HONOLULU AUTHORITY for RAPID TRANSPORTATION

MINUTES

Board of Directors Meeting
Mission Memorial Annex Conference Room
550 South King Street, Honolulu, Hawaii
Thursday, October 18, 2012, 9:00 AM

PRESENT:	Carrie Okinaga	Don Horner
	Ivan Lui-Kwan	Damien Kim
	Robert "Bobby" Bunda	Wayne Yoshioka
	Glenn Okimoto	
ALSO IN ATTENDANCE:	Dan Grabauskas	Brandon Elefante
(Sign-in Sheet and Staff)	Gary Takeuchi	Mark Abramson
	Lisa Hirahara	Ikaika Hussey
	Kaleo Patterson	Lori Hiraoka
	Diane Arakaki	Ryan Toyomura
	Joyce Oliveira	Cindy Matsushita
	Jeanne Mariani-Belding	Andrea Tantoco
	Bill Brennan	John Burns
	Joanna Morsicato	
EXCUSED:	William "Buzz" Hong	Keslie Hui
	Jiro Sumada	

I. Call to Order by Chair

The meeting was called to order at 9:00 a.m. by HART Board Chair Carrie Okinaga.

II. Public Testimony on All Agenda Items

Ms. Okinaga called for public testimony. None was offered.

III. Approval of Minutes

A. September 13, 2012 Board of Directors Meeting

Ms. Okinaga called for approval of the minutes of the September 13, 2012 Board of Directors meeting. There being no objections, the minutes were unanimously approved.

B. September 27, 2012 Board of Directors Meeting

Ms. Okinaga stated that as the September 27, 2012 minutes were still being reviewed, the approval of same would be deferred.

IV. Committee Reports

A. Report of the September 27, 2012 Transit Oriented Development Committee

As Transit Oriented Development (TOD) Committee chair William "Buzz" Hong was out of town at a TOD conference, TOD Vice Chair Ivan Lui-Kwan gave the committee report. He stated that the Director of the State Office of Planning Jesse Souki gave a presentation on is agency's efforts to bring all TOD stakeholders together. He also reported that Kathy Sokugawa of the Department of Planning and Permitting (DPP) gave a presentation on DPP's TOD efforts. He reported that Ms. Sokugawa stated that 57% of all public housing units on Oahu are within a half mile radius of the rail line.

Board member Wayne Yoshioka added that the State Office of Planning held their final TOD stakeholder meeting shortly after the September 27, 2012 HART TOD meeting.

B. Report of October 4, 2012 Finance Committee

Finance Committee Chair Don Horner reported on the October 4, 2012 meeting, in which the committee held a discussion on the proposed risk assessment. He stated that the HART Executive Director/CEO and CFO were exploring the possibility of an assessment of the financial and internal control risks.

Mr. Horner reported that the committee also discussed the pro forma operating budget, and stressed the need for building efficiencies into the system now in areas such as power consumption, human resources, engineering and design, and synergies with the bus. He stated that Deputy Director of Systems Rainer Hombach spoke about power consumption. HART Executive Director/CEO Dan Grabauskas explained that Mr. Hombach comes to HART with very extensive experience with systems such as Dallas, Texas. Mr. Horner also stated that there are ten major items in operating costs that the committee is asking HART to report on a monthly basis. He said that he wanted a greater level of specificity than that provided in the FTA submission.

Mr. Grabauskas stated that HART has six years until revenue service to work on the pro forma operating budget. Mr. Horner replied that HART consider designing efficiencies into the system now. Mr. Grabauskas stated he would do an analysis of the capital investment of fare gates. Mr. Horner commended Mr. Grabauskas on his leadership in recommending fare gates.

V. Archaeological Inventory Surveys and Cultural Monitors

Mr. Grabauskas introduced Planning and Environmental Deputy Joanna Morsicato, Environmental Compliance Planner Kaleo Patterson, and Planning and Environmental Manager Faith Miyamoto, who would give an update on the Archaeological Inventory Surveys (AIS) and Cultural Monitors.

Mr. Grabauskas referred to a chart containing information on the AIS trenchwork, attached hereto as Attachment A. He stated that, as of that day, 35 of 40 AIS trenches had been completed in the Airport section. In the City Center section, 137 of 232 trenches had been completed. He said that three crews were working seven days a week on trenching, and are averaging 20 to 21 trenches per week. He stated that at the current rate, contractors should be able to complete trenching activities ahead of schedule, possibly in February 2014.

Mr. Grabauskas reported on the status of real estate access for trenching. He stated that all affected landowners have agreed to allow HART access for trenching. He thanked HART staff, the archaeologists of Cultural Surveys Hawaii, and Royal Contracting for the level of respect and sensitivity they show for the work. Mr. Horner echoed the sentiment, and commended David Hulihee, the CEO of Royal Contracting.

Mr. Grabauskas reported that there had been three archaeological finds thus far. The first find, a disarticulated human remain several centimeters in length, was in trench 150 at the corner of Cooke and Halekauwila Streets. Additionally, there had been two additional finds in two separate trenches at the intersection of Keawe and Halekauwila Streets. One find appeared to be a full burial. All finds were currently under review by the State Historic Preservation Division.

Mr. Grabauskas explained that when *'iwi* is discovered, the Programmatic Agreement (PA) requires lineal and cultural descendants to be notified, along with the Oahu Island Burial Council (OIBC) and SHPD. He stated that Kaleo Patterson and others had been working on establishing a cultural monitoring program, and had been engaging in discussions and debates as to how HART could ensure that cultural and lineal descendants are fully engaged in the process.

Mr. Horner asked whether HART had anticipated these archaeological finds. Mr. Grabauskas confirmed that HART had anticipated the possibility of finding *'iwi* in the City Center section, which had previously been identified as an area of likely *'iwi* based on prior archaeological analyses.

Mr. Grabauskas asked Mr. Patterson to speak about the cultural monitoring program. Mr. Patterson stated that HART has a strong commitment towards cultural sensitivity. He said that although there is no law that requires cultural monitoring, such programs are

negotiated for inclusion on many projects, and are sometimes required by the courts in the context of a lawsuit. Mr. Patterson stated that HART's monitoring program had been instituted as of three days ago.

Mr. Patterson said that Native Hawaiians want to be present while digging occurs to assist with, liaise with, and be witnesses for the community. He said the program sought people in the Hawaiian community with prior experiences to be cultural monitors, to ensure that if burials are found, the proper respect is paid. He stated that monitoring is essential, and related to the process of archaeology in that Native Hawaiians may be able to identify things archaeologists may not.

Mr. Grabauskas stated that HART's conversations with the OIBC had been uniformly supportive of implementation of a monitoring program, and that he looked forward to including others who have ancestral ties to the *ahupua'a*. He stated that there are processes under federal and State law, as well as HART's own protocols to work with the cultural and lineal descendants. HART has made a commitment to honor the preference of families to leave any burials in place if possible.

Mr. Grabauskas stated that in the three locations where archaeological finds had been made, the flexibility of the construction process of an elevated system has borne itself out. One location, which was to contain a utility box, would shift. Therefore, the rail alignment can accommodate burials that may be found. He said that this is another element of transparency, and that HART has a lot to gain by learning from, and engaging with the Native Hawaiian community. Mr. Grabauskas complimented all parties who are working with the cultural monitoring program.

Mr. Patterson reported that so far, 11 monitors had been hired and trained. They include lineal and cultural descendants from Waianae, Waimanalo, and the City Center area.

Board member Glenn Okimoto asked whether there was a timeline regarding the treatment of a burial, as some State Department of Transportation projects had been affected by the *Kaleikini* decision. Ms. Miyamoto advised that HART follows a workflow process in which staff meets with SHPD biweekly to review recent finds and exchange information. If a burial site is discovered, the process is then determined by OIBC's schedule.

Mr. Horner asked whether the discovery of *'iwi* located so far is delaying progress, and Mr. Grabauskas replied that it has not. He stated that out of approximately 300 trenches dug so far, only three trenches contained *'iwi*, two of which were fragments. HART had archaeological professionals on site during the trenching work. The addition of cultural monitors provides another critical layer of protection for transparency and to ameliorate any concerns for those who are affected personally. Mr. Patterson agreed.

Board member Robert "Bobby" Bunda asked about the possible impacts to the alignment that the full burial may have. Mr. Grabauskas advised that the trench in which the burial

was found was dug as a location for a utility box. HART is able to relocate the utility box to an area free of *'iwi kupuna*, if that is the determination of OIBC. He affirmed HART's commitment that burials would stay in place if that is the determination of the parties to the process, and engineering would occur to redesign as necessary.

Mr. Lui-Kwan echoed the other members' comments regarding the importance of HART engaging OIBC, SHPD, and the cultural and lineal descendants, particularly in light of HART's efforts to comply with the *Kaleikini* court's decision. He commended the HART team and the CEO for their work.

Mr. Bunda asked whether the trench containing the full burial was included in the original trenching plans. Mr. Grabauskas confirmed that it was.

Ms. Okinaga commended Mr. Grabauskas. She asked whether the Federal Transit Administration agrees with HART's AIS process. Mr. Grabauskas replied that in HART's monthly meeting with the Project Management Oversight Consultant (PMOC) the previous week, the PMOC expressed that HART is going above and beyond what is being required.

Mr. Horner asked what the estimated monthly delay costs are, now that HART was a month into the delay. Mr. Grabauskas stated that the initial estimate had been $7 to 10 million per month. Now the delay cost has been refined to $7.1 million per month. Mr. Horner asked when the delay began, and Mr. Grabauskas stated that the delay began the day after the court decision was rendered on August 24, 2012. Mr. Horner calculated a six month delay to cost approximately $49 million.

Mr. Grabauskas stated that the trenching would be completed sooner than planned, and that he would report at the next Board meeting when the completion date would be.

Mr. Horner asked about Mr. Grabauskas' testimony to the City Council regarding the delay costs. Mr. Grabauskas stated that he had estimated a nine to twelve month delay to cost $63 to $120 million, with a monthly range of $7 to $10 million. Mr. Horner expressed his concern about eroding the contingency. Mr. Grabauskas stated that HART staff is looking for ways to engineer savings without impacting the scope of the project or the schedule. Mr. Horner clarified that the $7 million did not include the actual cost of trenching, which HART would have incurred without the delay. Mr. Grabauskas confirmed that was the case, and said that the acceleration of trenching would possibly cost an additional $200,000.

Mr. Bunda asked whether the Native Hawaiian community had called for further trenching around the area where the full burial was found. Mr. Grabauskas stated that HART was still awaiting SHPD's direction on whether it would have to dig further trenches, like it did for trenches 141 and 150.

Mr. Bunda asked whether Hawaiian burial grounds were far apart or close together. Mr. Patterson stated that practices differed throughout history, but that Native Hawaiians would generally bury *'iwi* where they lived, so each family had its own plot. There were also periods of diseases and warfare when mass graves were dug. Mr. Bunda asked if this particular find was in a cemetery. Mr. Patterson replied that it was not, but that SHPD's report was still pending.

Mr. Okimoto asked whether SHPD might ask HART to dig bigger, or additional holes. Mr. Grabauskas stated that it could be either, or both. Mr. Bunda asked whether the process was the same whether one, two or three sets of *'iwi* were found. Ms. Morsicato stated that the law does not speak to that issue directly, but that HART would follow OIBC and SHPD's guidance. She stated that HART is coordinating with those agencies to discern whether digging more trenches would possibly disturb more *'iwi*. Mr. Bunda agreed that more disruption was not desirable. Mr. Okimoto asked what process is favored by the Native Hawaiian community, and Ms. Morsicato replied that it was not to disturb *'iwi*. Mr. Patterson stated that many families will recommend leaving a fragment or burial in place. However, he stated that some situations will prompt a family to ask that the remains be moved, such was when faced with the threat of a possible break in a nearby sewer or gas line. He stressed that the decision is always left to the families.

Mr. Horner pointed out that this process is not unique. He said that in his own experience building First Hawaiian Bank branches, the location of the banks were generally adjusted when *'iwi* was found. He said that HART has a tremendous degree of flexibility. Mr. Grabauskas agreed, and said that is one of the advantages of an elevated rail line.

Mr. Bunda stated that the *Kaleikini* case has changed the manner in which future construction projects would be carried out. Mr. Horner clarified that the case was about defining the term "project," but was not about whether HART would dig trenches or build the project. Mr. Grabauskas said that because of the acceleration of the trenching, HART has engaged the lineal and cultural descendants in a more robust fashion.

Mr. Lui-Kwan pointed out that the practice prior to the *Kaleikini* decision was to phase projects. He stated that the federal government allows it. Mr. Horner added that SHPD's administrative rules to not specifically prohibit phasing.

Mr. Yoshioka expressed his frustration that the argument is about rules, and not technique. He maintained that phasing is better for design, and allows the AIS to be more specific, efficient, and less disruptive. However, he said that HART has done a good job of adapting.

Ms. Okinaga said that in the Kamehameha Highway section, more trenches were dug than were originally planned for, and asked if therefore, there may ultimately be more trenches dug than in the chart provided. Mr. Grabauskas agreed that the number of trenches required in the chart could change.

Mr. Bunda asked about an engineering timeline when all the trenching will be done. Mr. Grabauskas stated that would depend on the nature of any finds. Ms. Morsicato said that HART is working daily with the cultural monitors, archaeologists, and contractors.

Mr. Grabauskas stated that he would return to report on the AIS progress and work with interested parties on a longer term cultural monitoring program for next five to six years.

Ms. Okinaga thanked HART staff and contractors. Mr. Grabauskas thanked Mr. Okimoto and his staff at the State DOT for approving the AIS night work.

VI. Balanced Scorecard

HART Project Controls Manager John Burns and HART Chief Financial Officer Diane Arakaki presented the Balanced Scorecard for the quarter ending June 30, 2012, a copy of which is attached hereto as Attachment B. Mr. Burns stated that the timing of the reporting was impacted by the fiscal year closeout, as well as the rebaselining of project documents. He reported that the updated version of the Balanced Scorecard for the quarter ending in September would be available by mid-November. Mr. Burns pointed out that on page 3, real estate cost figures had been added pursuant to Mr. Horner's request.

Ms. Okinaga expressed her concern that the scorecard reflects dated information. Mr. Burns committed that an updated scorecard would be available in November. Ms. Okinaga stressed the importance of the scorecard in communicating with the public. She thanked staff for their efforts.

Mr. Grabauskas said that he anticipates the scorecard will contain some red dots, indicating "immediate attention needed," due to the temporary construction delay.

Mr. Horner suggested that we have several committees with oversight of various areas. He suggested that the tasks assigned to administration be reflected in the scorecard. For example, he stated that the Finance Committee has asked for an independent third party risk assessment, and more detail on the operating budget. He also suggested that information on the contingency be included in the scorecard. He stated that he would like to start operating from the Balanced Scorecard. Mr. Grabauskas stated that HART maintains a separate sheet for open administrative tasks, which he would work on providing.

Mr. Horner also requested a timeline by the following month. Although the 2019 opening date is still in place, he requested more information about the opening of the first section, and how HART has compressed its timeline. He stated that he understood it is a work in progress, but expressed his concerns over cash flow and the need to borrow money. Mr. Grabauskas said he would provide the Board with a pre-*Kaleikini* master project schedule. Mr. Burns advised that the master project schedule is in the Monthly Progress Report.

Mr. Bunda agreed with Mr. Horner on the need for a summary of contingencies geared to the layperson. He suggested that this information be included in the executive summary or in first part of the Monthly Progress Report. Ms. Okinaga requested that the Balanced Scorecard not increase in size.

Ms. Okinaga recalled that the Finance Committee was originally assigned to the development of the Balanced Scorecard, with the Project Oversight Committee holding an interest in the scheduling aspect of its development as well. She reiterated that it would be reported to the Board on a quarterly basis. Board member Damien Kim also recalled a prior request that the Board be provided with a simplified report.

VII. Discussion of OP 52 – Readiness to Execute Full Funding Grant Agreement and Financial Capacity Assessment Update

Mr. Grabauskas stated that OP 52 – Readiness to Execute Full Funding Grant Agreement and Financial Capacity Assessment Update, which is attached hereto as Attachment C, is one of 15 reports that are put together by HART, the FTA, and the PMOC that examine the FFGA submittal. All 15 reports have now been finalized. He highlighted the PMOC's conclusion that the grantee completed the steps necessary for the FFGA. OP 52 provides an overview of all the reports, and contains key highlights of the project, including technical capacity, cost estimates, completion schedules, and the project management plan. He stated that this and all other reports are on the HART website. Mr. Grabauskas stated that OP 52 is an honest assessment of the project, including an analysis of the impact of the Kaleikini case. The report states that the Kaleikini case is not an impediment to receiving the FFGA, a sentiment which has been echoed by FTA Administrator Peter Rogoff. He invited Board members to look at the discussion of the risks of contingencies and also the project strengths.

Ms. Okinaga congratulated Mr. Grabauskas on the report. She pointed to page 56, appendix B, Documents Reviewed, which details all the work that has been done on the project so far. Mr. Yoshioka echoed the congratulations on this major milestone. Mr. Grabauskas thanked the HART staff.

VIII. Executive Director's Report

Mr. Grabauskas reported that the first shipment of 3,000 tons of rail, which is made in Pueblo, Colorado, is expected to be delivered in the second week of November. He provided the Board with photos of the rail, attached hereto as Attachment D. The second shipment is expected in December. He explained that HART has ordered the rail for the entire 130 miles of rail for the project, or 8,735 tons, in order to lock in the price.

He also reported that he had recently participated in a lot of outreach, in which he invited the Board members to participate. He recently spoke to the Downtown Exchange Club with the Board Chair.

IX. Executive Session

Ms. Okinaga called for a motion to enter into executive session to consult with the Board's attorneys pursuant to Hawaii Revised Statutes Sections 92-4 and 92-5(a)(4) regarding the Supreme Court of Hawaii's Ruling in *Kaleikini v. Yoshioka, et al.*, SCAP-11-0000611, and other pending litigation. Mr. Lui-Kwan so moved, and Mr. Yoshioka seconded the motion, which carried unanimously. The Board entered into executive session at 10:27 a.m.

The Board of Directors reconvened at 11:50 a.m.

X. Adjournment

Ms. Okinaga adjourned the meeting at 11:51 a.m.

Respectfully Submitted,

Cindy Matsushita
Board Administrator

Approved:

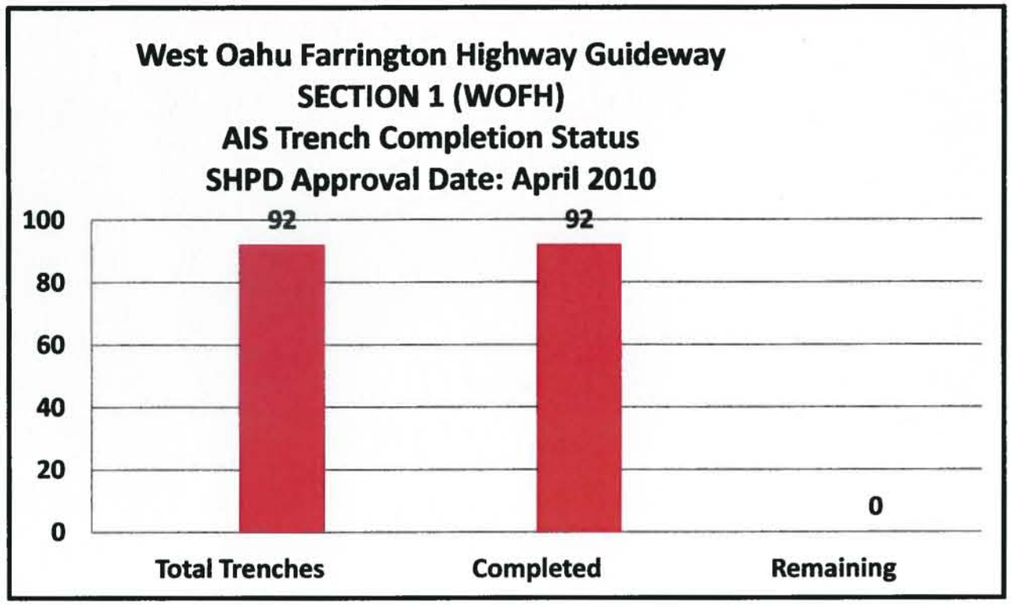
Carrie Okinaga
Board Chair

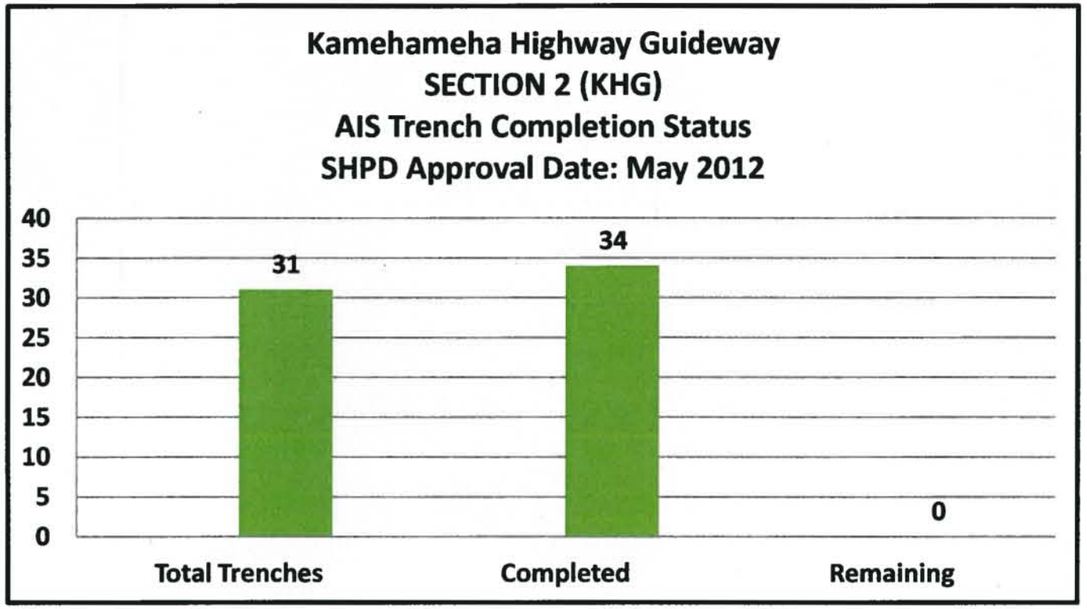
NOV 15 2012

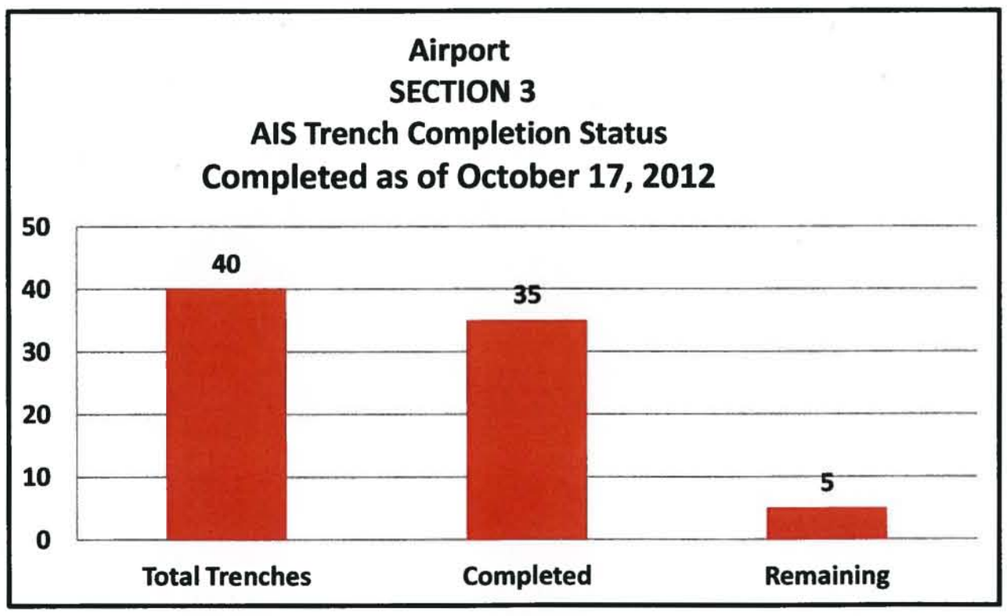
Date

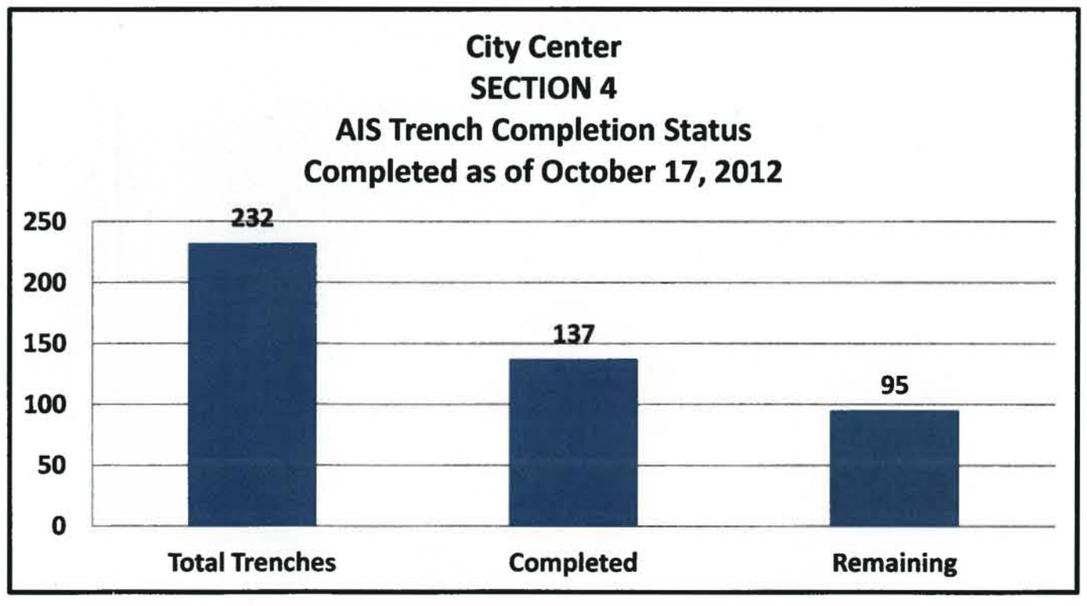
ATTACHMENT A

Honolulu Rail Transit Project
Archaeological Inventory Survey Status









ATTACHMENT B

HONOLULU AUTHORITY for RAPID TRANSPORTATION

BALANCED SCORECARD

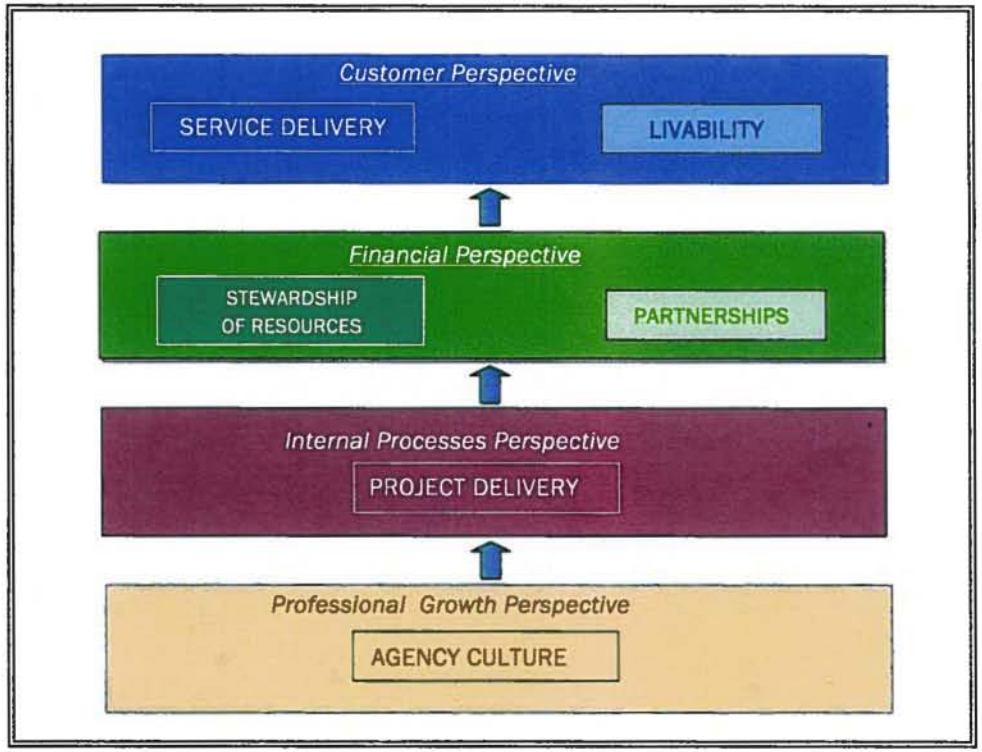
Project Implementation/Pre-Revenue Operation

APPENDIX A
Q4 FY12
Data Date: June 30, 2012

Business Strategy Map

HART Mission
Plan, design, construct, operate and maintain Honolulu's high-capacity fixed guideway rapid transit system.

HART Vision
- Mobility
- Reliability
- Land Use
- Equity
- Sustainability



HONOLULU AUTHORITY for RAPID TRANSPORTATION

BALANCED SCORECARD

Project Implementation/Pre-Revenue Operation

APPENDIX A
Q4 FY12
Data Date: June 30, 2012

	Goal	Current Quarter (Q4 FY12) Apr, May, Jun 2012				Inception to Date Oct 2009 - Jun 2012				Comments and Legend
		Actual	Plan	Variance	Status	Actual	Plan	Variance	Status	On track or ahead of plan. Immediate attention needed; Requires recovery/resolution. Monitoring and needs attention. No current target/activity to date; Action pending.
Customer Perspective	**SERVICE DELIVERY**									
	Operational and Administrative Policy Decisions									
	Platform Gates				○				○	To be determined (TBD) in FY13.
	Fare Collection System				○				○	TBD in FY13.
	Bus-Rail Integration Plan				○				○	TBD in FY14.
	HART Operating Organization Plan				○				○	TBD in FY14.
	HART Service Policy/Standards				○				○	TBD in FY15.
	LIVABILITY									
	HART Sustainability Policy				○				○	TBD in FY13.
	Transit-Oriented Development (TOD) Policy				○				○	# TOD Plans being developed with the Department of Planning and Permitting (DPP).
Financial Perspective	**STEWARDSHIP OF RESOURCES**									
	Programmatic Agreement (PA) [Negative reflects number remaining; Positive are additional trenches to Plan]									
	Traditional Cultural Property (TCP) Studies	3	3	-0-	●	3	4	(1)	●	# Guideway Sections with TCP studies completed vs. planned. Sections 1-3 completed (State Historic Preservation Division [SHPD] approved TCP studies). Section 4 completion expected in early 2013.
	Section I (WOFH) Archaeological Inventory Survey (AIS)	92	92	-0-	●	92	92	-0-	●	# trenches completed vs. planned. Phase I AIS completed - SHPD accepted AIS Report April 19, 2010.
	Section II (KHG) AIS	34	31	+3	●	34	31	+3	●	# trenches completed vs. planned. Phase II AIS completed - SHPD accepted AIS Report on May 23, 2012.
	Section III (Airport) AIS	5	40	(35)	●	5	40	(35)	●	# trenches completed vs. planned. Phase III (Airport) AIS work is ongoing.
	Section IV (City Center) AIS	59	232	(173)	●	59	232	(173)	●	# trenches completed vs. planned. Phase IV (City Center) AIS work is ongoing.
	Overall AIS Completion (#)	----	----	----	●	190	395	(205)	●	Total # trenches completed alignment-wide (SHPD approval of all AIS Reports) vs. planned.
	Overall AIS Completion (%)	----	----	----	●	48%	----	----	●	% Total # trenches completed of total planned.
	Archaeological Finds	1	----	----	●	2	----	----	●	# Archaeological Finds to date.
	Burial Sites (*'iwi kūpuna*)	0	----	----	●	0	----	----	●	# *'iwi kūpuna* sites identified in archaeological finds. No *'iwi kūpuna* have been identified to date.
	Operating Budget [Negative indicates below Plan]									
	Operating Expenditures	$4	----	----	○	$12	$21	($9)	●	$M Expenditures/Encumbrances vs. FY12 Annual Appropriations, subject to year-end audit adjustments.
	Staffing Level	119	136	(17)	●	119	136	(17)	●	# HART Full-Time Equivalents (FTEs) vs. authorized in FY12 Operating Budget. 119 FTEs = 93 City + 26 PMSC.
	Capital Budget [Negative indicates below Plan]									
	Capital Expenditures/Encumbrances	$83	----	----	○	$296	$355	($59)	●	$M Expenditures/Encumbrances vs. planned FY12 Annual Appropriations, excluding FY-end accruals.
	Revenues [Negative indicates below Plan]									
	GET Surcharge Receipts	$48	----	----	●	$480	$481	($1)	●	$M GET Surcharge Cash Receipts vs. the projected FY10-12 portion ($481M, not including Starting Cash Balance of $298M) of the planned Total Net GET Surcharge Revenues of $3,291M for FY10-23 (FFGA Financial Plan, June 2012, Table A-1). Total GET surcharge revenue collected since its inception 1/1/07 through 6/30/12 is $905.7M.
	Federal Grant Funds	$0	----	----	●	$66	$1,764	($1,698)	●	$M FTA Funds received = $62M §5309 + $4M American Recovery and Reinvestment Act [ARRA] vs. projected = $1,550M §5309 + $210M §5307 + $4M ARRA (June 2012 Financial Plan (Table ES-1).
	PARTNERSHIPS									
	Joint Development Projects	1	----	----	●	1	1	----	●	# Joint Development Projects between HART and public and/or private entities in progress vs. planned. HART continues discussions with the Hawai'i Community Development Authority (HCDA)-Kaka'ako and General Growth Properties-Ala Moana.
	Transit-Oriented Development Projects	----	1	----	●	----	1	----	●	# TOD Projects in development. On May 22, HART staff toured the Ala Moana Station area during the launch of a DPP TOD plan focused on Ala Moana, Kalihi and Downtown.

HONOLULU AUTHORITY for RAPID TRANSPORTATION

BALANCED SCORECARD

Project Implementation/Pre-Revenue Operation

APPENDIX A
Q4 FY12
Data Date: June 30, 2012

Goal	Current Quarter (Q4 FY12) Apr, May, Jun 2012				Inception to Date Oct 2009 - Jun 2012				Comments and Legend
	Actual	Plan	Variance	Status	Actual	Plan	Variance	Status	On track or ahead of plan. Immediate attention needed; Requires recovery/resolution. Monitoring and needs attention. No current target/activity to date; Action pending.
Internal Processes Perspective									
PROJECT DELIVERY - OVERALL									
Project Budget [Negative indicates balance remaining]									
FFGA Baseline Project Budget	----	----	----		$5,122	$5,122	-0-		$M FFGA Baseline Project Budget (including contingencies and FTA-eligible finance charges), in accordance with FTA New Starts project guidelines. FTA-ineligible finance charges (an estimated $42 M that will be incurred after the FFGA completion date) are excluded from the FFGA Baseline Project Budget.
Commitments (Contract Values + Executed Changes)	$20	----	----		$2,078	$4,406	($2,328)		$M Total Committed (awarded Contract Values + approved Change Orders) vs. the FFGA Baseline Project Budget including committed contingency (awarded design contract allowances of $4.961 M], but excluding current uncommitted contingencies (unallocated contingency of $101.871 M, allocated contingency of $547.635 M and known change contingency of $63.046 M) and finance charges.
Commitments (%)	0.5%	----	----		47%	----	(53%)		% $M Committed of the total committed Baseline FFGA Project Budget.
Incurred ($M)	$54	----	----	----	$444	$4,406	($3,962)		$M Incurred (Expenditures + approved Requests for Payment) vs. committed FFGA Baseline Project Budget.
Incurred (%)	1%	----	----	----	10%	----	(90%)		% $M Incurred (Expenditures + approved Requests for Payment) of the total committed Baseline FFGA Project Budget.
Estimate at Completion (EAC)	----	----	----	----	$5,122	$5,122	-0-		$M current vs. planned Estimate at Completion (EAC = contract values as budgeted or awarded + executed change orders + pending and potential changes).
Project Progress [Negative indicates below Plan]									
Overall Project Progress	----	----	----		2%	5%	(2%)		% Complete of Final Design & Construction (DB, DBB, DBOM & E/E) contracts vs. planned.
Total Design Progress	----	----	----		32%	34%	(2%)		% Complete of Final Design contracts & DB-DBOM design levels-of-effort vs. planned.
Total Construction Progress	----	----	----		1%	1%	(1%)		% Complete of Construction (DB, DBB, DBOM & E/E) contracts vs. planned.
Major Milestones [Negative indicates number of days behind Plan]									
Entry into Final Design	----	----	----		Dec 29 '11	Oct 15 '11	(75)		Actual vs. planned date of FTA approval for HART to enter Final Design.
Letter of No Prejudice 2 (LONP2)	Feb 06 '12	Feb 06 '12	-0-		Feb 06 '12	Feb 06 '12	-0-		Actual vs. planned date of FTA Letter of No Prejudice #2 (LONP2) authorizing Final Design and Construction.
FFGA Letter of Request	Jun 29 '12	Jun 01 '12	(28)		Jun 29 '12	Jun 01 '12	(28)		Actual vs. planned date of HART letter to FTA requesting entry into a Full Funding Grant Agreement (FFGA)
Start of Congressional Review	----	----	----		----	Aug 15 '12	----		Actual vs. planned start date of Congressional review of HART FFGA request.
FFGA Approval	----	----	----		----	Oct 07 '12	----		Actual vs. planned date of FTA letter to HART approving FFGA request.
Contingency [Positive indicates that Actual is favorable balance]									
Cost Contingency	$644	$643	+$1		$644	$643	+$1		$M Total Cost Contingency vs. planned at FFGA application in the draft FFGA Risk and Contingency Management Plan (RCMP), June 2012 (Table 6-4).
Schedule Contingency	20	20	-0-		20	20	-0-		# Months Total Buffer Float used vs. planned (Draft FFGA RCMP, June 2012, Table 6-2).
PROJECT DELIVERY - SPECIFICS									
Contracting - Construction (DB, DBOM, Elevators/Escalators) [Negative indicates below Budget]									
Contracts Awarded	0	0	-0-		4	5	(1)		# Contracts awarded vs. planned. Elevator/Escalator (E/E) contract award is expected in FY13.
Commitments (Contract Values + Executed Changes)	----	----	----		88%	100%	(12%)		% $M Committed ($1,698M) of amount budgeted with contingencies ($1,923M).
Contracts Completed	0	0	-0-		0	0	-0-		# Contracts completed vs. planned.
Contracting - Construction (DBB)									
Contracts Awarded	0	0	-0-		0	0	-0-		# Contracts awarded vs. planned. 11 DBB and 2 On-Call Construction contracts remain to be awarded, of which 1 DBB and 2 On-Call Construction contracts in FY13.
Commitments (Contract Values + Executed Changes)	----	----	----		0%	0%	-0-		% $M Committed ($0) of amount budgeted with contingencies ($1,557M). No DBB Construction contract award before Q4 FY13.
Contracts Completed	0	0	-0-		0	0	-0-		# Contracts completed vs. planned.
Contracting - Final Design Consultants [Negative indicates below Budget]									
Contracts Awarded	1	1	-0-		3	12	(9)		# Contracts awarded vs. planned. (FD-140 West Oahu Station Group awarded June 2012: $7.8M.)
Commitments (Contract Values + Executed Changes)	----	----	----		24%	100%	(76%)		% $M Committed ($47M) of amount budgeted ($192M).
Contracts Completed	0	0	-0-		0	0	-0-		# Contracts completed vs. planned.

HONOLULU AUTHORITY for RAPID TRANSPORTATION

BALANCED SCORECARD

Project Implementation/Pre-Revenue Operation

APPENDIX A
Q4 FY12
Data Date: June 30, 2012

Goal	Current Quarter (Q4 FY12) Apr, May, Jun 2012				Inception to Date Oct 2009 - Jun 2012				Comments and Legend
	Actual	Plan	Variance	Status	Actual	Plan	Variance	Status	On track or ahead of plan. Immediate attention needed; Requires recovery/resolution. Monitoring and needs attention. No current target/activity to date; Action pending.
Internal Processes Perspective (Continued)									
Contracting - Other Consultants [Negative indicates below Budget]									
Contracts Awarded	0	----	----	○	9	22	(13)	●	# Contracts awarded vs. planned. Remaining contracts scheduled to be awarded over next two years.
Commitments (Contract Values + Executed Changes)	----	----	----	○	70%	100%	(30%)	●	% $M Committed ($429M) of amount budgeted ($613M).
Contracts Completed	2	2	-0-	●	2	2	-0-	●	# Contracts completed vs. planned. PMSC-1 and GEC-1 have been completed and are being closed out.
Change Orders and Claims									
Change Orders (#)	0	----	----	●	4	----	----	●	# Change Orders executed (3 Construction, 1 Final Design).
Change Orders ($)	$0	----	----	●	$19	----	----	●	$M Change Orders executed ($19M Construction + $0.1M Final Design).
Claims Filed	0	0	----	●	0	0	----	●	# Claims filed vs. anticipated.
Claims Resolved	0	0	----	●	0	0	----	●	# Claims resolved vs. filed.
Utility & HDOT Agreements [Negative indicates balance remaining]									
Utility Agreements	----	----	----	○	24	26	(2)	●	# Utility Agreements completed vs. required. HECO signed WOFH agreement on April 20, Hawaiian Telcom remains to be completed and a 2nd outstanding agreement with Sandwich Isles Communication will be completed, although not required. Completion of 45 agreements by the end of Q1 FY13 is planned.
HART-HDOT Agreements	----	----	----	○	3	13	(10)	●	# HDOT Agreements completed vs. required. Of the 4 Master Agreements required, 1 (WOFH) has been completed. Of the 4 Joint Use and Occupancy (JU&O) Agreements required, 1 (WOFH) has been completed, as amended. The KHG Master and JU&O Agreements are expected to be executed in August.
Real Estate/Right-of-Way (ROW) [Negative indicates balance remaining]									
Full Acquisitions	1	1	-0-	●	19	38	(19)	●	# Properties fully acquired vs. planned.
Expenditures for Full Acquisitions	$6	----	----	●	$29	$29	$0	●	$M Expenditures recorded for full acquisitions vs. planned in the FFGA Budget.
Full Acquisitions Ready for Construction	5	----	----	●	10	38	(28)	●	# Properties fully acquired that are ready for construction vs. planned. 1 full acquistion was recorded in Q4 FY12. 4 relocations are underway from acquisitions in previous quarters.
Partial Acquisitions	3	133	(130)	●	6	133	(127)	●	# Properties partially acquired vs. planned.
Safety [Lower Actual indicates a favorable rating versus Hawaiian labor standard]									
Performance against Standard	0.2	4.3	----	●	0.2	4.3	----	●	Incidence Rate of Recordable Injuries and Illnesses vs. the Hawaii 2010 Total Recordable Incidence Rate (TRIR). Federal regulations define the Incidence Rate as the # of recordable injuries and illnesses occurring amongst a given # of full-time workers (usually 100) over a given period of time (usually 1 year). A Recordable Incident is a work-related injury or illness that results in: death, loss of consciousness, days away from work, restricted work activity or job transfer, or medical treatment beyond first aid. (29 CFR 1904).
OSHA Reportable Injuries	1	----	----	●	4	----	----	●	# Occupational Safety and Health Agency (OSHA) Reportable Injuries reported to date.
OSHA Violations	0	----	----	●	0	----	----	●	# OSHA violations cited to date.
Safety Certification Checklists	----	----	----	○	----	----	----	○	# Safety Certification Checklists completed vs. planned.
Quality Assurance (QA)									
QA Audits	4	4	-0-	●	8	8	-0-	●	# QA Audits of HART, GEC, contractors and suppliers completed vs. planned.
Design NCRs	6	7	(1)	●	6	7	(1)	●	# Design Non-Conformance Reports (NCRs) closed vs. issued.
Construction NCRs	----	----	----	●	----	----	----	●	# Construction NCRs closed vs. issued.
Economic Multipliers [Negative indicates below Plan]									
DBE/SBE Participation	0.1%	3.8%	(3.7%)	●	0.1%	3.8%	(3.7%)	●	Actual vs. target participation rate of Disadvantaged/Small Business Enterprises (DBE/SBE).
Direct Jobs Created	----	----	----	○	----	----	----	○	# Direct jobs created. Projections and criteria to be developed.
Public Outreach									
Neighborhood Board Meetings	34	----	----	●	679	----	----	●	# Neighborhood Board Meetings in which HART has participated to date.
Presentations/ Events	52	----	----	●	1,225	----	----	●	# Events in which HART has participated to date.

HONOLULU AUTHORITY for RAPID TRANSPORTATION

BALANCED SCORECARD

Project Implementation/Pre-Revenue Operation

APPENDIX A
Q4 FY12
Data Date: June 30, 2012

	Goal	Current Quarter (Q4 FY12) Apr, May, Jun 2012				Inception to Date Oct 2009 - Jun 2012				Comments and Legend
		Actual	Plan	Variance	Status	Actual	Plan	Variance	Status	On track or ahead of plan. Immediate attention needed; Requires recovery/resolution. Monitoring and needs attention. No current target/activity to date; Action pending.
Professional Growth Perspective	**AGENCY CULTURE**									
	Staff Training and Career Development Program									
	Training Opportunities				○				○	# Training opportunities provided to HART staff vs. planned. Annual Training Plan to be developed.
	Employees Trained				○				○	# HART Employees (including PMSC) who have received professional training. Objective to be established.
	Internal Promotions									
	Internally-Filled Positions				○				○	% of positions filled that have been filled internally. Objective to be established.
	PMSC/GEC Phase-Out									
	Positions Transitioned to HART	0	0	-0-	○	1	0	+1	○	# Positions transitioned from PMSC to HART vs. planned in the HART Business Plan. TBD.
	Employee Satisfaction									
	Surveys	0	0	-0-	○	0	0	-0-	○	# Employee surveys conducted to date vs. planned. Plan to be developed.

ATTACHMENT C

PMOC REPORT

OP 52 – Readiness to Execute Full Funding Grant Agreement (FFGA)

Honolulu Rail Transit Project
Honolulu Authority for Rapid Transportation (HART)
City and County of Honolulu
Honolulu, HI

October 2012 (FINAL)

PMOC Contract Number: DTFT60-09-D-00012
Task Order Number 2: Honolulu
Work Order Number 3
Project No. DC-27-5140
OPs Referenced: OP 1, OP 52

Jacobs Engineering Group, Inc., 501 North Broadway, St. Louis, MO 63102
Tim Mantych, P.E., (314) 335-4454, tim.mantych@jacobs.com
Length of Time Assigned: Five Years (November 18, 2009 through November 17, 2014)

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The City and County of Honolulu ("grantee") is requesting that the Honolulu Rail Transit Project ("Project") be granted a Full Funding Grant Agreement (FFGA) in accordance with the Federal Transit Administration (FTA) New Starts requirements. This report represents the Project Management Oversight Contractor's (PMOC) assessment of the Project's readiness to execute an FFGA.

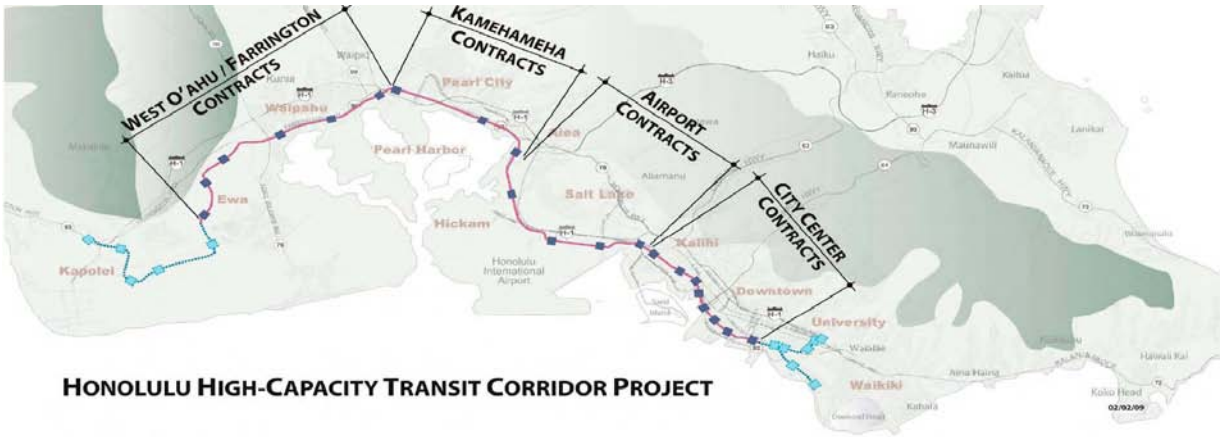
The Project is intended to provide improved mobility in the highly-congested east-west corridor along Oahu's south shore. The Project would provide faster, more reliable public transportation services than those currently operating in mixed-flow traffic.

The Project is a 20-mile elevated fixed guideway driverless rail system along Oahu's south shore between East Kapolei and Ala Moana Center. The alignment is elevated, except for a 0.6-mile at-grade portion at the Leeward Community College station. The proposed investment includes 21 stations (20 aerial and 1 at-grade), 80 driverless "light metro" rail transit vehicles, administrative/operations facilities, surface and structural parking, and a rail vehicle Maintenance and Storage Facility (MSF). The grantee plans to deliver the Project in four guideway segments, as shown in Figure 1:

- Segment I (West Oahu/Farrington Highway) – East Kapolei to Pearl Highlands (6 miles/7 stations)
- Segment II (Kamehameha Highway) – Pearl Highlands to Aloha Stadium (4 miles/2 stations)
- Segment III (Airport) – Aloha Stadium to Middle Street (5 miles/4 stations)
- Segment IV (City Center) – Middle Street to Ala Moana Center (4 miles/8 stations)

Segments III and IV are now planned to be combined into a single guideway construction contract.

Figure 1. Project Map Showing Line Segments



In addition, the project includes contracts for:

- Core Systems
  - Rail vehicles
  - Signals and communications
  - Operations Control Center
  - Traction Power
  - Security
  - Ticket vending
  - Operations
- Maintenance and Storage Facility (MSF)
  - Administration Building
  - Maintenance of Way Facility
  - Shops
  - Layover facility
- Stations
  - 21 stations
  - Pearl Highlands Garage and H-2 Ramps
- Elevators and Escalators

The grantee is utilizing traditional (Design/Bid/Build or DBB) and alternative (Design/Build, or DB, and Design/Build/Operate/Maintain, or DBOM) project delivery methods for the various contracts. The West Oahu-Farrington Highway (WOFH) Segment DB Contract, Kamehameha Highway Segment (KHG) DB Contract, the MSF DB Contract, and the Core Systems Contract (CSC) have all been awarded by the time of this report. The former three are all DB Contracts, while the latter, the CSC, is a DBOM-type contract. Under the CSC, the contractor will be responsible for designing and building the vehicles and the systems-related project elements while also being responsible for operations and maintenance of the same for up to a 10-year period. Construction contracts for the combined eastern line sections (Airport and City Center) and the stations have yet to be bid, as these are still under design using the traditional DBB method.

The grantee intends to begin revenue service in two increments:

- First incremental opening includes WOFH and KHG Segments and is scheduled for 2017
- Full revenue service will include Airport and City Center Segments and is scheduled for 2020.

Additional Project information:

- **Vehicles:** 80 "Light Metro" rail vehicles (identified as Heavy Rail in Standard Cost Category workbook), supplied by the CSC, which is also responsible for systems design and construction and operations.
- **Ridership Forecast:** Weekday boardings – 99,800 (2020); 114,300 (2030).
- **Base Cost Estimate (BCE):** $5.122 billion in Year-of-Expenditure (YOE) dollars, including $644 million in allocated and unallocated contingency (15%) and $173 million financing costs.
- **Grantee Target Start of Revenue Operations for Full Alignment:** March 2019
- **PMOC Recommended FFGA Revenue Service Date (RSD):** January 31, 2020

1.2 PMOC Review

This report is essentially, in accordance with FTA Oversight Procedure (OP) 52, "an 'update' of prior reviews and risk assessments performed at entry to both preliminary engineering and final design." This report represents the PMOC's assessment of the Project's readiness to execute an FFGA. The report provides analysis and conclusions as requested by FTA's "*Oversight Procedure (OP) 52 – Readiness to Execute FFGA."* This effort is supported by reports on specific aspects of the project that the PMOC prepared in advance of the grantee's request for an FFGA:

- OP 20 – PMP Review
- OP 21 – Technical Capacity and Capability Review
- OP 22 – SSMP Review
- OP 23 – RAMP Review
- OP 24 – QA/QC Review
- OP 32A – Project Transit Capacity Review
- OP 32C – Project Scope Review
- OP 32D – Project Delivery Method Review
- OP 33 – Capital Cost Estimate Review
- OP 34 – Project Schedule Review
- OP 37 – Fleet Management Plan Review (Bus)
- OP 37 – Fleet Management Plan Review (Rail)
- OP 40 – Risk and Contingency Review

Appendix C of this report provides a summary of the requirements identified in the Final Design approval letter issued by the FTA on December 29, 2011, as well as their current status.

1.3 Findings

1.3.1 Scope

The scope, as contained in the Project's Final Environmental Impact Statement (FEIS) and Record of Decision (ROD), is reflected in the current engineering plans, specifications, estimates, and the Project Management Plan (PMP).

The scope of the Project is well-defined and is generally at a level of completeness necessary to support an FFGA application. The Project final design phase and construction phase are concurrent to an extent as a result of the hybrid contract packaging strategy that contains work packages for DB, DBB, and DBOM. The awarded DB contracts are well into the design phase and field construction recently commenced on the WOFH contract, while other awarded DBB contracts remain in the early stages of final design. It is advisable to acknowledge the project risks in completing the project on schedule and within budget, given the varying level of completion of the final design documents. At a minimum, the grantee should have in place, on the day it receives an FFGA, all the means, methods, tools, and personnel necessary to meet the recommendations of this report and all controls it needs to successfully implement the agreed-to project within its budget and schedule.

The PMOC found no discrepancies in the Project documentation's internal consistency, compliance with laws, regulations, and policies, bid-ability, and constructability. The PMOC did, however, note the following:

- Coordination between the grantee and its various contractors and between different contractors remains one of the foremost challenges of the project.
- Station design must be progressed to achieve biddable construction packages for all 21 proposed stations.
- Agreements must be completed with all government bodies, public agencies, and utilities affected by the project.
- Procurement activities must adequately address Buy America and Ship America requirements for escalators and elevators, major system components (>$100,000), rail, steel, and vehicles.

It is the PMOC's professional opinion that the scope of the Project is well-defined and is generally at a level of completeness necessary to execute an FFGA.

1.3.2 Schedule

The schedule review categories systematically characterized each element in the project/program schedule, from schedule development and performance measurement through post-project archive record documentation. The schedule review evaluated the efficiency and effectiveness of the grantee's project implementation during each phase of the project life cycle.

The Schedule Review validated the inclusivity of the Project scope and the characterization of individual project elements within the current Project phase. It also validated the grantee's program management readiness to execute the FFGA and implement the project.

The PMOC has identified recommendations and opportunities to strengthen the integrity of the grantee's project controls organization, procedures, plans, technical schedule input, and technical capacity and capability. The PMOC expects the grantee to incorporate these recommendations during the remainder of the final design and construction phases in support of FFGA.

The grantee submitted a Master Project Schedule (MPS) with a Data Date of March 30, 2012, which identified a target start for full revenue operations of March 2019. Based on an assessment of the schedule, the PMOC recommends the FFGA Revenue Service Date (RSD) should be January 31, 2020.

It is the PMOC's professional opinion that the current MPS is mechanically correct and fundamentally sound, and that it meets the FTA guidance and requirements necessary to execute an FFGA.

1.3.3 Cost Estimate

The PMOC evaluated the cost estimates for each Standard Cost Category (SCC) for mechanical soundness and consistency. These mechanical checks are used to determine if there are any

material inaccuracies within the estimate. The *2012 SCC Estimate*, which was dated June 20, 2012, was found to be mechanically correct in the tabulation of the unit cost, application of factors, and translation to the SCC workbook. The estimate reflects Project phasing and sequencing as identified in the Master Project Schedule (MPS) and described in the Basis of Schedule. Furthermore, no significant issues were identified for missing scope or erroneous schedule durations.

The grantee's cost estimate in YOE is $5.122 billion, including $644 million in allocated and unallocated contingency and $173 million in financing costs.

It is the PMOC's professional opinion that the current cost estimate is mechanically and fundamentally sound and reasonable, and that it meets the FTA guidance and requirements necessary to execute an FFGA.

1.3.4 Project Risk and Contingency Review

Through the process of risk and contingency review, the PMOC attempted to aid the grantee in its efforts to better define the project's risks and to provide avenues for recovery should those risks become reality. The PMOC has provided recommendations for adjustments to scope, cost, and project delivery options and risk mitigation options and alternatives, particularly concerning contingencies, in order to respond to established project risks.

OP 52 guidance requests a "*characterization of significant uncertainties*." While the risk register, risk workshops, and OP 40 review all dealt with the likelihood and consequences of numerous risk events, the Risk Management exercise and the recommendation for contingency and mitigation strategies are designed to plan for these uncertainties. The following table lists the Project's significant uncertainties as identified in the current Risk Register in terms of likelihood (probable, remote, improbable) and consequence (catastrophic, critical, serious, moderate, marginal).

Table 1. Significant Uncertainties Identifed in Risk Register

Risk ID	Uncertainty	Likelihood	Consequence
60e	Given limited geotechnical information available at this time, additional costs may be incurred associated with final design through construction.	Probable	Serious
39	Contractors may not achieve contract required delivery dates of design information and construction interfaces to others.	Probable	Serious
14b	Hawaii Department of Transportation (HDOT) Use and Occupancy Agreement with utility owners could delay utility relocations in the state right of way (ROW).	Probable	Serious
116	Assumption is water mains will be relocated around columns by addition of bends, which may not be allowed by Board of Water Supply.	Probable	Moderate
36	Unanticipated litigation may add cost to the Project (e.g., protests from adversary groups, community groups, adjacent landowners, and other affected parties)	Probable	Moderate
58	City may require changes to baseline documents resulting in formal change orders.	Remote	Moderate
59d	Traffic disruptions may result in revised constraints imposed by City or HDOT (lane restrictions and peak time flow restrictions)	Remote	Moderate
44	Lack of bidders could increase cost.	Remote	Moderate
56	HDOT and/or BWS may not grant waiver to leave in place abandoned water pipes resulting in potentially costly removal and schedule disruption.	Remote	Moderate

Upon completion of the OP 40 Risk and Contingency Review, the PMOC offered the following:

(1) The grantee's total project estimate of $5,122 million, including $644 million in total contingency and $173 million in finance charges, is acceptable to support an FFGA.

(2) The Revenue Service Date identified in the FFGA should be January 31, 2020.

(3) Strong controls must be put in place immediately to avoid future rapid contingency loss. The frequency upon which, and the levels of project management to which these statistics are reported should be improved and closely monitored. Such monitoring must occur monthly.

(4) The grantee should develop more detail for the Secondary Mitigation items and attempt to identify secondary mitigation measures that approach a total value of $149 million. Failure to do so will preclude the ability to develop these items in the design documents and include them as deductive alternates in construction contracting proposals.

1.3.5 Project Management Plan (PMP) Review

The PMP is generally a well written and thorough document that satisfies the FTA *Project and Construction Management Guidelines* and the FTA PMP requirements. It is the PMOC's professional opinion that PMP Revision 5.0, which is dated June 29, 2012, meets the FTA guidance and requirements necessary to execute an FFGA.

1.3.6 Technical Capacity and Capability (TCC) Review

It is the PMOC's professional opinion that the grantee has demonstrated sufficient technical capacity and capability during the preliminary engineering and final design phases. HART has implemented several staff and procedural adjustments, many a result of FTA or PMOC recommendations that have improved HART's technical capacity and capability in preparation of the FFGA.

The PMOC has some concern that the grantee may continue experiencing difficulty attracting and retaining the experienced staff needed for long-term project assignment and permanent grantee employment (post-Project) given Hawaii's geographic isolation, salary limits, and high cost of living relative to the mainland. The grantee should adhere to the staffing plan to address the transition of staff during the final design and construction phases for positions currently occupied by Project Management Support Consultant (PMC) staff to grantee staff.

The PMOC will continue monitoring the grantee's project management process to ensure that it is effectively managing the project and continuing fiscal responsibility and accountability for all decisions affecting project design, cost, and schedule. The transition from PMC staff to full-time grantee staff must be closely monitored by the PMOC after receipt of an FFGA.

The grantee must issue comprehensive and timely Monthly Reports in accordance with the federal requirements. The PMOC will validate this requirement upon receipt and review of several months of consistently submitted status reports.

It is the PMOC's professional opinion that the grantee has demonstrated sufficient technical capacity and capability necessary to execute an FFGA.

1.4 Hawaii Supreme Court Ruling

On August 24, 2012, the Hawaii Supreme Court issued a ruling in Kaleikini v. City and County of Honolulu finding that the City and County of Honolulu (City) violated a State of Hawaii (State) historic preservation law (Hawaii Revised Statute (HRS) Chapter 6E) by approving the Project, and allowing construction to proceed, before completing an Archaeological Inventory Survey (AIS) for the entire Project. The ruling reversed a previous Circuit Court decision that had upheld the granting of City and State permits based on the phased completion of the AIS rather than on the completion of the AIS for the entire alignment. Currently, the HART is working to complete the AIS for the entire 20-mile alignment.

HART issued a partial suspension of construction work on August 24, 2012 for all ground-disturbing activities after a ruling by the Hawaii Supreme Court. On September 7, 2012, HART provided letters to their contractors to clarify that no construction activity would continue until future written notice is provided by HART. However, Final Design work is still proceeding on all contracts that have been awarded to date.

As a result of the State Supreme Court's ruling, it is anticipated that there will be significant impacts to both the project schedule and project budget. The grantee's preliminary analysis indicates that the cost impact for the three design-build contracts could range between $64 and

$95 million. However, this does not include additional cost impacts due to escalation for future contracts and extended agency and consultant staffing. The preliminary schedule analysis by the grantee indicates that there could be a nine to twelve-month impact on the interim opening but possibly no impact to the full Revenue Service Date. The PMOC will perform a thorough review of HART's assessment and Secondary Mitigation Strategies to determine the overall magnitude of impacts to the project schedule and project budget.

1.5 Conclusion

The PMOC has determined that the grantee has completed the following steps necessary to execute an FFGA: adequately defined the Project's scope, schedule, and cost; developed an approvable PMP and supporting documents; and, has demonstrated sufficient technical capacity and capability. The PMOC recommends that the FTA execute an FFGA with the grantee that identifies the following budget and completion milestone:

- Project budget of $5.122 billion in YOE, including $644 million in total contingency and $173 million in financing costs.
- FFGA Revenue Service Date of January 31, 2020.

1.6 Recommendations

The PMOC recommends that the following items be addressed by the grantee following execution of an FFGA:

- Identify project management staff per the Staffing Plan and Transition Plans in order to maintain control of the various concurrent projects.
- Follow the staffing and succession plan for those key management positions that may be considered short term (three years or less) in order to ensure a successful "knowledge transfer" of project consultants' expertise to the grantee.
- Develop a Human Resources Management Plan (HRMP) that will function as a blueprint for the organizational development of HART to assist with transition of PMC positions to HART.
- Consistently issue comprehensive and timely Monthly Reports to the FTA and PMOC.
- Implement all schedule management procedures and guidelines as documented in the PMP and its respective project control companion documents.
- Revise its staffing plan when major revisions are made to the Project scope, schedule or budget, or when major project phases are complete (e.g. completion of major DB contracts) in order to synchronize resource allocation planning. Major revisions include significant delay to contract letting or execution, contract package revisions, changes to contract delivery methods, etc., or the addition of professional service contracts, etc.
- Develop Baseline Project Procedures that are denoted as "To Be Determined" and are critical to proper execution of construction.
- Complete any unfinished effort to acquire agreements with all affected agencies and begin the process of cooperation that those agreements entail.
- Continue the process of updating the Project budget and schedule, incorporating information from contracts-in-progress, any accepted cost reduction measures, and from completed tasks as they occur.

- Manage the schedule and budget by implementing controls as described in its project management plans throughout construction.
- Perform more meaningful and comprehensive analysis of the MPS critical and near-critical paths each month.
- Fully develop a "solid" program schedule baseline that incorporates approved contract baseline schedules.
- Continue to be proactive in assuring that all of its contractors meet the requirements of Buy America and Ship America.
- Continue to incorporate and implement the accepted Value Engineering (VE) proposals for the Stations and Airport/City Center segments.
- Emphasize the need for a safety and security professional to be assigned in Honolulu for the CSC to support the systems and operations responsibilities under the systems and operations and maintenance portions of their contract.
- Coordinate with the CSC to resolve any transit capacity issues.
- Develop more detail for the Secondary Mitigation items and attempt to identify secondary mitigation measures that approach a total value of $149 million.
- Conclude Archaeological Inventory Surveys to comply with the Hawaii Supreme Court ruling and update analyses of that ruling's cost, schedule, contingency, and mitigation implications.

2.0 INTRODUCTION

The Honolulu Authority for Rapid Transportation (HART) continues to advance development of its proposed Honolulu Rail Transit Project ("Project"), formerly known as the Honolulu High-Capacity Transit Corridor (HHCTC) Project, in accordance with the Federal Transit Administration (FTA) New Starts requirements. The Project is intended to provide improved mobility in the highly-congested east-west corridor along Oahu's south shore between Kapolei and the Ala Moana Center. The Project would provide faster, more reliable public transportation services than those currently operating in mixed-flow traffic.

FTA assigned Jacobs as a Project Management Oversight Contractor (PMOC) on September 24, 2009, for the purpose of monitoring the Project and providing FTA with "information and well-grounded professional opinions regarding the reliability of the project scope, cost, and schedule" of the Project. That effort continues with this report, which represents the PMOC's assessment of the grantee's readiness to execute a Full Funding Grant Agreement (FFGA).

2.1 Project Sponsor

The City and County of Honolulu ("City") is the overarching FTA grantee. The City's Department of Transportation Services (DTS) and HART have executed a Memorandum of Understanding, which delineates each agency's roles and responsibilities so as not to jeopardize the City's standing as an FTA grantee. HART is responsible for the New Starts grants for the Project and may share responsibilities with DTS for grants using Section 5307 or other FTA funding sources.

2.2 Project Description

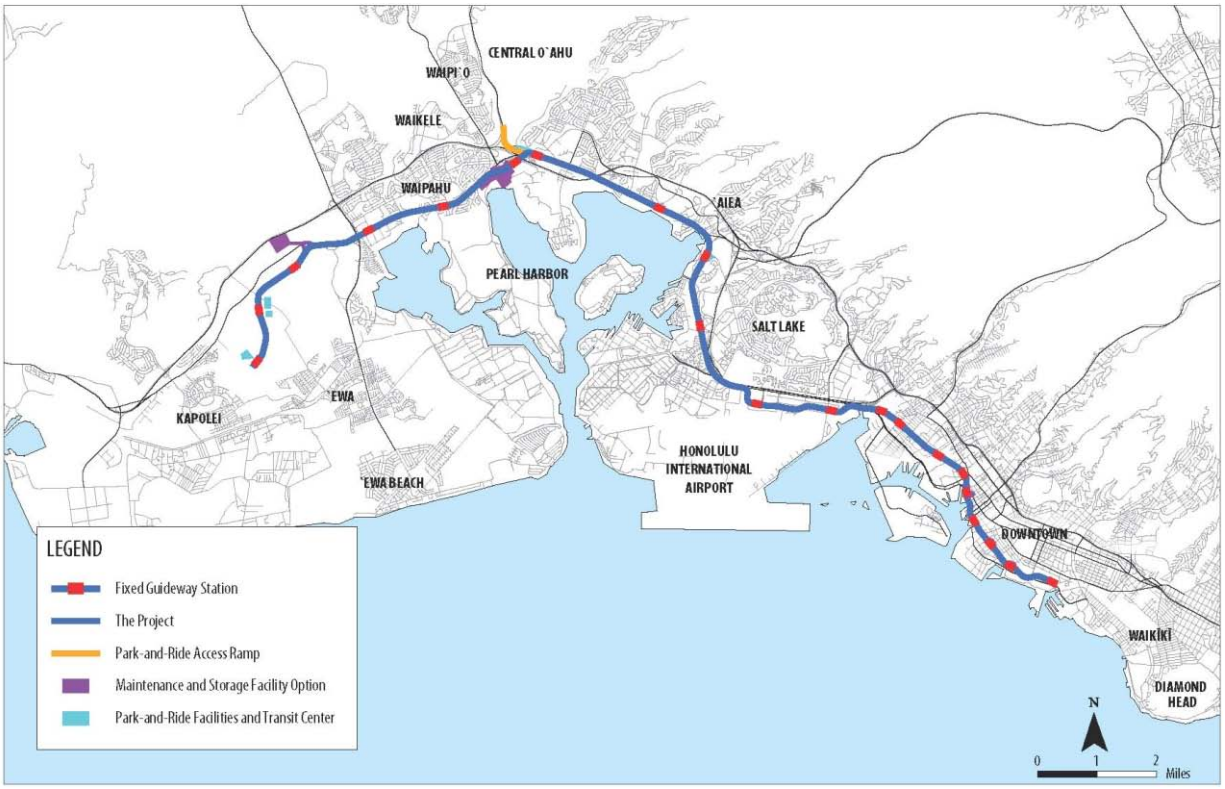
The proposed Project is a 20-mile light metro rail line in a grade-separated right-of-way that will provide high-capacity transit service on the island of Oahu from East Kapolei in the west to the Ala Moana Center in the east. The alignment is elevated except for a 0.6-mile at-grade portion adjacent to the Leeward Community College station. In addition to the guideway superstructure and trackwork, major physical elements of the Project include: 21 stations; one Maintenance and Storage Facility (MSF); numerous right-of-way parcel acquisitions; two park and ride lots, one park and ride structure and two bus transit centers and 80 driverless light metro vehicles and associated core systems.

The Project is planned to be delivered in four design and construction segments:

- Segment I (West Oahu/Farrington Highway) – East Kapolei to Pearl Highlands (7 miles/7 stations).
- Segment II (Kamehameha Highway) – Pearl Highlands to Aloha Stadium (4 miles/2 stations).
- Segment III (Airport) – Aloha Stadium to Middle Street (5 miles/4 stations).
- Segment IV (City Center) – Middle Street to Ala Moana Center (4 miles/8 stations).

It should be noted that HART has combined Segments III and IV into a single guideway construction contract. The Contract Packaging Plan has been updated to reflect this change.

Figure 2. Project as Identified in FEIS



East Kapolei is the western terminus of the Project. The alignment begins at North-South Road (Kualakai Parkway) north of Kapolei Parkway. The alignment follows North-South Road in a northerly direction to Farrington Highway where it turns east following Farrington Highway and crosses Fort Weaver Road. The alignment is elevated along North-South Road and along Farrington Highway. The alignment continues in a north-easterly direction following Farrington Highway on an elevated structure. South of the H-l Freeway, the alignment descends to grade as it runs alongside the MSF at the former Navy Drum Site. The alignment continues at-grade to Leeward Community College and then returns to an elevated configuration to cross over the H-l Freeway. North of the Freeway, the alignment turns eastward along Kamehameha Highway. Segment I includes seven stations: East Kapolei, University of Hawaii at West Oahu, Ho'opili, West Loch, Waipahu Transit Center, Leeward Community College and Pearl Highlands.

Segment II carries the alignment from Pearl Highlands to Aloha Stadium, running mostly above the median of Kamehameha Highway. At the highway interchange 'Ewa of the stadium, the alignment crosses over to the mauka side of Kamehameha Highway, in land adjacent to the roadway that is currently used for stadium parking. Segment II includes two stations: Pearl Ridge and Aloha Stadium. East of Aloha Stadium Station, the segment features a third track for temporary train layovers or storage.

The Airport Segment, or Segment III, takes the alignment from Aloha Stadium to Middle Street. This entirely elevated section of the route starts on the mauka side of Kamehameha Highway,

then transitions to the median of that street. As the route proceeds in the Koko Head direction, it leaves Kamehameha Highway to run on the makai side of the elevated H-1 Freeway. At Honolulu International Airport, the alignment swings out over the median of the H-1, then down Aolele Street to a station site adjacent to the main airport terminal. The route then continues Koko Head on Aolele and, eventually, the parallel Ualena Street to Lagoon Drive. At that point, the alignment crosses a corner of Ke'ehi Lagoon Park and threads through another highway interchange to Kamehameha Highway again at Middle Street. Segment III includes four stations: Pearl Harbor, Airport, Lagoon Drive, and Middle Street.

The City Center Segment, Segment IV, is also entirely elevated as it carries the alignment from Middle Street to the Ala Moana Center. Segment IV features guideway structures above Dillingham Boulevard, Nimitz Highway, Halekauwila Street, Queen Street, and Kona Street. Above Kona Street at the Ala Moana Center Station, the segment includes tail tracks beyond the station to provide operational flexibility and storage. The segment includes eight stations: Kalihi, Kapalama, Iwilei, Chinatown, Downtown, Civic Center, Kaka'ako, and Ala Moana.

The anticipated weekday boardings for the line are as follows:

- 99,800 (2020)
- 114,300 (2030)

2.3 Project Status

A Locally Preferred Alternative (LPA) was adopted by Oahu Metropolitan Planning Organization's 2030 Long Range Transportation Plan on May 4, 2007. The grantee was provided approval to begin preliminary engineering on October 16, 2009. The Final Environmental Impact Statement (FEIS) was published on June 14, 2010, and a Record of Decision (ROD) was issued on January 18, 2011. FTA granted approval to enter final design on December 29, 2011. The grantee has submitted an application for a Full Funding Grant Agreement in accordance with the FTA New Starts requirements.

2.4 Project Budget

The grantee's Base Cost Estimate (BCE), dated June 2012, is $5.122 billion in Year-of-Expenditure (YOE) dollars, including $644 million in allocated and unallocated contingency and $173 million financing costs.

Table 3. 2012 Adjusted Base Cost Estimate (June 20, 2012 SCC)[1]

SCC	Description	BCE	Allocated Contingency	Total w/o Contingency	Adjustments[2]	Adjusted BCE
10	**Guideway & Track Elements**	**1,275,329,000**	**161,113,818**	**1,114,215,182**	**0**	**1,114,215,182**
10.04	Guideway: Aerial structure	1,175,328,000	152,947,514	1,022,380,486	0	1,022,380,486
10.08	Guideway: Retained cut or fill	8,077,000	584,450	7,492,550	0	7,492,550
10.09	Track: Direct fixation	86,332,000	6,894,823	79,347,177	0	79,347,177
10.11	Track: Ballasted	3,551,000	256,910	3,294,090	0	3,294,090
10.12	Track: Special (switches, turnouts)	2,041,000	340,121	1,700,879	0	1,700,879
20	**Stations, Stops, Terminals, Intermodals**	**506,166,000**	**84,360,947**	**421,805,053**	**9,505,345**	**431,310,398**
20.01	At-grade station	7,334,000	1,222,266	6,111,734	327,096	6,438,830
20.02	Aerial station	353,476,000	58,912,691	294,563,309	9,178,249	303,741,558
20.06	Automobile parking multi-story structure	79,691,000	13,281,753	66,409,247	0	66,409,247
20.07	Elevators, escalators	65,665,000	10,944,237	54,720,763	0	54,720,763
30	**Support Facilities: Yards, Shops, Admin.**	**99,425,000**	**6,890,443**	**92,534,557**	**0**	**92,534,557**
30.02	Light Maintenance Facility	8,161,000	569,392	7,591,608	0	7,591,608
30.03	Heavy Maintenance Facility	40,907,000	2,807,751	38,099,249	0	38,099,249
30.04	Storage or Maintenance of Way Building	8,382,000	584,810	7,797,190	0	7,797,190
30.05	Yard and Yard Track	41,975,000	2,928,490	39,046,510	0	39,046,510
40	**Sitework & Special Conditions**	**1,103,868,000**	**123,297,838**	**980,570,162**	**5,737,998**	**986,308,160**
40.01	Demolition, Clearing, Earthwork	34,696,000	4,715,645	29,980,355	463,012	30,443,367
40.02	Site Utilities, Utility Relocation	350,695,000	51,245,046	299,449,954	4,167,939	303,617,893
40.03	Haz. material, contaminated soil removal/mitig	7,229,000	638,393	6,590,607	41,931	6,632,538
40.04	Environmental mitigation	30,842,000	3,862,784	26,979,216	545,133	27,524,349
40.05	Site structures (retaining walls, sound walls)	8,638,000	638,622	7,999,378	0	7,999,378
40.06	Pedestrian / bike access, landscaping	48,263,000	7,188,919	41,074,081	0	41,074,081
40.07	Automobile, bus accessways (roads, parking)	212,536,000	30,556,812	181,979,188	519,983	182,499,171
40.08	Temporary Facilities/other indirect costs	410,969,000	24,451,617	386,517,383	0	386,517,383
50	**Systems**	**247,461,000**	**26,176,478**	**221,284,522**	**0**	**221,284,522**
50.01	Train control and signals	91,493,000	9,509,976	81,983,024	0	81,983,024
50.02	Traffic signals and crossing protection	12,524,000	2,065,784	10,458,216	0	10,458,216
50.03	Traction power supply: substations	32,874,000	3,373,007	29,500,993	0	29,500,993
50.04	Traction power distribution	36,426,000	3,548,136	32,877,864	0	32,877,864
50.05	Communications	59,889,000	6,197,895	53,691,105	0	53,691,105
50.06	Fare collection system and equipment	10,222,000	1,062,476	9,159,524	0	9,159,524
50.07	Central Control	4,033,000	419,024	3,613,796	0	3,613,796
	CONSTRUCTION SUBTOTAL (10 - 50)	**3,232,249,000**	**401,839,524**	**2,830,409,476**	**15,243,343**	**2,845,652,819**

SCC	Description	BCE	Allocated Contingency	Total w/o Contingency	Adjustments	Adjusted BCE
60	**ROW, Land, Existing Improvements**	**221,188,000**	**24,790,439**	**197,397,561**	**0**	**197,397,561**
60.01	Purchase or lease of real estate	201,659,000	22,298,243	179,360,757	0	179,360,757
60.02	Relocation of existing households/businesses	20,529,000	2,492,196	18,036,804	0	18,036,804
70	**Vehicles**	**208,501,000**	**21,672,166**	**186,828,834**	**0**	**186,828,834**
70.01	Light Rail	186,061,000	19,339,681	166,721,319	0	186,721,319
70.06	Non-revenue vehicles	16,011,000	1,664,243	14,346,757	0	14,346,757
70.07	Spare parts	6,429,000	668,242	5,760,758	0	5,760,758
80	**Professional Services**	**1,183,826,000**	**93,387,212**	**1,090,438,788**	**0**	**1,090,438,788**
80.01	Preliminary Engineering	95,120,000	1,065,222	94,054,778	0	94,054,778
80.02	Final Design	257,935,000	29,613,276	228,321,724	0	228,321,724
80.03	Project Management for Design/Construction	385,826,000	19,367,231	366,458,769	0	366,458,769
80.04	Construction Administration & Management	218,156,000	18,499,024	199,656,976	0	199,656,976
80.05	Professional Liability/Non-Construction Insurance	52,138,000	5,588,306	46,549,694	0	46,549,694
80.06	Legal; Permits; Review Fees by other agencies	76,135,000	8,494,119	67,640,881	0	67,640,881
80.07	Surveys, Testing, Investigation, Inspection	24,955,000	3,195,992	21,759,008	0	21,759,008
80.08	Start up	73,561,000	7,564,042	65,996,958	0	65,996,958
	SUBTOTAL (10 - 80)	**4,846,764,000**	**541,689,341**	**4,305,074,669**	**15,243,000**	**4,320,318,002**
90	**Unallocated Contingency**	**101,871,000**	**101,871,000**		**0**	
90	**Latent Contingency**				**0**	
	SUBTOTAL (10 - 90)	**4,948,635,000**	**643,560,511**		**15,243,000**	**4,320,318,002**
100	**Finance Charges**	**173,058,000**			**0**	
	TOTAL PROJECT COST (10 - 100)	**5,121,693,000**	**643,560,511**		**15,243,000**	**4,320,318,002**

Notes

[1]All values shown are in YOE $.

[2]The PMOC recommended an adjustment to the base cost estimate in the amount of $15.24 million to account for insufficient contractor markup that was identified in several construction contracts.

2.5 Project Schedule

The table below presents the grantee's target dates for key milestones of this New Starts Project as identified in its Master Project Schedule (MPS) with a Data Date of March 30, 2012. It should be noted that the March 30, 2012 MPS version was used for the schedule assessment and schedule risk analysis. The grantee is in process of revising their MPS to account for impacts due to the Hawaii Supreme Court's ruling. The preliminary schedule analysis by the grantee indicates that there could be a nine to twelve-month impact on the interim opening but possibly no impact to the full Revenue Service Date. The recommended FFGA full Revenue Service Date is January 31, 2020.

Table 2. Grantee Target Milestone Dates

Milestone Description	Grantee Target Date
FTA Award Full Funding Grant Agreement	06-Oct-12
WOFH/KH Revenue Service	29-Jun-16
Airport/City Center Revenue Service (RSD)	12-Mar-19

Note: MPS Data Date of March 30, 2012

2.6 Project Management Oversight Contractor (PMOC)

This report represents the PMOC's assessment of the Project's readiness to execute an FFGA. The following deliverables, as governed by the applicable FTA Oversight Procedures (OP), were provided by the PMOC:

- OP 20 – PMP Review
- OP 21 – Technical Capacity and Capability Review
- OP 22 – SSMP Review
- OP 23 – RAMP Review
- OP 24 – QA/QC Review
- OP 32A – Project Transit Capacity Review
- OP 32C – Project Scope Review
- OP 32D – Project Delivery Method Review
- OP 33 – Capital Cost Estimate Review
- OP 34 – Project Schedule Review
- OP 37 – Fleet Management Plan Review (Bus)
- OP 37 – Fleet Management Plan Review (Rail)
- OP 40 – Risk and Contingency Review

2.7 Final Design Approval Letter Requirements

Appendix C of this report provides a summary of the requirements identified in the final design approval letter issued by the FTA on December 29, 2011, as well as their current status.

2.8 Evaluation Team

The following table presents the PMOC Evaluation Team and their respective roles associated with the assessment of the Project.

Table 3. PMOC Evaluation Team

Name	Location	Role
Jacobs		
Tim Mantych	St. Louis, MO	Program Manager
Bill Tsiforas	Las Vegas, NV	Task Order Manager
Keith Konradi	St. Louis, MO	Rail Engineering
Bob Niemietz	St. Louis, MO	Structural Engineering
Ahmad Hasan	St. Louis, MO	Geotechnical Engineering
Allan Zreet	Dallas, TX	Architect
Charles Neathery	Dallas, TX	Construction Management, Project Controls, Schedule Risk Assessment
Tim Morris	Dallas, TX	Cost Estimating
Brian Carpenter	Dallas, TX	Cost Estimating, Scheduling
Steve Rogers	Dallas, TX	Cost Estimating
Albert Amos	Austin, TX	Economics
David Nelson	Boston, MA	Operations, Transit Capacity
Tracey Lober	St. Louis, MO	QA/QC
Joe Leindecker	St. Louis, MO	Planning
Virginkar and Associates, Inc.		
Arun Virginkar	Brea, CA	Vehicle Engineer, Buy America
Hal Edris	Spring Grove, PA	Systems Integration Manager
Triunity Engineering Management Inc.		
Jonnie Thomas	Denver, CO	Systems (Communications)
Interactive Elements Inc.		
Dennis Newman	New York, NY	Safety
Dorothy Schulz	New York, NY	Security
LS Gallegos Inc.		
JR Casner	Centennial, CO	Construction Management, QA/QC
OR Colan & Associates		
Bob Merryman	St. Louis, MO	Real Estate
Kowalenko Consulting Group Inc.		
Emma Kowalenko	Chicago, IL	Planning/Environmental
Independent Contractor		
David Sillars	Corvallis, OR	Risk Manager

2.9 Documents Reviewed

Appendix B provides a listing of the project-related documents that were utilized during development of this Spot Report.

2.10 OP 52 Report Format

For each item identified in OP 52, PMOC maintains a similar analytical approach to assure that all federal requirements are met and that the resulting conclusions are supported, complete, and clear:

- PMOC Assessment
- OP 52 Guidance/PMOC Response (if applicable)
- Conclusion

3.0 SCOPE

The PMOC followed the requirements outlined in *OP 32A: Project Transit Capacity Review*, *OP 32C: Project Scope Review*, and *OP 32D: Project Delivery Method Review*, all dated May 2010, to verify that the scope of the project:

- Is represented by the totality of all contract plans and specifications.
- Is internally consistent.
- Is defined to a level appropriate for the project development phase.
- Is consistent with the estimated cost and schedule.
- Is consistent with all National Environmental Policy Act (NEPA) documents.

3.1 PMOC Assessment

The scope as contained in the Project's FEIS and ROD is reflected in the current engineering plans, specifications, estimates, and the Project Management Plan (PMP).

The drawings for the four line segments present right-of-way plans, drainage plans and details, demolition plans, guideway plans and profiles, typical cross sections, utility plans, roadway plans, signing and striping plans, maintenance of traffic plans, traffic signal plans, street lighting plans, structural drawings, landscaping plans, station drawings, and contact rail installation plans. The West Oahu/Farrington Highway (WOFH), Kamehameha Highway (KHG), and MSF DB contracts have progressed beyond the others as they near completion of final design.

The current design meets the capacity and operational objectives established in the FEIS, although details are subject to modification following the November 28, 2011 execution of the Core Systems Contract (CSC) with Ansaldo Honolulu Joint Venture (AHJV). Although the ROD was issued with the expectation of 76 vehicles, the Best and Final Offer (BAFO) by the selected CSC includes 80 vehicles. Increasing the number of vehicles from 76 to 80 allowed AHJV to propose a minimum headway reduction from 3 minutes to around 2-1/2 minutes, while still meeting the Project's capacity and operational objectives. The PMOC OP 32A report on Transit Capacity noted the following:

- The grantee's 2009 Fleet Sizing Plan showed how it expected to carry the projected 2030 peak surge load with all passengers traveling with at least 3.4 square feet of space per standing passenger. However, later specifications issued to bidders for the CSC simplified and smoothed the 2009 plan such that it falls consistently 9% short of the promised standard designed to address the peak surge.
- Close inspection of the forecast pattern of boardings and alightings indicates that the average passenger trip length and duration will be longer than most other rapid transit networks and that the number of seats per car and per train will be very low compared with other systems with long average trip lengths.
- AHJV's proposal established a Minimum Operating Headway of 155 seconds, but AHJV's proposal and HART's operating plan do not meet that minimum for the eighth and subsequent years of full operation. As the design year approaches, HART's operating plan shows trains operating every 147 seconds with no downward adjustment in running times or increase in trains required to sustain necessary headways.

- While HART and the PMOC agree on estimated dwell times for peak trips, the addition of platform screen gates to the Project may increase that dwell time.
- The PMOC has found no evidence that the timing and sequencing of turnbacks at terminal stations were considered in making fleet size calculations.
- The PMOC calculated the maximum person capacity of the system to be 13,381 persons per hour. This provides for 50% growth over the design-year peak flow of 8,982 passengers.

HART must coordinate with AHJV to resolve any transit capacity or operational issues identified above as soon as possible.

Attachment A to the ROD, dated January 2011, listed 197 mitigations to which the Project is committed. These mitigations deal with subjects such as real estate acquisitions, easements, relocations, landscaping, design details, protection of historic and environmentally sensitive resources, noise abatement, lighting, safety, security, public health, and the treatment of Hawaiian iwi. The grantee is committed to implementing all mitigation measures specified by the ROD and all terms of the Project's Programmatic Agreement (PA), also instituted in January 2011. The grantee has hired a Kako'o Consultant to ensure compliance with the PA. While the actual implementation of many of the detailed mitigations will not occur until final design and construction, the grantee has included requirements for their design in RFPs already issued. Thus, the grantee has contractual assurances that the ROD's requirements will be met.

The grantee and its consultants and contractors are actively working to acquire other necessary permits and approvals from federal, local, and state agencies.

In order to minimize the risk normally related to differing site conditions, the grantee's engineers have conducted site reconnaissance, subsurface investigation, and field and laboratory testing, and prepared geotechnical data and baseline reports. Buried structure and utilities have been identified to the extent known. The location of potential contaminated soils has been identified in general.

Much of the work for subsurface investigation was intended to take place during the final design phase. A comprehensive geotechnical investigation began on the WOFH DB Contract, KHG DB Contract, and MSF DB Contract. However, all ground disturbance activities have been suspended as a result of the Hawaii Supreme Court's decision regarding the AIS. For site work, the current drawings and reports show a sufficient amount of project definition to justify execution of an FFGA.

While these do not fall into the category of "*discrepancies and deficiencies*", the PMOC has nevertheless identified the following issues:

(1) The grantee has developed an extensive Contract Packaging Plan that will require significant management effort to ensure that proper coordination occurs.

(2) Cost and schedule controls, particularly associated with the DB contracts that have been awarded, must be effectively managed since final design will overlap with early construction.

(3) The configuration of Ala Moana Station (terminal) must be finalized with acceptance by the station's real estate owners and input from the CSC.
(4) The grantee has not fully incorporated and designed the Value Engineering (VE) and cost reduction alternatives proposed for the stations.
(5) The grantee has not finalized several third-party agreements.

Through plans and performance specifications, the grantee has provided enough project information to fully illustrate the scope, capacity, level of service, functionality, and expected reliability of the completed project. The plans and specifications sufficiently characterize elements of the design for execution of an FFGA.

The PMOC found no discrepancies in the Project documentation's internal consistency, compliance with laws, regulations, and policies, bid-ability, and constructability. The PMOC did, however, note the following:

- Coordination between the grantee and its various contractors and between different contractors remains one of the foremost challenges of the project.
- Station design must be progressed to create biddable construction packages for all 21 proposed stations.
- Agreements must be completed with all government bodies, public agencies, and utilities affected by the project.
- Procurement activities must adequately address Buy America and Ship America requirements for escalators and elevators, major system components (>$100,000), rail, steel, and vehicles.

3.2 *OP 52 Guidance*/PMOC Response

In accordance with the OP 52 Guidance, the PMOC here updates previous reviews (the *OP 51 Readiness to Enter Final Design* being the latest).

(1) Definition of the project (i.e., scope) contained in the project ROD/FONSI and most recent New Starts submittal agree with the scope as developed in preliminary engineering materials, including the approved PMP and the engineering design plans and specifications. Discrepancies or unclear scope items in the plans should be noted.

The scope as contained in the project ROD, dated January 18, 2011, is reflected in the preliminary engineering plans, specifications, estimates, and the PMP.

(2) Basic quantities, such as number and locations facilities, peak and total vehicles, etc., identified in the environmental document and ROD/FONSI are the same as assumed in the current project definition.

The only item that changed since the ROD is the total number of vehicles. At the time of the ROD, it was expected that the number of vehicles would be 76, but the BAFO by the selected CSC contractor includes 80 vehicles. That is not considered a scope change since the CSC bidders were allowed flexibility in order to meet the ridership projections defined in the CSC RFP document and amendments.

(3) The current project design satisfies the capacity and operational objectives established in the approved environmental document.

The current design meets the capacity and operational objectives established in the FEIS, although details are subject to modification following the recent execution of the CSC. Thus, although the number of vehicles may change from 76 to 80 and the minimum headway may change from 3 minutes to approximately 2½ minutes, the capacity and operational objectives are still met.

(4) Mitigations committed to in the ROD (or project mitigation plans), when involving a physical or operational feature of the project, are incorporated, or are in the process of being incorporated, into the engineering design, proposed construction program, and/or other implementation plans. Mitigations could include changes in design, use of different types of material, modified traffic control, restricted construction activities, etc.

Attachment A to the ROD, dated January 2011, listed 197 mitigations to which the Project is committed. These mitigations deal with subjects such as real estate acquisitions, easements, relocations, landscaping, design details, protection of historic and environmentally sensitive resources, noise abatement, lighting, safety, security, public health, and the treatment of iwi.

The grantee is committed to implementing all mitigation measures specified by the ROD and all terms of the Project's PA, also instituted in January 2011. The grantee has hired a Kako'o Consultant to ensure compliance with the PA.

While the actual implementation of many of the detailed mitigations will not occur until final design and construction, the grantee has included requirements for its design in RFPs already issued. Thus, the grantee has contractual assurances that the ROD's requirements will be met.

(5) Environmental and related early permits and approvals for project development have been executed or are in the approval process. Pre-construction, site reconnaissance and geotechnical surveys are complete.

The FEIS was published on June 25, 2010, and a ROD was issued on January 18, 2011. The grantee and its consultants and contractors are actively working to acquire other necessary permits and approvals from federal, local, and state agencies.

In order to minimize the risk normally related to differing site conditions, the grantee's engineers have conducted site reconnaissance, subsurface investigation, and field and laboratory testing, and prepared geotechnical data and baseline reports. Buried structure and utilities have been identified to the extent known. The location of potential contaminated soils has been identified in general.

Much of the work for subsurface investigation was intended to take place during the final design phase, although a comprehensive geotechnical investigation began on the WOFH DB Contract, KHG DB Contract, and MSF DB Contract. However, all ground disturbance activities have been suspended as a result of the Hawaii Supreme Court's decision regarding the AIS. For site work, the drawings and reports have done a sufficient amount of work to provide project definition and justify execution of an FFGA.

(6) PMOC shall examine the grantee's preliminary engineering plans for clarity, accuracy, and level of detail for a project at or beyond the schematic design level.

The drawings, specifications and other documentation far exceed the "schematic" threshold stated as a minimum requirement. The project was well-defined for a preliminary engineering-level design and several segments have progressed nearer to completion of final design. The PMOC's OP 32C – Project Scope Review describes the status of the project documentation and how it defines the scope of the project at the current level. The following table presents the PMOC assessment of Design Checklist items identified in Appendix C of OP 51.

Table 4. Design Checklist (OP 51 Appendix C)

Requirement	Compliance
Grantee accepted design standards and performance requirements	✓
Digitized aerial photogrammetry	✓
Photo-simulations and/or schematic renderings	✓
Guideway general notes, standard abbreviations and symbols	✓
Guideway key map; horizontal and vertical controls	✓
Guideway alignment geometry (plan and profile)	✓
Guideway curve data (table and/or included in drawings)	✓
Typical sections	✓
Guideway drainage plans, including key map, notes and symbols	✓
General layouts of each grade crossing (MSF Yard only)	✓
Maintenance of traffic for special situations	✓
Pedestrian connections to the public way, transit accessways, auto parking, railroad crossings (latter for MSF Yard only)	✓
Bridge and wall nomenclature, symbols and abbreviations, and general notes	✓
Bridge and wall general plans and sections	✓
Bridge foundation, abutment, bent plans and deck plans	✓
Load diagrams for structures (e.g., aerial guideway)	✓
Retaining walls, including typical wall sections	✓
Tunnel layout plans	N/A
Tunnel structural plans and typical sections	N/A
Tunnel excavation plans, approach wall plans and sections	N/A
Other tunnel detail	N/A
Station and finishes general information, including notes and legend	✓
Architectural design of building/facilities plans, including footprint, floor plans, sections	✓
Station layout plans, sections, elevations	✓
Platform details	✓
Grading and drainage plans, site cross sections	✓
Urban design/general landscaping features	✓
Utilities, landscaping	✓
Paving for pedestrian access, transit access, and parking plans	✓
Aerial station plans showing basic structural and architectural elements, including platform details	✓
Tunnel (underground) station plans	N/A
Right of way limits	✓
Parcel/property acquisitions and easements, if known	✓
Roadway key map showing roadways plan with signalized and other intersections	✓
Roadway/pedestrian access plans and profiles	✓
Roadway typical sections	✓
Roadway drainage plans	✓
Signing plans	✓

✓ - Indicates compliance with FTA expectations
× - Indicates non-compliance with FTA expectations

3.3 Conclusion

It is the PMOC's professional opinion that the scope of the Project is well-defined and is generally at a level of completeness necessary to execute an FFGA.

It should be noted that portions of the project, specifically the DB contracts, are significantly more advanced than other portions of the project (e.g. stations and DBB guideway segments). The scope of the Project is well-defined and is generally at a level of completeness necessary to support an FFGA application. The Project final design phase and construction phase are concurrent to an extent as a result of the hybrid contract packaging strategy that contains work packages for DB, DBB, and DBOM. The awarded DB contracts are well into the design phase and field construction had recently commenced on the WOFH contract (before being suspended as a result of the recent Hawaii Supreme Court ruling), while other awarded DBB contracts remain in the early stages of final design. It is advisable to acknowledge the project risks in completing the project on schedule and within budget, given the varying level of completion of the final design documents. At a minimum, the grantee should have in place, on the day it receives an FFGA, all the means, methods, tools, and personnel necessary to meet the recommendations of this report and all controls it needs to successfully implement the agreed-to project within its budget and schedule.

4.0 PROJECT SCHEDULE

The PMOC followed the requirements outlined in the *FTA OP 34 – Project Schedule Review*, dated May 2010, to assess and evaluate the grantee's project schedule. The schedule review evaluates the efficiency and effectiveness of the grantee's project implementation during each phase of the project life cycle. The schedule review validates the inclusivity of the Project scope and the characterization of individual project elements within the current Project phase. It also validates the grantee's program management readiness to execute the FFGA and implement the project. The review of the Project schedule addresses seven subcategories:

- Schedule.
- Technical Review.
- Resource Loading.
- Project Calendars.
- Interfaces.
- Project Critical Path.
- Critical Areas of Concern.

4.1 PMOC Assessment

The PMOC reviewed nine project schedule submittal packages and conducted four forensic scheduling workshops in an effort to support the grantee's development of the master schedule, procedures, and modifications to the project controls organizational structure. Through numerous reviews documented in the PMOC's OP 34 deliverable, the PMOC determined the grantee met the requirements related to *"completeness, adequacy, consistency, and level of detail."*

The PMOC Schedule Review report format is consistent with OP 34 and addresses the following subcategories:

- Technical Review
  - Format
  - Structure, quality, and detail
  - Mechanical soundness
  - WBS
  - Phasing and sequencing
  - Hierarchy
  - Cost and resource loading
  - Schedule Contingency
  - Constraints
  - Schedule Control
- Project Activities and Constraints
  - Sequencing
  - Resource Loading
  - Schedule Elements

The Schedule Review validates the inclusivity of the Project scope and characterizes individual project elements within the current Project phase. It also validates the program management's

readiness to enter and implement the next major program phase, application for an FFGA. The report findings result in a compilation of tabular and graphical reports and conclude with a list of PMOC findings and recommendations for grantee action.

The PMOC has identified a significant number of recommendations and opportunities to strengthen the integrity of the grantee's project controls organization, procedures, plans, technical schedule input, and technical capacity and capability. The PMOC expects the grantee to incorporate these recommendations shortly after execution of an FFGA.

The following table presents the PMOC assessment of Schedule Checklist items identified in Appendix C of OP 51.

Table 5. Schedule Checklist (OP 51 Appendix C)

Requirement	Compliance
All major final design activities indicated	✓
For each design discipline (civil, structural, systems, other) detail provided on scope/main tasks	✓
All early permits identified as a milestone or more detailed activity if possible	✓
Carryover/incomplete activities from preliminary engineering identified	✓
Milestones for 60%, 90%, and 100% (or similar percent) complete indicated	✓
o Logic ties to predecessor activities shown	✓
o Required reviews and approvals indicated	✓
Logic ties between other major activities shown	✓
Advertise and Bid for construction packages indicated; single activity for advertise/bid acceptable	✓
Logic ties provided from design to advertise/bid and from advertise/bid to construction	✓
Construction outline level of detail, including	✓
o Each construction package indicated	✓
o Five to 15 activities per package, depending on size	✓
Utilities outline level of detail, including	✓
o Which utilities affected by project	✓
o Estimated timeframe/duration of utility work	✓
o Design detail included in final design section of schedule	✓
Real Estate level of detail, including	✓
o Several basic activities included for each construction package	✓
o Logic ties shown from design to real estate and from real estate to construction	✓
Final Testing and Startup single activity indicating duration and predecessor logic acceptable	✓
For phased openings, preliminary detail (e.g., milestones) provided	✓
Placeholder for safety certification acceptable"	✓

✓ - Indicates compliance with FTA expectations
× - Indicates non-compliance with FTA expectations

4.2 *OP 52 Guidance*/PMOC Response

(1) The PMOC shall determine whether the level of detail (number of activities) and logic (activity interrelationships) are reasonable and sufficient for project design. Assessment will be made of major activity and overall project durations, leading to a conclusion on whether the project can be completed as planned;

The PMOC found that the number of activities and the relationship between them are reasonable and sufficient for execution of an FFGA.

Though a dynamic process, the grantee has demonstrated that the MPS and BOS contain a sufficient amount of duration (production, efficiency, contingency) for each project life cycle phase. The PMOC risk assessment accounted for contingencies, or lack thereof, for the current planning and final design phases.

(2) Risks to the schedule will be identified and areas requiring clarification and/or additional detail described;

The PMOC conducted qualitative brainstorming sessions with the grantee and its consultants during several Risk Workshops in 2011 and 2012. The purpose of the workshops was to identify a listing of program risks with both cost and schedule impacts. Prior to the workshops, the PMOC reviewed and modified a risk register prepared by the grantee. The PMOC noted that the grantee's risk register was very detailed and contained a considerable number of risks also identified by the PMOC risk assessment team.

(3) Consistency between the time sensitive variables in the capital cost estimate, including year of expenditure assumptions, and durations incorporated into the master schedule shall be examined;

The estimate is reflective of the sequencing identified in the MPS. The schedule was used to calculate escalation at reasonable rates and for the durations contained in the MPS activity codes.

(4) A Work Breakdown Structure (WBS) has been developed and a base Critical Path Method (CPM) schedule and budget are in place and are consistent with the project plans. The WBS must be consistent with the analyzed plan and program for all project participants' agreed upon roles, responsibilities, capabilities and capacities.

The grantee has developed a WBS and a base CPM schedule and budget that are consistent with the project plans. In addition, the grantee's schedule is reflective of the project scope represented in the plans and is congruent with the project estimate. The data below the summary levels generally provide adequate detail to differentiate between major project segments and contracting areas. The MPS can be sorted by project phase (preliminary engineering / Design / Construction / Startup & Testing), Project Segment, or by Project Contract, as identified in the Contract Packaging Plan. The MPS activity detail is sufficient to determine the type of work that is being performed and is traceable and transparent with the Contract Packaging Plan. The MPS can be organized and sorted by contract, project segment, and opening, and is flexible and robust enough to project executive summary level reporting.

4.3 Conclusion

It is the PMOC's professional opinion that the current MPS is mechanically correct and fundamentally sound, and that it meets the FTA guidance and requirements necessary to execute an FFGA.

5.0 PROJECT COST

The PMOC followed the requirements outlined in the *FTA OP 33 – Capital Cost Estimate Review,* dated May 2010, to assess and evaluate the grantee's cost estimate. Specifically, the review addresses:

- Soundness of the grantee's cost estimating methods and processes compared with proven professional quantity surveying and cost estimating practices for projects of this scale
- Congruence of the project cost estimate with the project scope and schedule
- Reliability of the estimate for procurements, contract bids, and contract closeout

In March 2012, the grantee submitted an estimate that incorporated value engineering changes for the stations (modular station concept), some pending change orders for the DB Contracts, and an update to the project Cash Flow/Escalation model. This 2012 *Standard Cost Category (SCC)* totaled $5.122 billion in Year-of-Expenditure (YOE) dollars, including $544 million in allocated and unallocated contingency and $173 million in financing costs.

However, following a Risk Assessment Workshop in April 2012, a revised estimate was submitted by the grantee on May 15, 2012. The revised estimate included three grantee-proposed cost reduction measures: (1) combining the separate City Center & Airport Guideway segments into one construction contract; (2) reducing the number of revenue service openings from three to two; and (3) reducing SCC 80 Soft Costs through reorganization of the project team. The revised *2012 SCC Estimate* totaled $5.126 billion in Year-of-Expenditure (YOE) dollars, including $644 million in allocated and unallocated contingency and $177 million in financing costs.

The estimate was slightly adjusted again on June 20, 2012, as the financing cost was adjusted. The current estimate in YOE is $5.122 billion, including $644 million in allocated and unallocated contingency and $173 million in financing costs.

5.1 PMOC Assessment

The PMOC evaluated the cost estimates for each SCC for mechanical soundness and consistency. These mechanical checks are used to determine if there are any material inaccuracies within the estimate. The *2012 SCC Estimate* was found to be mechanically correct in the tabulation of the unit cost, application of factors, and translation to the SCC workbook. The PMOC randomly sampled cost estimate line items to determine if the cost estimate backup cross-walked into the SCC workbook. In each instance, the PMOC found the calculated values translated to the SCC workbook and back to the cost estimate backup without variance or mechanical issues.

The estimate is reflective of the sequencing identified in the MPS. The schedule was used to calculate escalation at reasonable rates and for the durations contained in the MPS. The bids contain YOE escalation, so the grantee was able to develop base year and YOE costs mathematically for the *2012 SCC Estimate* from a combination of bids and estimate values.

The PMOC did not find any significant discrepancies between the MPS and cost estimate line items organized and sorted by SCC or contract package WBS. Furthermore, no significant issues were identified for missing scope or erroneous schedule durations.

The following items summarize specific PMOC observations of the *2012 SCC Estimate* per the OP 33 requirements:

(1) The PMOC concludes that the estimate is consistent with the project scope identified in the FEIS and ROD.

(2) The PMOC has characterized the project cost data as an Association for the Advancement of Cost Engineering (AACE) Class 2" estimate due to the bottoms-up style of estimate and receipt of bids for design build portions of the project scope. At the time of issuance of this report, the grantee has awarded $2.562 billion of the $4.983 billion of planned contracts, or 51.8%, including $178.1 million in allocated contingency. Without considering allocated contingency, the percentage is 54.3%.

(3) Soundness & reliability of the Grantee's Estimate – The grantee's *2012 SCC Estimate* was prepared utilizing standard industry practices combined with highly regarded Timberline estimating software and a reasonable and reliable data base. The database contains adjusted local rates which include constructions, environmental, real estate, permitting, bonds, insurance, and related general conditions and soft cost markup factors. It has been proven reliable thus far, as awards of approximately 52% of the planned contracts have occurred. The project budget has been reviewed by the PMOC for congruence, incorporation and coordination of the project scope & schedule, and found to fall within a reasonable range.

(4) The PMOC accepts the percentages used by the grantee for escalation in its *2012 SCC Estimate*.

(5) The PMOC verified that the grantee appropriately included the General Excise Tax in its estimate as it has not received exemption from this requirement.

(6) The PMOC verified that the grantee included an appropriate level of detail and supportable justification in the Basis of Estimate for general condition costs.

(7) The cost estimate contained some line item "Allowance" costs that contained minimal quantification or detail backup. The Allowance line item total just under $580 million or 11.71% of the total Project estimate. The PMOC found the use of Allowance line items acceptable and not excessive.

(8) The PMOC evaluated the design-build bids and the grantee's approach for contract evaluation, post bid analysis and award.

- The grantee has awarded two design-build guideway sections; one was substantially less than the engineer's estimate (WOFH) and one was not (KHG). The MSF bid was within the budget, and the DBOM contract for the CSC was less than the estimate. However, risk still exists for these projects due to pending court cases for the CSC bid and delays in Notices to Proceed (NTP) for the remaining bids. The PMOC accounted for these risks in its analysis sensitive to the information available at the time of the modeling.
- The grantee is following their outlined procurement process, which has proven successful to date.

- Because the bids are prepared using lump sum line items, the SCC format distributions are provided after NTP, which makes spot checking awarded contract line item quantification and unit pricing difficult.

(9) With the exception of the adjustment of $15.24 million for "Contractor Markups", the PMOC has determined the current cost estimate to be mechanically and fundamentally sound and reasonable and that it meets the FTA guidance and requirements necessary for an FFGA. The grantee's *2012 SCC Estimate* was prepared utilizing standard industry practices combined with highly regarded Timberline estimating software and a reasonable and reliable data base. The estimate is substantiated in part from bid results obtained from the award of the design-build portions of the work during 2010/2011.

(10) The escalation rate used by HART for professional services is below average when compared to United States mainland professional services historical data. In recent years, wage rates for professional services have increased at a faster rate nationally as compared to the State of Hawaii. The PMOC estimates that a 0.5% difference in escalation rates for professional services could result in $10 million in higher costs, overall. However, when taken in context of the overall cost estimate for the project, the PMOC did not recommend an adjustment of this item.

5.2 *OP 52 Guidance*/PMOC Response

Following are specific items identified in OP 52 and the corresponding PMOC response:

(1) The PMOC shall evaluate the project cost estimate and verify that it is in general agreement with the latest Standard Cost Category cost information contained in the grantee's most recent New Starts submission.

The PMOC concludes that the estimate is consistent with the project scope identified in the FEIS and ROD. The PMOC did not find any significant discrepancies between the MPS and cost estimate line items organized and sorted by SCC or contract package WBS.

(2) The PMOC shall determine whether the cost estimate is consistent with the project scope as defined in the drawings and specifications.

The PMOC concludes that the estimate is consistent with the project scope identified in the FEIS and ROD.

The review of the cost estimate revealed that each of the major elements for the project included an estimated cost. As noted within this report, the PMOC checked a sampling of quantities from the cost estimate. The values were found to be consistent with the scope drawings. Quantity take offs were performed by the grantee estimating team. Documentation of these take-offs was supplied to the PMOC via the Timberline cost estimate electronic file.

(3) The PMOC shall assess whether the estimate includes sufficient detail to establish a reasonably accurate cost for project development through construction and start-up. If

based on quantities/activities and unit costs, are the quantities/activities adequately defined? What prices are lump sums versus based on market research or quotes from potential suppliers/vendors? Further, the PMOC shall ascertain that the grantee has sought and received "industry review" of the construction/procurement schedule and interfaces contracting terms, special conditions and baseline estimating for a representative sample of major construction and equipment procurement contract packages planned.

With the exception of the adjustments listed in its OP 33 deliverable, the PMOC determined that the current cost estimate is mechanically and fundamentally sound and reasonable as it meets the FTA guidance and requirements necessary to support a FFGA.

(4) Allocated and unallocated contingencies shall be identified and a professional judgment offered as to the adequacy of contingencies, given project risks, complexity, and other factors.

Risk analyses (per the requirements of OP 33 and OP 40) have confirmed that adequate allocated and unallocated contingencies have been included in the total project cost based on the perceived project risk.

5.3 Conclusion

It is the PMOC's professional opinion that the current cost estimate is mechanically and fundamentally sound and reasonable, and that it meets the FTA guidance and requirements necessary to execute an FFGA.

6.0 PROJECT RISK

The PMOC followed the requirements outlined in the *FTA OP 40 Risk and Contingency Review*, dated May, 2010, to complete a risk analysis of the Project. This review requires an evaluation of the reliability of the grantee's project scope, cost estimate, and schedule, with special focus on the elements of uncertainty associated with the effectiveness and efficiency of the grantee's project implementation and within the context of the surrounding project conditions.

6.1 PMOC Assessment

(1) Cost Risk Assessment:

- The PMOC has refreshed its earlier risk review and presented its preliminary results to the grantee in April 2012. Concern was expressed over the rate of project cost contingency usage.
- The grantee responded with revised plans, estimates, and schedules to address the contingency shortfall.
- The PMOC has prepared this risk refresh based upon the grantee's revisions.
- The PMOC separated the project into three distinct risk profiles to better model the effect of risk upon the project.
- The PMOC found that the grantee's risk identification effort, including its risk mitigation activities, generally conforms to its documented processes.
- The cost risk assessment found few exceptional cost risks. No Beta value changes impacting all SCCs were included as a result of the grantee's prior lack of contingency management since there is increased emphasis on cost and schedule controls included in the RCMP.

(2) Project Cost Estimate:

- The grantee's estimate is $4,949 million, which includes a stripped estimate of $4,305 million plus a contingency of $644 million.
- The PMOC recommended estimate is $4,978 million, which includes a stripped estimate of $4,305 million, plus $15 million in cost adjustments for "Contractor Markups" as detailed in the OP 33 report, and plus a recommended contingency of $658 million.
- The recommended estimate represents the median value from the FTA risk assessment model, when adjusted for the specifics of this project. The historic trend indicates that 80% of similarly-scoped projects have fallen within the range of $4,497 million to $5,789 million.
- The grantee's estimate varies from the PMOC-recommended estimate by $29 million ($15 million in recommended adjustments and $14 million in recommended contingency).
- The difference between the grantee's project estimate of $4,949 million and the PMOC's recommended estimate of $4,978 million is 0.6%.
- It is observed that significant contingency reduction occurred since the recent prior risk review, to a point where contingency is below accepted control levels. The grantee has identified a total of $644 million in contingency. This is $222 million less than the amount of contingency of $866 million identified

during the prior review to support the request to enter into Final Design.
- It is recognized that efforts have been made to recover contingency levels through cost reduction measures, value engineering, and revised project delivery strategies.
- The grantee's estimated finance charges for the project are $173 million.

(3) Risk and Contingency Management Plan (RCMP):
- Organizational structure identified in the RCMP has been adjusted to improve risk management throughout the project life.
- RCMP includes more refined plans for the grantee to monitor and mitigate high-risk rated items.
- RCMP demonstrates that risk identification, assessment, and mitigation continue as a part of the project management process.
- Some strengthening of the risk contingency tracking, custody, and reporting is indicated in the updated RCMP. A revised contingency draw-down curve has been included in the RCMP. This revised curve was required due to a significant use of contingency that violated earlier contingency draw-down controls.
- This strengthening includes plans for more frequent (monthly) reviews of the remaining cost and schedule contingencies to ensure they are within the control limits set by the cost and schedule contingency draw-down curves.
- This strengthening of the contingency tracking and control is welcomed. However, diligence and vigilance must be applied to this effort to avoid a high rate of contingency use that could ultimately leave the project unprotected.

(4) Secondary Mitigation Measures:
- RCMP includes several potential Secondary Mitigation options. However, there is a lack of detailed development of plans and cost estimates for the items identified in the RCMP.
- The amount of secondary mitigation identified in the RCMP is assessed by the PMOC to be approximately $106 million.
- The PMOC recommended amount of secondary mitigation is $149 million.

(5) Project Schedule:
- The Grantee's target Revenue Service Date is March 2019.
- The PMOC recommends that the FFGA Revenue Service Date should be January 31, 2020.

6.2 Conclusion

(1) The grantee's total project estimate of $5,122 million, including $644 million in total contingency and $173 million in finance charges, is acceptable to support an FFGA.
(2) The Revenue Service Date identified in the FFGA should be January 31, 2020.
(3) Strong controls must be put in place immediately to avoid future rapid contingency reduction. The frequency and the levels of project management to

which these statistics are reported should be improved and monitored monthly.

(4) Prior to execution of an FFGA, the grantee should develop more details for the Secondary Mitigation items and attempt to identify secondary mitigation measures that approach a total value of $149 million. Doing so will strengthen the ability to develop these items in the design documents and include them as deductive alternates in construction contracting proposals.

7.0 PROJECT MANAGEMENT PLAN REVIEW

7.1 Project Management Plan

The PMOC followed the requirements outlined in the "*FTA OP 20 – Project Management Plan Review",* dated May 2010, to assess and evaluate the grantee's Project Management Plan, Revision 5.0 dated June 29, 2012.

The FTA requires that grantees develop and implement a written Project Management Plan (PMP) for any major capital project funded by FTA. Specifically, Title 49 of the United States Code Section 5327 of Chapter 53, entitled "Project Management Oversight (PMO)" requires a PMP as a condition of Federal financial assistance for major capital projects. The required elements of a PMP are stipulated in the Code of Federal Regulations:

Title 49 – Transportation
Part 633 – Project Management Oversight
Subpart C – Project Management Plans
Section 633.25 – Contents of a Project Management Plan

At a minimum, 49 Code of Federal Regulations (CFR) Part 633 requires that a recipient's PMP include the following items:

(1) *A description of adequate recipient staff organization, complete with well-defined reporting relationships, statements of functional responsibilities, job descriptions, and job qualifications*
(2) *A budget covering the project management organization, appropriate consultants, property acquisition, utility relocation, systems demonstration staff, audits, and such miscellaneous costs as the recipient may be prepared to justify*
(3) *A design management process encompassing Preliminary Engineering and Final Design*
(4) *A construction schedule*
(5) *A document control procedure and record-keeping system*
(6) *A change order procedure that includes a documented, systematic approach to the handling of construction change orders*
(7) *A description of organizational structures, management skills, and staffing levels required throughout the construction phase*
(8) *Quality control and quality assurance programs*
(9) *Material testing policies and procedures*
(10) *Plan for internal reporting requirements including cost and schedule control procedures*
(11) *Criteria and procedures to be used for testing the operational system or its major components;*
(12) *Periodic updates of the Plan*
(13) *The recipient's commitment to make monthly submission of project budget and project schedule to the Secretary*

Additional requirements are outlined in Section 633.27 of 49 CFR 633 (Subpart C) regarding the implementation of a project management plan as follows:

(1) Upon approval of a project management plan by the Secretary the recipient shall begin implementing the plan.

(2) If a recipient must modify an approved project management plan, the recipient shall submit the proposed changes to the Secretary along with an explanation of the need for the changes.

(3) A recipient shall submit periodic updates of the project management plan to the Secretary that include, but are not limited to, the following:

(a) Project budget

(b) Project schedule

(c) Financing, both capital and operating

(d) Ridership estimates, including operating plan

(e) Where applicable, the status of local efforts to enhance ridership when estimates are contingent, in part, upon the success of such efforts

(4) A recipient shall submit current data on a major capital project's budget and schedule to the Secretary on a monthly basis.

7.1.1 PMOC Assessment

Through review of the grantee's PMP, the PMOC was able to assess the ability of the grantee and its project management approach to take the project successfully from entry to final design through award of the FFGA. In doing so, the PMOC found that the PMP at this phase demonstrates a well-conceived plan for project bidding and construction.

The PMOC has reviewed the PMP to ensure adequacy and soundness of the grantee's plans and procedures for:

- NEPA coordination. The PMOC reviewed the grantee's Mitigation Monitoring Program that has been developed for managing and implementing mitigation actions into the design documents, cost estimates and schedules and has no further comments.
- Design control. The grantee has established and is implementing the plans and procedures for design control including reviews for design, value engineering, life-cycle cost considerations, constructability, and safety.
- Project controls. The PMOC reviewed the grantee's baselines for capital cost estimate and schedule. The grantee has accepted the PMOC recommendation of combining all various schedules into one all-encompassing schedule file, thus creating a true MPS. The Scheduling Procedures and PMP require revision to address any Schedule Breakdown Structure changes. The grantee's approach and plans for risk identification, assessment, and mitigation, and the development of adequate contingencies are acceptable.
- Project Delivery and Procurement. The PMOC reviewed the grantee's contracting plan for project delivery and procurement and evaluated the soundness and adequacy of the its approach to bidding and awarding of contracts, procurement of materials, equipment and vehicles, and the construction administration and construction management of the Project, and the PMOC has no further comments. The selected project delivery methods and contract packaging strategies are reflected in project schedules and cost estimates.

7.1.2 PMP Sub-Plans

Sub-plan documents are referenced in the PMP but require additional detail and information, which can more easily be recorded and referenced in a stand-alone document. The Table below provides a listing of the sub-plans. The table includes the document revision and status pursuant to PMOC review and comment. Note that the table does not include the numerous Procedures that are also developed and implemented by the grantee to further support the function, integration, and execution of the various plans.

Table 6. PMP Sub-Plans

Sub-Plan	Revision No.	Date	Notes
Quality Management Plan (QMP)	1	15-Feb-12	Acceptable for FFGA
Real Estate Acquisition and Management Plan (RAMP)	5	01-Jun-12	Acceptable for FFGA
Bus Fleet Management Plan (BFMP)	3	Mar-12	Acceptable for FFGA
Rail Fleet Management Plan (RFMP)	0.1	Mar-12	Acceptable for FFGA
Safety and Security Management Plan (SSMP)	3A	28-Feb-12	Acceptable for FFGA
Safety and Security Certification Plan (SSCP)	2A	01-Mar-12	Acceptable for FFGA
Configuration Management Plan	0.2	07-Feb-12	Acceptable for FFGA
Staffing and Succession Plan	5	25-May-12	Acceptable for FFGA
Risk and Contingency Management Plan (RCMP)	0	29-Jun-12	Acceptable for FFGA/Revision pending to reflect updated Secondary Mitigation Measures
Operating Plan	0.2	29-Jun-12	Acceptable for FFGA
Force Account Plan	0.3	05-Jan-12	Acceptable for FFGA
Mitigation Monitoring Program	0	15-Mar-12	Acceptable for FFGA
Interface Management Plan	0.1	17-Jan-12	Acceptable for FFGA
Contract Packaging Plan	3.0	30-Mar-12	Acceptable for FFGA
Claims Avoidance Plan	0.1	24-Jan-12	Acceptable for FFGA
Construction Management Plan (CMP)	0.1	03-Feb-12	Acceptable for FFGA
Contract Resident Engineer Manuals (DB & DBOM)	0.1	Feb-12	Acceptable for FFGA
Contract Resident Engineer Manuals (DBB)	A	15-Mar-12	Acceptable for FFGA
Project Procedures			Acceptable for FFGA

7.1.3 Conclusion

The PMP is generally a well written and thorough document that satisfies the FTA *Project and Construction Management Guidelines* and the FTA PMP requirements. It is the PMOC's professional opinion that PMP Revision 5.0, dated June 29, 2012, meets the FTA guidance and requirements necessary to execute an FFGA.

7.2 Design Control

7.2.1 Value Engineering

The grantee sponsored VE workshops on station design (April 2010) and on the Airport and City Center Guideway Segments (April 2011), which cover virtually the entire portion of the Project

that is to be delivered by the traditional DBB method. The Project also benefited from a program of Alternative Technical Concepts (ATC) that were received from bidders on the project's DB and DBOM contracts. The grantee has accepted or conditionally accepted 79 of 154 such VE and ATC proposals, with an estimated value of up to $310 million in net savings. Such savings, of course, depend on the actual implementation of the changes and may be affected by the "conditions" in the "conditionally accepted" category and the amount of overlap between similar VE or ATC proposals. PMOC does not expect the savings or the implementation percentage to meet the projected totals, but does feel that the efforts were effective in at least inducing serious study of the project's assumptions.

It is the PMOC's opinion that the grantee began adequately addressing the VE element of the Project in preliminary engineering and will continue to do so through completion of final design of all elements of the Project.

7.2.2 Coordination Review – Third Party Agreements

The grantee has identified all third party agreements needed for the Project. PMOC has tracked the status of the third-party agreements during the monthly review meetings. The grantee will need to negotiate, finalize, or update agreements with Hawaii Department of Transportation (HDOT), Honolulu International Airport (HNL), the Federal Aviation Administration (FAA), the Department of Hawaiian Homelands (DHHL), United States Navy (USN), and all the various utility companies. While most of these agencies have shown a willingness to cooperate with the grantee, nothing can be guaranteed about the success of these relationships until agreements are in place.

It must be noted that many third party agreements have yet to be executed, as typically required for an FFGA. However, it is the opinion of the PMOC that the grantee has sufficiently identified and managed the numerous third party agreements in a manner necessary to execute an FFGA.

Table 7. Third Party Agreements

Agreement	Segment/ Contract	Target Date	Completion Date	Status
University of Hawaii Master Agreement	WOFH, KHG, City Center	Nov 2012	Pending	Tentative agreement is in place on path forward to secure access to the property
Leeward Community College Sub-agreement	WOFH	Nov 2012	Pending	Property appraisal complete.
UHWO Sub-agreement	WOFH	Nov 2012	Pending	Property appraisal complete.
Department of Education Master Agreement and Consent to Construct	WOFH	-	Feb 8, 2011	Executed
DR Horton Consent to Construct	WOFH	-	Mar 7, 2012	Executed

Agreement	Segment/ Contract	Target Date	Completion Date	Status
DR Horton Master Agreement	WOFH		Pending	HART has permission to construct along WOFH Segment. Master Agreement will be required to address a permanent easement or dedication to the City and County of Honolulu
DHHL Master Agreement	WOFH and MSF	-	Mar 10, 2010	Executed
DHHL Consent to Construct	WOFH and MSF	-	Dec 1, 2011	Executed
DHHL License or Property Transfer	WOFH and MSF	Dec 2012	Pending	DHHL reviewing license and discussions continuing with City on property transfer.
HDOT Master Agreement for WOFH	WOFH	-	Oct 31, 2011	Executed
HDOT Use and Occupancy Sub-agreement for WOFH	WOFH	-	April 5, 2012	Executed
UH Urban Garden Sub-agreement	KHG	Nov 2012	Pending	Property appraisal complete.
HDOT Master Agreement for KHG	KHG	Nov 2012	Pending	HART has received comments and is resolving issues.
HDOT Use and Occupancy Sub-agreement for KHG	KHG	Nov 2012	Pending	Will complete after KHG Master Agreement is completed
Aloha Stadium/ Department of Accounting and General Services (DAGS)	KHG	Nov 2012	Pending	Finalized agreement. Aloha Stadium Board review and approval is pending.
Navy/General Services Administration (GSA)	Airport	N/A	Pending	Navy will provide consents to enter until all required easements are in place. Progressing fee taking of Pearl Harbor Station site.
US Post Office Honolulu Processing and Distribution Center	Airport	Nov 2013	Pending	Initiated request to secure an easement for Post Office Property.
FAA Master Agreement	Airport	Jul 2013	Pending	As design progress a determination will be made if an agreement is required.
HDOT Master Agreement for Airport	Airport	Apr 2013	Pending	Pending completion of KHG Master Agreement
HDOT Joint Use and Occupancy Sub-agreement for Airport	Airport	May 2013	Pending	Will complete after Airport Master Agreement is completed
HDOT Master Agreement for City Center	City Center	Jun 2013	Pending	Pending completion of KHG Master Agreement
HDOT Joint Use and Occupancy Sub-agreement for City Center	City Center	Jul 2014	Pending	Pending completion of City Center Master Agreement
Honolulu Community College Sub-agreement	City Center	May 2014	Pending	Property appraisal completed.

Agreement	Segment/ Contract	Target Date	Completion Date	Status
Federal Court House/GSA	City Center	Oct 2014	Pending	HART is reviewing GSA draft agreement and conducts monthly meetings with parties
Hawaii Community Development Agreement (HCDA)	City Center	Oct 2014	Pending	Awaiting final design requirements for guideway
DAGS	City Center	Oct 2014	Pending	Awaiting final design requirements for guideway

7.2.3 Constructability Review

The grantee has developed a Contract Packaging Plan. As part of the Risk Assessment, the PMOC reviewed the constructability of the Project and the Contract Packaging Plan.

The design oversight provided by the grantee will be a continuous process throughout the final design phase of the various contracts. The grantee will implement frequent design reviews, constructability reviews, peer reviews, and value engineering. The PMOC will continue to monitor these efforts.

The PMOC generally concurs with the grantee's logic in the selection of the proposed contract packaging approach. Each proposed package is well-reasoned from a location, contract size, and work management standpoint. The PMOC is of the opinion that the contract delivery methodology proposed by the grantee can be successfully executed. The grantee has the statutory authority to award the contract types currently under consideration.

It is the opinion of the PMOC that the grantee has sufficiently defined its Design Control process to meet the FTA guidance and requirements necessary to execute an FFGA.

7.3 Technical Capacity and Capability

7.3.1 FTA Guidance

Per FTA Oversight Procedure 21, Grantee Technical Capacity and Capability Review, the PMOC will perform evaluations and render professional opinions regarding both the grantee's Technical Capacity and Capability (TCC) to successfully implement, manage, and complete a major Federal-assisted capital project and the grantee's ability to recognize and manage project risk factors and implement mitigation measures. The evaluations cover the following:

- Organization, Personnel Qualifications and Experience
- Grantee's approach to the work, ability to perform the work, including its methods, policies, and procedures for developing and updating reasonable and realistic project cost estimates and schedules, and the grantee's abilities to identify, analyze, manage and mitigate project risks.

7.3.2 PMOC Assessment

The PMOC has some concern that the grantee may continue experiencing difficulty attracting and retaining the experienced staff needed for long-term project assignment and permanent grantee employment (post-Project) given Hawaii's geographic isolation, salary limits, and high cost of living relative to the mainland. The grantee should adhere to the staffing plan to address the transition of staff during the final design and construction phases for positions currently occupied by PMC staff to grantee staff.

The grantee must strive to transition the key management positions currently occupied by the PMC and General Engineering Consultant (GEC) as early as possible. This transition is necessary in order for the grantee to have more ownership and maintain stronger continuing control of the project without having to rely too heavily on the PMC and GEC. The grantee recently submitted a Staffing and Succession Plan Revision 5, dated May 25, 2012, to support the basis for the base soft cost reductions that were incorporated into the Capital Cost Estimate. The grantee reduced the PMC and GEC contract duration for some key staff positions to transfer to HART, but the Staffing and Succession Plan did not include some key positions that are needed by HART to complete the project by the Revenue Service Date.

The PMOC will continue monitoring the grantee's project management process to ensure that it is effectively managing the project and continuing fiscal responsibility and accountability for all decisions affecting project design, cost, and schedule. The transition from PMC staff to full-time grantee staff must be closely monitored by the PMOC after receipt of an FFGA.

The grantee must issue comprehensive and timely Monthly Reports in accordance with the federal requirements. The PMOC will validate this requirement upon receipt and review of several months of consistently submitted status reports.

7.3.3 Conclusion

It is the PMOC's professional opinion that the grantee has demonstrated sufficient TCC necessary to execute an FFGA.

7.4 QA/QC Plan Review

The FTA requires a grantee undertaking a major capital program to prepare a PMP that includes a Quality Assurance/Quality Control (QA/QC) Plan. The development of a project QA/QC Plan should be an outgrowth of a functioning quality management system. A comprehensive quality management system is comprised of a written quality policy, a written plan, written procedures, a management that supports and takes responsibility for quality, and personnel who will undertake quality assurance and quality control activities. The required elements of a QA/QC Plan are stipulated in FTA-IT-90-5001-02, *Quality Assurance and Quality Control Guidelines*, dated February 2002.

The PMOC followed the requirements outlined in the *FTA OP 24 – QA/QC Review*, dated May 2010, to assess and evaluate the grantee's Quality Management Plan (QMP) Revision 1.A, dated February 15, 2012. The objective of this review is to assess and evaluate the adequacy and

soundness of the grantee's QA/QC program and the grantee's implementation of such program over the course of the Project.

7.4.1 PMOC Assessment

The PMOC assessed and evaluated the adequacy and soundness of the grantee's QA/QC program and the implementation of the program. The PMOC determined that each of the following OP 24 categories was satisfactorily addressed:

- Quality Management
- Document Control
- Design Control
- Procurement
- Construction/Inspection
- Operations, Startup, and Testing

7.4.2 Conclusion

It is the PMOC's professional opinion that QMP Rev. 1.A, dated February 15, 2012, meets the FTA guidance and requirements necessary to execute an FFGA.

7.5 Safety and Security Management Plan

The FTA requires a grantee undertaking a major capital program to prepare a PMP that includes a Safety and Security Management Plan (SSMP). The grantee developed an SSMP according to the most recently available FTA guidance, *Safety and Security Management Guidance for Major Capital Projects*, FTA C 5800.1, dated August 1, 2007.

The PMOC followed the requirements outlined in the *OP 22 – Safety and Security Management Plan Review*, dated May 2010, to assess and evaluate the grantee's SSMP, Revision 3.0A, dated February 29, 2012.

7.5.1 PMOC Assessment

The PMOC assessed the SSMP using criteria identified in Items 1 through 12 in OP 22, which are also listed in Circular 5800.1, Pages II-4 and II-5, and against the specific section-by-section requirements identified in C5800.1 Chapter IV.

The PMOC review found that SSMP Revision 3.0A, dated February 29, 2012, is a significantly improved document over the previous submission. It contains, by inclusion or implication, all sections specified in FTA Circular 5800.1, and is compliant or acceptable for an FFGA. The PMOC review also found, however, a need for revision in some plan sections and appendices for both minor (correction of typographical errors and omissions) and major reasons. As a result of its findings, the PMOC has reached the following conclusions:

- The content of all plan sections and support appendices of the SSMP is compliant with requirements for an FFGA.

- The SSMP Adherence Review proceeded smoothly in large part due to the cooperation of the interviewees and all HART staff involved in supporting the review.
- For the most part, HART, PMC, and GEC personnel displayed a good understanding of the SSMP and their safety and security roles described in it. The actual performance of these activities aligned well with their SSMP descriptions.
- There are currently two vacant Construction Safety and Security Compliance Officer (CSSCO) positions that report to the GEC Construction Safety and Security Manager (CSSM), only one of which is planned for filling by the GEC in the near future. The second CSSCO position provides a good opportunity to hire a HART safety professional to be trained and mentored by the GEC CSSM in construction safety and security oversight and management. The PMOC believes that the timetable for some of the staffing recommendations identified in the OP 22 report may be affected by the current suspension of construction activities.
- There is also a current vacancy for a System Security Specialist (SSS) that reports to the GEC System Safety and Security Manager (SSSM) that is not programmed for filling in the near future. The SSS position provides a good opportunity to hire a HART security professional to be trained and mentored by the SSSM and the existing well-seasoned GEC senior security specialist in security oversight and management. The PMOC believes that the timetable for some of the staffing recommendations identified in the OP 22 report may be affected by the current suspension of construction activities.
- The SSMP currently identifies the Chief Safety and Security Officer (CSSO) as a "technical resource" to the Change Control Board (CCB); the CSSO should be a full member of the CCB.
- The PMOC observed that some plans and procedures reviewed were not up-to-date and others were filed as red-lined versions for extended periods while waiting for finalization. The PMOC will include review of all documents submitted in red-lined versions to assure they are in final format, including that recommended changes have been accepted or a rationale for non-acceptance provided, and that all are properly named, labeled, dated, and signed.
- The PMOC noted during interviews that there was some confusion as to the role of GEC personnel in the HART integrated safety and security organization. While GEC personnel coordinate with, provide information to, and receive information from HART, they are not integrated into the HART organization. They work solely for the GEC Project Manager under terms of their contract with HART. A clearer delineation of GEC project roles is needed.
- There are no full time security professionals in the combined HART organization. Although there is one GEC security professional assigned to the project, his assignment is on a part-time basis. Since GEC personnel report to a separate chain of command, the possibility exists that his availability may not be guaranteed over the life of the project.
- The CSC has not yet provided a safety and security professional on-site in Honolulu, and communication with off-site personnel is proving difficult due to the time difference between locations.
- The Safety and Security Certification Manager (SSCM) position that reports to the CSSO remains vacant, with certification efforts expected to increase in the near future.

- The HART Quality Assurance Manager (QAM) does not include auditing of the safety and security department's adherence to the SSMP and associated plans and procedures requirements in his audit program.

7.5.2 State Safety Oversight Agency (SSOA)

- The FTA, HART and PMOC participated in the first monthly roadmap call with HDOT on March 6, 2012 and subsequent roadmap calls are scheduled the first Tuesday of every month. HDOT also provided a letter to FTA on January 3, 2011 identifying a funding source for the SSOA once the Project is in operations.
- HART and HDOT executed the Memorandum of Agreement (MOA) on December 23, 2011. However, the MOA needed to be revised due to a potential conflict of interest and for HART to provide the technical funding directly to HDOT, which, in turn, will contract directly with the SSOA consultant. The revised MOA was executed between HART and HDOT on February 3, 2012, removing the potential conflict of interest and providing the technical funding from HART directly to HDOT, which will then contract directly with the SSOA consultant.
- An interim HDOT SSOA Project Manager has been working part-time since April 2011. HDOT anticipates hiring a full-time SSOA Project Manager by the end of 2012. HDOT is in the process of revising the job posting to eliminate the Professional Engineer license requirement to broaden the pool of applicants. Given the status of this Project, it is critical that a permanent lead be identified as soon as possible.
- HDOT awarded a consultant contract to Dovetail, Inc. in July 2012 to develop the System Safety and Security Program Standards (SSSPS), which will become an important part of HDOT's comprehensive safety and security assessment that formalizes the safety and security duties and responsibilities of the transit organization and ensures a process for identifying and correcting safety and security hazards.

7.5.3 Conclusion

It is the PMOC's professional opinion that SSMP Revision 3.0A, dated February 29, 2012, meets the FTA guidance and requirements necessary to execute an FFGA.

7.6 Real Estate Acquisition and Management Plan (RAMP)

The PMOC followed the requirements outlined in the *OP 23 – Real Estate Acquisition and Management Plan Review,* dated May 2010, to assess and evaluate the grantee's RAMP Revision 5, dated June 1, 2012. The review process consisted of identifying references for assessment of the plan contents and performing a review as needed to validate claims made by the grantee in the RAMP. Following are the objectives of the OP 23 review:

- Evaluation and continuous oversight of the grantee's RAMP including real estate acquisition; project scope; estimated cost; overall schedule and critical path; and the relocation plan.
- Evaluation of the real estate schedule for completeness, adequacy, consistency, appropriateness of level of detail given the phase; identification of risks inherent in the schedule and evaluation of the impact of these on project scope and cost.

- Characterization of the grantee's ability to meet the requirements of Federal laws, regulations, and guidance when acquiring real estate.
- Determination of grantee's compliance with all governing requirements during the implementation phase of the real estate acquisition program.
- Based on observations of the project, timely reporting by the PMOC of recommended improvements, lessons learned, and best practices.

7.6.1 PMOC Assessment

Each of the following elements of the RAMP was reviewed per the requirements of OP 23 and found to be adequately addressed:

- Organizational Structure
- Document Control
- Property Management Plan
- Acquisition Plan
- Ownership and title information
- Appraisal
- Establishment of Offer of Just Compensation
- Negotiations
- Closing/Escrow
- Condemnation
- Disposition Plan
- Relocation Assistance Plan
- Staffing and Administration
- Appeals
- Third Party Real Estate Agreements
- Real Estate Cost Estimate
- Acquisition and Relocation Schedule

7.6.2 Conclusion

It is the PMOC's professional opinion that RAMP Revision 5, dated June 1, 2012, meets the FTA guidance and requirements necessary to execute an FFGA.

7.7 Bus Fleet Management Plan

The PMOC followed the requirements outlined in the *OP 37 – Fleet Management Plan Review*, dated May 2010, to assess and evaluate the grantee's Bus Fleet Management Plan (BFMP) "red-lined" draft, dated March 2012.

7.7.1 PMOC Assessment

The PMOC's review process consisted of identifying references for assessment of the plan contents and performing an as-needed analysis to validate calculations and claims made by grantee in the BFMP. Review of this document concentrated on the impacts and grantee plans for bus service that may result from the Project.

The BFMP presents empirical data for operations of the current system through 2010 and provides projections through 2022. It satisfactorily addresses vehicles and service types in operation and anticipated to be in operation, as well as factors that are relevant to the grantee's determinations of current and future equipment needs.

The PMOC findings include:

- Grantee has met the intent of the requirement for a BFMP, as well as demonstrating grantee's ability to properly plan for and carry out the overall management of its Bus fleet.
- BFMP addresses operating policies (level of service requirements); peak vehicle requirements (PVR); inspection and maintenance program; system and service expansions; vehicle procurements and related schedules; and operating spare ratio (OSR) justification.
- Information in Table 4-3 Bus Acquisition and Replacement Costs & Revenues in this BFMP is based on the grantee's previous Financial Plan and must be revised based on the updated Financial Plan to show annual budgetary information for the projected cost of Bus Acquisition and Replacement from 2011-2020.
- The plan addresses the composition of the fleet, operating conditions, and facilities.

7.7.2 Conclusion

It is the PMOC's professional opinion that red-lined" draft BFMP, dated March 2012, meets the FTA guidance and requirements necessary to execute an FFGA.

When the BFMP is baselined, Table 4-3 Acquisition and Replacement Costs & Revenues should be based on the updated Financial Plan to show annual budgetary information for the projected cost of Bus Acquisition and Replacement from 2011-2020.

7.8 Rail Fleet Management Plan

The PMOC followed the requirements outlined in the *OP 37 – Fleet Management Plan Review*, dated May 2010, to assess and evaluate the grantee's Rail Fleet Management Plan (RFMP) "red-line" draft dated March 2012.

7.8.1 PMOC Assessment

The PMOC reviewed this red-lined RFMP document to assess compliance with appropriate FTA Guidance and found that the document generally followed FTA's 8-step process for OSR computation. The PMOC noted that the grantee has complied with OP 37 guidance, satisfactorily addressed the majority of the PMOC's previous comments, and agreed to update the remaining open items in the next revision of the RFMP.

The PMOC anticipates that the next revision of the RFMP would be available after the FFGA when AHJV progresses its work (i.e. within one year of initial Notice to Proceed). That revision should address and/or provide additional detail on the following topics:

- Service operations and vehicle demand forecasting.

- Planned fleet Maintenance practices and management staffing that will be provided through CSC.
- Planned use of Maintenance Statistics and Maintenance Strategy as provided through the CSC.
- MSF functionality and vehicle availability.

In addition to providing additional detail in the areas noted above, the grantee should address, in the next update of the RFMP, PMOC's comments as annotated in this report as well as those in "*Appendix B: OP 37, Appendix B FMP Checklist – Grantee Compliance*" of the PMOC's report.

7.8.2 Conclusion

It is the PMOC's professional opinion that red-lined" draft RFMP, dated March 2012, meets the FTA guidance and requirements necessary to execute an FFGA.

The PMOC also recommends that a workshop be conducted with the grantee to discuss the details needed in the next update of the RFMP to ensure compliance during implementation of the Project.

8.0 HAWAII SUPREME COURT RULING

On August 24, 2012, the Hawaii Supreme Court issued a ruling in Kaleikini v. City and County of Honolulu finding that the City and County of Honolulu (City) violated a State of Hawaii (State) historic preservation law (Hawaii Revised Statute (HRS) Chapter 6E) by approving the Project, and allowing construction to proceed, before completing an Archaeological Inventory Survey (AIS) for the entire Project. The ruling reversed a previous Circuit Court decision that had upheld the granting of City and State permits based on the phased completion of the AIS rather than on the completion of the AIS for the entire alignment. Currently, the HART is working to complete the AIS for the entire 20-mile alignment.

HART issued a partial suspension of construction work on August 24, 2012 for all ground-disturbing activities after a ruling by the Hawaii Supreme Court. On September 7, 2012, HART provided letters to their contractors to clarify that no construction activity would continue until future written notice is provided by HART. However, Final Design work is still proceeding on all contracts that have been awarded to date.

As a result of the State Supreme Court's ruling, it is anticipated that there will be significant impacts to both the project schedule and project budget. The grantee's preliminary analysis indicates that the cost impact for the three design-build contracts could range between $64 and $95 million. However, this does not include additional cost impacts due to escalation for future contracts and extended agency and consultant staffing. The preliminary schedule analysis by the grantee indicates that there could be a nine to twelve-month impact on the interim opening but possibly no impact to the full Revenue Service Date. The PMOC will perform a thorough review of HART's assessment and Secondary Mitigation Strategies to determine the overall magnitude of impacts to the project schedule and project budget.

9.0 CONCLUSION/RECOMMENDATIONS

9.1 Conclusion

The PMOC has determined that the grantee has completed the following steps necessary to execute an FFGA: adequately defined the Project's scope, schedule, and cost; developed an approvable PMP and supporting documents; and, has demonstrated sufficient technical capacity and capability. The PMOC recommends that the FTA execute an FFGA with the grantee that identifies the following budget and completion milestone:

- Project budget of $5.122 billion in YOE, including $644 million in total contingency and $173 million in financing costs.
- FFGA Revenue Service Date of January 31, 2020.

9.2 Recommendations

The PMOC recommends that the following items be addressed by the grantee following execution of an FFGA:

- Identify project management staff per the Staffing Plan and Transition Plans in order to maintain control of the various concurrent projects.
- Follow the staffing and succession plan for those key management positions that may be considered short term (three years or less) in order to ensure a successful "knowledge transfer" of project consultants' expertise to the grantee.
- Develop a Human Resources Management Plan (HRMP) that will function as a blueprint for the organizational development of HART to assist with transition of PMC positions to HART.
- Consistently issue comprehensive and timely Monthly Reports to the FTA and PMOC.
- Implement all schedule management procedures and guidelines as documented in the PMP and its respective project control companion documents.
- Revise its staffing plan when major revisions are made to the Project scope, schedule or budget, or when major project phases are complete (e.g. completion of major DB contracts) in order to synchronize resource allocation planning. Major revisions include significant delay to contract letting or execution, contract package revisions, changes to contract delivery methods, etc., or the addition of professional service contracts, etc.
- Develop Baseline Project Procedures that are denoted as "To Be Determined" and are critical to proper execution of construction.
- Complete any unfinished effort to acquire agreements with all affected agencies and begin the process of cooperation that those agreements entail.
- Continue the process of updating the Project budget and schedule, incorporating information from contracts-in-progress, any accepted cost reduction measures, and from completed tasks as they occur.
- Manage the schedule and budget by implementing controls as described in its project management plans throughout construction.
- Perform more meaningful and comprehensive analysis of the MPS critical and near-critical paths each month.
- Fully develop a "solid" program schedule baseline that incorporates approved contract baseline schedules.

- Continue to be proactive in assuring that all of its contractors meet the requirements of Buy America and Ship America.
- Continue to incorporate and implement the accepted Value Engineering (VE) proposals for the Stations and Airport/City Center segments.
- Emphasize the need for a safety and security professional to be assigned in Honolulu for the CSC to support the systems and operations responsibilities under the systems and operations and maintenance portions of their contract.
- Coordinate with the CSC to resolve any transit capacity issues.
- Develop more detail for the Secondary Mitigation items and attempt to identify secondary mitigation measures that approach a total value of $149 million.
- Conclude Archaeological Inventory Surveys to comply with the Hawaii Supreme Court ruling and update analyses of that ruling's cost, schedule, contingency, and mitigation implications.

10.0 APPENDICES

Appendix A: List of Acronyms

AACE	▪	Association for the Advancement of Cost Engineering
AHJV	▪	Ansaldo Honolulu Joint Venture
AIS	▪	Archaeological Inventory Survey
ATC	▪	Alternative Technical Concept
BAFO	▪	Best and Final Offers
BCE	▪	Base Cost Estimate
BFMP	▪	Bus Fleet Management Plan
CCB	▪	Change Control Board
CFR	▪	Code of Federal Regulations
CMP	▪	Configuration Management Plan
CPM	▪	Critical Path Method
CSC	▪	Core Systems Contract
CSSCO	▪	Construction Safety and Security Compliance Officer
CSSM	▪	Construction Safety and Security Manager
CSSO	▪	Chief Safety and Security Officer
DB	▪	Design-Build
DBB	▪	Design-Bid-Build
DBOM	▪	Design-Build-Operate-Maintain
DHHL	▪	Department of Hawaiian Homelands
DTS	▪	Department of Transportation Services
FAA	▪	Federal Aviation Administration
FEIS	▪	Final Environmental Impact Statement
FFGA	▪	Full Funding Grant Agreement
FTA	▪	Federal Transit Administration
GEC	▪	General Engineering Consultant
HART	▪	Honolulu Authority for Rapid Transportation
HDOT	▪	Hawaii Department of Transportation
HHCTCP	▪	Honolulu High Capacity Transit Corridor Project
HNL	▪	Honolulu International Airport
HRMP	▪	Human Resources Management Plan
HRS	▪	Hawaii Revised Statute
KHG	▪	Kamehameha Highway Guideway
LONP	▪	Letter of No Prejudice
LPA	▪	Locally Preferred Alternative
MOA	▪	Memorandum of Agreement
MPS	▪	Master Project Schedule
MSF	▪	Maintenance and Storage Facility
NEPA	▪	National Environmental Policy Act
NTP	▪	Notice to Proceed
OP	▪	Oversight Procedure
OSR	▪	operating spare ratio
PA	▪	Programmatic Agreement
PMC	▪	Project Management Support Consultant
PMOC	▪	Project Management Oversight Contractor
PMP	▪	Project Management Plan
PVR	▪	Peak Vehicle Requirement
QA/QC	▪	Quality Assurance/Quality Control
QAM	▪	Quality Assurance Manager
QMP	▪	Quality Management Plan
RAMP	▪	Real Estate Acquisition and Management Plan
RCMP	▪	Risk and Contingency Management Plan

RFMP	▪ Rail Fleet Management Plan
RFP	▪ Request for Proposals
ROD	▪ Record of Decision
ROW	▪ Right-of-Way
RSD	▪ Revenue Service Date
SCC	▪ Standard Cost Category
SSCM	▪ Safety and Security Certification Manager
SSCP	▪ Safety and Security Certification Plan
SSMP	▪ Safety and Security Management Plan
SSOA	▪ State Safety Oversight Agency
SSS	▪ System Security Specialist
SSSPS	▪ System Safety and Security Program Standards
SSSM	▪ System Safety and Security Manager
TCC	▪ Technical Capacity and Capability
USN	▪ United States Navy
VE	▪ Value Engineering
WBS	▪ Work Breakdown Structure
WOFH	▪ West Oahu/Farrington Highway
YOE	▪ Year of Expenditure

Appendix B: Documents Reviewed

Document	Rev. No.	Date
Management Plans/Administrative		
Final Environmental Impact Statement (FEIS)	-	25-Jun-10
Programmatic Agreement (PA)	-	18-Jan-11
Record of Decision (ROD)	-	18-Jan-11
Project Management Plan (PMP)	5.0	29-Jun-12
Quality Management Plan (QMP)	1	05-Feb-12
Real Estate Acquisition and Management Plan (RAMP)	5	31-Jan-12
Bus Fleet Management Plan (BFMP)	3	Mar-12
Rail Fleet Management Plan (RFMP)	0.1	Mar-12
Safety and Security Management Plan (SSMP)	3A	28-Feb-12
Safety and Security Certification Plan (SSCP)	2A	01-Mar-12
Configuration Management Plan	0.2	07-eb-12
Staffing and Succession Plan	5	25-May-12
Operating Plan	0.2	29-Jun-12
Force Account Plan	0.3	05-Jan-12
Mitigation Monitoring Program	0	15-Mar-12
Interface Management Plan	0.1	17-Jan-12
Risk Contingency Management Plan	0	29-Jun-12
Contract Packaging Plan	3	30-Mar-12
Claims Avoidance Plan	0.1	24-Jan-12
Construction Management Plan (CMP)	0.1	03-Feb-12
Contract Resident Engineer Manuals (DB & DBOM)	0.1	Feb-12
Contract Resident Engineer Manual (DBB)	A	15-Feb-12
1.PP-01 – Procedures Index	0	15-Mar-12
1.PP-02 – Procedure Development Process	0.1	12-Mar-12
1.PP-03 – Standard Terms, definitions, and Acronyms	0.1	12-Mar-12
1.PP-04– Baseline Documents Revision and Control	0.1	12-Mar-12
1.PP-05 – Identification of Badge Policy	0.1	15-Mar-12
2.PA-01 – Security Sensitive Information (SSI)	0.1	12-Mar-12
2.PA-02 – Procurement Control	0.1	12-Mar-12
2.PA-03 – Email Management	0.1	12-Mar-12
2.PA- 04- Project Wide Document Control	0.1	12-Mar-12
2.PA-05 – Project Library	0.1	12-Mar-12
2.PA-06 – Community Relations and Media Contacts	0.1	12-Mar-12
2.PA-07 – RTD Training Procedure	0.1	12-Mar-12
2.PA-08 – Policy for Safeguarding Protected Information	0.1	12-Mar-12
2.PA-09 – Permit Procedures	0	15-May-12
3.PM-01 – Contract Management System	1.1	14-Mar-12
3.PM-04 – Public Information Communication	0.1	15-Mar-12
3.PM-05 Meeting/Minutes	2.1	12-Mar-12
4.PC-02 – Project Management Control	0.1	15-Mar-12
4.PC-03 – Project Progress Reports	0.1	15-Mar-12
4.PC-04 – Program Scheduling	0.1	15-Mar-12
4.PC-05 – Project Accounting	0.1	12-Mar-12
4.PC-06 – Cost Estimating	0.1	12-Mar-12
4.PC-07 – Cost Control	0.1	12-Mar-12
4.PC-08 – Risk Management	0.1	12-Mar-12
4.PC-09 – Contingency Management	1	15-Mar-12
5.CA-01 – Contract Administration	0.1	15-Mar-12
5.CA-02 – Contract Change Management	0.1	14-Mar-12

Document	Rev. No.	Date
5.CA-03 – Contractor Progress Payments	0.1	13-Mar-12
5.CA-04 – Contractor Progress Reports	0.1	13-Mar-12
5.CA-05 – Contract Change Orders	0.1	13-Mar-12
5.CA-06 – Contract Closeout	0.1	13-Mar-12
5.CA-07 – Claims and Disputes Resolution	0.2	14-Mar-12
5.CA-08 – CACO and Contract Amendment Procedure	0	14-Mar-12
6.CM-01 – Submittal Procedure	1.1	14-Mar-12
6.CM-02 – RFI Procedure	2.1	14-Mar-12
6.CM-03 – RFC Procedure	0.2	14-Mar-12
6.CM-05 – Interface Management and Coordination Procedure	0.1	12-Mar-12
7.GA-01 – Board – Staff Interaction	0	17-July-11
7.GA-04 – Petty Cash Fund	0	17-July-11
7.GA-06 - Travel	0	17-July-11
7.GA-07 – Preparation of Board Materials	0	20-July-11
Technical		
Design Criteria		
Chapter 1 – General		15-Mar-12
Chapter 2 – Operations		15-Mar-12
Chapter 3 – Environmental Considerations		15-Mar-12
Chapter 4 – Track Alignment and Vehicle Clearances		14-Feb-12
Chapter 5 – Trackwork		15-Mar-12
Chapter 6 – Civil		15-Mar-12
Chapter 7 – Traffic		15-Mar-12
Chapter 8 – Utilities		15-Mar-12
Chapter 9 – Structural		15-Mar-12
Chapter 10 – Architecture		10-Feb-12
Chapter 11 – Landscape Architecture		15-Mar-12
Chapter 12 – Passenger Vehicles		10-Feb-12
Chapter 13 – Traction Electrification		15-Mar-12
Chapter 14 – Train Control		15-Mar-12
Chapter 15 – Communications and Control		15-Mar-12
Chapter 16 – Fare Vending		15-Mar-12
Chapter 17 – Corrosion Control		15-Mar-12
Chapter 18 – Maintenance & Storage Facilities (MSF)		14-Feb-12
Chapter 19 – Facilities Mechanical		15-Mar-12
Chapter 20 – Facilities Electrical		15-Mar-12
Chapter 21 – Fire and Intrusion Alarm Systems		15-Mar-12
Chapter 22 – Elevators and Escalators		15-Mar-12
Chapter 23 – Fire/Life Safety		15-Mar-12
Chapter 24 – Systems Assurance		10-Feb-12
Chapter 25 – System Safety and Security		15-Mar-12
Chapter 26 – Sustainability		14-Feb-12
HART Directive Drawings		3-Nov-10
HRTP Standard Specifications		15-Feb-12
West Oahu/Farrington Station Highway Final Design Drawings		Various
Geotechnical Data Report (WOFH)		27-Mar-09
Supplement to Geotechnical Data Report (WOFH)		15-May-09
Geotechnical Baseline Report (WOFH)	2.0	Aug-09
Kamehameha Highway Interim Design, Advanced Interim Design, and Final Design Drawings		Various
Kamehameha Highway Segment Geotechnical Baseline Report	1.1	07-May-10
Kamehameha Highway Geotechnical Data Report		16-Feb-10

Document	Rev. No.	Date
Kamehameha Highway Geotechnical Data Report Addendum		7-May-10
Airport Preliminary Engineering Drawings, Volumes 1-3		1-Oct-10
Airport Geotechnical Data Report		8-Feb-10
Airport Fixed-Guideway Foundation Technical Memorandum		6-Feb-10
City Center Preliminary Engineering Drawings, Volumes 1-4		6-Oct-10
City Center Geotechnical Data Report		26-Feb-10
City Center Fixed-Guideway Foundation Technical Memorandum		26-Feb-10
East Kapolei Station Updated Design Plans		9-Mar-12
UH West Oahu Station Updated Design Plans		9-Mar-12
Hoopili Station Updated Design Plans		9-Mar-12
West Loch Station In-Progress Submission		29-Feb-12
Waipahu Transit Center Station In-Progress Submission		29-Feb-12
Leeward Community College Station In-Progress Submission		29-Feb-12
Pearl Highlands Station Updated Design Plans		9-Mar-12
Pearlridge Station Updated Design Plans		9-Mar-12
Aloha Stadium Station Updated Design Plans		9-Mar-12
Airport Station Group Updated Design Plans		9-Mar-12
Dillingham Station Group Undated Design Plans		9-Mar-12
Kaka'ako Station Group Updated Design Plans		9-Mar-12
Ala Moana Station Updated Design Plans		9-Mar-12
Guideway Superstructure Study – Summary Report		22-May-08
Structures Workshop Summary Report		7-10-Jan-08
Systems Workshop Presentation		22-Aug-08
Transportation Technical Report		1-Aug-08
Construction Workshop Frequently Asked Questions (FAQ)		12-Jun-08
Construction Workshop Presentation		12-Jun-08
Environment Condition of Property, NAVFAC (Navy Drum Site)		Mar-09
Final Evaluation of Project Delivery Options		2-Nov-06
Fixed Guideway Fleet Sizing Report		Jun-09
Value Engineering – Stations Report		Sep-10
Value Enhancement Summary Report		Sep-10
Contracts		
West Oahu/Farrington Highway Design-Build – RFP, Addenda, Proposal and Contract Documents		Various
Kamehameha Highway Design-Build – RFP, Addenda, Proposal and Contract Documents		Various
Maintenance and Storage Facility Design-Build – RFP, Addenda, Proposal and Contract Documents		Various
Core Systems DBOM – RFP, Addenda, Proposal and Contract Documents		Various
General Conditions of Design-Build Contracts, Honolulu		Feb-09
Financial/Cost		
FFGA Capital Cost Estimate Basis and Assumptions		9-May-12
FFGA Main Worksheet – Build Alternative		14-May-12
FFGA Cash Flows Worksheet		14-May-12
FFGA HRTP SCC Cost Workbook		14-May-12
HART Capital Cost by Contract by SCC Workbook		20-Mar-12
Price Proposals (post bid) Kiewit WOFH		11-Nov-09
Price Proposals (post bid) Kiewit MSF		16-Mar-11
Price Proposals (post bid) Kiewit Kamehameha		16-Mar-11
Price Proposals (post bid) Ansaldo Core Systems		16-Mar-11
General Excise and Use Tax in Hawaii		16-Feb-06
Schedule		

Document	Rev. No.	Date
HRTP Baseline Progress Schedule REV.04.xer		13-Jun-12
HART FFGA BASELINE PMOC Review.plf		13-Jun-12
Basis of Schedule 062012.pdf (Rev 3.0)	3.0	20-Jun-12

Note: The above list includes all key documents reviewed by the PMOC for preparation of the various OP deliverables.

Appendix C: Final Design Approval Letter Requirements

No.	Item	Completion Date	Comments
	Financial Capacity Assessment		
1	The financial plan states that additional revenues may be obtained from an extension of the General Excise Tax or implementation of value capture mechanisms. However, these revenue sources require actions by the State of Hawaii and/or the City that have not been taken and which are beyond HART's ability to control. Prior to the Projects consideration for an FFGA, HART should demonstrate the availability of additional revenue sources that could be tapped should unexpected events such as cost increases or funding shortfalls occur.	Jun-12	Closed
2	HART made assumptions in three areas that require further justification or amendment: (1) the containment of bus and HandiVan operating expenses; (2) the increasing share of the City's annual budget required to fund the transit system; and (3) the diversion of Section 5307 funds from preventive maintenance to the Project. Prior to the Projects consideration for an FFGA, HART should either provide further documentation justifying the reasonableness of these assumptions or consider revising these assumptions to more closely follow historical patterns.	Jun-12	Closed
	Project Scope, Cost, Schedule, Risk and Technical Capacity		
3	At present HART is the project sponsor for the Project and the City is the direct recipient of FTA grant funds. It has not yet been decided if the grantee responsibilities will transition from the City to HART. Early in final design, the City and HART will need to notify FTA of a final decision regarding grantee responsibility so that any necessary preparations can be made in advance of the Project's consideration for an FFGA.	Jul-12	Closed
4	Project Scope: Resolve the Ala Moana Station design and the location of the pre-cast yard and ensure all contractors meet Buy America and Ship America requirements	May-12	Closed
5	Project Management Plan (PMP): Update the PMP to address the creation of HART; expand staff as planned, revise the staffing plan, and update the final design organization chart to include the positions identified in the PMOC report; expand the sections on construction management and testing and start up; and update and develop the Design-Bid-Build resident Engineer and Inspection Manual.	Feb-12	Closed

No.	Item	Completion Date	Comments
6	Technical Capacity and Capability: Develop a succession plan to ensure knowledge transfer for key management positions considered short term and hire a real estate acquisition consultant knowledgeable about requirements of the Uniform Relocation Act and the FTA real estate requirements.	Feb-12	Closed
7	Real Estate Acquisition and Management Plan (RAMP): Ensure that all real estate activities comply with the Record of Decision and update the RAMP to reflect the creation of HART.	Feb-12	Closed
8	The Project capital cost of $5,125.96 million assumes $104 million in cost savings from eight proposed cost reduction measures. FTA has accepted the cost reduction measures for purposes of moving forward with final design approval. However, additional supporting documentation regarding these cost reduction measures will need to be provided to FTA for review and validation. HART should provide the following to FTA: 1. Documentation to support the cost and schedule impacts of the cost reduction measures. 2. Information to verify that other aspects of the Project are not degraded as a result of implementing the cost reduction measures, such as safety and security, transit capacity, operations, maintainability, and service to the community. HART must ensure that the project design changes comply with the Americans with Disabilities Act and provide for appropriate emergency evacuation. FTA and HART will work together to determine if any environmental impacts resulting from Project changes related to cost reduction measures need to be addressed.	Jun-12	Closed
	Safety and Security		
9	The Hawaii Department of Transportation should accelerate the hiring process and select a qualified State Safety Oversight Agency project manager.	Dec-12	Open – Jadine Urasaki named as Interim Project Manager
10	HDOT and HART should execute a memorandum of agreement, and HDOT should identify staff or select an SSOA consultant to work on SSOA issues.	Feb-12	Closed
11	Specifically regarding the safety and security of the proposed cost reduction measures, HART should conduct hazard and threat/vulnerability analyses to ensure that the design criteria, as well as the design, construction, safety and security certification, and startup of the Project, conform to local, state and national codes of standards.	Aug-12	Closed (hazard and threat/vulnerability analyses are under review)

No.	Item	Completion Date	Comments
	Civil Rights		
12	Title VI program must be submitted to FTA at least 30 calendar days prior to June 10, 2013 which is the expiration of the current Title VI approval.	May-13	Open
13	The City will need to perform a Title VI service and fare equity analysis six months prior to revenue operations of the Project.	Jun-14	Open
14	The City must submit the revised DBE program and draft Project goal to the FTA's Office of Civil Rights within 60 days of receipt of the final design letter.	Jul-12	Closed

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

PREPARED FOR THE FEDERAL TRANSIT ADMINISTRATION

by Porter & Associates, Inc.

under subcontract to Milligan & Company, LLC

Contract No. DTFT60-08-D-00008

September 25, 2012

Based on June 2012 Financial Plan

PORTER & ASSOCIATES, INC.

Contents

Glossary of Abbreviations, Acronyms and Terms

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

1. Summary

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

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

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

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

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

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

This assessment finds:

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

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

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

2. Scope of the Financial Capacity Assessment

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

2.1 PROJECT DESCRIPTION

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

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

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

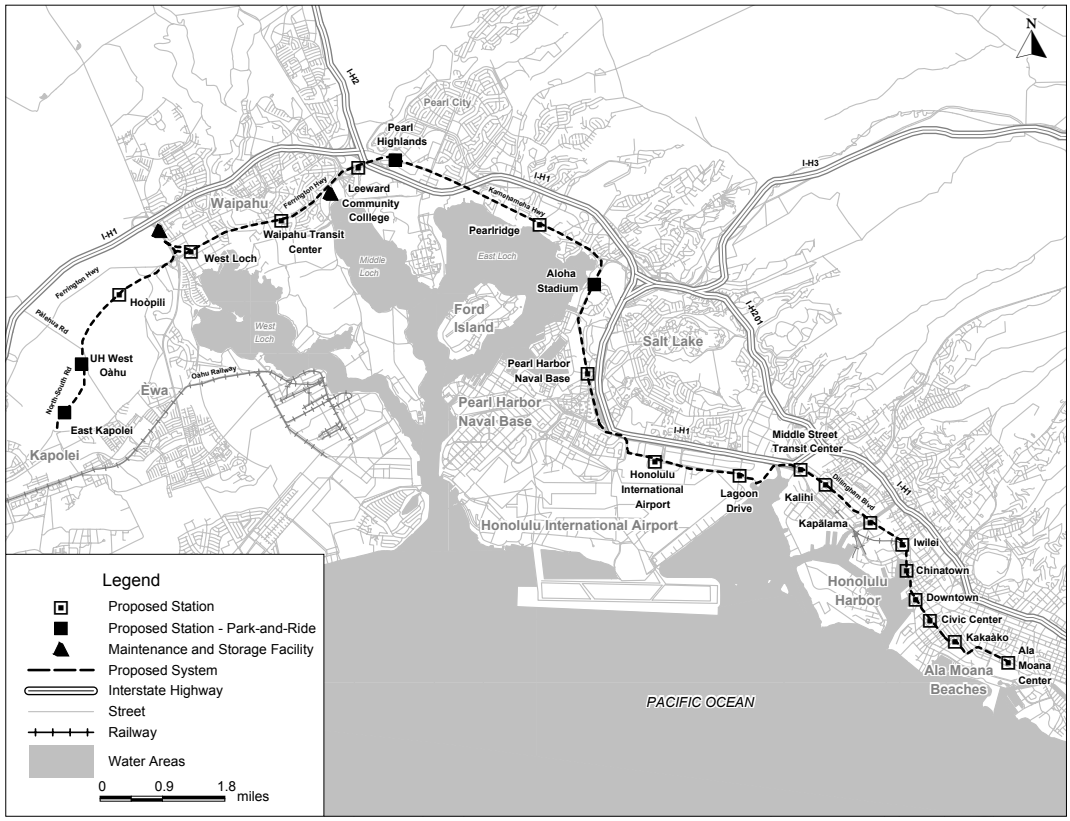
Cost estimates for the Project presented in this Financial Plan reflect a steel wheel on steel rail automated technology, operating primarily on elevated guideway using high floor vehicles and a barrier-free fare collection system.

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

2.2 PROJECT SPONSOR

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

Exhibit 2-1: Project Alignment



2.2.1 City & County of Honolulu

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

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

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

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

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

2.2.2 Honolulu Authority for Rapid Transportation

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

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

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

2.2.3 Public Transit Division of the Department of Transportation Services

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

2.3 LIMITATIONS OF DATA AND THE REPORT

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

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

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

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

3. Project Financing Plan

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

The key findings presented in this section are as follows:

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

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

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

3.1 PROJECT BUDGET

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

3.1.1 Sources of funds

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

Federal funds

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

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

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

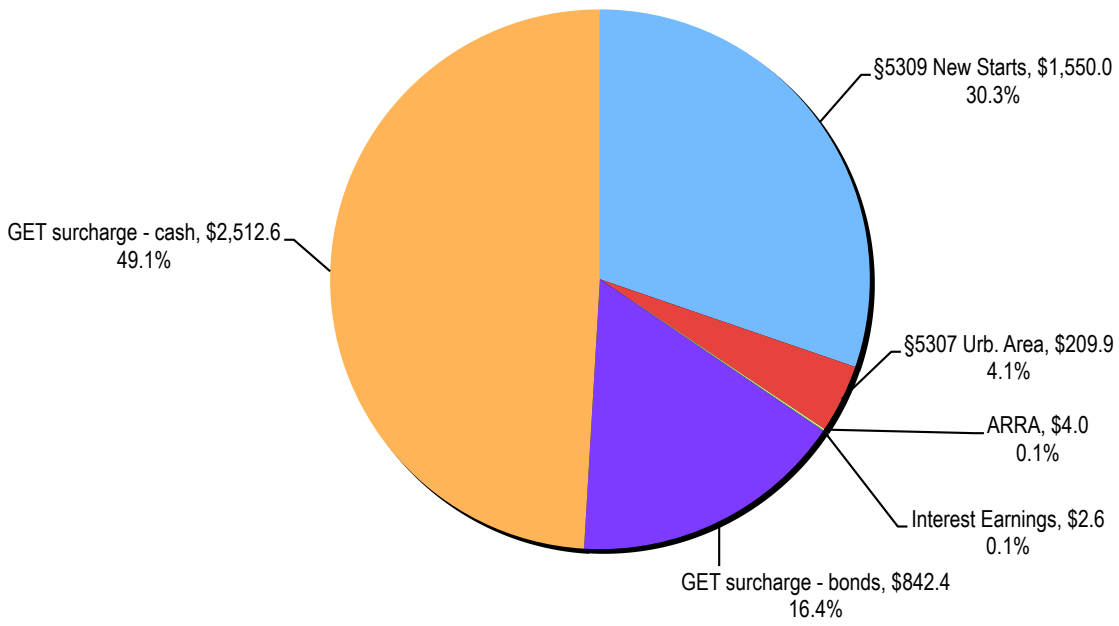
§5309 New Starts funds total 30.3 percent of total Project cost. Due to the timing of grant-eligible Project expenditures, the annual draws of §5309 New Starts funds may vary from the above schedule, but as presented in the financial plan would not exceed 30.3 percent of eligible Project costs on a cumulative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

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

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

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

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

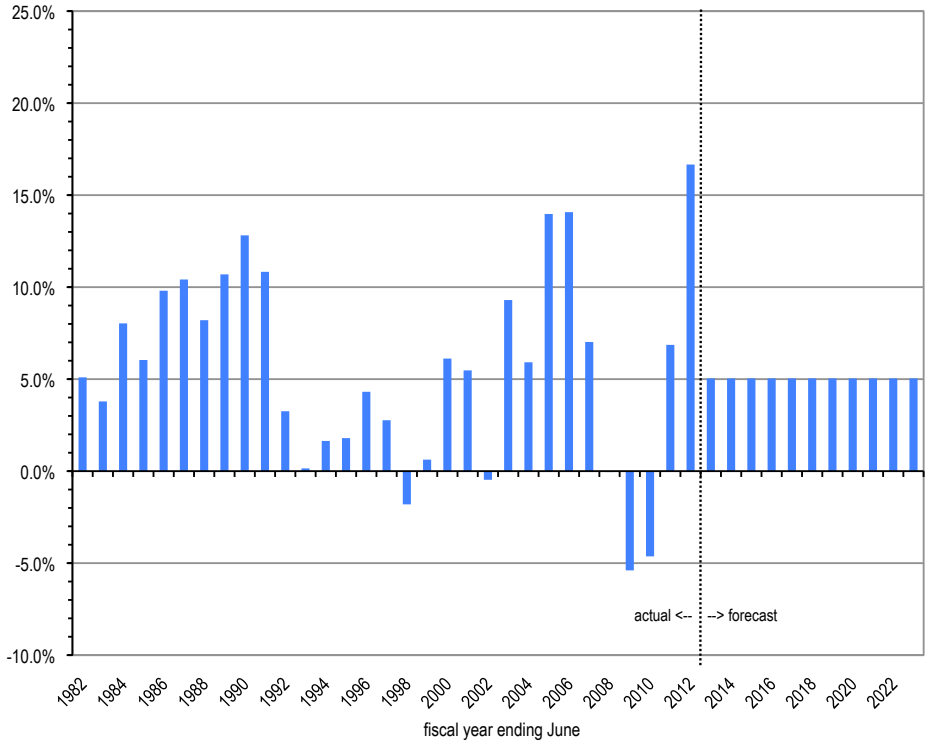


source: June 2012 Financial Plan. See Appendix D for details.

Local funds

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

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



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

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

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

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

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

3.1.2 Uses of funds

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

Project capital costs

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

Financing costs

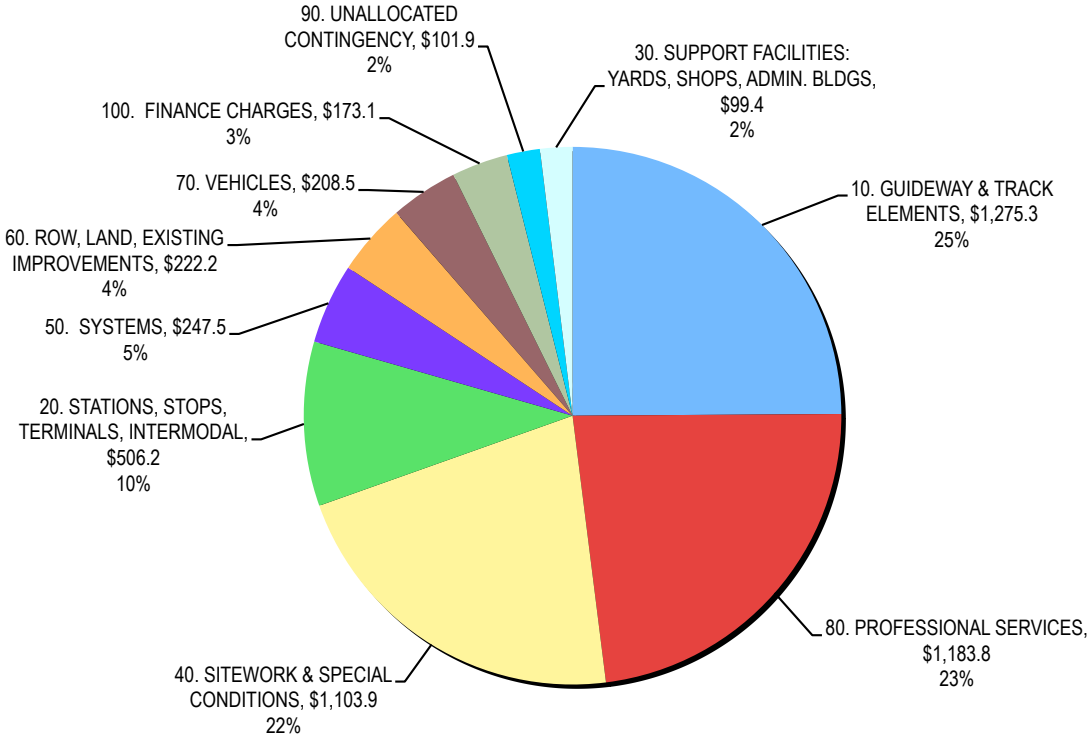
The City intends to use a combination of general obligation (G.O.) bonds and TECP to meet the cash flow requirements of the Project. The City will incur financing costs (issuance costs and interest expense) with the use of these instruments.

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

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

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

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



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

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

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

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

source: June 2012 Financial Plan, Table 2-2

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

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

3.2 PROJECT CASH FLOW

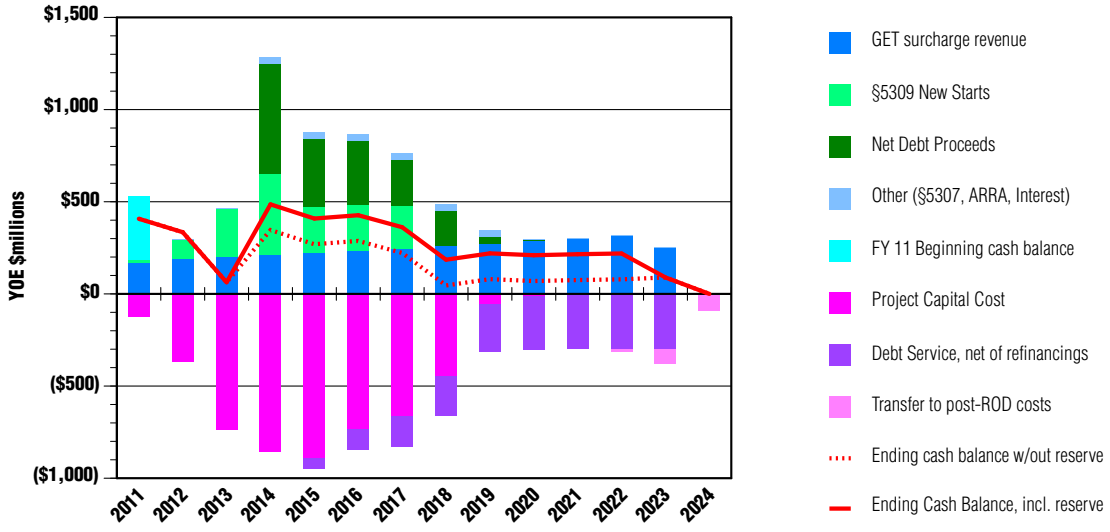
The cash flow forecast for the Project, from FY 2011 (June 30) to FY 2024 is shown graphically in Exhibit 3-5. Sources of funds are shown as stacked positive values (above the X-axis), and uses of funds are shown as stacked negative values (below the x-axis). The year-end cash balance is indicated by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

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

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

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

Exhibit 3-5: Project Cash Flow



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

Exhibit 3-6:
Debt and Debt Service Coverage

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

source: June 2012 Financial Plan, Table A-1

Note 1: Cumulative debt issued less cumulative principal payments.

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

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

3.3 CAPACITY TO ACCOMMODATE HIGHER PROJECT COSTS

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

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

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

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

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

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

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

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

* * * * *

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

4. Financial Condition

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

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

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

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

4.1 TRANSIT OPERATIONS

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

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

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

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

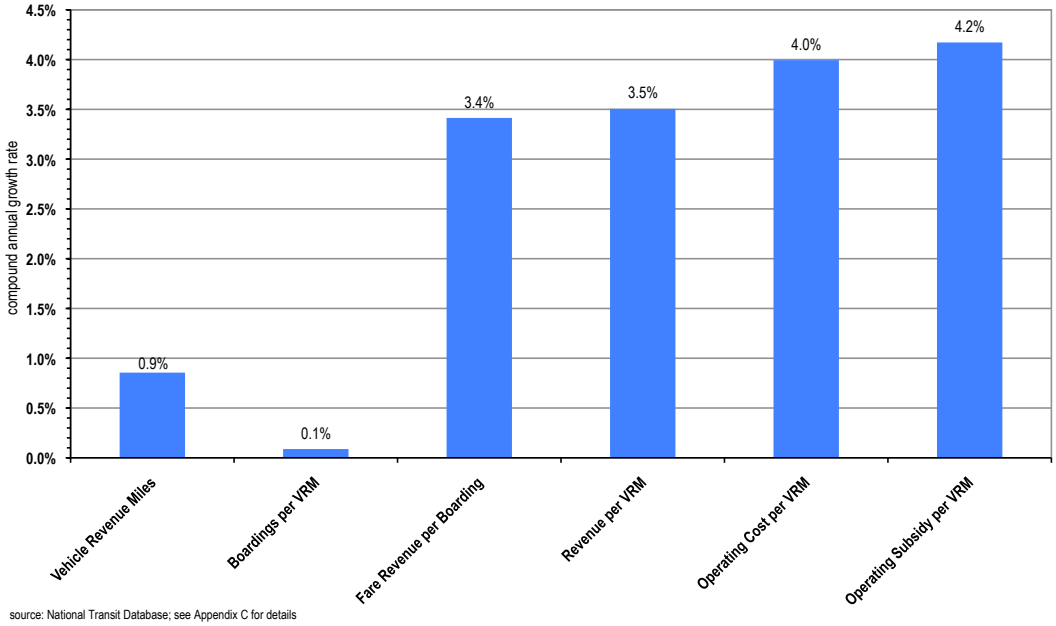
Additional details on trends in service, ridership & revenue, operating costs, and operating subsidies are provided in the remainder of section 4.1.

4.1.1 Service Trend

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

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

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



source: National Transit Database; see Appendix C for details

Exhibit 4-2:
Transit Service, 2006-2011

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

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

4.1.2 Ridership & Revenue Trend

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

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

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

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

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

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

4.1.3 Operating Cost Trend

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

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

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

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

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

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

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

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

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

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

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

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

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

4.1.4 Operating Subsidy Trend

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

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

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

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

4.1.5 Sources of funds for the operating subsidy

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

City operating subsidies

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

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

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

Federal funds applied to preventive maintenance

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

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

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

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

notes:

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

4.2 TRANSIT CAPITAL

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

The findings from this analysis are as follows:

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

Additional details are provided below.

4.2.1 Age & condition of transit capital assets

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

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

General asset age and investment needs implied by depreciation

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

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

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

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

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

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

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

$mil.

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

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

Fleet age

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

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

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

4.2.2 Trends in sources & uses of capital funds

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

Actual annual funds and expenditures, versus apportionments

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

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

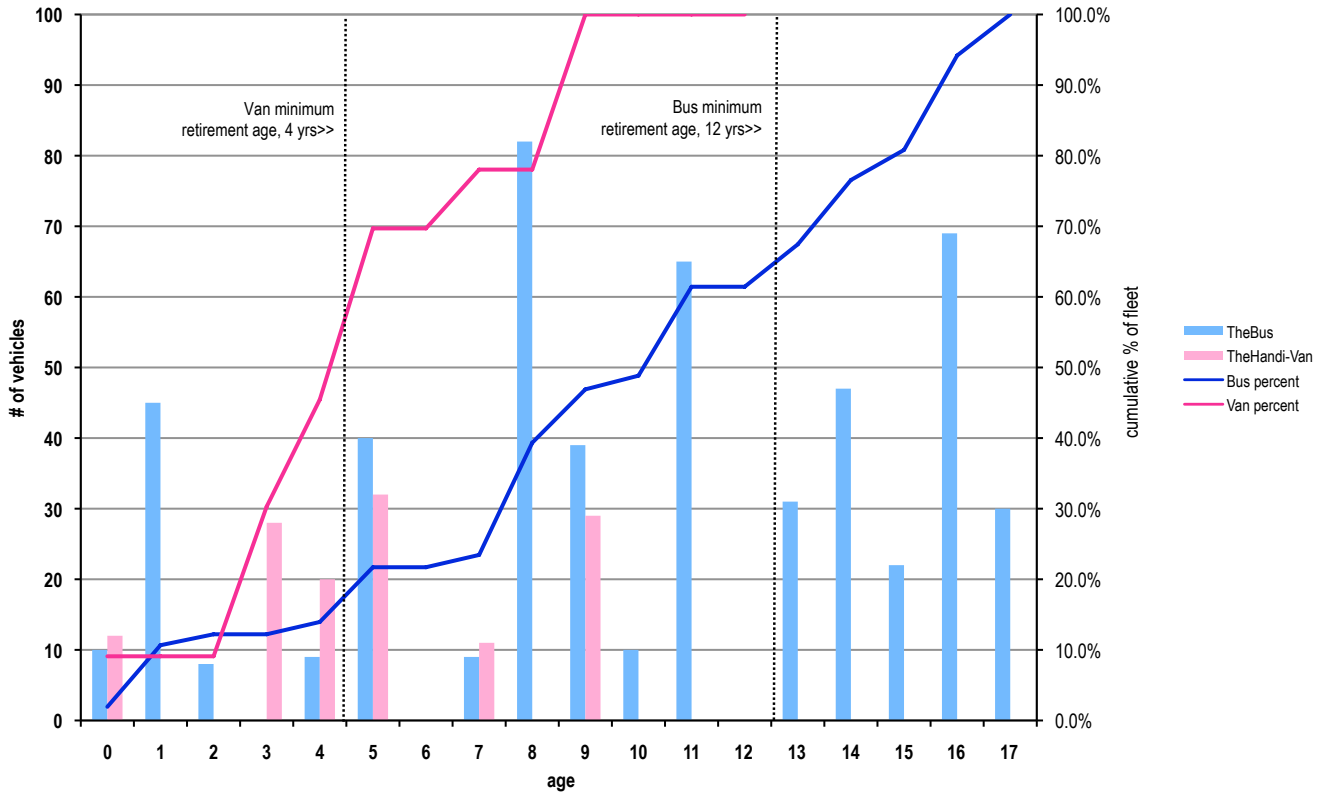
Between 2006 and 2011, the City expended about $22.5 million (YOE) annually on capital projects for TheBus and TheHandi-Van. This converts to about $23.4 million annually in constant 2011 dollars (2011$) based on the Honolulu CPI. Approximately 40 percent ($9.4 million, 2011$) of average annual expenditures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

Exhibit 4-8:
Fleet Average Age

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

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

Exhibit 4-9: Fleet Age Profile, June 2011



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

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

Federal apportionment trends

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

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

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

* * * * *

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

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

yoe$mil. except where noted otherwise

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

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

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

Exhibit 4-11:
FTA Grant Apportionments

$mil.

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

sources:

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

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

5. Financial Capability

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

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

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

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

- The additional operating subsidy required by the Project, for both the new rail operation and expanded bus services to support the Project, is forecasted to require up to 19 percent of combined General Fund and Highway Fund revenues, versus a historical level (2006-2011) of 10.1 percent. In 2011 dollars, the Project would add approximately $80.6 million to the City subsidy when it fully opens in FY 2020, a 61 percent increase relative to the City's actual 2011 transit subsidy.

- The operating plan forecast is reasonable, but for the forecast of The-Handi-Van passenger revenues; this is an insignificant risk due to the low contribution of these revenues to the overall revenue forecast.

- The on-going capital financial plan assumptions are reasonable in comparison to historical trends. The City has the capacity to maintain its assets in a state of good repair.

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

5.1 OPERATING FINANCIAL PLAN

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

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

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

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

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

5.1.1 Impact of the Project

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

The Project

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

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

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

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

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

Expanded bus service

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

5.1.2 Financial plan

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

Service assumptions

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

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

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

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

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

Exhibit 5-1: Vehicle Revenue Miles Forecast

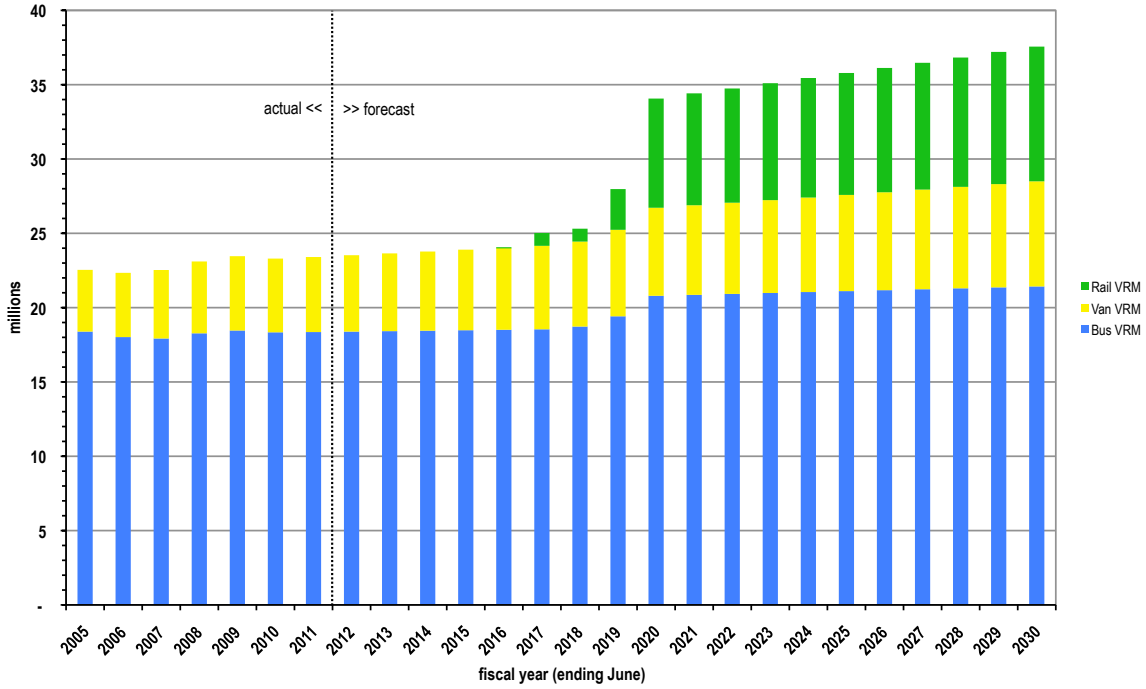
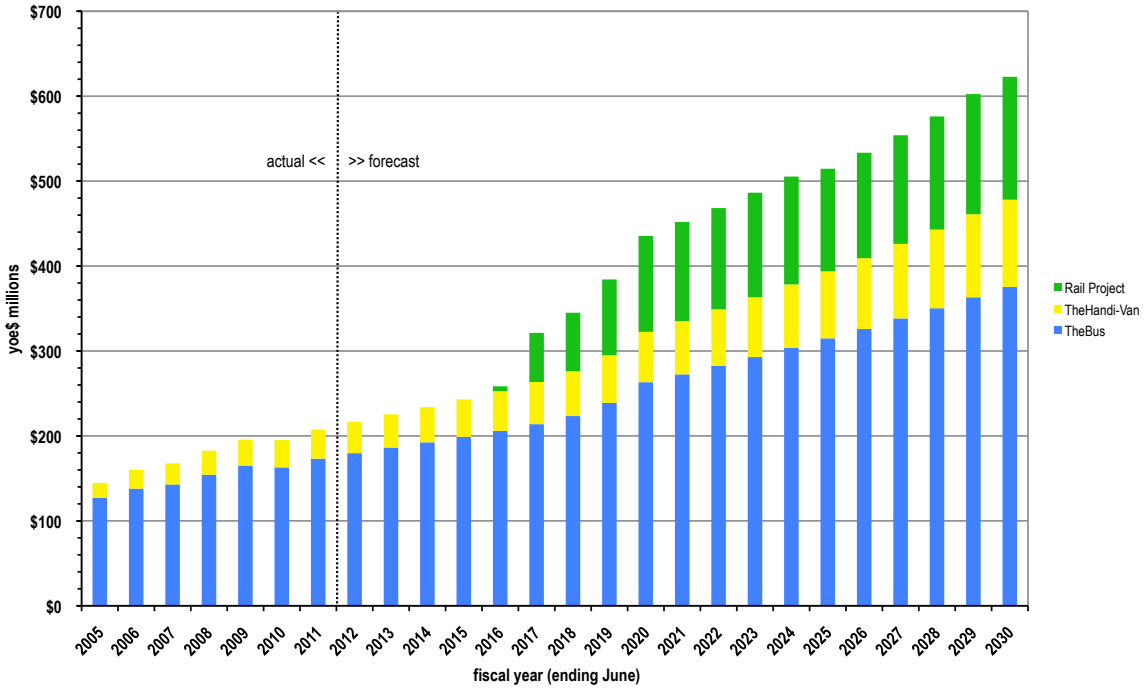


Exhibit 5-2: Operating Cost Forecast



Operating cost forecast

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

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

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

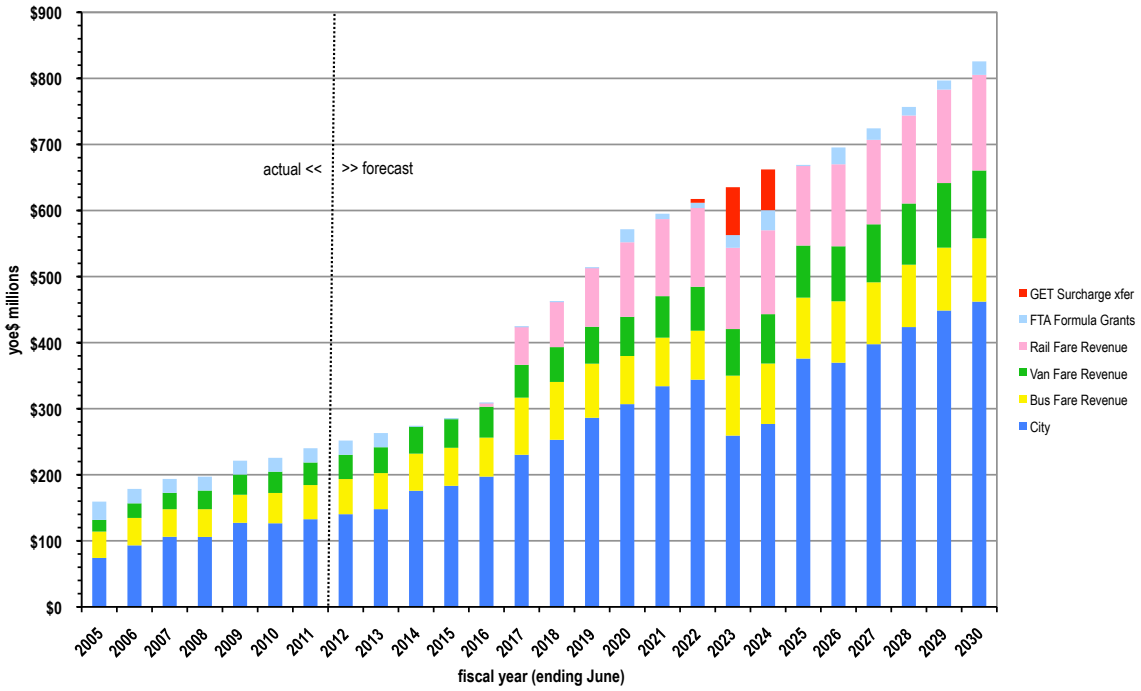
TheHandi-Van operating cost is forecast to increase 200 percent, to $103 million in 2030 from $34 million in 2011, an average annual growth rate of 6.0 percent. Unit cost (i.e., cost per VRM) would increase to $14.51 in 2030 from $6.77 in 2011, an average annual growth rate of 4.1 percent. TheHandi-Van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

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

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

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

Exhibit 5-3: Operating Revenue Forecast



Revenue forecast

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

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

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

PASSENGER FARE REVENUES

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

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

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

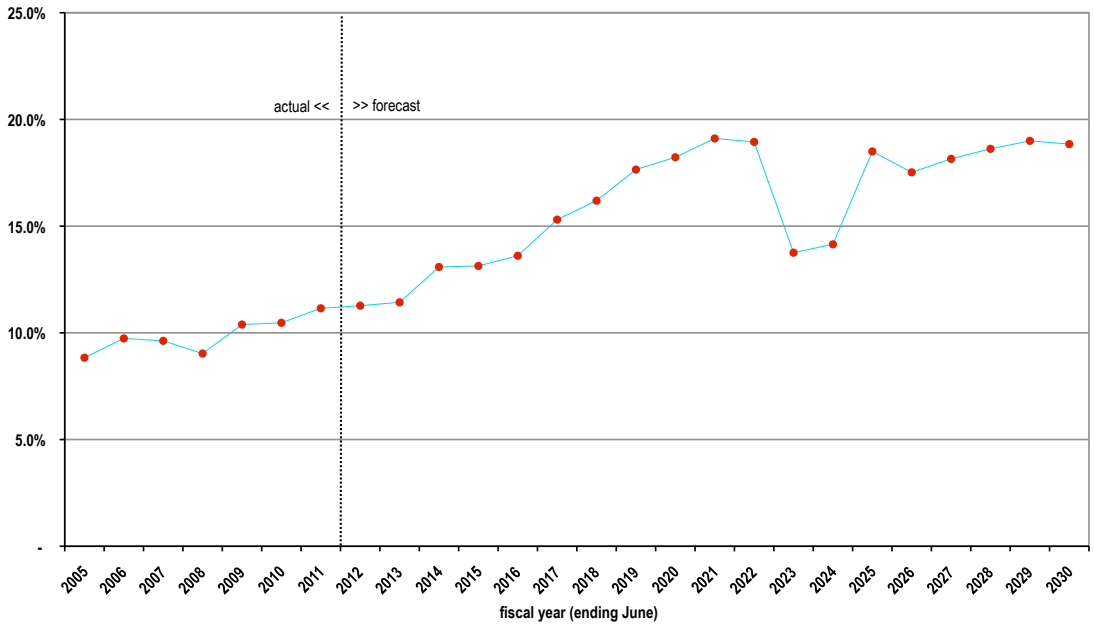
§5307 GRANT FUNDS APPLIED TO PREVENTIVE MAINTENANCE

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

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

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

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



City operating subsidies

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

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

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

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

Exhibit 5-5:
Critique of Operating Plan Assumptions

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

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

5.1.3 Critique

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

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

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

5.2 CAPITAL FINANCIAL PLAN

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

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

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

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

5.2.1 Impact of the Project

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

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

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

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

5.2.2 Financial plan

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

Capital expenditure forecast

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

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

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

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

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

Exhibit 5-6: On-going Capital Expenditure Forecast

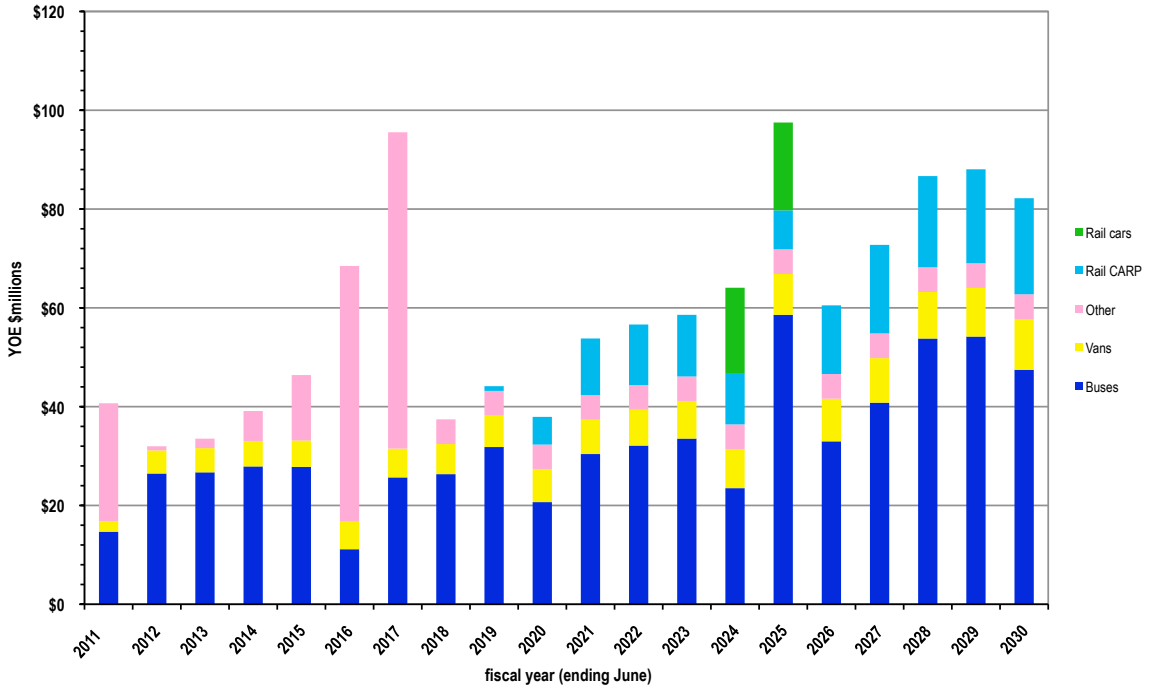
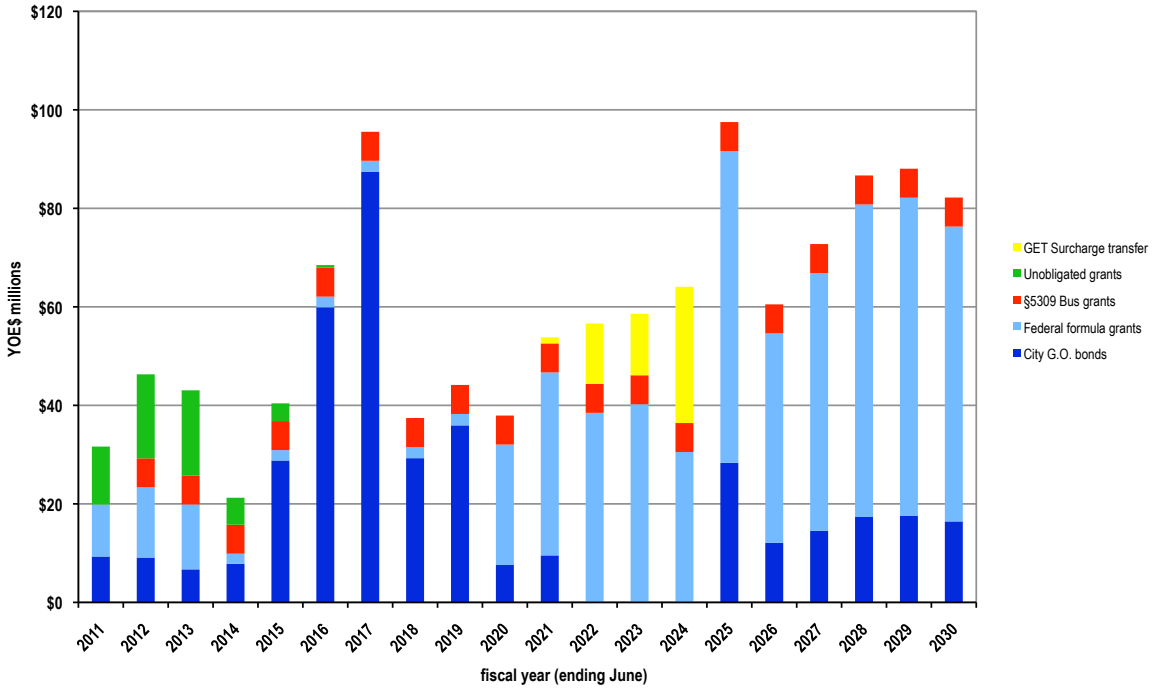


Exhibit 5-7: On-going Capital Funds Forecast



Sources of capital funds

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

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

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

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

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

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

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

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

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

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

5.2.3 Critique

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

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

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

* * * * *

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

6. Stress Tests

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

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

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

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

6.1 10 PERCENT INCREASE IN PROJECT COST

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

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

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

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

6.2 SLOWER GROWTH IN GET SURCHARGE REVENUE

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

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

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

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

* * * * *

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

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

7. Conclusions

1. All the non-§5309 New Starts funds included in the Project financial plan ($3,672 million, YOE) are committed.

2. The financing costs attributed to the Project ($173 million) are reasonable.

3. GET surcharge revenue, the dominant source of local financing for the Project, is forecast to grow at a 5.04 percent rate through 2023. The 5.04 percent rate is consistent with the estimated long-term (1981-2010) GET surcharge revenue trend.

4. The City's $450 million TECP program, in combination with Project cash reserves, is capable of funding a 10 percent increase in Project cost or local funding requirements.

5. In 2011 dollars, the Project will require from the City an additional $80.6 million in operating subsidies in its first full year of operation (2020), a 61 percent increase relative to 2011.

6. The operating and on-going capital financial plans are based on reasonable assumptions about revenue and cost growth. However, in order to fund the forecasted transit operating subsidies, the City would need to achieve a lower rate of growth in non-transit uses of General Fund and Highway Fund revenues than has been the case historically.

7. Stress tests performed on the Project financing plan – a 10 percent increase in Project cost, and a 4.3 percent GET surcharge growth rate (post-2012) – indicate the City has the financial capacity to build and implement the Project, though the City would incur additional financial obligations that would need to be satisfied from other, non-Project revenues available to the City.

Appendices

A. Sources of Project Funds

B. Project Cost Estimate (June 2012)

C. Transit Operating Trends, 2006-2011

D. Baseline Cash Flow, June 2012 (draft)

APPENDIX A:
Sources of Project Funds

yoe$millions

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

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

APPENDIX B: Project Cost Estimate, June 2012

MAIN WORKSHEET-BUILD ALTERNATIVE

(Rev.14, August 5, 2011)

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

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

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

Appendix C:
Transit Operating Trend, 2006-2011

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

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

notes:

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

CAGR = compound annual growth rate

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

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

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

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

1. Excludes amount applied to beginning fund balance per [2]; actual 2010 $162.05m.
2. Equals Transit Fund Balance at 10/16/2009 (start of PE).
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City Fiscal Year	2028	2029	2030	∑2010-2030
PROJECT CAPITAL FINANCIAL PLAN				
Project Funding Sources				
Net GET Surcharge Revenues [1]	-	-	-	3,291.37
FTA Section 5309 New Starts Revenues	-	-	-	1,550.00
FTA Section 5307 Formula Funds Used for the Project	-	-	-	209.90
ARRA Funds Used for the Project	-	-	-	4.00
General Obligation (GO) Bond Proceeds (net)	-	-	-	1,645.37
Proceeds from Tax Exempt Commercial Paper (TECP)	-	-	-	700.00
Transfer from Reserve Fund	-	-	-	140.44
Interest Income	-	-	-	1.93
Additional Funds	-	-	-	-
Total Project Sources of Funds	**-**	**-**	**-**	**7,543.02**
Project Capital Costs				
Total Capital Cost	-	-	-	4,948.63
Debt Service and Transfers				
Principal Payment on GO Bonds Issued for the Project	-	-	-	1,798.04
Interest Payment on GO Bonds Issued for the Project	-	-	-	191.40
Principal Payment on TECP	-	-	-	700.00
Interest Payment on TECP	-	-	-	9.75
Transfer to Ongoing Rail Capital and O&M Cost	-	-	-	193.48
Total Project Uses of Funds	**-**	**-**	**-**	**7,841.30**
Total Finance Charges	-	-	-	214.64
FFGA Eligible Finance Charges	-	-	-	173.06
Project Cash Balance				
Beginning Project Cash Balance [2]	**-**	**-**	**-**	**298.29**
Additions (deletions) to Cash	-	-	-	(298.29)
Ending Project Cash Balance	**-**	**-**	**-**	**(0.00)**
Reserve Fund Balance				
Beginning Reserve Fund Balance	**-**	**-**	**-**	**-**
Initial Deposit to Reserve Fund [3]	-	-	-	139.19
Interest Income on Reserve Fund	-	-	-	1.26
Reserve Fund transfer out	-	-	-	(140.44)
Ending Reserve Fund Balance	**-**	**-**	**-**	**(0.00)**

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

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

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

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

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millions of YOE dollars

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

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

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

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

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millions of YOE dollars

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

ATTACHMENT D


MAX GROSS
75,800 LBS
TARE
10,150 LBS
10/23/2012


99
10/23/2012


PNWP 342021
PAYLOAD
68,030 LBS
PNWP 342009
PNWP 342022
PNWP 342002
HYSTER
1050
53


P N W
Rent Lease Buy
1-800-659-0147
HYSTER
10/23/2012

ATTACHMENT E

Testimony of Michael Asato

Honolulu Authority for Rapid Transportation
Board of Directors Meeting

Archaeological Inventory Surveys and Cultural Monitors

October 18, 2012 [agenda]

This testimony is offered to bring to your *fiduciary* attention fraud, abuse and waste regarding the anticipated $64 million to $95 million delay claims from the court ordered delay related to the City Center Archeological Inventory Survey (AIS) – and broadly, $35 million change orders and $15.9 million cost of materials [article (10-11-12)].

I. Evidence of Fraud*

There have been two misrepresentations that are at the root of the above extra costs. The first is stated by HART Executive Director Toru Hamayasu in his request for a Letter of No Prejudice #2 (12/27/11) [link, Acrobat p. 5] where "showing progress" was a reason to procure and award the West Oahu/Farrington Highway (WOFH) guideway design-build contract in 2009:

> **D. Status of Procurement Progress**
> In 2009, a local decision was made to procure and award the West O'ahu/Farrington Highway Guideway Design-Build Contract (WOHF DB Contract) for two important reasons. The first reason was to demonstrate to the public that tangible progress was being made with the revenues from the one-half percent (0.5 percent) surcharge on the State of Hawai'i's General Excise Tax (GET) levied since January 1, 2007. The second reason was to advance preliminary engineering to support the ongoing EIS process through multiple notices to proceed. At the time, it was anticipated that the ROD and subsequent FD approval were achievable in early 2010. In addition, after very favorable bid prices were received on the WOFH Guideway DB contract, a decision was made to revise the contract packaging method for the Kamehameha Highway Guideway (KHG) from design-bid-build to design-build in order to leverage the favorable construction bidding climate and realize significant project cost savings. Similarly, the

Proof that "showing progress" was *not* an FTA criterion is:

Council Transportation Chair Breene Harimoto [video (05-12-11), 2:12:24]**:** The next really is a big issue to me one of the big parts of the Financial Plan is the schedule. I've always told people that one of the reasons we were proceeding what the public seemed to perceive as rushing it through, I always explained to people that it was because we needed to show the federal government that we're progressing, we have to show progress to get the federal funding. When I visited the FTA several months ago in Washington, they corrected me and said, I'm sorry that's not what really is an accurate statement. And that's always what I was led to believe, or I assumed. But they corrected me in saying that, all they really *monitor* is our progress according to our financial plan, and they were very firm about that. Whatever is in your financial plan, that's the progress that they *gauge us* against for no other reason other than that. So with that understanding now, I guess my big question is, so with all the public outcry against seemingly the perception is that we are *rushing this* before we have the Full Funding [Grant] Agreement, before we've got all the funding, can we rework the schedule to delay the construction and spending of money like we've heard earlier today and in the past? Is that still viable to rework the schedule or is it too late?

* Fraud defined here as the "false representation of a material fact, whether by words or by conduct, by false or misleading allegations, or by concealment of that which should have been disclosed, which deceives another so that he acts, or fails to act to his detriment" [link].

I. Evidence of Fraud (cont.)

The second misrepresentation is that the FTA required the phased-in approach for rail which is the justification that State Historic Preservation Officer William Alia's gave for signing the Programmatic Agreement [link; article (01-16-11)]:

> **As the State Historic Preservation Officer you signed the Mass Transit Programmatic Agreement which authorized a phased in approach. Critics of this approach have indicated that this approach will assure that more NH burials will be disturbed because there will be additional pressure not to consider alternative routes once construction begins, how do you answer those critics?**
>
> The Federal Transit Authority required a phased in approach in implementing a construction schedule for Rail development. In addition, completing an Archeological Inventory Survey (AIS) is not practical in this situation as the City and County of Honolulu does not own the land along the proposed route , does not have the funds to condemned the land along the proposed route, and it is problematic to remove existing commercial buildings and businesses to conduct an AIS in light of the reasons listed above. The Programmatic Agreement has protective processes to deal with Burial and Historic Architecture issues that may arise.

Proof that this is *not* an FTA requirement is the Civil Beat fact check [article (04-14-11)]:

> FACT CHECK — Aila: FTA Required Phased-In Approach For Rail
>
> F FALSE

As explained in the Hawaii State Supreme Court's opinion re *Kealekini v. Yoshioka et al.* [link (08-26-12), Acrobat pp. 4-5] where its ruling resulted in the above anticipated $64 million to $95 million delay claim, the City & State's defense was built around the Programmatic Agreement:

> required for each phase of the rail project. However, the City asserted that a plan for completion of the archaeological inventory surveys for each phase of the project was set forth in the project's Programmatic Agreement, and that the Programmatic Agreement would ensure that the requirements of HRS chapter 6E were complied with prior to the commencement of construction in any given phase. In other words, the City and State contended that as long as an archeological inventory survey had been completed for a particular phase, construction could begin on that part of the project even if the surveys for the other phases had not yet been completed. Based on the provisions of the Programmatic Agreement, the City argued that Kaleikini could not demonstrate a violation of HRS chapter 6E. Additionally, the

II. Evidence of Abuse[†]

Abuse is City Center AIS contractor Cultural Surveys Hawaii [website] *not* making "good faith" best efforts to discover native Hawaiian burials (*iwi kupuna*). Evidence is the following analysis of the Weekly AIS Updates as of the (10.07.2012 – 10.13.2012) on HART's website [link]:

1. Weekly AIS Update-City Center (10.31.2011 - 11.27.2011) – Middle St. Station (trenches #6, 7, 8, 11)
2. Weekly AIS Update-City Center (11.28.2011 - 12.04.2011) – Kalihi Station (27, 29, 30)
3. Weekly AIS Update-City Center (12.05.2011 - 12.11.2011) – Civic Center Station (140, 144, 146, 147 in Tunchin et al. 2009 & Douglas 1991 previous archeological study areas)
4. Weekly AIS Update-City Center (12.12.2011 - 12.18.2011) – no trench work
5. Weekly AIS Update-City Center (12.19.2011 - 12.25.2011) – no trench work
6. Weekly AIS Update-City Center (12.26.2011 - 01.01.2012) – no trench work
7. Weekly AIS Update-City Center (01.02.2012 - 01.08.2012) – no trench work
8. Weekly AIS Update-City Center (01.09.2012 - 01.15.2012) – no trench work
9. Weekly AIS Update-City Center (01.16.2012 - 01.22.2012) – no trench work
10. Weekly AIS Update-City Center (01.23.2012 - 01.29.2012) – no trench work
11. Weekly AIS Update-City Center (01.30.2012 - 02.05.2012) – no trench work
12. Weekly AIS Update-City Center (02.06.2012 - 02.12.2012) – no trench work
13. Weekly AIS Update-City Center (02.13.2012 - 02.19.2012) – no trench work
14. Weekly AIS Update-City Center (02.20.2012 - 02.26.2012) – no trench work
15. Weekly AIS Update-City Center (02.27.2012 - 03.04.2012) – no trench work
16. Weekly AIS Update-City Center (03.05.2012 - 03.11.2012) – no trench work
17. Weekly AIS Update-City Center (03.12.2012 - 03.18.2012) – no trench work
18. Weekly AIS Update-City Center (03.19.2012 - 03.25.2012) – no trench work
19. Weekly AIS Update-City Center (03.26.2012 - 04.01.2012) – no trench work
20. Weekly AIS Update-City Center (04.02.2012 - 04.08.2012) – no trench work

    << New HART Executive Director Grabauskas' first day on job 04.09.12 [article] >>
21. Weekly AIS Update-City Center (04.09.2012 - 04.15.2012) – Middle Street Station (15, 16, 18, 23, 24), Kalihi Station (43) [HNN video (04-09-12)]
22. Weekly AIS Update-City Center (04.16.2012 - 04.22.2012) – Middle Street Station (21, 22, 25, 26), Civic Center utility corridor (226 in Cordy & Hammett 2005)
23. Weekly AIS Update-City Center (04.23.2012 - 04.29.2012) – Kapalama Station (72), Civic Center utility corridor at Cooke St. (232 in Wineski & Hammatt 2000)
24. Weekly AIS Update-City Center (04.30.2012 - 05.06.2012) – Middle St. Station (19, 20), Kapalama Station (74, 78)

[†] Abuse is defined here as involving behavior that is deficient or improper when compared with behavior that a prudent person would consider reasonable and necessary business practice given the facts and circumstances. Abuse also includes misuse of authority or position for personal financial interests or those of an immediate or close family member or business associate. Abuse does not necessarily involve fraud, violation of laws, regulations, or provisions of a contract or grant agreement. [link]

II. Evidence of Abuse (cont.)

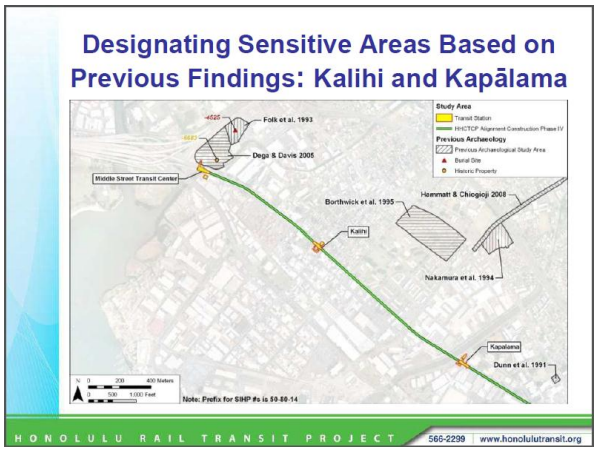
25. Weekly AIS Update-City Center (05.07.2012 - 05.13.2012) – Middle St. Station (17), Kalihi Station (41), near Iwilei Station (80), Civic Center utility line at Pohukaina St. (228 in Pfeffer et al. 1993)
26. Weekly AIS Update-City Center (05.14.2012 - 05.20.2012) – Kalihi Station (47), Dillingham Blvd. ewa of Iwilei Station (84)
27. Weekly AIS Update-City Center (05.21.2012 - 05.27.2012) – Iwilei Station (85), Civic Center utility corridor at Pohukaina St. (229 possibly in O'Hare et al. 2009, 230)
28. Weekly AIS Update-City Center (05.27.2012 - 06.02.2012) – Civic Center utility corridor at Pohukaina St. (231 possibly in Douglas 1991)
29. Weekly AIS Update-City Center (06.03.2012 - 06.09.2012) – Middle St. Station (1, 4, 5, 9), Iwilei Station (93)
30. Weekly AIS Update-City Center (06.10.2012 - 06.16.2012) – Middle St. Station (2, 10)
31. Weekly AIS Update-City Center (06.17.2012 - 06.23.2012) – no trench work
32. Weekly AIS Update-City Center (06.24.2012 - 06.30.2012) – no trench work
33. Weekly AIS Update-City Center (07.01.2012 - 07.07.2012) – no trench work
34. Weekly AIS Update-City Center (07.08.2012 - 07.14.2012) – no trench work
35. Weekly AIS Update-City Center (07.15.2012 - 07.21.2012) – no trench work
36. Weekly AIS Update-City Center (07.22.2012 - 07.28.2012) – no trench work
37. Weekly AIS Update-City Center (07.29.2012 - 08.04.2012) – no trench work
38. Weekly AIS Update-City Center (08.05.2012 - 08.11.2012) – no trench work
39. Weekly AIS Update-City Center (08.12.2012 - 08.18.2012) – no trench work
40. Weekly AIS Update-City Center (08.19.2012 - 08.25.2012) – no trench work

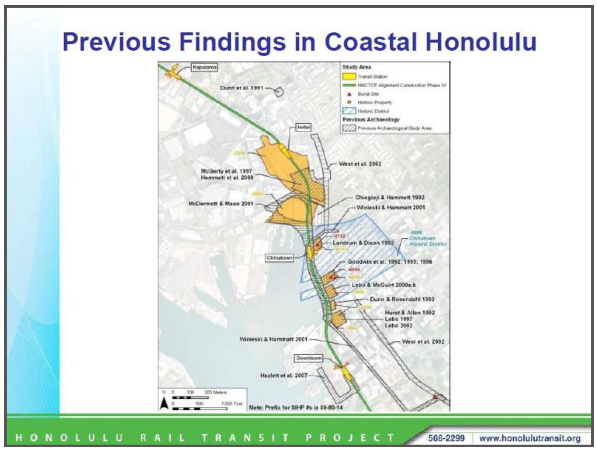
    << Hawaii State Supreme Court ruling on 08.24.2012 [article] >>
41. Weekly AIS Update-City Center (08.26.2012 - 09.01.2012) – no trench work
42. Weekly AIS Update-City Center (09.02.2012 - 09.08.2012) – no trench work
43. Weekly AIS Update-City Center (09.09.2012 - 09.15.2012) – near Kapalama Station (52, 54), Halekauwela St. ewa of Punchbowl (118, 119, 121), Halekauwila St. diamond head of Waldron Park (152, 150 [single human bone fragment discovered, article])
44. Weekly AIS Update-City Center (09.16.2012 - 09.22.2012) – Middle St. Station (12), Kapalama Station (48, 56, 57, 59), Halekauwila St. diamond head of Waldron Park (151), **Queen Street (181, 183, 185, 186, 190 in O'Hare et al. 2006)**
45. Weekly AIS Update-City Center (09.23.2012 - 09.29.2012) – Iwilei Station (86, 87, 89, 90, 91), Downtown Station (115), Halekauwila St. diamond head of Waldron Park (149, 153)
46. Weekly AIS Update-City Center (09.30.2012 - 10.06.2012) – Kapalama Station (50, 51, 60, 61, 63, 68), **Nimitz Highway ewa of Downtown Station (103, 105, 106, 107, 108, 109, 110, 111 in McDermott & Mann 2001 and Winieski & Hammatt 2001)**, Civic Center Station (141 [disarticulated human remains from at least two separate individual], 142 [single, intact human burial] article)
47. Weekly AIS Update-City Center (10.07.2012 – 10.13.2012) – Middle St. Station (13), Iwilei Station (76, 79, 83, 94), **Halekauwila St between Punchbowl St. & South St. (122, 123, 124, 125, 126 in Pfeffer et al. 1993), Queen St. (182, 187 in O'Hare et al. 2006)**

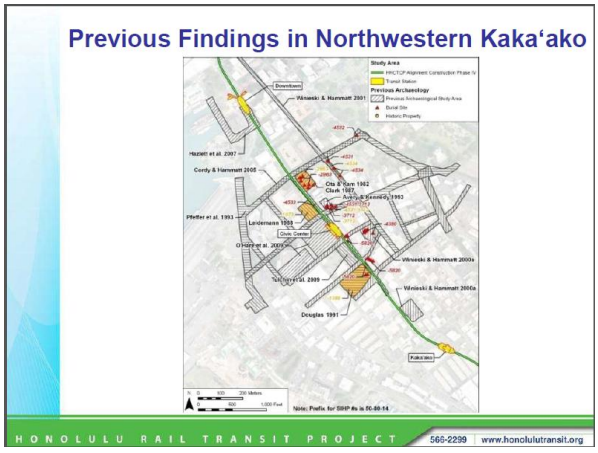
II. Evidence of Abuse (cont.)

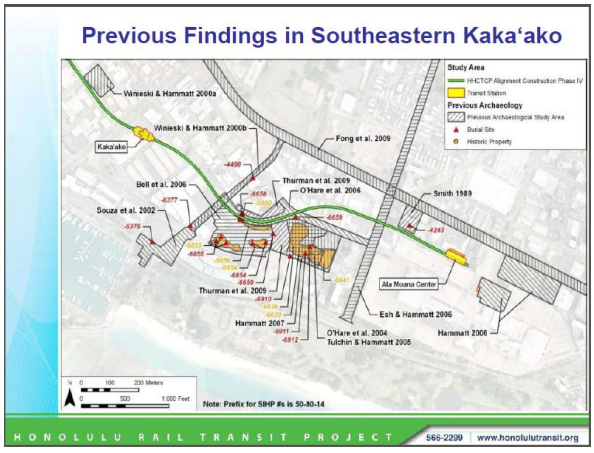
Observations

- 29 weeks out of 47 weeks had *no* trench work performed
- 36 weeks out of 47 weeks had *no* trench work performed in "burial central" Kakaako [op-ed]
- Illusion of "Potemkin village" [link] where trench work tailors off and ceases until events such as
  - » New HART Executive Director Grabauskas' first day on job 04.09.12 [article]
  - » Hawaii State Supreme Court ruling on 08.24.2012 [article]
- Before the Hawaii State Supreme Court ruling *all* trench work in Kakaako were in *previous* archeological study areas [City Center AIS Plan (AISP) Section 5: Previous Archeological Research link, link, slides 28-31]:









- After the Hawaii State Supreme Court ruling, 11 trenches worked on in Kakaako were in areas *not* previously studied (highlighted above) — wherein discoveries of human remains in 3 trenches
- After the Hawaii State Supreme Court ruling, "high productivity" trench work in Kakaako were in ***previous*** archeological study areas (weeks 44, 46 and 47 in **red font** above) — giving again a misleading "Potemkin village" illusion.

Assessment: "Bad faith" abuse of excavation effort in "Potemkin village" deception, and the sequencing & timing of trench work to *delay* the discovery of native Hawaiian burials.

II. Evidence of Abuse (cont.)

Implications of Abuse

There is *no* basis for HART Executive Director Grabaukas to credibly claim that HART can "reasonably excavate 15 to 17 trenches each week, and at that pace the archaeological survey could be completed by January or February" [article] because

(i) such "high productivity" has *never* been demonstrated; and

(ii) whatever "high productivity" that has occurred in Kakaako (weeks 44, 46 and 47 in **red font** above) were "Potemkin village" illusions because they were in *previous* archeological study areas.

Saving the "worst for last" are trenching areas with*no* *previous* archeological studies and [ibid article] …

> … whether private property owners are willing to allow the city access to their land to do the necessary excavations.
>
> Grabauskas said the city has identified 10 property owners who control land that is needed for 60 trenches. Some of those owners indicated they are "reluctant" to provide access to the city, while one of the 10 recently agreed to provide access.
>
> Other property owners were only notified in the past two weeks that the city needs to get access to their land, and the city is in discussions with a number of landowners, he said. If a property owner resists and tries to fight the city, the legal process the city would need to follow could require another five to 11 months before the city could get access, Grabauskas said.

Property owners may be "reluctant" to provide access because of trenching in ***existing*** **buildings** such as the foundation columns for the Kakaako Station inside Ross Dress for Less (Figure 142 below) and the Ala Moana Station inside a recycling warehouse (Figure 144 on next page) [see City Center AIS Plan (AISP): Section 9 Sampling Strategy link, Acrobat pp. 45-54, 80-85]:

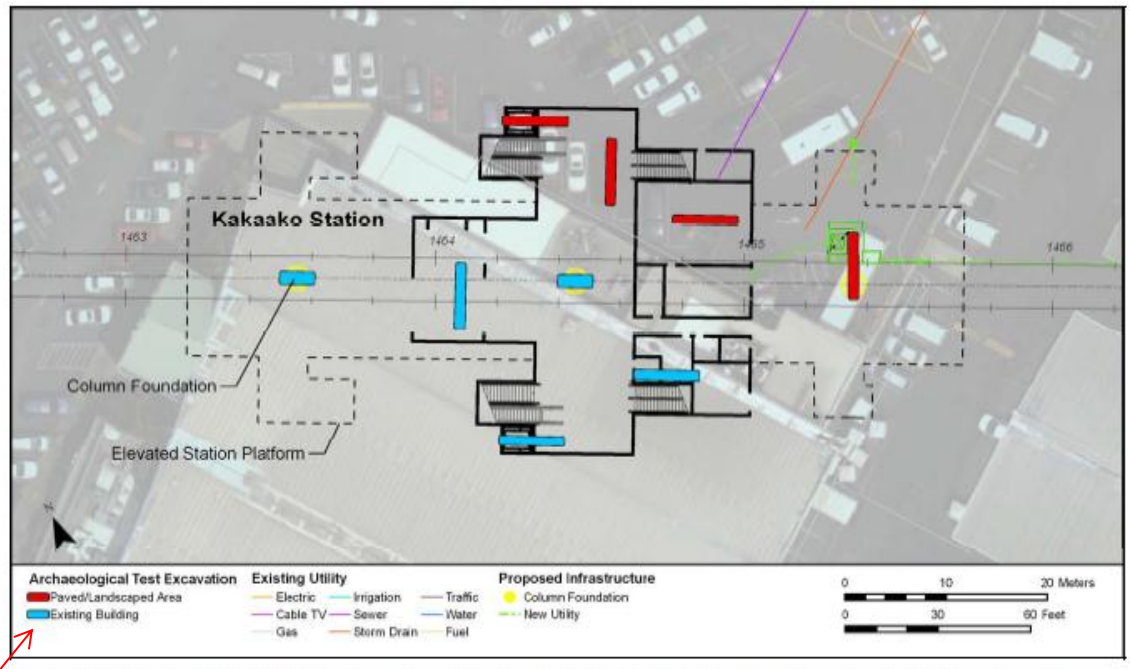


Figure 142. Kaka'ako Station, detail of column foundation layout showing proposed locations for archaeological inventory survey testing (test all three station column foundations with 3' by 10' excavations)

Existing Building

II. Evidence of Abuse (cont.)

Implications of Abuse (cont.)

Future Kakaako trenching in areas with no previous archeological study and in existing buildings:

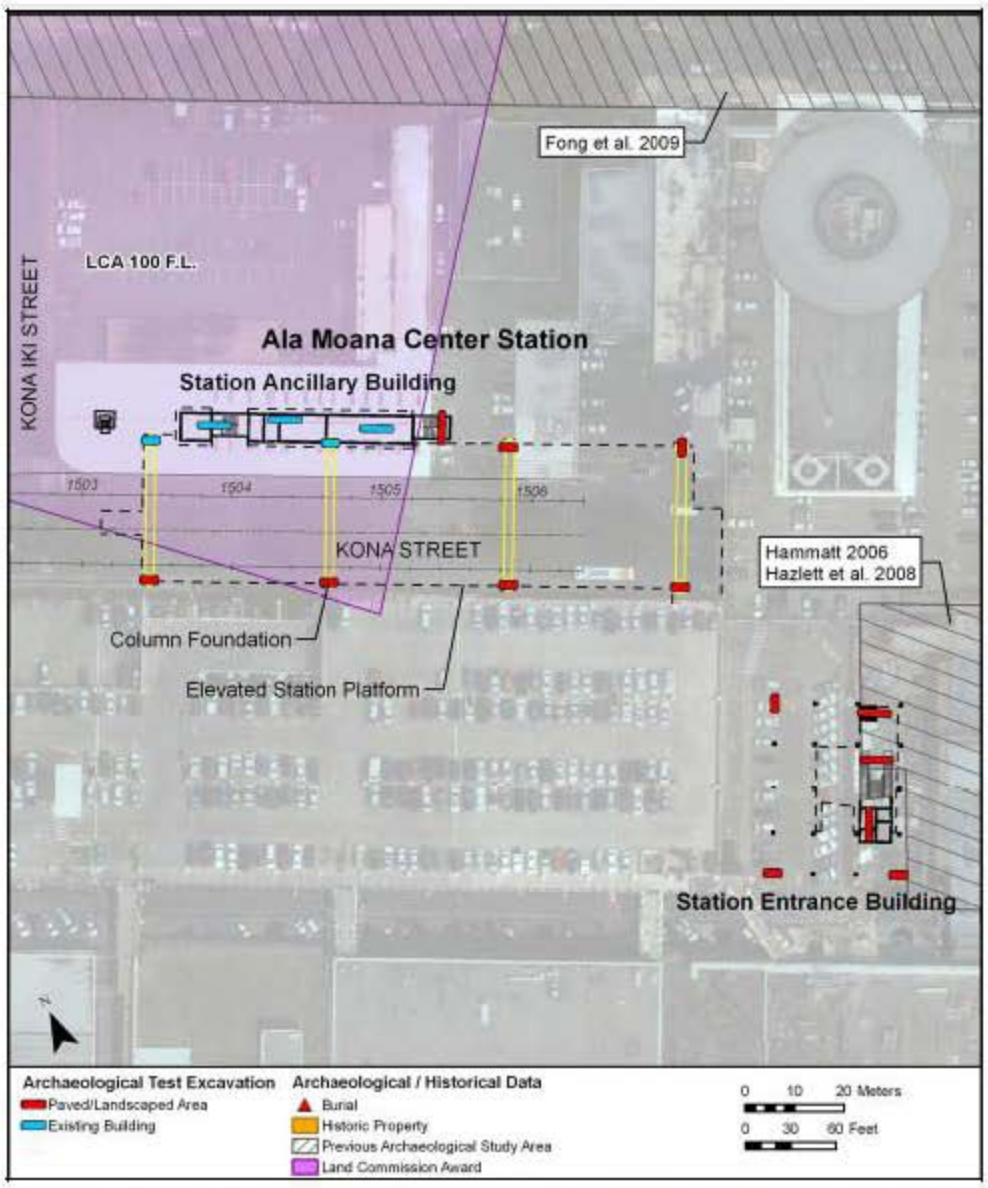


Figure 144. Ala Moana Center Station (at Kona Street just southeast of Kona Iki Street), aerial photograph showing overlay of transit station infrastructure (see following figures for details)

II. Evidence of Abuse (cont.)

Implications of Abuse (cont.)

Future Kakaako trenching in areas with no previous archeological study and in existing buildings:

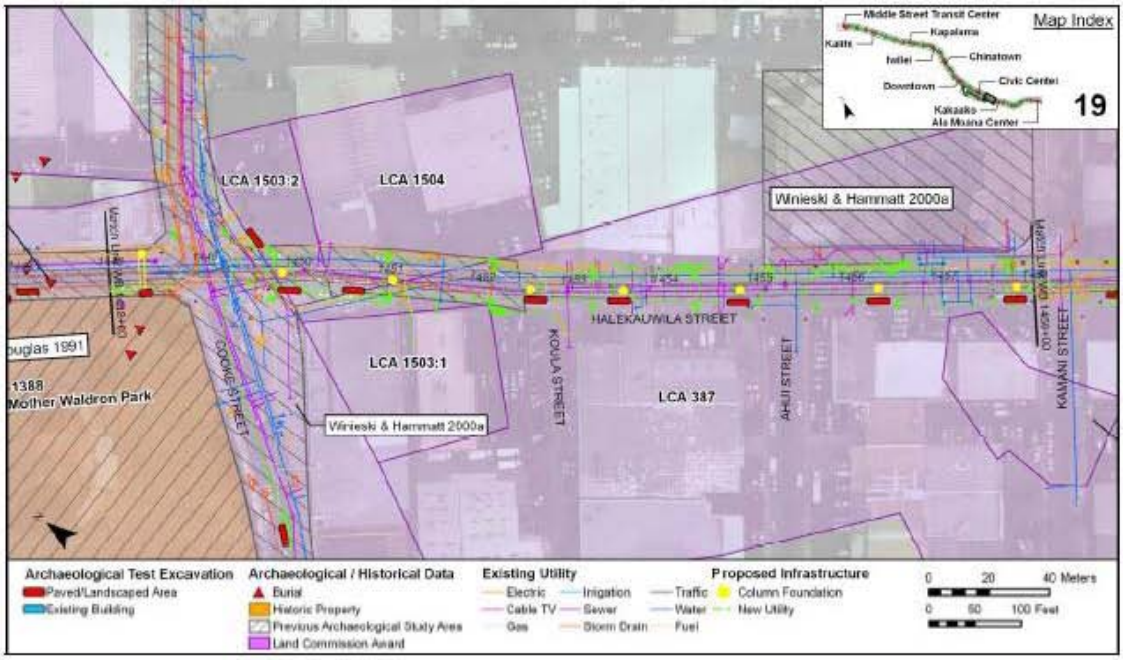


Figure 170. Map 19 Halekauwila Street between Cooke Street and Kamani Street showing proposed locations for archaeological inventory survey testing including (from northwest to southeast) a 3' by 10' trench at the *makai* straddle bent at WB 1448+40, a 2' by 20' trench at an electric manhole at WB 1449+60, a 2' by 20' trench at a 24" storm drain at WB 1450+00, a 2' by 20' trench at an 8" sewer relocation at WB 1450+60, 2' by 20' trenches at 8" sewer relocations at WB 1452+60, WB 1453+50, WB 1454+80, WB 1456+30, and WB 1457+80

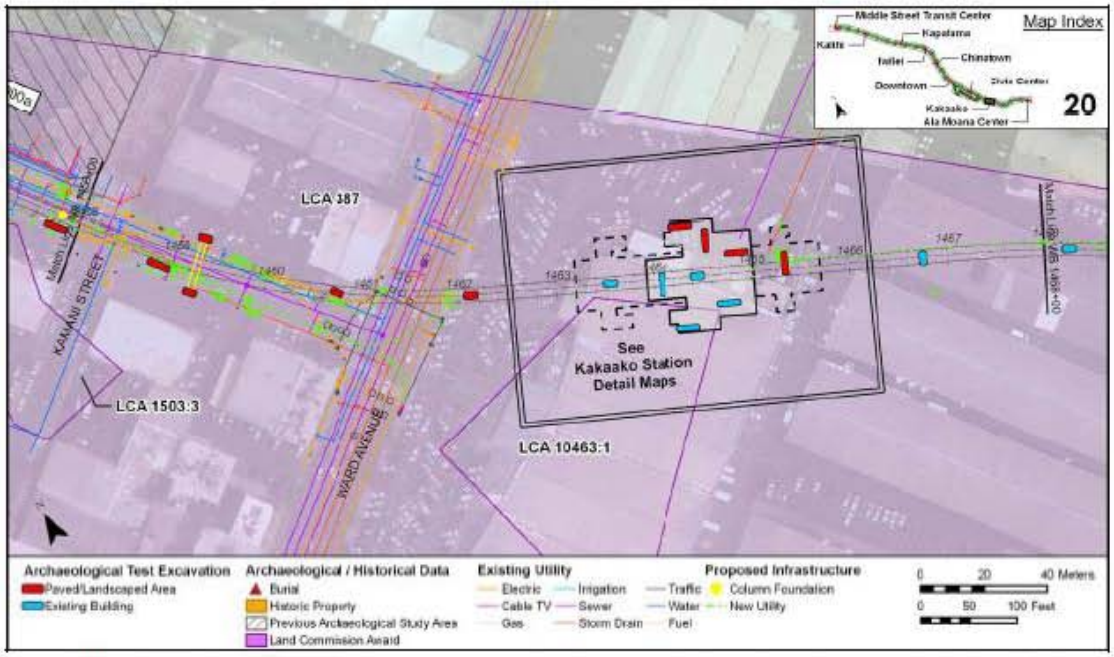


Figure 171. Map 20 Kaka'ako Station vicinity showing proposed locations for archaeological inventory survey testing (see Detail Maps for proposed excavations at Kaka'ako Station) including (from northwest to southeast) a 2' by 20' trench at an electric manhole at WB 1458+80, 3' by 10' trenches at the straddle bents at WB 1459+20 and WB 1459+30, 3' by 10' trenches at the column foundations at WB 1460+70, WB 1462+10, and WB 1466+80

II. Evidence of Abuse (cont.)

Implications of Abuse (cont.)

Future Kakaako trenching in areas with no previous archeological study and in existing buildings:

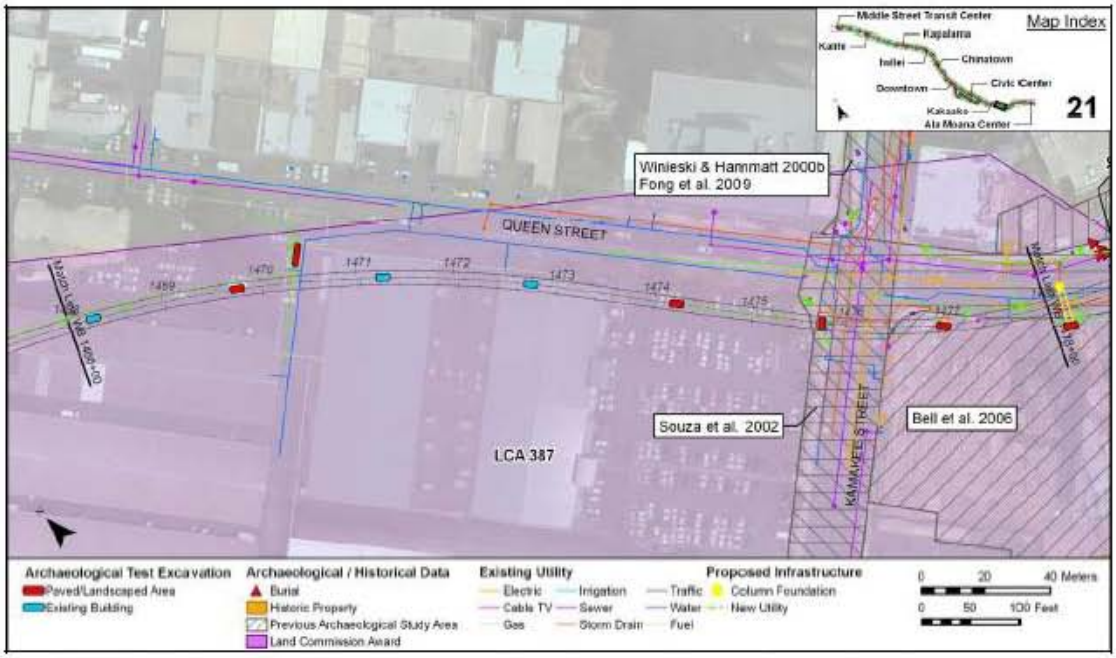


Figure 172. Map 21 Queen Street and Kamake'e Street vicinity showing proposed locations for archaeological inventory survey testing including (from northwest to southeast) 3' by 10' trenches at column foundations at WB 1468+20, WB 1469+80, WB1471+30, WB 1472+80, WB 1474+20, WB 1475+70, and WB 1477+00; and a 2' by 20' trench for an electric box at WB 1470+40

Figure 171. Map 23. Kona Street in the vicinity of Pensacola and Pi'ikoi Streets showing proposed locations for archaeological inventory survey testing including (from west to east) a 3' by 10' trench at a column foundation at WB 1488+80, a 2' by 20' trench at an electric manhole at WB 1489+00, a 2' by 20' trench at an electric manhole to the south along Pensacola Street, a 3' by 10' trench at an 8" water line at WB 1490+10, a 3' by 10' trench at the 8" water line at WB 1491+60, a 3' by 10' trench at the column foundation at WB 1493+00, a 2' by 20' trench at a *mauka* electric transformer at WB 1493+80, 3' by 10' trenches at both straddle bent foundations at WB 1494+40, a 3' by 10' trench at a column foundation at WB 1496+00, and a 2' by 20'trench at a 24" storm drain at WB 1497+50

II. Evidence of Abuse (cont.)

Implications of Abuse (cont.)

Future Kakaako trenching in areas with no previous archeological study and in existing buildings:

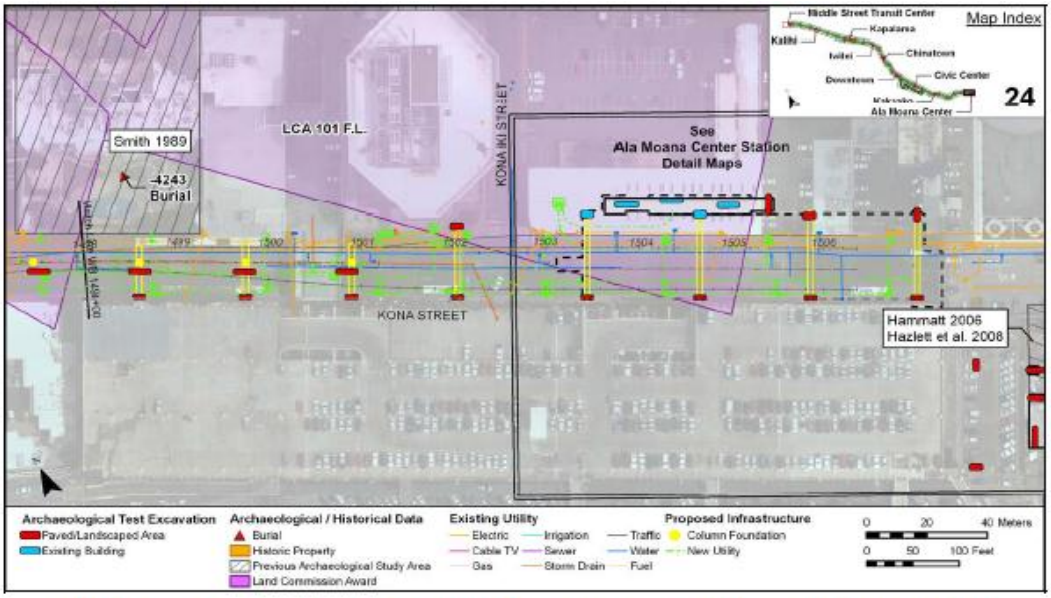


Figure 175. Map 24 Kona Street just northwest of Ala Moana Center showing proposed locations for archaeological inventory survey testing (see Detail Maps for proposed excavations at Ala Moana Center Station) including (from west to east) a 3' by 10' trench at the straddle bent column foundation at WB 1498+60, a 2' by 20' trench at a 24" storm drain at WB 1498+60, a 3' by 10' trench at the straddle bent column foundation at WB 1499+80, a 2' by 20' trench at a 24" storm drain at WB 1499+80, a 3' by 10' trench at the straddle bent column foundation at WB 1500+90, a 2' by 20' trench at a 24" storm drain at WB 1500+90, and 3' by 10' trenches at both the straddle bent column foundations at WB 1502+00, both foundations at WB 1503+40, both foundations at WB 1504+60, and both foundations at WB 1505+80

Note that upon the discovery of native Hawaiian burial remains, **Native Hawaiian cultural practitioners** have demanded that HART find a way to leave burials and other human remains "in place when they are discovered" along the rail route [article, video][‡]. If followed, should a large, dense native Hawaiian burial field be encountered and it becomes *impossible* to work around through "rail design changes" [article], it may be *impossible* to traverse Kakaako and finish at Ala Moana Center[§] — with the repercussion of a major re-scoping of the project.

TOP BREAKING NEWS

Discovery of human burial could prompt rail design changes

By STAR-ADVERTISER STAFF *03:40 PM HST*

Human remains were found Saturday at two additional sites in Kakaako along the route for the Honolulu rail project, and one of those sets of remains may qualify as a burial that could prompt the city to design the rail project around the site to avoid it. Story »

[‡] Cf. Hawaii State Supreme Court opinion plaintiff declaration, "One of the critical tenets of Native Hawaiian traditional and customary practices is the obligation to ensure that *iwi*…remain undisturbed" [link, Acrobat p. 15]).

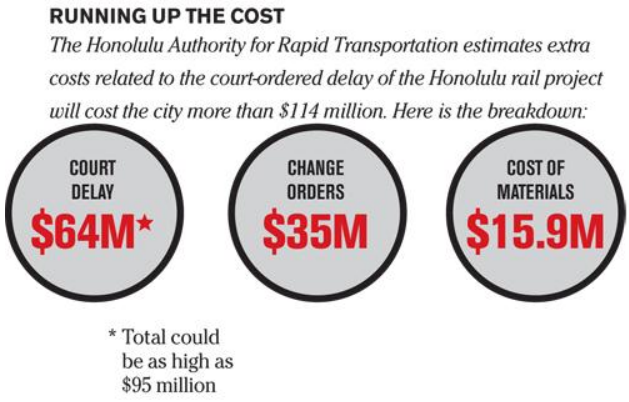
[§] Cf. "Burial Council Won't Sign Rail Pact," *Honolulu Advertiser*, October 20, 2009 [article] ("Burial council members said they should have been consulted and an archaeological inventory survey should have been conducted before selection of a route through Kakaako. The current route will almost certainly encounter buried human remains, which could delay the project and drive up costs, Abad said during last Wednesday's meeting. "What we're concerned about is the public is going to turn around and point to us as the cause of those increases in costs (and) as the cause of delays," she said. "Beyond just us, they're going to turn to the whole Hawaiian community and say it's those Hawaiians who are increasing the costs of this project for everyone. It is the Hawaiians who are holding up progress. "We're going to get blamed for something that we knew well in advance would have been coming, but nobody asked us," Abad said.").

III. Evidence of Waste[**]

This section discusses the more than $114 million in delay claims as evidence of waste, and the risk that the City Center AIS will need to be redone is evidence of potential waste.

A. $114 million Delay Claims

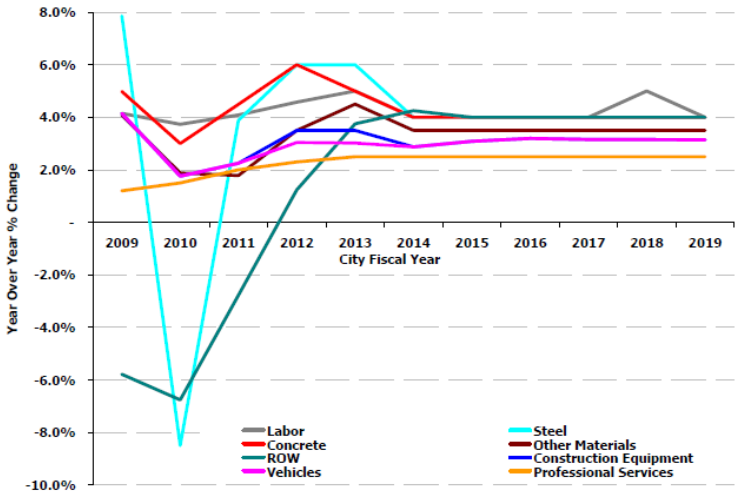
The $114 million delay claims should be considered waste because it is a direct result of mismanagement and inappropriate actions.



The mismanagement is the Rapid Transit Division (RTD) / HART entering into design-build contracts for the Phase I West Oahu/Farrington Highway guideway segment (WOFH DB), Phase II Kamehameha Highway (KHG) guideway segment, and the Maintenance & Storage Facility (MSF) that are firm fixed price — in exchange for the City taking schedule risk that it could not control.

Evidence of mismanagement is the $15.9 million delay claim for escalations in the cost of materials (e.g., steel) [HART Board minutes (04-19-12) link, Acrobat p. 5; article] because in a firm fixed-price contract advantageous to the City, that risk should have been shifted to the MSF contractor. Note that the forecasted dramatic drop forecasted for FY2010 due to the 2008 financial crisis documented in the Honolulu Rail Financial Plan for Entry into Preliminary Engineering Submittal (May 1, 2009) [link, Acrobat p. 15, 93-94] may explain why the FTA allowed the City to procure WOFH DB in 2009.[††] Thus a firm fixed-price contract *disadvantageous* to the City where it retained schedule risk is perhaps why "*very favorable* bid prices were received on the WOFH Guideway DB contract" [link, Acrobat p. 5].

Figure 2-1, Overall Project Cost Escalation Forecast, FY2009 – FY2020



[**] Waste here is defined as Involving involves the taxpayers not receiving reasonable value for money in connection with any government funded activities due to an inappropriate act or omission by players with control over or access to government resources (e.g., executive, judicial or legislative branch employees, grantees or other recipients). Importantly, waste goes beyond fraud and abuse and most waste does not involve a violation of law. Rather, waste relates primarily to mismanagement, inappropriate actions and inadequate oversight [link].

[††] Here the FTA may have been hoodwinked because 20 miles of steel were purchased in July 2012 [article] instead of FY2010 as the Financial Plan for Entry into Preliminary Engineering Submittal (May 1, 2009) suggested.

III. Evidence of Waste

A. $114 million Delay Claims (cont.)

Evidence of HART's inappropriate actions are "giving the contractor dates that are known to be impossible" per PMOC Timothy Mantych's October 2010 email [article]:

From: Mantych, Timothy [mailto:Timothy.Mantych@jacobs.com]
Sent: Thursday, October 07, 2010 11:50 AM
To: Luu, Catherine (FTA); Nguyen, Kim (FTA); Sinquefield, Robyn (FTA); Tahir, Nadeem (FTA); Tsiforas, William
Subject: Honolulu

I wanted to let you know that the City may try to ask about timing for LONPs on the FD Roadmap call. They know LONPs cannot be considered until after ROD and FD approval, but they will be aggessive once these milestones are reached.

They have put themselves in a "pickle" with the WOFH DB Contract by identifying unrealistic dates for NTP 3 (FD) and NTP 4 (construction start). Currently they have told Kiewit to expect these NTPs in March 2011. We have warned them several times in the last couple of months that these dates are improbable, but they haven't listened. We strongly feel that giving the contratractor dates that are known to be impossible may magnify their delay claim.

Maybe it is too early, but the issue of LONPs will need to be discussed at some point if they want to consider providing more realistic dates.

Thanks
Tim

and premature mobilization per HART's statement: "Kiewit, with our request, mobilized the people so that essentially the equipment, the lease, whatever, all of those are accumulating" [article (01-27-12)]:

Council Executive Matters & Legal Affairs Chair Romy Cachola [agenda, video (06-26-12), 1:41:58 re Resolution 12-158, link]: Look, I made my research. When the notice to proceed was given, you still have five more steps before we can go to full funding grant agreement. You should not be issuing or getting any approval from the FTA or use taxpayers' money until some of these things are done. We were still in the review of the draft EIS, we are still going to get the final EIS approval, there is the record of the decision, letter of no prejudice — before you go full funding grant agreement. Those things were still existing, and somebody went ahead and pulled the trigger of notice to proceed. So you folks should at least advise administration and say, you cannot do that because we still have other approvals to be obtained. You were paid top dollars and you are not giving proper advise to the administration. Why?

InfraConsult Wes Mott (seconded employee to HART): The overall master project schedule is basically what *drives* when decisions are made, and at that point in time the master schedule indicated that's what needed to be done at that point. And we expected that the record of decision would be obtained earlier, we expected the environmental impact statement would be cleared earlier, and we expected things to happen quicker than what actually occurred.

Cachola: So you pulled the trigger even *before* the approval of those conditions, right? Notice to proceed were given.

Mott: Notice to proceed was given before a number of issues had occurred but there was a plan in the master project schedule that anticipated when those things were going to occur, and it fit together.

Cachola: It doesn't fit together because those things happened in 2011 where there is more or less like 3 or 4 years from the time notice to proceed were ordered. Somebody made a booboo in terms of advising the administration in going ahead with notice to proceed, and that's why the delay, and we the taxpayers (including us) are now going to pay for it — and there will be a lot more.

III. Evidence of Waste

A. $114 million Delay Claims (cont.)

In turn, prematurely mobilizing Kiewit metaphorically held a gun to the FTA's head where if it did not approve Letter of No Prejudice No. 2 (LONP 2) "total delay impact could be at least a $110 million" [link, Acrobat p. 9]

> ***Impact to Budget and Contingency if LONP 2 Is Not Approved***
> The consequences of LONP 2 not being approved will have serious impacts to the overall project budget, and in particular, poses the most significant impact on the project contingency. HART analysis indicates that the total delay impact could be at least $110.2 million if LONP 2 is not authorized in January 2012 for the four contracts. This estimated delay cost is comprised of approximately $30.2 million if the limited construction activities do not start within the LONP 2 period, and an additional $79.9 million for delay to the contracts' remaining activities outside the LONP 2 period. Each month, the cost of delaying the start of the LONP 2 activities is approximately $9.2 million. This essentially is the cost of the contractors remaining mobilized and not working, as well as the escalation in the cost of materials. The $110.2 million addresses only costs associated with the contracts affected by the LONP 2 request listed in Table 1 and Figure 2.

and the so-called "cheaper to build and tear down than wait for an FFGA" justification for commencing construction of the guideway pillars in April 2012 made at a Honolulu City Council Budget meeting on March 15, 2012 [article, article, video; HART cost analysis letter (04-23-12), HART demolition cost letter (05-03-12)].

Note that the fraudulent justification that the FTA needed to "see progress" is the root cause of this $114 million waste from delay claims because that was the reason given to procure and award the now apparent City-disadvantaged WOFH DB contract in 2009.

III. Evidence of Waste

B. Risk of Re-doing City Center AIS

Evidence of potential waste from inappropriate action is the risk that the City Center AIS will have to be *redone* should the Phase IV guideway design contractor determine that the drilled-shaft foundation design baselined project wide is not suitable for the City Center. In other words sequentially, geotechnical investigation [cf. Phase III guideway design contract link, Acrobat p. 49] drives the foundation design (validated or "confirm" (*sic*) via WBS Task No. 7.6 Load Test [ibid link, Acrobat p. 133] which in turn drives the sampling strategies of the ground penetrating radar survey for locating underground utilities unmarked on pre-GPS maps [article] (SCC 40.02), and the archeological inventory survey for locating native Hawaiian burials (*iwi kupuna*) [article] (SCC 40.04).

ACTIVITY DESCRIPTION		Form SOW 01
Activity: Geotechnical Exploration and Design 7.6 Load Test	**Activity Responsibility:** Geolabs, Inc.	**Issue Date:** 09/20/2011
	Task No. / Sub Task No. WBS - 0720.0010	**Revision No:** Conformed

A) Activity Description:

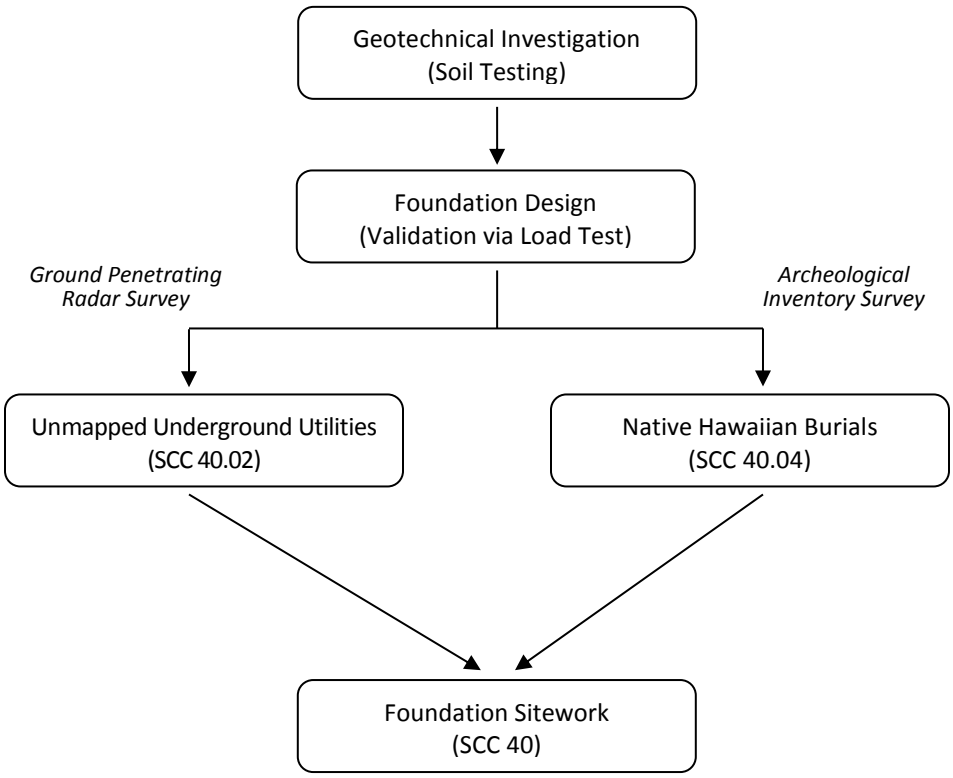
1) A foundation load test(s) will be performed on the selected foundation type(s) for the project. The load tests will be used to confirm the final design, allow the use of a higher resistance factor, and therefore increase the cost effectiveness of the final design without increasing risk to the project. Tasks required to implement a foundation load test program into the project include the following:

2) Identification and Development of Load Test Specifications:

   a) Review the foundation design and the subsurface conditions to evaluate the most appropriate foundation load tests, which may include both axial and lateral load considerations.

   b) Once the nature of the test is developed, evaluate areas/locations where the tests can be performed.

   c) Develop planning documents for the test program, including permit considerations.



Load Test of Drilled-Shaft Foundation Design in West Oahu farmland [article]

III. Evidence of Waste

B. Risk of Re-doing City Center AIS (cont.)

Note that the need for geotechnical investigation of the City Center guideway segment was identified by the PMOC in August 2011 as a *significant* project risk [link, see Acrobat pp. 325-26], i.e.,

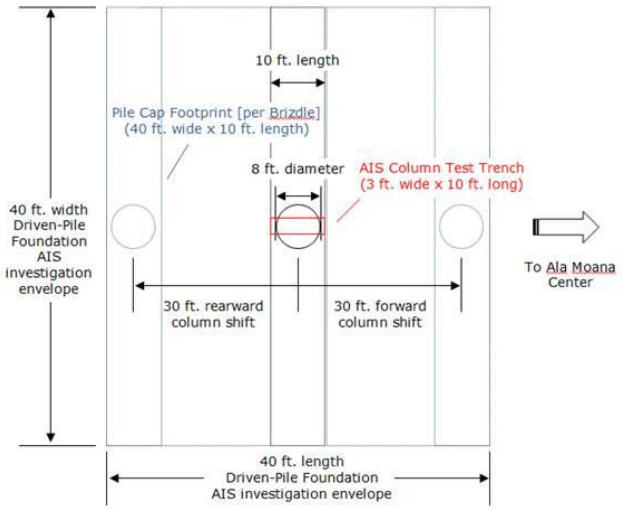
- Probability Rating > 90% (near certainty)
- Cost Impact > $10M (highest)
- Schedule Delay = high (3 to 6 month schedule delay).

PROJECT RISK REGISTER
Honolulu High-Capacity Transit Corridor Project
Date Issue: August 2011
Rev. 6
Note: Project Wide risks are evaluated both at the Project Wide level and by contract. Therefore, what may seem as repetitions are actually risks as applicable to each contract.

Legend	Low (1)	Med (2)	High (3)	Very High (4)	Significant (5)
Probability	< 10%	10><50%	>50%	~~75%~~	>90%
Cost	< $250K	$250K><$1	$1M><$3M	$3M><$10	>$10M
Schedule	< 1 Mths	1 ><3 Mths	3><6 Mths	6><12 Mths	> 12 Mths
Rating	<=3	3.1-9.49		>=9.5	

Current ID	SCC Code	Contract Package	FTA Risk Category	Risk Description	Most Current Notes and Comments	Probability Rating	Cost Impact (A)	Schedule Delay (B)	Risk Rating %x(A+B)/2	Prior Risk Rating
60	10.04	Project Wide	Geotech/Early Const	Differing geotechnical conditions may be encountered and result in schedule delays and additional cost. (General Project Wide geotechnical risk)		5	5	3	20	20
60e	10.04	City Center Guideway	Geotech/Early Const	Given limited geotechnical information available at this time, additional costs may be incurred associated with final design through construction.		5	5	3	20	20

and should the Phase IV City Center guideway design contractor determine that the baselined drill-shaft foundation design is not valid for the City Center segment but rather say a driven-pile foundation design [see FEIS Appendix E link] with say a 40 ft. wide x 10 ft. length pile cap is required[‡‡],



then the current City Center AIS (which presumes the drill-shaft foundation design) will be of waste because it will have to be redone (for, say, a driven-pile foundation design) . Thus the responsible party for the inappropriate action of not having a validated foundation design before Cultural Surveys Hawaii developing its excavation sampling strategy [link] is GEC Parsons Brinckerhoff.[§§]

[‡‡] For details see my testimony to HART Board (08-30-12) [minutes link, Acrobat pp. 9-12].

[§§] The GEC should have also advised HART to mitigate above PMOC-identified *significant* project risks before entering Final Design to ensure that "Design of all major or critical project elements to the level that no significant unknown impacts relative to their cost or schedule will result" [FTA PE factsheet].

ATTACHMENT F

Testimony of Michael Asato

Honolulu Authority for Rapid Transportation
Board of Directors Meeting

Discussion of OP 52 – Readiness to Execute Full Funding Grant Agreement

October 18, 2012 [agenda]

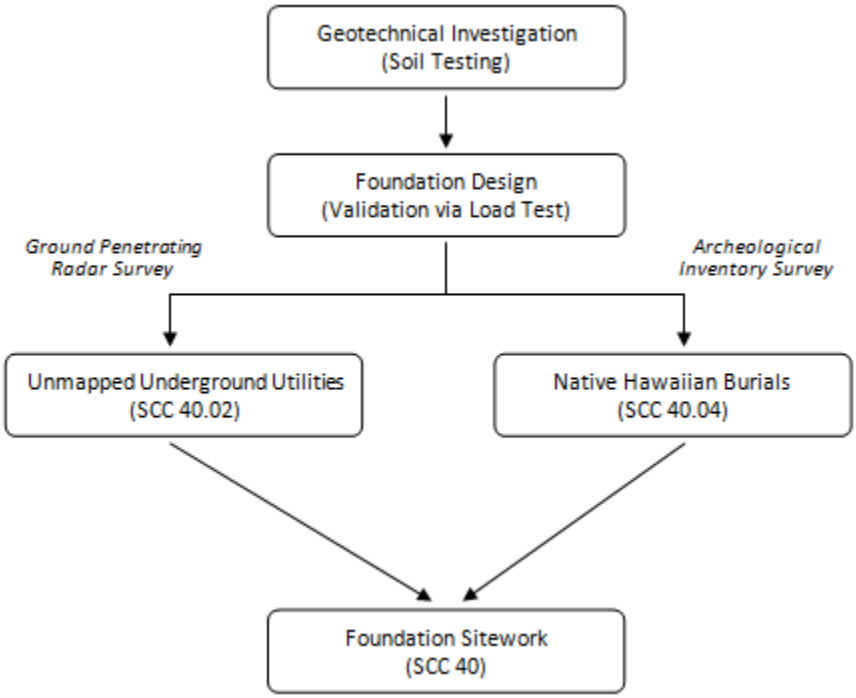
This testimony is provided to bring to the HART Board's attention [and the FTA, its Congressional oversight committees, OMB, DOT Inspector General, GAO, and the general public] systemic failures of risk management and cost estimation in the Program Management Oversight Contractor (PMOC) [link] recommendation in its October 2012 FFGA readiness report [link] (per FTA Oversight Procedure OP52 [link]) that Honolulu Rail is *ready* to execute an FFGA in 2012.

I. Systemic Failures of Risk Management

Three systemic failures of risk management have been identified. The first is violating the following FTA guiding principle of preliminary engineering (PE) [FTA PE factsheet] that serves as a basis for the management of risk of project implementation

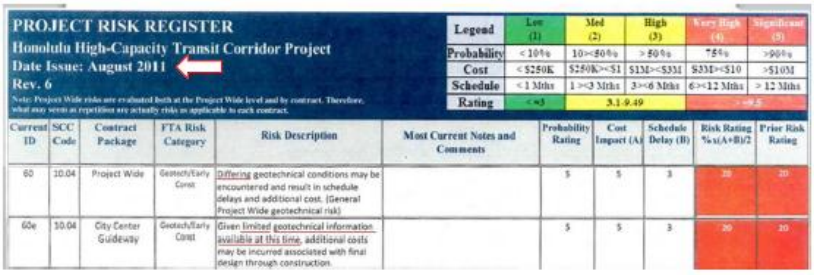
> Design of all major or critical project elements to the level that no significant unknown impacts relative to their cost or schedule will result.

wherein the PMOC recommended in its November 2011 Entry to Final Design readiness report [link] (per FTA Oversight Procedure OP51 [link]) that Honolulu Rail was ready to exit preliminary engineering and enter final design. The specific critical project element is the City Center guideway foundation whose design has yet to be validated — which requires not only geotechnical investigation (e.g. soil testing), but also a load test (to "confirm the final design") [cf. Airport guideway design contract link, Acrobat p. 123-133; West Oahu/ Farrington Highway load test rig article (04-05-11)]. For the City Center a validated foundation design is important because with respect to "significant unknown impacts relative to cost and schedule," it drives the sampling strategies of the ground penetrating radar survey for locating underground utilities unmarked in pre-GPS maps [article] (SCC 40.02), and the archeological inventory survey for locating native Hawaiian burials (*iwi kupuna*) [article] (SCC 40.04).



I. Systemic Failures of Risk Management (cont.)

The unknown impacts of a City Center guideway foundation design that has *yet to be validated* relative to their cost or schedule is *significant* because the PMOC identified in August 2011 [link, see Acrobat pp. 325-26] project risks ID 60 & 60e as *significant*, i.e.,



PROJECT RISK REGISTER
Honolulu High-Capacity Transit Corridor Project
Date Issue: August 2011
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Legend	Low (1)	Med (2)	High (3)	Very High (4)	Significant (5)
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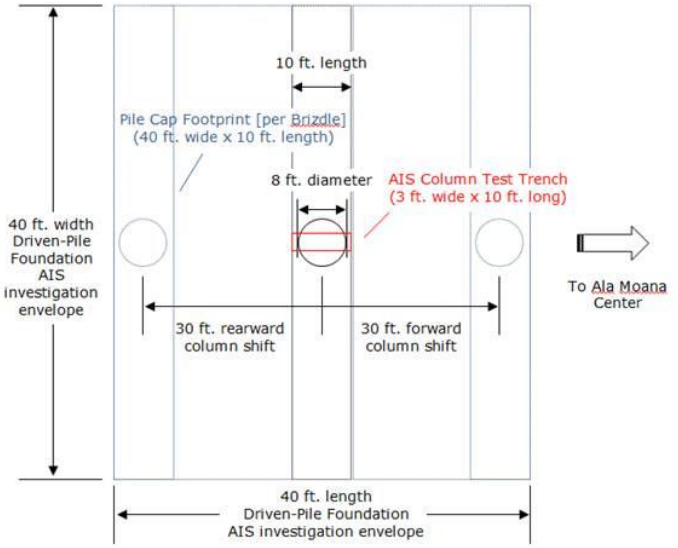
60e	10.04	City Center Guideway	Geotech/Early Const	Given limited geotechnical information available at this time, additional costs may be incurred associated with final design through construction.		5	5	3	20	20

- Probability Rating > 90% (near certainty)
- Cost Impact > $10M (highest)
- Schedule Delay = high (3 to 6 month schedule delay)

which has *yet to be mitigated*.



Significant project risk ID 60 of "differing geotechnical conditions" is rightly a concern[1] because the drilled-shaft foundation design has been baselined project wide, and the farm soil of the Phase I West Oahu guideway segment is very different from the landfill soil of Nimitz Highway along the Honolulu Harbor waterfront and the sandy soil in Kakaako of the Phase IV City Center guideway segment [report]. Should geotechnical investigation (e.g. soil testing) to mitigate significant project risk ID 60e likely now underway under the City Center guideway design contract (awarded July 30, 2012 [article]) determine that the drilled-shaft design is not valid there and a driven-pile foundation design is needed [see FEIS Appendix E link], the massive size of say a 40 ft. wide x 10 ft. length pile cap will dramatically increase the likelihood of encountering underground utilities unmarked in pre-GPS maps (SCC 40.02) and Native Hawaiian burials (SCC 40.04) whose cascading "worst case scenario" impact may be *catastrophic* in terms of either a multi-billion dollar cost overrun, major slippage in schedule or a radical re-scoping of the project. In sum, as of October 2012, in failing to mitigate *significant* project risks ID 60 & 60e, their impacts on cost or schedule are *significantly* *unknown* (plausibly catastrophic). Thus regarding the above FTA preliminary engineering guiding principle, the City Center guideway foundation has *not* been designed to the level that there are "no significant *unknown* impacts relative to their cost or schedule will result."

[1] Cf. FTA Notice of Proposed Rulemaking (NPRM) on Capital Project Management (09/13/11 [link, Acrobat p. 9]): "The inability of a sponsor to deal with geotechnical issues up front has been shown to increase total geotechnical costs by as much as 40 percent and cause months of delay. … A less frequent, but still costly, factor is where the physical characteristics of the project has changed. This has happened during geotechnical exploration, and actual changes in the physical configuration of the project made to accommodate stakeholder demands or changes in underlying assumptions."

I. Systemic Failures of Risk Management (cont.)

The second systemic failure is violating the following FTA guiding principle for New Starts funding allocation [FTA FFGA factsheet]

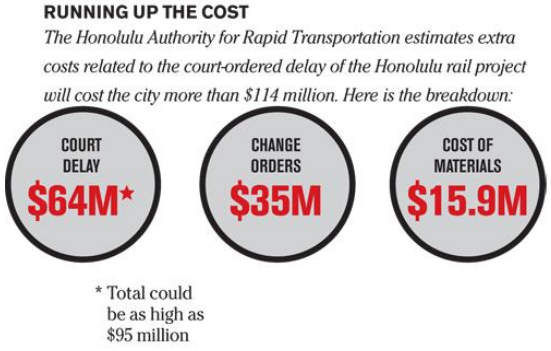
> Firm funding commitments, embodied in FFGAs, will not be made until projects demonstrate that they are ready for such an agreement, i.e. the project's development has progressed to the point where its scope, costs, benefits, and impacts are considered firm and final.

wherein the PMOC recommended in its October 2012 FFGA readiness report [link] (per FTA Oversight Procedure OP52 [link]) that Honolulu Rail is ready to *ready* to execute an FFGA in 2012. Specifically, the PMOC's FFGA readiness recommendation is reckless because

- City Center guideway design (design contract awarded July 30, 2012 [article]) whose overall design effort/ stage provided by HART [PMOC quarterly meeting report (August 1, 2012) link, Acrobat p. 12] was *only* 15% complete — far from the 75% to 100% design stage considered "definitive" (i.e., "firm and final") per Appendix A: Cost Estimation Methodology [link] of FTA *Project and Construction Management Guidelines* [link]

Overall Design Effort
- WOFH – 95%
- KHG – 90%
- Airport Guideway Section – 40%
- City Center Guideway Section – 15%
- MSF – 90%

- Firm fixed-price West Oahu/Farrington Highway (WOFH), Kamehameha Highway (KHG) and Maintenance & Storage Facility (MSF) design-build contracts (July 2012 status [link, Acrobat pp. 27-29]) are anticipated extra costs of more than $114 million [article (10-11-12)] ($64 million to $95 million from project-wide construction work stoppage when a *single* native Hawaiian burial human bone fragment was discovered [article (09-13-12)]). On October 6, 2012 two intact burials were discovered [article]. Native Hawaiian cultural practitioners have demanded that HART find a way to leave burials and other human remains "in place when they are discovered" along the rail route [article, video]. If followed, should a large, dense native Hawaiian burial field be encountered [article] and it becomes *impossible* to work around through "rail design changes" [article], it may be *impossible* to traverse Kakaako and finish at Ala Moana Center — with the repercussion of a major re-scoping of the project. [2] The point here is that regarding the above FTA principle, project development has not progressed to the point where its scope, costs, benefits and impacts can be considered "firm and final."



[2] For details see my HART Board testimony (10-18-12) re agenda item Archaeological Inventory Surveys and Cultural Monitors [YouSendIt download link (expires 10-25-12)].

I. Systemic Failures of Risk Management (cont.)

The third systemic failure is ignoring the prudent risk management practice of addressing *super hard* critical project elements[3] as soon as possible as exemplified by the following excerpt from the FTA Notice of Proposed Rulemaking (NPRM) on Capital Project Management (09/13/11 [link, Acrobat p. 8]):

> This particular provision in the NPRM reflects two corollary lessons learned by FTA in the 22 years since the agency issued the current regulation. First, any problems in implementing a project must be recognized and addressed as early as possible. … At heart, these proposed requirements are intended to help FTA and project sponsors meet their stewardship responsibilities to guard against waste and abuse of taxpayer funds.

Specifically from a risk management perspective HART's contracting packaging is "ass backwards" by starting in relatively "easy" Phase I West Oahu segment (guideway design-build contract awarded 11/18/09 [link, Acrobat p. 24]; FTA letter of no prejudice (LONP) allowing limited construction activities transmitted on 02/06/12 [link]) — and leaving last the *super hard* Phase IV City Center segment (guideway design contract awarded on 07/30/12 [article] which one month *after* HART submitted its FFGA application on 06/29/12 [article]).

HART justified the rail maintenance and storage facility (contract awarded 06/30/11 [link, Acrobat p. 26] for starting construction in west Oahu [video, 34:30] but prudent risk management should have been to start construction in the City Center limited to the guideway & station foundations *only* such that if it became apparent that traversing "burial central" Kakaako [article] was cost prohibitive, HART could *easily*, *quickly* and *cheaply* "pull the plug" on the project. As it now stands, the *super hard* City Center guideway foundations will remain on the critical path until construction begins in 2014 [per schedule as of 05-08-12 link] which if the above dramatic "foreseen" circumstances are encountered it will likely be *impossible* to "pull the plug" on the project [cf. escalation of commitment link] (resulting in massive multi-billion dollar cost overruns — or major re-scoping such as dropping Phase IV that would severely undercut the benefits of the overall project).

	AIS Completion	Final Design Completion	First Construction Contract Awarded
West Oahu Farrington Highway	Completed 10/2009	Complete by 12/2012	11/2009
Kamehameha Highway	Completed 8/2011	Complete by 12/2012	6/2011
Airport	Complete by 8/2012	Complete by 2013	Late 2013
City Center	Complete by 1/2013	Complete by 2014	Early 2014

[3] Also known as the "long pole in the tent" (meaning the most important issue or problem that prevents … progress … on a project) [link, Merriam Webster link, William Safire's *NYT Magazine* "On Language" column].

II. Systemic Failure of Cost Estimation

The PMOC has no basis to conclude in its FFGA readiness report [link, Acrobat p. 35]

> **5.3 Conclusion**
>
> It is the PMOC's professional opinion that the current cost estimate is mechanically and fundamentally sound and reasonable, and that it meets the FTA guidance and requirements necessary to execute an FFGA.

because the FTA typically requires 15% contingency at award of an FFGA [link, Acrobat p. 17] which per Appendix A: Cost Estimation Methodology [link] of FTA *Project and Construction Management Guidelines* [link] means that the design stage should be 75% to 100% complete.

Table A-1. Recommended Contingency by Estimating Stage

Estimate Stage	Probable Accuracy[1]	Design Stage	Purpose	Information Available	Estimate Methods	Contingency Guideline
Order of Magnitude (conceptual)	50% - 30%	Preliminary	Evaluation of projects or alternatives	100-scale alignment, facility descriptions, sketches, study reports	*Parametric* – Cost of a similar facility is adjusted to represent the new facility. Includes costing by SF, LF, or CF. *Model* – A typical design is used to develop quantities and costs for elements.	20% or higher
Preliminary (budget)	15% - 30%	Preliminary Design Report (25%)	Establish Control Budget	40-scale alignment, facility descriptions, sketches, study reports, cross sections, profiles, elevations, geotechnical data, staging plans, schedule, definition of temporary work	Quantity development of major commodities, pricing by database, manuals, quotes, bid results, or experience which may be adjusted for the conditions of the specific package. Rough estimates or allowances developed for immeasurable items.	10% - 20%
Definitive	15% - 5%	75% to 100% complete	Detailed Control Budget, Cost Control, and Reporting	Progress Plans and Specifications, working construction schedule	Takeoff of quantities from plans, representative pricing by database, manuals, quotes, bid results, or experience adjusted for the conditions of the specific package. Crewed approach to labor and equipment, percent approach to general conditions, overhead and profit, contingency, and escalation. Some allowances carried for immeasurable items.	5% - 15%

75% to 100% Complete Design Stage
≈ 15% Contingency for FFGA

Thus applying the FTA's Cost Estimation Methodology, the PMOC's professional opinion on the current cost estimate is neither sound nor reasonable because the total contingency of 15% in HART's Final Financial Plan for FFGA (June 2011) [link, Acrobat p. 27; link (10-09-12)] is inconsistent with the 40% design effort of the Phase III Airport guideway segment, 15% design effort of the Phase IV City Center guideway segment (on August 1, 2012) [link, Acrobat p. 12], and 0% design effort for the Kakaako Station Group.

Overall Design Effort

- WOFH – 95%
- KHG – 90%
- Airport Guideway Section – 40%
- City Center Guideway Section – 15%
- MSF – 90%
- West Oahu Station Group (WOSG) – 15%; Notice to Proceed (NTP) 15, 2012
- FSHG – 30%
- Kamehameha Highway Station Group (KHSG) – 15%, in procureme for October 2012)
- Airport Station Group (ASG) – 15%; in procurement (NTP scheduled for October 2012)
- Dillingham Station Group – Procurement not started (NTP scheduled for June 2012)
- Kaka'ako Station Group – Procurement not started (NTP scheduled for September 2013)

Preliminary Estimate Stage
(10% to 20% contingency)

Conceptual Estimate Stage
(20% or higher contingency)

Kakaako & Ala Moana Stations: AIS trenching for Native Hawaiian burials yet to be conducted in areas with no previous archeological studies & in private existing buildings [link, Acrobat pp. 45-54]

III. Systemic Failure of Cost Estimation (cont.)

MAIN WORKSHEET-BUILD ALTERNATIVE (Rev.14, August 5, 2011)

City and County of Honolulu - Honolulu Authority for Rapid Transportation						Today's Date	June 13, 2012	
Honolulu Rail Transit Project, East Kapolei to Ala Moana Center						Yr of Base Year $	2012	
FFGA						Yr of Revenue Ops	2019	
	Quantity	Base Year Dollars w/o Contingency (XD00)	Base Year Dollars Allocated Contingency (XD00)	Base Year Dollars TOTAL (XD00)	Base Year Dollars Unit Cost (XD00)	Base Year Dollars Percentage of Construction Cost	Base Year Dollars Percentage of Total Project Cost	YOE Dollars Total (XD00)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	20.05	955,497	136,580	1,092,076	$54,459	39%	24%	1,275,329
40 SITEWORK & SPECIAL CONDITIONS	20.05	891,846	108,839	1,000,685	$49,902	36%	22%	1,103,867
40.01 Demolition, Clearing, Earthwork		26,927	4,192	31,118				34,696
40.02 Site Utilities, Utility Relocation		274,431	46,301	320,732				350,695
40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		6,107	585	6,692				7,229
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks		24,421	3,422	27,843				30,842
90 UNALLOCATED CONTINGENCY				88,666			2%	101,871
Subtotal (10 - 90)	20.05			4,395,810	$219,209		97%	4,948,635
100 FINANCE CHARGES				140,596			3%	173,058
Total Project Cost (10 - 100)	20.05			4,536,406	$226,220		100%	5,121,693

Specifically a close look at Project Budget that was submitted to the FTA in the Final Financial Plan for Full Funding Grant Agreement (June 2012) [link, Acrobat p. 81; link (10-09-12)] indicates that HART's allocated contingencies for pre-GPS underground utilities (SCC 40.02) of 14.4% [= $46.3M/$320.7M], and native Hawaiian burial sites [article] (SCC 40.04) of 12.2% are *woefully inadequate*:

(i) Do not reflect the *significant* level of risk that the foundation design baselined for the Phase IV guideway has *yet to be validated*, and if determined *not* valid cascading impacts of an engineering change order may well result in massive multi-billion dollar cost overruns[4]

(ii) Discovery of a *single* human bone fragment leading to a project-wide construction work stoppage estimated to cost $64 million to $95 million [link, Acrobat p. 52] has *already* exceeded the $3.4 million SCC 40.04 contingency and *nearly exhausts* the $102 million unallocated contingency (and construction has only just begun!).

Moreover from the above "long pole in the tent" risk management perspective [link, link, link] it would be *intellectually absurd* that the 12.2% contingency for SCC 40.04 was achieved per the FTA Cost Estimation Methodology via algebraic manipulation[5]

0% contingency (WOFH @ definitive estimation stage)
+ 0% (KHG @ definitive)
+ 20% (Airport Guideway @ preliminary)
+ 28.8% (City Center Guideway @ conceptual)/4
= 12.2% allocated contingency (SCC 40.04)

CONTINGENCIES

The cost estimates include a variety of contingencies to allow for potential additional expenses related to each cost category. The FTA typically requires a total contingency of 30 percent at entry into Preliminary Engineering, 20 percent at entry into Final Design, and 15 percent at award of an FFGA.

which per the Honolulu Rail Financial Plan for Enter into Final Design (September 2011), the threshold bogey of "15 percent contingency at award of an FFGA" is met [link, Acrobat p. 17]

[4] For details see my testimony to HART Board (08-30-12) [minutes link, Acrobat pp. 9-12].

[5] 28.8% for City Center guideway is the algebraic "plug"

III. Systemic Failure of Cost Estimation (cont.)

Applying the above analysis to the HART Board Finance Chair's testimony

HART Board Finance Chair (and retired First Hawaiian Bank CEO) Don Horner [video (03-15-12), 3:41:00]**:** Again, Councilmember Cachola over 50% of our projections are now known. We have hard bid contracts that have been bonded. And as I say that is $300 million below where our projections are, of what we estimated our cost were, so that gives us some comfort that our estimates have been above what our actual bids have been — if you add them up that is $300 million in "savings" And so we have that number and we have an $850 million "contingency cushion" if you will, so that gives as a construction lender for 30 some years in this community I haven't seen when someone builds something that you've got a 30%, 25% actually, cushion — and you've actually got hard bid contracts, so that gives us some amount of risk modification, risk adjustment, so real risk bears in the second 10 miles and in the station construction cost. There is more risk in those than would be in the contracts that we've already got let.

per HART Executive Director Grabauskas' letter to Council Budget Chair Kobayashi (10-09-12) [link], rather than an $850 million or "30%, 25% actually, cushion," Honolulu Rail is now carrying a $644 million or 15% contingency cushion.

1. Provide the base project budget as well as the amount in the project contingency. Of that amount, provide amounts of allocated and unallocated project contingency and explanation of how amounts are distributed.

   Response: The Project Budget ("Main Worksheet Build Alternative") that was submitted to the Federal Transit Administration (FTA) is provided as Attachment 1.

   The total amount of Project Contingency is approximately 15 percent of the total Year of Expenditure (YOE) costs without contingencies, or $644 million. Of the total $644 million in YOE dollars contingency amount, $542 million is allocated contingency and $102 million is unallocated contingency.

Regarding allocated contingency & unallocated contingency [view also HART Executive Director's Grabauskas' Budget Committee meeting testimony video (10-10-12), 12:52]

2. Provide definition of allocated and unallocated project contingency.

   Response: FTA Circular 5200.1A, Full-Funding Grant Agreements (FFGA) Guidance explains "contingency" as "a funding resource for increases over the estimated project cost resulting from changes in market conditions, unknown field conditions, changes in regulations or other factors that could not be accounted for in other project unit terms."

   Circular 5200.1A further explains that "[c]ontingencies may be presented in one of the following ways: (1) a contingency amount may be included in each line item; (2) there may be a separate contingency amount for the Project as a whole, reflecting remaining uncertainty, and no contingency amounts in the contract units; or (3) there may be both an overall Project contingency amount and a contingency amount in each line item."

   The term "Allocated Contingency" refers to contingency presentation numbered (1), wherein a contingency amount included in each item, i.e. a contract unit. The term "Unallocated Contingency" refers to contingency presentation numbered (2), wherein there is a separate contingency amount for the Project as a whole and no contingency amounts in contract units. The budget for the Honolulu Rail Transit Project uses contingency presentation numbered (3), whereby there is both a contingency amount in each line item (Allocated Contingency) and an overall Project contingency amount (Unallocated Contingency).

the $542 million "allocated contingency" corresponds to the design stage of a line item (per the FTA's Cost Estimation Methodology), and the $102 million "unallocated contingency" is now already *nearly exhausted* by the *anticipated* $64 million to $95 million delays claims from court delay to complete the City Center AIS [article (10-11-12)] because they are from Finance Chair Horner's "50% of our projections are now known" whose line items were likely carrying 0% to 5% contingencies allocated to "hard bid contracts that have been bonded".

In closing, I respectfully remind the HART Board of its fiduciary duty of loyalty to the taxpayers of the City & County of Honolulu (vs. *blindly* carrying out HART's mission per the City Charter) and its fiduciary duty of care to *not* solely rely on the PMOC's recommendation — and request that the HART Board form a special committee of disinterested independent directors[6] [7] to conduct its own *independent* due diligence (ensuring public trust & confidence[8]), invite public testimony, and memorialize its recommendation in a public report on whether Honolulu Rail is *ready* to execute an FFGA in 2012.

---

[6] Direct analogy to Delaware corporate law governance practice of forming a special committee of disinterested independent directors for transactions involving a change of control or other major transaction in which a controlling shareholder or senior management stands on the opposite side (e.g., link).

[7] Per Councilmember Stanley Chang [Transportation Committee meeting (05-04-12) video, 1:51:38]: "that the board member should be following first, to eliminate the appearance of impropriety *exclude* current City employees or officers, or any persons who have been a City employee, consultant, or contractor within the last two years from consideration as a candidate for appointment to the board, and number two, carefully investigate the background of the all candidates to ensure the final selection is free from conflicts of interests, with someone with infallible integrity, and commands the public trust."

[8] Cf. Councilmember Stanley Chang's remarks [Transportation Committee meeting (05-04-12) video, 1:48:38]: In consideration of Resolution 11-115 the overriding concern that I have Mr. Chair is the issue of *public trust & confidence* in City government, in Honolulu Authority in Rapid Transportation and the rail project in particular. I believe that public trust is the *single most* criteria in dealing with the rail project. It's the single most important trait that the City & County should have in the eyes of its constituents, and ultimately *without* the public's trust & confidence in the City and in HART, I do *not* believe that the rail project will be brought to completion. And I think in this particular instance we've had a great erosion of public trust with respect to the rail project. We've had headlines over & over again over the years, councilmembers doubtful, questions emerge, we have currently at least two bid protests going through on one of the major contracts that's being awarded. There is a widespread & pervasive fear of cost overruns, of delays...um, and I think the result has made it very clear any time that anything remotely related to the rail project Mr. Chair is brought on to the full Council or any committee of the Council, we have lots & lots of public testimony both written & oral, and more concretely, more specifically, I think public opinion *reflects* that erosion of public trust as well, and this City Auditor's service efforts & accomplishments report issued for the first time this year on two of the public trust benchmarks, Honolulu scored dismally. The first value of services received for the taxes paid to the City & County, Honolulu ranked 23rd out of 24 comparable jurisdictions. In the overall direction the City & County has taken, Honolulu ranked 19th out of 20 comparable jurisdictions. So, I think it is very clear that public trust in the City has been greatly diminished as a result of a number of the actions that have taken place in the years leading up to today. And I'd like to give you just one comparison, one example: the wastewater consent decree versus rail transportation. Now the epithet most expensive or biggest public works project in the State's history is often used to apply to the rail project. That being said, Honolulu's taxpayers are being asked to provide a $4 billion out of the $5.5 billion estimated cost of the estimated cost of the rail transportation project. On the wastewater consent decree, Honolulu ratepayers are being asked to supply 100% of the $4.4 billion of the price tag. So the wastewater consent decree is actually a longer, more costly to Honolulu residents, and the subject of much more intense litigation has been — for the reason of public trust, when the wastewater consent decree CIP projects are include in the City budget, over $300 million this year (that's over 62% of the total CIP expenditures this year), very little attention is given, very little questions, very little outcry, is expected. And again, the wastewater consent decree is going to cost the ratepayers of Honolulu in this year more than the rail transit

Again, recognizing that the FTA could be under a lot of political pressure in which its (and PMOC's) technical integrity could be compromised [article], does it really make sense that Honolulu Rail is *ready* for the FTA to execute an FFGA in 2012 [cf. Guiding Principles for New Starts/Small Starts Funding Allocations in FTA FFGA factsheet] when the *super hard* City Center guideway design contract was awarded on July 30, 2012 [article] one month *after* HART submitted its FFGA application on June 29, 2012 [article]?

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project. And yet, as I mentioned, anytime rail transit comes up for the Council, voluminous testimony and many questions being asked both from the members of the public, and also among myself & my colleagues here on the City Council. And I think that's an example where the public trust has been greatly shaken on this project in particular in contrast with other projects of similar magnitude & scope.

I think another result of the *erosion* of public trust & confidence, Mr. Chair, is the overwhelming approval of the Honolulu Authority of Rapid Transportation on last year's election ballot. A landslide in a 63% this ballot question passed, and it was not a result of some of the traditional justifications for having a semi-autonomous body, for instance the involvement of multiple jurisdictions like the Port Authority of New York & New Jersey — we don't have that situation here, it is not like we are dealing with multiple jurisdictions — but rather the justification that was proffered over & over again was to remove politics and politicians from the process which I believe to be a reflection of the desire to *enhance* public trust which has been in the past eroded by, as I mentioned before, headlines, protests, and a lot of *unanswered* questions that the general public has had. That's why Mr. Chair I think it's a great opportunity today for our two nominees who are here and a third who is not here, it is a great opportunity for you to be a part of this effort that the Council has made to help *restore* some of that public trust & confidence in the rail system so that we are able to bring the system in on-time & on-budget — and ultimately on a much greater scale to *restore* the public trust & confidence in the City & County government of Honolulu.