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GOVERNOR

TRANSPORTATION CABINET

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Jim Gray
SECRETARY

June 25, 2025

CALL NO. 100
CONTRACT ID NO. 255381
ADDENDUM # 2

Subject: Fayette County, STP BRZ 9030 (499)
Letting June 26, 2025

- (1) Added - Special Notes - Pages 31A-31G of 119
- (2) Revised - Proposal Bid Items - Pages 118-119 of 119

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

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

Sincerely,

A handwritten signature in black ink that reads "Rachel Mills".

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

RM:mr
Enclosures

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.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
25075EC	Queue Protection Vehicle	Hour
25117EC	Furnish Queue Protection Vehicles	Month

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

- Overall PQWAS capabilities and performance requirements include the following:
 - 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 1 line, 2 line 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.

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

255381

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	42.00	TON		\$	
0020	00018		DRAINAGE BLANKET-TYPE II-ASPH	26.00	TON		\$	
0030	00100		ASPHALT SEAL AGGREGATE	0.10	TON		\$	
0040	00103		ASPHALT SEAL COAT	0.10	TON		\$	
0050	00205		CL3 ASPH BASE 1.50D PG64-22	8.00	TON		\$	
0060	00208		CL4 ASPH BASE 1.50D PG64-22	32.00	TON		\$	
0070	00214		CL3 ASPH BASE 1.00D PG64-22	8.00	TON		\$	
0080	00217		CL4 ASPH BASE 1.00D PG64-22	10.00	TON		\$	
0090	00219		CL4 ASPH BASE 1.00D PG76-22	10.00	TON		\$	
0100	00342		CL4 ASPH SURF 0.38A PG76-22	86.00	TON		\$	
0110	00356		ASPHALT MATERIAL FOR TACK	1.00	TON		\$	
0120	00358		ASPHALT CURING SEAL	0.10	TON		\$	
0130	02702		SAND FOR BLOTTER	0.20	TON		\$	
0140	22906ES403		CL3 ASPH SURF 0.38A PG64-22	42.00	TON		\$	
0150	23019EN		ASPHALT MILLING AND TEXTURING	1,520.00	SQYD		\$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0160	01984		DELINEATOR FOR BARRIER - WHITE	26.00	EACH		\$	
0170	01985		DELINEATOR FOR BARRIER - YELLOW	35.00	EACH		\$	
0180	02003		RELOCATE TEMP CONC BARRIER	2,461.00	LF		\$	
0190	02351		GUARDRAIL-STEEL W BEAM-S FACE	200.00	LF		\$	
0200	02381		REMOVE GUARDRAIL	200.00	LF		\$	
0210	02562		TEMPORARY SIGNS	685.00	SQFT		\$	
0220	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0230	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		\$	
0240	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
0250	02696		SHOULDER RUMBLE STRIPS	200.00	LF		\$	
0260	02775		ARROW PANEL	2.00	EACH		\$	
0270	02898		RELOCATE CRASH CUSHION	4.00	EACH		\$	
0280	03171		CONC BARRIER WALL TYPE 9T	3,721.00	LF		\$	
0290	06511		PAVE STRIPING-TEMP PAINT-6 IN	32,035.00	LF		\$	
0300	06542		PAVE STRIPING-THERMO-6 IN W	9,239.80	LF		\$	
0310	06543		PAVE STRIPING-THERMO-6 IN Y	2,663.00	LF		\$	
0320	06544		PAVE STRIPING-THERMO-8 IN W	1,489.00	LF		\$	
0330	06550		PAVE STRIPING-TEMP REM TAPE-W	1,088.00	LF		\$	
0340	06551		PAVE STRIPING-TEMP REM TAPE-Y	408.00	LF		\$	
0350	06556		PAVE STRIPING-DUR TY 1-6 IN W	248.20	LF		\$	
0360	06557		PAVE STRIPING-DUR TY 1-6 IN Y	136.00	LF		\$	
0370	08003		FOUNDATION PREPARATION	1.00	LS		\$	
0380	08901		CRASH CUSHION TY VI CLASS BT TL2	3.00	EACH		\$	
0390	20100ES842		PAVE MARK TEMP PAINT LINE ARROW	54.00	EACH		\$	

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0400	20411ED		LAW ENFORCEMENT OFFICER	200.00	HOUR		\$	
0401	25075EC		QUEUE PROTECTION VEHICLE (ADDED 6-25-25)	960.00	HOUR		\$	
0402	25117EC		FURNISH QUEUE PROTECTION VEHICLES (ADDED 6-25-25)	4.00	MONT		\$	
0403	26136EC		PORTABLE QUEUE WARNING ALERT SYSTEM (ADDED 6-25-25)	4.00	MONT		\$	
0404	26137EC		QUEUE WARNING PCMS (ADDED 6-25-25)	24.00	MONT		\$	
0405	26138EC		QUEUE WARNING PORTABLE RADAR SENSORS (ADDED 6-25-25)	24.00	MONT		\$	
0406	26237EC		CONNECTED ARROW PANEL (ADDED 6-25-25)	12.00	MONT		\$	

Section: 0003 - BRIDGE - 034B00150R

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0410	02223		GRANULAR EMBANKMENT	25.00	CUYD		\$	
0420	02545		CLEARING AND GRUBBING APPROX LESS THAN 1 ACRE	1.00	LS		\$	
0430	02726		STAKING	1.00	LS		\$	
0440	03299		ARMORED EDGE FOR CONCRETE (REVISED 6-18-25)	552.00	LF		\$	
0450	03300		ELIMINATE TRANSVERSE JOINT	270.00	LF		\$	
0460	08130		MECHANICAL REINF COUPLER #5	212.00	EACH		\$	
0470	08150		STEEL REINFORCEMENT	100.00	LB		\$	
0480	08500		APPROACH SLAB	381.00	SQYD		\$	
0490	08504		EPOXY SAND SLURRY	21.00	SQYD		\$	
0500	08534		CONCRETE OVERLAY-LATEX	20.00	CUYD		\$	
0510	08549		BLAST CLEANING	579.00	SQYD		\$	
0520	08550		HYDRODEMOLITION	579.00	SQYD		\$	
0530	22146EN		CONCRETE PATCHING REPAIR	60.00	SQFT		\$	
0540	23378EC		CONCRETE SEALING	9,513.00	SQFT		\$	
0550	23744EC		EPOXY INJECTION CRACK REPAIR	120.00	LF		\$	
0560	24094EC		PARTIAL DEPTH PATCHING	3.00	CUYD		\$	
0570	24845EC		UTILITY COORDINATION	1.00	LS		\$	
0580	24982EC		CONCRETE COATING APPROX 4500 SF	1.00	LS		\$	
0590	25028ED		RAIL SYSTEM SINGLE SLOPE - 40 IN	126.00	LF		\$	
0600	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	4.00	EACH		\$	
0610	26233EC		MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS		\$	

Section: 0004 - DEMOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0620	02569		DEMOBILIZATION	1.00	LS		\$	