

HONOLULU AUTHORITY for RAPID TRANSPORTATION

BOARD OF DIRECTORS

Damien T.K. Kim
CHAIR

Terrence M. Lee
VICE CHAIR

Arthur D. Challacombe
John Henry Felix
Ford N. Fuchigami
Terri Fujii
Mark N. Garrity
William "Buzz" Hong
Colbert M. Matsumoto
Glenn M. Nohara

December 1, 2016

Mr. Leslie T. Rogers
Region IX Administrator
Federal Transit Administration
San Francisco Federal Building
90, 7th Street, Suite 15-300
San Francisco, California 94103

Dear Mr. Rogers:

Attached please find the Honolulu Authority for Rapid Transportation's Update of the Final Financial Plan for Full Funding Grant Agreement.

Should you have any questions, please feel free to contact our office.

Sincerely,



Brennon T. Morioka
Acting Executive Director

Attachment

cc: HART Board of Directors
Mayor Kirk Caldwell
Council Chair Ernest Y. Martin
and Members of the Honolulu City Council



HONOLULU AUTHORITY for RAPID TRANSPORTATION

**DRAFT Update
of the Financial Plan for
Full Funding Grant Agreement**

Updated: December 1, 2016

Prepared by:
Honolulu Authority for Rapid Transportation

Table of Contents

EXECUTIVE SUMMARY	7
INTRODUCTION.....	7
<i>Summary of the Project Financial Plan</i>	<i>7</i>
<i>Systemwide Capital Plan</i>	<i>8</i>
<i>Systemwide Operating Plan</i>	<i>8</i>
CHAPTER 1 INTRODUCTION.....	10
DESCRIPTION OF THE PROJECT SPONSOR AND FUNDING PARTNERS.....	10
<i>Project Sponsor – City and County of Honolulu.....</i>	<i>10</i>
<i>Funding Partners.....</i>	<i>12</i>
DESCRIPTION OF THE PROJECT.....	12
<i>Objectives of the Project Sponsor.....</i>	<i>13</i>
<i>Project Detail.....</i>	<i>13</i>
<i>Integration with the Existing Bus System.....</i>	<i>14</i>
<i>Project Timing</i>	<i>14</i>
<i>Procurement and Project Delivery.....</i>	<i>15</i>
<i>Regional Economic Conditions</i>	<i>15</i>
CHAPTER 2 CAPITAL PLAN	16
PROJECT CAPITAL COSTS	16
<i>Contingencies.....</i>	<i>16</i>
<i>Cost Escalation</i>	<i>16</i>
<i>Capital Cost Estimating Methodology.....</i>	<i>16</i>
CAPITAL FUNDING FOR THE PROJECT	17
<i>Local GET Surcharge.....</i>	<i>17</i>
<i>Federal Funding Sources</i>	<i>19</i>
FINANCING OF THE PROJECT.....	20
SYSTEMWIDE AND ONGOING CAPITAL COST.....	22
SYSTEMWIDE CAPITAL FUNDING SOURCES	24
<i>Federal Funds.....</i>	<i>24</i>
<i>Local Capital Assistance for the Systemwide and Ongoing Project Capital Needs.....</i>	<i>24</i>
CHAPTER 3 OPERATING PLAN	25
INTRODUCTION.....	25
UPDATE SUMMARY	25
OPERATING COST UPDATE.....	26
<i>Rail O&M Costs</i>	<i>26</i>
<i>TheBus O&M Costs.....</i>	<i>32</i>
<i>TheHandi-Van O&M Costs</i>	<i>33</i>
<i>Other O&M costs.....</i>	<i>33</i>
OPERATING REVENUES.....	33
<i>Passenger Fares</i>	<i>33</i>
<i>Federal Funds.....</i>	<i>37</i>
SYSTEMWIDE OPERATING PLAN	37
CITY CONTRIBUTION	39
CHAPTER 4 RISKS AND UNCERTAINTIES	40
CAPITAL PLAN	40
<i>Capital Cost Risks</i>	<i>40</i>

<i>Capital Revenue Risks</i>	41
OPERATING PLAN	42
<i>Operating Cost Risks</i>	42
<i>Operating Revenue Risks</i>	42
POTENTIAL MITIGATION STRATEGIES FOR THE CAPITAL AND OPERATING PLANS	43

ATTACHMENTS

ATTACHMENT A: SUMMARY CASH FLOWS

ATTACHMENT B: CONTRACT PACKAGING PLAN SUMMARY

List of Tables

Table ES-1, Operating Costs in First Full Year, YOY \$ millions	9
Table 1-1, Summary of Major Project Development Milestones.....	15
Table 2-1, Compound Annual GET Surcharge Growth Rate	19
Table 2-2, Status of Section 5309 New Starts Revenues, through October 31, 2016, YOY \$millions	20
Table 3-1, Original Financial Plan Figures, June 2012	25
Table 3-2, Update of Rail O&M Costs, 2016 \$'s millions	27
Table 3-3, Power Consumption and Rate Variances.....	29
Table 3-4, Rail Costs under Various Inflation Assumptions	30
Table 3-5, TheBus Fare Structure and History.....	34

List of Figures

Figure 1-1, Project Location Map	14
Figure 2-1, Annual Net GET Surcharge Revenues, FY2007 - FY2028, YOE \$millions.....	18
Figure 2-2, Project Capital Sources and Uses of Funds, FY2017 – FY2035, YOE \$millions.....	21
Figure 2-3, Ongoing Capital Expenditures, FY2017 – FY2036, YOE \$millions.....	23
Figure 3-1, Original Financial Plan Rail Costs in FY2020, YOE \$'s millions	26
Figure 3-2, Honolulu Labor Index, August 2016	28
Figure 3-3, Core Systems Materials Index Update	28
Figure 3-4, Comparison of Cost Escalation Scenarios, FY2026-FY2036, YOE \$millions.....	31
Figure 3-5, Core Systems Labor Index and Industrial Power Correlation.....	32
Figure 3-6, Growth Rates of Bus Costs per Revenue Service Hour	32
Figure 3-7, Handi-Van Annual Trips and Operating Costs.....	33
Figure 3-8, Historical and Forecasted Linked Trips for TheBus and the Project, FY2004-FY2030, millions of Trips	35
Figure 3-9, Original Financial Plan Fare Increases, FY2011-FY2030, YOE \$.....	36
Figure 3-10, Average Fare Comparisons Original vs. Updated Plan, YOE \$.....	37
Figure 3-11, Ridership Sensitivity, YOE \$.....	38

List of Acronyms

ARRA	American Recovery and Reinvestment Act of 2009
BLS	U.S. Bureau of Labor Statistics
CAGR	Compounded Annual Growth Rate
CARP	Capital Asset Replacement Program
CBO	Congressional Budget Office
CCGS	City Center Guideway and Stations
CE&I	Construction Engineering & Inspection
CIP	Capital Improvement Program
City	City and County of Honolulu
CPI-U	Consumer Price Index All Urban Consumers
CPP	Contract Packaging Plan
DBEDT	State of Hawai'i Department of Business, Economic Development and Tourism
DBOM	Design-Build-Operate-Maintain
DPP	Department of Planning and Permitting
DTS	Department of Transportation Services, City and County of Honolulu
EAC	Estimate at Completion
EIS	Environmental Impact Statement
FD	Final Design
FFGA	Full Funding Grant Agreement
FFY	Federal Fiscal Year
FGM	Fixed Guideway Modernization
FRR	Farebox Recovery Ratio
FTA	Federal Transit Administration, U.S. Department of Transportation
FY	Fiscal Year
GDP	Gross Domestic Product
GEC	General Engineering Consultant
GET	General Excise and Use Tax
GO	General Obligation
H-1	Interstate H-1, which runs through the Project corridor
H-2	Interstate H-2, which feeds into Interstate H-1
H-3	Interstate H-3, which feeds into Interstate H-1
HART	Honolulu Authority for Rapid Transportation, City and County of Honolulu
HOV	High Occupancy Vehicle
JARC	Job Access and Reverse Commute
LONP	Letter of No Prejudice
M	Millions
MOS	Minimum Operable Segment
MOU	Memorandum of Understanding
MSF	Maintenance and Storage Facility and Yard
NEPA	National Environmental Policy Act

O&M	Operations and Maintenance
ORTP	(2030) O'ahu Regional Transportation Plan
OTS	O'ahu Transit Services, Inc.
PE	Preliminary Engineering
PHTG	Pearl Highlands Transit Center and Parking Garage
PIG	Permitted Interaction Group
PTD	Public Transit Division, Department of Transportation Services
PV	Peak Vehicle
RSD	Revenue Service Date
RVH	Revenue Vehicle Hour
RVM	Revenue Vehicle Mile
SCC	Standard Cost Category
TDFM	Travel Demand Forecasting Model
TECP	Tax Exempt Commercial Paper
TIP	Transportation Improvement Program
YOE	Year-of-Expenditure

EXECUTIVE SUMMARY

INTRODUCTION

The Honolulu Rail Transit Project (the Project) is a 20.1-mile proposed rail transit system in Honolulu extending from East Kapolei in the west to Ala Moana Center in the east via the Honolulu International Airport. The Project is intended to provide a high-capacity, high-speed transit service in the highly congested east-west corridor; and to improve mobility, transit reliability, and service equity for over 68% of O'ahu's residents and over 83% of its workforce who live and work in the areas within and connecting to this corridor, and for its many visitors. Revenue service from East Kapolei to Ala Moana Center is expected to start in December 2025.

Planning, design, construction, operations, and maintenance of the Project are currently the responsibility of the Honolulu Authority for Rapid Transportation (HART), which functions as a semi-autonomous unit of the City and County of Honolulu's (City) government. However, due to the recent passage of Charter Amendment Number 4 in the 2016 Elections, the voters of the City authorized the consolidation of the operations and maintenance functions and responsibilities for all modes of public transit. Therefore, rail transit operations and maintenance will be combined with that of fixed route bus (TheBus) and paratransit (TheHandi-Van) services under management by the Department of Transportation Services' (DTS) Public Transit Division (PTD).

The Project will be fully integrated with TheBus operations, which will be reconfigured to add feeder bus service to provide increased frequency and more transfer opportunities between bus and rail. The new rail and enhanced TheBus service will provide additional travel options, increase service frequencies, expand the hours of operation, minimize wait times, reduce total travel times, improve service reliability, and enhance comfort and convenience for passengers, resulting in over 20 million hours of user benefits annually.

This updated Financial Plan is being submitted to fulfill HART's commitment made in the September 30, 2016 Interim Plan, as part of the request for extension of the submittal of a full Recovery Plan. The plan provides a summary of the capital costs and funding sources associated with both the Project and the City's ongoing capital needs for its existing public transportation system. It then describes the City's plan to fund the operations and maintenance (O&M) costs associated with the Project, TheBus, and TheHandi-Van services.

SUMMARY OF THE PROJECT FINANCIAL PLAN

The current draft capital plan is based on the following key assumptions:

- Projected total Project cost of \$8.2 billion, based on current construction cost estimates.
- General Excise and Use Tax (GET) surcharge revenue estimated using a 4.3% assumed annual growth rate, as directed previously by the HART Board of Directors, beginning the quarter ended June 2017 through December 31, 2027 so as not to presume any extension of the GET surcharge at this point in time.
- Federal Transit Administration (FTA) grant reimbursement drawdowns of eligible project costs totaling \$1.6 billion by July 2020 based on current project plan and schedule or Revenue Service Date (RSD) of fiscal year (FY) 2026.

Project Capital Cost Estimate: The updated capital cost of the Project without finance charges is \$8.2 billion in year-of-expenditure (YOE) dollars. Financing costs, including interest and bond issuance charges, will be dependent on an extension of the GET surcharge as well as the terms upon which the

extension is based. The duration and amount of bond financing will weigh significantly on the final total budget necessary for the project.

The capital cost estimate provided in this updated Financial Plan draft reflects advanced final engineering, cost estimation methodologies, and actual contract bid prices for all but two of the major construction contracts. The revised cost estimate includes approximately 20% of contingency funds for existing and new contracts to cover risks.

Local Funding: The dedicated local funding source for the implementation of the Project is an established one-half percent (0.5%) county surcharge on the State of Hawai'i's GET surcharge. The GET surcharge commenced on January 1, 2007. On July 14, 2015, the Governor signed legislation that allows the City to extend the GET surcharge from December 31, 2022 to December 31, 2027. Following the passage of legislation by the City Council, the Mayor signed into law Ordinance 16-1 on February 1, 2016 to extend the GET City surcharge. Based on the most recent cost estimates and revenue projections, the GET surcharge would need to be further extended beyond the current 2027 sunset date.

The GET surcharge revenue is to be used exclusively for the Project. The plan reflects actual receipts through FY2017, and assumes that GET surcharge revenues will grow at a combined annual rate of 4.3%, as previously directed by a Permitted Interaction Group (PIG) of the HART Board of Directors. Total revenues incorporated in the updated Financial Plan from the GET surcharge are expected to total approximately \$4.8 billion between FY2010 and FY2028. Based on collections through the quarter ending September 2016, HART has received \$1.4 billion from the start date of the Financial Plan in October 2009.

Federal Funding: The Full Funding Grant Agreement (FFGA) was signed on December 19, 2012. Under this agreement the City was awarded a total of \$1.6 billion in FTA New Starts funding, with annual amounts of up to \$250 million per year. Through October 2016, HART has drawdown \$622 million. FTA Section 5307 Urbanized Area Formula funds (\$210 million) have been removed from the Financial Plan and will be utilized for current City transportation needs.

Project Financing: Given the higher total estimated project cost, additional funding is needed to complete the project. Should additional funding materialize, the updated Financial Plan submitted as part of the final project Recovery Plan will continue to use a mortgage-type amortization schedule with level debt service repayment for each General Obligation (GO) bond issuance

SYSTEMWIDE CAPITAL PLAN

Ongoing Capital Needs: HART, with the approval of the FTA, has reconfigured the vehicles from two-car trains to four-car trains. For purposes of this update, it is assumed that the replacement cost and schedule remains unchanged. The ongoing capital plan includes costs to replace, rehabilitate, and maintain capital assets in a state of good repair as well as necessary expansion of the existing system to accommodate forecasted FY2030 demand levels. The City is committed to maintaining the existing transit system in a state of good repair.

Funding Sources: FTA Section 5307 Urbanized Area Formula program, and other federal grants will continue to provide assistance for ongoing capital expenditures for the existing transit system. Section 5307 funds will be available for systemwide capital needs as well as for preventive maintenance for TheBus.

SYSTEMWIDE OPERATING PLAN

As with the original Financial Plan, the updated Financial Plan reflects the current transit policies applied to the future integrated transit system. The current City policy of setting fare rates to recover between 27-33% of operating costs, as well as the current fare rate categories, remains constant in the updated Financial Plan. By holding these factors constant, this updated Operating Plan projection will serve as a base comparison for changes to fare policies, fare differentials, and service levels.

O&M Costs: Updated rail costs in current year dollars are as projected in the original Financial Plan. However, projected estimates in certain cost categories vary considerably from the original projections. When converting the current year rail costs to YOE cost figures using the escalation factors in the original Financial Plan, rail costs forecast slightly under the original Financial Plan. The rail operating costs project between \$8 million to \$15 million per year higher when using more conservative escalation factors, as provided in Table 3-4.

Bus costs have been as anticipated in the original Financial Plan. The historical annual increase in bus costs per revenue service hour in the original Operating Plan was 3.9%. The actual cost per revenue hour over the last 10 years is 3.1%, reflecting the recent lower fuel prices. The updated Financial Plan estimates bus costs per revenue service hours to increase at approximately the same level as the original Financial Plan's historical cost. Handi-Van has experienced the cost increases as projected in the original Operating Plan.

Table ES-1, Operating Costs in First Full Year, YOE \$ millions

		Original		Updated		
		Original FY 2020	Inflated to FY 2026	FY 2026 Original Factors	Updated FY 2026 Moderate	Updated FY 2026 High
Bus Cost	YOE million \$'s	\$263	\$326	\$309	\$309	\$309
Handi-Van Cost	YOE million \$'s	\$59	\$83	\$85	\$85	\$85
Rail Cost	YOE million \$'s	\$113	\$129	\$127	\$137	\$144
Other	YOE million \$'s	\$2	\$4	\$4	\$4	\$4
Combined Total	YOE million \$'s	\$437	\$542	\$525	\$535	\$542
Fare Revenue	YOE million \$'s	\$110	\$143	\$126	\$126	\$126
Subsidy	YOE million \$'s	\$307	\$370	\$389	\$398	\$406

Operating Revenues: Approximately 258,000 daily linked trips were estimated in the first full year of the bus and rail combined system in 2020. The forecast grew to 280,000 linked trips per day in 2030 for the bus and rail combined system. The updated forecast estimates approximately 279,000 linked trips in the first full year and 313,000 in the tenth year.

With respect to actual boarding to date, actual boarding and original Financial Plan forecast began to diverge in FY2013. There are a number of factors that may have contributed to this situation, but service hour reductions and the decreasing price of fuel beginning in May 2014 are likely contributors. The updated ridership forecast commences at the current ridership results from FY2016.

Fare rate increases are comparable to Consumer Price Index All Urban Consumers (CPI-U) increases utilizing the original Financial Plan factors. Similar to the cost scenarios, this report also details the impact of lower ridership figures and its impact on fare rates and subsidy levels.

Table ES-1 above reflects a variance in the fare revenue between the original FY2026 (\$143 million) total and the updated fare revenue in FY2026 (\$126 million). This variance is attributable to the revenue service date starting in December 2025, midway through the fiscal year as opposed to a full year fare revenue in the original Financial Plan.

Subsidy: The original Financial Plan projected the transit system subsidy to grow to \$307 million in the first full year of combined operations (FY2020) and \$370 million in the seventh year of operations (FY2026). Fare Commission recommendations, other revenue sources (such as concessions, advertising, and potential leasing space for fiber cable), and further cost benefit analysis will lower subsidy levels. However, several sources of funds will be needed to support transit system operations, including fare revenues and continued Federal funds for preventive maintenance activities, increased City revenues related to transit-oriented development, and continued transfers from the City's General and Highway funds.

Chapter 1 INTRODUCTION

This report provides an updated draft Financial Plan for implementing and operating the approximately 20-mile rail transit project in Honolulu from East Kapolei to Ala Moana Center via the Honolulu International Airport (the Project), as well as operating and maintaining the existing public transportation system in a state of good repair.

The original Financial Plan submitted in June 2012 was prepared to support the City's submittal to the FTA for FFGA approval for the Project. As with the original Financial Plan, this updated Financial Plan provides an analysis of the capital costs and funding sources associated with both the Project and the City's ongoing capital needs for its existing public transportation system.

It then describes the City's plan to fund the O&M costs associated with the Project, TheBus, and TheHandi-Van services. The rail portion of the O&M costs is detailed in this report. The update of the integration of the entire transportation system has been reviewed and updated relative to the modifications in the capital plan (i.e. scheduling, four-car trains, fare gates, etc.) and pending policy decisions relative to bus and handi-van design and service.

On September 30, 2016, HART submitted an Interim Plan to the FTA that requested an extension to provide a complete Recovery Plan to the FTA by June 30, 2017 for either Plan A—construct the rail system between East Kapolei to Ala Moana Center (the MOS, Minimum Operable Segment); or Plan B—construct a rail system between East Kapolei to Middle Street or the Downtown Station for a total project funding of \$6.8 billion.

Also stated in the Interim Plan is that HART would provide an updated Financial Plan based on the best available data and information on the first of December 2016 to construct the rail system between East Kapolei to Ala Moana Center (the MOS)—Plan A, including updated analysis and projections of the future operating and maintenance costs and revenues.

Unless otherwise noted, all amounts in this Financial Plan are presented on a fiscal year basis, from July 1 to June 30. For example, FY2013 refers to the fiscal year starting on July 1, 2012 and ending on June 30, 2013. All dollar amounts shown, unless otherwise noted, are in millions of YOE dollars.

This Financial Plan consists of three main components. The first component is the capital plan, which outlines capital costs and presents revenues available for the Project as well as for the rest of the public transportation system. The purpose of the capital plan is to demonstrate the City's financial capacity to implement the Project, while keeping its public transportation system in a state of good repair by replacing vehicles that have met their useful service life and addressing other ongoing capital needs.

The second component is the operating plan, which demonstrates the requirements to operate and maintain an integrated transit system including the Project. The final component presents an analysis of risks and uncertainties, which is critical in assessing the potential risks inherent to certain assumptions made in the Financial Plan.

DESCRIPTION OF THE PROJECT SPONSOR AND FUNDING PARTNERS

PROJECT SPONSOR – CITY AND COUNTY OF HONOLULU

HART is the project sponsor for the Project and the City is the direct recipient of FTA grant funds. 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's governmental structure consists of the Legislative

Branch, the Executive Branch, and three other governmental units: The Board of Water Supply, the Department of the Prosecuting Attorney, and HART.

The legislative power of the City is vested in and exercised by an elected nine-member City Council whose terms are staggered and limited to no more than two consecutive four-year terms. The executive power of the City is vested in and exercised by an elected Mayor, whose term is limited to no more than two consecutive full four-year terms.

The City is authorized under Chapter 51 of the Hawai'i Revised Statutes to "acquire, condemn, purchase, lease, construct, extend, own, maintain, and operate mass transit systems, including, without being limited to, motor buses, street railroads, fixed rail facilities such as monorails or subways, whether surface, subsurface, or elevated, taxis, and other forms of transportation for hire for passengers and their personal baggage." This authority may be carried out either directly, jointly, or under contract with private parties. The City is the designated recipient of FTA Urbanized Area Formula Funds apportioned to the Honolulu and Kailua-Kāne'ohe urbanized areas. Transit services are currently provided through a management services contract with O'ahu Transit Services, Inc. (OTS) and overseen by the City's DTS PTD.

Honolulu Authority for Rapid Transportation

On November 2, 2010, O'ahu voters approved an amendment to the Charter of the City and County of Honolulu to create a semi-autonomous public transit authority responsible for the planning, design, construction, operation, maintenance, and expansion of the City's fixed guideway mass transit system. This authority is named HART.

HART began operating on July 1, 2011 and assumed the duties and responsibilities of the DTS Rapid Transit Division for the Project. Accordingly, FY2012 is the first year of business activities for HART. The agency consists of a Board of Directors, Executive Director, and professional staff.

HART functions as a semi-autonomous unit of the City's government. HART utilizes various City business systems and administrative practices in the conduct of the new authority's business activities (e.g., City Department of Budget and Fiscal Services accounting and payroll systems). In addition, HART continues to receive services provided by other City departments. Memoranda of Understanding with the City departments set forth the scope and terms of the services to be provided.

On November 8, 2016, voters approved an amendment to the City Charter (Amendment 4) to transfer the responsibility for operations and maintenance and fare setting of the rail system to the City's DTS effective July 1, 2017. The Charter amendment implementation will likely result in HART becoming primarily a rail system construction delivery agency, and the updating of this Financial Plan will become a joint effort between HART and the City in the future. This change should not have a significant impact to the FFGA or the Financial Plan update as the grant agreement is between the FTA and the City.

Department of Transportation Services – Public Transit Division

Based on the passage of Charter Amendment 4 in the recent 2016 elections, the responsibility for O&M of the rail system will be transferred to DTS, effective July 1, 2017. The DTS PTD will continue to be responsible for managing the City's fixed route bus and paratransit services operated under contract by OTS. The City's fixed route bus system is referred to as "TheBus," and is currently the 23rd most utilized transit system in the U.S. Annual transit passenger miles per-capita in Honolulu are higher than in all other major U.S. cities, with the exception of New York City; and is the highest in all major cities without a fixed guideway transit system. TheBus serves the entire island of O'ahu, including the estimated 950,000 residents and 100,000 visitors on the island on an average day.

FUNDING PARTNERS

The financial analysis applies and assumes capital funding projections from two major funding partners: the City and FTA. The financial analysis applies several sources of operating funds, mainly consisting of passenger revenues, Federal formula grants for preventive maintenance activities, and subsidies from the City's General and Highway funds. Capital and operating funding sources are further described both below and in subsequent chapters of this report.

City and County of Honolulu

The dedicated local funding source for the implementation of the Project is an established one-half percent (0.5%) county surcharge on the State of Hawai'i's GET. In 2005, the Hawai'i State Legislature authorized the counties to adopt a maximum 0.5% GET surcharge for public transportation projects. Following this authorization, the City enacted Ordinance No. 05-027 establishing the 0.5% GET surcharge. The GET surcharge commenced on January 1, 2007. In 2015, the Governor signed legislation that allowed the City to extend the GET surcharge from December 31, 2022 to December 31, 2027, which was subsequently approved by the City Council. Business activities that take place on O'ahu that are subject to the 4% GET surcharge rate (including retailing of goods and services, contracting, renting real property or tangible personal property, and interest income) are also subject to the GET surcharge. The Hawai'i Department of Taxation is responsible for collecting the GET surcharge and remitting to the City the net amount after retaining 10% of the gross proceeds.

The Financial Plan projects that revenues from the GET surcharge will be approximately \$4.8 billion (FY2010–FY2028). Based on collections through October 2016, the City has already received approximately \$1.4 billion.

Federal Transit Administration

New Starts funding is assumed to provide a total of \$1.6 million to the Project, with annual amounts of up to \$250 million per year through Federal Fiscal Year (FFY) 2017. The availability of future New Starts funding will depend on future actions by Congress to authorize and make annual appropriations for the program, as well as the nationwide competitive landscape for funding major transit capital investments.

DESCRIPTION OF THE PROJECT

The Project's east-west corridor stretches across southern O'ahu. The corridor is, at most, 4 miles wide because much of it is bounded by the Ko'olau and Waianae Mountain Ranges in the north and the Pacific Ocean in the south. Between Pearl City and Aiea, the corridor's width is less than 1 mile.

Between Kapolei and the University of Hawai'i at Mānoa, the corridor is highly congested with more than 60% of O'ahu's population residing in that area. The City and County of Honolulu General Plan (Honolulu General Plan, DPP 1997a) directs future population growth to the 'Ewa and Primary Urban Center Development Plan areas and the Central O'ahu Sustainable Communities Plan area. The largest increases in population and employment growth are expected to occur in the 'Ewa, Waipahu, Downtown and Kaka'ako Districts, which are all located in the corridor.

According to the 2000 census, Honolulu ranks as the fifth densest city among U.S. cities with a population greater than 500,000. Among those, Honolulu is the only one without a fixed guideway transit system.

Increasing traffic congestion has impacted the accessibility of the corridor, reduced mobility for people and goods, degraded transit performance, and increased travel costs. The longer travel times reduce the attractiveness of new developments emerging in 'Ewa-Kapolei. Average weekday peak-period speeds on Interstate Route H-1 (H-1 Freeway), which runs through the corridor with the H-2 and H-3 Freeways feeding into it, are currently less than 20 miles per hour in many places and will degrade further by

FY2030. Travelers on O'ahu's roadways experienced 71,800 vehicle hours of delay, a measure of how much time is lost daily by travelers in traffic, on a typical weekday in FY2007. This is expected to increase to 104,700 hours by FY2030, assuming all planned improvements in the O'ahu Regional Transportation Plan (ORTP) are implemented (excluding a fixed guideway system). With the implementation of the Project, the vehicle hours of delay are projected to be reduced to 85,800 vehicle hours.

OBJECTIVES OF THE PROJECT SPONSOR

The City's goal for the Project is to provide high-capacity, high-speed transit service in the congested east-west transportation corridor mentioned above, as specified in the ORTP. The Project is intended to provide faster, more reliable transportation in the corridor and to provide basic mobility in areas with diverse populations.

The following objectives were used to select the Project:

- Improve corridor mobility
- Encourage patterns of smart growth and support City land use policies for growth
- Improve transit service reliability
- Provide equitable transportation solutions for all people in the corridor

Implementation of the Project, in conjunction with other improvements in the ORTP, will moderate the growth of anticipated traffic congestion in the corridor, provide an alternative to private automobile use, and improve transit linkages to and within the corridor. The Project also supports the goals of the City's General Plan and the ORTP by serving areas designated for urban growth.

PROJECT DETAIL

The Project, on which this Financial Plan is based, is a 20.1-mile rail transit system extending from East Kapolei in the west to Ala Moana Center in the east and is shown on Figure 1-1. The alignment is elevated, with the exception of 0.6 miles that will be constructed at-grade. The alignment will include 21 stations.

The Project is planned to be delivered in four design and construction sections. The first section is the portion between East Kapolei to Pearl Highlands, and includes construction of the Maintenance and 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 Ala Moana Center.

Planning and design continue on the east half, for Design-Build projects that include both the guideways and stations, while construction on the guideway is in full progress on the west half with station construction now underway. System testing and an interim opening is in the planning stage for 2020 using the west side, while the RSD is projected for 2025 for the entire system, after the east side is completed.

Figure 1-1, Project Location Map



INTEGRATION WITH THE EXISTING BUS SYSTEM

The Project will be fully integrated with TheBus operations, which will be reconfigured to add feeder bus service to provide increased frequency and more transfer opportunities between bus and rail.

The Financial Plan assumes fares will be the same for TheBus and the Project, with free transfers and passes allowed on both modes. Fare vending machines will be available at all rail stations, and standard fareboxes will continue to be used on all buses. More information regarding the fare structure and fare revenues can be found in Chapter 3.

PROJECT TIMING

The City initiated technical and engineering work in support of the National Environmental Policy Act (NEPA) in late 2007 and received FTA approval to proceed into Preliminary Engineering (PE) on October 16, 2009. On January 18, 2011, FTA issued a Record of Decision for the Project and provided pre-award authority for right-of-way acquisition, utility relocation, and acquisition of rail vehicles. In May 2011, FTA issued a Letter of No Prejudice (LONP) for limited Final Design (FD) activities, and in February 2012 FTA issued a second LONP for limited Project construction. In May 2012, FTA provided additional authorization which covered the pre-cast yard for the guideway segments. A summary of the major Project development milestones is provided in the following table. The Project schedule is subject to change as procurement and phasing decisions are finalized.

Table 1-1, Summary of Major Project Development Milestones

Milestone	Date
FTA Approves Entry into Preliminary Engineering	October 2009
FTA Issues Record of Decision	January 2011
City Submits LONP Request for Limited Final Design Activities	April 2011
FTA Approves Limited Final Design LONP	May 2011
City Requests Entry into Final Design	October 2011
FTA Provides Final Design Approval	December 2011
City Submits LONP Request for Limited Construction Activities	December 2011
FTA Approves Limited Construction LONP	February 2012
City Requests FFGA	June 2012
City and FTA Execute FFGA	December 2012
Interim Opening Date	December 2020
Revenue Service Date	December 2025

LONP = Letter of No Prejudice / FFGA = Full Funding Grant Agreement

PROCUREMENT AND PROJECT DELIVERY

The Project will be implemented using various contract types. The completed MSF and the guideway from East Kapolei to Aloha Stadium are in construction under multiple Design-Build agreements, where contractors share in the risks of the Project. The 9 stations, under construction from East Kapolei to Aloha Stadium, were procured as low bid Design-Bid-Build contracts. The guideway and stations from Aloha Stadium to Ala Moana Center were originally planned to be designed and constructed using the Design-Bid-Build method, however HART repackaged those contract packages into two large Design-Build packages. This was one of the strategies implemented to mitigate rising costs due to the extraordinary escalation being experienced in Honolulu. Elevators and escalators are being provided on a Manufacture, Install and Maintain basis.

The Core Systems Contract (systems and vehicles) was awarded in 2011 as a Design-Build-Operate-Maintain (DBOM) agreement, with the expectation that the O&M component could be extended to 10 years beyond the completion of the full Project opening in FY2026.

The cost estimates presented in this report were developed based on the most current estimate at completion values for active contracts and bottoms up estimates for future contract packages. Additional information about the procurement and delivery strategy is provided in Chapter 2.

REGIONAL ECONOMIC CONDITIONS

Tourism plays an important role in Hawai'i's economy, and historical data shows there has been a strong correlation between GET collections and the number of visitors. The State of Hawai'i Tourism Authority estimates that tourism spending accounts for 18.5% of the State's economy, and tourism-related employment accounts for more than 152,000 jobs.

The State of Hawai'i's Department of Business, Economic Development & Tourism provides quarterly estimates of the Hawai'i economy. Their 4th Quarter 2016 Outlook for the Economy states: "Visitor arrivals are expected to increase 2.3 percent in 2016, 0.4 of a percentage point above the previous forecast. The forecast for visitor days in 2016 increased 0.3 of a percentage point to 1.9 percent. The forecast for visitor expenditure growth in 2016 was revised upward to 3.9 percent, from 3.2 percent growth projected in the previous forecast. For 2017, the growth rate of visitor arrivals, visitor days, and visitor expenditures are now expected to be 1.8 percent, 2.0 percent, and 4.0 percent, respectively."

Chapter 2 CAPITAL PLAN

PROJECT CAPITAL COSTS

The total capital cost for the Project is \$8.2 billion in YOE dollars. See Attachment B for the most recent Contract Packaging Plan (CPP) summary. These costs are inclusive of construction, professional services (such as engineering, design, and construction management), and contingency, but exclude finance charges that are detailed later in this chapter. Consistent with FTA guidelines for New Starts projects, the capital cost estimate does not include expenses for planning, environmental analysis, and conceptual engineering incurred prior to entry into preliminary engineering on October 16, 2009.

There are two remaining major capital contracts: the City Center Guideway and Stations (CCGS) Design-Build package and the Pearl Highlands Transit Center and Parking Garage (PHTG) Design-Build package. Both contract packages will likely begin in FY2019 with the condition additional funding is identified to complete the MOS. Construction market conditions in Honolulu have continued to be volatile and is one of the primary causes of the \$8.2 billion project cost estimate.

CONTINGENCIES

This updated EAC includes \$1.4 billion in contingency to address cost overruns for active contracts that are expected to exceed the original allocated contingencies. Design-Build contracts on the West segment of the Project in particular were burdened with Project delays that exhausted a substantial amount of allocated contingency, leaving an insufficient amount to cover risk exposures and unawarded contracts under the Original Budget. Further contingency is being applied to upcoming major projects to support contract related changes during construction.

COST ESCALATION

Market factors beyond HART's control are contributing significantly to higher expected prices than originally estimated on upcoming construction packages. A leading nationally published construction advisory report from Rider Levett Bucknall indicates that as of the 3rd quarter 2016, local construction costs are currently higher than almost anywhere in the nation. Firms providing the Independent Cost Estimates for upcoming packages are accounting for these extraordinary market conditions by utilizing local labor availability, local supplier backlog, and escalation to the midpoint of construction in their estimates to provide us with a bid day price HART can expect. In addition, the Rider Levett Bucknall report shows Honolulu approaching the peak inflationary period, with an expected flattening of the inflation rate. This will allow for current estimates to more accurately reflect and predict future costs.

CAPITAL COST ESTIMATING METHODOLOGY

The capital cost estimate is organized in the FTA Standard Cost Category (SCC) format, which includes the following components: guideway and track elements, stations, support facilities, sitework and special conditions, systems, right-of-way, vehicles, and professional services (including HART costs).

The Project incorporates multiple project delivery approaches, including Design-Bid-Build, Design-Build, and DBOM contracts. The capital cost estimate takes into account the cost of Design-Build, DBOM, FD, and Design-Bid-Build contracts that have already been executed or are in the process of being awarded. The cost estimates for the remaining project elements are based on Independent Cost Estimates from the Construction Engineering & Inspection (CE&I) consultant and/or General Engineering Consultant (GEC) staff using a "bottom-up" approach; and some smaller elements are cost estimates that have been risk adjusted to account for current market conditions and a revised Revenue Service Date of December 2025. Cost estimates for active contracts are derived from the aggregate of the original award value, executed changes, and all potential changes identified through the change management process.

There have been significant revisions to the Contract Packaging Plan (CPP) since the original FFGA, which include but are not limited to, the repackaging of the stations and guideway elements on the final 10 miles of the alignment into two Design-Build contracts (Airport Guideway and Stations & City Center Guideway and Stations). Due to multiple delays incurred from legal injunctions, protests on several contract awards, and other factors, the Project schedule has slipped into an unfavorable local construction bidding environment. Revisions to the delivery method and the repackaging of contracts from the CPP are strategies aimed at containing cost overruns and optimizing the schedule due to the market conditions in Honolulu.

Finance Cost: The updated capital cost of the Project without finance charges is \$8.2 billion in YOE dollars. Financing costs, including interest and bond issuance charges, will be dependent on an extension of the GET surcharge as well as the terms upon which the extension is based. The duration and amount of bond financing will weigh significantly on the final total budget necessary for the project. The longer the project must borrow or finance the capital costs of construction should HART not receive the full amount of GET surcharge currently anticipated, finance costs will be greater than currently planned. As an example, should the GET surcharge be extended for an additional period of 10 years through December 2038 and HART continue to receive 90% of the surcharge collected, one financing strategy could result in finance charges of up to \$1.3 billion which would bring the total project budget to \$9.5 billion.

CAPITAL FUNDING FOR THE PROJECT

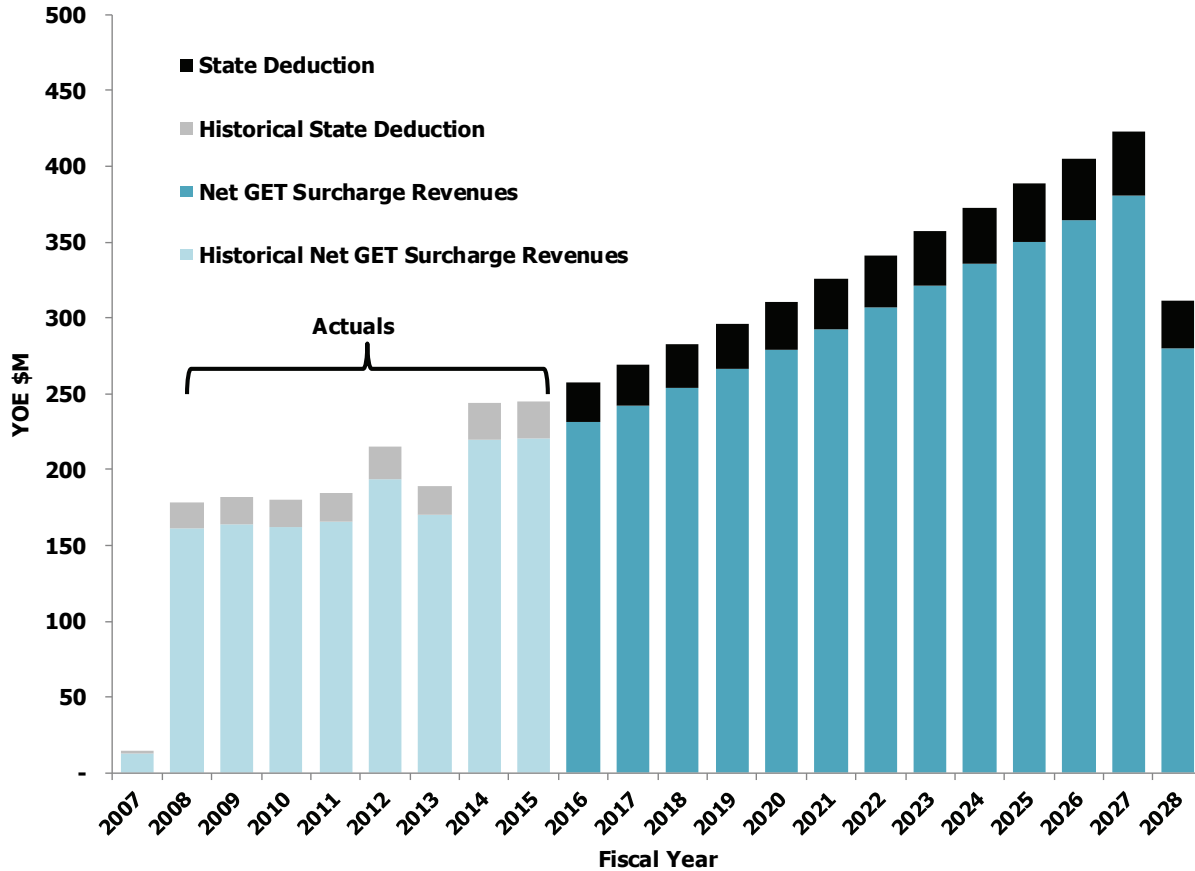
The Project is expected to be entirely funded by revenues from the dedicated GET surcharge and Federal funds.

LOCAL GET SURCHARGE

The local funding source for the Project is a dedicated one-half (0.5) percent county surcharge on the State of Hawai'i's GET surcharge. In 2005, the Hawai'i State Legislature authorized counties to adopt a surcharge on the GET surcharge of 0.5% for public transportation projects. On July 14, 2015, the Governor signed legislation that allows the City to extend the GET surcharge from December 31, 2022 to December 31, 2027. Following the passage of legislation by the City Council, the Mayor signed into law Ordinance 16-1 on February 1, 2016 to extend the GET surcharge.

Figure 2-1 presents the actual net GET surcharge collections to date and expected net GET surcharge revenues expected to be received by the City. The GET surcharge revenue from inception to 2027 is projected to be \$5.2 billion. Of that, \$1.8 billion has been received through October 2016. It is important to note that given the changes in the global and U.S. economies, this projection will be reviewed and refined periodically over time, as more actual tax collection data are received and as the local, national, and global economic outlooks change.

Figure 2-1, Annual Net GET Surcharge Revenues, FY2007 - FY2028, YOE \$millions



Timing of GET Surcharge Collections: The Financial Plan presents the annual GET surcharge amounts on a cash basis. This method accounts for the fact that HART does not receive its share of GET surcharge revenues until the month after the end of each quarter. For example, revenue for April 1 through June 30, 2016 was remitted to HART in July 2016 by the state government. This delay should be noted when comparing GET surcharge revenue as reported by the State to data presented in the Financial Plan. Additionally, the State of Hawai'i Department of Taxation experiences delays in processing GET surcharge returns, which can make quarterly year-over-year comparisons of historical GET surcharge collections less meaningful.

The Financial Plan submitted to the FTA in 2012 used the actual revenue remitted to HART by the State Department of Taxation for the 12-month period immediately preceding the release of the June 2012 Financial Plan. Subsequent to the submittal of the original Financial Plan, the State Department of Taxation informed HART that it had made an error and had remitted to HART \$9 million more than they should have. Since the error was included in the base projection period, its effect is compounded over the term of the Financial Plan. HART now has reduced the original GET surcharge revenue by \$100 million to offset the impact of the remittance error. The budget, when adjusted for the remittance error, is approximately equal to actual receipts, and receipts through October 2016 is \$1.4 billion.

GET surcharge Forecast Methodology: The original Financial Plan assumes that GET surcharge revenues will grow in line with the long-term historical growth experienced by statewide GET surcharge revenues. The long-term compounded annual growth rate (CAGR) in statewide GET surcharge revenues (FY1981 to FY2010) of 5% was used to forecast GET surcharge revenues for FY2013 to FY2023.

The growth rates assumed are subject to numerous risks and uncertainties, including the magnitude and timing of the economic recovery, future inflationary pressures, the strength of the U.S. dollar (especially relative to the East Asian currencies) and U.S. monetary policy. Due to these uncertainties, the combined growth rate in the updated Financial Plan lowers the annual revenue growth rate from 5% to 4.3%.

The table below details the impact of the recession on the growth in GET surcharge excise revenues. The chart illustrates that when the full impact of the "Great Recession," the worst economic downturn since 1929, the compounded annual growth rate is 4.1%. However, the growth rate rebounds even after only removing 1 year of the "Great Recession" at 5.6% over the last 6 years.

Table 2-1, Compound Annual GET Surcharge Growth Rate

Fiscal Years	# of Years	Description	Growth Rate
FY2008-15	7	Full Impact of "Great Recession"	4.1%
FY2009-15	6	FY 2009 Impact Great Recession"	5.6%

FEDERAL FUNDING SOURCES

FTA Section 5309 New Starts (49 U.S.C. Section 5309)

As shown in the following table, New Starts funding is assumed to provide a total of \$1.6 billion to the Project through FY2017, with annual amounts of up to \$250 million per year. The table presents the fiscal year in which the federal appropriations are assumed to be made, and when the funds will be used. The difference in timing reflects the assumed timing of federal appropriations, the cumulative amount of eligible expenditures in the fiscal year, and the fact that New Starts funds are expended on a reimbursable basis using the New Starts share for the Project. The availability of future New Starts funding will depend on future actions by Congress to authorize and make annual appropriations for the program, as well as the national competitive landscape for funding major transit capital investments.

Table 2-2, Status of Section 5309 New Starts Revenues, through October 31, 2016, YOY \$millions

Federal Fiscal Year	New Starts Appropriations	Actual Drawdown to Date
FFY 2008	\$15	\$15
FFY 2009	\$20	\$20
FFY 2010	\$30	\$30
FFY 2011	\$55	\$55
FFY 2012	\$200	\$200
FFY 2013	\$236	\$236
FFY 2014	\$250	\$66
FFY 2015	\$250	\$0
FFY 2016	\$250	\$0
FFY 2017	\$244	\$0
Total	\$1,550	\$622

FFY 2016 through 10/31/2016 unaudited

American Recovery and Reinvestment Act of 2009 Funding

The Project includes a minimal level of funding provided through stimulus monies received by the City. Specifically, the Project received \$4 million in ARRA funding in FY2010 which was used to support preliminary engineering activities.

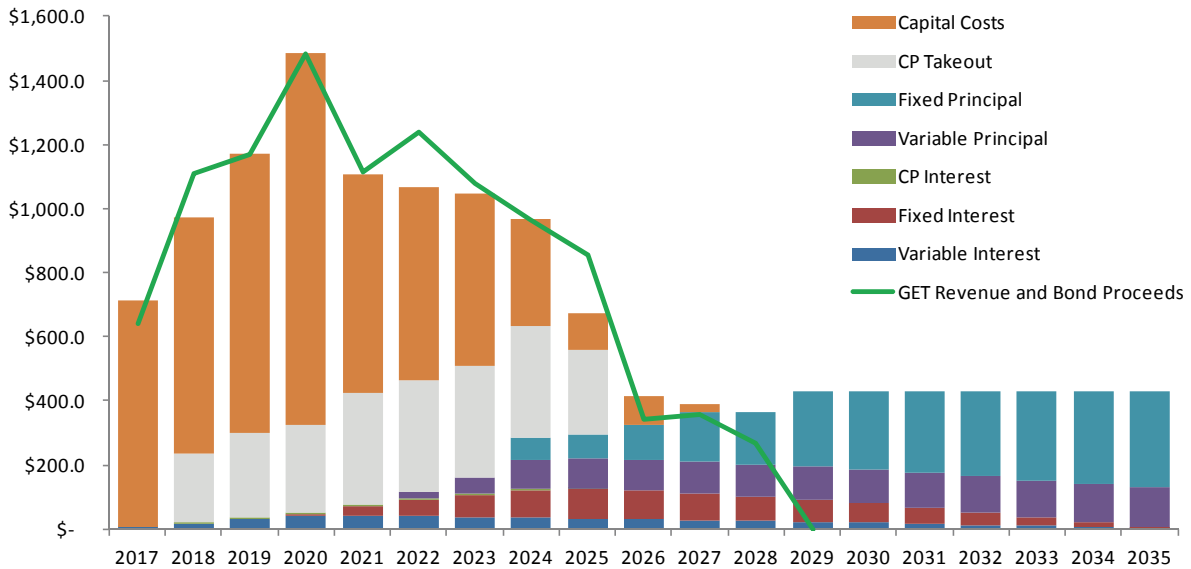
FTA Section 5307 Formula Funds (49 USC Section 5307)

The updated Financial Plan removes the 5307 formula funds which can now be utilized by the City for existing transportation needs. The 5307 formula funds are being replaced by the extension of the GET surcharge to December 31, 2027.

FINANCING OF THE PROJECT

The following figure shows the Project capital sources and uses of funds, including debt service. In the years in which capital expenditures are greater than the funding available on a pay as you go basis, debt financing is needed. GET surcharge revenue will continue to be generated after construction is completed, which provides the funding source for debt financing. However, this will require the GET surcharge to be extended beyond the existing 2027 sunset.

Figure 2-2, Project Capital Sources and Uses of Funds, FY2017 – FY2035, YOY \$millions



The following chart shows the tabular data through FY2027. As shown below, there are sufficient revenues through the current sunset date:

(\$ in millions)	Fiscal Years												
	Feb-16	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Beginning Cash Balance	\$298	\$192	\$95	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$209	\$141
Project Funding Sources:													
G.E.T.	\$1,259	\$61	\$236	\$246	\$257	\$268	\$279	\$291	\$304	\$317	\$330	\$344	\$359
Federal Grant	\$515	\$54	\$192	\$212	\$254	\$323	\$0	\$0	\$0	\$0	\$0	\$0	\$0
All Other	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Revenue	\$1,780	\$115	\$428	\$458	\$511	\$591	\$279	\$291	\$304	\$317	\$330	\$344	\$359
Total Project Sources	\$1,780	\$115	\$428	\$458	\$511	\$591	\$279	\$291	\$304	\$317	\$330	\$344	\$359
Project Uses:													
Total Project Costs	\$1,885	\$213	\$706	\$875	\$870	\$1,158	\$691	\$773	\$571	\$333	\$116	\$89	\$26
Debt Service	\$0	\$0	\$7	\$20	\$34	\$51	\$74	\$94	\$112	\$125	\$128	\$120	\$112
Total Project Uses	\$1,885	\$213	\$713	\$896	\$904	\$1,209	\$765	\$868	\$682	\$458	\$243	\$209	\$137
Net Current Change	(\$105)	(\$98)	(\$285)	(\$438)	(\$394)	(\$618)	(\$486)	(\$577)	(\$379)	(\$141)	\$87	\$136	\$222
Debt Proceeds	\$0	\$0	\$215	\$653	\$660	\$892	\$836	\$946	\$777	\$649	\$526	\$0	\$0
Less Debt Repayment	\$0	\$0	\$0	(\$215)	(\$267)	(\$274)	(\$350)	(\$370)	(\$398)	(\$508)	(\$429)	(\$204)	(\$251)
Ending Cash Balance	\$192	\$95	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$209	\$141	\$111

However, after the current sunset date, there are insufficient funds to pay debt service on the bonds. Table A-1 illustrates this.

Debt Capacity

The City's ability to issue debt is defined by legal limits included in the State's Constitution. Furthermore, the City has implemented policy guidelines that define appropriate levels of debt in relation to its funding base.

Legal Debt Limit: The State of Hawai'i Constitution (Act VII, Section 12 and 13) requires any one county to have a total outstanding funded debt equal to no more than 15% of that county's total assessed value of real property for tax purposes. This test represents the primary legal restriction on the amount of debt that the City could issue. Based on current estimates there is significant debt capacity under the limit. As of December 31, 2014, the City had \$188.6 billion in net assessed value of real property, which represents \$26.1 billion in total legal debt capacity. Of the total capacity, \$22.5 billion was available for future use.

City Affordability Guidelines: The City has established affordability guidelines, as last amended by Resolution No. 06-222 in June 2010. These policies include the following:

- Debt service for GO bonds, including self-supported bonds and enterprise and special revenue funds, should not exceed 20% of the City's total operating budget.
- Debt service on direct debt, excluding self-supported bonds, should not exceed 20% of the General Fund revenues.
- Other guidelines include a limitation on the City's variable debt rate and debt refunding policy.

Assuming the City's affordability guidelines are applicable in future years, the limitations on future GO debt can be calculated based on growth assumptions in assessed property values, General Fund revenues, and the City's operating budget. The resolution that adopted the affordability guidelines includes language stating that the guidelines "may be suspended for emergency purposes or because of unusual circumstances." The unusual circumstances relate to the Project having "self supported" short term GO debt, not included in the City operating budget, that is paid for by GET surcharge revenues rather than the City's General Fund revenues.

SYSTEMWIDE AND ONGOING CAPITAL COST

The capital plan includes ongoing costs to replace, rehabilitate and maintain capital assets in a state of good repair throughout the forecast period. It also includes necessary expansion of the existing transit system in order to accommodate forecasted FY2030 ridership demand levels.

Project Capital Asset Replacement Program: A Capital Asset Replacement Program (CARP) consisting of periodic overhaul, rehabilitation, refurbishment or replacement of major components, equipment, and facilities will be carried out for the Project elements included 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 YOE dollars. The Financial Plan conservatively assumes that this maximum amount of CARP spending would be required in each year. Eleven years of historical data from the U.S. Bureau of Labor Statistics were used to escalate CARP costs for the Financial Plan.

Total FY2019 to FY2030 CARP spending in the original Financial Plan was anticipated to be \$150 million in YOE dollars. Shifting the replacement schedule to the updated revenue service date at the original Financial Plan escalation composite rate would add approximately \$2-\$3 million per year. The weighted average inflation rate used in the original Financial Plan was 2.6%. The updated projection uses the CPI-U inflation rate which ranges between 2.6% to 2.8%.

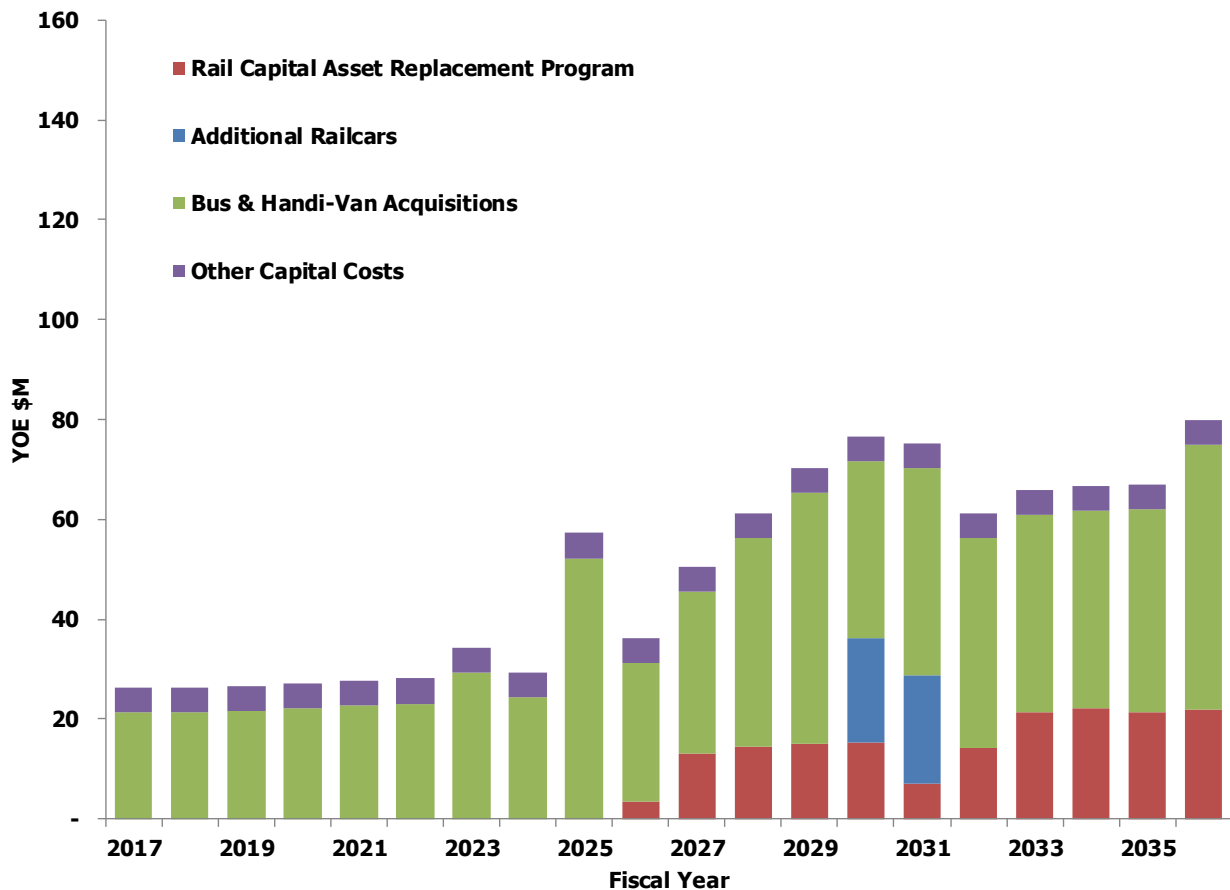
Additional Railcar Acquisitions: In the original Financial Plan, the purchase of ten additional railcars was expected to be needed to accommodate forecasted ridership in FY2025. The original Financial Plan

assumed that this delivery will be made over two years, with five railcars in FY2024 and the remaining five in FY2025. The total capital cost of the ten added cars was estimated at \$35 million in YOE dollars. The updated Financial Plan similarly expects additional railcars to be needed in the sixth full year of operations. The equivalent YOE cost of additional rail cars to purchase in FY2030 and FY2031 would total approximately \$43 million.

TheBus and TheHandi-Van Vehicle Acquisitions: Most changes in the transit network will result from adjustments to existing bus routes in order to complement the Project. Some bus routes will be re-structured and shortened to become feeder routes while others will be shortened where the Project provides improved service.

Other Capital Cost: The Financial Plan uses cost estimates assuming that \$5 million will be spent annually on TheBus and TheHandi-Van facilities, including transit security projects and small transit centers. The following figure presents the annual ongoing systemwide capital expenditure broken down by the components outlined above. Bus acquisition constitutes by far the single biggest ongoing capital expense. The following section will describe the sources of funds assumed in this Financial Plan to pay for these needs.

Figure 2-3, Ongoing Capital Expenditures, FY2017 – FY2036, YOE \$millions



SYSTEMWIDE CAPITAL FUNDING SOURCES

While the assumed New Starts funding and GET surcharge revenues will be adequate to fund the Project capital costs, other sources of funds will continue to be relied upon to fund ongoing capital costs for the existing TheBus and TheHandi-Van systems.

FEDERAL FUNDS

The three main sources of Federal funds for system-wide capital costs are as follows:

- FTA Urbanized Area Formula Program (49 U.S.C. Section 5307)
- FTA Capital Investment Grants (49 U.S.C. Section 5309) – Fixed Guideway Modernization (FGM) Program
- FTA Capital Investment Grants – Bus and Bus-Related Equipment and Facilities Program

Under Federal law, Section 5307 funds may be used for preventive maintenance, which is part of a transit system's operating budget. As a general rule for the Financial Plan, Section 5307 funds are first applied to ongoing capital needs, with any surplus being transferred to preventive maintenance.

LOCAL CAPITAL ASSISTANCE FOR THE SYSTEMWIDE AND ONGOING PROJECT CAPITAL NEEDS

The City is required to match all FTA funding programs with at least 20% in local funds. This Financial Plan, therefore, assumes that at least 20% of each year's ongoing capital needs are matched at that level. With the Federal revenues described above, the City is periodically required to contribute more funds to ensure that projected capital needs are met. Historically, the City has consistently done so through the issuance of GO bonds, and this Financial Plan assumes that it will continue to do so.

Chapter 3 OPERATING PLAN

INTRODUCTION

This report updates the Operating Plan portion of the original City's Final Financial Plan for FFGA, June 2012. This updated Financial Plan is based on the 20.1 mile route with full revenue service starting December 2025. Interim service may begin in December 2020 to Aloha Stadium.

The Project will be fully integrated with TheBus operations, which will be reconfigured to add feeder bus service to provide increased frequency and more transfer opportunities between bus and rail. The new rail and modified bus service will provide additional travel options, increase service frequencies, expand the hours of operation, minimize wait times, reduce total travel times, improve service reliability, and enhance comfort and convenience for passengers.

As with the original Operating Plan, the updated Operating Plan reflects the current transit policies applied to the future integrated transit system. The current City policy of setting fare rates to recover between 27-33% of operating costs, as well as the current fare rate categories, remains constant in the updated Operating Plan. By holding these factors constant, this updated Operating Plan projection will serve as a base comparison for changes to fare policies, fare differentials, and service levels.

UPDATE SUMMARY

Original Financial Plan: The following table summarizes the financial elements in the original Financial Plan that was released in June 2012. The table compares FY2011 actual with the first full year of operations in FY2020 in inflated YOE dollars.

Table 3-1, Original Financial Plan Figures, June 2012

		FY 2011 Actual	Original FY 2020	Change	% Change
Bus Cost	YOE million \$'s	\$173	\$263	\$90	52%
Handi-Van Cost	YOE million \$'s	\$34	\$59	\$25	73%
Rail Cost	YOE million \$'s	\$0	\$113	\$113	-
Combined Total	YOE million \$'s	\$207	\$435	\$228	110%
Bus Service Hours	millions	1.38	1.58	0.20	14%
Fare Revenue	YOE million \$'s	\$54	\$110	\$56	104%
Average Fare	YOE \$'s	\$0.93	\$1.30	\$0.37	40%
Subsidy	YOE million \$'s	\$133	\$307	\$174	131%

Updated Operating Costs: Projecting rail operating costs is a two-step process. The first step is to update the operating plan in today's current dollars incorporating all known changes (e.g. four car trains, fare gates, and power consumption estimates). After capturing current real changes, the second step is to convert current year cost figures into YOE dollars by selecting an inflationary factor.

Updated rail costs in current year dollars are as projected in the original Financial Plan (June 2012). However, projection estimates in certain cost categories vary considerably from the original projections.

These current year cost estimates are then converted to YOE dollars. The original Financial Plan applied various escalation factors to each cost category (e.g. core systems, power costs, station maintenance). This update provides a range of cost escalation scenarios and details their impacts.

Bus costs have been as anticipated in the original Financial Plan. The historical annual increase in bus costs per revenue service hour in the original Operating Plan was 3.9%. The actual cost per revenue hour over the last 10 years is 3.1% reflecting the recent lower fuel prices. The updated Financial Plan estimates bus costs per revenue service hours to increase at approximately the same level as the original Financial Plan's historical cost. Handi-Van has experienced the cost increases as projected in the original Operating Plan.

Updated Ridership: Ridership is projected using a travel demand model with inputs from customer survey data. A more robust regional planning model is currently being utilized to forecast ridership in conjunction with a fare modeling study. Approximately 258,000 daily linked trips were estimated in the first full year of a bus and rail combined system in 2020. The forecast grew to 280,000 linked trips per day in 2030 for the bus and rail combined system. The updated forecast estimates approximately 279,000 linked trips in the first full year and 313,000 in the tenth year.

With respect to actual boarding to date, actual boarding and the original Financial Plan forecast began to diverge in FY2013. There are a number of factors that may have contributed to this situation, but service hour reductions and the decreasing price of fuel beginning in May 2014 are likely contributors. The updated ridership forecast commences at the current ridership results from FY2016.

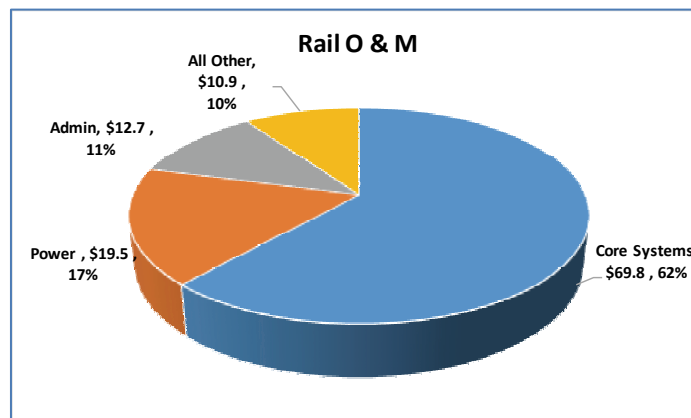
Fare rate increases are comparable to CPI-U increases utilizing the original Financial Plan factors. Similar to the cost scenarios, this report also details the impact of lower ridership figures and its impact on fare rates and subsidy levels.

OPERATING COST UPDATE

RAIL O&M COSTS

The assumptions incorporated in the original Financial Plan were mostly conceptual as final designs were not developed by the plan's release in June 2012. This update of rail O&M costs is based on information obtained and project developments between June 2012 and November 2016. These updated figures will be continually reviewed as designs are finalized, operation and maintenance contracts are secured, and organizational structure develops. The following figure reflects the operating costs in the original Operating Plan. Core Systems Contract and power represent nearly 80% of all operating costs.

Figure 3-1, Original Financial Plan Rail Costs in FY2020, YOE \$'s millions



Projecting rail operating costs is a two-step process. The first step is to update the operating plan in today's current dollars including all known contract awards, final designs, system changes such as fare

gates and four car trains, process changes, and energy consumption projections. After capturing current real changes, the second step is to convert current year cost figures into future YOY dollars.

The following table compares the updated cost estimates to the original Financing cost estimate for FY2016. In other words, if the rail systems were opened today what would the cost be using the contractual cost of the Ansaldo contract, current electrical rates, power consumption estimates, etc. The table reveals that total rail costs in current dollars are approximately as projected in the original Financial Plan. However, deviations exist within the various cost categories. These deviations are explained in the following sections.

Table 3-2, Update of Rail O&M Costs, 2016 \$'s millions

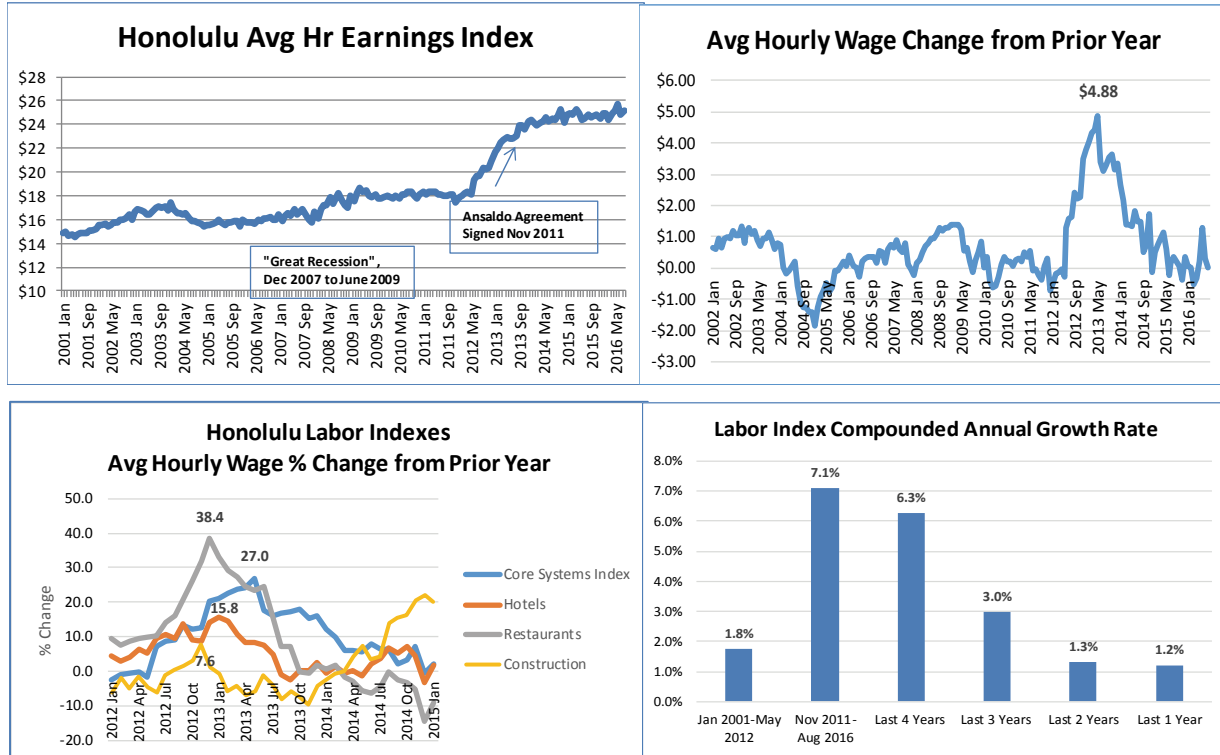
	FFGA First Full Year of Operations, June 2012:					Updated FY 2017:	
	In Constant \$'s mil.	FFGA Inflation Factor	Inflated to Cost in FY 2017	Inflated to Cost in FY 2020	Inflated to Cost in FY 2026	Updated Amount in Current \$'s	Change from FFGA FY 2017
Core Systems Labor	\$ 25.5	1.2%	\$ 27.1	\$ 27.9	\$ 29.9	\$ 36.1	\$ 9.1
Core Systems Materials	\$ 20.2	3.6%	\$ 24.1	\$ 27.3	\$ 34.0	\$ 20.5	\$ (3.6)
Core Systems Admin	\$ 13.1	1.2%	\$ 13.9	\$ 14.5	\$ 15.6	\$ 13.9	\$ -
Subtotal Core Systems	\$ 58.8		\$ 65.1	\$ 69.8	\$ 79.5	\$ 70.6	\$ 5.5
HART Admin	\$ 10.4	2.5%	\$ 11.8	\$ 12.7	\$ 14.7	\$ 7.0	\$ (4.8)
Power Costs	\$ 18.3	0.8%	\$ 19.1	\$ 19.5	\$ 21.8	\$ 16.5	\$ (2.5)
Guideway Maintenance	\$ 1.9	2.5%	\$ 2.2	\$ 2.4	\$ 2.7	\$ 2.65	\$ 0.4
Security Patrols	\$ 0.7	2.5%	\$ 0.8	\$ 0.8	\$ 1.0	\$ 2.00	\$ 1.2
Fare Enforcement	\$ 1.8	2.5%	\$ 2.0	\$ 2.2	\$ 2.6	\$ -	\$ (2.0)
Fare Collection	\$ 2.4	2.5%	\$ 2.8	\$ 3.0	\$ 3.4	\$ 3.33	\$ 0.6
Station Maint.	\$ 2.1	2.5%	\$ 2.3	\$ 2.5	\$ 2.9	\$ 2.83	\$ 0.5
Water	\$ 0.01	2.5%	\$ 0.01	\$ 0.01	\$ 0.02	\$ 0.03	\$ 0.0
Subtotal HART	\$ 37.7		\$ 41.0	\$ 43.1	\$ 49.2	\$ 34.3	\$ (6.6)
Total Projected O&M	\$ 96.5		\$ 106.0	\$ 112.8	\$ 128.7	\$ 104.9	\$ (1.1)

Core Systems Contract: The Core Systems Contract was signed with Ansaldo to operate and maintain the rail system. The O&M costs for the Project were developed using prices from the Core Systems Contract awarded in 2011. The Core Systems Contract has formulas to convert the bid award's 2011 dollars to YOY dollars. The formulas are based on indices published by the U.S. Bureau of Labor Statistics (BLS) for labor costs and material costs. The contract's labor index is based on the Honolulu Average Hourly Earnings of Production Employees in the Trade, Transportation, and Utilities Sector. The materials index is a composite of two national Producer Price indexes for Line-Haul and Rapid Transit Cars.

For the original Financial Plan, 11 years of historical data from the BLS were used to escalate the O&M costs that are included in the Core Systems Contract. The greatest deviation from the original Financial Plan is the Core Systems labor escalation factor. The Core Systems Contract was signed in November 2011. The following figure shows the labor index spiked in early calendar year 2012, reflecting the pent up pressure after the "Great Recession." Average hourly wages grew \$4.88 per hour (27%) from the previous year in May 2013. Similar spikes in the average hourly rate increase were experienced in other major sectors of the Honolulu economy such as the restaurant, hotel, and construction sectors. Contractually the labor compounded annual growth rate (CAGR) peaked at an annualized rate of 17% in early 2013. The CAGR for this labor index from the execution of the contract in November 2011 through

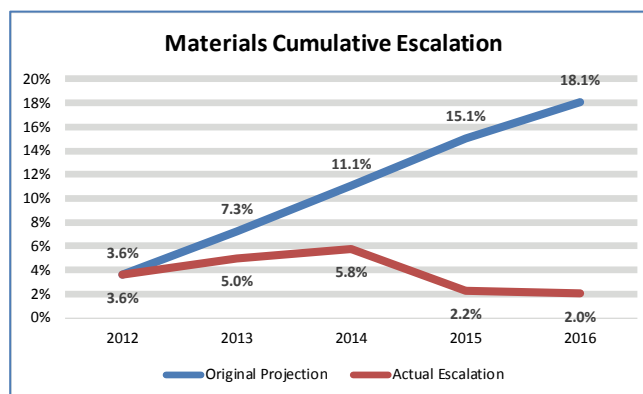
August 2016 has since dropped to approximately 7%. This labor index has averaged only 1.3% growth per year over the last two years. Despite the falling growth rate, if the rail systems started now, the escalation would add approximately \$9 million to operating costs.

Figure 3-2, Honolulu Labor Index, August 2016



Unlike the labor index, the materials composite index is much lower than the original Operating Plan projections. The materials index was expected to grow at 3.6% annually. The following figure highlights the actual change in the materials composite index is well below the original projection through August 2016. This actual index change represents a \$3.6 million savings from the original plan.

Figure 3-3, Core Systems Materials Index Update



City Cost Responsibilities: The remainder of the rail O&M services will be the City DTS responsibility, based on the passage of Charter Amendment 4 in the recent 2016 elections. These costs include: power costs, guideway structure inspections and maintenance, security patrols, fare revenue collection and

equipment servicing, fare inspection and enforcement, station maintenance (including escalators and elevators), and costs associated with the staffing of administrative and management personnel, including overhead, for the organization.

HART & City Admin: The original Financial Plan assumed that the HART organization would include 86 full-time equivalent positions in the first full year of operations. The cost estimates in the original plan assumed a stand-alone organization with a full complement of staffing; including support position such as human resources, accounting, and information technology. There was no consolidation of services with the City or the bus operator. With the recent Charter organizational changes, the plan will be updated based on new organizational structures and resource needs developed over the next year.

Power Costs: The largest operating cost besides the Core Systems Contract is electrical power. The original Operating Plan based its power consumption and demand projection from estimates in the Core Systems Contractor's proposal. The power price projection was based on then current industrial rates and escalated rates gradually over the projection period. These original estimates have been reviewed and updated relative to current track alignment and four car train operations.

The following table incorporates the current power consumption and demand figures with the current industrial electrical rates to calculate the current dollar impact for power costs. The table reflects the impact of the updated power consumption total that increases power costs by \$1.8 million. This power consumption increase is offset by a decrease in electrical rates of \$3.1 million, resulting in a total decrease in power costs to \$16.5 million in current dollars. The \$1.8 million savings grows to \$2.5 million when the original plan is escalated to current year dollars.

Table 3-3, Power Consumption and Rate Variances

	Original Plan	Update 2016	Change	% Change
Power Rate Comparison:				
Usage per kwh	\$0.22	\$0.157	\$ (0.06)	-29%
Traction Demand per kw	\$18.86	\$24.34	\$ 5.48	29%
Station Demand per kw	\$11.11	\$24.34	\$ 13.23	119%
Volume Comparison:				
Energy Consumption kwh	69,470,784	77,137,606	7,666,822	11%
Demand kw	10,920	11,355	435	4%
Cost Update:				
Annual Power Cost	\$18,303,028	\$16,545,748	(\$1,757,281)	-10%
Cost Variance:				
Change in Rates		(\$3,112,227)		
Change In Volume		\$1,777,130		
Mix Variance		(\$422,184)		
Total Variance		(\$1,757,281)		

Fare Collection and Enforcement: Ticket vending machines were originally envisioned for the rail system with fare enforcement officers verifying payment. A new automated integrated fare collection system that can be used throughout the entire transportation system is currently being implemented. In addition, the Project now includes fare gates thereby eliminating on board fare enforcement. The integrated fare collection system and other associated costs increases rail's share of collection costs to \$3.3 million in current dollars, a net increase of \$0.6 million.

Guideway and Station Maintenance: The Core Systems Contractor is responsible for all maintenance associated with operating the rail system, including all track and equipment on the guideway. DTS will be responsible to inspect and maintain the guideway structure, station structures, and station elevators

and escalators. The estimate includes resources to cover mandated guideway inspection, graffiti removal, elevator/escalator repair, and includes reserves to accumulate for major station and guideway repair. The updated figures increase both guideway and station maintenance by approximately \$0.5 million each for a combined total of approximately \$4 million per year.

Security: The rail system will have over 1,650 security cameras, emergency and information call points, sophisticated security software, as well as security staffing. The original security plan included an eight position staff as well as fare enforcement officers. The increase of \$1.2 million in the cost of security reflects the need to increase staffing to offset the reductions in prior plan's fare enforcement officers.

Cost Adjustments Related to Inflationary Growth Rates

Once the operating costs are determined in current dollars, these cost estimates must be converted to future YOY dollars. The following table provides escalated costs under a variety of inflation assumptions. The chart demonstrates that the future first year operating costs could vary from approximately \$127 to \$144 million depending on escalation assumptions.

Table 3-4, Rail Costs under Various Inflation Assumptions

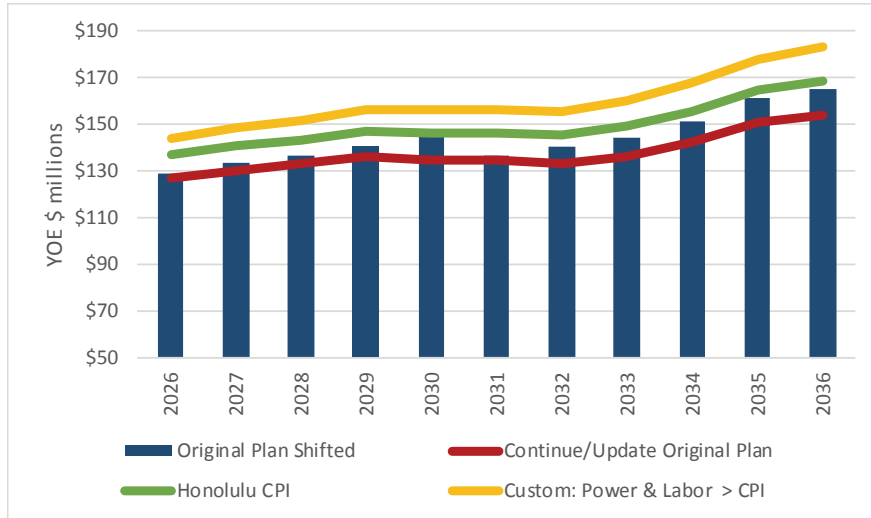
Cost Category	Inflation Factor Scenarios:					
	Continue FFGA Escalation Factor to FY 2026		Change From FFGA FY 2026		Change From Custom Inflation	
Core Systems Labor	\$ 40.5	\$ 10.5	\$ 46.7	\$ 16.7	\$ 51.5	\$ 21.5
Core Sys. Materials	\$ 30.0	\$ (4.0)	\$ 27.2	\$ (6.8)	\$ 27.4	\$ (6.6)
Core Systems Admin	\$ 14.9	\$ (0.7)	\$ 18.8	\$ 3.2	\$ 19.1	\$ 3.5
Subtotal	\$ 85.3	\$ 5.8	\$ 92.6	\$ 13.1	\$ 98.0	\$ 18.5
HART Admin	\$ 8.7	\$ (6.0)	\$ 8.8	\$ (5.9)	\$ 8.8	\$ (5.9)
Power Costs	\$ 19.1	\$ (2.7)	\$ 21.5	\$ (0.4)	\$ 23.6	\$ 1.8
Guideway Maint.	\$ 3.3	\$ 0.6	\$ 3.3	\$ 0.6	\$ 3.3	\$ 0.6
Security Patrols	\$ 2.6	\$ 1.6	\$ 2.5	\$ 1.6	\$ 2.5	\$ 1.6
Fare Enforcement	\$ -	\$ (2.6)	\$ -	\$ (2.6)	\$ -	\$ (2.6)
Fare Collection	\$ 4.3	\$ 0.8	\$ 4.2	\$ 0.8	\$ 4.2	\$ 0.8
Station Maint.	\$ 3.5	\$ 0.6	\$ 3.6	\$ 0.6	\$ 3.6	\$ 0.6
Water	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
Subtotal HART	\$ 41.5	\$ (7.6)	\$ 43.9	\$ (5.2)	\$ 46.1	\$ (3.0)
Total Projected O&M	\$ 126.9	\$ (1.8)	\$ 136.6	\$ 7.9	\$ 144.1	\$ 15.5

Continuing Original Plan Methodology

This projection scenario applies the original operating plan inflation factors to current dollar cost estimates. Under this scenario, the labor index for Core Systems would continue to fall back to historical trend lines and power costs inflation would remain low. Core Systems material inflation would reverse its current low to date escalation and grow at its original Financial Plan annual rate of 3.6%.

In this scenario, total rail O&M cost would total approximately \$127 million in the first full year of operations. This scenario would result in a cost savings of \$1.8 million per year over the original Financial Plan cost projection inflated to the December 2025 starting date.

Figure 3-4, Comparison of Cost Escalation Scenarios, FY2026 – FY2036, YOE \$ millions



Moderate Range Scenario

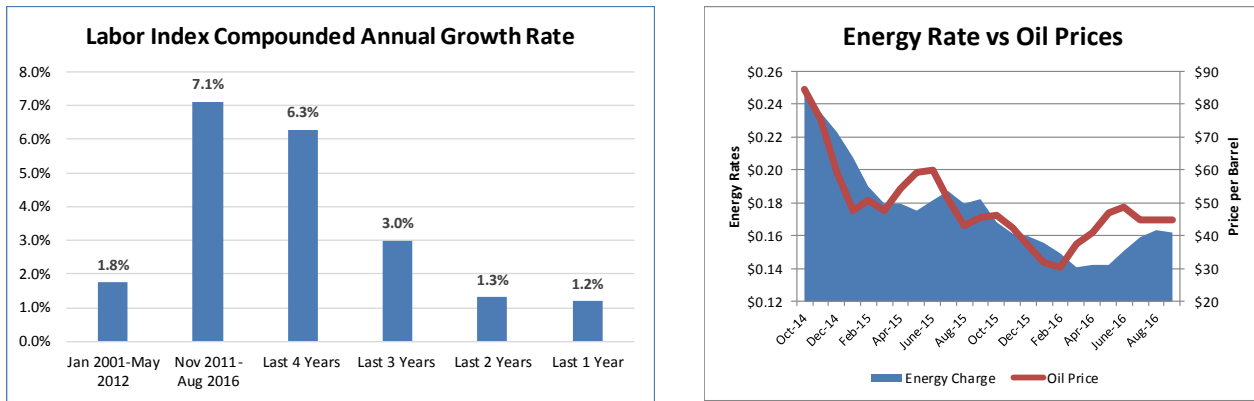
Although, the Honolulu Labor Index growth rate has decreased from its post-recession spike and electric rates to date have actually decreased from 2012, this scenario increases current dollar projections by the Honolulu CPI-U providing another cost perspective. This scenario uses the State Department of Business, Economic Development and Tourism’s (DBEDT) most recent Honolulu CPI-U forecast (November 15, 2016) through 2019, then steps up CPI-U from 2.6% to 2.8% annually.

In this scenario, total rail O&M cost would total \$136.6 million in the first full year of operations. This scenario would result in a cost increase of \$7.9 million (6%) per year over the original Financial Plan cost projection inflated to the December 2025 starting date.

High Cost Range Scenario

The Core Systems labor and power costs represent approximately 50% of the current update for rail costs. To date, these costs have exhibited the most volatility. A more conservative forecasting approach would be to assume higher escalation factors than under the original Financial Plan methodology. Increasing these two cost categories approximately 1.4 times CPI-U results in total rail cost increasing to \$144 million (11%) in the first full year of operations.

Figure 3-5, Core Systems Labor Index and Industrial Power Correlation

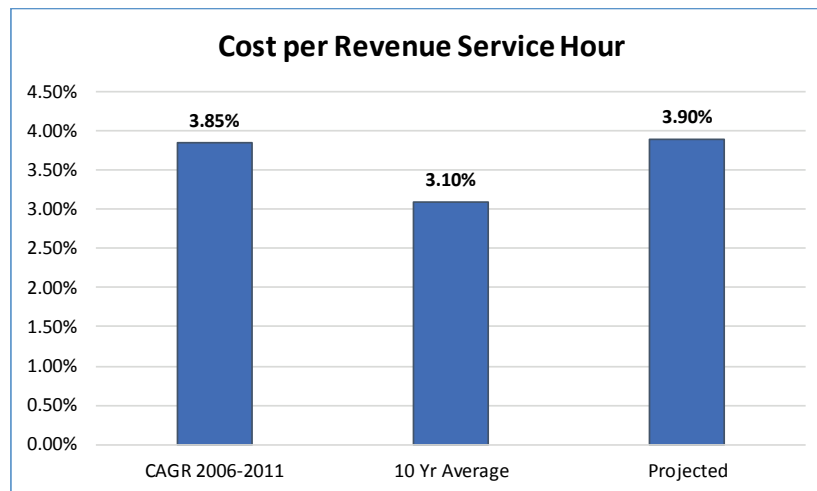


THEBUS O&M COSTS

In the original Financial Plan, TheBus O&M costs were developed using existing bus operations as the baseline as well as anticipated service levels through FY2030. TheBus O&M costing methodology uses a resource build-up approach that fully allocates O&M costs based on level of service variables. Each unit cost is broken down by object class which allows for applying different inflation rates to each object class. The overall composite cost based on revenue service hours was a 3.2% annual cost increase.

The following figure compares the inflationary growth factors cited in the original Financial Plan from 2006-2011 (3.9%), the updated 10 year average (3.1%), and the average used in the updated projection (3.9%). The updated projection uses a more conservative estimate given that the most recent years have realized savings from a sharp decrease in fuel costs. The total cost per revenue service hour for bus operations is currently approximately \$130.

Figure 3-6, Growth Rates of Bus Costs per Revenue Service Hour

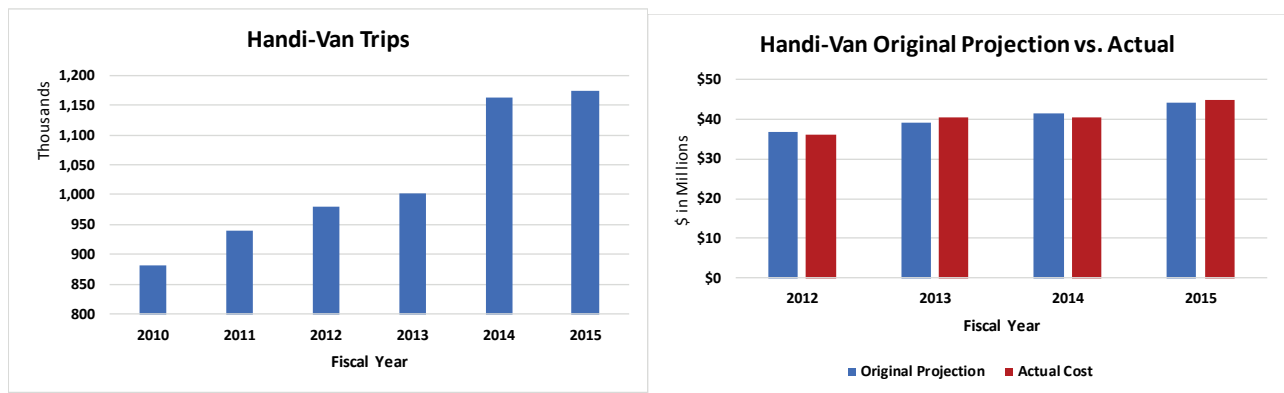


THEHANDI-VAN O&M COSTS

TheHandi-Van is a paratransit service operating in tandem with TheBus and has been in operation since 1999. In FY2011, TheHandi-Van serviced more than 940,000 trips with an associated total O&M cost of approximately \$34 million. The projected O&M costs for TheHandi-Van are based on the FY2011 cost per rider, equal to \$36.32, applied to the projected ridership, and adjusted for inflation.

The original Operating Plan assumed that TheHandi-Van ridership would increase at an average annual rate of 1.8% from FY2011 to FY2030. The overall Handi-Van total cost was projected to increase between 5% to 6% per year given the increase in ridership and inflation. Fiscal Year 2015 actual results and the original Financial Plan estimate were \$44.8 million and \$44.1 million respectively. The updated Financial Plan continues the assumptions in the original Financial Plan for the Handi-Van.

Figure 3-7, Handi-Van Annual Trips and Operating Costs



OTHER O&M COSTS

The Financial Plan also includes operating costs associated with other transit service programs. The projection increases over time from approximately \$1 million in FY2017, up to \$8 million per year in FY2036.

OPERATING REVENUES

PASSENGER FARES

Fare Policy: A City resolution stipulates that the farebox recovery ratio (FRR) for TheBus be maintained between 27% and 33%, which demonstrates a commitment of the City to keep operating costs and revenues growing at a comparable rate on average. The Charter Amendment 4 recently approved during the November 2016 General Election created a Fare Commission tasked with the responsibility of establishing fares for TheBus, Handi-Van, and the rail, including transfer policies. However, because this Fare Commission has yet to be established and the timing for any future decisions have yet to be determined, this Financial Plan assumes that the current fare structure for TheBus will be maintained for both TheBus and the Project, with free transfers assumed between both modes.

The below table details the history of City fare increases. The City last raised fares in July 2010.

Table 3-5, TheBus Fare Structure and History

Effective Date	One-way Cash Fare		Monthly Pass	
	Adult	Youth	Adult	Youth
March 1, 1971	0.25	0.15	N/A	N/A
March 2, 1971	0.25	0.10	N/A	N/A
June 9, 1972	0.25, 0.50	0.10, 0.25	N/A	N/A
March 15, 1974	0.25	0.10	N/A	N/A
November 1, 1979	0.50	0.25	15.00	7.50
June 18, 1984	0.60	0.25	15.00	7.50
October 1, 1993	0.85	0.25	20.00	7.50
July 1, 1995	1.00	0.50	25.00	12.50
July 1, 2001	1.50	0.75	27.00	13.50
July 1, 2003	1.75	0.75	30.00	13.50
October 1, 2003	2.00	1.00	40.00	20.00
July 1, 2009	2.25	1.00	50.00	25.00
July 1, 2010	2.50	1.25	60.00	30.00

N/A = Not Applicable

Ridership Forecasting: Ridership relies on outputs from travel demand models. The original Operating Plan was based on a travel demand model used in the development of the Environmental Impact Study. The update of the Operating Plan uses the OahuMPO regional travel demand forecasting model (TDFM). This regional TDFM uses land use and population data to estimate transit system usage at different horizon years.

The TDFM estimates future islandwide vehicular traffic flows and transit ridership based on land use, employment, population characteristics, and an underlying transportation network. The OahuMPO uses the TDFM during long-range planning efforts to assess and compare the performance of different transportation projects relative to a baseline scenario.

The TDFM is a tour-based micro-simulation model system that uses the TransCAD 6.0 software package. The model uses a synthetic population and land use forecasts to simulate and track the travel patterns of each individual or household in future years. The tour-based model simulates individual daily travel patterns as a series of linked trips or tours which begin or end at home or work. Trips are simulated as one of seven different tour purposes, such as work, school, or non-mandatory trips. The tour-based framework allows consistency across trip mode choice decisions. Someone who takes a bus to work, for example, would not be able to use a car for a trip during lunch because he or she would not have a car available to make the trip. The simulation results are then aggregated and assigned to a transportation network (highway or transit service). Simulation results are also supplemented by forecasts of tourists, airport passengers, and commercial vehicle traffic.

Major inputs into the OahuMPO TDFM include long-range socioeconomic forecasts prepared by the Department of Planning and Permitting in 2015 for the Oahu Regional Transportation Plan. Long-range population, housing, and employment forecasts for 2040 were linearly interpolated to develop intermediate forecasts for 2020 and 2030. A monte carlo simulation was used to fit a synthetic population to these targets. Overall, the land use inputs included about 3.4% fewer residents in 2030 than previous projections, or a total of 1.1 million people.

Other model inputs include data from the 2010 U.S. Census, as well as travel behavior surveys of 4,000 households and 950 visitors conducted in 2012. An onboard survey of 26,300 bus riders in 2012-2013 was also incorporated into the model. These surveys were used to calibrate the travel mode choice components of the model---e.g. how the model predicts that the synthetic travelers will chose to ride transit or drive an automobile.

Another major input into the TDFM is the underlying roadway and transit projects that are assumed to be in place at the time of the forecast year. This fare modeling study includes the committed short-range highway and transit projects included in the 2040 Oahu Regional Transportation Plans that was adopted in April 2016. Proposed mid- and long-range highway projects through 2029 and 2040, respectively, are not included in the fare model study due to their implementation horizons.

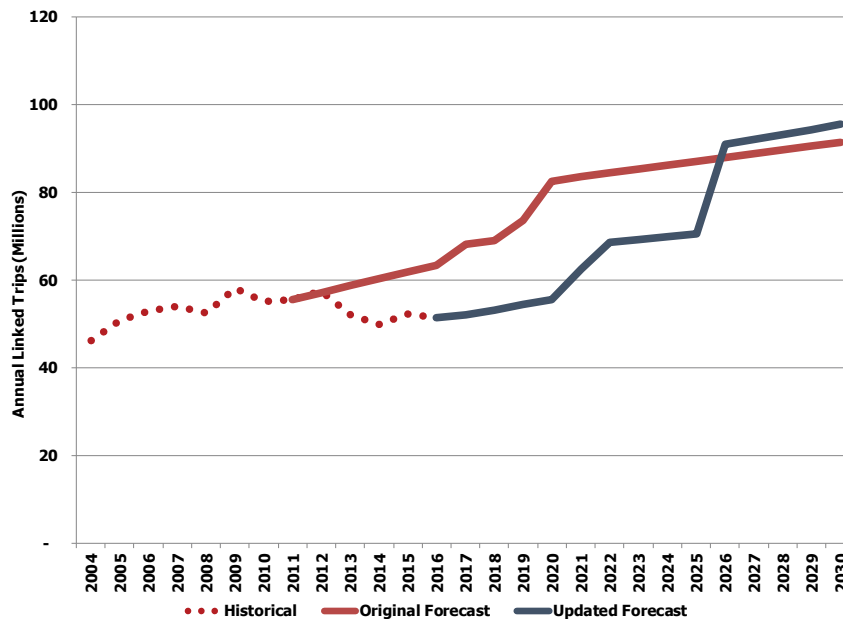
The TDFM also includes a underlying bus route network in order to simulate how travelers will use the transit system. Although the City and County Department of Transportation Services is developing the bus service plans that will be implemented when the rail system opens, this fare study uses two scenarios for analytical purposes:

The full-opening forecast assumes the comprehensive long-term restructuring of the bus network that was described in the Honolulu Rail Transit Project Final Environmental Impact Statement (EIS). This conceptual long-term bus network includes the addition of new high-frequency community circulators, truncation of regional and peak-period express routes, and a modest expansion in the bus fleet. Overall, the 2030 bus network included a roughly 20% increase in bus service hours over 2011 levels and an increase in the peak bus fleet of 474 vehicles (about a 10% increase).

In FY2011, TheBus reported boardings corresponded to about 55.5 million linked trips (taking transfers into account). The original Operating Plan estimated ridership from the original travel demand model. Approximately 258,000 daily linked trips were estimated in the first full year of a bus and rail combined system in 2020. The forecast grew to 280,000 linked trips per day in 2030 for the bus and rail combined system. Figure 3-8 displays the original Financial Plan with the updated forecasted linked trips. The updated forecast estimates approximately 279,000 linked trips in the first full year and 313,000 in the tenth year.

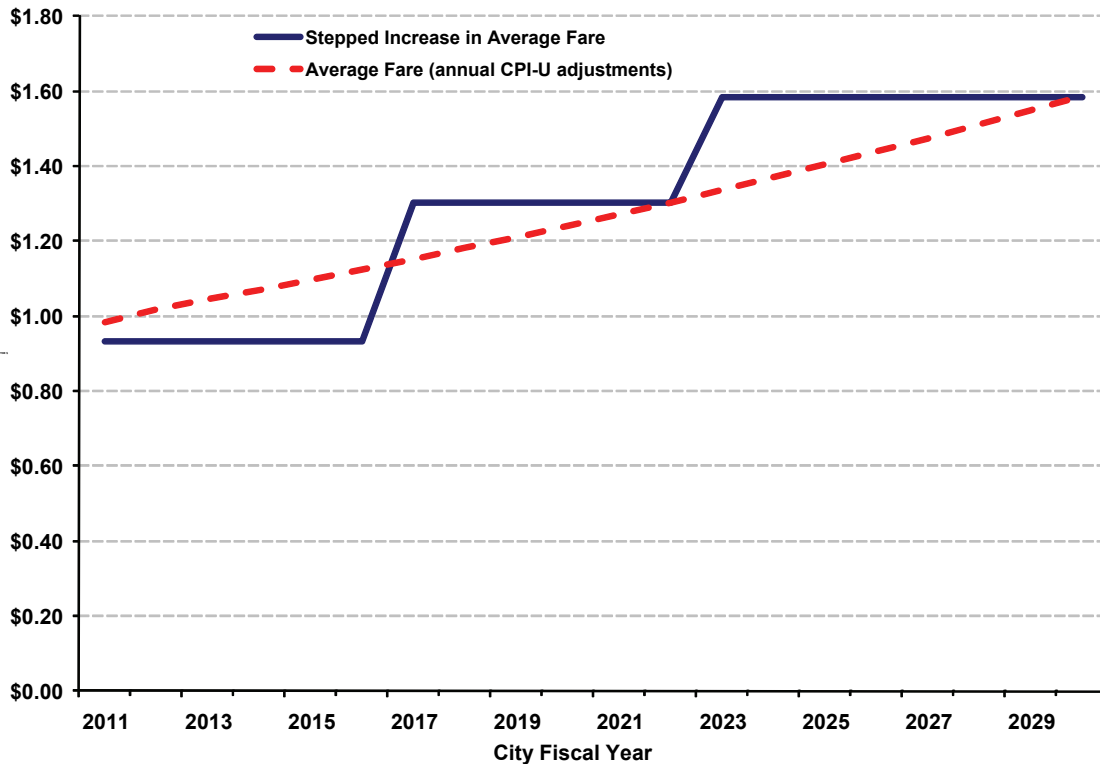
The figure also shows a gap has developed between 2012 and 2016. Beginning in 2013, the observed boarding and forecast began to diverge. There are a number of factors that may have contributed to this situation, but service hour reductions and the decreasing price of fuel beginning in May 2014 are likely contributors. The updated ridership forecast commences at the current ridership results from FY2016.

Figure 3-8, Historical and Forecasted Linked Trips for TheBus and the Project, FY2004 – FY2030, millions of Trips



Fares: The following figure illustrates the assumed future fare increases from the original Financial Plan. This figure compares the step up fare changes that are used as the basis for the fare revenue forecast, as compared to an annual increasing average fare. The original Financial Plan growth in average fare is assumed as a "step function" with increases of approximately \$0.37 in FY2017 and \$0.28 in FY2023.

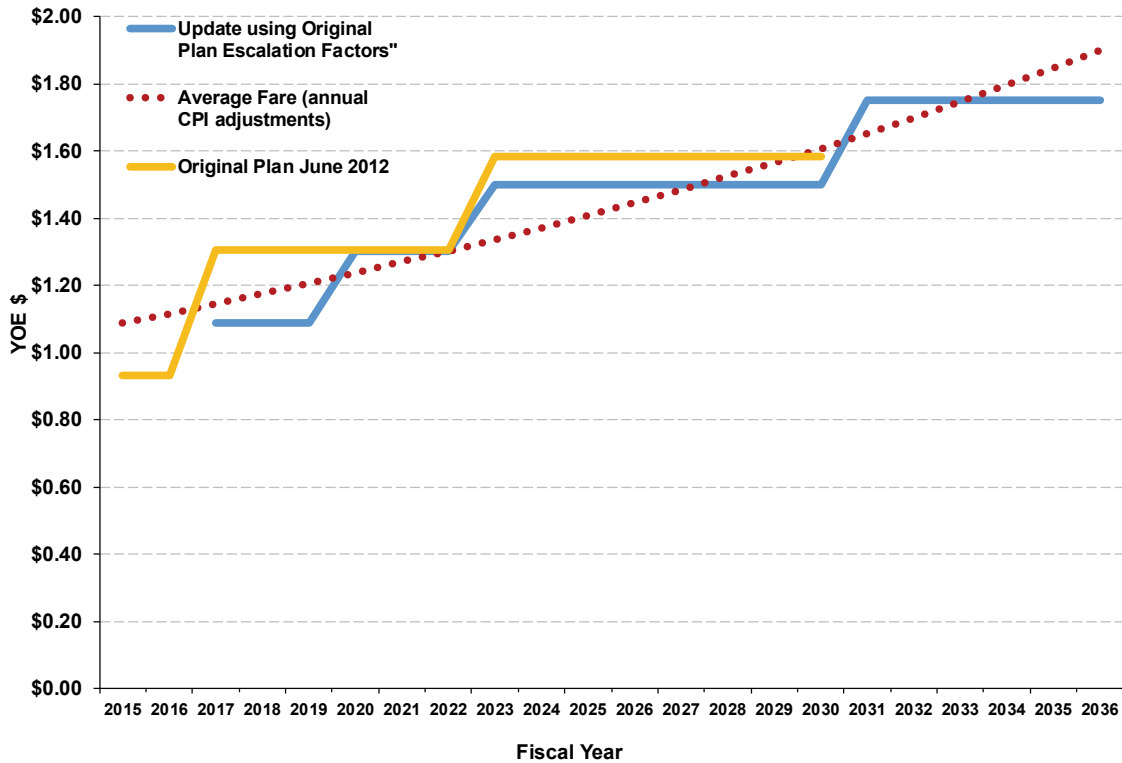
Figure 3-9, Original Financial Plan Fare Increases, FY2011 – FY2030, YOY \$



CPI -U= Consumer Price Index All Urban Consumers

Continuing the Original Plan Revenue and Cost Assumptions: The following figure updates the original fare projection consistent with current City policies and fare products. The figure illustrates the impact of the shift in date of the full revenue service date. This figure assumes the updated rates based on cost escalation factors in the original Financial Plan as well as revenue factors developed in the final environmental impact study. Under this scenario, rates increase \$0.20 to \$1.30 in FY2020; to \$1.50 in FY2023; and \$1.75 in FY2031.

Figure 3-10, Average Fare Comparisons Original vs Updated Plan, YOE \$



FEDERAL FUNDS

The City currently receives Federal funds through FTA’s Section 5307 Urbanized Area Formula Program. As mentioned in the systemwide capital plan chapter of this Financial Plan, the majority of Section 5307 funds are applied first to ongoing capital needs with any surplus being used for preventive maintenance.

Beyond the Project construction period, the Financial Plan assumes that Section 5307 funds will be distributed first to fund the Project Capital Asset Replacement Program and ongoing systemwide capital expenditures; any remaining balance will then be used to fund preventive maintenance. The updated Financial Plan also includes a projected \$1 million to \$2 million annually for other federal grant programs.

SYSTEMWIDE OPERATING PLAN

Original Financial Plan Methodology

As previously discussed, this projection scenario applies the original Financial Plan escalation factors to convert current dollar cost estimates to YOE dollars and utilizes the same fare revenue factors. In this scenario, total rail O&M cost would total approximately \$127 million in the first full year of operations. This scenario would result in a cost savings of \$1.8 million per year over the original Financial Plan cost projection inflated to the December 2025 starting date. Average fare rates would increase with CPI-U. The original Financial Plan had average fares rising from \$0.93 per trip to \$1.58 in the ten year period ending in FY2030. In the updated Financial Plan, average fares would rise \$0.17 to \$1.75 over the ten year period ending FY2036.

Table A-2, *Operating Plan, Continue Original Plan Methodology*, provides the revenue, cost, and subsidy level through FY2036.

Moderate Range Scenario

Under this scenario, rail inflationary costs grow with projected increases in CPI-U. This scenario would increase total rail O&M costs by approximately \$8 million (6%) in the first full year of operations over the original Financial Plan's FY2026 projection. The original Financial Plan had average fares rising from \$0.93 per trip to \$1.58 in the ten year period ending in FY2030. In this scenario, average fares would rise \$0.24 to \$1.82 over the ten year period ending FY2036.

Table A-3, *Operating Plan, Moderate Range Scenario*, provides the revenue, cost, and subsidy level through FY2036.

High Cost Range Scenario

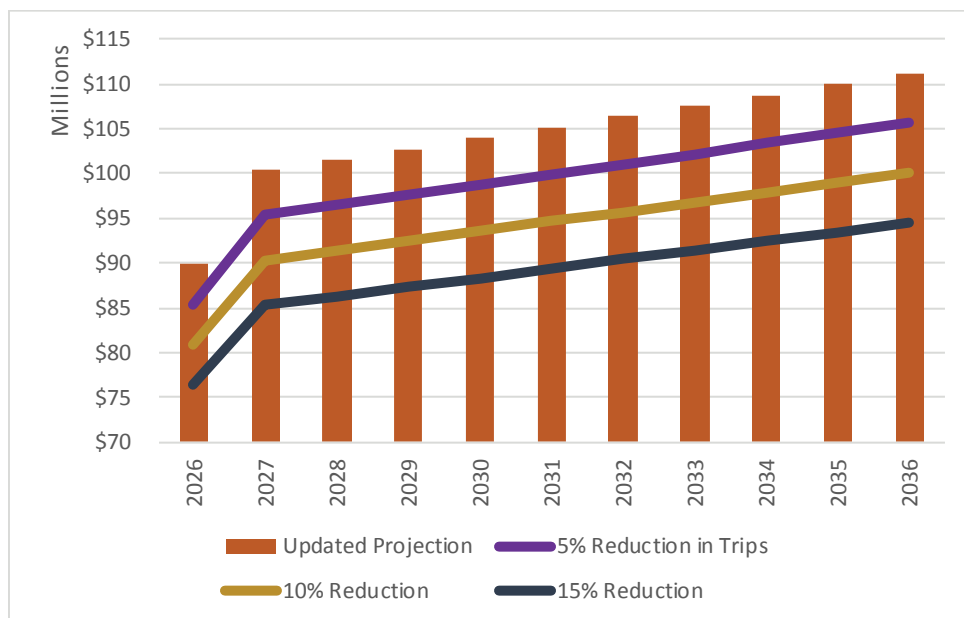
Under this scenario, rail inflationary costs grow from 3.6% to 3.8% annually for the most volatile cost categories to date: Core System labor and power costs. Growth in these cost categories would increase total rail O&M costs by approximately \$15 million (11%) in the first full year of operations. The original Financial Plan had average fares rising from \$0.93 per trip to \$1.58 in the ten year period ending in FY2030. In this scenario, average fares would rise \$0.27 to \$1.85 over the ten year period ending FY2036.

Table A-4, *Operating Plan, High Cost Range Scenario*, provides the revenue, cost, and subsidy level through FY2036.

Slower Revenue Growth Scenario

Currently, there is not an automated system to capture ridership statistics. The bus and rail system will be equipped with an integrated automated fare collection system that will provide further insight into customer travel habits. Currently, surveys are preformed periodically to determine customer travel habits. Given the reliance on survey data, potential changing customer travel habits, and other economic factors, this update models the impact of a more conservative revenue model. The figure below highlights the impact of a 5%, 10%, and 15% reduction in ridership.

Figure 3-11, Ridership Sensitivity, YOY \$ millions



The lower fare revenue in FY2026 reflects the full 20 mile rail system starting in December 2025, midway through the fiscal year.

HART has contracted with CH2M Hill in 2016 to undertake more detailed fare structure implementation options, including estimated ridership and fare revenue impacts. The core objective of this study is to evaluate alternative fare structure/fare policy options, including estimation of ridership and fare revenue impacts. This fare model will be used to estimate the ridership and fare revenue impacts of alternative fare structures, including changes to fare products, fare rates and transfer policies.

Table A-5, *Operating Plan, Ridership Sensitivity, at Current Average Fare Rate*, provides the revenue, cost, and subsidy level through FY2036.

CITY CONTRIBUTION

The City's contribution to transit O&M expenses is funded using local revenues from the General and Highway Funds. The General Fund comprises most of its revenues from the following taxes:

- Real Property Tax – tax on real property based on assessed value; rates vary with property class.
- State Transient Accommodations Tax – 7.3% tax on a dwelling that is occupied for less than 180 consecutive days. The City has historically received a portion of these revenues.
- Public Service Company Tax – the City receives 1.9% of all public service companies' gross income.

The Highway Fund comprises most of its revenues from the following taxes:

- Fuel Tax – a 16.5 cent per gallon tax on all fuel sold or used within the City's jurisdiction.
- Vehicle Weight Tax – a tax on the net weight of all passenger and non-commercial vehicles (5 cents per pound), and motor vehicles and non-passenger-carrying vehicles (5.5 cents per pound).
- Public Utility Franchise Tax – a 2.5% tax on all electric power and gas companies' gross sales receipts.

During the period from FY1994 to FY2011, revenues from these sources totaled \$14 billion, of which approximately \$1.5 billion (11%) went to transit. The percentage in FY2015 totaled approximately 13%. The original Financial Plan percentage in the first full year of operations totaled approximately 19%. The updated Financial Plan, assuming no change in fare policies, fare products, and service levels, would increase to approximately 21% in the first operating year.

The Financial Plan forecasts the growth in these City Funds at an aggregate level and the resulting share that will be needed for transit operations. This forecast applies the aforementioned CPI-U inflation forecast in Honolulu as well as a real rate of growth equal to 1.3%, which is equal to the real growth experienced between FY1996 and FY2011.

Increases in other transit revenue sources, such as advertising, concession contracts, and development opportunities, could reduce the amounts required to be transferred from the City's General and Highway Funds.

Although the actual funding of the operating costs will involve further in depth review and extensive public discussion, additional offsets such as fare differentials, fare equity, cost effective routing, potential Transit-Oriented Development related increases to tax revenues, and other revenues could provide additional resources for the Project.

Chapter 4 RISKS AND UNCERTAINTIES

CAPITAL PLAN

CAPITAL COST RISKS

Risks and uncertainties related to the Project capital cost estimate are mostly related to inflationary and schedule risks as further described below. Market risks are reduced for awarded contracts that make up 62% of the Project capital cost estimate in YOE dollars (without contingency). To date, over 75% of the guideway construction is under contract including the most recently awarded Airport Guideway and Stations Design-Build package. Further, 13 of the 21 planned stations are also under contract. The two most significant contract packages outstanding are the City Center Guideway and Stations Design-Build package, which would include the remaining 4.2 miles of guideway and 8 stations, and the Pearl Highlands Transit Center and Parking Garage.

Market Conditions

As described in Chapter 2, construction cost estimates have been escalated to account for rising costs on the island of O'ahu. Inflation varies amongst cost components (labor, equipment, materials) based on their dependence to either a global or regional (local) economy. Commodities shipped to O'ahu tend to be more sensitive to global economic pressures; while labor shortages result in per diem expenses for workforce brought in from the mainland U.S. Therefore, cost projections on future contract packages consider these factors individually.

The majority of labor contracts were renegotiated in FY2013 and will be renegotiated again in FY2018, at which point labor prices could increase or decrease based on the availability of labor and the level of construction activity. Furthermore, the escalation rates for labor might be somewhat different if a labor agreement is signed for the Project, since it would lock in labor contracts throughout the construction period.

The total contingency included in the Project cost estimate is approximately 20% of the total project cost. The level of contingency reflects some cushion for potential cost escalation, within a reasonable level of probability.

Project Schedule

As part of the Project's ongoing risk management program and FTA's risk assessment process, the City has identified several Project activities that pose potential risks to the critical path of the Project. As with many projects of similar scope and size, the most significant schedule risks involve the timing of design and construction NTP; permitting delays; delays in acquisition of right-of-way; and late delivery or acceptance of design submittals. Of note, the largest remaining contract is the City Center Guideway and Stations contract which also includes the most complex utility relocations and the undergrounding of two major 138 kV circuits within a very narrow right of way. Constructability and resulting impacts on traffic and local businesses pose challenges to anticipated schedules.

The Project's master schedule is updated in close coordination with FTA, and reflects input on a monthly basis. The probability of risks associated with potential schedule delays has been included in the Project's risk register, and therefore is also reflected in the amount of contingency included in the Project budget.

Interest Rates and Municipal Market Uncertainties

As in any capital project requiring the issuance of debt, the Project is subject to uncertainty associated with fluctuations in interest rates. Variations in interest rates could affect the interest earned on cash balances and the interest paid on outstanding debt, as well as the size of the debt requirements to

finance the Project. Variations in interest rates could also influence the level of working capital and the ability to both operate existing service and undertake new initiatives.

Fluctuations in interest rates are influenced by a number of factors, including the credit rating of the bond issuer (the City) and other external factors that are not directly under the control of the City, such as market risks.

The Financial Plan assumes that the City will utilize GO bonds and short-term interim financing. These tools are currently available to the City and have been structured in the Financial Plan to conform to provisions of the Hawai'i Constitution. The interest rates assumed for each type of debt instrument are similar to the interest rates that are available for comparable maturities in today's market and have been adjusted upward by 50 basis points for bonds issued between FY2016 and FY2019 to account for potential higher future interest rates.

Credit Rating

This Financial Plan assumes that Project-related debt will not impact the credit rating of the City because the forecasted Project revenues are sufficient to fund all Project-related debt service. The cost of borrowing could increase if the City's credit rating were negatively impacted.

CAPITAL REVENUE RISKS

GET Surcharge Revenue

The primary source of non-Federal funding for the Project is the net GET surcharge revenues. The amount of total GET surcharge revenues depends on a variety of underlying economic factors outside of the City's control that may result in a higher or lower collection rate than the one currently used in this Financial Plan. Nonetheless, several mitigating factors are important to consider for the outlook in GET surcharge revenues:

- Inflation plays an important role in forecasting GET surcharge revenues, as this source of funds is highly dependent on local prices. Higher general inflation in the post-construction years could increase GET surcharge revenues without affecting Project capital costs.
- Unlike most sales taxes, the GET surcharge has the benefit of being levied on a broad range of business activities including both goods and services. This diversification is usually seen positively by economists and the investment community and is usually associated with greater stability.

FTA Funding: Section 5307 Formula; Section 5309 New Starts, FGM, and Bus Capital

The Project assumes Federal funding participation through the Section 5307 Urbanized Area program; and Section 5309 New Starts, FGM, and Bus Capital programs. Federal legislation that authorizes these programs (Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users) was scheduled to expire at the end of September 2009, but was extended until June 30, 2012. While these programs have been in place for many years, through several authorization cycles, there is always a possibility that Congress will change direction in the next authorization cycle. Congress could increase or decrease the amount of funds available, impose new rules on project eligibility, and/or revise the criteria used to evaluate potential projects.

Congress could also extend the funding period for the Project by stretching out the annual appropriations. Any delay or significant decrease in the annual New Starts appropriation amounts could necessitate additional borrowing or schedule delays, potentially increasing the Project's overall cost due to increased financing costs.

In the event of delays in FFGA funds, the City could consider issuing debt that would be secured with FFGA revenues, referred to as grant anticipation notes. These notes would allow the City to leverage future FFGA revenues before they are appropriated, and any appropriation risk would be factored into the

interest rate. This could help minimize the potential impacts of any delays in FFGA appropriations on the Financial Plan.

OPERATING PLAN

OPERATING COST RISKS

Core Systems Contract

As described in Chapter 3, about 80% of the Project's O&M cost will be covered by the Core Systems DBOM contract, including pass-through utility costs. The O&M agreement includes pricing for labor, materials, management and administration necessary to support the O&M of the Project. As such, the risks and uncertainties around unit prices and service plan are strongly mitigated by the presence of this contract for up to ten years.

Cost Escalation: Labor, Health Care and Energy Prices

Escalation rates were applied to each Project O&M cost category from the Core Systems Contract and each object class for TheBus and TheHandi-Van O&M costs. This level of disaggregation allowed for consideration of differences in the growth outlook for various cost items, such as labor, health care or fuel prices, which may be expected to increase faster than general inflation. Inflationary risks and uncertainties do remain, however, as the global and local supply/demand balance evolves. This is the case, for example, with energy costs in Honolulu, which are highly driven by oil prices and therefore, subject to its volatility.

Other Transportation Costs: TheBus and Handi-Van

The risks and uncertainties outlined above could lead to a higher level of O&M subsidy required to operate and maintain the City's public transportation system i.e. TheBus and the Handi-Van. In the base scenarios, TheBus and Handi-Van are projected to grow at higher than general inflation. The updated Financial Plan projects TheBus operating subsidy (as measured by TheBus O&M cost minus TheBus fare revenues) per Revenue Vehicle Hour (RVH) to grow at a higher rate (3.8%) than the original plan (3.2%).

TheHandi-Van service levels are driven directly by ridership growth. The annual growth rate in TheHandi-Van ridership continues to be driven by the projected growth in population above 65 years old assuming 70% of the growth. The Handi-Van's costs are projected to grow between 5% to 6% per year.

OPERATING REVENUE RISKS

Fare Revenues-Ridership

Fare revenues are based on current demand forecasts for ridership and a continuation of current fare levels in real terms, which could both change due to a number of short-term and long-term factors such as:

- The state of the economy
- The local job market
- Population growth
- Traffic congestion on roads and main highways
- Fuel prices
- Land use and development plans

While the existing travel demand forecast has made some assumptions with regard to each of these variables, there are uncertainties surrounding the timing and extent of each.

The operating revenues included in the Financial Plan assume periodic fare increases that would maintain a Farebox Recovery Ratio (FRR) for TheBus and rail between 27% and 33%, in accordance with the City's current policy. However, the FRR would not be met if fares are not increased as shown in the Financial Plan.

The fare revenue forecast has not taken into account any temporary ridership decreases that could result from the fare increases based on previous experience demonstrating the relative inelasticity of the City's transit demand with respect to fares. Furthermore, the fare increases have been sized to increase the average fare at approximately the same rate as general price inflation, but on a less frequent basis. Accordingly, the fare increases should have a minimal effect on ridership. However, any reduction in ridership as a result of the fare increases could lead to a lower FRR.

POTENTIAL MITIGATION STRATEGIES FOR THE CAPITAL AND OPERATING PLANS

The City has various other funding opportunities that are available to add financial capacity if needed. These consist of potential future revenue-generating strategies and are not included in this Financial Plan as part of the Project cash flows.

Extension of GET Surcharge Revenues

An extension of the GET surcharge beyond 2027 is needed to complete the project to Ala Moana (MOS). The City and HART are preparing to request an extension of the surcharge during the next Legislative Session beginning in January 2017.

Value Capture

The Project will improve access to and spur development at several of the station areas within the City. There are many ways that the City can benefit from this expected development through 'value capture' mechanisms. These options would generate additional Project funding, which could be used to offset any increase in capital costs or decrease in available GET surcharge revenues, or to reduce the City's contribution to O&M costs for the Project. The City is currently evaluating the potential of "value capture" as well as other public-private partnerships to generate revenue opportunities for both capital and O&M to supplement the Project funding.

Advertising and Other Non-fare Operating Revenues

Expanding the advertising program could generate significantly more than the approximately \$100,000 received by the City for bus advertisements. With the introduction of rail service, not only will there be an ability to advertise within each railcar, but the stations will also present potential advertising locations for local businesses. Based on 2011 National Transit Database data, Honolulu receives approximately \$0.001 per boarding in advertising revenues, while similar larger-sized systems receive advertising revenues that are 10 to 100 times greater, after adjusting for ridership. Other miscellaneous operating revenue opportunities include the lease of right-of-way for telecommunications or the naming of stations. These funds could offset the City's contribution to O&M costs.

Parking Revenues

Demand for park-and-ride stations is strong in Honolulu, and charging even a nominal amount for daily parking could generate a significant amount of revenue. Collected parking funds could be used for capital and/or operating expenses, as parking surcharges could be used to offset the construction costs of the parking garages, or revenues could be used to offset operating costs of the garages including garage attendants and security personnel.

Improvement in Service Efficiencies in TheBus, TheHandi-Van, and Rail Operations

The addition of the Project to the existing transit network will likely result in some overlap of service between bus and rail. While some bus service and route modifications are planned as the Project is implemented, there is a possibility to further reduce redundancies in the bus service as rail ridership grows. This would have an impact on ongoing bus fleet replacement cycles, which can lead to reductions in both capital and O&M costs.

Productivity on TheHandi-Van system, as measured by the number of unlinked trips per RVH, decreased every year between FY2006 and FY2010 at a CAGR of -1.9%. However, the paratransit system experienced its first productivity gain in six years in FY2011, with riders per RVH increasing by 3.3%. The Base Case Financial Plan does not include any productivity gains beyond the one already captured in the FY2011 estimates. However, should the trend in productivity gains continue, growth in TheHandi-Van O&M cost could be further contained to mitigate a greater increase in ridership.

Attachment A: Summary Cash Flows

Table A-1, Capital Plan and Ongoing Capital Cash Flows

Total	Inception thru Feb-2016	FISCAL YEAR																							
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035				
\$298	\$298	\$192	\$95	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$209	\$141	\$111	\$13	(\$415)	(\$844)	(\$1,273)	(\$1,701)	(\$2,130)	(\$2,559)	
\$4,816	\$1,259	\$61	\$236	\$246	\$257	\$268	\$279	\$291	\$304	\$317	\$330	\$344	\$359	\$266	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$1,550	\$515	\$54	\$192	\$212	\$254	\$323	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$6	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$6,372	\$1,780	\$115	\$428	\$458	\$511	\$591	\$279	\$291	\$304	\$317	\$330	\$344	\$359	\$266	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$6,372	\$1,780	\$115	\$428	\$458	\$511	\$591	\$279	\$291	\$304	\$317	\$330	\$344	\$359	\$266	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$6,165	\$1,885	\$213	\$706	\$875	\$870	\$1,158	\$691	\$773	\$571	\$533	\$116	\$69	\$26	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$140)
\$1,337	\$0	\$0	\$7	\$20	\$34	\$51	\$74	\$94	\$112	\$125	\$128	\$120	\$112	\$103	\$92	\$79	\$66	\$62	\$66	\$66	\$62	\$38	\$23	\$23	\$8
\$9,502	\$1,885	\$213	\$713	\$896	\$904	\$1,209	\$765	\$868	\$662	\$458	\$243	\$209	\$137	\$103	\$92	\$79	\$66	\$62	\$66	\$66	\$62	\$38	\$23	\$23	(\$152)
(\$3,130)	(\$105)	(\$98)	(\$285)	(\$438)	(\$394)	(\$618)	(\$486)	(\$577)	(\$379)	(\$141)	\$87	\$136	\$222	\$163	(\$92)	(\$79)	(\$66)	(\$52)	(\$66)	(\$66)	(\$52)	(\$38)	(\$23)	(\$23)	\$132
\$6,155	\$0	\$0	\$215	\$653	\$660	\$892	\$836	\$946	\$777	\$649	\$526	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(\$6,170)	\$0	\$0	(\$215)	(\$267)	(\$274)	(\$350)	(\$350)	(\$370)	(\$398)	(\$508)	(\$429)	(\$204)	(\$251)	(\$261)	(\$337)	(\$350)	(\$363)	(\$377)	(\$391)	(\$406)	(\$421)	(\$436)	(\$451)	(\$466)	(\$481)
(\$2,847)	\$192	\$95	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$25	\$209	\$141	\$111	(\$415)	(\$844)	(\$1,273)	(\$1,701)	(\$2,130)	(\$2,559)	(\$2,988)	(\$3,417)	(\$3,846)	(\$4,275)	(\$4,704)

Beginning Cash Balance
 Project Funding Sources:

G.E.T.
 Federal Grant
 All Other

Total Revenue
 Total Project Sources

Project Uses:

Total Project Costs
 Debt Service
 Total Project Uses

Net Current Change

Debt Proceeds
 Less Debt Repayment
 Ending Cash Balance

Grantee: City and County of Honolulu, Hawai'i
DRAFT Update of the Financial Plan for Full Funding Grant Agreement

City Fiscal Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
Funding Sources for Ongoing System-wide Capital Cost																					
Federal Assistance for Ongoing Capital Cost																					
Total Federal Assistance	16	16	17	17	18	18	23	20	42	22	26	33	40	28	33	34	32	32	32	42	
Ongoing City Capital Funding																					
Transfer from Project																					
Bond Proceeds	10	10	10	10	10	10	11	10	15	14	25	28	30	48	42	28	34	35	34	38	
Total Ongoing City Capital Funding	10	10	10	10	10	10	11	10	15	14	25	28	30	48	42	28	34	35	34	38	
Total Funding Sources	26	26	27	27	28	28	34	29	57	36	51	61	70	77	75	61	66	67	67	80	
Ongoing Capital Costs																					
Additional Railcar Acquisitions															21	22					
Rail Capital Asset Replacement Program															15	15					
Bus & Handi-Van Acquisitions	21	21	22	22	23	23	29	24	52	28	32	42	50	35	41	42	39	40	41	53	
Other Capital Cost	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
Total Ongoing Capital Cost	26	26	27	27	28	28	34	29	57	36	51	61	70	77	75	61	66	67	67	80	

Table A-2, Operating Plan, Continue Original Plan Methodology

City Fiscal Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
Operating Revenues																					
Fare Revenues (Bus)	55	58	59	72	80	86	100	101	102	84	93	94	95	96	112	113	114	115	116	117	
Fare Revenues (Rail)	-	-	-	-	3	3	3	4	4	40	45	46	47	47	56	57	58	59	60	61	
Fare Revenues (Handi-Van)	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Total Fare Revenues	57	60	62	74	85	91	106	107	108	126	141	143	144	146	172	174	176	178	180	182	
Federal Operating Assistance																					
Total Federal Operating Assistance	23	10	10	11	10	10	6	10	9	6	-	-	-	5	1	1	4	5	5	-	
Local Operating Assistance																					
Transfer from Project	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
City Operating Subsidy	176	197	207	207	248	287	307	330	366	389	420	448	472	486	488	508	532	562	597	632	
Total Local Operating Assistance	176	197	207	207	248	287	307	330	366	389	420	448	472	486	488	508	532	562	597	632	
Total Operating Revenues	256	268	279	292	343	389	419	447	475	524	567	591	616	638	661	683	712	745	781	814	
Operations and Maintenance (O&M) Costs																					
Bus O&M Costs	204	212	220	229	238	247	257	268	291	309	342	358	374	391	409	428	448	469	490	513	
Rail O&M Costs	-	-	-	-	39	71	87	100	101	137	130	133	136	134	135	133	136	142	151	154	
Handi-Van O&M Costs	52	55	58	61	65	68	72	76	80	85	89	94	99	104	109	114	120	126	132	138	
Other O&M Costs	1	1	1	2	2	2	3	3	3	3	5	6	7	8	8	8	8	8	8	8	
Total O&M Costs	256	268	279	292	343	389	419	447	475	524	567	591	616	638	661	683	712	745	781	814	
Farebox Recovery Ratio (Bus and Rail)	27%	27%	27%	32%	30%	28%	30%	28%	27%	28%	29%	28%	28%	27%	31%	30%	30%	29%	28%	27%	

Table A-3, Operating Plan, Moderate Range Scenario, Honolulu CPI-U

City Fiscal Year	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Operating Revenues																					
Fare Revenues (Bus & Rail)	YOE \$M	55	58	59	72	83	89	104	105	106	124	138	140	141	143	154	156	173	175	177	186
Fare Revenues (Handi-Van)	YOE \$M	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Total Fare Revenues	YOE \$M	57	60	62	74	85	91	106	107	108	126	141	143	144	146	157	159	176	178	180	189
Federal Operating Assistance																					
Total Federal Assistance	YOE \$M	23	10	10	11	10	10	6	10	-	9	6	-	-	5	1	1	4	5	5	-
Local Operating Assistance																					
Transfer from Project	YOE \$M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
City Operating Subsidy	YOE \$M	176	197	207	207	248	287	307	330	366	398	431	458	483	498	514	535	545	575	611	640
Total Local Assistance	YOE \$M	176	197	207	207	248	287	307	330	366	398	431	458	483	498	514	535	545	575	611	640
Total Operating Revenues	YOE \$M	256	268	279	292	343	389	419	447	475	534	577	601	627	650	673	696	725	758	795	829
Operations and Maintenance (O&M) Costs																					
TheBus O&M Costs	YOE \$M	204	212	220	229	238	247	257	268	291	309	342	358	374	391	409	428	448	469	490	513
Rail O&M Costs	YOE \$M	-	-	-	-	39	71	87	100	101	137	141	143	147	146	146	145	149	156	165	169
TheHandi-Van O&M Costs	YOE \$M	52	55	58	61	65	68	72	76	80	85	89	94	99	104	109	114	120	126	132	138
Other O&M Costs	YOE \$M	1	1	1	1	2	2	3	3	3	3	5	6	7	8	8	8	8	8	8	8
Total O&M Costs	YOE \$M	256	268	279	292	343	389	419	447	475	534	577	601	627	650	673	696	725	758	795	829
Farebox Recovery (Bus and Rail)		27%	27%	27%	32%	30%	28%	30%	28%	27%	28%	29%	28%	27%	27%	28%	27%	29%	28%	27%	27%

Table A-4, Operating Plan, High Cost Range Scenario

City Fiscal Year	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Operating Revenues																					
Fare Revenues (Bus & Rail)	YOE \$M	55	58	59	72	83	89	104	105	106	124	138	140	156	157	159	161	183	185	187	189
Fare Revenues (Handi-Van)	YOE \$M	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Total Fare Revenues	YOE \$M	57	60	62	74	85	91	106	107	108	126	141	143	158	160	162	164	186	188	190	192
Federal Operating Assistance																					
Total Federal Assistance	YOE \$M	23	10	10	11	10	10	6	10	-	9	6	-	-	5	1	1	4	5	5	-
Local Operating Assistance																					
Transfer from Project	YOE \$M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
City Operating Subsidy	YOE \$M	176	197	207	207	248	287	307	330	366	406	439	467	478	494	519	541	546	577	614	651
Total Local Assistance	YOE \$M	176	197	207	207	248	287	307	330	366	406	439	467	478	494	519	541	546	577	614	651
Total Operating Revenues	YOE \$M	256	268	279	292	343	389	419	447	475	541	585	609	636	659	683	706	736	770	809	843
Operations and Maintenance (O&M) Costs																					
TheBus O&M Costs	YOE \$M	204	212	220	229	238	247	257	268	291	309	342	358	374	391	409	428	448	469	490	513
Rail O&M Costs	YOE \$M	-	-	-	-	39	71	87	100	101	144	149	151	156	156	156	156	160	168	178	183
TheHandi-Van O&M Costs	YOE \$M	52	55	58	61	65	68	72	76	80	85	89	94	99	104	109	114	120	126	132	138
Other O&M Costs	YOE \$M	1	1	1	2	2	2	3	3	3	3	5	6	7	8	8	8	8	8	8	8
Total O&M Costs	YOE \$M	256	268	279	292	343	389	419	447	475	541	585	609	636	659	683	706	736	770	809	843
Farebox Recovery (Bus and Rail)		27%	27%	27%	32%	30%	28%	30%	28%	27%	27%	28%	27%	29%	29%	28%	28%	30%	29%	28%	27%

Table A-5, Operating Plan, Ridership Sensitivity, At Current Average Fare Rate

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Constant \$'s											
No Reduction	\$89,855,800	\$100,325,001	\$101,534,448	\$102,743,895	\$103,953,342	\$105,162,789	\$106,372,236	\$107,581,683	\$108,791,130	\$110,000,577	\$111,210,024
Total Revenue @ 95%	\$85,363,010	\$95,308,751	\$96,457,725	\$97,606,700	\$98,755,675	\$99,904,649	\$101,053,624	\$102,202,599	\$103,351,574	\$104,500,548	\$105,649,523
Change from 100%	(\$4,492,790)	(\$5,016,250)	(\$5,076,722)	(\$5,137,195)	(\$5,197,667)	(\$5,258,139)	(\$5,318,612)	(\$5,379,084)	(\$5,439,557)	(\$5,500,029)	(\$5,560,501)
Total Revenue @ 90%	\$80,870,220	\$90,292,501	\$91,381,003	\$92,469,505	\$93,558,008	\$94,646,510	\$95,735,012	\$96,823,515	\$97,912,017	\$99,000,519	\$100,089,022
Change from 100%	(\$8,985,580)	(\$10,032,500)	(\$10,153,445)	(\$10,274,389)	(\$10,395,334)	(\$10,516,279)	(\$10,637,224)	(\$10,758,168)	(\$10,879,113)	(\$11,000,058)	(\$11,121,002)
Total Revenue @ 85%	\$76,377,430	\$85,276,251	\$86,304,281	\$87,332,311	\$88,360,341	\$89,388,371	\$90,416,401	\$91,444,431	\$92,472,461	\$93,500,491	\$94,528,521
Change from 100%	(\$13,478,370)	(\$15,048,750)	(\$15,230,167)	(\$15,411,584)	(\$15,593,001)	(\$15,774,418)	(\$15,955,835)	(\$16,137,252)	(\$16,318,670)	(\$16,500,087)	(\$16,681,504)

