

Treasure Island Muni Operating Plan

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TICD

Treasure Island Community Development, LLC

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1 INTRODUCTION

This report describes the proposed Muni service plan for the Treasure Island and Yerba Buena Island Redevelopment Project (herein referred to as the “Project”), including the proposed routes, headways, service hours, and vehicles, as well as the associated costs. The Project Sponsor has worked in collaboration with the Planning Department and the San Francisco Municipal Transportation Agency (SFMTA) to develop a transit service plan that adequately meets the future needs of the proposed development on Treasure Island and Yerba Buena Island, as well as estimates of the associated costs of providing this service. However, while this plan describes the proposed transit service plan and associated costs as currently envisioned, SFMTA service planning staff have retained the discretion to implement the most appropriate transit service, as warranted by conditions at the time.

This transit operating plan features four chapters. This first chapter provides a brief introduction of the plan and its purpose. Chapter 2 (Transit Service Plans) describes the existing and proposed transit service plans. Chapter 3 (Transit Operating Costs) details the costs—both capital and operating / maintenance—associated with the proposed transit service. Chapter 4 (Phasing), the final chapter, describes how capital and operating / maintenance costs vary over the course of development of the Project towards full build-out.

2 TRANSIT SERVICE PLANS

The transit service plan and other transit improvements proposed by the Project are outlined in Chapter 5 (Transit Services) and Chapter 8 (Transit Operations) of the *Treasure Island Transportation Implementation Plan* (Draft).⁽¹⁾ In addition, the SFMTA has recently proposed some changes to existing service on transit routes serving Treasure Island as part of its Transit Effectiveness Project (TEP).

2.1 EXISTING SERVICE PLAN

Existing Muni service on the Island is provided by the 108 Treasure Island bus line operating between Treasure Island and the Transbay Terminal in Downtown San Francisco. The route proceeds from the Transbay Terminal and along the Bay Bridge, using the Treasure Island on- and off-ramps to access the Island. On-Island, the route follows Treasure Island Road, California Avenue, Avenue H, Gateway Avenue, Avenue B, and 9th Street, before proceeding back to the Transbay Terminal.

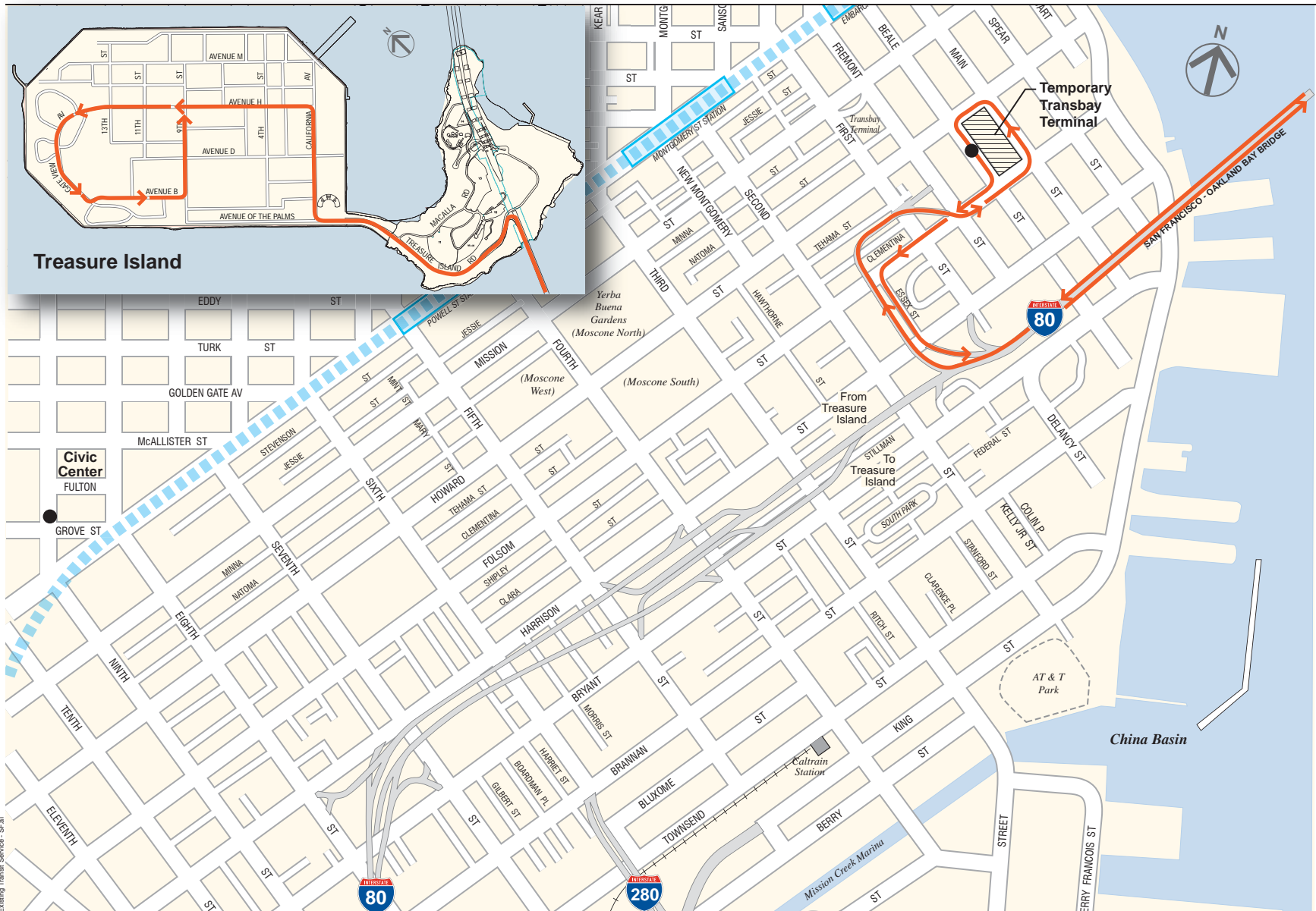
As demolition of the former Transbay Terminal and construction of the new Transbay Transit Center is currently underway, the Downtown San Francisco terminus has been temporarily relocated to the Beale Street / Howard Street intersection adjacent to the new Temporary Terminal. The existing Muni service is illustrated in Figure 1.

On weekdays, the 108 Treasure Island currently operates on 10-minute headways during the AM peak period, 15-minute headways during the PM peak period, 20-minute headways during the midday and evening, and between 30- to 45-minute headways at other times.

2.2 TEP SERVICE PLAN

The SFMTA has proposed several recommendations for the 108 Treasure Island as part of systemwide improvements under the TEP. These recommendations were unanimously endorsed by the SFMTA Board on October 21, 2008, and some minor changes have already been made to some routes in accordance with these recommendations.

⁽¹⁾ *Treasure Island Transportation Implementation Plan* (Draft). Treasure Island Community Development, LLC. January 2011.



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TREASURE ISLAND TRANSIT OPERATING PLAN
Figure 1
Existing Transit Service

The proposed TEP recommendations from 2008 called for extension of the 108 Treasure Island to the Caltrain station at Fourth Street / King Street from 2:00 pm to 10:00 pm, and simplification of the route on Treasure Island, including removal of the jog to Avenue M (consolidating the route along Avenue H instead) and elimination of service on the eastern end of Yerba Buena Island (buses traveling to the Island would use the left-hand-side Treasure Island off-ramp instead). The proposed TEP service is illustrated in Figure 2. No changes to frequency, service hours, or vehicle type are proposed.

It should be noted that these service recommendations for the 108 Treasure Island had already been implemented as of February 23, 2008, but the extension to the Caltrain station at Fourth Street / King Street between 2:00 pm and 10:00 pm was eliminated with the systemwide service changes on December 5, 2009.

2.3 PROPOSED SERVICE PLAN

The transit service proposed by the Project is detailed in Chapter 5 (Transit Services) and Chapter 8 (Transit Operations) of the *Treasure Island Transportation Implementation Plan* (Draft). For reference, the service is summarized below.

- Transbay Terminal Route
Replacement of the 108 Treasure Island with a point-to-point service between the Island's new Ferry Terminal and Intermodal Transit Hub and the Transbay Terminal (Transbay Transit Center) in Downtown San Francisco. Muni buses would no longer circulate through the Island, with most passengers walking, bicycling, or taking the new on-Island shuttle service to access this bus line. The line would operate as frequently as every five minutes during the weekday peak periods and less frequently during off-peak periods, including midday weekends, and nights. Similar to the existing 108 Treasure Island, owl (late night and early morning) service would be provided. At full build-out, this route would be operated with articulated coaches (94-passenger capacity), but would reuse existing coaches from the 108 Treasure Island during the early phases of development.



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TREASURE ISLAND TRANSIT OPERATING PLAN
Figure 2
TEP Transit Service

- Civic Center Route

Establishment of an additional line operated as a point-to-point service between the Island's Ferry Terminal and Intermodal Transit Hub and the Civic Center area in Downtown San Francisco. On city streets, buses would travel via Eighth Street and Ninth Street to / from a terminus at Larkin Street / Grove Street. This line would operate every 12 minutes during the weekday peak periods and less frequently during off-peak periods, including midday, weekends, and nights. No owl service would be provided on this line. This route would operate with standard coaches (63-passenger capacity).

The Civic Center Route would only be implemented if ridership warrants an additional direct route connecting Treasure Island and the rest of San Francisco.

The proposed transit service is illustrated in Figure 3. The Civic Center Route as shown in Figure 3 is only a draft alignment used for costing purposes—actual alignment and stops will be worked out at a later date and time. The Civic Center Route was selected because it has a large job density, but because of the distance, alternative routes to closer locations (e.g., Fourth Street / King Street and Mission Bay) would result in cheaper operating costs if selected.

Table 1 summarizes the route characteristics of the proposed transit service plan, compared to the existing and TEP transit service. Additional details on the phasing of the improvements under the proposed transit plan are included in Chapter 4.



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TREASURE ISLAND TRANSIT OPERATING PLAN
Figure 3
Proposed Transit Service

TABLE 1: ROUTE CHARACTERISTICS

TRANSIT SERVICE PLAN	VEHICLE TYPE	(A)	(B)	(C)	(D) C/B	(E) 2A × 60/B
		ONE-WAY DISTANCE (MI)	HEADWAY (MIN)	CYCLE TIME (MIN)	VEHICLE DEMAND ^a (VEH)	SERVICE MILES (MI)
WEEKDAY AM PEAK PERIOD						
Existing 108 Treasure Island	Standard	5.3	10	38	4	63.6
TEP 108 Treasure Island	Standard	5.3	10	38	4	63.6
Proposed ^b Transbay Terminal Route	Articulated	3.7	7.5	23	4	59.2
Civic Center Route	Standard	5.2	12	43	4	52.0
WEEKDAY PM PEAK PERIOD						
Existing 108 Treasure Island	Standard	5.3	15	38	3	42.4
TEP 108 Treasure Island	Standard	6.5	15	56	4	52.0
Proposed ^b Transbay Terminal Route	Articulated	3.7	5	25	5	88.8
Civic Center Route	Standard	5.2	12	45	4	52.0

Source: SFMTA, 2010; AECOM, 2011.

^a Does not include 20% maintenance float.

^b At full build-out of Project.

3 TRANSIT OPERATING COSTS

AECOM worked with SFMTA staff to develop operating / maintenance and capital costs required by the proposed transit service plan. Given that the extension of the 108 line to the Caltrain station as recommended by the TEP was implemented in 2008 but subsequently eliminated in 2009, as well as the fact that the existing 108 route is more similar to the Transbay Terminal route under the proposed transit plan, the incremental costs of the proposed transit plan as presented in this document are relative to the existing transit plan.

Table 2 summarizes the capital and operating / maintenance costs for the proposed transit plan.

Estimated annual operating / maintenance costs were developed using SFMTA's cost estimation and scheduling model originally developed for the TEP. Revenues—both from transit-related (e.g., farebox) and non-transit-related (e.g., general fund) sources—are discussed separately in the *Fiscal Impact Analysis of the Treasure Island Redevelopment Project* (Draft Report), dated March 2011.

The number of new transit vehicles required under the proposed transit plan was developed in the transit service planning work conducted for the *Treasure Island Transportation Implementation Plan* (Draft), dated January 2011, based on the expected transit ridership for the Project at full build-out. Unit costs for new rolling stock were provided by SFMTA and assume hybrid electric-diesel motor coaches. An additional capital cost related to facilities (storage) of \$820,000 per articulated motor coach is also assumed.

As shown in Table 2, the proposed transit plan would require a capital investment of approximately \$14.0 million (\$9.1 million in rolling stock and \$4.9 million in facilities (storage)). The equivalent annual amortizing cost—assuming five percent for 14 years for buses and five percent for 30 years for facilities (storage)—is approximately \$1.1 million. The proposed transit plan would also result in an additional annual operating / maintenance cost of approximately \$5.1 million.

TABLE 2: PROPOSED TRANSIT PLAN COSTS (DUE TO PROJECT BUILD-OUT)

ROUTE	ADDED BUSES ^a	UNIT CAPITAL COSTS		INCREMENTAL COSTS ^b				
		ROLLING STOCK	FACILITIES (STORAGE)	CAPITAL				O&M (ANNUAL)
				ROLLING STOCK	FACILITIES (STORAGE)	AMORTIZED (ANNUAL)		
						ROLLING STOCK	FACILITIES (STORAGE)	
Transbay Terminal Route ^c	6	\$1,510,000	\$820,000	\$9,058,000	\$4,920,000	\$732,000	\$320,000	\$1,150,000
Civic Center Route ^d	--	--	--	--	--	--	--	\$3,996,000
Subtotal	6			\$9,058,000	\$4,920,000	\$732,000	\$320,000	\$5,146,000

Source: SFMTA, 2010; AECOM, 2011.

^a Net new buses over the existing transit plan, including a 20 percent maintenance float.

^b Increment over the existing transit plan.

^c Incremental costs are relative to the existing 108 service.

^d No new capital costs, as vehicles on the existing 108 service would be reused.

4 PHASING

Given that full build-out of the Project is expected to take place over the course of 15 to 20 years, a phased implementation of the proposed transit improvements is necessary to ensure that appropriate levels of transit service are provided over the course of the development timeframe for the Project. This chapter summarizes the phasing of the proposed transit improvements as well as the resulting costs within each development phase.

4.1 DEVELOPMENT SCHEDULE

The development schedule for the Project is summarized in Table 3.

TABLE 3: DEVELOPMENT SCHEDULE

PHASE	APPROXIMATE YEARS ^a
Up to 1,000 new units	2014-2016
Up to 2,000 new units	2017-2018
Up to 3,000 new units	2019
Up to 4,000 new units	2020
Up to 5,000 new units	2021-2022
Up to 6,000 new units	2023-2025
Up to 7,000 new units	2026-2028
Up to 8,000 new units	2029-2030

Source: TICD, 2011.

^a Years estimated based on current project sales projections; subject to change.

4.2 TRANSIT SERVICE PHASING

The phasing of transit service changes under the proposed transit plan is based on the transit service planning work conducted for the *Treasure Island Transportation Implementation Plan* (Draft), dated January 2011. For reference, the phasing is summarized in Table 4 and Table 5.

TABLE 4: TRANSIT SERVICE BY PHASE: TRANSBAY TERMINAL ROUTE

Phase	Vehicle Type	One-Way Distance (mi)	Headway (min)			
			AM Peak	Midday	PM Peak	Off-Peak
Existing Transit Plan	Standard	5.3	10	20	15	20
Up to 1,000 new units	Standard	5.3	10	20	15	20
Up to 2,000 new units					12	
Up to 3,000 new units				15	10	
Up to 4,000 new units ^a						
Up to 5,000 new units	Articulated	3.7	7.5	12	7.5	
Up to 6,000 new units						
Up to 7,000 new units				10	5	
Up to 8,000 new units						

Source: Fehr & Peers, 2010; SFMTA, 2010; AECOM, 2011.

^a Service switches from the existing Route 108 circulating through the Island to a point-to-point service, coincident with the start of the on-Island shuttle service.

TABLE 5: TRANSIT SERVICE BY PHASE: CIVIC CENTER ROUTE

PHASE	VEHICLE TYPE	ONE-WAY DISTANCE (MI)	HEADWAY (MIN)			
			AM PEAK	MIDDAY	PM PEAK	OFF-PEAK
Up to 7,000 new units	Standard	5.2	12	15	12	20
Up to 8,000 new units						

Source: Fehr & Peers, 2010; SFMTA, 2010; AECOM, 2011.

As shown in Table 4 and Table 5, transit service in the early phases of the development will be similar to the current 108 route under the existing transit plan. The Transbay Terminal Route will use the same fleet of standard coaches currently used on the 108 (four on-street buses and one float) until the development reaches 4,000 units, after which the route will switch to new articulated coaches. In addition, the Transbay Terminal Route will stop circulating on-Island and switch to a point-to-point

service when the development surpasses 3,000 units. The Civic Center Route becomes active when the development surpasses 6,000 units.

4.3 CAPITAL COSTS

Capital costs associated with the proposed transit plan by development phase are summarized in Table 6.

TABLE 6: CAPITAL COSTS BY PHASE

RESIDENTIAL UNIT COUNT	TRANSBAY TERMINAL ROUTE				CIVIC CENTER ROUTE			
	VEHICLES		CAPITAL COSTS		VEHICLES		CAPITAL COSTS	
	EXISTING	NEW	ROLLING STOCK	FACILITIES (STORAGE)	EXISTING	NEW	ROLLING STOCK	FACILITIES (STORAGE)
Existing	5 (sta.)							
Up to 1,000 new units	--		--	--				
Up to 2,000 new units	--		--	--				
Up to 3,000 new units	--		--	--				
Up to 4,000 new units	--		--	--				
Up to 5,000 new units		5 (artic.)	\$7,548,000	\$4,100,000				
Up to 6,000 new units		--	--	--				
Up to 7,000 new units		--	--	--	5 (sta.) ^a		--	--
Up to 8,000 new units		1 (artic.)	\$1,510,000	\$820,000	--		--	--
Total		6 (artic.)	\$9,058,000	\$4,920,000	5 (sta.)	--	--	--

Source: SFMTA, 2010; AECOM, 2011.

^a The existing vehicles on the current 108 line will be transferred to the second route.

As shown in Table 6, the proposed transit plan would require a capital investment of approximately \$11.6 million (\$7.5 million for rolling stock and \$4.1 million for facilities (storage)) for five new articulated motor coaches when the development exceeds 4,000 units. When the development exceeds 7,000 units, an additional capital investment of approximately \$2.3 million (\$1.5 million for rolling stock and \$0.8 million for facilities (storage)) is needed for an additional articulated motor coach. No

new capital costs are incurred as a result of the Civic Center Route, as this route would reuse buses currently used on the existing 108 route (and subsequently the Transbay Terminal Route, before its conversion to articulated coaches).

4.4 OPERATING / MAINTENANCE COSTS

Operating / maintenance costs associated with the proposed transit plan by development phase are summarized in Table 7.

TABLE 7: ANNUAL OPERATING / MAINTENANCE COSTS BY PHASE

RESIDENTIAL UNIT COUNT	TRANSBAY TERMINAL ROUTE	CIVIC CENTER ROUTE	TOTAL
Existing Transit Plan	\$3,678,000	--	\$3,678,000
Up to 1,000 new units	\$3,678,000	--	\$3,678,000
Up to 2,000 new units	\$3,842,000	--	\$3,842,000
Up to 3,000 new units	\$4,699,000	--	\$4,699,000
Up to 4,000 new units ^a	\$3,767,000	--	\$3,767,000
Up to 5,000 new units	\$3,969,000	--	\$3,969,000
Up to 6,000 new units	\$3,969,000	--	\$3,969,000
Up to 7,000 new units	\$3,969,000	\$3,996,000	\$7,965,000
Up to 8,000 new units	\$4,828,000	\$3,996,000	\$8,824,000

Source: SFMTA, 2010; AECOM, 2011.

^a There is a decrease in operating / maintenance costs when the development surpasses 3,000 units, as the Transbay Terminal Route stops circulating on-Island and switches to a shorter, more efficient point-to-point service.

4.5 CONCLUSION

As noted earlier, this plan describes the proposed transit service plan and associated costs as currently envisioned, with the available information at this time. However, SFMTA service planning staff have retained the discretion to implement the most appropriate transit service, as warranted by conditions during the course of the development of the Project.