ADDENDUM #1
ITB NUMBER: 2014038-PW-B
South Main Street Traffic Signal Upgrades ITB

DATE: March 5, 2014

TO: All Potential Proposers

City of Harrisonburg's South Main Street Traffic Signal Upgrades ITB (2014038-PW-B), is modified as follows:

The attached document should be substituted for the original *Specifications & Guidelines for Traffic Signal Projects* posted in the ITB. This revised version is correct.

End Addendum #1.

All other requirements, terms and conditions of the ITB remain unchanged.

Addendum page must be signed and returned with your proposal to acknowledge receipt of this addendum.

_____
Authorized Signature

By: Pat Hilliard, CPPB
Purchasing Agent

Specifications & Guidelines for Traffic Signal Projects

Revised

February 14, 2014

City of Harrisonburg, VA
Public Works Department
Traffic Engineering Division

1. Introduction

These guidelines and specifications set forth the minimum requirements for traffic signal projects in the City of Harrisonburg, VA. All items included in this specification must be included as part of the project unless otherwise noted. Separate specification documents are attached below for the control cabinet assembly and traffic signal controller. Please also refer to the attached manufacturer product specification sheets for additional information.

Three printed copies and one (1) digital copy of as-built plans shall be supplied to the Public Works Department and include specifications for mast arm poles and pole foundations. Cut sheets shall be supplied for all proposed items that differ from what is specified in this document.

Contractor shall provide the Traffic Superintendent a weekly work schedule at the beginning of each week with progress report. A weekly installed quantities sheet will be required at the end of each work week. Any questions concerning these specifications should be directed to Shawn Adams, Traffic General Supervisor, or James H. Beierle, Traffic Superintendent at (540) 434-5928.

2. Control Cabinet & Components

2.1. Control Cabinet

2.1.1. The control cabinet shall be an Econolite model Plug & Go P44 TS2 Type 1 enclosure as per City of Harrisonburg specifications. In most cases, the cabinet will be supplied by the City of Harrisonburg and the cost added to the project.

2.1.2. The cabinet shall be designed and manufactured with materials that will allow rigid mounting, whether intended for pole, base or pedestal mounting. The cabinet must not flex on its base.

2.1.3. A rain channel shall be incorporated into the design of the main door opening to prevent liquids from entering the enclosure. The cabinet door opening must be a minimum of 80 percent of the front surface of the cabinet. A stiffener plate shall be welded across the inside of the main door to prevent flexing.

2.2. Components

2.2.1. Traffic controller shall be an Econolite model ASC/3-2100, with Ethernet and Data Key capability as per City of Harrisonburg specifications. In most cases, the controller will be supplied by the City of Harrisonburg and the cost added to the project.

2.2.2. Malfunction Management Unit (MMU) shall be a Reno A&E model MMU-1600GE, with Ethernet capability.

2.2.3. UPS battery backup shall be a Tesco Controls model 22000, 1000-watt system.

2.2.4. 100-Amp A/C power service shall be permitted and inspected by the contractor through the Community Development Department (540) 432-7700. Contractor is responsible for installing power service, which shall be brought through a 100-Amp service disconnect, Midwest Electric Products, Inc. Model M101CP6 or equivalent.

2.2.5. Traficon video detection system using model VIP3D.2 cards shall be used for vehicle detection. This system shall include VIP cards (1 for every 4 phases in use at the intersection), cameras (1 for every

intersection approach), wires, and a Traficon ViewCom E Max card for remote management. Contact Charles Kimbrough of Control Technologies at (540) 421-3662 to schedule an appointment for system configuration.

2.2.6. Global Traffic Technologies (GTT) Opticom Infrared Emergency Preemption System shall be used. This system shall include model 754 Phase Selector, model 760 Card Rack, model 758 Auxiliary Interface Panel, and model 721 Detectors with confirmation lights (one for each approach).

3. Mast Arms & Poles

3.1. Pole Foundations

3.1.1. Pole foundations shall be designed for a maximum arm length of 70 feet.

3.1.2. The maximum load capacity shall be figured to include the weight of internally-illuminated LED street signs.

3.1.3. All pole foundations shall be inscribed with the dimensions of the foundation and number of conduits and direction they come out of foundation.

3.2. Mast Arms & Poles

3.2.1. Mast arm poles and arms shall meet Virginia Department of Transportation Special Provisions, and be as per VDOT regional contract galvanized eight (8) bolt design. Order No. A86 Contract ID NO. C00088275C01 February 08, 2008.

3.2.2. Mast arm (or strain poles, if applicable) shall be designed in accordance with the 1994 AASHTO Standard Specifications for Structure Supports for Highway Signs, Luminaries, and Traffic Signals.

3.2.3. Mast arm (or strain poles, if applicable) shall be designed to a minimum 90 mph wind load capacity.

4. Pole & Arm-Mounted Devices

4.1. Signal Heads

4.1.1. Signal heads shall be manufactured by Peek Traffic, Inc. or McCain, Inc.

4.1.2. Signal heads shall be of 12-inch polycarbonate construction.

4.1.3. Signal heads shall be yellow and have cut away visors.

4.1.4. Signal heads shall have aluminum louvered back plates of flat black color.

4.1.5. All signal heads shall have 12 inch Red, Amber and Green VDOT approved LED inserts.

4.1.6. Signal indications shall be Leotek Electronics Corp., Model IL6-P3, 12” Incandescent Look LED modules.

4.1.7. Signal heads shall be mounted using ASTRO-brackets - Cable Mount Kit AB-3009.

4.1.8. Each signal head shall be wired using fourteen (14) AWG Stranded seven (7) conductor IMSA approved traffic signal cable pulled from control cabinet. Wiring for signal heads shall not be ‘jumpered’ except for neutral wire within a 5-section head.

4.1.9. Signal heads shall be wired according to the following schema:

Red Wire – Red output	*White Wire* – Neutral
Orange Wire – Yellow output	*Black/White Wire* – Yellow Arrow (5-section head only)
Green Wire – Green output	*Blue Wire* – Green Arrow (5-section head only)

4.2. Street Signs

4.2.1. LED lighted street signs shall be used for all streets at the intersection.

4.2.2. LED lighted street signs shall be manufactured by Transportation Control Systems, Inc., model 'Brite Lite'. Please contact Public Works Department for street name verification and approval of sign design.

4.2.3. LED lighted street sign power cable shall be fourteen (14) AWG stranded (3) conductor IMSA approved traffic signal cable pulled from control cabinet.

4.2.4. All signs shall meet requirements of the latest version of the Manual on Uniform Traffic Control Devices.

4.3. Pedestrian Signals

4.3.1. Pedestrian signal housing shall be 16" aluminum polycarbonate, Federal yellow color.

4.3.2. Pedestrian signals shall meet VDOT standard SP-8 and be Leotek Electronics Corp., Model No. TSL-PED-16-CIL-9.

4.3.3. Pedestrian push buttons shall be of Accessible Pedestrian Signal (APS) design. Please contact the Public Works Department for design specifications.

4.3.4. Pedestrian signals shall be mounted on separate aluminum pedestals and poles unless otherwise specified.

4.3.5. Pedestrian signal shall be wired using fourteen (14) AWG stranded seven (7) conductor IMSA approved traffic signal wire pulled from control cabinet.

4.3.6. Pedestrian push buttons shall be wired using fourteen (14) AWG stranded three (3) conductor IMSA approved traffic signal wire pulled from control cabinet.

5. Conduits & Pull Boxes

5.1. Conduits

5.1.1. All conduits shall be schedule 80 PVC pipe.

5.1.2. Please contact Public Works Department for details on road crossings, size, and number of conduits per crossing.

5.2. Pull Boxes

5.2.1. All pull Boxes shall be constructed of Armorcast Products Company 20K rated polymer concrete cover with polymer concrete ring.

5.2.2. Armorcast Products Company model W/FRP skirt #JB-5C shall be used at control box and model #JB-3C shall be used at all other locations.

5.2.3. Covers shall have the text 'TRAFFIC' stamped on top.

5.2.4. All conduits shall run under and turned up into the pull box. Conduits shall not be drilled into the side of the pull box.

6. Communication System

6.1. Wireless Connectivity

6.1.1. If specified, an ENCOM model COMMPAKBB58 broadband radio shall be used for wireless interconnectivity. Consult with the Public Works Department for correct radio positioning prior to installation.

6.2. Interconnect Wire

6.2.1. If specified, BELDEN model 1049A PAIRED – 600V TRAY CABLE shall be used for underground interconnectivity.

7. Signs

7.1.1. All signs shall meet requirements of the latest version of the Manual on Uniform Traffic Control Devices (MUTCD) and the Virginia Supplement to the MUTCD.