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GOVERNOR

TRANSPORTATION CABINET
200 Mero Street
Frankfort, Kentucky 40601

Rebecca Goodman
SECRETARY

April 21, 2026

CALL NO. 106
CONTRACT ID NO. 264411
ADDENDUM # 2

Subject: Hardin County, HSIP 9010(762)
Letting April 23, 2026

(1) Added – Special Notes – Pages 35A-35G & 40A of 113
(2) Revised – Special Note – Page 40 of 113
(3) Revised – Summary - Page 68 of 113
(4) Revised – Proposal Bid Items – Pages 112-113 of 113

Proposal revisions are available at http://transportation.ky.gov/Construction-Procurement/.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

Rachel Mills

Rachel Mills, P.E.
Director
Division of Construction Procurement

RM:mr
Enclosures

Rev 8/2021

Special Note for Portable Queue Warning Alert System

1.0 Description

This item shall consist of furnishing, installing, relocating, operating, servicing, and removing various components of a portable, quickly deployable, real-time automated ITS queue warning alert system (PQWAS), in accordance with the standard specifications and this special provision. The Contractor shall also provide the maintenance of the complete system for the duration of the project or as directed by the Project Engineer. The Department is willing to look at different technologies (i.e. allow the use of crowd sourcing data to be used in lieu of the portable radar sensors). Any changes to the below requirements must be submitted and approved by the Engineer.

2.0 Materials

Materials shall be in accordance as follows:

All materials used shall meet the manufacturer's specifications and recommendations.

All PQWAS materials installed on the project shall be provided by the Contractor in excellent quality condition, shall be corrosion resistant and in strict accordance with all of the details shown within Contractor's Plans approved by KYTC. The Contractor shall maintain an adequate inventory of parts and replacement units to support maintenance and repair of the PQWAS. Pre-deployment is a condition of the system's acceptance and is based on the successful performance demonstration for a (5) day continuous period in accordance to this specification and as set forth in the plans. Ensure compliance to all FCC and Department specifications.

The Contractor shall maintain this system and shall be locally available to service and maintain system components, move portable devices as necessary and respond to emergency situations. The Contractor has oversight responsibility for directing placement of devices in the project area. The Contractor is to be accessible seven (7) days a week and twenty-four (24) hours a day while the system is deployed. The Contractor shall provide contact information for the system's coordinator and others responsible for maintenance of the system prior to installation of the system. Furnish a System Coordinator for monitoring the PQWAS throughout all periods of deployment.

A. General Capabilities and Performance Requirements

1. Overall PQWAS capabilities and performance requirements include the following:
   a. Furnish a system capable of providing advance traffic information to motorists when there is a queueing of traffic due to congestion resulting from lane reductions, emergency events or other conditions. The condition-responsive notification to the motorist occurs with the use of Portable Changeable Message Signs (PCMS) in accordance to the below capabilities and performance requirements, activated through real-time traffic data collected downstream of the PCMS locations. This equipment must

be a packaged system, pre-programmed and operates as a stand-alone PQWAS meeting this specification. Conditions might exist that require relocation of the portable sensors at any given time, the sensors shall be portable and shall not require re-calibration in the field for fast deployments. Due to the potential need to replace damaged sensors or to change the position of one or more sensors at any given time, sensors must be interchangeable and relocatable by an unskilled laborer. The system must continue to function if as many as half the sensors fail to function.

b. Provide a PQWAS that consists of the following field equipment: portable radar sensors and portable changeable message signs (PCMS). Provide a system capable of withstanding inclement weather conditions while continuing to provide adequate battery power. The portable radar sensor battery, in a stand-alone state and without a solar panel for recharging, shall be capable of keeping power and capable of sending data for (10) consecutive days or longer. The system shall notify drivers of real-time queue events via specifically placed PCMS units up stream of the work zone. All predetermined/preprogrammed messages are to be approved by KYTC. The number and location of portable radar sensors and PCMS units shall be as directed by the Project Engineer. The decision to deploy or relocate field equipment is made by the Project Engineer and instrumented through the System Coordinator. The decision for equipment removal is made by the Project Engineer after work is complete. The sensors and PCMS units shall be identifiable via global positioning system (GPS) and shall contain an accelerometer to detect and alert of unauthorized movement.

c. The portable radar sensor shall be capable of collecting traffic speed data. The processed data is used to remotely control PCMS units to display user definable, Engineer approved and locally stored messages. The message trigger state thresholds for slow and stopped speeds shall be user configurable and revisable in less than {1) hour from the Project Engineer's request. Weekly Traffic Data Reports shall be presented to the Project Engineer and shall include speed data per sensor location, travel times, and queue lengths in graphical and numerical formats. In the event the Project Engineer requires a report, other than a weekly report, for any reason; then the Contractor shall provide report within (48) hours of request. Unlimited data reports shall be included within price of system. Sensors shall require no calibration adjustments in the field. Sensor should begin transmitting data within (30) seconds of being turned on. Satellite (SAT) communications will be required when cellular service does not provide continuous communications. Contractor shall identify the most trustworthy cellular provider within the project area.

d. Data shall be accessible through a website and the Contractor shall provide a username and password for protection. The website shall be accessible seven (7) days a week and twenty - four (24) hours a day. The website shall provide historical & real-time data in graphical and numerical formats and shall have the capability of being integrated within the Department's Traffic Management Center (if requested). The website should be compatible to most hand held devices. Data shall be saved on the manufacturer's network for up to (5) years from the deployment date of system and shall be provided at the request

of the Department at any time within the (5) year window. The use of the website shall be included within the price of system.

e. Warning Alerts: queue events, low battery voltage warnings, sensor movement alerts, high and low speed alerts shall be provided via cellular text messaging and/or via email messaging at the request of select Contractor personnel and KYTC officials.

f. The PQWAS system shall have the capabilities to provide alternate route messaging on specifically placed portable changeable message units and/or fixed Variable Message Systems (VMS). The intent of this service is to provide alternate route messaging to motorists before entering the project limits from all directions and giving them appropriate time to adjust their routes. Alternative routes shall be predefined and approved by KYTC. Additional PCMS units may be required for alternate route messaging and will be as per Section 5.0 of this note. KYTC's Traffic Management Center will provide detour messages via fixed VMS units during the term of the project.

B. Portable Radar Sensor Capabilities and Performance Requirements

The PQWAS shall include portable radar sensors (PRD) to monitor and detect queue events.

1. The Radar Sensor shall be FHWA accepted to meet NCHRP 350 test requirements
2. The Radar Sensor shall be locatable at all times via an internal Global Positioning System (GPS) and shall be capable of Cellular or SAT Communications.
3. The Radar Sensor shall have a dry-cell battery capable of powering the system for (10) consecutive days or longer
4. The Radar sensor shall be K-Band technology and have a line of sight up to 200 linear feet without obstruction
5. The Radar sensor shall have the ability to be charged in the field through adaptable solar recharging technology in the case the sensor is utilized for more than 10 consecutive days

C. PCMS Capabilities and Performance Requirements

The PQWAS shall include portable changeable message signs (PCMS) designated to relay automated messaging of queue events, alternate route messages, and caution for the work area defined by the project limits. PCMS placements shall meet the requirements set forth by the Cabinet in each direction of the National Highway System (NHS).

1. The PCMS unit shall be a Full Matrix 24 rows x 50 columns and shall be capable of l line, 2line or 3 line messages
2. The PCMS unit shall be legible from a distance over twelve hundred feet (1200')
3. The height and size of characters shall be 18" to 58"
4. The PCMS shall be capable of storing up to 199 pre-programmed messages and up to 199 user-defined messages
5. The PCMS shall have a weather tight control cabinet with back lit LCD handheld controller.
6. The PCMS shall utilize a hydraulic lift to raise the unit to display height
7. The PCMS unit shall include solar recharging ports to allow for recharging of the portable radar sensors when they are not deployed.
8. The PCMS shall be NTCIP compliant and shall have an active Modem with active cellular service.

9. The user shall have the ability to communicate and override the PCMS remotely in the event of an emergency, Amber Alert, etc.
10. The PCMS unit shall have a docking station to include safety rails that allow a commercial safety strap to tie down the portable radar sensors while in transport. The docking station shall hold-up to (4) sensors safely and securely at all times

3.0 Construction Requirements

All communication costs include cellular telephone services, FCC licensing, wireless data networks, satellite and internet subscription charges, and battery charging and maintenance. Additional to these requirements, the Contractor shall assume all responsibility for any and all damaged equipment due to crashes, vandalism, and adverse weather that may occur during the contract period.

The PQWAS shall operate continuously (24 hours/ 7 Days) when deployed on the project. The system is in a constant "data collection" mode when deployed. The Contractor shall provide technical support for the PQWAS for all periods of operation.

In the event communication is lost with any component of the PQWAS, provide a means and staff to manually program a PCMS message. If communication is lost for more the 10 consecutive minutes, the system shall revert to a fail-safe ROADWORK/# MILES/AHEAD message displayed on the PCMS units until communication is restored.

System Operator, local control function and remote management operation must be password protected.

The PQWAS shall be capable of acquiring traffic information and selecting messages automatically without operator intervention after system utilization. The lag time between changes in threshold ranges and the posting of the appropriate PCMS message(s) shall be no greater than (60) seconds. The system operation and accuracy must not be appreciably degraded by inclement weather or degraded visibility conditions including precipitation, fog, darkness, excessive dust, and road debris.

The system shall be capable of storing ad-hoc messages created by the System Coordinator and logging this action when overriding any default or automatic advisory message.

The PQWAS communication system shall incorporate an error detection/correction mechanism to insure the integrity of all traffic conditions data and motorists information messages. Any required configuration of the PQWAS communication system shall be performed automatically during system initialization.

The system's acceptance is based on the successful performance demonstration of PQWAS for a (5) day continuous period in accordance to this specification and as set forth in the plans.

Ensure compliance to all FCC and Department specifications.

4.0 Equipment Maintenance.

Maintain system components in good working condition at all times. Repair or replace damaged or malfunctioning components, at no cost to the Department, as soon as possible and within (12) hours of notification by the Engineer. Periodically clean PCMS units if necessary.

5.0 Measurement. The Department will measure each item below in Months. For partial months the Department will pay in 0.25 increments based on the number of calendar days in the below table.

Partial Month Payment Schedule

Days	Increment
0-7 days	0.25
8-14 days	0.50
15-21 days	0.75
22-31 days	1.00

5.1 Portable Queue Warning Alert System includes cellular (SAT communications will be required if cellular is not available), all supporting field equipment, website, and unlimited data reports accessible by the Engineer. It will be measured by the number of months authorized by the Engineer for use on the project.

5.2 Queue Warning PCMS will be measured by each individual unit multiplied by the number of months authorized by the Engineer for use on the project.

5.3 Queue Warning Portable Radar Sensors will be measured by each individual unit multiplied by the number of months authorized by the Engineer for use on the project. Queue Warning Portable Radar Sensors will not be measured for payment if the Contractor utilizes a system operating on crowd sourcing data. Crowd sourcing data systems will only be allowed as approved by the engineer and will be considered incidental to Portable Queue Warning Alert System.

6.0 Payment.

Code	Pay Item	Pay Unit
26136EC	Portable Queue Warning Alert System	Month
26137EC	Queue Warning PCMS	Month
26138EC	Queue Warning Portable Radar Sensors	Month

Rev 7/2021

Special Note for Traffic Queue Protection Vehicle

1.0 DESCRIPTION. Furnish, Operate, and Maintain Traffic Queue Protection Vehicle at locations and times described herein. The Queue Protection Vehicle is expected to alert motorists (inside and outside of project limits) of all stopped traffic caused by construction activities or incidents within the project limits.

2.0 MATERIALS. The contractor shall provide a minimum of one (1) queue protection vehicle for each traveling direction where traffic flow is reduced or modified in a manner where a queue could occur. One (1) additional queue protection vehicle shall be onsite in reserve. The Traffic Queue Protection Vehicle must fulfill the following minimum requirements:

1. A truck mounted attenuators that meets or exceeds NCHRP TL-3 requirements.
2. Four (4) round yellow strobe lights (with auto-dimmers) positioned rear facing
    - Two (2) mounted under rear bumper
    - Two (2) mounted at cab level
    - Visibility of strobe lights can not be deterred by attenuator
3. One (1) standard cab mounted light bar.
4. A truck mounted message board with a minimum of 3 Lines and 8 Characters per line.
5. Four Hour National Traffic Incident Management (TIM) Responder Training for Queue Truck Operators.

3.0. CONSTRUCTION. A queue will be defined as anytime that traffic traveling through the project is reduced to a speed of twenty (20) miles per hour or less. The following procedures will be followed when a traffic queue occurs until free flow traffic conditions are present:

- The queue protection vehicle shall be positioned no further than ½ mile upstream from the back of the slow moving traffic.
- The queue protection vehicle shall be positioned on the shoulder and clear of the traveled way so as not to impede traffic.
- The queue protection vehicle shall relocate as needed to maintain approximately ½ mile distance from the back of the slow moving traffic.
- The 2nd queue protection vehicle shall be held in reserve, on site, and support the primary vehicle if conditions prevent repositioning by reverse. This vehicle shall not be paid for idle time.
- Queue Protection Vehicles shall be kept in project limits during planned lane closures and other project activities expected to cause a queue. One Queue Protection Vehicle shall remain on the project at all times available to respond to incidents within the project limits in a timely manner.
- Queue length estimates and traffic conditions shall be reported to the KYTC project engineer or designee at the following periods:
    1. At 30 minute intervals
    2. At significant changes
    3. When free flow traffic is achieved
- The KYTC project engineer or designee will document all daily queue reports and provide these logs to the Director of Maintenance and Director of Construction at the end of each month.

The Queue Protection Vehicle shall be mobilized by the Project Engineer or designee for planned construction activities. For unplanned incidents mobilization should be initiated by the first person (KYTC's or Contractor's project staff) receiving notification of the queue.

4. MEASUREMENT.

4.01 Queue Protection Vehicle. The Department will measure the time from when the vehicle is in position protecting the queue until either free flow traffic is achieved or the vehicle is no longer protecting the queue, whichever occurs first. Idle time will not be paid. The Department will not measure mobilization, removal, maintenance, labor, fuel, or any additional items but will consider them all incidental to this item of work.

4.02 Furnish Queue Protection Vehicles. The Department will measure the quantity by each month the Engineer requires to have the Contractor furnish vehicles as defined in '2.0 Materials' of this Special Note. The Department will not measure mobilization, removal, labor, fuel, or any additional items but will consider them all incidental to this item of work. Partial Months will be calculated as shown in the table below.

Partial Month Payment Schedule

Days	Increment
0-7 days	0.25
8-14 days	0.50
15-21 days	0.75
22-31 days	1.00

5. PAYMENT.

Code	Pay Item	Pay Unit
25075EC	Queue Protection Vehicle	Hour
25117EC	Furnish Queue Protection Vehicles	Month

Special Note for Completion Date & Liquidated Damages

I. COMPLETION DATE

The ultimate fixed completion date for this project will be **October 31, 2026**. Liquidated Damages for failure to complete the project on time will be assessed following Section 108.09.

II. LIQUIDATED DAMAGES

In addition to the requirements of Section 108.09, the Department will assess Liquidated Damages in the amount of **$1,000** per 15 minutes for each hour, or fraction of an hour, for any and all lane closures that are in place beyond the time frame(s) noted in the Traffic Control Plan and approved by the Engineer.

Contrary to Section 108.09, Liquidated Damages will be assessed regardless of whether seasonal limitations prohibit the Contractor from performing work on the controlling operation.

Contrary to Section 108.09, Liquidated Damages will be assessed for the months of December through March.

All liquidated damages will be applied accumulatively.

All other applicable portions of Section 108 apply.

SPECIAL NOTE FOR ASPHALT MILLING AND TEXTURING

Begin paving operations within **48 hours** of commencement of the milling operation. Continue paving operations continuously until completed. If paving operations are not begun within this time period, the Department will assess liquidated damages at the rate prescribed by Section 108.09 until such time as paving operations are begun.

Contrary to Section 408, the Department will retain possession of the material obtained from the milling operations. Deliver this material to the State Maintenance facility in Hardin County (310 Valley Creek Road, Elizabethtown, KY 42701).

NOTICE TO CONTRACTOR: The Department considers transfer of millings to the state maintenance facility to be a part of the construction project, therefore truck operators are subject to receiving prevailing wages.

GENERAL SUMMARY

COUNTY OF	ITEM NO.
Hardin	4-975.00

BID CODE	DESCRIPTION	UNIT	QTY
2562	TEMPORARY SIGNS	SQFT	400
2650	MAINTAIN AND CONTROL TRAFFIC	LS	1
2654	TRUCK MOUNTED ATTENTUATOR	EACH	2
2671	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	2
2775	ARROW PANEL	EACH	2
20411ED	LAW ENFORCEMENT OFFICER	HOUR	100
6511	PAVE STRIPING-TEMP PAINT-6 IN	LF	15,708
6542	PAVE STRIPING-THERMO-6 IN W	LF	12,012
6543	PAVE STRIPING-THERMO-6 IN Y	LF	3,696
6610	INLAID PAVEMENT MARKER-MW	EACH	235
2569	DEMOBILIZATION	LS	1
26136EC	PORTABLE QUEUE WARNING ALERT SYSTEM	MONTH	2
26137EC	QUEUE WARNING PORTABLE CHANGEABLE MESSAGE SIGNS	MONTH	12
26138EC	QUEUE WARNING PORTABLE RADAR SENSORS	MONTH	12
25117EC	FURNISH QUEUE PROTECTION VEHICLES	MONTH	2
25075EC	QUEUE PROTECTION VEHICLE	HOURS	240
	MICROSURFACE		
21652EN	MICROSURFACE-LEVELING COURSE	SQYD	36,139
20814EC	MICROSURFACE-SURFACE COURSE - TYPE A (MODIFIED)	SQYD	36,139
23071EN	OVERBAND CRACK SEALING ①	LB	5,000
25051EC	FIBER REINFORCEMENT FOR MICROSURFACING	SQYD	36,139
	THINLAY		
2676	MOBILIZATION FOR MILL & TEXT	LS	1
25005EC	CL4 ASPH SURF NO.4A PG76-22 (MODIFIED)	TON	1,491
24964EC	FINE MILLING	SQYD	36,139
24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	TON	12.7
25054EC	FIBER REINFORCEMENT FOR SURF NO. 4	TON	1,490.7
20071EC	JOINT ADHESIVE	LF	33,264

Notes

① This route has been previously crack sealed. A quantity of Overband Crack Sealing has been included to use as directed by the Engineer in case the pavement condition has deteriorated since the project was identified.

264411

PROPOSAL BID ITEMS

Report Date 4/21/26

264411

Section: 0001 - MICROSURFACING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	20814EC		MICROSURFACING-SURFACE COURSE - TYPE A (MODIFIED)	36,139.00	SQYD		$	
0020	21652EN		MICROSURFACING-LEVELING COURSE	36,139.00	SQYD		$	
0030	23071EN		OVERBAND CRACK SEALING	5,000.00	LB		$	
0040	25051EC		FIBER REINFORCEMENT FOR MICROSURFACING	36,139.00	SQYD		$	

Section: 0002 - THINLAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0050	02676		MOBILIZATION FOR MILL & TEXT (HARDIN I-65 HSIP)	1.00	LS		$	
0060	20071EC		JOINT ADHESIVE	33,264.00	LF		$	
0070	24964EC		FINE MILLING	36,139.00	SQYD		$	
0080	24970EC		ASPHALT MATERIAL FOR TACK NON-TRACKING	12.70	TON		$	
0090	25005EC		CL4 ASPH SURF NO.4A PG76-22 (MODIFIED)	1,491.00	TON		$	
0100	25054EC		FIBER REINFORCEMENT FOR SURF NO.4	1,490.70	TON		$	

Section: 0003 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0110	02562		TEMPORARY SIGNS	400.00	SQFT		$	
0120	02650		MAINTAIN & CONTROL TRAFFIC (HARDIN I-65 HSIP)	1.00	LS		$	
0130	02654		TRUCK MOUNTED ATTENUATOR	2.00	EACH		$	
0140	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		$	
0150	02775		ARROW PANEL	2.00	EACH		$	
0160	06511		PAVE STRIPING-TEMP PAINT-6 IN	15,708.00	LF		$	
0170	06542		PAVE STRIPING-THERMO-6 IN W	12,012.00	LF		$	
0180	06543		PAVE STRIPING-THERMO-6 IN Y	3,696.00	LF		$	
0190	06610		INLAID PAVEMENT MARKER-MW	235.00	EACH		$	
0200	20411ED		LAW ENFORCEMENT OFFICER	100.00	HOUR		$	
0201	26136EC		PORTABLE QUEUE WARNING ALERT SYSTEM (ADDED 4-21-26)	2.00	MONT		$	
0202	26137EC		QUEUE WARNING PCMS (ADDED 4-21-26)	12.00	MONT		$	
0203	26138EC		QUEUE WARNING PORTABLE RADAR SENSORS (ADDED 4-21-26)	12.00	MONT		$	
0204	25117EC		FURNISH QUEUE PROTECTION VEHICLES (ADDED 4-21-26)	2.00	MONT		$	

264411

PROPOSAL BID ITEMS

Report Date 4/21/26

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0205	**25075EC**		**QUEUE PROTECTION VEHICLE (ADDED 4-21-26)**	**240.00**	**HOUR**		**$**	

Section: 0004 - DEMOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0210	**02569**		**DEMOBILIZATION**	**1.00**	**LS**		**$**	