Office of the City Auditor

City and County of Honolulu
State of Hawai`i

Follow-Up Audit of the Honolulu Authority for Rapid Transportation, Resolution 17-199, CD1

Report to the Mayor
and the
City Council of Honolulu

Report No. 19-01
January 2019

Cover Photo: Honolulu Authority for Rapid Transportation

Follow-Up Audit of the Honolulu Authority for Rapid Transportation, Resolution 17-199, CD1

A Report to the
Mayor
and the
City Council
of Honolulu

Submitted by

THE CITY AUDITOR
CITY AND COUNTY
OF HONOLULU
STATE OF HAWAI`I

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EDWIN S.W. YOUNG
CITY AUDITOR

January 17, 2019

The Honorable Ann Kobayashi, Chair
and Members
Honolulu City Council
530 South King Street, Room 202
Honolulu, Hawai'i 96813

Dear Chair Kobayashi and Councilmembers:

City Council Resolution 17-199, CD1, requested that the City Auditor Conduct a follow-up audit of the Honolulu Authority for Rapid Transportation. The audit objectives were to determine whether (1) HART's contractors fulfilled their obligations in an economical, effective and efficient manner; (2) expenditures charged to HART by the contractors were valid and accurate; (3) HART has implemented the project management and contract administration controls over the contractors needed to prevent cost overruns for the rail project; and (4) HART addressed the concerns raised and followed the recommendations made in our prior HART audit.

Background

In 2010, voters approved a charter amendment to establish a semi-autonomous, government agency responsible for building and operating a fixed guideway system. The Honolulu Rapid Transit Authority (HART) was established in 2011. Its mission was to plan, design, construct, operate, and maintain Honolulu's high-capacity, fixed guideway, rapid transit system. In 2016, city charter amendments modified the HART powers, duties and functions.

The $9.020 billion Honolulu Rail Transit Project (rail project) is the largest, most expensive public works project in the State of Hawai'i's history. The project is intended to mitigate traffic congestion between O'ahu' s east to west transportation corridors, and will consist of 21 stations that will connect the East Kapolei station to the Ala Moana Center station. As of October 2018, HART has spent just over $3.4 billion.

The City Auditor restricted its audit to the period from the inception of the rail project to June 2016. The audit work was coordinated with the Hawai'i State Auditor to minimize overlap between Act 1, First Special Session 2017, requirements and City Council Resolution 17-199, CD1 requests. The State Auditor was to conduct an audit of HART's financial records and an analysis of financial management. Audit work between the Hawai'i State Auditor and the City Auditor was coordinated throughout CY 2017 and CY 2018.

Audit Results

Although HART has made many improvements and is in the process of implementing many of the recommendations made in prior audit reports, the Federal Transit Authority (FTA) and its Project Management Oversight Consultant (PMOC), much more needs to be done to control project costs and to ensure more schedule delays do not occur.

Based on our review, cost overruns and schedule delays resulted from inexperienced HART managers and contractors who initiated and approved a plethora of change orders and amendments that increased project costs and contributed to schedule delays. We found insufficient justifications and documentation for many contract change orders and amendments.

HART lacked internal controls to minimize costs and prevent schedule delays; and ignored or only partially addressed repeated PMOC warnings about internal controls and schedule impacts.

HART managers did not disagree with the audit findings, but did state they have addressed and completed most of the audit recommendations made in the prior audit report. Based on our audit work, we disagreed with their assessments. Since July 2016, HART has made improvements and are in the process of implementing many audit recommendations. Unfortunately, current HART operations, practices, staffing and succession planning remains incomplete and does not adequately prepare for the project's future. In our opinion, HART policies and practices are inadequate to prevent cost overruns and schedule delays from recurring. Our attached audit report contains several recommendations for improving HART operations.

We express our appreciation for the cooperation and assistance provided us by HART managers, staff and its consultants, the Hawai'i State Auditor's Office, the FTA Project Management Oversight Consultant (PMOC), and the many others who provided inputs for this review. We are available to meet with you and your staff to discuss the review results and to provide more information. If you have any questions regarding the audit report, please call the auditor-in-charge, Troy Shimasaki, or me at 768-3131.

Sincerely,

Edwin S. W. Young
City Auditor

c: Andrew Robbins, HART CEO
Ruth Lohr, Fiscal Officer, HART
Members of the HART Board of Directors
Kirk Caldwell, Mayor
Roy Amemiya, Managing Director
Nelson Koyanagi, Director, Budget and Fiscal Services Director

Table of Contents

Appendices

List of Exhibits

Chapter 1
Introduction and Background

Introduction

This audit was conducted by the Office of the City Auditor pursuant to Honolulu City Council Resolution 17-199, CD1, *Requesting that the City Auditor Conduct a Follow-Up Audit of the Honolulu Authority for Rapid Transportation*, (HART), (Appendix A). The audit objectives were to determine whether:

1. HART's contractors fulfilled their obligations in an economical, effective and efficient manner;

2. Expenditures charged to HART by the contractors were valid and accurate;

3. HART has implemented the project management and contract administration controls over the contractors needed to prevent cost overruns for the rail project; and

4. HART addressed the concerns raised and followed the recommendations made in our prior HART audit.

Background

In 2010, voters approved a charter amendment to establish a semi-autonomous, government agency responsible for building and operating a fixed guideway system. The Honolulu Authority for Rapid Transportation was established in 2011. Its mission is to plan, design, construct, operate, and maintain Honolulu's high-capacity, fixed guideway, rapid transit system (See Appendix A for a glossary of frequently-used acronyms in this report).

The $9.02 billion Honolulu Rail Transit Project (rail project) is the largest, most expensive public works project in the State of Hawai`i's history (See Appendices B, C, and D). The project is intended to mitigate traffic congestion within O`ahu s east to west transportation corridor, and will consist of a rail line with 21 stations between East Kapolei and Ala Moana Center. As of October 2018, HART has spent just over $3.4 billion on this project. Exhibit 1.1 shows the current project map.

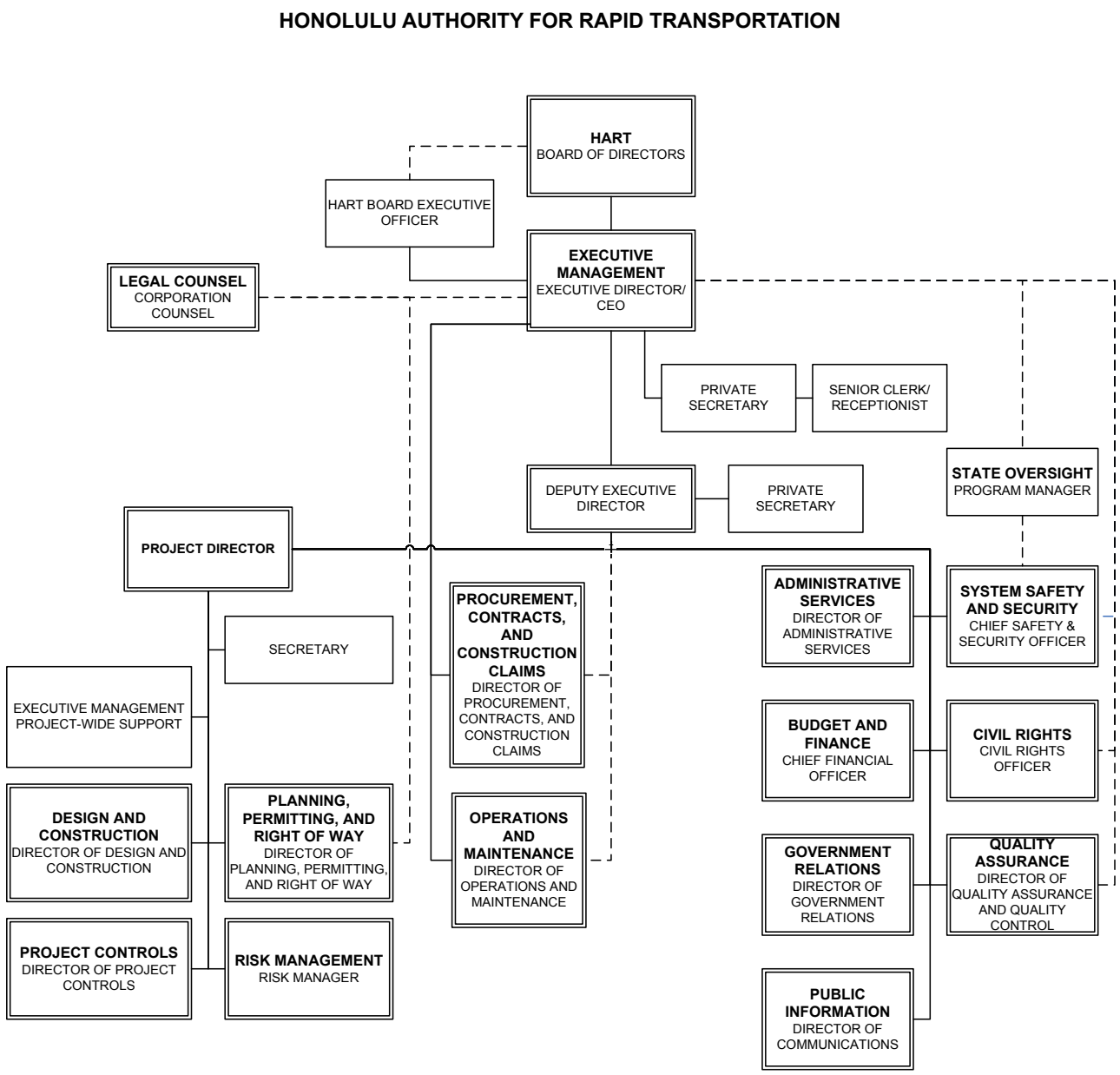
Exhibit 1.1
Map of the Honolulu Fixed Rail System

Source: HART

HART is currently governed by a 14-member board consisting of 3 members appointed by the mayor, 3 members appointed by the city council, 2 members appointed by the senate president, 2 members appointed by the house speaker,1 member appointed by the board, and 3 ex-officio members. Board members serve five-year staggered terms and are not compensated during their terms. The board meets monthly and establishes HART's overall policy for the development, operation, and maintenance of the public transit system. In 2012, the board appointed a chief executive officer (CEO) to manage and provide leadership to HART. There have been multiple changes in the HART board and organizational leadership since 2016.[1] See Exhibit 1.2 for HART's current executive structure.

[1] In 2016, the HART CEO resigned and two interim CEOs headed HART until the current CEO was appointed in 2018. Since 2016, 10 HART Board officers and members have departed and been replaced, including the Board Chair. Within the HART organization, key personnel departures included the CEO, Deputy CEO, the CFO, the project controls manager, chief engineers, land acquisition managers, and some budget and accounting staff.

Exhibit 1.2
HART Organizational Chart



Source: HART

On September 5, 2017: The Hawai`i State Legislature passed Senate Bill 4 (Act 1) which provided the City and County of Honolulu additional finances and revenues to complete construction of the rail project. Act 1 addressed most of the projected $2.378 billion shortfall reported by the city by:

- Extending the General Excise Tax (GET) on O`ahu for three additional years (through December 31, 2030) which will provide $1.046 billion;
- Raising the Transient Accommodation Tax (TAT) by 1 percent to 10.25 percent for 13 years (to December 31, 2030) which will provide $1.326 billion;
- Permanently increasing the counties' share of the TAT from $93 million to $103 million;
- Reducing the State Department of Taxation's administrative fee on the GET surcharge from 10% to 1%;
- Creating a Mass Transit Special Fund;
- Requiring the Hawai`i State Budget and Finance Director and the Hawai`i State Department of Accounting and General Services to review and approve HART capital construction costs and invoices before releasing any revenues to HART; and
- Requiring a state audit of the rail project and annual financial reviews.

In addition to providing a mechanism to finance the HART rail project shortfalls, the Act provided $1 million for the Hawai`i State Auditor to conduct an audit that examines HART's financial records, analyzes the agency's financial management practices, and determines whether funds received from the county surcharge on state tax were being managed and used in a reasonable manner. The Act was passed after the Honolulu City Council passed Resolution 17-199, CD1 that requested its City Auditor to perform a follow-up audit of HART.

Audit Objectives, Scope, and Methodology

The audit objectives were to determine whether: (1) HART's contractors fulfilled their obligations in an economical, effective and efficient manner; (2) expenditures charged to HART by the contractors were valid and accurate; (3) HART has implemented

the project management and contract administration controls over the contractors needed to prevent cost overruns for the rail project; and (4) HART addressed the concerns raised and followed the recommendations made in our prior HART audit.

The audit work was coordinated with the Hawai`i State Auditor to minimize overlap between Hawai`i State Act 1 requirements and City Council Resolution 17-199, CD1 requests. The State Auditor was to conduct an audit that examined HART's financial records and analyze the project's financial management. The City Auditor would restrict its audit of contract and financial transactions to the period from the inception of the rail project to June 2016, the date of its last audit report on HART. Other audit analysis included HART operations through June 2018. Audit work between the Hawai`i State Auditor and the City Auditor was coordinated throughout CY 2017 and CY 2018.

During the audit, the Office of the City Auditor staff reviewed HART project files, contract files, contracts and invoices, personnel and organization changes, contract management databases, and project data from the inception of the project through FY 2016. For topics related to personnel and staffing, project management oversight consultant work, and follow-up on prior audit recommendations, we reviewed documents and interviewed applicable staff through November 2018.

We reviewed applicable HART policies and procedures, Federal Transit Administration (FTA) guidelines and best practices, and FTA Project Management Oversight Consultant (PMOC) reports. We reviewed state laws and administrative rules, the city charter, city ordinances, and city resolutions. We interviewed select past and present HART administrators and key personnel. We conducted physical inspections and visits of HART administrative offices, facilities, and project operations.

We validated the accuracy and validity of HART databases and found the information was reasonably accurate and useable for the audit. We flowcharted and documented HART processes, and obtained copies of HART project management controls, contract lists, project histories, and project management charts, including Program Evaluation and Review Technique/Critical Path Method documents. We examined and documented HART project modeling databases.

We also examined prior performance and financial HART audits and other related reports. In the prior HART audit reports, the city auditor reported deficiencies, the need to improve HART public information specialist contracting practices, and the need

to improve the administration of the ongoing HART project, including the need to develop a reliable and accurate contract management system and project accounting and financial reporting systems.

We conducted a risk analysis for contracts that had contract change orders or amendments and selected a judgmental sample of the ten highest risk contracts for this audit review. We examined contract files, change orders, and contract amendments. We compared hard copy documents with those in HART's Contract Management System (CMS) to determine the adequacy and sufficiency of the supporting documents, and compliance with HART and FTA policies, procedures, and best practices.

In addition, we identified 69 of 96 HART contracts that had contract amendments or change orders through June 30, 2016. From the 69 contracts, we selected 10 high-risk contracts and analyzed 63 contract amendments and 208 change orders. In addition, we judgmentally sampled 100 invoices from the 10 high-risk contracts to determine if the invoices contained sufficient support and documentation, and if they complied with applicable policies and procedures. We also assessed the sufficiency of applicable internal controls for the project, including internal controls related to contract initiation, contract administration, contract amendments, and change orders. For purposes of this audit we assessed contract amendments, change orders, and sufficiency of documentation based on professional judgment and a r*easonable person* perspective. We did not apply technical or construction industry standards for making these assessments.

According to FTA's *Best Practices Procurement & Lessons Leaned Manual*, any contract involving the expenditure of public funds is subject to review/audit during and after performance to ensure that, at the very broadest level, the government got what it paid for. This concept means that at the contract administration level, the file (standing alone and without need for interpretation or augmentation of the contract administrator or other personnel) should demonstrate that the contracting officer and the contractor have complied with the terms of the contract.

For the prior audit recommendations follow-up, we reviewed recommendations from Report No. 16-03 and examined applicable policies, procedures, and documents to determine implementation status. We also interviewed applicable HART staff and reviewed applicable documents including the HART recovery plan documents.

Finally, we reviewed HART's organization charts, employee rosters, and consultant contracts. We also examined staffing plans and PMOC reports. We interviewed HART personnel staff and the city's Director of the Department of Human Resources.

This audit was performed in accordance with generally accepted government auditing standards from January to November 2018. These standards require that we plan and perform the audit to obtain sufficient and appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Audit Results

Although HART has made many improvements and is in the process of implementing many of the recommendations made in prior audit reports, the FTA, and its PMOC, much more needs to be done to control project costs and to ensure more schedule delays do not occur. In our opinion, cost overruns and schedule delays resulted from inexperienced HART managers and contractors who initiated and approved a plethora of change orders and amendments without sufficient justifications and a lack of basic internal controls to minimize costs and prevent schedule delays. The PMOC issued and repeated many warnings. HART ignored or only partially addressed the PMOC warnings. Since April 2016, HART has made many improvements and began to address many audit recommendations. Unfortunately, current HART staffing and other policies and practices are inadequate to prevent cost overruns and schedule delays from recurring.

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Chapter 2

Inexperienced HART Staff and Consultants Initiated a Plethora of Contract Amendments and Change Orders That Increased Project Costs and Contributed to Schedule Delays

Contract amendments and change orders represent one of the highest risks for HART's rail project. Between FY 2008 and FY 2016, HART staff awarded 96 contracts. Of the 96 contracts, 69 contracts had 641 change orders and amendments. According to experienced project managers, the number of contracts, change orders, and amendments were excessive.

HART Managers and Contractors Were Inexperienced

According to a rail consultant with 25 years of experience with the Los Angeles Metropolitan Transit Authority and other rail projects, rail projects should have a master contract and a minimal number of change orders and amendments. All contract changes and amendments should be carefully reviewed and analyzed to ensure the changes are absolutely needed. Independent cost estimates should be performed to ensure the costs are minimized, and the impact on the project costs and schedule should be considered before approving any change orders or amendments to the contract.

According to HART executives, senior engineers, and consultants we spoke with, the original HART team of contractors was inexperienced and not proficient. As a result, the HART design, plans, and specifications were flawed and HART had to initiate and approve many corrections and adjustments to the original plans and designs. The corrections and adjustments resulted in 412 change orders and 236 contract amendments that increased the project cost by at least $488,119,676 (a 15.1% increase in project costs).

According to the Project Controls Manager, HART compounded the problems by not having a comprehensive list of all the contracts, change orders, and amendments; incomplete cost data related to the contracts; and lacked a model that could show the impact of the changes to the total cost of the rail project. HART also did not use standard project management techniques like

PERT/CPM charts that identified the critical path, available *slack time*[1], and the impact of the changes on the project schedule.

The HART project and original contracts were premature

Former project managers and executives we spoke with stated the project was premature. The Full Funding Grant Agreement was approved although the rail project was not ready to start and did not satisfy the five criteria needed for the project to proceed. They include Project Management, Engineering, Planning, Budget and Financing, and Legal requirements. More specifically:

- HART did not have the rights-of-way for constructing, access, or building in the rights of way;
- Rights-of-ways were not obtained, and contractor roles and responsibilities were not defined;
- HART had insufficient plans for relocating utilities, and had not fully identified utilities that needed to be relocated;
- HART had inadequate, or no, third party agreements with Hawaiian Electric Company (HECO), the University of Hawai`i, the State of Hawai`i, the city government, or others for constructing, accessing, planning, and building the rail system;
- The rush to approve the project was for political purposes;
- The CEC contractors were inexperienced and developed design and construction plans that were incomplete.

As a result, many of the original contracts required a multitude of change orders and amendments that resulted in cost overruns and project delays. The lawsuits by rail opponents added to the cost overruns and project delays.

[1] *Program Evaluation and Review Technique* (PERT) – network model, which allows for randomness in activity completion time, has the potential to reduce both the time and cost required to complete a project; *Critical Path Method* (CPM) is a deterministic method that uses a fixed time estimate for each activity; *Slack Time* is the amount of time that a non-critical path activity can be delayed without delaying the project.

A plethora of change orders and amendments were approved without sufficient justifications

Of the 96 contracts awarded between FY 2008 and FY 2016, 69 of the contracts, originally valued at $3.2 billion, had 412 change orders and 236 amendments (a total of 648 change orders and amendments) totaling over $488 million in additional costs. The contracts were for design, construction, and professional services. According to experienced project managers and consultants, the number of contracts, change orders, and amendments were excessive, particularly since contract amendments and change orders represent one of the highest risks.

We reviewed a sample of 10 of the 69 contracts and analyzed 208 change orders and 63 contract amendments connected to these 10 contracts. Combined, the 271 change orders and contract amendments added nearly $416 million to the original costs. Exhibit 2.1 identifies the sample universe.

Exhibit 2.1
Change Order and Contract Amendment Impact for 10 HART Contracts

							CONRACT COSTS			
	Contract No.	Contractor	Start Date	No. of Contract Amendments	No. of Change Orders	Total Changes	Intitial Contract Amount	Total Contract/ Change Order Value	% Increase	Contract Value (06/30/16)
1	CT-HRT-10H0137	Kiewit Infrastructure West	11/17/09	0	104	104	$482,924,000	$175,871,787	36.4%	$658,795,787
2	SC-HRT-11H0082	AECOM	06/08/11	5	0	5	$3,000,000	$6,500,000	216.7%	$9,500,000
3	SC-DTS-070001	PB Americas, Inc.	08/24/07	10	0	10	$86,000,000	$81,104,181	94.3%	$167,104,181
4	CT-HRT-10H0449	Kiewit Kobayashi Joint Venture	07/25/11	4	47	51	$195,258,000	$79,521,742	40.7%	$274,858,568
5	CT-HRT-1400042	Tesoro Hawaii	09/12/13	2	0	2	$2,200,000	$12,375,587	562.5%	$14,575,587
6	SC-HRT-1200065	ICX Trans Group	06/05/12	4	0	4	$1,600,000	$2,400,000	150.0%	$4,000,000
7	CT-HRT-11H0195	Kiewit Infrastructure West	06/30/11	2	30	32	$372,150,000	$26,441,749	7.1%	$398,591,749
8	SC-HRT-1400012	URS Corporation	09/27/13	12	0	12	$3,800,000	$2,074,000	54.6%	$5,874,000
9	SC-HRT-1200116	URS Corporation	06/14/12	22	0	22	$7,789,000	$2,402,989	30.9%	$10,191,989
10	CT-HRT-1200106	Ansaldo Joint Venture	11/28/11	2	27	29	$1,397,387,093	$27,037,894	1.9%	$1,424,424,987
				63	**208**	271	**$2,552,108,093**	**$415,729,929**	16.3%	**$2,967,916,848**

Source: Office of the City Auditor

Sampling Results Confirm the Number of Change Orders and Amendments Were Excessive, Questionable, and Insufficiently Substantiated

The sample showed an array of deficiencies including non-compliance with Hawai`i State procurement rules, payment after the fact, failure to follow city contract policies and procedures, lack of contract approvals, insufficient documentation to support the need for the changes, questionable changes, lack of independent cost estimates, and non-conformance with contract best practices.

Sampling results

Our sample[2] was based on high risk factors. The sampling results indicated 57% of the change orders and 59% of the contract amendments were not substantiated or lacked sufficient supporting documentation. We also found 18 state procurement violations. Change orders in three construction contracts added 2,246 days to the project schedule.

Over 50% of change orders and 65% of contract amendments were deemed questionable

Our review of contract documents found that 105 of 208 change orders, or nearly 50%, were deemed *questionable*[3],92 (44%) were reasonable, and 6 (3%) were unknown or we could not make a determination. In addition, our review of 63 contract amendments found that 41 (65%) were considered *questionable*, 22 (35%) were reasonable.

Categories of questionable change orders include lack of documentation, design deficiency, time impact, procurement

[2] 10 contracts, 208 change orders and 63 contract amendments totaling over $415 million. The changes increased the original contract amounts from nearly $2.6 billion to almost $3 billion.

[3] For purposes of this audit, we assessed change order and contract amendment categories (questionable and reasonable) based on a reasonable person perspective and guidelines in FTA's Best Practices Procurement & Lessons Learned Manual. We did not apply technical or industry standards for making these assessments.

violation, delay in execution, or cost. In some instances, some contract changes fell into multiple categories. Specifically, we found that of the 105 *questionable* change orders:

60 of 105 questionable change orders (57%) lacked sufficient supporting documentation.

- 60 (57%) lacked sufficient supporting documentation to justify the change in accordance with FTA best practices;
- 55 (27%) had potential design deficiencies;
- 27 (26%) had timing delays/impact on other contracts;
- 18 (17%) had procurement violations related to after-the-fact payments;
- 7 (7%) were for delayed execution of contract; and
- 55 (52%) had questionable costs associated with the change.

Examples of questionable change orders include:

- Widening of the emergency walkway at the Kamehameha Highway Guideway site. In May 2014, HART directed a contractor to re-design and widen the guideway's center safety walkway from 30 inches to greater than 44 inches at all locations to comply with National Fire Protection Association (NFPA) 130 Section 6.2.1.11.2 to avoid having to place a handrail on the walkway. The original contract, which included the 30-inch guideway design specification, was issued in June 2011. The cost for this change order was $509,000. We question why the design did not reflect the NFPA requirements in the first place and why HART did not consider the cost of handrails in the original design. Contract files did not contain any cost comparison or consideration of alternatives to this costly change.

- Cost increase due to delayed Notice-to-Proceed (NTP). Contract documents indicate that this change is needed due to cost increase for rail procurement due to the delay in HART issuing a NTP. The contract documents also indicated that the contractor further reserved the right to submit a change order(s) for additional escalation tied to actual production schedules, business related risks including changes in terms and conditions imposed by the material suppliers, and impacts associated with changes to Schedule of Milestone dates necessitated by the issuance of NTPs #2 and #3.

This November 2012 change order served as a supplemental agreement covering extra work or a change in the quantity of work from what is on the project proposal. The cost for this change order was $15.9 million. The contract files did not contain cost and schedule analysis or independent cost estimate as required by HART policies and procedures. We question HART's ability to properly manage the project so that costly changes like this could be avoided.

- Compensation to contractor for a 9-month delay claim re-submittal. HART paid a contractor $8.7 million on an undisclosed claim. The contract documents state that the change order was based on the full reconciliation of the Best-and-Final Offer and other revised schedules. However, there were no supporting documents in the contract file that detailed how the $8.7 million was negotiated and justified.

Categories of questionable contract amendments include lack of documentation, design deficiency, time impact, and cost. In some instances, some contract changes fell into multiple categories. Specifically, we found that of the 63 *questionable* change orders:

24 of 63 questionable contract amendments (59%) lacked sufficient supporting documentation

- 24 (59%) lacked sufficient supporting documentation to justify the change in accordance with FTA best practices;
- 15 (37%) had design deficiencies;
- 6 (15%) had timing delays/impact on other contracts; and
- 14 (34%) had questionable costs

Examples of questionable contract amendments include:

- Revision to final design project documents for West Loch, Waipahu, and Leeward Community College stations. According to contract documents, this October 2014 contract amendment was approved with the following justification:
    - Design of the Farrington Hwy Station Group has been completed by others, however, due to circumstances of timing with respect to some of the other HRTP contracts, the FHSG1 Consultant, who is currently the Architect and Engineer-of-Record for the FHSG stations, was unable to incorporate a number of critical items.

- Contract documents also state that the CE&I consultant's constructability comments on the three FHSG stations include a number of comments that were not explicitly identified under the consultant scope of work for the FHSG2 contract. These comments are identified in the consultant responses to the constructability, along with a reference to this amendment. Comments generated from HDOT, DPP, and GEC II on FHSG I were also not explicitly identified under the original consultant scope of work and therefore require this change.

We were unable to determine why the architect was unable to incorporate a number of critical items from the original contract dated September 2013 and why HART had to pay an additional $768,756 for these changes.

HART purposely proceeded with other aspects of the project in anticipation of changes.

- Design of Ho`opili Station. The new configuration for Ho`opili station is required in order to integrate the station with the new urban planning concepts for the Ho`opili community, including the provision of green spaces in and around the guideway. This contract amendment was implemented in May 2014 at an added cost of nearly $1.5 million. The original contract was initiated in June 2012. Contract documents show that the final design of the Ho`opili station entry building was deferred to a later date and included in a separate contract to allow more time for coordination with the landowner in order to better plan and integrate the station entry building with their planned development. In other words, HART purposefully proceeded with other aspects of the project in anticipation of changes. We were unable to determine why HART could not coordinate design initiatives earlier rather than opting for costly changes later.

- Relocation of facilities. HART entered into a contract with a utility to relocate facilities impacted by the Kamehameha Highway Guideway project. A contract amendment in September 2014 increased the contract from its original $2.2 million (September 2013) to nearly $5.7 million, which totaled $3,460,107. This represented a 157% increase. The contract amendment stated, *the parties mutually agree that the amount of work, duration of the work and its scope originally anticipated under the Agreement will be exceeded due to finalization of design, an increase in labor and material cost, and a correction of a math calculation error on Exhibit C, and the Maximum Reimbursable Amount (as defined in Section 3.1.1 of the Agreement) requires an upward adjustment to compensate*

the utility for said costs. The math error totaled $391,499. We determined that this costly contract amendment was needed because the original contract was issued prematurely and because the design was not finalized.

Most change orders and contract amendments lacked adequate documentation as required by FTA

FTA Guidelines. FTA *Project and Construction Management Guidelines*, 5.2.7 (Change Control Management), directs that establishing merit, preparing an independent cost estimate (cost/price analysis) before negotiations, properly documenting the record of negotiations, and obtaining appropriate approvals are key requirements for change order evaluation. HART's policies and procedures also required independent cost estimates, record of negotiations, and proper approvals for contract change orders and amendments.

An *Independent Cost Estimate* is a tool to assist in determining the reasonableness or unreasonableness of the bid or proposal being evaluated and is required of all procurements regardless of dollar amounts.

The *Record of Negotiation* (Summary of Negotiations) is an instrument that states the key issues during the negotiations and ultimately the decision of the negotiation, what issues were not addressed, or if a resolution was not agreed upon. Generally, contract amendments and change orders required the approval of the HART Project Manager, Officer-in-Charge, Fiscal Officer, Deputy Corporation Counsel, and HART CEO.

In our review of contract file documents for 208 change orders, we found that:

146 of 208 change orders (70%) did not have independent cost estimates.

- 146 (70%) did not have independent cost estimates;
- 99 (48%) did not have records of negotiation; and
- 13 (6%) did not have proper approvals.

For example, we also reviewed contract file documents for 63 contract amendments to determine whether the amendments had the requisite independent cost estimates, record of negotiations, and proper approvals. We determined that 9 of the 63 contract amendments were administrative changes (no dollar value) and therefore independent cost estimates and record of negotiations

were not necessary. In our review of the remaining 54 contract amendments that were subject to the requirements, we found that:

40 of 54 contract amendments (74%) did not have records of negotiations.

- 34 (63%) did not have independent cost estimates;
- 40 (74%) did not have records of negotiations; and
- 7 (13%) did not have proper approvals.

Examples of a lack of independent cost estimate include:

- A contract amendment was described as, *Project Management and Interface Management services connected with the extension of the Farrington Highway Station Group Design Support contract from May 2, 2014 through to January 31, 2015.* The amendment clarified that those services are not included in any other request for contract change submitted to HART and have not been included in time and materials tasks. The request was for ongoing services only. The amendment, which increased costs by $297,500, had no breakdown for how this amount was determined. No independent cost estimate was included in the contract file.

- Another contract amendment for utility relocation services, valued at nearly $3.5 million, did not contain an independent cost estimate or cost comparison. The contractor provided its own cost data, which is included in the contract document.

- A change order was approved to establish a provisional sum to pay the contractor for actual monies expended during the first six months, of the twelve month period, of partial suspension of the project. This change order increased the already $372.2 million contract by an additional $4.2 million. The contract file did not contain any cost estimate, cost comparison, or breakdown for how the $4.2 million was calculated.

In our view, independent cost estimates, record of negotiations and proper approvals are key internal controls to ensure that contractors are providing goods and services in an economical and efficient manner. By not consistently adhering to these important oversight functions, HART abdicated its responsibility for proper project administration.

Eighteen change orders in two separate contracts did not comply with state Procurement Code

State of Hawai`i Public Procurement Code, HRS Chapter 103D-126, requires contract modifications and change orders to receive written certification, ensuring availability of funds, and the scope of work is feasible prior to execution of the work. Rules also state that contract work cannot be executed without a proper Notice-to-Proceed (NTP). We found that HART violated procurement requirements 18 times in our sample review by issuing after-the-fact payments to contractors for work done prior to NTP execution. The violations, which involved two separate contracts, involved change orders valued at $4.5 million.

In the first instance, HART's contract with Kiewit Infrastructure West had 17 change orders that did not comply with the Hawai`i State Procurement Code. HART paid approximately $3.03 million to a contractor before the change orders were approved. The violations occurred because HART internal controls were insufficient to manage the changes and those controls in place were purposefully ignored. HART sought approval for the 17 after-the-fact payments for change orders that totaled $3.03 million. More specifically,

Design work valued at $2.85 million continued without proper authorization to minimize project delays.

- Of the 17 change order procurement violations, we identified 8 instances where the contractor was directed to continue design work instead of following change order procedures. According to contract documents, design work valued at $2.85 million continued without proper authorization in an effort to minimize project delays. HART did not follow procedures to resolve the change order in a timely manner. These violations occurred due to lack of sufficient and qualified staff and the volume of pending Change Requests which caused them to be overlooked. These violations were identified and documented by HART's Procurement and Contracts Officer with written assurance and safeguards to preclude subsequent unauthorized procurements. However the violations continued.

- In addition, in 9 of the 17 change order procurement violations, a total of $177,155, were not approved by the Procurement and Contracts Officers. According to contract documents, during preparation of the final change order package, it was discovered that HART did not formally authorize the contractor to proceed with the work.

- HART administrators were able to identify the procurement violations after-the-fact and sought to make corrections. Although HART did not incur any penalties for the procurement code violations, the organization put the project at risk for paying civil fines and compromising the project's integrity.

In the second instance, HART's contract with URS Corporation incurred a single Procurement Code violation. In this example, final design work on the Ho`opili station proceeded and was completed without an authorized change order. The contractor submitted a request for change on June 19, 2014 for final design of various station elements and began work. However, HART and the contractor did not finalize negotiations until December 5, 2014. An after-the-fact payment was approved for $1,499,877. According to HART contract files, staff will be trained in procurement requirements to avoid future violations.

Procurement Code violations are subject to civil or criminal penalties, and administrative fines of up to $5,000 per violation. For these penalties to kick-in, the violator must knowingly and purposefully procure goods and services in violation of procurement requirements. However, in most cases, violations that are the result of administrative error or mistake, ignorance, or carelessness are usually not subject to civil penalties. We did not find any evidence or documentation from procurement officials that civil penalties, criminal penalties, or fines were warranted or assessed. Nevertheless, the repeated violations compromises HART's compliance with procurement requirements, internal controls, and contract management capabilities.

Change orders in three construction contracts added 2,246 days to the project schedule

Change orders in three construction contracts added 2,246 days to the project schedule.

The three construction contracts in our sample review had an initial estimate of 3,868 cumulative days for contractors to complete their respective construction projects. We found that change orders added 2,246 days to the HART projects for a schedule increase of 58%. This raised the estimated total days for contractors to complete their projects to 6,114 days. The additional days added to these contracts were caused by design changes, lawsuits, and issues that arose during planning and construction. The added time resulted in additional project costs.

Examples of the project delays include:

One contract was amended 10 times and added 1,136 days.

- HART's contract with PB Americas, Inc. was amended 10 times, 5 of which resulted in time extensions. The original contract called for work to be completed within 900 days. By contract amendment No. 10, the contract had been extended to 2,036 days, or an additional 1,136 days. Although the dollar value of the contract amendments were explained, there is no justification or documentation for the time extensions. As a result, we were unable to determine whether the time extensions were reasonable.

- HART's contract with Kiewit Infrastructure West had a contract change order approved that added 624 days to the Kamehameha Highway Guideway portion of the project schedule at a cost of $1.8 million. The date of substantial completion was extended from January 1, 2015 to September 16, 2016 due to the time impacts of the Archaeological Inventory Survey investigation[4]. Contract documents note that delays were caused by:

    - Design management delay. As of August 24, 2012, construction activities were suspended on the Kamehameha Highway Guideway project. Prior to this date, many changes to the contract impacted the design schedule and cost.

    - Delays to borings, method, and test shafts. Boring completion had been delayed because the geological profile along the guideway alignment was found to be different from the profile provided in the geotechnical baseline report. This difference caused the depth of the borings to be much deeper, therefore taking more time to complete than was previously planned.

    - HECO reviews. HECO caused several delays to the dry utility package submittals. They included HECO's request for incorporating single line diagram information into the design, revisions due to new as-built information, HECO work stoppage, and late reviews beyond 60 days for dry utility packages.

[4] An Archaeological Inventory Survey identifies historic properties, assesses the significance of the identified historic properties, and recommends appropriate mitigation.

- Wet utility packages changes[5]. Delays included a relocation of a wastewater line shown as abandoned in the Request for Proposal, a redesign based on new pothole information, and a change in relocation design of Piers 354-357. Wet utility packages were also affected by late reviews beyond 60 days from the Board of Water Supply.

- We questioned another contract, with Tesoro Hawai`i, for architectural and engineering services. The contract (time and materials and multi-term), which began June 5, 2012, did not have an end date. Instead, the contract stated, the consultant agrees to perform the work until the work set forth in the agreement is completed or until the costs reach the amount specified herein, whichever occurs first. The initial contract was priced at $1.6 million. This contract was amended four times in three years. The last contract amendment was issued May 7, 2015 and had reached a value of $4 million. In this instance, we could not determine whether this contract contributed to any project delays since it was open-ended in terms of contract duration.

HART project and initial contracts were premature

Based on interviews with prior HART executives and staff, many costly contract amendments and changes and the subsequent time delays were due to poor planning and contracts that began prematurely. Former and current HART staff stated contracts were often rushed, which resulted in costly change orders. For example, we found:

- A utilities relocation contract with Tesoro Hawai`i was signed and initiated on 9/12/2013 at a cost of $2.2 million. Exactly 12 months later, the contract was amended by adding nearly $3.5 million to the contract cost, an increase of 157%, which brought the total contract cost to $5.7 million. In explaining this contract amendment, HART stated that the, amount of work, duration of the work and the scope originally anticipated under the agreement will be exceeded due to finalization of design, an increase in labor and materials cost, and a correction of a math calculation error. In this instance, we find that the original contract was initiated prematurely and resulted in cost increases.

[5] Wet Utilities are underground piping for storm, sewer, and water utilities.

- A contract with URS Corporation for architectural engineering services related to the design of three transit stations was signed on September 27, 2013 at a cost of $2.7 million. On October 24, 2014, a contract amendment raised the cost by $768,756, or 29% of the initial contract cost. HART stated that the amendment was needed for revisions to the final design project documents. The HART amendment to the final design project documents was just over one year from the contract's inception.

HART's Current Status

The original Full Funding Grant Agreement (FFGA) approved by the U.S. Federal Transit Authority (FTA) was $5.164 billion. As of October 2018, the Estimate at Completion (EAC) was $9.02 billion, including $840 million in allocated and unallocated contingency and $584 million in financing costs. Exhibit 2.2 shows the project's status as of October 2018.

Exhibit 2.2
Project Cost Summary (as of October 2018)

Project Status: FFGA ($ are in millions)		Original at FFGA	HART Current EAC [2]
Cost	Base Cost w/o Contingency	$4,305	$7,325
Contingency	Allocated [2]	542	758
	Unallocated Contingency	102	82
Finance Charges		173	584
Post RSD Finance Charges		42	271
Total Project Cost [4]		$5,164	$9,020
Schedule	Revenue Service Date (RSD) [4]	January 31, 2020	December 2025
HART Total Project Percent Complete	Based on Expenditures [1]	No longer valid	44%
	Based on Earned Value [3]	Not calculated	Not calculated

[1] HART utilizes a weighted calculation to report progress.
[2] Earned Value is not being calculated for this project.
[3] HART informed the PMOC at the September 12, 2018 Monthly Progress Meeting that it moved $54 million in allocated contingency to project costs for the UTIL and UTIL 2 contracts. This is reflected in the table above in the amounts for *Cost* and *Allocated Contingency*.
[4] HART indicated at the October 17, 2018 PMOC Monthly Meeting that the RSD and the EAC will reflect the values recommended from the April 2018 Risk Refresh in its updated Financial Plan.

Source: PMOC Monthly Report, October 2018

The original operational date for the rail system was January 2020. As of November 2018, HART claimed the projected would be running by December 2025. FTA however projects the rail project will not be ready for service until September 2026.

As discussed above, our audit indicates the cost overruns and project delays occurred for several reasons. HART managers and contractors were inexperienced; a plethora of change orders and amendments were approved without sufficient justifications; HART lacked internal controls to minimize costs and prevent schedule delays; and HART ignored PMOC warnings.

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Chapter 3
HART Lacked Internal Controls to Minimize Costs and Prevent Schedule Delays

Internal Controls Were Inadequate to Prevent Cost Overruns and Schedule Delays

During the period of our audit (from inception to June 2016), HART's internal controls were inadequate to prevent cost overruns and schedule delays. More specifically:

- HART lacked an internal audit function to properly monitor and control contract costs;
- HART's Contract Management System (CMS) database was incomplete;
- HART relied on an inefficient paper-based contract filing system to monitor project and contract costs;
- Individuals lacked expertise in modeling and quantifying the impact of contract changes and amendments on the project costs and the project schedules;
- Key personnel were not involved with reviewing change orders and contract amendments. For example, the Chief Financial Officer was cut out of some financial review processes;
- Cost control personnel and measures were ineffective in preventing cost overruns and schedule delays; and
- Internal controls related to change orders and contract amendments were still evolving.

We were unable to substantiate claims by individuals that consultants were not interested in controlling costs, and exploited opportunities to increase and/or perpetuate their contracts. In our opinion, the lack of acceptable internal controls would have been conducive to such a scenario. A more thorough examination of potential fraud, waste, and abuse has been deferred to the Hawai`i State Auditor's Office.

HART lacked an internal audit function to properly monitor costs

HART does not have an internal audit function. Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations.

It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes. The internal audit function was not a priority for HART. If an internal audit function had been in place, HART might have been able to identify cost, schedule, and other related issues and have those issues reported independently.

As part of the contract change order process, the HART Quality Assurance Department was required to perform an internal audit as directed by the Quality Management Plan. We found evidence that HART conducted these quality assurance audits (QAA). While these audits provided important oversight, they were limited to construction contract activities. The QAA did not audit the accuracy and validity of the contractor charges, project expenditures, financial plans, project timelines, and contract management activities. Although HART currently has oversight functions within various divisions of its organization (e.g. Project Controls, Risk Management, and Procurement, Contracts and Construction Claims), they are not independent of management.

A current HART administrator acknowledged that an internal audit function would be beneficial for HART. In our view, an internal audit division, reporting to the HART board, could provide timely, accurate, and objective analysis of HART's expenditures, financial plans, project timelines, and contract management activities.

HART made exceptions to its policies or procedures

We found three instances where HART approved contract amendments without complying with proper review procedures. HART policies and procedures and FTA best practices require that contract amendments include independent cost estimates and record of negotiations. The customary reviews were disregarded in the interest of timely delivery of design documents. As a result, we cannot be assured that these contract amendments were economical or value added.

- On October 24, 2014, HART approved a contract amendment valued at over $472,000. The amendment was for engineering and other revisions requested by HART to be incorporated into the final design submittals for the West Loch, Waipahu, and Leeward Community College stations. The amendment also requested that the Farrington Highway Station Group 2 be prepared as a single big package to be issued separately from the West O`ahu and Kamehameha Highway station groups. As part of the amendment's justification, contract files noted,

the consultant will not develop a revised Engineer's Cost Estimate for this work but will support the Construction, Engineering and Inspection (CE&I) consultant's estimating work by providing a description of changes made from the previous bid set. HART will forego the traditional review process and will participate in Over-the-Shoulder reviews with the consultant to facilitate the timely delivery of the design documents. The contract file contained a detailed list of tasks to be completed with this amendment, but there are no documents to support the $472,000 cost.

- On the same day, October 24, 2014, HART approved a contract amendment for the same contract valued at over $748,000. This amendment revised the final design submittal documents of West Loch, Waipahu, and Leeward Community College stations as the consultant took on the responsibilities of the Architect of Record and Engineer of Record for the project, excluding civil engineering. The contract files, again, noted, *The consultant will not develop a revised engineer's cost estimate for this work, but will support the CE&I consultant's estimating work by providing a general description of changes made from the previous bid set…HART will forego the traditional review process and will participate in Over-the-Shoulder reviews with the consultant to facilitate the timely delivery of the design documents.* The contract file contained a list of tasks and deliverables, but there were no documents to support the $748,000 cost.

The contract file contained a list of tasks and deliverables, but there were no documents to support the $748,000 cost.

- On October 10, 2015, HART approved another contract amendment to the same contract for $34,000. This amendment was needed for revisions to the final design project documents for additional coordination and design services in connection with the West Loch Traction Power Supply Station slab foundation, transformer switch gear pad, and associated underground duct banks. Contract documents noted, *The consultant will not develop a revised engineer's cost estimate for this work, but will support the CE&I consultant's estimating work by providing a general description of changes made from the previous bid set.* The contract file did not include documents to support the $34,000 cost.

In our view, HART made questionable decisions to override basic internal controls with these contract amendments. While saving time and money on revising work that had already been done, we believe the responsibility shift and increased costs should have prompted a revised cost assessment. Management's mantra at the time was, *On Time and On Budget*. In this instance, management may have sacrificed the project's budget for staying on schedule.

HART CFO was cut out of key financial approval processes

Between September 22, 2015 and June 8, 2017, Chief Financial Officer (CFO) approval was no longer required for contract change orders. We found no documents to explain why the CFO was eliminated from the review process for important financial transactions such as change orders and contract amendments. As the key management position responsible for HART's finances, excluding the CFO from contract amendments and change orders and the lack of oversight may have contributed to cost overruns.

The CFO is responsible for managing the financial actions of a company or organization. The CFO's duties include tracking cash flow and financial planning as well as analyzing the entity's financial strengths and weaknesses and proposing corrective actions. The CFO is also responsible for managing the finance and accounting divisions and for ensuring that the entity's financial reports are accurate and completed in a timely manner.

In an email exchange dated September 22, 2015, between the Deputy Director of Contract Administration (DDCA) and the CFO, the DDCA advises the CFO that, effective immediately, the Contract Financial Impact (CFI) document no longer requires the CFO's signature/approval:

> DDCA: *Effective immediately, the CFI document no longer requires signature/approval by Fiscal Officer and CFO*
> CFO: *Yes, and any impacts/changes to certification of funds on the project should be reviewed at (sic) approved by me as CFO*
> DDCA: *Again, CFO and Fiscal Officer approval is not required*

The CFO, who started in that position in August 2012, vacated the CFO position in December 2016. As a result, for over one year, the CFO of a multi-billion dollar construction project was not actively involved with reviewing and approving key financial decisions such as change orders. At the time the CFO was eliminated from various financial oversight duties (September 2015), the project cost estimate was over $5.1 billion. When the CFO left the position in December of 2016, the estimated project cost had swelled to over $8.6 billion. It is unclear if the subsequent CFO's authority for change orders and contract amendments was restored.

HART relies on an inefficient, paper-based contract filing system

HART maintains an information system and database that contains various contract documents. The customized HART Oracle-based Contract Management System (CMS) serves as the information distribution and archival system for all contracts and project interface control documents. Contractors are required to upload pertinent documents such as correspondence, transmittals, meeting minutes, requests, baselines, deliverables, daily inspection logs, payment requests, and change management documents.

We found that the CMS does not contain all the pertinent contract and project documents and does not comply with best practices. FTA's *Best Practices Procurement & Lessons Learned Manual* directs that the *official* contract file include all correspondence relating to the administration of the contract to verify the contractor's adherence to the terms of the contract and demonstrates that the agency is following good administrative practices and sound business judgment in settling all contractual and administrative issues arising during contract performance. In the City Auditor's Report No. 16-03, we recommended that HART replace the CMS with a more user-friendly and appropriate system for HART's construction projects because the CMS database was incomplete and unreliable. HART acknowledged that the CMS database does not include all applicable contract documents.

HART maintained contract management documents in hardcopy form that was cumbersome to use and was at high risk for loss or damage. The manual, hard copy files were the primary contract document repository. The contract files ranged from a single binder to multiple binders containing thousands of pages. We questioned HART's ability to manage a complex, major public works project totaling over $5.2 billion through the use of a cumbersome, paper-based system. Not only was the manual system difficult to use, the documents were susceptible to loss and damage; provided no assurance the files were thorough and complete; were difficult to produce; and the files did not easily identify project issues and how they were resolved.

HART oversight of contractors was lax

Nearly $198 million in contractor invoice payments lacked sufficient documentation or approvals. HART did not comply with FTA guidelines for contracting best practices. As a result, HART was unable to determine whether contractors provided the goods and services in a cost-effective manner. By not following-up on Quality Assurance Audits of contractors, and without an internal audit function to monitor costs, HART could not identify lapses in contract and invoice review procedures. As a result of the insufficient oversight, costs continued to increase.

Nearly $198 million in contractor invoice payments lacked sufficient documentation or approvals

41 of 100 invoices lacked supporting documentation and approvals before nearly $198 million was paid.

The U.S. Department of Transportation Federal Transit Administration (FTA) Project and Construction Management Guideline 5.3.8, *Progress Reporting and Invoices* provides best practices for reviewing and paying contractor invoices. The guidelines require specific documents and approvals.

We selected a judgmental sample of 100 invoices from the 10 contracts in our sample (10 per contract). We found that 41 of the 100 invoices lacked supporting documents and approvals before they were paid. Without proper documentation, reviews and approvals, HART could not ensure that contractors were providing the goods and services required under the contracts.

HART conducted Quality Assurance Audits (QAA) of contractors, but lacked an internal audit function to monitor costs

HART's Quality Management Plan requires that Quality Assurance Audits (QAA) be completed at least annually. We found that HART conducted QAAs for 7 of 10 contracts in our sample review; 3 contracts did not have QAAs in the contract folders. There were 30 quality assurance audits on file for 7 of the 10 contracts. Exhibit 3.1 shows the distribution of quality assurance audits.

Exhibit 3.1
Number of Quality Assurance Audits Conducted in Sample Review

	Contract No.	Contractor	**No. of Quality Assurance Audits[1]**	Total No. Change Orders/ Contract Amendments	Initial Contract Value	Change Order Costs	Contract Value After Change Orders
1	SC-HRT-11H0082	AECOM	**0**	5	$3,000,000	$6,500,000	$9,500,000
2	CT-HRT-1200106	Ansaldo Joint Venture	**3**	29	1397387093	27037894	$1,424,424,987
3	SC-HRT-1200065	ICX Transportation Group	**0**	4	1600000	2400000	$4,000,000
5	CT-HRT-10H0137	Kiewit Infrastructure West	**4**	104	$482,924,000	$175,871,787	$658,795,787
4	CT-HRT-11H0195	Kiewit Infrastructure West	**2**	32	372150000	26441749	$398,591,749
6	CT-HRT-10H0449	Kiewit Kobayashi Joint Venture	**14**	51	$195,258,000	$79,600,568	$274,858,568
7	SC-DTS-070001	PB Americas, Inc.	**4**	10	$86,000,000	$81,104,181	$167,104,181
8	CT-HRT-1400042	Tesoro Hawaii	**0**	2	$2,200,000	$12,375,587	$14,575,587
9	SC-HRT-1200116	URS Corp	**2**	22	$7,789,000	$2,402,989	$10,191,989
10	SC-HRT-1400012	URS Corp	**1**	12	$3,800,000	$2,074,000	$5,874,000
	TOTAL		**30**	**271**	**$2,552,108,093**	**$415,808,755**	**$2,967,916,848**

[1] The QAAs are comprised of several Observation Reports. These reports identify specific contractor activities for review. Each observation report contains Description of observation; Recommendation for improvement; and Justification for improvement. The audit's findings and recommendations are discussed with the contractor and audit staff. DTS/HART drafts a written report which is shared with the contractor. The HART executive management team (including the CEO), PMOC, and other oversight agencies release the report. The contractor provides a written response with a plan for corrective actions, if necessary.

Source: Office of the City Auditor

In the Quality Assurance Audits, we found instances that identified significant areas of concern and contract non-conformance. For example:

- HART found that one of its contractors was not independent since the reviewer was the same individual listed as the designer for some drawings in the design package. In this instance, HART caught a potential conflict of interest issue.

- HART found that a contractor did not have quality check prints on file for Cost Estimates. Not formally checking cost estimates could lead to incorrect information being submitted to HART for use in construction budgeting purposes. HART recommended that the contractor formally check cost estimates and store the resulting check prints in its database.

- HART found that a contractor was implementing an unapproved, redlined version of a task requirement that was previously developed without HART's task manager. In some cases, duties were ambiguous and did not reflect current practices. HART noted that ambiguous contract scope exposed risk to both HART and the contractor.

HART recommended that the contractor revise its scope to clearly define responsibilities and reflect current or desired practices.

The Quality Assurance Audits were a useful tool and internal control for oversight of the project contractors to ensure that contractors fulfilled their obligations in an economical, effective, and efficient manner. However, HART did not use the Quality Assurance Audits to provide complete oversight of its contracts. The QAAs were limited to planning, design, administration, and delivery. HART lacked internal controls for auditing costs, invoices, and deliverables.

HART policies and procedures for change orders and contract amendments were ineffective

Change orders: HART was established in July 2011. Prior to that date, the city's Department of Transportation Services guided the rail project. Between March 2011 (pre-HART) and June 2017, contract change order policies and procedures were amended 6 times. In March 2011, 8 HART personnel were involved with change order approvals and the number of personnel approving change orders later grew to 16 by June 2017. The number of change order procedures nearly tripled from 8 in March 2011 to 28 in August 2015. In our opinion, the redundancies contributed to the lack of coordinated controls and inconsistent actions.

The amendments addressed operational changes, but appeared to be reactionary. The implemented changes had little impact on controlling project costs and schedules.

Contract amendments: Contract amendment policies and procedures were amended 3 times during the same time period. The number of HART personnel involved with contract amendments ranged from 13 in April 2012 to 20 by November 2013. The number of contract amendment procedures increased from 8 in March 2011 to 31 by July 2014. Like the change orders, in our opinion, the redundancies contributed to the lack of coordinated controls and inconsistent actions.

Contract amendment policies and procedures were tightened in July 2014. Areas that were previously unaddressed included emergency and non-emergency work; claim and dispute resolution procedures; and additional changes to procedures. Specific changes were:

- If required, request additional supporting information and/or clarification from the contractor to complete the contractor's proposed cost review and to understand the basis of quantification;

- The CEO will approve all contract amendments greater than $100,000;
- Specify number of days for document completion;
- HART and contractor will maintain change log within the CMS and the Contract Meeting Minutes; and
- Identify and document the status of all contract changes.

The contract files and the CMS database often did not have these required documents.

Between April 2012 and July 2014, HART added several layers of oversight for contract amendment approvals. In 2014, HART added the Contract Change Manager, the Contract Change Management Group, the Contract Engineer, the Chief Financial Officer, the Chief Procurement Officer, the Director of Design and Construction, the Project Manager, a Program Management Support Consultant, Procurement and Contracts Officer, and Resident Engineer. The oversight by these individuals of contract amendments did not prevent cost overruns and questionable amendments from being approved.

Effective policies and procedures were not in place to control project costs and schedules even though experienced and highly paid consultants filled key management positions.

Despite the changes in the policies and procedures, contract costs continued to increase over time. The cost increase was due to HART's reactionary approach to managing change orders and contract amendments. Additionally, effective policies and procedures were not in place to control project costs and schedules even though experienced and highly paid consultants filled key management positions.

HART did not comply with existing policies and procedures for change orders

HART policies and the FTA require certain documents for change orders, such as independent cost estimates, written contractor proposed costs, and rough order of magnitude. We found HART staff did not consistently comply with its basic policies and procedures. Many contract files did not have the required data such as independent cost estimates. We therefore could not determine from the file contents if the change orders were appropriate or if the costs were reasonable.

Contract summary page used in lieu of required documents: In August 2015, HART made changes to its policies and procedures that

required a change order summary. The summary page provided key information such as:

- Title of change
- Description of change
- Discretionary or non-discretionary change
- Type of change
- Rough order of magnitude
- Facts and references
- Reason for change and determination or denial of merit
- Recommendation

We found many instances where the summary sheet, without any backup documentation, was the only document in the contract file to support the change order.

We found the contract files were voluminous and difficult to review without a summary page. The summary page allowed us to navigate the voluminous documents associated with the change orders and made it easier for managers and those involved with oversight functions to evaluate the change orders.

We found many instances where the summary sheet, without any backup documentation, was the only document in the contract file to support the change order. As a result, what was intended to be an enhancement to the change order process became a *shortcut* that replaced existing document requirements. For example:

- A July 2013 change order was approved for nearly $695,000. The only document in the file related to this change order was the Contract Change Order summary sheet. The document referenced attached supplemental sheets, request for change, and record of negotiations. However, the contract file did not contain these documents and we were unable to assess the appropriateness of the change order.

- A change order was approved on November 13, 2014 to compensate a contractor in the amount of $15 million for costs incurred to price escalation for wage increases, fuel, oil, gas, small tools, supplies, and the project delay due to the archaeological inventory survey. The contract file related to this change order comprised a two-page letter from the officer-in-charge and the CEO to the HART Board that explained the need for this change order

and a Contract Change Order summary. There were no documents to support the $15 million amount requested.

- A January 2013 change order added 78 days to the project schedule with no cost impact. The two-page Contract Change Order summary was the only document included in the file and references other supporting documents, but there was no explanation for the over two-month schedule extension or the referenced documents.

Some improvements found

Beginning in 2016, we found a general improvement in the number of documents contained in the contract file. Although policies and procedures require documents to be maintained in CMS, HART's official and primary contract files and documents are still the manual contract files and documents. The contract files are still not electronic.

In March 2017, HART established a Change Control Committee (CCC). This committee reviews and recommends a finding of merit for all change orders. The procedures require documentation justifying any change request at each phase of the project for both construction and professional services contracts. If successful, we believe the CCC will address many of the change order and contract amendment missteps that occurred between 2012 and 2016.

In March 2017, HART created key oversight positions to review and approve change orders. The four persons involved with overseeing the change orders were the Deputy Director of Contract Administration; Deputy Director of Construction Claims, Utility, and Third-party Contracts; Deputy Director of Procurement and Consultant Contracts; and Director of Project Controls. Adding these positions and their functions earlier could have prevented some cost increases and could have improved management of the project. Hopefully, the belated changes will result in improved oversight of the project change orders.

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Chapter 4
HART Ignored PMOC Warnings About Internal Controls, Cost and Schedule Impacts

According to FTA's *Best Practices Procurement & Lessons Learned Manual*, any contract involving the expenditure of public federal funds is subject to review and audit during and after performance to ensure that, at the very broadest level, the government got what it paid for. To provide oversight of the project, FTA hired an engineering firm (Jacobs Engineering) to serve as the Project Management Oversight Consultant (PMOC) that monitors the project, construction progress, and reports to the FTA problems, concerns, deficiencies, and recommendations for improvements. The PMOC also monitors contract administration and ensures the grantee complies with the terms of the grant contract.

In its reports, the PMOC cautioned HART about internal controls, costs, and schedule impacts. HART failed to heed the warnings and failed to take timely action to implement the PMOC recommendations. As a result, problems materialized that contributed to the increased project costs and extended the project schedule.

PMOC Cautioned HART About Internal Controls, Costs, and Schedule Impacts

The Project Management Oversight Consultant provides a continuous review and evaluation of HART and FTA process to ensure compliance with statutory, administrative, and regulatory requirements. The committee also evaluates HART's project management and technical capacity, change orders, and value engineering. Over the years, the PMOC expressed varying concerns regarding planning and design, contract change order and amendments, and cost and schedule overruns (see Appendix E). We found that HART was often slow to address the PMOC concerns, which led to continued inefficiencies, cost, and schedule overruns.

Poor design, construction, and planning: The PMOC raised various issues related to poor design, construction, and planning:

- The PMOC cautioned HART in the use of federal funds to build an interim facility when a permanent facility will be constructed using federal funds. It is not known how long the interim facility would be in use before the permanent facility can be constructed. The PMOC first raised this

concern in its August 2013 monthly report and continued to raise the concern 27 times through March 2016.

The PMOC expressed, seven times, its concern that HART has not fully assessed the impacts from delayed activities such as real estate acquisition and final design.

- The PMOC recommended that HART hold an interactive planning workshop to determine the impacts from the federal court case on the master project schedule as it relates to activities in the City Center Segment. The PMOC expressed concern that HART has not fully assessed the impacts from delayed activities such as real estate acquisition and final design. The PMOC raised this issue 7 times from August 2013 through February 2016.

- The PMOC anticipated that the master project schedule will require revision as a result of HART's decision to re-package the West Side Station Group contract. The PMOC raised this concern 9 times from September 2014 to September 2015. It took HART one year to revise its master schedule to incorporate the project delays.

Contract change orders and amendments: The PMOC noted several issues that would necessitate significant contract amendments and change orders due to operational changes:

- Change Orders for the amount of $34 million for settlement of archaeological inspection survey and notice-to-proceed delays were approved by the HART Board on May 15, 2014. The PMOC noted it will continue to monitor the progress of discussions to determine the overall impact on the project. HART expects the contractor to submit its first claim for escalation on materials purchased in the next two months. The PMOC continued to monitor the progress of discussions to determine the overall impact of this change on the project. The PMOC raised this concern 7 times between May 2014 and June 2015.

- HART now plans to start revenue service with 4-car trains in place of the initial plan of 2-car trains based on FTA's acceptance in December 2013. The PMOC noted it will continue to monitor the progress of discussions to determine the overall impact of this change on the project. If no agreement is achieved, HART will issue unilateral Change Order. The PMOC raised this concern in June 2014.

- The cost for activation of the Traction Power Substations was not included in the project estimate. A change order will be required to address this cost, which is still being assessed. This issue has not been captured in HART's forecast, but has been generally identified in the Risk

Register. The PMOC raised this issue 6 times between October 2014 and May 2015.

Cost and schedule overruns: The PMOC cautioned HART on numerous occasions about cost and schedule overruns:

- The PMOC expressed concerns with the adequacy of HART's ability to forecast costs for the existing Design-Build (DB) contracts by stating that, the grantee's current Estimate at Completion (EAC) does not accurately provide an assessment of the contract costs. The PMOC first raised this issue in February 2012 and was raised 17 times through July 2013.

- The PMOC noted that HART issued a partial suspension of construction work on August 24, 2012 for all ground-disturbing activities after a ruling by the Hawai`i 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. 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 PMOC raised this issue 5 times between September 2012 and January 2013. In the later part of 2012, HART estimated a possible 9-12 month delay impact on the interim opening, but possibly no impact to the full revenue service date. We believe this delay had a greater impact than HART disclosed at the time.

- The PMOC recommended that HART engage a consultant to perform independent cost estimates for the remaining contract packages, including any repackaging efforts. This issue was raised 8 times between May 2013 and January 2014. During our review, we found that many of the change orders did not include independent cost estimates, which could have helped to save on cost increases.

- The PMOC emphasized the need for HART to revisit both its primary and secondary mitigation measures for cost assessments. The PMOC encouraged HART 10 times between September 2013 and July 2014 to improve its cost assessments. There were a number of other issues raised by the PMOC between 2011 and 2016 related to increased cost and cost estimates. HART failed to use primary and secondary mitigation measures for assessments for a long period of time.

The PMOC encouraged HART 10 times between September 2013 and July 2014 to improve its cost assessments.

- The PMOC was concerned the Estimate at Completion (EAC) did not include all potential costs, did not provide sufficient contingency to complete the project, and was based on a Revenue Service Date (RSD) that may be unrealistic. This strongly-worded caution was issued in September 2015.

By failing to implement the PMOC recommendations in a timely and effective manner, HART contributed to project cost increases and project schedule delays.

Chapter 5

HART Staffing and Succession Planning Remains Incomplete and Does Not Adequately Prepare for the Project's Future

The original HART plans called for HART consultants to train and develop city staff to replace them. The FTA PMOC and our prior audits reaffirmed the need for HART to develop in-house expertise and to train city employees as replacements for the consultants.

HART insists it is only allowed to hire personnel on one-year personal service contracts. According to the Director of the city's Department of Human Resources, under the city charter, HART may establish its own personnel system, position descriptions and pay scales similar to another quasi-governmental agency, the Board of Water Supply, provided the HART Board approves and funds the HART personnel setup.

HART rejected these inputs, plans, and reminders. HART continues to hire staff and experts on one year personal service contracts. Unless HART changes its policies and hiring practices, HART will continue to lose experienced, skilled, and knowledgeable personnel needed to complete the project. Without these employees, past mistakes may recur.

Background

After the former CEO departed in 2016, HART hired an experienced interim CEO and an experienced project controls manager. They implemented cost and procurement controls that improved internal controls, reduced the role of the project engineers, organized the contract files, and established cost and project controls that stabilized project costs.

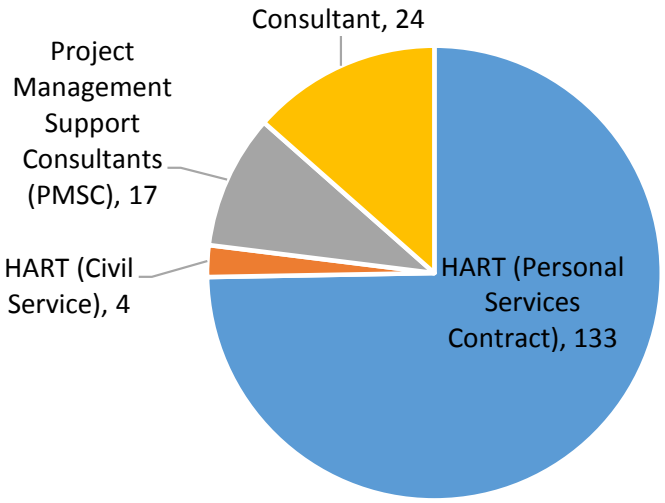
According to HART's November 2018 Organization Chart, HART had 178 staff positions. A total of 41 positions, or 23%, were filled by consultant contracts. Some of the key personnel positions that are filled by consultants include:

- Traffic Engineering Manager
- Budget Systems Manager

- Chief Safety & Security Chief
- Director of Quality Assurance & Quality Control

HART staff on personal services contracts comprised 137 positions, or 77%, of the organization. Personal services contracts are generally short-term staff contracts (one year maximum), which can be renewed. HART did not have exempt employees. Exhibit 5.1 shows the distribution of HART staff.

Exhibit 5.1
Distribution of HART Staff as of November 2018



Source: HART

The 2012 Staffing and Succession Plan established HART's staffing strategy to transition from consultants to HART employees and to transfer the expertise, knowledge, and skills from the consultants to city employees.

The purpose of the staffing and succession plan was to help ensure that HART goals were met in an efficient and timely manner, and human resources and the technical expertise needed by HART was available for each phase of the project.

HART plan to transition consultants to city employees is still incomplete

Although the 2012 Staffing and Succession Plan called for HART to convert at least 16 positions from consultant to HART employees, HART continued to rely on consultants and placed them in key positions. The plan further stated that consultant

staff will be phased out as city employees are hired to replace them. The HART organizational structure was set up to allow for shadowing of consultant staff by city employees who were trained to perform the duties of the consultant. Exhibit 5.2 shows the status of HART's compliance with its 2012 Staffing and Succession Plan.

Exhibit 5.2
2012 Staffing and Succession Plan - Consultant Positions versus Transition to HART Employee (As of November 2018)

	Position Held by Consultant	Start Date (HART)	Estimated Transition to HART Employee	Current Status	HART Followed Plan?
1	Chief Safety and Security Officer	1Q, 2012	4Q, 2016	PMSC	No
2	Quality Assurance Manager	1Q, 2012	4Q, 2014	PMSC	No
3	Chief Project Officer	1Q, 2012	1Q, 2014	PMSC	No
4	Public Information Officer	1Q, 2012	4Q, 2013	**HART Employee**	**Yes**
5	Project Controls Manager	1Q, 2012	4Q, 2014	PMSC	No
6	Procurement & Controls Officer	1Q, 2012	4Q, 2013	**HART Employee**	**Yes**
7	Configuration Manager	1Q, 2012	4Q, 2014	HART Employees and PMSC	No
8	Deputy Project Officer – Engineering & Construction	1Q, 2012	4Q, 2013	PMSC	No
9	Assistant Project Officer – Design Build Contracts	1Q, 2012	4Q, 2016	PMSC	No
10	Right-of-Way Coordinator & Permits	1Q, 2012	2Q, 2014	**HART Employee**	**Yes**
11	Rail Operations Manager	1Q, 2012	3Q, 2014	PMSC	No
12	Assistant Project Officer – Core Systems	1Q, 2012	2Q, 2017	PMSC	No
13	Chief Architect	1Q, 2012	2Q, 2014	HART Employees and PMSC	No
14	Assistant Project Officer – Utilities & Agency Coordinator	1Q, 2012	4Q, 2014	**HART Employees**	**Yes**
15	Lead Scheduler	1Q, 2012	2Q, 2014	**HART Employee**	**Yes**
16	Environmental Compliance Administrator	1Q, 2012	2Q, 2014	**HART Employee**	**Yes**

PMSC = Project Management Support Consultant (Consultant)

Source: Office of the City Auditor

As of November 2018, HART had transitioned 6 of the 16 positions from consultant to HART employees in accordance with the 2012 Staffing and Succession Plan. In addition, 2 of

the 16 positions had responsibilities reallocated to both HART employees and consultants. A total of 8 of 16 positions (50%), remain filled by consultants or the Project Management Support Consultant (PMSC).

The five-week cost to maintain five consultants was over $217,000.

The remaining consultants continue to fill key administrative and management positions and are costly. We found that the five-week cost to maintain five consultants was over $217,000. By retaining consultants in key management and administrative positions, HART continued to lack in-house, technical staff needed to manage this project. We believe these positions, if filled with HART employees, would cost considerably less and comply with the 2012 Staffing and Succession Plan. Exhibit 5.3 gives a breakdown of consultant cost by position.

Exhibit 5.3
Consultant Costs for the Period May 28, 2017 to July 1, 2017

	Position	Current Status	Total 5-Week Labor Cost
1	Chief Safety and Security Officer	PMSC	$49,053
2	Quality Assurance Manager	PMSC	$55,799
3	Project Controls Manager	PMSC	$49,344
4	Deputy Project Officer – Engineering & Construction	PMSC	$14,476
5	Assistant Project Officer – Core Systems	PMSC	$48,489
	TOTAL		**$217,161**

Source: HART

According to HART's planning and succession plan, the consultants should have been used to train their replacements and to impart knowledge to permanent HART employees. By not complying with the succession plan, HART extended its reliance on costly consultants. According to HART managers, succession planning is being carried out to determine the timeframe and best method to transition to city employees for key positions. In some instances, the city replacement position has already been established and filled, and transition is in process. For other key staff, a city replacement position needs to be created and filled. HART managers continue to note that there is not enough experienced local personnel to fill the highly specialized HART positions.

The PMOC raised concerns over transitioning consultants to HART personnel early in the project

From the project's start, the PMOC raised concerns over HART's reliance on consultants and the need to transition those consultants to HART employees. We reviewed PMOC monthly reports from October 2011 through June 2016 and found that the PMOC raised the following concerns (See Appendix F):

- Several key management positions remain vacant and the technical capacity will again be stretched if they are not soon filled especially when demand will greatly increase after entry into the final design phase. The grantee has relied heavily on the PMSC to temporarily fill many of the current City positions as they endure recruiting and contract employee retention challenges. Such challenges include salary limitations, geographical isolation, and high costs of living compared to the US mainland. The grantee anticipates transitioning the positions currently held by PMSC employees to City positions over the next two to three years. The grantee has recently included budget allowances to cover the extended employee transition period. (October 2011).

- 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 Hawai`i'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 PMSC staff to grantee staff. The PMOC expressed similar concerns 16 times from November 2011 – March 2013.

- The grantee must strive to transition the key management positions currently occupied by the PMSC as early as possible. The grantee should focus on transitioning the key positions of Chief Project Officer, Project Controls Manager, and Contracts Administrator, 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. The PMOC expressed this concern 9 times from November 2011 to July 2012.

- The PMOC will continue monitoring the grantee's project management process…until all key management positions transition to full-time grantee staff. The transition from consultant staff to full-time grantee staff will be closely monitored by the PMOC throughout the Final Design

phase of the project. The PMOC repeated this 9 times from November 2011 to July 2012.

- The grantee must strive to transition the key management positions currently occupied by the PMC and 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[1]. (September 2012).

- 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. (September 2012).

The adoption of the Staffing and Succession Plan in October 2012 provided a detailed plan for transitioning consultants to HART staff and appeared to satisfy the PMOC. To date, however, those plans have not been fully implemented and remain a fraction of full implementation. The PMOC concerns raised earlier remain a high risk item for the HART project.

HART relies on Personal Service Contracts to hire employees

As of June 2017, HART had 137 city employees—133 of which were on personal services contracts, which comprised 77% of its overall city workforce. HART management explained that personal services contracts are the most appropriate type of employee to use because HART's construction is a relatively short-term project and there is no need to establish permanent positions. Management also commented that it was limited in its ability to hire personnel.

We spoke with the city's Director of Human Resources (DHR) who clarified that HART has the authority to establish its own personnel scheme and does not have to get DHR approval. According to Article 17, Revised Charter of Honolulu, HART has the authority, *to create or abolish positions within the authority and establish a pay plan for those persons holding positions in the position classification plan in accordance with Section 6-1109*. By limiting it's hiring to short-term, one-year personal services contracts, HART did not establish the most effective and efficient personnel scheme for administering the construction project and transitioning personnel to the operations and maintenance phase.

[1] General Engineering Contractor (GEC)

Types of HART Employee Options

HART's organization is composed of civil service and contract staff from the City and County of Honolulu, the PMC consultant staff, employees on personal service contracts, and direct support provided by departments within the city.

City staff generally fall into three categories: civil service, exempt, and personal services contracts.

- Civil service positions are generally more permanent positions and follow collective bargaining rules. While not as flexible as personal services contracts or exempt positions, civil service is the foundation of government employment and provides incumbents with stability and career advancement.

- Exempt positions can be either temporary or permanent. These positions are *at will*, have no end date, but the person filling that position or the position itself can be eliminated at any time without following collective bargaining requirements. Like personal service contracts, exempt positions can offer flexibility, but provide more stability for incumbents.

- Personal Service Contract employees are temporary staff on short-term contracts not to exceed one year. The contracts may be renewed annually.

HART justification for using Personal Service Contracts

Although the Personal Services Contract process is less restrictive and much faster than the process for hiring civil service employees, personal services contract employees are considered temporary employees and are not guaranteed job security and continued employment.

The continued reliance on short-term personal services contracts does not provide a stable workforce, retain staff, preserve skills and institutional knowledge needed to complete the project, or facilitate the transition to the Operations and Maintenance phase.

To the employing agency, personal services contracts offer maximum flexibility and potential cost savings. Although HART managers claimed personal service contracts are the best method to quickly fill personnel needs on a short-term basis, the continued reliance on short-term personal services contracts for HART staffing does not provide a stable workforce, retain staff, preserve skills and institutional knowledge needed to complete the project, or facilitate the transition to the Operations and Maintenance (O&M) phase.

Personal services contracts may have been appropriate when the rail project began and when the project was slated to be completed

in 2020—a relatively short time horizon. However, since the project has been delayed and planning for O&M began, we believe HART should reconsider its personnel plans, stabilize its workforce going forward, and begin planning for long term O&M operations.

By relying on short-term personal services contracts, HART risks losing staff to other, more permanent and stable positions within government or the private sector. When this happens, HART loses important institutional knowledge and wastes the time and resources needed to build the skill set of employees.

HART should evaluate its staffing needs and establish an appropriate mix of personal services contracts, exempt, and civil service employees needed to effectively retain key staff skills as the construction nears the critical city center phase, and ensure that qualified and skilled staff are transitioned to the operations and maintenance phase.

HART continues to lose experienced, skilled, and knowledgeable personnel

HART rejected the PMOC reminders and audit recommendations, and continues to hire HART staff and experts on one year personal service contracts. As a result:

- The CFO is on a one year personal service contract which can be renewed each year. If the CFO left, HART would lose the expertise, experience, and knowledge developed by the CFO.

- Other key staff including land acquisition managers, engineers, budget and finance, accounting, contract administration staff, and many others have left HART after their one year personal service contracts expired.

- The experienced and competent project controls manager left HART after two years and has been replaced by another consultant under a one year personal services contract. As a result, HART lost the knowledge, experience, expertise, and institutional and corporate memory of an individual with 25 years of rail project construction and operations.

The magnitude of the loss of the Project Controls Manager is demonstrated by what was accomplished. The Project Controls Manager had over 25 years of experience in rail projects; created a complete history and record of HART contracts; introduced project management tools like PERT/CPM charts that showed the

impact of contract changes to the project schedules; and created models that quantified the cost and schedule impacts of contract changes. The Project Controls Manager consolidated disparate databases, developed shared databases for HART staff and project engineers, and improved the accuracy and validity of the HART data. The manager also introduced project controls to ensure project costs and schedule delays were minimized. As of July 13, 2018, HART controls had improved and files showed more documentation, more discussions, and more reviews related to costs and schedule delays.

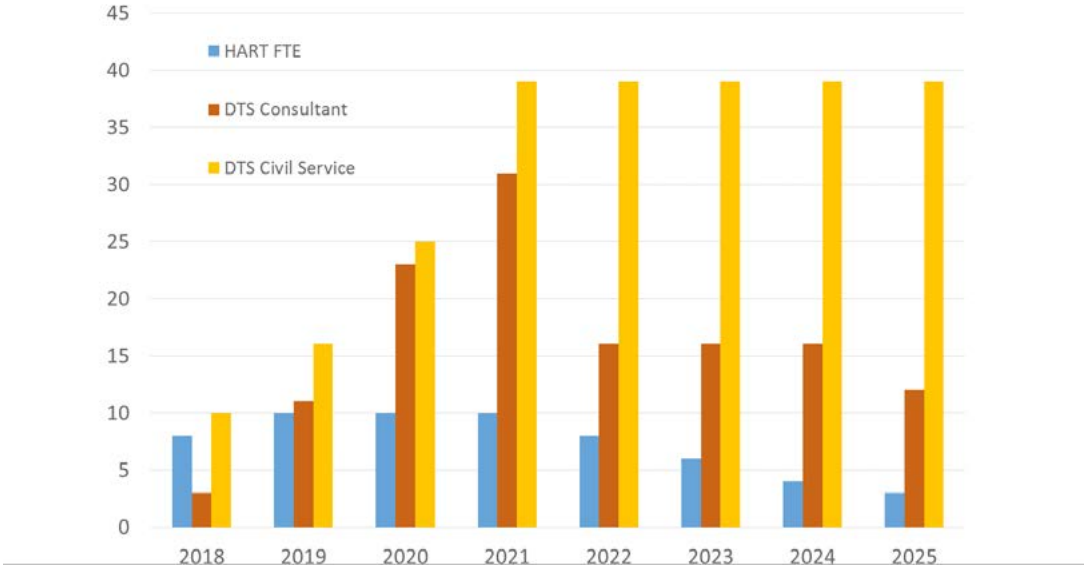
Operations and Maintenance Transition Needs

The HART Recovery Plan confirmed that many existing positions such as human resources, payroll, accounting, contract administration, auditor, and engineering positions will be needed for the normal operations and maintenance of the rail system after construction is completed. These positions can be transferred to the city's Department of Transportation Services (DTS) once the rail system is completed.

As Exhibits 5.4, 5.5, and 5.6 show below, the number of rail O&M positions will increase after HART construction is completed and the O&M organization will require the services of engineers, planners, administrators, contract administrators, compliance offers, information technology specialists, and many other technical staff

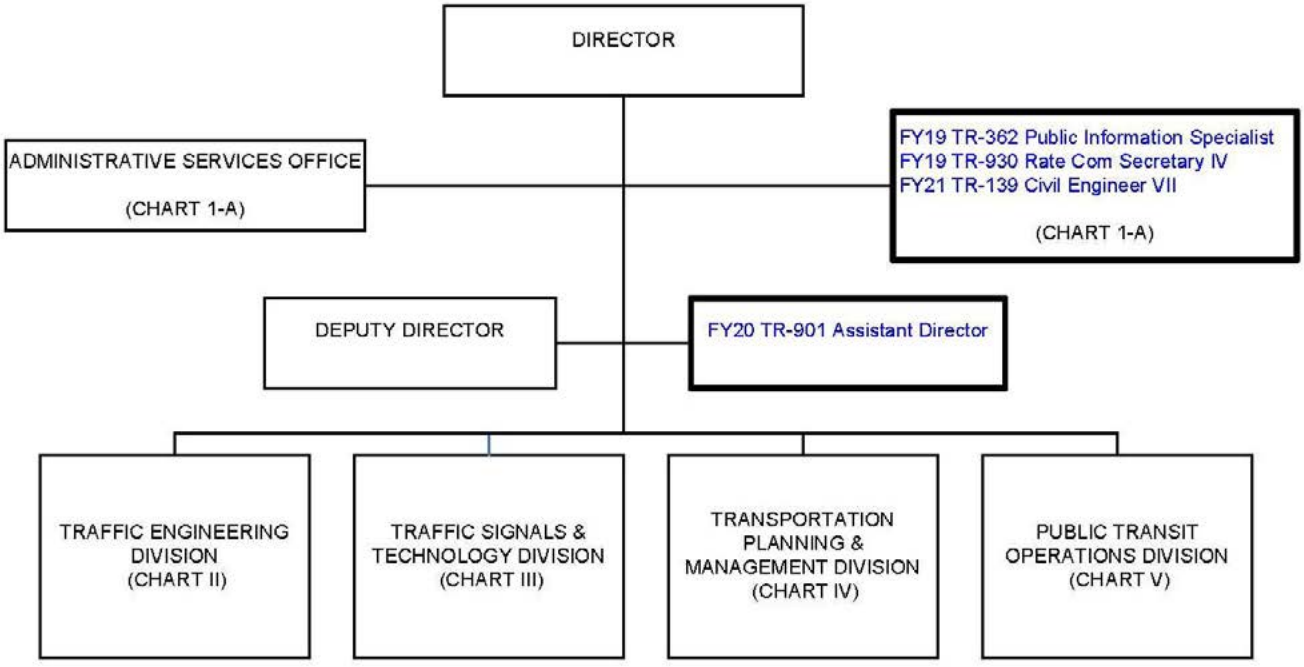
In our opinion, HART's refusal to change its operating and hiring practices (despite PMOC inputs, the original master plans for the project, and our audit recommendations) will result in continued staff turnover and loss of institutional knowledge and expertise needed by HART to effectively control project costs and to prevent further delays in completing the rail project. As existing contract staff develop competence and leave to seek permanent and secure jobs elsewhere, cost overruns and delays may recur.

Exhibit 5.4
Expected Number of Rail O&M Full-Time Positions in the City DTS and HART



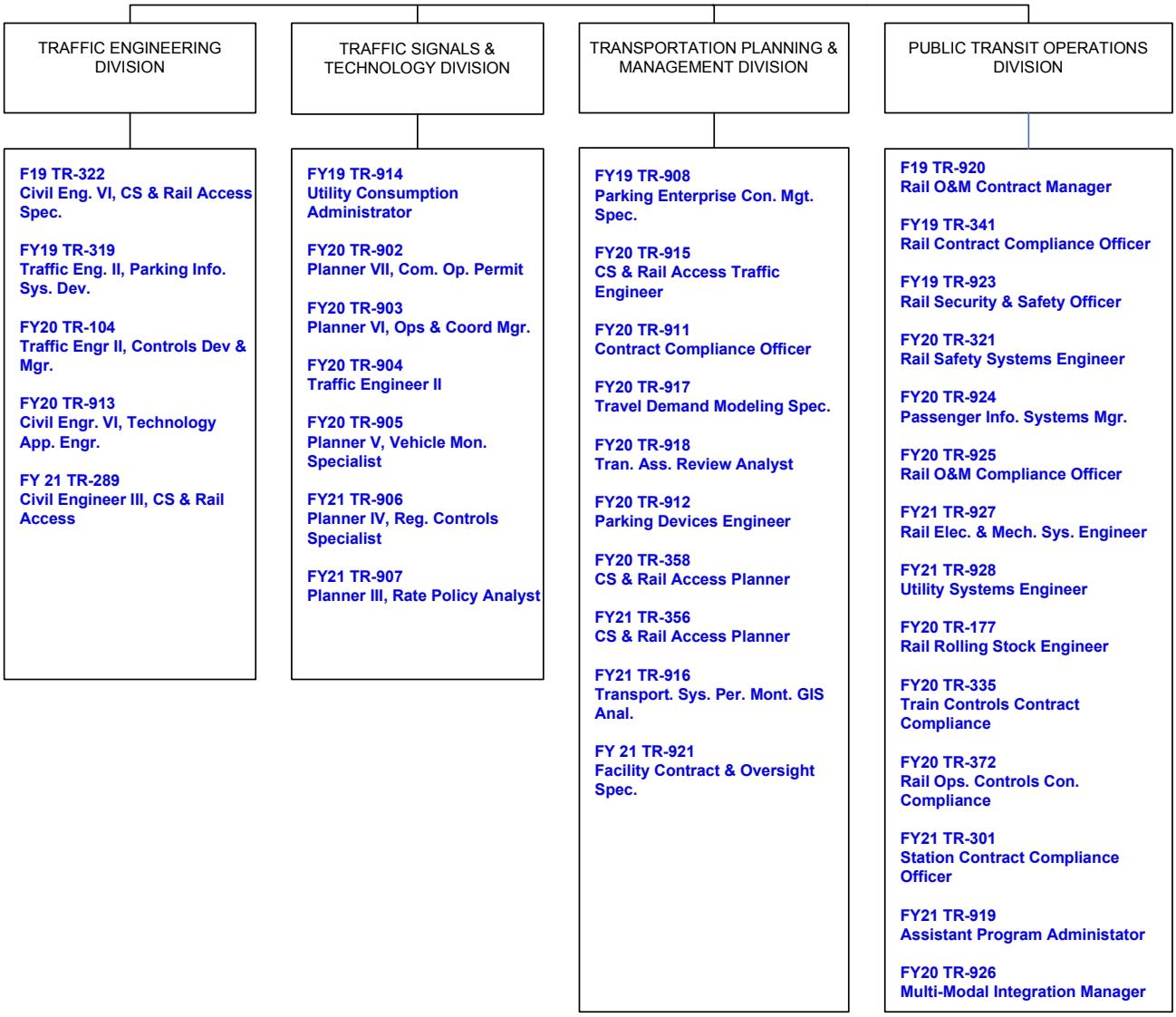
Source: HART

Exhibit 5.5
Integration of Rail Into Existing DTS Divisions



Source: HART Recovery Plan October 24, 2018

Exhibit 5.6
DTS Rail Operations and Maintenance Staffing Plan



Source: HART Recovery Plan October 14, 2018

According to HART managers, as implementation of the project advances, the organization will evolve to maximize the efficient use of personnel and adjust to meet the changing workload.

This includes careful succession planning to ensure qualified city employees are replacing the temporary PMC (Project Management Consultant) employees.

- HART managers state the agency plans to supplement its staff during the Final Design and subsequent phases of project development through a contract with a PMC. According to HART managers, the PMC approach permits the immediate mobilization of an experienced project management team and additional staff as needed while the city recruits and trains appropriately qualified employees. The city may subsequently procure further services of a PMC as determined by the city's staffing needs at that time.

- HART managers stated consultants will continue to be utilized on the project when the HART staff does not possess the necessary qualifications for specific areas or the services are of an urgent or temporary nature.

HART's statement that rail construction is a short-term project as justification for not hiring more permanent staff is ill-advised and imprudent messaging for the city as it plans, prepares, and constructs Honolulu taxpayers' most expensive asset. We caution that HART should be mindful of its commitment to have consultants train city staff to takeover key positions and prepare for the skill set needed for when the rail construction project transitions to operations and management.

Chapter 6
HART Managers Claim Most of the Prior Recommendations Have Been Implemented

HART managers report they have implemented most of the recommendations listed in our prior audit report, *Audit of the Honolulu Authority for Rapid Transportation*, Report No. 16-03. In its written response to the draft audit report, HART stated it addressed and/or completed actions on 14 of the audit recommendations. HART states it is actively committed, has implemented, acted on 16 of the in-progress recommendations from the 2016 audit, and will continue to work on the open recommendations.

Based on our latest review, we concluded only one recommendation has been resolved, one recommendation has not been started because HART claims it would incur a penalty if it were implemented, and 16 of the 18 recommendations were still in some stage of implementation.

Background

HART's initial reaction to the original recommendations was mixed. It disagreed with most of the original recommendations. After the audit was completed, the FTA imposed a number of requirements upon HART as a contingency for continued federal funding. This resulted in issuance of a Draft Recovery Plan (issued in September 2017 and again in October 2018). A review of the draft recovery plans shows that many of the required actions also addressed recommendations made in the audit and the majority of the recommendations were in various stages of implementation.

Status of Audit Recommendations

The recommendation that was completely implemented related to policies and procedures for stipend payments. We found that HART implemented a written stipend payment procedure in July 2016. As a result, HART has effectively tightened its internal control over stipend payments.

Another recommendation tasked HART with re-evaluating its office space requirements, renegotiating the lease, sublease unused space, or allow other city agencies to use or rent the space until HART actually needs the space. HART reported that

its office space lease did not have any early termination clauses other than project termination and termination would result in a penalty. HART claims it is considering sub-leasing office space to DTS. The agency further noted that the leases for its current office space will expire in 2020. We concluded that although HART considered the audit recommendation, no action will probably be taken until office space negotiations for 2020 and beyond are initiated.

The 16 audit recommendations *in progress* included:

1. HART should increase efforts to regularly update its financial plan. The cost changes and adjustments are necessary to reflect the current financial condition of the project. Updates should be supported by detailed, source documentation;

Recommendation status from Report No. 16-03:

- 1 recommendation resolved
- 1 recommendation not started
- 16 recommendations in progress

2. Update its Operations and Maintenance Plan (OMP) to address funding, management, and other transit needs;

3. Consistently and accurately report on project cost information, identify and explain variances if internal and external reports are intended to be different so that policy makers and the public receive consistent and reliable project cost information;

4. Develop methods to ensure data used in HART reports, Project Management Oversight Consultant (PMOC) reports, and other reports are consistent, accurate, reliable, and can be reconciled among all the reports using the data;

5. Develop a process for tracking and monitoring all costs, including status of claim costs;

6. Support its cost estimates with consistent, reliable and sufficient information. To do so, HART should thoroughly document details, including any forecasting methodology and assumptions made to support of its cost estimates;

7. Replace the contract management system with a system that is more user friendly and more appropriate to managing the HART construction project. IF the CMS system is retained, HART should define which CMS data elements, data fields, and functions should be used and which parts should be deactivate or eliminated;

8. Use the city's C2HERPS enterprise resource planning system to develop, monitor, track and report budget, financial and accounting data. The CMS system should not be used for these purposes;

9. Develop a forecasting model to best predict escalation costs and support it with documentation;

10. Make it a priority to analyze significant changes to the project, determine how it will affect the project's overall costs and schedule, and regularly update key management plans to reflect those changes to ensure that stakeholders and the public are informed of significant changes in a timely manner;

11. Ensure project managers prioritize budget management, compare actual costs to cost estimates, analyze any differences and make adjustments as necessary to prevent or minimize cost overruns;

12. Not make concessions on retainage to contractors, as it diminishes HART's ability to ensure proper performance and could be misconstrued as favoritism or biased;

13. Document its cost-savings strategies and to the extent possible, quantify and document the amount of potential cost savings;

14. Develop written policies and update procedures for contract administration. Clearly distinguish the roles and responsibilities of project managers, contract managers, and contract administrators in contract administration policies and procedures. Promote increased awareness of procurement and contract administration file recordkeeping by providing additional training to staff, and develop more robust guidance policies, and procedures that address the variety of contracts and associated invoices HART receives in order to help standardize the invoice payment process and prevent improper payments;

15. Develop plans for annual and ongoing operation and maintenance of the rail system once it is completed and operational. The plan should address subsidies needed to fund rail operations and maintenance costs, maximize fare box recoveries and ridership; minimize city subsides; address operations and maintenance (O&M) policies, subsidy sources, and alternative revenues; and

16. Fill the operations and maintenance position and other key vacancies. The recruitment should include a succession plan to fill key positions in the event of any unexpected departures.

HART noted that its Projects Control Division is evaluating various options to replace the CMS system and is considering

contract management document control as it evaluates alternative software systems.

We continue to have concerns regarding HART's ability to control costs and prevent schedule delays. Although HART has improved its operations and achieved greater effectiveness and efficiency in managing the rail construction project and its operations, more still needs to be done. More specifically, only one recommendation has been implemented over the last two years and 16 audit recommendations are still in progress. One recommendation will not be implemented due to potential financial penalties. We are encouraged by HART's progress and believe that the recommendations in progress, when implemented, will improve HART operations going forward. Until the recommendations are fully implemented, the Office of the City Auditor will continue to monitor the status of these outstanding recommendations and holds many concerns regarding HART's ability to prevent future cost overruns and schedule delays.

Conclusions

HART has made many improvements and is in the process of implementing many of the recommendations made in prior audit reports, the Federal Transit Administration (FTA), and by the Project Management Oversight Consultant (PMOC). Despite the progress, much more needs to be done to control project costs and to ensure more schedule delays do not occur.

In our opinion, cost overruns and schedule delays resulted from inexperienced HART managers and contractors who initiated and approved a plethora of change orders and amendments without sufficient justifications, inadequate documentation for many change orders and amendments, and a lack of basic internal controls to minimize costs and prevent schedule delays. The PMOC issued and repeated many warnings. HART ignored or only partially addressed the PMOC warnings.

Since April 2016, HART has made many improvements and implemented many audit recommendations. Unfortunately, current HART staffing and other policies and practices are inadequate to prevent cost overruns and schedule delays from recurring.

Recommendations

HART should:

1. Assess and revise contract amendment and change order policies and procedures to ensure proper oversight and that requisite approvals are obtained prior to effectuating changes;

2. Revise or implement policies and procedures to ensure that sufficient documentation is in the contract files that justify contract amendments and change orders;

3. Establish an internal audit function, attached to the HART Board, to conduct independent oversight of project expenditures and compliance with applicable policies, procedures, laws, and best practices;

4. Fully implement the 16 in-progress recommendations from the 2016 Audit of the Honolulu Authority for Rapid Transportation, Report No. 16-03;

5. Comply with the 2012 Staffing and Succession Plan by transitioning four key administrative positions (Chief Safety and Security Officer; Quality Assurance Manager; Chief Project Officer; and Project Controls Manager) from consultants to HART employees;

6. Update the 2012 Staffing and Succession Plan to identify other positions currently filled by consultants that can be transitioned to HART employees and provide a timeline for the transition;

7. Review its personnel strategy by considering a mix of civil service, exempt, and personal service contract employees, as applicable, to ensure that current project needs are met and that qualified, experienced staff are in place to transition to operations and management.

Management Response

Most of the HART responses to the recommendations were responsive to the audit report. HART generally concurred with the audit recommendations and will continue to update contract administration procedures; review, refine, and update written policies and procedures; and convert to electronic files as budget is available. HART managers stated it will recommend to the HART Board to hire an internal auditor or employ an outside firm to audit HART work and consultants. HART agreed its staffing

and succession plans should be updated and has initiated a revision to its plan.

As discussed earlier, HART disagreed with the status of the prior audit recommendations and felt many of those recommendations were fully addressed and complete. We acknowledge that HART has made progress in addressing the prior audit recommendations, but disagree that they are complete. For auditing purposes, HART needs to demonstrate not only that it has established policies, procedures, and plans that address the recommendations, but that they are actually being implemented and making an impact on management and operations. To date, we have not been able to make a complete assessment. We will revisit these recommendations during our office's routine Audit Recommendations Status Report to be completed later this year.

HART resisted considering a mix of civil service, exempt, and personal service contract employees because HART is a temporary agency created to build the rail system and not a permanent city department; is organized as a construction project; and operations and maintenance functions will be determined by the Department of Transportation Services (DTS).

The HART responses and pace of implementing the audit recommendations reaffirmed our many concerns regarding HART's ability to prevent future cost overruns and schedule delays. Nominal changes and edits were made to this report to enhance the report format and to better communicate the audit results. The substance of the findings and recommendations remain substantively unchanged. A copy of the HART management response is provided on page 59.

We made technical, non-substantive amendments to the report for purposes of clarity and style.

HART

HONOLULU AUTHORITY for RAPID TRANSPORTATION

IN REPLY REFER TO:
CMS-AP00-03391

January 16, 2019

Mr. Edwin S. W. Young
City Auditor
City and County of Honolulu
Office of the City Auditor
1001 Kamokila Boulevard, Suite 216
Kapolei, Hawaii 96707

Re: Audit of the Honolulu Authority for Rapid Transportation (HART)

Dear Mr. Young:

Enclosed is HART's updated response to the Draft Audit Report received on December 14, 2018. HART looks forward to receiving a copy of the final report.

Should you have any questions on our response, please feel free to contact me directly.

Very truly yours,

Andrew S. Robbins
Executive Director and CEO

Attachment

CITY AND COUNTY OF HONOLULU, Alii Place, Suite 1700, 1099 Alakea Street, Honolulu, Hawaii 96813
Phone: (808)768-6159 Fax: (808)768-5110 www.honolulutransit.org

Responses to City Audit Report

January 16, 2019

We have received the findings of the Follow-Up Audit of HART pursuant to Honolulu City Council Resolution 17-199, CD1, in a document dated December 13, 2018. Below you will find our responses to the findings as of January 2019. Before delving into the issues, please note that the report from the City repeatedly references an October 2018 version of the FTA Recovery Plan, however, the final version, as approved by the Board, reviewed by the City Council, and accepted by FTA, is dated November 19, 2018.

Findings in City Audit Report and HART Response

Finding 1 - Assess and revise contract amendment and change order policies and procedures to ensure proper oversight and that requisite approvals are obtained prior to effectuating changes.

HART concurs with the need to continue updating contract administration procedures, including those related to the oversight and approval process for contract amendments and change orders.

Over the last two years, HART has taken steps to update written policies and procedures for contract administration. In March 2017, HART introduced the Change Control Committee (CCC) in an effort to improve change procedures. CCC is comprised of the Deputy Executive Director of HART, the Director of Project Controls, the Director of Design and Construction, and the Director of Core Systems. Each member considers the change requests from their area of expertise including schedule and cost, technical, and interface with core systems. The CCC meets weekly at a set time with a set agenda. All requested changes must have justification and sufficient data to back up the request. Rigorous questions and robust documentation ensure that decisions are documented in the contract files.

The revised Change Procedures incorporated the CCC in August of 2017. Following that, 5.CA-01 Rev 2.0 Contract Administration was updated as a part of the Procurement Manual in December 2017. In November 2018, the process was streamlined further in Change Procedures Revision B (5.CA-11, Rev 4.0). To ensure timely completion of the Westside construction from Kapolei to Aloha Stadium, HART staff, its consultants, and contractors are engaged to scrutinize change orders and prioritize them so that change orders are negotiated and issued in support of scheduled activities. Contractors, CE&I teams, designers, and HART CM staff are committed to the process in our partnering sessions. This process will be followed for AGS and CCUR contracts as well.

Major programmatic changes are considered in the Executive Decision Document (EDD) procedure which is currently in review by executive management of HART for approval. This document strengthens HART's decision-making process on contract amendments, change orders, and other significant changes to the Project as defined in the Procedure. The EDD is required for a number of key decisions associated with proposed changes to Project construction, design, services, and budget. This process ensures "key" and/or significant decisions are made with proper input, review, and documentation from all relevant divisions within HART, before approval of the Executive Director and CEO is sought.

HART will continue to review, refine, and update written policies and procedures, including those specifically related to contract administration and change orders. Findings 2 and 4-14 in this document are also related to this Action.

Responses to City Audit Report

January 16, 2019

As noted in the Audit Report, contract files are currently in hard copy and not accessible electronically for the most part. HART plans to scrutinize its budget allocations and convert these files to electronic files, subject to availability of data capacity to the extent that certain HART contracts include hundreds of pages of plans, drawings, and technical specifications which, currently, HART includes in the Contract File in DVD format.

This change to convert to electronic files is anticipated to be completed as budget is made available.

Finding 2 - Revise or implement policies and procedures to ensure that sufficient documentation is in the contract files that justify contract amendments and change orders.

HART concurs with the need to continue updating contract administration policies and procedures.

Refer to the response to Finding 1 for information on the improvements HART has made over the past two years. As noted previously, in recognizing the complexity of many of HART's contracts, HART will continue to improve on documenting procurement and contract administration policies and procedures, and training personnel on the Project. To that end, HART will update its Procurement Manual, which includes contract administration procedures, and implement active utilization of the manual by personnel. Each contract file includes a standard (and detailed) Table of Contents that also includes a rationale and justification for the project delivery method selected for the contract, independent cost estimate, solicitation documents, resulting contract, and contract change order documents, including written requirements for Finding of Merit (FOM) as basis for change.

HART will continue to review and update written policies and procedures, including those specifically related to documentation and file management, so as to improve documentation of processes involved in contract amendments and change orders. Findings 1 and 4-14 in this document are also related to this Action.

This change is anticipated to be completed in 2019 as a part of a larger set of changes to policies and procedures as budget is made available.

Finding 3 - Establish an internal audit function, attached to the HART Board, to conduct independent oversight of project expenditures and compliance with applicable policies, procedures, laws, and best practices.

HART Staff will recommend to its Board to consider approval to hire an internal auditor or employ an outside firm to conduct audits of HART's work as well as that of consultants.

This recommendation to the Board will occur during the first quarter of 2019.

Responses to City Audit Report

January 16, 2019

Finding 4 - Fully implement the 16 in-progress recommendations from the 2016 Audit of the Honolulu Authority for Rapid Transportation, Report No. 16-03

HART is actively committed, and has implemented and acted upon the 16 in-progress recommendations from the 2016 Audit. We believe that we have now closed 14 of the 16 recommendations, and during CY 2019, HART will continue work on the open recommendations:

1. *HART should increase efforts to regularly update its financial plan. The cost changes and adjustments are necessary to reflect the current financial condition of the project. Updates should be supported by detailed, source documentation.*

At this time, HART believes this finding has been addressed and the Action is complete. HART concurred with this recommendation and adopted, in July 2017, the City Auditor's 2016 recommendation to regularly update its financial plan. Furthermore, financial plan information such as actual and projected revenues, expenditures, 15-month cash flow projection and fiscal year cash flows is regularly presented to the HART Board of Directors and available to employees, public officials and the general public. The latest Financial Plan was submitted to the Federal Transit Administration (FTA) in November 2018 as a part of the Recovery Plan.

The November 2018 financial plan was prepared and presented in the following format:

- An overall Project financial plan showing annual revenues, costs, and debt service to the expiration of HART's funding sources in December 31, 2030 (Fiscal Year 2031). This plan is required by the FTA. Additionally, HART tracks actual revenue, costs, and debt service data on a monthly basis and provides information to the Board. This Project financial plan was submitted to the FTA in November 2018. Prior submissions to the FTA were in September 2017, December 2016 and June 2012.
- A fiscal year financial plan showing actual and projected revenues, expenditures, and debt service by month for each revenue and contract package, including encumbrance amounts. This is a publicly available document presented at Board meetings.
- A monthly cash flow statement (Statement) is shared at each Board meeting.

HART's Chief Financial Officer holds regular monthly discussions on the Project's financial status with the Project Management Oversight Contractor representing the FTA, and weekly discussions are held with the City and County of Honolulu's Director of Budget and Fiscal Services and representative from the Managing Director's office.

It is HART's position that this Finding has been addressed and the Action is complete.

2. *Update its Operations and Maintenance Plan (OMP) to address funding, management, and other transit needs.*

At this time, HART believes this finding has been addressed and the Action is complete. Following the approval of the 2016 Charter Amendment 4 to the Revised Charter of the City and County of Honolulu 1973 (2000 edition) ("Charter Amendment 4"), which places operations and maintenance responsibilities for rail with the City and County of Honolulu Department of Transportation Services

(DTS), the ultimate responsibility for the plan now lies with DTS. HART, under its responsibility, is working with DTS to transition this responsibility and making any necessary modifications to earlier HART plans.

It is HART's position that this Finding has been addressed and the Action is complete.

3. *Consistently and accurately report on project cost information, identify and explain variances if internal and external reports are intended to be different so that policy makers and the public receive consistent and reliable project cost information.*

At this time, HART believes this finding has been addressed and the Action is complete. As noted in Finding 4-1 above, HART has improved on financial plan reporting since the release of these findings. It is important to note that the Design and Construction division also reports project or contract-specific financial information in Monthly Progress Reports. The criteria used to present cost information is different than what finance uses in that the monthly progress report records costs through CMS on an incurred basis. This means that the costs may have been invoiced by the contractors, but they are not necessarily yet paid by HART. Financial Reports differ in that the CFO reports on a cash basis, or what has been paid, as well as projections of future expenses based on CMS. This is a normal reporting process within the City's financial system. Additionally, as noted in Response No. 3, HART's Project Controls division is in the process of developing report cover pages with report descriptions and a list of prompts available to users who generate reports. This is being rolled out for new reports and reports with revision requests.

It is HART's position that this Finding has been addressed and the Action is complete.

4. *Develop methods to ensure data used in HART reports, Project Management Oversight Consultant (PMOC) reports, and other reports are consistent, accurate, reliable, and can be reconciled among all the reports using the data.*

At this time, HART believes this finding has been addressed and the Action is complete. Over the past year, HART has made efforts to ensure that reports are consistent, accurate and reliable and can be reconciled with other reports. The challenge is that different reports have different data dates. The data exists and it is possible to reconcile the information among the different reports and report dates. For example, the PMOC reports are written based on the date of the PMOC visit, while reports to the HART Board are tied to the date of the Board meeting. The information in each report may be slightly different depending on the date the data is pulled, but the source data remains consistent.

In order to ensure accuracy, HART and PMOC Reports are given wide distribution for review by various managers and funneled back through a central source for final review. Changes to previous reports are forwarded in track changes to the CEO, Project Director and the Report Administrator for review.

It is HART's position that this Finding has been addressed and the Action is complete.

Responses to City Audit Report

January 16, 2019

5. *Develop a process for tracking and monitoring all costs, including status of claim costs.*

At this time, HART believes this finding has been addressed and the Action is complete. As noted in Finding 4-1 above, HART has improved on financial reporting since the release of these findings. Project Controls prepares a periodic worksheet showing potential claims (risk) values for major contract packages. In 2018, Project Controls, in consultation with construction staff and the CFO, rolled out a new construction cost forecasting tool that requires project managers and/or area managers to review possible changes including potential claims on a monthly basis. This tool will continue to be applied in 2019.

It is HART's position that this Finding has been addressed and the Action is complete.

6. *Support its cost estimates with consistent, reliable and sufficient information. To do so, HART should thoroughly document details, including any forecasting methodology and assumptions made to support of its cost estimates*

At this time, HART believes this finding has been addressed and the Action is complete. Project Controls reviews detailed change cost estimates along with assumptions and cost analysis as part of the Change Control Committee (CCC). Over the past year, cost estimating has strengthened their cost estimates with detailed documentation for each cost estimate.

It is HART's position that this finding has been addressed and the Action is complete.

7. *Replace the contract management system with a system that is more user friendly and more appropriate to managing the HART construction project. IF the CMS system is retained, HART should define which CMS data elements, data fields, and functions should be used and which parts should be deactivate or eliminated.*

An IT specialist firm has been retained to review the current CMS system and has made a recommendation on moving forward with a new or revised CMS. Historically, HART also identified the need for a more user-friendly contract management software system, but grappled with cost constraints associated not only with the new software and data storage, but data migration of this magnitude. The IT specialist that takes into consideration these constraints is expected to provide its draft report to HART in January 2019.

8. *Use the city's C2HERPS enterprise resource planning system to develop, monitor, track and report budget, financial and accounting data. The CMS system should not be used for these purposes.*

At this time, HART believes this finding has been addressed and the Action is complete. The HART Finance Department uses the C2HERPS system exclusively for tracking project revenue and expenditures since July 2017. As discussed in our response to Finding 4.1 above, financial reports presented to the

Responses to City Audit Report

January 16, 2019

FTA, HART Board members, public officials, and employees are a product of data generated from the C2HERPS system.

It is HART's position that this Finding has been addressed and the Action is complete.

9. *Develop a forecasting model to best predict escalation costs and support it with documentation.*

At this time, HART believes this finding has been addressed and the Action is complete. Project Controls uses a forecasting methodology which includes escalation in construction cost estimates and also for professional service contracts which include staffing plans for documentation purposes. Based on the number of estimates prepared and negotiations with the contractors the system in use provides staff a good basis for determining the escalation costs. This process does need constant validation to ensure accounting for market fluctuations.

It is HART's position that this Finding has been addressed and the Action is complete.

10. *Make it a priority to analyze significant changes to the project, determine how it will affect the project's overall costs and schedule, and regularly update key management plans to reflect those changes to ensure that stakeholders and the public are informed of significant changes in a timely manner.*

At this time, HART believes this finding has been addressed and the Action is complete. To document significant or "key" changes to project, HART is in the process of establishing a decision procedure called the Executive Decision Document (EDD). Under the EDD procedure, decisions that are identified as "key" decisions or changes to the Project are required to be reviewed by all affected HART divisions so as to prevent key decisions from being made in a vacuum and also to document those decisions. Even with an EDD decision, however, those decisions that are subject to HART Board approval under the Board rules are presented to the Board for approval; those decisions that require risk management modeling for cost, schedule and program impact will undergo a rigorous risk management workshop.

Additionally, changes, or the potential for changes, are tracked as project risks. HART conducted a Cost Risk Assessment (CRA) workshop in the spring of 2016, with input from multiple disciplines within HART and consulting specialists, resulting in a rigorous cost and schedule risk analysis of the project. It led to HART's revised project budget and current goal of $8.165 Billion and a Revenue Service Date of December 2025. From this study, HART's current Risk Management System (RMS) was established, which replaced a less rigorous risk management process. The resulting RMS from the 2016 CRA study is based on a system in use on numerous rail and transportation projects in the United States. HART's new RMS is managed by a full time Director of Risk Management. Monthly risk updates involve detailed input from HART's CEI staff who oversee HART's numerous construction projects, as well as staff who oversee pending projects such as CCGS. The Director of Risk Management reviews, inputs and consolidates this monthly risk input into meaningful Risk Management Reports that predict the overall cost and schedule completion values within probability ranges acceptable to the PMOC. The Risk Management Reports identify the top risks on the overall Project as well as individual projects so that HART managers can focus their efforts on mitigation strategies on all significant risks affecting the

Responses to City Audit Report

January 16, 2019

project's cost and schedule. The RMS tracks the mitigation strategies for every active risk on all projects until such time as the risk is fully or partially mitigated and paid for, then retired. Thus, through its active RMS, HART has made it a priority to analyze significant changes to the project, forecasting cost and schedule impacts, and advising HART managers so that effective mitigation strategies can be employed to offset the changes (risks) as much as possible before they occur.

HART's Risk and Contingency Management Plan (RCMP) documenting this overall process was fully redrafted in 2017 and approved in March 2018. The resulting cost and schedule forecasts are reported to FTA and PMOC monthly, and reported to HART's stakeholders and the public as the cost and schedule goals for the project.

It is HART's position that this Finding has been addressed and the Action is complete.

11. *Ensure project managers prioritize budget management, compare actual costs to cost estimate, analyze the differences and make adjustments as necessary to prevent or minimize cost overruns.*

At this time, HART believes this finding has been addressed and the Action is complete due to HART's continued efforts to improve on project controls. Every change order includes a cost analysis that compares the HART independent cost estimate with the contractor's proposed costs. The contract file also documents negotiation targets. Additionally, Project Controls rolled out a new construction cost forecasting tool in 2018 that requires project managers or area managers to be aware of the impact of the changes on their budget and to make adjustments where possible to minimize cost overruns.

It is HART's position that this Finding has been addressed and the Action is complete.

12. *Not make concessions on retainage to contractors, as it diminishes HART's ability to ensure proper performance and could be misconstrued as favoritism or biased.*

HART agrees that any payment of retainage must support HART's continued ability to ensure proper performance and any payment of retainage is in accordance with statutory requirements. This requirement will be more expressly included in the Contractor Payment Application Procedure.

13. *Document its cost-savings strategies and to the extent possible, quantify and document the amount of potential cost savings.*

At this time, HART believes this finding has been addressed and the Action is complete. Based on lessons learned from the West Side and input from specialty consultants, Project Controls has developed a tracking spreadsheet to better estimate rough order of magnitude costs and cost savings for ongoing work. For example, the recent decision by HART to revise the design-build contract on the City Center Guideway and Stations (CCGS) and Pearl Highlands Garage and Transit Center contracts to a P3 DBFOM contract will allow HART to leverage the long-term O&M costs and will ensure a fixed cost for the CCGS contract while reducing risk on the overall program. This delivery method is estimated to save HART

approximately $300 million on long-term O&M. HART's active cost-saving strategies and results are outlined in HART's Revised Recovery Plan dated November 19, 2018 (Appendix B).

It is HART's position that this Finding has been addressed and the Action is complete.

14. *Develop written policies and update procedures for contract administration. Clearly distinguish the roles and responsibilities of project managers, contract managers, and contract administrators in contract administration policies and procedures. Promote increased awareness of procurement and contract administration file recordkeeping by providing additional training to staff, and develop more robust guidance policies, and procedures that address the variety of contracts and associated invoices HART receives in order to help standardize the invoice payment process and prevent improper payments.*

As documented in Findings 1 and 2 at the onset of this response, changes to Contract Administration have continued throughout 2017 and 2018, and at this time, HART believes this finding has been addressed and the Action is complete. Change Procedures Revision B (5.CA-11, Rev 4.0) issued on November 2018 includes clearer roles and responsibilities of the project managers, resident engineers, and contract managers/administrators. HART will continue to update the change procedures, including the roles and responsibilities of the positions, to improve on the process toward added efficiency, but continued accountability. Also, an Invoice Payment Process Procedure is in place, signed and approved. During CY 2019, HART expects to continue streamlining processes and improve access to files, as noted previously.

It is HART's position that this Finding has been addressed and the Action is complete.

15. *Develop plans for annual and ongoing operation and maintenance of the rail system once it is completed and operational. The plan should address subsidies needed to fund rail operations and maintenance costs, maximize fare box recoveries and ridership; minimize city subsides; address operations and maintenance (O&M) policies, subsidy sources, and alternative revenues.*

At this time, HART believes this finding has been addressed. As discussed in the response to Finding 4-2 above, HART is collaborating with DTS to transition O&M Responsibilities, including ownership of the Operations and Maintenance Plan, pursuant to Charter Amendment 4. HART is engaging DTS through regular executive and working level meetings on all aspects of O&M Activation, review of the Ansaldo Honolulu Joint Venture (AHJV) plans and procedures, and other issues. It is HART's position that this Finding has been addressed and the Action is complete.

It is HART's position that this Finding has been addressed and the Action is complete.

16. *Fill the operations and maintenance position and other key vacancies. The recruitment should include a succession plan to fill key positions in the event of any unexpected departures.*

At this time, HART believes this finding has been addressed. The O&M function of the rail system no longer falls under HART. Under Charter Amendment 4, the responsibility for operations and

Responses to City Audit Report

January 16, 2019

maintenance for bus, paratransit, and rail is solely with DTS. HART no longer has an O&M division as part of its organization and has shifted its attention to readiness and activation functions per attached current organization chart dated November 15, 2018.

As a result of the operations and maintenance functions being removed from HART's purview, HART is an agency responsible only for construction and testing of the rail system. When construction and testing have been completed, HART will conceivably cease to exist. As such, it is not appropriate to create permanent civil service positions. Therefore, HART has ceased hiring civil service employees because the organization and staffing for rail O&M will be determined by DTS.

HART is working closely with DTS to design an organization that is appropriate to oversee operations and maintenance of the system, and when the time is appropriate, civil service positions may be created and filled by DTS to ensure a smooth transition of the rail system from construction and testing to maintenance and operations.

HART has created an organization with succession planning in mind. Every key position has either a deputy or an assistant who is able to step in and fill any temporary gaps created by the departure of a key individual.

It is HART's position that this Finding has been addressed and the Action is complete.

Finding 5 - Comply with the 2012 Staffing and Succession Plan by transitioning four key administrative positions (Chief Safety and Security Officer; Quality Assurance Manager; Chief Project Officer; and Project Controls Manager) from consultants to HART employees.

HART concurs that it would be ideal to fully utilize HART employees in these key positions, however; this is not always practicable for multiple reasons.

The Staffing and Succession Plan, Revision 4.0 (2012) has been updated several times since 2012. These revisions were based on the City Charter change in 2016, the Hawaii State Legislative changes in 2017, and multiple internally driven project reorganizations. Revision 6.C is currently being developed by HART staff.

HART's understanding of the City Charter is that HART has the ability to hire Personnel Service Contract employees, exempt employees, permanent Civil Service employees, or employees of a consultant firm contracted by HART in order to fulfill its mission. HART has had significant success in hiring City employees to staff key project positions in the past but also relies on consultant staff in order to meet the Technical Capacity and Capability (TCC) requirements set forth by the Federal Transit Administration when necessary.

HART competes for qualified employees on the open market, and the vast majority of HART positions are not suitable for entry-level candidates. Consultant staff is phased out at every possible opportunity when HART is able to find and hire qualified individuals as City employees. HART employees are usually expected to work at the fully functioning level upon start of employment, and they expect to be compensated accordingly. The HART Board of Directors has been very proactive in supporting HART's

efforts to pay reasonable salaries, but HART is still faced with restrictions regarding compensation based on the City classification and pay policies and established compensation schedules. Pay restrictions sometimes make it impossible to fill certain positions with city employees given the level of expertise required to do the job. As such, there will most likely continue to be a need for a limited number of employees who possess the required skills or experience whereby the services will continue to be provided on a consultant contract basis. The Project Management Oversight Consultant (PMOC) hired by the FTA to oversee the project has acknowledged that reliance on consultants in a project of this complexity is a common practice. Nevertheless, HART will continue to strive to place City employees in key positions wherever possible.

HART concurs that it would be ideal to fully utilize HART employees in key positions. As noted in the response to Finding 6 below, in Q1 2019 HART will complete Revision 6.C to the Staffing and Succession Plan. During this revision process, analysis of critical organizational changes through revisiting strategic staffing opportunities with the City's Department of Human Resources and other key areas will be made to ensure every tool is used to optimize city employees. It is a key element of a project of this magnitude to finely tune the balance between specialized technical needs within the constraints of a low unemployment and professional experience.

Revision 6.C is anticipated to be completed in the first quarter of 2019.

Finding 6 - Update the 2012 Staffing and Succession Plan to identify other positions currently filled by consultants that can be transitioned to HART employees and provide a timeline for the transition.

HART agrees that the Staffing and Succession Plan, Revision 4.0 (2012) should be updated and has initiated Revision 6.C.

As mentioned in the Response to Finding 5, the 2012 Staffing and Succession Plan, Revision 4.0, has been updated several times as a result of the City Charter change, the Hawaii State Legislative change, and internally generated project reorganizations. HART is currently working on Revision 6.C of the Staffing and Succession Plan. Also as discussed in the response to Finding 5, above, HART strives to place City employees in key positions.

HART agrees that the Staffing and Succession Plan, Revision 4.0 (2012) should be updated. In Q1 2019 HART will complete Revision 6.C to the Staffing and Succession Plan, after critical organizational changes currently being considered are decided upon.

It is the position of HART to first look at hiring staff to fill key positions before turning to consultants. HART will continue to do so within the constraints of the system and given the unique level of experience required for these key positions.

The Revision 6.C to the Staffing and Succession Plan is anticipated to be completed in the first quarter of 2019.

Responses to City Audit Report

January 16, 2019

Finding 7 - Review its personnel strategy by considering a mix of civil service, exempt, and personal service contract employees, as applicable, to ensure that current project needs are met and that qualified, experienced staff are in place to transition to operations and management.

HART welcomes the opportunity to ensure that current project needs are met and that coordination with DTS ensures that the appropriate staff are in place for long-term operations and maintenance.

HART's understanding of the City Charter is that HART has the ability to hire Personal Service Contract employees, permanent Civil Service employees, or employees of a consultant firm contracted by HART in order to fulfill its mission. Due consideration is given to the fact that HART is a temporary agency created to build the rail system and not a permanent City Department. The current HART employee breakdown is: 117 city employees (5 civil service, 4 appointees, 1 CEO on direct contract with the Board of Directors, and 107 employees on Personal Services contracts). Additionally, there are 18 Project Management Support Consultant employees integrated into the organization. This equates to a project staff consisting of roughly 87% City employees and 13% consultant contract employees.

HART is open to and receives input from multiple internal as well as external agencies concerning Project organization and staffing. HART has implemented changes to its organizational structure and staffing based on input from the PMOC on contract with the FTA, the American Public Transportation Association (APTA), the HART Board of Directors, other City agencies, and other transit agencies. HART's overarching staffing goal is to ensure core competencies of the organization by employing staff with the requisite knowledge, skills, abilities, and experience in the appropriate positions when needed to complete the project as efficiently and safely as possible.

Because HART is now organized as a construction project, flexibility with respect to the organizational structure, staffing assignment adjustments, and adaptations is critical as the Project progresses through the various phases associated with a multi-year construction project of this magnitude and complexity.

As a result of the operations and maintenance functions being removed from HART's purview Charter Amendment 4, HART is a temporary agency responsible for construction and testing of the rail system. As such, the long-term organization and staffing of rail operations and maintenance will be determined by DTS. With that in mind, HART currently is and has been working closely with DTS to design an organization that is capable of overseeing operations and maintenance of the rail system. When DTS determines the time is appropriate, they will be creating and filling civil service positions to ensure a smooth transition of the rail system from construction and testing to maintenance and revenue operations.

HART will continue to ensure that current project needs are met and that coordination with DTS ensures that the appropriate staff are in place for long-term operations and maintenance. This will be reflected in the Revision 6.C to the Staffing and Succession Plan.

The Revision 6.C to the Staffing and Succession Plan is anticipated to be completed in the first quarter of 2019.

Appendix A
Glossary of Acronyms

AGS	Airport Guideway and Stations
AIS	Archaeological Inventory Survey
CCO	Contract Change Order
CCA	Contract Change Amendment
CCGS	City Center Guideway and Stations
CE&I	Construction, Engineering & Inspection
CEO	Executive Director and Chief Executive Officer
CFO	Chief Financial Officer
CMS	Contract Management System
DTS	Department of Transportation Services
EAC	Estimate at Completion
EIS	Environmental Impact Statement
FFGA	Full Funding Grant Agreement
FHSG	Farrington Highway Station Group
FTA	Federal Transit Administration
FY	Fiscal Year
GEC	General Engineering Consultant
GET	General Excise Tax
HART	Honolulu Authority for Rapid Transportation
HECO	Hawaiian Electric Company
HDOT	Hawai`i Department of Transportation
HRTP	Honolulu Rail Transit Project
KHG	Kamehameha Highway Guideway
KHSG	Kamehameha Highway Stations Group
KIWC	Kiewit Infrastructure West Company
MSF	Maintenance and Storage Facility
NTP	Notice to Proceed
O&M	Operations and Maintenance
OCA	Office of the City Auditor
PERT/CPM	Program Evaluation and Review Technique/Critical Path Method
PMOC	Project Management Oversight Consultant
PMSC	Project Management Support Consultant
RFC	Request for Change
ROC	Rail Operations Center
RSD	Revenue Service Date
WOFH	West Oahu/Farrington Highway
WOSG	West Oahu Stations Group

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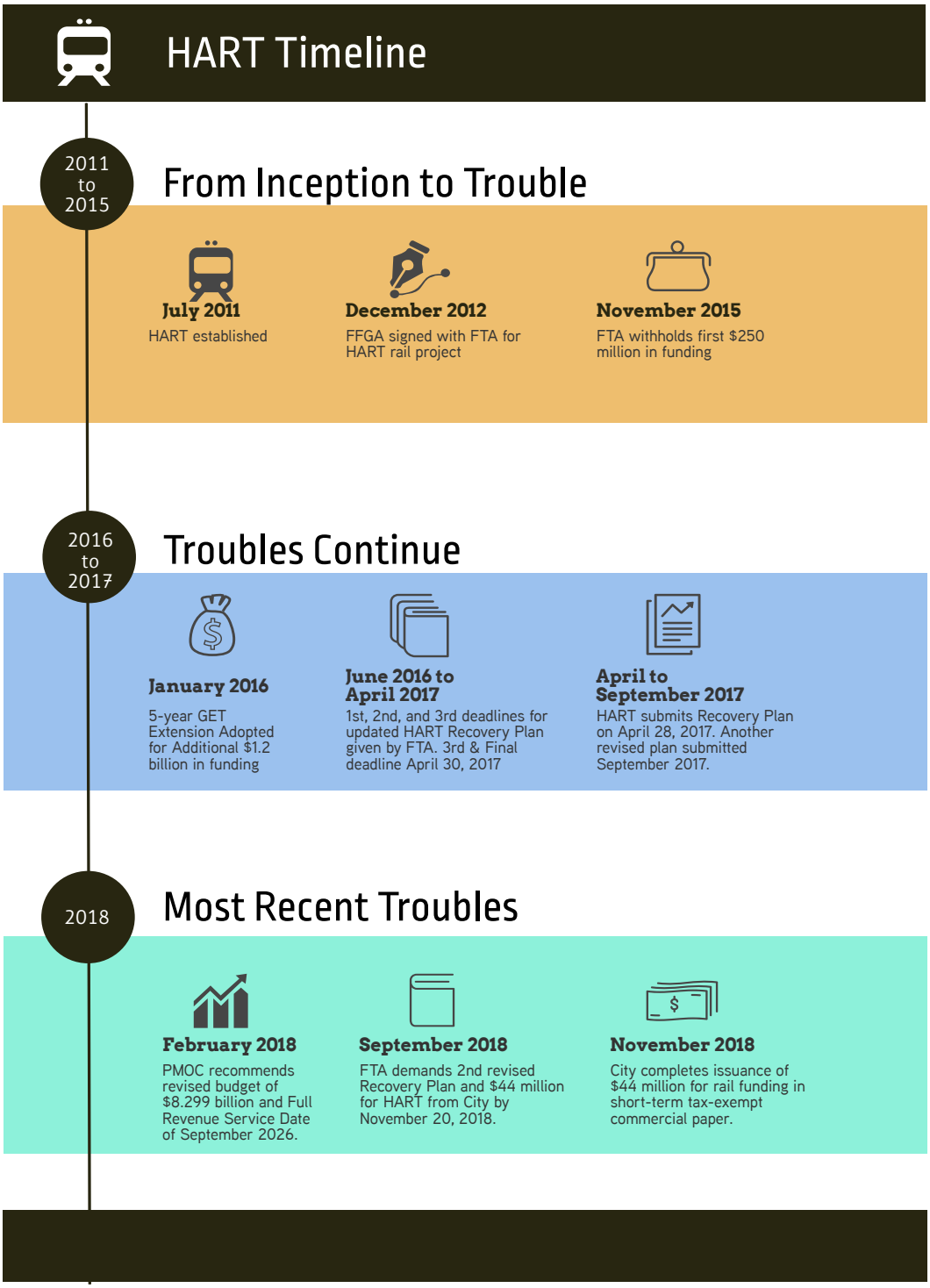
Appendix B

HART Chronology, Increasing Costs, and Schedule Delays



The rail project was preceded by decades of rail planning since 1967. Below is a chronology of key events in the rail project's history from 2005 to 2018.

- July 2005: The Hawai`i State Legislature authorized and in August 2005, the Honolulu City Council approved, a 0.5% General Excise Tax (GET) surcharge to provide non-federal local funding for a new rail transit system.

- August 2005: The City Department of Transportation Services (DTS) initiated an Alternatives Analysis following the Federal Transit Authority (FTA) Section 5309 New Starts Program (now known as the FTA Major Capital Investment Grant Program).

- January 2007: The city selected the steel-wheel on steel-rail design and began collecting the GET surcharge. The city then initiated work on the project's Environmental Impact Statement (EIS) and preliminary engineering for the system.

- February 2007: The Honolulu City Council passed City Council Resolution 07-039 approving the selection of the Minimum Operating Segment (MOS) from East Kapolei to Ala Moana Center, via Salt Lake Boulevard. The MOS was subsequently amended to serve the Honolulu International Airport and deferred the Salt Lake portion of the project alignment.

- November 2009: The city executed its first contract for the project, a Design-Build (DB) services contract with Kiewit Pacific Company for the West Oahu/Farrington Highway Guideway (WOFH).

- June 2010: The Final Environmental Impact Statement (FEIS) for the Project was approved by the FTA and published on June 25, 2010.

- November 2010: Oahu voters approved a City Charter Amendment that established Honolulu Authority for Rapid Transportation (HART), a semi-autonomous, public transit authority responsible for planning, constructing, operating, maintaining, and expanding the City's fixed guideway, mass transit system.

- January 2011: A Section 106 Programmatic Agreement was signed. FTA issued its environmental Record of Decision (ROD) for the project on January 18, 2011 that provided pre-award authority for right-of-way (ROW) acquisition, utility relocation, and acquisition of rail vehicles.

- July 2011: HART was established.

- May 2012: Construction workers begin pouring concrete for the foundations that will hold the rail columns.

- December 19, 2012: The City and FTA sign a Full Funding Grant Agreement (FFGA) for a project consisting of 20 miles and 21 stations. The total estimated project cost of $5.12 billion included a committed federal share (subject to annual congressional appropriations) of $1.55 billion, and a full system revenue service date of January 31, 2020.

- November 2015: After issuing $250 million to the city, Federal Transit Authority officials decide to withhold the next $250 million allotment of funding until the Honolulu City Council approves the five-year extension of the GET surcharge.

- January 2016: A five-year extension to the GET was adopted and was anticipated to yield $1.2 billion in additional local funds for the project.

- June 2016: On June 6, 2016, the FTA directed HART to submit a Recovery Plan by August 7, 2016, that demonstrates HART is working to contain costs and minimize delays in the project schedule.

- In July 2016, FTA extended the deadline to submit the Recovery Plan to December 31, 2016. FTA subsequently extended the deadline for the submission of this Recovery Plan to April 30, 2017.

- On September 5, 2017: The Hawai`i State Legislature passed Senate Bill 4 (Act 1) which provided the City and County of Honolulu with additional finances and revenues to complete construction of the rail project. Act 1 addressed most of the $2.378 billion shortfall reported by the city by:

    - Extending the General Excise Tax (GET) on Oahu for three additional years (through December 31, 2020) which will provide $1.046 billion;

    - Raising the Transient Accommodation Tax (TAT) by 1% to 10.25 % for 13 years (to December 31, 2030) which will provide $1.326 billion;

    - Permanently increasing the counties' share of the TAT from $93 million to $103 million;

    - Reducing the State Department of Taxation's administrative fee on the GET surcharge from 10% to 1%;

    - Creating a Mass Transit Special Fund;

    - Requiring the Hawai`i State Budget and Finance Director and the Hawai`i State Department of Administrative and General Services to review and approve HART capital construction costs and invoices before releasing any revenues to HART; and

    - Requiring a state audit of the rail project and annual financial reviews.

In addition to providing a mechanism to finance the HART rail project shortfalls, the Act provided $1 million for the Hawai`i State Auditor to conduct an audit that examines HART's financial records, analyzes the agency's financial management practices, and determines whether funds received from the county surcharge on state tax were being managed and used in a reasonable manner. The Act was passed after the Honolulu City Council passed Resolution 17-199, CD1 that requested its City Auditor to perform a follow-up audit of HART, but did not provide extra funding for the audit.

- April 2017: HART submitted a Recovery Plan to the FTA. This was subsequently revised in September 2017 and submitted to the Project Management Oversight Consultant (PMOC) and FTA.

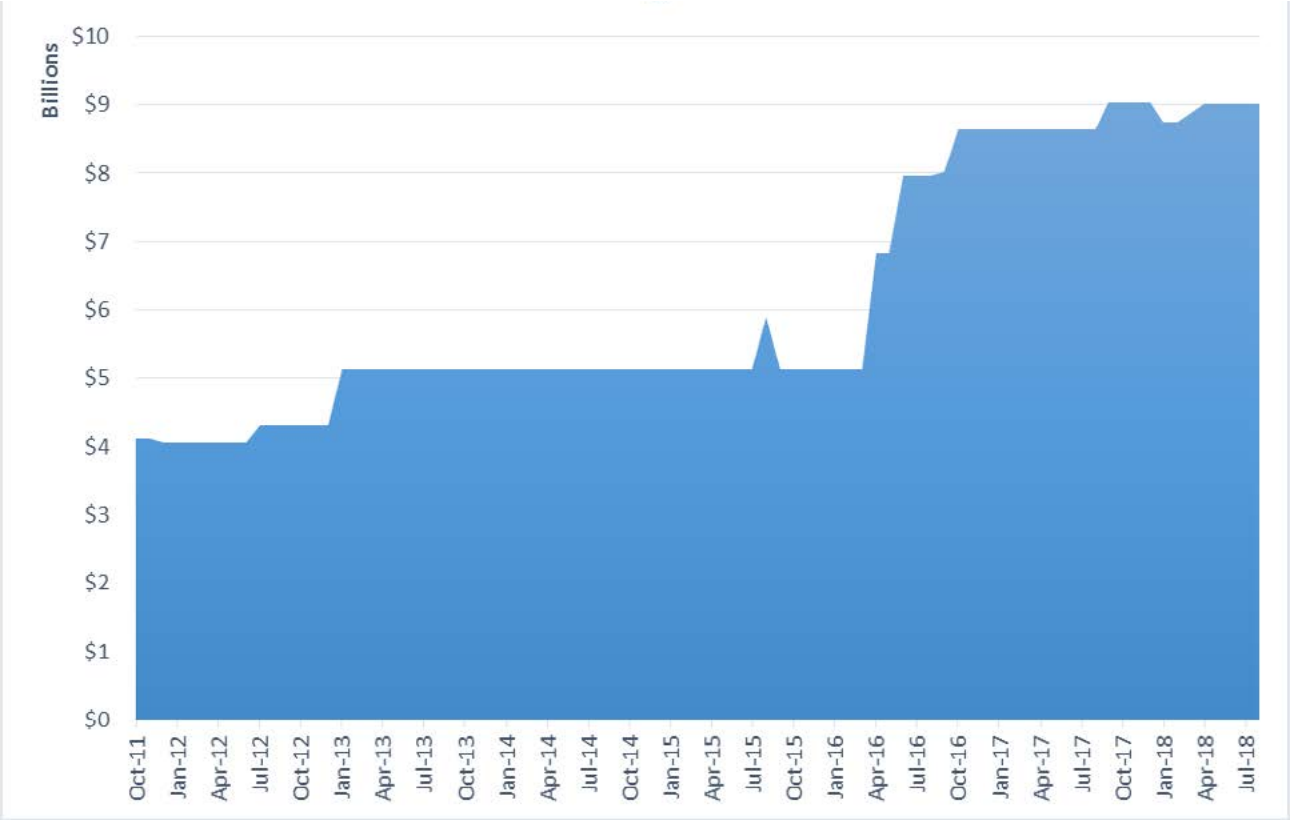
- February 2018: the PMOC conducted a Risk Refresh Workshop to update its risk assessment of the Project. Based on the outcomes of the reviews, the PMOC recommended a revised project budget of $8.299 billion (excluding finance costs) and a revised full Revenue Service Date of September 2026.

- September 21, 2018: FTA directs HART to identify the final selection of a procurement strategy for the City Center Guideway and Stations segment by October 21, 2018. FTA further directs the City to revise its Recovery Plan and its financial plan to reflect the cost estimate of $8.299 as stated in the Final Risk Refresh Report. The Recovery Plan is due to FTA by November 20, 2018. In addition, the FTA warned the city that it needs to deliver $44 million to HART within 60 days or by November 20, 2018 as a down payment on the city's larger $214 million required contribution to rail.

- October 2018: In a letter to the FTA dated October 9, 2018, the city mayor and the Chair of the Honolulu City Council reiterate commitments to provide the city funds identified in HART's 2017 Recovery Plan within 60 days.

- November 2018: The City Council passed Resolution 18-132 and related legislation and the mayor signed the laws that authorized the issuance and sale of general obligation bonds for HART. The city issued $44 million in general obligation bonds and HART submitted the Final Recovery Plan to FTA.

Appendix C
HART's Increasing Cost Estimates



Source: Office of the City Auditor

Cost estimates provided to the Federal Transit Administration's (FTA) Project Management Oversight Consultant (PMOC), Jacobs Engineering, and by HART vary but have steadily increased from $4.066 billion to $9.023 billion between October 2011 and August 2018.

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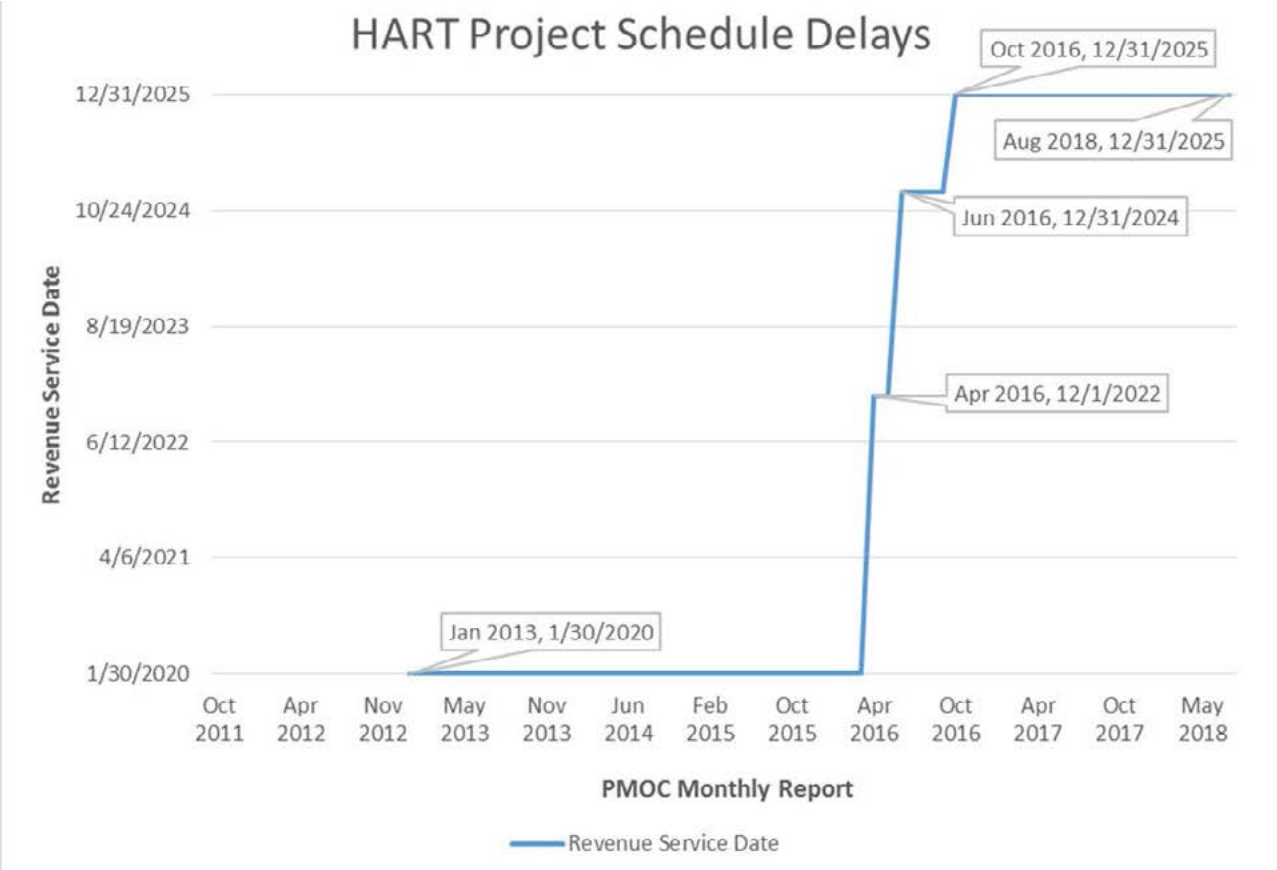
Appendix D
HART Project Schedule Delays



Source: PMOC Reports 2011-2018

In addition to cost increases, HART has experienced significant project delays. HART project delays extended its completion date nearly 6 years - from January 30, 2020 to December 31, 2025. This above chart shows the Revenue Service Date (date when rail operations will start) reported by HART to the PMOC in its monthly PMOC reports.[1]

[1] HART began providing PMOC estimates of the Revenue Service Dates in January 2013.

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Appendix E

Project Management Oversight Consultant (PMOC) Concerns: Planning, Contract Change Orders and Amendments, Cost and Schedule Overruns, HECO, and Miscellaneous Items

Poor Design/Construction/Planning

	PMOC Report Text	Date(s)	OCA Comments
1	PMOC is concerned that the design consultant was performing advance PE design submittals without having been an approved QAP.	Oct 2011	
2	The PMOC identified numerous issues and questions related to the systems design that require grantee clarification.	Nov 2011	
3	**The PMOC cautions HART in use of federal funds to build the interim facility when a permanent facility will be constructed using federal funds.** It is not known how long the interim facility will be in use before the permanent facility can be constructed.	Aug 2013; Sep 2013; Oct 2013; Nov 2013; Dec 2013; Jan 2014; Feb 2014; Mar 2014; May 2014; Jun 2014; Jul 2014; Sep 2014; Oct 2014; Nov 2014; Dec 2014; Feb 2014; Mar 2015; May 2015; Jun 2015; Jul 2015; Sep 2015; Oct 2015; Sep 2015; Dec 2015; Jan 2016; Feb 2016; Mar 2016	This may be an example of HART not planning with the long term in mind by investing so much into an interim facility. PMOC raised this issue 27 times.
4	**City Center Segment –** The PMOC recommends that HART hold an interactive planning workshop to determine the impacts from the federal court case as it relates to activities in the City Center Segment. **The PMOC expressed concern that HART has not fully assessed the impacts from delayed activities such as real estate acquisition and final design.**	Aug 2013; Sep 2013; Oct 2013; Nov 2013; Jan 2014; Jan 2016; Feb 2016	Not fully assessing the impacts from delayed activities might be the reason for unforeseen costs and delays.
5	**Airport and City Center Guideway and Utilities** – Invitation For Bid (IFB) is to be issued in June/July 2014. However, HART reported that Geotechnical Data Report (GDR) for City Center may not be available until late in bidding or possibly after bids are due**. This was a result of the federal lawsuit injunction**. **The PMOC cautions HART about accepting bids without providing the contractors with this information.** HART will review the timing for completion of the GDR in relation to the anticipated bid due date.	May 2014; Jun 2014	Example of premature contract issuance that resulted in a change order.

Poor Design/Construction/Planning (continued)

	PMOC Report Text	Date(s)	OCA Comments
6	The following issues are identified regarding **HART's real estate activities:** • HART must own and control 165 parcels (81 owners) within 112 days. **Some of these parcels do not yet have title work completed or appraisals underway.** • HART must revise its *RAMP* to **develop approaches to expedite real estate purchases** (e.g. possession and use agreements; partial payments upfront; rental protection for vacant units). • Easements – Duration of Temporary Construction Easements (TCE) is now settled and sizes of easements are known. However, language of the authority in the easement document is still not settled. **Until the appraisers can be informed of the restrictions contained in the easements, appraisals cannot be completed**. • Appraisals – **HART must ensure that it is providing appraisers the information necessary to reach a value conclusion**, and that the report cites the delivery of such information to the appraiser (Scope of Work). For example, HART must clarify if parking will be permitted beneath the overhead structures.	Jul 2014	Example of premature contract issuance before HART owned the land or had proper access secured. This added to the project costs.
7	It is anticipated that the Master Project Schedule will require revision as a result of the **re-packaging of the Westside Station Group contract**.	Sep 2014; Oct 2014; Nov 2014; Dec 2014; Mar 2015; May 2015; Jun 2015; Jul 2015; Sep 2015	
8	**Westside Stations Group –** Since the procurement was cancelled, HART is repackaging these nine stations into three separate packages: HART is reviewing their packaging strategy for all remaining contracts. **This strategy will impact numerous aspects of the project including the schedule.**	Nov 2014; Dec 2014	
9	HART provided a white paper to the FTA to explain the $5.2 million credit associated with the 4 car train changes and also the Ansaldo Honolulu Joint Venture (AHJV) NTP delay claim settlement of $8.7 million.	Aug 2015	

Change Orders/Amendments

	PMOC Report Text	Date(s)	OCA Comments
1	HART anticipates that Kiewit/Kobayashi will submit a change order for material cost escalation since there has been a delay in execution of the contract.	Dec 2011; Jan 2012; Feb 2012	
2	The FTA determined that **the Project Management Support Consultant (PMC) contract was not solicited with the required Federal clauses** based on the Fiscal Year 2010 Procurement System Review Final Report prepared for the FTA.	Mar 2012;Apr 2012; May 2012; June 2012	If original contract was not solicited with the required Federal clauses, the contract would need to be amended.
3	**Change Orders for the amount of $34 million** for settlement of AIS and NTP Delays were approved by the HART Board on May 15, 2014. The PMOC will continue to monitor the progress of discussions to determine the overall impact on the project. **HART expects Kiewit to submit its first claim for escalation on materials purchased in the next two months. The PMOC will continue to monitor the progress of discussions to determine the overall impact of this change on the project.**	May 2014; Jun 2014; Jul 2014; Feb 2015; Mar 2015; May 2015; Jun 2015	
4	HART now plans to start revenue service with 4-car trains in place of the initial plan of 2-car trains based on FTA's acceptance in December 2013. The PMOC will continue to monitor the progress of discussions to determine the overall impact of this change on the project. **If no agreement is achieved, HART will issue unilateral Change Order.**	Jun 2014	
5	**The cost for activation of the Traction Power Substations was not included in the project estimate. A change order will be required to address this cost, which is still being assessed.** This issue has not been captured in HART's forecast but has been generally identified in the Risk Register.	Oct 2014; Nov 2014; Dec 2014; Feb 2014; Mar 2015; May 2015	

Underestimating Costs/Schedule and Cost Overruns

	PMOC Report Text	Date(s)	OCA Comments
1	The cost estimate for the Farrington Station Group has increased compared to the previous estimate.	Dec 2011; Jan 2012	In 2012 and 2013, HART proposed selecting another design consultant to perform construction administration for FHSG.
2	The PMOC is concerned with the adequacy of the grantee's ability to forecast costs for the existing Design-Build (DB) contracts. **HART's current Estimate at Completion (EAC) does not accurately provide an assessment of the contract costs.**	Feb 2012; Mar 2012; Apr 2012; May 2012; Jun 2012; Jul 2012; Sep 2012; Oct 2012; Nov 2012; Dec 2012; Jan 2013; Feb 2013; Mar 2013; Apr 2013; May 2013; Jun 2013; Jul 2013	Oct 2012: HART provided significantly improved EAC assessments of the contract costs to the PMOC. Nov 2012: HART and the PMOC held monthly breakout sessions to review the status of the forecast costs, schedule management, risk management, and cost containment measures. Jun 2013: HART developed a detailed methodology for forecasting use of contingency. The PMOC has noted that there is still a discrepancy in how HART will handle potential future changes without enough information to prepare detailed cost estimates. Jul 2013: PMOC has some concern with the adequacy of the remaining contingency given the anticipated costs due to the project delays.
3	The PMOC recommended that the License Agreement be provided to the FTA and PMOC for review prior to execution.	Feb 2012; Mar 2012; Apr 2012; May 2012; Jun 2012; Jul 2012; Sep 2012; Oct 2012; Nov 2012; Dec 2012; Jan 2013; Feb 2013; Mar 2013; Apr 2013; May 2013; Jun 2013; Jul 2013; Aug 2013	Failing to have FTA and PMOC review agreements may be the cause of unforeseen costs and delays. **PMOC raised this issue 18 times**.
4	HART issued a partial suspension of construction work on August 24, 2012 for all ground-disturbing activities after a ruling by the Hawai`i Supreme Court. On September 7, 2012, HART provided letters to its contractors to clarify that no construction activity would continue until future written notice is provided by HART. 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.**	Sep 2012; Oct 2012; Nov 2012; Dec 2012; Jan 2013	Nov 2012: The preliminary schedule analysis by the grantee indicates that **there could be a 9 to 12-month impact on the interim opening but possibly no impact to the full Revenue Service Date.** Dec 2012: The grantee's preliminary analysis indicates that the **cost impact for the three design-build contracts could range between $64 and $95 million.**
5	The PMOC recommended **that HART engage a consultant to perform independent cost estimates** for the remaining contract packages, including any **repackaging efforts.**	May 2013; Jun 2013; Jul 2013; Sep 2013; Oct 2013; Nov 2013; Dec 2013; Jan 2014	
6	HART anticipates re-baselining its budget and Master Project Schedule (MPS) in October 2013, once it has certainty that construction activities will be resuming.	Jul 2013	

Underestimating Costs/Schedule and Cost Overruns (continued)

	PMOC Report Text	Date(s)	OCA Comments
7	HART's current assessment indicates the range of uncommitted contingency available at this time is $415-443 million. This estimate is reasonably accurate. However, the **PMOC is concerned whether there is sufficient contingency remaining, given the status of the project.**	Aug 2013	
8	The PMOC has emphasized the need for HART to **revisit both its primary and secondary mitigation measures for cost assessments.**	Sep 2013; Oct 2013; Nov 2013; Dec 2013; Jan 2014; Feb 2014; Mar 2014; May 2014; Jun 2014; Jul 2014	PMOC encourages HART ten times to improve its cost assessments. There are a number of other issues raised by PMOC between 2011 and 2016 on increased cost, cost estimates, etc. that may be tied to HART's initial cost assessments. It is concerning that HART failed to use primary and secondary mitigation measures for cost assessments for such a long period of time.
9	Concern is the revised engineer's estimate for the Airport and City Center Guideway and Utilities contract, which is **considerably higher than the FFGA budget.**	Mar 2014; Jun 2014	
10	2014 Risk Refresh • HART's estimate falls short of the predicted FTA cost risk model outcome by $265 million. **HART should review its project estimate and determine how to reduce costs to close this gap.** • **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. • **The PMOC and HART should engage in a focused *cost containment workshop*** on a monthly basis to monitor the efforts taken to avoid rapid contingency usage.	Sep 2014; Oct 2014; Nov 2014; Dec 2014; Feb 2014; Mar 2015; May 2015; Jun 2015; Jul 2015; Sep 2015; Oct 2015; Nov 2015; Dec 2015; Jan 2016; Feb 2016; Mar 2016; Apr 2016	Nov 2014: The FFGA RSD of January 2020 can be achieved; however, HART must implement strong schedule and contract management throughout the remainder of the project. HART implemented Cost Containment Reduction Measures but cost containment workshops continued.
11	**Contingency** – HART's current assessment indicates a balance of uncommitted contingency of $348 million ($67 million in unallocated and $281 million in allocated). **However, this assessment does not take into consideration impacts from recent WSSG bidding.** The actual balance of available contingency will not be known until updated estimates are available after all **re-packaging** of the remaining contracts (including the stations and guideway). This is a priority for HART.	Oct 2014; Nov 2014; Dec 2014; Feb 2014; Mar 2015; May 2015; Jun 2015; Jul 2015; Sep 2015	
12	There is concern that the **current estimated contingency** is not sufficient, which will impact the project budget. HART is currently assessing the remaining contract strategy including implementation of primary risk mitigations measures and value engineering to reduce project cost impacts. However, **HART should review their Secondary Mitigation Measures and consider implementation of any valid measures to help reduce pressure on the project budget.**	Nov 2014; Dec 2014; Jul 2015; Sep 2015	

Underestimating Costs/Schedule and Cost Overruns (continued)

	PMOC Report Text	Date(s)	OCA Comments
13	**HART's current Estimate at Completion (EAC) indicates that the Project cost will most likely exceed the FFGA budget** primarily due to the AIS, federal lawsuit delays, subsequent impact of current market conditions, and several other items that are anticipated to be an additional cost to the project. HART is revising the project budget and will update the EAC accordingly.	Jul 2015; Aug 2015; Sep 2015	
14	Due primarily to market factors, cost estimates on all station and guideway construction on the eastern segments now vary from 30% to 70% **above the FFGA budget allocated for those contract packages and increased cost for Hawaiian Electric Company (HECO) to account for conflicts in Airport and City Center.**	Aug 2015	
15	**The PMOC is concerned the EAC does not include all potential costs, does not provide sufficient contingency to complete the project**, and is based on a Revenue Service Date (RSD) that may be unrealistic.	Sep 2015	
16	GET extension: The Governor signed the bill on July 14, 2015. The City Council will need to amend an ordinance to enact the tax extension. The City Council cannot enact the measure before July 1, 2015 (start of Fiscal Year) but must take action by July 1, 2016. If passed by the City Council, the Mayor must then sign the measure. The City Council could take action on Bill 23 to extend collection of the GET as early as December 2015. Public hearings were held November 5 and 9, 2015. **The PMOC is concerned that the delay of the City Council's action beyond the planned target dates for issuance of the City Center Guideway and Stations Design Build RFP Part, which is anticipated in February 2016. This may further impact the project budget and schedule.**	Oct 2015; Nov 2015; Dec 2015	

Hawaiian Electric Company (HECO)

	PMOC Report Text	Date(s)	OCA Comments
1	HECO has expressed concern over its ability to meet all requirements of Davis-Bacon. If this issue is not resolved, it could impact the schedule since HECO will not perform utility relocation work until the waiver request is submitted.	Feb 2014; Mar 2014; May 2014; Jun 2014; Jul 2014; Sep 2014; Oct 2014; Nov 2014; Dec 2014; Feb 2014; Mar 2015; May 2015; Jul 2015; Sep 2015; Oct 2015; Sep 2015; Dec 2015; Jan 2016; Feb 2016; Mar 2016; Apr 2016; May 2016; Jun 2016	
2	**The PMOC strongly recommends that HART prepare an independent cost estimate for all additional HECO-related costs given its potential order of magnitude**. **This is currently HART's most significant risk to the project**. This issue must be resolved by fall 2015, so HART can incorporate the final configuration into the City Center Guideway and Stations DB Contract.	Jun 2015	
3	50-foot Offset Issue HART has acknowledged that under-grounding of the overhead power lines may be required along limited lengths of the guideway. HART and HECO are reviewing the alignment to determine the extent of these locations. **HART does not have an estimated cost for the under-grounding yet. This may have a tremendous impact on both schedule and cost.** **The PMOC strongly recommends that HART prepare an independent cost estimate for all additional HECO-related costs given its potential order of magnitude**. **This is currently HART's most significant risk to the project**. This issue must be resolved by fall 2015, so HART can incorporate the final configuration into the City Center Guideway and Stations DB Contract.	Oct 2014; Nov 2014; Dec 2014; Feb 2014; Mar 2015; May 2015; Jun 2015; Jul 2015; Sep 2015; Oct 2015; Sep 2015; Dec 2015; Jan 2016; Feb 2016; Mar 2016; Apr 2016	PMOC says this is the most significant risk to the project and needed to be resolved by Fall 2015. If HART is required to underground all affected lines, its project costs would be significantly affected. March 2016: HART made the determination that it will underground some of the HECO lines. Apr 2016: PMOC recommended that HART consider including a HECO representative as a non-voting member of selection panel for remaining DB contracts.
4	HART does not have an estimated cost for the under-grounding yet and has not included a cost in its Estimate at Complete (EAC).	Nov 2014; Dec 2014	
5	HART indicates that a revision is underway to account for elimination of the Dillingham Utilities and Road Widening package. **This work will be completed under the City Center Guideway and Stations DB Contract and through an On-Call Construction Contract.** This change will affect RSD of the full system. **PMOC is also concerned that MPS does not fully account for HECO undergrounding activities along Dillingham Boulevard, which would affect the critical path.** HART committed to providing the updated MPS by February 29, 2016. It is critical that HART meet this deadline, so the PMOC has sufficient time to prepare for the Risk Refresh Workshop.	Feb 2015	

HECO (continued)

	PMOC Report Text	Date(s)	OCA Comments
6	Horizontal Working Clearances Analysis – For Airport and City Center, HART and HECO have agreed to underground the overhead 138kV lines. HART designers are progressing to a preliminary engineering design with feedback from HECO. For WOFH and KHG, HECO has completed a pole-by pole review of the current overhead 138kV and 46kV pole and line locations and has identified areas where alternative access may be used for future pole and line maintenance. **HART's Task Force continues to meet bi-weekly with HECO staff to identify and analyze all potential solutions to the working clearance issue, including relocating lines to new overhead alignments, underground alignments, attachment to the guideway, and use of alternative equipment.**	Jun 2016	

Other Relevant Topics

	PMOC Report Text	Date(s)	OCA Comments
1	**The PMOC recommends that HART formally contact FTA requesting guidance on review** for authorization for procurement of numerous materials, and to determine what items are considered long-lead items.	Jan 2012; Feb 2012; Mar 2012; Apr 2012; May 2012;Jun 2012; Jul 2012	Jan 2012: there was confusion over whether rebar procurement is considered a long-lead item. Feb 2012: HART proceeded with a contract without consulting with FTA over what items are considered long-lead.
2	Concern that HART does not have sufficient Technical Capacity and Capability to ensure that it will complete everything in a timely manner while also complying with applicable regulations.	Feb 2012; Mar 2012; Apr 2012; Dec 2012; Jan 2013; Feb 2013; Mar 2013; Apr 2013; May 2013	Dec 2012: HART Senior Scheduler and one of the mid-level schedulers left the project. This reduced the grantee's Technical Capacity and Capability even more. Feb 2013: HART acknowledged the situation and recently hired a new Project Controls Manager. Mar 2013: HART submitted an update of the MPS on March 7, 2013. This MPS was cost-loaded. The updated MPS does not indicate any delays to the Interim Opening or RSD at this time if construction were to resume in September 2013
3	**HDR's acquisition of InfraConsult LLC (HART's Program Management Consultant) has created conflict of interest issues for HART since HDR is currently under contract to complete design of FHSG**. HART submitted a White Paper on Organizational Conflict of Interest to FTA that discussed measures to mitigate this conflict, **which includes several critical aspects of the project (quality, safety/security, project controls)**. HART proposes selecting another design consultant to perform construction administration for FHSG.	Sep 2012; Oct 2012; Nov 2012; Dec 2012; Jan 2013; Feb 2013; Mar 2013; Apr 2013; May 2013; Jun 2013; Jul 2013; Aug 2013	

Other Relevant Topics (continued)

	PMOC Report Text	Date(s)	OCA Comments
4	On November 1, 2012, the U. S. District Court for the District of Hawai`i issued a ruling in Honolulutraffic.com v. Federal Transit Administration**. The primary issue is the injunction on the City Center Segment of the Project. If this injunction continues, there could be significant impacts to this construction contract.**	Nov 2012; Dec 2012; Jan 2013; Dec 2013; Jan 2014	Dec 2013: The Federal District Court held a status conference in the Honolulutraffic.com v. FTA case on December 11, 2013.
5	**Buy America –** There is a possible issue with Buy America content as a result of the change to End (E) cars and M (Middle) cars since the M cars do not have some of the higher value components (e.g. propulsion).	Nov 2014; Dec 2014	
6	The WOFH and KHG Guideway Project delays are affecting some of the other contracts, but HART staff is working with the contractors to minimize the impacts.	May 2016	
7	The Contract Packaging Plan must still be updated to reflect schedule and budget changes.	May 2016	

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Appendix F
PMOC Concerns: Personnel and Staffing Issues

	PMOC Report Text	Date(s)	OCA Comments
1	**Several key management positions remain vacant** and the technical capacity will again be stretched if they are not soon filled especially when demand will greatly increase after entry into the final design phase. **HART has relied heavily on the Project Management Consultants to temporarily fill many of the current *City* positions** as it endures recruiting and employee retention challenges. Such challenges include salary limitations, geographical isolation, and high costs of living compared to the U.S. mainland. **The grantee anticipates transitioning the positions currently held by PMC employees to *City* positions over the next two to three years**. HART has recently included budget allowances to cover the extended employee transition period.	Oct 2011	
2	The PMOC meets monthly with HART's Administrator of Controls and Administration to discuss any immediate TCC issues and provide recommendations, such as: • Fill Deputy Director of Finance position • Identify Deputy for the Executive Director (or a combination of executive managers) • Increase staff resources for procurement, project controls, and human resources • Identify Contract Manager for GEC and PMC contracts **(*City* positions)** • Identify Claims Analyst **(*City*** or consultant position) • Develop Succession Plan • Include Contract Resident Engineer (CRE) position in Construction Engineering and Inspection scope Hire a recruiting consultant to assist with staffing plan, recruiting, training, transition planning and execution, and employee retention	Oct 2011	
3	Project Management Consultant **(PMC) Contract.** • Scope – The consultant will serve as a program manager in providing oversight of the PE, Final Design, and construction activities for all Design Build and Design Bid Build contracts. Status – HART awarded a contract to InfraConsult LLC in November 2009 to provide Project Management Support Services. The PMC Agreement is for five years with a Not-to-Exceed amount of $36.7 million.	Oct 2011	
4	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 Hawai`i's geographic isolation, salary limits, and high cost of living relative to the mainland. **HART 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 HART staff.	Nov 2011;Dec 2011;Jan 2012;Feb 2012;Mar 2012;Apr 2012;May 2012; Jun 2012;Jul 2012; Sep 2012;Oct 2012; Nov 2012;Dec 2012;Jan 2013;Feb 2013;Mar 2013	PMOC referenced the transition of staff 16 times.
5	**HART must strive to transition the key management positions currently occupied by the PMC as early as possible. HART should focus on transitioning the key positions of Chief Project Officer, Project Controls Manager, and Contracts Administrator**, in order for HART to have more ownership and maintain stronger continuing control of the project without having to rely too heavily on the PMC.	Nov 2011;Dec 2011; Jan 2012;Feb 2012; Mar 2012;Apr 2012; May 2012;Jun 2012; Jul 2012	
6	The PMOC will continue monitoring HART's project management process…u**ntil all key management positions transition to full-time HART staff.** The transition from PMC staff to full-time grantee staff will be closely monitored by the PMOC throughout the Final Design phase of the project.	Nov 2011;Dec 2011; Jan 2012;Feb 2012; Mar 2012;Apr 2012; May 2012;Jun 2012; Jul 2012	

	PMOC Report Text	Date(s)	OCA Comments
7	T**he FTA has determined that the Project Management Support Consultant (PMC) contract was not solicited with the required Federal clauses** based on the Fiscal Year 2010 Procurement System Review Final Report prepared for the FTA. The **FTA notified HART that it must proceed with timely re-procurement of the PMC contract,** which includes Federal clauses. The grantee issued an RFP on August 2, 2011 and anticipates issuing NTP to the selected PMC by **December 2011**. The terms of the NTP will be determined during negotiations with the selected firm.	Oct 2011;Nov 2011; Dec 2011;Jan 2012; Feb 2012;Mar 2012;	Nov 2011: HART amended NTP to selected PMC by January 2012 Feb 2012: HART amended NTP to selected PMC on February 23, 2012 Mar 2012: HART issued NTP to InfraConsult on 2/23/12 for a 5-year contract at $33 million.
8	**The FTA determined that the Project Management Support Consultant (PMC) contract was not solicited with the required Federal clauses** based on the Fiscal Year 2010 Procurement System Review Final Report prepared for the FTA. The FTA notified HART that it must proceed with timely re-procurement of the PMC contract, which includes Federal clauses. HART issued NTP to InfraConsult on February 23, 2012. The total value for the new five-year contract is $33 million.	Mar 2012;Apr 2012; May 2012; Jun 2012	
9	Through March 2012, PMC contract (awarded November 2009) had expended $19.5 million (53%) of the $36.7 million budgeted for this contract	Apr 2012	
10	HART 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. **HART 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. **HART has, however, taken appropriate measures to help ensure an adequate transition occurs.** Most recently, the Executive Director began a detailed review of the organization of the agency and proposed significant restructuring. These proposed changes are appropriate and should result in more effective management of the project.	Jul 2012;Sep 2012; Oct 2012;Nov 2012; Dec 2012;Jan 2013; Feb 2013;Mar 2013; Apr 2013;May 2013	PMOC expressed concerns about HART's Staffing and Succession Plan and its lack of key positions 10 times.
11	There are currently two vacant Construction Safety and Security Compliance Officer (SSCO) positions that report to the GEC CSSM, only one of which is planned for filling by the GEC in the near future. **The second SSCO 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.	Jul 2012;Sep 2012; Oct 2012;Nov 2012; Dec 2012;Jan 2013; Feb 2013;Mar 2013; Apr 2013;May 2013	Sep 2012 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. Apr 2013 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. It is the PMOC's professional opinion that these positions should be filled after construction resumes.

	PMOC Report Text	Date(s)	OCA Comments
12	There is also a current vacancy for a System Security Specialist (SSS) that reports to the GEC System Safety and Security Manager (SSSM), which 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.	Jul 2012;Sep 2012; Oct 2012;Nov 2012; Dec 2012;Jan 2013; Feb 2013;Mar 2013; Apr 2013;May 2013	<u>Sep 2012</u> 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. <u>Apr 2013</u> 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. It is the PMOC's professional opinion that these positions should be filled after construction resumes. <u>June 2013 – Dec 2013</u> Ansaldo Honolulu Joint Venture (AHJV) provided an interim part-time, on site Safety and Security Manager (SSM) for the CSC in April 2013 with as needed support from Italy. AHJV submitted a replacement SSM to HART for approval in June 2013. HART did not approve the replacement SSM and HART is allowing him to work until an acceptable SSM is approved by HART in the next few months. HART wants the interim part-time SSM to be the replacement SSM but he is not available. **HART is not in compliance with PMOC recommendations made in the OP 22 Report that a full time, on site SSM is required.**
13	The PMOC noted some **confusion as to the role of GEC personnel in the HART integrated safety and security organization.** While GEC personnel coordinate with and 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.	Jul 2012;Sep 2012 Oct 2012;Nov 2012	
14	**There are no full-time security professionals in the combined HART/PMC organization**. Although there is one GEC security professional assigned to the project, his assignment is on a part-time basis and t**he possibility exists that his availability may not be guaranteed over the life of the project. It should also be noted that, although there have been no conflicts with the GEC over his activities, as a GEC employee, he reports to a separate chain of command.**	Jul 2012;Sep 2012; Oct 2012;Nov 2012; Dec 2012;Jan 2013; Feb 2013;Mar 2013; Apr 2013;May 2013	

	PMOC Report Text	Date(s)	OCA Comments
15	T**he Safety and Security Certification Manager (SSCM) position that reports to the CSSO remains vacant**, with certification efforts expected to increase in the near future.	Jul 2012;Sep 2012; Oct 2012;Nov 2012; Dec 2012;Jan 2013; Feb 2013;Mar 2013; Apr 2013;May 2013; Jun 2013;Jul 2013; Aug 2013	Mar 2013 HART anticipates hiring the SSCM in Mar 2013 Apr 2013 HART anticipates hiring the SSCM in May 2013 and start date in July 2013 Aug 2013 HART anticipated the SSCM starting on July 1, 2013. However, the potential SSCM candidate declined in June 2013 and HART is searching for another potential candidate. HART may select a candidate from the pool of HDOT candidates they don't hire for the HDOT Program Manager position or fill the position with the PMC. Sep 2013 SSCM position was filled in Sep 2013 It took HART over one year to fill this key position.
16	**HART must strive to transition the key management positions currently occupied by the PMC and GEC as early as possible**. This transition is necessary in order for HART to have more ownership and maintain stronger continuing control of the project without having to rely too heavily on the PMC and GEC.	Sep 2012	Starting in September 2012, PMOC noted that HART was relying too heavily on both the PMC AND GEC (not just PMC as noted previously).
17	The PMOC will continue monitoring HART'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 HART staff must be closely monitored by the PMOC after receipt of an FFGA.**	Sep 2012	Starting September 2012, PMOC noted that it would monitor HART's transition from PMC staff to full-time HART staff after receipt of an FFGA. This text was dropped in October 2012.
18	The PMOC had expressed some concern that HART may continue experiencing difficulty attracting and retaining the experienced staff needed for long-term project assignment **and permanent grantee employment (post-Project)** given Hawai`i's geographic isolation, salary limits, and high cost of living relative to the mainland. It was recommended that **HART adhere to the staffing plan to address the transition of staff during the Final Design and construction phases for positions currently occupied by PMC and GEC staff to HART staff.**	Oct 2012;Nov 2012; Dec 2012	Starting October 2012, PMOC recommended that HART adhere to staffing plan to transition from PMC and GEC staff to HART staff. PMOC also raised the concern about the need for permanent HART employment (Post-Project).

	PMOC Report Text	Date(s)	OCA Comments
19	The PMOC was informed at the December 2012 site visit that the HART Senior Scheduler and one of the mid-level schedulers have left the project. **The HART Project Control Manager relied heavily on the two schedulers to maintain the HART Master Project Schedule database for required monthly progress reporting. HART has not updated and provided an MPS update since August 2012**.	Dec 2012;Jan 2013	It is the PMOC's professional opinion that **HART currently lacks the Technical Capacity and Capability specific to project controls**, **which is a crucial element of project management oversight and control**. HART acknowledges the situation and has temporarily contracted a senior scheduler to provide immediate assistance while the Human Resources department is searching for replacement candidates. The PMOC project controls technical staff members have continually offered recommendations and outside resources to support HART's candidate search. HART hired a Projects Control Manger in Feb 2013
20	As noted in Section 1.3, it is the PMOC's professional opinion that the **grantee currently lacks the Technical Capacity and Capability specific to project controls, which is a crucial element of project management oversight and control.** HART acknowledged the situation and has hired a new Project Controls Manager, who began working on the project in February 2013.	Jan 2013;Mar 2013	
21	HART hired Brennon Morioka as Deputy Executive Director Feb 2013	Feb 2013	
22	**HART is in the process of updating the Staffing and Succession Plan** that will identify recent restructuring of the agency organization including those staff positions that are currently filled by the PMC and GEC. **HART has gone through some considerable staff changes** since the FFGA was issued by the FTA in December 2012.	Mar 2013;Apr 2013; May 2013	
23	HART is in the process of updating the Staffing and Succession Plan that will identify recent restructuring of the agency organization including those staff positions that are currently filled by the PMC and GEC. **One critical procedure that is under revision addresses Contract Change Orders**. **This procedure must be updated to reflect the changes in the change order process that have been implemented but not properly documented.**	Apr 2013	This is the first significant PMOC reference to Change Order procedures.
24	**HART has gone through considerable organizational changes since the FFGA was executed in December 2012.** Project staff has begun reviewing their numerous plans and procedures to determine whether updates are required to reflect these changes. The PMOC met with HART to discuss the timing of each plan that will require updating as a result of the organization and procedural changes that have occurred.	June 2013;Jul 2013; Aug 2013;Sep 2013; Oct 2013;Nov 2013; Dec 2013;Jan 2014; Feb 2014;Mar 2014; May 2014;Jul 2014; Sep 2014;Oct 2014	

	PMOC Report Text	Date(s)	OCA Comments
25	**Following are some key positions that are vacant and must be filled by HART or through their PMC**: • Independent cost estimator – Pending; will be filled through PMC • Safety and Security Certification Manager – Recruiting in progress • Configuration Manager – Newly identified position; HART will begin recruiting.	Jun 2013;Jul 2013; Aug 2013;Sep 2013; Oct 2013;Nov 2013; Dec 2013;Jan 2014	Jul 2013 • Independent cost estimator – Pending; will be filled through PMC. HART intends to use the GEC to provide independent cost estimate services until the GEC re-compete process is completed or until the PMC fills the position. • Safety and Security Certification Manager – Recruiting in progress. HART may select a candidate from the pool of HDOT candidates they don't hire for the HDOT Program Manager position or fill the position with the PMC • Configuration Manager – Newly identified position; HART started the recruitment process in July 2013 and plans on filling the configuration management position prior to construction starting in September 2013.

	PMOC Report Text	Date(s)	OCA Comments
26	The PMOC is concerned with the recent loss of staff due to retirement or turnover and subsequent vacancy in key positions: • Grant Administrator • Deputy Director of Planning and Environmental • Deputy Director of Construction • Deputy Director of Right-of-Way • Vehicle Engineer. **Dec 2013** • Change Order Manager • Cultural Planner • Risk Manager **Feb 2014.**	Dec 2013;Jan 2014; Feb 2014;Mar 2014; May 2014;Jun 2014; Jul 2014;Sep 2014; Oct 2014	Dec 2013 HART is in the process of hiring an executive recruitment company to fill some of the vacant positions Feb 2014 HART hired an executive recruitment company to help identify candidates fill the vacant positions. HART's Risk Manager position is vacant, and no active recruiting is underway to fill this position. PMOC has recommended that HART make this a priority. **HART is considering utilizing one of its consultants to fill this void**. May 2014 • Assistant Director for Right-Of-Way – New hire started in May 2014. • Assistant Director for Planning – New hire started in May 2014. • Deputy Director of Construction – Search is ongoing. • Risk Manager – GEC III Project Manager is identified as Interim Risk Manager; PMOC has recommended that HART make this a priority. Jul 2014 • Deputy Director of Systems – Current Deputy Director is leaving the project; and is being replaced by the current Assistant Deputy Director on an interim basis. • Deputy Director of Construction – New hire started in July 2014. • Assistant Director of Construction – New hire will start in July 2014. • Risk Manager – GEC 3 Project Manager has been identified as Interim Risk Manager; PMOC has recommended that HART make this a priority. • HART has indicated that additional Assistant Deputy Director positions will be created. **The PMOC has recommended that the project organization be streamlined to be more effective.** At a minimum, HART must update its management plans to include these additional positions. Nov 2014 HART filled all key vacant positions
27	PMOC recommended that HART **engage a consultant to perform independent cost estimates** for the remaining contract packages, including any repackaging efforts.	Mar 2014;May 2014; June 2014	Mar 2014 HART enlisted a subconsultant under the Program Management Consultant contract to provide these services.
28	PMOC is concerned that **HART has several new consultants that have started or are about to start**, although HART's procedures and management plans are outdated. It is critical for HART to update these plans and procedures immediately.	May 2014;Jun 2014; Sep 2014;Oct 2014	

	PMOC Report Text	Date(s)	OCA Comments
29	PMOC is concerned with the rejection or replacement of AHJV CSC Project Controls Manager. PMOC is concerned with the **vacant CSC Project Controls Manager position.**	Jan 2014;Feb 2014; Mar 2014;May 2014; Jun 2014;Jul 2014; Sep 2014;Oct 2014	Jan 2014 AHJV has not submitted candidates that were deemed acceptable by HART for the AHJV Project Controls Manager and Systems Manager. These positions are filled with interim staff. Permanent replacements are critical to the success of this contract. Mar 2014 AHJV has not submitted candidates that were deemed acceptable by HART for the AHJV Project Controls Manager. This position is being filled with interim staff. A permanent replacement is critical to the success of this contract. AHJV filled the Systems Manager and Project Principal positions in February 2014. HART issued a letter to AHJV noting that a permanent replacement must be identified for the Project Controls Manager, but no timeline has been provided by AHJV. May 2014 AHJV has filled the CSC Project Controls Manager position on an interim basis while a search for permanent candidate continues. Oct 2014 AHJV has retained the interim CSC Project Controls Manager on a permanent basis.

Appendix G
Resolution 17-199, CD1

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. 17-199, CD1

RESOLUTION

REQUESTING THAT THE CITY AUDITOR CONDUCT A FOLLOW-UP AUDIT OF THE HONOLULU AUTHORITY FOR RAPID TRANSPORTATION.

WHEREAS, the cost of the Honolulu High-Capacity Transit Corridor Project ("Rail Project") has increased from $5,163,000,000 in June 2012 to a current estimated cost of approximately $9.5 billion; and

WHEREAS, on May 6, 2015, the City Council approved Resolution 15-90, which requested that the City Auditor conduct a performance audit of the Honolulu Authority for Rapid Transportation ("HART"); and

WHEREAS, on April 15, 2016, the City Auditor issued the Audit of the Honolulu Authority for Rapid Transportation ("HART Audit"); and

WHEREAS, the HART Audit made specific findings concerning HART's failure to construct the Rail Project economically, effectively, and efficiently, including:

1. HART's financial plan has not been updated to reflect the Rail Project's current financial condition in spite of significant cost increases; and

2. HART has failed to exercise sufficient controls over its financial information to ensure that data is complete and readily available; delay claims are adequately tracked, monitored, and reported; and pending utility agreements, contingency allowance figures, and county general excise and use tax surcharge receipts are complete and accurate; and

3. HART's Project Management Plan and Operations and Maintenance Plan are outdated and unreliable as decision making tools; and

4. Contract administration controls are needed to assure proper invoice payments and adequate procurement file documentation and to prevent improper payments; and

5. Rail Project cost estimates, details, and cost assumptions are unsubstantiated and project cost managers are not managing actual costs against budgeted costs; and

6. Project management and contract administration controls can be improved; and

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. 17-199, CD1

RESOLUTION

7. HART paid in stipends to unsuccessful bidders without knowing the bidders' actual costs; and

WHEREAS, the HART audit made numerous recommendations to address concerns raised in the audit including the following:

1. Regularly update its financial plan to reflect the current financial condition of the project; and

2. Update its Operations and Maintenance Plan to address funding, management, and other transit needs; and

3. Develop methods to ensure data used in reports are consistent, accurate, reliable, and can be reconciled among all the reports using the data; and

4. Develop a process for tracking and monitoring all costs, including the status of delay claim costs; and

5. Support cost estimates with consistent, reliable and sufficient information; and

6. Replace the contract management system (CMS) with a system that is more user friendly and more appropriate to managing the Rail Project; and

7. Use C2HERPS (city enterprise resource planning system) to develop, monitor, track, and report budget, financial, and accounting data; and

8. Require project managers to prioritize budget management, compare actual costs to cost estimates, analyze differences and make adjustments to prevent/minimize cost overruns; and

9. Develop and implement written internal policies and procedures that address stipend payments, document unsuccessful bidders' actual costs, determine compensated value, and limit payment to unsuccessful bidders' actual costs or the stipend amount whichever is less; and

10. Develop written policies and update procedures for contract administration; clearly distinguish the roles and responsibilities of managers and administrators; promote increased awareness of procurement and contract administration file record keeping; provide additional training; develop more robust guidance, policies, and

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. 17-199, CD1

RESOLUTION

procedures that address the variety of contracts and invoices HART receives; and standardize the invoice payment process to prevent improper payments; and

WHEREAS, HART stated in HART's response to the audit that most of the recommendations were unnecessary or unwarranted; and

WHEREAS, it is the Council's belief that a follow-up audit must be conducted concerning HART so that the reasons for the Rail Project's cost overruns, specifically the causes of HART's inefficiencies or uneconomical practices, can be determined so that the Council, administration and the HART Board can take actions to address these issues and prevent a recurrence of such inefficiencies and practices; now, therefore,

BE IT RESOLVED by the Council of the City and County of Honolulu that the City Auditor is requested to conduct a follow-up audit of the Honolulu Authority for Rapid Transportation which will include a review of the following concerns: 1) whether HART's contractors fulfilled their obligations in an economical, effective and efficient manner; 2) whether the expenditures charged to HART by the contractors were valid and accurate; 3) whether HART has implemented the project management and contract administration controls over the contractors needed to prevent cost overruns for the rail project; and 4) whether HART addressed the concerns raised and followed the recommendations made in the HART audit; and

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. 17-199, CD1

RESOLUTION

BE IT FINALLY RESOLVED that copies of this Resolution be sent to the Mayor, the Managing Director, the Executive Director and Chair of the Board of the Honolulu Authority for Rapid Transportation, and the City Auditor.

INTRODUCED BY:

Trevor Ozawa

DATE OF INTRODUCTION:

July 20, 2017
Honolulu, Hawaii

Councilmembers

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII
CERTIFICATE

RESOLUTION 17-199, CD1

Introduced: 07/20/17 By: TREVOR OZAWA Committee: BUDGET

Title: RESOLUTION REQUESTING THAT THE CITY AUDITOR CONDUCT A FOLLOW-UP AUDIT OF THE HONOLULU AUTHORITY FOR RAPID TRANSPORTATION.

Voting Legend: * = Aye w/Reservations

08/16/17	SPECIAL BUDGET	CR-307 - RESOLUTION REPORTED OUT OF COMMITTEE FOR ADOPTION AS AMENDED IN CD1 FORM.
09/06/17	COUNCIL	NOTE: PROPOSED FD1 POSTED ON THE AGENDA WAS NOT CONSIDERED. CR-307 AND RESOLUTION 17-199, CD1 WERE ADOPTED. 8 AYES: ANDERSON, ELEFANTE, FUKUNAGA, KOBAYASHI, MANAHAN, MARTIN, MENOR, PINE. 1 ABSENT: OZAWA.

I hereby certify that the above is a true record of action by the Council of the City and County of Honolulu on this RESOLUTION.

GLEN I. TAKAHASHI, CITY CLERK

RON MENOR, CHAIR AND PRESIDING OFFICER

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