

ADDENDUM NUMBER 1

Bid #22-20

**Traffic Signal Upgrades on Maplewood Ave at Congress, Hanover
and Deer Streets**

Issued February 6, 2020

This addendum forms part of the original document marked “**CONTRACT DOCUMENTS AND SPECIFICATIONS for City of Portsmouth Project #22008 Traffic Signal Upgrades Maplewood Avenue at Congress, Hanover and Deer Streets Bid #22-20**”.

Add the following additional specification for Ethernet equipment to special provisions 616.191, 616.192 and 616.193:

2.1.4 Hardened Ethernet Switch: shall be a managed self-contained unit capable of 24-hour per day unattended operation. The Hardened Ethernet Switch shall be supplied, assembled and tested by the Contractor. The Hardened Ethernet Switch shall be of rugged design and suitable for reliable operation when mounted in the configuration as specified in the Contract Documents. The Hardened Ethernet Switch shall be configured for minimum maintenance and need for adjustment after initial set-up. The Hardened Ethernet Switch shall include all equipment to provide power and software required for status monitoring and updating from a computer.

2.1.4.1 The Hardened Ethernet Switch shall have the following connections:

2.1.4.1.1 Eight (8) auto-sensing RJ-45 Ethernet ports that shall support the following network standards:

- IEEE.802.3 10 Base-T
- IEEE.802.3u 100 Base-T
- IEEE.802.3ab 1000 Base-T
- IEEE.802.1D MAC Bridges
- IEEE.802.1d Spanning Tree
- IEEE.802.1w Rapid Spanning Tree
- IEEE.802.1q VLAN
- IEEE.802.1p Quality of Service
- IEEE 802.3x Flow Control
- RFC 951 BOOTP
- RFC 2030 Simple Network Time Protocol (SNMP) v4
- RFC 2131 DHCP

2.1.4.2 The Hardened Ethernet Switch shall be an Ethernet layer 2 device.

2.1.4.3 The Hardened Ethernet Switch shall have a switching method of store and forward.

2.1.4.4 The Hardened Ethernet Switch shall support the following protocols:

- RTP/ID
- TCP/IP with full multicast support
- RFC 3376 IGMPv3 IP Multicast
- RFC 1591 DNS (client)
- HTML and Telnet management
- RFC 2131 DHCP
- IEEE 802.1X Port Based Network Access Control
- RFC 1492 TACACS+
- Secure Sockets Layer (SSL)
- SSHv1SSHv2 Secure Shell

2.1.4.1. The Hardened Ethernet Switch shall support the following network management protocols: SNMP v1, V2c, v3

2.1.4.2. RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)

2.1.4.3. HTTP graphical web-based

2.1.4.4. RFC 854 Telnet

2.1.4.5. Command Line Interface

2.1.4.6. The Hardened Ethernet Switch shall have an operational temperature range of -40°F to +140°F (-40°C to +60°C)

2.1.4.7. The Hardened Ethernet Switch shall have an operational power input range of 100 to 140 VAC.

2.1.5 Fast Ethernet over Copper/Twisted Pair: Shall consist of furnishing, installing, and testing a Fast Ethernet over Copper/Twisted Pair device that meets or exceeds the following requirements.

2.1.5.1 The Fast Ethernet over Copper/Twisted Pair device shall support 10/100 Mbps Ethernet over copper or unshielded twisted pair (UTP).

2.1.5.2 The Fast Ethernet over Copper/Twisted Pair device shall support transmission distances up to 5,000 feet at 10 Mbps, or 2,000 feet at 100 Mbps.

2.1.5.3 The Fast Ethernet over Copper/Twisted Pair device shall support an Ethernet data interface and be IEEE 802.3 compliant.

- 2.1.5.4 The Fast Ethernet over Copper/Twisted Pair device shall support auto-negotiation, as well as be set to full duplex or half duplex transmissions.
- 2.1.5.5 The Fast Ethernet over Copper/Twisted Pair device shall support the following standards:
- Power requirements: 9-36 VDC, 24 VAC
 - Environmentally hardened: NEAM TS- / TS-2
 - Operation Temperature: -40° C to +75° C
 - Device shall be UL and ULC listed
 - Have a MTBF of > 100,000 hours
- 2.1.5.6 The Fast Ethernet over Copper/Twisted Pair device shall support automation re-settable solid-state current limiters and independent voltage regulators.
- 2.1.5.7 The Fast Ethernet over Copper/Twisted Pair device shall be of rugged aluminum housing designed for stand-alone mounting.
- 2.1.5.8 The Fast Ethernet over Copper/Twisted Pair device shall support a comprehensive lifetime warranty.
- 2.1.5.9 The Fast Ethernet over Copper/Twisted Pair device shall include all accessories for a full and complete installation; including but not limited to power supplies, Ethernet cables, and mounting hardware.

Delete this original verbiage of the special provisions 616.191, 616.192, 616.193 and 616.194:

2.1.4 Ethernet Switch. (Only applies if camera detection Add-Alt is selected) This work shall consist of furnishing, installing, and testing an Ethernet Switch that meets the requirements of a 100 Mbps Ethernet.

2.1.4.1 The Ethernet Switch shall include a minimum of four single mode fiber optic patch cords, each one meter in length, and terminated on both ends with Type SC single mode fiber optic connectors.

2.1.4.2 The Ethernet Switch shall include sufficient Category 6 Ethernet patch cords, each one meter in length, and terminated on both ends with Type RJ45 connectors to provide full connectivity within the cabinet as shown in the Contract Documents.

2.1.4.3 The Ethernet Switch shall include all accessories required for a full and complete installation, including but not limited to all connecting cables, serial to Ethernet modems, power supplies, and mounting hardware.

Bidders are to acknowledge this addendum within their proposal. Failure to do so may subject a bidder to disqualification.

End of Addendum #1