The Honolulu Rail Transit Project

Public-Private Partnership Development Program
Recommended Program Structure

July 19, 2016
Discussion Outline

- Project Status / Remaining Work
- Comprehensive Analysis: P3 Feasibility
- Purpose and Objectives of the Analysis
- Funding and Financing Overview
- Recommended Project Delivery Method
- Risk Allocation and Assessment: DB vs. DBF/OM
- Summary
- Next Steps
Remaining Civil Works to be Procured
City Center Guideway and Stations and Pearl Highlands Garage and Transit Center

[Map showing the locations of projects]
Comprehensive Analysis to Support Recommendation

- Retained EY to conduct a P3 commercial feasibility assessment
- Reviewed comparable projects and relevant case studies
- Developed a P3 structure specific to the HRTP
- Conducted a comprehensive risk assessment involving staff and outside experts in risk mitigation
### Purpose and Objectives

To define a project delivery structure that...

- Reduces the possibility of cost increases through enhanced fiscal discipline
- Promotes schedule certainty by financially based performance requirements
- Provides a “life-cycle” approach linking construction with operations
- Improves risk management by optimally allocating risks and responsibilities
- Encourages robust global competition by bundling construction and O&M
- Promotes incorporation of technical innovation and best practices
- Integrates the mutual goals of HART and the City for improved mobility and long-term sustainability
Increases Fiscal Discipline and Reduces Cost Increases

- DBF/OM reduces the potential for cost increase and/or change orders
- DBF/OM places financial incentives and performance requirements on the P3 partner to meet pre-established budget, scope and schedule
- DBF/OM is projected to provide modest cost reductions when compared conservatively to DB over the 30-year term, primarily due to more competitive pricing and increased efficiency
  - Projected City savings of over **$310M** in operating costs over the 30-year term, primarily forecast for the years 2031-2050 subsequent to termination of existing CSC
  - Projected HART savings of **$46M** in construction costs for CCGS and PHGTC
Promotes Schedule Certainty

- DBF/OM confirms adherence to the schedule and provides substantial contractual requirements and associated financial penalties to the developer if delays occur
  - The P3 development agreement will include fundamental schedule incentives including private financing and robust performance metrics for O&M
- DBF/OM is projected to result in a slightly earlier Revenue Service Date
  - Schedule acceleration is due to construction innovation and efficiency and parallel testing and commissioning, enhanced by financial incentives for early completion
  - These schedule accelerators compensate for a longer procurement period for P3
Provides a “Life-Cycle” Approach

- DBF/OM recognizes that major infrastructure endeavors are long-term community assets and should be constructed, operated, and maintained accordingly.

- DBF/OM combines construction and long-term operations and maintenance into a joint procurement by HART and the City which creates a full life-cycle approach by linking design, construction, operations and maintenance.
Optimizes Risk Management

- DBF/OM allocates risk to the parties best equipped to accept the respective risks and responsibilities
- DBF/OM procurement increases likelihood of attracting bidders who have world-class experience and the capabilities to accept allocation of risks
- DBF/OM transfers key construction and O&M interface risks from HART and the City to P3 partner
  - Reduces level of HART-required staffing for management & construction oversight
  - Eliminates the requirement for both HART and the City to serve as the integrator and interface manager for numerous contracts and transfers that risk to the P3 partner
Encourages Competition

- DBF/OM encourages increased and robust competition from among US-based and international contractors with positive performance records in developing and operating major transit and infrastructure projects, many of whom are unlikely to propose for only a design-build program.
DBF/OM promotes incorporation by the developer of technical innovation and best practices by optimizing the developer’s opportunities to connect design and construction with long-term operations and maintenance.
DBF/OM integrates the mutual goals of HART and the City to build, operate, and maintain one of the most significant sustainable infrastructure assets undertaken on behalf of the citizens and visitors to Hawaii.
Funding and Financing Overview

- HART’s principal sources of capital funding are from GET, TAT and the federal FFGA
  - HART has received approximately $3.2B total from inception through June 30, 2018
- Approximately $6.1B is anticipated in local and FFGA revenues from July 1, 2018 to 2030, which covers all remaining construction, contingency, and financing costs
- About $1.9B is available for the capital components of the P3 agreement after reserving for non-P3 project costs, debt service/financing charges, and required contingency . This number is referred to as the “affordability ceiling”
- The City will fund O&M of systems and rolling stock and non-systems elements of the project including facilities and stations
DBF/OM Attributes

- The P3 procurement will be a joint procurement between HART and the City.
- To assure maximum transparency, bidders will be required to provide separate pricing for capital construction and financing funded by HART and O&M funded by the City.
- The concession term will be 30 years: 2020-2050.
- The P3 structure is based on a design-build-finance (DBF) model for the civil works combined with a 30-year O&M agreement, linked through a single procurement designed to obtain strong global competition, favorable pricing, cost, and schedule certainty and optimal risk transfer.
## Major Components of the Project Structure

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<tr>
<th>Remaining under HART</th>
<th>Key P3 Components</th>
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<tbody>
<tr>
<td>• Ongoing and completed capital construction, including guideway, stations and systems installation for West Side and Airport Guideway and Stations (AGS)</td>
<td>• Civil and systems design and construction for the City Center Guideway and Stations (CCGS) and Pearl Highlands Garage and Transit Center (PHGTC)</td>
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<tr>
<td>• Rolling stock acquisition, testing and commissioning</td>
<td>• Full systems integration and long-term O&amp;M of all system elements</td>
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Ongoing and Completed Construction Including Guideway, Stations and Systems

- Completion of AGS, finalization of West Side contracts and related systems installation, and rolling stock acquisition, testing and commissioning will not be included in the P3 partner contract
- Funding and financing by HART will continue as at present
- The current civil and systems contractors will continue accordingly
- Under its current contract, the Core Systems Contractor is expected to complete its installation of the systems for the AGS segment in mid-2022 and complete its testing and commissioning for this segment in 2023
Civil and Systems Construction for City Center and Pearl Highlands Facilities

- CCGS design, construction, and systems work will be the civil construction element of the P3 partner’s contract
- This work will be funded through GET, TAT, and FFGA
- CCGS construction will occur between 2020 and 2025
- Revenue Service Date (RSD) expected by December 2025 or earlier
Civil and Systems Construction for City Center and Pearl Highlands Facilities

- The P3 partner will:
  - Undertake design and construction of CCGS and PHGTC
  - Finance construction works privately
  - Receive milestone payments during construction between 2020-2025
  - Receive capital availability payments post-construction between 2026-2030

- 2026-2030 is a five year “tail” where HART retains fiscal control to assure satisfactory performance

- CCGS systems installation being performed by Ansaldo Honolulu Joint Venture (AHJV) will become part of the P3 partner’s scope
  - Transfers interface risk and likely accelerates completion
Operations and Maintenance

- Core Systems Contract (AHJV) scope includes interim and full operations
- Since the project schedule has changed, the AHJV contract will need to be renegotiated to reflect the current schedule
- HART and the City will jointly negotiate a “term sheet” with AHJV
  - Will incorporate all relevant scope and contractual conditions
- The new O&M aspects of the Core Systems Contract constituting the term sheet will be transferred to the P3 partner
- AHJV will perform its O&M responsibilities under the redefined contract as a subcontractor to (or member of) the P3 partner’s consortium
The City will provide availability payments to the P3 partner for the initial O&M period (assumed to be 10 years) inclusive of AHJV’s participation. This approach will provide cost certainty to the City regarding its costs over the initial years of system operation under rigorous performance requirements. When the interim O&M term undertaken by AHJV under the P3 partner concludes, the P3 partner can:

- Negotiate with AHJV to continue serving as the system operator for all or part of the remainder of the development agreement term
- Change its organization to facilitate increased O&M efficiency beyond 2030
Responsibility/Risk Allocation

- The DBF/OM structure will transfer certain risks and responsibilities to the P3 partner from the City and HART
- A comparison was made between DBF/OM and Design-Build to examine:
  - How these responsibilities and risks would be allocated
  - How this would affect cost and schedule
Comparative Risk Assessment: DB and DBF/OM

- A Risk Assessment Workshop was conducted June 19–21, 2018 with representatives from HART, the City and financial and project delivery experts.

- Purposes of the workshop:
  - Define and quantify risks, with focus on risks that differed between the two delivery methods.
  - Assess which delivery method would provide greater cost and schedule certainty.

- “Base” costs were defined as starting point to reflect the longer procurement period and additional advisory fees for DBF/OM:
  - DB Base Cost: $1.61B
  - DBF/OM Base Cost: $1.64B
Key Risk Differentiators for DB and DBF/OM

- Procurement
- Right-of-Way
- Design and construction
- Administrative oversight
- Market opportunity
Key Risk Differentiators for DB and DBF/OM

- **Procurement**
  - Risk of joint procurement with City resulting in schedule delay to P3 procurement
  - Risk of delay in notice-to-proceed due to potential bid protest

- **Right of Way**
  - Risk of late delivery of ROW necessary for on-time completion of CCGS
  - Potential for a delay to incur higher financing costs under P3

- **Design and construction**
  - Opportunity for P3 to present a cost and schedule reduction for construction of CCGS
  - Opportunity for P3 to present a cost and schedule reduction for construction of PHGTC
  - Opportunity for DB and P3 to present a schedule reduction during commissioning and testing of the overall rail system
Key Risk Differentiators for DB and DBF/OM

- Administrative oversight
  - Opportunity to lower HART’s costs for design and construction oversight

- Market opportunity
  - Marketplace opportunity to increase number of qualified competing contractors for CCGS and PHGTC under DBF/OM
Incorporating the risk assessment and modeling, risk-adjusted capital costs of DB and DBF/OM are:

- DB: $1.627B
- DBF/OM: $1.581B

- $46M potential cost saving with DBF/OM
Risk-adjusted capital costs reflect the potential to offset the higher base cost of DBF/OM through:

- Opportunity for modest cost and schedule reduction for construction of CCGS and PHGTC
- Opportunity to reduce total cost to HART for program management oversight
Risk Analysis Results: Capital Cost

- These figures show the results of the risk assessment for the risk-adjusted capital costs projected at various levels of probability.

- At 80% probability
  - DB Cost: $1.627B
  - DBF/OM Cost: $1.581B

- At 90% probability
  - DB Cost: $1.641B
  - DBF/OM Cost: $1.601B
With DBF/OM, Systems-related O&M will be under the P3 Partner, beginning 2020 and continuing to 2050

Anticipated cost savings with DBF/OM were assumed to accrue for Systems–related O&M over the 2031-2050 period

O&M cost for DBF/OM is projected to be $309.67M less than DB
These figures show the results of the risk assessment for the risk-adjusted schedule for the start of revenue service projected at various levels of probability.

At 65% probability (FTA’s standard: P65)

- DB Completion: By Late December 2025
- DBF/OM Completion: By Early December 2025
Summary

- DBF/OM will improve cost certainty and fiscal discipline as compared to DB, with cost savings over the 30-year concession period conservatively to exceed $350 million.
- DBF/OM will enhance schedule certainty, with Revenue Service Date projected to occur earlier than under DB delivery.
- DBF/OM will facilitate risk transfer from HART and the City to an experienced and capable P3 partner who will manage the interfaces between design, construction, and operations and maintenance over the life-cycle of the project.
- DBF/OM will encourage robust global competition which in turn will promote competitive pricing for both construction and operations and maintenance.
- DBF/OM will utilize private financing for civil construction, reducing the need to issue public debt and creating fiscal incentives for on-time and on-budget performance.
Next Steps

- Based on these findings, staff recommends that the HART Board:
  - Approve the Fiscal Year 2019 Capital Budget Reappropriation Request for P3 Consultants in support of HART, utilizing the Design-Build-Finance-Operate-Maintain (DBF/OM) project delivery method to complete construction of the remainder of completion of the Minimum Operable Segment of the Locally Preferred Alternative for Mass Transit Project jointly with the City and County of Honolulu.