

**Request for Proposal for Design and Manufacture of Rail Cars and Related Services**  
**Solicitation # 20CTRAIL-1**

**PART 3: SCOPE OF WORK**

**1. Design, Manufacture, Testing, Delivery and Commissioning of single-level push-pull rail cars**

- a. Contractor shall perform all services and provide all goods and materials to design, manufacture, test, deliver, and commission a base order of rail cars including (41) trailer cars and (19) cab cars, and any additional rail cars, if Option(s) in Section 7 below are so exercised by CTDOT, all in compliance with all FRA regulations in effect at the time of delivery and in accordance with the Technical Specification (RFP Part 4), including but not limited to, the following:
  - i. capable in all respects of operating at speeds up to one hundred twenty-five (125) mph on FRA class 1 through class 7 track;
  - ii. operable in push-pull intercity and commuter passenger service;
  - iii. with all labor, equipment, and materials used in the manufacture of the rail cars shall be in strict accordance with the requirements of the Technical Specification; and
  - iv. with delivery in strict accordance with the delivery schedule set forth in subsection (c) below.
- b. Contractor shall perform all required testing of the rail cars in accordance with Chapter 19 of the Technical Specification, and the following.
  - i. High-speed testing will be conducted at the Transportation Technology Center, Inc. (“TTCI”) facilities located at 55500 DOT Rd, Pueblo, CO 81001. Contractor shall be responsible for making all arrangements with TTCI and providing a locomotive capable of producing the required speeds for testing, all at no direct cost to CTDOT.
  - ii. On-site Acceptance testing will be conducted from the CT Rail Maintenance Facility on weekdays between the hours of 9 p.m. and 4 a.m. eastern time, as may be revised from time to time by CTDOT at its sole discretion. Testing will occur using CTDOT-provided locomotives and on rail territory owned by CTDOT or over which **CTrail** has operating rights. CTDOT will assist Contractor in obtaining required permissions from the host railroad(s) and providing required train personnel for testing on **CTrail** territory.
- c. Schedule and Conditions for Delivery of Rail Cars
  - i. Contractor shall deliver the base order of 41 trailer cars and 19 cab cars to CTDOT in accordance with the schedule below:

<b>Event</b>	<b>Calendar Days From NTP</b>
Delivery of Pilot Cars (3 Trailer Cars & 1 Cab Car)	791 days
Delivery of First Production Rail Car	973 days
Delivery of Last Rail Car of base order	1392 days

- ii. The pilot car delivery shall consist of three (3) trailer cars and one (1) cab car.
- iii. The rate of rail car delivery shall be four (4) rail cars per month.
- iv. There shall be no more than eight (8) unaccepted rail cars stored at CTDOT at any time, awaiting conditional acceptance, provided at least four (4) of those cars are in active testing.
- v. Cab cars and trailer cars shall each be delivered at a rate which, upon Conditional Acceptance of each rail car, enables CTDOT to use the rail cars in revenue service in consists of three (3) trailer cars and one (1) cab car.
- vi. All deliveries shall be to the CT Rail Maintenance Facility at Contractor's expense.
- vii. If the Contractor fails to meet the rail car delivery schedule, it will be subject to liquidated damages as set forth in Article 7 of the Contract.

## **2. Rail Car Documentation, Other Deliverables, and Responsibilities of the Contractor**

- a. Contractor shall supply specialized tools, diagnostic equipment, service consumables, spare parts, manuals, documentation, and training program as more particularly described in, and in accordance with, the Technical Specification. All manner of workmanship and material used in production shall conform in material, design and workmanship to the best practices known in the industry. All such specialized tools, diagnostic equipment, service consumables, spare parts, manuals, and documentation shall be delivered to CT Rail Maintenance Facility.
- b. Contractor shall submit all Contract Deliverables listed on the Contract Deliverable Requirements List (CDRL) and ensure that all Contract Deliverables, including without limitation, all design documents, be reviewed and approved in accordance with the design review process set forth in the Technical Specification at Chapter 3.03.02.
- c. Contractor shall submit final versions of the Compliance Matrix as set forth in the Technical Specification at Chapter 3.06.04.
- d. Contractor shall ensure that each subcontractor performing work related to major components, materials, systems and/or subsystems of the rail cars has a copy of the complete Technical Specification.
- e. Contractor shall be responsible for providing all engineering services required to complete the work.
- f. Contractor shall be responsible for any modifications in the design and/or manufacture of the rail cars that may be required in the event of changes in FRA regulations prior to Conditional Acceptance of each rail car.

## **3. Railroad Safety Requirements**

- a. All Contractor and subcontractor personnel working in the vicinity of the railroad or on railroad property must complete roadway worker protection ("RWP") training from the host railroad(s), at no expense to CTDOT. All Contractor and subcontractor personnel working in the vicinity of the railroad or on railroad property must wear a hard hat, an approved fluorescent safety vest, OSHA approved safety glasses and proper work boots, at all times, provided by Contractor or subcontractor, at no expense to CTDOT. Contractor shall ensure that their personnel and any subcontractor personnel carry at all times when at the New Haven Site, on the railroad territory, or at CTDOT offices, a photo

identification badge, which shall include the employee’s full name and the name of Contractor or subcontractor.

**4. Technical Assistance**

- a. Contractor shall provide service representative(s) at the CT Rail Maintenance Facility to conduct receiving inspection and acceptance testing, and subsequently for the entire rail car warranty period commencing with the start of revenue service, and thereafter at the request of CTDOT. The service representative(s) shall:
  - i. Participate in Contractor-provided training of CTDOT’s operating and maintenance personnel;
  - ii. Conduct (with CTDOT) receiving inspections and testing of rail cars upon delivery;
  - iii. Participate in acceptance documentation;
  - iv. Process and expedite warranty claims and order parts and materials; and
  - v. Provide technical expertise and support to CTDOT in commissioning, troubleshooting, and liaison with CTDOT’s contracted Maintenance Provider and service operator(s). Office space for Contractor’s Personnel will be provided by CTDOT.
  
- b. Contractor shall furnish the services of one or more, as mutually agreed upon with CTDOT, qualified, factory trained, English-speaking, field service engineer(s) promptly when requested by CTDOT for assistance during inspection, operation, testing and adjustment of the rail cars, to insure satisfactory performance, and to instruct a reasonable number of employees of CTDOT’s service operators and Maintenance Provider in the proper use and care of the rail cars, at no additional direct cost to CTDOT. The service engineer(s) shall remain available for the duration of all warranty periods, as defined in section 5 below.

**5. Warranty Services**

- a. Throughout all warranty periods as more particularly defined in subsection (b) below, Contractor shall provide all labor and materials, and arrange for all services required, in order to fulfill its warranty obligations set forth in the Contract, in a timely manner and all at no expense to CTDOT. Contractor’s obligation to perform such warranty services shall commence on the date of Conditional Acceptance of the first rail car.
  
- b. Each rail car shall have an individual warranty period commencing from the date of Conditional Acceptance and extending for two (2) years thereafter, in which period Contractor is obligated to provide all warranty services to that rail car. The warranty periods specific to certain warranted components of the rail cars shall be as follows:

Component(s)	Warranty Period
Journal bearings	1,000,000 miles of revenue service
Carbody structure and truck frames	15 years
Flooring materials and coverings	10 years

<b>Component(s)</b>	<b>Warranty Period</b>
Plastic glazing material and coating, batteries, elastomeric parts and bonding, seats and seat coverings	3 years
Specialized tools, diagnostic equipment, spare parts, material and equipment, and documentation as more particularly described in the Technical Specification	2 years
All items of the work not specifically identified above as being provided with a warranty of a longer duration	2 years

- c. The outstanding warranty period covering any item that is replaced or repaired by Contractor shall be extended for an additional one (1) year effective the day replacement or repair is completed to CTDOT's satisfaction.

#### **6. Capital Spare Parts**

- a. Contractor shall submit a capital spare parts list with its proposal, including the recommended quantities and prices. Pricing shall be extended to both CTDOT and its Maintenance Provider and shall be valid for the duration of the warranty period of the first rail car Conditionally Accepted.
- b. At the end of such first rail car warranty period, a price for each warranty spare part shall be negotiated between CTDOT and Contractor.
- c. Contractor shall be responsible for making all capital spare parts available to CTDOT, within sixty (60) days from delivery of the first production car.

#### **7. Options for Additional Rail Cars**

- a. In accordance with Article 10 of the Contract, CTDOT may exercise any one or more of four (4) Options for additional rail cars as listed below:
- i. Option 1: eight (8) trailer cars and four (4) cab cars
  - ii. Option 2: twelve (12) trailer cars and three (3) cab cars
  - iii. Option 3: thirteen (13) trailer cars and two (2) cab cars
  - iv. Option 4: twenty-six (26) trailer cars and four (4) cab cars
- b. Contractor shall perform all services and deliver all option rail cars in accordance with the delivery requirements set forth in Section 1 of this Scope of Work.
- c. Contractor shall deliver the Option rail cars in accordance with the schedule below:

	<b>Delivery of Last Option Rail Car, if only Option exercised</b>	<b>Delivery of Last Option Rail Car, if exercised after another Option</b>
<b>Option 1</b>	90 days after delivery of last production rail car	90 days after delivery of last rail car for preceding Option
<b>Option 2</b>	120 days after delivery of last production rail car	120 days after delivery of last rail car for preceding Option

<b>Option 3</b>	120 days after delivery of last production rail car	120 days after delivery of last rail car for preceding Option
<b>Option 4</b>	225 days after delivery of last production rail car	225 days after delivery of last rail car for preceding Option

## **8. Option for Post-Warranty Service and Support**

In accordance with Article 10 of the Contract, CTDOT may exercise an Option for post-warranty service and support of the rail cars (“Post-Warranty Service and Support”). If the Option is so exercised, Contractor shall provide Post-Warranty Service and Support, as detailed in sections 8.1 through 8.3 below commencing upon expiration of the warranty period of the first Conditionally Accepted rail car and continuing for a period of ten (10) years, with an option for an additional ten (10) year period exercisable by CTDOT at its sole discretion (the “Service and Support Period”). As part of Service and Support responsibilities, Contractor shall perform the activities below:

### **8.1 Post-Warranty Maintenance Plan**

- a. Contractor shall prepare a post-warranty maintenance plan identifying all activities required to maintain and repair the rail cars during the Service and Support Period (“Post-Warranty Maintenance Plan”), which shall include at a minimum but not be limited to, all activities required to maintain and repair the rail cars and all activities related to the reliability and safety of the rail cars in accordance with all Requirements and best industry practices and standards:
  - All scheduled maintenance activities required throughout the life of the rail cars;
  - Frequency and duration of each required activity;
  - Scheduling tool to demonstrate how the rail cars will be maintained throughout the life of the project;
  - Annual submittal of a maintenance schedule which details the maintenance activities for the subsequent calendar year by rail car and date; and,
  - Complete list of every inspection, testing, and maintenance requirement.
- b. Contractor shall submit a draft of the Post-Warranty Maintenance Plan to CTDOT within seventy-five (75) days of the Official Notice to Contractor exercising the option. Contractor is solely responsible for development and update of the Post-Warranty Maintenance Plan, which shall include, without limitation, the following:
  - All activities required to maintain and repair the rail cars and all activities related to the reliability and safety of the rail cars;
  - A list of consumable materials; and
  - A line replaceable unit (LRU) list.
- c. The Post-Warranty Maintenance Plan will be deemed final upon written approval of CTDOT, and thereafter shall be modified from time to time as Contractor determines to be necessary and shall be updated and submitted to CTDOT no less frequently than every six (6) months, unless otherwise approved by CTDOT.

## **8.2 Material Supply**

- a. Contractor shall supply CTDOT's maintenance provider with all material required for it to perform scheduled maintenance and unscheduled maintenance as set forth in the Post-Warranty Maintenance Plan including but not limited to that needed for ninety-two (92) day cab car inspection, one hundred eighty-four (184) day trailer car inspection, and for unscheduled maintenance on the rail cars. Contractor is responsible for arranging all shipping at its expense.
- b. Material to be supplied by Contractor shall be identified and replaced at the mutually agreed-upon designated Lowest Level Replaceable Unit ("LLRU").
- c. After the completion of the material delivery required to kick-off the Post-Warranty Service and Support Period (pursuant to the supply schedule in section 8.2(f) below), Contractor shall deliver material on an as-needed basis. CTDOT, or its authorized representative, will notify Contractor in writing of the need for material. Contractor shall deliver the requested material to CTDOT's requested maintenance facility within twenty-four (24) hours of CTDOT's notification.
- d. The material provided by Contractor will be stored in space provided at the CT Rail Maintenance Facility or other location that CTDOT may make available. Contractor is solely responsible for establishing inventory levels to meet the demand of the Post-Warranty Maintenance Plan and working with CTDOT's maintenance provider to determine needed storage and inventory control best practices.
- e. Contractor shall manage, track, receive, and store material per the Post-Warranty Management Plan.
- f. Contractor shall follow the schedule outlined below to kick-off the Post-Warranty Service and Support material delivery to CTDOT.
  - i. Within thirty (30) days of the expiration of the warranty period on the first rail car, Contractor shall supply required consumable materials to CT Rail Maintenance Facility.
  - ii. Within thirty (30) days of the expiration of the warranty period on the first rail car, Contractor shall supply sufficient material required to support the Maintenance activities as set forth in the Maintenance Plan.

## **8.3 Technical Support**

- a. During the Service and Support Period, Contractor shall provide 24-hour phone support and onsite technical support as needed to address any technical issues related to the rail cars and to assist CTDOT and its contracted maintenance provider and service operators, as needed. This technical support includes, but is not limited to, the following:
  - i. Assisting CTDOT's contracted Maintenance Provider in performing inspections, maintenance and repairs;
  - ii. Providing guidance on the proper maintenance procedures associated with the rail cars;
  - iii. Providing support in analyzing symptoms, troubleshooting, and diagnosing problems;
  - iv. Helping to identify the proper material;
  - v. Assisting in the documentation of reported problems and remedies. (This ensures the proper vehicle data logging and issue tracking in the proper systems and applications.)

- vi. Using major or complex repairs as opportunities for impromptu hands-on demonstration;
- vii. Providing technical help desk support to CTDOT and its contracted maintenance provider and service operator(s), including support of vehicles experiencing en-route defects or failures;
- viii. Providing technical expertise to support investigations, performance monitoring and fleet improvement programs;
- ix. Providing technical support to investigate and resolve systemic fleet problems;
- x. Maintaining and providing version control for applications of FMI, material and software to vehicles and material supply;
- xi. Generating, validating and maintaining all required maintenance work instructions/procedures in accordance with Original Equipment Manufacturer (OEM) specifications.
- xii. Providing reviews, updates and recommendations to maintenance practices and maintenance work instructions/procedures;
- xiii. Analyzing data logs and events and providing software updates as required; and
- xiv. Creating and tracking of reliability fleet performance report with data provided by CTDOT and by Contractor.