft of high temperature radiant heaters (Corayvac)
- Located over drive aisles, ineffective at warming mechanics

Exhaust Fans

- 12x10hp propeller exhaust fans
- 4x20hp, 9x10hp, 7x15hp, 1x7.5hp general exhaust fans
- Operate 24/7
- Vehicle exhaust pipe connections in service area

Lighting

- Sodium HID lamps
- Some fixtures on a timer maintained by the electrician

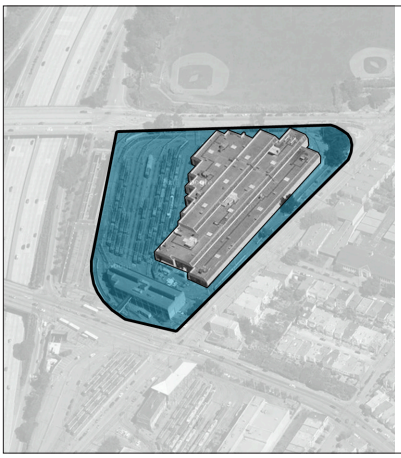
Comfort Units

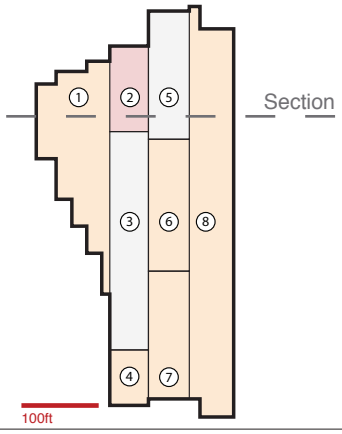
- 1 packaged heating/cooling/ventilation unit for offices
- 1 heating/ventilation unit for Gilley Room - poor temperature control
- Too few zones - electric heater workarounds

Envelope

- Uninsulated metal building, insulated offices

Function

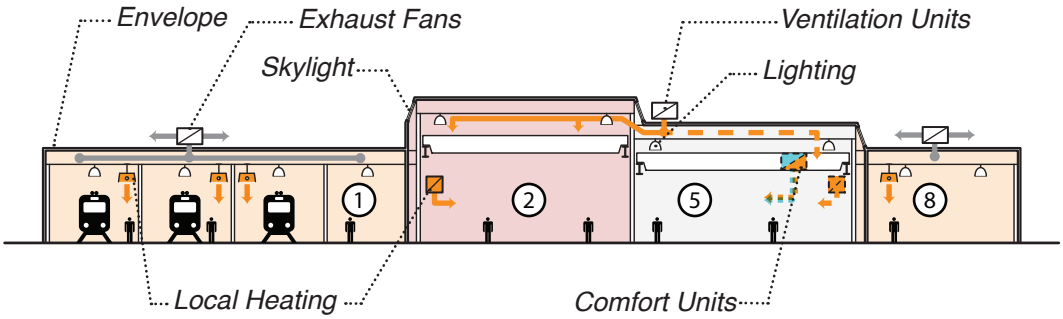




- no services
- ventilation only
- heating only
- heating & ventilation
- heating, ventilation, + cooling

1. running repair (24/7)
2. lift area (24/7)
3. assembly (24/7)
4. machine shop (5d/week)
5. machine shop (5d/week)
6. motor shop (24/7)
7. parts storage (5am-11pm, M-F)
8. sand + wash (24/7)

Systems



Description

Ventilation Units

- 3x~20,000cfm (10+hp) fans + 2,000 MBH gas-fired heaters - rarely used due to air quality concerns, difficult to operate and maintain
- Roof leaks at units
- 1x~35,000cfm fan + 3,672 MBH gas fired heater for paint/body shop

Exhaust Fans

- 4 large exhaust fans serving service bays and wash area – abandoned
- 4 garage fans – one active during site walk

Lighting

- Sodium HID lamps (300+ lamps) - 24/7 use
- T12 fluorescent task lights at motor shop
- T12 fluorescent lights in parts area
- (N) LED site lighting

Comfort Units

- Air-cooled heat pumps at offices
- Diffusers blocked with cardboard

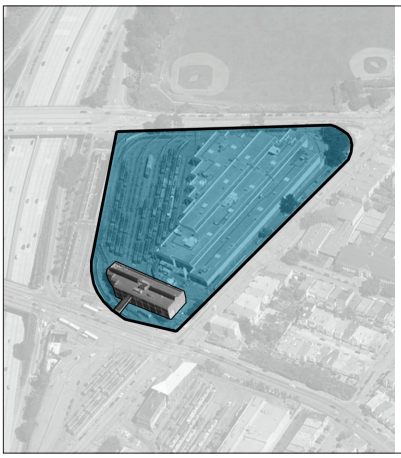
Local Heating

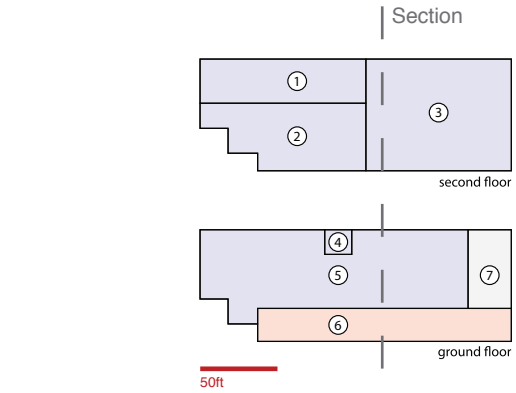
- Corayvac heaters at service bays
- Supplemental unit heaters in shop areas where not conflicting with cranes above

Envelope

- CMU walls
- Gravel roof on metal decking
- Rollup door in area (2) usually open
- Large roof vents, unused

Function

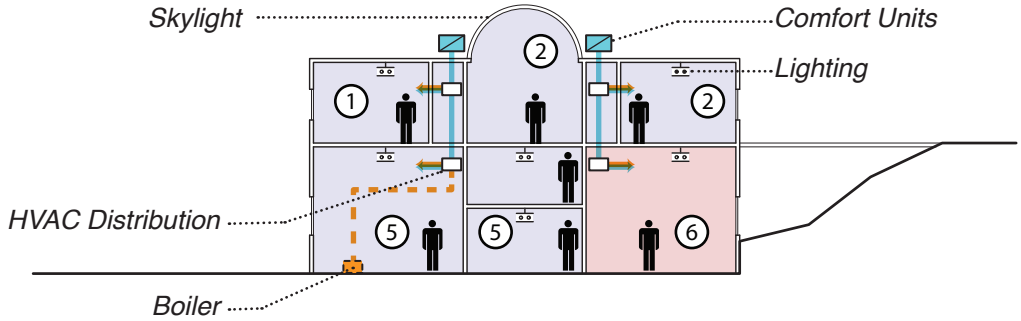




- no services
- ventilation only
- heating only
- heating & ventilation
- heating, ventilation, + cooling

1. operations offices (24/7)
2. operations + gilley (24/7)
3. administration (40hrs/week)
4. meet + greet (24/7)
5. elec/radio shops (5d/week)
6. LRV repair (5d/week)
7. mech/elec

Systems



Description

Comfort Units

- 2x30-ton Trane rooftop units, 10+ years old - one not functioning properly, loud discharge + obstructed intake
- Ventilation poor - leads employees to prop open the entry door

HVAC Distribution

- Ducted terminal boxes with reheat hot water coils
- Room 202 suffers from very high noise, no thermostat
- Poor temperature control in offices, can “store meat” in one corner office

Lighting

- Fluorescent T8 lights in office areas
- Inefficient can lights in entry areas

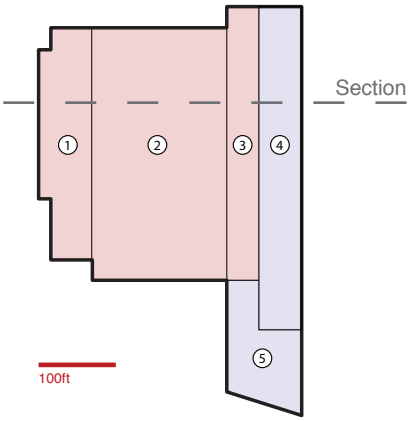
Boiler

- 760 MBH boiler, 1984
- 2hp constant speed hot water pump

Skylight

- Skylights covered over with netting, films, and paint

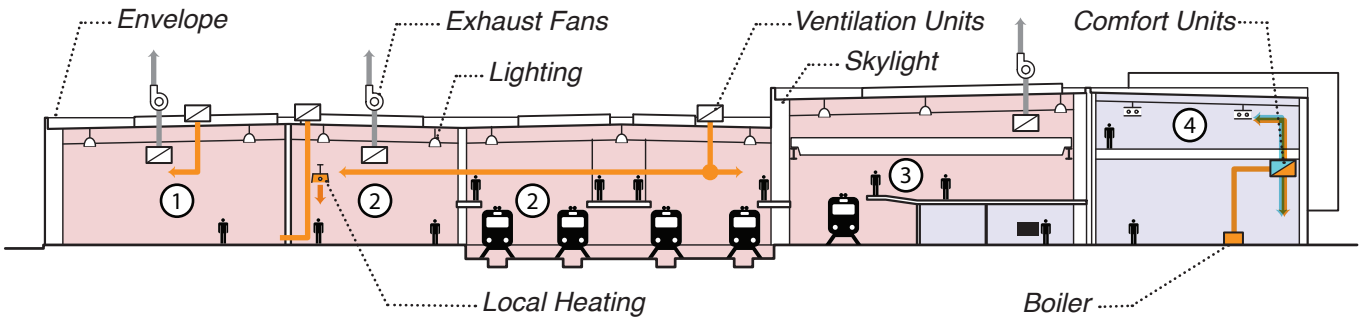
Function



- no services
- ventilation only
- heating only
- heating & ventilation
- heating, ventilation, + cooling

1. paint/wash (night only)
2. maintenance (24/7)
3. lifts/assembly (24/7)
4. administration (40hrs/week)
5. operations (24/7)

Systems



Description

Ventilation Units

- 2x48,000cfm (~15hp) fans + 2,000 MBH gas-fired heaters – repair area
- Rarely used because of noise complaints
- 2x15,000cfm (~7hp) fans + 1,200 MBH gas-fired heaters – wash/service area

Exhaust Fans

- 4x24,000cfm fans for general shop areas, 24/7 operation
- 30 additional small fans for other uses

Comfort Units

- 3 Trane air-handling units for office areas (2x13,000cfm, 1x6,000cfm)
- Compressors not functioning, new compressors purchased but not installed
- Centralized control via computer

Lighting

- Metal Halide HID lamps with magnetic ballast
- T8 fluorescent in office areas

Boiler

- 4000 MBH hot water
- 2x20hp hot water pumps, constant speed

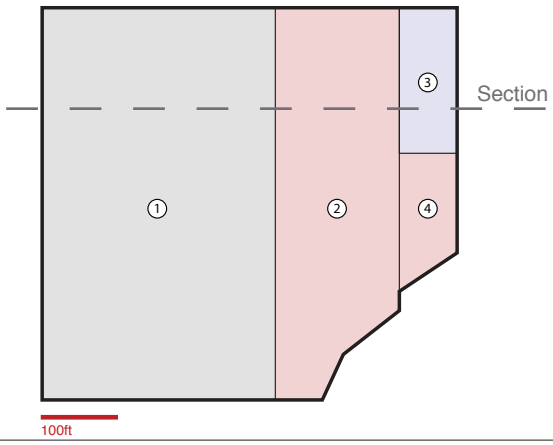
Local Heating

- 18 hot water convective heaters
- After-construction Corayvac system, presumably because ventilation units do not regularly operate

Renewables

- None

Function



- no services
- ventilation only
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- heating & ventilation
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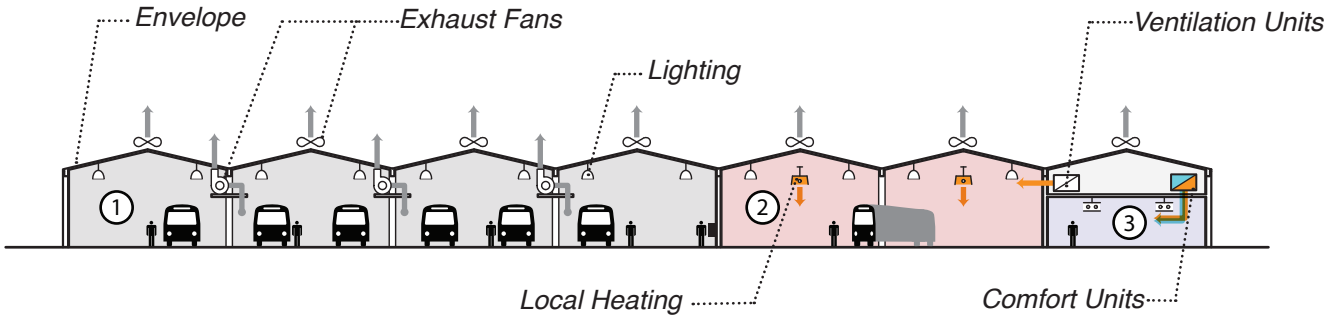
1. fuel/wash/parking
2. maintenance
3. operations + dispatch
4. office + support

Systems



Description

Ventilation Units (4-D)

- 4x20,000cfm (10hp) fans + gas-fired heaters
- Pressurize maintenance area to protect from parking area fumes
- Operate on a timer from 6am-4:30pm
- Install a simple scheduling control system
- Schedule fans to maintain positive pressure in maintenance area vs. parking area

Local Heating (4-C)

- ~800ft of high temperature radiant heaters (Corayvac)
- Located over drive aisles, ineffective at warming mechanics
- Relocate existing Corayvac units from drive aisle to maintenance areas to improve worker comfort

Exhaust Fans

- 12x10hp propeller exhaust fans
- 4x20hp, 9x10hp, 7x15hp, 1x7.5hp general exhaust fans
- Operate 24/7
- Vehicle exhaust pipe connections in service area
- Install a simple scheduling control system
- Schedule fans so total exhaust airflow matches bus contaminants

Lighting (4-B)

- Sodium HID lamps
- Some fixtures on a timer maintained by the electrician
- Replace HID lamps with fluorescent induction lamps
- Install new dimming/timer control system

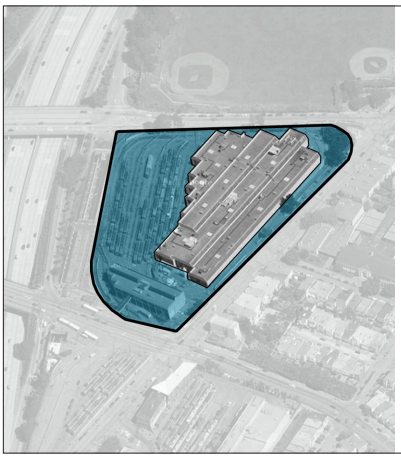
Comfort Units (4-F)

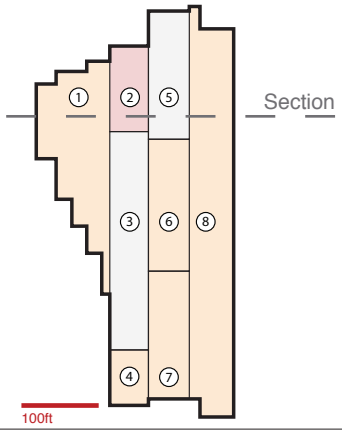
- 1 packaged heating/cooling/ventilation unit for offices
- 1 heating/ventilation unit for Gilley Room
- Too few zones - electric heater workarounds
- Install (N) air-cooled VRF heat recovery system with 4+ thermal zones
- Disable cooling on (E) comfort unit
- Use (E) comfort units for ventilation and preheating only

Envelope

- Uninsulated metal building, insulated offices

Function





- no services
- ventilation only
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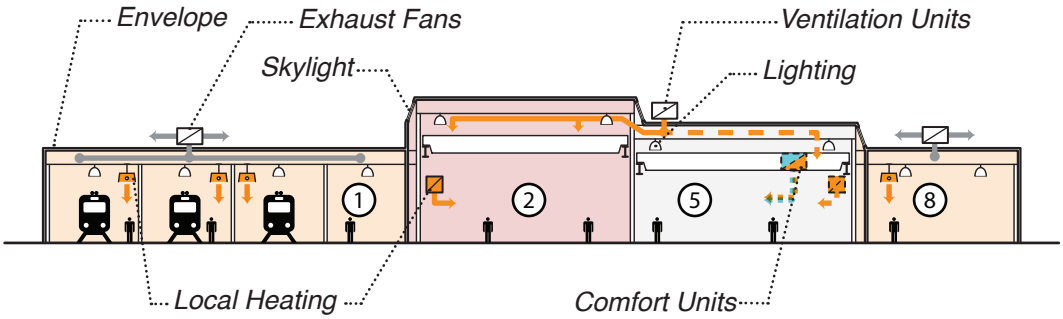
1. running repair (24/7)
2. lift area (24/7)
3. assembly (24/7)
4. machine shop (5d/week)
5. machine shop (5d/week)
6. motor shop (24/7)
7. parts storage (5am-11pm, M-F)
8. sand + wash (24/7)

Systems



Description

Ventilation Units (4-A) (4-C) (4-D)

- 3x~20,000cfm (10+hp) fans + 2,000 MBH gas-fired heaters - rarely used due to air quality concerns, difficult to operate and maintain
- Roof leaks at units
- 1x~35,000cfm fan + 3,672 MBH gas fired heater for paint/body shop
- Demolish 3x20,000cfm units
- Install 4 new 12' fans to mix warm air in shop areas
- Size & install new ventilation units (one for parts area, three for shop areas)
- Install a clock/switch to schedule units based upon occupied hours

Exhaust Fans (4-D)

- 4 large exhaust fans serving service bays and wash area – abandoned
- 4 garage fans – one active during site walk
- Repair garage exhaust fans as necessary, control via schedule or CO sensor
- Replace exhaust fans at service bays

Lighting (4-B)

- Sodium HID lamps (300+ lamps) - 24/7 use
- T12 fluorescent task lights at motor shop
- T12 fluorescent lights in parts area
- (N) LED site lighting
- Replace HID lamps with fluorescent induction lamps
- Provide fixture-integrated light on/off control

Comfort Units (4-F)

- Air-cooled heat pumps at offices
- Diffusers blocked with cardboard
- Replace existing comfort units with air-cooled VRF heat recovery system
- Service parts and offices with separate heat pump zones on central VRF system

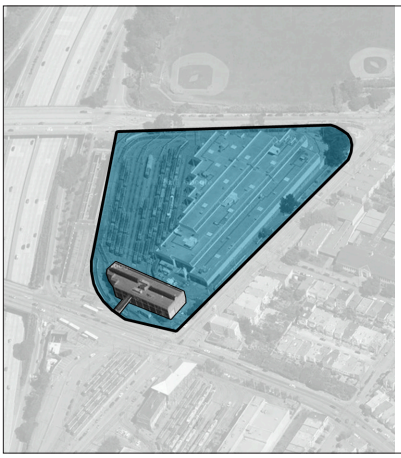
Local Heating

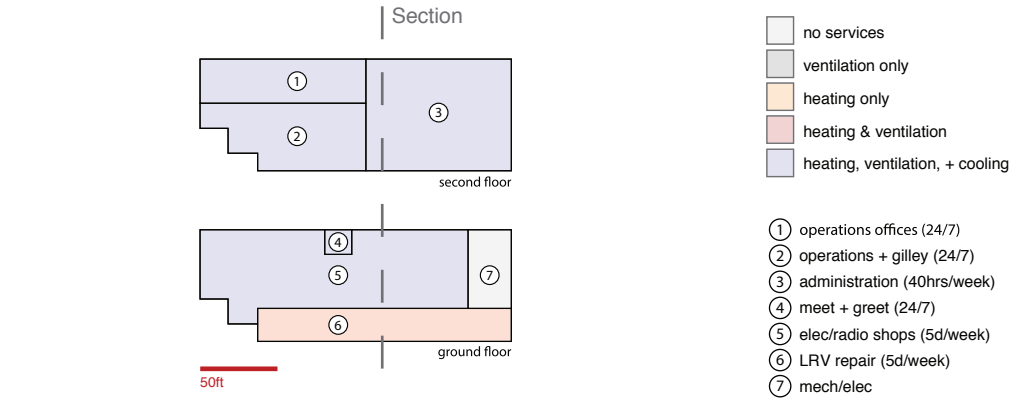
- Corayvac heaters at service bays
- Supplemental unit heaters in shop areas where not conflicting with cranes above
- Abandon supplemental heaters in parts & shop areas when new ventilation units are installed

Envelope

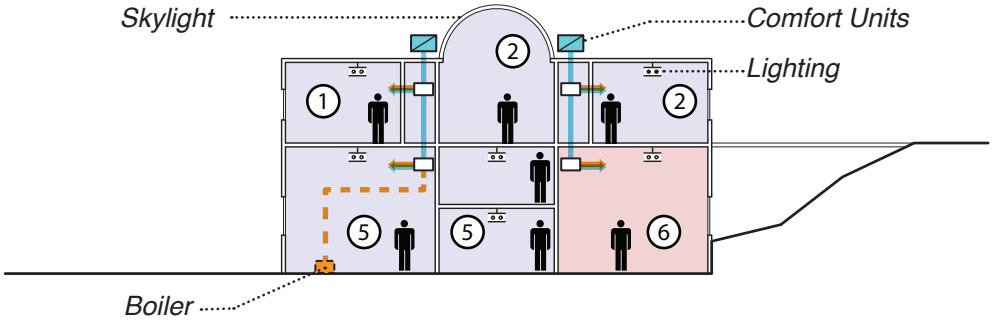
- CMU walls
- Gravel roof on metal decking
- Rollup door usually open
- Large roof vents, unused

Function





Systems



Description

Comfort Units

- 2x30-ton Trane rooftop units, 10+ years old - one not functioning properly, loud discharge + obstructed intake
- Ventilation poor - leads employees to prop open the entry door
- Repair/replace dysfunctional rooftop units

HVAC Distribution

- Ducted terminal boxes with reheat hot water coils
- Room 202 suffers from very high noise, no thermostat
- Poor temperature control in offices, can "store meat" in one corner office
- Perform whole building air and water system balance - make recommended repairs to distribution systems

Lighting

- Fluorescent T8 lights in office areas
- Inefficient can lights in entry areas
- Replace can lights with compact fluorescent or LED fixtures that use less energy and have better color
- Install auto off/manual on control in office areas with part-time use
- Circuit lights near skylight separately so they can be turned off easily during daytime hours

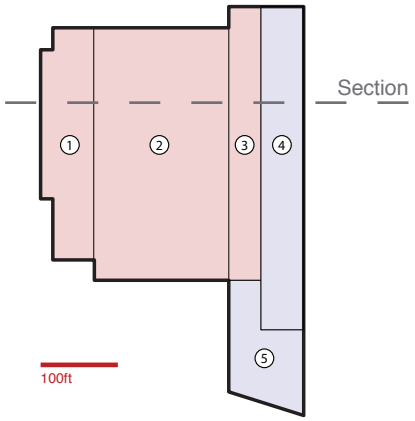
Boiler

- 760 MBH boiler, 1984
- 2hp hot water pump
- Replace boiler with high-efficiency Laars Pennant, or equal

Skylight 4-E

- Skylights covered over
- Remove skylight coverings
- Install 3-ft clerestory to improve light control, thermal performance, and create a vibrant indoor experience

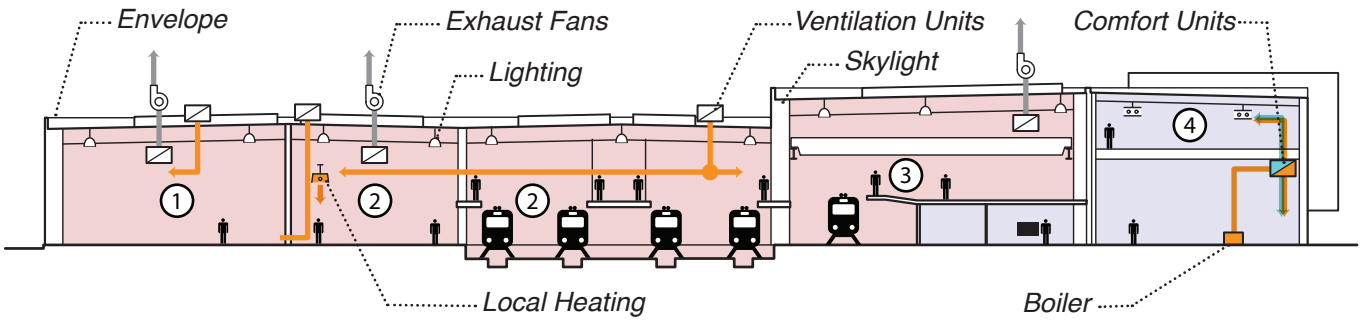
Function



- no services
- ventilation only
- heating only
- heating & ventilation
- heating, ventilation, + cooling

1. paint/wash (night only)
2. maintenance (24/7)
3. lifts/assembly (24/7)
4. administration (40hrs/week)
5. operations (24/7)

Systems



Description

Ventilation Units

- 2x48,000cfm (~15hp) fans + 2,000 MBH gas-fired heaters – repair area
- Rarely used because of noise complaints
- 2x15,000cfm (~7hp) fans + 1,200 MBH gas-fired heaters – wash/service area
- Schedule ventilation units appropriately to address part-load conditions
- Install sound dampening at ventilation units (spring isolators, duct liner, sound traps)

Exhaust Fans 4-D

- 4x24,000cfm fans for general shop areas
- 30 additional small fans for other uses
- Install new clock/switch to schedule fans to match heating + ventilation unit airflow

Comfort Units

- 3 Trane air-handling units for office areas (2x13,000cfm, 1x6,000cfm)
- Compressors not functioning, new compressors purchased but not installed
- Centralized control via computer
- Install compressors to enable cooling
- Schedule AHU-2 for 24/7 operation in existing control system
- Schedule AHU-1,3 for business hour operation in existing control system

Lighting 4-B

- Metal Halide HID lamps with magnetic ballast
- T8 fluorescent in office areas
- Replace HID lamps with fluorescent induction lamps
- Provide fixture-integrated light on/off control

Boiler

- 4000 MBH hot water
- 2x20hp hot water pumps, constant speed
- Install a variable speed drive for each pump + differential pressure sensor
- Replace 3-way valves at coils/heaters with 2-way valves, retain minimum flow capability with bypass

Local Heating

- 18 hot water heaters
- After-construction Corayvac system, presumably because ventilation units do not regularly operate
- Disable Corayvac system once heating + ventilation units are operational

Renewables

- None
- Install photovoltaic panels on the roof, space for up to ~1MW

Presidio

Time Clock (4-D)

- Currently two 20-ton Carrier packaged units provide cooling and ventilation to the training and office areas
- Install a time clock to change these units from 24/7 operation to align with actual operation schedules

Air and Water Balance

- Temperature control is poor where original systems service the space
- Warm/cold complaints especially prevalent in the physical therapy area
- Perform whole building air and water balance, repair/replace control equipment that is not functioning properly

Woods

Ventilation

- The mezzanine machine shop is currently unventilated and suffers from poor air quality
- Extend an existing exhaust fan or install a new fan.
- Provide a path for outdoor air to enter the machine shop.

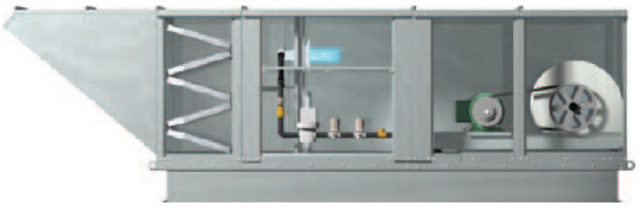
4-A Appendix - Ventilation

Need

Green facility heating/ventilation fans in shop areas are a perceived health risk, are zoned poorly, only manually operable at the roof, and are inefficient.

Solution 1: Greenheck "Greenheat" http://www.greenheck.com/

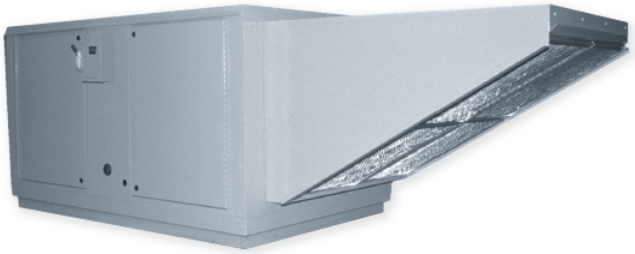
- Recirc outdoor air ventilation/heating unit
- High efficiency burner with 25:1 turndown
- Operates by thermostat control
- In-kind replacement for existing equipment



Tom Lew, Consultant, (415) 467-7600
tlew@norman-wright.com

Solution 2: CaptiveAire CAH-M http://www.captiveaire.com/

- Recirc outdoor air ventilation/heating unit
- Modulating burner
- Operates by thermostat control
- In-kind replacement for existing equipment



Danny Ng, Consultant, (415) 800.4688
danny.ng@captiveaire.com

Comparison

	estimated cost	installation & distribution	SFMTA site
Recommended			
Greenheck Greenheat	$10,000 / 1000 MBH	$30,000 / unit	green
CaptiveAire CAH-M	$10,000 / 1000 MBH	$30,000 / unit	green

Need

Existing HID lights in high bay areas are in many cases noisy, have poor color rendering (safety hazard), require 5-10 minutes to start up, and cannot be dimmed or controlled easily with occupancy or daylight variations. The need is for better performance and less energy use.

Solution 1: Induction Fixtures http://www.everlastlight.com/

- Long 100,000hr lamp life
- ~40% energy saving, best life cycle cost
- Good color rendering, dimmable
- Instant start and restrike
- 70% lumen maintenance @ 100k hrs

Dan Grumney, Greentech Cal, (805) 218-8607
dan@greentechcal.com

Solution 2: 6xT5 Fluorescent Fixtures http://www.16500.com/

- Easy dimming by dual circuiting
- Can integrate sensors & controls easily
- ~40% energy saving, 20,000hr lamp life
- Instant start and restrike
- 90% lumen maintenance @ 20k hrs

Ariel Labra, Consultant, (510) 645-2571
alabra@16500.com

Comparison

	est cost per fixture	lamp life	color quality (0-100)	savings/yr/ fixture
Recommended Induction	$300-$500	100,000hr	85	~$60
LED	$400-$1000	50,000hr	N/A	~$60
6xT5	$70-$300	20,000hr	80-90	~$60
HID (current)	$100-$500	20,000hr	65	-

4-C Appendix - Heating

Need

Heating solutions for the main shops at Green facility must not interfere with overhead cranes. Air-based ventilation units are a convenient solution, but warm air tends to pool inefficiently at the ceiling.

Solution 1: Mixing Fans http://www.bigassfans.com/

- Fits above gantry cranes and between HID lights
- Fans mix heated air to keep it from collecting at the ceiling and provide a breeze on hot days
- Effective pairing for unit heaters and other air-based systems

Chasidi Eason, Consultant, (859) 977-1355
chasidi@bigassfans.com

Solutions 2-4: Heating Approaches

- Corayvac - local radiant heat. Flue can cause overhead obstruction
- Unit Heater - local air-based heat. Flue can cause overhead obstruction
- Rooftop Unit - existing strategy. General air-based heat. 4-A

Recommended

Comparison

	estimated cost	installation	SFMTA site
Recommended			
Big Ass Fan Powerfoil x2.0	$8,000 / fan	$2,000 / fan	green
Big Ass Fan Basic 6	$6,000 / fan	$2,500 / fan	green

4-D Appendix - Equipment Controls

Need

- An easy way to see if devices are on or off
- An easy way to vary exhaust fan airflow to match demand and save energy

Solution 1: Grasslin Time Control http://www.intermatic.com/

- Can schedule operation for up to four electrical circuits (Digi 322 model)
- Ability to program 322 unique operation schedules, flexible
- At least an order of magnitude less expensive than a software-based control system
- Not computer-based, does not indicate status of equipment

GRASSLIN TIME & ENERGY CONTROLS

Intermatic Sales, 815-675-7002

Solution 2: Spinwave Wireless http://www.spinwave.com/

- Computer-based, wireless control system
- Can schedule loads on/off and indicates their status on a computer
- Requires a wireless device at each piece of equipment and signal repeaters to strengthen wireless communication
- Cost depends heavily upon signal and equipment count

SpinWave Systems

Rainer Wischinski, VP Marketing, (978) 392-9000x227
rwischinski@spinwavesystems.com

Comparison

	estimated cost	estimated installation	SFMTA site
Recommended			
Grasslin	$700 / device	$2000 / device	all
Spinwave	$500 / device	$300 / device	all

4-E Appendix - Skylights

Need

- Occupants of Green and Green Annex facilities have painted or covered over skylights because glare and heat impair their ability to work.

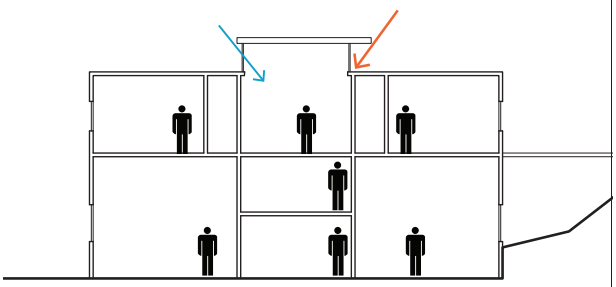
Solution 1: Kalwall http://www.kalwall.com/

- Can often be installed in curved existing mullions
- Diffuses light, mitigating glare and solar gain
- Provides 2x-3x better insulation than existing single pane glass

Charlie Kennedy, Collier Building Specialties, (415) 467-9235
charlie@colliersf.com

Solution 2: Create Clerestory

- Provides solar control - admits north light while shading southern summer heat
- Provides the benefit of insulated roofing
- Reduces the amount of glazed surface area
- Adds contemporary design aesthetic
- Less expensive than replacing existing glazing



Comparison

		estimated cost	approximate area	SFMTA site
Recommended	Kalwall	$100 / ft^2	3,000 ft^2 (150 ft x 20 ft)	green annex
	Clerestory	~$100 / ft^2	900 ft^2 glass + 3,750 ft^2 roof	green annex

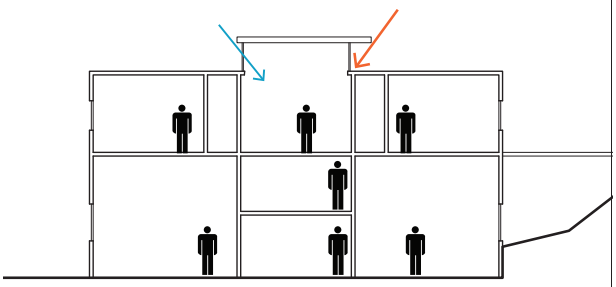
4-F Appendix - Comfort Systems

Need

- HVAC systems for offices tend to be simple single zone systems tasked with keeping dissimilar spaces comfortable. Employees have expressed their disapproval by bringing electric heaters and covering over diffusers.

Solution 1: Variable Refrigerant Volume (VRV) http://www.daikinac.com/

- An outdoor unit absorbs (heating) and rejects (cooling) heat
- Indoor units provide heating and cooling service
- Many indoor units can be attached to one outdoor unit, making flexible zoning possible
- Heat recovery type units use simultaneous heating and cooling to reduce energy use
- Cost driven by number of zones and capacity, but can is often less than traditional VAV systems



Tom Lew, Consultant, (415) 467-7600
tlew@norman-wright.com

Comparison

	product cost	install cost	SFMTA site
Daikin	$2,300/ton	-	green, flynn
Mitsubishi	$2,300/ton	10%-20% less	green, flynn

Appendix H:

Traffic Signal Space Requirements

SFMTA Traffic Signal Shop

Preliminary Space Program

Space Name	Existing	Proposed				Remarks
		Space Standard		Qty.	Space	
	sq. ft.	dimensions	sq. ft.		sq. ft.	
OFFICE AND CREW SPACES						
Manager	275	20 x 14	280	1	280	
Engineer	250	16 x 16	256	1	256	
Electrician Supervisors	200	16 x 16	256	1	256	shared between 2
Dispatcher	200	14 x 14	196	1	196	
Programmer	0	14 x 14	196	1	196	
IC Programming	200	14 x 14	196	1	196	
TMC	200	14 x 14	196	1	196	
Training Room	275	20 x 14	280	1	280	
Conference Room	750	30 x 25	750	1	750	
Computer Room	200	14 x 14	196	1	196	
Men's Restroom	130	8 x 16	128	1	128	
Women's Restroom	130	8 x 16	128	1	128	
Subtotal	2,810				3,058	
Circulation		30 %			918	
Total Office and Crew Spaces	**2,810**				**3,976**	
SHOP SPACES						
Cabinet Test Area	975	30 x 40	1,200	1	1,200	
Component Test Area	575	30 x 20	600	1	600	
Work Desk Area	2,050	50 x 45	2,250	1	2,250	
Framework Assembly Area	1,000	20 x 50	1,000	1	1,000	
Compressor Room	0	15 x 10	150	1	150	
Subtotal	4,600				5,200	
Circulation		20 %			1,040	
Total Shop Spaces	**4,600**				**6,240**	
INDOOR STORAGE SPACES						
PALLET RACK STORAGE						
Wire Area	200	20 x 10	200	1	200	
Lamps & Heads	5,250	55 x 100	5,500	1	5,500	
Other Storage	3,925	70 x 56	3,920	1	3,920	
Small Parts Storage	820	40 x 22	880	1	880	
Secure Tool Storage	0	20 x 15	300	1	300	
Subtotal	10,195				10,800	
Circulation		10 %			1,080	
Total IndoorStorage Spaces	**10,195**				**11,880**	

SFMTA Traffic Signal Shop

Preliminary Space Program

Space Name	Existing	Proposed				Remarks
		Space Standard		Qty.	Space	
	sq. ft.	dimensions	sq. ft.		sq. ft.	
OUTDOOR / YARD STORAGE SPACES						
Pole & Signal Adaptor Storage	22,000	200 x 110	22,000	1	22,000	Can be stored indoors if space permits
Dumpsters/Recycling Storage	7,400	100 x 75	7,500	1	7,500	Needs to be in secured area
Subtotal	29,400				29,500	
Circulation		10 %			2,950	
Total Outdoor / Yard Storage Spaces	**29,400**				**32,450**	
AGENCY VEHICLE PARKING						
1 Ton and under	6,500	10 x 20	200	22	4,400	Currently outdoor - indoor preferred
1 Ton and over	6,000	10 x 35	350	8	2,800	Currently outdoor - indoor preferred
Subtotal	12,500				7,200	
Circulation		75 %			5,400	
Total Agency Vehicle Parking	**12,500**				**12,600**	
EMPLOYEE PARKING						
Employees	3,200	10 x 20	200	22	4,400	
Visitors	400	10 x 20	200	5	1,000	
Subtotal	3,600				5,400	
Circulation		75 %			4,050	
Total Employee Parking	**3,600**				**9,450**	

Appendix I:

Evaluation of TOD/JD Potential

SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY
REAL ESTATE & FACILITIES VISION FOR THE 21ST CENTURY

DELIVERABLES #7A & #7B: EVALUATION OF TOD/JD POTENTIAL, LAND USE PLANS, AND SCHEMATIC DRAWINGS

Prepared by:
Keyser Marston Associates, Inc.
Prowler, Inc.
Gensler

September 2012
Revised January 2013

Table of Contents

[Note: SFMTA has made no decisions regarding declaring individual sites surplus, nor on proposed changes in functions of facilities or land development. Ranges of estimated values are estimates of current value and are intended only as "order of magnitude" estimates to enable decision-makers to decide whether to pursue dispositions.]

I. BACKGROUND & EXECUTIVE SUMMARY

SFMTA seeks to partner with the development community to replace obsolete SFMTA facilities, meet public needs, and generate revenues to address capital needs. Such innovative public/private partnerships have proven successful in jurisdictions nationwide.[1]

The consultant team has been charged with establishing criteria for selection of SFMTA-owned development sites, identifying candidate sites, proposing and analyzing potential uses and massing for those developments, assessing their revenue potential, and outlining disposition strategies. SFMTA has contracted with consultants for specific recommendations on three mutually selected sites in addition to the Chinatown and Yerba Buena/Moscone Central Subway sites addressed in a companion document (Central Subway Transit Oriented Development Opportunities, April 2012.)

The three sites selected for consideration as development sites are Presidio, Potrero and the Upper Yard. Presidio and the Potrero Yard were built in 1915 and 1914 respectively and are functionally obsolete and in need of replacement. The Upper Yard, recently rezoned to accommodate housing, is no longer needed for SFMTA purposes. For these and other reasons discussed below, the consultant team believes that these three sites represent the best short term opportunities to meet SFMTA's Real Estate policies.

The consultant team recommends the following development approaches (described in greater detail in later sections of this report):

Presidio: With permitted heights of 40' – 160' spread over 5.75 acres, the Presidio Yard and office building represent a significant development opportunity. Electric trolley maintenance and storage should remain in place in a rebuilt and modernized facility and Overhead Lines operations would be moved from the seismically unsafe Bryant Street location. Functions housed in existing office building are relocated to other SFMTA-owned sites and the obsolete 1915 building is removed. Proposals largely conforming to surrounding uses and to existing height and bulk controls could yield an estimated order of magnitude value for planning purposes of: **$20 million to $40 million ($1.6 million to $3.2 million per year on ground lease/air rights lease basis)**

Upper Yard: Consistent with the Balboa Park Station Area Plan, the consultant team recommends that this site be combined with the adjacent BART property and developed for rental apartments. Estimated order of magnitude value for planning purposes: **$4.5 million to $9 million ($360,000 to $720,000 per year on ground lease/air rights lease basis), representing the combined SFMTA/BART site**

Potrero: This electric trolley facility has reached the end of its useful life and should be replaced, with current functions or diesel lines replaced on site in a new facility. Above the new facility, mixed use or a campus suitable for tech or knowledge-sector users

[1] See Deliverable 3, Peer Practices

would be built along with a central open space. Rezoning from the current "P" zoning would be required. Estimated order of magnitude value: **TBD**

II. PROCESS & CRITERIA

Prowler, Inc, Keyser Marston Associates (KMA), and Gensler collaborated with Parsons Brinckerhoff to identify SFMTA sites that could lend themselves to either Transit Oriented Development (TOD) or Joint Development (JD). These models differ in that TOD assumes a site without ongoing SFMTA operations while JD would be a joint use of a site, perhaps with the private partner responsible for construction of the on-site SFMTA facility to SFMTA's specifications.

The consultant team was guided by SFMTA's real estate policies of May, 2008 (below) and by additional criteria developed with SFMTA staff.

The key principle in assessing potential development sites is the priority of SFMTA operations. Development should enhance – not interfere with - the SFMTA's mission of providing transportation services to the public. Looking forward, the consultant team was directed by SFMTA staff to use the 2030 fleet growth projections as a guide to future needs. Should SFMTA modify its projections, additional site developments could be offered.

To better understand the operations of individual facilities and the relationships among them, team members with expertise in architecture and planning, real estate development and economics participated along with SFMTA staff and Parsons Brinckerhoff in workshops, site visits, and interviews.

a) TOD/JD POLICIES:

SFMTA TOD/JD policy[2] calls for the use of property to:

1) Increase the use of public transit, bicycling, walking, and ridesharing through coordinated land use policies and development that support long term system capacity without negatively impacting transit operations;

2) Generate new revenue[3] by maximizing the value of land; and

3) Promote a high-quality, sustainable urban lifestyle."

Additional policies for SFMTA consideration could include:

- Improve SFMTA operations where possible
- Leverage new development as a catalyst for public/private partnerships to replace aging and obsolete SFMTA facilities and infrastructure
- Maximize revenue generation to SFMTA

[2] The consultant team understands that SFMTA's TOD/JD policy has never been formally adopted by the SFMTA Board. SFMTA will be considering updated Policies in 2013.
[3] Note: SFMTA's Property Policy does not encourage land sales. Therefore, ground leases or air rights leases with ongoing land payments rather than a lump sum payment, are anticipated at this time.

- Generate revenues to SFMTA sooner rather than later
- Minimize complexity of public-private partnership
- Address City-adopted Smart Growth goals

b) Development Site Selection Methodology

The consultant team toured 36 sites to become familiar with site conditions, operations, and neighborhood contexts. For each site, Gensler architects researched existing and potential zoning and other constraints. For the Presidio, Upper Yard, and Kirkland sites, the consultant team reviewed existing development analyses. Appendix A includes a listing of all the sites.

c) Site Assessment

Consultant team grouped SFMTA sites into three categories:

- **Highest potential** (the three selected for short term action, addressed in greater detail in a later section):
  - *Presidio:* The Presidio Yard's first floor Geary rail car barn opened in 1913 and the second floor offices were added in 1915. In 1949, the trolley bus yard was opened on the north side of the building. However, the entire facility is antiquated, and few of the functions it serves are accommodated properly. The site is zoned P-Public with a 160' height limit on the southern third and 40' height limit on the remainder. Joint Development offers the chance to replace the aging facility, generate significant revenues, contribute toward the City's housing supply, and create a Transit Oriented Development.
  - *Upper Yard:* No longer needed for SFMTA purposes, the Upper Yard is proposed for residential development in the recently adopted Balboa Park Station Area Plan. It is the only SFMTA site that may be surplus to Agency needs in its entirety.
  - *Potrero:* This facility has been in operation since 1914 and should be replaced (for more on the conditions of this site as well as Presidio, please refer to the "Site Visits and Interview Documentation" deliverable, Parsons Brinckerhoff, April 2012). This 4.4-acre site, while currently zoned for "P" for Public use, could work well as a low-rise office or tech campus and possibly with some housing, with a modern rail or diesel facility below.
- **Second Tier Potential**: While these sites have potential for future development, consultants consider them in a second tier of opportunities.
  - *Cameron Beach*: Although this site will have limited demands if Historic streetcar maintenance is moved to Muni Metro East, the ongoing need to circulate streetcar lines around the site would make development problematic.
  - *Kirkland Bus Yard*: In reliance on the SFMTA 2010 Fleet Plan, consultants have determined that there is an ongoing need for this facility at this time.

- o *5th and Mission Garage and Performing Arts Garage*: There is additional development potential at these two sites, with the possibility of hotel air rights development at 5th and Mission and residential development at the Performing Arts Garage. Nonetheless, the complexity of these opportunities leads the consultants to recommend the pursuit of disposition of sites which better meet the goal of minimizing complexity.

- o *Surface lots:* Agency staff and consultants concurred that the surface parking lots are not a high priority at this time for rezoning and redevelopment. Consultants recommend that given staff and resource constraints as well as cost-benefit ratios, surface lot disposition and development should remain a lower priority for the SFMTA until higher priority goals are achieved, unless additional resources are made available.

- o *Overhead lines facility at 1401 Bryant Street*: Built in 1893, this unreinforced Masonry Building has retrofit need estimated at $21 million (2005 estimate). Although the area is undergoing revitalization as tech companies grow in the city, the cost of seismic rehabilitation makes this a poor candidate for private development. Once Presidio is developed, this facility will be surplus to SFMTA's needs and could be disposed of.

- o *Moscone Garage*: This facility is occupied at an average rate of 50-60% and has poorly designed and underperforming retail spaces. It is expected that as part of the Moscone Expansion project SFMTA will be approached to consider participating in a demolition and replacement of this garage.

- o *Lombard Garage*: Usually half empty, this facility is located close to the Union Street shopping district and may be a good candidate for eventual redevelopment or disposition.

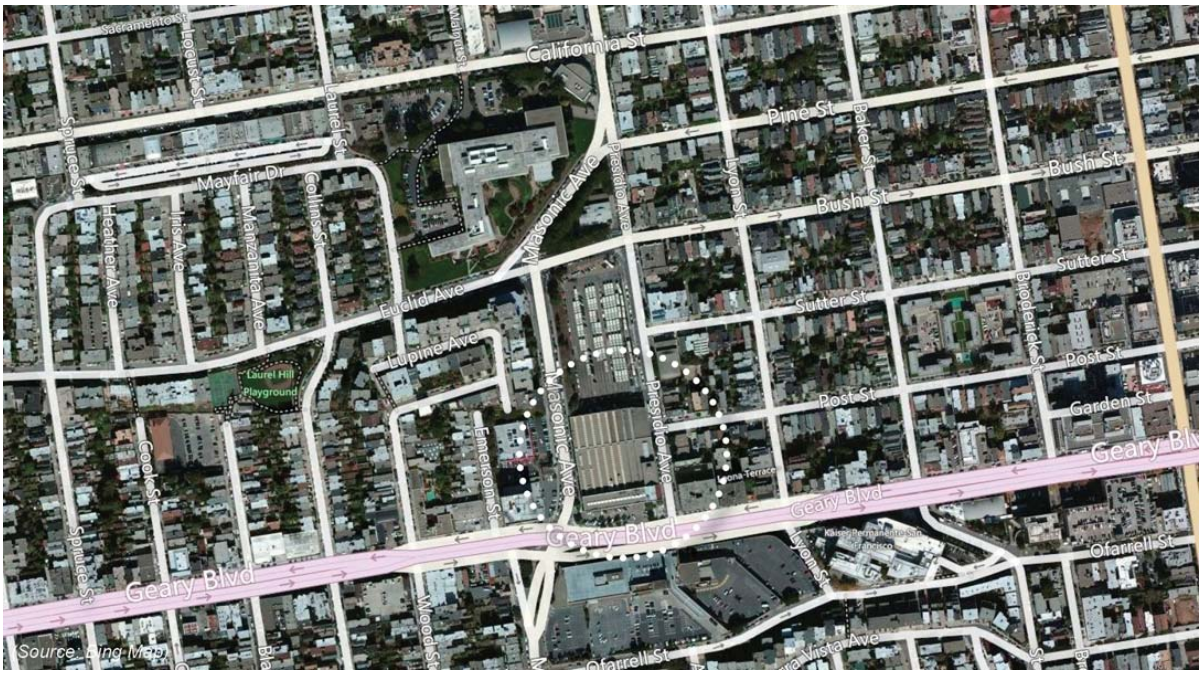
- **Little to no potential**:
  The remaining sites are not good candidates for redevelopment either because the entire developable area is in use for SFMTA functions or because of site or context constraints. Sites remote from urban amenities or otherwise unattractive to developers were rejected. In addition, those facilities performing heavy repair functions such as Woods facility could create noise and odor issues which reduce value for TOD or JD.

PRESIDIO

I. Background & Context

SFMTA's Presidio Yard is located on a 5.75-acre site bounded by Geary, Presidio, Euclid, and Masonic in the Laurel Heights area of San Francisco. The site's topography is sloping from the high point on the Geary and Masonic sides on the south and west respectively to the low point on the northern side toward Euclid. Due to its topography, much of the site enjoys excellent views of the city to the east and to the north.

Geary Street is a busy east-west thoroughfare and is a major transit corridor leading to downtown from the Richmond District and neighborhoods in the central parts of the city. Across Geary to the south is a shopping center which includes Best Buy, Office Depot, and a new Target store (formerly Mervyn's) slated to be open in 2013. Within walking distance on Geary is the Kaiser Permanente Medical Center. Other notable uses within close walking distance are Trader Joe's (across Masonic), the UCSF Laurel Heights administrative complex (across Euclid), the Jewish Community Center (on California), the University of San Francisco Lone Mountain campus, and the California Avenue retail corridor providing a range of retail/food establishments and services including banks and drug stores. The surrounding area is also home to well established and desirable residential neighborhoods including Laurel Heights, Presidio Heights, and Lower Pacific Heights. The Presidio site is located near the 1, 1AX/BX, 2, 31AX, 38, 38AX/BX, 38L, and 43 Muni bus lines. In addition, a future bus rapid transit (BRT) line is being planned along Geary.



The northern approximately 3.25 acres of the Presidio Yard is used as an outdoor layover facility for approximately 165 electric trolley buses (ETBs). The yard is also used for vehicle washing and for SFMTA employee parking. The southern approximately 2.5 acres of the site is improved with about 163,000 sq. ft. of buildings housing various SFMTA facilities. The northern end of the building facing the yard is a trolley coach maintenance facility. The southern end of the building facing Geary is the original 1913-1915 building which served as Muni's headquarters for many years but is now mostly vacant.

Consultant team members from Parsons Brinckerhoff have determined that the northern portion of the Presidio Yard is an essential facility for effective SFMTA transit operations, and therefore needs to be retained/rebuilt as a modern electric trolley bus yard and bus maintenance facility. Parsons Brinckerhoff is also recommending that the Presidio site incorporate a new facility for the fleet of overhead lines maintenance trucks that are currently housed in the seismically unsafe Bryant Street facility. Therefore, the Presidio site has been analyzed assuming that the existing yard remains in its current size and basic configuration, and that a new maintenance and overhead lines facility is rebuilt as part of a new private development/joint development project. The feasibility of decking over the open yard is unknown.

The current building on site has been determined to be functionally obsolete and the few uses that remain in the administrative building, such as Operator Training, Reprographics, Employee Assistance Program (EAP), and Schedules have been slated to be moved or can be moved to other SFMTA locations. As a result, once the existing maintenance facility has been temporarily relocated, the southern portion of the site can be vacated by SFMTA and can be developed with private transit oriented development (TOD) or joint development (JD).

In order for the SFMTA maintenance facility to be rebuilt, the Presidio operations will have to be moved temporarily to the Flynn Division during construction at Presidio[4]. Careful consideration will need to be made regarding the timing and logistics of temporarily moving Presidio's ETB fleet in order to avoid as much as possible interruption in transit functions (the timing of which is further described later). It is noted that the temporary fleet relocation will be needed whether or not private development occurs on the southern portion of the Presidio site because the maintenance facility needs to be rebuilt in any event. In addition, integrating the new private development with the ongoing SFMTA transit functions will require thorough planning and coordination between SFMTA and the private developer to ensure compatibility between the uses over the long run.

II. Highest and Best Use

The highest and best use for any development site is influenced by a wide variety of factors, among which are: risk associated with local regulatory approvals, market demand, availability of capital financing, and financial feasibility. These factors are summarized below.

a) Regulatory Approvals

The value of any development site is directly a function of what can be built on the site from a regulatory and entitlements perspective. The level of regulatory approvals that still needs to be obtained translates into a developer's time, money, and risk, and therefore a site's entitlement status impacts land value. This is particularly true in San Francisco where land use approvals can be difficult to obtain depending upon the development's impact, real or perceived, on the surrounding neighborhood. Since the current zoning for the Presidio site is "P-Public", a land use rezoning is necessary to allow any private development. Given the land uses and character of the surrounding neighborhood, the consultant team has concluded that the land use most likely to be achievable through a rezoning of the site is residential, with building height and bulk

[4] As further described in the later section regarding the Potrero Division, the consultant team recommends pursuing joint development at Presidio first, followed by Potrero. Both projects will require temporary relocation to Flynn. It is noted that Parsons Brinckerhoff does not believe at this time that replacement of the Potrero facilities is any more urgent than Presidio. See Appendix F, the section of the Vision report addressing facility solutions.

mostly consistent with current designations. The consultant team also believes that residential would achieve the highest return to SFMTA while at the same time producing much-needed housing supply in the city.

ZONING

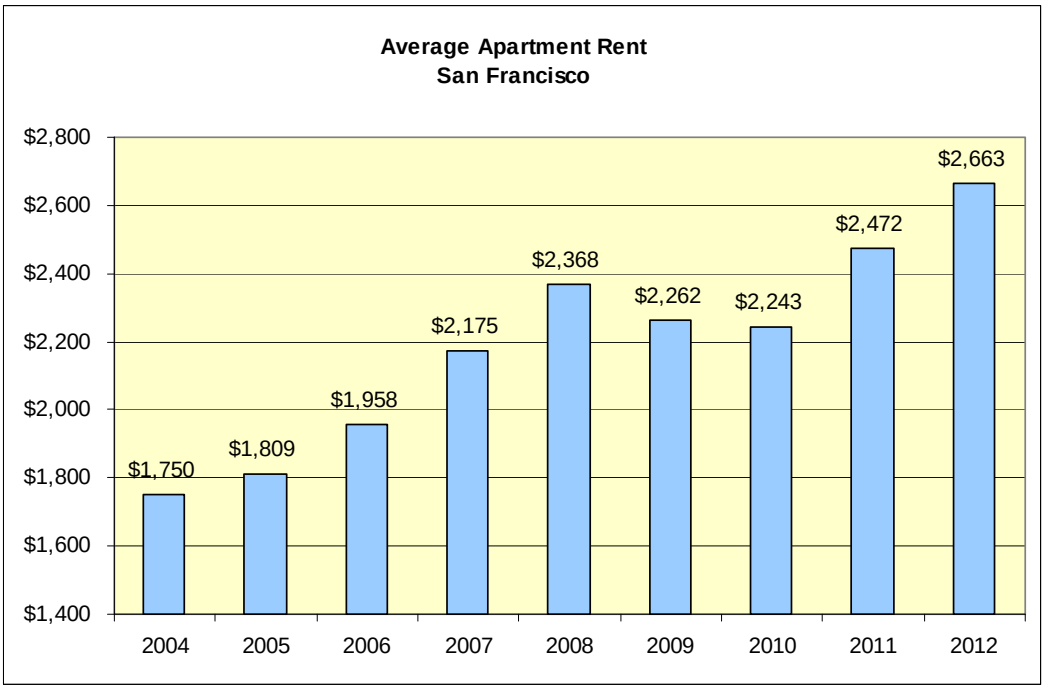
HEIGHT AND BULK

b) Market Demand

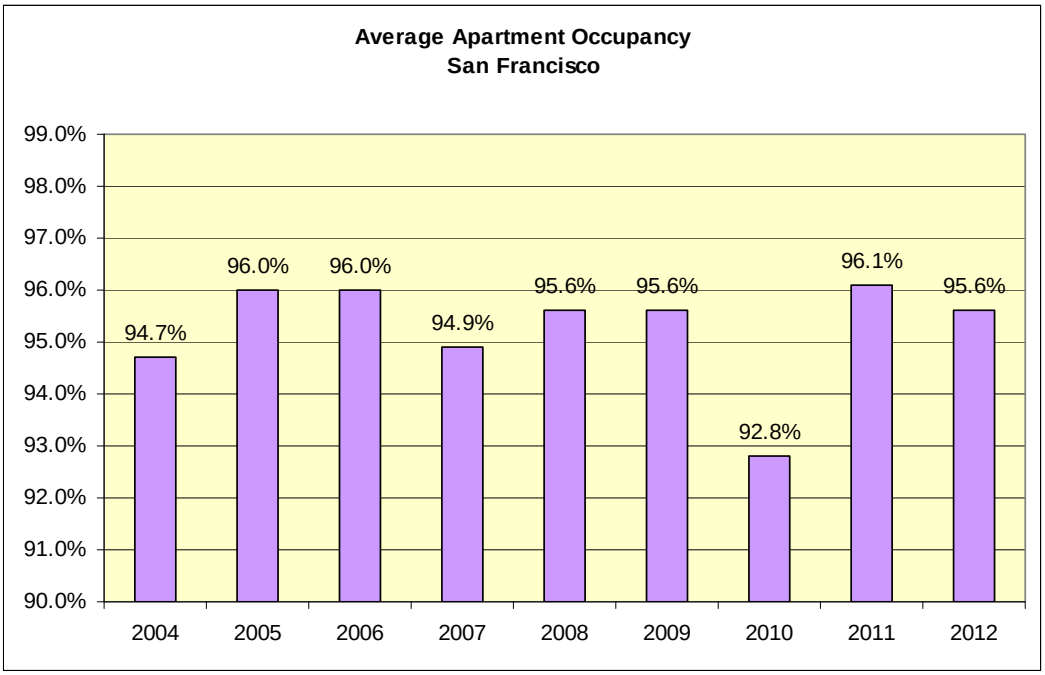
From the mid- to late-2000s, the San Francisco housing market was dominated by for-sale condominium projects, especially in SoMa, Rincon Hill, and Mission Bay where many high-rise and mid-rise condominium projects were developed. After a pause in virtually all real estate development as a result of the shock in of the capital markets in 2008/2009 and from the lingering effects of the recession, the last two years has witnessed a sharp rebound in the San Francisco housing market, this time in the favor of rental apartments. This jump in activity for apartments has been fueled in significant part by the return in the availability of capital financing and by rapidly rising apartment rents. A key reason for the jump in demand for apartments is the strength of job growth in "new economy" industries such as high tech, social media, and biotech/life sciences, as well as to larger demographic and lifestyle changes that has resulted in the growing demand for housing in urbanized areas by both young professional (generation-Y) and empty nesters drawn by the city's cultural amenities.

There is currently high market demand for rental apartments throughout San Francisco, and particularly in desirable neighborhoods such as Laurel Heights and the neighboring Western Addition and Japantown where there are higher concentrations of multifamily apartment developments. These neighborhoods benefits from their central location, convenience to downtown jobs and proximity to retail, restaurants, and services.

Current market metrics are indicative of the apartment market demand. Average citywide apartment rents have risen from $1,750 in 2004 to $2,663 in the first quarter of 2012, while average citywide apartment occupancy rates have improved from a low of about 93% in 2010 to a very healthy 95.6% in the first quarter of 2012.



Source: RealFacts



Source: RealFacts

Market demand for residential use at the Presidio site is further strengthened by the fact that the site has excellent views to both the east and north, which adds significantly to the value of the property. Finally, there are very limited opportunities to develop significant numbers of new housing units in this densely populated and built out part of the city, thereby contributing to the imbalance of supply and demand. A recent report by the Planning Department indicates that there are three large residential projects either approved or planned in this part of the city (i.e. in the Planning Departments Western Addition sub-district) representing a total of 400 units, including for-sale, rental, and below market rate units. The areas in the city with the most planned residential growth are Hunters Point and Parkmerced.

Given the fact that development at Presidio will not occur for several years, market demand will likely be different at the time development is ready to occur. Nonetheless, given the historic and continuing demand for new housing opportunities in San Francisco, and given the city's high barriers to entry for new development, the consultant team is confident that market demand will remain strong for a residential project (rental or for-sale) at Presidio into the foreseeable future.

c) Capital Financing & Financial Feasibility

The availability of capital financing is an important factor contributing to property values. The last few years have seen a significant increase in the availability of conventional debt and equity for both existing built apartment properties and new apartment construction. For strong real estate markets in 24-hour gateway cities like San Francisco, capital for apartment investment is now available and at a relatively low cost. The low cost of financing is a result of global economic challenges, driving down yields on stocks, bonds, and other investments. Multifamily residential is currently the single strongest real estate investment sector.

The aforementioned escalation of apartment rents in San Francisco has contributed to the financial feasibility of new apartment projects, despite the high cost of land and construction in San Francisco. Because of the strength of the local rental housing market, capitalization rates

(cap rates) for apartment developments in the city and other strong markets like the Peninsula and parts of Silicon Valley, are at or near their strongest levels in many years. Again, it is important to note that real estate markets are cyclical and that residential market conditions will likely be different to some degree when the Presidio project is ready to be built in several years.

Financial feasibility of the specific development concept envisioned for the site has been tested on a preliminary basis and is discussed further in Section IV.

Highest and Best Use Conclusions

Based on an assessment of the aforementioned factors, the consultant team has determined that the land use at the Presidio site that is most likely to gain governmental approvals and yield the highest value is a new residential project that is mostly consistent with existing building height and bulk designations. Residential use would be consistent with the surrounding neighborhood, although traffic, historic preservation, and view impacts are issues that would need careful examination prior to any new development on the site.

The consultant team is aware that there have been discussions in the past to develop the Presidio site with retail uses, specifically for a large format general merchandise store. The consultant team considered this as a use on the Presidio site, but concluded that it would not result in the highest value given the relatively low rents that large format retail tenants tend to pay.

The cost of decking over the yard, though unknown, would be substantial because fleet maintenance would require a ceiling height of 22 feet and column spacing would have to permit adequate bus circulation. The value of the housing above the deck, while limited by the 40 foot height limit, could nonetheless be positively affected by view premiums. Decking over the yard would have the added benefits of making the site more attractive for the neighborhood as well as protecting the yard's facilities from the elements. SFMTA could consider inviting developers bidding on Presidio South to also propose development schemes for Presidio North, conditioned upon the satisfaction of SFMTA's operational needs.

III. Preliminary Development Concept

> *[Note: the concept plan studied for this assignment was prepared for purposes of a yield analysis for programmatic purposes (i.e. number of units, building square feet, number of parking spaces, etc.) and does not reflect any SFMTA decisions regarding project design. It represents a mix of land uses and building layout that could reasonably be achievable given existing zoning, the character of the surrounding neighborhood, and given what is currently known about the physical constraints of the site. All of these factors would be studied further if and when SFMTA decides to pursue joint development.]*

As an exercise to analyze the Presidio Yards residual land value, the consultant team studied a preliminary concept plan for just the southern portion of the Presidio site ("Presidio South") consisting of two residential towers up to 160 feet in height on the Geary end of the site and lower rise residential development (up to 40 feet) on the balance of the site. These building heights are consistent with existing zoning. In total, this preliminary concept plan yields approximately 425 residential units with an average unit size of about 825 sq. ft. The ground floor of the building facing Geary would be reserved for common amenities for the residents as well as possibly for small-scale retail uses such as a café. A relatively small amount of neighborhood serving convenience retail may be an ideal use along the Geary Street frontage especially if it is the location of a transit stop (bus and future BRT) along this busy transit corridor.

As currently contemplated, the new SFMTA facilities would occupy the entire lower level of the development with the housing located above it as depicted in the conceptual building section below. Due to the sloping site conditions, the retail use on the Geary frontage would be at grade.

A possible alternative solution for the SFMTA facilities would be for the overhead lines trucks facility (which occupies roughly half the lower level of the building) to be stacked above the bus maintenance facility on the northernmost portion of the building, thereby allowing for the possibility that at least the two housing towers could be developed on a separate parcel and achieving a physical separation between the SFMTA and the residential uses. This arrangement might be preferable for the housing project but would require further study to ensure operational effectiveness for SFMTA. A detailed evaluation of alternative layouts of the SFMTA facilities is an important exercise to be undertaken by the consultant team during the predevelopment/planning period.

In order to accommodate the rebuild of the SFMTA facilities, the current Presidio fleet would need to be temporarily moved to Flynn and then moved back when construction of the new SFMTA facilities are complete. The potential timing of this temporary move is outlined in Section VI.

The ongoing SFMTA operation may present some operational issues relative to the new residential units as it relates to traffic circulation and noise, though it is noted that electric trolley buses are less noisy and cause less fumes than do diesel buses. To partially mitigate these issues, the concept plan pulls back the residential units from the yard so that there is some distance between the units and the yard itself. The consultant team believes that housing and SFMTA transit facilities can be compatible uses within a joint development project. The concept plan described herein represents only one approach for the integration of the uses, and it would be expected that further refinements and study would be undertaken of design alternatives. For example, a deck over Presidio North could increase compatibility while improving the operation of the Yard.

IV. Preliminary Revenue Projections & Financial Feasibility

This section discusses the possible disposition proceeds that SFMTA might expect to achieve from disposition of only the Presidio South site. The feasibility of decking the yard and constructing housing above is not known, therefore only the Southern portion is addressed in this exercise. It is assumed at this time that the site will be ground leased to a private developer and that the developer will either make annual ground rent payments for the project or pre-pay the rent in a capitalized, up-front payment. The assumption of a ground lease, rather than selling the site in fee, is based on SFMTA's preference to retain fee ownership of its land holdings (SFMTA policy factor #2, SFMTA Policy Governing the Acquisition, Sale, Lease and Use of Real Property, May 12, 2008). If as a policy matter SFMTA were willing to sell the fee interest in the land rather than ground lease, the site could also be developed with for-sale condominiums as well as with apartments, which would provide additional flexibility to accommodate changing market conditions over time and might achieve greater land values for SFMTA when the condo market fully recovers.

a) Apartment Land Values

As mentioned previously, values of both existing apartment developments and apartment development sites in San Francisco have generally been on the rise over the past few years consistent with improved market conditions and availability of capital financing. Sales of existing

apartment buildings in San Francisco have recently been in the range of $400,000 to $500,000 per unit with low capitalization rates. The higher values and lower cap rates are generally reflective of premium Class A properties in solid locations.

In Mission Bay and Rincon Hill, where there have been multiple land transactions in the past two years, apartment land values have generally been in the range of $75,000 to $115,000 per unit, or between roughly $250 to $1,000+ per land sq. ft. depending on whether the building will be mid-rise or high-rise[5]. Other recent apartment land sales have occurred in SoMa (in the range of $50,000 per unit), Mid-Market ($75,000 per unit), and Lower Nob Hill (in the range of $70,000 to $80,000 per unit). Other apartment projects that are in construction or nearing construction do not offer comparable land sale data because the sites were purchased many years ago and likely no longer represent current market values.

The value of the Presidio site for apartment development will benefit from being one of the few new apartment developments in this part of the city, unlike other areas of the city where there are numerous new apartments to choose from (such as Mission Bay). But perhaps the most exceptional aspect of the Presidio site is the views that can be achieved from virtually all floors of the project, with even greater views achievable in the upper floors of high rise buildings along Geary. While detailed view studies have not yet been performed, many of the units in the project will have expansive views of the city and San Francisco Bay in both the eastern and northern directions. As noted previously, the Presidio site is also located in an established and highly desirable neighborhood with convenient proximity to downtown jobs.

At this early planning stage, and given the many unknowns at this time, estimating the possible land value in a wide range is considered a pragmatic approach. The range of land values can be refined if a “Stage 2” due diligence assessment is performed. Factors that would be studied in further detail at that time would include:

- Geotechnical conditions affecting the costs of excavation and preparing the site for development;
- Potential traffic impacts and mitigation measures;
- Historic preservation issues;
- Political and neighborhood goals for development of the site;
- View studies evaluating both impacts on neighboring properties as well as the view potential from the project itself;
- Detailed analysis of housing/SFMTA integration issues including vehicle access points, noise and fume impacts, and possible building code factors (fire walls, ventilation, etc.);
- Detailed sequencing plan and logistics of temporarily moving SFMTA transit operations to the Flynn Division;
- Evaluation of legal, operational, and economic issues related to the potential business agreement alternatives with the developer

Given the preliminary stage of project planning and analysis, only an order-of-magnitude estimate for preliminary planning purposes can be made regarding the Presidio site’s land value. On this preliminary basis a land value in the conservative range of $50,000 to $100,000

[5] Source: CoStar comps. Note: some development sites in these areas do not have affordable housing obligations.

per residential unit is assumed[6]. While the site clearly offers many positive attributes that increase the land value, there are also offsetting factors such as the large number of units (for a project which does not lend itself well to phasing), the fact that the project requires rezoning, the fact that the project requires the high cost of Type I construction (steel or concrete), and the fact that the SFMTA facilities will remain an integral use of the site, which may not be perceived as "ideal" by the project's residents. At $50,000 to $100,000 per unit, the 425-unit concept plan project would yield in the rough range of $20 million $40 million, or roughly $180 to $360 per land sq. ft. at 2.5 acres. The annual ground rent would approximate $1.6 million to $3.2 million per year, assuming an 8% ground rent factor.

b) Financial Feasibility

For planning purposes, Keyser Marston has prepared a preliminary development pro forma in order to test the financial feasibility of the housing portion of the development concept and the associated land value range. The intention of the preliminary pro forma is to estimate the costs to develop the project (private project only; the cost of the SFMTA facilities are considered separately) and the annual rental income that could be expected from operations, in order to assess whether the development project's return (profit potential) is at a sufficient level to attract the necessary private capital and developer interest. The development pro forma indicates that a land value in the $20 million to $40 million planning range is supported by the development economics of the concept plan project.

It is reminded that the financial feasibility analysis and land valuation at this early stage is only on an order-of-magnitude basis to help guide SFMTA policy decisions regarding whether or not to proceed with joint development. Again, it would be expected that a more rigorous analysis would be conducted as planning efforts progress to the next stage. In addition, it is emphasized that land values change over time based on fluctuations in real estate markets, which is important because the Presidio South project will not be built for several years.

c) Costs of SFMTA Facilities

The costs of replacing SFMTA's facilities at the Presidio Division and SFMTA's funding options thereto are addressed in a separate section of the larger Vision Report. It is reminded that replacement of the obsolete facilities at Presidio is needed whether or not joint development occurs.

V. Disposition Strategies

Given the high value location of the Presidio site and the potential for ±400 units as contemplated in the concept plan, there is little doubt that the development opportunity will generate widespread interest by private developers. Nonetheless, there are important steps that the consultant team recommends SFMTA take before soliciting development proposals: (a) achieve internal SFMTA commitment on facility consolidation and funding, (b) perform additional due diligence of the development opportunity, and (c) perform outreach to the community and other government agency partners. These three tasks are briefly discussed below.

[6] The land value range assumes that any residential project on the Presidio site satisfy the citywide affordable housing requirements (15% on site or payment of in-lieu fees based on 20%). It is noted that any change to the city's affordable housing requirements, which may come about if the Housing Trust Fund goes on the November ballot, would likely affect land values.

a) Internal SFMTA Commitment

Before a developer solicitation document (RFQ/ RFP) is circulated for development of Presidio South, there will need to be agreement by senior leadership of SFMTA that the administrative functions currently housed in the Presidio building are no longer needed at their current location, and that the overhead lines maintenance facilities will get moved from the Bryant Street facility to Presidio. SFMTA should also develop a detailed operational and funding plan for the new SFMTA facilities at Presidio so that a private developer will have a high level of certainty of what SFMTA facilities will exist at the site over the long term and how the costs of such a facility will be funded (including a combination of developer funding and SFMTA bonds or federal/regional grants). Finally, SFMTA will have to be committed to the improvements at other facilities (such as electrifying Flynn) in order to make development at Presidio and Potrero possible. The more certainty that SFMTA can bring to the process from the outset, the less risky the development opportunity will be to outside developers.

b) Additional Due Diligence

If and when SFMTA makes the determination that the Presidio South site can be developed with private uses, it is recommended that SFMTA engage in additional due diligence and site planning that builds upon the conceptual planning and financial analysis contained in this report. Additional due diligence efforts might include initial site studies such as geotechnical, traffic, and historic studies; more detailed site planning work such as view studies, floor plans, and unit plans, refined cost estimating; additional market analysis and value testing; and detailed housing/transit integration studies. This additional level of project analysis will provide a greater degree of confidence in the project that could be developed and the expected values that could be achieved for both the developer and SFMTA.

During this period of additional due diligence, it will be important for SFMTA and the consultant team to evaluate in greater detail alternatives for how the SFMTA facilities are incorporated into the larger project. For example, for a variety of reasons (related to operations, funding, timing, reduced complexity, etc.) it may be beneficial to completely separate the SFMTA transit functions (on the north side of the site) from the housing project (on the south side). It will be important for SFMTA to carefully evaluate alternative solutions that will work for SFMTA in order to provide guidance to prospective housing developers. SFMTA could also refine estimates of the cost of decking over the yard to assess whether it could make sense to offer developers the opportunity to propose uses for Presidio North as well as Presidio South.

c) Community Outreach and Government Agency Partners

As noted previously, the value of a development opportunity is affected significantly be the level of entitlements the property already has or, in the case of most SFMTA properties, the ability to rezone the sites and achieve all necessary regulatory approvals for development of a private project. Since development of any large project in an established San Francisco neighborhood is likely to experience a heightened level of public scrutiny, it is important that SFMTA do as much as it can to gain neighborhood support for the project before a private developer is selected; again with the goal of reducing risks to a developer and thereby yielding higher land value for SFMTA.

Activities that should be undertaken at these early stages include meetings with key neighborhood leaders and groups, and gaining the support of the Board of Supervisors, the Mayor’s office, and the Planning Department. At this early stage, outreach will be less about

scrutinizing project design or other specific aspects of the project (which won't be highly defined at this stage) as it is about gaining support for the general development concept and addressing fundamental neighborhood concerns such as traffic generation, preservation of views, etc. Based on the outreach effort, the development concept can be refined to achieve an optimum balance between community concerns and land value yield for SFMTA.

After the due diligence activities are performed, it would then be an appropriate time for SFMTA to begin the developer solicitation process. Given the amount of developer interest the Presidio South site is likely to generate, it is recommended that SFMTA initiate the process with an RFQ, then narrow to a shortlist of teams to prepare more detailed development and business term proposals. The following are some of the key elements that developers should be asked to provide in the solicitation:

1. Identification of the development team, description of roles, and how the team is organized;
2. Qualification of each team member with a description of similar projects successfully implemented by each team member;
3. Resumes of key individuals;
4. Financial statements and other evidence of securing financing of the expected magnitude (to be submitted confidentially; for example, to a third party consultant);
5. Narrative description of development concept;
6. Conceptual site plan and conceptual project renderings;
7. Preliminary programmatic data (number of units, unit sizes, building area, parking spaces, etc.)
8. Preliminary development pro forma including estimates of development costs, projected operating revenues, operating expenses, sources and terms of expected financing, developer return/profit requirements, etc.
9. Basic conditions and terms of proposed business agreement including, in the event of a ground lease, minimum base ground rent, future ground rent adjustments, percentage/participation rents, length of ground lease, subordination, reinvestment criteria, etc.

VI. Preliminary Timeline

a) Temporary Relocation of Transit Facilities

Joint development of the Presidio South site requires temporary relocation of the Presidio ETB fleet to the Flynn Division during construction at Presidio. The consultant team, led by Parsons Brinckerhoff, has prepared a preliminary schedule of activities to effectuate this move. It is recognized that several actions are needed by SFMTA to make the Presidio project possible. Realization of the schedule will depend upon a variety of factors, funding availability among others.

Islais Creek M&O Buildings & Restriping	
Design & Bid / Award (Phase 2)	2013
Construction (Phase 2)	2013 - 2015
Relocate diesel artics from Flynn	2015
Lease Portion of Tubbs Building or alternative (6 bays)	
Negotiate Lease	2013
Design Tenant Improvements	2014
Construction of Tenant Improvements	2015
Flynn (conversion for ETB (incl. OH to facility)	
Planning/environmental (for OH to facility)	2013 - 2014
Design	2015
Relocate diesel artics to Islais Creek and Woods	2015
Construction	2016
Presidio Redevelopment	
Planning/environmental/design	2013 - 2016
Relocate ETBs to Flynn	2017
Demolition & construction	2017 - 2019
Relocate ETBs back to Presidio	end of 2019

b) SFMTA Predevelopment & Developer Solicitation

The following is a rough outline schedule of the basic activities to be undertaken by SFMTA during the predevelopment period leading up to construction of the project. Of particular importance, it is not anticipated that a developer will be selected for Presidio South until the temporary relocation facility at Flynn is certain to be completed and available.

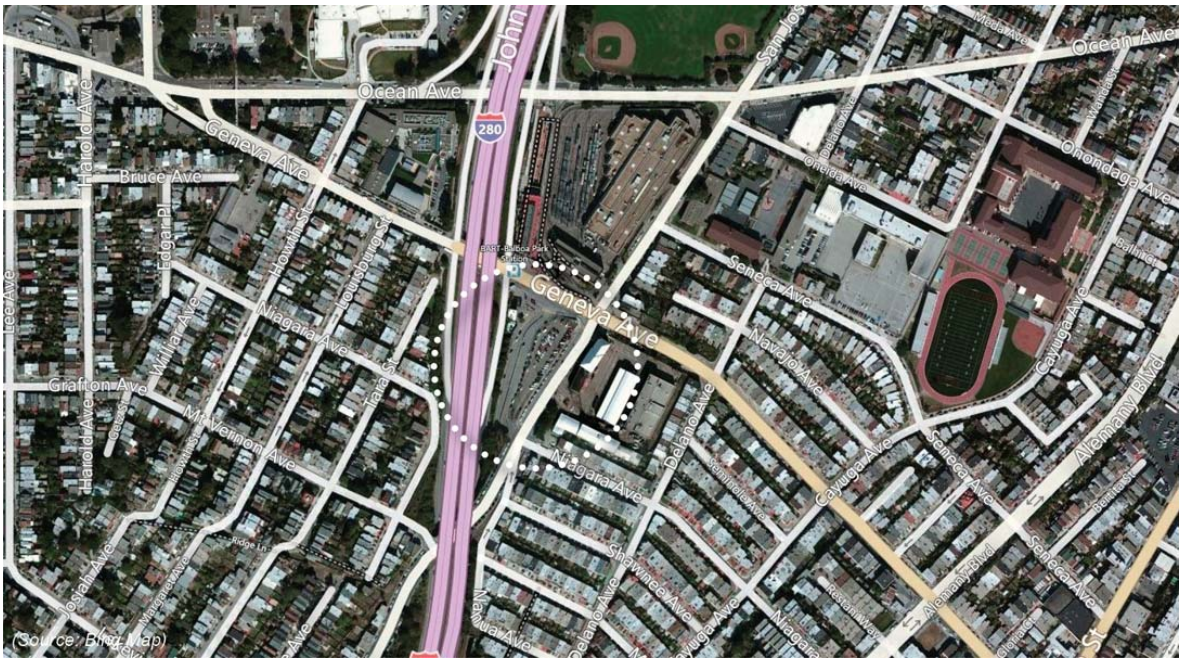
Internal SFMTA discussion & commitment	2013
Additional due diligence	2013
City agencies, communities (neighborhood and city-wide), Supervisor education & participation in determining conceptual development program & structure	2013 - 2014
Developer solicitation; award of Exclusive Negotiation Agreement	2015
Design, community review, EIR	2017
Entitlements & closing	2017
Demolition & construction	2017 - 2019

UPPER YARD

I. Background & Context

The Upper Yard site is a narrow, approximately 0.7-acre parcel located at the corner of Geneva Street and San Jose Avenue straddling San Francisco's Excelsior and Ingleside Districts. The site is adjacent to the 280 freeway and is immediately across Geneva from SFMTA's Green Division and across San Jose from SFMTA's Cameron Beach Yard. The Upper Yard site is also adjacent to BART's Balboa Park Station and near several Muni transit lines including the J, K, and M light rail lines as well as the 29, 43 and 54 bus lines, all of which makes the site ideally located for future transit oriented development (TOD). Historically, the Upper Yard has been used as a layover yard for SFMTA's light rail vehicles (LRVs), however the site is currently used only for SFMTA employee parking. The consultant team has determined that the Upper Yard is no longer needed for SFMTA purposes and that, therefore, the site is surplus and available for future private development.

BART owns an approximately 1.0-acre parcel immediately next to SFMTA's parcel, which BART utilizes as the entrance plaza to the underground BART station and as its Kiss & Ride area. A street serving the Kiss & Ride currently bisects the site and is located on the BART parcel. As described in more detail later in this report, the consultant team is recommending that SFMTA and BART combine their respective parcels so that a single project can be built on the combined site.



The Excelsior and Ingleside areas surrounding the Upper Yard site are predominantly residential although these areas also include major commercial, educational, and public uses. The area is home to a large residential neighborhood of single family homes and row houses, which provides more affordable housing options than many parts of San Francisco (the 2011 median home price in the Excelsior and Ingleside Districts was about $475,000 compared to $633,000 for the city as a whole[7]). The neighborhood is also served by retail/commercial areas, mostly along Ocean Avenue on the north side of the 280 freeway and Mission Street on the

[7] Source: Dataquick

south side of the freeway, although neither of these commercial concentrations are within close walking distance of the Upper Yard site. Other notable uses in close vicinity to the site are City College of San Francisco (CCSF); Balboa, Riordan, and Lick Wilmerding high schools; and the 25-acre Balboa Park.

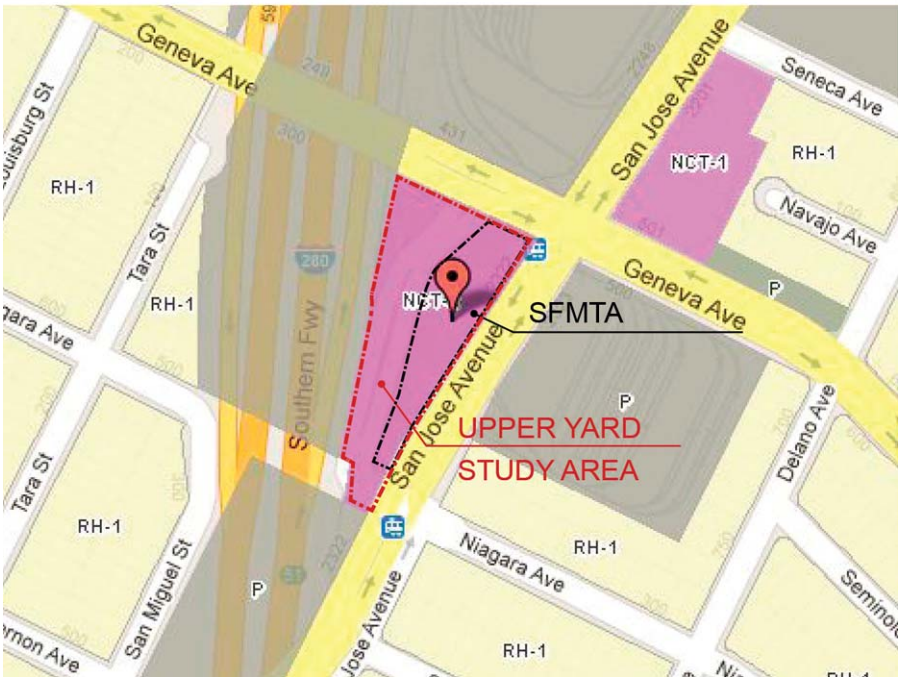
II. Highest and Best Use

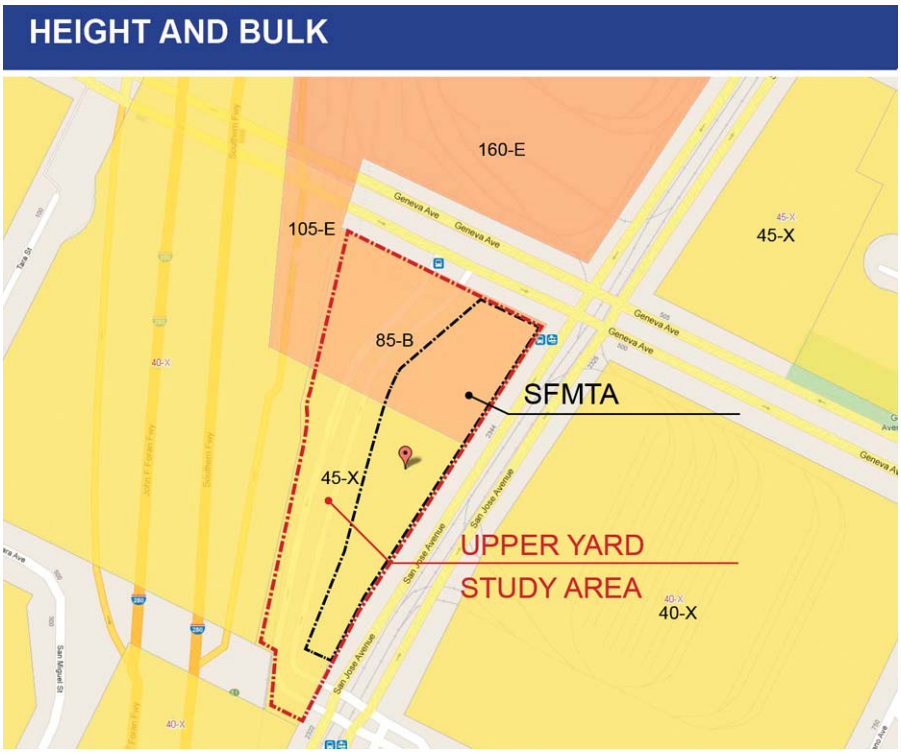
A key factor related to the highest and best use of SFMTA's parcel is its narrow configuration, which sharply limits what can be built on the SFMTA parcel alone. SFMTA's parcel would have far greater utility and value if were combined with BART's parcel and developed with a single project. As a result and as further described in this report, the consultant team has assumed that the highest and best of SFMTA's parcel is a housing project on the combined site. The following is a summary of the regulatory, market, and financing factors as they affect highest and best use of the Upper Yard.

a) Regulatory Approvals

The Upper Yard site is within the boundaries of the Balboa Park Station Area Plan, which was completed by the City and County of San Francisco in 2009. Under the Station Area Plan, the Upper Yard site is envisioned as a residential development with building heights up to 85 feet along Geneva and 45 feet on the balance of the site. Consistent with this vision, the land use designation for the Upper Yard site is "NCT-2" (Neighborhood Commercial Transit-2) and permits a floor area ratio (FAR) of 2.5:1. The city's Station Area Plan, as well as BART's Balboa Park Station Comprehensive Plan (September 2002), assumes that SFMTA's and BART's parcels be combined and developed with a single residential project.

ZONING





The fact that the Upper Yard site already has the proper land use designations for residential development adds significantly to the value of the site because the risk that a residential project at the Upper Yard won't be approved is significantly reduced. Residential development at the Upper Yard has support from key neighborhood interests, elected officials, BART staff, and city staff.

b) Market Demand

As noted in the previous section regarding the Presidio Yard, market demand for rental apartments in San Francisco is currently strong. Most new apartment development has occurred in areas such as Mission Bay and Rincon Hill, although there are pockets of apartment development throughout the city including Mid-Market. A new apartment development was also recently completed near the Upper Yard site. This new development, built by AvalonBay, is located on Ocean Avenue next to City College. The 173-unit project includes a structured parking garage and a new 26,000-sq. ft. Whole Foods grocery store.

A new apartment development at the Upper Yard would have the benefit of its adjacency to the BART station, making it an easy commute to Downtown San Francisco and other job centers throughout the BART system. The adjacency to the 280 freeway also makes the site convenient for jobs on the Peninsula and the South Bay. Given this proximity, the site is ideally located for couples with split commutes to these job locations. A housing development at the Upper Yard would also be ideal for someone working at City College or for another large employer in the southern part of the city such as San Francisco State University.

Apartment market rents for newer apartments in this part of the city are in the range of $2,700 for a one-bedroom and $3,300 for a two-bedroom. These rents are lower than other parts of the city. For example, one-bedroom rents in the Mission Bay area are in the range of $3,200 and two-bedroom rents are in the range of $3,800 (about 15% to 20% higher). Despite lower rents

than other parts of the city, there should be more than adequate market demand for a well conceived and quality apartment development at the Upper Yard given the site's many locational advantages,.

c) Capital Financing & Financial Feasibility

As noted previously, there has recently been a significant increase in private investment in apartment developments in San Francisco. As long as there isn't a significant deterioration in capital markets, it is expected that an experienced and well-capitalized developer would be able to attract the necessary financing to build an apartment development at the Upper Yard.

The escalation of apartment rents in San Francisco has contributed to the financial feasibility of new apartment projects, despite the high cost of land and construction. Because of the strength of the local rental housing market, capitalization rates (cap rates) for apartment developments in the city are currently at or near their strongest levels in many years.

Highest and Best Use Conclusions

Based on an assessment of the aforementioned factors, the consultant team has determined that the land use at the Upper Yard that is most likely to gain governmental approvals and yield the highest value today is a new residential apartment project that is mostly consistent with existing zoning and height/bulk designations.

The consultant team has prepared a preliminary concept plan for the Upper Yard consisting of two mid rise buildings up to 85 feet in height on the Geneva frontage with the balance of the site limited to 45 feet. The concept plan building heights reflect the current zoning and the city's Station Area plan. There are approximately 150 apartment units in the concept plan with an average unit size of about 775 sq. ft. Given the high pedestrian traffic generated by the BART station, the project's ground floor along Geneva is conceived as supporting street retail uses such as casual eating establishments and neighborhood serving convenience retail.

III. Preliminary Development Concept

> *[Note: the concept plan studied for this assignment was prepared for purposes of a yield analysis for programmatic purposes (i.e. number of units, building square feet, number of parking spaces, etc.) and does not reflect any SFMTA decisions regarding project design. It represents a mix of land uses and building layout that could reasonably be achievable given existing zoning, the character of the surrounding neighborhood, and given what is currently known about the physical constraints of the site. All of these factors will be studied further if and when SFMTA decides to pursue development.]*

Since the consultant team has determined that the Upper Yard is no longer needed for SFMTA operations, there is no SFMTA use included in the development concept plan. The BART station entrance plaza and the Kiss & Ride function, however, will need to be accounted for in the project's design. For this assignment, the consultant team has met with BART staff to discuss on a preliminary basis options for incorporating BART's ongoing needs into the new housing project. As contemplated in the concept plan, the BART Kiss & Ride area will be moved from its current location to San Jose Avenue. In this configuration, BART patrons will take a short walk along Geneva Avenue and turn the corner onto San Jose. The concept plan incorporates wide sidewalks (approximately 20 feet) along Geneva to allow for safe and

comfortable pedestrian access along this key route. It is emphasized that this is a preliminary concept plan only; further study would be needed in subsequent phases of analysis to ensure that the Kiss & Ride will function well on San Jose Avenue[8].

Because the BART tunnel is located underground along the edge of the site facing the freeway, the concept plan assumes that the footprint of the new development will be set back approximately 40 feet in order to avoid structural conflicts with the BART tunnel. Due to this setback, the new housing development will not need the full 1.7-acre combined site.

IV. Preliminary Revenue Projections & Financial Feasibility

This section discusses the disposition proceeds that the SFMTA might expect to achieve from disposition of the Upper Yard site. As with the Presidio site, the consultant team assumes at this time that the site will be ground leased to a private developer and that the developer will either make annual ground rent payments or pre-pay the rent in a capitalized, up-front payment. The reason for the ground lease assumption is that, in addition to SFMTA's policy to ground lease land rather than sell, BART also has a preference to ground lease its sites. The option of selling the site to a housing developer may simplify the overall transaction, but would have to be a topic of early discussion between SFMTA and BART in its joint development efforts.

a) Apartment Land Values

As mentioned previously, values of both existing apartment developments and apartment development sites in San Francisco have generally been on the rise over the past few years consistent with improved market conditions and availability of capital financing. As mentioned, AvalonBay recently completed a new 173-unit apartment development with a 26,000 sq. ft. Whole Foods on Ocean Avenue adjacent to City College. CoStar reports that this 1.84-acre site was sold for $5.15 million, about $30,000 per unit or $65 per land sq. ft. An existing 15,000 sq. ft. retail building on the site needed to be removed prior to development of the housing project.

The Upper Yard site, while it has the advantage of its proximity to both the Balboa Park BART station and the 280 freeway, does not enjoy the same high rents as other new apartment locations in San Francisco such as Mission Bay. In addition, there are some challenges of developing the Upper Yard site. For example, the close proximity to the freeway results in higher levels of noise and airborne particulates, the latter of which could potentially pose health issues (or regulatory issues related to the same) and could add design and development costs. The adjacency to the BART station could potentially pose some structural issues related to the underground tunnel. And finally, a developer may have to work with two government agencies to effectuate a development agreement, which could present additional challenges relative to project approvals and agreement on business terms. At this stage, none of these issues is deemed to be insurmountable, but nonetheless must be factored into the possible proceeds that might be achieved from disposition of the site for private development.

Given the preliminary stage of project planning and analysis, only an order-of-magnitude estimate for planning purposes can be made regarding the Upper Yard site's land value. On this preliminary basis a conservative land value range of $30,000 to $60,000 per residential unit is

[8] The consultant team is aware of a study currently being undertaken by the San Francisco County Transportation Agency to possibly close the Geneva on ramp to the 280 freeway. If this were to occur, a BART Kiss & Ride area could possibly be relocated to where the on ramp is currently located.

estimated[9]. At $30,000 to $60,000 per unit, the approximately 150-unit concept plan project would yield in the range of $4.5 million and $9.0 million, or about $60 to $120 per land sq. ft. at 1.7 acres (however, the land value on a per land sq. ft. basis is distorted somewhat by the fact that not all of the site is developable). The annual ground rent would approximate $360,000 to $720,000 per year, assuming an 8% ground rent factor. This value range represents the combined SFMTA/BART site.

b) Financial Feasibility

For planning purposes, Keyser Marston has prepared a preliminary development pro forma in order to test the financial feasibility of the development concept and the land value range. The intention of the preliminary pro forma is to estimate the costs to develop the project and the annual rental income that could be expected from project operations, in order to assess whether the development project's return (profit potential) is at a sufficient level to attract the necessary private capital and developer interest.

The development pro forma indicates that at a preliminary level, the $4.5 million to $9 million land value range is supported. This result lends additional support for the estimated $4.5 million to $9 million land value range for initial planning purposes. It is noted that because of the high cost of Type I construction, the 85 foot tall buildings as currently planned may not necessarily be the optimal economic solution in the near term. As more detailed analysis of the site is performed, alternative building prototypes, such as Type V wood frame construction above a concrete podium, can be explored.

As stated previously, the preliminary pro forma and land valuation at this early stage is on an order-of-magnitude basis to help guide SFMTA policy decisions regarding whether or not to proceed with development projects. It would be expected that a more rigorous analysis would be conducted later. In addition, it is emphasized that land values change over time based on fluctuations in real estate markets which is an important factor since it could be a couple years before the project is built.

V. Disposition Strategies

The disposition strategy for Upper Yard would likely be different than for other development sites under SFMTA's control because the Upper Yard will not have any ongoing SFMTA transit function and thus the property could be declared surplus in the future. Therefore, unlike sites in which there is a need to replace aging SFMTA transit facilities, the SFMTA's primary objective for the disposition of the Upper Yard is to generate revenues that can then be used to serve SFMTA's transit needs elsewhere. Given the particular circumstances surrounding the Upper Yard site, the consultant team has developed a set of recommendations for its disposition, principally revolving around SFMTA establishing a partnership with BART in which BART would take the lead in soliciting a developer for the site and, with SFMTA's concurrence, negotiating business terms. This recommendation is driven by several factors including:

- BART has an ongoing transit function on the site, which will need to be carefully accounted for in the design of the private development;
- BART staff has experience in successfully implementing private development at several of its stations in the Bay Area;

[9] The land value range assumes that any residential project on the Upper Yard site satisfy the citywide affordable housing requirements (15% on site or pay in-lieu fees at 20%).

- BART staff has the capacity to lead the developer solicitation and disposition process;
- BART owns the larger of the two parcels;
- SFMTA staff could then focus its efforts on predevelopment activities at other development sites, such as Presidio South.

BART has successfully worked in partnership with other Bay Area jurisdictions on implementing private development. The particular partnership arrangements between the agencies would be negotiated up front and would be documented in a Memorandum of Understanding (as BART has done with the cities of Oakland and Richmond), or other form of agreement[10].

One issue that would need to be addressed is the method for allocating disposition proceeds between the two agencies. There are different allocation alternatives that can be considered including pro rata based on land square feet, pro rata based on the number of units sitting on each parcel, or pro rata based on building area sitting on each parcel. Such an allocation can also take into account the "net developable area" of each parcel since a portion of the BART parcel is not developable because of the station entrance plaza and because of the underground BART tunnel.

An alternative for SFMTA to work with BART in this fashion is for SFMTA to sell its site to another government agency such as (possibly) the Mayor's Office of Housing (MOH) with the intent that MOH would then take SFMTA's place in the partnership with BART (Note: BART staff has indicated to the consultant team that BART does not have funding to purchase the SFMTA's parcel itself)[11]. This and other possible alternatives could be explored in detail in subsequent phases of planning should SFMTA decide to proceed with disposition.

VI. Preliminary Timeline

The following is a rough outline of SFMTA or MOH reaching agreement with BART (assuming a partnership approach is pursued), followed by BART's activities related to developer solicitation and project construction.

Internal SFMTA discussion & commitment	2013
Negotiation of MOU (or other agreement) between SFMTA and MOH re: disposition of SFMTA property (if this option is pursued)	2013
Negotiation of MOU (or other agreement) between SFMTA/MOH and BART re: development goals, land values, etc.	2013

[10] Factors that would be taken into consideration in a SFMTA/BART partnership include roles and responsibilities of each party, allocation of land disposition proceeds, project schedule, and the legal entity that will enter into agreements (e.g. JPA or other).
[11] The consultant team has not as yet reached out to MOH to explore this alternative.

UPPER YARD

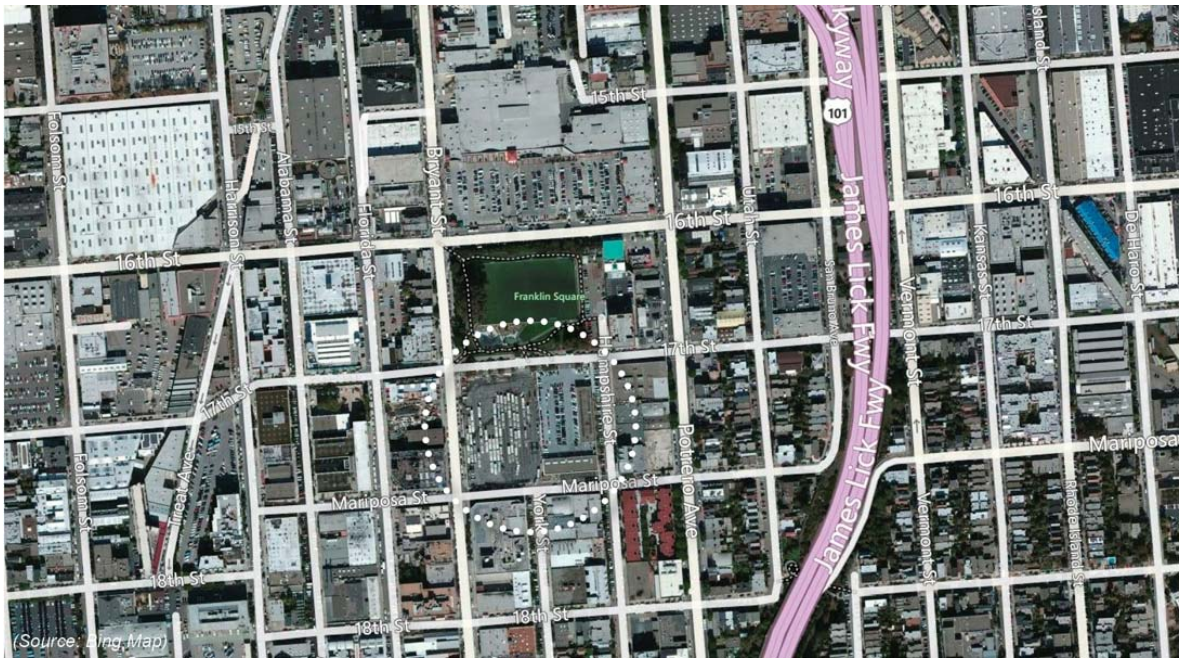
BART issues developer solicitation; selects development partner	2014
SFMTA vacates the Upper Yard operations and conveys the SFMTA property to MOH (if this option is pursued)	2014
Partner solicits community, local agency, and elected officials' input, conducts environmental review to tier off Community Plan & obtains entitlements	2014 - 2015
Site conveyed from BART/SFMTA (or MOH) to developer	2015
Project construction	2015 - 2017

POTRERO

I. Background & Context

SFMTA's Potrero Yard is an electric trolley bus yard and maintenance facility located on a 4.4 acre site bounded by Mariposa, Bryant, 17th, and Hampshire Streets. The site is located on the eastern edge of the Mission District, near Potrero Hill, Showplace Square, and West SoMa. The area is home to a diverse mix of land uses including residential, some of which are conversions of former industrial/warehouse buildings; production/distribution/repair (PDR) and other low intensity uses such as auto repair, printing companies, furniture & antique outlets, and self-storage; public uses including several SFMTA facilities (the Flynn Division, Scott, and Bryant Street facilities are all nearby), and the large Potrero retail center anchored by Safeway one block north on Potrero Avenue.

Land uses immediately adjacent to the Potrero Yard include Franklin Square park across 17th Street, KQED Television/Radio's offices across Mariposa, and a mix of artist studios, residential, and retail/commercial uses across Bryant and Hampshire. The Potrero site enjoys convenient location near the 101 freeway and is located near several Muni bus lines including the 9, 12, 19, 22, 27, and 33. BART's 16th Street station is about eight blocks to the west. Nearby Showplace Square has become home to high tech and social media companies such as Zynga and Airbnb, and the site is within a close drive of downtown San Francisco, SoMa, and Mission Bay.



The Potrero site slopes from the 17th Street side of the parcel down to the low point on Mariposa. Currently the Muni trolleys access the yard from Mariposa. Additionally, there is employee parking on the roof of the maintenance building, which is accessed from 17th Street.

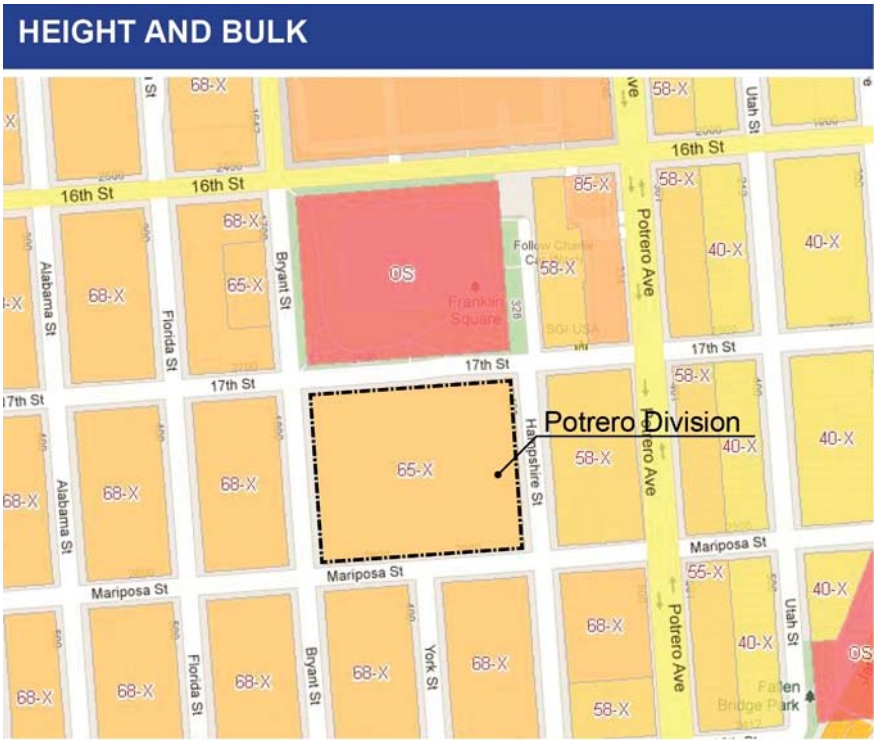
The consultant team has determined that the SFMTA transit functions at Potrero are essential to the effective operation of the larger transit system. Therefore a rebuild of the aging Potrero facility is needed. Any private development on the site would need to be built on top of a deck, with continuing SFMTA operations on the entire lower level.

II. Highest and Best Use

The following is a summary of the factors that influence the site's value:

a) Regulatory Approvals

Since the Potrero site is currently zoned P-Public, a rezoning would be necessary prior to any private development on the site. The surrounding zoning is a mix of PDR and Urban Mixed Use (UMU) Commercial. In order to assess rezoning opportunities, the consultant team looked toward the land use policy goals outlined in the Eastern Neighborhoods Plan. The Eastern Neighborhoods Plan, which the city adopted in 2008 in the form of area plans for the city's General Plan, sets forth a long term planning framework for future development of the Mission, Showplace Square/Potrero Hill, Central Waterfront, and East SoMa areas. Key goals of the Eastern Neighborhoods Plan include the preservation of industrially zoned land in the city, preservation and enhancement the employment base, and the expansion of affordable housing opportunities for a wide range of household incomes. In developing the concept plan for the Potrero site, the consultant team was mindful of the goals enumerated in the Eastern Neighborhood Plan.



While the ability to provide industrial and PDR jobs is important to maintaining a diverse local economy, these types of businesses generally cannot afford the rents needed to support the high cost of new construction in San Francisco. Therefore, the consultant team has explored alternative land uses for the Potrero site that would yield long term revenues for SFMTA.

Considering these factors, the consultant team has determined that the Potrero site holds the highest potential for a high tech/R&D/"Knowledge Sector"[12] development located above the lower level SFMTA uses. Such a campus-type development would take advantage of the site's rare large land assemblage and close proximity to other employment bases such as SoMa and Mission Bay and would provide a more affordable option to these extremely high cost areas.

b) Market Demand

[Note: The consultant team assumes that the Presidio South site would be developed before Potrero. This is important from a timing and market demand perspective because both Presidio South and Potrero require temporary relocation of the existing transit functions before construction on each site can occur. Since the Flynn Division, which would act as the temporary relocation facility for both Presidio and Potrero, can only accommodate one move at a time, redevelopment of Potrero would lag several years behind Presidio South (see projected timeline in Section VI). Therefore, current market demand factors, as described in this section, provide context for land use opportunities at Potrero but conditions will undoubtedly be different when development is likely to occur.]

[12] As noted in the Eastern Neighborhoods Plan, the "Knowledge Sector" would include businesses involved with financial services, professional services, information technology, publishing, digital media, multimedia, life sciences (including biotechnology), and environmental products and technologies.

Because of the site's large land assemblage and central location, the Potrero site presents a rare opportunity to develop a large campus project in the heart of the city. This type of campus development would appeal to large companies seeking expansion opportunities in well-located areas of San Francisco and to high tech, social networking, or digital media companies whose employees tend to be young and who desire to live and work in urban, mixed-use, diverse environments. The large site allows for the large floor plates desired by these types of innovative businesses which thrive on collaboration and creative "21st Century" work environments.

Recent San Francisco tech office transactions include Twitter (roughly 200,000 sq. ft. of the Western Furniture Mart building in Mid-Market), Salesforce.com (roughly one million sq. ft. in total in various properties downtown)[13], Macys.com (243,000 sq. ft. at 680 Folsom), Autodesk (100,000 sq. ft. at One Market), Airbnb (170,000 at 888 Brannan), and Amazon.com (80,000 sq. ft. at 188 Spear). Other transactions include Zynga, Dropbox, and Riverbed Technologies. These companies illustrate the growing demand for large spaces by tech users interested in locating or expanding in San Francisco. Recent research published by Jones Lang LaSalle indicates there is about 2.7 million sq. ft. of space being sought by tech firms including Yelp, Advent Software, and Instagram. It is also being reported that South Bay firms are also looking to expand into the San Francisco market including Palo Alto-based Pinterest, Quora, and HTC Dev.

Closer to the Potrero site, the old Hamm's Brewery building (1550 Bryant, two blocks north of the Potrero site) was recently purchased by TMG Partners and among its tenants are tech firms Asana (web applications) and Rdio (digital music). It is worth noting however that the strength of the San Francisco office market at this time is primarily focused on certain parts of the city, notably the South Financial District, SOMA, and Mission Bay. Other parts of the city such as Civic Center have so far not enjoyed the same strength. This points to the fact that office space demand by tech and other creative businesses is centered on certain hot areas, and consequently there is less certainty regarding the depth of market demand outside these hot areas.

Office Market Trends - Q1 2012

	Vacancy	Net Absorption (YTD)	Class A Asking Rent	Class B Asking Rent
SOMA	6.4%	99,137	$56.96	$43.40
South Financial District	8.3%	190,182	$42.79	$36.65
Mission Bay*	36.2%	9,910	$59.90	---
Civic Center/Van Ness	29.0%	(140,687)	$31.88	$30.58

* The vacant 500 Terry Francois (300,000 sq. ft.) represents 60% of the current Mission Bay vacancy.
Source: Grubb & Ellis

It should also be noted that there is significant new development of office buildings in planning. A report from the Planning Department indicates that there are over eight million sq. ft. of net new commercial space planned in the downtown, SOMA, Mission Bay, Rincon Hill, and Transbay areas. Time will tell how much of this planned space will ultimately get built for tech

[13] It is noted that Salesforce.com purchased a 14-acre development site in Mission Bay in 2010 for the purpose of building a 2-million sq. ft. corporate campus, but Salesforce has put those plans on hold.

office use, but it will be an important factor in determining the ability of the Potrero site to support the type of new campus development envisioned.

c) Capital Financing & Financial Feasibility

As evidenced by new construction of office developments San Francisco, financing is obtainable for new projects in solid locations and with experienced, well-capitalized developers. Some of these projects are proposed to be built on spec, without preleasing commitments or a secured anchor tenant. While financing is not broadly available for new commercial development, the prospects appear positive for the Potrero site as long as the economy and real estate markets continue to improve. As mentioned previously, investors are seeking places to place capital and prime development opportunities for new economy businesses are among the best bets, especially in 24-hour gateway cities with high barriers to entry like San Francisco.

Highest and Best Use Conclusions

Given the location of the site in the Eastern Neighborhoods Plan, which emphasizes the preservation of employment uses, the consultant team believes that a campus use for high tech/R&D is the most likely use to generate value from the site. Since the SFMTA facility would be rebuilt as part of the project, there would be no displacement of the current use of the site, only the creation of new additional employment-generating uses.

III. Preliminary Development Concept

Since the SFMTA transit functions at Potrero need to be retained, a rebuild of the aging Potrero facility is needed whether or not private development occurs. The private development could be viewed then as a means of capitalizing on the value of development rights above the SFMTA facility in order to fund some of the costs of the replacement facility.

The consultant team has prepared a development concept plan consistent with the goal of achieving value from the site while at the same time being mindful of the Eastern Neighborhoods Plan goals. The concept plan designates the entire lower level of the site as the replacement facility for SFMTA consisting of a bus yard and a maintenance facility. The private development would be built atop the SFMTA facility with the building totaling three stories along 17th Street and stepping up to five stories along Mariposa. The buildings would be no higher than 65 feet tall, measured from average street grade, at all locations consistent with current restrictions. The consultant team also performed a preliminary shadow assessment to minimize shadow impacts on Franklin Square park and other surrounding uses.

In total, the private development atop the SFMTA facility is estimated to yield up to about 370,000 sq. ft. of leasable area, not including the parking garage. The commercial development will have large floor plates consistent with the desires of many tech businesses because large floor plates foster collaboration among employees and provide flexibility in layouts and functions. The project will have a large, flexible courtyard space that would likely be highly utilized by employees for a wide variety of uses including meals, recreation, and company functions. It is likely that the building would also contain other employee amenities such as a cafeteria, fitness center, child care, and the like. The project design incorporates a mid-block view corridor cutting through the site from Mariposa to 17th Street in an effort to break down the massing of the building.

Example tech campus users in the Bay Area include Pixar, Google, Facebook, or the Lucas Letterman Digital Art Center. It is possible, though less likely, that the concept and project location might also appeal to the biotech/life sciences sector or to the medical sector because of the large space needs of these types of organizations.

Because the project is a large campus-type development, it is anticipated that it would appeal to a large tech company seeking to expand into a larger space and could take advantage of the opportunity to keep all the employees of the company in one building. As such, it is a good possibility that either the entire building or at least a large portion of it would be taken by a single tenant. If a single tenant were to utilize the entire building, this would also open up the possibilities that the building could be a build-to-suit arrangement in which the building would be customized according to the needs of the specific user. Because there is a relatively small pool of potential companies that could take such a large space, the development plan for the Potrero site would need to be flexible to accommodate the unique needs of whatever company may be interested in the site.

IV. Preliminary Revenue Projections & Financial Feasibility

This section discusses the proceeds from disposition of the Potrero site. Because the private development will be on top of the SFMTA facility, it is anticipated that the private developer would enter into a long term air rights lease for the project. *Again, any discussion of possible disposition proceeds for the Potrero site must recognize that real estate markets will undoubtedly be different when the site is ready to be developed several years down the road.*

While San Francisco has witnessed strong values for residential uses in recent years (first condominiums, then apartments), the record is spotty for commercial land. Sales of premium development sites, such as the sites for Foundry Square III at 1st and Howard and the Salesforce.com Mission Bay campus on Third Street, have sold at steep prices but are not comparable to the Potrero Yard location. A more relevant comp was the sale of an unimproved 2.36-acre industrially zoned site at 7th Street and Hooper, just north of the Potrero site in Showplace Square, which was sold to California College of the Arts (CCA) for $8.4 million in February 2011 (approximately $82 per sq. ft.). It is not known what CCA's plans are for the site although the site does adjoin existing CCA facilities.

Of direct relevance to the Potrero site, a 3.28-acre development site at 100 Hooper, immediately adjacent to CCA's parcel, is currently being planned for development of a four story office project that could accommodate up to 400,000 sq. ft. The property's owner/developer is currently marketing the project to prospective tenants with the idea that the project would be a build to suit. Close monitoring of the progress of this project will help SFMTA assess the market demand and supported land value for large space users in this area of the city.

It is not anticipated that the Potrero Yard project will be built as a traditional multi-tenant office building, but instead will be targeted to large users interested in a unique, campus-like environment. It is also not known what discount a user might apply to the value of the site because of the ongoing SFMTA transit operation on the lower level. Given the small pool of users that would be interested in such a unique development opportunity, it is uncertain what potential proceeds could result from disposition of the Potrero site. If on hypothetical basis the CCA land value ($82 per sq. ft.) was applied to the Potrero site, the resulting land value for Potrero's 4.4 acres would be approximately $15 million.

The costs of replacing SFMTA's facilities at the Potrero Division and SFMTA's funding options thereto are addressed in a separate section of the larger Vision Report.

V. Disposition Strategies

Given the uncertainty of attracting a large campus user for the Potrero site, the consultant team recommends that SFMTA proceed down two parallel tracks. In the first track, SFMTA would proceed under the assumption that the Potrero facility would need to be replaced without any private development above it. This is the fallback position and would probably need to move forward regardless of private development opportunities simply because of the poor condition of the current facility. In the second track, SFMTA could prepare for the possibility of conveying the site for a private campus-type development.

There are different approaches that can be taken along this second track:

- If SFMTA wanted to take a more proactive approach, SFMTA could widely circulate a Request for Interest (RFI) which would advertise the development opportunity to a wide range of developers and end users in order to test the interest of relevant parties without the need for parties to incur the time and expense of responding to a more formal RFQ/RFP process.
- A second approach would be for SFMTA to initiate discussions with potential campus users who might be identified by tech office brokers. If these discussions held promise, additional due diligence could be performed by both SFMTA and the potential user.
- A third approach is a passive one in which SFMTA would let developers or end users approach SFMTA about the Potrero Yard (recognizing that SFMTA often receives unsolicited development proposals for its properties).

The latter two approaches would allow SFMTA to proceed cautiously and "under the radar" by not pursuing a very public development solicitation document.

VI. Preliminary Timeline

a) Temporary Relocation of Transit Facilities

Joint development of the Potrero site requires temporary relocation of the Potrero ETB fleet to the Flynn Division during construction at Potrero. The consultant team, led by Parsons Brinckerhoff, has laid out a preliminary schedule of activities that will take place to effectuate this move. The following schedule assumes that the Presidio project is developed first, thereby requiring temporary relocation of the Presidio ETB fleet (from 2017 to 2019) prior to moving Potrero. It is recognized that several actions are needed by SFMTA to make the Potrero project possible. Realization of the schedule will depend upon a variety of factors, funding availability among others.

Islais Creek M&O Buildings & Restriping	
Design & Bid / Award (Phase 2)	2013
Construction (Phase 2)	2013 - 2015
Relocate diesel artics from Flynn	2015
Lease Portion of Tubbs Building or alternative (6 bays)	
Negotiate Lease	2013
Design Tenant Improvements	2014
Construction of Tenant Improvements	2015
Flynn (conversion for ETB (incl. OH to facility)	
Planning/environmental (for OH to facility)	2013 - 2014
Design	2015
Relocate diesel artics to Islais Creek and Woods	2015
Construction	2016
Temporary occupancy by Presidio fleet	2017 - 2019
Potrero Redevelopment	
Soonest demo & construction can occur	2020

b) SFMTA Predevelopment & Developer Solicitation

As noted, there are different approaches that can be taken to proceeding with joint development of the Potrero Yard. If it is decided, in fact, that Presidio will precede Potrero, there will be more time to undertake predevelopment and planning activities at Potrero. A more detailed predevelopment schedule can be prepared when it is decided which basic approach might be taken (i.e. a developer solicitation like an RFI versus one of the more passive approaches).

APPENDIX A: SFMTA SITES ASSESSED

Assessment of Potential for TOD/JD on SFMTA Properties
SFMTA Real Estate and Facilities Vision for the 21st Century

Highest Potential (Top 3 Recommended Sites + Central Subway sites)

1. Presidio Division
2. Upper Yard
3. Potrero Division
4. Chinatown Central Subway
5. Yerba Buena/Moscone Central Subway

2nd Tier Potential

1. Geneva Yard & Shop / Cameron Beach
2. Kirkland Division
3. 5th & Mission Garage
4. Moscone Garage
5. Lombard Garage
6. Surface parking lots
7. Overhead Lines Facility
8. Presidio North

Little to No Potential

1. Burke Avenue Facility
2. Cable Car Barn
3. Central Control
4. Enforcement Division
5. Flynn Division
6. Green Annex
7. Green Division
8. Islais Creek Division
9. Muni Metro East
10. Parking Garages (other than listed above)
11. Power Control Center
12. Scott Division
13. Towed Car Parking
14. Woods Division
15. 1 South Van Ness
16. 505 7th Street, 571 10th Street
17. 700 Pennsylvania
18. 1399 Marin
19. 1455 Market Street

Appendix J:

Central Subway Transit-Oriented Development Potential

SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY
REAL ESTATE & FACILITIES VISION FOR THE 21ST CENTURY

SFMTA

CHINATOWN STATION

DRAFT
CENTRAL SUBWAY CHINATOWN STATION
TRANSIT ORIENTED DEVELOPMENT
OPPORTUNITIES

Prepared by:

Gensler

Keyser Marston Associates

Prowler, Inc.

May 2012

(Cover) Photo Credit:

Chinatown Station:
Existing Site: Google
Proposed Station: http://centralsubwaysf.com/

Central Subway Chinatown Station Transit Oriented Development (TOD) Opportunities

Executive Summary

Keyser Marston Associates (KMA), Prowler, Inc., and Gensler have evaluated TOD development opportunities at SFMTA's future Central Subway Chinatown Station at Stockton and Washington Streets. The subway station is slated to open in 2018. In order to accommodate the station head house, as well as ventilation shafts and emergency exiting, SFMTA acquired an 1/4-acre parcel for the Chinatown Station. Since the head house and other subway requirements do not require use of the full parcel at street level, there are opportunities to develop private TOD uses on the remaining portion of the parcel.

Given its location, the Chinatown Station site offers potentially strong opportunities for TOD development. However, there are also significant limitations to developing the site, particularly related to the sizes and limitations on the amount of development that can be built as a result of its foundation systems. As a result of these limitations, it is estimated that development of TOD at the Chinatown site is limited to about 13,000 sq. ft. of building in two and three stories (three stories including the head house).

Although the small site results in construction and operational inefficiencies, the Chinatown Station site presents an opportunity to provide needed amenities, such as open space and community centers, for the neighborhood.

Opportunities & Constraints

The Chinatown Subway Station is located at the southwest corner of Stockton and Washington Streets in the heart of Chinatown. Gordon Lau Elementary School is immediately to the west of the site and the 16-story Mandarin Tower residential and office building is located across Stockton Street to the east. Chinatown in general is characterized by a densely developed mix of housing, retail, and commercial uses, predominantly in mixed use and historic buildings. There is bustling street activity throughout the day from Chinatown residents, local merchants, employees, as well as tourists. The new City College of San Francisco Chinatown/North Beach campus at Washington and Montgomery, targeted to be completed this year, will bring an additional customer base for retail at the Chinatown subway station site.

Given the high volume of existing pedestrian traffic, combined with the additional traffic that will be generated by the subway station itself, the Chinatown site offers an excellent opportunity for ground floor retail space. Ideas for the upper floors of a TOD development on the Chinatown site include retail/restaurant space on a second floor mezzanine, medical office, or senior residential. From a market demand perspective, all of these uses are potential opportunities. However, given the uniqueness of this development opportunity in the heart of Chinatown, and given the tight and irregular development parameters resulting from being atop the subway station, it won't really be known what developers would want to build on the upper floors until developers respond to an RFP.

Community members and local stakeholders have expressed support for a park or open space above the head house, a community center for use by students to do homework and for use by other Chinatown residents, and possibly an extension of the elementary school's playground. Chinatown is the second-densest neighborhood in the United States (second only to New York Chinatown) and the densest neighborhood in San Francisco. The

Recreation and Open Space element of the City's General Plan has designated Chinatown as a high-need neighborhood for parks.

The significant constraint to any development on the Chinatown site is the extremely small development potential. The subway site is about 10,000 sq. ft. in size (about ¼-acre), but a significant portion of the site is needed for the station head house and for ventilation shafts and emergency exiting. The structural foundation of the subway combined with the site's zoning puts additional limitations on what can be developed. In total, only about 13,000 sq. ft. of gross building area can be developed in a TOD development on the Chinatown site.

A building of this small size will result in both construction and operational inefficiencies and for this reason, combined with the sheer limits on the project's size, it is likely that the interest on the part of experienced developers to undertake TOD development on this site will be limited. Potential uses may include park, residential, office, retail, hotel, institutional (religious / educational) or a combination of compatible uses of the site. Any proposed development should consider the neighborhood character, respond to the Chinatown Central Subway Design Guidelines[1], address neighborhood needs and seek to adapt to the difficult topography of the site.

[1.] *AsianNeighborhoodDesign prepared for Chinatown Community Development Center, Draft: Dec. 2008*

CHINATOWN STATION TOD OPPORTUNITY STUDY

Study Method

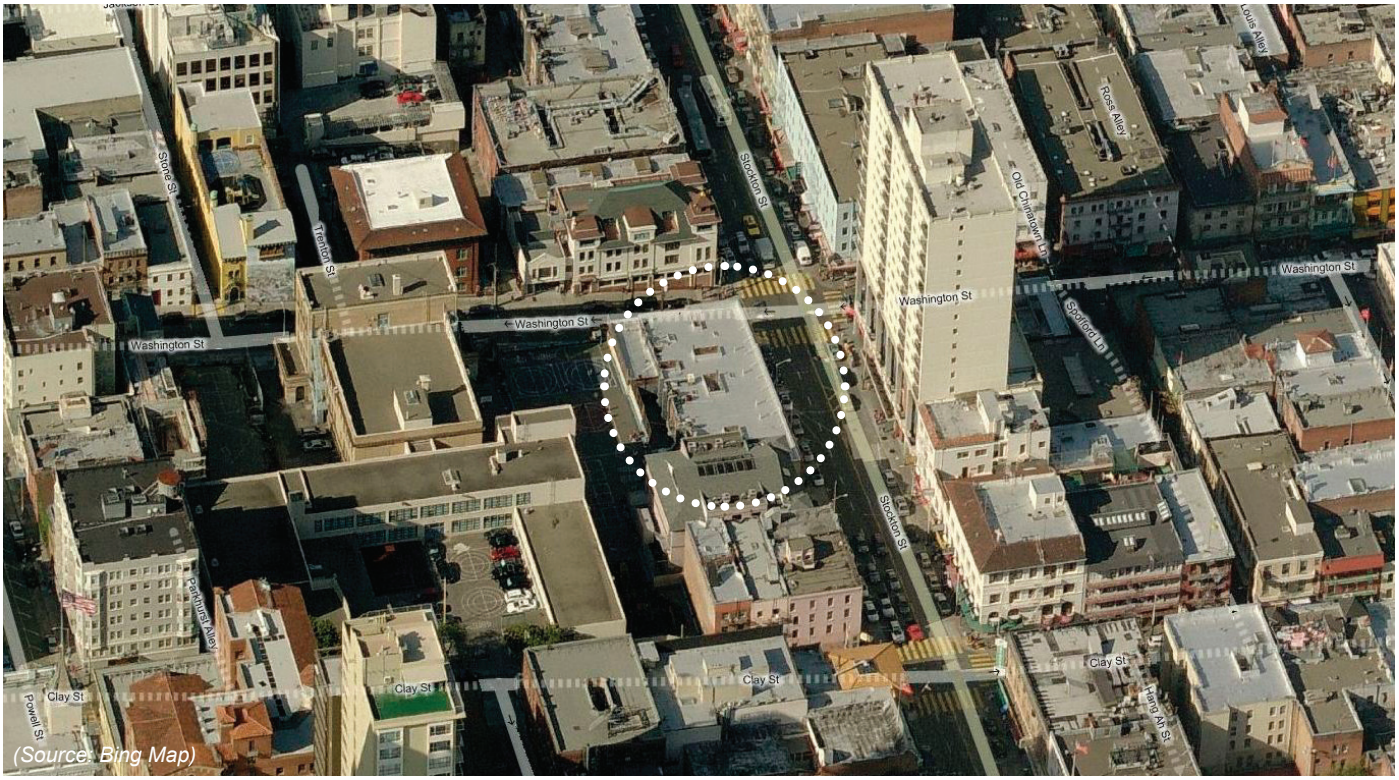
In order to determine development potential of the Chinatown Station site, the site was reviewed through the following activities;

- Site context analysis
- Review of existing and proposed planning controls
- Interviews with architectural teams working on the station
- Review of development constraints and opportunities analysis
- Preparation of development scenarios

Assumptions

For purposes of this review, the following assumptions were made:

- Foundation systems are not going to be re-designed.
- Foundations, soil conditions, and tunnel affect vertical construction opportunities.
- Existing zoning remains in place.
- TOD should not impact Subway construction schedule or budget.



(Source: Bing Map)

ZONING

PARCEL #: 0211/001

ADDRESS: 933-949 Stockton St.

LOT AREA: 10,053 sf

ZONING: CRNC (Chinatown Residential Neighborhood Commercial)

HEIGHT & BULK: 65-85-N[2]

SPECIAL USE DISTRICT: Chinatown Transit Station SUD

FLOOR AREA RATIO (FAR):

Basic FAR: 1.0 : 1[3]

- Basic FAR does not apply to residential, medical, and institutional uses)
- Commercial Use: 1.0 (Total = 10,0530 GSF)
- Residential Use: 1 unit / 200 SF (Total = 50 units)
- Medical Center and Institutional Use: 4.8:1

Maximum Allowable Development: 10,053 sf of Commercial and 50 Residential Units

MAX SITE COVERAGE: 75%

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[2] *Maximum dimension of 50' in length and 100' in diagonal apply to the portion of the building above 40' in height; 85' Maximum height applies to low income housing only.*

[3] *San Francisco Planning Department: Zoning Ordinance*
SEC. 124.1. FLOOR AREA RATIO EXCEPTIONS: CHINATOWN.
(b) In the Chinatown Community Business District, Chinatown Visitor Retail District and the Chinatown Residential Neighborhood Commercial District, mezzanine commercial space and institutional use shall not be included in computation of the floor area ratios.
(c) The floor area ratios set forth for the Chinatown Residential Neighborhood Commercial District shall not apply to hospitals or medical centers. The applicable floor area ratio for hospitals or medical centers shall be 4.8.
(d) The floor area ratios set forth for the Chinatown Mixed Use District shall not apply to any existing business originally located within or partially within a Chinatown Mixed Use District as of the effective date of this ordinance which must relocate as a result of acquisition by the City and County of San Francisco of the real property on which the business is situated. Such use must be the same as that use existing on the effective date of the ordinance. The applicable floor area ratio shall be a maximum of 4.8 or a lesser amount sufficient to accommodate replacement of improved property and parking used on a regular basis in connection with the business needing to relocate as determined by the Zoning Administrator.

SITE CONTEXT

Site Location

The Chinatown Station is located at the southwest corner of Stockton and Washington Streets in Chinatown. The site is currently occupied by a two-story mixed-use building that will be demolished to facilitate subway construction. The Chinatown Station will be the northern terminus of the central Subway.

Surrounding Uses and Massing

San Francisco's Chinatown is the oldest in North America and the largest Chinatown outside of Asia. The site is surrounded by a range of diverse uses including residential, commercial retail and office, institutional and other uses that support the day-to-day functions of Chinatown. The immediate neighborhood is characterized by a mixture of building types that are largely 3 and 4 stories in height, depending upon the relationship with the street and underlying topography.

To the south on Stockton Street, the site abuts the Presbyterian Church in Chinatown at 925 Stockton Street. This structure is home to the oldest Asian American Christian congregation in North America, having celebrated its centenary on this site in 1953. The structure is a known historic resource as defined by the City of San Francisco having been completed in 1907 shortly after the 1906 earthquake.

To the west, the station site abuts the playground of the Gordon J. Lau Elementary School. The school building is identified as a potential historic resource by the City of San Francisco, built about 1914 as the Commodore Stockton School.

Potential uses may include residential, office, retail, hotel, institutional (religious / educational) or a combination of compatible uses of the site. Any proposed development should consider the neighborhood character, respond to the Chinatown Central Subway Design Guidelines[4], and seek to adapt to the difficult topography of the site.

[4] *AsianNeighborhoodDesign prepared for Chinatown Community Development Center, Draft: Dec. 2008*

Street Character

Stockton and Washington Streets are dissimilar in character. Stockton Street is almost 70 feet wide, and supports two-way traffic generally along the topography of the hill. Ground floor retail uses front the sidewalk, which is periodically occupied by stalls and outflow from retail establishments. Washington Street is narrower, being 49 feet wide, and is a one-way street westbound heading almost directly uphill. Grades on Washington are steep and make street fronting retail difficult to achieve.

Stockton Street Enhancement Project

The Stockton Street Enhancement Project, currently headed by the Chinatown Community Development Center (CCDC) and SPUR, conducted a workshop earlier in 2012. This brought together stakeholders from Chinatown and SPUR to discuss ways to preserve the economic and cultural vitality of Stockton Street while offering opportunity areas for improvement through the next decade. This effort, based on a study by CHS Consulting Group for the SF Department of Parking and Traffic and CCDC in 2003, will aid the shaping of a dynamic public realm to which the station design can contribute.

Off-Street Parking

There is limited secured parking (parking garages) available within a 5-minute walk of the Chinatown Station site.

Historic Building Evaluation[5]

The site is listed as Category A – Historic Resource and was evaluated as a historical resource for the purposes of CEQA. Evaluation criteria included;

- Significance (event, persons, and architecture),
- Integrity,
- Character Defining Features (including well-related building height, continuous façade, simple massing, regular rhythm of vertical bays of openings, etc.)

[5] *Source: Historic Resource Evaluation, San Francisco Planning Department*

CURRENT STATION DESIGN & ENGINEERING

This section describes current station design and engineering considerations incorporated into the bid-documents for construction of the Central Subway.

Design Intent

The current design has been prepared by Kwan Henmi Architecture / Planning, Inc. in association with Parsons Brinkerhoff. The design proposes an enclosed single-story station (head house) on the corner of Stockton and Washington Streets that uses existing street topography to provide pedestrian entry at the lowest part of the station site. Required emergency evacuation and venting structures are located to the southwest of the head house, adjacent to the Elementary School, exiting toward Stockton Street.

The proposed Chinatown Station platforms are located beneath Stockton Street, with platforms approximately 90 to 100 feet under existing sidewalk elevations. The entire site will be excavated to facilitate construction of the Central Subway. A key goal established during station design was to maximize penetration of natural light into the station to enhance the user experience and minimize the need for lighting. This has been incorporated through the provision of a skylight over the station escalators parallel to Stockton Street.

Foundation Conditions

The site has been engineered to support two stories of uniform superimposed dead loads and live loads above the head house and above the balance of the site.

Servicing and Emergency Egress

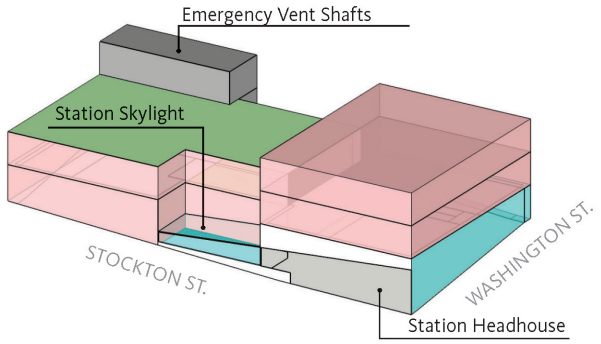
Maintenance access to Chinatown Station is located along the western boundary of the site, accessing from Washington Street. The ventilation shaft, for both day-to-day and emergency smoke evacuation, is located at the southwest corner of the site, and is required to extend approximately 10-feet above the anticipated height of development over the station and adjacent operable windows. Any increase in height in the development adjacent to the vent shaft would require vertical extension of the vent shaft, which has been designed to ensure continued light access to windows along the northern face of the Presbyterian Church.

Construction Access

It is anticipated that the Chinatown Station will provide access for construction throughout tunneling and fit-out of the Central Subway.

Development Building Massing and Footprint

The current engineering plans for the Chinatown Station allows for a 2-story addition above the head house and 2-stories above the balance of the site. Although the parcel is approximately 138 x 73 feet, the exclusions to development established by the skylight and emergency ventilation shaft produce an irregularly shaped developable opportunity of approximately 6,800 GSF in a dumbbell plan shape. The area above the headhouse provides a developable area of approximately 3,200 GSF, with the remaining portion of the site adjacent to the Presbyterian Church providing an area of approximately 3,600 GSF. The available development envelope is described in the following diagram.



(Illustrative only - demonstrates current zoning height and bulk)

Ground Floor Commercial (including common amenities, such as bathrooms and circulation)	3,060 sf
Level 2 GSF (excluding emergency vents)	7,060 sf
Level 3 GSF (excluding emergency vents)	3,220 sf

DEVELOPMENT CONSTRAINTS

Neighborhood Concerns

The proximity of the Chinatown Station to the Presbyterian Church remains a concern of the neighborhood, in addition to concerns over the proposed uses of the site. The location of development should be crafted to avoid over-shadowing of windows on the northern façade of the Church, and should seek to enhance solar access to the station skylight. Additionally, the community consultation process completed throughout the Environmental Impact Report for the Chinatown Station elicited preferences for community serving activities in replacement development on the site.

Physical Constraints

The designed foundation establishes a significant overall restriction to the transit-oriented development potential of the Chinatown Station site. The foundation establishes function, location, height and bulk limitations on the extent of achievable development. These include;

- Development is only achievable over two roughly equal areas, over the head house and the southern portion of the station site, of approximately 3,200 GSF each,
- Development is limited to a maximum of 2 stories or approximately 30 feet, and,
- Total development potential is approximately 13,000 GSF and,
- Development is limited to a lightweight steel frame building type.

In addition, the resulting development parcel(s) is highly irregular in footprint and constrains development options by;

- Providing an irregular footprint of approximately 7,000 GSF floor plate area, and,
- Limiting capacity for construction of on-site parking owing to the underlying station structure.

Central Subway Project Delivery

The site is further constrained by delivery schedule and cost of the Central Subway.

The subway is currently anticipated as being substantially complete during 2017, after which a testing period will culminate with opening of the line to passengers in 2018. The Chinatown Station site will not be available for developer occupation until testing begins, and will be influenced by the economic conditions at that time.

In addition, any transit-oriented development potential that does not comply with the planned foundation systems will require significant re-design, which is anticipated to produce cost and schedule delays. As such, development of the Chinatown Station site should comply with the physical constraints identified above.

DEVELOPMENT OPPORTUNITIES

Potential Uses:

In order to determine potential development value to the SFMTA of the Chinatown Station site, the following potential uses were identified;

Open Space: including potential roof top open spaces over the head house and/or commercial retail portion of the site fronting Stockton Street. This open space has the potential to be connected at grade to the Elementary School if desirable. However, there was no support for at-grade open space.

Community Uses: capitalizing on the location near downtown at the heart of Chinatown and addressing expressed community desire, including potential child care, community meeting rooms and other uses that are intended to support the community at large.

Retail: occupying the ground floor at the southern end, with potential use of a mezzanine and / or second floor for retail purposes, including retail, community services, and other uses appropriate to a corner location. These may include potential food and beverage operations, including potential 'grab-and-go' offerings targeted to students and local residents and / or a banqueting facility that would benefit from adjacency with an open space and vertical separation from activity on the street.

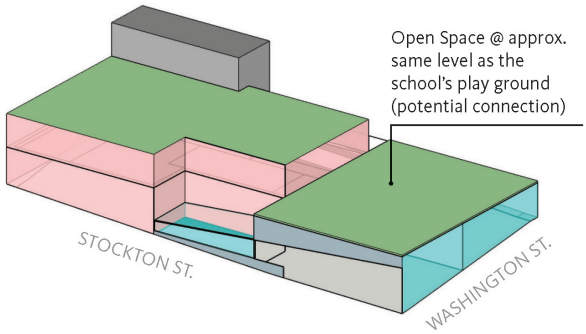
Commercial Office: potential small office spaces and/or office condominiums including alternative medical offices such as acupuncturists and herbalists that require the equivalent of small studio spaces.

Residential: rental or low-income housing. Market rate housing, except senior housing, is not considered feasible at this site due to lack of the ability to provide on-site parking and limited value potential for level of developer effort. However, both low-income and non-traditional urban housing options such as single room occupancy and micro-lofts may be achievable. The form of the developable area on the station site, allied with locations of vertical penetrations and site adjacencies, make this option largely infeasible without significant re-design of the underlying station.

Potential Development & Massing Scenarios:

Scenario A:
Minimal Density: Open Space + Small Space Commercial / Community / Retail

The built volume is constrained to 2-floors above grade south of the head house, and preserves the developable area over the head house for open space. Uses may include small space retail, commercial, and/or community uses.

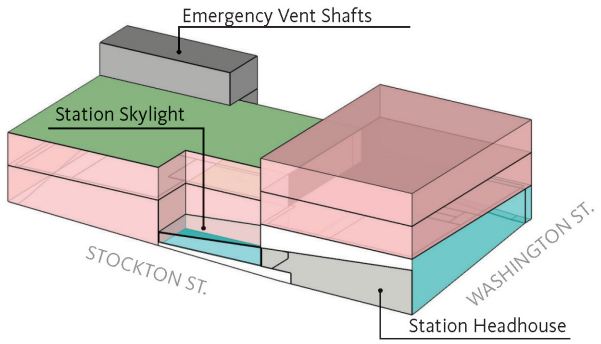


(Illustrative only - demonstrates current zoning height and bulk)

Ground Floor Commercial (including common amenities, such as bathrooms and circulation)	3,060 sf
Level 2 Commercial* GSF (excluding emergency vents)	3,840 sf

* Potential restaurants or medical offices. The open space above the head house can be an outdoor banquet space for the restaurant.

Scenario B:
Maximum Density: Small Space Commercial / Community / Retail



(Illustrative only - demonstrates current zoning height and bulk)

Ground Floor Commercial (including common amenities, such as bathrooms and circulation)	3,060 sf
Level 2 Commercial* GSF (excluding emergency vents)	7,060 sf
Level 3 Commercial* GSF (excluding emergency vents)	3,220 sf

Appendix K:

Cost Estimate Summary

Schedule Loaded Cost Estimate
August 6, 2012 (rev. November 6, 2012 to show Scott) (rev. December 20, 2012 with changes to Marin)

Year/Facility	Potrero	Presidio Bus	Presidio OH	Flynn	Woods	Kirkland	Marin	Burke	MME - Body Repair & paint	MME - Existing Building Upgrades	MME - Historic Streetcar Storage	Green Annex	Green	Cameron Beach	Scott	Subtotal	Escalation	Subtotal (Escalated)	Total
																		3% per year	
Total Construction Cost	$ 39,363,901	$ 37,766,498	$ 12,030,969	$ 16,554,737	$ 43,281,716	$ 27,825,287	$ 3,046,350	$ 8,054,743	$ 31,764,197	$ 12,950,822	$ 9,405,569	$ 911,605	$ 3,623,196	$ 9,206,484	$ 10,539,819	$ 266,325,893	$ 71,226,662	$ 337,552,555	
Total Soft Cost	$ 7,872,780	$ 7,553,300	$ 2,406,194	$ 3,310,947	$ 8,656,343	$ 5,565,057	$ 609,270	$ 1,610,949	$ 6,352,839	$ 2,590,164	$ 1,881,114	$ 182,321	$ 724,639	$ 1,841,297	$ 2,107,964	$ 53,265,179	$ 11,202,217	$ 64,467,396	**$ 402,019,951**
Total	**$ 47,236,682**	**$ 45,319,798**	**$ 14,437,163**	**$ 19,865,684**	**$ 51,938,060**	**$ 33,390,344**	**$ 3,655,620**	**$ 9,665,691**	**$ 38,117,036**	**$ 15,540,987**	**$ 11,286,683**	**$ 1,093,926**	**$ 4,347,835**	**$ 11,047,780**	**$ 12,647,783**	**$ 319,591,072**	**$ 82,428,879**	**$ 402,019,951**	
Soft Cost Start/Duration (yrs)	1/2016 (6.5)	1/2013 (7)	1/2013 (7)	1/2013 (4)	7/2015 (5)	7/2023 (6)	7/2012 (1.5)	1/2015 (2.5)	1/2014 (6)	1/2029 (2)	1/2013 (3)	1/2014 (2)	1/2014 (2)	1/2015 (6)	1/2013 (2)				
Construction Start/Duration (yrs)	7/2020 (2)	1/2017 (3)	1/2017 (3)	1/2016 (1)	7/2017 (3)	7/2027 (2)	1/2013 (1)	1/2016 (1.5)	1/2018 (2)	1/2030 (1)	1/2015 (1)	1/2015 (1)	1/2015 (1)	1/2019 (2)	1/2014 (1)				
2012																			
Soft Cost (design, CM, testing, etc)																$ -	$ -	$ -	**$ -**
Construction																$ -	$ -	$ -	
2013																			
Soft Cost (design, CM, testing, etc)		$ 1,079,043	$ 343,742	$ 827,737							$ 627,038				$ 1,053,982	$ 3,931,541	$ 117,946	$ 4,049,488	**$ 4,049,488**
Construction																$ -	$ -	$ -	
2014																			
Soft Cost (design, CM, testing, etc)		$ 1,079,043	$ 343,742	$ 827,737			$ 304,635		$ 1,058,807		$ 627,038	$ 91,160	$ 362,320		$ 1,053,982	$ 5,748,463	$ 350,081	$ 6,098,545	**$ 17,280,239**
Construction															$ 10,539,819	$ 10,539,819	$ 641,875	$ 11,181,694	
2015																			
Soft Cost (design, CM, testing, etc)		$ 1,079,043	$ 343,742	$ 827,737	$ 865,634		$ 304,635	$ 644,379	$ 1,058,807		$ 627,038	$ 91,160	$ 362,320	$ 306,883		$ 6,511,378	$ 603,781	$ 7,115,158	**$ 25,677,006**
Construction							$ 3,046,350				$ 9,405,569	$ 911,605	$ 3,623,196			$ 16,986,720	$ 1,575,128	$ 18,561,848	
2016																			
Soft Cost (design, CM, testing, etc)	$ 1,211,197	$ 1,079,043	$ 343,742	$ 827,737	$ 1,731,269			$ 644,379	$ 1,058,807					$ 306,883		$ 7,203,056	$ 904,047	$ 8,107,103	**$ 32,783,395**
Construction				$ 16,554,737				$ 5,369,828								$ 21,924,565	$ 2,751,726	$ 24,676,292	
2017																			
Soft Cost (design, CM, testing, etc)	$ 1,211,197	$ 1,079,043	$ 343,742		$ 1,731,269			$ 322,190	$ 1,058,807					$ 306,883		$ 6,053,129	$ 964,107	$ 7,017,236	**$ 37,735,320**
Construction		$ 12,588,833	$ 4,010,323		$ 7,213,619			$ 2,684,914								$ 26,497,689	$ 4,220,395	$ 30,718,084	
2018																			
Soft Cost (design, CM, testing, etc)	$ 1,211,197	$ 1,079,043	$ 343,742		$ 1,731,269				$ 1,058,807					$ 306,883		$ 5,730,940	$ 1,112,102	$ 6,843,042	**$ 62,854,235**
Construction		$ 12,588,833	$ 4,010,323		$ 14,427,239				$ 15,882,098							$ 46,908,493	$ 9,102,701	$ 56,011,194	
2019																			
Soft Cost (design, CM, testing, etc)	$ 1,211,197	$ 1,079,043	$ 343,742		$ 1,731,269				$ 1,058,807					$ 306,883		$ 5,730,940	$ 1,317,393	$ 7,048,333	**$ 70,401,269**
Construction		$ 12,588,833	$ 4,010,323		$ 14,427,239				$ 15,882,098					$ 4,603,242		$ 51,511,735	$ 11,841,202	$ 63,352,936	
2020																			
Soft Cost (design, CM, testing, etc)	$ 1,211,197				$ 865,634									$ 306,883		$ 2,383,714	$ 635,904	$ 3,019,618	**$ 30,455,117**
Construction	$ 9,840,975				$ 7,213,619									$ 4,603,242		$ 21,657,837	$ 5,777,663	$ 27,435,499	
2021																			
Soft Cost (design, CM, testing, etc)	$ 1,211,197															$ 1,211,197	$ 369,140	$ 1,580,337	**$ 27,260,819**
Construction	$ 19,681,951															$ 19,681,951	$ 5,998,531	$ 25,680,481	
2022																			
Soft Cost (design, CM, testing, etc)	$ 605,598															$ 605,598	$ 208,275	$ 813,874	**$ 14,039,322**
Construction	$ 9,840,975															$ 9,840,975	$ 3,384,473	$ 13,225,448	
2023																			
Soft Cost (design, CM, testing, etc)						$ 463,755										$ 463,755	$ 178,190	$ 641,945	**$ 641,945**
Construction																$ -	$ -	$ -	
2024																			
Soft Cost (design, CM, testing, etc)						$ 927,510										$ 927,510	$ 394,897	$ 1,322,407	**$ 1,322,407**
Construction																$ -	$ -	$ -	
2025																			
Soft Cost (design, CM, testing, etc)						$ 927,510										$ 927,510	$ 434,569	$ 1,362,079	**$ 1,362,079**
Construction																$ -	$ -	$ -	
2026																			
Soft Cost (design, CM, testing, etc)						$ 927,510										$ 927,510	$ 475,432	$ 1,402,941	**$ 1,402,941**
Construction																$ -	$ -	$ -	
2027																			
Soft Cost (design, CM, testing, etc)						$ 927,510										$ 927,510	$ 517,520	$ 1,445,030	**$ 12,282,752**
Construction						$ 6,956,322										$ 6,956,322	$ 3,881,401	$ 10,837,723	
2028																			
Soft Cost (design, CM, testing, etc)						$ 927,510										$ 927,510	$ 560,871	$ 1,488,381	**$ 23,814,089**
Construction						$ 13,912,643										$ 13,912,643	$ 8,413,065	$ 22,325,708	
2029																			
Soft Cost (design, CM, testing, etc)						$ 463,755				$ 1,295,082						$ 1,758,837	$ 1,148,253	$ 2,907,090	**$ 14,404,829**
Construction						$ 6,956,322										$ 6,956,322	$ 4,541,418	$ 11,497,740	
2030																			
Soft Cost (design, CM, testing, etc)										$ 1,295,082						$ 1,295,082	$ 909,709	$ 2,204,791	**$ 24,252,699**
Construction										$ 12,950,822						$ 12,950,822	$ 9,097,086	$ 22,047,908	
TOTAL	**$ 47,236,682**	**$ 45,319,798**	**$ 14,437,163**	**$ 19,865,684**	**$ 51,938,060**	**$ 33,390,344**	**$ 3,655,620**	**$ 9,665,691**	**$ 38,117,036**	**$ 15,540,987**	**$ 11,286,683**	**$ 1,093,926**	**$ 4,347,835**	**$ 11,047,780**	**$ 12,647,783**	**$ 319,591,072**	**$ 82,428,879**	**$ 402,019,951**	**$ 402,019,951**

Construction Cost Estimates
August 6, 2012 (rev. November 6, 2012 to show Scott) (rev. December 20, 2012 with changes to Marin)

	Unit	Unit Cost	Potrero		Presidio Bus Maintenance		Presidio Overhead Lines		Flynn		Woods		Kirkland		Marin		Burke		MME- Body Repair & Paint		MME - Existing Building Upgrades		MME - Historic Streetcar Storage		Green Annex		Green		Cameron Beach		Scott (Alternate)	
			Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
Sitework																																
Demolition	SF	4	119,732	478,928	141,647	566,588		-		-	232,720	930,880	99,293	397,172		-		-		-		-		-		-		-	101,861	407,444		-
Site Utilities	SF	1	196,868	196,868	250,822	250,822		-		-		-	113,438	113,438		-	29,806	29,806	111,644	111,644		-	43,394	43,394		-		-	101,861	101,861		-
Paving	SF	7	142,281	995,967	141,647	991,529		-		-	232,720	1,629,040	80,938	566,566		-		-	111,644	781,508		-		-		-		-	101,861	713,027		-
Excavation	CY	8			6,616	52,928	12,000	96,000		-																						
Off-Sitework																																
Overhead Installation	LF	200		-		-		-	528	105,600		-		-		-		-		-		-		-		-		-		-		-
Track and Overhead																																
Track Demolition	LF	150		-		-		-		-		-		-		-		-		-		-		-		-		-	5,513	826,950		-
Track Installation	LF	300		-		-		-		-		-		-		-		-	3,818	1,145,400		-	5,177	1,553,100		-		-	4,258	1,277,400		-
Overhead Demolition	LF	150	14,759	2,213,850	8,637	1,295,550		-		-		-		-		-		-		-		-		-		-		-	5,513	826,950		-
Overhead Installation	LF	200	12,736	2,547,200	9,802	1,960,400		-	16,015	3,203,000		-		-		-		-	3,818	763,600		-	5,177	1,035,400		-		-	4,258	851,600		-
Maintenance Equipment																																
Vehicle Lifts	EA	195,000	16	3,120,000	18	3,510,000		-	11	2,145,000	41	7,995,000	12	2,340,000		-		-	6	1,170,000		-		-		-		-		-		-
Paint Booths (w/ manlift)	EA	553,000		-		-		-		-		-		-		-		-	4	2,212,000		-		-		-		-		-		-
Vehicle Exhaust System	BAY	15,000	15	225,000	18	270,000		-	-	-	40	600,000	12	180,000		-		-		-		-		-		-		-		-		-
Bus Washer	EA	200,000	2	400,000	2	400,000		-	2	400,000	2	400,000	2	400,000		-		-		-		-		-		-		-		-		-
Fuel Position	EA	385,000	2	770,000		-		-	-	-	6	2,310,000	2	770,000		-		-		-		-		-		-		-		-		-
Lubrication System																																
Reel Banks (5 commodities)	EA	8,000	8	64,000	10	80,000		-	6	48,000	20	160,000	6	48,000		-		-		-		-		-		-		-		-		-
Tanks & Pumps (5 commodities)	EA	62,000	1	62,000	1	62,000		-	1	62,000	2	124,000	1	62,000		-		-		-		-		-		-		-		-		-
Compressed Air System	EA	50,000	1	50,000	1	50,000		-	1	50,000	2	100,000	1	50,000	1	50,000	1	50,000	1	50,000		-		-		-		-		-		-
Pallet Stacking System	EA	70,000		-		-		-		-		-		-		-	1	70,000		-		-		-		-		-		-		-
Misc. Equipment	SF	25	40,435	1,010,875	61,593	1,539,825		-	66,865	1,671,625	60,072	1,501,800	22,500	562,500			29,806	745,150	59,057	1,476,425		-		-		-		-		-	40,278	1,006,950
Building																																
Demolition																																
Interior	SF	5		-		-		-	66,865	334,325	102,569	512,845		-			3,020	15,100		-		-		-		-		-		-	40,278	201,390
Building	SF	15	100,958	1,514,370	132,474	1,987,110		-		-		-	14,145	212,175				-		-		-		-		-		-	22,124	331,860		-
Renovation																																
Office / Support	SF	115		-		-		-		-	17,369	1,997,435		-		-		-		-		-		-		-		-		-	31,408	3,611,920
Parts Storeroom	SF	55		-		-		-		-	14,290	785,950			26,400	1,452,000		-		-		-		-		-		-		-		-
Maintenance Space	SF	100		-		-		-		-	59,269	5,926,900		-			29,806	2,980,600		-		-		-		-		-		-	8,870	887,000
Envelope & Misc. Repairs	SF	10		-		-		-	66,865	668,650					26,400	264,000	77,876	778,760		-		-		-		-	109,211	1,092,110		-	40,278	402,780
Sustainability Projects				Included		Included		Included				Included		Included				Included		Included												
Vent., Fan, Light Control	SF	0.50							256,447	128,224											94,094	47,047			29,238	14,619	109,211	54,606		-		-
Lighting Replacement	SF	2.50							256,447	641,118																	109,211	273,028		-		-
Comfort System Replacement	SF	8.00							17,426	139,408																	10,000	80,000		-		-
Vent. System Replacements	SF	5.50																									109,211	600,661		-		-
Repair/Replace Comfort Units	SF	6.00																							25,947	155,682						
Air/Water System Balance	SF	1.00																							29,238	29,238						
Boiler Replacement	SF	1.00																							29,238	29,238						
Skylight Replacement	SF	20.50																							14,619	299,690						
Compressor Installation	SF	0.10																			45,136	4,514										
Photovoltaic System	SF	56.00																			130,125	7,287,000										
Variable Speed Pumping	SF	1.30																			130,125	169,163										
Ventilation	SF	0.10																														
New Construction																																
Office / Support	SF	185	12,787	2,365,595	9,000	1,665,000	10,000	1,850,000		-		-	2,250	416,250		-		-	3,876	717,060		-		-		-		-		-		-
Parts Storeroom	SF	90	6,000	540,000	4,493	404,370	4,000	360,000		-		-	6,250	562,500		-		-	4,101	369,090		-		-		-		-		-		-
Fuel & Wash	SF	175	7,750	1,356,250		-		-		-		-	7,750	1,356,250		-		-		-		-		-		-		-		-		-
Maintenance Space	SF	175	28,050	4,908,750	38,900	6,807,500	26,677	4,668,475		-		-	16,250	2,843,750		-		-	54,956	9,617,300		-		-		-		-		-		-
Vehicle Canopies (w/ Green Roof)	SF	105		-		-		-		-			50,000	5,250,000		-		-		-		-		-		-		-		-		-
Vehicle Canopies	SF	65		-		-		-		-	1,800	117,000		-		-		-		-		-	43,394	2,820,610		-		-		-		-
Subtotal				22,819,653		21,893,622		6,974,475		9,596,949		25,090,850		16,130,601		1,766,000		4,669,416		18,414,027		7,507,723		5,452,504		528,467		2,100,404		5,337,092		6,110,040
Location Factor	1.35			7,986,879		7,662,768		2,441,066		3,358,932		8,781,798		5,645,710		618,100		1,634,296		6,444,909		2,627,703		1,908,376		184,963		735,141		1,867,982		2,138,514
Design Contingency	15%			3,422,948		3,284,043		1,046,171		1,439,542		3,763,628		2,419,590		264,900		700,412		2,762,104		1,126,158		817,876		79,270		315,061		800,564		916,506
Subtotal				34,229,480		32,840,433		10,461,713		14,395,424		37,636,275		24,195,902		2,649,000		7,004,124		27,621,041		11,261,585		8,178,756		792,700		3,150,605		8,005,638		9,165,060
Construction Contingency	15%			5,134,422		4,926,065		1,569,257		2,159,314		5,645,441		3,629,385		397,350		1,050,619		4,143,156		1,689,238		1,226,813		118,905		472,591		1,200,846		1,374,759
Total Construction Cost				**39,363,901**		**37,766,498**		**12,030,969**		**16,554,737**		**43,281,716**		**27,825,287**		**3,046,350**		**8,054,743**		**31,764,197**		**12,950,822**		**9,405,569**		**911,605**		**3,623,196**		**9,206,484**		**10,539,819**
Soft Cost	20%			7,872,780		7,553,300		2,406,194		3,310,947		8,656,343		5,565,057		609,270		1,610,949		6,352,839		2,590,164		1,881,114		182,321		724,639		1,841,297		2,107,964
Total Project Cost				**47,236,682**		**45,319,798**		**14,437,163**		**19,865,684**		**51,938,060**		**33,390,344**		**3,655,620**		**9,665,691**		**38,117,036**		**15,540,987**		**11,286,683**		**1,093,926**		**4,347,835**		**11,047,780**		**12,647,783**

Not Including: Escalation, Hazardous Material Removal, or TOD/JD Construction Cost

Note that Scott (Alternate) does not include cost to provide for NRV Maintenance elsewhere. The cost shown is for modifying Scott entirely for Enforcement. The cost would be approximately $1,000,000 less for Scott (Base Recommendation) - renovating the ground floor for NRV Maintenance and a portion of the first parking level for Go-4 Maintenance.

Summary (with mark ups)

Sitework				2,883,791		3,211,721		165,600		-		4,415,862		1,858,129		-		51,415		1,540,687		-		74,855		-		-		2,108,523		-
Off-Sitework				-		-		-		182,160		-		-		-		-		-		-		-		-		-		-		-
Track and Overhead				8,212,811		5,616,514		-		5,525,175		-		-		-		-		3,293,025		-		4,465,163		-		-		6,525,503		-
Maintenance Equipment				9,835,734		10,197,898		-		7,549,678		22,754,130		7,611,563		86,250		1,492,384		8,467,033		-		-		-		-		-		1,736,989
Building - Demolition				2,612,288		3,427,765		-		576,711		884,658		366,002		-		26,048		-		-		-		-		-		572,459		347,398
Building - Renovation				-		-		-		**1,153,421**		15,025,242		-		2,960,100		6,484,896		-		-		-		-		1,883,890		-		8,455,433
Building - Sustainability Projects				-		-		-		1,567,592		-		-		-		-		-		12,950,822		-		911,605		1,739,306		-		-
Building - New Construction				15,819,276		15,312,601		11,865,369		-		201,825		17,989,594		-		-		18,463,451		-		4,865,552		-		-		-		-
Total Construction Costs				**39,363,901**		**37,766,498**		**12,030,969**		**16,554,737**		**43,281,716**		**27,825,287**		**3,046,350**		**8,054,743**		**31,764,197**		**12,950,822**		**9,405,569**		**911,605**		**3,623,196**		**9,206,484**		**10,539,819**
Total Soft Cost				7,872,780		7,553,300		2,406,194		3,310,947		8,656,343		5,565,057		609,270		1,610,949		6,352,839		2,590,164		1,881,114		182,321		724,639		1,841,297		2,107,964
Total Project Cost				**47,236,682**		**45,319,798**		**14,437,163**		**19,865,684**		**51,938,060**		**33,390,344**		**3,655,620**		**9,665,691**		**38,117,036**		**15,540,987**		**11,286,683**		**1,093,926**		**4,347,835**		**11,047,780**		**12,647,783**

TOTAL CONSTRUCTION COST	266,325,893
TOTAL SOFT COST	53,265,179
TOTAL PROJECT COST	319,591,072

Appendix L:

Funding Approaches

SFMTA Real Estate and Facilities Vision for the 21st Century – Funding Approaches

December 21, 2012

Prepared for:

SFMTA | Municipal Transportation Agency

Prepared by:

PARSONS BRINCKERHOFF

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Acronyms and Terms

Congestion Management and Air Quality (CMAQ) Program was originally authorized as part of the federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and provides funding for projects that improve air quality and/or relieve traffic congestion. The CMAQ program has been reauthorized under each subsequent federal transportation bill, including, most recently, Moving Ahead for Progress in the 21st Century Act (MAP-21).

Design-Build-Finance/Lease Arrangements refer to alternative approaches for delivering construction projects. Typically, a government agency will issue bonds to finance the design and construction of a facility, which it will own and occupy. In a design-build-finance arrangement, a private party will assume each of those responsibilities and will lease the completed facility to the government agency.

Final Maturity refers to the last date at which a debt obligation becomes due.

Fiscal Year (FY) for the SFMTA is from July 1 through June 30 of the following year.

General Obligation (GO) bonds are voter-approved bonds backed by a governmental issuer's taxing power in San Francisco, based on the commercial and residential real property taxable assessed roll.

Interest Rate refers to the borrowing rate for a debt obligation. The rate is based on the final maturity of the obligation, its credit quality and tax status (tax-exempt or taxable), and is determined at the time the obligation is entered into.

Lien Status refers to the priority of payment from a specified revenue repayment source. A senior lien represents the highest priority. Senior lien obligations will be paid before subordinate obligations. The concept is relevant in the context of the repayment of loans under the TIFIA program, which can be subordinate to the repayment of SFMTA revenue bonds.

MAP-21 is the acronym for the new federal transportation bill—Moving Ahead for Progress in the 21st Century.

Master Credit Agreements are authorized under the current TIFIA program and are used to document contingent commitments of TIFIA funding for a project or series of projects that will commence in the future—up to three years from the time the master credit agreement is entered into.

Prop 1A refers to State of California High Speed Rail Act of 2008. The general purpose of this Act is to fund the planning and construction of a high-speed train system that initially would link San Francisco and the Bay Area to Los Angeles and, eventually, include all of California's major

population centers. The Act authorizes the issuance of $9.95 billion of State of California general obligation bonds, most of which remain unissued.

Prop 1B refers to the State of California Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006. Prop 1B authorizes the issuance of $19.925 billion of State of California general obligation bonds, with proceeds allocated for specific transportation purposes throughout the state, including $3.6 billion for Public Transportation Modernization, Improvement and Service Enhancement (PTMISE) to be appropriated by the State Legislature to the Department of Transportation for intercity rail projects and commuter or urban rail operators. $1.69 billion of PTMISE funding has been committed, with $1.9 billion to become available from time to time when additional bonds under Prop 1B are issued.

Prop 1C refers to the State of California the Housing and Emergency Shelter Trust Fund Act of 2006. Prop 1C authorizes the issuance of $2.85 billion of State of California general obligation bonds for a variety of housing programs, including $300 million for transit-oriented developments, $590 million for affordable rental housing, $625 million of home ownership opportunities, $285 million for other housing programs, and $1.05 billion for infrastructure and parks.

Prop K refers to the ½ cent sales tax measure approved by San Francisco voters in 2003 for transportation projects identified in the voter-approved Expenditure Plan. Sales tax revenues are received and administered by the San Francisco County Transportation Authority.

Revenue bonds are obligations that are secured by and repaid from a defined revenue stream. The SFTMA's revenue bonds are repaid from a combination of farebox revenues, parking-related revenues, and state TDA funds.

Social Impact Bonds represent a new means for the delivery of social services whereby a private nonprofit entity performs a service typically provided by a government agency, with a large sophisticated investor providing the funding to the private entity. The investor is repaid from the savings generated by the nonprofit service provider over the cost that would have been incurred by the government agency if it were to have provided the service. Social impact bonds have been used in Massachusetts, Minnesota, and New York to fund services relating to poverty, prisons, and health care.

State-of-good-repair needs refer to capital needs associated with existing assets, including their rehabilitation and replacement as such assets reach the end of their useful lives.

TIFIA is the acronym for the federal Transportation and Infrastructure Financing & Innovation Act of 1998, which provides credit assistance for qualified highway, transit, railroad, intermodal freight and other surface transportation projects of regional and national significance. TIFIA fills

project funding gaps by providing supplemental and subordinate investments. The TIFIA program was reauthorized and expanded by MAP-21.

1 Introduction

The SFMTA Real Estate and Facilities Vision for the 21st Century report (the Vision or the Vision Report) outlines $404 million of facilities improvements to be implemented through 2030. These improvements are intended to accommodate the San Francisco Municipal Transportation Authority's (SFMTA) increasing fleet and operational demands and assist the SFMTA in meeting its real estate needs. The improvements will also improve operations and provide cost efficiencies. The Vision costs are significant; given the SFMTA's agency-wide state-of-good-repair backlog of $2.2 billion as of 2010.[1] This funding report reviews existing and potential new funding and financing sources for the SFMTA to consider as it proceeds to implement these facility solutions.

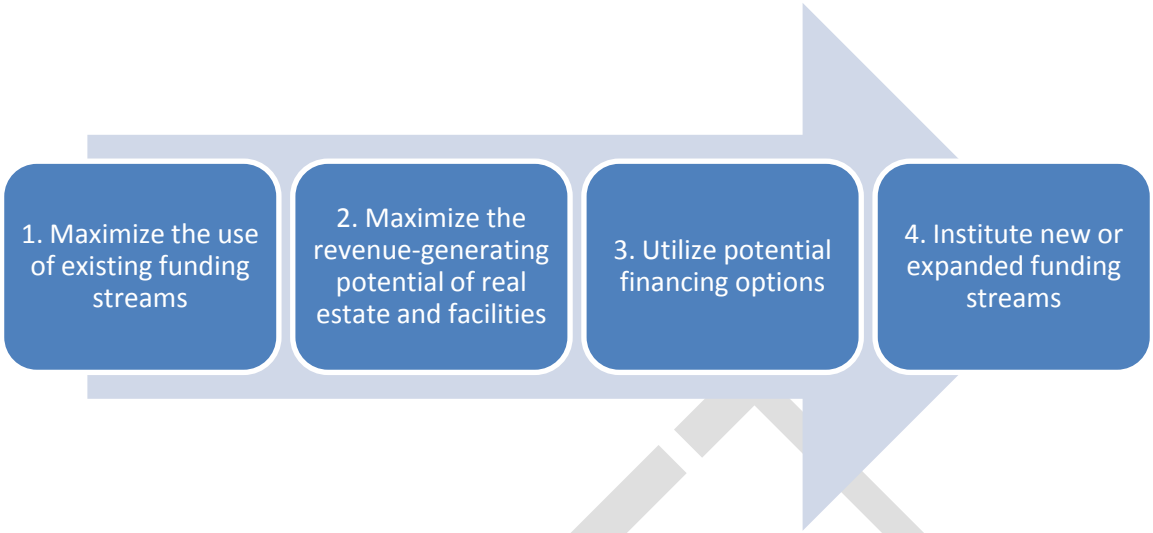
To put this report in context:

- This report was developed in tandem with an implementation schedule that targets facility investments based on assumptions as to when funding can reasonably be expected to become available. This implementation schedule is discussed in the Vision Report.
- The improvements recommended in this funding report cannot take place overnight, nor are all funding sources known at this time. The Vision Report is intended to serve as a tool for communicating the SFMTA's facilities' needs and making a case for funding over the next 19 years. New sources of funds will need to be identified in order to implement the program.
- Many of the improvement measures recommended in this report could lead to cost savings from increased operating efficiencies as well as from avoidance of failures. While they are difficult to quantify, these savings are expected to be significant.
- Operational savings and increased revenues from joint or transit-oriented developments could, in turn, increase the SFMTA's capacity to issue and afford additional revenue bonds over time.
- Many of the recommendations in this report will require policymakers to consider reordering priorities (e.g., balancing previously identified needs with the new needs identified in this report).

Against this backdrop, the basic funding strategy for the Vision consists of four components (Figure 1).

[1] Federal Transit Administration, *2010 National State of Good Repair Assessment*, June 2010, http://www.fta.dot.gov/documents/National_SGR_Study_072010(2).pdf

FIGURE 1– VISION REPORT FUNDING SOLUTIONS



This report addresses the costs and potential funding strategy associated with the facilities solutions identified in the Vision Report. It is organized in the following sections:

1. **SFMTA Financial Context** reviews the SFMTA's current financial environment in setting the context for the funding and financing solutions discussed in this report.
2. **Facilities' Solutions Cost Summary** summarizes the capital costs and timing associated with the facilities' solutions.
3. **Funding and Financing Solutions** assesses the availability of existing funds, and federal, state, and local grants programs. These solutions also evaluate various funding/financing options including federal Transportation Infrastructure Finance and Innovation Act (TIFIA) loans, SFMTA revenue bonds, design-build-finance structures involving private parties, and joint and transit-oriented development options. In addition, the section discusses how the SFMTA could augment its existing funding capacity through a variety of means. While these funding sources will inevitably change over the lengthy implementation timeframe of the Vision Report's facilities plan, the funding approaches discussed could be applicable for the near-term, if not longer.
4. **Conclusions and Next Steps** summarizes this report's findings and provides a pathway for the SFMTA to make the Vision Report a reality.

2 SFMTA Financial Context

The SFMTA, like transit agencies throughout the nation, must contend with significant levels of state-of-good-repair backlog, an aging fleet, and the pressure to increase service—all with severely constrained capital funds. As outlined by SFMTA staff in a 2011 Board workshop and the SFMTA's 2012 Budget Balancing Panel, the SFMTA has the following challenges with its operations and maintenance budget:[2]

- $50 million per year operating deficit (assuming the SFMTA maintains current levels of service)
- $70 million in additional funding needed annually for operations to support increased service levels ($40 to $45 million for transit needs and $20 to $25 million for bicycles, sustainable streets and other modes and support)

In addition to the operating shortfalls, the Federal Transit Administration's (FTA) *2010 National State of Good Repair Assessment* found a backlog of the SFMTA's agency-wide state-of-good-repair needs of $2.2 billion (requiring annual capital expenditures of approximately $366 million) and ongoing state-of-good-repair needs of approximately $10.2 billion over the next 20 years. Within this financial environment, the SFMTA will have to make funding decisions associated with the Vision Report in the context of a broad set of competing needs.

[2] See Final Report – June 1, 2012 of 2012 Budget Balancing Panel

3 Facilities' Solutions Cost Summary

The Vision Report provides a detailed estimate of the following soft costs (e.g., planning, environmental, design) and hard construction costs (e.g., construction materials and labor) associated with the facilities that are recommended for rebuilding or rehabilitation, along with an implementation schedule:

- Total costs in current (2012) year dollars are estimated to be $319.6 million:
  - $266.3 million in hard costs
  - $53.3 million in soft costs
- Total costs in year of expenditure dollars (escalated at an assumed 3 percent per year) are estimated to be approximately $402.0 million:
  - $337.6 million in hard costs
  - $64.5 million in soft costs
- Project implementation is projected over 18 years, beginning in 2013 and continuing through 2030.

The ultimate costs would depend on the actual timing for implementing the projects. The implementation schedule, in turn, would depend on several of the following major factors:

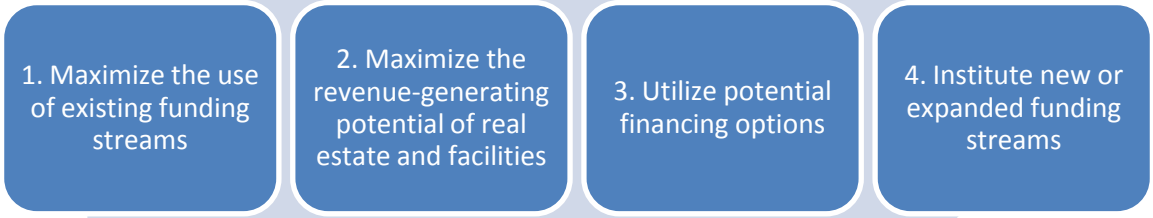
- Acceptance of the Vision Report's recommendations and the incorporation of the facilities' projects into an approved capital budget
- Sufficient staffing at the SFMTA to implement the Vision
- Availability of full funding for each project (or independent component thereof)

4 Funding and Financing Solutions

As mentioned in the introduction, the funding and financing solutions are organized into four categories (Figure 2):

- Maximize the use of existing funding streams (e.g., federal formula funds and grant opportunities)
- Maximize the revenue-generating potential of the SFMTA's real estate and facilities
- Utilize potential financing options (through the use of TIFIA or GO bonds)
- Institute new or expanded funding streams (e.g., increase vehicle license fee or revise the SFMTA's fare structure).

FIGURE 2– VISION REPORT FUNDING SOLUTIONS



4.1 MAXIMIZE THE USE OF EXISTING FUNDING STREAMS

Before considering new funding streams and financing mechanisms, it is important for the SFMTA to ensure that it is taking advantage of existing funds, including federal, state, and local funds as anticipated in its current capital budget and proceeds from its recent bond issue. All of these funding sources are discussed in more detail in the following sections.

4.1.1 Reallocation of Existing Capital Improvement Program Funds

The SFMTA's five-year Capital Improvement Program (CIP) anticipates expenditures of approximately $3.06 billion, of which approximately $1.06 billion is allocated to the Central Subway Project, $627 million to other transit expansion/enhancement projects, and $1.37 billion to state-of-good-repair projects. These projects include $89.7 million for facilities, of which $61.7

million represents prior-year carry-forward funds for specific projects (mostly for the Islais Creek facility). According to SFMTA staff, it is unrealistic for the prior-year carry-forward funds to be re-allocated to Vision Report or other facilities, as this funding is needed to complete the carry-forward projects identified in the CIP. The remaining $28 million in the five-year CIP are targeted to the facility projects (Table 1).

TABLE 1 – FACILITY FUNDING IN THE SFMTA'S CURRENT CAPITAL IMPROVEMENT PROGRAM

Facility	FY 13	FY 14	FY 15	FY 16	FY 17
MME Paint	$450,000		$10,000,000		
Kirkland	1,800,000				
Fac. Reserve	650,000				$15,130,000
Total	**$2,900,000**		**$10,000,000**		**$15,130,000**

Note: The SFMTA did not identify facilities projects in FY 14 and FY 16 either because it could not identify funding sources in those years and/or it did not scope out project needs.

According to SFMTA staff, $20 million of the $28 million in funding for these projects was assumed to derive from discretionary federal state-of-good-repair grants, a program eliminated by the new federal transportation bill, Moving Ahead for Progress in the 21st Century (MAP-21). As a result, the SFMTA is left with only $8 million in identified CIP funding, mostly from Proposition K (Prop K), for facilities projects, and those funds are not expected to materialize until Fiscal Year (FY) 17 because of restrictions in the Prop K expenditure plan. Therefore, any additional funding from the current CIP for Vision Report projects would require a reallocation of CIP funds from other categories.

The SFMTA could adopt a technical change to its two-year budget and CIP to reprogram FY 13 funding to Vision Report projects rather than to MME Paint Booth or Kirkland. Assuming such funds have not yet been committed, they could jump-start some of the design work anticipated by the Vision Report.

Bottom Line

The SFMTA could reprogram funds from the existing CIP to fund a portion of the early design costs for Marin, MME, Flynn, and other Vision Report solutions through a technical change to its FY13 – 14 capital budget.

4.1.2 Bond Proceeds

In July 2012, the SFMTA issued its first series of revenue bonds, which, among other things, raised $25,700,000 to finance various transit projects:

- System-wide transit access ($1,500,000)
- Muni Metro Sunset tunnel rail rehabilitation ($900,000)

- Muni Metro turnback rehabilitation ($3,000,000)
- Public announcement system and radio replacement ($8,100,000)
- Parking garages ($5,000,000)
- Muni Green Light Rail Facility rehabilitation ($7,200,000)

Under its bond indenture and as disclosed in the Official Statement for its bonds, the SFMTA can substitute other projects for the ones listed. SFMTA staff indicated since bond proceeds are committed to the intended projects, the SFMTA would need to look to future bond issuances absent a policy decision to redirect the use of unexpended funds.

Bottom Line

The SFMTA could re-allocate any portion of bond proceeds (such as the Muni Green Light Rail Facility Rehabilitation/Re-rail Project) towards other facilities' needs as outlined in the Vision Report. Improvements called for in the Vision Report should be considered for inclusion in future bond issues.

4.1.3 Federal Funding Programs

Federal funding programs are now governed by MAP-21, the new, two-year authorization outlining current highway and transit federal-funding allocations. While these funding programs provide context for the requirements and a level of federal funding available over the next two years, the majority of facilities solutions' costs occur after the MAP-21 authorization expires. If the SFMTA can use certain funds under existing SFMTA programs to start design, it may be able to commence a federal advocacy effort for an FY 2015 reauthorization that will provide funding that favors state-of-good-repair projects, including maintenance facilities. Under MAP-21, relevant federal grant options include the following:

- ***Formula Grant Programs for Urbanized Areas*** – These continue to be allocated for the SFTMA's region by the Metropolitan Transportation Commission (MTC). Under the MTC's Resolution No. 3908, adopted on June 24, 2009, the MTC allocates formula funds (Section 5307) based on a scoring system that favors revenue vehicle replacement and fixed guideway replacement/rehabilitation over maintenance facilities. This current priority may address the SFMTA's most pressing needs, but to the extent it wishes to redirect its formula funding allocation (approximately $124 million per year in FY 2013 and 2014) to maintenance facilities, it and the other transit agencies in the urbanized area will need to reach policy agreement with the MTC. The potential also might exist in the future for a "funds swap"; for example, enabling the use of formula grants for maintenance facilities by showing the SFMTA has funded higher priority projects through other means (e.g., bond funds or Prop K).

- ***New State of Good Repair Program*** – This $2.1 billion program replaces the former Fixed Guideway Modernization program. Projects eligible for grant funding include rail systems, fixed catenary systems, passenger ferries, and bus rapid transit.

  According to SFMTA staff, these new State of Good Repair funds are also distributed by formula through the MTC, with similar priorities as described previously. Some of these funds may clearly benefit other SFMTA projects (e.g., Van Ness Bus Rapid Transit). However, absent a change in MTC funding priorities, the funds do not appear likely for bus maintenance facilities even if such facilities accommodate, and are necessary for, the Van Ness and Geary bus rapid transit projects.

- ***Congestion Management and Air Quality (CMAQ) Funds*** –The purpose of the CMAQ program is to fund projects or programs that improve air quality and/or relieve congestion in areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, and particulate matter. Under MAP-21, approximately $2.2 billion of CMAQ funds will be allocated to states based on the severity of their ozone and carbon monoxide problem. In San Francisco, the allocation is determined by the San Francisco County Transportation Authority (SFCTA). As significant portions of the City are in Association of Bay Area Governments (ABAG)-designated Priority Development Areas, the SFMTA is a recipient of CMAQ funds for CMAQ-eligible projects and activities. CMAQ-eligible projects and activities include traffic monitoring and management, projects that improve traffic flow, projects that shift traffic demand to non-peak hours or other transportation modes, the purchase of diesel retrofits, facilities serving electric or natural gas-fueled vehicles, and certain transit operations.[3] While the SFMTA may need to await Federal Guidance as to the use of CMAQ funds for bus maintenance facilities, it appears unlikely that such funds will be eligible for such purpose. The prior Federal Guidance specifically deemed maintenance facilities as ineligible for CMAQ funding.

Bottom Line

Existing federal funding mechanisms are relatively limited in providing funding to support facilities-related projects; however, the SFMTA and other transit agencies in the urbanized area should consider seeking amendment to the MTC's current policy regarding how it prioritizes federal formula funds in the region. Also, if the SFMTA can use certain funds under existing agency programs to start design, it may be able to commence a federal advocacy effort for an FY 2015 reauthorization that will provide funding that favors state-of-good-repair projects, including maintenance facilities.

[3] See Federal Highway Administration paper entitled, "Congestion Mitigation and Air Quality Improvement Program (CMAQ)", August 13, 2012.

4.1.4 State and Local Funding

Potential state and local funding sources for Vision Report projects include the following:

- ***Prop 1A Funds*** – These are funds to be raised from the issuance of state general obligation (GO) bonds authorized under the State of California High Speed Rail Act of 2008. This Act is intended to fund the planning and construction of a high-speed train system that initially would link San Francisco and the Bay Area to Los Angeles and eventually include all of California's major population centers. Of the $9.95 billion of GO bonds authorized, $995 million of bond proceeds will be available for "connectivity projects"—capital improvements to intercity and commuter rail lines and urban rail systems to provide connectivity to the high-speed train system, as well as capacity enhancements and safety improvements.[4] Such projects include "the rehabilitation or modernization of, or safety improvements to, tracks utilized for public passenger rail service, signals, structures, facilities, and rolling stock." Funds for connectivity projects will be available upon appropriation by the State Legislature. The timing for the issuance of bonds to fund connectivity projects is unknown, and no guidance yet exists as to whether the State Legislature would make connectivity funds availability for maintenance facility projects that could be characterized as state-of-good-repair projects.
- ***Prop 1B Funds*** – Prop 1B, the State of California Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, authorized the issuance of $19.925 billion of State of California GO bonds, with proceeds allocated for specific transportation purposes throughout the state, including $3.6 billion for Public Transportation Modernization, Improvement and Service Enhancement (PTMISE) to be appropriated by the State Legislature to the Department of Transportation for intercity rail projects and commuter or urban rail operators. While all the $1.69 billion of PTMISE funds from bonds issued to date has been committed, $1.9 billion of additional bonding remains and could become available for Vision Report projects.
- ***Prop 1C Funds*** – Prop 1C, the Housing and Emergency Shelter Trust Fund Act of 2006, authorizes the issuance of $2.85 billion of state GO bonds for a variety of housing programs, including $300 million for transit-oriented development (TOD), $590 million for affordable rental housing, $625 million of home ownership opportunities, $285 million for other housing programs, and $1.05 billion for infrastructure and parks. Although nearly half of that bond authorization ($1.259 billion) remains to be issued, the full amount of TOD funds has been expended in the form of low-interest loans and grants to local governments and developers to produce housing (both market rate and affordable) near transit. The State Legislature is considering several bills that would rearrange how Prop 1C funds could be spent. For example, AB 1585, which is now awaiting the governor's signature, would move $50 million from the Regional Planning, Housing and Infill Incentive Account to the TOD/Infill

[4] Senate Bill No. 1856, Chapter 697, Section 2704.095.

construction program. If the TOD program can be reinfused through such legislation, and such legislation is not vetoed by the governor, potential future TOD grant funding might exist. With maximum funding of $17 million per project under existing Prop 1C, such funds could enhance the financial feasibility of the proposed Presidio South housing project envisioned by the Vision Report.

- ***Vehicle License Fee*** – SB 1492, which takes effect on January 1, 2013, allows the City to submit to the voters a local vehicle assessment (i.e., a vehicle license fee or "VLF") of 2 percent times the market value of automobiles registered in San Francisco. The Board of Supervisors first would need to approve an ordinance proposing the assessment by a two-thirds vote; the SF electorate would then need to approve the ordinance by a majority vote. The current VLF rate is 0.65 percent times the market value of the vehicle. A 2 percent rate would restore the rate which had been in effect several years ago.

  Because of the majority vote requirement, the VLF assessment would be considered a "general tax" and revenues would flow to the City's General Fund rather than the SFMTA directly. That said, the City, at its discretion, could share the additional revenues with the SFMTA. To provide additional "leverage" for using all or a portion of VLF revenues for transit, the City (Board of Supervisors) could take an approach similar to the one used in 1996 by the County of Santa Clara. In Santa Clara, the voters approved (1) Measure A, an advisory measure relating to a series of desirable transportation projects that the County might undertake if a 1/2 cent sales tax measure were approved and (2) Measure B (the 1/2 cent sales tax increase). The advisory companion measure as to potential use of new revenues would require careful wording to avoid the having the revenue measure be viewed as a special tax, which otherwise would trigger a two-thirds voter approval requirement.

  As the VLF is considered a personal property tax, it is deductible as an itemized deduction. As a result, the Franchise Tax Board potentially could lose additional income tax revenues should the VLF increase be approved. SB 1492 contains a "make whole" provision which reduces the amount of revenues that otherwise would flow to the City.

  The potential to increase the VLF now exists in the City and County of San Francisco. The ability of those revenues to benefit the SFMTA requires: (1) the approval of an ordinance by two-thirds of the Board of Supervisors; (2) the approval by a majority of the voters; and (3) the willingness of the Board of Supervisors to direct all or a portion of the increased revenues to the SFMTA.

- ***Facility Funding Agreements*** – Major commercial and office development projects in San Francisco are required to pay Transit Development Impact Fees, which contribute toward meeting increased costs of transit demand triggered by their new users. As an example, the expansion of California Pacific Medical Center would trigger a $20 million impact fee owing to the SFMTA, which could be used to fund service and facilities. As a policy, the City should consider continuing to assess such fees as part of development agreements. As

funds become available, the SFMTA should consider allocating them to improvements identified in the Vision Report. The revenues generated by these impact fees enhance SFMTA's internal capacity to fund capital projects.

Bottom Line

State and local funds may present the following funding opportunities:

- A case could be made for Prop 1A funds to fund maintenance facilities as a "connectivity project" to support California's high speed train system as and when Prop 1A bonds are issued.
- Additional Prop 1B funds could become available as and when bonds for the remainder of the PTMISE are issued.
- Prop 1C, with legislatively approved reallocations, may provide funding that could enhance the financial feasibility of the SFMTA's TOD projects.
- Facility funding agreements may generate significant revenues from upcoming new commercial and office developments in San Francisco.

Currently, all available state (Prop 1B) and local funds (Prop K) applicable for facilities have already been committed.

4.2 MAXIMIZE THE REVENUE-GENERATING POTENTIAL OF REAL ESTATE AND FACILITIES

The Vision Report identifies opportunities for using the SFMTA's real estate and facilities to generate revenues. The majority of these revenues would likely come from TOD and joint development (JD) opportunities; however, the SFMTA might also consider changes to its retail leases.

4.2.1 Transit-Oriented Development/Joint Development Opportunities

The Vision Report identifies five TOD and JD opportunities on SFMTA real estate assets. These opportunities could generate two types of revenue streams:

- Annual revenues from leases to the developers of SFTMA-owned real estate
- Upfront revenues through the outright disposition of such real property or air rights

Table 2 summarizes the revenue potential of the JD and TOD opportunities.

TABLE 2– JOINT DEVELOPMENT/TRANSIT-ORIENTED DEVELOPMENT REVENUE ESTIMATES

Facility	Annual Lease Revenue (2012 $)	Upfront Revenue (2012 $)	Estimated Start Date for TOD/JD Revenues
Presidio South	$1.6 – $3.2 million	$20 – $40 million	2017
Potrero	TBD	TBD	2020

Upper Yard	$360,000 – $720,000	$4.5 – $9.0 million	2015
Yerba Buena-Moscone Subway	TBD	TBD	TBD
Chinatown Subway	<$80,000	≤$1 million	2019
Total	**$2.04 - $4 million**	**$25.5 - $50 million**	2015 – 2020

With estimated upfront revenues of $50 million at the high end, private development on SFMTA facilities may cover some of the costs of the Vision Plan, but a large gap will remain. Additionally, these TOD/JD revenues are not necessarily timed with the expenditure of funds for the facilities solutions outlined in the Vision Report. Nonetheless, these revenues could factor into an overall funding plan in one of two ways:

- By adding to the SFMTA's operating revenues thereby enhancing its ability to support annual debt service on financing obligations incurred by SFMTA.
- By providing an inducement to a developer to fund all or a portion of the cost of a facility, most likely Presidio South, thereby reducing the SFMTA's net capital funding requirement for Vision Report facilities.

Ground Lease Payments. The SFMTA would have difficulty directly leveraging against the expected ground-lease payments from TOD/JD developers on a stand-alone basis, as such private payments would raise complicated tax issues and involve uncertainties that investors would have difficulty accepting, especially if those lease payments were senior to the developers' other funding arrangements. However, these payments would effectively increase the annual resources available to the SFMTA to fund debt-service payments on its bonds or TIFIA loans, or lease payments under design-build-finance (DBF) arrangements. On an aggregate basis, ground/air right lease payments of $2.04 to $4.5 million/year would have the net effect of reducing gross annual SFMTA debt service by up to 20 percent, assuming, hypothetically, that the SFMTA finances all of the Vision Report projects with revenue bonds.

Upfront Receipts. Receiving the value of lease payments on an upfront basis ($25.5 to $50 million) rather than over time would reduce the amount of funding, from grants or debt/lease obligations that SFMTA would otherwise need to procure or incur for Vision Report projects. Depending on how quickly these projects could be advanced, these development-related receipts could be used to offset the costs of the projects with the JD/TOD, or they could fund the costs associated with other Vision Report projects. The effect would be to reduce the SFMTA's gross annual debt service by approximately $2 to $4 million for Vision Report projects. The lower annual impact would stem from using a rate to discount future lease payments that exceeds the SFMTA's cost of borrowing. However, the approach would reduce both the risk of receiving future lease payments (e.g., the TOD/JD might not provide the cash flow as projected) and the need to tap other funding sources.

4.2.2 Retail Leases

The Vision Report also includes recommendations associated with the SFMTA's retail leases.

- Streamline tenant selection and leasing process
- Offer tenant improvement grants
- Encourage the use of private brokers
- Explore further use of participation rent
- Expand program of leasing poles for telecommunication installations and explore such installations in Metro tunnels

Bottom Line

TOD/JD projects could provide significant new revenues to the SFMTA. They may—in the case of the Presidio JD project (and perhaps in Potrero as well)—significantly reduce the SFMTA's need to provide upfront capital funding should private developers become involved in these projects at the start. Alternatively, the SFMTA may decide to use the annual cash flows from these projects to support ongoing operations and thus reduce the operating deficit. With regard particularly to Presidio, these are investment decisions that the SFMTA Board of Directors and staff need to make as quickly as possible so that the sequential process of first replacing both Presidio and then Potrero may commence as soon as possible.

4.3 UTILIZE POTENTIAL FINANCING OPTIONS

With limited opportunities for grant funds, the SFMTA would need to rely on financing options to generate the funds needed for the projects identified in the Vision Report. Financing options entail making payments over time—whether in the form of principal and interest on debt obligations, lease or other payments—and assume that the SFMTA has sufficient financial resources each year to make such payments. Any financing option that involves long-term debt obligations of the SFMTA would share one major characteristic: the annual payment required of the SFMTA would reduce funds otherwise available for the SFMTA's operating budget, thereby exacerbating its current structural deficit. Moreover, SFMTA bond covenants would limit the extent to which the SFMTA could use such financing.

This section of the report reviews these options and considerations to their use, and outlines the various finance mechanisms and the advantages and disadvantages of using each mechanism to leverage funding for the facilities' solutions.

4.3.1 TIFIA Loans

MAP-21 included a reauthorization and significant expansion of the TIFIA loan program. The TIFIA loan budget increases from $122 million to $750 million in FY 13 and $1 billion in FY 14. Maximum funding for project costs expanded from 33 percent to 49 percent of eligible costs, and TIFIA loans may fund 100 percent of the cost of development phase activities, including planning, environmental, feasibility analyses, design, and preliminary engineering. Loans can be applied to a related group of projects through a master credit agreement or to single projects. Loans will be awarded on a rolling, first-come, first-served basis, and are no longer subject to subjective evaluation criteria.[5] However, the projects must demonstrate a reasonable expectation that the contracting process for construction can begin with 90 days after the TIFIA loan is obligated.

Master Credit Agreements. In addition to providing extremely favorable loan terms, the new TIFIA program incorporates a new concept of "master credit agreements." This approach will enable applicants to obtain early *contingent* commitments of TIFIA assistance to projects so long as the financial close occurs within three years after executing the master credit agreement. The objective of the master credit agreement is for TIFIA funding to serve as a catalyst for the project sponsor to secure other funding. However, according to TIFIA representatives, the master credit agreement avenue, while still evolving, nonetheless will require project sponsors to have reasonably formulated projects that will be ready to fund upon execution of the TIFIA loan agreement. If the application is too vague, then TIFIA staff will ask for more details, and, absent those details, the project may be deemed ineligible for funding at that time.

Advantages of TIFIA Program. The TIFIA loan program offers the following benefits to the SFMTA:

- *Lowest cost of borrowing* – In the SFMTA's inaugural bond issue, the yield on its 30-year maturity was 3.81 percent (priced to call in 2022). By contrast, 30-year Treasury bonds (and, by extension, a TIFIA loan) yielded 2.70 percent on the same date.
- *Ability to fund 100 percent of soft costs and up 33 percent or 49 percent of overall costs*. – A TIFIA loan can provide the necessary funding for 100 percent of preconstruction costs of a project and up to either 33 percent or 49 percent of its overall cost depending on whether the TIFIA is subordinate to or on a parity with SFMTA existing revenue bonds. The Vision Plan identifies $62.6 million of soft costs (in year of expenditure dollars) through 2030. In

[5] The standard for TIFIA assistance is that it will (1) "foster, if appropriate, partnerships that attract public and private investment for the project", (2) "enable the project to proceed more quickly, or reduce the lifecycle costs (including debt service costs) of the project" and (3) reduce the contribution of Federal grant assistance for the project."

theory, TIFIA loans could fund all of these costs and another $67.5 to $128.7 million of construction costs[6] depending on the lien status of the TIFIA loan.

- *Flexibility* – Under the master credit agreement approach, the SFMTA would have up to three years before executing the TIFIA loan agreement. There appears to be no financial penalties (apart from the application-related fees) if a loan agreement is never executed—although political ramifications may exist.
- *Non-discretionary* – The proposed project is either eligible or not.

Bottom Line

TIFIA assistance represents a promising avenue of financing maintenance facilities for the SFMTA. In principle, it could enable the SFMTA to finance a substantial portion of the Vision Plan projects, including 100 percent of predevelopment costs, at extremely low rates. As a practical matter, TIFIA funding may be best suited for the most immediate Vision Plan projects, such as MME Paint Booth, Burke, Woods, Flynn and Presidio, which will likely have the highest degree of readiness.

4.3.2 SFMTA Revenue Bonds

In late June 2012, the SFMTA sold its inaugural issue of revenue bonds backed primarily by a gross pledge of farebox revenues, parking-related revenues, AB 1107 funds, and TDA funds (Pledged Revenues). The bonds garnered strong ratings of "Aa3" from Moody's and "A" from S&P.

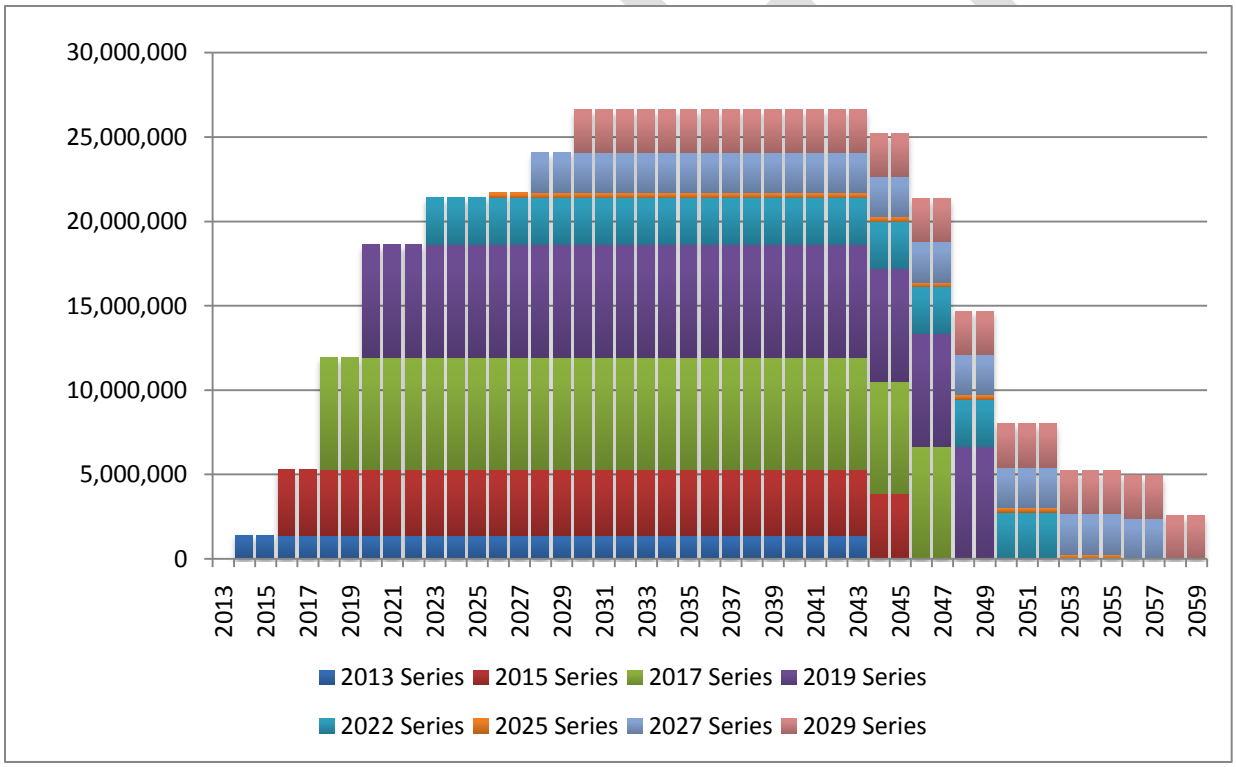
Key Issuance Constraints. The bonds contain two principal constraints on future debt issuance. The first is an additional bonds test of 3x—meaning that Pledged Revenues must cover maximum annual debt service on all parity senior lien bonds by 3x. Based on FY 11 results, recent Pledged Revenues totaled $489.6 million, resulting in net bondable revenues of approximately $163 million ($489.6 million divided by 3). This amount of bondable revenues, without further restriction, would suggest a senior lien bonding capacity of more than $2.6 billion (assuming a 30-year maturity and a 4.5 percent interest rate). The second constraint is created by the SFMTA's covenant that Pledged Revenues and other funds must be sufficient both to pay annual bond debt service and to fund all operating costs (the Sufficiency Covenant). Thus, the real constraint on the SFMTA's ability to issue bonds becomes debt affordability, as annual debt service payments would divert funds away from operations.

Implementation of the Vision Plan, however, should positively affect and reduce the SFMTA's constraints through the additional revenues generated from TOD/JD opportunities and any operating efficiencies from the reconfiguring of the subject maintenance facilities.

[6] Assumes $373.8 million of total costs associated with the Vision Plan.

Bonding for Vision Plan Capital Projects. Soft and construction costs of improving each facility in the Vision Plan have been estimated at $321.6 million in current year dollars and $403.8 million in projected year of expenditure dollars.[7] While the funding strategy for Vision Report projects is to maximize the use of grant funds—thereby reducing the need for bonding or other financing—it is useful for the SFMTA to know the financial impact of bonding for all of the Vision Report projects as a worst-case scenario. Assuming (1) the periodic issuance of 30 year SFMTA bonds (4.5 percent interest rate and level debt service) to fund the soft and construction costs (in year of expenditure dollars) for all of the facilities identified in the Vision Plan in the years identified in the implementation schedule; and (2) that the SFMTA is able to meet its Sufficiency Covenant, the SFMTA's gross annual debt service associated with financing the entire Vision Plan would approximate $26.66 million at its peak. (See Figure 2 for a depiction of the estimated annual debt service associated with a revenue bond issuance that could address the facilities' solutions outlined in the Vision Report.)

FIGURE 3 – ANNUAL DEBT SERVICE ESTIMATES ASSOCIATED WITH REVENUE BOND ISSUANCE



A portion of this debt service could be offset or avoided depending on the TOD/JD revenues. This is described in Section 4.2: Maximize the Revenue-Generating Potential of Maintenance Facilities.

[7] This total includes approximately $59.8 million ($70.8 million in escalated dollars) for Presidio South, which is identified for JD and may be a candidate for developer funding.

The Official Statement for the SFMTA's bonds indicates current expectations to issue approximately $150 million of additional bonds between 2013 and 2017 for state-of-good-repair projects. The Official Statement also anticipates a $200 million commercial paper program to fund the Central Subway Project and/or finance state-of-good-repair projects on an interim basis, pending the issuance of long-term bonds or the receipts of grants.

The projects identified in the Vision Report would qualify as state-of-good-repair projects and, therefore, could be appropriate candidates for funding with SFMTA bonds. However, SFMTA must determine which state-of-good-repair projects receive the benefit of its bonding capacity.

Advantages of SFMTA Bonds. The issuance of SFMTA bonds is now an established funding mechanism that rating agencies and investors both have embraced. The legal documents create a glide path for future issuances and the issuance process is now familiar to staff, the SFMTA Board, and the Board of Supervisors. This approach provides certainty of funding and would enable the SFMTA to finance a broad array of land acquisition, construction, equipment, predevelopment, and other costs that can be capitalized, subject to bond counsel review. The annual impact to the SFMTA's operating budget would likely be less with SFMTA bonds than any other financing approach, except for TIFIA loans.

Disadvantages of SFMTA Bonds. In addition to their adverse impact on funds available for operations, the issuance of SFMTA bonds is labor-intensive, involves upfront costs of consultants and underwriters (which may be financed), and imposes annual administrative burdens with respect to continuing disclosure and compliance with tax laws.

Bottom Line

While SFMTA revenue bonds would provide the most certain funding approach, the issuance of SFMTA bonds should be used as a last resort due to their impact on the SFMTA's operating budget.

4.3.3 City and County General Obligation Bonds

Whereas the funding mechanisms discussed in Section 2.2 would add to the SFMTA's operating deficit, the issuance of GO bonds by the City and County of San Francisco would not. GO bonds are secured by an *ad valorem* tax against non-exempted private property within the City and County. As such, the issuance of GO bonds would have the same fiscal impact on the SFMTA as a grant.

The historical argument for not issuing GO bonds for the SFMTA is based on the SFMTA's status as an Enterprise Department. Yet, the SFMTA's maintenance and maintenance-related facilities are arguably no less worthy of GO bonding than other City facilities that receive GO bond funds, such as parks, libraries and health facilities. The SFMTA's operations, directly or

indirectly, affect all residents and are central to mobility within the City. The SFMTA relies predominantly on its customers and on car owners fees and fines for funding, whereas other Enterprise Departments can tap into more robust and/or commercially based revenue sources, such as landing fees, concession revenues and passenger facility charges in the case of the airport, real estate leases in the case of the port, and user charges in the case of the Public Utilities Commission. The entire resident population of San Francisco benefits from a strong transit system; it could be argued that it is inequitable to place the burden of paying for Muni on the currently very limited revenue base.

GO bonds involve a two-step approval process:

- Approval of the Mayor and Board of Supervisors to place a measure on the ballot. The Board will consider the backlog of all City capital needs against the SFMTA's needs as well as the likelihood of a successful vote. As discussed, the fact that the SFMTA is an Enterprise Department might weigh against the Board's consideration. The SFMTA must convince the Mayor and Board that building or rebuilding the SFMTA's bus and rail facilities is essential to providing expected levels of service, that transit benefits the entire City, that safe, reliable transit service is essential to sustaining the vitality of the local economy, all domestic transit providers operate at a deficit, and that SFMTA facilities are no less City facilities than other of the City's buildings that have relied on GO bonds for construction.
- Approval by 2/3 vote of all voters. Voter education will be critical to an affirmative vote. The SFMTA may want to point to rating agency credit reports that provide a favorable view of SFMTA management.

Bottom Line

With the Mayor's and the Board of Supervisors' approval and a 2/3 vote, GO bond financing would be available to finance the costs of facilities but not the costs of equipping or furnishing them. Spreading the burden of providing the facilities for maintaining Muni services over a wider base, and supporting it with property taxes is worth the SFMTA's consideration.

4.3.4 Social Impact Bonds

Another longer-term approach that the SFMTA may wish to consider for reducing its operating costs, thereby expanding its capacity to fund capital costs, is through the use of social impact bonds. Social impact bonds represent a new financing technique that is beginning to generate interest throughout the United States. Conceived by the Rockefeller Foundation in New York, social impact bonds represent a financing model to accelerate social innovation and improve government performance. The financing technique is focused on outcomes, with repayment stemming from the success of the program funded by the bonds. The technique is not dissimilar

to outcome-based philanthropy (e.g., where foundations can measure the impact of a donation on a problem it is seeking to address).[8]

As a recent example of such "pay for success" bonds, Goldman Sachs recently invested $10 million in a New York City jail program, and will be repaid only if the program significantly reduced recidivism rates.[9] Massachusetts is undertaking a social impact bond program to reduce health care costs for the chronically homeless.

Social impact bonds are not bonds in the sense of a revenue bond or GO bond. The "typical" structure of a social impact bond involves a government contract with a nonprofit entity (the SIB Issuer) to perform social services that the government would otherwise undertake. The SIB Issuer receives funds from a private investor to provide the cost of the service. The government pays the service provider only upon achieving certain performance targets. A portion of success payments is then passed on to the investor. If those targets are not achieved then, the government does not pay.

To date, social impact bonds have been applied to social services relating to prisons, health care, poverty, homelessness, and related areas. The question arises as to whether there is an analog to transit and whether the private sector can deliver some aspect of those services more cheaply. The larger goals of the SFMTA's transit system (e.g., to reduce emissions) are the type that may appeal to a social impact investor. However, the other elements to the structure may be more difficult to arrange—both finding a creditable nonprofit service provider and developing an objective standard of measuring the outcome.

Bottom Line

The time and effort associated with developing a social impact bond structure for transit may be otherwise spent pursuing other more proven options. However, the broader societal goals of the SFMTA, coupled with the entrepreneurial nature of the Bay Area economy, suggest a potential fit that could benefit all parties.

4.3.5 Design-Build-Finance/Lease Arrangements

Another approach to funding certain portions of the Vision Report projects is through design-build-finance (DBF) arrangements with private developers. In essence, the approach represents an allocation of responsibilities and risks, with a developer (selected by the SFMTA) assuming responsibility for design, constructing, and financing the maintenance facilities. The developer would lease the reconstructed facilities to the SFMTA under a long-term lease, with either the

[8] A classic example of outcome-based philanthropy is the Gates Foundation's $100 million donation to purchase mosquito nets in Africa to stop the spread of malaria.
[9] See August 2, 2012, *New York Times* article: http://www.nytimes.com/2012/08/02/nyregion/goldman-to-invest-in-new-york-city-jail-program.html?_r=1

SFMTA or the developer assuming responsibility for operating and maintaining the facility. In certain arrangements, the developer's financing may be secured by an assignment of the SFMTA lease annual payments. In short, from the SFMTA's standpoint, the approach converts a construction project to a lease transaction.

The DBF approach would have its best applicability to the Presidio site, which envisions the development of a housing project over a bus maintenance facility. As this project would entail a single structure with two uses, maximum efficiency would derive from having a single party control the construction process. Additionally, the private development value of Presidio ($20 to $40 million upfront) is closest to the cost of the SFMTA facility on this site ($59.7 million).

The scenario might entail entering into a Development and Disposition Agreement (DDA), or similar arrangement, with a developer to be selected through an SFMTA-run process. Under the DDA, the SFMTA would transfer the Presidio site under a long-term lease agreement to the developer, which, in turn, would build the SFMTA portion to required specifications. Two parcels would be created: one for bus maintenance and an air rights parcel for the housing development. The developer, then, would lease (or sell) the maintenance facility parcel back to the SFMTA.

The SFMTA would likely receive *no* net ground rent from the developer under this approach. The objective would be for the developer to pay for as much of the SFMTA facilities as can be supported by the economics of the housing project. The SFMTA's payments back to the developer would reflect the net cost of developing the maintenance facility on the lower parcel. Lease payments from the SFMTA also might support a portion of the developer's own financing for the project.

This approach could reduce overall Vision Plan funding requirements by approximately 15 percent, given the projected $59.7 million cost of Presidio. Were the SFMTA to bond for that amount, it would incur an annual gross debt service requirement of approximately $4 million but receive projected developer lease payments of $1.6 to $3.2 million, resulting in a net obligation of a $0.8 to $2.4 million. The SFMTA's lease payment back to the developer could exceed this net amount. The benefits of transferring the responsibility to develop the overall project would seem to outweigh the potential for a higher net annual cost with respect to Presidio.

The SFMTA might be able to further diminish the annual impact of this approach through a lower-cost TIFIA loan. That loan would finance the gap between the development value of the housing project and the cost of the maintenance facility development.

The DBF approach could generate cost savings through faster implementation and other private sector efficiencies. The developer presumably would qualify for depreciation and other tax benefits that the SFMTA could not enjoy as a tax-exempt entity. The lease payments from the SFMTA would likely reflect the developer's higher cost of capital. In addition, the SFMTA would

need to determine if it wants a purchase option at the end of the lease term, depending on the lease term.

The DBF does not eliminate the annual financial impact to the SFMTA associated with its own debt financing. The SFMTA would be making lease payments instead of debt service payments.

Advantages. The DBF approach may result in a faster delivery of the facility reconstruction, a lower cost of construction, reduced risk to the SFMTA and, potentially, the allocation of all construction risk and financing responsibility to a third party.

***Disadvantages*.** DBFs are more complicated than direct funding arrangements such as bond issues or TIFIA loans and may result in paying higher lease payments than debt service payments.

Bottom Line

The DBF may offer implementation, scheduling, and construction cost benefits over a traditional delivery alternative, but, due to a higher cost of funds, may produce a greater financial impact to the SFMTA's operating budget. In general, stand-alone maintenance facilities would not seem to make attractive candidates for this technique. However, because of the TOD/JD component to Presidio and Potrero, those facilities may present more promising opportunities for this approach.

4.4 INSTITUTE NEW OR EXPANDED FUNDING STREAMS

In order to fund the Vision Report project and meet its other capital needs, the SFMTA needs significant amounts of additional revenue. In fact, any kind of debt-financing activity undertaken for the Vision Report projects or others would exacerbate the SFMTA's structural deficit, especially when considered as an addition to previously identified needs. This section provides a summary of new or expanded funding streams for the SFMTA to consider.

The SFMTA, along with the San Francisco Planning & Urban Research Association (SPUR), have identified and studied a multitude of revenue-raising options since 2007. Most recently, the 2012 Budget Balancing Panel, comprising 24 separate stakeholder organizations, reevaluated those and other options. The following options were categorized as both short-term (the SFMTA's FY 2013 and 2014 operating budget) and long-term to support its longer-term operating and capital needs:[10]

- Short-term options focused on ones within the SFMTA's immediate control (e.g., higher citation fees, extended parking hours, new parking meters Sunday parking charges, and

[10] See Final Report – June 1, 2012, San Francisco Municipal Transportation Agency (SFMTA), 2012 Budget Balancing Panel

internal budgetary cost reallocations for certain services). The recommended measures are projected to generate approximately $20 million in additional annual revenues. While intended for use in the operating budget, these measures effectively would increase the SFMTA's bonding capacity by enabling it to comply more easily with its Sufficiency Covenant.

- Longer-term options recommended by the 2012 Budget Balancing Panel involve additional levels of approvals (a longer-time frame for implementation) but potentially more revenues (Table 3).

TABLE 3– 2012 BUDGET PANEL RECOMMENDATIONS TO INCREASE SFMTA REVENUES

Option	Description	Approvals	Estimated Annual Impact
Increased Clipper card use	Reduce cash transactions; add Clipper outlets in City	MTC support	TBD – operational benefits
Cost recovery for service	Ensure cost recovery related to events	Event sponsor	$2 to $10 million
Vehicle License Fee	Restore fee to 2% from 0.65%	▪ State legislation/ Governor approval – 4 prior unsuccessful attempts; ▪ Board of Supervisors majority approval ▪ Voter approval – 2/3 if allocated to SFMTA; majority if to General Fund	$60 million (to be shared with streets)
GO Bonds	See discussion in Section 4.3.3		
General Tax Measures	E.g., sales tax, revised business license tax	▪ Board of Supervisors majority approval ▪ Voter approval – 2/3 if allocated to SFMTA; majority if to General Fund	$30 to $60 million
Revised Transit Fare Structure	Single fare vs. monthly pass; Discount vs. monthly pass; Low income pass	SFMTA Board and Board of Supervisors	TBD

TABLE 3 – 2012 BUDGET PANEL RECOMMENDATIONS TO INCREASE SFMTA REVENUES (CONTINUED)

Option	Description	Approvals	Estimated Annual Impact
Parking Stall Fee/ Parking Tax Replacement	Evaluate (1) replacing 25% parking tax with per parking stall fee and (2) whether to impose fee on parking stalls in free lots	▪ Board of Supervisors majority approval ▪ Voter approval – 2/3 if allocated to SFMTA; majority if to General Fund	$30 to $60 million (less if parking tax is replaced)
Develop SFMTA real estate	Identify JD and TOD opportunities	▪ SFMTA Board ▪ Board of Supervisors	$2.04 to $4 million (per Vision Report)
Others	Enforcing existing parking garage ordinance; re-allocate MTC revenues (bridge tolls); improve residential parking permit program; disabled placard reform; reduce overtime; optimize/ restructure service	▪ State legislation for disabled placard reform; ▪ SFMTA Board ▪ Board of Supervisors	TBD – policy driven

The availability of these revenues would narrow the structural deficit, cause the SFMTA's debt to become more affordable, and enable the issuance of more SFMTA revenue bonds.

Bottom Line

Short- and long-term opportunities for new funding streams do exist for the SFMTA; however, they all require different levels of approvals and have varying levels of revenue-generating potential. Increased fees and rates could be met with public resistance.

5 Conclusion and Next Steps

5.1 SUMMARY OF FUNDING OPTIONS

Table 4 provides a summary of all funding/financing opportunities presented in this report.

5.2 NEXT STEPS

The following highlights the key next steps associated with obtaining funding for the projects outlined in the Vision Report.

- **Update SFMTA's Capital Plan** – Reconcile the Vision Report project recommendations with the SFMTA's unconstrained capital plan for facilities. The SFMTA will then need to prioritize the projects in the context of the SFTMA's overall capital needs.
- **Re-prioritize SFMTA's CIP** – The specific facilities projects in the Vision Report must be included in the SFMTA's capital budget prior to the expenditure of any funds. To enable the early funding of design costs, the SFMTA will need to amend its current five-year capital budget for facilities, approved in April 2012, and reallocate a portion of budgeted funds for Vision Report design costs.
- **Implement Retail Lease Recommendations** – The SFMTA should implement the recommendations identified in the Vision report to maximize the value of current retail leases, including offering participation rent options and tenant improvement funds, expanding use of commercial brokers, streamlining tenant selection and leasing, and exploring further leasing of telecommunication sites.
- **Seek TIFIA Funding** – Seek TIFIA funding for design and other costs associated with the most ready projects.
- **Refine Plans and Obtain Approvals for Most Immediate TOD/JD Projects –** Refine the feasibility analysis associated with the private development and financing of Presidio South. Conduct such further analyses of the comparative benefits of various possible development scenarios for Presidio South and make a decision to move forward with one or another of them as quickly as possible.
- **Continue Promoting Need for New Funding Sources** – Promote the need for additional revenues to flow to the SFMTA and the issuance of GO bonds.

TABLE 4 – SUMMARY OF POTENTIAL FUNDING/FINANCING SOURCES

Potential Funding Source	Overview	Recommendation
Maximize the Use of Existing Funding Streams		
Reallocation of existing CIP funds	The SFMTA could adopt a technical change to its two-year budget and CIP to reprogram FY 13 funding to Vision Report projects rather than to MME Paint Booth or Kirkland.	In light of the Vision Report recommendations, the SFMTA should consider reprioritizing existing funding.
Bond proceeds	The SFMTA issued its first series of revenue bonds which raised $25,700,000 to finance various transit projects. The SFMTA has the ability to substitute other projects for the ones listed.	
Federal funding programs	Existing federal funding mechanisms are relatively limited in providing funding to support facilities-related projects; however, the opportunities may change after MAP-21 expires in two years.	
Proposition K Renewal	The SFMTA should work with SFCTA to ensure that facilities are included in Proposition K renewals.	
State and local funding	▪ A case could be made for Prop 1A funds to fund maintenance facilities as a "connectivity project" to support California's high speed train system. ▪ Prop 1B funding may become available upon the issuance by the state of additional bonds with eligible uses including maintenance facilities. ▪ Prop 1C may provide funding that could enhance the financial feasibility of the SFMTA's TOD projects. ▪ Facility funding agreements may generate significant revenues from upcoming new commercial and office developments in San Francisco.	The SFMTA should communicate with the State Legislature regarding the timetable for the future issuance of Prop 1A, Prop 1B, and 1C bonds and how funds are being allocated. Additionally, the SFMTA should consider reprioritizing how they are spending the facility funding agreement revenue.
Transit Impact Development Fees (TIDF)	Major commercial and office development projects in San Francisco are required to pay Transit Development Impact Fees, which contribute toward meeting increased costs of transit demand triggered by their new users. As a policy, the City should consider continuing to assess such fees as part of development agreements. As funds become available, the SFMTA should consider allocating them to improvements identified in the Vision Report. The revenues generated by these impact fees enhance SFMTA's internal capacity to fund capital projects.	The SFMTA should ensure that the BOS approves the TIDF/TSP and fund facility maintenance from these one-time fees

TABLE 4 – SUMMARY OF POTENTIAL FUNDING/FINANCING SOURCES (CONTINUED)

Potential Funding Source	Overview	Recommendation
Maximize the Revenue-Generating Potential of Real Estate and Facilities		
Transfer of Development Rights	Owners of Historic buildings in the Downtown area are allowed to sell development rights for transfer to other parcels within the same area. Amending the Planning Code to allow such transfers is a policy decision for the Board of Supervisors. It is not possible at this time to estimate the value of such Rights.	The SFMTA Real Estate should pursue potential opportunities for transfer of development rights.
Retail leases	Offer participation rent options and tenant improvement funds, expand use of commercial brokers, streamline tenant selection and leasing, and explore further leasing of telecommunications sites.	The SFMTA Real Estate should implement these measures.
Utilize Potential Financing Options		
TIFIA loans	The newly expanded TIFIA program offers the lowest cost financing vehicle, and can allow SFMTA to finance between 33% to 49% of a project's cost, including 100% of predevelopment costs. The SFMTA potentially could utilize TIFIA funding for some of the initial design costs contemplated by the Vision Report. The major concern with TIFIA is whether demand will outstrip budgetary authorization but TIFIA staff has not experienced an onslaught of applications yet.	The SFMTA should pursue obtaining a TIFIA loan for portions of Vision Report not funded by existing funding streams or TOD/JD.
SFMTA revenue bonds	Revenue bonds are an established SFMTA funding mechanism; however, they will require using the SFMTA's limited operating funds, are labor-intensive and more expensive than TIFIA, and they impose significant annual administrative burdens.	The SFMTA should not pursue revenue bonds unless it becomes clear that no other capital funds are available on a timely basis for priority projects.
City and County GO bonds	The SFMTA has not so far benefited from the City's General Obligation Bond issuances as have other City facilities. It is reasonable to argue that Muni's maintenance facilities are no less important in terms of providing services to the community than other City facilities that are financed by GO bonds. The major drawback of GO bonds is that they require a 2/3 vote of the electorate.	The SFMTA should pursue City General Obligation bonds as it is the most effective local way of financing its capital needs without impact on its operating deficit, even if GO bond proceeds would be limited to SFMTA's facilities rather than equipment needs

TABLE 4 – SUMMARY OF POTENTIAL FUNDING/FINANCING SOURCES (CONTINUED)

Potential Funding Source	Overview	Recommendation
Social impact bonds	Social impact bonds represent a new financing technique intended to accelerate social innovation and improve government performance. To date, social impact bonds have been applied to social services relating to prisons, health care, poverty, homelessness and related areas.	The time and effort associated with developing a social impact bond structure for transit may be otherwise spent pursuing other more proven options. However, the broader societal goals of the SFMTA coupled with the entrepreneurial nature of the Bay Area economy suggest a potential fit that could benefit all parties.
Design-build-finance/lease arrangements	This approach represents an allocation of responsibilities and risks. In theory, the DBF approach could generate cost savings through faster implementation and other private sector efficiencies. The DBF does not eliminate the annual financial impact to the SFMTA associated with its own debt financing. The SFMTA would be making lease payments instead of debt service payments.	The SFMTA should consider this avenue for the JD/TOD component to Presidio and Potrero.
Institute New or Expanded Funding Streams		
Short-term options	These are focused on funding streams within SFMTA's immediate control (e.g., higher citation fees, extended parking hours, and new parking meters). The recommended measures are projected to generate approximately $20 million in additional annual revenues. These funds would supplement the operating budget and increase the SFMTA's bonding capacity.	The SFMTA should pursue any funding options that could provide funding in the short-term.
Long-term options	These options require Board of Supervisors approval, potential legislation and/or voter approval. They will likely have a longer-time frame for implementation, but potentially more revenues.	The SFMTA should pursue any funding options that could provide funding in the long-term, especially if they can be directed towards the facilities' solutions.

Appendix M:

Glossary of Acronyms and Terms

Appendix M
Glossary of Acronyms and Terms

BART	Bay Area Rapid Transit
BRT	Bus rapid transit. Typically articulated bus-length rubber-tired vehicles that run on dedicated the right-of-way or on public streets, usually having limited stops and dedicated stations.
CAC	Citizens Advisory Committee
CCSF	City and County of San Francisco
CEQA	California Environmental Quality Act
CMAQ Program	The Congestion Management and Air Quality Improvement (CMAQ) program was originally authorized as part of the federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and provides funding for projects that improve air quality and/or relieve traffic congestion. The CMAQ program has been reauthorized under each subsequent federal transportation bill, including, most recently, Moving Ahead for Progress in the 21st Century Act (MAP-21).
DART	Dallas Area Rapid Transit
Design-Build-Finance/ Lease Arrangements	Design-build-finance/lease arrangements refer to alternative approaches for delivering construction projects. Typically, a government agency will issue bonds to finance the design and construction of a facility, which it will own and occupy. In a design-build-finance arrangement, a private party will assume each of those responsibilities and will lease the completed facility to the government agency.
ETB	Electric trolley bus. *See* Trolley Coach.
Executive Committee	Comprises leadership from various Agency departments.
Final Maturity	Final maturity refers to the last date at which a debt obligation becomes due.
Fiscal Year (FY)	Fiscal year for the SFMTA is from July 1 through June 30 of the following year.

General Obligation bonds	General obligation (GO) bonds are voter-approved bonds backed by a governmental issuer's taxing power- in San Francisco based on the commercial and residential real property taxable assessed roll.
Go-4	Small scooters and carts used by parking enforcement officers.
Historic Streetcar	Steel wheeled historic streetcar (rail vehicle) powered by overhead electric lines. Runs on rails that may be in dedicated right-of-way or on public streets. Note that historic streetcars and light rail vehicles can run on the same track and the same overhead electric line.
Interest Rate	Interest rate refers to the borrowing rate for a debt obligation. The rate is based on the final maturity of the obligation, its credit quality and tax status (tax-exempt or taxable), and is determined at the time the obligation is entered into.
JD	Joint development. Typically refers to a space that has joint use, such as retail or residential that is developed by an independent developer/contractor, shared with existing transit operations.
Lien Status	Lien status refers to the priority of payment from a specified revenue repayment source. A senior lien represents the highest priority. Senior lien obligations will be paid before subordinate obligations. The concept is relevant in the context of the repayment of loans under the TIFIA program, which can be subordinate to the repayment of SFMTA revenue bonds.
LRV	Steel wheeled "Light Rail Vehicle" powered by overhead electric line. Runs on rails that may be in dedicated right-of-way or on public streets.
MAP-21	MAP-21 is the acronym for the new federal transportation bill, Moving Ahead for Progress in the 21st Century.
Master Credit Agreements	Master Credit Agreements are authorized under the current TIFIA program and are used to document contingent commitments of TIFIA funding for a project or series of projects that will commence in the future—up to three years from the time the master credit agreement is entered into.
MBTA	Massachusetts Bay Transportation Authority
MME	Metro Muni East Light Rail Maintenance and Operations Facility.

Motor Coach	Rubber-tired transit coach powered by diesel, gasoline, natural gas, hybrid (diesel/electric), hybrid (gas/electric), hydrogen fuel cell. Runs on public streets. *Note that where "diesel" is used in this document, this refers to all motor coaches.*
MOW	Maintenance-of-Way responsible for maintaining rail right-of-way
Muni	San Francisco Municipal Railway
NEPA	National Environmental Policy Act
NRV	Non-revenue vehicle. All support vehicles not used for revenue service including supervisor vehicles, sedans, vans, trucks, and Go-4s.
PDR	Production/distribution/repair
PPP (P3s)	Public Private Partnerships
Prop 1A	Prop 1A refers to State of California High Speed Rail Act of 2008. The general purpose of this Act is to fund the planning and construction of a high-speed train system that initially would link San Francisco and the Bay Area to Los Angeles and, eventually, include all of California's major population centers. The Act authorizes the issuance of $9.95 billion of State of California general obligation bonds, most of which remain unissued.
Prop 1B	Prop 1B refers to the State of California Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006. Prop 1B authorizes the issuance of $19.925 billion of State of California general obligation bonds, with proceeds allocated for specific transportation purposes throughout the state, including $3.6 billion for Public Transportation Modernization, Improvement and Service Enhancement (PTMISE) to be appropriated by the State Legislature to the Department of Transportation for intercity rail projects and commuter or urban rail operators. $1.69 billion of PTMISE funding has been committed, with $1.9 billion to become available from time to time when additional bonds under Prop 1B are issued.
Prop 1C	Prop 1C refers to the State of California the Housing and Emergency Shelter Trust Fund Act of 2006. Prop 1C authorizes the issuance of $2.85 billion of State of California general obligation bonds for a variety of housing programs, including $300 million for transit-oriented developments, $590 million for

	affordable rental housing, $625 million of home ownership opportunities, $285 million for other housing programs, and $1.05 billion for infrastructure and parks.
Prop K	Prop K refers to the ½ cent sales tax measure approved by San Francisco voters in 2003 for transportation projects identified in the voter-approved Expenditure Plan. Sales tax revenues are received and administered by the San Francisco County Transportation Authority.
R&D	Research and development
Revenue Bonds	Revenue bonds are obligations that are secured by and repaid from a defined revenue stream. The SFMTA's revenue bonds are repaid from a combination of fare box revenues, parking-related revenues, and state TDA funds.
Rubber-tired Revenue	Motor coaches and trolley coaches
SFMTA	San Francisco Municipal Transportation Agency
Social Impact Bonds	Social impact bonds represent a new means for the delivery of social services whereby a private nonprofit entity performs a service typically provided by a government agency, with a large sophisticated investor providing the funding to the private entity. The investor is repaid from the savings generated by the nonprofit service provider over the cost that would have been incurred by the government agency if it were to have provided the service. Social impact bonds have been used in Massachusetts, Minnesota, and New York to fund services relating to poverty, prisons, and health care.
SPUR	San Francisco Planning and Urban Research
State-of-good-repair Needs	These refer to capital needs associated with existing assets, including their rehabilitation and replacement as such assets reach the end of their useful lives.
TIFIA	TIFIA is the acronym for the federal Transportation and Infrastructure Financing and Innovation Act of 1998, which provides credit assistance for qualified highway, transit, railroad, intermodal freight and other surface transportation projects of regional and national significance. TIFIA fills project funding gaps by providing supplemental and subordinate investments. The TIFIA program was reauthorized and expanded by MAP-21.

TOD	Transit-oriented development. Typically refers to space such as retail or residential that is developed by an independent developer/contractor, without ongoing transit operations.
Trolley Coach	Rubber-tired transit coach powered by overhead electric line. Also referred to as “electric trolley bus” or ETB. Runs on public streets.
UMU	Urban mixed use