

INFORMATION PACKAGE
SYSTEM CHARACTERISTICS QUESTIONNAIRE
NOTICE TO FIXED GUIDEWAY SYSTEM VEHICLE SUPPLIERS
REQUEST FOR INFORMATION
(RFI 001)

The City and County of Honolulu (City) is currently conducting engineering and technical studies to support the preparation of environmental impact statements (EISs) for the Honolulu High-Capacity Transit Corridor Project (HHCTCP). The HHCTCP's Locally Preferred Alternative (LPA) is a fixed guideway transit system from Kapolei to the University of Hawaii at Manoa and to Waikiki. The Final EIS will focus on the LPA's minimum operable segment (First Project) and must be based on a selected fixed guideway transit vehicle technology. The selected technology will be the basis for any future procurement of fixed guideway vehicles.

To assist the City in evaluating existing technologies, suppliers of fixed guideway transit vehicles are invited to complete the Information Package that accompanies this notice. The Information Package consists of a description of the First Project's systems and vehicle characteristics, and three sets of questionnaires. Information regarding the HHCTCP, its current status, and general alignment of the First Project are available on the web site www.honolulustransit.org.

The City reserves the right to contact respondents for additional generic information. The City also reserves the right to incorporate in a future solicitation for fixed guideway vehicles, if issued, any recommendations presented in the responses to this Request for Information or in any written communications or during any oral discussions with respondents. If the City desires to use proprietary or confidential information submitted by a respondent, the City shall first obtain the written permission of the respondent prior to its use. Other than this obligation regarding the use of proprietary or confidential information, neither the City nor any respondent to this notice has any obligation to the other under this Request for Information now or in the future.

Submittal Requirements

1. Respondent contact information:
 - Name, address, telephone, fax and E-mail of the submitting supplier; and
 - Name, address, telephone, fax and E-mail of the submitting supplier's designated representative.
2. Responses must be clearly marked with the City's RFI number (RFI 001).
3. Specific proprietary or confidential information contained in the responses must be clearly marked as such.
4. Responses to the questionnaires attached hereto are requested to be in electronic format using standard file formats such as Microsoft Word, Excel or PowerPoint or in Adobe PDF equivalents. Drawings should be in an Adobe PDF file format. Hard copies will also be accepted.

INFORMATION PACKAGE
SYSTEM CHARACTERISTICS QUESTIONNAIRE

Deadline and Instructions

1. Submit the completed Information Package no later than Friday, January 11, 2008, 4:00 PM, Hawaii Standard Time.
2. Electronic submittals should be sent to transitmailbox@honolulu.gov. No electronic executable files, e.g. files with .zip or .exe name extensions, will be accepted.
3. Hard copy submittals consisting of one original and five (5) copies should be mailed to:
Division of Purchasing
Department of Budget and Fiscal Services
530 South King Street, Room 115
City Hall
Honolulu, Hawaii 96813
4. Direct any inquiry regarding this Request for Information to transitmailbox@honolulu.gov.



MARY PATRICIA WATERHOUSE, DIRECTOR
Department of Budget and Fiscal Services
City and County of Honolulu

ATTACHMENT TO
NOTICE TO FIXED GUIDEWAY SYSTEM VEHICLE SUPPLIERS
REQUEST FOR INFORMATION (RFI 001)

INTRODUCTION

To supplement and expand its understanding of available fixed guideway transit system vehicle technologies, the City and County of Honolulu (City) invites fixed guideway transit vehicle manufacturers and suppliers to submit written materials in response to this RFI describing their particular fixed guideway transit technology(ies) and identifying how the technology(ies) address(es) the fixed guideway systems and vehicle characteristics of the minimum operable segment (First Project) of the Honolulu High-Capacity Transit Corridor Project's Locally Preferred Alternative. The goal of the RFI is to provide the City with detailed information concerning available fixed guideway transit vehicle technologies for use by the City in selecting a technology for the First Project and structuring a potential future procurement for fixed guideway transit vehicles.

The City is not obligated to inform respondents of the reasons for, or the details of, its technology selection. The City reserves the right to incorporate in a future procurement, if issued, any recommendation presented in the responses to this RFI. If the City desires to use proprietary or confidential information submitted by a respondent, the City shall first obtain the written permission of the respondent prior to its use. Other than this obligation regarding the use of proprietary or confidential information, **neither the City nor any respondent to this RFI has any obligation to the other under this RFI now or in the future.**

INFORMATION PACKAGE

The Information Package consists of a description of the First Project's systems and vehicle characteristics and three sets of questionnaires which should be completed in their entirety:

- Technology Characteristics Questionnaire;
- Vehicle Characteristics Questionnaire; and
- System Characteristics Questionnaire.

The City strongly encourages the submission of additional technical or promotional material with the completed Information Package. The additional information may include technical data, photographs, system design drawings, specifications, documentation and narrative descriptions explaining the technical aspects and proven characteristics of the technology, and any modifications to the technology that may be needed to accommodate the First Project's characteristics.

Information on more than one technology may be submitted. A separate Information Package should be completed for each technology. All information submitted will be subject to public disclosure under the Hawaii Uniform Information Practices Act (Hawaii Revised Statutes Chapter 92F) unless clearly marked "CONFIDENTIAL" or otherwise identified as proprietary or confidential information. If specific information is identified as proprietary or confidential, that information will not be subject to public disclosure, unless the respondent has given its written

permission. All other information not specifically identified as proprietary or confidential information will be subject to public disclosure. The City will not be responsible and a respondent cannot hold the City liable for the disclosure of proprietary or confidential information submitted in response to this RFI that is not properly marked or identified as proprietary or confidential. Blanket-type identification by designating the entire response, whole pages or sections as containing proprietary or confidential information is not permitted and will be invalid.

INFORMATION PACKAGE
FIRST PROJECT SYSTEM CHARACTERISTICS

The following characteristics are provided for an understanding of the currently planned system. All system characteristics are subject to change if a supplier provides convincing evidence that it would be in the City's best interest to do so. They have been deemed to be practical requirements for planning the system, but if a technology cannot meet one or more of these characteristics, we would like to hear what changes the supplier would propose and any reasons why the City should consider making a change.

1. Route Length:

- Approximately 20 miles.

2. Station Spacing:

- Approximately 1 mile (19 stations).

3. Station Length:

- 300 ft. maximum.

4. Guideway:

- Dual guideway, 20 miles each direction.

5. Mostly elevated and grade separated guideway.

6. Right-of-Way Type/Speeds:

- Completely exclusive/private: 55 mph or more;
- Fenced exclusive 55 mph or more.

7. Route Geometric Constraints:

- Minimum horizontal radii:
 - Maintenance Facility: 150 ft.;
 - Elevated Structure: 400 ft.
- Minimum horizontal lengths:
 - Curves: 100 ft.;
 - Tangents: 100 ft.;
 - Spirals: 100 ft.
- Vertical alignment:
 - Maximum line grade: 6%;
 - Maximum station grade: 1%.

8. Horizontal/Vertical Clearances:

Dependent on transit technology chosen, but in accordance with best practice and local requirements.

INFORMATION PACKAGE
FIRST PROJECT SYSTEM CHARACTERISTICS

9. Diverging / Crossing Requirements:

- Turnouts: yes;
- Crossovers: yes.

10. Line capacity:

- Maximum projected: 9,000 passengers per hour per direction (pphd);
- Minimum headway: 2-3 minutes

11. Hours of Operation:

- 4:00 a.m. to 12:00 a.m. service day;
- 6:00 a.m. to 9:00 a.m. morning peak;
- 3:00 p.m. to 6:00 p.m. evening peak.

12. Average Speed:

- End-to-end trip time of 40 minutes making all stops with a 20 second dwell time at each station.

13. Station Dimensions:

- No platform screen doors;
- Platform length: 300 ft. maximum;
- Center platform width: 26 ft. desirable minimum;
- Center platform width: 24 ft. absolute minimum;
- Side platform width: 14 ft. desirable minimum;
- Side platform width: 12 ft. absolute minimum.

14. Emergency Evacuation Walkways:

- Must be continuous along entire guideway;
- Must be accessible from vehicle;
- Minimum evacuation walkway width: 2'-6";
- Minimum evacuation walkway height: 6'-8";
- Minimum maintenance walkway width: 2'-0";
- Minimum maintenance walkway height: 6'-8";
- Walkway width must be clear of the vehicle dynamic envelope;
- Walkway around switches must meet state and local requirements.

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FIRST PROJECT SYSTEM CHARACTERISTICS

15. Traction Power:

- Dependent on transit technology chosen;
- Substation spacing: approximately 1 mile;
- Substation size: approximately 2.0 – 4.0 MW.

16. Train Control / Signal System:

- Fully automatic train operation (normal);
- Back-up manual operation: train operated by Line of Sight (LOS) with wayside signals.
- Fully automatic bi-directional operations capability

17. Communications:

- Operations Control Center (OCC): yes;
- High Speed Cable Transmission System: yes;
- Public Address (PA): yes;
- Station platform Variable Message Signs (VMS): yes;
- Radio system: yes;
- Telephone system: yes;
- System-wide Supervisory Control & Data Acquisition: yes;
- System-wide Closed Circuit Television security coverage: yes;
- Fire and emergency management system: yes.

18. Fare Collection:

- Self-service honor system with Proof of Payment: yes;
- Station Ticket Vending Machine: yes;
- Station Ticket Validators: yes

19. Noise and Vibration:

- Levels and criteria as established by the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Guidance Manual* or better: the First Project will have a maximum combined goal of 75 dBA at station platforms.

20. Other Characteristics:

- Facilities and vehicles must be fully accessible and meet all the Americans with Disabilities Act (ADA) requirements, including U.S. Department of Transportation regulations at 49 CFR Part 38, Transportation for Individuals with Disabilities;
- Meet all Buy America requirements; and
- The technology must be cost-effective to operate and maintain.

INFORMATION PACKAGE
FIRST PROJECT VEHICLE CHARACTERISTICS

1. General:

- Attractive appearance;
- Electric propulsion;
- High floor;
- Fully automatic train operation (with manual back-up);
- Bi-directional vehicles;
- Third rail or equivalent current collection (no Overhead Contact System);
- Dynamic braking (regeneration preferred);
- ADA compliant (including specified stringent ADA step height and gap requirements, level boarding preferred);
- Crash worthiness compliant with latest U.S. national codes and standards (others considered);
- Fire performance to National Fire Prevention Association (NFPA) 130;
- Emergency evacuation provisions;
- Video monitoring and recording;
- Automatic vehicle location / vehicle management system;
- Maintenance and diagnostic system;
- High reliability / availability;
- Low mean time to repair;
- Vehicle life (25 years minimum);
- Resilient wheels / other noise mitigation measures;
- Automatic passenger counting system;
- Ergonomic design to accommodate 5th percentile female to 95th percentile male.

2. Performance:

- Maximum operating speed: 55 mph;
- Acceleration rate: 3.0 miles per hour per second (mphps);
- Service braking rate: 3.0 mphps;
- Minimum mainline horizontal radius: 400 ft.;
- Minimum Yard & Shop horizontal radius: 150 ft.;
- Maximum grade: 6% or more.

INFORMATION PACKAGE
FIRST PROJECT VEHICLE CHARACTERISTICS

3. **Passenger Accommodations:**

- Two wheelchair spaces (minimum / vehicle); tip-up seats provided in these areas;
- Dedicated space for luggage (including bicycles and surfboards);
- Minimum seated ratio: 50% of passenger floor area;
- Air conditioning;
- PA system with auto-announcer;
- Dynamic destination and passenger information displays;
- Passenger to OCC emergency communications.

4. **Train Sets:**

- Capable of running in both single and multiple unit coupled consists;
- Capable of failed train retrieval;
- Capable of bidirectional operation.

INFORMATION PACKAGE
TECHNOLOGY CHARACTERISTICS QUESTIONNAIRE

9. Can multiple manufacturers provide compatible interfacing systems equipment in a future procurement? If so, please provide the names of up to four other manufacturers of compatible train control/signaling, traction power distribution, propulsion and braking control equipment.
10. Would your system comply with federal and state regulations and requirements, including the following?
- Americans with Disabilities Act (ADA);
 - Buy America Act;
 - Hawaii Seismic Codes;
 - Fire Protection and safety evacuation regulations (including NEPA 130).
11. What features does your system offer which could reduce the impact of construction?
12. Provide high resolution digital photograph(s) of your proposed system and proposed vehicles which are currently in service that can be used in presentations and publicly released reports (do not provide artist renderings).

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TECHNOLOGY CHARACTERISTICS QUESTIONNAIRE

II - COSTS

13. If your system requires a proprietary guideway, please provide a typical list of quantities for piers, beams, walkways and guidance mechanisms for 450 linear feet of dual guideway with a clearance of 20 feet above ground level. (Assumptions should include 150-foot long spans).
14. Please provide information regarding actual costs of your vehicles and equipment for similar transit systems recently built or in revenue service.
- Are there any unique costs or proprietary technology considerations associated with your technology (positive or negative)? Please explain:

 - Please tell us if your system would reduce the costs associated with right-of-way acquisition and/or reduce the impacts to traffic and the community when compared to an elevated 28 foot wide guideway built on single piers at approximately 150 foot spacing. Please explain:

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TECHNOLOGY CHARACTERISTICS QUESTIONNAIRE

19. How do you typically guarantee the long term availability of replacement vehicles, systems equipment, and spare parts, as well as software support?

INFORMATION PACKAGE
VEHICLE CHARACTERISTICS QUESTIONNAIRE

1. General:

- Electric propulsion: YES _____ NO _____
- High floor: YES _____ NO _____
- Fully automatic train operation (manual back-up) YES _____ NO _____
- Bi-directional vehicles: YES _____ NO _____
- Third rail or equivalent current collection: YES _____ NO _____
- Dynamic braking: YES _____ NO _____
- Regenerative braking: YES _____ NO _____
- ADA compliant: YES _____ NO _____
- Level boarding: YES _____ NO _____
- Crash worthiness compliant: YES _____ NO _____
- Crash worthiness details provided: YES _____ NO _____
- Fire performance to NFPA 130: YES _____ NO _____
- Emergency evacuation provisions: YES _____ NO _____
- Video monitoring and recording: YES _____ NO _____
- Automatic vehicle location / VMS system: YES _____ NO _____
- Vehicle life: _____ years minimum
- Details of noise mitigation measures provided: YES _____ NO _____
- Vehicle maintenance and diagnostic system: YES _____ NO _____
- High reliability / availability: _____ mean time between train delays
- Low mean time to repair: _____ mean time to repair
- Expected vehicle life: _____ years minimum
- Automatic passenger counting system: YES _____ NO _____
- Vehicle general arrangement drawings provided: YES _____ NO _____
- Vehicle cross sections provided: YES _____ NO _____
- Vehicle to guideway interface details provided: YES _____ NO _____
- Vehicle static clearance envelope provided: YES _____ NO _____
- Vehicle dynamic clearance envelope provided: YES _____ NO _____
- Vehicle length (over ends of vehicle): _____ ft.
- Vehicle length (over extended couplers): _____ ft.
- Vehicle width (maximum carbody): _____ ft.

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VEHICLE CHARACTERISTICS QUESTIONNAIRE

- Vehicle width (over door threshold): _____ ft.
- Vehicle height (maximum): _____ ft.
- Maximum weight per vehicle (empty): _____ lbs.
- Ergonomic design as specified: YES _____ NO _____

2. Performance:

- Maximum operating speed: _____ mph
- Maximum acceleration rate: _____ mphps
- Service braking rate: _____ mphps
- Emergency braking rate: _____ mphps
- Minimum horizontal radius curve: _____ ft.
- Minimum vertical radius curve: _____ ft., crest _____ ft., sag
- Maximum grade: _____ % for _____ ft.
- Maximum sustained grade: _____ %

3. Passenger Accommodations:

- # of wheelchair spaces: _____ spaces
- Number of seats per car: _____ seats (tip-up seats may be included)
- Number of standees per car at design load of 4 passengers / m² (AW2): _____ standees
- Total number of passengers per car (seated + standees) at AW2 design load: _____ total passengers
- Air conditioned: YES _____ NO _____
- PA system with auto-announcer: YES _____ NO _____
- Passenger to OCC communications: YES _____ NO _____
- Destination and passenger information displays: YES _____ NO _____

4. Train Sets:

- Capable of coupling to make multicar trains: YES _____ NO _____
- Capable of failed train retrieval: YES _____ NO _____
- Capable of bidirectional operation from each car: YES _____ NO _____

INFORMATION PACKAGE
SYSTEM CHARACTERISTICS QUESTIONNAIRE

1. Superelevation Limits

What are the superelevation requirements of your system?

Please explain:

2. Route Geometric Constraints

Does your system meet the following criteria?

- Minimum horizontal radii:
 - Maintenance Facility: 150 ft.;
 - Elevated Structure: 400 ft.
- Minimum horizontal lengths:
 - Curves: 100 ft.;
 - Tangents: 100 ft.;
 - Spirals: 100 ft.
- Vertical alignment:
 - Maximum station grade: 1%;

If not, please explain:

3. Hours of Operation:

Does your system meet the following?

- 4:00 a.m. to 12:00 a.m. service day;
- 6:00 a.m. to 9:00 a.m. morning peak;
- 3:00 p.m. to 6:00 p.m. evening peak.

YES _____ NO _____

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SYSTEM CHARACTERISTICS QUESTIONNAIRE

4. Station Dimensions:

- Platform length: 300 ft. maximum; with all doors on platform?
YES _____ NO _____

If not, please explain:

5. Emergency Evacuation Walkways:

Does your system meet all of the following criteria?

- Must be along entire guideway;
 - Must be accessible from vehicle;
 - Minimum evacuation walkway width: 2'-6";
 - Minimum evacuation walkway height: 6'-8";
 - Minimum maintenance walkway width: 2'-0";
 - Minimum maintenance walkway height: 6'-8";
 - Walkway width is clear of the vehicle dynamic envelope;
 - Walkway around switches meet state and local requirements.
- YES _____ NO _____

If not, please explain:

6. Traction Power:

- Power: Please provide Voltage and Distribution Configuration;
- Substation spacing _____ ft.;
- Substation size: _____ MW.

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SYSTEM CHARACTERISTICS QUESTIONNAIRE

7. Train Control / Signal System:

Can your system be supplied with a bi-directional fully automatic train operation with manual back-up?

YES _____ NO _____

If not, please explain:

Please provide examples of existing installations in revenue service:

8. Communications:

- Radio system: YES _____ NO _____
- Passenger communication system to OCC/
Operators: YES _____ NO _____
- On-board Closed Circuit Television: YES _____ NO _____
- Fire & emergency management system: YES _____ NO _____
- On-board ADA message system: YES _____ NO _____

9. Noise and Vibration:

- Can your system meet or exceed the levels and criteria as established by the FTA *Transit Noise and Vibration Impact Assessment Guidance Manual* and the goal of 75 dBA at stations?

YES _____ NO _____

Please explain how this is achieved:

If not, please explain:

- What noise level is achieved from your system operating on elevated guideway at 55 mph, measured 50 feet from the guideway centerline?

_____ dBA

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SYSTEM CHARACTERISTICS QUESTIONNAIRE

Cite a location where such a level can be measured:

10. Other Characteristics:

Does your system provide the following?

- Fully accessible and meets all ADA requirements, including the regulatory requirements of 49 CFR Part 38, Transportation for Individuals with Disabilities;
- Meets all Buy America requirements; and
- Cost-effective to operate and maintain.

YES _____ NO _____

If not, please explain:

Please explain how cost-effectiveness is achieved:
