

PROCUREMENT SUMMARY

**HR4000 HEAVY RAIL VEHICLES (HRV) ACQUISITION,
RAIL VEHICLE CONTRACTOR/OP6355500HR4000**

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| 1. | Contract Number: OP6355500HR4000 | |
| 2. | Recommended Vendor: CRRC MA Corporation | |
| 3. | Type of Procurement (check one): <input type="checkbox"/> IFB <input checked="" type="checkbox"/> RFP <input type="checkbox"/> RFP-A&E <input type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order | |
| 4. | Procurement Dates: | |
| | A. Issued: 05.29.15 | |
| | B. Advertised/Publicized: 06.06.15 | |
| | C. Pre-proposal/Pre-Bid Conference: 06.18.15 | |
| | D. Proposals/Bids Due: 01.11.16 | |
| | E. Pre-Qualification Completed: 10.10.16 | |
| | F. Conflict of Interest Form Submitted to Ethics: 09.19.16 | |
| | G. Protest Period End Date: 11.18.16 | |
| 5. | Solicitations Picked up/Downloaded: 181 | Bids/Proposals Received: 2 |
| 6. | Contract Administrator: Joe Marzano | Telephone Number: (213) 922-7014 |
| 7. | Project Manager: Cop Tran | Telephone Number: (213) 922-3188 |

A. Procurement Background

This Board Action is to approve Contract No. OP6355500HR4000 for the purchase of new Heavy Rail Vehicles (HRVs) to support the Purple Line Extension and to replace the original 30 A650 HRVs. The Base order is for 64 HRVs: 34 vehicles are for Section 1 of the Purple Line Extension and 30 vehicles are to replace the original A650 HRVs that are expected to reach the end of its useful life. The Contract also includes options for up to 218 additional vehicles to meet future service expansions and the opening of new subway extensions. Board approval of contract awards are subject to resolution of any properly submitted protest.

The RFP was issued in accordance with Metro's Acquisition Policy and the contract type is a firm fixed unit price.

Sixteen amendments were issued during the solicitation phase of this RFP:

- Amendment No. 1, issued on 06.05.15 provided the pre-proposal conference meeting location and agenda;
- Amendment No. 2, issued on 06.19.15 established a project data repository for planholder access to reference documents;
- Amendment No. 3, issued on 07.07.15 extended the proposal due date to 10.30.15 and edited the Technical Specifications and commercial terms;
- Amendment No. 4, issued on 08.03.15 extended the proposal due date to 11.30.15, edited the Technical Specifications and commercial terms and provided edited pricing and Local Employment Program (LEP) forms;

- Amendment No. 5, issued on 08.20.15 edited the Technical Specifications and commercial terms and provided edited pricing form (PF-5);
- Amendment No. 6, issued on 09.04.15 edited the Technical Specifications and commercial terms;
- Amendment No. 7, issued on 09.18.15 edited the Technical Specifications;
- Amendment No. 8, issued on 09.18.15 edited the Technical Specifications, commercial terms and Local Employment Program;
- Amendment No. 9, issued on 10.28.15 extended the proposal due date to 01.11.16;
- Amendment No. 10, issued on 12.08.15 edited the Technical Specifications and commercial terms;
- Amendment No. 11, issued on 12.18.15 edited the commercial terms;
- Amendment No. 12, issued on 07.12.16 after receipt of proposals requested Best and Final Offers (BAFOs), established BAFO due date of 08.08.16;
- Amendment No. 13, issued on 07.18.16 after receipt of proposals extended the BAFO due date to 08.22.16 and edited the Technical Specifications and commercial terms;
- Amendment No. 14, issued on 07.21.16 after receipt of proposals edited the commercial terms and provided pricing forms in excel format;
- Amendment No. 15, issued on 08.16.16 after receipt of proposals extended the BAFO due date to 09.07.16; and
- Amendment No. 16, issued on 08.25.16 after receipt of proposals edited the technical specification.

A total of two proposals were received on January 11, 2016. A pre-proposal conference and vehicle inspection was held on June 18, 2015. An additional vehicle inspection and shop tour was provided to proposers in the competitive range during negotiations in June 2016.

Metro's responses to questions received throughout the solicitation period were made accessible to all solicitation plan holders by posting them to the Metro project data repository. There were 234 questions and answers uploaded to the Metro site from June 19, 2015 to December 18, 2015. All available drawings, manuals, and other reference material were posted to the site.

Over the course of the solicitation period there were several requests to extend the proposal due date by prospective proposers. Metro agreed to extend the proposal due date from October 1, 2015 to January 11, 2016. Proposers also requested extensions to the BAFO due date from August 8, 2016 to September 7, 2016. These extension requests were granted to ensure maximum competition from an already limited field of interested proposers.

The proposal evaluation period, from January 11, 2016, through July 11, 2016, included oral presentations, proposer capacity and capability site visits, transit agency reference verifications and face-to-face negotiations. This comprehensive

process was necessary to thoroughly assess the strengths and weaknesses of each of the proposer's technical and price proposals.

B. Evaluation of Proposals/Bids

A Proposal Evaluation Team (PET) consisting of staff from Rail Vehicle Acquisition, Rail Fleet Services, and Rail Transportation was convened and conducted a comprehensive technical evaluation of the proposals received. Furthermore, technical advisors (TAs) from Metro's Rail Fleet Services, Rail Wayside Systems, Rail Vehicle Engineering and Metro contracted technical consultants provided reports to the PET as Subject Matter Experts (SMEs).

The proposals were evaluated based on the following evaluation criteria and weights:

- | | |
|--|------------|
| • Past Experience and Past Performance | 375 points |
| • Price | 300 points |
| • Technical Compliance | 250 points |
| • Project Management Experience | 75 points |
| • Voluntary Local Employment Program | 50 points |

The evaluation criteria are appropriate and consistent with criteria developed for other, similar vehicle acquisition procurements. Several factors were considered when developing these criteria and weights, giving the greatest importance to past experience and past performance on new rail vehicle delivery.

Both proposals received were determined to be within the competitive range. The firms are listed below in alphabetical order:

1. CRRC MA Corporation (CRRC MA)
2. Hyundai Rotem U.S.A., Inc. (Hyundai Rotem)

The proposal evaluation kick-off was conducted on January 12, 2016. Technical Advisors (TAs) were used to support the PET with their expertise in the relevant subject matter. Comments from the PET and TAs were compiled during the week of February 15, 2016 and a Request for Clarification (RFC) was sent to both proposers on February 25, 2016, with a due date of March 11, 2016. A clarification due date extension request was granted, extending the clarification due date to March 25, 2016.

The proposer oral presentations and capacity and capability site visits were scheduled with each firm in April 2016. CRRC MA's oral presentation and site visit was held at its carshell manufacturing facility in Changchun, China on April 25-26, 2016. Hyundai Rotem's oral presentation and site visit was held at its carshell and truck manufacturing facility in Changwon, South Korea on April 28-29, 2016. During the oral presentation and site visit, the proposer's project managers and key team members had an opportunity to present each team's qualifications, project

management plan and facility capability and capacity at its respective manufacturing location.

In May, 2016, several in-person transit agency reference check visits were conducted to verify each proposer's past performance and past experience. During the in-person agency reference verification visits, Metro staff met with transit agency project management, operations and maintenance personnel to learn about their experience conducting business with the proposer and to witness the vehicles in its operating environment. Metro staff also verified references by telephone and through written reference verification surveys sent directly to Metro prior to the proposal due date from other transit agencies.

The PET considered the proposals, oral presentations, site visits and reference verification in its initial technical proposal evaluation score. The price proposals were then opened and pre-negotiation positions were established using Metro's Independent Cost Estimate (ICE). Prior to negotiations, the PET compiled each proposer's relative strengths and weaknesses for discussion during negotiations to provide proposers with an opportunity to improve its proposal in the BAFO.

Negotiation discussions were held from June 20, 2016, to July 1, 2016, culminating in conformed commercial terms and Technical Specifications to be used as the basis for the request for BAFO. Invitations to submit a BAFO were issued to both proposers in the competitive range on July 12, 2016, with a BAFO due date of August 8, 2016. Two BAFO due date extension requests were granted extending the BAFO due date to September 7, 2016. The final evaluations of the BAFO were completed the week of September 26, 2016, and were used as the basis of the final recommendation for award.

Metro conducted a Buy America Pre-Award Audit on both Proposers the week of October 10, 2016, in accordance with FTA guidance. Both Proposers were audited and found to exceed the FTA's Buy America requirements. The enhanced U.S. content commitment will be made a contractual requirement.

Qualifications Summary of Firms within the Competitive Range: CRRC MA Corporation

CRRC MA, a subsidiary of CRRC Corporation Ltd., is the largest rolling stock manufacturer in the world and has supplied vehicles to over 13 countries including Brazil, Argentina, Australia and New Zealand. CRRC MA has proposed to perform carshell manufacturing at its Changchun, China facility with final assembly occurring in Springfield, MA. Final assembly for Metro railcars will occur at CRRC MA's facility currently under construction in Springfield MA. The final assembly facility will consist of 40 acres which will include vehicle production facilities and a test track used to conduct routine and dynamic railcar testing. Construction on the facility is currently on schedule and is expected to be completed by Summer 2017. Major component manufacturing for the propulsion, heating, ventilation and air conditioning (HVAC)

and lighting systems will be performed at a facility in Los Angeles as part of its Local Employment Program where CRRC MA intends to supply these systems to all of its North American customers, including Metro.

CRRC MA's proposal strengths include lowest evaluated Price offer and the highest technically rated proposal. CRRC MA ranked highest in all technical evaluation categories including Past Experience and Past Performance, Technical Compliance and Project Management. CRRC MA also had the highest commitments for Metro's Local Employment Program and Enhanced U.S. Content Program.

Hyundai Rotem U.S.A, Inc.

Hyundai Rotem is part of the Hyundai Motor Group and has supplied rolling stock vehicles to over 15 countries including the U.S., Turkey, India, Greece, Canada, Brazil, Australia, and New Zealand. In the U.S., Hyundai Rotem has supplied rail vehicles to SEPTA, Denver RTD, MBTA, Tri-Rail (Miami) and Metrolink. Hyundai Rotem has proposed to perform carshell and truck manufacturing at its Changwon, South Korea facility with final assembly performed at a facility in Los Angeles as part of its Local Employment Program.

Hyundai Rotem's strength is that it has experience delivering rail vehicles in the U.S. However, Hyundai Rotem was two years late on the SEPTA project and over one year late on the Metrolink project. Hyundai Rotem has since improved its schedule performance record by delivering the Denver RTD vehicles on-time. Overall, its Past Performance, Technical Compliance and Project Management elements were not evaluated to be as strong as the recommended awardee. Hyundai Rotem also had a lower Local Employment Program value and higher Price offer.

| 1 | Firm | Average Score | Factor Weight | Weighted Average Score | Rank |
|-----------|---|----------------------|----------------------|-------------------------------|-------------|
| 2 | CRRC MA Corporation | | | | |
| 3 | Past Experience and Past Performance | 80.22 | 375 | 300.8 | |
| 4 | Price (Base + Options) with enhanced U.S. content | 100.00 | 300 | 300.0 | |
| 5 | Technical Compliance | 79.78 | 250 | 199.4 | |
| 6 | Project Management | 81.71 | 75 | 61.3 | |
| 7 | Voluntary Local Employment Program Incentive | 100.00 | 50 | 50.0 | |
| 8 | Total | | 1050 | 911.5 | 1 |
| 9 | Hyundai Rotem U.S.A, Inc. | | | | |
| 10 | Past Experience and Past Performance | 75.77 | 375 | 284.1 | |
| 11 | Price (Base + Options) with enhanced U.S. content | 95.76 | 300 | 287.3 | |
| 12 | Technical Compliance | 75.28 | 250 | 188.2 | |

| | | | | | |
|----|--|-------|-------------|--------------|----------|
| 13 | Project Management | 76.93 | 75 | 57.7 | |
| 14 | Voluntary Local Employment Program Incentive | 75.63 | 50 | 37.8 | |
| 15 | Total | | 1050 | 855.1 | 2 |

Two important evaluation factors introduced to the RFP process were the incentives created by Metro’s voluntary Local Employment Plan and its Enhanced U.S. Content Program. Both firms proposed a level of participation in the Local Employment Plan and also proposed U.S. content in excess of the FTA’s 60% Buy America content requirement. This participation in both programs resulted in incentive points for the Local Employment Program, and a trade-off against the Price factor for the value of the proposed U.S. content in excess of 60%. CRRC MA proposed a higher level of commitment for new local jobs as well as enhanced U.S. content value; thus, it received more points for new local jobs and a higher trade-off value that was applied to their Price score.

Local Employment Plan

| | | CRRC MA Corporation | Hyundai Rotem U.S.A., Inc. |
|----|--|----------------------------|-----------------------------------|
| A. | Total Local Employment, Facility and Training Investment | \$38,395,972 | \$29,038,721 |

Enhanced U.S. Content Program – Price Trade Off

| | | CRRC MA Corporation | Hyundai Rotem U.S.A., Inc. |
|----|---|----------------------------|-----------------------------------|
| A. | BAFO Price (Base & Options) | \$646,995,869 | \$670,065,708 |
| B. | Estimated Travel Costs | \$773,572 | \$926,738 |
| C. | Enhanced U.S. Content Value | \$21,512,934 | \$16,983,531 |
| D. | Proposed Price for Evaluation Purposes only (Row A + B - C) | \$626,256,507 | \$654,008,915 |

Note: Estimated travel costs and U.S. Content Value are for evaluation purposes only.

C. Cost/Price Analysis

The recommended price has been determined to be fair and reasonable based upon adequate price competition, ICE, technical evaluation, fact finding, and negotiations. The recommended price for the Base Contract and Options, spare parts, special tools, diagnostic equipment, training aids and performance bond is \$552,991,216 or 46% lower than the ICE. The Base Contract vehicle unit price of \$2,350,000 per car is consistent with other recent contract awards to CRRC by Massachusetts Bay Transportation Authority (MBTA), and Chicago Transit Authority (CTA). The recommended Base Contract per car unit price of the HR4000 is also consistent with a recent contract awarded by New York City Transit (NYCT).

| | Proposer Name | Proposal Amount | Metro ICE | BAFO Price |
|----|----------------------|------------------------|------------------|-------------------|
| 1. | CRRC MA Corporation | \$637,468,068 | \$1,199,987,085 | \$646,995,869 |

| | | | | |
|----|---------------------------|---------------|-----------------|---------------|
| 2. | Hyundai Rotem U.S.A, Inc. | \$683,137,887 | \$1,199,897,085 | \$670,065,708 |
|----|---------------------------|---------------|-----------------|---------------|

D. Background on Recommended Contractor

The recommended firm, CRRC MA, located in Boston, MA, is a wholly owned subsidiary of CRRC Corporation Ltd., headquartered in Changchun, China. CRRC was formed on June 1, 2015, with the merger of China CNR Corporation Ltd. and CSR Corporation Ltd. and is the largest rolling stock manufacturer in the world. CRRC has over 50 years of vehicle development and construction experience with an annual production capacity of 1,000 high speed rail vehicles, 1200 urban railway vehicles, 500 general railway vehicles and 6000 trucks. Since 1959, CRRC MA has produced over 30,000 railway vehicles. CRRC MA has a skilled workforce of over 13,000 workers worldwide with over 1,223 acres of manufacturing floor space. CRRC MA has recently been awarded contracts to supply MBTA for up to 284 new heavy rail vehicles including Options and CTA for up to 846 new heavy rail vehicles including Options.