Financial Capacity Assessment Update of the City & County of Honolulu for the Honolulu High Capacity Transit Corridor Project

PREPARED FOR THE FEDERAL TRANSIT ADMINISTRATION

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PORTER & ASSOCIATES, INC.

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Glossary of Abbreviations, Acronyms and Terms

BAN	Bond anticipation note
CAFR	Comprehensive Annual Financial Report
CAGR	Compound Annual Growth Rate: the constant rate of change per year that, when applied to the first value in a time series and each succeeding year, would yield the actual final value in that series. Also known as the average annual rate of change.
CIP	Capital Improvement Program
COR	Council on Revenues
CMAQ	Congestion Mitigation and Air Quality Program
DBOM	Design-Build-Operate-Maintain, a type of procurement
DTS	City of Honolulu Transportation Services Department
FFGA	Full Funding Grant Agreement
FMOC	Financial Management Oversight Contractor
FTA	Federal Transit Administration
FTE	Full-time equivalent employee
GAAP	Generally accepted accounting principles
GAN	Grant anticipation note
GDP	Gross domestic product
GET	General excise tax
G.O.	General obligation
HART	Honolulu Authority for Rapid Transit
HHCTCP	Honolulu High Capacity Transit Corridor Project
HTAX	Hawaii Department of Taxation
New Starts	Part of the §5309 program relating to the funding of new fixed guideway projects
NTD	National Transit Database
PMOC	Project Management Oversight Contractor
SCC	Standard Cost Category, used in breakdowns of project cost
§5307	Urbanized Area Formula Grant Programs
§5309	Includes (1) Discretionary program to supplement formula funding for buses and bus-related facilities in both urbanized and rural areas; (2) discretionary program for new starts projects; and (3) a formula funding program for fixed guideway modernization (FGM).
TECP	Tax-exempt commercial paper
VRM	Vehicle revenue mile
YOE	Year-of-Expenditure (denominates dollars in the year they are expended; contrast with *constant dollars*, wherein dollars in multiple years are expressed in terms of their buying power in a single year, e.g., 2010 dollars).

1. Summary

This document presents a financial capacity assessment of the City & County of Honolulu (hereafter, "the City") in preparation for a Full Funding Grant Agreement (FFGA) for the Honolulu High Capacity Transit Corridor Project ("the Project").

The Project is a 20.1-mile elevated rail line, using light metro technology incorporating automatic train control. A description of the Project is provided in section 2.

The Honolulu Authority for Rapid Transportation (HART) is a semi-autonomous authority created by the City to manage the construction and operation of the Project. The City's Department of Transportation Services, Public Transportation Division, will continue to manage bus and demand response services provided under contract by Oahu Transit Services, Inc. A description of these entities is provided in section 2.

The Project is estimated to cost $5,122 million in year-of-expenditure dollars, inclusive of financing costs. The estimate is explained in section 3.1.

The Project cost estimate is assumed to be funded by §5309 New Starts funds totaling $1,550 million. This report assumes these funds will be available according to the schedule in Appendix A to this report. The remaining funds include: a 0.5 percent county surcharge on the State of Hawaii 4 percent general excise tax (also known as the GET surcharge), providing $3,358 million; §5307 Urbanized Area formula grants ($210 million); and an American Recovery and Reinvestment Act grant ($4 million). All except the §5309 New Starts funds have been committed. The Project is scheduled to begin partial revenue service in June 2016, and would be completed by January 31, 2020.

This report analyzes the reasonableness of the Project financial plan, and a long-term financial plan for all transit services to be operated by HART and the City through 2030. The financial plan is dated June 2012.

This assessment finds:

- Project revenues, in combination with the City's tax-exempt commercial paper (TECP) program could fund a Project cost increase or funding shortfall of up to 10 percent. Please refer to section 3 for details on the Project financing plan, and to section 6 for the analysis of the City's capacity to fund a 10 percent cost increase or funding shortfall.
- The City provides highly-utilized transit services, has stabilized cost and operating subsidy growth, and has appropriated sufficient funds to maintain its capital assets in good repair. Please refer to section 4 for supporting information.

- The operating and on-going capital financial plans are based on reasonable assumptions regarding future costs and revenues. However, in order to fund the forecasted transit operating subsidies, the City would need to achieve a lower rate of growth in non-transit uses of General Fund and Highway Fund revenues than has been the case historically. Please refer to section 5 for supporting details.
- The stress tests examined the City's capacity to withstand a 10 percent increase in Project cost, and a lower rate of growth in GET surcharge revenues. In either case, the City would have the financing capacity to complete the Project. However, the City could incur an additional debt obligation of $373.2 million, and may need to fund between $70.9 million and $123.1 million in rail operating and capital costs that would otherwise have been funded from surplus Project revenues. Please see section 6 for supporting details.

In summary, the City has the financial capacity to construct the Project, and to address reasonable risks regarding Project costs and funding.

2. Scope of the Financial Capacity Assessment

This section briefly describes the project and the project sponsors, and describes the limitations of data and the report.

2.1 PROJECT DESCRIPTION

The Honolulu High Capacity Transit Corridor project ("the Project") is a 20.1-mile, dual-track rail line extending from East Kapolei, in the west, eastward to the Ala Moana Center in downtown Honolulu. The guideway will be primarily on elevated structure (19.5 miles). Twenty-one stations are included in the Project; all but one (Leeward Community College) will be located on aerial structure.

The Project alignment is shown in Exhibit 2-1, following page.

The Project is planned to be delivered in four design and construction sections. The first section is the portion between East Kapolei and Pearl Highlands, and includes construction of the Maintenance Storage Facility and Yard (MSF). The second section will be constructed from Pearl Highlands to Aloha Stadium. The third section will be constructed from Aloha Stadium to Middle Street, and the final section will continue to the Ala Moana Center. The segment between East Kapolei and Aloha Stadium is scheduled to open in June 2016, followed by the remainder of the line to Ala Moana Center by January 31, 2020.

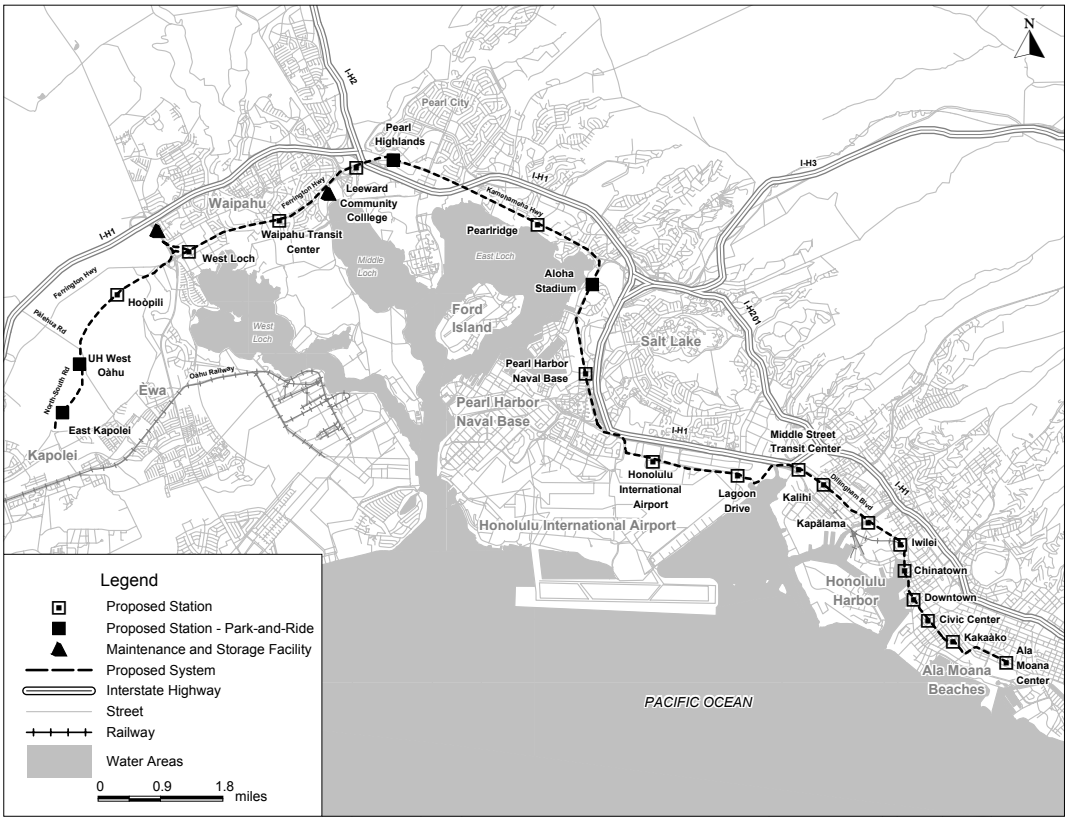
Cost estimates for the Project presented in this Financial Plan reflect a steel wheel on steel rail automated technology, operating primarily on elevated guideway using high floor vehicles and a barrier-free fare collection system.

Project costs and financing are described in Section 3 of this report.

2.2 PROJECT SPONSOR

The Project is sponsored by the City and County of Honolulu, hereafter referred to as the City, acting through the Honolulu Authority for Rapid Transportation (HART). HART is described more fully in Section 2.2.2. Motor bus and paratransit services will continue to be managed by the City's Public Transit Division, in the Department of Transportation Services. These services are operated by contract with Oahu Transit Services, Inc.

Exhibit 2-1: Project Alignment



2.2.1 City & County of Honolulu

The City is a body politic and corporate, as provided in Section 1-101 of the Revised Charter of the City and County of Honolulu 1973, as amended. The City is the designated recipient of FTA Urbanized Area Formula Funds apportioned to the Honolulu and Kailua-Kāneʻohe urbanized areas.

Transit services are currently provided through the City's Department of Transportation Services' Public Transit Division. See section 2.2.3 for additional information on the management of the City's current transit services.

The City funds transit operations and on-going capital expenditures from sources that are largely independent of funding sources being applied to the Project's capital costs. On-going bus and paratransit operations are funded through transfers from the City's General Fund and Highway Fund. On-going transit capital expenditures, other than those funded through Federal grants, are funded primarily from the proceeds of general obligation bonds issued by the City pursuant to its capital improvement program. These bonds are serviced from the general revenues of the City.

Local funds for the Project are provided primarily by a 0.5 percent county surcharge on the existing State of Hawaii 4 percent general excise tax (aka GET surcharge). This surcharge was enabled by Hawaii Revised Statutes (HRS) chapter 46, which authorizes counties to levy up to a 1 percent surcharge on the same activities that are subject to the State 4 percent GET. The GET surcharge was implemented by City Ordinance 05-027 on August 10, 2005. The ordinance specified that the GET surcharge would be levied at the 0.5 percent rate, commencing on January 1, 2007 and terminating on December 31, 2022, consistent with State legislation (HB 1309).

Revenues from the GET surcharge are collected by the State, which retains 10 percent of the revenues for administrative purposes. The remaining revenues are transferred quarterly to the City's Special Transit Fund, managed by HART, described in Section 2.2.2. As explained in Section 3 of this report, most of the local capital funds applied to the Project will derive from general obligation bonds issued by the City. GET surcharge revenues will be used to service this debt.

2.2.2 Honolulu Authority for Rapid Transportation

The creation of HART was enabled via a November 2010 voter-approved amendment to the Charter of the City and County of Honolulu. The charter amendment was initiated by resolution of the City Council (09-252, CD1). The question submitted to voters was *"Shall the Revised City Charter be amended to create a semi-autonomous public transit authority responsible for the planning, construction, operation, maintenance, and expansion of the City's fixed guideway mass transit system?"* Sixty-three-point-six (63.6) percent of the voters responded affirmatively, thus authorizing HART's creation.

The powers and duties of HART are specified in City Council Resolution no. 09-252, CD 1. The resolution confers broad powers to HART, within the scope of the charter amendment question above. However, the ultimate power to approve line-item appropriations and bond sales proposed by HART remains vested in the City Council.

The HART Board of Directors consists of nine voting members, and one non-voting ex-officio member (the City's Director of Planning and Permitting). The nine voting members include: three members appointed by the Mayor; three members appointed by the City Council; the City's Director of Transportation Services; the State's Director of Transportation; and a ninth member to be selected by the appointed and by-law members. Day-to-day activities are managed by an Executive Director.

2.2.3 Public Transit Division of the Department of Transportation Services

The Public Transit Division (PTD) of the Department of Transportation Services (DTS) will continue to be responsible for managing the City's fixed route bus and paratransit services. The City's fixed route bus system is referred to as "TheBus"; paratransit services are referred to as "TheHandi-Van". All transit services operate across the entire island of Oahu. TheBus and TheHandi-Van are operated under contract by O'ahu Transit Services, Inc. (OTS).

2.3 LIMITATIONS OF DATA AND THE REPORT

The assessment presented herein relies on documents supplied by the City, describing historical revenues, expenditures, assets, and liabilities, as well as a financial plan prepared in June 2012.

The FMOC acknowledges that, by their nature, financial forecasts assume the occurrence of future events that are unlikely to occur exactly as planned. Variances between assumed and actual outcomes may occur and could be material.

The June 2012 financial plan, including supplemental information submitted by the City, generally conforms to FTA Guidelines for Transit Financial Plans.

The FCA included a review of the reasonableness of the forecast assumptions used in the City's financial plan, focusing on the contrast between these assumptions and historical trends, in the context of current economic conditions. The assessment carefully examined but did not attempt to fully proof the forecast methodology. Where appropriate, the risks posed by potential variation in these material assumptions were evaluated. These risks are described in section 6, Stress Tests.

3. Project Financing Plan

This section of the report describes the Project budget, cash flow, and the City's capacity to accommodate higher Project costs or funding shortfalls. The primary local funding source for the Project is the 0.5 percent surcharge on the State of Hawaii general excise tax (the "GET surcharge"). The Project and the GET surcharge were described in section 2.

The key findings presented in this section are as follows:

- The Project cost estimate is $5,122 million in year of expenditure (YOE) dollars. This figure includes contracts awarded to date, as well as financing costs that would be incurred through January 31, 2020.
- The Project cost estimate is assumed to be funded from: §5309 New Starts funds ($1,550.0 million, 30.3 percent); GET surcharge revenues, bonds, and interest earnings ($3,357.8 million, 65.6 percent); §5307 Urbanized Area funds ($209.9 million, 4.1 percent); and an ARRA grant ($4.0 million, 0.1 percent). These percentages may not total 100 percent due to rounding error. All of the non-§5309 New Starts funds are committed.
- The financing costs attributed to the Project ($173.1 million) are reasonable in relation to the anticipated borrowing needs for the Project, as well as recent experience with interest rates for similar debt instruments.
- The City has the authority to issue tax-exempt commercial paper (TECP) of up to $450 million, which serves as a standby financial contingency for the Project. The City also intends to create a Project reserve fund of $140 million that could serve as an alternative source of cash to temporarily fund an increase in Project cost. Collectively, the TECP program and Project cash balances could fund a 10 percent Project cost increase or funding shortfall. However, any additional TECP would need to be repaid from City (i.e., non-Project) sources. The actions identified by the City to fund these additional costs would eliminate a planned transfer of funds for operating and non-Project capital expenses; funds to replace this transfer have not been identified.

This review of the Project financing plan concludes that the City has adequate resources to fund its local financial commitment through the completion date for the Project, and to fund a Project cost increase of up to 10 percent.

Additional details on the Project budget, cash flow, and capacity to accommodate higher Project costs are presented in the remainder of this section.

3.1 PROJECT BUDGET

The current Project cost estimate is $5,121.7 million in YOE dollars, consisting of $4,948.6 million in capital costs and $173.1 million in financing costs. Details on the sources and uses of funds are provided in the remainder of section 3.1.

3.1.1 Sources of funds

The sources of funds for the Project are depicted in Exhibit 3-1 (following page). An annual breakdown of the funds, in the format of Attachment 6 to the FFGA, is provided in Appendix A.

Federal funds

The bulk of Federal funds to be applied to the Project is from the §5309 New Starts program, with additional funds from the §5307 Urbanized Area formula grant program, and from a previously awarded ARRA grant.

§5309 New Starts funds are assumed to be $1,550 million, apportioned as follows:

- $120 million apportioned through City FY 2011 (ending June)
- $200 million in FY 2012
- $250 million in each of fiscal years 2013-2016
- $230 million in FY 2017

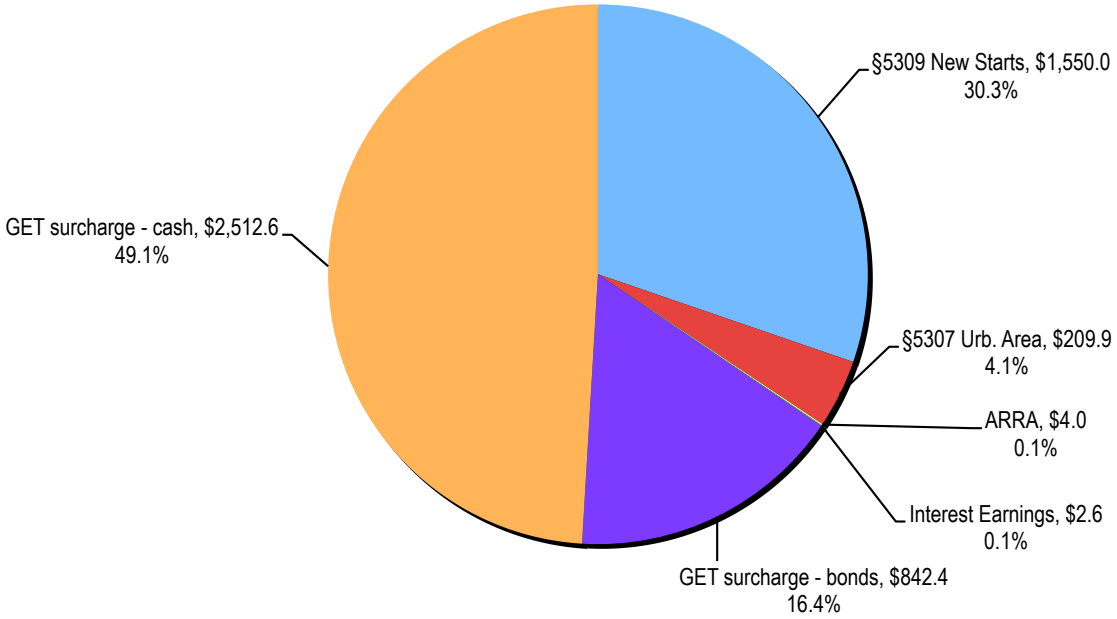
§5309 New Starts funds total 30.3 percent of total Project cost. Due to the timing of grant-eligible Project expenditures, the annual draws of §5309 New Starts funds may vary from the above schedule, but as presented in the financial plan would not exceed 30.3 percent of eligible Project costs on a cumulative basis.

§5307 Urbanized Area formula funds total $209.9 million, or 4.1 percent of total Project cost. These funds are committed to the Project in the Statewide 2011-2014 Transportation Improvement Plan, from grant apportionments expected to occur in those years. However, most of the funds would actually be disbursed after 2014. Annual disbursements of these grant funds are projected to range from a low of $32.9 million in FY 2014 to a high of $37.1 million in FY 2019.

The City of Honolulu was awarded a $4 million ARRA grant that has already been applied to the Project, accounting for 0.1 percent of Project funds.

All told, Federal funds total $1,763.9 million, or 34.4 percent of total Project funds.

Exhibit 3-1: Sources of Project Funds ($5,122 mil., y-o-e)

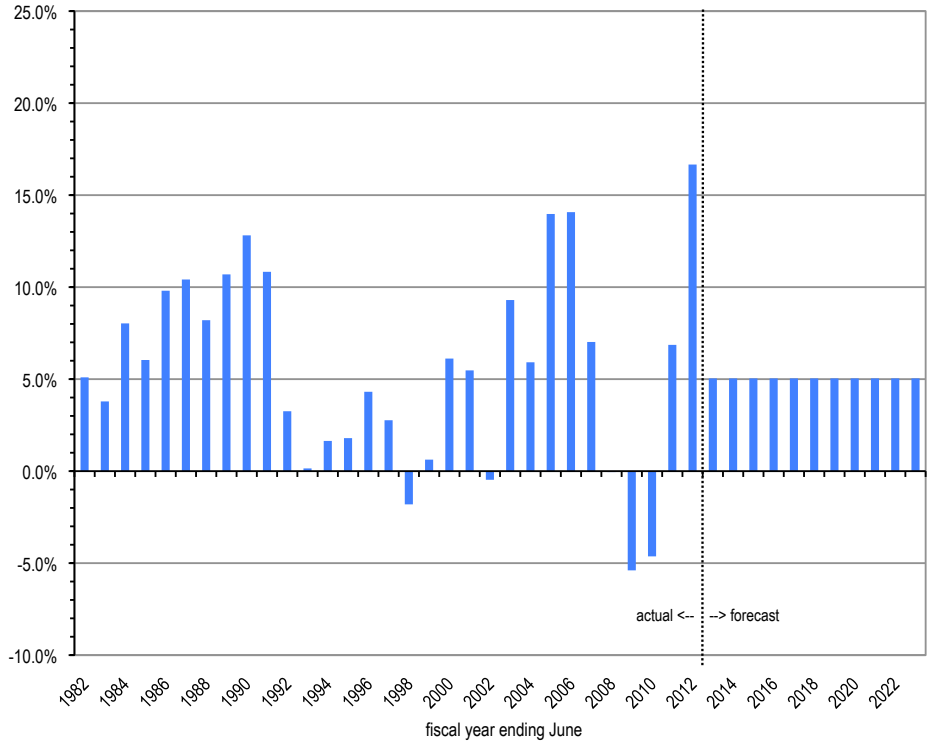


source: June 2012 Financial Plan. See Appendix D for details.

Local funds

Local funds are provided almost entirely by the GET surcharge, consisting of $2,512.6 million in cash, and $842.4 million in bonds that would be outstanding at completion of the Project in 2020. These figures are net of TECP issued for cash flow purposes, that would be repaid either with cash or refinanced with G.O. debt prior to Project completion. The bonds outstanding at Project completion would be repaid from GET surcharge revenues collected through the sunset date (December 31, 2022, occurring in the City's 2023 fiscal year), and from a Project reserve (see section 3.1.2 for additional details). Interest earnings on cash balances are forecasted to provide another $2.6 million for the Project, less than 0.1 percent of Project funds.

Exhibit 3-2: Historical & Forecast Annual Growth Rates, State 4% GET



source:
State 4% GET as stated in June 2012 financial plan through 2011 (Att. C); forecast scaled from GET surcharge forecast in June 2012 financial plan, reflecting 2011 actual.

The GET surcharge is levied on certain taxable activities in the City & County of Honolulu, coterminous with the island of Oahu. The taxable activities correspond to those of the State GET that are taxed at a 4 percent rate. Because the GET surcharge is a relatively new tax, first collected in January 2007, with a geographically unique tax base, there is no exact long-term series of collections against which to compare a forecast. However, GET taxable activity on Oahu is known to be highly correlated with that of the State as a whole. A long-term historical series does exist for the State 4 percent GET. This series was assumed to be a reasonable approximation of long-term taxable economic activity on Oahu under the GET surcharge, and was used to establish a historical context for evaluating the GET surcharge revenue forecast.

Exhibit 3-2 presents actual (1982-2012) and forecast (2013-2023) annual percentage changes in GET revenue. The forecast, while labeled as "State 4% GET", is actually the GET surcharge forecast presented in the June 2012 financial plan.

GET revenue growth in the historical period is variable, which makes it difficult to forecast. The compound annual growth rate (CAGR) in the forecast period (2012-2023) is 5.04 percent. This is exactly equal to the long-term historical growth rate (1982-2010), and is slightly less than the historical rate if the 2011 and 2012 results are taken into account (5.47 percent CAGR).

The GET surcharge forecast is in the range of what may be considered reasonable. The historical variability in statewide GET revenues suggests that any forecast of GET revenues is inherently risky.

3.1.2 Uses of funds

The current Project cost estimate (June 2012) is $5,121.7 million in YOE dollars, consisting of $4,948.6 million in capital costs and $173.1 million in financing costs. A more detailed breakdown is shown in Exhibit 3-3. The SCC worksheet backing this exhibit is included as Appendix B to this report. The financing costs cited in the exhibit and Appendix B were documented in the City's June 2012 financial plan.

Project capital costs

The current Project cost estimate reflects contracts awarded to date. Preliminary engineering estimates were used for Project elements that have not yet been bid or awarded. A breakdown describing the bases for the current Project cost estimate is presented in Exhibit 3-4.

Financing costs

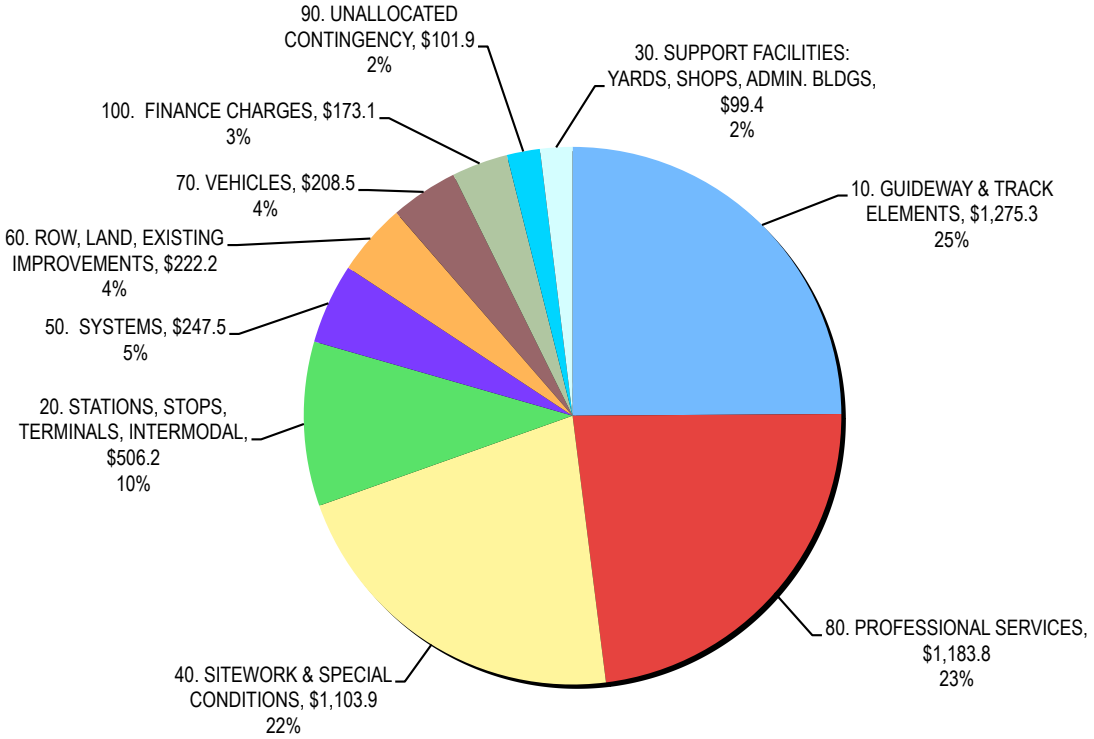
The City intends to use a combination of general obligation (G.O.) bonds and TECP to meet the cash flow requirements of the Project. The City will incur financing costs (issuance costs and interest expense) with the use of these instruments.

Approximately $1,798 million G.O. bonds are anticipated to be sold by the City to support the Project, with the first sale of $496 million occurring in 2014. A maximum of $1,186 million would be outstanding during the construction period. Approximately $842.4 million of G.O. bonds would be outstanding when all Project activities are completed in 2020. Most of the bond proceeds would be used to fund capital costs or to pay TECP principal. A portion of the proceeds from the first bond sale in 2014 would be used to fund a Project Reserve, totaling approximately $140 million, that may be used for temporary cash flow needs that could not otherwise be met. The financial plan indicates that the full Project Reserve would eventually be used to fund a portion of the final G.O. debt service payment in 2023. The structure and amount of G.O. debt included in the financial plan conforms to current City policy and state law.

The City plans to issue $100 million in TECP in 2014. The TECP is assumed to be remarketed on a 270-day cycle until it is paid down in 2019. To meet cash flow requirements, an additional $100 million TECP would be issued in 2015 and 2018, but would be paid down by year end. Thus, a maximum of $200 million TECP would be outstanding during the construction period. These anticipated issues are well within the $450 million TECP program approved by the City Council (Bill 37) in June 2012.

The financial plan assumes interest rates on G.O. bonds of 2.50 percent for issues in FY 2014 and FY 2015 and 3.00 percent for issues beyond FY 2015. The interest rate assumption is increased after FY 2015 to account for the possibility that market conditions may become less favorable in the future. The maturity of the bonds varies be-

Exhibit 3-3: Uses of Project Funds, June 2012 estimate ($5,121.7 mil., y-o-e)



source: June 2012 Financial Plan. See Appendix B for full breakdown. Note the digits preceding each label refer to the Standard Cost Category. Percentages may not sum to 100% due to rounding.

Exhibit 3-4: Basis for Project Cost Estimates by Contract

Major Contract Breakdown	Contracting Method	Source of Estimate
West O'ahu - Farrington Highway Guideway Design-Build Contract	Sealed Proposals (Best Value)	Used price of executed contract
Maintenance Storage Facility and Yard Design-Build Contract	Sealed Proposals (Best Value)	Used price of executed contract
Kamehameha Highway Guideway Design-Build Contract	Sealed Proposals (Best Value)	Used price of executed contract
Airport Utilities	Design-Bid-Build	PE design level cost estimate
City Center Utilities	Design-Bid-Build	PE design level cost estimate
Airport and City Center Guideways	Design-Bid-Build	PE design level cost estimate
Core Systems DBOM Contract (including vehicles)	Sealed Proposals (Best Value)	Used price of executed contract
Stations, parking garage, intermodal contracts	Design-Bid-Build	PE design level cost estimate
Elevators/Escalators design, manufacture, install, test, & maintain	Sealed Proposals	PE design level cost estimate
Professional Services	Qualifications or sealed proposals	PE design level cost estimate

DBOM = Design-Build-Operate-Maintain // PE = Preliminary Engineering

source: June 2012 Financial Plan, Table 2-2

tween three and nine years, with a weighted average of about seven years. The interest rate on TECP financing is assumed to equal 1.50 percent for FY 2014 and FY 2015, and 2.00 percent beyond FY 2015.

The City's current bond rating is AA+. Current AA yields for the maturities assumed in the financial plan are 1.34 percent for a seven-year term and 0.22 percent for a 270-day (or 9-month) term. These rates, which are near historical lows, are lower than assumed in the financial plan. However, over the past five years, yields on seven-year maturities have averaged about 3 percent, and yields on 270-day maturities averaged 2.7 percent. Thus, although the interest rates assumed in the financial plan are higher than current market rates, they are within the range of rates in the near past.

3.2 PROJECT CASH FLOW

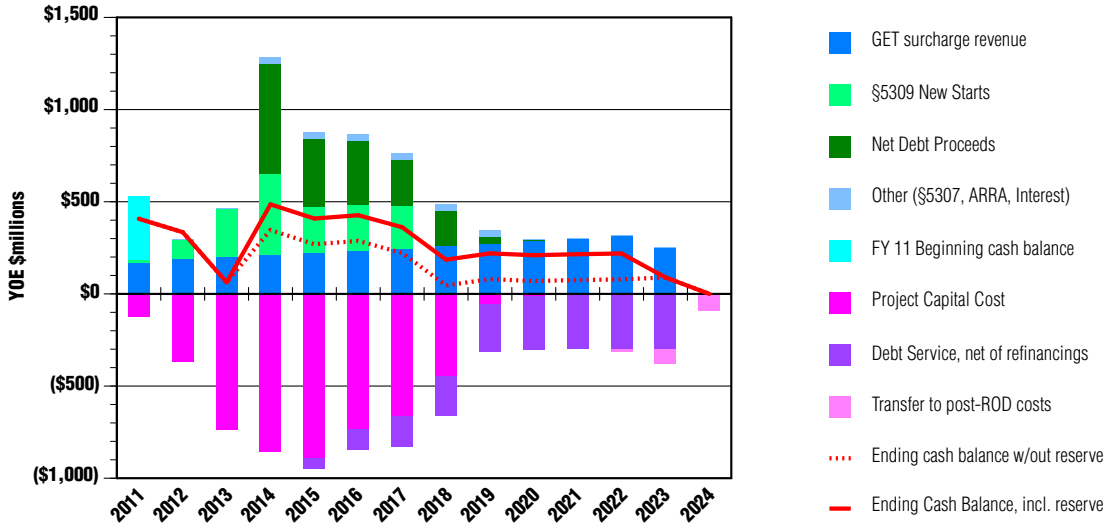
The cash flow forecast for the Project, from FY 2011 (June 30) to FY 2024 is shown graphically in Exhibit 3-5. Sources of funds are shown as stacked positive values (above the X-axis), and uses of funds are shown as stacked negative values (below the x-axis). The year-end cash balance is indicated by two red lines – the solid line includes all cash, including the Project Reserve; the dashed line excludes the Project Reserve. The annual data backing this chart are included in Appendix D.

The Project had a FY 2011 beginning cash balance of approximately $344 million. This had been accumulated from GET surcharge revenues collected since the inception of the tax (January 2007), net of Project expenses.

Other sources of funds flow into the Project as described in section 3.1. The cash flow includes short-term financing in the form of TECP. Because the TECP is refinanced or repaid during the construction period, the proceeds that contribute to the cash flow are shown simply in the exhibit as "debt proceeds net of refinancing." TECP of $100 million would be issued in 2014, and rolled over until paid down in 2019. This would be managed within the City's current $450 million TECP program.

The ending cash balance is forecast to fall to $63 million at 2013, but would then be recharged from debt proceeds, including about $140 million to be held in a Project Reserve fund. The cash balance peaks at $486 million in 2014 (or $346 million net of the Project Reserve), then declines to a low of $186 million at 2018, before stabilizing at about $220 million through 2022. In 2023, the Project Reserve would be fully drawn to partially pay the final debt service payment ($294.7 million), the balance of which would be paid from GET surcharge revenue. In 2024, a final cash balance of $89 million would be transferred to the City's Public Transit Fund for post-revenue operations date (ROD) expenses, such as the capital asset replacement program and additional railcars. Thus, under current revenue and borrowing assumptions, the GET surcharge revenue is fully committed.

Exhibit 3-5: Project Cash Flow



source: June 2012 Financial Plan. See Appendix D for details.

Exhibit 3-6:
Debt and Debt Service Coverage

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Debt to be issued ($mil.):													
General Obligation Bonds	-	-	-	496	369	347	253	189	137	7	-	-	-
Tax-Exempt Commerical Paper	-	-	-	100	200	100	100	200	-	-	-	-	-
total debt to be issued	-	-	-	596	569	447	353	389	137	7	-	-	-
Debt outstanding at year end ($mil.): [1]													
General Obligation Bonds	-	-	-	496	815	1,069	1,180	1,186	1,099	842	569	289	(0)
Tax-Exempt Commerical Paper	-	-	-	100	100	100	100	100	-	-	-	-	-
total debt outstanding	-	-	-	596	915	1,169	1,280	1,286	1,099	842	569	289	(0)
Debt service ($mil.):													
G.O. bonds	-	-	-	-	62	113	168	215	256	292	295	295	295
TECP (interest only)	-	-	-	-	2	2	2	3	2	-	-	-	-
total debt service	-	-	-	-	64	114	170	218	257	292	295	295	295
Cash available to service debt ($mil.):													
GET surcharge revenue	166	194	203	214	224	236	247	260	273	287	301	316	249
Year end cash balance, incl. reserves	408	335	63	486	409	427	362	186	220	210	215	219	89
Debt service coverage ratio:													
based on GET surcharge revenue only	na	na	na	na	3.5	2.1	1.5	1.2	1.1	1.0	1.0	1.1	0.8
including cash reserves	na	na	na	na	9.9	5.8	3.6	2.0	1.9	1.7	1.8	1.8	1.1

source: June 2012 Financial Plan, Table A-1

Note 1: Cumulative debt issued less cumulative principal payments.

The debt to be issued in support of the Project is summarized in Exhibit 3-6. For each year through 2023, which is the final year of GET surcharge collections, the table presents: the amount and type of debt to be issued; the debt outstanding; debt service; the sources of cash available to service the debt; and debt service coverage ratios.

The data in Exhibit 3-6 provide two perspectives on the planned debt – first, that there would be robust coverage of debt service costs until the final debt service payment in 2023; and second, that GET surcharge revenue is fully leveraged. The first point is confirmed by the debt service coverage ratios calculated using both GET surcharge revenue and cash reserves (the bottom line in the table), which vary between 1.7 and 9.9 through 2022, before falling to 1.1 in 2023. The second point is confirmed by the debt service coverage ratios calculated using current-year GET surcharge revenue only, which vary between 1.0 and 1.1 between 2019 and 2022, falling to 0.8 in 2023. These results underscore the materiality of the Project Reserve in meeting the Project's debt service obligations, and the inability of GET surcharge revenues to support additional debt, all other assumptions held constant.

3.3 CAPACITY TO ACCOMMODATE HIGHER PROJECT COSTS

The standard FCA test of a project sponsor's capacity to accommodate higher Project costs is to identify cash or debt that could reasonably be obtained to fund a 10 percent increase in Project cost – in this case, an additional $512 million.

As noted in section 3.2 above, the Project cash flow has no excess cash, and the debt service coverage ratios indicate that Project revenues can provide no additional debt capacity. Thus, there is no room in the cash flow to accommodate additional Project cost.

A stress test conducted by the City and included in the June 2012 financial plan tested the effect of a $416 million increase in Project costs. This was based on a 10 percent cost increase effective in 2014 and extending through Project completion. This is less than the standard 10 percent increase typically addressed in a FCA report, and converts to a difference of about $96 million.

The City found that it could cover an additional $416 million through: (i) use of the Project cash balance (≈$53 million) and Project reserve fund ($140 million), totaling $193 million; and (ii) use of $223 million in TECP or other resources in the period 2021 through 2023, when there otherwise would be no TECP issued. However, no funds would be transferred from the Project accounts to the City for future rail capital and operating costs. In the baseline financial plan, the transfer was planned to be $193 million. The stress test conducted by the City did not indicate how these funds would be replaced.

In a summary of this stress test, the City stated:

> *At this time, the City expects to use TECP capacity for any additional funding requirements generated by this stress test scenario. This scenario has a forecasted need for $223 million in TECP which is less than half the $450 million TECP program currently authorized by the City Council. GO bond funds are currently used to refund TECP. However, since the stress test scenario identifies that additional funding capacity would not be needed until at least FY2021, the City Department of Budget and Fiscal Services would work with HART to determine the most cost-effective option for funding the $223 million based on prevailing market conditions and the financing tools available to the City at that point in time. HART has committed to reimburse the General Fund for any outstanding principal, interest or issuance costs associated with the TECP.*

The stress test, as conducted by the City, would leave a balance of $217 million in the authorized $450 million TECP program. It is conceivable that this balance could be applied to the $96 million difference between a "full" 10 percent stress test and the qualified 10 percent stress test performed by the City. This indicates that the City has sufficient financing capacity to fund a 10 percent increase in Project cost or local funding requirements. Since the City will be the signatory for the FFGA, the question as to how HART would reimburse the City's General Fund for any costs associated with the use of additional TECP is moot.

The FMOC conducted an independent stress test, analyzing the City's capacity to fund a 10 percent increase in Project costs. This stress test differed slightly from the City's stress test described above, but arrived at generally the same conclusion. Please see section 6 for additional details.

* * * * *

This section of the report found that Project funds, other than §5309 New Starts funds, are fully committed and are based on reasonable assumptions. Although no capacity exists to fund unanticipated higher Project costs or funding shortfalls from Project revenues, the City's authorized $450 million TECP program provides sufficient financing capacity to address these exigencies.

4. Financial Condition

The analysis of financial condition presented in this section of the report focused on existing transit services – TheBus and TheHandi-Van – including both operating and capital programs. The analysis assessed the current condition of these programs, using a look-back period of 2006-2011, and identified benchmarks that are used to evaluate the reasonableness of assumptions backing the financial plan, presented in section 5 of this report.

The analysis of transit operations focused on trends in transit operating subsidies and factors contributing to the growth in subsidies, as well as how the subsidies are funded. This focus is appropriate because it helps establish the capacity of the City to fund future operating subsidies. Between 2006 and 2011, there was 5.1 percent annual growth in total operating subsidies, funded primarily by a 7.7 percent annual increase in City operating subsidies. Growth in the City's portion of operating subsidy exceeded the growth rate for total operating subsidies, due to a constant level of Federal funds applied to preventive maintenance, which gradually reduced the relative contribution of Federal funds. The overall growth rate in operating subsidies was principally driven by unit costs (i.e., cost per vehicle revenue mile) growing at a faster pace (+4.0 percent) than unit passenger revenues (+3.5 percent).

The capital program analysis focused on asset age and condition, replacement costs, and the capacity to fund capital replacement costs. Honolulu's transit assets are, in general, in the last third of their useful life; revenue vehicles are slightly more aged, in the last quarter of their useful life (e.g., the bus fleet average age is 10.1 years). Thus, the City faces substantial fleet replacement needs. Between 2006 and 2011, capital funds appropriated by the City were almost exactly equal to average annual replacement costs. This suggests that the City has set aside sufficient funds to maintain a state of good repair. As may be expected with capital projects, expenditures lag appropriations.

Supporting details on the operating and capital program analysis are presented in the remainder of this section.

4.1 TRANSIT OPERATIONS

The transit operations analysis focused on factors contributing to the amount of operating subsidy required to fund current operations (i.e., excluding the Project), as well as growth in the amount of operating subsidy itself. The results were normalized by vehicle revenue miles (VRM) operated, so that the rate of growth in operating subsidy and its contributors can be used to assess the reasonableness of assumptions for like variables in the operating financial plan, evaluated in section 5.2 of this report.

A summary of the operating trends is shown in Exhibit 4-1 (following page), which presents the compound annual growth rate (CAGR) for the operating subsidy per VRM and its major contributing components.

Honolulu transit operating subsidies grew at a 5.1 percent annual rate between 2006 and 2011. On a unit basis (i.e., operating subsidy per VRM), operating subsidies grew at 4.2 percent annually. The transit operating measures contributing to this outcome were as follows:

- Service, as measured by VRM, increased slightly, at 0.9 percent annually. Virtually all the increase is attributed to demand-response service (i.e., TheHandi-Van).
- Service effectiveness, measured by passenger boardings per VRM, was virtually static, increasing at 0.1 percent annually.
- Average fare revenue per boarding increased by 3.4 percent annually. The adult cash fare and monthly pass actually increased at higher rates (4.6 percent and 8.4 percent respectively), inferring that riders using prepaid fare media were making progressively more trips.
- Passenger revenue per VRM increased at 3.5 percent annually, reflecting the combined effect of growth in service effectiveness (+0.1 percent) and average fare revenue per boarding (+3.4 percent).
- Operating subsidies were funded by the City (84 percent) and Federal formula capital grants applied to preventive maintenance, an operating expense (16 percent).
- City operating subsidies increased at a 7.7 percent annual rate between 2006 and 2011. These subsidies represented 10.1 percent of the City's General Fund and Highway fund revenues during that time.

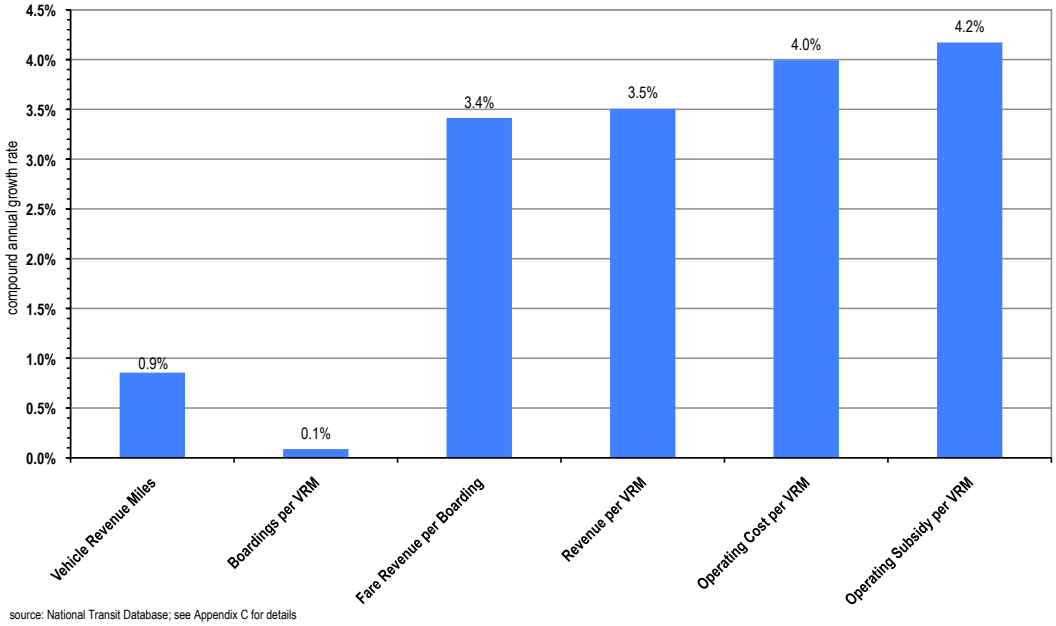
Additional details on trends in service, ridership & revenue, operating costs, and operating subsidies are provided in the remainder of section 4.1.

4.1.1 Service Trend

The 2006-2011 trend in VRM is shown in Exhibit 4-2 (following page).

Overall, VRM grew at 0.1 percent annually, rising to 23.3 million VRM in 2011 from 22.3 million VRM in 2006. Most of the service growth was vested in TheHandi-Van demand response service, which grew at a 2.8 percent annual rate. VRM for TheBus changed very little – the average was 18.24 million VRM, ranging from a high of 18.46 million VRM (+1.2 percent) and a low of 17.92 million VRM (-1.7 percent).

Exhibit 4-1:
Rates of Growth in Selected Transit Operating Statistics, 2006-2011



source: National Transit Database; see Appendix C for details

Exhibit 4-2:
Transit Service, 2006-2011

	2006	2007	2008	2009	2010	2011	trend, 2006-2011 Δ	%Δ	CAGR
Vehicle Revenue Miles (VRM) (mil.)									
TheBus	18.02	17.92	18.27	18.46	18.34	18.36	0.34	1.9%	0.4%
TheHandi-Van	4.32	4.61	4.83	5.00	4.96	4.96	0.63	14.7%	2.8%
total system	22.34	22.53	23.11	23.46	23.30	23.31	0.97	4.4%	0.9%
Percent of system VRM									
TheBus	80.7%	79.5%	79.1%	78.7%	78.7%	78.7%	-1.9%	-2.4%	-0.5%
TheHandi-Van	19.3%	20.5%	20.9%	21.3%	21.3%	21.3%	1.9%	9.9%	1.9%

source: National Transit Database. See Appendix C for details.
CAGR = compound annual growth rate

4.1.2 Ridership & Revenue Trend

The 2006-2011 trend in ridership and fare revenue is shown in Exhibit 4-3. Ridership is measured in boardings, which is shorthand for unlinked passenger trips as reported to NTD. A boarding occurs each time a person boards a vehicle; thus, a trip involving one transfer would result in two boardings.

Total ridership (TheBus plus TheHandi-Van) grew by 0.9 percent annually, to 73.77 million boardings in 2011 from 70.38 million boardings in 2006. TheBus ridership and TheHandi-Van ridership grew at similar rates, 0.9 to 1.0 percent annually.

Total fare revenue grew at 4.4 percent annually, to $51.72 million in 2011 from $41.53 million in 2006. Virtually all the growth in fare revenue was attributed to TheBus, which accounted for 98.7 percent ($10.2 million) of the incremental fare revenue ($10.3 million) between 2006 and 2011.

Fare revenue growth was primarily attributable to growth in the average fare revenue per boarding, which increased to $0.70 in 2011 from $0.59 in 2006, a 4.5 percent annual rate of growth. This growth rate, however, was less than the increase in fares. Fare increases occurred in fiscal years 2009 (+12.5 percent) and 2011 (+11.1 percent). Between 2006 and 2011, the adult cash fare increased by 25 percent (or 4.6 percent annually), and the monthly pass price increased by 50 percent (or 8.4 percent annually). The relatively smaller increase in the average fare revenue per boarding, when viewed in light of these substantial increases in the face value of adult fares, suggests that greater use is being made of prepaid, unlimited-ride fare media.

Boardings per VRM, a measure of service effectiveness, increased by 0.1 percent annually to 3.20 in 2011 from 3.19 in 2006.

Fare revenue per VRM increased at 3.5 percent annually. This reflects the combined effect of the increases in boardings per VRM (0.1 percent annually) and fare revenue per boarding (3.4 percent annually).

4.1.3 Operating Cost Trend

The 2006-2011 trend in annual operating costs is shown in Exhibit 4-4. Cost recovery, as measured by the fare recovery ratio (i.e., fare revenue ÷ operating cost) is also shown, using the annual fare revenues cited earlier in Exhibit 4-3.

Operating costs increased at a 4.9 percent annual rate, to $203.13 million in 2011 from $160.05 million in 2006. The rate of operating cost growth was higher for TheHandi-Van (7.6 percent annually) than TheBus (4.4 percent annually). This reflects the larger increase in VRM for TheHandi-Van (2.8 percent annually) than TheBus, for which VRM was almost static between 2006 and 2011.

Exhibit 4-3:
Ridership & Revenue, 2006-2011

	2006	2007	2008	2009	2010	2011	trend, 2006-2011 Δ	%Δ	CAGR
Boardings (mil.)									
TheBus	70.38	71.75	69.76	77.33	73.16	73.77	3.38	4.8%	0.9%
TheHandi-Van	0.78	0.81	0.83	0.84	0.79	0.83	0.04	5.4%	1.0%
total system	71.17	72.56	70.59	78.17	73.95	74.59	3.42	4.8%	0.9%
Fare Revenue ($mil.)									
TheBus	41.53	41.74	41.98	42.46	45.88	51.72	10.19	24.5%	4.5%
TheHandi-Van	1.51	1.60	1.63	1.66	1.51	1.64	0.13	8.3%	1.6%
total system	43.04	43.34	43.62	44.12	47.38	53.36	10.32	24.0%	4.4%
Fare Revenue per Boarding ($.¢¢)									
TheBus	0.59	0.58	0.60	0.55	0.63	0.70	0.11	18.8%	3.5%
TheHandi-Van	1.93	1.98	1.96	1.98	1.91	1.98	0.05	2.8%	0.5%
total system	0.60	0.60	0.62	0.56	0.64	0.72	0.11	18.3%	3.4%
Adult passenger fare									
Cash fare	2.00	2.00	2.00	2.25	2.25	2.50	0.50	25.0%	4.6%
Monthly pass	40.00	40.00	40.00	50.00	50.00	60.00	20.00	50.0%	8.4%
Break-even rides	20	20	20	22	22	24	4	20.0%	3.7%
Boardings per VRM									
TheBus	3.91	4.00	3.82	4.19	3.99	4.02	0.11	2.9%	0.6%
TheHandi-Van	0.18	0.18	0.17	0.17	0.16	0.17	(0.01)	-8.1%	-1.7%
total system	3.19	3.22	3.06	3.33	3.17	3.20	0.01	0.4%	0.1%
Fare Revenue per VRM ($.¢¢)									
TheBus	2.30	2.33	2.30	2.30	2.50	2.82	0.51	22.2%	4.1%
TheHandi-Van	0.35	0.35	0.34	0.33	0.30	0.33	(0.02)	-5.6%	-1.1%
total system	1.93	1.92	1.89	1.88	2.03	2.29	0.36	18.8%	3.5%

source: all but fares from National Transit Database. See Appendix C for details. Fare schedule from Table 3-3, April 2011 financial plan.
CAGR = compound annual growth rate
VRM = vehicle revenue miles

Exhibit 4-4:
Transit Operating Cost & Cost Recovery, 2006-2011

	2006	2007	2008	2009	2010	2011	trend, 2006-2011 Δ	%Δ	CAGR
Operating Cost ($mil.)									
TheBus	137.94	142.87	154.33	165.08	162.94	171.27	33.33	24.2%	4.4%
TheHandi-Van	22.11	24.81	28.23	30.56	30.20	31.87	9.76	44.1%	7.6%
total system	160.05	167.68	182.56	195.64	193.14	203.13	43.09	26.9%	4.9%
Operating Cost per VRM ($.¢¢)									
TheBus	7.66	7.97	8.45	8.94	8.88	9.33	1.67	21.9%	4.0%
TheHandi-Van	5.12	5.38	5.84	6.11	6.09	6.43	1.31	25.7%	4.7%
total system	7.16	7.44	7.90	8.34	8.29	8.71	1.55	21.6%	4.0%
Fare Recovery Ratio									
TheBus	0.30	0.29	0.27	0.26	0.28	0.30	0.00	0.3%	0.1%
TheHandi-Van	0.07	0.06	0.06	0.05	0.05	0.05	(0.02)	-24.9%	-5.6%
total system	0.27	0.26	0.24	0.23	0.25	0.26	(0.01)	-2.3%	-0.5%

source: National Transit Database. See Appendix C for details.
CAGR = compound annual growth rate
VRM = vehicle revenue mile

Exhibit 4-5:
Transit Operating Subsidy, 2006-2011

	2006	2007	2008	2009	2010	2011	trend, 2006-2011 Δ	%Δ	CAGR
Operating Subsidy ($mil.)									
TheBus	96.41	101.13	112.35	122.62	117.06	119.54	23.14	24.0%	4.4%
TheHandi-Van	20.60	23.21	26.60	28.90	28.69	30.23	9.64	46.8%	8.0%
total system	117.00	124.34	138.95	151.52	145.75	149.78	32.77	28.0%	5.1%
Operating Subsidy per VRM ($.¢¢)									
TheBus	5.35	5.64	6.15	6.64	6.38	6.51	1.16	21.7%	4.0%
TheHandi-Van	4.77	5.04	5.50	5.78	5.78	6.10	1.33	28.0%	5.1%
total system	5.24	5.52	6.01	6.46	6.25	6.42	1.19	22.7%	4.2%

source: calculated from National Transit Database, where subsidy = operating cost less fare revenue. See Appendix C for details.
CAGR = compound annual growth rate
VRM = vehicle revenue mile

Operating unit cost, measured as operating cost per VRM, grew at a 4.0 percent annual rate. Unit cost growth was higher for TheHandi-Van (4.7 percent annually) than for TheBus (4.0 percent annually). Both rates of growth exceeded the Honolulu CPI for this period, which grew at 3.2 percent annually.

The fare recovery ratio was variable between 2006 and 2011, with no discernible trend. The 2011 ratio – 0.26 – was slightly above the average for the prior five years (0.25).

4.1.4 Operating Subsidy Trend

The 2006-2011 trend in annual operating subsidy is shown in Exhibit 4-5 (following page). Operating subsidy is calculated as the difference between operating cost and fare revenue, presented in the two prior sections. The amount of operating subsidy actually paid by the City is less than presented in Exhibit 4-5, due to the utilization of grants (e.g., §5307 urbanized area grants applied to preventive maintenance) and other sources of operating income, which are addressed in section 4.1.4 below.

Operating subsidies increased at a 5.1 percent annual rate, to $149.78 million in 2011 from $117.00 million in 2006. Operating subsidies for TheBus grew at 4.4 percent annually, while those for TheHandi-Van grew at 8.0 percent annually.

On a unit basis (i.e., operating subsidy per VRM), operating subsidies grew at 4.2 percent annually, to $6.42 per VRM in 2011 from $5.24 per VRM in 2006. The rates of growth in unit subsidies for TheBus and TheHandi-Van (4.0 percent and 5.1 percent, respectively) are much closer to one another than their overall rates of cost growth noted above, since the unit costs adjust for differences in the scale of operation.

These unit subsidies are a useful benchmark for evaluating the reasonableness of the financial plan's forecast of operating subsidies for TheBus and TheHandi-Van, addressed in section 5.1 of this report.

4.1.5 Sources of funds for the operating subsidy

The transit operating subsidy is funded by the City and by Federal formula funds applied to preventive maintenance. Exhibit 4-6 (following page) shows a breakdown of the sources of operating subsidy for the period 2006-2011, the compound annual growth rates (CAGR) over this period, and – for City revenue sources – the CAGR for a longer timeframe (1996-2011).

City operating subsidies

Operating subsidies provided by the City consist of transfers to the Public Transit Fund from two other City funds – the General Fund and the Highway Fund (GF-HF). These transfers accounted for about 84 percent of transit operating subsidies, 2006-2011.

During this period, transfers to the Public Transit Fund represented about 10.1 percent of total GF-HF revenues, excluding the GET surcharge. As noted in section 2 of this report, uses of the GET surcharge are effectively limited to the Project. Thus, in establishing a benchmark for the analysis of forecasted operating subsidies, it is logical to exclude the GET surcharge revenues.

This is a useful benchmark for evaluating the financial capacity to fund future transit operating subsidy needs, presented in section 5.1 of this report. Excluding the GET surcharge, the GF-HF revenues grew at a 4.5 percent annual rate 2006-2011, and at a 3.8 percent annual rate 1996-2011. The Hawaii economy experienced substantial growth during the housing bubble from 2003-2007. Accordingly, the near-term historical growth rate is higher than the longer-term historical growth rate. Non-transit uses of GF-HF revenue, which are important to consider in benchmarking the City's financial capacity to fund future transit subsidies, grew at a 4.5 percent annual rate between 2006 and 2011, and at a 3.8 percent annual rate between 1996 and 2011.

Federal funds applied to preventive maintenance

Funds from FTA's §5307 Urban Area Formula grant program and §5309 Fixed Guideway Modernization program may be applied to preventive maintenance, an operating cost, although the funds are technically termed capital funds. Between 2006 and 2011, Federal funds from these sources accounted for 16 percent of transit operating subsidies.

Between 2006 and 2011, about 96 percent of the Federal funds applied to operations were from the §5307 program. These funds were held constant at $21 million from 2007-2011. The §5307 funds applied to preventive maintenance during this period represented about 86 percent of total §5307 funds apportioned to the Honolulu urbanized area.

Exhibit 4-6:
Sources of Operating Subsidy
$mil.

	2006	2007	2008	2009	2010	2011	CAGR, 2006-2011	CAGR, 1996-2011
City Funds [1]								
General Fund								
Real property taxes	591.3	689.4	769.4	851.3	901.7	800.9	6.3%	4.4%
Other sources, excluding GET surcharge	212.3	240.7	233.8	189.8	126.5	171.6	-4.2%	0.0%
subtotal	803.6	930.0	1,003.2	1,041.0	1,028.2	972.5	3.9%	3.4%
GET surcharge	-	48.4	169.1	160.9	157.6	179.1	na	na
total General Fund revenues	803.6	978.5	1,172.3	1,201.9	1,185.8	1,151.6	7.5%	4.6%
Highway Fund								
City & County Fuel Tax	52.4	52.2	50.6	50.3	47.6	52.3	0.0%	0.9%
County Motor Vehicle Weight Tax	58.7	71.6	71.9	71.5	84.0	108.7	13.1%	11.0%
Other sources	41.5	48.6	46.9	62.4	49.2	56.5	6.4%	4.7%
total Highway Fund revenues	152.6	172.3	169.4	184.2	180.8	217.5	7.3%	5.5%
Total, General & Highway Fund revenues	956.2	1,150.8	1,341.7	1,386.0	1,366.6	1,369.2	7.4%	4.7%
as above, excluding GET surcharge	956.2	1,102.4	1,172.6	1,225.2	1,209.1	1,190.0	4.5%	3.8%
Transfers to Public Transit Fund	93.1	106.1	105.9	127.3	124.3	134.8	7.7%	4.2%
% of General & Highway fund revenues	9.7%	9.2%	7.9%	9.2%	9.1%	9.8%		
as above, net of GET surcharge	na	9.6%	9.0%	10.4%	10.3%	11.3%		
Federal funds [2]								
§5307 Urbanized Area Formula funds	21.8	21.0	21.0	21.0	21.0	21.0	-0.8%	na
§5309 Fixed Gudieway Maintenance	-	-	3.2	1.8	-	-	na	na
total Federal funds	21.8	21.0	24.2	22.8	21.0	21.0	-0.8%	na
Total operating subsidy [3]	114.9	127.1	130.1	150.1	145.3	155.8	6.3%	na
% funded by City	81%	83%	81%	85%	86%	87%		
% funded by FTA (preventive maint.)	19%	17%	19%	15%	14%	13%		

notes:

1. From the City's comprehensive annual financial reports (CAFR).
2. From NTD database, "Tax_Funds" sheet. These are capital funds applied to preventive maintenance, recorded as an operating expense.
3. "Total operating subsidy" in this exhibit is the sum of "Transfers to Public Transit Fund" and "Federal funds applied to preventive maintenance". It approximates but does not exactly equal the annual transit subsidy computed in Exhibit 4-5.

4.2 TRANSIT CAPITAL

The sources and uses of capital funds for TheBus and TheHandi-Van were analyzed to better understand the age and condition of capital assets, and to establish benchmarks to use in the evaluation of the capital financial plan in section 5.2 of this report. The look-back period used in this analysis was 2006-2011.

The findings from this analysis are as follows:

- Transit capital assets, in total, are in the last third of their useful life – buildings and improvements are relatively younger, having 59 percent to 75 percent of their useful life remaining, but all other assets are in the last quarter of their useful life, most importantly revenue vehicles.
- The revenue fleet is relatively old – buses were 10.1 years old on average at the end of FY 2010.
- The average annual replacement cost of all transit assets is approximately $32 million in 2011 dollars, based on the purchase cost and useful life of the assets, escalated to 2011$ as a function of growth in the Honolulu CPI.
- Between 2005 and 2010, the City appropriated an average $32.6 million (2011$) for TheBus and TheHandi-Van capital programs, which was slightly more than on-going replacement costs..
- Federal capital grants accounted for about 51 percent of capital expenditures; about 60 percent of these funds were from the §5307 and §5309 formula programs. About 21 percent of formula the grant funds were applied to capital expenditures; the remaining 79 percent was applied to preventive maintenance, an operating expense.

Additional details are provided below.

4.2.1 Age & condition of transit capital assets

The City's transit capital assets include a mix of a minority of relatively young assets and a majority of relatively old assets, most importantly its revenue vehicle fleet. Facilities are relatively new or are in good operating condition. The City is facing some significant capital replacement needs for these assets in the near future. This issue is analyzed further in section 5.2 of this report.

Additional details on all depreciable assets, and specifically the revenue vehicle fleet, are provided below.

General asset age and investment needs implied by depreciation

The age and replacement needs of the City's transit assets can be established generally by the cost basis, accumulated depreciation, and net book value of its depreciable assets.

When a depreciable asset is purchased, the purchase cost (or cost basis) is amortized over subsequent years, according to its estimated useful life. Buses, for example, are depreciated over 12 years, with one-twelfth of the cost recorded as depreciation expense each year. This expense is accumulated in the fixed asset ledger for as long as the asset is owned by the City. An asset's net book value is the cost basis less accumulated depreciation. Summed over all assets of a like class (e.g., buses, fare collection equipment), the ratio of net book value to cost basis provides an estimate of the percentage of the average remaining useful life for a class of assets. This technique is useful for assets replaced on a relatively frequent cycle, but provides a less definitive estimate for long-lived assets, such as buildings.

The average annual replacement needs can be estimated from this data as well, based on the ratio of cost basis to depreciable life, escalated from the midpoint of the depreciable life to denominate the cost in constant (say 2011) dollars.

Exhibit 4-7 (following page) provides a summary of the remaining useful life by asset class, and approximate average annual replacement cost, for transit capital assets owned at June 30, 2010. Overall, approximately one-third of the useful life of these assets remains. The average annual replacement cost, in 2011 dollars, is approximately $31.7 million.

TheBus capital assets have approximately 29 percent of their useful life remaining. This estimate is biased upward by relatively recent and valuable investment in leasehold improvements and buildings. Non-facility assets are all in the last quarter or less of their useful life. Buses, on average, have 24 percent of their useful life remaining, translating to an average age based on the fixed asset calculations of about 9 years. As noted in the fleet profiles below, the average age is actually slightly older.

TheHandi-Van capital assets have approximately 66 percent of their useful life remaining. As in the bus calculations, this estimate is biased upward by relatively recent and valuable investment in leasehold improvements and buildings, but the effect is more extreme than for TheBus because, for TheHandiVan, these assets account for a much larger share of the cost basis (55.9 percent versus 18.6 percent). Vans, on average, have 23 percent of their useful life remaining, translating to an average age based on the fixed asset calculations of about 5 years.

Exhibit 4-7:
Transit Capital Asset Age and Estimated Average Annual Replacement Cost (at June 2010)

$mil.

	Cost Basis	Net Book Value	Remaining Useful Life	Annual Replacement Cost, 2011$
TheBus				
Revenue vehicles	200.2	47.5	24%	19.8
Autos & trucks	2.1	0.3	14%	0.5
Leasehold Improvements	5.1	3.9	75%	0.6
Buildings	46.9	27.9	59%	2.3
Machinery & Equipment	9.6	0.2	3%	1.5
Revenue Collection Equipment	2.6	0.1	3%	0.4
Computer Equipment	1.7	0.3	18%	0.3
Communications Equipment	12.4	1.3	10%	2.0
total	280.7	81.5	29%	27.4
TheHandi-Van				
Revenue vehicles	13.1	3.1	23%	2.1
Autos & trucks	0.4	0.0	3%	0.1
Leasehold Improvements	9.2	9.0	98%	1.1
Buildings	11.7	10.9	93%	0.6
Machinery & Equipment	0.3	0.1	29%	0.0
Revenue Collection Equipment	-	-	0%	-
Computer Equipment	0.2	-	0%	0.0
Communications Equipment	2.5	1.6	63%	0.4
total	37.5	24.7	66%	4.3
System total	318.1	106.2	33%	31.7

source: Honolulu Baseline Financial Capacity Assessment, Jan. 2012.
Derived from trial balance @6/30/10, provided by Oahu Transit Services, Inc.

Fleet age

The 2006-2011 trend in fleet age for TheBus and TheHandi-Van vehicles is shown in Exhibit 4-8. The fleet age profile for each fleet at fiscal year end 2011 is shown in Exhibit 4-9.

TheBus fleet average age increased to 10.1 years in 2011 from 8.3 years in 2006. TheHandi-Van average age decreased to 5.0 years in 2011 from 5.6 years in 2006. TheHandi-Van fleet exhibits relative stability in fleet age, hovering around the 4-year minimum retirement age, whereas TheBus fleet average age increased steadily.

At the end of 2011, 39 percent of TheBus fleet, and 55 percent of TheHandi-Van fleet, was eligible for retirement.

4.2.2 Trends in sources & uses of capital funds

The trends in sources and uses of capital funds for TheBus and TheHandi-Van were analyzed to better understand how these assets are financed, how past expenditures compare to estimate of annual replacement needs noted above, and to establish benchmarks to use in the evaluation of the capital financial plan in section 5.2 of this report.

Actual annual funds and expenditures, versus apportionments

The analysis of the sources and uses of capital funds included both the funds applied on an annual basis, as reported through NTD, and the City's annual appropriations of capital funds. Capital projects are typically multi-year endeavors. Because the appropriations are for an entire project, the amount of funds appropriated over some period of time typically, but not always, exceed expenditures since some projects for which funds have been appropriated may be incomplete.

Exhibit 4-10 shows the annual sources and uses of funds actually applied to capital projects in the top half of the table, and the funds appropriated by the City in the bottom half of the table.

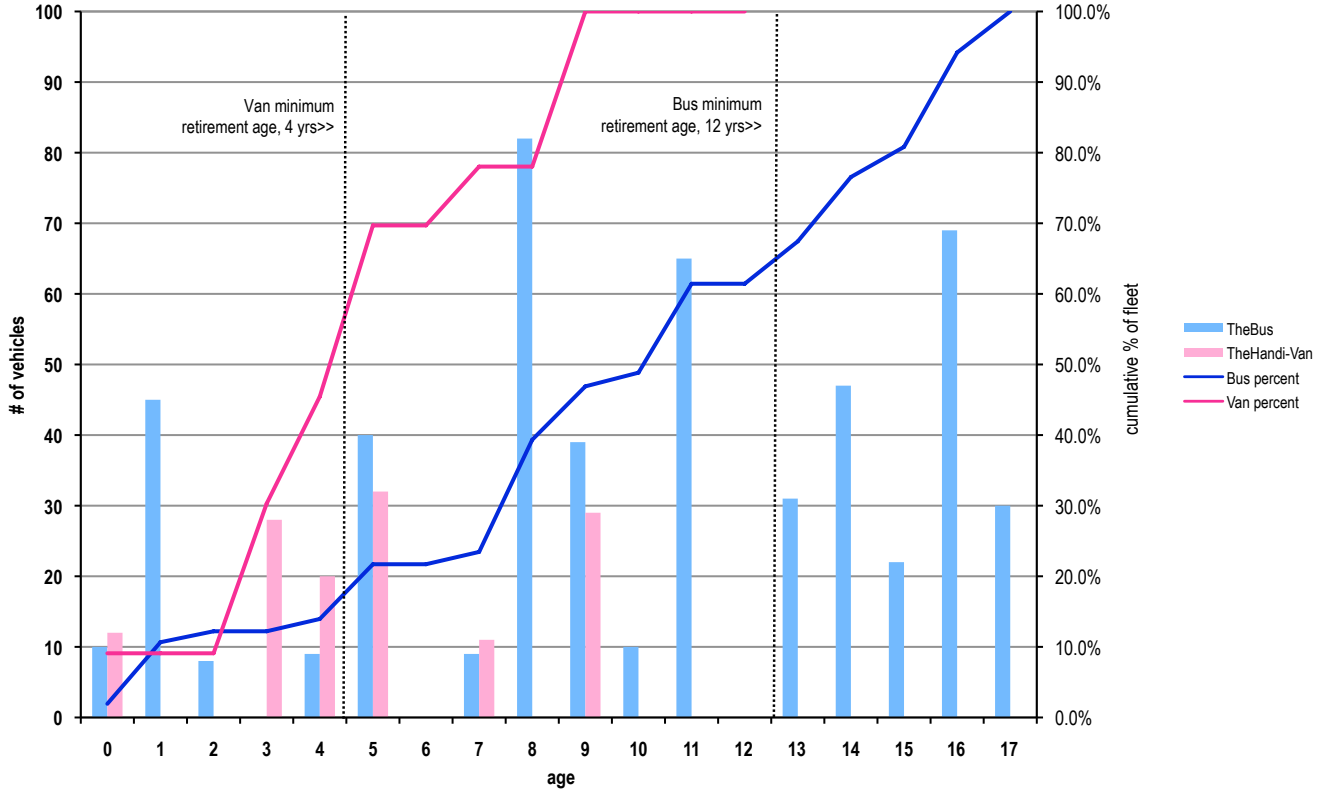
Between 2006 and 2011, the City expended about $22.5 million (YOE) annually on capital projects for TheBus and TheHandi-Van. This converts to about $23.4 million annually in constant 2011 dollars (2011$) based on the Honolulu CPI. Approximately 40 percent ($9.4 million, 2011$) of average annual expenditures was funded by the City, and 60 percent ($14.0 million, 2011$) was funded by Federal grants. A breakdown of Federal grants apportioned to Honolulu in this period is described in *Federal apportionment trends,* below.

Exhibit 4-8: Fleet Average Age

	2006	2007	2008	2009	2010	2011	2006-2011 Δ	2006-2011 Δ%
TheBus	8.3	8.4	9.2	9.9	10.3	10.1	1.8	22%
TheHandi-Van	5.6	4.7	4.7	4.8	5.0	5.0	(0.6)	-11%

source: NTD annual profiles, 2006-2010; 2011 age calculated from City's NTD submittal.

Exhibit 4-9: Fleet Age Profile, June 2011



The City's appropriations to the capital program for TheBus and TheHandi-Van averaged $30.8 million annually (YOE$), converting to about $32.6 million annually in 2010 dollars. These appropriations show a slightly greater use of local funds (50.5 percent) than the local funds actually applied to capital projects (40.2 percent).

The average annual funds appropriated by the City in 2011 dollars ($32.6 million) aligns almost closely with the estimated annual capital replacement cost presented in Exhibit 4-7 ($31.7 million), indicating that the City's planned capital expenditures were sufficient to maintain state of good repair. Although actual expenditures were less (74 percent) of the average annual replacement costs, this type of spread is not unusual given the lead time required for large capital purchases, such as fleet replacement.

Federal apportionment trends

The City's primary sources of Federal grants for TheBus and TheHandi-Van capital programs are the §5307 Urbanized Area and §5309 Fixed Guideway Modernization formula programs, and §5309 Bus & Bus Facilities earmarks. The 2006-2011 trend in these sources is shown in Exhibit 4-11.

Formula grant apportionments increased to $31.5 million in 2011 from $25.4 million in 2006, an average annual increase of 4.4 percent. §5307 apportionments account for 94 percent of the six-year total. About 21 percent ($38.5 million) of the funds apportioned were applied to capital projects; the remainder was applied to preventive maintenance, an operating expense.

§5309 Bus & Bus Facilities have been variable, averaging about $4.3 million (YOE$), converting to about $4.6 million annually in constant 2011 dollars, based on the Honolulu CPI.

* * * * *

The analysis of the City's operating and capital programs for TheBus and TheHandi-Van presented in Section 4 identified benchmarks that are used in the next section of the report to evaluate the reasonableness of financial plan assumptions, chief among these being: i) the rate of growth in City operating subsidies (7.7 percent annually); ii) city subsidies as a percentage of General Fund and Highway Fund revenues (10.1 percent); iii) the rate of growth in General Fund and Highway Fund revenues, excluding the GET surcharge (4.5 percent near-term, 3.8 percent long-term); and iv) capital asset replacement needs (approximately $32 million annually, 2011$).

Exhibit 4-10:
Transit Capital Sources & Uses of Funds

yoe$mil. except where noted otherwise

	2006	2007	2008	2009	2010	2011	average, yoe$	average, 2011$	percent of total
Annual data (NTD)									
Sources									
Local	1.7	5.2	4.9	11.4	3.9	27.5	9.1	9.4	40.2%
Federal	0.2	18.1	12.6	8.8	26.1	14.3	13.4	14.0	59.8%
total sources	1.9	23.3	17.5	20.2	30.0	41.9	22.5	23.4	100.0%
Uses									
TheBus									
Revenue vehicles	-	19.9	5.6	9.6	20.7	15.9	11.9	12.5	53.5%
Systems & Guideways	0.3	0.1	0.1	0.3	1.2	0.5	0.4	0.5	1.9%
Facilities & Stations	0.5	0.0	1.2	1.0	6.7	16.2	4.3	4.3	18.5%
Other	0.2	0.2	0.7	0.3	0.4	6.6	1.4	1.4	6.1%
total	1.0	20.2	7.6	11.2	29.1	39.2	18.0	18.7	80.0%
TheHandiVan									
Revenue vehicles	-	3.1	2.0	1.9	-	2.1	1.5	1.6	6.9%
Systems & Guideways	-	-	1.5	0.8	-	-	0.4	0.4	1.7%
Facilities & Stations	0.9	-	6.4	0.5	0.9	0.4	1.5	1.6	6.9%
Other	0.0	-	-	5.7	-	0.1	1.0	1.0	4.3%
total	1.0	3.1	9.9	8.9	0.9	2.7	4.4	4.7	19.9%
Total, Existing System									
Revenue vehicles	-	23.0	7.6	11.5	20.7	18.0	13.5	14.2	60.4%
Systems & Guideways	0.3	0.1	1.6	1.2	1.2	0.5	0.8	0.9	3.7%
Facilities & Stations	1.4	0.0	7.6	1.4	7.7	16.6	5.8	5.9	25.3%
Other	0.2	0.2	0.7	6.0	0.4	6.7	2.4	2.4	10.4%
total, existing system	1.9	23.3	17.4	20.2	30.0	41.9	22.5	23.4	99.9%
Other capital projects	-	-	0.1	0.0	0.0	0.0	0.0	0.0	0.1%
total uses	1.9	23.3	17.5	20.2	30.0	41.9	22.5	23.4	100.0%
City Appropriations [1]									
Sources:									
Local	4.7	13.1	25.7	18.9	19.7	11.3	15.6	16.4	50.5%
Other	5.9	10.7	22.0	30.0	11.2	11.6	15.3	16.1	49.5%
total	10.6	23.8	47.7	49.0	31.0	22.9	30.8	32.6	100.0%
Uses:									
Vehicles	7.9	14.0	25.3	31.1	20.3	17.7	19.4	20.5	62.8%
Facilities & Equipment	1.9	0.5	0.7	0.8	1.2	2.0	1.2	1.3	3.9%
Passenger Facilities	0.8	9.3	21.8	17.1	9.4	3.2	10.3	10.8	33.3%
total	10.6	23.8	47.7	49.0	31.0	22.9	30.8	32.6	100.0%

source: NTD data from annual profiles (2006-2010) and 2011 City submittal; City appropriations from City staff, 6/14/11.

note 1: These figures exclude appropriations for special projects (e.g., the HHCTCP), which totaled $2.81 billion, 2005-2010, which were 91% locally funded.

Exhibit 4-11:
FTA Grant Apportionments

$mil.

	2006	2007	2008	2009	2010	2011	CAGR
§5307 Urbanized Area [1]	24.1	26.4	29.0	31.1	29.8	29.5	4.1%
§5309 Fixed Guideway Modernization [1]	1.3	1.5	2.0	2.1	2.1	2.0	10.0%
subtotal, formula grants	25.4	27.9	31.0	33.2	31.9	31.5	4.4%
§5309 Bus & Bus Facilities [2]	7.4	1.3	4.1	1.3	-	12.0	10.3%
total	32.7	29.2	35.1	34.5	31.9	43.5	5.8%

sources:

1. HHCTCP Financial Plans: April 2011, Table 2-6 (2006-2009); June 2012, Table 2-9 (2010-2011).
2. Federal Register notices (Annual FTA Apportionments, Allocations, & Program Information).

§5309 New Starts grants excluded. See Section 3 for history of New Starts grants applied to the Project.

5. Financial Capability

This section of the report assesses the City's financial capability to implement the operating financial plan, and the capital financial plan for on-going capital expenditures. The City's capacity to implement the Project financing plan was addressed in section 3.

The City's financial capability was assessed by comparing key assumptions in the financial plan to benchmark values developed in section 4.

A key common element of the operating and on-going capital financial plans is the degree of financial support required of the City. The GET surcharge – the dominant source of financing for the Project – is of minimal importance to the financial plans reviewed in this section, since all but $193 million of GET surcharge revenue is used to support the Project. Accordingly, the operating and on-going capital financial plans will need to rely on funding sources that exist today, principally cash and general obligation debt proceeds from the City.

The operating and capital financial plans require a greater relative degree of City financial support than has historically been the case:

- The additional operating subsidy required by the Project, for both the new rail operation and expanded bus services to support the Project, is forecasted to require up to 19 percent of combined General Fund and Highway Fund revenues, versus a historical level (2006-2011) of 10.1 percent. In 2011 dollars, the Project would add approximately $80.6 million to the City subsidy when it fully opens in FY 2020, a 61 percent increase relative to the City's actual 2011 transit subsidy.
- The operating plan forecast is reasonable, but for the forecast of The-Handi-Van passenger revenues; this is an insignificant risk due to the low contribution of these revenues to the overall revenue forecast.
- The on-going capital financial plan assumptions are reasonable in comparison to historical trends. The City has the capacity to maintain its assets in a state of good repair.

Additional details on the operating and on-going capital financial plans are presented in the remainder of this section.

5.1 OPERATING FINANCIAL PLAN

This section describes the operating impact of the Project, describes the key features of the operating financial plan, and presents a critique of the financial plan assumptions. The operating plan cash flow is included as Appendix D to this report. The data cited in section 5.1 derive from the values shown in Appendix D unless stated otherwise.

The Project will have a significant impact on the financial support required of the City, and will also carry significantly more passenger trips. New, additional operating subsidies associated with the Project, assumed to be paid by the City, total $100.6 million in 2020, which is the first full year of operation. This estimate includes the operating subsidy for new rail service, as well as the operating subsidy for expanded bus services that would support the Project. This converts to $80.6 million in constant 2011 dollars, a 64 percent increase relative to the City's actual 2011 transit subsidy ($132.7 million).

Real revenue growth in the City's General Fund and Highway Fund could potentially fund this increase in transit subsidies, but the City would need to reduce the rate of growth in non-transit uses of these funds to less than the historical average.

The forecasted unit subsidies (i.e., subsidy per vehicle revenue mile) are similar to historical experience for TheBus and TheHandi-Van. Because the unit subsidies are a product of all other significant operating assumptions, by inference the constituent forecasts are also considered to be reasonable.

Additional details on the impact of the Project and the operating financial plan are presented in the remainder of section 5.1.

5.1.1 Impact of the Project

The impact of the Project is comprised of two parts – the Project itself (i.e., the 20.1-mile elevated light metro rail line), and expanded bus service to support the Project.

The Project

The Project is scheduled to be implemented in two phases. The first phase is the portion between East Kapolei and Aloha Stadium, assumed to open in June 2016 (FY 2016). The second phase, from Aloha Stadium to the Ala Moana Center, is assumed in the financial plan to open in March 2019 (FY 2019).[1] The first full year of operations would be FY 2020. Service would continue to expand, in terms of peak vehicles, through the end of the forecast (FY 2030).

A flat fare system is planned, whereby a rider would pay a set fare for a trip of any length on the rail line, and/or a bus. Currently, a barrier-free fare system is planned, requiring the utilization of fare inspectors, but the rail line is being constructed with the capability to convert to a barrier-type system.

1. The revenue operations date in the FFGA is expected to be January 31, 2020.

The operating subsidy associated with operation of the Project (excluding bus service) is forecast to be $78.1 million (YOE dollars) in FY 2020. This converts to $62.6 million in 2011 dollars. This estimate reflects the awarded design-build-operate-maintain (DBOM) contract, as well as the results of a cost build-up model to estimate the cost of operating activities that would not be in the contractor's scope.

Implementation of the Project is forecasted to serve an additional 80,590 weekday transit trips in 2020 relative to those made in 2010 (169,011), a 48 percent increase.[2]

Expanded bus service

Bus service would be re-configured and expanded (as envisioned in the ridership forecast) to work more effectively with the rail line. Bus service, as measured in vehicle revenue miles, would be 13.2 percent greater in 2020 than in 2011. The pro rata share of bus operating subsidy attributable to the Project is forecasted to be $22.5 million in FY 2020, which converts to $18.0 million in constant 2011 dollars. Buses would carry 76 percent of the weekday unlinked transit trips (or boardings) in 2020 (304,000 of 402,000). Bus boardings in 2020 are forecasted to be 35 percent higher than in 2010.

5.1.2 Financial plan

The operating financial plan is structured in much the same way as exists today, but for the introduction of rail service. The service assumptions, operating cost forecast, and revenue forecast are described below.

Service assumptions

Exhibit 5-1 (following page) shows the annual vehicle revenue miles (VRM) for TheBus, TheHandi-Van, and the Project.

TheBus VRM would increase by 16.7 percent, to 21.4 million in 2030 from 18.4 million in 2011, an average annual growth rate of 0.8 percent. TheBus VRM is consistent with the assumptions used in the ridership forecast.

TheHandi-Van VRM is estimated to increase by 40.1 percent, to 7.1 million in 2030 from 5.0 million in 2010, an average annual growth rate of 1.8 percent. These VRM were not cited in the plan; rather, they are estimated here from the plan's assumption that TheHandi-Van ridership would grow at 1.79 percent annually, coincident with the forecasted target population growth. The VRM estimate assumes constant service productivity (i.e., boardings per VRM).

Rail VRM is forecasted to grow to 9.1 million in 2030 from 7.4 million in the first full year of operation in 2020, an increase of 2.1 percent annually. Rail VRM for the first phase of the Project (2016-2018) averages about 0.9 million on an annualized basis.

2. Opening year trips on the Project are projected to be 99,800 per weekday.

Exhibit 5-1: Vehicle Revenue Miles Forecast

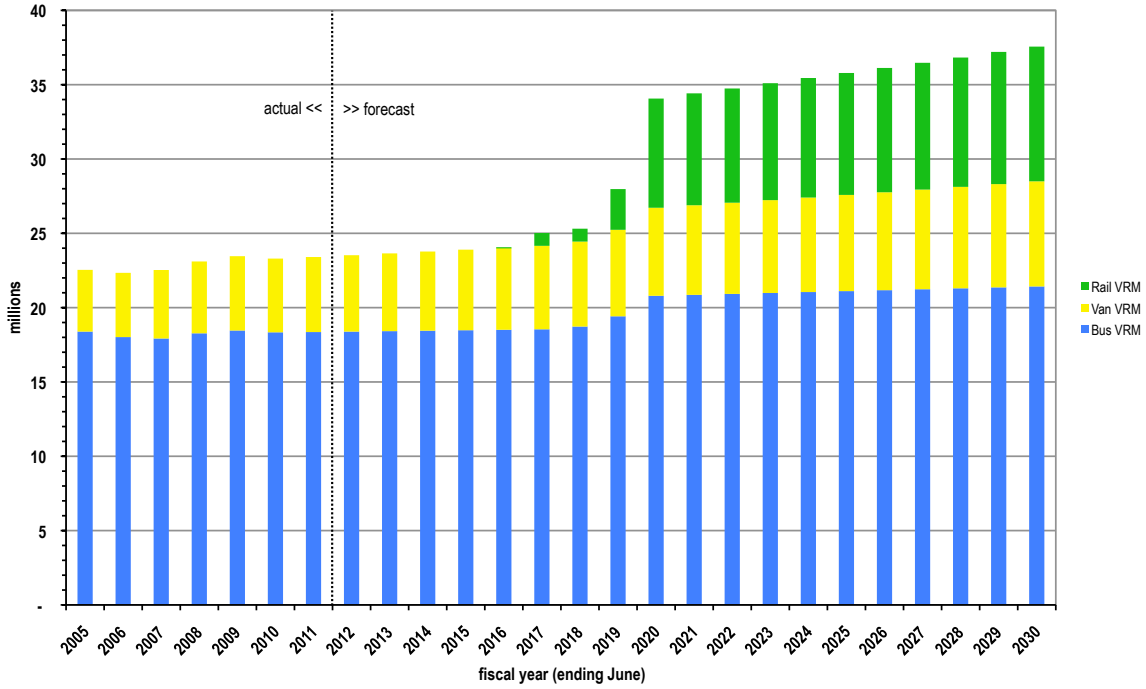
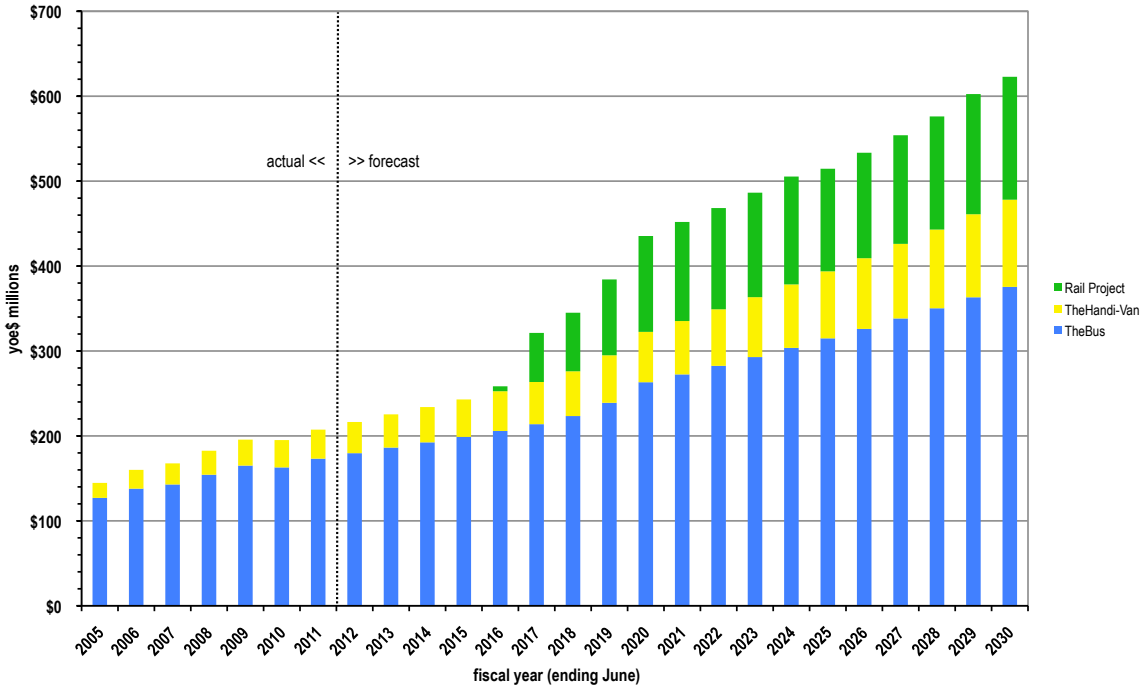


Exhibit 5-2: Operating Cost Forecast



Operating cost forecast

Exhibit 5-2 (prior page) shows the annual operating cost forecast for TheBus, TheHandi-Van, and the Project.

Total operating cost would increase to $631 million in 2030 from $208 million in 2011, an average annual growth rate of 6.0 percent. Between 2011 and 2030, TheBus accounts for 67 percent of operating cost, TheHandi-Van 15 percent, and the Project 18 percent.

TheBus operating cost is forecast to increase 117 percent, to $375 million in 2030 from $173 million in 2011, an average annual growth rate of 4.2 percent. Unit cost (i.e., cost per VRM) would increase to $17.52 in 2030 from $9.44 in 2011, an average annual growth rate of 3.3 percent. TheBus operating costs were forecast using a multivariate cost allocation model, which relates the 2011 cost of an object class (e.g., wages and salaries) to one or more operating variables (e.g., vehicle hours). The resulting unit costs were escalated to current (i.e., YOE) dollars using independent forecasts of the CPI (2.5 percent), health care cost growth, and diesel fuel cost growth.

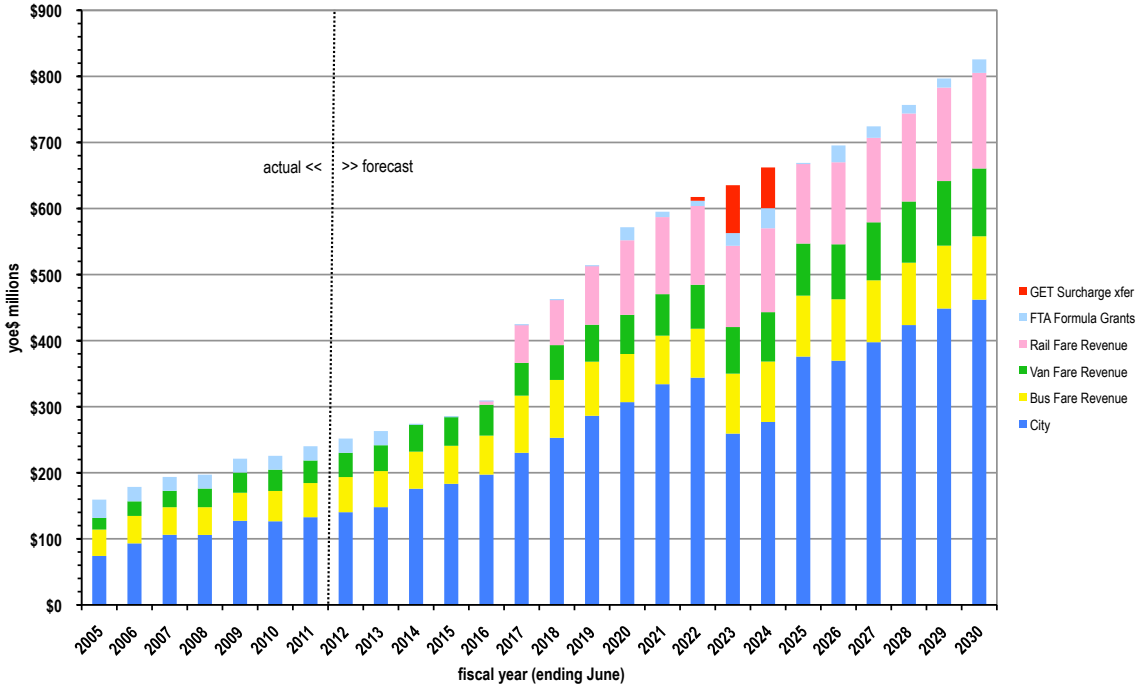
TheHandi-Van operating cost is forecast to increase 200 percent, to $103 million in 2030 from $34 million in 2011, an average annual growth rate of 6.0 percent. Unit cost (i.e., cost per VRM) would increase to $14.51 in 2030 from $6.77 in 2011, an average annual growth rate of 4.1 percent. TheHandi-Van operating costs were forecast based on the 2011 cost per boarding, applied to a boardings forecast of 1.79 percent annual growth, and escalated to current dollars based on the CPI forecast noted above.

Operating costs for the Project are forecast to grow to $145 million in 2030 from $113 million in 2020, an average annual growth rate of 2.5 percent. Unit cost (i.e., cost per VRM) would increase at a 0.4 percent annual rate during this period, reflecting the scale economies of this automated operation.

As stated in the financial plan, the operating costs for the Project were developed using data from the Core Systems Contract. Escalated O&M costs were bid for the Intermediate O&M Period #1 (aka Phase 1). For the Full O&M Period and the Optional O&M Period, the Core Systems Contract provides operating costs by year in FY 2011 dollars. The contract includes a formula based on indices published by the U.S. Bureau of Labor and Statistics (BLS) for labor costs, electricity prices, consumer prices, and producer prices to escalate the costs to YOE dollars.

The operating activities not covered in the Core Systems Contract will be provided directly by HART. These costs account for approximately 10 percent of total Project operating cost and include costs for guideway structure inspections and maintenance, security patrols (not including the Maintenance and Storage Facility, which is covered by the Core Systems Contract), fare revenue collection and equipment servicing, fare inspection and enforcement, station maintenance (including escalators and elevators), and Core Systems Contract oversight. A resource build-up approach was used to determine these costs, based on level of service variables. The cost estimate also includes HART staff and other operating costs associated with other executive and managerial functions.

Exhibit 5-3: Operating Revenue Forecast



Revenue forecast

The revenue forecast is shown in Exhibit 5-3 for all sources – passenger fare revenue (TheBus, TheHandi-Van, the Project), §5307 urbanized area formula grants applied to preventive maintenance, and the City operating subsidy. Revenues are forecasted to grow by 204 percent, to $631 million in 2030 from $208 million in 2011, an average annual increase of 6.0 percent.

Revenues applied to operations are forecast to exactly equal operating costs, as has been the case historically. This feature of the plan occurs because the City would pay the net operating subsidy (i.e., operating cost less passenger fare revenue, miscellaneous operating income, and grants) from its General Fund and Highway Fund. Consequently, no operating cash balance is maintained independent of those of the City funds from which the net operating subsidy is paid.

The assumptions backing the forecast of each revenue source are briefly described below.

PASSENGER FARE REVENUES

Passenger fare revenues are forecasted to grow to $149 million in 2030 from $54 million in 2011, an average annual increase of 5.5 percent. The rates of growth in passenger fare revenues vary by mode:

- TheBus revenues are forecast to grow 85 percent, to $96 million in 2030 from $52 million in 2011, an average annual increase of 3.3 percent. On a unit basis, revenues would increase to $4.48 per vehicle revenue mile in 2030 from $2.82 in 2011, an average annual increase of 2.5 percent.
- TheHandi-Van revenues are forecast to grow 126 percent, to $4.2 million in 2030 from $1.8 million in 2011, an average annual increase of 4.4 percent. On a unit basis, revenues would increase to $0.59 per vehicle revenue mile in 2030 from $0.37 in 2011, an average annual increase of 2.6 percent.
- Rail revenues are forecast to grow to $49 million in 2030 from $35 million in 2020, the first full year of the Project's operation, an average annual increase of 3.4 percent. On a unit basis, revenues would increase to $5.38 per vehicle revenue mile in 2030 from $4.73 in 2020, an average annual increase of 1.3 percent.

The passenger revenue forecast assumes the same fare structure for bus and rail, with free transfers. The forecast assumes that the average fare per linked trip will remain constant, consistent with the travel demand model. Fares are assumed to increase every six years, at a rate that yields a constant real fare between 2010 and 2030.

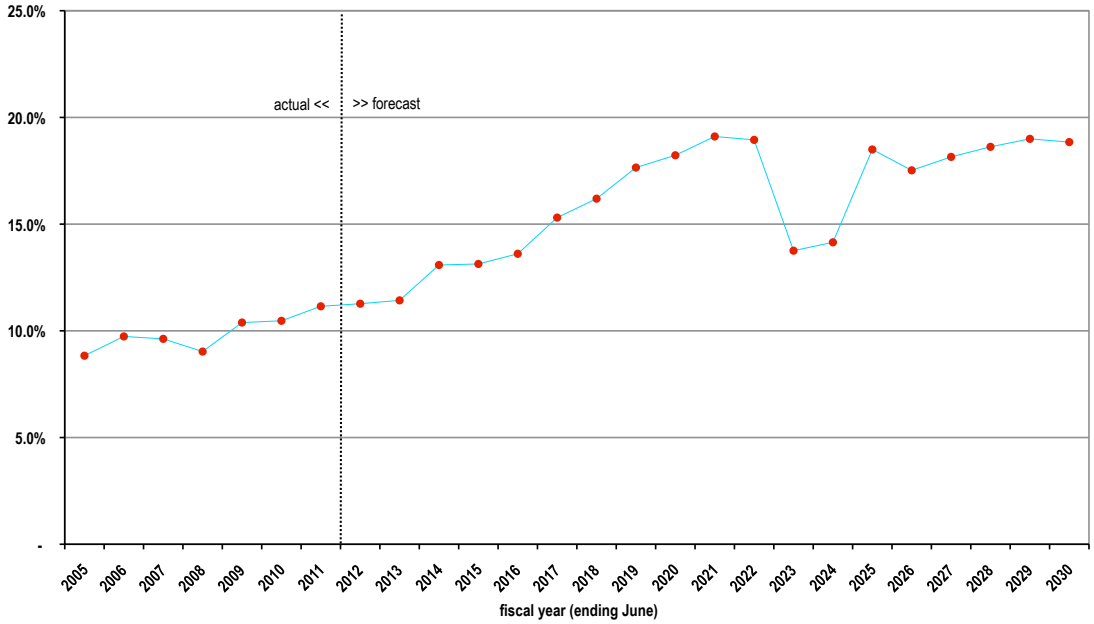
§5307 GRANT FUNDS APPLIED TO PREVENTIVE MAINTENANCE

§5307 funds comprise the bulk (94 percent) of Federal grant funds applied to operations in the operating forecast. The remainder is comprised of funds from the §5316 Job Access-Reverse Commute (JARC) and §5317 New Freedom grant programs, which total about $1 million per year.

§5307 funds are applied intermittently to operations – steady at the current (2011) level of $21 million through 2013; zero in the period 2013-2019 due to the §5307 funds being applied to the capital costs of the Project during that time; then again from 2020 ($19 million) to 2030 ($19 million). Between 2020 and 2030, §5307 funds applied to operations average $14.8 million, which is less than the amount actually applied to operations in 2010.

The overall §5307 grant fund forecast included in the financial plan assumes baseline growth (i.e., net of the impact of the Project) of 3.3 percent annually. The Project will increase the Honolulu urbanized area apportionment, because it adds to operating statistics used to apportion the funds (e.g., vehicle revenue miles). With the Project included, §5307 apportionments are forecast to increase at a 4.9 percent annual rate between 2011 and 2030.

Exhibit 5-4:
City Transit Subsidy as Percentage of General Fund & Highway Fund Revenues



City operating subsidies

City operating subsidies are forecast to grow 248 percent, to $462 million in 2030 from $133 million in 2011, an average annual increase of 6.8 percent. These subsidies are anticipated to be paid from the revenues of the City's General Fund and Highway Fund (GF-HF), as is now the case.

Exhibit 5-4 shows the percentage of the combined revenues of these funds that would be required to pay the City share of the transit operating subsidy. The growth rate of the combined fund revenue is assumed to be 3.9 percent. This rate approximates actual growth 1996-2011.

The transit subsidy share of GF-HF revenues would climb from the current (2011) 11.1 percent to a high of 19.1 percent at 2021, then stabilize at an average 17.5 percent through 2030. The financial plan assumes that $140 million would be transferred from the Project in fiscal years 2022 through 2024. Accordingly, the transit subsidy share of General Fund and Highway Fund revenues declines in those years.

However, in order to fund the City's portion of transit operating subsidies, the City would need to achieve a lower rate of growth in non-transit uses of GF-HF revenues than has been the case historically. As noted in section 4.1.5, long-term (1996-2011) growth in non-transit uses of GF-HF revenues was 3.8 percent annually. This translates to a 1.28 percent real rate of growth in this period, given CPI growth of 2.42 percent annually. The financial plan assumes 2.98 percent annual growth in non-transit uses of GF-HF revenues, 2011-2020. This translates to a 0.38 percent real growth rate, given a forecasted inflation rate of 2.6 percent annually. Thus, non-transit uses are assumed to grow about 0.9 percent slower, on an annual basis, than has been the case historically. A $112 million shortfall could occur at 2020 if the non-transit uses of GF-HF revenues were to grow at historical rates, all other assumptions held constant.

Exhibit 5-5:
Critique of Operating Plan Assumptions

Item	Historical growth rate [1]	Forecast growth rate [2]	Assessment	Impact
TheBus operations				
Vehicle revenue miles (VRM)	0.4%	0.8%	Reasonable - consistent with demand model	
Boardings per VRM	0.6%	1.3%	Reasonable - consistent with demand model	
Operating cost per VRM	4.0%	3.3%	Reasonable - reflects lower inflation forecast	
Revenue per VRM	4.1%	2.5%	Reasonable - consistent with demand model	
Subsidy per VRM	4.0%	3.6%	Reasonable re cost and revenue forecasts	
TheHandi-Van operations				
Vehicle revenue miles (VRM)	2.8%	1.8%	Reasonable - growth has stabilized	
Operating cost per VRM	4.7%	4.1%	Reasonable - reflects lower inflation forecast	
Revenue per VRM	-1.1%	2.6%	Optimistic	Low
Subsidy per VRM	5.1%	4.2%	Reasonable - reflects lower inflation forecast	
Rail operations				
Boardings per VRM	-	-0.7%	Reasonable - consistent with demand model	
Operating cost per VRM	-	0.4%	Reasonable - based largely on bid	
Revenue per VRM	-	1.3%	Reasonable - consistent with demand model	
Subsidy per VRM	-	-0.0%	Reasonable - calculated result	
System-wide items:				
§5307 grant funds	4.1%	4.9%	Reasonable given Project impacts	
Total operating subsidy	5.1%	6.2%	Reasonable given Project impacts	
City operating subsidy	7.7%	6.8%	Reasonable given Project impacts	

Notes:
1. 2006-2011 compound annual growth rate (CAGR); see sec. 4 of this report.
2. TheBus, TheHandi-Van, and System forecast CAGR 2011-2030; rail forecast CAGR 2020-2030 per Appendix D.

5.1.3 Critique

The reasonableness of the operating financial plan assumptions is assessed in Exhibit 5-5, which compares historical growth rates to those assumed in the financial plan.

The operating plan forecast is reasonable, except for the forecast of TheHandi-Van passenger revenues. This is an insignificant risk due to the low contribution of these revenues to the overall revenue forecast (3.6 percent). Accordingly, no operating plan assumptions are included in the Stress Tests.

The only other risk potentially arising from this review of the operating plan is the City's ability to fund the increase in transit operating subsidies associated with the Project. As noted above, this may not necessarily affect the Project, but would require the City to realize a lower rate of growth in non-transit expenditures than has historically been the case.

5.2 CAPITAL FINANCIAL PLAN

This section describes the capital impact of the Project on on-going capital costs, describes the key features of the capital financial plan, and presents a critique of the financial plan assumptions. The on-going capital plan cash flow is included in Appendix D to this report. The data cited in section 5.2 derives from the values shown in Appendix D unless stated otherwise. Capital expenditures and funding in this section of the report are expressed in both YOE dollars and 2011 dollars, the latter to facilitate comparison to historical data.

On-going capital costs include replacement and expansion of existing transit capital assets, plus costs of the Project that were not included in the Project financing plan discussed in section 3 of this report – additional railcars to service forecasted growth in ridership, and the Capital Asset Replacement Program (CARP) included in the Core Systems design-build-operate-maintain (DBOM) contract.

The capital financial plan assumptions are reasonable in comparison to historical trends. Accordingly, the City should be able to maintain a state of good repair of its on-going transit capital assets.

The remainder of section 5.2 describes the impact of the Project and the on-going capital financial plan, and provides a critique of the plan's key assumptions.

5.2.1 Impact of the Project

Although the impact of the Project on the overall financial plan is significant, its impact on the on-going capital financial plan is slight.

Two Project-related items are included in the on-going capital plan – additional rail cars ($35 million, YOE) and the rail Capital Asset Replacement Program (CARP) included in the Core Systems design-build-operate-maintain (DBOM) contract ($150 million, YOE). Together, these account for 16 percent of the on-going capital program.

HART expects to purchase ten additional railcars in order to accommodate forecasted ridership in FY 2024. The Financial Plan assumes that this delivery will be made over two years, with five railcars in FY2024 and the remaining five in FY 2025.

The rail CARP consists of periodic overhaul, rehabilitation, refurbishment or replacement of major components, equipment and facilities acquired in the Core Systems contract. The Core Systems contract sets out a maximum level of CARP spending in FY2011 dollars for each year of the contract and includes a formula based on indices of labor costs and producer prices to escalate the maximum cost budget to year of expenditure dollars. It is assumed that that the costs in the last year of the Optional O&M Period (2028) will continue through the end of the forecast period.

5.2.2 Financial plan

The financial plan extends through 2030. It is structured in much the same way as exists today, but for the introduction of rail service. The most noticeable changes are an increase in §5309 Fixed Guideway Modernization funds in the last seven years of the forecast, reflecting the phased implementation of rail service, and the rail car and CARP expenditures noted above.

Capital expenditure forecast

The capital expenditure forecast, in YOE dollars, is shown in Exhibit 5-6 (following page). It includes the additional rail cars and CARP expenditures noted above, as well as bus and van fleet acquisition and other capital costs.

The acquisition of new and replacement buses is the largest single cost item, totaling $647 million in YOE dollars, converting to $496 million in 2011 dollars. It accounts for 54 percent of 2011-2030 capital expenditures. The cost estimate is consistent with the Bus Fleet Plan. The fleet plan includes the replacement of hybrid buses with clean diesel buses, and an expansion in the fleet – to 474 peak vehicles from the current (2011) 431 peak vehicles.

The CARP program is the second-largest single cost item, totaling $150 million in YOE dollars, converting to $104 million in 2011 dollars. It accounts for 15 percent of 2011-2030 capital expenditures. All these expenditures would be incurred in the 2020-2030 period, after the Project is fully operational.

The acquisition of new and replacement vans is the third-largest single cost item, totaling $138 million in YOE dollars, converting to $106 million in 2011 dollars. It accounts for 12 percent of 2011-2030 capital expenditures. HART has not presented a current fleet plan for TheHandi-Van fleet.

"Other capital costs" include a variety of bus facility projects. These total $227 million in YOE dollars, converting to $193 million in 2011 dollars. This category accounts for 19 percent of 2011-2030 capital expenditures. The capital plan reflects expenditures for bus facilities programmed in the FY2011-FY2014 Transportation Improvement Program, approved in July 2010. The TIP includes projects such as the design and construction of the Middle Street intermodal center, a maintenance facility for TheBus and TheHandi-Van operations in West O'ahu, and transit security projects. The financial plan uses cost estimates from the TIP through FY 2017, and then assumes that $5 million will be spent annually on bus and TheHandi-Van facilities, including transit security projects, small transit centers, and transit preferential treatments. It is noted that DTS is reviewing the scope of the maintenance facility to determine if a smaller, less costly facility would be more appropriate. This would not affect the Project.

Exhibit 5-6: On-going Capital Expenditure Forecast

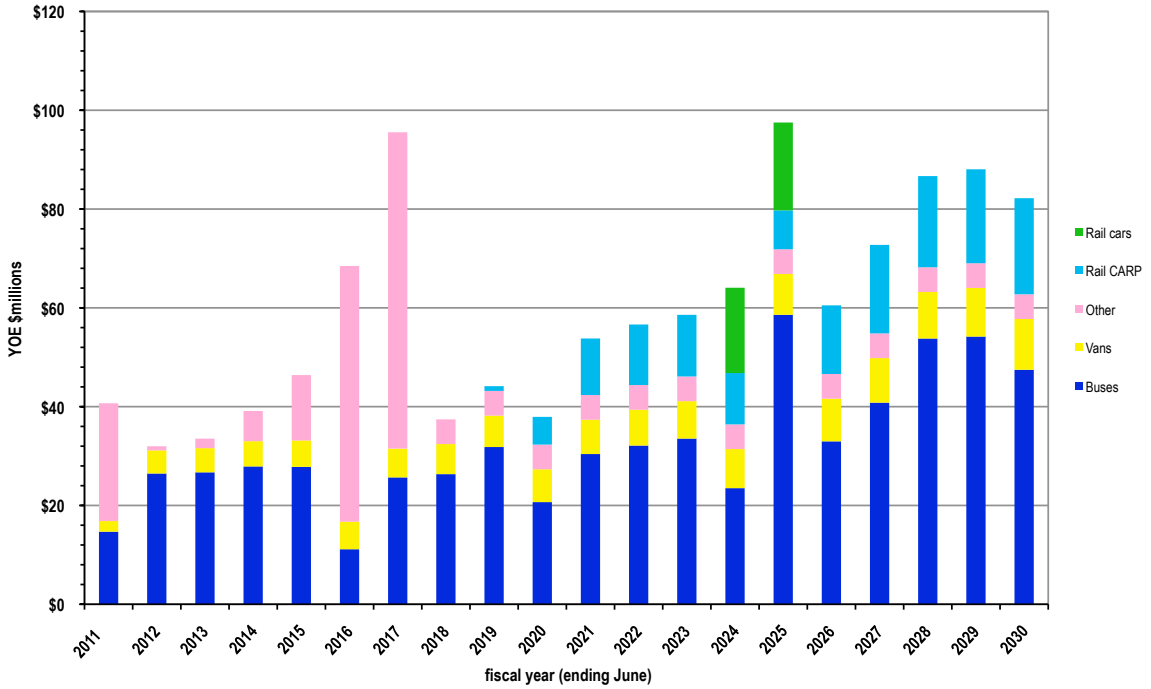
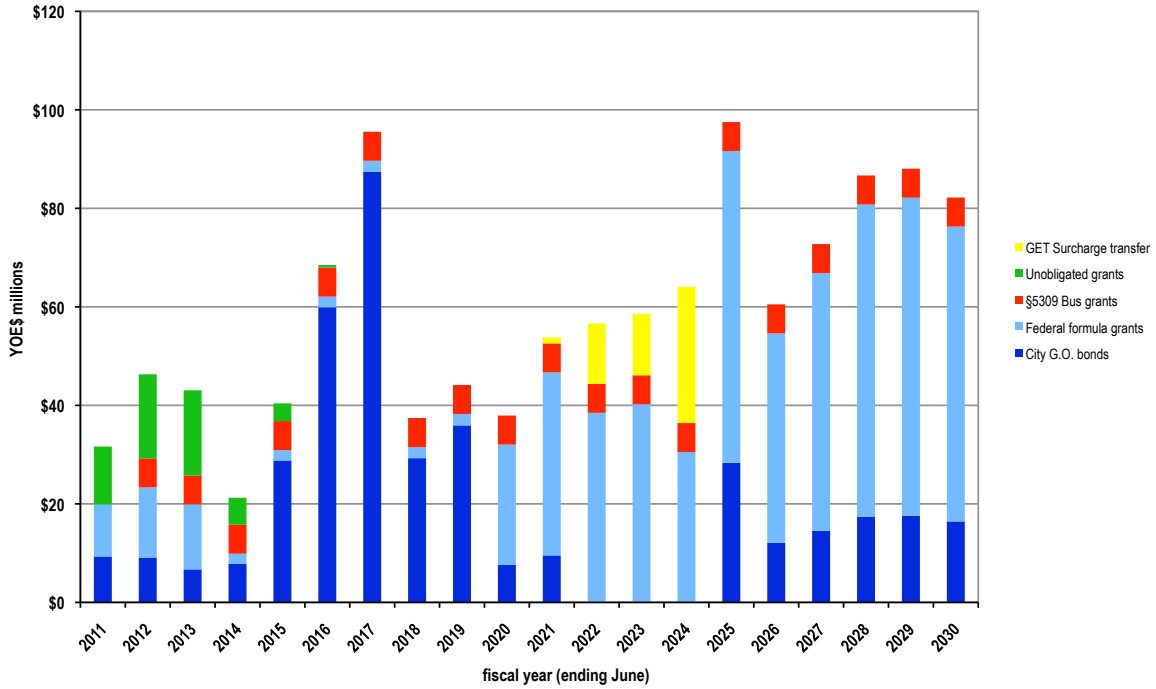


Exhibit 5-7: On-going Capital Funds Forecast



Sources of capital funds

The sources of capital funds, in YOE dollars are shown in Exhibit 5-7 (prior page). The sources include City G.O. bond proceeds, Federal formula funds, §5309 Bus and Bus Facility funds, unobligated prior-year grant funds, and GET surcharge revenues not applied to the Project financing plan discussed in section 3.

City G.O. bond proceeds are the single largest source of capital funds, totaling $398 million (YOE), converting to $325 million in 2011 dollars. This source will fund 33 percent of total capital expenditures.

Federal formula funds are the second largest source of capital funds, totaling $568 million (YOE), converting to $408 million in 2011 dollars. This source will fund 48 percent of total capital expenditures. The formula funds applied to capital expenses are primarily comprised of §5307 Urbanized Area formula funds, $490 million (YOE) and §5309 Fixed Guideway Modernization, $78 million (YOE), which ramp up in the 2016-2030 period, reflecting the impact of the Project on the apportionment to the Honolulu urbanized area. There is also a small amount (less than $1 million) of funds from the §5316 Job Access-Reverse Commute (JARC) and §5317 New Freedom grant programs.

§5309 Bus and Bus Facility grants are the third-largest source of capital funds, totaling $112 million (YOE), converting to $88 million in 2011 dollars. This source will fund 9 percent of total capital expenditures. These discretionary funds are assumed to be accessible every year in the forecast, a scenario that may not play out given the extent of discretionary funds assumed to be available for the Project.

GET surcharge revenues not applied to Project costs (see section 3) are the fourth-largest source of capital funds, totaling $54 million (YOE), converting to $40 million in 2011 dollars. This source will fund 5 percent of total capital expenditures.

The financial plan includes $50.2 million (YOE) in unobligated §5307 and §5309 grants from prior years. These would be fully drawn down by 2016.

Rounding out the capital funding picture is an ARRA grant, totaling $5.47 million, applied to capital projects in 2011.

Exhibit 5-8:
Critique of On-Going Capital Plan Assumptions

Item	Historical Value, 2011$	Forecast value, 2011$	Assessment	Impact
Bus replacement cost [1]	19.8	24.8	Reasonable; estimate is sufficient for replacement and expansion	
Van replacement cost [1]	2.1	5.3	Reasonable; estimate is sufficient for replacement and expansion	
Other asset replacement cost [1]	9.8	9.6	May be understated; project descriptions read more as expansion than replacement	Low
§5309 Bus grants [2]	4.6	4.4	Reasonable in comparison to history, but may prove more difficult to attain with large §5309 New Starts grant	Low
City capital funds [3]	16.4	16.3	Reasonable overall, but heavy during Project construction period; could constrain Project funding options	

notes:
1. See Exhibit 4-7 for replacement cost estimates.
2. Historical value discounted at CPI from grant amounts shown in Exhibit 4-11.
3. Historical value from Exhibit 4-10.

5.2.3 Critique

The reasonableness of the on-going capital financial plan assumptions is assessed in Exhibit 5-8, which uses average annual 2011$ values as the basis for comparing historical results to forecast assumptions. This method is used in lieu of compound annual growth rates that can distort this type of comparison when the historical base is short (in this case, six years) with highly variable year-to-year changes.

All of the capital plan assumptions are reasonable in comparison to recent trends. Accordingly, the City should be able to maintain a state of good repair of its on-going transit capital assets.

The only qualification is the near-term use of City capital funds (G.O. debt), which would average $38.1 million (YOE) annually, 2013-2017, which is the heaviest part of the Project's construction schedule. This higher-than-normal use of bond funds could conceivably constrain the City's capability to respond to increases in Project cost, should those occur.

* * * * *

This section presented the operating and on-going capital financial plans, and assessed key assumptions in light of historical benchmarks. Overall, the financial planning assumptions are reasonable regarding the identified sources and uses of funds.

6. Stress Tests

The purpose of the stress tests is to evaluate the sensitivity of the financial plan to plausible, adverse changes in key assumptions, and to gauge the City's capacity to accommodate those changes.

Two sets of Project-related stress tests were performed – an increase in Project cost of $512.2 million (10 percent of the current Project cost estimate, including financing costs); and a decrease in the average annual growth rate of GET surcharge revenues post-2012, to 4.3 percent annually from the 5.04 percent annual average growth rate in the Project financing plan. Both stress tests were analyzed by calculating their annual effect on the Project cash flow, and their effect on the FY 2023 ending cash balance of the Project funds.

As noted in section 5, the operating financial plan and on-going capital financial plan are based on reasonable assumptions, although some risk was identified regarding City funding to support the increase in transit operating subsidies associated with the Project. However, there is insufficient detail on which to develop a stress test regarding the incremental City funding for operations. Accordingly, no stress tests were performed on the operating financial plan and on-going capital financial plan.

The results of the Project-related stress tests are described below.

6.1 10 PERCENT INCREASE IN PROJECT COST

The 10 percent increase in Project cost ($512.2 million) was converted to an annual cost by apportioning this increase, pro rata, to forecasted annual Project expenditures 2014-2020. The additional annual cost was assumed to be covered, first, by the application of $140 million in Project Reserve funds (described in section 3), and second, by the issuance of TECP ($372.2 million) for the incremental Project costs. All other components of the Project cash flow were held constant, including $193 million in planned cash transfers to rail operating and post-construction rail capital expenses. The additional TECP was assumed to be refinanced, from other sources available to the City, at the close of 2023.

The additional $372.2 million TECP would incur interest cost of $70.9 million that would be paid from the Project cash flow. The cash balance would remain positive through Project completion, and would total $18.4 million at the 2023 fiscal year end. The baseline Project cash flow had assumed an $89.3 million transfer from Project funds in 2024 ($104.2 million would have been transferred in the three prior fiscal years, see "planned cash transfers" in above paragraph) to rail operating and post-construction rail capital expenses. The stress test scenario would result in a $70.9 million shortfall in that final transfer. The shortfall would need to be covered by other City (i.e., non-Project) funds.

This stress test indicates that the City has the financing capacity to accommodate a 10 percent increase in Project cost, but would incur a financial obligation of $443.1 million at fiscal year end 2023, comprised of $372.2 million in TECP, and a $70.9 million shortfall in revenues for rail operating and post-construction rail capital expenses. The additional TECP needed would exceed the TECP balance available in the baseline financial plan (≈$350 million), but the difference (≈$22 million) could probably be mitigated through cash flow management tactics, such as modifying the timing of Project expenditures, or modifying the timing or amount of transfers from Project revenues to rail operating and post-construction rail capital expenses.

These results differ slightly from a similar stress test performed by the City, described in section 3.3, in that: (i) the 10 percent cost increase above was calculated based on the full Project cost, whereas the City applied to the 10 percent to remaining costs only; (ii) the City's test assumed that no cash transfer would be made from Project funds to rail operating and post-construction rail capital expenses, thus freeing up $193 million for the Project, but requiring the City to fund a like amount from other (i.e., non-Project) sources; and (iii) because the City's stress test scenario required less incremental TECP, it incurred less debt service cost.

6.2 SLOWER GROWTH IN GET SURCHARGE REVENUE

This stress test examined the effect of a decrease in the average annual growth rate of GET surcharge revenues post-2012, to 4.3 percent annually from the 5.04 percent annual average growth rate in the baseline financing plan.

The lower GET surcharge revenue growth rate corresponds to a June 2011 Congressional Budget Office forecast (4.9 percent annual GDP growth), less the historical difference (1981-2010) in growth between revenues from the State 4 percent GET (5.04 percent annually) and US GDP (5.6 percent annually).

The annual effect of the difference in GET surcharge growth rates was calculated by applying a 4.3 percent growth rate to the FY 2012 estimate for all subsequent years, then subtracting the baseline GET surcharge forecast. The lower growth rate for GET surcharge revenues would remove $123.1 million from Project revenues, reducing the ending cash balance (2024) to a negative $123.1 million. The Project cash balance would be positive, however, through 2022. The cash shortfalls that would occur in 2023 ($33.8 million) and 2024 ($89.3 million) would reduce the amount of Project revenue transferred to rail operating and post-construction rail capital expenses, which the City would need to fund from other (i.e., non-Project) sources. It would have no effect on Project capital financing, and would not require additional debt (e.g., TECP) to be incurred for the Project.

These results differ slightly from a similar stress test performed by the City, in that: (i) the City reduced the Project Reserve to $41 million from $139 million in the baseline; and (ii) because the Project Reserve would be funded from debt proceeds, a smaller reserve would result in less debt service costs, though less financing contingency would be available to the Project. The net effect is a $15.6 million difference in the amount of Project revenue transferred to rail operating and post-construction rail capital expenses – $86 million in the City's stress test, versus $70.4 million in the test described above. Both are less than the $193 million transfer envisioned in the baseline financial plan. Any reduction in these transfers would need to be funded by the City from other (i.e., non-Project) funding sources.

* * * * *

If either stress test described above occurred alone, the City would have the financing capacity to complete the Project. However, the City could incur a debt obligation of $373.2 million, and may need to fund between $70.9 million and $123.1 million in rail operating and capital costs that would otherwise have been funded from surplus Project revenues.

If the stress tests were combined (i.e., 10 percent increase in Project cost and slower growth in GET surcharge revenue), the City would need additional financial resources to complete the Project. In this event, debt financing requirements would increase by approximately $540 million relative to the baseline financial plan, which exceeds the maximum available balance (≈$350 million) in the TECP program. Also, the $193 million transfer of surplus Project revenue to rail operating and post-construction rail capital expenses would be eliminated, and would need to be funded from other City resources.

7. Conclusions

1. All the non-§5309 New Starts funds included in the Project financial plan ($3,672 million, YOE) are committed.
2. The financing costs attributed to the Project ($173 million) are reasonable.
3. GET surcharge revenue, the dominant source of local financing for the Project, is forecast to grow at a 5.04 percent rate through 2023. The 5.04 percent rate is consistent with the estimated long-term (1981-2010) GET surcharge revenue trend.
4. The City's $450 million TECP program, in combination with Project cash reserves, is capable of funding a 10 percent increase in Project cost or local funding requirements.
5. In 2011 dollars, the Project will require from the City an additional $80.6 million in operating subsidies in its first full year of operation (2020), a 61 percent increase relative to 2011.
6. The operating and on-going capital financial plans are based on reasonable assumptions about revenue and cost growth. However, in order to fund the forecasted transit operating subsidies, the City would need to achieve a lower rate of growth in non-transit uses of General Fund and Highway Fund revenues than has been the case historically.
7. Stress tests performed on the Project financing plan – a 10 percent increase in Project cost, and a 4.3 percent GET surcharge growth rate (post-2012) – indicate the City has the financial capacity to build and implement the Project, though the City would incur additional financial obligations that would need to be satisfied from other, non-Project revenues available to the City.

Appendices

A. Sources of Project Funds

B. Project Cost Estimate (June 2012)

C. Transit Operating Trends, 2006-2011

D. Baseline Cash Flow, June 2012 (draft)

APPENDIX A:
Sources of Project Funds
yoe$millions

City Fiscal Year (ending June)	Federal Funds §5309 New Starts	§5307 Urb. Area	ARRA	subtotal, Federal	Local	total
Prior to 2012	120.00	-	4.00	124.00	78.59	202.59
2012	200.00	-	-	200.00	166.05	366.05
2013	250.00	-	-	250.00	483.61	733.61
2014	250.00	32.94	-	282.94	578.28	861.22
2015	250.00	33.73	-	283.73	620.46	904.20
2016	250.00	34.54	-	284.54	471.89	756.44
2017	230.00	35.37	-	265.37	424.44	689.82
2018	-	36.22	-	36.22	442.10	478.32
2019	-	37.09	-	37.09	51.53	88.62
2020	-	-	-	-	40.64	40.64
total	1,550.00	209.90	4.00	1,763.90	3,357.59	5,121.49
% of total	30.3%	4.1%	0.1%	34.4%	65.6%	100.0%

source: Honolulu High Capacity Transit Corridor Financial Plan, June 2012

APPENDIX B: Project Cost Estimate, June 2012

MAIN WORKSHEET-BUILD ALTERNATIVE

(Rev.14, August 5, 2011)

City and County of Honolulu - Honolulu Authority for Rapid Transportation
Honolulu Rail Transit Project, East Kapolei to Ala Moana Center
FFGA

Today's Date **06/20/12**
Yr of Base Year $ 2012
Yr of Revenue Ops 2019

	Quantity	Base Year Dollars w/o Contingency (X000)	Base Year Dollars Allocated Contingency (X000)	Base Year Dollars TOTAL (X000)	Base Year Dollars Unit Cost (X000)	Base Year Dollars Percentage of Construction Cost	Base Year Dollars Percentage of Total Project Cost	YOE Dollars Total (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	**20.05**	955,497	136,580	**1,092,076**	**$54,459**	**38.8%**	**24%**	**1,275,329**
10.01 Guideway: At-grade exclusive right-of-way		0	0	0				0
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)		0	0	0				0
10.03 Guideway: At-grade in mixed traffic			0	0				0
10.04 Guideway: Aerial structure	19.45	873,608	129,364	1,002,973	$51,562			1,175,328
10.05 Guideway: Built-up fill		0	0	0				0
10.06 Guideway: Underground cut & cover		0	0	0				0
10.07 Guideway: Underground tunnel		0	0	0				0
10.08 Guideway: Retained cut or fill	0.60	6,926	540	7,466	$12,416			8,077
10.09 Track: Direct fixation		70,630	6,163	76,793				86,332
10.10 Track: Embedded		0	0	0				0
10.11 Track: Ballasted		2,903	226	3,130				3,551
10.12 Track: Special (switches, turnouts)		1,429	286	1,715				2,041
10.13 Track: Vibration and noise dampening		0	0	0				0
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	**21**	351,188	70,238	**421,425**	**$20,068**	**15.0%**	**9%**	**506,166**
20.01 At-grade station, stop, shelter, mall, terminal, platform	1	5,525	1,105	6,630	$6,630			7,334
20.02 Aerial station, stop, shelter, mall, terminal, platform	20	244,862	48,972	293,835	$14,692			353,476
20.03 Underground station, stop, shelter, mall, terminal, platform		0	0	0				0
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		0	0	0				0
20.05 Joint development		0	0	0				0
20.06 Automobile parking multi-story structure		53,637	10,727	64,364				79,691
20.07 Elevators, escalators		47,164	9,433	56,596				65,665
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	20.05	85,010	6,326	**91,336**	**$4,555**	**3.2%**	**2%**	**99,425**
30.01 Administration Building: Office, sales, storage, revenue counting		0	0	0				0
30.02 Light Maintenance Facility		6,970	523	7,493				8,161
30.03 Heavy Maintenance Facility		35,033	2,578	37,611				40,907
30.04 Storage or Maintenance of Way Building		7,159	537	7,696				8,382
30.05 Yard and Yard Track		35,848	2,689	38,537				41,975
40 SITEWORK & SPECIAL CONDITIONS	20.05	891,846	108,839	**1,000,685**	**$49,902**	**35.5%**	**22%**	**1,103,867**
40.01 Demolition, Clearing, Earthwork		26,927	4,192	31,118				34,696
40.02 Site Utilities, Utility Relocation		274,431	46,301	320,732				350,695
40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		6,107	585	6,692				7,229
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks		24,421	3,422	27,843				30,842
40.05 Site structures including retaining walls, sound walls		7,439	593	8,033				8,638
40.06 Pedestrian / bike access and accommodation, landscaping		34,699	6,035	40,733				48,263
40.07 Automobile, bus, van accessways including roads, parking lots		156,253	25,699	181,952				212,536
40.08 Temporary Facilities and other indirect costs during construction		361,569	22,013	383,582				410,969
50 SYSTEMS	20.05	188,204	22,163	**210,367**	**$10,491**	**7.5%**	**5%**	**247,461**
50.01 Train control and signals		70,594	8,189	78,783				91,493
50.02 Traffic signals and crossing protection		8,414	1,661	10,075				12,524
50.03 Traction power supply: substations		24,761	2,827	27,588				32,874
50.04 Traction power distribution: catenary and third rail		28,811	3,061	31,872				36,426
50.05 Communications		44,946	5,186	50,132				59,889
50.06 Fare collection system and equipment		7,657	888	8,545				10,222
50.07 Central Control		3,021	350	3,372				4,033
Construction Subtotal (10 - 50)	20.05	2,471,745	344,146	**2,815,890**	**$140,422**	**100.0%**	**62%**	**3,232,248**
60 ROW, LAND, EXISTING IMPROVEMENTS	20.05	180,327	22,431	**202,757**	**$10,111**		**4%**	**222,188**
60.01 Purchase or lease of real estate		164,016	20,181	184,196				201,659
60.02 Relocation of existing households and businesses		16,311	2,250	18,561				20,529
70 VEHICLES (number)	**80**	159,603	18,514	**178,117**	**$2,226**		**4%**	**208,501**
70.01 Light Rail		0	0	0				0
70.02 Heavy Rail	80	142,794	16,564	159,358	$1,992			186,061
70.03 Commuter Rail		0	0	0				0
70.04 Bus		0	0	0				0
70.05 Other		0	0	0				0
70.06 Non-revenue vehicles		11,994	1,391	13,385				16,011
70.07 Spare parts		4,816	559	5,375				6,429
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	20.05	1,024,627	85,753	**1,110,379**	**$55,372**	**39.4%**	**24%**	**1,183,826**
80.01 Preliminary Engineering		93,009	1,015	94,024				95,120
80.02 Final Design		218,749	28,305	247,054				257,935
80.03 Project Management for Design and Construction		351,899	18,069	369,969				385,826
80.04 Construction Administration & Management		184,367	16,575	200,941				218,156
80.05 Professional Liability and other Non-Construction Insurance		39,921	4,786	44,708				52,138
80.06 Legal; Permits; Review Fees by other agencies, cities, etc.		60,324	7,605	67,929				76,135
80.07 Surveys, Testing, Investigation, Inspection		20,258	2,971	23,229				24,955
80.08 Start up		56,100	6,426	62,526				73,561
Subtotal (10 - 80)	20.05	3,836,302	470,843	**4,307,144**	**$214,788**		**95%**	**4,846,764**
90 UNALLOCATED CONTINGENCY				88,666			**2%**	**101,871**
Subtotal (10 - 90)	20.05			**4,395,810**	**$219,209**		**97%**	**4,948,635**
100 FINANCE CHARGES				**140,596**			**3%**	**173,058**
Total Project Cost (10 - 100)	20.05			**4,536,406**	**$226,220**		**100%**	**5,121,693**
Allocated Contingency as % of Base Yr Dollars w/o Contingency				12.27%				
Unallocated Contingency as % of Base Yr Dollars w/o Contingency				2.31%				
Total Contingency as % of Base Yr Dollars w/o Contingency				14.58%				
Unallocated Contingency as % of Subtotal (10 - 80)				2.06%				
YOE Construction Cost per Mile (X000)								$161,185
YOE Total Project Cost per Mile Not Including Vehicles (X000)								$245,010
YOE Total Project Cost per Mile (X000)								$255,407

Appendix C:
Transit Operating Trend, 2006-2011

	2006	2007	2008	2009	2010	2011	trend, 2006-2011 Δ	%Δ	CAGR
"TheBus" (Motor Bus)									
VRM (000s)	18,019	17,924	18,273	18,462	18,344	18,357	338	1.8%	0.4%
O&M ($000s)	137,936	142,867	154,331	165,079	162,938	171,265	33,329	26.2%	4.4%
Fare Rev ($000s)	41,531	41,742	41,984	42,455	45,875	51,721	10,190	25.5%	4.5%
Operating subsidy ($000s) [1]	96,405	101,125	112,347	122,624	117,063	119,544	23,139	26.6%	4.4%
Boardings (000s)	70,384	71,749	69,760	77,330	73,159	73,765	3,381	5.0%	0.9%
Cost per VRM ($)	7.66	7.97	8.45	8.94	8.88	9.33	1.67	24.2%	4.0%
Fare revenue per VRM ($)	2.30	2.33	2.30	2.30	2.50	2.82	0.51	23.6%	4.1%
Operating subsidy per VRM ($)	5.35	5.64	6.15	6.64	6.38	6.51	1.16	24.5%	4.0%
Boardings per VRM	3.91	4.00	3.82	4.19	3.99	4.02	0.11	3.1%	0.6%
Fare recovery ratio	0.30	0.29	0.27	0.26	0.28	0.30	0.00	0.3%	0.1%
Average revenue per boarding ($)	0.59	0.58	0.60	0.55	0.63	0.70	0.11	18.8%	3.5%
Full cash fare ($)	2.00	2.00	2.00	2.25	2.25	2.50	0.50	25.0%	4.6%
Ratio of avg rev/brd to full cash fare	0.30	0.29	0.30	0.24	0.28	0.28	(0.01)	-4.9%	-1.0%
Fleet size	525	531	541	531	531	530	5	1.0%	0.2%
Peak vehicles	415	424	439	439	428	431	16	3.8%	0.8%
Spare ratio	27%	25%	23%	21%	24%	23%	-4%	-13.5%	-2.8%
Avg Fleet Age	8.3	8.4	9.2	9.9	10.3	10.1	1.8	24.7%	4.0%
"TheHandi-Van" (Demand Response)									
VRM (000s)	4,322	4,608	4,833	5,000	4,960	4,956	634	15.3%	2.8%
O&M ($000s)	22,109	24,813	28,233	30,562	30,198	31,869	9,760	55.3%	7.6%
Fare Rev ($000s)	1,512	1,601	1,631	1,664	1,509	1,637	125	8.7%	1.6%
Operating subsidy ($000s) [1]	20,597	23,212	26,602	28,898	28,689	30,232	9,635	59.5%	8.0%
Boardings (000s)	784	808	834	841	790	826	42	5.5%	1.0%
Cost per VRM ($)	5.12	5.38	5.84	6.11	6.09	6.43	1.31	31.0%	4.7%
Fare revenue per VRM ($)	0.35	0.35	0.34	0.33	0.30	0.33	(0.02)	-5.6%	-1.1%
Operating subsidy per VRM ($)	4.77	5.04	5.50	5.78	5.78	6.10	1.33	34.2%	5.1%
Boardings per VRM	0.18	0.18	0.17	0.17	0.16	0.17	(0.01)	-8.1%	-1.7%
Fare recovery ratio	7%	6%	6%	5%	5%	5%	(0.02)	-20.9%	-5.6%
Average revenue per boarding ($)	1.93	1.98	1.96	1.98	1.91	1.98	0.05	2.8%	0.5%
Fleet size	206	220	245	296	na [2]	na [2]	na [2]	na [2]	na [2]
Peak vehicles	171	188	205	229	na [2]	na [2]	na [2]	na [2]	na [2]
Spare ratio	20%	17%	20%	29%	na [2]	na [2]	na [2]	na [2]	na [2]
Avg Fleet Age	5.6	4.7	4.7	4.8	5.0	5.0	(0.60)	-12.5%	-2.2%
SYSTEM									
VRM (000s)	22,341	22,532	23,106	23,462	23,304	23,313	972	4.3%	0.9%
O&M ($000s)	160,045	167,680	182,564	195,641	193,136	203,134	43,089	29.8%	4.9%
Fare Rev ($000s)	43,043	43,343	43,615	44,119	47,384	53,358	10,315	24.9%	4.4%
Operating subsidy ($000s) [1]	117,002	124,337	138,949	151,522	145,752	149,776	32,774	31.7%	5.1%
Boardings (000s)	71,168	72,557	70,594	78,171	73,949	74,591	3,423	5.0%	0.9%
Cost per VRM ($)	7.16	7.44	7.90	8.34	8.29	8.71	1.55	24.1%	4.0%
Fare revenue per VRM ($)	1.93	1.92	1.89	1.88	2.03	2.29	0.36	19.7%	3.5%
Operating subsidy per VRM ($)	5.24	5.52	6.01	6.46	6.25	6.42	1.19	25.9%	4.2%
Boardings per VRM	3.19	3.22	3.06	3.33	3.17	3.20	0.01	0.5%	0.1%
Fare recovery ratio	0.27	0.26	0.24	0.23	0.25	0.26	(0.01)	-2.2%	-0.5%
Average revenue per boarding ($)	0.60	0.60	0.62	0.56	0.64	0.72	0.11	18.2%	3.4%

sources: National Transit Database annual profiles, 2005-2010; 2011 data from City of Honolulu NTD submittal

notes:

1. Operating subsidy is calculated as the difference between operating cost and fare revenue. Actual subsidy paid the City may be less, due to use of grants and other sources of operating income.
2. The fleet size reported by the City for 2010 & 2011 is less than earlier years, and its definition is not consistent with the fleet series reported in the NTD annual profiles. Trend stats were not calcula

CAGR = compound annual growth rate

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City Fiscal Year	2010 Actual	2011 Actual	2012	2013	2014	2015
PROJECT CAPITAL FINANCIAL PLAN						
Project Funding Sources						
Net GET Surcharge Revenues [1]	120.94	165.88	193.52	203.27	213.52	224.28
FTA Section 5309 New Starts Revenues	-	20.61	99.38	258.28	441.72	250.00
FTA Section 5307 Formula Funds Used for the Project	-	-	-	-	32.94	33.73
ARRA Funds Used for the Project	4.00	-	-	-	-	-
General Obligation (GO) Bond Proceeds (net)	-	-	-	-	352.77	366.04
Proceeds from Tax Exempt Commercial Paper (TECP)	-	-	-	-	100.00	200.00
Transfer from Reserve Fund	-	-	-	-	-	-
Interest Income	0.18	0.33	0.28	0.24	0.12	0.18
Additional Funds	-	-	-	-	-	-
Total Project Sources of Funds	**125.12**	**186.82**	**293.18**	**461.79**	**1,141.08**	**1,074.24**
Project Capital Costs						
Total Capital Cost	79.08	123.51	366.05	733.61	857.56	887.22
Debt Service and Transfers						
Principal Payment on GO Bonds Issued for the Project	-	-	-	-	-	49.79
Interest Payment on GO Bonds Issued for the Project	-	-	-	-	-	12.01
Principal Payment on TECP	-	-	-	-	-	200.00
Interest Payment on TECP	-	-	-	-	-	2.25
Transfer to Ongoing Rail Capital and O&M Cost	-	-	-	-	-	-
Total Project Uses of Funds	**79.08**	**123.51**	**366.05**	**733.61**	**857.56**	**1,151.27**
Total Finance Charges	-	-	-	-	3.72	17.02
FFGA Eligible Finance Charges	-	-	-	-	3.72	17.02
Project Cash Balance						
Beginning Project Cash Balance [2]	**298.29**	**344.33**	**407.63**	**334.76**	**62.95**	**346.47**
Additions (deletions) to Cash	46.04	63.30	(72.87)	(271.81)	283.52	(77.03)
Ending Project Cash Balance	**344.33**	**407.63**	**334.76**	**62.95**	**346.47**	**269.44**
Reserve Fund Balance						
Beginning Reserve Fund Balance	**-**	**-**	**-**	**-**	**-**	**139.22**
Initial Deposit to Reserve Fund [3]	-	-	-	-	139.19	-
Interest Income on Reserve Fund	-	-	-	-	0.03	0.14
Reserve Fund transfer out	-	-	-	-	-	-
Ending Reserve Fund Balance	**-**	**-**	**-**	**-**	**139.22**	**139.36**

1. Excludes amount applied to beginning fund balance per [2]; actual 2010 $162.05m.
2. Equals Transit Fund Balance at 10/16/2009 (start of PE).
3. Initial deposit from FY2014 bond issue.

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City Fiscal Year	2016	2017	2018	2019	2020	2021
PROJECT CAPITAL FINANCIAL PLAN						
Project Funding Sources						
Net GET Surcharge Revenues [1]	235.58	247.46	259.93	273.03	286.79	301.24
FTA Section 5309 New Starts Revenues	250.00	230.01	-	-	-	-
FTA Section 5307 Formula Funds Used for the Project	34.54	35.37	36.22	37.09	-	-
ARRA Funds Used for the Project	-	-	-	-	-	-
General Obligation (GO) Bond Proceeds (net)	344.77	250.71	188.01	136.14	6.93	-
Proceeds from Tax Exempt Commercial Paper (TECP)	100.00	100.00	200.00	-	-	-
Transfer from Reserve Fund	-	-	-	-	-	-
Interest Income	0.14	0.12	0.09	0.03	0.04	0.04
Additional Funds	-	-	-	-	-	-
Total Project Sources of Funds	**965.04**	**863.67**	**684.24**	**446.29**	**293.75**	**301.28**
Project Capital Costs						
Total Capital Cost	732.71	659.11	443.09	54.92	11.79	-
Debt Service and Transfers						
Principal Payment on GO Bonds Issued for the Project	93.26	140.92	183.72	224.42	263.44	273.09
Interest Payment on GO Bonds Issued for the Project	19.67	27.34	30.83	31.18	28.79	21.60
Principal Payment on TECP	100.00	100.00	200.00	100.00	-	-
Interest Payment on TECP	1.50	1.50	3.00	1.50	-	-
Transfer to Ongoing Rail Capital and O&M Cost	-	-	-	-	-	1.22
Total Project Uses of Funds	**947.13**	**928.87**	**860.64**	**412.03**	**304.02**	**295.90**
Total Finance Charges	23.77	30.74	35.25	33.71	28.85	21.60
FFGA Eligible Finance Charges	23.77	30.74	35.25	33.71	28.85	-
Project Cash Balance						
Beginning Project Cash Balance [2]	**269.44**	**287.35**	**222.14**	**45.74**	**80.01**	**69.74**
Additions (deletions) to Cash	17.91	(65.20)	(176.40)	34.26	(10.27)	5.37
Ending Project Cash Balance	**287.35**	**222.14**	**45.74**	**80.01**	**69.74**	**75.11**
Reserve Fund Balance						
Beginning Reserve Fund Balance	**139.36**	**139.50**	**139.64**	**139.78**	**139.92**	**140.06**
Initial Deposit to Reserve Fund [3]	-	-	-	-	-	-
Interest Income on Reserve Fund	0.14	0.14	0.14	0.14	0.14	0.14
Reserve Fund transfer out	-	-	-	-	-	-
Ending Reserve Fund Balance	**139.50**	**139.64**	**139.78**	**139.92**	**140.06**	**140.20**

1. Excludes amount applied to beginning fund balance per [2]; actual 2010 $162.05m.
2. Equals Transit Fund Balance at 10/16/2009 (start of PE).
3. Initial deposit from FY2014 bond issue.

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City Fiscal Year	2022	2023	2024	2025	2026	2027
PROJECT CAPITAL FINANCIAL PLAN						
Project Funding Sources						
Net GET Surcharge Revenues [1]	316.43	249.50	-	-	-	-
FTA Section 5309 New Starts Revenues	-	-	-	-	-	-
FTA Section 5307 Formula Funds Used for the Project	-	-	-	-	-	-
ARRA Funds Used for the Project	-	-	-	-	-	-
General Obligation (GO) Bond Proceeds (net)	-	-	-	-	-	-
Proceeds from Tax Exempt Commercial Paper (TECP)	-	-	-	-	-	-
Transfer from Reserve Fund	-	140.44	-	-	-	-
Interest Income	0.04	0.07	0.04	-	-	-
Additional Funds	-	-	-	-	-	-
Total Project Sources of Funds	**316.46**	**390.01**	**0.04**	**-**	**-**	**-**
Project Capital Costs						
Total Capital Cost	-	-	-	-	-	-
Debt Service and Transfers						
Principal Payment on GO Bonds Issued for the Project	280.75	288.64	-	-	-	-
Interest Payment on GO Bonds Issued for the Project	13.93	6.05	-	-	-	-
Principal Payment on TECP	-	-	-	-	-	-
Interest Payment on TECP	-	-	-	-	-	-
Transfer to Ongoing Rail Capital and O&M Cost	17.99	84.96	89.31	-	-	-
Total Project Uses of Funds	**312.68**	**379.65**	**89.31**	**-**	**-**	**-**
Total Finance Charges	13.93	6.05	-	-	-	-
FFGA Eligible Finance Charges	-	-	-	-	-	-
Project Cash Balance						
Beginning Project Cash Balance [2]	**75.11**	**78.90**	**89.27**	**-**	**-**	**-**
Additions (deletions) to Cash	3.79	10.37	(89.27)	-	-	-
Ending Project Cash Balance	**78.90**	**89.27**	**-**	**-**	**-**	**-**
Reserve Fund Balance						
Beginning Reserve Fund Balance	**140.20**	**140.34**	**-**	**-**	**-**	**-**
Initial Deposit to Reserve Fund [3]	-	-	-	-	-	-
Interest Income on Reserve Fund	0.14	0.11	-	-	-	-
Reserve Fund transfer out	-	(140.44)	-	-	-	-
Ending Reserve Fund Balance	**140.34**	**-**	**-**	**-**	**-**	**-**

1. Excludes amount applied to beginning fund balance per [2]; actual 2010 $162.05m.
2. Equals Transit Fund Balance at 10/16/2009 (start of PE).
3. Initial deposit from FY2014 bond issue.

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City Fiscal Year	2028	2029	2030	∑2010-2030
PROJECT CAPITAL FINANCIAL PLAN				
Project Funding Sources				
Net GET Surcharge Revenues [1]	-	-	-	3,291.37
FTA Section 5309 New Starts Revenues	-	-	-	1,550.00
FTA Section 5307 Formula Funds Used for the Project	-	-	-	209.90
ARRA Funds Used for the Project	-	-	-	4.00
General Obligation (GO) Bond Proceeds (net)	-	-	-	1,645.37
Proceeds from Tax Exempt Commercial Paper (TECP)	-	-	-	700.00
Transfer from Reserve Fund	-	-	-	140.44
Interest Income	-	-	-	1.93
Additional Funds	-	-	-	-
Total Project Sources of Funds	**-**	**-**	**-**	**7,543.02**
Project Capital Costs				
Total Capital Cost	-	-	-	4,948.63
Debt Service and Transfers				
Principal Payment on GO Bonds Issued for the Project	-	-	-	1,798.04
Interest Payment on GO Bonds Issued for the Project	-	-	-	191.40
Principal Payment on TECP	-	-	-	700.00
Interest Payment on TECP	-	-	-	9.75
Transfer to Ongoing Rail Capital and O&M Cost	-	-	-	193.48
Total Project Uses of Funds	**-**	**-**	**-**	**7,841.30**
Total Finance Charges	-	-	-	214.64
FFGA Eligible Finance Charges	-	-	-	173.06
Project Cash Balance				
Beginning Project Cash Balance [2]	**-**	**-**	**-**	**298.29**
Additions (deletions) to Cash	-	-	-	(298.29)
Ending Project Cash Balance	**-**	**-**	**-**	**(0.00)**
Reserve Fund Balance				
Beginning Reserve Fund Balance	**-**	**-**	**-**	**-**
Initial Deposit to Reserve Fund [3]	-	-	-	139.19
Interest Income on Reserve Fund	-	-	-	1.26
Reserve Fund transfer out	-	-	-	(140.44)
Ending Reserve Fund Balance	**-**	**-**	**-**	**(0.00)**

1. Excludes amount applied to beginning fund balance per [2]; actual 2010 $162.05m.
2. Equals Transit Fund Balance at 10/16/2009 (start of PE).
3. Initial deposit from FY2014 bond issue.

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City Fiscal Year	2010 Actual	2011 Actual	2012	2013	2014	2015
ON-GOING CAPITAL FINANCIAL PLAN						
Funding Sources for On-Going System-Wide Capital Cost						
Federal Assistance for On-going Capital Cost						
FTA Section 5309 Fixed Guideway Modernization Funds	2.12	2.01	1.95	2.00	2.05	2.10
FTA Section 5309 Bus Discretionary Grants	4.45	-	5.89	5.89	5.89	5.89
FTA Section 5307 Formula Funds Used for Ongoing Capital Cost	8.76	8.46	12.20	11.17	-	-
FTA Section 5307 and 5309 Grants Carryover from Prior Years	-	6.30	17.06	17.29	5.47	3.60
ARRA Funds Used for Ongoing Capital Cost	20.15	5.47	-	-	-	-
FTA Section 5316 (JARC) and 5317 (New Freedom)	-	0.08	0.10	0.01	0.01	0.01
Transfers to the State's Vanpool Program	(1.30)	(1.87)	-	-	-	-
Total Federal Assistance for Ongoing Capital Cost	**34.18**	**20.45**	**37.20**	**36.35**	**13.42**	**11.60**
On-going City Capital Funding						
Transfer from Project Cash Balance to Ongoing Rail Capital	-	-	-	-	-	-
City General Obligation Bond Proceeds	5.82	9.31	9.10	6.70	7.82	28.81
Total On-going City Capital Funding	**5.82**	**9.31**	**9.10**	**6.70**	**7.82**	**28.81**
Total Funding Sources for Ongoing Capital Cost	**39.99**	**29.76**	**46.30**	**43.06**	**21.24**	**40.41**
On-going Capital Costs						
Additional Railcar Acquisitions	-	-	-	-	-	-
Rail Capital Asset Replacement Program (CARP)	-	-	-	-	-	-
Bus Acquisitions	20.65	14.69	26.47	26.70	27.90	27.81
Other Capital Cost	8.43	23.85	0.83	1.92	6.11	13.24
Handi-Van Acquisitions	-	2.15	4.69	4.89	5.11	5.34
Total On-going Capital Cost	**29.08**	**40.68**	**31.98**	**33.52**	**39.12**	**46.39**

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City Fiscal Year	2016	2017	2018	2019	2020	2021
ON-GOING CAPITAL FINANCIAL PLAN						
Funding Sources for On-Going System-Wide Capital Cost						
Federal Assistance for On-going Capital Cost						
FTA Section 5309 Fixed Guideway Modernization Funds	2.15	2.21	2.26	2.32	2.37	2.43
FTA Section 5309 Bus Discretionary Grants	5.89	5.89	5.89	5.89	5.89	5.89
FTA Section 5307 Formula Funds Used for Ongoing Capital Cost	-	-	-	-	22.08	34.71
FTA Section 5307 and 5309 Grants Carryover from Prior Years	0.52	-	-	-	-	-
ARRA Funds Used for Ongoing Capital Cost	-	-	-	-	-	-
FTA Section 5316 (JARC) and 5317 (New Freedom)	0.01	-	-	-	-	-
Transfers to the State's Vanpool Program	-	-	-	-	-	-
Total Federal Assistance for Ongoing Capital Cost	**8.57**	**8.10**	**8.15**	**8.21**	**30.34**	**43.04**
On-going City Capital Funding						
Transfer from Project Cash Balance to Ongoing Rail Capital	-	-	-	-	-	1.22
City General Obligation Bond Proceeds	59.91	87.45	29.28	35.94	7.59	9.54
Total On-going City Capital Funding	**59.91**	**87.45**	**29.28**	**35.94**	**7.59**	**10.76**
Total Funding Sources for Ongoing Capital Cost	**68.48**	**95.54**	**37.43**	**44.14**	**37.93**	**53.80**
On-going Capital Costs						
Additional Railcar Acquisitions	-	-	-	-	-	-
Rail Capital Asset Replacement Program (CARP)	-	-	-	0.96	5.61	11.45
Bus Acquisitions	11.13	25.68	26.34	31.83	20.68	30.41
Other Capital Cost	51.77	64.04	5.00	5.00	5.00	5.00
Handi-Van Acquisitions	5.58	5.83	6.09	6.36	6.64	6.94
Total On-going Capital Cost	**68.48**	**95.54**	**37.43**	**44.14**	**37.93**	**53.80**

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City Fiscal Year	2022	2023	2024	2025	2026	2027
ON-GOING CAPITAL FINANCIAL PLAN						
Funding Sources for On-Going System-Wide Capital Cost						
Federal Assistance for On-going Capital Cost						
FTA Section 5309 Fixed Guideway Modernization Funds	2.50	2.56	2.62	4.79	4.91	5.03
FTA Section 5309 Bus Discretionary Grants	5.89	5.89	5.89	5.89	5.89	5.89
FTA Section 5307 Formula Funds Used for Ongoing Capital Cost	35.99	37.66	27.90	58.50	37.61	47.28
FTA Section 5307 and 5309 Grants Carryover from Prior Years	-	-	-	-	-	-
ARRA Funds Used for Ongoing Capital Cost	-	-	-	-	-	-
FTA Section 5316 (JARC) and 5317 (New Freedom)	-	-	-	-	-	-
Transfers to the State's Vanpool Program	-	-	-	-	-	-
Total Federal Assistance for Ongoing Capital Cost	**44.37**	**46.11**	**36.41**	**69.17**	**48.40**	**58.20**
On-going City Capital Funding						
Transfer from Project Cash Balance to Ongoing Rail Capital	12.25	12.48	27.66	-	-	-
City General Obligation Bond Proceeds	-	0.00	-	28.34	12.10	14.55
Total On-going City Capital Funding	**12.25**	**12.48**	**27.66**	**28.34**	**12.10**	**14.55**
Total Funding Sources for Ongoing Capital Cost	**56.63**	**58.58**	**64.07**	**97.52**	**60.50**	**72.75**
On-going Capital Costs						
Additional Railcar Acquisitions	-	-	17.26	17.78	-	-
Rail Capital Asset Replacement Program (CARP)	12.25	12.48	10.39	7.87	13.89	17.92
Bus Acquisitions	32.12	33.54	23.50	58.60	32.98	40.81
Other Capital Cost	5.00	5.00	5.00	5.00	5.00	5.00
Handi-Van Acquisitions	7.25	7.57	7.91	8.27	8.64	9.02
Total On-going Capital Cost	**56.63**	**58.58**	**64.07**	**97.52**	**60.50**	**72.75**

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City Fiscal Year	2028	2029	2030	∑2010-2030
ON-GOING CAPITAL FINANCIAL PLAN				
Funding Sources for On-Going System-Wide Capital Cost				
Federal Assistance for On-going Capital Cost				
FTA Section 5309 Fixed Guideway Modernization Funds	10.15	10.40	10.66	79.57
FTA Section 5309 Bus Discretionary Grants	5.89	5.89	5.89	116.39
FTA Section 5307 Formula Funds Used for Ongoing Capital Cost	53.30	54.15	49.20	498.95
FTA Section 5307 and 5309 Grants Carryover from Prior Years	-	-	-	50.24
ARRA Funds Used for Ongoing Capital Cost	-	-	-	25.61
FTA Section 5316 (JARC) and 5317 (New Freedom)	-	-	-	0.22
Transfers to the State's Vanpool Program	-	-	-	(3.17)
Total Federal Assistance for Ongoing Capital Cost	**69.34**	**70.44**	**65.75**	**767.82**
On-going City Capital Funding				
Transfer from Project Cash Balance to Ongoing Rail Capital	-	-	-	53.60
City General Obligation Bond Proceeds	17.33	17.61	16.44	403.64
Total On-going City Capital Funding	**17.33**	**17.61**	**16.44**	**457.24**
Total Funding Sources for Ongoing Capital Cost	**86.67**	**88.05**	**82.19**	**1,225.06**
On-going Capital Costs				
Additional Railcar Acquisitions	-	-	-	35.05
Rail Capital Asset Replacement Program (CARP)	18.46	19.01	19.45	149.75
Bus Acquisitions	53.79	54.19	47.47	667.27
Other Capital Cost	5.00	5.00	5.00	235.17
Handi-Van Acquisitions	9.42	9.84	10.28	137.82
Total On-going Capital Cost	**86.67**	**88.05**	**82.19**	**1,225.06**

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City Fiscal Year	2010 Actual	2011 Actual	2012	2013	2014	2015
OPERATING FINANCIAL PLAN						
Operating Revenues						
Fare Revenues (Bus)	45.87	51.72	53.18	54.64	56.10	57.56
Fare Revenues (Rail)	-	-	-	-	-	-
Fare Revenues (Handi-Van)	1.69	1.84	1.94	2.04	2.13	2.23
Total Fare Revenues	**47.57**	**53.56**	**55.13**	**56.68**	**58.24**	**59.79**
Federal Operating Assistance						
FTA Section 5307 Formula Funds Used for Preventative Maintenance	21.00	21.00	21.00	21.00	-	-
FTA Section 5316 (JARC) and 5317 (New Freedom)	-	0.55	0.57	0.46	0.69	0.72
Total Federal Operating Assistance	**21.00**	**21.55**	**21.57**	**21.46**	**0.69**	**0.72**
Local Operating Assistance						
Transfer from Project Cash Balance to Rail O&M Cost	-	-	-	-	-	-
City Operating Subsidy	126.55	132.68	140.29	147.91	175.84	183.26
Total Local Operating Assistance	**126.55**	**132.68**	**140.29**	**147.91**	**175.84**	**183.26**
Total Operating Revenues	**195.12**	**207.79**	**216.98**	**226.05**	**234.76**	**243.76**
Operations and Maintenance (O&M) Costs						
TheBus O&M Costs	162.94	173.24	179.69	186.30	192.45	198.86
Rail O&M Cost	-	-	-	-	-	-
TheHandi-Van O&M Costs	32.18	34.17	36.72	39.10	41.53	44.08
Other O&M Cost	-	0.38	0.57	0.66	0.78	0.82
Total O&M Costs	**195.12**	**207.79**	**216.98**	**226.05**	**234.76**	**243.76**
Farebox Recovery Ratio (Bus and Rail)	**28%**	**30%**	**30%**	**29%**	**29%**	**29%**
Farebox Recovery Ratio (Bus)	28%	30%	30%	29%	29%	29%
Farebox Recovery Ratio (Rail)						
LEVEL OF SERVICE						
Annual Linked Trips (Bus and Rail, mil.)		55.53	57.10	58.66	60.23	61.80
Unlinked Passsenger Trips (mil.)						
Unlinked Passenger Trips (Bus)		73.77	75.85	77.93	80.01	82.10
Unlinked Passenger Trips (Rail)		-	-	-	-	-
Total Unlinked Passenger Trips		**73.77**	**75.85**	**77.93**	**80.01**	**82.10**
Passenger Miles (mil.)						
Passenger Miles (Bus)		402.93	415.81	428.69	441.57	454.45
Passenger Miles (Rail)		-	-	-	-	-
Total Passenger Miles		**402.93**	**415.81**	**428.69**	**441.57**	**454.45**
Revenue Vehicle Miles (mil.)						
TheBus Revenue Vehicle Miles		18.36	18.39	18.42	18.45	18.48
Rail Revenue Vehicle Miles		-	-	-	-	-
Total Revenue Vehicle Miles		**18.36**	**18.39**	**18.42**	**18.45**	**18.48**
Peak Vehicles						
TheBus Peak Vehicles		431	433	433	433	433
Rail Peak Vehicles		-	-	-	-	-
Total Peak Vehicles		**431**	**433**	**433**	**433**	**433**
FARE (earned)						
Average Fare per Linked Trip		0.93	0.93	0.93	0.93	0.93

APPENDIX D:
Honolulu High Capacity Transit Corridor Project
FFGA Financial Plan, June 2012 (Draft)
millions of YOE dollars

City Fiscal Year	2016	2017	2018	2019	2020	2021
OPERATING FINANCIAL PLAN						
Operating Revenues						
Fare Revenues (Bus)	59.02	86.49	87.58	81.90	72.87	73.48
Fare Revenues (Rail)	-	2.36	2.38	13.95	34.76	35.30
Fare Revenues (Handi-Van)	2.33	2.44	2.55	2.67	2.79	2.91
Total Fare Revenues	**61.36**	**91.29**	**92.51**	**98.52**	**110.42**	**111.69**
Federal Operating Assistance						
FTA Section 5307 Formula Funds Used for Preventative Maintenance	-	-	-	-	18.80	7.14
FTA Section 5316 (JARC) and 5317 (New Freedom)	0.74	0.78	0.83	0.88	0.94	0.99
Total Federal Operating Assistance	**0.74**	**0.78**	**0.83**	**0.88**	**19.73**	**8.14**
Local Operating Assistance						
Transfer from Project Cash Balance to Rail O&M Cost	-	-	-	-	-	-
City Operating Subsidy	197.18	230.22	252.90	286.24	306.89	334.04
Total Local Operating Assistance	**197.18**	**230.22**	**252.90**	**286.24**	**306.89**	**334.04**
Total Operating Revenues	**259.28**	**322.30**	**346.24**	**385.64**	**437.04**	**453.87**
Operations and Maintenance (O&M) Costs						
TheBus O&M Costs	205.86	213.84	223.41	239.01	263.24	272.45
Rail O&M Cost	5.77	57.78	68.94	89.28	112.87	116.65
TheHandi-Van O&M Costs	46.79	49.66	52.71	55.95	59.29	62.83
Other O&M Cost	0.85	1.01	1.19	1.40	1.65	1.94
Total O&M Costs	**259.28**	**322.30**	**346.24**	**385.64**	**437.04**	**453.87**
Farebox Recovery Ratio (Bus and Rail)	**28%**	**33%**	**31%**	**29%**	**29%**	**28%**
Farebox Recovery Ratio (Bus)	29%	40%	39%	34%	28%	27%
Farebox Recovery Ratio (Rail)	-	4%	3%	16%	31%	30%
LEVEL OF SERVICE						
Annual Linked Trips (Bus and Rail, mil.)	63.37	68.14	68.99	73.50	82.54	83.42
Unlinked Passsenger Trips (mil.)						
Unlinked Passenger Trips (Bus)	84.18	93.14	94.32	96.24	100.09	101.00
Unlinked Passenger Trips (Rail)	-	2.58	2.60	12.57	32.51	32.98
Total Unlinked Passenger Trips	**84.18**	**95.72**	**96.91**	**108.81**	**132.60**	**133.98**
Passenger Miles (mil.)						
Passenger Miles (Bus)	467.33	532.23	538.93	506.18	440.68	443.38
Passenger Miles (Rail)	-	14.28	14.41	107.85	294.73	299.12
Total Passenger Miles	**467.33**	**546.51**	**553.34**	**614.03**	**735.41**	**742.50**
Revenue Vehicle Miles (mil.)						
TheBus Revenue Vehicle Miles	18.51	18.54	18.73	19.42	20.80	20.86
Rail Revenue Vehicle Miles	0.04	0.87	0.87	2.74	7.35	7.53
Total Revenue Vehicle Miles	**18.55**	**19.41**	**19.59**	**22.16**	**28.14**	**28.39**
Peak Vehicles						
TheBus Peak Vehicles	433	433	433	440	440	440
Rail Peak Vehicles	0	10	10	25	63	64
Total Peak Vehicles	**433**	**443**	**443**	**465**	**503**	**504**
FARE (earned)						
Average Fare per Linked Trip	0.93	1.30	1.30	1.30	1.30	1.30

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City Fiscal Year	2022	2023	2024	2025	2026	2027
OPERATING FINANCIAL PLAN						
Operating Revenues						
Fare Revenues (Bus)	74.08	90.75	91.48	92.22	92.95	93.69
Fare Revenues (Rail)	35.84	44.20	44.86	45.51	46.17	46.82
Fare Revenues (Handi-Van)	3.04	3.17	3.31	3.45	3.58	3.73
Total Fare Revenues	**112.96**	**138.12**	**139.65**	**141.18**	**142.70**	**144.24**
Federal Operating Assistance						
FTA Section 5307 Formula Funds Used for Preventative Maintenance	6.87	18.11	29.22	-	24.12	15.94
FTA Section 5316 (JARC) and 5317 (New Freedom)	1.05	1.12	1.19	1.26	1.34	1.42
Total Federal Operating Assistance	**7.93**	**19.23**	**30.41**	**1.26**	**25.46**	**17.36**
Local Operating Assistance						
Transfer from Project Cash Balance to Rail O&M Cost	5.74	72.48	61.65	-	-	-
City Operating Subsidy	343.95	259.26	276.87	375.89	369.66	397.61
Total Local Operating Assistance	**349.69**	**331.74**	**338.51**	**375.89**	**369.66**	**397.61**
Total Operating Revenues	**470.58**	**489.09**	**508.57**	**518.32**	**537.83**	**559.22**
Operations and Maintenance (O&M) Costs						
TheBus O&M Costs	282.53	292.85	303.65	314.91	326.04	338.32
Rail O&M Cost	119.19	123.00	126.99	120.79	124.15	127.88
TheHandi-Van O&M Costs	66.57	70.55	74.75	78.88	83.23	87.83
Other O&M Cost	2.29	2.69	3.17	3.74	4.41	5.19
Total O&M Costs	**470.58**	**489.09**	**508.57**	**518.32**	**537.83**	**559.22**
Farebox Recovery Ratio (Bus and Rail)	**27%**	**32%**	**32%**	**32%**	**31%**	**30%**
Farebox Recovery Ratio (Bus)	26%	31%	30%	29%	29%	28%
Farebox Recovery Ratio (Rail)	30%	36%	35%	38%	37%	37%
LEVEL OF SERVICE						
Annual Linked Trips (Bus and Rail, mil.)	84.30	85.17	86.05	86.93	87.81	88.69
Unlinked Passsenger Trips (mil.)						
Unlinked Passenger Trips (Bus)	101.90	102.80	103.71	104.61	105.52	106.42
Unlinked Passenger Trips (Rail)	33.46	33.93	34.41	34.88	35.36	35.83
Total Unlinked Passenger Trips	**135.36**	**136.74**	**138.12**	**139.50**	**140.88**	**142.26**
Passenger Miles (mil.)						
Passenger Miles (Bus)	446.09	448.79	451.50	454.20	456.91	459.61
Passenger Miles (Rail)	303.51	307.90	312.29	316.68	321.07	325.46
Total Passenger Miles	**749.60**	**756.69**	**763.79**	**770.88**	**777.98**	**785.07**
Revenue Vehicle Miles (mil.)						
TheBus Revenue Vehicle Miles	20.92	20.99	21.05	21.11	21.17	21.24
Rail Revenue Vehicle Miles	7.68	7.87	8.04	8.20	8.36	8.53
Total Revenue Vehicle Miles	**28.61**	**28.85**	**29.09**	**29.32**	**29.54**	**29.77**
Peak Vehicles						
TheBus Peak Vehicles	440	450	450	460	460	470
Rail Peak Vehicles	65	67	68	69	71	72
Total Peak Vehicles	**505**	**517**	**518**	**529**	**531**	**542**
FARE (earned)						
Average Fare per Linked Trip	1.30	1.58	1.58	1.58	1.58	1.58

APPENDIX D:
Honolulu High Capacity Transit Corridor Project
FFGA Financial Plan, June 2012 (Draft)
millions of YOE dollars

City Fiscal Year	2028	2029	2030	∑2010-2030
OPERATING FINANCIAL PLAN				
Operating Revenues				
Fare Revenues (Bus)	94.42	95.16	95.89	1,601.07
Fare Revenues (Rail)	47.48	48.14	48.79	496.55
Fare Revenues (Handi-Van)	3.87	4.03	4.17	59.93
Total Fare Revenues	**145.78**	**147.32**	**148.85**	**2,157.55**
Federal Operating Assistance				
FTA Section 5307 Formula Funds Used for Preventative Maintenance	11.45	12.17	18.71	246.52
FTA Section 5316 (JARC) and 5317 (New Freedom)	1.51	1.60	1.70	20.36
Total Federal Operating Assistance	**12.96**	**13.77**	**20.41**	**266.88**
Local Operating Assistance				
Transfer from Project Cash Balance to Rail O&M Cost	-	-	-	139.87
City Operating Subsidy	423.55	448.62	462.07	5,871.48
Total Local Operating Assistance	**423.55**	**448.62**	**462.07**	**6,011.35**
Total Operating Revenues	**582.28**	**609.71**	**631.34**	**8,435.79**
Operations and Maintenance (O&M) Costs				
TheBus O&M Costs	350.31	363.24	375.49	5,458.62
Rail O&M Cost	133.18	141.48	144.71	1,612.69
TheHandi-Van O&M Costs	92.67	97.79	102.65	1,309.96
Other O&M Cost	6.12	7.21	8.49	54.53
Total O&M Costs	**582.28**	**609.71**	**631.34**	**8,435.79**
Farebox Recovery Ratio (Bus and Rail)	**29%**	**28%**	**28%**	**30%**
Farebox Recovery Ratio (Bus)	27%	26%	26%	29%
Farebox Recovery Ratio (Rail)	36%	34%	34%	31%
LEVEL OF SERVICE				
Annual Linked Trips (Bus and Rail, mil.)	89.56	90.44	91.32	1,523.55
Unlinked Passsenger Trips (mil.)				
Unlinked Passenger Trips (Bus)	107.33	108.23	109.13	1,908.27
Unlinked Passenger Trips (Rail)	36.31	36.78	37.26	401.47
Total Unlinked Passenger Trips	**143.64**	**145.01**	**146.39**	**2,309.75**
Passenger Miles (mil.)				
Passenger Miles (Bus)	462.32	465.03	467.73	9,184.34
Passenger Miles (Rail)	329.85	334.24	338.62	3,620.02
Total Passenger Miles	**792.17**	**799.26**	**806.36**	**12,804.36**
Revenue Vehicle Miles (mil.)				
TheBus Revenue Vehicle Miles	21.30	21.36	21.43	399.52
Rail Revenue Vehicle Miles	8.70	8.89	9.06	94.73
Total Revenue Vehicle Miles	**30.00**	**30.26**	**30.49**	**494.25**
Peak Vehicles				
TheBus Peak Vehicles	470	474	474	
Rail Peak Vehicles	73	75	76	
Total Peak Vehicles	**543**	**549**	**550**	
FARE (earned)				
Average Fare per Linked Trip	1.58	1.58	1.58	