

TASK ORDER NO. 011

TASK ORDER NAME: TRAX Remote VHLC Access

PROJECT CODE: FMA557 40-7557.68912

This is Task Order No. 011 to the On Call Maintenance Contract entered into by and between Utah Transit Authority (UTA) and Rocky Mountain System Services. (Contractor) as of February 2nd, 2021.

This Task Order is part of the On Call Maintenance Contract and is governed by the terms thereof.

The purpose of this Task Order is to specifically define the scope, schedule, lump sum price, and other terms applicable to the work identified herein.

UTA and Contractor hereby agree as follows:

1.0 SCOPE OF SERVICES

The scope of work for the Task Order #011 is hereby attached and incorporated into this Task Order.

2.0 SCHEDULE

The Substantial Completion Date for this Task is December 31st, 2021. The Final Acceptance Date for this Task is December 31st, 2021.

3.0 LUMP SUM PRICE

The price for this task order is a not to exceed \$472,796.00. Invoices will be billed on monthly basis for work completed to date.

4.0 APPLICABILITY OF FEDERAL CLAUSES

This Task Order does does not [Check Applicable] include federal assistance funds which requires the application of the Federal Clauses appended as Exhibit D to the On Call Maintenance Contract.

IN WITNESS WHEREOF, this Task Order has been executed by UTA and the Contractor or its appointed representative

UTAH TRANSIT AUTHORITY:

ROCKY MOUNTAIN SYSTEM SERVICES:

By: _____
Carolyn M Gonot, Executive Director Date
> \$100,000

By: _____

By: _____
Mary DeLoretto, Chief Service Development Officer Date
< 100,000

Date: _____

By: _____
David Hancock, Director of Asset Mgt. Date
< \$50,000

By: _____
Jared Scarbrough, Project Manager Date
< \$10,000

DocuSigned by:
Mike Bill
381716288970249
Legal Review

Procurement Review



May 25th, 2021

RMSS-52598-010

Mr. Jared Scarbrough
Manager of Systems Engineering
2264 South 900 West
Salt Lake City, UT 84119

Reference: Utah Transit Authority – Systems On-Call Services

Subject: Potential Task Order 001 - TRAX VHLC Remote Access

Jared,

Rocky Mountain Systems Services (RMSS) is pleased to provide a proposal for upgrading the TRAX wayside signal and communication segments to provide remote access for the VHLC platforms at locations that do not currently have this functionality.

Our lump sum pricing for this proposal is **\$472,796.00**. Although it is not practical to provide a specific cost per location due to differences in scope from location to location as described below, the lump sum results in an overall average price per location of \$12,778.

37 locations in the TRAX LRT system are equipped with the VHLC platform for vital signal control which do not currently have remote access functionality.

- Nine (9) locations on the North/South Main line are already equipped with networking equipment which provides access to the TRAX non-vital communications network.
 - These nine (9) locations only require minor hardware and cabling to provide remote access functionality for the VHLC.
- 28 locations will add the following nodes to the wayside communications network to provide remote access functionality:
 - Three (3) nodes will need to be added to the U-Line network ring
 - Currently the U-line already contains 28 nodes which are on the network and already have remote VHLC functionality.
 - This upgrade will result in a network ring with 31 nodes in total all of which will have remote VHLC remote access functionality.
 - 25 nodes will need to be added to the North/South Main line network
 - The current ring that services the North/South Main line contains 57 nodes which already have VHLC remote access functionality.
 - Due to the high number of nodes that are already in this ring, it will be required to establish a new ring by installing a router at the Midvale Service Center.
 - This new ring will require the use of four fibers at each location in the ring



The scope of work of this proposal is as follows to provide remote access at all 37 locations:

- Design
 - Evaluate existing TRAX network architecture for the inclusion of 28 additional nodes
 - Work with UTA to develop IP addressing scheme for 28 additional network nodes
 - Develop and/or update the following communications drawings for affected locations:
 - Head-end plans for the Midvale service center
 - Existing fiber layout drawings
 - 28 new fiber tables for FPP panels
 - One line network diagrams
 - Network topology diagrams
 - Rack elevation drawings
 - Wiring diagrams
 - At 38 locations, update circuit plans to reflect equipment and wiring changes
 - Add additional network pages to the location circuit plans for communication upgrades
 - At 11 locations, update the executive software version of the ACP module
- Procurement & Installation
 - Procure, configure, and install 28 new RS400 rack mounted switches
 - Procure, configure, and install one (1) new RX1500 rack mounted router at the Midvale Service Center
 - Migrate existing connections from the ProCurve, RS400, and Fiber coupler converter over to the new RX1500 in order to eliminate several points of potential equipment failure
 - Procure and install 37 RS232 modules onto Port A of each VHLC
 - Update configuration of 37 VHLCs to activate Port A for remote access
 - Update ACP executive file at 11 locations to enable Port A
 - Procure and install serial cable at 37 TRAX locations from Port A of VHLC to RS400
 - Install conduit from communication case to adjacent signal case at two (2) locations
 - Install 74 fiber optic patch cables from fiber patch panel to RS400 (two per location)
 - Place new fiber tables in fiber patch panels at 28 locations
 - Procure the following spare parts:
 - Two (2) additional RS400's for use as commissioning spares (to be turned over to UTA upon the completion of testing if not used)
 - Two (2) additional RS232 modules
 - Four (4) additional fiber patch cables
 - Two (2) additional serial communication cables
- OTDR testing of spare fibers to be used to establish new network ring
- Test remote access to 37 locations
 - Testing of remote access functionality will be provided by RMSS key personnel covered under the Systems On-Call Services task order #01 - Key Personnel or applicable task order extension if testing occurs beyond December 31, 2021
- Update NMS to reflect new network nodes

Affected Locations

The scope of work outlined above is represented in the table below for the locations shown:



Line	Location	RS232 Module	Serial Cable	RS400	Fiber Drop	4 - Spare Fibers
Main N/S	Beet Diggers	NEEDED	NEEDED	EXISTING	EXISTING	AVAILABLE
Main N/S	150	NEEDED	NEEDED	EXISTING	EXISTING	AVAILABLE
Main N/S	Intermodal	NEEDED	NEEDED	EXISTING	EXISTING	AVAILABLE
Main N/S	Main street	NEEDED	NEEDED	EXISTING	EXISTING	AVAILABLE
Main N/S	Cushing A	NEEDED	NEEDED	EXISTING	EXISTING	AVAILABLE
Main N/S	Pioneer A	NEEDED	NEEDED	EXISTING	EXISTING	AVAILABLE
West Valley	Central CP	NEEDED	NEEDED	EXISTING	EXISTING	AVAILABLE
U-Line	Rice Eccles	NEEDED	NEEDED	EXISTING	EXISTING	AVAILABLE
U-Line	Health Sciences	NEEDED	NEEDED	EXISTING	EXISTING	AVAILABLE
Main N/S	8720/8680 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	8530 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	Pioneer B Interlocking	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	8120 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	8000 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	Cushing B Interlocking	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	7720 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	7500 South/S7500-S7501	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	7200 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	6100 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	5900 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	5813 South Crossing	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	Vine St	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	4800 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	4500 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	Fireclay	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	Central Ave	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	3900 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	3300 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	Gregson Ave	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	2950 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	2700 South/S2700-S2701	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	2100 South Crossing	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	1700 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
Main N/S	1300 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
U-Line	300 South	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
U-Line	South Campus Dr Circle	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE
U-Line	North Stadium Parking Lot	NEEDED	NEEDED	NEEDED	INSTALLED	AVAILABLE



Clarifications

1. Although an average cost per location is provided in this proposal, the communications upgrades required cannot be complete on a per location basis for 27 of the locations due to required network upgrades. Our pricing assumes that all scope will be included in the issued task order. RMSS will provide a separate proposal for a reduced or broken out scope at the request of UTA.
2. This proposal does not include updates to any design or implementation for existing discrepancies.
3. Any design updates for out-of-scope items will be tracked and billed under the General Engineering and Maintenance task order or MSA as appropriate.
4. RMSS has been notified by vendors of potential shortages of microprocessors that could result in longer than average lead times.

Assumptions

1. RMSS has verified that there are enough unused existing spare fibers available to implement this work. However, it has not been determined that all spare fibers are of sufficient quality. Provision of additional interbuilding fiber optic cable is not included in this proposal.
2. RMSS assumes that spare fibers are terminated in the fiber patch panel and do not require "pig tails" to be spliced on and terminated. Fiber work is limited to furnishing and installing standard patch cords.
3. RMSS assumes that the existing VHLC equipment can support this upgrade, except for the specific tasks identified above to update VHLC executive files and hardware as described.

Exclusions

- Factory acceptance testing of new network hardware

This proposal is valid for 60 days, unless extended in writing by RMSS.

If you need any additional information, please do not hesitate to contact us.

Sincerely,

A handwritten signature in blue ink, appearing to read "Anthony Ortolani", is placed below the "Sincerely," text.

Anthony Ortolani
Project Manager
Rocky Mountain Systems Services



cc:

Marshall Wilson – RMSS

Dan Meservey – RMSS

Doug Jones – RMSS

Procurement lead times may be affected by Covid-19 pandemic

Our pricing is in U.S. Dollars, F.O.B. Salt Lake City UT, and excludes all allowances, taxes, tariffs, licenses, and permits

UTA - On Call
RMSS-52598-010 - TRAX VHLC Remote Access
Task Order Estimate Summary



5/25/2021

Subcontractors	\$	-
Materials	\$	123,492.60
Administrative	\$	24,472.00
Design/Engineering	\$	155,858.00
Construction/Testing	\$	63,452.00
Travel & Perdiem	\$	8,000.00
Other Costs and Fee	\$	97,521.00
Total:	\$	<u>472,795.60</u>

UTA - On Call
RMSS-52598-010 - TRAX VHLC Remote Access
Task Order Estimate Worksheet



TRADE SECRET PROPRIETARY CONTRACTOR INFORMATION

5/25/2021

SUBCONTRACTORS

	Quantity	UOM	Price	Extended
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			\$ -	\$ -
			\$ -	\$ -

			Subtotal - Subcontractors:	\$ -
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MATERIALS

	Quantity	UOM	Price	Extended
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RS400	30	EA	\$ 3,127.50	\$ 93,825.00
RS232 Modules	40	EA	\$ 486.00	\$ 19,440.00
Serial Cables	40	EA	\$ 55.44	\$ 2,217.60
RX1500	1	EA	\$ 6,000.00	\$ 6,000.00
Fiber Jumpers (15 meter)	80	EA	\$ 16.00	\$ 1,280.00
Fiber Jumpers (1 meter)	60	EA	\$ 8.00	\$ 480.00
Misc Conduit	1	LS	\$ 250.00	\$ 250.00

			Subtotal - Materials:	\$ 123,492.60
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ADMINISTRATIVE

	Quantity	UOM	Price	Extended
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Indirect Labor & Office Personnel

Senior Project Manager	ST	0.0	Hr	\$ 162.00	\$ -
Project Engineer w/ pickup (non-overhead)	ST	160.0	Hr	\$ 124.95	\$ 19,992.00
Safety/Quality Engineer	ST	0.0	Hr	\$ 80.00	\$ -
Document Control Specialist	ST	80.0	Hr	\$ 56.00	\$ 4,480.00
Project Controls	ST	0.0	Hr	\$ 62.00	\$ -

			Subtotal - Administrative:	\$ 24,472.00
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DESIGN / ENGINEERING

	Quantity	UOM	Price	Extended
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Systems Engineering

Senior Systems Engineer	ST	0.0	Hr	\$ 150.00	\$ -
Systems Engineer	ST	0.0	Hr	\$ 112.00	\$ -
CADD Technician	ST	0.0	Hr	\$ 50.00	\$ -
Manager of CADD	ST	0.0	Hr	\$ 50.00	\$ -
Verification Engineer	ST	0.0	Hr	\$ 150.00	\$ -

Hardware Engineering

Senior Signal Engineer	ST	76.0	Hr	\$ 150.00	\$ 11,400.00
Signal Engineer	ST	304.0	Hr	\$ 112.00	\$ 34,048.00
CADD Technician	ST	228.0	Hr	\$ 50.00	\$ 11,400.00
Manager of CADD	ST	38.0	Hr	\$ 50.00	\$ 1,900.00
Verification Engineer	ST	152.0	Hr	\$ 150.00	\$ 22,800.00

Software Engineering

Senior Signal Engineer	ST	0.0	Hr	\$ 150.00	\$ -
Signal Engineer	ST	0.0	Hr	\$ 112.00	\$ -
Verification Engineer	ST	0.0	Hr	\$ 150.00	\$ -

Communication Engineering

Senior Comm Engineer	ST	0.0	Hr	\$ 110.30	\$ -
Comm Engineer	ST	704.0	Hr	\$ 67.16	\$ 47,281.00
CADD Technician	ST	302.0	Hr	\$ 50.00	\$ 15,100.00
QA/QC	ST	152.0	Hr	\$ 78.48	\$ 11,929.00

			Subtotal - Design:	\$ 155,858.00
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UTA - On Call

RMSS-52598-010 - TRAX VHLC Remote Access

Task Order Estimate Worksheet


TRADE SECRET PROPRIETARY CONTRACTOR INFORMATION

5/25/2021

CONSTRUCTION / INSTALLATION / TESTING

	Quantity	UOM	Price	Extended
Construction - General				
Construction Manager ST	0.0	Hr	\$ 105.00	\$ -
Construction Manager OT (40+)	120.0	Hr	\$ 131.25	\$ 15,750.00
Systems Construction Labor ST	360.0	Hr	\$ 95.00	\$ 34,200.00
Systems Construction Labor OT (40+)	0.0	Hr	\$ 118.75	\$ -
Systems Construction Labor DT (Sunday)	0.0	Hr	\$ 166.25	\$ -
Construction - OCS Lineman				
General Lineman Foreman ST	0.0	Hr	\$ 102.36	\$ -
General Lineman Foreman - Nighttime	0.0	Hr	\$ 130.20	\$ -
General Lineman Foreman OT (40+)	0.0	Hr	\$ 144.50	\$ -
General Lineman Foreman DT (Sunday)	0.0	Hr	\$ 163.34	\$ -
Lineman ST	0.0	Hr	\$ 98.72	\$ -
Lineman - Nighttime	0.0	Hr	\$ 114.40	\$ -
Lineman OT (40+)	0.0	Hr	\$ 125.87	\$ -
Lineman DT (Sunday)	0.0	Hr	\$ 141.83	\$ -
All Locations - Testing				
Signal Test Manager	0.0	Hr	\$ 131.00	\$ -
Signal Test Engineer	0.0	Hr	\$ 111.00	\$ -
Signal Test Support	0.0	Hr	\$ 105.00	\$ -
Signal Test Support OT (40+)	0.0	Hr	\$ 131.25	\$ -
Signal Test Support DT (Sunday)	0.0	Hr	\$ 183.75	\$ -

Subtotal - Construction / Install / Testing: \$ 49,950.00
EQUIPMENT

	Quantity	UOM	Price	Extended
Construction				
Pickup Truck	480.0	Hr	\$ 18.00	\$ 8,640.00
Trailer	16.0	Hr	\$ 14.63	\$ 234.00
Mini Ex	16.0	Hr	\$ 52.00	\$ 832.00
Specialty tools	292.0	Hr	\$ 13.00	\$ 3,796.00
OCS Equipment				
Bucket Truck w/ Specialty Tools	0.0	Hr	\$ 60.27	\$ -
Boom Truck	0.0	Hr	\$ 64.80	\$ -
Specialty tools	0.0	Hr	\$ 13.00	\$ -
All Locations - Testing				
Pickup Truck	0.0	Hr	\$ 18.00	\$ -

Subtotal - Equipment: \$ 13,502.00
TRAVEL & PERDIEM

	Quantity	UOM	Price	Extended
Test Engineer - T&E	0.0	Man-weeks	\$ 2,000.00	\$ -
Application & Design	0.0	Man-weeks	\$ 2,000.00	\$ -
Senior PM	0.0	Man-weeks	\$ 2,000.00	\$ -
Comm Engineer	4.0	Man-weeks	\$ 2,000.00	\$ 8,000.00

Subtotal - Travel & Perdiem \$ 8,000.00
OTHER

	Quantity	UOM	Price	Extended
ST&S	1.00	LS	\$ 3,000.00	\$ 3,000.00

Subtotal - Other: \$ 3,000.00

UTA - On Call
RMSS-52598-010 - TRAX VHLC Remote Access
Task Order Estimate Worksheet



TRADE SECRET PROPRIETARY CONTRACTOR INFORMATION

5/25/2021

TOTALS

Subtotal Direct Costs			\$	378,275.00
Fee	12.5%	\$	378,275.00	\$ 47,284.00
Subtotal Costs with Fee			\$	425,559.00
Contingency	10.0%	\$	425,559.00	\$ 42,556.00
Subtotal Cost with Provisional Sum			\$	468,115.00
Bond Premium	0.0%	\$	468,115.00	\$ -
Job Related Insurance	1.0%	\$	468,115.00	\$ 4,681.15
Tax	0.0%	\$	378,275.00	\$ -
TOTAL PRICE - RMSS			\$	472,796.00