


CENTRAL FLORIDA EXPRESSWAY AUTHORITY

MEMORANDUM

TO: CFX Board Members

FROM: Robert Johnson 
Manager of Procurement

DATE: April 26, 2016


SUBJECT: Approval of Purchase Order for Traffic & Parking Control Co., Inc. (TAPCO) for Wrong-Way Driving Vehicle Detection and Countermeasures Equipment; Project 599-526B

Board approval is requested to issue a purchase order to TAPCO in the amount of \$349,900.00 to purchase wrong-way driving vehicle detection and countermeasures equipment for installation at 10 remaining ramps that were identified in the original Wrong Way Driving Study.

In order to expedite the procurement of project materials and to ensure consistency with previous phases of the pilot project, it is recommended that CFX owner furnish the wrong-way driving detection equipment from TAPCO, whom we have identified as a single source provider with previous deployments.


This project is funded in the Five Year Work Plan.

Reviewed by:


Brian Homayouni, P.E.
Traffic Operations Manager

Date: April 20, 2016

To: Bryan Homayouni, P.E.
Manager of Traffic Operations / CFX

From: Charles R. Lattimer, P.E. 

CC: Corey Quinn, P.E. / CFX
Nathan Silva, P.E. / Atkins

Re: **Project 599-526B**
(Wrong-Way Driving Vehicle Detection and Countermeasures Phase IIB):
Recommendation to purchase owner-furnished wrong-way driving detection equipment

CFX, with assistance from the University of Central Florida (UCF), is conducting a pilot deployment of wrong-way driving detection and countermeasures equipment at strategic ramps on the CFX expressway system. The first phase of the pilot deployment equipped five ramps (four on SR 408 and one on SR 528) in 2015. Phase IIA, which will equip an additional 19 ramps, is currently under construction and will be completed in the summer of 2016. Phase IIB, which will equip another ten ramps, was advertised for construction on April 10, 2016.

In order to expedite the procurement of critical project materials and to ensure consistency with previous phases of the pilot deployment, it is recommended that CFX purchase the wrong-way driving detection equipment from TAPCO and owner-furnish said equipment to the Contractor. This approach is consistent with Project 599-526A (Phase IIA), which is currently under construction. In addition to avoiding Contractor cost markups, utilizing this procurement method allows CFX to reduce its material purchase costs by exercising its tax-exempt status.

Atkins has reviewed the attached quotation from TAPCO for laser-based wrong-way driving detection equipment for use at ten ramp locations, plus spare parts. We find the proposed cost of \$349,900.00 to be reasonable.

We therefore recommend a request be submitted to the May 2016 Consent Agenda requesting Board authorization to issue a purchase order to TAPCO in the amount of \$349,900.00 to furnish wrong-way driving detection equipment for Project 599-526B.

Please call me at (407) 806-4287 if you have any questions or if you would like to discuss further.

ATTACHMENT A



Traffic & Parking Control Co, Inc.
5100 W Brown Deer Rd
Brown Deer, WI 53223
800-236-0112

March 28, 2016

Mr. Bryan Homayouni, P.E.
Director of Expressway Operations
Central Florida Expressway Authority
4974 ORL Tower Road
Orlando, Florida 32807

Mr. Homayouni:

Thank you for your continued interest in TAPCO's Wrong Way Vehicle Detection Equipment. We are pleased to assist your organization in their further enhancement of Wrong Way Vehicle Countermeasures. As requested, you'll find our detailed equipment quote in the following pages.

Per our conversation last week, I've requoted both Boggy Creek Rd locations in the 599-526B project as Radar-Based with the remaining sites and the spare system staying as Laser-Based systems.

I welcome any questions or concerns you may have. Please do not hesitate to contact me directly to discuss any aspects of the attached quotation, or specifics of our proposed equipment.

With best regards,

Maximilion Smith

Maximilion Smith
Engineering Manager
Traffic & Parking Control Co, Inc.
max@tapconet.com
262-649-5232



TAPCO®

Safe travels.™

5100 W Brown Deer Rd, Brown Deer, WI 53223 800-236-0112

Wrong Way Detection Equipment Quotation

Prepared Exclusively for Central Florida Expressway Authority

For CFX Contract Number 599-526B

Revised March 28, 2016

-Confidential-



SALES QUOTE

5100 West Brown Deer Road, Brown Deer, Wisconsin 53223
Phone 1-800-236-0112 • www.tapconet.com • Fax 1-800-444-0331

Customer Copy

Number	ETO15-01643
Date	3/28/2016
Page	1

Sell To Cust. C39680	Central Florida Expressway Authority Bryan Homayouni, P.E. 4974 ORL Tower Road ORLANDO, FL 32807 USA			Ship To Cust.	Central Florida Expressway Authority Bryan Homayouni, P.E. 4974 ORL Tower Road ORLANDO, FL 32807 USA	
Reference #	Expires	Slsp	Terms	Freight	Ship Via	
	5/27/2016	Max Smith	Net 30 DAYS	PREPAY/ADD	BEST RATE	

Item	Description	Quantity	UM	Price	UM	Extension
2180-SYSTEM	TAPCO Wrong Way Equipment Only Quote: CFX Contract Number 599-526B Radar-Based Wrong Way Detection System (See attached Details)	2	EA	23,500.00	EA	\$47,000.00
2180-SYSTEM	Laser-Ready Wrong Way Detection System (See attached Details)	8	EA	20,000.00	EA	\$160,000.00
2180-SYSTEM	Laser-Ready Wrong Way Detection System, Black Finish (See attached Details)	1	EA	20,500.00	EA	\$20,500.00
2180-CUSTOM	SICK LMS-581 Laser Scanner, Brackets, Cables (Includes One Year Warranty)	9	EA	11,800.00	EA	\$106,200.00
2180-CUSTOM	OPTIONAL: Additional 4 Year Warranty for Laser Scanners (Priced per Scanner)	9	EA	1,800.00	EA	\$16,200.00
SP SIGN	Sheeted Blank, 18x24" x 0.125" DG3 White (No Legend)	20	EA		EA	

BlinkLink Web Service Included for 1 year, \$895
Per Modem, Per Year Thereafter.

5 Year Limited Warranty Included on All Items
EXCLUDING Laser Scanners.
Furnish Only, Freight Included.
Required On-Site Setup and Testing Additional.
8 Week Lead Time ARO

- CONFIDENTIAL -

Shipment within _____
Acceptance By _____
Date _____
By _____

Merchandise	Freight	Tax	Total
\$349,900.00	\$0.00	\$0.00	\$349,900.00

For terms and conditions, please visit: <http://www.tapconet.com/terms-and-conditions>

Radar-Based Wrong Way Detection System Component Listing

Each System Contains:

Primary Detector Pole Components	
Qty	Description
1	Incoming Radar Cabinet Assembly with Dual Output -Primary Output to Activate Warning Lights -Secondary Output to Confirm Approaching Vehicle -Banding Brackets
1	Incoming Camera Assembly -Captures Images after Warning Light Activation -Banding Brackets
1	Outgoing Radar Cabinet Assembly with Single Output -Output to Confirm Departing Vehicle -Banding Brackets
1	Outgoing Camera Assembly -Output to Confirm Departing Vehicle with Cross-Line Analytics -Captures Images of Confirmed Wrong Way Vehicle -Banding Brackets
1	Wrong Way Control Cabinet Assembly -All Aluminum Construction, Vented, Screened -120W 12VDC Power Supply -120W 24VDC Power Supply -76W 48VDC Power Supply -Solid State Flash Controller -Solid State Output for LED Illuminator -Solid State LED Output Drivers (Up to 4 Light Bars) -900MHz FHSS Wireless Transceiver -900MHz Omni-Directional Antenna -Dual Channel POE Injector -Dual Serial to Ethernet Converters -4G/LTE Cellular Gateway with Antenna -5 Port 10/100 Switch -Lighting Arrestor -Circuit Breaker -Screw-Type Terminal Block -Banding Brackets
1	LED Illuminator -Provides Additional Lighting for Increased Outgoing Camera Performance -Activated Simultaneously with Warning Lights -Banding Brackets
2	RRFB Light Bar -Dual 8 LED Modules - Red -Banding Brackets
1	48" x 36" R5-1a WRONG WAY Static Sign -3M DG3 Retro-Reflective Sheeting -3M 1160 Anti-Graffiti Overlay -.080" Aluminum

Laser-Ready Wrong Way Detection System Component Listing

Each System Contains:

Primary Detector Pole Components	
1	Incoming Camera Assembly -Captures Images after Warning Light Activation -Banding Brackets
1	Outgoing Camera Assembly -Output to Confirm Departing Vehicle with Cross-Line Analytics -Captures Images of Confirmed Wrong Way Vehicle -Banding Brackets
1	Wrong Way Control Cabinet Assembly -All Aluminum Construction, Vented, Screened -120W 12VDC Power Supply -120W 24VDC Power Supply -76W 48VDC Power Supply -Solid State Flash Controller -Solid State Output for LED Illuminator -Solid State LED Output Drivers (Up to 4 Light Bars) -900MHz FHSS Wireless Transceiver -900MHz Omni-Directional Antenna -Dual Channel POE Injector -Dual Serial to Ethernet Converters -4G/LTE Cellular Gateway -Cellular Antenna -5 Port 10/100 Switch -Lighting Arrestor -Circuit Breaker -Screw-Type Terminal Block -Banding Brackets
1	White Light LED Illuminator -Provides Additional Lighting for Increased Outgoing Camera Performance -Activated Simultaneously with Warning Lights -Banding Brackets
2	RRFB Light Bar -Dual 8 LED Modules - Red -Banding Brackets
1	48" x 36" R5-1a WRONG WAY Static Sign -3M DG3 Retro-Reflective Sheeting -3M 1160 Anti-Graffiti Overlay -.080" Aluminum

Warning Pole Components (Hardwired to Adjacent WW Control Cabinet)	
2	RRFB Light Bar -Dual 8 LED Modules - Red -Banding Brackets
1	48" x 36" R5-1a WRONG WAY Static Sign -3M DG3 Retro-Reflective Sheeting -3M 1160 Anti-Graffiti Overlay -.080" Aluminum

Up-Stream Controller Pole Components (Radio Activated)	
1	Warning Control Cabinet Assembly -All Aluminum Construction, Vented, Screened -120W 12VDC Power Supply -Solid State Flash Controller -Solid State LED Output Drivers (Up to 4 Light Bars) -900MHz FHSS Wireless Transceiver -900MHz Omni-Directional Antenna -Lighting Arrestor -Circuit Breaker -Screw-Type Terminal Block -Banding Brackets
2	RRFB Light Bar -Dual 8 LED Modules - Red -Banding Brackets
1	48" x 36" R5-1a WRONG WAY Static Sign -3M DG3 Retro-Reflective Sheeting -3M 1160 Anti-Graffiti Overlay -.080" Aluminum

Warning Pole Components (Hardwired to Adjacent Up-Stream Warning Control Cabinet)	
2	RRFB Light Bar -Dual 8 LED Modules - Red -Banding Brackets
1	48" x 36" R5-1a WRONG WAY Static Sign -3M DG3 Retro-Reflective Sheeting -3M 1160 Anti-Graffiti Overlay -.080" Aluminum

Black System Add-On Component Listing

Each Upgrade Contains:

Items to be Upgraded to Black Finish	
Qty	Description
1	Wrong Way Control Cabinet Upgrade -Black Powder Coat Finish Exterior -Black Powder Coat Finish Banding Brackets
1	Up-Stream Control Cabinet Upgrade -Black Powder Coat Finish Exterior -Black Powder Coat Finish Banding Brackets
4	48" x 36" R5-1a WRONG WAY Static Sign Upgrade (Replaces Raw Signs) -3M Black Vinyl Back

TAPCO Wrong Way Project Terms and Conditions:

Indemnity Clause:

The BlinkLink Web-based Traffic Device Monitor and Control and the Wrong Way LED Warning System (the "devices") are not fail safe devices. Caltrans will hold harmless and defend TAPCO from and against all claims arising out of extraordinary events, or circumstances beyond the control of the parties, which might cause the system to stop working, malfunction, or function in an unexpected or undesired way, including but not limited to, weather, solar eruptions, electrical outages or any other risk beyond the control of TAPCO between incidences of regular service.

Exclusions:

TAPCO shall not provide items other than those listed on Project Sales Quote contained herein.

Delivery:

- All products are shipped FOB Factory.
- All risk of loss or damage to the Products in transit shall be borne by Customer regardless of the party paying for the freight.
- Offload is Customer's responsibility.
- TAPCO shall not be liable for any losses or damages, whether direct, indirect, incidental, consequential, or otherwise, for delays in shipment or delivery, regardless of the cause.
- TAPCO shall have the right to make partial shipments and invoice separately. Partial shipment invoices shall be due per project payment terms.

Variables:

- a. Submittals:
Prior to commencing manufacturing, TAPCO shall provide to the customer at customer request a project submittal document. The submittal document represents the governing document for project specifications, materials, and terms and conditions. The submittal shall be customer approved prior to manufacturing release.
- b. Change Orders:
Changes in product requirements after customer approved submittals are subject to TAPCO's acceptance or rejection in writing. Change orders shall be subject to additional charges and agreed upon in writing and may alter total cost and/or delay project shipping.
- c. Modifications and Governing Law:
Any modifications of this Agreement or Attachments/Exhibits to this Agreement must be in writing and signed by authorized representatives of both the Customer and TAPCO. In the event that any of the provisions of the Agreement shall for any reason be determine to be invalid, illegal or unenforceable in any respect, the remaining portions shall continue in full force and effect.
- d. Changes in Products and Parts:
TAPCO continually improves its products and shall provide products that meet or exceed project requirements. If original replacement parts are no longer available, TAPCO shall provide parts that meet the fit, form and function unless specifically advised in writing that such parts are not acceptable.
- e. Force Majeure:
TAPCO's performance hereunder, or any delay in such performance, shall be excused for such failure to perform or delay as attributable to any cause or reason beyond TAPCO's control, including without limitation lack of available storage space, equipment breakdown, labor trouble, governmental regulations, transportation difficulties, embargoes, civil disturbances, acts of God, or any other causes of the like or difference character beyond TAPCO's control.

Warning Pole Components (Hardwired to Adjacent WW Control Cabinet)	
Qty	Description
2	RRFB Light Bar -Dual 8 LED Modules – Red -Banding Brackets
1	48" x 36" R5-1a WRONG WAY Static Sign -3M DG3 Retro-Reflective Sheeting -3M 1160 Anti-Graffiti Overlay -.080" Aluminum

Up-Stream Controller Pole Components (Radio Activated)	
Qty	Description
1	Warning Control Cabinet Assembly -All Aluminum Construction, Vented, Screened -120W 12VDC Power Supply -Solid State Flash Controller -Solid State LED Output Drivers (Up to 4 Light Bars) -900MHz FHSS Wireless Transceiver -900MHz Omni-Directional Antenna -Lighting Arrestor -Circuit Breaker -Screw-Type Terminal Block -Banding Brackets
2	RRFB Light Bar -Dual 8 LED Modules - Red -Banding Brackets
1	48" x 36" R5-1a WRONG WAY Static Sign -3M DG3 Retro-Reflective Sheeting -3M 1160 Anti-Graffiti Overlay -.080" Aluminum

Warning Pole Components (Hardwired to Adjacent Up-Stream Warning Control Cabinet)	
Qty	Description
2	RRFB Light Bar -Dual 8 LED Modules - Red -Banding Brackets
1	48" x 36" R5-1a WRONG WAY Static Sign -3M DG3 Retro-Reflective Sheeting -3M 1160 Anti-Graffiti Overlay -.080" Aluminum

*Pricing includes aluminum shields with fasteners if needed for ramp tuning

TAPCO Standard Terms and Conditions:

1. Traffic and Parking Control Co., Inc. (TAPCO) assigns to buyer any manufacturer's warranty. TAPCO is not responsible for improper installation, improper operation or improper maintenance of its products, unless specifically so stated on the TAPCO quote. Other than the assignment of the manufacturer's warranty, TAPCO makes no warranty, express or implied, as to any matter whatsoever, including, but not limited to, any warranty of merchantability or fitness for a particular purpose. Buyer's exclusive remedy for failure of the product to meet the manufacturer's warranty or any other non-conformity or defect whatsoever, is limited to the return of the product and repayment of the price or repair and/or replacement of the non-conforming product: incidental, consequential, special or punitive damages are excluded. Buyer shall defend and indemnify TAPCO against any claim including costs and attorney fees arising out of buyer's use of the product. No claim may be maintained after one year from the accrual of the cause of action.
2. If any product fails to comply with the manufacturer's warranty, TAPCO shall immediately be notified, and the product shall be returned to TAPCO or to the manufacturer within 30 days. Transportation charges on the returned product shall be prepaid by the buyer and TAPCO will credit the buyer any transportation charge involved with the returned products.
3. The correction of any defect by repair or replacement shall constitute a complete fulfillment of all obligations to the buyer. TAPCO will not accept any charges associated with or resulting from the use or replacement of apparatus claimed defective; nor will it pay any charges involved by the removal or replacement of such equipment.
4. Any claims for shortages or damages must be documented by specifying the shortage or other damage in writing on the transportation company's Bill of Lading at the time of delivery and in no cases later than 30 days after receipt of order. To file a claim for concealed loss or damage, the outer container must NOT show any visible evidence of such damage and must be returned to substantiate the claim. The allowable length of time to report such a claim is thirty days.
5. Buyer shall exercise due diligence by promptly inspecting the product immediately upon delivery. Prompt inspection and prompt reporting to TAPCO of any problems are the duties of the buyer. The buyer is never empowered to take corrective steps without first reporting the problem to TAPCO. Hence, "charge backs" are not allowed unless authorized in writing by a TAPCO representative.
6. Payment, from customers with established credit, is due within thirty days from the date of an invoice unless otherwise authorized in writing by a TAPCO representative. Buyer shall pay TAPCO interest of eighteen percent per annum on the unpaid balance after the date due. If buyer fails to pay an invoice when due or if buyer defaults, breaches or repudiates any agreement with TAPCO, or if buyer shall become insolvent, make an assignment for the benefit of creditors, or becomes the subject of a bankruptcy, receivership or any other insolvency proceeding, TAPCO may (a) cancel this and/or any other agreement with buyer, and buyer shall promptly return the purchased products to TAPCO (or TAPCO may reposes without civil process) whereupon TAPCO shall return any portion of the purchase price previously paid less up to 25% of the purchase price for a re-stocking fee or (b) declare buyer's outstanding orders and invoices immediately due and payable and postpone delivery of TAPCO products until all purchases are prepaid in full. At all times, TAPCO may invoke the remedies above if TAPCO has reason to believe buyer may be unable to perform its obligations. In addition, TAPCO maintains the right to pursue any and all available legal remedies.
7. Buyer grants a purchase money security interest to TAPCO in all products purchased by buyer and all tangible personal property owned by the buyer and in all of buyer's deposit accounts and accounts receivable; buyer authorizes TAPCO to perfect its security interest.
8. As a service to TAPCO customers, TAPCO frequently furnishes customers with engineering data, wiring diagrams recommendations, etc. Ordinarily, no charge is made for this service and every reasonable effort is made to avoid errors. Nevertheless, errors may occasionally occur and, in consideration of the fact that TAPCO makes no charge for this service, buyer agrees that TAPCO assumes no responsibility for the completeness or accuracy of such information or data and accordingly releases TAPCO from liability. Buyer stipulates that the economic loss doctrine applies to all contracts between buyer and TAPCO, and buyer waives all tort claims against TAPCO. Unless authorized in writing by a TAPCO employee, buyer is not entitled to liquidated or late payment penalties for any failure by TAPCO to deliver purchased products on time.

Project 599-526B Deployment locations





ORLANDO - ORANGE COUNTY

4974 ORL TOWER RD., ORLANDO, FLORIDA 32807
TELEPHONE (407) 690-5000 • FAX (407) 690-5011 • WWW.OOCEA.COM

MEMORANDUM

TO: Claude Miller
Director of Procurement

FROM: Corey Quinn *CQ*
Director of Expressway Operations

SUBJECT: Single Source Justification for
Traffic & Parking Control Co., Inc. (TAPCO)
Wrong Way Driving Detection System Pilot Project

DATE: July 11, 2013

In accordance with the Procurement Procedures Manual, your approval is requested to designate Traffic & Parking Control Co., Inc. (TAPCO) as a single source vendor and exempt from the competitive bidding requirements to provide a wrong-way detection system for the Orlando-Orange County Expressway Authority's expressway system. It is my opinion that the single source determination is justified based on the attached documentation from Atkins that demonstrates the good faith efforts made to support this request.

☒ Approved ☐ Disapproved

Claude Miller, Director of Procurement

WALTER A. KETCHAM, JR.
Chairman

R. SCOTT BATTERSON, P.E.
Vice Chairman

TERESA JACOBS
Secretary/Treasurer
Ex Officio Board Member
Orange County

VACANT
Board Member

NORANNE B. DOWNS, P.E.
Ex Officio Board Member
Florida Department of
Transportation

MAX D. CRUMIT, P.E.
Executive Director

Date: June, 24 2013
To: Corey Quinn, P.E. / OOCEA
From: Keith DeLuca
CC: Charles R. Lattimer, P.E. / Atkins
File: ITS Deployment / Wrong Way Driving Detection System Pilot Project

**Re: Wrong Way Driving Detection System Pilot Project
Justification for Single Source Determination**

The Orlando-Orange County Expressway Authority in conjunction with the University of Central Florida (UCF) is assembling a conceptual plan and a cost estimate to test a system capable of alerting motorists they are traveling the wrong way on selected expressway ramps. A study undertaken by Dr. Haitham Al-Deek from UCF has indicated that the occurrences of wrong-way driving (WWD) on the Authority's expressway system may be underreported. The purpose of this pilot project is to gather quantitative data of WWD activity in the vicinity of five (5) expressway off-ramps and equip wrong-way warning signs at those ramps with supplemental flashing beacons for increased safety.

Since expressway wrong-way detection systems are currently not common, Atkins recommends that the key components of the system be equivalent to those used elsewhere by others in similar successful test applications. In the case of Rectangular Rapid Flash Beacons (RRFB), the Tapco Traffic and Parking Control AC powered RRFB Perimeter Wrong Way System has been recommended by Haitham Al-Deek, Ph.D., P.E. Professor of Engineering, University of Central Florida and currently is in use by the Texas Department of Transportation in the San Antonio District. Tapco is currently an FDOT Approved Products List (APL) vendor. The Tapco RRFB system as of yet has not been tested by Traffic Engineering Research Laboratory (TERL).

Recommended Vendors:

Wavetronix – Oviedo, FL 32765

Contact: Kevin Yorke – Applications Engineer, Phone; 407-575-8601

Mike Kline – Southeast Regional Sales Manager, Phone; 407-366-5144

- Wavetronix HD products have been used extensively on the Authority's expressway system as well as the Florida Department of Transportation's (FDOT) roadways. Wavetronix Click products are currently listed on the FDOT Approved Products List.
- Wavetronix is offering a price reduction over their regular price in order to participate in the wrong way detection pilot project (see quote contained in Attachment A).
- Wavetronix HD Sensors are currently being deployed by the Texas Department of Transportation (TxDOT) in a wrong-way driving detection application in San Antonio Texas.

Tapco Traffic and Parking Control – Brown Deer, WI 53223

Contact: Bryan Everard – TAPCOMade Products Sales Manager, Phone; 866-814-7337

I:\Projects\OOCEA\ITS Deployment\General Support\Road Rangers\Contract 2013

482 South Keller Road • Orlando FL 32810-6101 • 407.647.7275