RFP QUESTIONS AND ANSWERS
I-64 ACTIVE TRAFFIC AND SAFETY MANAGEMENT SYSTEM
VDOT PROJECT 0064-007-913, C501

October 2, 2013

1) Special Provisions sections 706, 707 and Part 2, and the discussion at the pre-bid meetings contain conflicting requirements for the UPS. Please clarify the UPS requirements regarding the minimum size of the UPS, as well as an indication of the specific ATMS and other equipment to be backed up, and the duration that each device is to be kept operational.

Part 2 – Technical Information & Requirements, Section 2.17.5 will be revised in Addendum No. 1 to clarify that the UPS shall be required to power all the ITS devices and communication equipment installed inside the ITS cabinet, as well as the following devices connected to the ITS cabinet: CCTV camera, controller and video encoder; vehicle detector; RWIS. DMS Types 1 and 2 are not intended to receive backup battery power through a UPS. The UPS shall provide a run time of 8 hours for these devices. Special Provision 706_ITS – Infrastructure will be revised to require the UPS to have a capacity of 2.3 KVA. This size is consistent with Part 2 and Special Provision 707_ITS_Uninterruptible Power System.

2) Special Provision 713 requires that the encoder provide “video streams compatible with the Regional TOC Central Software interface. What is this software interface?

The Regional TOC Central Software interface is currently under development. Its anticipated release date is June-2014. The Design-Builder will be required to coordinate with the TOC staff to insure the ITS devices and software will integrate smoothly with the TOC. This coordination should occur as early in the design of the project as possible.

3) Special Provision Section 714 requires the use of Steel Poles for CCTV cameras. The Power Point presentation at the pre-bid meetings indicated that 45’ wood poles would be used for the CCTV units and the microwave detectors. Please clarify this conflict.

Part 2, Sections 2.12, 2.12.1 and 2.18.1, as well as Special Provision 714 will be revised in RFP Addendum No. 1 to include the use of wood poles to support the CCTV cameras and to clarify the camera mounting height of 45-ft. Part 2, Section 2.12.3, RWIS Tower, will be added to clarify the structural mounting requirements for the RWIS.

4) High voltage power lines are not normally used on VDOT Projects. Please indicate whether 2,400 primary voltage feeds can be installed in conduit along the right-of-way to power ITS devices.

The project requires primary voltage feeders to be installed from Exit 96 to the Power House at Exit 99 and continuing on to MM 104. The primary feeder will be installed in VDOT right of way. The voltage of the primary feeder should match the voltage supplying the power house; 2,400-v. The Part 2, Section 2.17.1 and the plans will be revised in Addendum No. 1 to clarify the location of the DVP distribution line at Exit 96 and the proposed location of the step down transformer to 2,400-v as well as the need for a recloser at this point. The plans will be revised to show all proposed power conduits on this project to be 3”.

5) Can the conduit be installed in the median?

New conduit may be installed in the median. However, the installation of new conduit is depicted on the plans along the shoulder to minimize the number of bores under the roadway and to facilitate connection to new and existing devices. The Design-Builder will be required to determine that location of the existing 2,400-volt fog light system, as well as the location of the existing ITS power and communication conduits and junction boxes. The Design-Builder's proposed location of the conduit should be included in the construction plans for VDOT review and approval.

6) Will depth relief be allowed due to rock sub grade? If so, to what minimum depth?

The minimum depth of the conduit shall be 30" except where bedrock is encountered in which case the minimum depth of 18" will be permitted.

7) As an alternative, can the conduit be set in a shallow trench and incased in concrete. If so at what depth?

Alternative shallow trenched conduit encased in concrete will not be permitted project wide. The minimum depth of the conduit shall be 30" except where bedrock is encountered in which case the minimum depth of 18" will be permitted.

8) Section 1.4 of Part 2 of the RFP states that the Design-Builder's design shall be wholly included in the existing right-of-way as shown on the RFP Conceptual Plans, yet no existing right-of-way is shown on the RFP Conceptual Plans. Please provide the existing right-of-way information or confirm that the RFP Conceptual Plan design is indeed wholly included within the existing right-of-way.

The ITS devices along I-64 as shown on the RFP Conceptual Plans are wholly contained within the right of way. It is the responsibility of the Design Builder's Designer to determine that their design, including locations along the arterial roadway, is wholly included in the right of way. The RFP Conceptual Plans are diagrammatic concepts and not construction plans. VDOT does not have any current survey data for the area.

9) Section 2.13.3 of Part 2 of the RFP says that permanent stormwater management facilities may not be required. Please confirm stormwater management facilities will not be required if the Design-Builder constructs the project in conformance with the RFP Conceptual Plans.

No storm water facilities are required for this project.

10) Please confirm a "Type A" TMP per VDOT IIM-241.5 is acceptable for this project.

The type of Traffic Management Plan (TMP) submitted by the Design-Builder shall be in accordance with the latest version of IIM-214. The Type A TMP would be acceptable only where work could be accomplished in accordance with the Typical Applications and Temporary Traffic Control (TTC) plans described in the Virginia Work Area Protection Manual. Where work cannot be performed in accordance with these TTC's, the Design-Builder will be required to submit Temporary Traffic Control plans for approval by VDOT.

11) Please confirm that truck mounted attenuators will be required for temporary shoulder and lane closures on I-64 per the Virginia Work Area Protection Manual.

Temporary traffic controls (TTC) shall be in accordance with the Virginia Work Area Protection Manual.

12) Please provide the allowable lane and shoulder closure times along I-64 and all other roadways within the project limits.

Allowable lane and shoulder closure times are found in the Special Provisions for Section 108. The Special Provision will be distributed with RFP Addendum No. 1.

13) Please clarify if open trenching across existing roadways is prohibited.

Open trenching across existing roadways is prohibited.

14) Please clarify if VDOT will provide aerial survey that will be deemed acceptable by VDOT for final design. If not, does VDOT anticipate that the Design-Builder must acquire aerial mapping as part of the scope?

VDOT will not provide aerial survey. The Design-Builder is responsible for providing final plans at the same level of plan detail as shown in the RFP Conceptual Plans.

15) The RFP information package contains a document called "System Requirements". Please clarify if the content of this document truly are requirements of the Design-Builder, or if the document is "for information only".

The Systems Requirements Document includes specific information concerning the various equipment and software requirements for the project, as well as the communication requirements for the project. As noted in Part 2 of the RFP, Section 2.1.2: Requirements described in the Technical Information and Requirements (Part 2 of the RFP) shall supersede information included in the RFP Information Package including the information depicted on the RFP Conceptual Plans. In the event that there is a discrepancy between the RFP Conceptual Plans (or other information included in the RFP Information Package) and the Technical Information and Requirements (Part 2 of the RFP) herein, the Technical Information and Requirements (Part 2 of the RFP) shall take precedence.

16) Reference RFP Part 2, Section 2.12.1, Page 33 of 50 – This section calls for installation of one (1) standard pole size of 40 feet in height, but continues to describe lowering devices for 60-foot or greater pole heights. Please confirm that all poles should be 40-foot.

Part 2, Sections 2.12, 2.12.1 and 2.12.2, as well as Section 2.18.1, will be revised to include the requirement to install wooden camera poles and to provide a camera mounting height of 45-ft. The wood poles shall provide a CCTV mounting height of 45-ft. Where appropriate, the CCTV may be combined with other ITS components, such as a DMS sign structure, provided the camera mounting height of 45-ft is provided. The Design-Builder's proposed CCTV support should be included in the construction plans for VDOT review and approval.

17) Reference RFP Part 2, Section 2.12.1, Page 33 of 50 – The camera pole requirement in the CCTV video equipment special provision conflicts with Part2, Section 2.12.1 of the RFP. Please clarify if wooden poles are acceptable for this project.

See the response to Questions 3 and 16 above.

18) Please provide the manufacturer and model number of existing equipment along the corridor that we are expected to modify.

A list of existing equipment will be provided in RFP Addendum No. 1.

19) Please clarify the Uninterruptible Power Systems (UPS) requirements for each equipment type.

See the response to Question 1 above.

20) Can the following as-built data be made available to the bidders including:

- Electrical Construction As-built Drawings
- Fiber Optic Network As-Built Drawings
- Utility Power System As-Built Drawings

No as-built drawings exist. Roadway construction plans, as well as construction plans for the fog light system, are included in RFP Addendum No. 1 but are not deemed a component of the RFP. These plans are solely for the information of the Offeror, which each Offeror may use at their own risk and as they deem appropriate. The Department does not represent or warrant that the information contained in the plans is suitable for designing the Project.

21) The Technical Specification details the requirements to upgrade, extend or modify existing guide rail systems. Can the following as-built data be made available to the bidders:

- Existing roadway drawings inclusive of all guide rail and attenuators with details for types of roadway safety devices

No as-built drawings exist. Roadway construction plans are included in RFP Addendum No. 1 but are not deemed a component of the RFP. These plans are solely for the information of the Offeror, which each Offeror may use at their own risk and as they deem appropriate. The Department does not represent or warrant that the information contained in the plans is suitable for designing the Project.

22) Can an inventory of ITS assets be provided by manufacture, model and date of installation for the following assets:

- CCTV
- DMS
- RWIS
- Vehicle Detectors
- HAR

A list of existing equipment will be provided in RFP Addendum No. 1.

23) Can as-built data be provided for the existing Power House and existing medium voltage distribution system?

No as-build data exists. Construction plans for the Power House will be provided in RFP Addendum 1 but are not deemed a component of the RFP. These plans are solely for the information of the Offeror, which each Offeror may use at their own risk and as they deem appropriate. The Department does not represent or warrant that the information contained in the plans is suitable for designing the Project.

24) At the pre-bid meeting, it was mentioned that there are an existing number of junction boxes that have been covered by a prior asphalt overlay contract. Will the successful contract be responsible for uncovering the junction boxes in question and repairing the asphalt? Also will a full long term shoulder closure be required while the cable revisions in this existing raceway system are taking place?

The Design-Builder will be required to locate, uncover and repair the existing junction boxes located in the paved shoulder. The pavement shall be repaired at those locations. Repaving over the junction boxes will not be permitted. The Design-Builder will be responsible for submitting a lane closure schedule (including shoulder closure schedule) to VDOT for approval. The duration and length of the shoulder closure should be representative of the work involved with revisions to the existing raceway system.

25) Will the Department Consider an addition period of time for any additional technical questions?

A revised proposal schedule will be provided in RFP Addendum No. 1. A second round of questions and answers will not be entertained at this time.

26) Will the Department consider an extension to the current bid date to facilitate a site visit and additional technical questions?

The site visit to the project area is scheduled for Monday, October 7, 2013, at 10-am. Interested parties will meet at the Power House at that time. A revised proposal schedule will be provided in RFP Addendum No. 1. A second round of questions and answers will not be entertained at this time.

27) Has a date for the site visit be arranged to view the existing ITS assets, power and communications systems been established?

The site visit to the project area is scheduled for Monday, October 7, 2013, 10-am. Interested parties will meet at the Power House at that time.

28) Please clarify the qualifications section referenced in 4.2.6 of the RFP regarding minimum work history would be met by the following:

    a) Multi-year Contracts with the department with executed task order values totaling greater than $2,000,000 in which the projects were construction related activities that includes ITS work as well as other construction activities.

A multi-year task order contract with $2,000,000 strictly for ITS work exclusive of any other construction activities will meet the minimum requirement.

    b) ITS projects exceeding $2,000,000 in total value performed as a subcontractor with other team members as Prime satisfy the requirement for the Prime Contractor

If the subcontract was for $2,000,000 or greater exclusive of the Prime's work this will meet the minimum requirement.

29) Will a tour of the powerhouse be available prior to the bid date?

The site visit to the project area is scheduled for Monday, October 7, 2013, 10-am. Interested parties will meet at the Power House at that time.

30) Regarding the contractor's four-hour response time required during the 60-day acceptance test, who will notify the contractor of failure / required response and how will this be initiated?

The TOC will notify the contractor via telephone and email.

31) To meet the four-hour response time will the Contractor during the 60-day acceptance test, have to:

    a) Arrive onsite within four-hours, or
    b) Have to complete troubleshooting within four-hours, or
    c) Have the repair completed within four-hours?

Part 2, Section 2.20 will be revised in RFP Addendum No. 1 to clarify the response time to equipment failures. The Contractor must arrive on site within 2 hours. Repairs to equipment must be completed within 4 hours of arrival. The same timeframes apply to communications system failures.

32) During the 60-day acceptance test, under what conditions would the test be required to restart the 60-day test period? E.g., would a maintenance failure addressed within the 4-hour response time restart the test period?

Section 2.20 of Part 2 will be revised in RFP Addendum No. 1 to clarify when the acceptance test will be restarted or extended. The 60-day acceptance test shall demonstrate that the equipment functions as required without intervention by the Contractor. Where the equipment must be replaced, or require any adjustment, the acceptance test period will be restarted and continue to completion of the 60-day period. Where execution of the acceptance test is interrupted due to an event, such as area-wide power outage,

the test period will be extended for the period of the event, such that the total period of the test includes 60 calendar days of operation where the Department may monitor the performance of the equipment.

33) Within this procurement are dome cameras allowed or is VDOT requiring positioner style cameras?

Positioner style CCTV cameras are preferred.

34) Is the contractor required to keep the existing underground 2400VAC lighting circuits, located adjacent to the eastbound and westbound shoulders and within the median from MM98 to MM104, active and undisturbed throughout the construction project?

The 2,400-v fog lights must remain operational throughout the duration of this project.

35) Who is responsible for communication circuit costs or costs associated with leased lines to the powerhouse from the period of construction to acceptance?

The costs associated with existing communication line to the power house are VDOT's responsibility. The Design-Builder will be responsible for the costs associated with new communication lines during construction and through to acceptance.

36) In regards to the T-3 communications circuit from the powerhouse to the Staunton TOC discussed in the prebid is this required or can the Contractor offer alternative solutions?

It is the intention of this project to provide redundant communication links to the Staunton TOC via the new Primary Ethernet Switches located at Exits 94, 96, 99 (the power house), and the rest area at MM 105.3. The Primary Ethernet switch and the communication system at Exit 107 are not intended to be part of the Afton Mountain communication network. Alternate solutions to this concept will be considered and encouraged. However, of primary concern is establishment of alternate communication paths from the project area to the Staunton TOC.

37) Who is responsible for electrical costs from the period of construction to acceptance?

The Design-Builder is responsible for electrical costs during construction through acceptance.

38) Will the existing two line DMS sign at MM104 westbound remain in place?

The Conceptual Plans in RFP Addendum No. 1 will clarify the need to remove the existing 2-line DMS at MM 104 and return it to VDOT.

39) Can the existing two line DMS sign specified for removal be redeployed in arterial or entrance locations?

The existing 2-line DMS signs should be removed and returned to VDOT, and not redeployed. These signs do not meet the Department's requirements for dynamic message signing on the project.

40) For DMS Type II (Arterial) please confirm that a 12" character height is allowed even on those roads with a speed limit of 45-MPH or greater, or do the MUTCD standards apply?

The Conceptual Plans in RFP Addendum No. 1 have been revised to require DMS Type 1 signs with 18" characters to be installed on roadways where the speed limit is 45-mph or greater.

41) Will VDOT provide as-built drawings for this project?

See the response to Questions 20, 21, 22 and 23 above.

42) Regarding UPS power for DMS, please confirm that the eight-hour runtime requirement applies to the equipment in the cabinet only, not the display, as indicated during the pre-bid meeting.

See the response to Question 1 above.

43) Is there a maximum distance allowed from the project location for the location of the Modified Type I field office?

The field office shall be placed within the project limits.

44) At what point will the warranty of the system begin?

The warranty period shall commence from successful completion of the field acceptance testing. See Part-2, Section 2.20.

45) Will the project be accepted in phases as a start to the warranty period?

Phased acceptance is not allowed for this project.

46) How are the connections to devices from the TOC to be tested without providing system software?

Part 2, Section 2.20 will be revised in Addendum 1: The System Operation Testing will show that the devices can communicate to the TOC via the VDOT communication system and the leased communication lines. Testing at the TOC should be performed through a dedicated interface, separate from the TOC operations. This System Operation Testing shall successfully demonstrate that users at the TOC can fully control all aspects of the AT&SM system before the Design-Builder can commence Acceptance Testing.

47) Please describe the requirements of the system operation testing phase.

See the response to Question 46 above.

48) Acceptance testing: please describe what constitutes a system failure and to what extent individual devices may not be operable and not specifically constitute a system failure.

See the response to Question 32 above.

49) Acceptance testing: Will external problems with electrical service constitute a system failure?

See the response to Question 32 above.

50) Is the DB team responsible for the connection fee and monthly costs for the leased communications to Salem and Staunton TOCs?

The Design-Builder will be responsible for costs associated with the communication lines installation/connection fees and recurring costs until project acceptance to both the Salem TOC and the Staunton TOC.

51) According to the Special Provisions, the UPS units must power the device controllers. What other devices are the UPS required to power and for what period of time?

See the response to Question 1 above.

52) Please provide an inventory of all field devices.

A list of existing equipment will be provided in RFP Addendum No. 1.

53) Please provide plans for the existing ITS system, including conduit routes, structural plans, and electrical design.

Construction plans for the Fog Guidance will be provided in RFP Addendum No. 1. These plans were prepared in 1973 include portions of the current Afton Mountain ITS system. The plans show the proposed layout of the Fog Guidance System, along with signing plans and structural details for the power house. As-built plans do not exist.

54) Do all existing devices need to be retrofitted for lightning protection equipment?

New structures intended to support DMS, CCTV and/or RWIS devices shall be installed with lightning protection.

55) How is the power supply for the existing fog lights configured and what will the DB Team be required to do to maintain it and provide power to the ITS devices?

The existing fog lights are powered from the power house on seven (7) 2400-v circuits. The circuits are run along both the inside and outside shoulders of both eastbound and westbound directions. The ITS devices that are powered from the power house operate at 120v. Both the fog lights and the ITS devices are connected to the same DVP distribution line at the top of the mountain. Control of the fog lights is provided by remote switching from the TOC. The fog light controller is located in the power house and operates on 120v power. The Design-Builder is required to ensure that power to the fog lights remains undisturbed during the project. The intension of running the new primary feed from Exit 96 is to provide power to the new and existing ITS devices as well as the power house. This new primary feeder shall be installed before de-energizing the ITS devices and performing any upgrades to the communication and power system. The Design-Builder shall provide a sequence of construction to VDOT for review and approval prior to de-energizing any ITS device.

56) The pre-bid meeting discussion said there is to be redundant communications; however, the Rockfish Gap Turnpike Interchange is isolated to the rest of the network. Is that area to have redundant communications using a collapsed ring or is the DB team required to design a physical ring (additional route) to the TOC?

The communication network at Exit 107 is not intended to be part of the ring network associated with the Primary Ethernet switches at Exits 94, 96 and 99. The Design-Builder is required to establish a separate communication link to the Staunton TOC from the Primary Ethernet switch at Exit 107. The network at Exit 107 will not have a redundant communication path to the TOC.

57) The pre-bid meeting discussion said there is to be redundant power yet the plans do not include primary feeder conduit and cable the entire length of the project. Please describe how redundancy is to be achieved. Is it the responsibility of the DB team to coordinate with the local power provider to either locate or obtain additional service points?

A new power feed sahll shall be established to the power house from Exit 96. This power feed will provide redundant power to the power house and the ITS devices powered from the power house. The ITS devices powered from the power house include the devices from Exit 96 to MM 104. The ITS devices powered from Exit 94 will not have a redundant power source. Furthermore, the devices powered from the rest area at MM 105.3 and the devices powered from Exit 107 will not have a redundant power source. It will be the responsibility of the Design-Builder to coordinate with the local power company to provide the new service.

58) Is the electrical service to be metered at the primary service points or on the secondary at the device locations?

The new power feed at Exit 96 will be metered at 2,400-v, not at each ITS device. The Design-Builder will coordinate with the local power company to establish any new or upgraded metered service points for those ITS devices not powered from the power house or the new 2,400-v power feed from Exit 96.

59) Is each RWIS location to have all sensors as described in the special provisions or only those sensors specifically called out on the conceptual plans?

Due to limited space on the plan sheets, the RWIS sensors required at each location are listed in Part 2. Part 2, Section 2.18.4 and 2.18.5 will be revised in Addendum 1 to clarify the required RWIS sensors at new RWIS locations and at those locations where modification of existing stations require installation of additional sensors. The intention of this project is to have each RWIS location fitted with a complete set of atmospheric and roadway condition sensors.

60) At locations where only a fog sensor is called out, is the intent to have only an RWIS with sensors capable of detecting only fog?

The plans will be revised to clarify that existing Fog Sensors will be modified to include all sensors necessary to provide a complete RWIS. The components necessary to complete the work will be included in Part 2, Section 2.18.5.

61) General: at locations where existing 120/240 electrical service is being moved to the VDOT system is the contractor to remove the old service and abandon the conduit?

At those locations where the ITS device will be powered by new electrical service, the existing 120/240-v electrical service is no longer needed. The old service should be removed and the conduit abandoned.

62) What is the purpose of the spare conduit?

Spare conduits are required in various areas of the project to provide alternate power and/or communication routes to the ITS devices under future conditions. Installation of new conduit in areas specified in the RFP Conceptual Plans is a requirement.

63) Sheet 10 and 11: for the CCTV at MM 104.8 is power being fed from the rest area as secondary without a transformer?

The plans call for a new electrical service to be established at the rest area to feed the ITS devices from MM 104.8 to MM 105.6. The voltage at this new electrical service has not been established. As such, the voltage provided to the CCTV at MM 104.8 should be shown in the plans provided by the Design-Builder for this area. Recognizing that the CCTV at MM 104.8, as well as the other ITS components, will likely operate on 120v, 1-phase, a step down transformer has been included with the CCTV. The Conceptual Plans in Addendum No. 1 include step down transformers at the other ITS devices powered from the rest area electrical service.

64) Sheet 10: In the prebid meeting, it was discussed that the workers memorial is to have power other than solar but in this area the conduit is identified as spare with no conductors. Please clarify the intent.

The Conceptual Plans in Addendum No. 1 require a 3” power conduit and primary feeder cables routed into the Workers Memorial. The feeder cable will be terminated at a step down transformer. Connection to the secondary of the transformer will be address in the future.

65) Page 10: Section 2.2.10 mentions access control gates but none are shown in the plans. Gates are also mentioned in High Level design document on page 5. Are they to be designed/installed as part of this project, and if so where?

Access control gates have been removed from the project.

66) Page 48: The plans do not show or call out installing primary network Ethernet switches. Are these to be installed in the two TOCs?

Primary Network switches are shown at the HUB locations on plan sheets 3, 5, 7, 11, 12. There is no intention to install these switches at the TOC.

67) How will failover be accomplished with a single communications connection to the corridor at the rest area and the workers memorial?

Failover will be accomplished through the primary network switches (PNSW) at Exits 94, 96, 99 and the rest area at MM 105.3. The plans will be revised in Addendum 1 to clarify the need to establish communication links to the TOC from the HUB's at these locations. The Design-Builder is responsible for configuring the network such that all ITS devices, DMS and CCTV connected to the HUB's at these locations shall be capable of communicating with the TOC through any of the PNSW's in the event of the failure of one PNSW.

68) Are video encoders required to be installed at all existing camera locations? They are not called out at existing locations.

The plans require the upgrade of existing CCTV power and communication such that these cameras are capable of communicating with the TOC through the managed field Ethernet switches. The Design-Builder is required to determine the extent of this work and provide VDOT with construction plans for review and approval.

69) Page 23 states a redundant power supplies is required. The plans show at least six non-redundant power sources along the corridor with only one pair possibly redundant to each other. Please clarify the intention.

See the response to Question 57 above.

70) Page 23-24: has VDOT determined if "fiber optic based leased communications is available the desired locations?

VDOT has not determined if lease communications are available. The Design-Builder will be responsible for determining the leased communication medium.

71) Would the Department consider extending the due date for questions? Having received the plans just one week prior to the deadline for questions has not provided sufficient time for a thorough review of documents or field conditions and associated time required to generate questions.

See the response to Questions 25 and 26 above.

72) RFP Part 2, Section 2.16.5 makes reference to VDOT's Special Provision for Section 108 – Prosecution and Progress of Work, but this Special Provision was not included in the RFP Information package. Please provide.

See the response to Question 12 above.