

# **PMOC MONTHLY REPORT**

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

June 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. 1  
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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## 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

- Overall project is approximately 47.2% complete as of April 2016. The planned completion at this time is approximately 72.9% (based on HART's S-curve late plan).
- Overall design of the project is approximately 89.1% complete as of April 2016. The planned completion at this time is approximately 99.6%. 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 40.1% complete as of April 2016. The planned completion at this time is approximately 66.42% (based on HART's S-curve late plan).
- It should be noted that the reported percentages complete are based on the current FFGA budget and Revenue Service Date (RSD) reported in HART's Monthly Report in April 2016. HART will be required to revise their 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. 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              | 86.7%       | 93.1%   | 10 months behind   |
| Kamehameha Highway Guideway (KHG) DB Contract                 | 61.5%       | 97%     | 12 months behind   |
| Maintenance and Storage (MSF) DB Contract                     | 98.9%       | 95.8%   | On time            |
| Core Systems Design-Build-Operate-Maintain (DBOM) Contract    | 32.1%       | 47.1%   | 6 months behind*** |
| Airport Advanced Utilities Construction Contract              | 43%         | 98.1%   | 7 months behind    |
| Farrington Highway Station Group Construction Contract (FHSG) | 0%          | 0%      | On time            |
| West Oahu Station Group Construction Contract (WOSG)          | 0%          | 0%      | On time            |
| Kamehameha Stations Group Construction Contract (KHSG)        | 0%          | 0%      | On time            |

\*As of April 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              | \$7,967,000,000 <sup>3</sup> |
| <b>Contingency</b>                         | Unallocated Contingency                           | \$101,900,000                | Not reported                 |
|  | Total Contingency<br>(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>                | 40.8% (as of April 29, 2016) |                              |
|  | Based on Earned Value <sup>2</sup>                | 47.2%                        |                              |

<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 26%.

<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 \$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.<br><br>The PMOC completed a Risk Refresh in March 2016. The final report that contains the results of the Risk Refresh was transmitted to HART in June 2016.  |
| Post-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. |

| Major Issues                   | Status  | Comments/Planned Action                         |
|--------------------------------|---|---|
| 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 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 that was presented to the HART Board on June 8, 2016:
  - Project as defined by the FFGA has a potential deficit of \$1.140 billion.
  - HART’s Estimate-at-Completion (EAC) is \$7.967 billion and includes \$736 million in contingency and \$393 million in finance costs.
  - Contingency amount represents approximately 15% of the remaining work to be completed.
  - HART’s estimated Revenue Service Date (RSD) is December 2024 and includes approximately 8 months of schedule contingency.
  - Without additional revenue, HART must consider options for construction within the current projected GET revenues.
  - HART staff presented five “Build to Budget” options as noted in the presentation.
  - A Working Group will be convened to explore all options and develop a recommendation. 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. However, HART intends to request an extension of the due date of the Recovery Plan due to the need to coordinate with the Mayor and City Council.
  
- HART is developing a robust risk management program with support from their Program Management Consultant. They are using a bottoms up risk modeling approach.
  - HART has held numerous internal risk workshops to refine risk register, develop cost and schedule ranges, and identify risks responses.

- HART's focus was primarily on construction contracts. The PMOC noted that HART must still focus on soft costs and ancillary contracts since they can impact overall cost and schedule.
  - When fully developed and if properly implemented, HART's risk program can be effective and beneficial to the project.
  - HART Risk Manager must still update the RCMP, which would include development of cost and schedule drawdown curves.
- Hawaiian Electric Companies (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 Department of Labor (DOL), although HECO has appealed. HECO and HART are still awaiting a final decision from the US Department of Labor.
    - 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 – 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.
    - Alternative Equipment – HECO is performing trials to determine if specialized bucket truck equipment may mitigate some of the clearance issues.
  - Buy America –
    - HART submitted to FTA a Waiver Request for the Train Control and Communications Equipment Variable Refrigerant Flow air conditioning equipment on February 8, 2016. Additional information was subsequently provided at the request of FTA. HART is awaiting a decision from the FTA.
    - AHJV has changed the truck supplier for the LRVs. HART does not anticipate any issues with meeting the 60% requirement for US content. However, AHJV is verifying the calculation for Buy America percentage for the vehicles and will submit that information to HART for review in July 2016.

## **2.0 BODY OF REPORT**

### **2.1.1 Project Status**

- Overall project is approximately 47.2% complete as of April 2016. The planned completion at this time is approximately 72.9% (based on HART's S-curve late plan).
- Overall design of the project is approximately 89.1% complete as of April 2016. The planned completion at this time is approximately 99.6%. 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 40.1% complete as of April 2016. The planned completion at this time is approximately 66.4.2% (based on HART's S-curve late plan).
- It should be noted that the reported percentages complete are based on the FFGA budget and Revenue Service Date (RSD). HART will be required to revise their 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 – Best and Final Offers (BAFO) were received on June 17, 2016 with an award date scheduled for July 7, 2016.
- City Center Guideway and Stations DB Contract – Request for Proposal (RFP) Part II responses are now due in March 2017. However, this contract will likely be substantially changed as a result of the need for a Recovery Plan.
- Pearl Highlands Parking Structure DB Contract – HART is working with a consultant to finalize the RFI for PPP. Release of the RFI may be delayed pending the outcome of the Recovery Plan.
- Program Management Support Consultant (PMSC) – RFP was issued in May 2016. Proposals are due in July 2016.
- ROW Support II – BAFOs are due June 2, 2016.
- Complex Real Property Negotiations and Litigation Support Contract – Proposals were received in May 2016.
- Outside Council for Land Court Petition Services – Proposals are due in June 2016.
- On-Call Appraiser Contract – Proposals received in April 2016.
- UH West Oahu Temporary Park and Ride and UH West Oahu Campus Road “B”- Advertise 2Q16.
- 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 86.7% complete based on earned value (design and construction activities). The planned earned value at this time is approximately 93.1%.
- The contract is approximately ten months behind schedule. The delay is the result of lower-than-planned production rates and lack of site access. HART and KIWC have been working to mitigate impacts to critical path activities.
- A revised baseline schedule was submitted by the contractor in August 2015 and was rejected by HART. The contractor schedule has been continuously rejected, but HART has not taken action.
- Guideway construction will be significantly completed in July 2016 but substantial completion will not occur until May 2017 due to delays at Leeward Community College.
- Overall quality of the contract is good, but there are some issues as discussed in Section 2.6 of this report.
- Kamehameha Highway Guideway (KHG) DB Contract –
  - The contract is approximately 61.5% complete based on earned value (design and construction activities). The planned earned value at this time is approximately 97%.
  - The contract is approximately 12 months behind schedule. HART has indicated that the delay is the result of lower-than-planned production rates, weather, and failure by the contractor to provide required labor and material to perform required column and foundation work.
  - Contractor schedule has been continuously rejected but HART has not taken action.
  - Guideway is currently forecasted to be complete in April 2017. However, the completion of the overall contract has been pushed out to September 2017.
- Maintenance and Storage (MSF) DB Contract –
  - The contract is approximately 98.9% complete based on earned value (design and construction activities). The planned earned value at this time is approximately 95.8%.
  - Contract is scheduled to complete in July 2016.
  - Overall quality of the contract is good.
- Airport Advanced Utilities Construction Contract –
  - Contract is approximately 43% complete based on Earned Value. The planned earned value at this time is approximately 98.1%.
  - The contract is approximately seven 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 0% complete based on HART's earned value calculation. HART's planned earned value at this time is approximately 0%.
  - The baseline schedule has been approved.
  - Construction is anticipated to begin during the Third Quarter of 2016.
- Farrington Highway Station 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%.
  - The baseline schedule has 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%.
  - An Administrative NTP has been issued 4/2016.
  - The baseline schedule has not yet been approved.
  - Construction is anticipated to begin during the Third Quarter of 2016.

## 2.1.4 Status of Core Systems Contract

| Core System Description                   | Status  |
|---|---|
| <b>General</b>                            |   |
| Overall                                   | Contract is approximately 32% complete based on expenditures (design, manufacturing, and construction activities). The planned completion at this time is approximately 47% (based on late plan S-curve).   |
| Design                                    | Following are the approximate levels of final design completion <ul style="list-style-type: none"> <li>• LRVs – 85%</li> <li>• Communications – 38%</li> <li>• Train Control – 87%</li> <li>• Traction Power – 100%</li> <li>• Fire Detection – 56%</li> <li>• Platform Screen Gates – 82%</li> </ul>   |
| Testing                                   | Initial testing of the PSG mockup has been postponed until summer 2016 due to mechanical issues. The PSG are not on the critical path.  |
| Construction                              | Construction activity will not begin along guideway until 3Q16.   |
| Schedule                                  | AHJV contract schedule must be revised to reflect access dates. HART is deferring revision of milestone dates until they have 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 CSC Safety Certification Manager left the project. Permanent replacement will not be onsite full time until fall 2016.   |
| 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. A full analysis was completed by AHJV and approved by HART in September 2015. The System Performance Analysis was reviewed by the PMOC and comments were provided to HART. |
| <b>Vehicle Subsystem</b>                  |   |
| Vehicle Schedule                          | Delivery of first LRV to Honolulu occurred in March 2016. Delivery of second LRV is planned for early 2017.   |
| Buy America                               | AHJV changed the truck body supplier for the LRVs. HART does not anticipate any issues with meeting the 60% requirement for US content. However, AHJV is verifying the calculation for Buy America percentage for the vehicles and will submit that information to HART for review in July 2016.  |
| Ship America                              | AHJV is negotiating terms with a carrier to transport the LRVs from Italy to US mainland and from US mainland to Hawaii. Once that agreement is finalized, HART will provide confirmation to FTA. AHJV received approval from the US Maritime Agency to ship the first 4 vehicles from a non-US carrier.  |
| <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 O&M Plan and FTA guidelines. CSC construction work is anticipated to be completed in late 2016.   |

| Core System Description                   | Status   |
|---|--|
| <b>Hawaiian Electric Companies (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 group continues to work to secure construction rights of entry to support the program procurement schedule, which includes the design-build contracts for the Airport and City Center segments.
- There are currently no ROW actions impeding construction work and the objective is to secure site access via Rights of Entry. HART indicated 90% site access has been achieved to date.
- 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. This includes the Blood Bank parcel. However, the City Council may acquire the parcel using other funds then sell a portion to HART. The PMOC cautioned the group that any acquisition intended for the project needed to be compliant with URA requirements. Negotiations are still continuing with all private property owners in the Airport section in an attempt to reach mutual agreement.
- Land Court – Given the issue with slowing closings, HART is hiring a special attorney to expedite matters through the land court.
- 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 HDOT property. These parcels will be eventually 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.
- Navy consent has been obtained for HART to construct on its property and facilities.

### **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) – Agreement is anticipated to be executed in July 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 is being resolved with binding arbitration using a mutually agreed third appraiser. Arbitration decision is anticipated for July 2016.
- US Navy – Base Command change occurred without license agreement being finalized. HART and USN are working on agreement on how to pay for relocations. Main outstanding issue is how national register nomination is handled for Big Makalapa and Little Makalapa.

### 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 – Submitted to FTA
  - AGS Precast Yard – Submitted to FTA
  - CCGS Precast Yard – Submitted to FTA
  - CC Alignment Shift (Ala Moana Station) – submittal pending
  - West Oahu Park-n-ride – submittal pending
  - Chinatown Station – submittal pending
  - Phased opening – submittal pending

### 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                       | Baseline update pending               |
| 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               |
| Rail Fleet Management Plan (RFMP)                  | Baseline update pending               |
| Safety and Security Management Plan (SSMP)         | Baseline update pending               |
| Safety and Security Certification Plan (SSCP)      | Baseline update pending               |

### 2.3 Management Capacity and Capability (MCC)

HART has gone through a considerable number of organizational changes since the FFGA was executed in December 2012. The PMOC has recommended that HART review its staffing and consider changes to streamline the organization. HART has begun reviewing the project organization to determine if changes can be made to be more effective. Project staff has also begun updating the project’s numerous plans and procedures to reflect these changes. HART’s update of the management plans must incorporate any organizational changes that are proposed or already accomplished. It has become critical that any changes be documented in the various management plans immediately.

There are currently several key positions that remain vacant. The most critical positions that HART is diligently working to permanently fill include:

- Director of Communications – position has been filled by Bill Brennan, who was the Deputy to the former Director.
- Chief Financial Officer – Candidate identified but is on hold
- Risk Manager – position filled by Alex Cross, who will be supported by senior staff from PMSC (HDR).

## 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:

| Source   | Amount                 |
|--|------------------------|
| 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 – \$2.091 billion (through April 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 an additional cost to the project. HART project staff developed an updated EAC and RSD that was presented to the HART Board on June 8, 2016:

- HART’s Estimate-at-Completion (EAC) is \$7.967 billion and includes \$736 million in contingency and \$393 million in finance costs.
- HART’s Revenue Service Date (RSD) is December 2024 and includes approximately 8 months of schedule contingency.

The following table presents the FFGA budget and expenditures to date. The Estimate at Completion (EAC) for each 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>359,320,081</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        | 304,693,000          |
| 10.08     | Guideway: Retained cut or fill  | 8,077,393            | 7,492,943            | 584,450            | 2,095,882            |
| 10.09     | Track: Direct fixation  | 86,332,027           | 79,437,204           | 6,894,823          | 52,482,945           |
| 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>5,868,106</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         | 5,868,106            |
| <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>116,534,536</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            | 7,537,682            |
| 30.03     | Heavy Maintenance Facility  | 40,906,889           | 38,099,138           | 2,807,751          | 43,248,881           |
| 30.04     | Storage or Maintenance of Way Building                                | 8,382,270            | 7,797,460            | 584,810            | 8,650,085            |
| 30.05     | Yard and Yard Track   | 41,975,018           | 39,046,528           | 2,928,490          | 56,892,622           |
| <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>569,715,612</b>   |
| 40.01     | Demolition, Clearing, Earthwork                                       | 34,695,802           | 29,980,157           | 4,715,645          | 4,052,666            |
| 40.02     | Site Utilities, Utility Relocation                                    | 350,694,801          | 299,449,755          | 51,245,046         | 126,563,527          |
| 40.03     | Haz. mat'l, contam'd soil removal/mitigation, ground water treatments | 7,228,935            | 6,590,542            | 638,393            | 2,984,597            |
| 40.04     | Environmental mitigation, e.g. wetlands, historic/archeologic, parks  | 30,841,906           | 26,979,122           | 3,862,784          | 11,384,137           |
| 40.05     | Site structures including retaining walls, sound walls                | 8,637,582            | 7,998,960            | 638,622            | 5,957,823            |
| 40.06     | Pedestrian / bike access and accommodation, landscaping               | 48,262,816           | 41,073,897           | 7,188,919          | 1,485,734            |
| 40.07     | Automobile, bus, van accessways including roads, parking lots         | 212,536,181          | 181,979,369          | 30,556,812         | 5,708,044            |
| 40.08     | Temporary Facilities and other indirect costs during construction     | 410,969,241          | 386,517,624          | 24,451,617         | 411,579,084          |
| <b>50</b> | <b>SYSTEMS</b>  | <b>247,460,781</b>   | <b>221,284,483</b>   | <b>26,176,298</b>  | <b>50,761,884</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          | 4,751,819            |
| 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          | (1,131,901)          |
| 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>1,102,200,219</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>115,890,114</b>   |
| 60.01     | Purchase or lease of real estate                                      | 201,658,907          | 179,360,664          | 22,298,243         | 103,194,962          |
| 60.02     | Relocation of existing households and businesses                      | 20,529,479           | 18,037,283           | 2,492,196          | 12,695,152           |
| <b>70</b> | <b>VEHICLES</b>   | <b>208,501,186</b>   | <b>186,829,020</b>   | <b>21,672,166</b>  | <b>39,678,906</b>    |
| 70.02     | Heavy Rail  | 186,061,066          | 166,721,385          | 19,339,681         | 31,151,288           |
| 70.06     | Non-revenue vehicles  | 16,011,166           | 14,346,923           | 1,664,243          | 8,527,618            |
| 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>817,288,877</b>   |
| 80.01     | Preliminary Engineering   | 95,120,484           | 94,055,262           | 1,065,222          | 103,784,827          |
| 80.02     | Final Design  | 257,934,908          | 228,321,632          | 29,613,276         | 171,249,680          |
| 80.03     | Project Management for Design and Construction                        | 385,825,694          | 366,458,463          | 19,367,231         | 328,991,861          |
| 80.04     | Construction Administration & Management                              | 218,155,752          | 199,656,728          | 18,499,024         | 91,480,776           |
| 80.05     | Professional Liability and other Non-Construction Insurance           | 52,138,030           | 46,549,724           | 5,588,306          | 28,543,680           |
| 80.06     | Legal; Permits; Review Fees by other agencies, cities, etc.           | 76,135,125           | 67,641,006           | 8,494,119          | 22,622,295           |
| 80.07     | Surveys, Testing, Investigation, Inspection                           | 24,955,327           | 21,759,335           | 3,195,992          | 34,249,111           |
| 80.08     | Start up  | 73,560,706           | 65,996,664           | 7,564,042          | 36,366,647           |
| 90        | Subtotal (10 - 80)  | 4,846,763,750        | 4,305,164,589        | 541,599,161        | 2,075,058,116        |
|           | UNALLOCATED CONTINGENCY   | 101,871,170          | 0                    | 101,871,170        | 0                    |
| 100       | Subtotal (10 - 90)  | 4,948,634,920        | 4,305,164,589        | 643,470,331        | 2,075,058,116        |
|           | FINANCE CHARGES   | 173,058,242          |                      |                    | 0                    |
|           | Total Project Cost (10 - 100)   | 5,121,693,162        | 4,305,164,589        | 643,470,331        | 2,075,058,116        |
|           | Provisional Request for Payment                                       |                      |                      |                    | 15,484,305           |
|           | Total Project Cost (10 - 100)   | 5,121,693,162        | 4,305,164,589        | 643,470,331        | 2,090,542,421        |

## 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 \$7.967 billion and includes \$736 million in contingency and \$393 million in finance costs.
- Contingency amount represents approximately 15% of the remaining work to be completed.
- Revenue Service Date (RSD) is December 2024 and includes approximately 8 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 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 \$1.698 billion in GET funds since 2007.
- HART has received approximately \$1.320 billion in GET funds since Preliminary Engineering, which began in October 2009.

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 General Excise Tax (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 will not be sufficient to complete the Project and is in addition to what was included in the FFGA.

## 2.5 Project Schedule

HART's current project schedule indicates the following:

- The target for the Interim Opening is December 2019.
- The target for construction completion is April 2024.
- The target for full revenue service is December 2024, including 8 months of contingency.
- HART is undergoing a refinement of its Master Program Schedule (MPS) and intends to have the revised MPS available in June 2016.

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

| Period: July 2016 – September 2016 |                    |                    |
|------------------------------------|--------------------|--------------------|
| Activity                           | Responsibility     | Date               |
| Monthly Progress Meeting           | FTA, HART and PMOC | July 13, 2016      |
| Monthly Progress Meeting           | FTA, HART and PMOC | August 10, 2016    |
| Monthly Progress Meeting           | FTA, HART and PMOC | September 14, 2016 |
| Quarterly Meeting                  | FTA, HART and PMOC | TBD                |

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

- HART and AHJV have planned a Quality Audit of the LRV production facility in Pittsburg, CA in late June 2016.
- WOFH Span 258 – Some strands of the Tendon T1L failed after post-tensioning. KIWC prepared a Remediation Plan to replace the failed tendon and completed the replacement on April 14, 2016. Span 258 was subsequently lowered to its correct position.
- WOFH Span 249 – Some strands of Tendon T3 failed after post-tensioning. The defective tendon was removed on April 21, 2016. The tendon replacement will occur when the special stressing Jacking system arrives at the site.
- KIWC will perform a postmortem of the Tendons T1L and T3 to determine the root cause of the failure and the corrective action to prevent recurrence on KHG.
- Drilled Shafts – There are four (4) Open NCRs related to the CSL Reports. There were few CSL issues encountered recently indicating the construction process has improved. The CSL anomalies on the four NCRs open were found to be 15 feet from the top due to deeper shafts, therefore correction/fixing will be more challenging.

## 2.7 Safety and Security

- HART provided an update on safety certification activities that are related to the MSF facilities, MSF CSC rail activation, and the WOFH Guideway.
- HART is progressing on Design Conformance but is lagging on Construction Conformance since it is still finalizing construction checklists. MSF Construction Conformance Checklist is at approximately 54% and HART anticipates receiving the remaining construction conformance items in the next couple of months since substantial completion of the civil portion has been issued to KKJV.
- HART Safety and Security in conjunction with the HART CSC Deputy Director will be providing a detailed schedule that includes items from the Operational Readiness Checklist that will be updated on a monthly basis. HDOT SOA activities will also be

included in the detailed schedule.

- Partial certification will be issued by HART Safety and Security to list any open items and restrictions since the MSF is not fully operational yet. Interim certification will be issued for the MSF after MSF CSC activities are completed by September 2016.
- AHJV CSC Safety Certification Manager permanent replacement will not be onsite full time until fall 2016.

## **2.8 Project Risk**

The PMOC has discussed the project cost on a monthly basis with HART in an effort to ensure cost issues are proactively addressed. HART has recently implemented Cost Containment and Cost Reduction measures in an effort to mitigate the cost increase. These efforts include:

- Significant revision of HART's contract packaging strategy
- Development of a detailed cost reduction matrix that focuses on the remaining construction contracts (Value Engineering)
- Review of interface milestones to help relieve schedule compression where possible
- Review of various options related to financing of the project
- Identification of items that could be considered Operations & Maintenance costs
- Development of a HART Decision Milestone Matrix.

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 HART in June 2016.

HART is developing a robust risk management program with support from their Program Management Consultant. They are using a bottoms up risk modeling approach.

- HART has held numerous internal risk workshops to refine risk register, develop cost and schedule ranges, and identify risks responses.
- Focus was primarily on construction contracts. The PMOC noted that HART must still focus on soft costs and ancillary contracts since they can impact overall cost and schedule.
- When fully developed and if properly implemented, HART's risk program can be effective and beneficial to the project.
- HART Risk Manager must still update the RCMP, which would include development of cost and schedule drawdown curves.

## 2.9 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        | <b>Updates resulting from Risk Refresh:</b>                                       |                   |                 |          |                |   |
| 2a       | Update the Contract Packaging Plan  | HART              | Aug-14          | Aug-16   |                | Pending final update of budget and schedule               |
| 2b       | Re-baseline Financial Plan  | HART              | Apr-14          | Aug-16   |                | Pending final update of budget and schedule               |
| 2c       | Re-baseline budget  | HART              | Apr-14          | TBD      |                | In progress   |
| 2d       | Re-baseline MPS   | HART              | Apr-14          | TBD      |                | In progress   |
| 2f       | Update RCMP (including Hold Points and Secondary Mitigation Measures)             | HART              | Sept-13         | Aug-16   |                | Pending final update of budget and schedule               |
| 5        | HART to provide Operational Readiness Checklist/Hold Points for MSF Certification | HART              | Jan-16          | Apr-16   | Jun-16         | HART has developed detailed schedule with key activities. |
| 10       | Submit documentation to FTA for Post-ROD changes                                  | HART              | Mar-16          | Apr-16   | Jun-16         | Ongoing activity; specific items will be tracked monthly  |
| 11       | Provide updated organizational chart  | HART              | May-16          | May-16   | May-16         |   |
| 12       | Provide Triennial Review Closeout Letter  | FTA               | May-16          | Jun-16   | Jun-16         |   |
| 13       | Provide updated cash flow chart   | HART              | May-16          | Jul-16   | Jun-16         |   |

### 3.0 APPENDICES

#### Appendix A: Acronym List

|      |  |
|------|--|
| AHJV | ▪ Ansaldo Honolulu Joint Venture               |
| AIS  | ▪ Archeological Inventory Survey               |
| APS  | ▪ Adjusted Project Schedule                    |
| ARRA | ▪ American Recovery and Reinvestment Act       |
| ASG  | ▪ Airport Station Group                        |
| ATC  | ▪ Alternative Technical Concept                |
| AUG  | ▪ Airport Utilities Group                      |
| AVI  | ▪ Automatic Vehicle Indication                 |
| AVL  | ▪ Automatic Vehicle Location                   |
| BCE  | ▪ Base Cost Estimate                           |
| BFMP | ▪ Bus Fleet Management Plan                    |
| CCUG | ▪ City Center Utilities Group                  |
| CE&I | ▪ Construction Engineering and Inspection      |
| CMP  | ▪ Construction Management Plan                 |
| CPM  | ▪ Critical Path Method                         |
| CPP  | ▪ Contract Packaging Plan                      |
| CROE | ▪ Construction Right of Entry                  |
| CSC  | ▪ Core Systems Contract                        |
| CSSO | ▪ Chief Safety and Security Officer            |
| 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            |
| DLIR | ▪ Department of Labor and Industrial Relations |
| DLNR | ▪ Department of Land and Natural Resources     |
| DOE  | ▪ Department of Education                      |
| DOT  | ▪ Department of Transportation                 |
| 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             |
| FHWA | ▪ Federal Highway Administration               |
| 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  |
| HCC  | ▪ Honolulu Community College                   |
| HCDA | ▪ Hawaii Community Development Authority       |
| HDOT | ▪ Hawaii Department of Transportation          |
| HECO | ▪ Hawaiian Electric Company                    |
| IFB  | ▪ Invitation to Bid                            |
| ITP  | ▪ Inspection Test Plans                        |
| JU&O | ▪ Joint Use & Occupancy                        |
| KHG  | ▪ Kamehameha Highway Guideway                  |
| KHSG | ▪ Kamehameha Highway Stations Group            |

|       |  |
|-------|--|
| KIWC  | ▪ Kiewit Infrastructure West Company                   |
| KKJV  | ▪ Kiewit Kobayashi Joint Venture                       |
| LCC   | ▪ Leeward Community College                            |
| LEED  | ▪ Leadership in Energy and Environmental Design (LEED) |
| MMP   | ▪ Mitigation Monitoring Program                        |
| MOA   | ▪ Memorandum of Agreement                              |
| MOT   | ▪ Maintenance of Traffic                               |
| MOW   | ▪ Maintenance of Way                                   |
| MPS   | ▪ Master Project Schedule                              |
| MSF   | ▪ Maintenance and Storage Facility                     |
| NCR   | ▪ Non-Compliance Report                                |
| NEPA  | ▪ National Environmental Policy Act                    |
| NTP   | ▪ Notice to Proceed                                    |
| OCCC  | ▪ Oahu Community Correctional Center                   |
| OCIP  | ▪ Owner Controlled Insurance Program                   |
| OP    | ▪ Oversight Procedure                                  |
| PA    | ▪ Programmatic Agreement                               |
| PE    | ▪ Preliminary Engineering                              |
| PM    | ▪ Project Manager                                      |
| PMC   | ▪ Project Management Consultant                        |
| PMOC  | ▪ Project Management Oversight Contractor              |
| PMP   | ▪ Project Management Plan                              |
| PSG   | ▪ Platform Screen Gate                                 |
| PW    | ▪ Project-wide   |
| QA    | ▪ Quality Assurance                                    |
| QAM   | ▪ Quality Assurance Manager                            |
| QAP   | ▪ Quality Assurance Plan                               |
| QMP   | ▪ Quality Management Plan                              |
| RAMP  | ▪ Real Estate Acquisition and Management Plan          |
| RCMP  | ▪ Risk and Contingency Management Plan                 |
| RFMP  | ▪ Rail Fleet Management Plan                           |
| RFB   | ▪ Request for Bids                                     |
| RFP   | ▪ Request for Proposals                                |
| RFQ   | ▪ Request for Qualifications                           |
| ROD   | ▪ Record of Decision                                   |
| ROE   | ▪ Right of Entry                                       |
| ROW   | ▪ Right of Way   |
| RSD   | ▪ Revenue Service Date                                 |
| SCC   | ▪ Standard Cost Category                               |
| SHPD  | ▪ State Historic Preservation Division                 |
| SOA   | ▪ State Oversight Agency                               |
| SS    | ▪ Safety and Security                                  |
| SSCM  | ▪ Safety and Security Certification Manager            |
| SSCP  | ▪ Safety and Security Certification Plan               |
| SSMP  | ▪ Safety and Security Management Plan                  |
| SSPP  | ▪ System Safety Program Plan                           |
| SSSPS | ▪ System Safety and Security Program Standards         |
| TCC   | ▪ Technical Capacity and Capability                    |
| UH    | ▪ University of Hawaii                                 |
| UPS   | ▪ Uninterruptible Power Supply                         |
| VE    | ▪ Value Engineering                                    |
| WOFH  | ▪ West Oahu/Farrington Highway                         |
| WOSG  | ▪ West Oahu Stations Group                             |
| WSSG  | ▪ Westside 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           | \$41,176,027 | 79%    | Mar-12     | Mar-17               | -             | Re-compete is ongoing  |
| MM-913   | General Engineering Consultant (GEC III)              | CH2M Hill                        | \$46,143,277        | \$268,451     | 1%             | \$46,411,728           | \$27,606,535 | 59%    | Dec-13     | Apr-19               | -             |  |
| MM-290   | Construction Engineering and Inspection (West)        | PGH Wong Engineering, Inc.       | \$54,232,480        | \$0           | 0%             | \$54,232,480           | \$25,097,107 | 46%    | Jan-14     | Jan-20               | -             |  |
| MM-596   | Construction Engineering and Inspection II (East)     | Stantec Consulting Services Inc. | \$55,036,130        | \$0           | 0%             | \$55,036,130           | 3,523,705.00 | 6%     | Sep-15     | Dec-19               | -             |  |
| MM-962   | Core System Contract Oversight Consultant             | Lea + Elliott, Inc.              | \$43,988,989        | \$0           | 0%             | \$43,988,989           | \$15,328,182 | 35%    | Feb-14     | Sep-19               | -             |  |
| FD-140   | West Oahu Station Group Construction FD               | URS, Inc.                        | \$7,789,000         | \$2,270,103   | 29%            | \$10,059,103           | \$9,199,096  | 91%    | Jun-12     | Dec-16               | -             |  |
| FD-240   | Farrington Highway Station Group FD                   | HDR, Inc. / URS                  | \$9,300,696         | \$4,981,349   | 54%            | \$14,282,045           | \$12,577,157 | 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            | \$9,305,132  | 93%    | Nov-12     | Dec-16               | -             |  |
| FD-430   | Airport Section Guideway and Utilities FD             | AECOM                            | \$38,840,960        | \$4,293,512   | 11%            | \$43,134,472           | \$41,526,542 | 96%    | Dec-11     | Jun-17               | -             |  |
| FD-440   | Airport Station Group Construction FD                 | AECOM                            | \$10,177,365        | \$1,396,487   | 14%            | \$11,573,852           | \$9,983,402  | 86%    | 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           | \$42,809,894 | 91%    | 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        | \$986,124     | 5%             | \$19,308,042           | \$15,732,737 | 81%    | 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       | \$164,897,879 | 34%            | \$647,821,879          | \$560,978,560 | 87%    | Nov-09     | Jul-16               | May-17        | Approximately 10 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       | \$79,592,776  | 41%            | \$274,850,776          | \$271,532,758 | 99%    | Jun-11     | May-16               | Jul-16        |   |
| DB-320   | Kamehameha Highway Guideway DB                   | KIWC                           | \$372,150,000       | \$17,322,586  | 5%             | \$389,472,586          | \$239,707,374 | 62%    | 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       | \$26,060,894  | 5%             | \$599,843,687          | \$192,496,847 | 32%    | 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           | \$5,868,106   | 11%    | 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        | \$29,663      | 0%             | \$28,022,953           | \$10,580,738  | 38%    | Jul-14     | Jul-16               | Sep-16        | Approximately seven 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           | \$0           | 0%     | Oct-15     | Mar-18               | Mar-18        |   |
| DBB-271  | Farrington Highway Station Group Construction    | Hawaiian Dredging              | \$78,999,000        | \$0           | 0%             | \$78,999,000           | \$0           | 0%     | 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     | Apr-16               | 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>  |
|-----------------|--------------------|-------------------|----------------------------|----------------------|-----------------------|-------------------------------|-----------------|---------------|-------------------|-----------------------------|----------------------|---|
| DBB-385         | Ramp H2R2          | Royal Contracting | \$5,203,646                | \$0                  | 0%                    | \$5,203,646                   | \$732,850       | 14%           | May-15            | May-16                      | Mar-17               | Delayed start of construction due to additional HDOT required soil remediation and submittal of required documentation. |

## Appendix C: PMOC Team

| Name                   | Position                              | Background  |
|------------------------|---------------------------------------|---|
| Tim Mantych,<br>PE     | Program<br>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<br>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,<br>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<br>Neathery    | Construction<br>Management<br>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<br>Estimating<br>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<br>Carpenter     | Project<br>Scheduling<br>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<br>Schulz, PhD | Systems<br>Safety<br>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<br>Virginkar      | Rail<br>Equipment<br>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<br>Merryman        | Real Estate<br>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,<br>PhD | Risk<br>Assessment<br>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<br>Operations<br>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:** June 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                       |

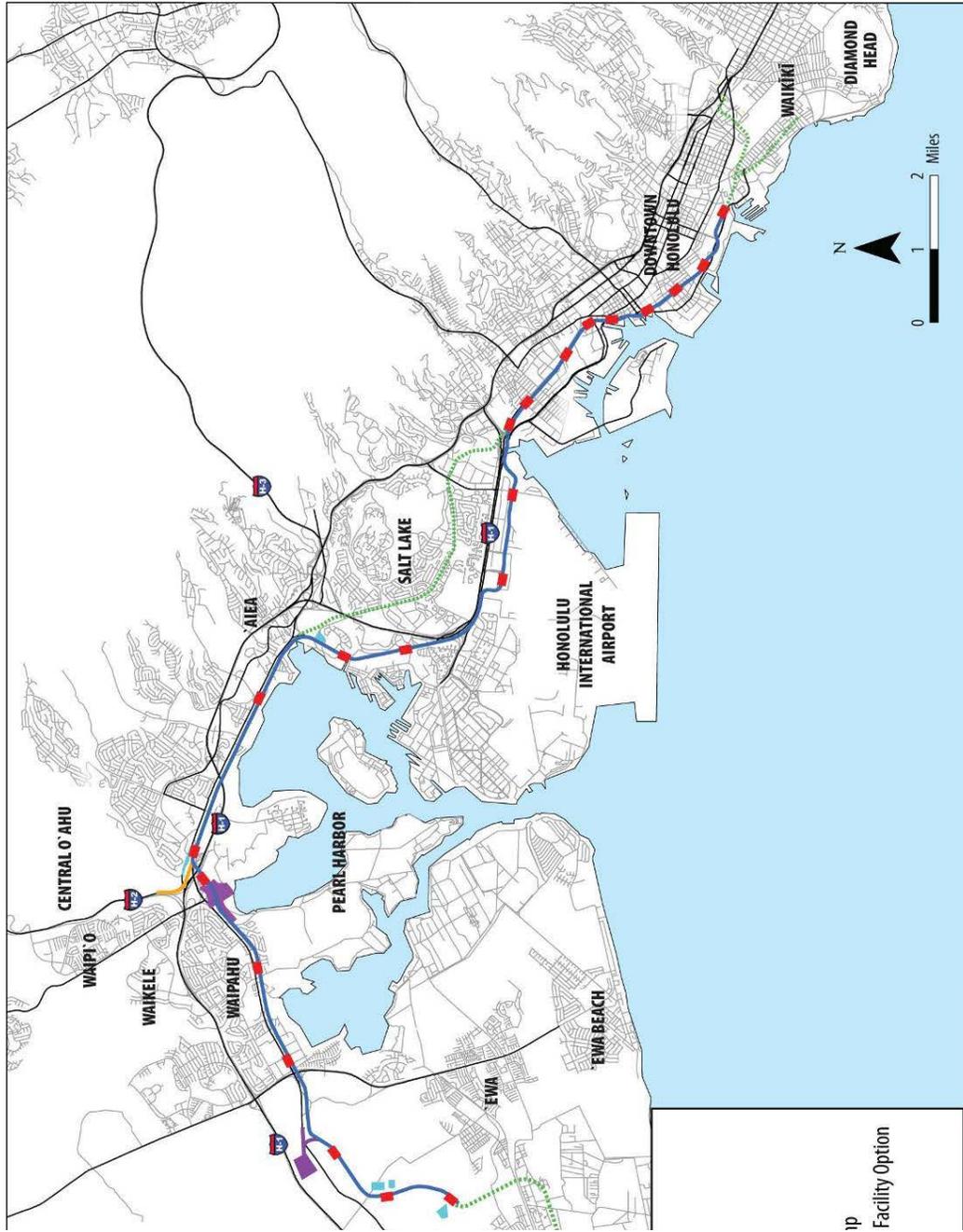
### COST

\$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  
  
 \$2.091B Amount of Expenditures at date of this report  
 47.2% 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 26%.
- HART's current EAC and RSD as presented to HART Board on June 8, 2016:
  - Estimate-at-Completion (EAC) is \$7.967 billion and includes \$714 million in contingency and \$393 million in finance costs.
  - Revenue Service Date (RSD) is December 2024 and includes approximately 8 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 |  |