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DEPARTMENT OF PUBLIC WORKS
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To: Municipal Services Committee
From: Michael Hardy, Assistant City Traffic Engineer
Date: December 2, 2021
Re: 2022 Sole Source Purchase Request – Various Traffic Equipment & Technologies
CC: Jeffrey Fait, City Purchasing Manager

This sole source purchase request is reassessed and presented annually as required in the City Procurement Policy. It was last approved for calendar year 2021.

Background:

Traffic Signal and Control Equipment

Within the traffic signal control industry, there is a tremendous amount of proprietary functionality and limited interoperability. The number of vendors servicing traffic signal equipment is also very limited. For example, Traffic and Parking Control Company, Inc. (TAPCO), located in Elm Grove, Wisconsin, is the exclusive vendor in Wisconsin for Siemens signal cabinet and control equipment, which the City of Appleton uses. TAPCO is also the exclusive state vendor for Eberle Design Inc. (EDI) cabinet equipment, Iteris video detection systems, and other support equipment used in traffic signal control systems. Because TAPCO is designated as the exclusive rights vendor in the state by these manufacturers, they have exclusive knowledge for set-up, testing and servicing, beyond that which the City is capable of performing. There are other vendors in nearby states that carry these product lines, but their manufacturer-vendor relationships do not allow overlap with each other. Thus, the City cannot, for example, do business with Brown Traffic Products, Inc., which is TAPCO's equivalent in Illinois and Minnesota.

The next closest vendor that provides comparable products and services is a company called Traffic Control Corporation (TCC), with service currently provided out of Illinois and Minnesota. TCC's exclusive manufacturer-vendor relationship is very similar to TAPCO, with cabinets and control systems manufactured by both Econolite and Reno Traffic Products. Also, because TCC is the exclusive vendor for these product lines, they have exclusive knowledge for set-up, testing and servicing.

Due to the above circumstances, it is common in the traffic industry that complete traffic signal control assemblies are sole-source purchased as complete, functional systems. Another unfortunate reality is that each manufacturer's equipment has its own proprietary firmware and controls, which makes it nearly impossible to competitively procure comparable equipment. In this situation, TAPCO or TCC will assemble the cabinet, controller, vehicle detection equipment and any other integrated equipment, and perform functional testing prior to shipment and installation. The advantage to this approach is it helps manage compatibility issues and puts responsibility on the sole source vendor to assure complete functionality of the system. The disadvantage is that procured equipment is not competitively bid in a formal process. The other common application in the traffic industry is that specifications are written to accept only one manufacturer's products. This gives the illusion of being competitive, but often only one vendor can meet the required specifications. There has been some implementation of equipment from both TAPCO and TCC, but the experiences are limited, along with the success stories. Here too, the City would need to stock significant additional equipment due to limited experience with compatibilities and functionality.

The good news is there are standards making gradual progress in the traffic control industry. The National Electrical Manufacturer's Association (NEMA) has developed standards that provide requirements for equipment interoperability. For example, the City has accepted NEMA, TS2, Type 1 specification for our traffic signal control cabinets. This provides control over how the cabinets are configured and how the control equipment is connected and integrated into the control functionality. The National Transportation Communications for Intelligent Transportation Systems (ITS) Protocol (NTCIP) is the next level of standards under development at the federal level, intended to limit the proprietary firmware and controls in the traffic industry.

In 2019, the northeast region of Wisconsin DOT (WisDOT) made a complete transition from Siemens to Econolite traffic signal controllers and traffic management software. Over the last several years, WisDOT began accepting Econolite products at the request of other DOT regions. As they became more familiar with the Econolite product and software, it became more and more favored by State traffic engineers due to their increased functionality and reliability. The City has started to take notice of Econolite with our more recent frustrations with Siemens control software and their seeming lack of effort to address their shortcomings in a timely manner. Our office in the process of discussions with Traffic Control Corporation to learn more about the Econolite controller and software. We intend to conduct reference checks with their clients who recently transitioned from Siemens to Econolite to learn more. For this reason, we are adding Econolite controllers and software to the sole source purchase list.

Traffic Signal Preventative Maintenance

Preventative maintenance is another item that is currently sole sourced. A key component in preventative maintenance is performing a diagnostic test on a device called the Malfunction Management Unit (MMU). Performing this service annually is common practice in the traffic signal industry to discourage legal action against the City for negligence if a signal malfunction is the suspected cause in a traffic incident. To date, the City has decided it is not in our best interest to perform this testing on our own. To replicate this service the City would have to purchase expensive test equipment, software and training. The current sole source vendor, TAPCO, has strong familiarity with our equipment since they are exclusive rights vendor in the state by the MMU manufacturer the City currently uses. Having considered this, we feel this is a reasonable cost and the best decision for the City at this time.

Decorative Street Lighting Equipment

Recent experiences have prompted the addition of decorative street lighting equipment to this sole source request. Specific items that apply are decorative lighting components involving steel poles, concrete poles, arms and fixtures. One large contributing factor is the City has standardized on a specific appearance and quality using Stresscrete, King and Visco brands products for applications across the City, most notably College Avenue and Wisconsin Avenue. While there are other decorative brands on the market simulating a comparable look, the quality of these off-brands has been much lower, leading to increased maintenance costs and decreased life. When bidding this equipment in the past, we have specified a specific product or approved equal. To meet the City purchasing policy, we have been competitively bidding these decorative lighting brands through the electrical supply chains. It is our opinion, while this looks competitive and meets the spirit of the purchasing policy, it actually amounts to a mark-up on a product we ultimately know we are going to purchase. Having considered the above, we feel sole source offers the best value of the City's time and resources.

In 2017, we added a new pole, arm and fixture line in conjunction with the new Fox Cities Exposition Center (FCEC). The architect and project team of the FCEC has selected a unique lighting assembly to match the look and appeal of the building. We are adding this to the sole source list as we feel this will be a similar situation to the other decorative lighting equipment.

In 2018, we added another pole, arm and fixture line in conjunction with the Parks, Recreation, Facilities & Grounds expansion of trail lighting throughout the City. DPW is installing trail facilities with several upcoming projects, and will match the unique lighting assembly already selected for the trail system throughout the City. We are adding this to the sole source list as we feel this will be a similar situation to the other decorative lighting equipment.

In 2022, we add another pole, arm, and fixture line (K595 & K820 Series) for the City's central business district streets. These were product selected in the City's recently completed Downtown Streetscape Design Guide. We are adding this to the sole source list as we feel this will be a similar situation to the other decorative lighting equipment.

LED Street Lighting

Recent experiences have prompted the addition of LED street lighting equipment to this sole source request. Specific items that apply are both standard and decorative LED street lighting fixtures. In 2010, the City authored a specification and released a bid to replace standard fixtures with LED fixture in the central business district. That experience evaluated products from eight (8) different manufacturers. As a result of that experience, we have identified products from Cooper and Philips as the preferred fixtures for future applications. To comply with the City's purchasing policy in future purchases, we would have to competitively bid these two brands thru the electrical supply chains. In our opinion, while this appears competitive and meets the spirit of the purchasing policy, it really amounts to a mark-up on a product we ultimately know we are going to purchase. We have established a relationship with the manufacturers and have been advised we can purchase from them directly. Where these two products are competitive with each other, we would be able to compare costs direct from the manufacturers which would meet the competitive spirit of the policy. However, three products would be needed to satisfy the policy as written. Having considered the above discussion, we feel a sole source exception offers the best value of the City's time and resources.

Camera & Video Encoders

When the traffic camera program began its deployment in 2010, Pelco brand pan-tilt-zoom cameras were procured in accordance with City Policy, where at least three quotes were received. In light of the switch to Avigilon video management software by the City in 2013 and the increase in failures of recent Pelco brand cameras, the Traffic Section has transitioned to both AXIS and Avigilon brand cameras. Avigilon cameras can be purchased in accordance with City Policy as they are readily available through multiple suppliers. However, Lappen Security is a local vender certified to provide technical support with Avigilon projects. For this reason, they are being added to the sole source purchase list. Axis brand cameras can also be purchased in accordance with City Policy as they are readily available through multiply suppliers. However, in 2019 the City established a positive relationship with a local Axis supplier named Hunter Security. They are serving in a unique support role with integrating Axis into the City's Avigilon video management software. They are a certified, high ranking dealer for Axis brand cameras and, as such, are able to offer the maximum discount permitted by the manufacturer. Their support has proven to be valuable resource to the City. For this reason, they are being added to the sole source purchase list.

School Zone Flashers

In 2014 the City procured a new school flasher control system. Criteria specified in that procurement was the ability for remote access to set the flasher schedules and troubleshoot in case of maintenance. The product is called DirecTime, which has its own proprietary web enabled service for remote access. The DirecTime product, installed at all school zone flashers across the City, is exclusively manufactured by Traffic and Parking Control Company, Inc. (TAPCO). In the event additional locations or replacement units are necessary, it is in our opinion that sole sourcing the DirecTime product line is the best value of the City's time and resources.

Summary:

The City Traffic Section continues to pursue equipment and services to help improve competition in our purchases. We often have alternative vendors bring us equipment to familiarize with and test for compatibility. When we evaluate comparable products, we try to take a holistic approach, considering additional software, training, stocking, etc. We also stay in touch routinely with our counterparts in the traffic industry, like WisDOT, City of Green Bay, and Milwaukee County to help evaluate pricing when and where sole sourcing is performed. This, too, helps communicate between agencies on acceptance of alternative products. We also pursue alternative procurement options when available through the WisDOT procurement contract. Where equipment is consistent with WisDOT procurement contracts, a price match is pursued.

The following is the Traffic Section's current list of equipment and services we feel it is in the City's best interest to sole source for procurement:

Traffic Signal and Control Equipment

Signal Controller and Control Software:

- Siemens (TAPCO)
- Econolite (TTC)

Signal Control Cabinets:

- Mobotrex (TAPCO)
- Econolite (TTC)

Signal Control Malfunction Management Unit:

- Eberle Design, Inc. (TAPCO)
- Reno A & E (TTC)

Loop Detector Amplifiers:

- Eberle Design, Inc. (TAPCO)
- Reno A & E (TTC)

Video Detection Systems

- Iteris, Inc. (TAPCO)
- Econolite (TTC)

Radar Detection Systems

- MS Sedco / Intersector. (TAPCO)
- Wavetronix (TTC)
- Iteris, Inc. (TAPCO)

Preemption:

- GTT (TTC)

Wireless Radio Communications:

- Encom Wireless (TAPCO)

Control Cabinet Integration Set-up and Testing:

- TAPCO
- TTC

Radar Speed Signs

- Information Display Company
- TAPCO

Traffic Signal Preventative Maintenance

Traffic Signal Preventative Maintenance:

- TAPCO

Decorative Street Lighting Equipment

Concrete Poles & Arms

- Stresscrete / King Luminaire (Visual Impact Lighting, LLC)

Steel Poles & Arms

- Visco (Commercial Lighting)
- Spring City (Visual Impact Lighting, LLC)
- Structura Inc.
- Candela Series (Spectrum Lighting)

LED Fixtures

- Stresscrete / King Luminaire (Visual Impact Lighting, LLC)
- Beacon Viper
- Candela Series (Spectrum Lighting)
- Gardco

Conventional LED Street Lighting

LED Street Light Fixtures

- Philips (Spectrum Lighting, TAPCO)
- Cooper Lighting (Enterprise Lighting, TAPCO)

Traffic Cameras

- Avigilon
- Axis (Hunter Security)

Warning Flashers & RRFB

School Zone Flasher & RRFB Controls

- (TAPCO)

ALPR Traffic Cameras

- Genetec (Systems Technologies)