



DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

INTRADEPARTMENTAL CORRESPONDENCE

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MEMORANDUM

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TO: JANICE P. WILLIAMS, P.E. CHIEF ENGINEER
FROM: JODY COLVIN, P.E., PTOE TRAFFIC ENGINEERING DIVISION ADMINISTRATOR
DATE: August 8, 2016
SUBJECT: Traffic Signal Controller Certification

In accordance with the provisions of 23 CFR 635.411(a), the Louisiana Department of Transportation and Development has determined that on the basis of synchronization the continued use of Trafficware traffic signal controllers as a sole source proprietary product is necessary for synchronization. We are requesting your approval for this certification.

Attached is a report which provides information and documentation which demonstrates that the use of Trafficware controllers as a propriety product is justified. In accordance with 23 CFR 635.411(a), the Department is authorized to certify this decision with the following statement:

I, Jody Colvin, DOTD Traffic Engineering Administrator of the Louisiana Department of Transportation and Development, do hereby certify that in accordance with the requirements of 23 CFR 635.411 (a)(2), that Trafficware traffic signal controllers are propriety items which are essential for synchronization with existing highway facilities.

This certification is statewide and will sunset in twenty five years, unless action is taken by the Department to extend it or to cancel it. This certification and the attached report will be posted on the Department's website.

Thank you for your time and consideration. If you have any questions, please contact me at 225-242-4635.

Attachment

JC/af

[Signature] 8/9/16
RECOMMENDED FOR APPROVAL DATE

RECOMMENDED FOR APPROVAL DATE

[Signature] 8-10-2016
APPROVED DATE

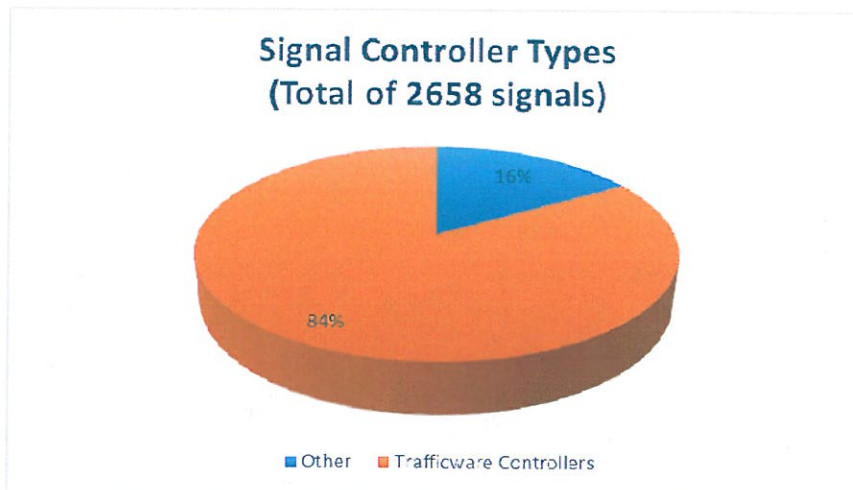
## TRAFFIC SIGNAL CONTROLLER CERTIFICATION REPORT

In accordance with the requirements of 23 CFR 635.411(a), the Louisiana Department of Transportation and Development has determined that on the basis of synchronization the continued use of Trafficware traffic signal controllers as a sole source proprietary product is necessary for synchronization.

### Existing Facilities

Presently the Department has over 2,225 Trafficware controllers which make up the vast majority (84%) of the existing 2,658 traffic signals in the State. Because of the large percentage of existing Trafficware controllers, the continued use of only Trafficware controllers can be justified for synchronization on the basis of life cycle, function, logistics, and cost.

**Figure 1, Signal controller types**



### Life Cycle

Of the existing 2,225 Trafficware controllers, 40% are Trafficware TS1 controllers, 30% are Trafficware TS2 controllers and 30% are Trafficware 980 ATC controllers. The Trafficware TS1 controllers were purchased between 1995 and 2005, which corresponds to an average age of 16 years. The Trafficware TS2 controllers were purchased between 2005 and 2013, which corresponds to an average age of 7 years. The Trafficware 980 ATC controllers were purchased between 2014 and 2016 and are still being installed. Given the expected service life of a traffic signal controller is over 25 years, all of the Trafficware controllers are well within their expected life cycles. Replacing these controllers would not be practical.

### **Functional Synchronization**

Based on functional synchronization, the Department needs to continue to use Trafficware compatible hardware on all new and replacement signal installations. The Department currently has over 900 intersections in urban areas on closed loop systems that are controlled with the Trafficware Streetwise software and soon to be Trafficware ATMS.now Statewide System for all signals. As our communication network expands and is upgraded, additional intersections are being interconnected and coordinated with ATMS.now. ATMS.now is also used to store and transfer signal timings for isolated signal controllers that may need to be replaced due to crash damage or maintenance. The cost to purchase the nine district Streetwise licenses was \$450,000. Around a \$1.2 million investment in the new Trafficware ATMS.now Statewide System has been made by the State.

### **Logistical Synchronization**

Synchronization based on logistics also supports the sole use of Trafficware controllers. The Department currently contracts with six cities to maintain and operate state owned intersections along with their city owned signals. Due to scarce financial and labor resources on the state and city levels, the Department would prefer to train local and state signal field crews and engineers on only one signal controller operating system. For these same reasons, we would prefer for our districts and cities to stock only one type of controller for maintenance and repairs. The continued use of Trafficware controllers as a sole source product will ease the burden of maintenance for the Department and for those cities which maintain our signals under signal maintenance agreements.

### **Cost**

In preparation of this report, the Department collected controller cost from several States for Econolite, Peek and McCain controllers. Comparing these prices with the price taken from the existing Trafficware controller contract, there would be little or no cost savings if multiple manufacturers are allowed to supply controllers to the Department. In fact, it is believed that there will be an increase in cost to the Department due to training and stocking spares.

Shown in Table 1 below are the contract costs paid by the Department and the prices quoted by Econolite and Peek to the Department.

**Table 1, Equipment Costs for Controllers**

<b>Manufacturer</b>	<b>Controllers per each (Average)</b>
Trafficware*	\$1415.00
Econolite**	\$2750.00
Peek**	\$1996.00
McCain**	\$2572.50

Notes:

\*- Source DOTD Contract 4400005861, 1/23/15 – 1/22/17

\*\*-Source based on average from other states including Florida, Texas, Arizona, New Mexico and Rhode Island.

As shown in Table 1, the procurement price the Department pays for Trafficware controllers is lower than it would pay for controllers from other suppliers.

A similar comparison can be made for controllers installed under contract. A typical signal installation constructed by a contractor costs the Department \$200,000. The DOTD 2015 Weighted Average Unit Price for controllers was \$5,063 (3% of the total signal cost) and for the controller. If a cost savings of 10% were to be achieved for the controller, the overall potential savings for the intersection would be \$506.39 or a less than 1% of the intersection cost. However, the comparison of the procurement contract prices and the vendor quotes in Table 1 strongly suggest that there would be no savings for signals installed under contract.

It is believed that the cost to the Department will increase in a compounded amount with the addition of each alternate. The cost associated with stocking spare controllers clearly increases as the number of alternates installed in the field increases. Our Hammond District reported that they keep 25-30 spare controllers, which equates to 10% of their intersections. On a statewide basis, 10% of the 2,658 intersections equates to 258 spare controllers for each type controller allowed. At present the investment in spare stock for just Trafficware controllers is valued at \$364,787.00. For spares for Econolite, the investment in stock would increase by \$708,950.00, for Peek the increase would be an additional \$514,568.80 and for McCain the increase by \$663,190.50.

Similar cost increases are expected due to the additional training that Department field crews and engineering staff would have to undergo to learn each additional type of alternate controller. At present there are approximately 17 electricians that would need to be trained on basic controller operation. There are also approximately 42 electronic technicians that would have to undergo basic and advanced training on controller programming. Lastly there are approximately 8 engineer interns and 22 engineers that would need training of controller operation. To accomplish this level of training would require an investment of \$144,441.75 in salaries for the class time for each type of controller used by the Department. The cost is actually higher since expenditures associated with travel to training and costs for training employees of each city with signal maintenance contracts are not included.

Based on the above, the estimated additional cost incurred as a result of continuing to specify Trafficware controllers as a proprietary product is expected to be very low and most likely zero. It is also possible to speculate that there would be a cost savings due to increased training and stocking costs that would be incurred by the Department if alternate controllers are allowed. These potential cost increases are detailed in Table 2.

**Table 2,** Costs for spare controllers and training costs in relation to alternates

Level of competition	Cost to Stock Spare Controllers	Cost for Training	Cumulative Total Costs
Existing Trafficware as a sole source	Existing Investment \$303,517.50	Existing Investment \$144,441.75	Existing Investment \$447,959.25
Add Econolite as an alternate	Additional Cost \$708,950.00	Additional Cost \$144,441.75	Additional Cost \$853,391.75
Add Peek as an alternate	Additional Cost \$663,190.50	Additional Cost \$144,441.75	Additional Cost \$659,010.55
Add McCain as an alternate	Additional Cost \$663,190.50	Additional Cost \$144,441.75	Additional Cost \$807,632.25
Add all alternates	Additional Cost \$1,886,709.30	Additional Cost \$433,325.25	Additional Cost \$2,320,034.55

Based on the above, the addition of alternate controller manufacturers will increase costs to the Department due to increased investments in spare controllers and training of employees. This increase ranges from an additional \$659,010.55 for a single alternate to \$2,320,034.55 for several alternates.

**Recommendation:**

The combined lack of savings and the potential sizeable increase in cost if alternate controllers are allowed makes the use of a sole source product the best possible solution for the Department. When including the favorable factors of life cycle as well as functional and logistical synchronization, it is appropriate for the Chief Engineer to certify that the continued practice of specifying Trafficware controllers using a sole-source acquisition is in the best interest of the Department. The Department shall reevaluate the cost of controllers every 5 years to determine if this is still the best direction for Louisiana.

André Fillastre, P.E.  
Traffic Control Engineer Manager  
August 4, 2016

