

Global Transportation District Preconstruction Update for ***MOTORMEDS*** Project

Presented by:



CONSTRUCTION

GLOBAL Transportation DISTRICT



PRECONSTRUCTION UPDATE FOR *MOTORMEDS* PROJECT

Responses must be received by Global Water District at 7:00 a.m. local time on Thursday
February 9, 2017 at:

John Ascuaga's Nugget Casino & Hotel
c/o: PCL/Global Transportation District
Bonanza B
1100 Nugget Ave, Sparks, NV 89431

The Global Transportation District (**GTD**) has awarded the **MOTORMEDS** project to PCL through a design-build contract. The project was awarded to PCL based on a submission that included a brief narrative and a very high level schematic layout of the facility. Since awarded the project, the PCL project team has been actively engaged in the project design and planning for over a



year. In that time, PCL and its design-build team have been working closely with the owner to ensure the project meets the RFP requirements, maintains project schedule and cost, reaches design completion, and all constructability options are evaluated for the project.

The selected ASC Student Teams are to assume the role of PCL on this project and are to work through several design, planning, cost, schedule, and other miscellaneous exercises in order to prepare deliverables as requested by GTD.

The purpose of this update is to demonstrate to GTD the qualifications, competency and project knowledge the PCL Team has in completing the design, maintaining budget & schedule, and prove their readiness to execute the work associated with the Project.

Selected ASC Student Teams are as follows:

Brigham Young University, Idaho	Clarkson University
California Polytechnic State University, SLO	Colorado State University
California Polytechnic State University, Pomona	Milwaukee School of Engineering
California State University, Chico	Montana Tech
California State University, Fresno	San Diego State University
California State University, Long Beach	University of Southern California



1) Introduction:

a) About Global Transportation District (GTD)

GTD provides public transportation services to over 5 million people in the metropolitan area through their extensive bus and rail services. GTD aspires to be the most respected transportation provider renowned for:

- Excellence
- Leadership
- Unsurpassed Value

This vision is upheld by the District's Core Values and Guiding Principles of which business is conducted upon. GTD expects their partnership with PCL to mirror these same principals.

- ***Mutual Obligation*** - In return for adding value, GTD can expect to perform meaningful work and to have satisfied customers.
- ***Teamwork*** - Every employee and business partner has something to contribute to GTD's teams. This belief is the key to mutual success.
- ***Ownership*** - Ownership means extraordinary performance by employees and outstanding value for clients. At the same time, local ownership ensures that local dollars remain in the communities where GTD and Contractor employees live and work.
- ***Social Responsibility*** - GTD encourages and supports its employees and contractors in their desire to improve the quality of life in their communities.
- ***Mobility*** – Our extensive geographic diversity is an asset. GTD goes where our partners and customers need us to be.
- ***Effective Communication*** - GTD provides the accurate and timely information required to support good decision-making.
- ***Diversity*** - GTD values men and women of diverse ages, religions, and ethnic backgrounds.
- ***Safety*** - GTD will not compromise the health and safety of its employees or the people of the metropolitan community that utilize their services.

b) Project Description:

The MOTORMEDS project, when complete, will provide maintenance to GTD's new fleet of rail vehicles. GTD is expanding the rail service and, as a result, has selected a new rail vehicle that requires the construction of a facility tailored to the new model of vehicle. In addition to servicing the rail vehicles, this facility will also contain a state of the art operations control center, maintenance of way services, and offices/training areas for the rail line management. The project must be closely coordinated with GTD as they will be completing the utility, site concrete, rail installation, landscaping, and other work outside of the building perimeter.

The project is being built for a government agency and is funded by the Federal Transit Administration (FTA). As a result of this, several other requirements and goals must be met in order to make this project successful. To name a few, these include Disadvantaged Business Enterprise (DBE) goals, Buy America compliance, and LEED Silver Certification (the first ever for a building of this kind).



2) Schedule of Events:

<u>Date</u>	<u>Deliverable</u>
January 20 th , 2017	Final day for RFI questions
January 27 th , 2017	Final addendums will be distributed to teams
February 9 th , 2017 (7AM)	Phase I deliverables due and Phase II issued
February 9 th , 2017 (9PM)	Phase II deliverables due and numbers will be drawn for presentation times
February 10 th , 2017 (6:30 AM)	Presentation materials due
February 10 th , 2017 (6:45AM- 5PM)	Meeting Times (Please note time change from pre-problem statement.)
February 10 th , 2017 (6:15PM)	Meeting Recap
February 10 th , 2017 (7:15PM)	Room Hosted Event
February 11 th , 2017	Career Fair



3) Proposal Requirements

a) Deliverable Format

- i) Respondents' submittals shall be clear, accurate, and comprehensive. Excessive or irrelevant materials will not be favorably received. The deliverable shall be signed by an individual or individuals authorized to execute documents on behalf of the Respondent.
- ii) All respondents will be acting as PCL and shall submit deliverables as such.
- iii) Proposals shall be three-hole punched in a single three-ring binder.
- iv) Proposals shall be organized, tabbed, and numbered in the order presented below:
 - A. Team Organization Chart and Responsibilities
 - B. Concrete Proposal
 - C. Subcontractor Comparison
 - D. Logistics and Crane Plan
 - E. Equipment
 - F. Access to High Bay Work
- v) In addition to a hard copy, an electronic version shall be submitted on a USB flash drive.
- vi) All RFP's shall use Calibri 11 pt. font.

b) Submittal Instructions

To be considered, GTD must receive from Respondent, one (1) original hard copy of the Proposal and one (1) electronic version, at the address set forth below, prior to **7:00 a.m. local time on February 9, 2016.**

In Person or by Courier

John Ascuaga's Nugget Casino & Hotel

Room: Bonanza B, 2nd Floor

1100 Nugget Ave, Sparks, NV 89431



4) Request for Clarifications

All questions, interpretations or clarifications, either administrative or technical must be requested in writing and directed to the GTD Representative, C/o PCL: Matt Meunier, mjmeunier@pcl.com. All written questions will be answered in writing and conveyed to all respondent's on the list. Oral statements regarding this deliverable by any persons are unverified and not binding.

To ensure a response, questions must be received via email no later than close of business on January 20, 2017.



5) Request for Proposal Components

a) **Team Organization Chart (Limit 3 pages, typed, single sided):**

- i) Provide a project organization chart with roles and responsibilities of each team member as it relates to the MOTORMEDS project.

b) **Concrete Proposal:**

- i) PCL will be self-performing the concrete caissons, footings, vertical concrete work including (foundation walls, equipment and elevator pits) along with the equipment and elevator pit slabs. All other slab on grade and elevated slab on metal deck will be performed by subcontract forces. Now that the drawings are complete, the owner is requesting an updated budget and schedule for the concrete work. Self-perform work presents a higher degree of risk to PCL when compared to subcontracting out the scope of work. Accuracy and a detailed plan of execution is critical to PCL's bottom line for this work.

1) Concrete Schedule: (Minimum of 2 pages – Maximum 10 pages, 11 x 17, single sided):

- (a) The construction schedule is considered of vital importance to the success of the Project for both the Owner and Contractor. As part of this update your PCL team should create an overall schedule for the concrete activities to show the anticipated approach to construct the foundations.

- (b) The Construction Schedule should use the “Critical Path Method” (CPM) method and should be prepared with any version of Oracle Primavera, or similar type and capable software. Refer to Attachment D – Construction Scheduling and Reporting Requirements.
- (c) Provide a schedule for all portions of concrete work from drilling of caissons to completion of foundations and back fill.
- (d) Particular attention should be paid to the sequence of installation of the foundation wall along B-Line to determine the sequence of work.
- (e) Schedule should also include a projection of the labor required for the completion of the concrete scopes of work and should correlate to the concrete activities and worker-hours estimated. Labor projections shall be submitted in the form of a bar graph.
- (f) Project Overview Bar Chart: The overview bar chart shall indicate the major components of work and the relationships and time frames in which the various components of the Work will be complete. Sufficient detail shall be included for the identification of subdivisions of the major components shown below, but does not need to follow the exact requirements called out in Attachment D.
 - 1. Sitework & Utilities
 - 2. Excavation
 - 3. Foundations
 - 4. Structure
 - 5. Exterior Skin & Roofing
 - 6. Interior Framing & Finishes
 - 7. Mechanical & Plumbing Systems
 - 8. Electrical systems
 - 9. Rail Installation
 - 10. Equipment Installation
 - 11. Etc.
- (g) The following Contract Milestones shall be included with the project schedule.
 - (i) Project Start: February 1, 2017
 - (ii) Concrete Start: April 20, 2017
 - (iii) Project Completion: February 23, 2019

2) Concrete Estimate (Limit 7 pages, typed single sided):

- (a) Provide a detailed concrete estimate for the concrete work outlined above. Stair edges, block outs, pipe penetrations, equipment pads, or other items not indicated below shall be excluded from this line item. The work shall be organized in a manner similar to below and include the total quantity for each item as well as the carried out price. The total price shall be carried under the appropriate bid item on the bid form.

Description	Production	Units	Avg. Cost/ Worker Hour	Material and Equipment Cost/Unit
FORMWORK				
Form/Strip Slabs, Bulkheads and Footings	3.2	SF/Worker Hour	\$ 52.26	\$ 1.25
Form/Strip Pile Caps	3.9	SF/Worker Hour	\$ 52.26	\$ 1.25
Form/Strip Walls and Pit Walls	5.6	SF/Worker Hour	\$ 52.26	\$ 1.25
CONCRETE AND PLACING				
Pour Caissons	3.2	CY/Worker Hour	\$ 39.38	
Pour Footings and Pile Caps	2.4	CY/Worker Hour	\$ 39.38	
Pour Walls and Pit Walls	2.7	CY/Worker Hour	\$ 39.38	
Pour Slabs	2.25	CY/Worker Hour	\$ 39.38	
Concrete Material		CY		\$ 135.00
Concrete Pumping Cost		CY		\$ 14.00
CONCRETE FINISHING				
Screeds, Trowel and Curing	269	SF/Worker Hour	\$ 55.37	\$ 0.02
Patch Walls	51	SF/Worker Hour	\$ 39.38	\$ 0.03

c) **Sub Comparison (Limit 3 pages, typed single sided):**

Using the attached three steel quotations, complete the subcontract bid recap sheet to ensure that the apparent low bidder has included a complete scope. Make your award recommendation for the steel package to GTD.

d) **Logistics Plan, Crane Selection and Placement (Limit 10 pages, typed single sided):**

- i) Hoisting is critical on the project and needs will change based on the work being performed and the adjacent work being completed by GTD. Below is an outline of three major phases for the project along with specific constraints.
- 1) Due to the nature of the proposed jobsite, the existing rail line onsite cannot be removed until the existing concrete trestle factory is removed. Use the proposed demo date of the existing tracks and explain how you will re-configure your excavation plan to still stay on schedule.
 - 2) Now that you have excavated underneath the train tracks and backfilled to proposed grade, sequence your fill operations so that the wall along Gridline B can be constructed and backfilled. (Use the attached productivity rates for footings and walls) to price the construction of this wall and schedule accordingly with backfill operations. Provide a detailed section cut excavation/fill plan in phases to depict the sequence of construction.

3) Once Gridline B Wall is constructed, please choose a crane from the list of options and devise a plan so that the building's structural steel can be erected (the heaviest steel is provided with the crane package) along with the weights of the heaviest Roof Top Units. Your selection of crane and location will need to be priced so that upper management can confirm that it will be the most cost effective way to build the project. (Provide plan views of the proposed cranes and their setup in relation to the building foot print).

(a). Tower Crane Options:

<http://www.morrow.com/equipment/cranes/hammerhead>

1. 316 Liebherr EC-H 12 Litronic - \$29,900 per month Rental (Freight In/Out \$40,000)
2. 420 Liebherr EC-H 16 - \$31,300 per month Rental (Freight In/Out \$45,000)

(b). Lattice Truck Mounted Crane Options:

http://www.linkbelt.com/lit/home_cranes1.htm

1. Link-Belt HC-238H II – \$34,900 per month Rental (Freight In/Out \$10,000)
2. Link Belt HC-278H II - \$54,900 per month Rental (Freight In/Out \$15,000)

e) Equipment – Car Hoists

- i) One of the major operationally critical components of the MOTORMEDS project is the car hoist system along Track 10. These two systems will allow a “married pair” (two semi-permanently coupled rail vehicles) to be lifted at once so the operations crews can perform various maintenance activities. There are several companies that engineer, fabricate and install these systems and GTD needs to know who PCL will be using. Several factors need to be taken into account when evaluating the various companies such as cost, lead time, Buy America requirements, and installation logistics.
- ii) In addition to selecting a manufacturer for the Car Hoist Systems, each team will be required to complete a work plan detailing how the Car Hoists are to be installed inside the building. Keep in mind that the caissons will need to be drilled after the building superstructure and roof is installed above.
- iii) Incorporate all activities associated with the Car Hoists into the project schedule at the same level of detail as the concrete activities. These activities should be isolated to their own WBS.

f) **High Bay Access Plan (Limit 7 pages, typed single sided):**

- i) Due to the depressed areas/pit of tracks 6 – 9, provide a cost effective work plan to install all high bay mechanical, electrical, plumbing, and fire sprinkler systems and duration of these activities. Your choice of scaffold dance floor or the use of interior boom lifts/scissor lifts, etc. to access this high area is your decision, but cost analysis and schedule will need to be provided based on your conclusion. Use the attached sections and plan views to develop your plan, schedule, and costs.

6) Attachments

- a) Applicable Contract Documents – Drawings and Specs
- b) Applicable Contract Requirements – Buy America
- c) Civil/Arch Section – Pete
- d) Attachment D – Construction Scheduling and Reporting Requirements – Ryan
- e) Attachment E – Car Hoists
- f) Attachment F – Steel Bid Recap and Quotes