


CENTRAL FLORIDA EXPRESSWAY AUTHORITY

MEMORANDUM

TO: Authority Board Members

FROM: Claude Miller 
Director of Procurement

DATE: August 25, 2015

RE: Approval of Purchase Order for Traffic & Parking Control Co. Inc. (TAPCO) for
Wrong-Way Driving Vehicle Detection and Countermeasures Equipment

Board approval is requested to issue a purchase order to TAPCO in the amount of \$447,000.00 to purchase wrong-way driving vehicle detection and countermeasures equipment for installation at 19 ramps on the system: S.R. 417 at Moss Park Road (north and southbound), Innovation Way (north and southbound), University Boulevard (southbound), US 441 (north and southbound), and S.R. 50 (north and southbound); S.R. 408 at Clark Road/S.R. 50 (westbound), Old Winter Garden Road (westbound), John Young Parkway (west and eastbound), Chickasaw Trail (eastbound), and Dean Road (west and eastbound); S.R. 414 at Keene Road (westbound); S.R. 429 at CR 437A (southbound); S.R. 451 at Vick Road (northbound). An additional 8 locations are still under design so the equipment requirements at those locations have not been finalized.

Under the Procurement Policy, Article XII, Exemptions From Competitive Procurement Processes, paragraph M, Single Source and Sole Source Purchases, this procurement is exempt from competitive procurement requirements; however, Board approval is required since the amount will exceed \$50,000.00.

Date: August 24, 2015
To: Corey Quinn, P.E. / CFX
From: Keith DeLuca / Atkins
CC: File: Charles R. Lattimer, P.E. / Atkins
ITS Deployment / Wrong Way Driving Pilot
Re: **Wrong Way Diving Pilot Program – Recommendation for Enhanced Equipment and Vendor Services**

The Central Florida Expressway Authority (CFX), in conjunction with the University of Central Florida (UCF), has currently deployed a wrong way driving countermeasures test system at five locations capable of alerting motorists they are traveling the wrong way onto the expressway. On June 24, 2013, a justification for single source determination naming Tapco Parking and Traffic Company, Inc. was provided to the Authority describing the purpose and functionality of the system.

In response to recommendations from local citizens and the fact the system has proven effective by deterring potential wrong way drivers from entering the freeway, the CFX Board of Directors recommended the expansion of the current five locations up to an additional thirty-two (32) more. Currently nineteen (19) sites have been evaluated and design is nearing completion. In order to meet a December 2015 construction schedule, Tapco equipment procurement of the first nineteen (19) sites is necessary. The balance of the sites shall be incorporating laser technology which was successfully tested at CFX Headquarters August 20, 2015.

Tapco has also agreed for a nominal fee to assist in the development of construction plans specific to the Authority's roadway geometrics as an added value. Since this application is an extension of the original pilot project and the first of its kind in Central Florida, we would recommend that the Authority accept this offer to promote an additional level of design oversight critical for the success of this project.

Based on the information provided by the above referenced manufacturer and their willingness to submit their quotations and terms, we recommend that the equipment be purchased by CFX and owner furnished to the Contractor at time of construction. Additional benefits of owner furnishing is tax exemption, free shipping and no contractor mark-up. The total cost of the quote is \$ 447,000.00.

Please see attachments with the quote for all devices necessary to construct, deploy and maintain the nineteen (19) additional wrong way driving countermeasure locations.

Please call me at (407) 806-4445 if you have any questions or if you would like to discuss further.



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

August 21, 2015

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

Mr. Quinn:

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.

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,

Maximilian Smith

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



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

Wrong Way Detection Equipment Quotation

Prepared Exclusively for Central Florida Expressway Authority

August 21, 2015

-Confidential-



SALES QUOTE

Customer Copy

Number	ETO15-00864
Date	8/21/2015
Page	1

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

Sell To Cust. C39680	Central Florida Expressway Authority Corey Quinn 4974 ORL Tower Road ORLANDO, FL 32807 USA			Ship To Cust.	Central Florida Expressway Authority Corey Quinn 4974 ORL Tower Road ORLANDO, FL 32807 USA	
Reference #	Expires	Slsp	Terms	Freight	Ship Via	
	9/30/2015	Max Smith	Net 30 DAYS	PREPAID	BEST RATE	

Item	Description	Quantity	UM	Price	UM	Extension
2180-SYSTEM	Radar-Based Wrong Way Detection System (See Attached Details)	19	EA	23,500.00	EA	\$446,500.00
2180-CUSTOM	Upgrade to Black Powder Coat Control Cabinets & Black Vinyl Backed Signs (Per System)	1	EA	500.00	EA	\$500.00
	Furnish Only					
	Freight Included					
	Delivery by 12/4/2015 if a PO/Promissary Note is Receivied by 9/4/2015					

Shipment within _____
Acceptance By _____
Date _____
By _____

Merchandise	Freight	Tax	Total
\$447,000.00	\$0.00	\$0.00	\$447,000.00

THANK YOU FOR CALLING TAPCO!!! THIS OFFER IS SUBJECT TO TERMS AND CONDITIONS SHOWN ON REVERSE SIDE

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 -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 Camera Controllers -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	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)	
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

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
2	Radar Cabinet Bracket Upgrade -Black Powder Coat Finish Banding Brackets
X	Radar Shield Upgrade -Black Powder Coat Finish Radar Shields (If needed for ramp tuning)
4	48" x 36" R5-1a WRONG WAY Static Sign Upgrade -3M Black Vinyl Back



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 *CC*
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



Memorandum

Date: June, 24 2013
To: Corey Quinn, P.E / OOCEA
From: Keith DeLuca *KA*.
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

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

- 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 has offered to furnish “buy one – get one free” system equipment. Tapco offers a 2 year warranty from date of installation or 3 years from date of purchasing (whichever occurs first). Please see quote contained in Attachment B for additional information.
- TAPCO will offer phone support during installation and an onsite presence during walk through.
- TAPCO would also pick up all the freight costs.

The pilot system will consist of two primary components:

- A radar system installed on the wrong-way signs at each ramp will detect a wrong-way driver on the ramp. The radar system will activate a rectangular rapid flash beacon (RRFB) on the sign to provide an enhanced alert to motorist of their WWD behavior.
- Supplemental Click 512 modules will be installed in selected existing Wavetronix sensors on the Expressway mainline to detect wrong-way driving activity on the mainline in the vicinity of the ramps in the study area.

The cost to furnish and install the wrong-way pilot system is estimated to be:

Item	Quantity	Unit Cost	Total Cost
Tapco RRFB Kit	6 (includes one spare)	\$ 2,300.00	\$ 13,800.00
Wavetronix Click	10	\$ 987.50	\$ 9,925.00
Infrastructure/ Installation			\$106, 275.00
		Grand Total	\$ 130,000.00

Atkins recommends the Authority directly purchase six (6) Tapco Ramp kits and ten (10) Wavetronix Click 512 devices for use in the Wrong-Way Detection Pilot Project.

Please call me at (407) 806-4445 if you have any questions or if you would like to discuss further.