25-16-002-PIF

MEMORANDUM

State of Alaska

Department of Transportation & Public Facilities
Design and Engineering Services – Central Region
Highway Design Section – Traffic & Safety

TO : Charles Deninger
Chief Contracts Officer

DATE : 6/23/2015

THRU : Robert A Campbell, PE
Director, Central Region

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SUBJECT : Econolite Blanket PIF

Introduction

The Central Region (CR) has an installed base of approximately 260 Econolite hardware and software controlled intersections. Approximately 180 of those are operated by the Municipality of Anchorage (MOA) under the Transfer of Operating Responsibility Agreement. The CR and the MOA share common Econolite supplied and maintained equipment at the MOA Traffic Management Center. Econolite provides software, hardware, integration services, training, and software maintenance.

Proprietary Items

Econolite produced and sourced hardware, software, and services.

Typical items include, but are not limited to: Controller, $3,000; MMU $1000; Routers $3,000-$10000, Switches $1000-$3000, Servers, $10,000-$15,000; Signal Cabinet, $20,000; Detectors, $1000-$5000, with associated software, training, software management, and integration services. Econolite sources devices that are compatible with its system and which it can integrate and support.

Justification for Public Interest Finding

The proposed proprietary devices, software, and services have been used by the AKDOT&PF for the past 10 years. Most of the devices have been purchased in the last 5 years under a previous PIF that documented the distinctive features of the devices that justified purchasing through Econolite. The devices have been carefully selected and specified by the AKDOT&PF and Econolite to interface in a system for controlling and optimizing traffic signal operation efficiently. This equipment has also been selected based on low maintenance requirements. AKDOT&PF currently maintains a stock of these proprietary devices. Continued standardization of these devices allows quick switch-out of damaged devices with backup supplies. Standardization of equipment also reduces the amount of training AKDO&PF staff need for continued operation of the system and troubleshooting operation errors, permitting swift

troubleshooting and recovery of traffic signal operation. This is important for the safety and efficiency of roadway transportation.

The provision of a PIF is especially important for use with the established and forthcoming ITS maintenance and operations projects, such as 56007 CRITS M&O, in which the FHWA participates in qualifying M&O expenses. This project replaces failed equipment, provides upgrades and minor enhancements as necessary to keep the signal system functioning optimally and for which it would not be cost effective to create a new project. It is essential to the M&O function that a process be found to streamline the acquisition of products and services quickly.

Duration of Public Interest Finding Validity

This Public Interest Finding shall be valid for a period of five years from date of approval. (June 2020).

Finding of Public Interest

It is hereby found to be in the Public's best interest and consistent with the Code of Federal Regulation Title 23, Section 635.411 and AKDOT&PF Policy and Procedure 10.02.013 to specify proprietary items on multiple highway projects.

Submitted by: Scott E. Thomas 6-23-15

Scott Thomas, PE
Regional Traffic Engineer
Date

Recommended by: 7.6.15

Robert A. Campbell, PE
Regional Director
Date

Approved by: 7/8/15

Charlie Deininger
Chief Contracts Officer
Date

PREPARED BY : Val Rader, PE, 269-0646

Blanket Public Interest Finding for the purchase of Econolite traffic control hardware and software.

Introduction

The Alaska Department of Transportation and Public Facilities (ADOT&PF) is seeking a Public Interest Finding (PIF) to allow the purchase of Econolite traffic control hardware and software.

Justification for Public Interest Finding

The Central Region (CR) has an installed base of approximately 50 Econolite hardware and software controlled intersections.

1) The Econolite controllers were originally selected from among the competitors for the following reasons, which are still applicable. This list is based on features that neither of the top two competitors provide. Each of the top two competitors lack other features that are provided by Econolite, but this is a list of features that both lack:

    a. LCD Display Size 16X40 others 8X40
    The additional detail permits more information to be displayed on each screen. This permits faster access to features, faster field programming, and more robust help screens. This is very important when the weather is cold or inclement and the field technicians have to reprogram the intersection control for a repair or special event.
    b. Heated LCD display for cold weather
    This feature is extremely important for field programming in cold weather. LCD displays become virtually unusable at low temperatures without this feature. Emergency repairs are frequently required in the winter.
    c. Special Overlap features on all overlaps
    TS-2 Controllers have 16 load switches. Any of the 16 load switches in an Econolite can programmed to be an overlap. (for example, when a EB right turn runs at the same time as a SB left turn). Our convention is to use the load switch that corresponds to the overlapped phase (1-8) Other controllers that only offer 8 overlaps do so on load switches 9-16, so the phase number cannot be matched to the load switch and may conflict with conventions for assigning pedestrian phases to the load switches. Failure to follow this convention in new installations will result in confusion and errors in the field and in the signal software control.

d. Logic processor
Provides a custom scripting language which is unique among controllers and provides flexibility for implementing such functions as:

e. Adaptive Red CLR.
This feature allows us to extend the ALL RED Clearance interval if we detect a vehicle in the intersection. SPUI (Single Point Urban Intersections) have a very long vehicle path for clearance. Frequently there are no vehicles in this area and the extra ALL RED needed to clear a vehicle becomes wasted time.

f. Track CLR Reservice on RR P.E. Track Clearance Reservice on RailRoad PreEmpt feature permits movements that are compatible with the "gated" movement to operate. For long trains and trains that stop and maneuver on the tracks, e.g. at the Wasilla train station near Main St/KGB on the Parks, this permits other non-conflicting movements to be served in turn.

g. Exit to Timing plan after P.E.
The ability to add some additional time to the movements prohibited by the Pre-empt permits the intersection to get back to normal operation sooner.

h. NTCIP Level 2 compliant
This is quite a complicated feature. The Econolite has the most advanced implementation of the NTCIP requirements, permitting greater control and functionality using NTCIP Level 2 compliant software. As such, it represents the greatest flexibility for integrating into other systems and softwares, if and when they catch up.

i. Communication Compatible with Aries Control Software
At the present time all CR signals outside the MOA are Aries compatible and Econolite Master Controller compatible in order to operate as part of our systems. Other manufacturers' controllers do not operate with Aries.

j. Communication Compatible with CENTRACS
The AKDOT&PF has purchased and installed Centracs traffic signal control software on Econolite servers hosted at the MOA Traffic Management Center. This software and hardware is capable of managing all of the advanced functions, not yet supported by other vendors, on the Econolite controllers for all of the signals in Alaska. The software also provides the best user interface available.

k. D Connector compatible with Traconex 390
The Econolite is designed for easy migration from the Traconex 390. The CR has already replaced all of its Traconex 390 controllers outside the MOA with Econolite controllers. However, within the MOA the State's and the MOA's controllers are still Traconex 390s. The Econolite controller offers the only D plug compatible controller, allowing the quick exchange of the Econolite controller for the Traconex 390 in the State's TS-1 Cabinets within the MOA and avoiding custom wiring requirements depending on which feature subset is implemented.

2) It would impose unnecessary costs and burdens upon the AKDOT&PF to maintain multiple replacement part stockpiles, including having to have multiple replacement units by different manufactures on-board the service vehicles.

3) AKDOT&PF personnel are well trained on the Econolite equipment Additional training would be required to maintain and operate other manufacturers' equipment. Not only does this place a financial burden on the Department, but it endangers the public by introducing sources of confusion and complexity in sorting out how a feature is implemented in a particular situation by a particular manufacturer in the emergency or inclement weather conditions to which our field personnel are frequently subjected. This is a situation in which it is really important to keep it simple, minimizing opportunity for errors and keeping downtime to a minimum.

4) Mixing components that are not yet truly plug and play creates problems when seeking manufacturers' support for compatibility issues. The testing suites for NTCIP compliance are still in a state of infancy and manufacturers have not been able to test their products with standards or with all other combinations of other manufacturers' products. When confronted with interoperability failures, it is hard to pin down responsibility and obligations for support.

5) The Federal Government, including FHWA, is encouraging plug and play interchangeability through NTCIP standards to promote a more competitive model. We have not yet reached the point of true plug and play compatibility among manufacturers. Econolite, being Level 2 compliant has made the most progress in this respect, offers the highest level of compatibility, is most likely to preserve our investment when plug and play capability becomes reality, and best advances the policy of encouraging NTCIP compliance.

Finding of Public Interest

We request that ADOT&PF find the above recommendation to be in the public interest and consistent with Title 23, Section 645.104(b) of the Code of Federal Regulations and the Department of Transportation & Public Facilities Policy DPDR 10.02.013, Public Interest Finding, and DPDR 10.02.012, Force Account Construction.

Submitted By:

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Department of Transportation and Public Facilities

7/19/10
Date

Reviewed By:

Lance Wilber
Central Region Director
Department of Transportation and Public Facilities

7/28/10
Date

Approved By:

Mark O'Brien
Chief Contracting Officer, Headquarters

7-28-10
Date