

## **PMOC MONTHLY REPORT**

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

September 2016 (FINAL)

PMOC Contract Number: DTFT60-14-D-00012  
Task Order No. 3: Honolulu Rail Transit Project  
Project No: DC-27-5288  
Work Order No. 2  
OPs Referenced: OP 1 and 25

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Length of Time Assigned: Five Years (February 18, 2015 through February 17, 2020)

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- Appendix D: Project Overview and Map (Transmitted as a separate file)
- Appendix E: Safety and Security Checklist (Transmitted as a separate file)

## 1.0 EXECUTIVE SUMMARY

### 1.1 Project Description

- **General Description:** The Project is a 20-mile-long elevated fixed guideway rail system along Oahu's south shore between East Kapolei and Ala Moana Center. The Project will include 21 stations. The alignment is elevated, except for a 0.6-mile at-grade portion at the Leeward Community College station. The Project is planned to be delivered in four guideway segments.
  - Segment I (West Oahu/Farrington Highway) – East Kapolei to Pearl Highlands (7 miles/6 stations)
  - Segment II (Kamehameha Highway) – Pearl Highlands to Aloha Stadium (4 miles/3 stations)
  - Segment III (Airport) – Aloha Stadium to Middle Street (5 miles/4 stations)
  - Segment IV (City Center) – Middle Street to Ala Moana Center (4 miles/8 stations)
- **Length:** 20 miles
- **No. of Stations:** 21
- **Additional Facilities:** Maintenance and Storage Facility and parking facilities
- **Vehicles:** 80 vehicles
- **Ridership Forecast:** Weekday boardings – 104,300 (2020); 119,600 (2030)

### 1.2 Project Status

- HART Executive Director/Chief Executive Officer tendered his resignation on August 18, 2016. Mike Formby, current Director of the Department of Transportation Services (DTS) for the City and County of Honolulu and a member of the board, has been named as the Acting Executive Director for HART. The HART Board will begin a search for an Interim Executive Director. It is anticipated that the Interim Executive Director would remain in place for up to a year while the HART Board searches for a permanent replacement.
- Overall project is approximately 51.5% complete as of July 2016. The planned completion at this time is approximately 77.7% (based on HART's S-curve late plan).
- Overall design of the project is approximately 90% complete as of July 2016. The planned completion at this time is approximately 100%. The percent complete may change as a result of utilizing Design-Build (DB) procurement strategy for the Airport and City Center guideway and stations sections.
- Overall construction of the project is approximately 44.9% complete as of July 2016. The planned completion at this time is approximately 72.2% (based on HART's S-curve late plan).
- It should be noted that the reported percentages complete are based on the current Full Funding Grant Agreement (FFGA) budget and Revenue Service Date (RSD) reported in HART's Monthly Report. HART will be required to revise its progress curves when the project budget and RSD are re-baselined.
- Section 2.1.3 and Appendix B of this report provide the status of the current design and construction contracts. The following table provides the summary level status of the primary construction contracts taken from HART's Monthly Report:

Description	% Complete*		Schedule Status
	Actual**	Planned	
West Oahu /Farrington Highway (WOFH) DB Contract	93.3%	96.4%	6 months behind
Kamehameha Highway Guideway (KHG) DB Contract	79%	99.4%	18 months behind
Maintenance and Storage (MSF) DB Contract	99.8%	98.4%	On time
Core Systems Design-Build-Operate-Maintain (DBOM) Contract (CSC)	36.4%	52.1%	TBD***
Airport Advanced Utilities Construction Contract	57.0%	100%	2 months behind
Farrington Highway Station Group Construction Contract (FHSG)	1%	27.4%	On time
West Oahu Station Group Construction Contract (WOSG)	5.5%	11.5%	On time
Kamehameha Stations Group Construction Contract (KHSG)	0%	0.5%	On time
Elevators and Escalators	12.3%	65.5%	Pending
Fare Collection System	3.8%	0.1%	On time
Ramp H2R2	25.2%	100%	4 month time extension

\*As of June 2016

\*\* HART's assessment of Earned Value is based on a weighted expenditure calculation of the contract and is not a true Earned Value calculation.

\*\*\*Contract schedule is to be re-baselined to incorporate new milestone dates due to re-procurement of Westside Stations Group and use of DB for the eastside guideway and stations.

### 1.3 Core Accountability Items

The Estimate at Completion (EAC) and percentage complete shown below are based on data provided by HART. This data is under review and has not been fully validated by the PMOC.

Project Status: FFGA		Original at FFGA	HART Current Estimate
<b>Cost</b>	Cost Estimate	\$5,122,000,000	\$8,021,000,000 <sup>3</sup>
<b>Contingency</b>	Unallocated Contingency	\$101,900,000	Not reported
	Total Contingency (Allocated plus Unallocated)	\$643,600,000	\$714,000,000
<b>Schedule</b>	Revenue Service Date (RSD)	1/31/2020	12/2024 <sup>3</sup>
<b>HART Total Project Percent Complete</b>	Based on Expenditures <sup>1</sup>	51.5% (as of July 29, 2016)	
	Based on Earned Value <sup>2</sup>	47.0%	

<sup>1</sup>HART's reported percent complete does not reflect HART's current EAC. Actual percent complete using expended against current HART EAC is 27%.

<sup>2</sup>HART's assessment of Earned Value is based on the weighted expenditure calculation of the individual construction and design contracts and is not a true Earned Value calculation

<sup>3</sup>HART's current EAC and RSD as presented to HART Board on June 8, 2016. Estimated available funding based on GET extension is \$6.8 billion.

Major Issues	Status	Comments/Planned Action
Cost Increase & Schedule Delays	HART has experienced delays and has incurred costs as a result of the state and federal lawsuits as well as protested procurements.	See PMOC Monthly Report Section 1.4 for status.

Major Issues	Status	Comments/Planned Action
Post-Record of Decision (ROD) Changes	HART is considering several proposed design changes that may require additional environmental review.	FTA and HART hold bi-weekly meetings to discuss the status of any potential changes. HART has submitted or will submit information on each proposed change for FTA to determine the level of documentation required to assess impacts and subsequent mitigation measures.
Hawaii Electric Company (HECO)	50-foot clearance requirement for facility maintenance including pole replacement	See PMOC Monthly Report Section 1.4 for status.
Next Quarterly Meeting:	To be determined	

#### 1.4 PMOC Issues or Concerns

- The Estimate at Completion (EAC) indicates that the Project cost will exceed the FFGA budget primarily due to the Archaeological Inventory Survey (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 project staff developed an updated EAC and RSD:
  - Project as defined by the FFGA has a potential deficit of \$1.140 billion.
  - HART’s EAC is \$8.0 billion and includes \$1.1 billion in contingency and \$405 million in finance costs.
  - Contingency amount represents approximately 15% of the remaining work to be completed.
  - HART’s current estimated target RSD is December 2025 for the full FFGA scope. However, this date includes only minimal schedule contingency. The EAC and the RSD must be reviewed and validated by the PMOC when we are confident they are ready.
  - Without additional revenue, HART must consider options for construction within the current projected General Excise Tax (GET) revenues.
  - HART staff is reviewing project scope options that will be presented to the HART Board, City Council, and FTA. Any changes to the project scope would require coordination and consent from the Mayor, City Council, and FTA.
  
- The PMOC provided the following recommendations as a result of the 2016 Risk Refresh:
  - The predicted FTA model outcome at the p50 level is \$7.338 billion and at the p65 level is \$7.623 billion (excluding finance costs).
  - The revised RSD should be no earlier than December 2024, which represents the 75% Confidence level in the Schedule Risk Model.
  
- FTA issued a letter to the Mayor on June 6, 2016 requiring the City and County of Honolulu and HART to submit a Recovery Plan that “demonstrates HART is taking every reasonable measure to mitigate the cost overruns and minimize delay in the opening of the Project to revenue operations.” FTA expects the Recovery Plan by August 7, 2016. The Mayor transmitted a letter to FTA on June 24, 2016 requesting extension of the Recovery Plan deadline to June 2017. The FTA responded to the

Mayor's time extension letter on July 21, 2016 and is amenable to an extension until the end of the calendar year. However, the FTA intends to meet with HART in August 2016 to discuss the immediate milestones and deliverables for an interim plan. FTA expects the plan by the end of September 2016 that outlines their path forward. If HART cannot complete the project to Ala Moana with its current funding availability, it should nonetheless pursue a viable project with "local termini" and "independent utility." It is critical that HART provides a system of independent utility, at a minimum.

- HART is developing a robust risk management program with support from its Program Management Consultant. They are using a bottoms up risk modeling approach. The focus is primarily on construction contracts. PMOC has emphasized that HART must still focus on soft costs and ancillary contracts since they can impact overall cost and schedule. HART must still update the Risk and Contingency Management Plan (RCMP), which would include development of cost and schedule drawdown curves.
- APTA Peer Review – HART has engaged APTA to perform a Peer Review. It is anticipated that the review will occur in October 2016 with the draft report to be submitted in November 2016.
- Hawaiian Electric Company (HECO)
  - HECO has a collective bargaining agreement that has different wage scales and allows payment to its labor forces biweekly, which does not satisfy Davis-Bacon. HECO has requested a waiver that has so far been denied by the United States Department of Labor (DOL), although HECO has appealed. HECO and HART are still awaiting a final decision from the DOL.
  - HECO 46kV Substation near MSF area – HECO indicated a need in the 2018-2019 timeframe for a new 46kV substation to feed the MSF area due to requirements in HECO Rule 13 for line extensions and substations.
  - Horizontal Working Clearances Analysis:
    - Airport Guideway and Stations Segment (AGS) and City Center Guideway and Stations Segment (CCGS) – HART and HECO have agreed to underground the overhead 138kV lines. HART designers are progressing to a preliminary engineering design with feedback from HECO.
    - WOFH and KHG – HECO has agreed to the use of alternate bucket truck equipment in lieu of relocation of the overhead 46kV lines. HECO will test alternate crane and truck equipment to mitigate the 138 kV line conflicts.
- Buy America –
  - HART submitted to FTA a Waiver Request for the Train Control and Communications (TCCR) Equipment Variable Refrigerant Flow (VRF) air conditioning equipment on February 8, 2016. Additional information was subsequently provided at the request of FTA. FTA provided email on September 9, 2016 indicating TCCR equipment VRF units are components of the train control and communications equipment. Train control equipment is subject to the

“rolling stock” requirement of 60% domestic content. The PMOC will review the domestic content to confirm that it meets the minimum threshold.

- Ansaldo Honolulu Joint Venture (AHJV) has changed the truck supplier for the Light Rail Vehicles (LRV). AHJV submitted revised calculation that indicates 61.2% US content. AHJV previously reported 64% US content. HART intends to perform a post-delivery audit in 2017.
- Ship America – HART has had discussions with MARAD regarding Ship America requirements. MARAD expressed concern because AHJV has not engaged US flag carriers. HART has issued a letter to AHJV requiring action.

## **2.0 BODY OF REPORT**

### **2.1.1 Project Status**

- Overall project is approximately 51.5% complete as of July 2016. The planned completion at this time is approximately 77.7% (based on HART's S-curve late plan).
- Overall design of the project is approximately 90% complete as of July 2016. The planned completion at this time is approximately 100%. The percent complete may change as a result of utilizing DB procurement strategy for the Airport and City Center guideway and stations sections.
- Overall construction of the project is approximately 44.9% complete as of July 2016. The planned completion at this time is approximately 72.2% (based on HART's S-curve late plan).
- It should be noted that the reported percentages complete are based on the FFGA budget and RSD. HART will be required to revise its progress curves when the project budget and RSD are re-baselined as a result of the 2016 Risk Refresh.
- Section 2.1.3 and Appendix B of this report provide the status of the current design and construction contracts.

### **2.1.2 Status of Procurement**

- Airport Guideway and Stations DB Contract (AGS) – Shimmick/Traylor/Granite was the selected contractor with value of \$874.75 million. . Full execution of the contract occurred in September 2016. NTP is anticipated for October 2016.
- City Center Guideway and Stations DB Contract (CCGS) – Procurement is on hold. HART will not restart procurement until additional funding is secured.
- Pearl Highlands Parking Structure DB Contract (PHPS) – Request for Proposal (RFP) dates are yet to be determined.
- Program Management Support Consultant (PMSC) – Negotiations are ongoing. Award is scheduled for October 2016.
- Right-of-Way (ROW) Support II – Award occurred in July 2016 and NTP was issued on September 13, 2016.
- Complex Real Property Negotiations and Litigation Support Contract – Contract was executed on September 9, 2016.
- Outside Council for Land Court Petition Services – Best and Final Offer (BAFO) was received in August 2016 and are under evaluation.
- University of Hawaii (UH) West Oahu Temporary Park and Ride and UH West Oahu Campus Road “B” – To be determined (TBD)
- Core Systems Back-up Generators – TBD
- Photovoltaic for Rail Operations Center (ROC) –TBD

### **2.1.3 Status of Primary Construction Contracts**

- West Oahu/Farrington Highway (WOFH) Design-Build (DB) Contract –

- Contract is approximately 93.3% complete based on earned value (design and construction activities). The planned earned value at this time is approximately 96.4%.
- The contract was approximately six months behind schedule. However, HART and the contractor have agreed to a revised substantial completion date of March 2017 to complete all civil work.
- Guideway construction was essentially completed in July 2016.
- In general, quality of the contract is good, but there are some very significant issues as discussed in Section 2.6 of this report.
- Kamehameha Highway Guideway (KHG) DB Contract –
  - The contract is approximately 79% complete based on earned value (design and construction activities). The planned earned value at this time is approximately 99.4%.
  - Contract is over 18 months behind schedule. Contractor schedule has been continuously rejected. HART has indicated that the delay is the result of lower-than-planned production rates, resource sharing between the KHG and WOFH projects, and self-directed work stoppage for traffic signal and civil work.
  - Guideway is currently forecasted to be complete in May 2017. However, the completion of the overall contract has been pushed out to April 2018.
- Maintenance and Storage (MSF) DB Contract –
  - Contract is 100% complete with exception of closeout. HART issued substantial completion to KKJV on July 2, 2016. Closeout activities are expected to be completed by the end of 2016.
  - HART and KKJV are scheduled for non-binding mediation to resolve approximately 20 items in October 2016.
- Airport Advanced Utilities Construction Contract –
  - Contract is approximately 57% complete based on Earned Value. The planned earned value at this time is 100%.
  - The contract is approximately two months behind schedule. The delay was due to issues with Navy right of entry (ROE) for construction.
- West Oahu Station Group Construction Contract –
  - The contract is approximately 5.5% complete based on HART's earned value calculation. HART's planned earned value at this time is 11.5%.
  - The baseline schedule has not been approved.
  - Construction is anticipated to begin during the Third Quarter of 2016.
- Farrington Highway Station Group Construction Contract –
  - The contract is approximately 1% complete based on HART's earned value calculation. HART's planned earned value at this time is 27.4%.
  - The baseline schedule has not been approved.
  - Construction began in May 2016.
- Kamehameha Stations Group Construction Contract –
  - The contract is approximately 0% complete based on HART's earned value calculation. HART's planned earned value at this time is approximately 0.5%.
  - An Administrative Notice to Proceed (NTP) has been issued in April 2016.
  - The baseline schedule has not yet been approved.
  - Construction is anticipated to begin during the Third or Fourth Quarter of 2016.

- Elevators and Escalators Manufacture-Install-Maintain Contract -
  - The contract is approximately 12.3% complete based on HART's earned value calculation. HART's planned earned value at this time is approximately 65.5%.
  - A revised baseline schedule will need to be prepared at a later date once the DB contracts for the east portion of the guideway are awarded.
- Fare Collection System Contract -
  - The contract is approximately 3.8% complete based on HART's earned value calculation. HART's planned earned value at this time is approximately 0.1%.
  - The baseline schedule has not yet been approved.
- Ramp H2R2 Contract -
  - The contract is approximately 25.2% complete based on HART's earned value calculation. HART's planned earned value at this time is approximately 100%.
  - A four-month time extension was issued for unforeseen condition.

## 2.1.4 Status of Core Systems Contract

Core System Description	Status
<b>General</b>	
Overall	Contract is approximately 36.4% complete based on expenditures (design, manufacturing, and construction activities). The planned completion at this time is approximately 52.1% (based on late plan S-curve).
Design	<p>Following are the approximate levels of final design completion</p> <ul style="list-style-type: none"> <li>• LRVs – 90.9%</li> <li>• Communications – 39.6%</li> <li>• Train Control – 98%</li> <li>• Traction Power – 100%</li> <li>• Fire Detection – 58.3%</li> <li>• Platform Screen Gates – 90.9%</li> </ul>
Testing	AHJV is targeting energization of the rail in the MSF for the end of 2016 that would allow for limited dynamic testing.
Construction	CSC yard construction work at the MSF is anticipated to be completed in late 2016. AHJV will begin energizing the yard tracks in late 2016 or early 2017. CSC guideway construction will begin in 3 <sup>rd</sup> Quarter of 2016.
Schedule	AHJV contract schedule must be revised to reflect access dates. HART is deferring revision of milestone dates until it has better information on the other contracts that may impact AHJV. It is anticipated that AHJV will submit a change request for extended overhead and escalation due to delay as a result.
Staffing	AHJV Interim Safety Certification Manager is working part time. HART Safety and Security would prefer that she work on site full time.
System Performance Design	There are some concerns with AHJV’s method for calculating headways and round-trip times. Alignment changes from Airport and City Center Fixed Facility Contractors may affect system performance.
<b>Vehicle Subsystem</b>	
Vehicle Schedule	<p>LRV 1 – Static testing to begin in October 2016</p> <p>LRV 2 – Delivery planned for early 2017</p>
Buy America	AHJV changed the truck supplier for the Light Rail Vehicles (LRV). AHJV submitted revised calculation that indicates 61.2% US content. AHJV previously reported 64% US content. HART intends to perform post-delivery audit in 2017.
Ship America	HART has had discussions with MARAD regarding Ship America requirements. MARAD expressed concern because AHJV has not engaged US flag carriers. HART has issued a letter to AHJV requiring action.
<b>Traction Electrification Subsystem</b>	
Middle Street AM Antenna	HART has identified an alternate location to relocate the AM Antenna. ROW is working to execute the agreement and complete the relocation.
<b>O&amp;M Subsystem</b>	
MSF O&M	AHJV has provided preliminary MSF Operations Plans, but will resubmit to better follow HART’s Operations & Maintenance (O&M) Plan and FTA guidelines. CSC construction work is anticipated to be completed in late 2016.

Core System Description	Status
<b>Hawaiian Electric Company (HECO)</b>	
Activation Dates	HART and HECO are coordinating project schedule and HECO activation start dates for power.
Service Requests	AHJV has submitted HECO service requests for all system sites.

### **2.1.5 Real Estate Acquisition**

- HART right-of-way (ROW) group continues to work to secure construction rights of entry to support the program procurement schedule per the following HART Board direction:
  - City Council action to terminate all ROW actions in City Center has been deferred. HART Board to consider removing restriction placed on HART staff regarding initiating new acquisition or relocation activities in City Center.
  - FTA has conditionally approved HART's request regarding incidental use of 14 parcels in City Center. However, HART must provide specific information for each incidental use for FTA review and approval.
- There are currently no ROW actions impeding construction work and the objective is to secure site access via Rights of Entry.
- In order to support the upcoming procurement for the AGS DB Contract and to maintain the project schedule, eminent domain proceedings were authorized by the HART Board and the Honolulu City Council for several parcels. Negotiations are still continuing with all private property owners in the Airport section in an attempt to reach mutual agreement.
- HECO – HART will have approximately 100 new private easements that will be acquired for HECO undergrounding. Another 146 small parcels will be located in public streets and Hawaii Department of Transportation (HDOT) property. These parcels will eventually be turned over to HECO. The PMOC suggested this turnover could be viewed by FTA as a disposition, so the PMOC have asked that FTA be provided the opportunity to review the settlement document and approve the process.
- United States Postal Service (USPS) – Valuation dispute was resolved with binding arbitration using a mutually agreed third appraiser. Arbitration decision rendered in July 2016. USPS is preparing documents that will allow HART's contractor access to the site.

### **2.1.6 Third Party Agreements and Coordination**

The following agreements are critical and will impact the project if not completed in the near term:

- Aloha Stadium Construction Right of Entry (CROE) – HART anticipates that the Stadium Board may approve the CROE in October 2016.
- GSA – Details of Memorandum of Understanding (MOU) for all work adjacent to the Federal courthouse have been substantially agreed to but final agreement is still pending. The MOU is not on the critical path.
- United States Postal Service (USPS) – Valuation dispute was resolved with binding arbitration using a mutually agreed third appraiser. Arbitration decision rendered in July 2016. USPS is preparing documents that will allow HART's contractor access to the site.
- US Navy (USN) – Main outstanding issue is how national register nomination is handled for Big Makalama and Little Makalama. HART's consultant is working directly with USN Federal Preservation Officer (FPO) on the nomination.

### 2.1.7 Environmental mitigation measures

- Proposed Design Changes/Refinement – HART is considering several proposed design refinements that may require additional environmental review. FTA and HART hold bi-weekly meetings to discuss the status of any potential changes. HART has submitted or will submit information on each proposed change for FTA to determine the level of documentation required to assess impacts and subsequent mitigation measures:
  - Backup Generators – Submittal to FTA is pending.
  - AGS & CGS Precast Yard – FTA letter is pending.
  - City Center Alignment Shift (Ala Moana Station) – On hold
  - West Oahu Park-n-ride – Under internal review by HART.
  - Chinatown Station – On hold
  - Phased opening – On hold

### 2.2 Project Management Plan (PMP) and Sub-Plans

HART is in the process of updating several of its procedures and management plans. These updates are necessary due to HART organizational changes and the contract packaging changes that are being implemented. It is critical for HART to update these plans and procedures soon. Following is the status of the key management plan updates:

Plan	Update Status
Project Management Plan (PMP)	Update pending revised budget and RSD
Contract Packaging Plan (CPP)	Update pending revised budget and RSD
Construction Management Plan	Completed
Construction Safety Plan	Completed
Change Procedure	Completed
Quality Management Plan	Completed
Risk and Contingency Management Plan (RCMP)	Update pending revised budget and RSD
Financial Plan	Update pending revised budget and RSD
Real Estate Acquisition and Management Plan (RAMP)	Updated, Rev. 6 baselined March 2016
Operations and Maintenance Plan (OMP)	Baseline update pending – under internal review
Rail Fleet Management Plan (RFMP)	Pending signature
Safety and Security Management Plan (SSMP)	Baseline update to be completed by end of year – Update annually after re-baseline
Safety and Security Certification Plan (SSCP)	Baseline update to be completed by end of year - Update annually after re-baseline

### 2.3 Management Capacity and Capability (MCC)

HART Executive Director/Chief Executive Officer tendered his resignation on August 18, 2016. Mike Formby, current Director of the Department of Transportation Services (DTS) for the City and County of Honolulu and a member of the board, has been named as the Acting Executive Director for HART. The HART Board has begun a search for an Interim Executive Director. It is anticipated that the Interim Executive Director would remain in place for up to a year while the HART Board searches for a permanent replacement.

## 2.4 Project Cost

The grantee's Base Cost Estimate (BCE) dated March 19, 2012 is \$5.122 billion in Year-of-Expenditure (YOE) dollars, including \$644 million in allocated and unallocated contingency per the original FFGA budget (or 15.0% of the BCE) and \$173 million in financing costs. Of the \$644 million in total contingency, \$101 million is unallocated. The original FFGA Project Budget is as follows:

<b>Source</b>	<b>Amount</b>
Base Cost Estimate	\$4,305 billion
Total Contingency per the original FFGA budget	\$0.644 billion
Finance Charges per the original FFGA budget	\$0.173 billion
<b>Total FFGA Project Cost</b>	<b>\$5.122 billion</b>

### **Total Expenditures to Date – \$2.270.1 billion (through July 2016)**

The Estimate at Completion (EAC) indicates that the Project cost will 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 additional costs to the project. HART's EAC is \$8.021 billion and includes \$1.1 billion in contingency and \$405 million in finance costs.

The following table presents the FFGA budget and expenditures to date. The EAC for each Standard Cost Categories (SCC) will be provided once HART re-baselines its budget.

SCC	SCC Description	FFGA Budget	Base Cost	Allocated Cont.	Incurred
<b>10</b>	<b>GUIDEWAY &amp; TRACK ELEMENTS</b>	<b>1,275,328,962</b>	<b>1,114,305,144</b>	<b>161,023,818</b>	<b>432,916,076</b>
10.02	Guideway: At-grade semi-exclusive	0	0	0	17,378
10.04	Guideway: Aerial structure	1,175,328,184	1,022,380,670	152,947,514	365,403,400
10.08	Guideway: Retained cut or fill	8,077,393	7,492,943	584,450	4,109,548
10.09	Track: Direct fixation	86,332,027	79,437,204	6,894,823	63,354,874
10.11	Track: Ballasted	3,550,634	3,293,724	256,910	0
10.12	Track: Special (switches, turnouts)	2,040,724	1,700,603	340,121	30,876
<b>20</b>	<b>STATIONS, STOPS, TERMINALS, INTERMODA</b>	<b>506,165,689</b>	<b>421,804,742</b>	<b>84,360,947</b>	<b>6,149,756</b>
20.01	At-grade station, stop, shelter, mall, terminal, platform	7,333,599	6,111,333	1,222,266	0
20.02	Aerial station, stop, shelter, mall, terminal, platform	353,476,148	294,563,457	58,912,691	0
20.06	Automobile parking multi-story structure	79,690,518	66,408,765	13,281,753	0
20.07	Elevators, escalators	65,665,424	54,721,187	10,944,237	6,149,756
<b>30</b>	<b>SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS</b>	<b>99,425,456</b>	<b>92,535,013</b>	<b>6,890,443</b>	<b>118,433,020</b>
30.01	Administration Building: Office, Sales	0	0	0	205,266
30.02	Light Maintenance Facility	8,161,279	7,591,887	569,392	7,571,836
30.03	Heavy Maintenance Facility	40,906,889	38,099,138	2,807,751	44,886,233
30.04	Storage or Maintenance of Way Building	8,382,270	7,797,460	584,810	8,782,967
30.05	Yard and Yard Track	41,975,018	39,046,528	2,928,490	56,986,718
<b>40</b>	<b>SITework &amp; SPECIAL CONDITIONS</b>	<b>1,103,867,264</b>	<b>980,569,426</b>	<b>123,297,838</b>	<b>591,669,951</b>
40.01	Demolition, Clearing, Earthwork	34,695,802	29,980,157	4,715,645	4,780,623
40.02	Site Utilities, Utility Relocation	350,694,801	299,449,755	51,245,046	133,764,130
40.03	Haz. Mat'l, contam'd soil removal/mitigation, ground water treatments	7,228,935	6,590,542	638,393	4,413,634
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	30,841,906	26,979,122	3,862,784	11,391,864
40.05	Site structures including retaining walls, sound walls	8,637,582	7,998,960	638,622	7,521,200
40.06	Pedestrian / bike access and accommodation, landscaping	48,262,816	41,073,897	7,188,919	2,314,654
40.07	Automobile, bus, van accessways including roads, parking lots	212,536,181	181,979,369	30,556,812	12,958,829
40.08	Temporary Facilities and other indirect costs during construction	410,969,241	386,517,624	24,451,617	414,525,017
<b>50</b>	<b>SYSTEMS</b>	<b>247,460,781</b>	<b>221,284,483</b>	<b>26,176,298</b>	<b>52,760,194</b>
50.01	Train control and signals	91,492,532	81,982,556	9,509,976	6,989,403
50.02	Traffic signals and crossing protection	12,524,011	10,458,227	2,065,784	0
50.03	Traction power supply: substations	32,873,934	29,500,927	3,373,007	6,114,252
50.04	Traction power distribution: catenary and third rail	36,426,286	32,878,150	3,548,136	22,444,552
50.05	Communications	59,889,234	53,691,339	6,197,895	17,708,011
50.06	Fare collection system and equipment	10,221,753	9,159,277	1,062,476	(496,024)
50.07	Central Control	4,033,031	3,614,007	419,024	0
	<b>Construction Subtotal (10 – 50)</b>	<b>3,232,248,152</b>	<b>2,830,498,808</b>	<b>401,749,344</b>	<b>1,201,928,997</b>
<b>60</b>	<b>ROW, LAND, EXISTING IMPROVEMENTS</b>	<b>222,188,386</b>	<b>197,397,947</b>	<b>24,790,439</b>	<b>119,584,827</b>
60.01	Purchase or lease of real estate	201,658,907	179,360,664	22,298,243	105,165,044
60.02	Relocation of existing households and businesses	20,529,479	18,037,283	2,492,196	14,419,783
<b>70</b>	<b>VEHICLES</b>	<b>208,501,186</b>	<b>186,829,020</b>	<b>21,672,166</b>	<b>42,773,570</b>
70.02	Heavy Rail	186,061,066	166,721,385	19,339,681	31,815,624
70.06	Non-revenue vehicles	16,011,166	14,346,923	1,664,243	10,957,946
70.07	Spare parts	6,428,954	5,760,712	668,242	0
<b>80</b>	<b>PROFESSIONAL SERVICES</b>	<b>1,183,826,026</b>	<b>1,090,438,814</b>	<b>93,387,212</b>	<b>835,416,376</b>
80.01	Preliminary Engineering	95,120,484	94,055,262	1,065,222	104,144,827
80.02	Final Design	257,934,908	228,321,632	29,613,276	174,082,684
80.03	Project Management for Design and Construction	385,825,694	366,458,463	19,367,231	337,566,627
80.04	Construction Administration & Management	218,155,752	199,656,728	18,499,024	95,339,904
80.05	Professional Liability and other Non-Construction Insurance	52,138,030	46,549,724	5,588,306	28,600,749
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	76,135,125	67,641,006	8,494,119	23,310,224
80.07	Surveys, Testing, Investigation, Inspection	24,955,327	21,759,335	3,195,992	35,354,064
80.08	Start up	73,560,706	65,996,664	7,564,042	37,017,297
<b>90</b>	<b>Subtotal (10 – 80)</b>	<b>4,846,763,750</b>	<b>4,305,164,589</b>	<b>541,599,161</b>	<b>2,199,703,770</b>
	UNALLOCATED CONTINGENCY	101,871,170	0	101,871,170	0
<b>100</b>	<b>Subtotal (10 – 90)</b>	<b>4,948,634,920</b>	<b>4,305,164,589</b>	<b>643,470,331</b>	<b>2,199,703,770</b>
	FINANCE CHARGES	173,058,242			0
	<b>Total Project Cost (10 – 100)</b>	<b>5,121,693,162</b>	<b>4,305,164,589</b>	<b>643,470,331</b>	<b>2,199,703,770</b>
	Provisional Request for Payment				0
	<b>Total Project Cost (10 – 100)</b>	<b>5,121,693,162</b>	<b>4,305,164,589</b>	<b>643,470,331</b>	<b>2,199,703,770</b>

## 2.4.1 Contingency

HART's EAC was reviewed and the contingency was evaluated as part of the 2016 Risk Refresh Workshop. The PMOC has noted that there were significant adjustments incorporated into the EAC for the Risk Refresh Workshop.

HART forecasts indicated an increase to project costs and extension of the overall completion date for the project:

- EAC is \$8.021 billion and includes \$1.1 billion in contingency and \$405 million in finance costs.
- Contingency amount represents approximately 15% of the remaining work to be completed.
- RSD is October 2026 and includes approximately ten months of schedule contingency.

Once the budget is re-baselined, HART must then update the contingency drawdown curve for inclusion in the Risk and Contingency Management Plan (RCMP) and Monthly Reports.

## 2.4.2 Funding Sources

The following are the project capital revenue (funding) sources:

Source	Amount
General Excise Tax (GET)	\$3.358 billion
Section 5309	\$1.550 billion
Section 5307	\$0.210 billion
American Recovery and Reinvestment Act (ARRA)	\$0.004 billion
<b>Total</b>	<b>\$5.122 billion</b>

Following is the status of HART's GET receipts:

- HART has received approximately \$1.775 billion in GET funds since 2007. The anticipated GET funds per the Financial Plan are \$1.8 billion.
- HART has received approximately \$1.377 billion in GET funds since Preliminary Engineering, which began in October 2009. The anticipated GET funds per the Financial Plan are approximately \$1.4 billion.

The Hawaii State Legislature passed House Bill 134, which would extend the City and County of Honolulu's current 0.5% surcharge on the state's GET for the rail transit project for an additional five years through 2027. The Governor signed the bill on July 14, 2015. On January 27, 2016, the City Council approved Bill 23 to extend collection of the GET to December 2027.

Initial estimates indicated that the GET extension could generate approximately \$1.8 billion in revenue at a 5 percent growth rate. However, more current (and conservative) forecasts indicate that the additional revenue will be closer to \$1.5 billion. This increase in revenue is in addition to what was included in the FFGA. However, it will not be sufficient to complete the Project.

## 2.5 Project Schedule

HART's current project schedule indicates the following:

- The target for the Interim Opening is "To Be Determined" once the NTP for KHSG is issued.
- The target for construction completion is December 2025.
- The target for full revenue service is October 2026, including 10 months of contingency.

The following is a look ahead for important activities associated with the Project:

Period: October 2016 – December 2016		
Activity	Responsibility	Date
Monthly Progress Meeting	FTA, HART and PMOC	October 14, 2016
Monthly Progress Meeting	FTA, HART and PMOC	November 16, 2016
Monthly Progress Meeting	FTA, HART and PMOC	December 14, 2016
Quarterly Meeting	FTA, HART and PMOC	TBD

## 2.6 Quality Assurance/Quality Control (QA/QC)

- HART and AHJV held a Quality Audit of the LRV production facility in Pittsburg, CA in June 2016. There were numerous findings, but none were significant. HART staff will travel to Pittsburg in late September 2016 to review AHJV's response to findings.
- Drilled Shafts – To date, there is one (1) Open Non-compliance Reports (NCR) related to the cross-hole sonic logging (CSL) reports. There were few CSL issues encountered recently, indicating that the construction process has improved.
- WOFH Tendons – Rusting and/or failing tendons in WOFH span segments have been identified. The condition is being investigated to avoid impacting the loading capacity of the spans. HART is concerned that the full extent of any compromised tendons has not been established.
- Shims – HDPE (blue) shims appear to be brittle and are cracking. HDOT submitted a letter to HART requesting a Corrective Action Plan (CAR) for rail shims being installed on the guideway. HART is aware of the issue and has requested additional information from Kiewit, including providing test results to clear the CAR. HART is awaiting lab results from testing of shims. Preliminary indications are that the shims may have less carbon content than required by ASTM. Responsibility for the replacement of inadequate shims has not yet been addressed between HART and its contractors.

## 2.7 Safety and Security

- HART Design Conformance is progressing with the exception of a few CORE Systems Design Criteria Conformance Checklists (DCCC). Construction Conformance Checklists are pending finalization of the construction checklists and the submission of construction submittals/test reports.
- AHJV CSC Safety Certification Manager and CSC Security Manager are being staffed by personnel located on the mainland. HART stated the CSC contract does not have a requirement to have an on-site Safety Certification Manager and Security Manager. HART Safety and Security has an issue with how CSC Safety and Security is meeting

their submittal requirements and the part time Safety Manager. HART requires a Safety Manager for testing and plans. This Manager needs to be on site for this work. HART Project Director is to resolve the issue internally with staff.

- HDOT SOA issued a letter to HART regarding open NCR's related to shims and tendons on the Guideway and requested a corrective action plan and path forward to resolve issues.

## **2.8 Operations & Maintenance (O&M)**

- Staffing – HART potential candidate for Deputy Director of Operations and Maintenance position has accepted the offer. HART O&M Director is evaluating staffing needs and will add additional staff to support AHJV MSF skeleton crew.
- AHJV anticipates having 12 O&M personnel staff working at the MSF to perform light maintenance as soon as final completion issued by HART by the end of this year.
- HART is reviewing AHJV submittals in four areas that include building occupancy, energization, vehicles and functional track.
- HART is to develop internal O&M plans and procedures.
- HART will initiate public outreach with several schools near the project alignment to foster safety awareness.

## **2.9 Project Risk**

A Risk Refresh Workshop was held on March 30, 2016. The PMOC reviewed any Project changes that may affect and impact the management capacity and capability of the grantee. The review also focused on the Project's FFGA scope, schedule, cost estimate, and risk and contingency management. The FINAL Risk Refresh Report was transmitted to HART in June 2016.

HART is developing a robust risk management program with support from its Program Management Consultant. They are using a bottoms up risk modeling approach. The focus is primarily on construction contracts. PMOC has emphasized that HART must still focus on soft costs and ancillary contracts since they can impact overall cost and schedule. HART must still update the Risk and Contingency Management Plan (RCMP), which would include development of cost and schedule drawdown curves.

## 2.10 Action Item Table

Item No.	Item	Responsible Party	Date Identified	Date Due	Date Completed	Status
1	Resolve HECO issue with Davis-Bacon requirements	HART/FTA	Mar-14	On-going		Open – HECO waiver is pending.
2	Updates required for Recovery Plan:					
	Contract Packaging Plan	HART	Aug-14	TBD		Pending update of budget and schedule
	Financial Plan	HART	Apr-14	TBD		Pending update of budget and schedule
	Budget	HART	Apr-14	TBD		In progress
	MPS	HART	Apr-14	TBD		In progress
	RCMP	HART	Sept-13	TBD		Pending update of budget and schedule
3	Provide Implementation Plan for Recovery Plan	HART	Aug-16	Sept-16		
4	Provide Recovery Plan	HART	Aug-16	Dec-16		
5	Provide AGS bi-lateral signed contract	HART	Aug-16	Sept 16		
6	Provide technical report on guideway shim issue	HART	Sep-16	Oct-16		
7	Provide Peer Review agenda and list of participants	HART	Sep-16	Oct-16		

### 3.0 APPENDICES

#### Appendix A: Acronym List

AGS	▪ Airport Guideway and Stations
AHJV	▪ Ansaldo Honolulu Joint Venture
AIS	▪ Archeological Inventory Survey
ARRA	▪ American Recovery and Reinvestment Act
BAFO	▪ Best and Final Offer
BCE	▪ Base Cost Estimate
BFMP	▪ Bus Fleet Management Plan
CCGS	▪ City Center Guideway and Stations
CE&I	▪ Construction Engineering and Inspection
CMP	▪ Construction Management Plan
CPP	▪ Contract Packaging Plan
CROE	▪ Construction Right of Entry
CSC	▪ Core Systems Contract
CSL	▪ Cross-hole Sonic Logging
DAGS	▪ Department of Accounting & General Services
DB	▪ Design-Build
DBB	▪ Design-Bid-Build
DBOM	▪ Design-Build-Operate-Maintain
DCCA	▪ Department of Commerce and Consumer Affairs
DHHL	▪ Department of Hawaiian Home Lands
DLNR	▪ Department of Land and Natural Resources
DOL	▪ Department of Labor
EAC	▪ Estimate at Completion
EIS	▪ Environmental Impact Statement
FD	▪ Final Design
FEIS	▪ Final Environmental Impact Statement
FFGA	▪ Full Funding Grant Agreement
FHSG	▪ Farrington Highway Station Group
FPO	▪ Federal Preservation Officer
FTA	▪ Federal Transit Administration
FY	▪ Fiscal Year
GEC	▪ General Engineering Consultant
GET	▪ General Excise Tax
GSA	▪ General Services Administration
HART	▪ Honolulu Authority for Rapid Transportation
HDOT	▪ Hawaii Department of Transportation
HECO	▪ Hawaiian Electric Company
IFB	▪ Invitation to Bid
KHG	▪ Kamehameha Highway Guideway
KHSG	▪ Kamehameha Highway Stations Group
KIWC	▪ Kiewit Infrastructure West Company
KKJV	▪ Kiewit Kobayashi Joint Venture
LCC	▪ Leeward Community College
LRV	▪ Light Rail Vehicle
MCC	▪ Management Capacity and Capability
MMP	▪ Mitigation Monitoring Program
MOU	▪ Memorandum of Understanding
MPS	▪ Master Project Schedule
MSF	▪ Maintenance and Storage Facility
NCR	▪ Non-Compliance Report
NEPA	▪ National Environmental Policy Act

NTP	▪ Notice to Proceed
O&M	▪ Operations & Maintenance
OCIP	▪ Owner Controlled Insurance Program
OP	▪ Oversight Procedure
P3	▪ Public Private Partnership
PHPS	▪ Pearl Highlands Parking Structure
PMOC	▪ Project Management Oversight Contractor
PMP	▪ Project Management Plan
PMSC	▪ Project Management Support Consultant
PSG	▪ Platform Screen Gate
QA/QC	▪ Quality Assurance/Quality Control
QAM	▪ Quality Assurance Manager
QMP	▪ Quality Management Plan
RAMP	▪ Real Estate Acquisition and Management Plan
RCMP	▪ Risk and Contingency Management Plan
RFB	▪ Request for Bids
RFMP	▪ Rail Fleet Management Plan
RFP	▪ Request for Proposals
RFQ	▪ Request for Qualifications
ROC	▪ Rail Operations Center
ROD	▪ Record of Decision
ROE	▪ Right of Entry
ROW	▪ Right of Way
RSD	▪ Revenue Service Date
SCC	▪ Standard Cost Category
SOA	▪ State Oversight Agency
SSCP	▪ Safety and Security Certification Plan
SSMP	▪ Safety and Security Management Plan
SSPP	▪ System Safety Program Plan
SSSPS	▪ System Safety and Security Program Standards
TBD	▪ To be Determined
UH	▪ University of Hawaii
USN	▪ United States Navy
USPS	▪ United States Postal Service
WOFH	▪ West Oahu/Farrington Highway
WOSG	▪ West Oahu Stations Group
YOE	▪ Year of Expenditure

## Appendix B: Contract Status

Contract	Description	Contractor	Base Contract Value	Change Orders	Change Order %	Current Contract Value	Expended	% Exp.	Award Date	Contract Compl. Date	Target Compl.	Notes
MM-901	Program Management Support Consultant (PMSC-2)	HDR/InfraConsult LLC	\$33,376,897	\$18,444,023	55%	\$51,820,920	\$43,875,716	85%	Mar-12	Mar-17	-	Re-compete complete. In negotiations
MM-913	General Engineering Consultant (GEC III)	CH2M Hill	\$46,143,277	\$398,451	1%	\$46,541,728	\$30,460,903	65.4%	Dec-13	Apr-19	-	
MM-290	Construction Engineering and Inspection (West)	PGH Wong Engineering, Inc.	\$54,232,480	\$0	0%	\$54,232,480	\$28,003,077	52.0%	Jan-14	Jan-20	-	
MM-596	Construction Engineering and Inspection II (East)	Stantec Consulting Services Inc.	\$55,036,130	\$0	0%	\$55,036,130	\$5,830,050	11.0%	Sep-15	Dec-19	-	
MM-962	Core System Contract Oversight Consultant	Lea + Elliott, Inc.	\$43,988,989	\$0	0%	\$43,988,989	\$17,301,205	39.3%	Feb-14	Sep-19	-	
FD-140	West Oahu Station Group Construction FD	URS, Inc.	\$7,789,000	\$2,270,103	29%	\$10,059,103	\$9,489,489	95%	Jun-12	Dec-16	-	
FD-240	Farrington Highway Station Group FD	HDR, Inc. / URS	\$9,300,696	\$4,981,349	54%	\$14,282,045	\$12,606,322	88%	Jan-11	Dec-16	-	
FD-340	Kamehameha Highway Station Group Construction FD	Anil Verma, Inc.	\$8,702,592	\$1,257,636	14%	\$9,960,228	\$9,451,210	95%	Nov-12	Dec-16	-	
FD-430	Airport Section Guideway and Utilities FD	AECOM	\$38,840,960	\$4,293,512	11%	\$43,134,472	\$41,647,169	96.6%	Dec-11	Jun-17	-	
FD-440	Airport Station Group Construction FD	AECOM	\$10,177,365	\$1,396,487	14%	\$11,573,852	\$10,059,820	87%	Nov-12	Jul-17	-	Combined with Airport Stations into DB Contract.
FD-530	City Center Section Guideway and Utilities FD	AECOM	\$43,948,220	\$3,149,342	7%	\$47,097,562	\$43,605,272	93%	Jul-12	May-18	-	Combined with Dillingham and Kaka'ako Stations into DB Contract.
FD-550	Dillingham and Kaka'ako Station Group Construction FD	Perkins & Will	\$18,321,918	\$1,309,799	5%	\$19,631,717	\$12,293,535	62.6%	Jun-13	Jul-18	-	

Contract	Description	Contractor	Base Contract Value	Change Orders	Change Order %	Current Contract Value	Expended	% Exp.	Award Date	Contract Compl. Date	Target Compl.	Notes
DB-120	West Oahu/Farrington Highway DB	KIWC	\$482,924,000	\$167,384,042	34.6%	\$650,308,042	\$606,930,718	93.3%	Nov-09	Jul-16	May-17	Approximately six months behind schedule. HART and KIWC working to mitigate impacts. Contractor schedule has been continuously rejected, but HART has not taken action.
DB-200	Maintenance and Storage Facility DB	Kiewit/Kobayashi JV	\$195,258,000	\$79,600,568	41%	\$274,858,568	\$274,180,830	99.8%	Jun-11	May-16	Jul-16	
DB-320	Kamehameha Highway Guideway DB	KIWC	\$372,150,000	\$18,142,386	4.8%	\$390,292,368	\$296,348,421	76.1%	Jun-11	Sep-16	Sep-17	Approximately 12 months behind schedule. HART and KIWC working to mitigate impacts. Contractor schedule has been continuously rejected, but HART has not taken action.
DBOM-920	Core Systems Contract	Ansaldo/Honolulu JV	\$573,782,793	\$27,037,894	4.7%	\$600,820,687	\$218,662,954	36.4%	Nov-11	Jan-21	Jan-22	Schedule must be revised to reflect Construction Access Milestone dates. HART is deferring revision of milestone dates until they have better information on the other contracts. Anticipated AHJV will submit a change request for extended overhead and escalation.
MI-930	Elevators and Escalators Install & Maintain	Schindler Elevator Corporation	\$50,982,714	\$1,016,321	2%	\$51,999,035	\$6,290,580	12.3%	Aug-13	Jun-18	Jun-18	Schedule may be delayed due to revised Construction Access Milestone dates.
DBB-505	Airport Section Utilities Construction	Nan, Inc.	\$27,993,290	(\$608,480)	0%	\$27,384,809	\$15,531,901	57%	Jul-14	Jul-16	Sep-16	Approximately two months behind schedule due to issues with Navy ROE.
DBB-525	Airport Section Guideway Seven Pier Construction	HDCC/CJA JV	\$3,973,000	\$54,843	1%	\$4,027,843	\$4,027,843	100%	Sep-14	Feb-15	-	Closeout is ongoing.
DBB-171	West Oahu Station Group Construction	Nan, Inc.	\$56,088,470	\$0	0%	\$56,088,470	\$3,064,070	5.5%	Oct-15	Mar-18	Mar-18	
DBB-271	Farrington Highway Station Group Construction	Hawaiian Dredging	\$78,999,000	\$0	0%	\$78,999,000	\$450,000	1%	Aug-15	Sep-17	Sep-17	
DBB-371	Kamehameha Highway Stations Group Construction	Nan, Inc.	\$115,805,845	\$0	0%	\$115,805,845	\$0	0%	Apr-16	Nov-18	Nov-18	

<b>Contract</b>	<b>Description</b>	<b>Contractor</b>	<b>Base Contract Value</b>	<b>Change Orders</b>	<b>Change Order %</b>	<b>Current Contract Value</b>	<b>Expended</b>	<b>% Exp.</b>	<b>Award Date</b>	<b>Contract Compl. Date</b>	<b>Target Compl.</b>	<b>Notes</b>
MI-900	Fare Collection System	INIT	\$15,464,198	\$0	0%	\$15,464,198	\$593,840	3.8%	Mar-16	Sep-21	Sep-21	
DBB-385	Ramp H2R2	Royal Contracting	\$5,203,646	\$0	0%	\$5,203,646	\$1,311,578	25.2%	May-15	May-16	Mar-17	Four month time extension issued due to additional HDOT required soil remediation and submittal of required documentation.

## Appendix C: PMOC Team

Name	Position	Background
Tim Mantych, PE	Program Manager	Overall responsibility for the Jacobs PMO program. He has spent 16 years in key management roles on the PMO program, including Program Manager and Task Order Manager, effectively managing oversight services for major capital projects in Regions V and IX.
Bill Tsiforas	Task Order Manager	Responsible for oversight of this task order. He has over 25 years of experience and has served as Task Order Manager and as a systems integration manager in the PMO Program since 2008. His project management experience covers a wide range of transit projects including BRT, monorail, streetcar, light rail, and heavy rail systems. In rail projects and other transportation modes, he has experience in management of project planning, engineering, and architecture service contract, engineering design, and construction management.
Keith Konradi, PE	Civil Engineer	Has extensive over 40 years of experience as a civil engineer and trackwork expert who can provide informed reviews of all issues regarding the design and construction of civil, railroad, and transit. He has specialized in railroad and transit projects, designing new alignments, realignments, profiles, yard, and maintenance facility layouts, connections, and interlockings.
Charles Neathery	Construction Management Manager	Responsible for oversight of construction management activities and project scheduling. He has served on the PMO Program since 1995 in various key positions: Deputy Program Manager, Task Order Manager, Construction Manager, Risk Manager, and Technical Specialist. His heavy civil construction background as a construction contractor Project Manager and as Program and Controls Director combines experience on both sides of the industry as a builder and a manager.
Tim Morris	Cost Estimating Manager	Responsible for oversight of cost estimating and cost control. He brings 34 years of experience in cost estimating. His background includes: construction and project management of heavy civil projects; cost estimating; field engineering; scheduling; project controls; change order negotiations; and procurement.
Brian Carpenter	Project Scheduling Manager	Responsible for oversight of project scheduling. Has over 25 years of experience project controls including schedule development and management. Well versed with following: Primavera Project Planner (P3), Primavera 7.0, Suretrak, M.S. Project, Schedule Analyzer, Claim Digger, Private Investigator, and PertMaster (Monte Carlo Risk Analyzer), as well as document management tools: Prolog, ProjectWise, and Contract Manager (Expedition).
Dorothy Schulz, PhD	Systems Safety Manager	Responsible for oversight of safety and security activities. She has been Director of Transit Security Practice at Interactive Elements for more than 20 years. She performs safety and security studies and oversights for various agencies. She also performs FTA State Oversight Agency (SOA) audits as well as Safety and Security Readiness Reviews (SSRRs). Dr. Schulz has written and/or reviewed numerous TVAs, PHAs, SSPPs, and SSPs; all require comprehensive understanding of the 882C Standard.
Arun Virginkar	Rail Equipment Engineer	Responsible for oversight of rail vehicle engineering and Buy America compliance. He has been involved with the PMOC Program since 1994. He has experience in contract management, vehicle and systems equipment engineering, operations and maintenance planning, system integration and testing, safety certification plans, and quality and system assurance. He also has specialized experience in Buy America Pre-Award and Post-Delivery audits of car builders.
Bob Merryman	Real Estate Manager	Responsible for oversight of real estate activities on the project. He has 35 years of practical experience in the implementation of the Uniform Act in federally funded projects. In addition, he has written three text books used by FHWA, as well as the one additional course text used by the FTA discussing the implementation of the Uniform Act. He also served as lead investigator on the business retrospective study for the Federal Highway Administration. The information gleaned from this investigation was to develop the most recent revisions to 49 CFR Part 24.

David Sillars, PhD	Risk Assessment Manager	Responsible for oversight of the risk management activities for the project. He has over 35 years of experience in risk and management consulting and transportation research. He assisted FTA with editing and developing the updated MAP-21 Risk and Contingency Management Oversight Procedure (OP 40) and updated FTA risk workbook. He has co-developed and delivered the New Starts risk management training program for the National Transit Institute on behalf of the FTA.
David Nelson	Transit Operations Manager	Responsible for oversight of the transit operations planning for the project Has more than 30 years of experience with in-depth, working knowledge of North American public transportation agencies. Was previously assistant director and project manager of planning and manager of transit applications for the Massachusetts Bay Transportation Authority and the manager of planning and administration for the Boston & Maine Railroad.

## Appendix D: Project Overview and Map

**Date:** September 2016  
**Project Name:** Honolulu Rail Transit Project  
**Grantee:** City and County of Honolulu  
**FTA Regional contact:** Catherine Luu  
**FTA HQ contact:** Kim Nguyen

### SCOPE

<b>Description</b>	The proposed Project is an approximately 20-mile rail alignment extending from East Kapolei to Ala Moana Center.
<b>Guideway</b>	The majority of the Project is to be built on aerial structure, but the Project also includes a short at-grade section (0.6 miles).
<b>Stations</b>	21 stations (20 aerial and 1 at-grade)
<b>Support Facility</b>	Maintenance and Storage Facility (located near Leeward Community College)
<b>Vehicles</b>	80 light metro rail
<b>Ridership</b>	104,300 weekday boardings in 2019; 119,600 weekday boardings in 2030

### SCHEDULE

10/09 Approval Entry to PE	03/19 Estimated RSD at Entry to PE
12/11 Approval Entry to FD	03/19 Estimated RSD at Entry to FD
06/12 Request for FFGA	03/19 Estimated RSD at Request for FFGA
12/12 FFGA	01/20 RSD at FFGA

### COST

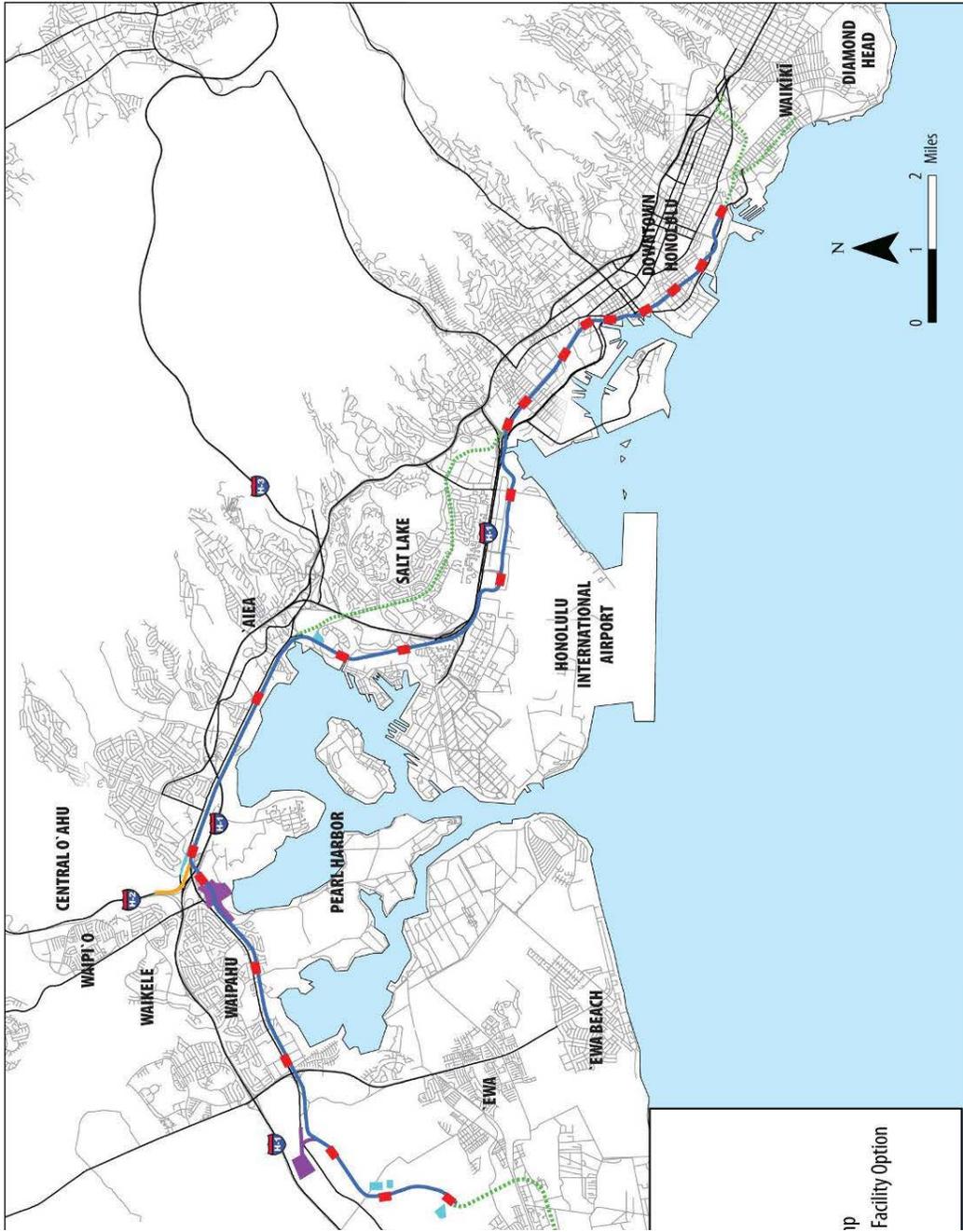
\$5.348 B Total Project Cost (\$YOE) at Approval Entry to PE  
\$5.126 B Total Project Cost (\$YOE) at Approval Entry to FD  
\$5.122 B Total Project Cost (\$YOE) at request for an FFGA  
\$5.122 B Total Project Cost (\$YOE) at FFGA

\$2.270.1B Amount of Expenditures at date of this report  
51.5% complete (Total Project Expenditures/Total Project Cost)

### Notes

- HART's reported percent complete does not reflect HART's current EAC. Actual percent complete using expended against current HART EAC is 27%.
- HART's current EAC and RSD:
  - Estimate-at-Completion (EAC) is \$8.021 billion and includes \$1.1 billion in contingency and \$405 million in finance costs.
  - Revenue Service Date (RSD) is October 2026 and includes approximately 10 months of schedule contingency.

# Honolulu Rail Transit Project Map



## Appendix E: Safety and Security Checklist

<b>Project Overview</b>			
Project Name	Honolulu Rail Transit Project		
Project mode (Rail, Bus, BRT, Multimode)	Rail		
Project phase (Preliminary Engineering, Final Design, Construction, or Start-up)	FD		
Project Delivery Method (Design/Build, Design/Build/Operate Maintain, CMGC, etc.)	DB, DBB and DBOM		
<b>Project Plans</b>	<b>Version</b>	<b>Review by FTA</b>	<b>Status</b>
Safety and Security Management Plan	5	Y	Complete
Safety and Security Certification Plan	4	Y	Complete
System Safety Program Plan			Submittal date Mar-13
System Security Plan or Security and Emergency Preparedness Plan (SSEPP)		N	TBD
Construction Safety and Security Plan	3	Jun-11	Completed Oct 2015
<b>Safety and Security Authority</b>	<b>Y/N</b>		<b>Status</b>
Is the grantee subject to 49 CFR Part 659 state safety oversight requirements?	Y		
Has the state designated an oversight agency as per Part 659.9	Y		Executive Order 10-04 effective April 6, 2010
Has the oversight agency reviewed and approved the grantee's SSPP as per Part 659.17?	N		Submission/Approval in 2013
Has the oversight agency reviewed and approved the grantee's Security Plan or SEPP as per Part 659.21?	N		Submission/Approval in 2013
Did the oversight agency participate in the last Quarterly Program Review Meeting?	Y		April 16, 2014
Has the grantee submitted its safety certification plan to the oversight agency?	Y		SOA information
Has the grantee implemented security directives issues by the Department Homeland Security, Transportation Security Administration?	N		None issued to date
<b>SSMP Monitoring</b>			
Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this project?	Y		
Grantee reviews the SSMP and related project plans to determine if updates are necessary?	Y		
Does the grantee implement a process through which the Designated Function (DF) for Safety and DF for Security are integrated into the overall project management team? Please specify.	Y		
Does the grantee maintain a regularly scheduled report on the status of safety and security activities?	Y		Reported Monthly
Has the grantee established staffing requirements, procedures and authority for safety and security activities throughout all project phases?	Y		
Does the grantee update the safety and security responsibility matrix/organization chart as necessary?	Y		
Has the grantee allocated sufficient resources to oversee or carry out safety and security activities?	Y		
Has the grantee developed hazard and vulnerability analysis techniques, including specific types of analysis to be performed during different project phases?	Y		

Does the grantee implement regularly scheduled meetings to track to resolution any identified hazards and/or vulnerabilities?	Y	
Does the grantee monitor the progress of safety and security activities throughout all project phases? Please describe briefly.	Y	
Does the grantee ensure the conduct of preliminary hazard and vulnerability analyses? Please specify analyses conducted.	Y	
Has the grantee ensured the development of safety design criteria?	Y	
Has the grantee ensured the development of security design criteria?	Y	
Has the grantee verified conformance with the safety and security requirements in the design?	N	Will be done during FD/Construction
Has the grantee identified conformance with safety and security requirements in equipment and materials procurement?	N	Will be done during FD/Construction
Has the grantee verified construction specification conformance?	N	Will be done during construction
Has the grantee identified safety and security critical tests to be performed prior to passenger operations?	N	Will be done during Rail Activation phase
Has the grantee verified conformance with safety and security requirements during testing, inspection and start up phases?	N	Will be done during Rail Activation phase
Does the grantee evaluate change orders, design waivers, or test variances for potential hazards and/or vulnerabilities?	N	Will be done during FD/Construction
Has the grantee ensured the performance of safety and security analyses for proposed work-arounds?	N	Will be done during Rail Activation phase
Has the grantee demonstrated through meetings or other methods, the integration of safety and security in the following: <ul style="list-style-type: none"> <li>• Activation Plan and Procedures</li> <li>• Integrated Test Plan and Procedures</li> <li>• Operations and Maintenance Plan</li> <li>• Emergency Operations Plan</li> </ul>	N	Will be done during Rail Activation phase
Has the grantee issued final safety and security certification?	N	Will be done after completion of Rail Activation phase
Has the grantee issued the final safety and security verification report?	N	Will be done during Rail Activation phase
<b>Construction Safety</b>		
Does the grantee have a documented/implementation Contractor Safety Program with which it expects contractors to comply?	Y	CSP development is included in construction contracts
Does the grantee's contractor(s) have a documented company-wide safety and security program plan?	TBD	Is a requirement of CSSP
Does the grantee's contractor(s) have a site-specific safety and security program plan?	TBD	Is a requirement of CSSP
Provide the grantee's OSHA statistics compared to the national average for the same type of work?	TBD	None developed yet
If the comparison is not favorable, what actions are being taken by the grantee to improve its safety record?	TBD	None developed yet
Does the grantee conduct site audits of the contractor's performance versus required safety/security procedures?	Y	Audit required in CSSP

<b>Federal Railroad Administration</b>		
If the shared track: has the grantee submitted its waiver request application to FRA? (Please identify any specific regulations for which waivers are being requested)	NA	
If the shared corridor: has grantee specified specific measures to address shared corridor safety concerns?	NA	
Is the Collision Hazard Analysis underway?	NA	
Other FRA required Hazard Analysis – fencing, etc?	NA	
Does the project have Quiet Zones?	NA	
Does FRA attend Quarterly Review Meetings?	NA	