FAX COVER SHEET

TO	LarryMcDonnell
COMPANY	DepartmentofAdministration,PurchasingDivision2019
FAXNUMBER	13045583970
FROM	MichaelCarvelli
DATE	2023-06-27 18:52:55 GMT
RE	SOLICITATION NO.: CRFQ 0803 DOT2300000149

COVER MESSAGE

VENDOR NAME: i3 Celtic, and i3 Verticals Company
BUYER: Larry D McDonnell
SOLICITATION NO.: CRFQ 0803 DOT2300000149
BID OPENING DATE: 28 June 2023
BID OPENING TIME:
1:30 PM EST
FAXNUMBER:
304-558-3970

Ce;toc4Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

State of West Virginia Centralized Request for Quote Info

Technology

Proc Folder:	1234660
Doc Description:	Automated Hauling Permit System RFQ (81230076)
Proc Type:	Central Master Agreement

Reason for Modification:

Date Issued	Solicitation Closes	Solicitation No	Version
2023-06-13	2023-06-28 13:30	CRFQ 0803 DOT2300000149	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Customer Code:

Vendor Name :
i3 Celtic an i3 Verticals company

Address : 8961

Street : East Bell Road, Suite 101

City : Scottsdale

State : AZ **Country : USA** **Zip : 85260**

Principal Contact : **Michael Carvelli**

Vendor Contact Phone: 623-910-9202	**Extension:**

FOR INFORMATION CONTACT THE BUYER
Larry D McDonnell
304-558-2063
larry.d.mcdonnell@wv.gov

Vendor Signature X	michael carvelli	**FEIN#**	71-0927550	**DATE** 27 June 2023

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

REQUEST FOR QUOTATION:

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Transportation (WVDOT) to establis open-end contract for an Automated Hauling Permit System to be utilized by the WV Transportation Division, per the attached documentation.

INVOICE TO	SHIP TO
DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720 CHARLESTON WV US	DEPT. OF TRANSPORTATION 1900 KANAWHA BLVD E, BLD. 5 RM-720 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Pri
1	Cloud-based software as a service - Total Overall Cost	1.00000	EA		

Comm Code	Manufacturer	Specification	Model #
81162000			

Extended Description:
Automated Hauling Permit

System RFQ (81230076) See

attached pricing page and CRFQ

documentation.

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Technical Questions due by 4:00PM EST	2023-06-21

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. REVIEW DOCUMENTS THOROUGHLY: The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

2. MANDATORY TERMS: The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

3. PREBID MEETING: The item identified below shall apply to this Solicitation.

☑ A pre-bid meeting will not be held prior to bid opening

☐ A **MANDATORY PRE-BID** meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be

permitted to sign in but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. VENDOR QUESTION DEADLINE: Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted emails should have the solicitation number in the

subject line. Question Submission Deadline:

Submit Questions to: June 21, 2023 by 4:00PM EST
2019 Washington
Street, East
Charleston, WV
25305
Fax: (304) 558-3970
Email: larry.d.mcdonnell@wv.gov

5. VERBAL COMMUNICATION: Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

6. BID SUBMISSION: All bids must be submitted on or before the date and time of the bid opening listed in section 7 below. Vendors can submit bids electronically through *wv*OASIS, in paper form delivered to the Purchasing Division at the address listed below either in person or by courier, or in facsimile form by faxing to the Purchasing Division at the number listed below. Notwithstanding the foregoing, the Purchasing Division may prohibit the submission of bids electronically through *wv*OASIS at its sole discretion. Such a prohibition will be contained and communicated in the *wv*OASIS system resulting in the Vendor's inability to submit bids through *wv*OASIS. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via email. Bids submitted in paper or facsimile form must contain a signature. Bids submitted in *wv*OASIS are deemed to be electronically signed.

Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason.

For Request for Proposal ("RFP") Responses Only: Submission of a response to a Request for Proposal is not permitted in *wv*OASIS. In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal prior to the bid opening date and time identified in Section 7 below, plus N/A convenience copies of each to the Purchasing Division at the address shown below. Additionally, the Vendor should clearly identify and segregate the cost proposal from the technical proposal in a separately sealed envelope.

Bid Delivery Address and Fax Number:
Department of Administration,
Purchasing Division 2019
Washington Street East
Charleston, WV 25305-0130
Fax: 304-558-3970

A bid submitted in paper or facsimile form should contain the information listed below on the face of the submission envelope or fax cover sheet. Otherwise, the bid may be rejected by the Purchasing Division.

VENDOR NAME: i3 Celtic, and i3 Verticals Company
BUYER: Larry D McDonnell
SOLICITATION NO.: CRFQ 0803 DOT2300000149
BID OPENING DATE: 28 June 2023
BID OPENING TIME:
1:30 PM EST
FAX NUMBER: 304-558-3970

7. **BID OPENING:** Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by *wv*OASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

Bid Opening Date and Time: June 28, 2023 at 1:30PM EST

Bid Opening Location: Department of Administration,
Purchasing Division 2019 Washington Street East
Charleston, WV 25305-0130

8. ADDENDUM ACKNOWLEDGEMENT: Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

9. BID FORMATTING: Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

10. ALTERNATE MODEL OR BRAND: Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

☐ [ ] This Solicitation is based upon a standardized commodity established under W. Va. Code § 5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

11. EXCEPTIONS AND CLARIFICATIONS: The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

12. COMMUNICATION LIMITATIONS: In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

13. REGISTRATION: Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the $125 fee, if applicable.

14. UNIT PRICE: Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

15. PREFERENCE: Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at: www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

15A. RECIPROCAL PREFERENCE: The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES: For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37 and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women- owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly

certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.

17. WAIVER OF MINOR IRREGULARITIES: The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

18. ELECTRONIC FILE ACCESS RESTRICTIONS: Vendor must ensure that its submission in *wv*OASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

19. NON-RESPONSIBLE: The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1- 5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform or lacks the integrity and reliability to assure good-faith performance."

20. ACCEPTANCE/REJECTION: The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b."

21. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE

CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

22. WITH THE BID REQUIREMENTS: In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

23. EMAIL NOTIFICATION OF AWARD: The Purchasing Division will attempt to provide bidders with e-mail notification of contract award when a solicitation that the bidder participated in has been awarded. For notification purposes, bidders must provide the Purchasing Division with a valid email address in the bid response. Bidders may also monitor *wv*OASIS or the Purchasing Division's website to determine when a contract has been awarded.

24. ISRAEL BOYCOTT CERTIFICATION: Vendor's act of submitting a bid in response to this solicitation shall be deemed a certification from bidder to the State that bidder is not currently engaged in, and will not for the duration of the contract, engage in a boycott of Israel. This certification is required by W. Va. Code § 5A-3-63.

GENERAL TERMS AND CONDITIONS:

1. CONTRACTUAL AGREEMENT: Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. DEFINITIONS: As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

2.1. "Agency" or **"Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

2.2. "Bid" or **"Proposal"** means the vendors submitted response to this solicitation.

2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.

2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.

2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

2.9. "Vendor" or **"Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

☑ **Term Contract**

Initial Contract Term: The Initial Contract Term will be for a period of one (1) year _____. The Initial Contract Term becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as __), and the Initial Contract Term ends on the effective end date also shown on the first page of this Contract.

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to five (5) successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

☐ [ ] **Alternate Renewal Term** – This contract may be renewed for _____ succe approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this

Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

☐ [ ] **Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within _____day
s.

☐ [ ] **Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days.
Upon completion of the work covered by the preceding sentence, the vendor agrees that:

☐ the contract will continue for _____ years;

☐ the contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's Office (Attorney General approval is as to form only).

☐ [ ] **One-Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

☐ [ ] **Construction/Project Oversight:** This Contract becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and continues until the project for which the vendor is providing oversight is complete.

☐ **Other:** Contract Term specified in _____

4. AUTHORITY TO PROCEED: Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced.

5. QUANTITIES: The quantities required under this Contract shall be

determined in accordance with the category that has been identified as applicable to this Contract below.

☐ [✔] **Open End Contract:** Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

☐ [✔] **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

☐ [ ] **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

☐ [ ] **One-Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

☐ [ ] **Construction:** This Contract is for construction activity more fully defined in the specifications.

6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One-Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked in this section must be provided to the Purchasing Division by the Vendor as specified:

☐ [ ] **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or

change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

Vendor must maintain:

☐ [✔] **Commercial General Liability Insurance** in at least an amount of: $1,000,000.00 per occurrence.

☐ [ ] **Automobile Liability Insurance** in at least an amount of: _____ per occurrence.

☐ **Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: _____ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

☐ **Commercial Crime and Third Party Fidelity Insurance** in an amount of: _____ per occurrence.

☐ [✔] **Cyber Liability Insurance** in an amount of: $1,000,000 per occurrence.

☐ **Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

☐ **Pollution Insurance** in an amount of: _____ per occurrence.

☐ **Aircraft Liability** in an amount of: _____ per occurrence.

9. WORKERS' COMPENSATION INSURANCE: Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10. VENUE: All legal actions for damages brought by Vendor against the State shall be brought in the West Virginia Claims Commission. Other causes of action must be brought in the West Virginia court authorized by statute to exercise jurisdiction over it.

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

☐ _____ for _____.

☐ Liquidated Damages Contained in the Specifications.

☑ Liquidated Damages Are Not Included in this Contract.

12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

14. PAYMENT IN ARREARS: Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software

maintenance, licenses, or subscriptions may be paid annually in advance.

15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

18. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.

19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

20. TIME: Time is of the essence regarding all matters of time and performance in this Contract.

21. APPLICABLE LAW: This Contract is governed by and interpreted

under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.

22. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

24. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions

which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

29. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/default.html.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

34. VENDOR NON-CONFLICT: Neither Vendor nor its representatives are permitted to have any interest, nor shall they acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. NO DEBT CERTIFICATION: In accordance with West Virginia

Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State. By submitting a bid, or entering into a contract with the State, Vendor is affirming that (1) for construction contracts, the Vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, neither the Vendor nor any related party owe a debt as defined above, and neither the Vendor nor any related party are in employer default as defined in the statute cited above unless the debt or employer default is permitted under the statute.

38. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

39. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

☐ [✔] Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

☐ [ ] Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.division@wv.gov.

40. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the

United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.

b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process.

c. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

   1. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars ($2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or

   2. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL:

In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not

produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars ($50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least $1 million, the Vendor must submit to the Agency a disclosure of interested parties prior to beginning work under this Contract. Additionally, the Vendor must submit a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-work interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a

national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

44. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

45. VOID CONTRACT CLAUSES: This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

46. ISRAEL BOYCOTT: Bidder understands and agrees that, pursuant to W. Va. Code § 5A-3-63, it is prohibited from engaging in a boycott of Israel during the term of this contract.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title) Michael Carvelli, President

(Address) 8961 E Bell Road, Suite 101 Scottsdale, AZ85260

(Phone Number) / (Fax Number) 623- 910- 9202 / 480-991-4200

(Email address) Michael.carvelli@celtic.bz

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through *wv*OASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair

and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

I3 Celtic an i3 Verticals Company

(Company)

michael carvelli

(Signature of Authorized Representative)

Michael Carvelli, President 27 June 2023

(Printed Name and Title of Authorized Representative) (Date)

623- 910- 9202 / 480-991-4200 (Phone Number) (Fax Number)

Michael.carvelli@celtic.bz

(Email Address)

REQUEST FOR QUOTATION
Automated Routing OS/OW Permit System (81230076)
CRFQ DOT23*149

SPECIFICATIONS

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Transportation to establish an open-end contract for an Automated Hauling Permit System (AHPS).

Overview

Ensuring safety of the traveling public, protecting taxpayer funded infrastructure in roads and bridges, and enabling efficient travel of oversize (OS) and overweight (OW) traffic throughout WV are critical responsibilities of the WVDOT. Currently, WVDOT utilizes an automated OS/OW permitting system provided and hosted by Bentley Systems, Inc which provides real-time live load analysis of most bridge structures through use of existing Bentley LAHPS dataset/model information. In addition, the system manages route restrictions and provides a web-based user interface (UI).

Recently WVDOT has undergone a production load rating system change, with all routine bridge load rating performed with AASHTOWare Bridge Rating (BrR). For this reason, WVDOT seeks an automated permitting solution that will provide all necessary requirements outlined in this RFQ while directly interfacing with BrR for real-time live load analysis of WVDOT bridges.

The overall purpose of this RFQ is to solicit bids for the development and maintenance of a new automated OS/OW hauling permit system (AHPS) that directly interfaces with BrR's Load Rating Tool (LRT) and is able to utilize data from WVDOT's current bridge inspection database (currently this is Bentley Asset Reliability Inspections). In addition, the AHPS will also need to meet the following agency requirements:

1.1 Must integrate fully with the West Virginia State Treasurer's Office (STO) E- Government payment system to capture all payments.
1.2 Must provide a user-friendly, quick, and easy permit application for hauling permit applicants.
1.3 Must provide thorough and complete route analysis of all routes within WVDOT network, including Interstate, US,

WV, and county routes.

1.4 Must provide an automated process that maintains WVDOT's current level of auto-issuance of OS/OW permits (80-85%).

1.5 Must provide real-time data exchanges, as appropriate.

1.6 Must provide a secured solution with ample oversight of all HPS operations.

1.7 Must provide the ability to modify or adapt AHPS as needed, based on business changes that result from WVDOT initiatives, future legislation and or FHWA mandates and other internal or external sources as requested by WVDOT.

2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.

2.1 **"Contract Item"** or **"Contract Items"** means the list of items identified in Section 3.1 below and on the Pricing Pages.

2.2 **"Pricing Pages"** means the schedule of prices, estimated order quantity, and totals contained in wvOASIS or attached hereto as Exhibit A, and used to evaluate the Solicitation responses.

2.3 **"Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

3. **QUALIFICATIONS**: Vendor, or Vendor's staff if requirements are inherently limited to individuals rather than corporate entities, shall have the following minimum qualifications:

3.1 Vendor must provide, upon request, showing their experience with having successfully completed a minimum of two (2) implementations of an existing Automated Hauling Permit System (AHPS) within an organization of similar size and complexity or larger than WVDOT.

3.2 Vendor must provide, upon request, showing a minimum of three (3) years of experience providing the proposed AHPS to be eligible for award.

3.3 Vendor must provide, upon request, Vendors Project Manager specifically assigned to manage the resulting contract(s) must have managed at least three (3) software implementation projects of similar scope and complexity within the last ten

(10) years.

3.4 Vendor must provide, upon request, Vendors Project Manager specifically assigned to manage the resulting contract(s) has managed at least one (1) implementation project that involved the proposed software major version (e.g. 5.XX) within the last five (5) years.

3.5 Vendor must provide, upon request, a list of key management, customer service and other roles to be used in the fulfillment of the contract(s) (in addition to the Project Manager). Role descriptions, including requisite qualifications and experience of the specific employee assigned to each role, must also be included if requested.

4. GENERAL REQUIREMENTS:

4.1 Contract Items and Mandatory Requirements: Vendor shall provide Agency with the Contract Items listed below on an open-end and continuing basis. Contract Items must meet or exceed the mandatory requirements as shown below.

4.1.1 Automated Hauling Permit System (AHPS) : Core System Requirements

4.1.1.1 AHPS must be a web-based hosted solution.

i3-Celtic Response:
i3-Celtic and its hosting partner Microsoft Azure will be responsible for all software and hardware acquisition and maintenance, and support of the proposed CTS-PARS.

The CTS-PARS is developed using Microsoft .Net, ESRI ArcGIS Services, and support SQL Server/Oracle Database.
The components of the CTS-PARS can be summarized as follows:
• Clients - Web browsers are used to connect to web applications running in the GIS Services. The system supports all standard browsers, including Microsoft Edge, Google Chrome, Firefox, and Safari.
• Web Server – The GIS Web Server Adaptor allows the GIS Server to integrate with the permitting system web server. The Web adaptor forwards requests to the GIS Server.
• GIS Server – The GIS Server process GIS Service request and communicates with the GIS database server.
• Data Server – Following databases shall be created/maintained:
o The GIS database contains a feature class, feature table, locator, dataset, network dataset, etc.
o THE CTS-PARS OLTP and OLAP database contains data, including permit customers, permit transactions, payments, credentials, and more.

The following is a high-level CTS-PARS GIS Server Architecture:

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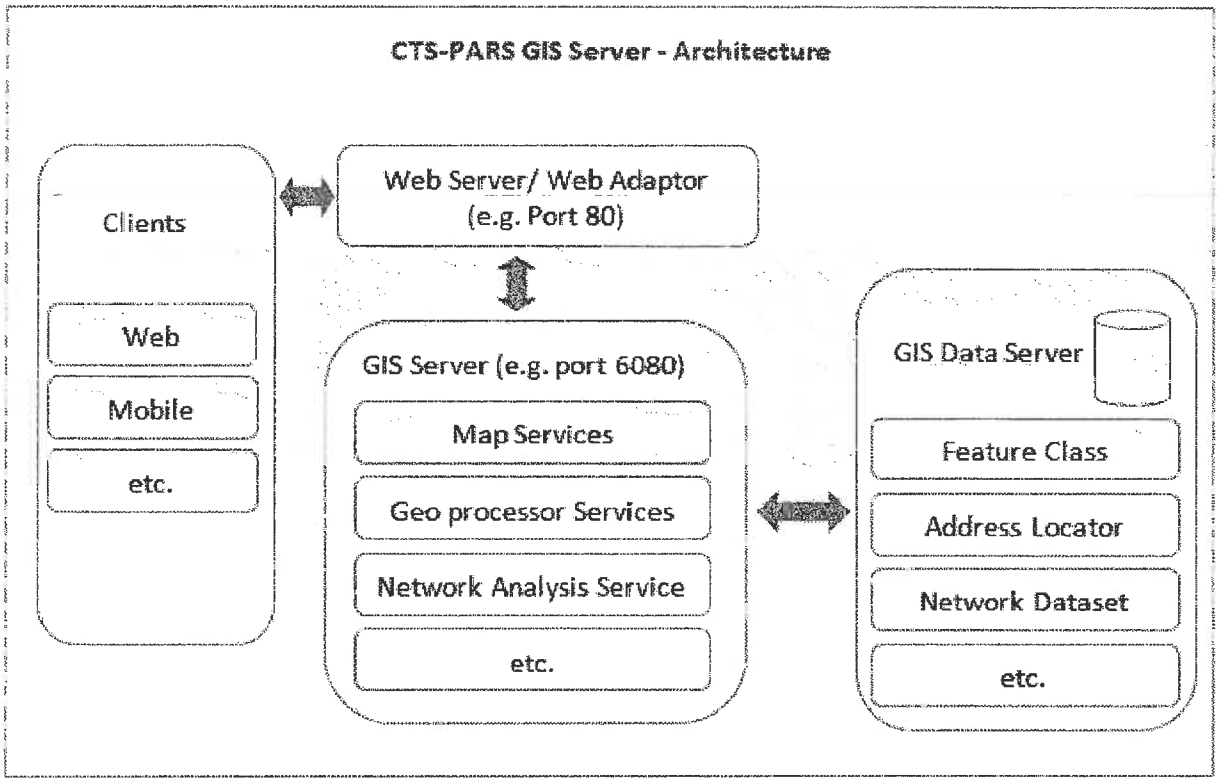

The CTS-PARS universal interface controller (UIC) shall integrate with WVDOT other asset categories and data, including enterprise data warehouse and other State systems, to include roadways, interchanges, ramps, and structures in the evaluation of routes state-wide.

4.1.1.2 AHPS must support (be tested on and certified on) the following Web Browsers, at minimum: Microsoft Edge, Google Chrome, Mozilla Firefox, and Apple Safari.

i3-Celtic Response:
CTS-PARS is a web-based UI solution. The system supports all standard browsers, including Microsoft Edge, Google Chrome, Firefox, and Safari.

4.1.1.3 AHPS must issue a credential or permit within five (5) inutes for auto-generated permits or credentials or five
(5) minutes after the last manual approval.

i3-Celtic Response:
CTS-PARS is a high-performance web-based application. Considering the straightforward application flow and available options to pre-populate data to reduce data entry time, the permit credential can be issued in less than 5 min.

4.1.1.4 Vendor must be responsible for all equipment, labor, and services necessary to set-

up and maintain the internet connectivity to support access to the system at the vendor hosting location.

i3-Celtic Response:
i3-Celtic and its hosting partner Microsoft Azure will be responsible for all software and hardware acquisition and maintenance, and support of the proposed CTS-PARS.

4.1.1.5 Vendor must administer the system databases and services on servers located at the vendor's facility and maintain the system database for continuity and data integrity.

i3-Celtic Response: We will meet this requirement.

4.1.1.6 AHPS must be available twenty-four (24) hours a day, 7 days a week except for during agreed-upon scheduled maintenance.

i3-Celtic Response:
CTS-PARS shall be hosted in the Azure Cloud in a proposed load-balanced and database mirroring setup for redundancy and maximum accessibility to the system. CTS-PARS Solution shall meet greater than 99.9% uptime on a 24/7, 365-days per year basis except for scheduled maintenance.
For example, if a system experiences 45 minutes of unplanned downtime in a month, and the total time in the month is 43,800 minutes (30 days x 24 hours x 60 minutes), the availability would be calculated as follows:

Availability = (43,800 - 45) / 43,800 = 99.9%
i3-Celtic will work with the WVDOT team to set specific uptime and availability targets for CTS-PARS that shall be included in service level agreements (SLAs).

4.1.1.7 Vendor must operate on a network offering adequate performance to meet the business requirements for the system and enhance or upgrade as required to maintain performance.

i3-Celtic Response: We will meet this requirement.

4.1.1.8 AHPS must be able to respond to needs for additional capacity without performance degradation as the State's needs scale.

i3-Celtic Response:
CTS-PARS can scale out and scale up using additional Infrastructure provisioning. The proposed solution can be sized considering 150 transactions per minute (average) with a Peak number of transactions up to 600.

4.1.1.9 AHPS data must be available in a non-proprietary standard, such as ASCII data files (e.g., comma separated values).

i3-Celtic Response: We will meet this requirement.

4.1.1.10 AHPS data must not be subject to any copyright, patent, trademark or other trade secret regulation.

i3-Celtic Response: We will meet this requirement.

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4.1.1.11 AHPS must have direct integration with WVDOT owned Bridge BrR and route GIS databases provided through an ESRI endpoint.

i3-Celtic Response:
CTS-PARS will be
- using GIS database, network dataset, locator, and map services to show map, layers, find address and generate route.
- integrated with BrR to do bridge analysis of bridges in the generated route.

4.1.1.12 AHPS must allow for a configurable workflow for various levels of WVDOT users (eg:) administrators, central office permit technician, district office review

i3-Celtic Response:
CTS-PARS provides configurable workflow and application fording rules that allow the system to add permit application in the workflow for review by an authorized user.

The workflow can be configured depending on WVDOT specific regulations and requirements of the state. However, the system considers the following parameters for the approval workflow:

1) Determine the size and weight of the load
2) Check permit requirements: These include the weight and size limits, the types of vehicles, the number of axles, and the specific routes that are permitted.
3) Review and approval: After the permit application has been submitted, it will be reviewed by the authorized user group(s). This review process period depends on the complexity of the load and the number of permits being requested. 4) Issuance of permit: Once the permit has been approved, it will be issued to the applicant. The permit will include information about the standard and specific restrictions.
5) Compliance and enforcement: The system may require for approval of the bridge engineer to ensure that the load is being transported in compliance with the permit.

The permit approval workflow business rule includes compliance with regulations to ensure that the application has been reviewed and approved by required user groups.

4.1.1.13 AHPS must provides automated issuance of OS/OW permits based on real-time route analysis coupled with real-time bridge live load analysis interfaced through AASHTOWare BrR's LRT.

i3-Celtic Response:
CTS-PARS generates real-time routes considering provided stops and vehicle details. The system identifies bridges on the route and utilizes those bridges to do bridge analysis through BrR.

4.1.1.14 AHPS must have a comprehensive database that allows reporting and querying functionality for a myriad of data reports and performance measures.

i3-Celtic Response: CTS-PARS offers a set of production-proven standard reports, including Route Usage, Bridge Usage, and more. The system also provides additional MIS Reports, Inquiries, and an Ad-hoc report feature with the availability of Graphical Charts. All reports and inquiries include mandatory and optional search parameters, including date range, customer account, permit number, commodities, load, and dimensions, and more.

4.1.1.15 AHPS must have web-based mapping, created by the vendor based on WVDOT

GIS/LRS information.

i3-Celtic Response:
The CTS-PARS routing system is developed using ESRI ArcGIS Services.

Base Map – Our routing solution leverages the ESRI base map along with either ESRI street map premium (SMP) data or the state-provided routable road network.

ESRI SMP provides quarterly updates. If we use State-provided data, we will align our update process with state releases. We recommend applying updates annually.

However, i3-Celtic has developed a process to update the road network as and when required. i3-Celtic will work with WVDOT to schedule, test, and approve updates to the road network data. WVDOT and i3-Celtic must put additional efforts into the conflation process to align structure updates on the road network.

The system creates a log of changes to the road network while updating the system records (including impacted active restrictions, routes, and structures).

4.1.1.16 AHPS must have GIS database support for routing.
i3-Celtic Response:

The CTS-PARS routing system utilizes GIS data to generate safer route for travel. However, it also provides the option for manual route (non-GIS) that require approval and undergo a review process in the queue.

4.1.1.17 AHPS must have intelligent route routing and analysis, including self-routing, which incorporates current route and bridge restrictions and real-time bridge analysis from AASHTOWare BrR's LRT.

i3-Celtic Response:
CTS-PARS generates real-time routes considering provided stops and vehicle details. The system identifies bridges on the route and utilizes those bridges to do bridge analysis through BrR.

4.1.1.18 AHPS must have security management.

i3-Celtic Response: We will meet this requirement.

4.1.1.19 AHPS must have vertical and horizontal clearance management for inventoried structures by interfacing with WVDOT bridge inspection database to gather known clearances.

i3-Celtic Response:
i3-Celtic has the experience to integrate and reference the State's bridge information to create an accurate and up-to-date representation of the bridges on the GIS dataset using the following steps:
• Data acquisition: Collecting bridge data
• Feature extraction: Extract features of interest related to the bridges
• Georeferencing: Establishing a common coordinate system or reference framework that enables the different data sources to be aligned and overlaid on top of each other
• Matching: Comparing the extracted features from each data source and finding matches or similarities between them. Identify differences in the shape, size,

location, and orientation of the features and find ways to align them.
• Conflation: Merging or aligning the features from various sources to create a more accurate representation of the bridges on the map.

CTS-PARS route solver process will validate the load and dimensions restriction of bridges and retrieve bridge data in a tabular format based on the user-entered route. The Bridge engineer has the option to add/remove bridges from the list and run "Bridge Analysis." The system will allow the bridge engineer to export load and dimension data in XML format as required by the AASHTO BrR. Based on the AASHTO BrR result, the bridge engineer will provide recommendations of allowable load & dimensions, weight, speed limit, and center line restrictions.

4.1.1.20 AHPS must allow restriction management through provided route/bridge clearance inventory data as well as temporary restrictions as added by WVDOT personnel as needed.

i3-Celtic Response:
The steps to update bridge data on a GIS map typically involve the following:

• Reviewing the new data: Ensure that it is accurate and up to date.
• Update the database: Once the new data has been verified, update the attributes associated with the bridge, such as its location, physical characteristics, and weight restrictions.
• Conflate the new data: If the new structure is not in a GIS format, it will need to be converted into a GIS-compatible format and then conflated with the existing GIS data. This involves aligning the new data with the existing data and ensuring that the two datasets are accurate and consistent.
• Verify the updated data: Verify that the updated bridge data is displayed correctly on the GIS map by conducting route analysis to ensure that the routing information is accurate.
• Publish the updated data: Once the updated data has been verified and confirmed, it can be published for production use.

CTS-PARS includes a powerful Restrictions Management module that allows authorized users to enter in real-time any permanent or temporary road restrictions, including seasonal road restrictions, and provides an interface to integrate with Agency's Restrictions Management System. When road restriction changes occur, affected permit holders can be automatically notified via WVDOT-preferred electronic notification, including email or text messages.

4.1.1.21 AHPS must have the ability to interface bridge load rating data that is outside of AASHTOWare BrR's database, including ratings by capacity table and spreadsheets.

i3-Celtic Response: We will meet this requirement.

4.1.1.22 AHPS must authenticate, authorize, create and update users against the state Microsoft Active Directory Domain.

i3-Celtic Response: i3-Celtic has experience integrating our COTS Solution with State's Azure Active Directory and other single sign-on services.

4.1.1.23 AHPS must be built and secured utilizing an industry acceptable security architecture to meet guidelines set forth by: CIS Center Internet Security (CIS), National Institute of Standards and Technology (NIST) or National Security Agency (NSA).

i3-Celtic Response: We will meet this requirement.

4.1.1.24 AHPS must have security measures to ensure that the WVDOT's System application and data is protected.

i3-Celtic Response: We will meet this requirement.

4.1.1.25 Vendor must integrate all payments to be captured and processed to the West Virginia State Treasure's Office E- Government system for all permit fee payment options for customers, including credit/debit card and EFT/ACH.

i3-Celtic Response:
The integration between the State designated merchant service provider, and CTS-PARS will be accomplished through an API or a web service through i3-Celtic's universal interface controller. The web services enable the secure transmission of credit card information and provide real-time authorization and settlement of transactions that allows CTS-PARS shall confirm the payment and issue credentials.

4.1.1.26 AHPS must have finance and accounting management and reporting.

i3-Celtic Response: We will meet this requirement.

4.1.1.27 AHPS must include but not limited to incorporate bridge load rating data that is outside of BrR's database, including ratings by capacity table, or by spreadsheet.

i3-Celtic Response: We will meet this requirement.

4.1.1.28 Post Go Live, the vendor must use a change management process, that includes coordination with a designated WVDOT contact (to be identified by WVDOT during the implementation of the System), for notification and tracking of change requests as well as critical outages.

i3-Celtic Response: We will meet this requirement.

4.1.1.29 AHPS must maintain all data accurately; data loss must be avoided.

i3-Celtic Response: We will meet this requirement.

4.1.1.30 Vendor must provide a Business Continuity Procedure Plan and Disaster Recovery Plan before WVDOT Go Live. These plans must be approved by WVDOT.

i3-Celtic Response:

Backup/Archive routine
Archiving and retention of the data will start with the business. Based on WVDOT's data-retention policies that involve cross-organizational teams (legal, compliance & records), i3-Celtic will outline the approaches to retain and purge data. After WVDOT's archival retention period has passed, i3-Celtic will delete the archived database and associated system package as required.

Disaster Recovery Plan

i3-Celtic shall provide a well-structured and production proven Disaster recovery and business continuity plan to WVDOT.
i3-Celtic will work with WVDOT to finalize and test a business continuity, disaster recovery and backup process. while finalizing this process, i3-Celtic assures that CTS-PARS will be available within an agreed upon recovery window. We have preliminarily identified a 4-hour maximum recovery window for an unplanned operational disruption called Simple Outages and a 24-hour system recovery window for a catastrophic disaster called Minor Catastrophes affecting the data center. The Major Catastrophes recovery window will be dependent on the nature of catastrophe and i3-Celtic will review and work with WVDOT to identify the recovery window. i3-Celtic is committed to providing the best possible experience to our customers and will give its best effort to recover the system.
The following activities defines the Backup and Recovery service parameters that will be performed by the i3-Celtic team:

- Execution and checking of scheduled data backups to ensure backup process ran as scheduled.
- Remedial activities required to resolve backup and restore failures.
- Recovery of Supported Applications and Production Databases after a declared Disaster Recovery Event
- Monitoring of backup job success/failure, start time, time to backup.
- Testing of backup and recovery operations (restoration and validation)

The following is our proposed disaster recovery approach:

Major Catastrophes
These types of events suggest that the computer hosting facility has been wiped out via some tragic event (earthquake, flood, fire etc.) and the location and computers are no longer available. This type of catastrophe suggests that the WVDOT and i3-Celtic will need evaluate possibilities and agree upon the recovery window and process. This could mean new equipment purchase, new cloud service, etc. I3-Celtic will assist in the installation at a new site and restore the latest backup of the data and application.
As an interim solution, the database and application could be made available through the development environment with minimal functionality to include printing and would have access for internal users only.

Minor Catastrophes
These types of events suggest that something has happened to the server(s), and it is no longer available, but the hosting facility is still in service. New server (s) need to be acquired and installed at the hosting facility, backups retrieved, and the database and application restored.
While waiting for the equipment, the Production environment will be using the UAT server and backups can be retrieved and restored.
Upon restore of production environment the UAT environment will be restored.

Simple Outages
Some disasters are not as overwhelming as others and these we can categorize as simple outages where the database and/or the application has been rendered unusable and out of service at any point in time. These types of events can be rectified by a restore of the then most current version of the database and or deployment of the then most current version of the application.
The best plans in preparation for disaster recovery are to have the most current data available quickly to minimize the time between the event and the time when operations are restored to the production environment. The following describes our approach to backing up data in a timely manner to achieve restoration of the system functionality to the users as quickly as possible given the disaster circumstances.
The following is our proposed backup planning:

Windows Server Maintenance Windows
Windows updates are critical to the security of the any computer system, Windows updates are set to download automatically and be manually installed each weekend during the maintenance window. The projected maintenance window is currently Sunday 9 AM to Noon Mountain Standard Time. This is

dependent on what batch jobs are running at the time. Many times, Windows updates can be installed without service interruption; others may require a reboot of a server. Therefore, update installations may be performed manually. SQL Server patches are released from time to time from Microsoft are to be installed in production once a patch has been installed and application tested in the development system.

Database Servers
The application has a production database server and a UAT/Disaster Recovery database standby server to which each production transaction is replicated to in near real time.

Windows Server Backups
The following servers will be backed up on a regular basis:
Machines:

- Production Database Server
- Production Web Servers
- Production CTS
- Virtual Domain Controller
- File share Server

Real Time Transactional Replication
The Production Database Server is replicated to a stand-by database server in the different UAT Environment. This data is stored on a separate data store than the production environment. This will allow for minimal down time if the original Production Database Server encounters a problem.

Database Server Maintenance Jobs
To ensure that each database continues to operate as efficiently as possible, maintenance jobs are required. Table indexes are reorganized or rebuilt, and database statistics collected.

Off-Site Backup Process
Production database backups are copied to the different geolocation on a regular nightly schedule after local backups are completed as above.
During the technical discussion sessions, i3-Celtic shall demonstrate its backup and disaster recover approach. Our current disaster recover approach is as follows:

Resolution Steps
1) Notify Customer
2) Determine the extent of the Disaster:
- Bad virtual server
- Bad physical server
- Bad storage
- Hosting Location lost

Recovery Steps
Recovery steps are provided below based on disaster type.
Bad Virtual Server
Recover Server from Template (a template server is a copy of a server waiting to deploy – This server has all necessary software installed, once a new server is created from a template application data will need to be restored to that server)
Existing Templates:
• Web Server Template
• SQL Server Database Server Template
• Email Server Template
• Domain Controller Template

• File Server Template

Bad Storage Centre:

- The Virtual machines are stored on the storage center; this consists of multiple physical hard disks and controllers. In the event of a disk failure or other problem the storage center will automatically alert Dell Support and send emails to i3-Celtic Support Staff notifying them of an issue.
- If the Storage Center goes off-line the system will be down and appropriate action will need to be taken before the system is back up.
- The backup environment will need to consist of the following items to get the system back on-line.
  - One webserver
  - One SQL Server with CTS-PARS
  - One mail server
  - One File share Backup restored.
  - Database backup (CTS-PARS) restored.
  - Router backup restored (if needed)
  - One domain controller (if needed)

Hosting Location lost: Microsoft Azure will be contacted to restore the offsite backups.
The Process of building the servers and finding a replacement location will begin at Azure facility. In the meantime, if required, the environment will be created at a i3-Celtic location and restored to operational readiness until the normal hosting facility is restored at Azure.

4.1.2 Automated Hauling Permit System (AHPS) Data and Security Requirements

4.1.2.1 AHPS should conform with State of West Virginia Office of Technology Cloud SaaS Addendum.

i3-Celtic Response: We will meet this requirement.

4.1.2.2 AHPS must allow for SSO (Single Sign-On) from WVDOT network to AHPS for users.

i3-Celtic Response:
CTS-PARS solution is built on top of a secured solution architecture that controls user authentication and encrypts confidential user information such as passwords. The system supports single sign-on authentication and is configurable to support authentication using both LDAP and Azure.

4.1.2.3 AHPS must encrypt browser session data between the server and client (e.g. in transit) using at a minimum Transport Layer Security (TLS) 1.2 encryption.

i3-Celtic Response:
CTS-PARS communication uses SSL (secured channel) to ensure secure data communication while in motion. CTS-PARS encrypts confidential data using industry-standard encryption methodology. Encryption includes passwords and security answers in the database while at rest. I3-Celtic has implemented an AES 256 encryption algorithm for data encryption. The system provides the capability to integrate with WVDOT-provided SSL certificates or any third party-provided certificates (TLS >= 1.2) for data encryption in transit.

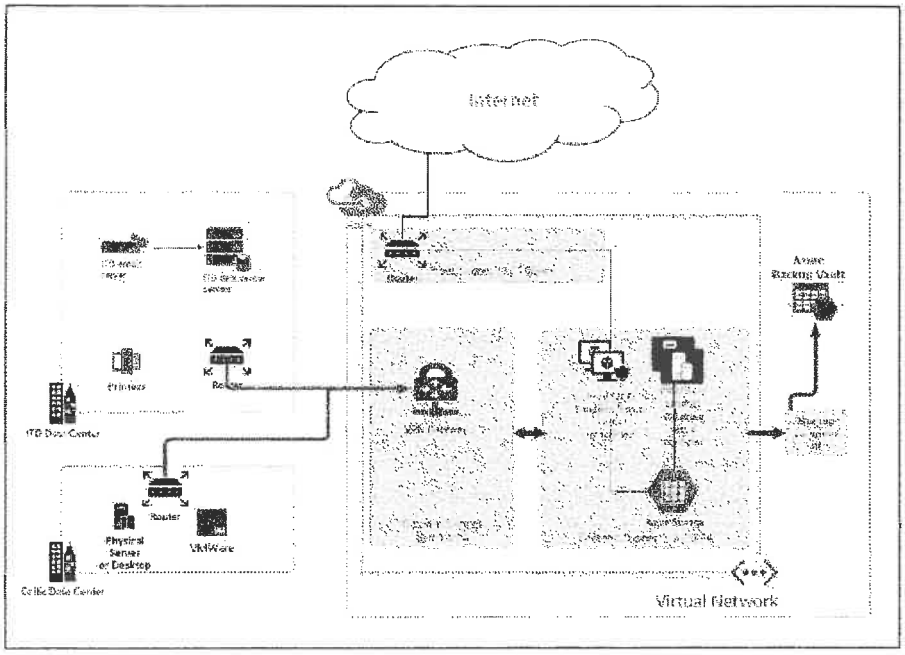
4.1.2.4 AHPS must support 256-bit encryption and TLS 1.2.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement and the same has been

addressed in our response to requirement 4.1.2.3.

4.1.2.5 Vendor must have a web server, and it must be separate from the database server, physically or logically.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement. We do follow standard practice by keeping Application and Database Server separately.
The diagram below shows the physical network diagram that shall be used to host CTS-PARS in the Microsoft Azure Cloud



Azure meets a broad set of international and industry-specific compliance standards, such as General Data Protection Regulation (GDPR), ISO 27001, HIPAA, FedRAMP, SOC 1 and SOC 2, as well as country-specific standards. One measure of Azure's commitment to the privacy of customer data is adoption of the world's first code of practice for cloud privacy, ISO/IEC 27018.

At i3-Celtic we follow strict security standards as per the i3-Celtic security guide that is similar to ISO 27001 security practices. As required, i3-Celtic will pursue ISO 27001 Certification prior to the contract award.

All hosts, servers and devices will have currently supported and hardened operating systems, anti-virus software, firewalls, anti-spam, anti-spyware, and anti-malware utilities. Our hosting facility will also be configured with advanced malware protection, application visibility & control and URL filtering. Communications will be established using a secured channel to prevent unauthorized tampering of the data. The secured hosting infrastructure provides for confidentiality (i.e., No unauthorized access), Integrity (i.e., No tampering), and Authenticity (i.e., No impersonation). CMCS provides intrusion detection to lock accounts after multiple logons attempts and an audit trail is maintained.

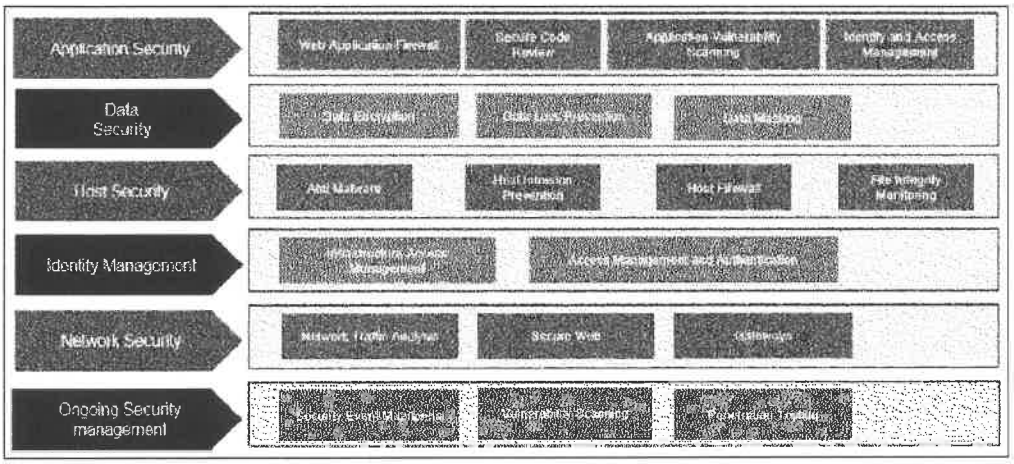
All critical patches for operating systems, databases, web services, etc., will be applied within three working days of release by their respective manufacturers. i3-Celtic will apply maintenance updates in the pre-

production environment to ensure there is no unintentional disruption to the security mechanisms of the application or supporting hardware.

CMCS is tested to eliminate attacks such as cross-site scripting, SQL Injection, and path traversal attacks. CMCS communication uses SSL (secured channel) and tracks / logs all authorized / unauthorized logon attempts along with a corresponding public IP address. CMCS encrypts confidential data including passwords and security answers into the database. i3-Celtic resources will access the MoDOT data for support through the application. The MoDOT database will reside in the US only. In the event of any deviation from this plan, we will obtain the necessary permission from MoDOT.

i3-Celtic will grant access to MoDOT or third party upon written request from MoDOT.

The following diagram shows our proposed security solution:



Service type	Description
Production Server	Two (4 vCPU(s), 16 GB RAM); Windows 2016 OS
Production Database Server	One (4 vCPU(s), 16 GB RAM); SQL Server 2016
Nonproduction Database server	One (4 vCPU(s), 16 GB RAM); SQL Server 2016
Nonproduction Application server	Three (2 vCPU(s), 8 GB RAM); Windows 2016 OS
VPN to i3-Celtic and SD	VPN Gateways type, Basic VPN tier, VPN outbound VPN gateway type

External IP address	3 Dynamic IP Addresses, 3 Static IP Addresses, 0 Remaps
Network Storage	
Offsite backup	1 instance(s) x 500, GRS
Domain Controller	One (1 vCPU(s), 4 GB RAM); Windows 2016 OS
Security Center Subscription	Standard tier, 4 nodes
F5 WAF	F5 web application firewall solution. (2 instances (HA configuration))

4.1.2.6 AHPS must encrypt Personally Identifiable Information (PII) during transmission, use, and storage.

i3-Celtic Response:
Our system follows industry standards data retention approach and it is flexible enough to comply with the WVDOT retention policy.
During the requirement gathering session, we will understand and document the encryption requirements with WVDOT personnel.
In addition, we also mask all the PII information in the database and do not store any critical information in the logs.

4.1.2.7 AHPS must allow WVDOT Administrator Users to create, modify, disable, and reactivate user access and security rights for others.

i3-Celtic Response:
CTS-PARS is a browser-based application that provides the User Management functionality that allows administrator users to grant, modify, disable, and reactivate security level permission to other user roles as needed.

4.1.2.8 AHPS must allow for multiple levels of user permissions as well as custom permissions. (eg: A role for "Administrative Uses" that would allow them to run specific reports but not allow non-Administrative users to run the reports).

i3-Celtic Response:
CTS-PARS is a browser-based, role-based system that provides a User Management module to create user roles to allow or limit access to functionalities for different user types and modules within the system.

AHPS must log unauthorized access attempts by date, time, user id, device and location. The log would be available to WVDOT Staff upon request within twenty-four (24) hours.

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i3-Celtic Response:
CTS-PARS provides the User Activity logging and reporting functionality that tracks user activities such as login, logout, user privilege changes, accounts created, deleted, changed, or suspended, and administrative overrides. The system also logs all the requests/responses to interfaces and system errors. All the logs will include required information like Date, Time, UserID, Device and location as requested in above requirement.

4.1.2.10 Vendor must provide backup and restorative services; offline storage must be encrypted. The encrypted backup must meet Federal Information Processing Standard (FIPS) "FIPS 140-2" or the National Institute of Standard and Technology (NIST) Advanced Encryption Standard (AES) "AES-256)

i3-Celtic Response:

i3-Celtic will adhere to the above requirement. We are using Microsoft Azure backup and Site-recovery for configuring System backups and Offsite backups. Azure meets a broad set of international and industry-specific compliance standards, such as General Data Protection Regulation (GDPR), ISO 27001, HIPAA, FedRAMP, SOC 1 and SOC 2, as well as country-specific standards. One measure of Azure's commitment to the privacy of customer data is adoption of the world's first code of practice for cloud privacy, ISO/IEC 27018.

4.1.2.11 Vendor must store credentials in a one-way salted hash if state-owned Microsoft Active Directory is not used.

i3-Celtic Response:
i3-Celtic ensures that all credentials will be stored using a one-way salted hash mechanism. This approach enhances security by protecting sensitive information and aligns with industry best practices.

4.1.2.12 Vendor must support intruder lockout after no less than three (3) and no more than ten (10) incorrect login attempts.

i3-Celtic Response:

CTS-PARS allows up to 5 incorrect attempts before locking out the account while tracking the audit trails of the locked-out account. CTS-PARS is customizable enough to configure the account lockout for incorrect login attempts as per the requirement.

4.1.2.13 Vendor must have a back-up data center geographically separated from primary data center by at least three hundred (300) miles.

i3-Celtic Response:
i3-Celtic proposes Azure Gov Cloud with a secured data center. The Azure platform is pre-configured with all CIS standards and best practices that ensures WVDOT that the system software platform is built and hardened, utilizing an industry-standard acceptable security architecture. The proposed infrastructure is secured with virtual network and not exposed outside of this virtual network. The connection between WVDOT and i3-Celtic will use a VPN tunnel to access the environments. External users will be restricted to accessing the application using secured HTTPS protocol.
Azure meets a broad set of international and industry-specific compliance standards, such as General Data Protection Regulation (GDPR), ISO 27001,

HIPAA, FedRAMP, SOC 1 and SOC 2, as well as country-specific standards. One measure of Azure's commitment to the privacy of customer data is adoption of the world's first code of practice for cloud privacy, ISO/IEC 27018. While configuring the Disaster recovery the above requirement of WVDOT will be addressed adequately.

4.1.2.14 Vendor data centers must have power backup.

i3-Celtic Response:
As stated in the requirement 4.1.2.13 the proposed solution will be hosted on the Microsoft Azure Cloud and is compliant with most of the Security standards Microsoft is committed to provide continuous Up time for system and ensue that adequate Power backup is available within the datacenter.

4.1.2.15 Vendor must have data backup and restore procedures.

i3-Celtic Response:

i3-Celtic has well established backup and restore procedures.
The following activities defines the Backup and Recovery service parameters that will be performed by the i3-Celtic team:
- Execution and checking of scheduled data backups to ensure backup process ran as scheduled
- Remedial activities required to resolve backup and restore failures
- Recovery of Supported Applications and Production Databases after a declared Disaster Recovery Event
- Monitoring of backup job success/failure, start time, time to backup.
- Testing of backup and recovery operations (restoration and validation)

4.1.2.16 Vendors Data Center and must be restricted to authorized personnel with controls such as biometric or proximity badge solutions (either or both). Vendor policies for granting access must be in place and followed. Access must only be granted to those with a need to perform tasks in the Data Center.

i3-Celtic Response:
At i3-Celtic, we prioritize the security of our clients' data. i3-Celtic is ISO 27001:2013 compliant, and we have established stringent Access Control Policies to ensure the highest level of security at both the application and server levels.
Our comprehensive policies govern access permissions, ensuring that access is granted solely to individuals with a legitimate need to perform tasks within the data center.

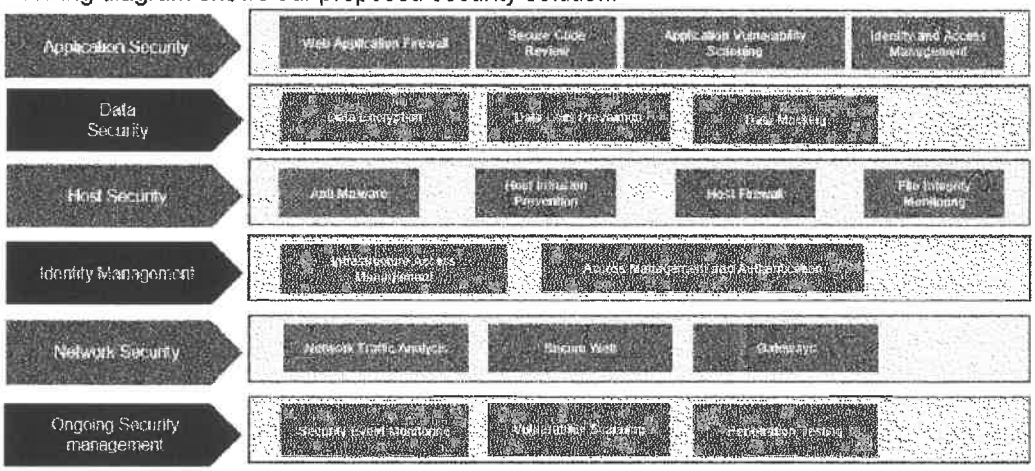
4.1.2.17 AHPS must be tested for input validation that ensures it is protected from buffer overflow, cross-site scripting, SQL injection, and unauthorized access of files and/or directories on the server.

i3-Celtic Response:
CTS-PARS is tested to eliminate attacks such as cross-site scripting, SQL Injection, and path traversal attacks. CTS-PARS communication uses SSL (secured channel) and tracks / logs all authorized / unauthorized logon attempts along with a corresponding public IP address. CTS-PARS encrypts confidential data including passwords and security answers into the database. i3-Celtic resources will access the WVDOT data for support through the application. The WVDOT database will

reside in the US only. In the event of any deviation from this plan, we will obtain the necessary permission from WVDOT.

4.1.2.18 AHPS must be tested for intrusion detection and must support the detection of illegal entrance into a computer system.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement. All hosts, servers and devices will have currently supported and hardened operating systems, anti-virus software. The following diagram shows our proposed security solution:



4.1.2.19 AHPS must have application software security in its baseline product and must not utilize operating system or database security only.

i3-Celtic has a well-defined information security policy, standards, and guidelines for their representatives (employee and Sub-contractors) along with an established process for policy enforcement and tracking which is aligned to ISO 27001:2013 Information Security Standards. i3-Celtic's information security framework is supported by a set of supplementary policies, procedures & standards aimed at achieving the enterprise-level information security objectives.

CTS-PARS has been developed using industry-recommended secure coding standards such as OWASP top 10, SANS 25, etc. and adhered to a Secure SDLC process through its development process. i3-Celtic will be leveraging a Secure SDLC framework which involves following secure coding practices & periodic scanning for known vulnerabilities for any software developed/customized for the modernization program.

4.1.2.20 AHPS must secure and authorize access to the underlying data and databases of the application.

i3-Celtic Response: We will meet this requirement.

4.1.2.21 AHPS must have automated systems in place to ensure malware is detected and prevented.

i3-Celtic Response:

All hosts, servers and devices will have currently supported and hardened operating systems, anti-virus software, firewalls, anti-spam, anti-spyware, and anti-malware utilities. The hosting facility will also be configured with advanced malware protection, application visibility & control and URL filtering. Communications will be established using a secured channel to prevent unauthorized tampering of the data. The secured hosting infrastructure provides for confidentiality (i.e., No unauthorized access), Integrity (i.e., No tampering), and Authenticity (i.e., No impersonation). CMCS provides intrusion detection to lock accounts after multiple logins attempts and an audit trail is maintained.

All critical patches for operating systems, databases, web services, etc., will be applied within 60 days of release by their respective manufacturers as required.

4.1.2.22 Vendor must ensure that information exchanged between devices via the System must be secured and encrypted.

i3-Celtic Response: We will meet this requirement.

4.1.2.23 Vendor must monitor system and security logs generated by the System. The logs must be monitored by an automated system 24/7, all days of the year. WVDOT must be alerted within one (1) hour of a security alert.

i3-Celtic Response:

i3-Celtic will have a single point of contact for all security incident handling and management.

i3-Celtic has a comprehensive Security Incident Response and Management procedure which elaborates the steps to be taken for reporting, isolating, handling incidents, and learning from security incidents. All incidents are captured by and reported to the respective departments and are handled according to the nature of the incident.

The Incident Handling activities carried out by the Incident Response Team are:

- Determine the extent of damage and classify the severity of the incident
- Contain the damage – prevent other systems from being damaged (e.g., by removing the system from the network)
- Determine how the incident happened and remove the cause. Recover services.
- Escalate medium and high severity alerts to Head of the department
- Inform the affected stakeholders
- Be available on call and escalate severe incidents regardless of the time of the day
- Preserve log files and other evidence

4.1.2.24 Vendor must provide security audit reports upon request, if available.

i3-Celtic Response: We will meet this requirement.

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4.1.2.25 AHPS must support capturing username, user ID, timestamp, success/failure of the transaction, originating PC identifier, and transaction description as part of the security log attributes.

i3-Celtic Response:

CTS-PARS supports capturing security log attributes including username, user ID, timestamp, transaction success/failure, IP Address, and transaction description. These attributes are integral to our comprehensive security logging mechanism, ensuring thorough monitoring and accountability.

4.1.2.26 Vendors hosting facility must provide physical security controls over ingress and egress.
Vendor must perform security testing as part of the development process.

i3-Celtic Response:

CTS-PARS has been tested for OWASP's top 10 vulnerabilities to ensure that the application does not disclose any sensitive data during application failure. i3-Celtic has an established Real-Time Predictive Threat Modeling solution in place for conducting vulnerability assessments and penetration testing regularly, and timely remediation of identified vulnerabilities as per industry best practices.

4.1.2.28 Vendor must maintain a single point of contact for the duration of all security issues.

i3-Celtic Response:
i3-Celtic will adhere to this requirement as addressed in requirement 4.1.2.23.

4.1.2.29 Vendor must conduct a security of review of the system prior to WVDOT Go-Live. The Vendor review must uncover vulnerabilities and, if any are found, identify them to the Contractor for corrective action prior to launch.

i3-Celtic Response:
i3-Celtic acknowledges the need for a comprehensive security review of the system before Go-Live. As part of our commitment to ensuring a secure environment, we will conduct a thorough evaluation to identify any vulnerabilities. If any vulnerabilities are discovered, we will communicate to WVDOT resources, providing detailed information for corrective actions to be taken prior to the launch.

We prioritize the security and integrity of our systems and are dedicated to delivering a robust and protected solution.

4.1.2.30 Prior to going live, the Vendor must provide WVDOT with validation of independent 3rd party security reviews performed on the application and system environment.

i3-Celtic Response: We will meet this requirement.

4.1.2.31 Vendor must ensure the System has been tested and hardened to prevent security flaws

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i3-Celtic Response:

i3-Celtic will work with WVDOT to design and deliver a comprehensive security test plan, test cases, test scripts, and documentation for comprehensive test management and test strategy for WVDOT, but not limited to, the following sections:

1. Introduction
1.1. Purpose
1.2. Objective
1.3. Project Background
2. Release Scope
2.1. Test coverage for various releases
2.2. Types of Testing (functional, integration, end-to-end, automation, security, performance, multilingual, usability and accessibility, customer experience, cross-browser, data migration testing, etc.) and the testing approach. For e.g., End-to-end security testing covers the testing approach to ensure that the application is compliant to zero tolerance security model
3. Software Life cycle
3.1. Testing approach
3.2. Test planning
3.3. Test Execution
3.4. Entry and Exit criteria
3.5. Testing Tools (for e.g., HP ALM, TFS, CITS, Selenium, etc.)
3.6. Test Environment and Infrastructure
3.7. Test Data management
3.8. Test Results documentation
3.9. Test Suspension/Resumption Criteria
3.10. Configuration Management
4. Assumptions
5. Dependencies
6. Constraints
7. Risks and mitigation Plan
8. Project Management
8.1. Project Schedule
8.2. Roles and responsibilities
8.3. Testing Deliverables
8.4. Communication and status reporting
8.5. Testing Metrics
8.6. Code promotion/migration process
8.7. Change management
8.8. Escalation procedures
9. Defect Management
10. Testing Status Reporting
11. UAT (User Acceptance Testing) support

4.1.2.32 AHPS subsequent application enhancements or upgrades must not remove or degrade security requirements.

i3-Celtic Response:

i3-Celtic will provide a **security plan** to WVDOT to include policies, procedures, system capabilities, work steps and other actions to meet WVDOT security requirements.

4.1.2.33 Vendor must provide ongoing security testing, at minimum, on an annual basis. Tests must focus on the technical, administrative and physical security controls that have been designed into the system architecture to provide the necessary confidentiality, integrity and availability and verified by a mutually agreed upon independent third party or WVDOT.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement as stated in requirement 4.1.2.31.

4.1.2.34 Vendor must return to WVDOT all data held by Vendor in its performance of the Contract, in a format and in a manner as designated by WVDOT; and must certify that any and all copies of data, including back up and disaster recovery, will be destroyed upon WVDOT request.

i3-Celtic Response:
At i3-Celtic, we understand the importance of a seamless on-boarding process and compliance with the State's regulations. We are committed to fulfilling the necessary steps to ensure a smooth transition into the project. i3-Celtic will hand over all the data pertinent to the project to WVDOT.

4.1.2.35 Vendor must maintain a secure hosted system and provide all necessary hardware, software, and internet bandwidth to manage the system and support users with permission based logins.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement and commits to providing all necessary hardware and software and Internet bandwidth to maintain secured hosting system.
The bandwidth requirements for the proposed CTS-PARS solution are as follows:
- Minimum bandwidth - 100 MBPS
- Optimum Bandwidth – 1 GBPS
- Internet bandwidth – 100 MBPS

Below are hardware requirements:

Service type	Description
Production Server	Two (4 vCPU(s), 16 GB RAM); Windows 2016 OS
Production Database Server	One (4 vCPU(s), 16 GB RAM); SQL Server 2016

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Nonproduction Database server	One (4 vCPU(s), 16 GB RAM); SQL Server 2016
Nonproduction Application server	Three (2 vCPU(s), 8 GB RAM); Windows 2016 OS
VPN to i3-Celtic and SD	VPN Gateways type, Basic VPN tier, VPN outbound VPN gateway type
External IP address	3 Dynamic IP Addresses, 3 Static IP Addresses, 0 Remaps
Network Storage	
Offsite backup	1 instance(s) x 500, GRS
Domain Controller	One (1 vCPU(s), 4 GB RAM); Windows 2016 OS
Security Center Subscription	Standard tier, 4 nodes
F5 WAF	F5 web application firewall solution. (2 instances (HA configuration))

4.1.2.36 AHPS must allow users to access the system via web- based internet browser. No system browser plug-ins or client software will be permitted.

i3-Celtic Response:

CTS-PARS is a completely browser-based solution. It does not require any additional plug-ins or client software for users to operate it.

4.1.2.37 Vendors web-based system must be compatible and in conformance with HTML5, CS 2.1, XML 1.2 W3C standards.

i3-Celtic Response:
CTS-PARS is compatible and is compliant with the HTML5, CS 2.1, CML 1.2 and W3C Standards as stated in above requirement.

4.1.2.38 AHPS must encrypt browser session data between the server and client (e.g., in transit) using TLS encryption.

i3-Celtic Response:

CTS-PARS communication uses SSL (secured channel) to ensure secure data communication while in motion. CTS-PARS encrypts confidential data using industry-standard encryption methodology. Encryption includes passwords and security answers into the database while at rest.

CTS-PARS encrypts confidential data including passwords and security answers in the database. I3-Celtic has implemented an AES 256 encryption algorithm for data encryption

CTS-PARS has the capability to integrate with WVDOT provided SSL certificates or any 3rd party provide certificates (TLS >= 1.2) for Data encryption in transit.

4.1.2.39 AHPS must authenticate all customers and Authorized Users to prevent access to inappropriate or confidential data or services.

i3-Celtic Response:

The secured hosting infrastructure of CTS-PARS provides for confidentiality (i.e., No unauthorized access), Integrity (i.e., No tampering), and Authenticity (i.e., No impersonation) which authenticates all users and prevents them from accessing any inappropriate or confidential data.

4.1.2.40 AHPS must not store authentication credentials or sensitive data in its code.

i3-Celtic Response:

Our solution is following industry standards data retention approach and it is flexible enough to comply with WVDOT retention policy. i3-Celtic will discuss with WVDOT officials and finalize it. In addition to User consent, we are masking all the PII information in the Database and not storing any such information in the codebase.

4.1.2.41 AHPS must prevent the display of any user's password in readable form.

i3-Celtic Response:

CTS-PARS is following industry standards data retention approach and it is flexible enough to comply with WVDOT retention policy. I3-Celtic will discuss with WVDOT officials and finalize it. In addition to User consent, we are masking all the PII information in the Database and not storing any such information in the logs. All the fields like passwords, SSN and other sensitive information are masked by default.

4.1.2.42 AHPS must force customers who have not logged into the system for a configurable amount of time (initially set to 365 days) to do a password recovery.

i3-Celtic Response:
The CTS-PARS solution sends a password expiration notification to alert the user of the inactivity within the past 90 days (about 3 months). The system requires such users to reset their password to retrieve their access. CTS-PARS solution can be configured to fulfill the above requirement.

4.1.2.43 AHPS must be tested for the intrusion detection and must support the detection of illegal entrance into a computer system.

i3-Celtic Response:

i3-Celtic will adhere to the above requirement.

4.1.2.44 Vendor must provide WVDOT with a secure FTP site (sFTP) to be used by WVDOT for uploading and downloading files prior to Go-Live.

i3-Celtic Response:
i3-Celtic will comply with the above requirement. i3-Celtic will set up a secure FTP setup so that the required files can be uploaded and downloaded.

4.1.2.45 AHPS must validate each command from an Authorized User for the proper privileges.

i3-Celtic Response:
CTS-PARS is a browser-based, role-based solution whereby, depending on the assigned role, the user will be granted access to specific modules and functionality within the system that can be accessed 24/7. CTS-PARS (COTS) in-built RBAC (Role Based Access Control) to authorize users seeking information at Navigation Tab Level, Page level and Field level.

4.1.2.46 AHPS must log all attempted accesses that fail authentication.

i3-Celtic Response:
CTS-PARS provides the User Activity logging and reporting functionality. With this functionality all the failed login attempts are recorded and logged into the system. The system also logs all the requests/responses to interfaces and system errors.

4.1.2.47 AHPS must log all successful and unsuccessful login attempts including at a minimum username and validation result (whether a success or failure), and record when user exits the system.

i3-Celtic Response:
CTS-PARS provides the User Activity logging and reporting functionality that tracks user activities such as login, logout, user privilege changes, accounts created, deleted, changed, or suspended, and administrative overrides. The system also logs all the requests/responses to interfaces and system errors.

4.1.2.48 Vendor must provide System Performance Reports Weekly and monthly performance metric reports Monthly Accuracy report, Issuance report (emails bounce back), processing time reports, system availability (planned and unplanned outages), bug report, and release reports to WVDOT.

i3-Celtic Response:
i3-Celtic will adhere to this requirement. Underperformance testing, critical business scenarios will be considered for Load, Stress and Endurance performance testing. The performance testing will validate that the product is meeting performance measures as per requirements.

4.1.2.49 AHPS must timeout (e.g. require logging in again) after a specified length of inactive time in the System. The system must allow WVDOT the ability to vary the length of time before the system times out based on factors such as the User's Permissions

and the tasks being performed.

i3-Celtic Response:
CTS-PARS has inbuilt functionality to track down inactive sessions. The system warns the user before timing out the session that you have been inactive, and your session will be logged out. The session timeout value is also customizable and the required timeout value as per WVDOT can be configured in the system.

4.1.3 Automated Hauling Permit System (AHPS) Administrator and UI Requirements

4.1.3.1 Vendor must provide a UI for WVDOT to submit and monitor system problem tickets with the Vendor.

i3-Celtic Response:
As a part of our support and maintenance process, i3-Celtic shall follow a service level agreement (SLA) to provide all necessary ongoing service and support to the system.
Throughout the project implementation phase and during system support and maintenance, we provide a robust browser-based incident tracking system – i3-Celtic Jira Service Desk (CJSD), which allows any reported incidents to be prioritized and addressed in a timely manner.

4.1.3.2 AHPS UI must respond to all user interactions within three (3) seconds at a minimum

i3-Celtic Response:
CTS-PARS can scale out and scale up using additional Infrastructure provisioning. The proposed solution can be sized considering 150 transactions per minute (average) with a Peak number of transactions up to 600. Response time of Simple transactions is in the range of <5 seconds, and medium workload transactions are in the range of 3-6 seconds. For Bulk calculations, the response time will be higher.

4.1.3.3 AHPS must allow Administrative Users the ability to add or remove a user from one (1) or more privilege groups or System while maintaining historical information.

i3-Celtic Response:
CTS-PARS is a browser-based, role-based solution whereby, depending on the assigned role, the user will be granted access to specific modules and functionality within the system that can be accessed 24/7. CTS-PARS (COTS) in-built RBAC (Role Based Access Control) to authorize users seeking information at Navigation Tab Level, Page level and Field level.

Authorized users can manage privilege groups (Role) or can add or remove a user from a privilege group.

4.1.3.4 AHPS must allow an Administrative User to add or remove AHPS privileges to other AHPS users, while maintaining historical information of privileges associated with AHPS users.

i3-Celtic Response:
CTS-PARS is a browser-based, role-based solution where authorized user can create new or edit existing privileges that includes defining new role, manage access level, manage users in role.

4.1.3.5 AHPS must allow Administrative Users the ability to add, activate, and disable user accounts.

i3-Celtic Response:
Depending on the business scenarios, the CTS-PARS allows authorized users to add various flags on the customer account as follows:

1) Permit Account Status – When the account is suspended or deactivated, the system will restrict internal and external users from processing any transaction but allows them to collect the payment.
2) OSS order flag – Enabled when permit account status is "Suspended".

CTS-PARS has the module that allows to create new Permit Account with default Active Status.

4.1.3.6 AHPS must allow Administrative Users the ability to assign multiple roles to the same user.

i3-Celtic Response:
CTS-PARS is a browser-based, role-based solution whereby, Authorized user can assign single user in multiple roles but in different office location.

4.1.3.7 AHPS must allow Administrative Users the ability to maintain roles and the associated functions.

i3-Celtic Response:

CTS-PARS (COTS) in-built RBAC (Role Based Access Control) to authorize users seeking information at Navigation Tab Level, Page level and Field level.

4.1.3.8 Vendor must coordinate with WVDOT as requested to configure System user groups and privileges at no additional cost.

i3-Celtic Response: We will meet this requirement.

4.1.3.9 Vendor must allow ad hoc registration applications to mimic existing or updated registration applications; AHPS must have version control and document history management capabilities.

i3-Celtic Response: We will meet this requirement.

4.1.3.10 AHPS must log all activities to a central server for audit trail purposes.

i3-Celtic Response:
CTS-PARS logs event-based activities and application transactions of users throughout the system.

The user activity logging provides tracking of users, including user login to logout, creating a new permit account, updating customer account, and administrative overrides.

The system provides user activity statistics and other Management Information reports, including performance statistics, user accounts reporting, and system log reports.

The system stores the logs, transaction history or activities for audit trail purpose on shared path or in database.

4.1.3.11 AHPS must log all activities to a central server to validate all application transactions.

i3-Celtic Response:
CTS-PARS logs event-based activities and application transactions of users throughout the system.

The user activity logging provides tracking of users, including user login to logout, creating a new permit account, updating customer account, and administrative overrides.

The system provides user activity statistics and other Management Information reports, including performance statistics, user accounts reporting, and system log reports.

The system stores the logs, transaction history or activities for audit trail purpose on shared path or in database.

4.1.3.12 AHPS must log edits to system records for user accounts and restrictions. The log must include, but is not limited to, recording User Identification (ID), and performed action.

i3-Celtic Response:
CTS-PARS keeps history or transaction which is for audit trail purpose.

4.1.3.13 AHPS log entries must include the username if the log entry is a result of a user action.

i3-Celtic Response:
CTS-PARS keeps details like user id, date and time, IP of client etc. to help audit trail when required.

4.1.3.14 All logs must be kept for a minimum of 30 months (2.5 years) or as defined/requested by WVDOT Record Retention Policy.

i3-Celtic Response:
i3-Celtic will outline the approaches to retain logs. After MVDOT's logs retention period has passed, i3-Celtic will delete the logs.

4.1.3.15 Vendor must provide annual certification to Administrative Users to validate that the automated system backup and restore procedures are functioning and tested.

i i3-Celtic Response: We will meet this requirement.

4.1.3.16 Vendor must provide Role & Privilege Management that supports the granting of abilities to External and Authorized Users or groups of External and Authorized Users of a computer, application, or network.

i3-Celtic Response: We will meet this requirement.

4.1.3.17 Vendor must offer one (1) rules repository within the System where WVDOT business rules will be defined,

updated and maintained. Once defined, the business rules can be deployed at single, multiple or all locations, if requested or needed by WVDOT.

i3-Celtic Response: We will meet this requirement.

4.1.3.18 AHPS must use WVDOT configurable rules to ensure data integrity and standardization within any input fields. (e.g., the letter 'A' cannot be entered as part of an Employer Identification Number (EIN), vehicle make codes must adhere to WVDOT abbreviations)

i3-Celtic Response:
This type validation is usually implemented through code and is not currently configurable. i.e., change in rule will need new release.

4.1.3.19 AHPS must provide an integrated help utility that provides guidance for Authorized Users in performing transactions.

i3-Celtic Response:
CTS-PARS comes with a fully integrated user guide that can be accessed from any transaction screen of the application and is relevant to the user role logged in at that instant. This approach limits access to user manuals for the intended user roles.

4.1.4 Automated Hauling Permit System (AHPS) Plan Requirements

4.1.4.1 Vendor must provide a project plan and timeline after contract award. The Preliminary Project Plan must include, at minimum: continuously updated resource-loaded Schedule (all Project resources, Contractor and WVDOT included), Communication Plan, Training Plan, Support Plan, Architecture Plan, Release Plan, Issue and Risk Management Plan, Resource Plan, Information Management Plan, Quality Assurance Plan, system implementation, testing (including criteria), and Go Live. The Go Live date should be within twelve (12) month of contract award or another date if mutually agreed to by WVDOT and the Vendor.

i3-Celtic Response:
i3-Celtic will leverage Project Management's best practices applicable to the Agile framework. i3-Celtic will onboard a seasoned Project Manager with extensive experience in managing similar projects. The Project Manager will work in collaboration with the WVDOT project manager counterpart from the start of the project through go-live while working with WVDOT in collaboration for tracking and ensuring the quality throughout the project duration and to ensure that the program is delivered on time and within budget. The Project Manager will be supported by the Functional team, Development and PMO team to ensure successful execution of the Agile releases.

The below diagram provides a 3-tiered governance view, with stakeholders involved and focus on outcomes.

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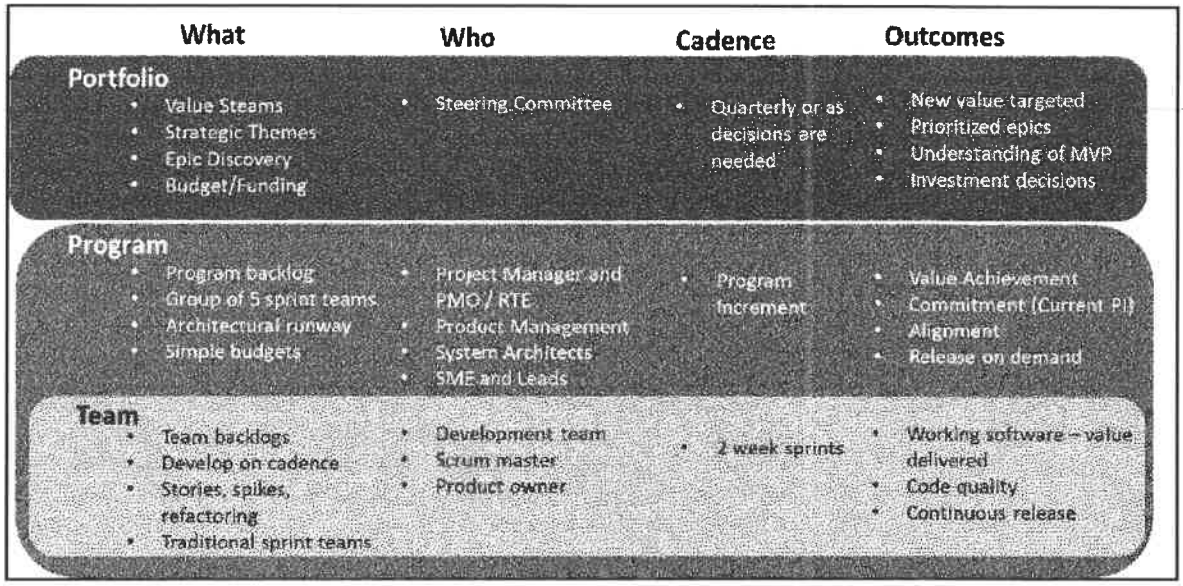

The i-3 Celtic Project Management framework (based on the Project Management Institute's PMBOK), will be used to plan and execute this program. The framework organizes project management processes into four main phases linked by the results they produce—the result or outcome of one becomes an input to another. It provides for well-defined deliverables, entry and exit criteria, and activity definitions in each of these phases.

The four main phases follow a rigorous structure to plan, execute, control, and close the nine Project Management core processes as depicted in the picture. The Project Management Office (PMO) manages the processes. The four PMO phases are specific to project management and can be applied to any Project Lifecycle model.

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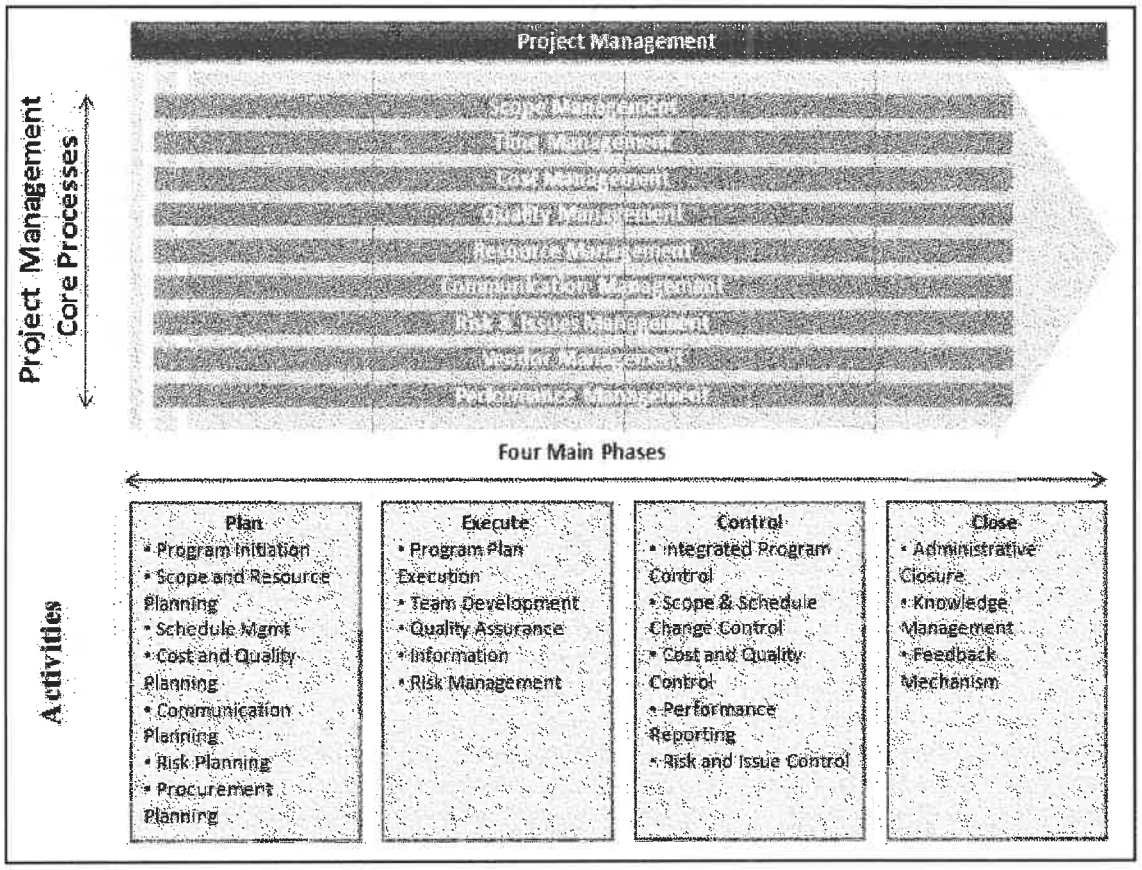

A process-centric perspective is provided to the Project Management framework by the nine core processes of Scope, Time, Cost, Quality, Resource, Communication, Risk/Issue, Performance and Vendor Management.
These core process areas are aligned to the Agile execution framework.

- **Scope Management:** Scope Management ensures that the project includes all the work required to complete it successfully. Key Scope Management activities include:
  - Prioritize Portfolio backlog
  - Split epics, prioritize features
  - Prioritize Product backlog
  - Prioritize team sprint backlog
- **Time Management:** Time Management ensures the timely delivery and completion of the project. Key time management activities include:
  - Fixed Sprints and Program Increment durations
  - Frequent backlog grooming
  - Prioritize user stories
  - Observed team velocity
  - User stories sized based on Agile estimation techniques
  - Team members commit to the sprint backlog

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- **Cost Management:** Cost Management ensures that the project is completed within the approved budget. Key cost management activities include:
  - Plan Agile Release Train (ART) Funding
  - Allocation based on customer demand
  - Determine the Agile Release Train budget
  - Control costs at a Program Increment boundary
- **Quality Management:** Quality Management ensures that the project adheres to the quality standards as planned. Key Quality management activities include:
  - Definition of ready
  - Behavior-driven development (BDD) / Test-driven development (TDD)
  - Continuous integration
  - Definition of Done / Pair testing
- **Resource Management:** Resource Management ensures the most effective utilization of resources for the project. Key Resource management activities include:
  - Evaluate team capacity
  - Dedicated teams assigned
  - Retrospectives and continuous learning by teams
  - Self-organized teams
- **Communication Management:** Communication Management ensures an ongoing cycle of collecting and disseminating project information. Key Communication management activities include:
  - Setting up a Governance model for the program
    - Identify business owners
    - Align to a common vision
    - Frequent collaboration and team agreements
  - The daily stand-up meeting, sprint demos and retrospective meetings
  - Publish work status on Kanban boards
  - Highly collaborative environment; lean portfolio metrics published regularly
- **Risk & Issues Management:** Risk & issues Management ensures the identification, analysis and resolution of project risks and issues. Key Risk & Issue management activities include:
  - Deliver in small increments; mid Program increment reviews
  - Fishbone and 5 Why techniques to analyze impediments
  - Regular Scrum of Scrum meetings to identify impediments
  - Swarm and proactively resolve impediments
- **Integration/Performance Management:** The Release Train Engineer (RTE) and the PMO team capture agile metrics at period intervals to track the progress of the agile release train. The metrics are captured at sprint, release, and project level. Representative metrics include:
  - Sprint Velocity
  - Sprint Defect density
  - Release Productivity
  - Release defect density
  - Release effort variance
  - Project Productivity in story points
  - Project defect density
  - Project schedule variance

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- **Procurement/Vendor Management:** Procurement/Vendor Management ensures the acquisition of services and goods for successful project completion. Key Procurement management activities include:
  - Establish strategic relationships
  - Develop business partnerships
  - Align with Lean and Agile practices
  - Close contracts

The following is our proposed schedule for the deliverables. i3-Celtic will work with the WVDOT project manager to finalize the project plan and deliverable schedule.

No.	Cross-Reference Section	Deliverable Name	Anticipated Submission/Due Date
1	6.1	Project Management Plan (PMP)	June 22, 2020
2	6.2	Integrated Master Schedule	June 22, 2020
3	6.3	Final Implementation Plan	June 22, 2020
4	6.4	Requirements Traceability Verification Matrix	June 22, 2020
5	6.5	Solution Security Plan	August 14, 2020
6	6.6	COTS System Technical Architecture Design	October 30, 2020
7	6.7	System Design Document - ORION Integration	October 30, 2020
8	6.8	System Design Document - External (Third Party) Interfaces	May 28, 2021
9	6.9	System Design Document - COTS Software Customizations	May 28, 2021
10	6.10	COTS Software Configuration Design for IFTA	December 22, 2020
11	6.11	COTS Software Configuration Design for IRP	January 29, 2021
12	6.12	COTS Software Configuration Design for Audit	February 24, 2021
13	6.13	Data Migration and Data Conversion Plan	November 9, 2020
14	6.14	Initial Legacy Data Mapping to COTS	July 9, 2021
15	6.15	Development Completion Software Milestone	January 31, 2022
16	6.16	Configuration Completion Software Milestone	March 31, 2022
17	6.17	Final Legacy Data Mapping to COTS	October 15, 2021
18	6.18	Security Testing Plan	August 31, 2021
19	6.19	Key Performance Measures Criteria Report	September 30, 2021
20	6.20	Security Verification	February 28,

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No.	Cross-Reference Section	Deliverable Name	Anticipated Submission/Due Date
			2023
21	6.21	UAT Completion Report	March 31, 2023
22	6.22	Training and Training Materials	April 28, 2023
23	6.23	Final System and User Documentation	April 28, 2023

No.	Cross-Reference Section	Deliverable Name	Anticipated Submission/Due Date
24	6.24	Deployment Implementation Plan and Checklist	May 31, 2023
25	6.25	Final Solution	May 31, 2023
26	6.26	Post Implementation Acceptance	June 19, 2023
27	6.27	Operations and Maintenance (O&M) Plan	June 19, 2023
28	6.28	Warranty Completion Report	June 24, 2024
29	6.29	Operations Transition Plan	June 19, 2023
30	6.30	Turnover Plan	June 24, 2024
31	6.31	Project Closure Report	June 24, 2024

4.1.4.2 Vendor must develop a Transition Plan acceptable to WVDOT that complies with the requirements of this RFQ. The objectives of the Transition Plan are to minimize disruption of services provided to WVDOT and to provide for an orderly and controlled transition of the Vendor responsibilities to a successor at the conclusion of the contract period or for any other reason the Contractor cannot complete the responsibilities of the contract. A draft Transition Plan must be submitted to WVDOT for review within one-hundred eighty (180) calendar days after execution of the Contract. The Transition Plan must be submitted, with any necessary revisions, to WVDOT for a final review.

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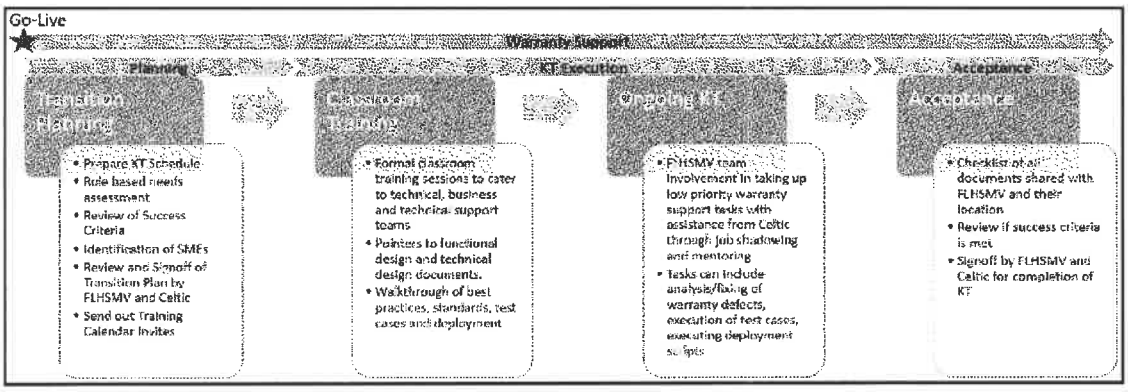
i3-Celtic Response:
i3-Celtic will follow a structured approach to transitioning the knowledge of application services to the WVDOT team for the maintenance & operations Phase of the Project.

i3-Celtic will conduct knowledge transfer of the solution to the WVDOT resources after the Go-live to assist them in becoming self-sufficient during the production support phase. Knowledge Transfer is a detailed process of planning, scheduling, imparting, and monitoring of transfer of knowledge and skills from i3-Celtic to the WVDOT team. The goal of knowledge transfer is to provide the WVDOT team with the knowledge and skills of the new system to ensure the WVDOT team can assume service delivery responsibilities for the new solution. Knowledge transfer is not end-user training or communication activities. Identified resources must have a baseline set of skills prior to knowledge transfer activities as knowledge transfer does not include training on specific tools, performing data corrections, software, or hardware.

The transition process can be typically depicted into phases mentioned in the below figure:



i3-Celtic will assist WVDOT to meet the following business objectives:

- Incident and enhancement requests including fee changes will be reported via the Incidents Tracking System. Supporting documents including screenshots can be uploaded with the incident for clarification.
- Define issue priorities depending on business needs.
- i3-Celtic support personnel will review the incident and confirm their understanding with WVDOT before it moves through the process.
- As an incident moves through the defect resolution process, it will move through various stages. Each status change will generate an email to WVDOT and i3-Celtic support as follows:
  - New - New incident is reported.
  - Confirm - The incident has been reviewed and is understood.
  - Feedback - The incident has been reviewed and more information is required from the customer for clarification.

- Assign - The incident is assigned to the development.
- QA - Work is completed and being tested.
- Fixed - QA Testing is complete.
- Resolved - Ready for business user acceptance testing.
- Closed - Business has approved the incident and it will be scheduled for release to production.

- Ensure that the security of WVDOT's confidential data is always maintained.
- Establish excellent communication and a good working/business relationship.
- Minimize the impact on the business by utilizing off-hours to perform scheduled or preventative maintenance processes when possible.
- i3-Celtic provides a pool of support personnel that will be assigned to this contract to manage and respond to calls for service based on required skill sets and problem determination.

This process will form the basis for establishing how we work together to ensure and monitor the quality of the support provided to WVDOT by i3-Celtic.

4.1.5 Automated Hauling Permit System (AHPS) Support Requirements

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4.1.5.1 Vendor must provide technical support to Authorized Users to solve problems related to products and services provided. This support includes, but is not limited to:

4.1.5.1.1 Deployment Support – Vendor must support for the AHPS application deployment and related infrastructure processes including the creation of the deployment plan. This includes on- site support as needed.

4.1.5.1.2 Post Implementation (Production (GO Live) Support) – Vendor must provide post implementation support for each major phase of the project.

i3-Celtic Response:
i3-Celtic recommends a 60 to 90-day warranty after go-live.

Support and Maintenance Service
During the term of the contract, i3-Celtic will follow the terms of the service level agreement (SLA). i3-Celtic will do the necessary issue and bug fixes as part of support and maintenance. i3-Celtic proposed using our browser-based incident tracking system, which allows any reported incidents to be prioritized and addressed in a timely manner. Incident tracking should have the capability of emailing notification to the required project personnel for action and resolution. In this way, management will be fully aware of all incidents and their status at any given time.

i3-Celtic provides Level 2 technical support for business-issued permits during normal business hours. We provide an after-hours contact number for any emergencies outside of business hours.

i3-Celtic team will perform the following activities as part of Level 2 support:

- Provide a quick First-Level Resolution (FLR)
- Compliance with the required response times
- On-time routing of the required incidents
- Resolving common incident types quickly using issue resolution procedures
- Reporting results of root cause analysis to identified stakeholders within defined timeframes for priority incidents
- Prepare status reports and attend service review meetings as required
- Continuous improvement and help to the Level 1 Support team

Optional 24/7 Helpdesk
i3-Celtic provides Level 2 technical support during normal business hours. We also provide a dedicated resource for technical support after normal business hours and on weekends for business-issued permits.

Scheduled Maintenance
i3-Celtic will work with the agency to produce a matrix that will help determine deployment frequency. The matrix will consider numerous factors such as the type of fix (hotfix / new features/ product upgrade/ maintenance release), severity, and the priority of the defect or

functionality to determine the release frequency.

The following represents a sample matrix for release frequency:

	Severity	Priority	Frequency	Duration
Hotfix	High	High	Immediate	1 Hr.
New Features	Medium	High	Quarterly	4-6 Hrs.
System Upgrade	Medium	Medium	Depends on the Road map	8-24 Hrs.
Maintenance Release	Medium	Medium	Monthly	2 Hrs.

For i3-Celtic SaaS Model, we will be responsible for all software and hardware acquisition, maintenance, and support of the proposed CTS-PARS Solution. Our solution will leverage the deployment of the COTS solution on Azure Cloud. Planned Outages will include any OS patches or Product fix pack releases. i3-Celtic will follow a strong change management process to deploy these changes in the Production environment. Patches are generally applied in Off hours, and frequency is generally once in a quarter.

4.1.5.2 Vendor must offer phone, email, and website support options 24 hours, seven (7) days a week, 365 days a year with a two (2) hour response time.

i3-Celtic Response:
i3-Celtic agrees to comply with the above requirement.

4.1.5.3 Vendors yearly maintenance must include system hosting, any required software and security updates, development which may be required to implement administrative and legislative action (e.g. new permit types), and at least two-hundred (200) hours of development time for other upgrades requested by the state agency per year.

i3-Celtic Response:
As a part of our annual support and maintenance services, i3-Celtic agrees to assist WVDOT with system hosting, software and security updates, development of new permit types, and a minimum of two hundred (200) hours of development time for additional upgrades as required by WVDOT.

4.1.5.4 AHPS must archive and index permit information.

i3-Celtic Response:
CTS-PARS provides the ability to archive and purge the permit information. The archival and retention of the permit information will be based on the policies implemented in accordance with WVDOT.

Backup/Archive Routine
Archiving and retention of the data will start with the business. Based on WVDOT's data-retention policies that involve cross-organizational teams (legal, compliance & records), i3-Celtic will outline the approaches to retain and purge data. After WVDOT's archival retention period has passed, i3-Celtic will delete the archived database and associated system package as required.

4.1.5.5 AHPS must keep any sensitive Data or communications private from unauthorized individuals and programs.

i3-Celtic Response:
i3-Celtic's proposed solution comprises security controls derived from various regulatory requirements, standards, and industry best practices are detailed below:

- All application and system users will be provisioned in the Active Directory and will be named users. Application and system service accounts will be configured for use without actual login privileges, thereby avoiding the need to have multiple users share mechanisms to grant access.
- Authentication and Authorization controls, combined with Encryption where possible (Data at rest and Data in motion), will be implemented to protect against unauthorized information disclosure. All Users will be authenticated using a State provided authentication solution, i.e., Microsoft Active Directory for all users of the WVDOT system, and the i3-Celtic COTS solution, which is the core component of the solution, provides role-based authorization where each user can be assigned a role based on their job function.
- All user access with privileges to modify data/software will be controlled via Azure Active Directory and will be combined with strong change management procedures. Where possible, all builds, and deployments will be automated to ensure that only authorized and approved software is moved to the production environment. Further data security controls such as Encryption, IP-based access to the database, security audits, and monitoring for DB activity will be implemented to prevent unauthorized access/modification to data. All privileged user actions will be audited and configured with Azure Sentinel to detect anomalies and unauthorized access attempts.
- The proposed solution will be deployed in a Highly Available (HA) configuration of the data/application. Transaction traffic will be load balanced to ensure traffic volume is distributed to all Pods of the HA configurations.
- Security Audit configurations will be enabled on all critical applications and supporting Infrastructure (Container services, Database, etc.); audit configurations will include:
  - User Authentication login/Log off, User Activity Log
  - Event Logging, Transaction logging
  - Access to sensitive Data or Files - transaction logs, confidential record logs (application logging and database triggers)
  - Modification/ Deletion of Sensitive data or files. - transaction logs
  - Addition/ Modification/deletion of application roles - user and roll management logging.
  - Addition/ Modification/deletion to application configuration files/parameters.
  - Application service or System restarts
  - The above configurations will help identify any anomalies and audit any changes. i3-Celtic has proposed to use Azure Sentinel to support continuous monitoring requirements.
- All sensitive application configuration files will be protected and will leverage Integrity monitoring solutions authorized by the state. Any system-specific configurations will be limited to specific roles and users.
- The proposed solution will be configured with session timeouts to prevent unauthorized system usage. The system will further use timestamps to be matched for any system-to-system communications; any difference in timestamps will lead to a request being denied. Any privileged emergency accounts created for

administrators will be time bound only for the duration required, and permissions will be rolled back to the least privilege for their day-to-day operations.

- Users need to satisfy multiple conditions such as – successful Authentication, Authorization to access certain objects & permissions via RBAC, and in some instances, restricted access from specific IP addresses/subnets, etc., will be implemented before granting access to the application and systems. Multiple conditions are met before granting permissions to an object.
- As indicated in the overall application architecture, multiple layers of defense will be implemented to prevent a successful attack/unauthorized access – An in-depth defense strategy includes – network protection via firewalls/proxy solutions and gateways, OS security, application security controls, access security controls, data protection strategies, continuous monitoring for User and Application activity.
- Each time user is required to access sensitive systems or information, access control checks will be performed, which include validating for an active session, user roles and associated privileges, access location, and in some cases, access restricted to business hours.
- Secure coding practices and validated libraries will be re-used for any development involved. i3-Celtic will adopt secure coding practices from OWASP and SANS and adopt secure libraries in the .Net Security framework.
- If any vulnerabilities/risks are identified for critical components which can compromise the system, appropriate remediation measures or compensating controls will be implemented to protect the system. i3-Celtic has proposed various vulnerability assessment tools such as Azure Defender for Infrastructure Vulnerability Assessment and Container Vulnerability Assessment. i3-Celtic will conduct periodic assessments to ensure known vulnerabilities are identified and remediation steps are implemented.

For information exchange between different systems and external systems/interfaces – secure channels will be used, such as HTTPS, SFTP, Azure ExpressRoute, etc., where end-to-end channels are encrypted. If any data file exchange is involved, files will be encrypted where supported using FIPS-compliant encryption modules to support confidentiality requirements. Application and database will support fail-safe configurations where the system rolls back any uncommitted changes when the system is unable to complete its action or task before terminating to protect data Integrity. In case of any system failure, the application and underlying infrastructure will be configured such that any sensitive data is not accessible during system failures. Regular backups will be taken to ensure data/system can be restored to the last known good configuration. All critical system components will be configured to support high availability for multiple scenarios – single component failure, site failure, and DR scenarios.

4.1.5.6 AHPS must, in addition to production environments, support one (1) or more non-production environment(s) that WVDOT can use for testing and training.

i3-Celtic Response:
i3-Celtic will provide WVDOT with access to the sandbox and training environments.

Sandbox Environment - As the core functionality is verified and configured or modified, i3-Celtic will deploy versions of the COTS product for WVDOT's personnel to familiarize themselves with the look and feel of the new system and provide valuable feedback to the development team for early issues resolution. The use of the sandbox will provide some initial training and will give users a feeling of ownership when they see their feedback implemented and displayed on the screen.

Training Environment - i3-Celtic will provide access to a Training environment to allow WVDOT Trainers to familiarize themselves with system functionality as early as possible. i3-Celtic will deliver Training as closely as possible to Go Live so that knowledge and skill are retained through the transition by users into the production environment. i3-Celtic will build, maintain, and support the Training Environment in each Release.

4.1.5.7 AHPS non-production environments must match the production environment to ensure product patches and tests performed successfully in the non-production environments work in the production environment.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement.

4.1.5.8 AHPS must allow an Administrative User to determine which users are currently logged into the system.

i3-Celtic Response: We will meet this requirement.

4.1.5.9 AHPS must include an archival system for data and data images throughout the life of the contract.

i3-Cetic Response:
Backup/Archive routine
Archiving and retention of the data will start with the business. Based on WVDOT's data-retention policies that involve cross-organizational teams (legal, compliance & records), i3-Celtic will outline the approaches to retain and purge data. After WVDOT's archival retention period has passed, i3-Celtic will delete the archived database and associated system package as required.

We will configure the retention period for the retrieval of archived/purged documents in accordance with WVDOT.

4.1.5.10 AHPS must be configurable to enable the System Administrator to modify parameters to define the historical data retention duration.

i3-Celtic Response:

Our COTS CTS-PARS solution is configurable to allow modifications to the data retention duration. i3-Celtic will configure or allow the System Administrator to configure the retention period for the retrieval of archived/purged documents in accordance with WVDOT.

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4.1.5.11 AHPS must archive restriction data.

i3-Celtic Response:
Our CTS-PARS provides the ability to the archival and purge facility to allow data archival and purge from the database based on the period as defined in accordance with WVDOT.

4.1.5.12 AHPS must provide the ability to archive permit information at a minimum of five (5) years. The archive permit information must be available to create future permits.

i3-Celtic Response:
The CTS-PARS solution provides the ability to retrieve archived or purged permit information within a pre-defined retention period. i3-Celtic will configure the retention period for the retrieval of archived permit information in accordance with WVDOT.

4.1.5.13 Other than updates of the browser software, AHPS must not require client side installations to enable functionality and fixes that are implemented from server side installs and updates.

i3-Celtic Response: We will meet this requirement.

4.1.5.14 At the WVDOT's discretion, authorized third parties may be given limited access to AHPS.

i3-Celtic Response:
The CTS-PARS solution will provide web-based access to the authorized third-party users through a self-service portal to perform limited functions as determined.

During the requirement gathering sessions, i3-Celtic will work with WVDOT to define the list of functions accessible to the third-party users.

4.1.5.15 Vendor must work with WVDOT to configure AHPS map restriction symbols that are non-ambiguous and meet WVDOT's approval.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement.

CTS-PARS Restriction management functionality allows authorized users to add and update restrictions manually.

CTS-PARS provides a scheduled batch process to import and update restrictions with an optional well-defined workflow to manually review and approve restrictions data feeds. The system displays specific locations graphically based on the type and category of restrictions.

During the requirement gathering session, i3-Celtic will document the details pertaining to map restriction symbols as per WVDOT's requirement.

4.1.5.16 When an Administrative User overrides a transaction of an Authorized User or Customer AHPS must send a notification to the overridden user. This notification must include information about who and why the override was initiated.

i3-Celtic Response: We will meet this requirement.

4.1.5.17 AHPS must provide the capability for Authorized Users to access and report on data stored in the system including, but not limited to, the following: User Accounts and Authorizations, User Actions related to Restrictions, User Authentications, Restriction details, Restriction notifications (incoming and outgoing), Permit Applications, Permits Issues, Permits Denied, Permits Amended, Cancelled Permits, and Suspended Permits.

i3-Celtic Response:
CTS-PARS solution allows authorized users full access to data stored in the system with the ability to generate reports based on the stored data.

The solution provides the Report and Inquiry functionality to generate various on-demand reports or inquire for specific information based on relevant user inputs including but not limited to User Accounts and Authorizations, User Actions related to Restrictions, User Authentications, Restriction details, Restriction notifications (incoming and outgoing), Permit Applications, Permits Issues, Permits Denied, Permits Amended, Cancelled Permits, and Suspended Permits.

4.1.6 Automated Hauling Permit System (AHPS) Customization Requirements

4.1.6.1 Vendor must customize AHPS system to meet WVDOT's requirements listed in this RFQ or requested later by WVDOT.

i3-Celtic Response: We will meet this requirement.

4.1.6.1.1 System Customizations requested after contract award will be requested to the Vendor from WVDOT and mutually agreed upon in an hourly rate SOW.

i3-Celtic Response: We will meet this requirement.

4.1.6.1.2 AHPS must visually notify the permit office staff of all failures (weight, clearance, temporary restrictions), and notify the permit office staff of the WVDOT districts in which the failures occur. At that point, the system should have the ability to send those permits to those districts for review allowing the district to approve, approve with conditions, or deny. There should also be a text box for the districts to make comments.

i3-Celtic Response:
CTS-PARS displays all pre-defined business rules for the queue process, providing pass or fail results. The system utilizes the defined workflow to determine the necessary entities for review and sends corresponding notifications accordingly.

4.1.7 Automated Hauling Permit Routing Systems (AHPS) : Business Operation Requirements

4.1.7.1 AHPS must interoperate with WVDOT GIS, LRS, and any other data necessary to assist in dynamic routing of permitted vehicles/loads.

i3-Celtic Response: We will meet this requirement.

4.1.7.2 AHPS must interoperate WVDOT AASHTOWare BrR; AHPS will be required to utilize AASHTOWare BrR data to assist in dynamic routing and analysis of permitted vehicles/loads.

i3-Celtic Response:
CTS-PARS route solver process will validate the load and dimensions restriction of bridges and retrieve bridge data in a tabular format based on the user-entered route.

4.1.7.3 AHPS must have and use a rules engine, comprised of one (1) or more business rules, for permit applications and fee calculations.

i3-Celtic Response:
CTS-PARS offers a very sophisticated permit definition module with an in-built rules engine for managing business rules for permit application rules, fee calculation rules, workflow, application rules, and check and restriction management rules.

The fees section allows for managing fixed and dynamic fees rules as follows:

- Fixed fees based on fees type.
- Dynamic fees are based on fixed fees and other criteria such as load and dimension, weight, distance, vehicle type, transaction type etc.

4.1.7.4 AHPS must use the Rules Engine to determine if a mandatory combination of AHPS calculations, data entry, interface, answer/response, approvals, or document storage has

been met.

i3-Celtic Response:
CTS-PARS offers a permit definition module with an in-built rules engine for managing business rules for permit application rules, fee calculation rules, workflow, application rules, and check and restriction management rules.

Permit Business Rules Section allows for managing multiple validations and business rules as follows:

- Edit Rules – Allows for managing business rules for different sections of the permit application that provide a hard stop with an appropriate message and allows the user to proceed with a warning message.
- Application forwarding rules – Allows for managing business rules to add an application in the workflow for review by an authorized user or forward the application as an issue.

4.1.7.5 AHPS Rules Engine must calculate the fees, credits, refunds and taxes for each transaction type, vehicle type and road usage

i3-Celtic Response:
CTS-PARS offers a very sophisticated permit definition module with an in-built rules engine for managing business rules for permit application rules, fee calculation rules, workflow, application rules, and check and restriction management rules.

The fees section allows for managing fixed and dynamic fees rules as follows:

- Fixed fees based on fees type.
- Dynamic fees are based on fixed fees and other criteria such as load and dimension, weight, distance, vehicle type, transaction type etc.

4.1.7.6 AHPS must host the HPS including all software and hardware.

i3-Celtic Response: We will meet this requirement.

4.1.7.7 AHPS must enforce that data entry fields must only be used for what they are intended (e.g. date field only accepts date format, address field must contain addresses)

i3-Celtic Response:
CTS-PARS incorporates standard field-level validation across the entire application. This ensures that data entered by users adheres to predefined rules and requirements. By implementing field-level validation, CTS-PARS helps to maintain data integrity and accuracy, reducing the likelihood of errors and inconsistencies.

4.1.7.8 AHPS must be designed to prevent redundant data entry by HPS Authorized Users throughout the UI.

i3-Celtic Response:
CTS-PARS offers several features that assist users in reducing data entry efforts:

1. Prepopulating common details: The system automatically populates frequently used information such as customer details, default contact information, conditions, fees, and mandatory documents. This eliminates the need for users to repeatedly enter the same data, saving time and effort.
2. Fields auto-complete feature: CTS-PARS includes an auto-complete feature for fields, which suggests and completes entries based on previously entered information. This helps users by reducing the need to

FAX COVER SHEET

TO	LarryMcDonnell
COMPANY	DepartmentofAdministration,PurchasingDivision2019
FAXNUMBER	13045583970
FROM	MichaelCarvelli
DATE	2023-06-27 18:52:55 GMT
RE	SOLICITATION NO.: CRFQ 0803 DOT2300000149

COVER MESSAGE

VENDOR NAME: i3 Celtic, and i3 Verticals Company
BUYER: Larry D McDonnell
SOLICITATION NO.: CRFQ 0803 DOT2300000149
BID OPENING DATE: 28 June 2023
BID OPENING TIME:
1:30 PM EST
FAX NUMBER:
304-558-3970

been met.

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1. Prepopulating common details: The system automatically populates frequently used information such as customer details, default contact information, conditions, fees, and mandatory documents. This eliminates the need for users to repeatedly enter the same data, saving time and effort.
2. Fields auto-complete feature: CTS-PARS includes an auto-complete feature for fields, which suggests and completes entries based on previously entered information. This helps users by reducing the need to

manually type repetitive or similar data.

3. Reducing data entry work through saved details: Users can select and use pre-saved vehicle details, axle details, and pre-defined routes, minimizing the need for manual data entry. This streamlines the process and ensures accuracy by utilizing previously saved information.
4. Option to duplicate pre-issued permits: CTS-PARS allows users to duplicate pre-issued permits while still providing the flexibility to modify any necessary details. This feature eliminates the need to recreate permits from scratch, saving time and effort for users.

4.1.7.9 AHPS must provide the capability to suspend Customers for confirmed reasons including, but not limited to: Non-payment, Fraud and Violations.

i3-Celtic Response:
Depending on the business scenarios, the CTS-PARS allows authorized users to add various flags on the customer account as follows:
1) Permit Account Status – When the account is suspended or deactivated, the system will restrict internal and external users from processing any transaction but allows them to collect the payment.
2) OSS order flag – Enabled when permit account status is "Suspended".

4.1.7.10 AHPS must support the grouped data sets as layers on the base map. At a minimum, the following grouped data sets must be configured by the Contractor in cooperation with

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WVDOT: Accidents, Bridge Out, Closure, Counties, District, District Offices, Flooding, Incidents, Open, Parades, Pavement Markings, Reduced to One Lane, Restriction, Road Work, Seasonal Road Closures, Special Restrictions. The AHPS must also have the ability to turn layers on and off based on user type.

i3-Celtic Response:
i3-Celtic will collaborate closely with WVDOT to finalize the layer requirements for CTS-PARS.

The current implementation of CTS-PARS includes the following layers:

1. Restrictions
2. Counties
3. Bridges
4. Exits
5. Mile Marker
6. Interstate Roads
7. Federal Roads
8. State Roads
9. Local Roads

However, the specific layer requirements may vary based on WVDOT's needs and preferences. i3-Celtic will work diligently to understand and incorporate the required layers as per WVDOT's guidance.

4.1.7.11 AHPS must use a Rules Engine.

i3-Celtic Response:
CTS-PARS offers a very sophisticated permit definition module with an in-built rules engine for managing business rules for permit application rules, fee calculation rules, workflow, application rules, and check and restriction management rules.

4.1.7.12 AHPS must provide the capability for an Administrative User to define custom business rules for a permit application.

i3-Celtic Response:
CTS-PARS offers a permit definition module with an in-built rules engine for managing business rules for permit application rules, fee calculation rules, workflow, application rules, and check and restriction management rules. Permit Business Rules Section allows for managing multiple validations and business rules as follows:

- Edit Rules – Allows for managing business rules for different sections of the permit application that provide a hard stop with an appropriate message and allows the user to proceed with a warning message.
- Application forwarding rules – Allows for managing business rules to add an application in the workflow for review by an authorized user or forward the application as an issue.

4.1.7.13 AHPS must have business rule revisions by an Administrative User must have an approval loop, with the ability for one (1) or more additional Administrative Users to review and approve the revision, prior to implementation.

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i3-Celtic Response:
This would be a new feature to be developed and included.

4.1.7.14 AHPS must provide the capability to auto-select business rules on a permit application based on pre-defined logic.

i3-Celtic Response:
CTS-PARS provides the capability to auto-select business rules on a permit application based on pre-defined logic. The system is designed to automatically apply the appropriate business rules according to the predefined logic, streamlining the permit application process.

4.1.7.15 AHPS must provide the capability for an Administrative User to override auto-selected business rules on a permit application.

i3-Celtic Response:
CTS-PARS offers a permit definition module with an in-built rules engine for managing business rules. Our rule engine supports the following types.

1) Warning Rules: These rules allow the user to proceed with a warning message, indicating potential issues or concerns.
2) Hard Stop Rules: These rules do not allow the user to proceed until the data is corrected to meet the specified requirements.
3) Override Rules: Similar to hard stop rules, these rules also require the user to correct the data. However, administrative users have the option to override the rule and proceed.
4) Forwarding Rules: These rules are designed to check for manual review requirements, forwarding the application to the appropriate reviewer or workflow based on specific criteria.

4.1.7.16 Vendor must provide the capability to create a viewable extract of all existing business rules.

i3-Celtic Response:
CTS-PARS also offers a permit definition module in inquiry mode that displays all the business rules, fees configurations , conditions etc. Authorized user can assign permit definition inquiry access to desired role.

4.1.7.17 AHPS must retain the location where the fee is collected on each transaction.

i3-Celtic Response:
CTS-PARS offers a financial report that gives transaction-wise fee collected in each location.

4.1.7.18 AHPS must provide the ability for Customers to initiate, conduct and pay for permits at different WVDOT locations that provides the service requested. (e.g., A permit initiated at WVDOT central office can be paid at same location).

i3-Celtic Response:
CTS-PARS provides a secure payment system that enables users to initiate, process, and make payments for permits at any office location. The system offers users the flexibility to choose between online and offline payment options. Whether they prefer to make payments online or at any physical office location, CTS-PARS accommodates both methods to ensure a seamless payment experience.

4.1.7.19 AHPS must allow for any data elements, as defined, and configured by WVDOT, to print on Permits or communications. (e.g., bar codes, unique user identifier, standardized headers, and footers)

i3-Celtic Response:
CTS-PARS includes a template management module that allows authorized users to create and modify templates used for communication, including email, letters, notifications, text messages, and standard reports.

The report can be downloaded and edited using Crystal Reports designer. After completing an update, the new template can be uploaded and published for use in production.

i3-Celtic has implemented an AAMVA-compliant barcode and check digit logic on the permit and a QR code to retrieve permit documents.

i3-Celtic will share the existing permit credential template, which includes crucial details such as customer information, permit duration, vehicle specifics, load details, route information, directions, and conditions. Additionally, we will work together to identify any additional data elements that may be necessary for the permit credential template.

4.1.7.20 AHPS must provide the ability to input notes in a text field, with a minimum character count of five thousand (5,000) and associate it with the transaction or customer record.

i3-Celtic Response:
CTS-PARS offers a comment section for all transactions or modules like customer, account, queue, etc.

The comments feature allows the user to enter the description to the free-form Comment box. That allows characters up to 5,000.

- Select an appropriate Access Level for each comment (Internal, Public, or Restricted).
- Delete Allowed checkbox – All comments default with this checkbox unchecked (meaning all comments will remain on the record until the record is purged.) If the user wants to allow deletion of a comment in the future, then check this checkbox before adding the comment to the record. When this checkbox is checked, a "Delete" link will appear on the right of the comment.
- Select Add/Update Comment to save the comment to the record.
- Clear Comment – click this button to remove the details entered in the comment section and reset it.

4.1.7.21 AHPS allow an address to be marked as undeliverable and record the date the indicator was applied.

i3-Celtic Response: We would like clarification on this requirement.

4.1.7.22 AHPS must allow Authorized Users to create new records. When duplicates exist, the

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AHPS must provide an alert and allow Authorized Users to perform overrides.

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i3-Celtic Response: This would be a new feature to be developed.

4.1.7.23 AHPS must perform real-time live load bridge analysis for oversize and overweight vehicles for every bridge on every route, less exceptions included in these requirements.

3-Celtic Response: We will meet this requirement.

4.1.7.23.1 AHPS must have the ability for authorized users to tag/toggle bridges in the list from AssetWise as bridges that do not require deep analysis (eg: deep buried culverts with no live load effect)

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

4.1.7.23.2 AHPS must report any bridges that should have a file for analysis that currently do not.

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

4.1.7.23.3 AHPS must kick back for technical review to WVDOT if automation finds any file that are missing.

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

4.1.7.24 AHPS must perform real-time live load bridge analysis utilizing the American Association of State Highway and Transportation Officials (AASHTOWare) Bridge Rating (BrR) system: AASHTOWare Rating Tool and WVDOT's BrR Database.

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

4.1.7.25 AHPS must utilize BrR's Load Rating Tool (LRT) for fast processing of the majority of WVDOT's bridge inventory.

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

4.1.7.26 Bridges not currently included in the LRT but with a complete BrR model in the database, allow some level of prescreening for approval with a developed capacity table or other WVDOT approved method.

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

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4.1.7.27 AHPS must provide means and methods to operate the required version of BrR on the contractor's hardware and servers, disconnected from WVDOT. The version will match WVDOT's production version of the software. The contractor will provide a means and method to accept BrR database backup files at a frequency of WVDOT choice (daily, weekly, monthly, or quarterly). Vendor must have the ability to determine, through automation, if the database file that was provided has new or changed information, and if so, be able to automatically pull that into the HPS for production use without manual intervention.

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

4.1.7.28 AHPS must interact with the BrR software with the following:

4.1.7.28.1 AHPS must send Customer entered axle weights, spacing, and bridges on the Customer entered route to be analyzed by the BrR system.

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i3-Celtic Response:

The system will allow the bridge engineer to export load and dimension, axle data in XML format as required by the AASHTO BrR.

4.1.7.28.2 AHPS must receive bridge analysis from BrR and use them to determine the next step.

i3-Celtic Response:
CTS-PARS displays ASHTO BrR result. Based on the AASHTO BrR result, the bridge engineer will provide recommendations of allowable load & dimensions, weight, speed limit, and center line restrictions.

4.1.7.28.3 AHPS must interact with BrR on various bridge rating levels and scenarios.

4.1.7.28.3.1 AHPS must provide low impact and no impact ratings for review.

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

4.1.7.28.3.2 AHPS must provide one lane loading scenarios for review.

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

4.1.7.29 AHPS must apply travel restrictions (speed and specified lane) and resend axle weights, spacing and bridges.

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

4.1.7.30 AHPS must allow for a feedback loop with the BrR software until a permit can be issued with or without restrictions, denied, or sent for a manual analysis.

i3-Celtic Response:
While we have this capability, we will need to coordinate with the Bridge Engineer.

4.1.7.31 AHPS must be capable of routing (through workflow) a permit request to the WVDOT Operations Division – Bridge Permit Section (OM-BPS) team for manual bridge analysis. This permit request must include a list of all bridges crossed and the results of the automatic analysis.

i3-Celtic Response:
CTS-PARS provides configurable workflow and application forwarding rules that allow the system to add permit applications in the workflow for review by an authorized user. CTS-PARS permit queue comes with general and advanced search/filter criteria that help business users to narrow down the data.

Workflow rule can be defined to manage manual approval from distinct roles and departments.

4.1.8 Automated Hauling Permit Routing Systems (AHPS) : WVDOT Bridge Analysis Requirements

4.1.8.1 AHPS must populate results of bridge analyses into the transaction record of the permit.

i3-Celtic Response:
CTS-PARS route solver process will validate the load and dimensions restriction of bridges and retrieve bridge data in a tabular format based on the user-entered route. The Bridge engineer has the option to add/remove bridges from the list and run "Bridge Analysis". The system will allow the bridge engineer to export load and dimension data in XML format as required by the AASHTO BrR. Based on the AASHTO BrR result, the bridge engineer will provide recommendations of allowable load & dimensions, weight, speed limit, and centre line restrictions.

4.1.8.2 AHPS must utilize the results of bridge analysis to determine the validity of a prospective route. If the bridge analysis fails, the AHPS must perform the following actions with the Customer:

4.1.8.2.1 Alert Customer of the failed bridge analysis, but the customer should only get a message saying there are one of more failures while showing the location on the map. The customer should not be given any load rating information.

i3-Celtic Response:
CTS-PARS has the option in the review process to reject or assign back to the carrier the permit request for further action. Customer will get email notification with only details/reason which is provided by the reviewer in comments.

4.1.8.2.2 Allow Customer to select a different route.

i3-Celtic Response:
CTS-PARS allows authorized users to assign back (feedback) to permit application to customer to correct data or to select to different route. The customer will get a feedback email notification with the provided details to be followed.

4.1.8.2.3 Allow Customer to cancel the permit application.

i3-Celtic Response:
CTS-PARS allows authorized users to reject the permit request or allow customers to cancel the work in progress permit.

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4.1.8.2.4 Allow Customer to place the request in a held/pending state.

i3-Celtic Response:
CTS-PARS has hold transaction which allows user to put issued permit on hold which can be reactivated through amendment transaction.

4.1.8.3 AHPS reporting and querying capabilities as defined in Appendix B

4.1.8.3.1 AHPS must be capable of creating reports showing all permits on roads or bridges over any time frame.

i3-Celtic Response:
CTS-PARS offers a set of production-proven standard reports, including Route Usage, Bridge Usage, and more. The system also provides additional MIS Reports, Inquiries, and an Ad-hoc report feature with the availability of Graphical Charts. All reports and inquiries include mandatory and optional search parameters, including date range, customer account, permit number, commodities, load, and dimensions, and more.

4.1.8.3.2 AHPS must have the ability to query permits on selected routes in various states of approval (pending, approved, and denied.).

i3-Celtic Response:

CTS-PARS includes a Route Usage report that currently includes only approved permits. i3-Celtic will work closely with WVDOT to gain a comprehensive understanding of the desired usage requirements and implement any necessary adjustments to the report accordingly.

4.1.8.3.3 AHPS must have the fully functional ability to query based on various permit parameters on various routes (e.g. show the permits that have been requested, approved, and denied crossing a certain route with a certain dimension parameter set, and certain weight parameter.).

i3-Celtic Response:
CTS-PARS offers reports on subjects such as Bridge Usage and Route Usage. These reports provide both mandatory and optional search parameters, including date range, customer details, commodities, load, dimensions, and more. i3-Celtic will collaborate closely with WVDOT to identify any additional parameters that would be useful and integrate them into the system.

4.1.9 Automated Hauling Permit Routing Systems (AHPS) : LRS Analysis Requirements

4.1.9.1 AHPS must have a Geographical Information System (GIS) web-based mapping system. WVDOT currently uses ESRI GIS and LRS software, including ArcGIS Desktop, ArcGIS Server, ArcGIS Online and Roads & Highways LRS, using MS SQL Server database.

i3-Celtic Response:
The CTS-PARS is developed using Microsoft .Net, ESRI ArcGIS Services, ArcGIS API for JavaScript applications, and supports SQL Server/Oracle Database.

The components of the CTS-PARS can be summarized as follows:

- Clients - Web browsers are used to connect to web applications running in the GIS Services. The system supports all standard browsers, including Microsoft Edge, Google Chrome, Firefox, and Safari.

- Web Server – The GIS Web Server Adaptor allows the GIS Server to integrate with the permitting system web server. The Web adaptor forwards requests to the GIS Server.
- GIS Server – The GIS Server process GIS Service request and communicates with the GIS database server.
- Data Server – Following databases shall be created/maintained:
  - The GIS database contains a feature class, feature table, locator, dataset, network dataset, etc.
  - THE CTS-PARS OLTP and OLAP database contains data, including permit customers, permit transactions, payments, credentials, and more.

CTS-PARS leverages Esri ArcGIS technology and toolsets, making the system tightly integrated with jurisdictional network layers and easy to maintain for those already managing their roadway network with Esri. We are an authorized Esri partner.

4.1.9.2 AHPS must utilize WVDOH's GIS highway, bridge, ramp, and interchange names. The AHPS must use an WVDOT defined source for all road nomenclature and will include a web API.

i3-Celtic Response:
i3-Celtic recommends using an ESRI base map along with either ESRI street map premium (SMP) data or the state-provided routable road network.

The road network will have different layers of data overlayed on the base map, including state-provided routable road network, other boundaries and road networks, temporary restrictions, structures, and more.

CTS-PARS has been developed utilizing Esri ArcGIS in combination with i3-Celtic's proprietary modules, and we will leverage WVDOT's confirmed GIS data and infrastructure to provide a scalable, robust solution to exceed WVDOT's expectations for CTS-PARS.

4.1.9.3 AHPS must have the ability to use WVDOT's GIS length, width, height, and weight limitations on roadways, ramps, interchanges, and structures to analyze routes and identify permanent restrictions on a route based on length, width, height, and weight. Information is derived from the transportation asset management system (TAMS), LRS, the bridge database or other electronic formats.

i3-Celtic Response:
During the technical discussion sessions, i3-Celtic will understand the available data source from ArcGIS Roads and Highways LRS. The system will be configured to establish a workflow and automatically update ArcGIS Roads and Highways LRS roadway data and restrictions in CTS-PARS.

4.1.9.4 AHPS must process WVDOT GIS data to create a mapping solution with a geo-coded database for use within the AHPS.

i3-Celtic Response:
The CTS-PARS supports SQL Server and Oracle Database and has the capability to work with spatial data.

4.1.10 Automated Hauling Permit Routing Systems (AHPS) : Customer Requirements

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4.1.10.1 AHPS must have the ability to issue permits to Customers.

i3-Celtic Response:
CTS-PARS is a web-based application that allows customers to apply for and obtain permits online

4.1.10.2 AHPS must provide step-by-step driving instructions and map(s) to Customer.

i3-Celtic Response:
The CTS-PARS-generated credential includes a route map, turn-by-turn direction details, as well as any applicable conditions and warnings associated with the generated route.

4.1.10.3 AHPS must support all axle configurations including, but not limited to, trunnion trailers or trailers with a trunnion axle configuration when applying for a permit.

i3-Celtic Response:
CTS-PARS permit load and dimension section allows for the selection of commodity type, transportation type, total weight, length (total length, front overhanding, rear overhanging), width (total width, side overhang), and axle configuration (including axle type, individual axle weights, total weight, and axle spacing, total spacing)

4.1.10.4 AHPS should provide a Customer the ability to bookmark map views.

i3-Celtic Response: We will meet this requirement.

4.1.10.5 AHPS should provide the ability to "jump" to a bookmarked or stored map view.

i3-Celtic Response: We will meet this requirement.

4.1.10.6 AHPS should provide Customers to save a minimum of ten (10) bookmark map views to their user profile.
i3-Celtic Response: We will meet this requirement.

4.1.10.7 AHPS should support workflow that allows a Motor Carrier to view, approve or be notified of pending permit payment requests from the trucker operators employed by that Motor Carrier.

i3-Celtic Response: We would like clarification.

4.1.10.8 AHPS must support handheld device access to the AHPS.
i3-Celtic Response: is this asking for a mobile application? (4.1.10.12)

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4.1.10.9 AHPS must provide the ability to enter and submit a new permit application via a handheld device.

i3-Celtic Response: We will meet this requirement.

4.1.10.10 AHPS must support a secure connection from handheld devices including at a minimum, but not limited to, Apple iOS, Android, MS Windows Mobile, and new/future mobile operating systems.

i3-Celtic Response: We will meet this requirement.

4.1.10.11 AHPS must provide the ability to view/display an approved permit on a handheld device.

i3-Celtic Response:

4.1.10.12 AHPS must provide the ability to sign/attest the permit electronically by the vehicle driver on a handheld device.

i3-Celtic Response: We will meet this requirement.

4.1.10.13 AHPS must provide the capability to create a new permit application.

i3-Celtic Response:
Customization: Permit definition can be used to create new permit however it is not 100% configurable some level of code changes are required to make it functional.

4.1.10.14 AHPS must provide the ability to create a new permit application by type including but not limited to: single trip oversize/overweight, single trip mobile home, annual oversize/overweight, annual mobile home, annual seagoing, and annual timber permits.

i3-Celtic Response:
Customization: Permit definition can be used to create new permit however it is not 100% configurable some level of code changes are required to make it functional.

4.1.10.15 AHPS must provide the ability to select a Motor Carrier address from a list of addresses when the Motor Carrier has more than one.

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i3-Celtic Response:
CTS-PARS supports multiple addresses (10 addresses) and also allows you to select multiple address from the entered (10 addresses).

4.1.10.16 AHPS must provide the ability for a Customer to enter permit application information including but not limited to: anticipated move date, willingness to accept alternate route, maximum acceptable additional miles, permit delivery method (e.g., fax, email), fax number, and email address.

i3-Celtic Response:
The CTS-PARS allows customers to apply for the permit and obtain permits online. By entering all the required details like travel dates, load details, vehicle details, route points and also allows to select the delivery type option (email or fax) to get the permit credential.

4.1.10.17 AHPS must provide the ability to request multiple permits with identical loads, route, and equipment from a single permit application, including round trip permits.

i3-Celtic Response:
The CTS-PARS has the option to select the Number of Identical Permits required with similar details including round trip details.
The system generates different permits with the same permit details.

4.1.10.18 AHPS must provide the ability to enter emergency move information including but not limited to: Emergency type, emergency description, date of move, agency or utility contact name, agency or utility contact telephone number, location of emergency, and justification for the emergency move.

i3-Celtic Response: This would be a new feature to be developed.

4.1.10.19 AHPS must use map symbols common to the industry.

i3-Celtic Response:
In CTS-PARS, commonly used map symbols are employed based on the source data subject. These symbols help to represent various features and elements on the map accurately. The symbols are selected in accordance with standard cartographic conventions and industry best practices.

Moreover, CTS-PARS provides an icon configuration module that allows users to edit and customize map icons or symbols. With this module, users have the flexibility to modify the appearance and representation of icons as per their preferences or specific requirements. This feature enables users to tailor the visual presentation of the map to align with their needs and improve the overall user experience.

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4.1.10.20 AHPS map must display restriction data using icon symbols common to the industry.

i3-Celtic Response:
In CTS-PARS, restriction map symbols are employed based on the source data subject. The symbols are selected in accordance with standard cartographic conventions and industry best practices.

Moreover, CTS-PARS provides an icon configuration module that allows users to edit and customize map icons or symbols

4.1.10.21 AHPS map must display non-restriction data using icons common to the industry.

i3-Celtic Response:
In CTS-PARS, commonly used map symbols are employed based on the source data subject. These symbols help to represent various features and elements on the map accurately. The symbols are selected in accordance with standard cartographic conventions and industry best practices.

Moreover, CTS-PARS provides an icon configuration module that allows users to edit and customize map icons or symbols

4.1.10.22 AHPS map symbols must be easily identifiable to any user when displayed in color and in black and white to meet ADA requirements as defined by ADA best practices:

4.1.10.22.1 https://www.ada.gov/pcatoolkit/chap5toolkit.htm

i3-Celtic Response:
This would be customization of the ADA Map and Icon Configuration

4.1.10.23 AHPS must support symbolization through multiple attributes, such as charts (stacked, pie, bar graphs), and quantities (graduated symbol, graduated color, or proportional symbol) as defined in Appendix B - Minimum Reports.

i3-Celtic Response:
Customization: We have route usage and bridge usage reports, additional can be created as required in Appendix B

4.1.10.24 AHPS map must contain a legend that automatically updates as new icons are imported and associated with restriction types and locations, included in the user fee structure outlined above.

i3-Celtic Response:
Not Clear: "user fee structure" seems to be typo error?
CTS-PARS includes an icon configuration module that allows users to manage and update icon for layers. When an icon is modified through this module, the changes are reflected on the map and legend automatically.

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4.1.10.25 AHPS must provide the ability to build a route via a graphic map interface that includes, but is not limited to: all bridges, posted roads, temporary restrictions, individual bridge, and roadway restrictions, turn restrictions, alternate routes, ramp ID, road connector information, identified detours, and emergency restrictions.

i3-Celtic Response:
CTS-PARS provides the capability to build a route using a graphic map interface, encompassing various elements such as bridges, posted roads, temporary restrictions, individual bridge, and roadway restrictions, turn restrictions, alternate routes, ramp IDs, road connector information, identified detours, and emergency restrictions.

The system ensures that these factors are taken into account during the route generation process, allowing users to plan routes that consider all relevant restrictions and road conditions.

4.1.10.26 AHPS must provide a visual map that highlights road construction and maintenance operations, has a zoom feature, and provides dates and restrictions on

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i3-Celtic Response:
CTS-PARS includes Restrictions, Counties, Bridges, Exits, Mile Marker, Interstate Roads, Federal Roads, State Roads, Local Roads layers.

However, the specific layer requirements may vary based on WVDOT's needs and preferences. i3-Celtic will work diligently to understand and incorporate the required layers as per WVDOT's guidance.

System provides a toggle button option that enables users to turn on/off specific map layers. This feature allows users to customize their map view and focus on the information that is most important to them, resulting in a clear and personalized display.

System incorporates standard uniform widgets on all map screens, providing users with features such as zooming in, zooming out, zooming to a specific area, zooming to the state border, full-screen mode, base map selection, and location search.

4.1.10.27 AHPS must provide drivable routes on a permit.

i3-Celtic Response:
The CTS-PARS-generated credential includes a drivable route map with turn-by-turn directions and any associated conditions or warnings.

4.1.10.28 AHPS must provide the capability for a Trucking Permit Service user to maintain a list of Motor Carrier accounts associated with that Trucking Permit Service, with access to any Motor Carrier permit data that is associated specifically with that Trucking Permit Service.

i3-Celtic Response:
CTS-PARS allows the selection of a Trucking Permit Service Provider for Motor Carriers to apply for permits and submit them online. A single Trucking Permit Service Provider can work on behalf of multiple Motor Carriers, streamlining the permit application process.

4.1.10.29 AHPS must provide the capability for an Authorized User to submit a permit application on behalf of a permit applicant.

i3-Celtic Response:
CTS-PARS allows authorized users, such as service providers or third-party users, to apply for permits and submit them online on behalf of the applicant.

4.1.10.30 AHPS must provide the ability to identify the type of permit requested on a permit application.

i3-Celtic Response:
We will support this as a new feature.

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4.1.10.31 AHPS must allow the user to select the permit type based on vehicle, load, and route information.

i3-Celtic Response:
We will support this as a new feature.

4.1.10.32 AHPS must provide the ability to enter load information for a permit application including but not limited to: gross weight, total length, total width, total height, load specifics, load serial ID, , front overhang, back overhang, axle and tire widths, axle loads, tires per axle, axle spacings, distance between extreme axles (distance between the steer axle and last axle of the load).

i3-Celtic Response:
In CTS-PARS, customers have the ability to apply for permits and obtain them online. They can enter all the necessary details, including travel dates, load details, vehicle specifications (dimensions, axle details), route points, and other relevant information, to generate the permit credential. By providing these details, customers can ensure that their permit application is complete and accurate, enabling them to obtain the necessary permit for their intended travel.

4.1.10.33 AHPS must provide the ability to accept attachments; those attachments will be used by WVDOH to enter non-standard gage (NSG) configurations, preferably as needed so that a NSG temporary permit vehicle can be defined through the BrR API for NSG permit analysis.

i3-Celtic Response:
We can support this but will need to coordinate with the Bridge Engineer.

4.1.10.34 AHPS must provide the capability for Customer to enter load and vehicle information (i.e. license plate numbers and issuing state for the tractor and all subsequent trailers).

i3-Celtic Response:
CTS-PARS captures vehicle details such as vehicle type, VIN, make, year, plate number, and unit number. The system includes a Vehicle module that allows users to save their account vehicles, reducing data entry time and minimizing errors.

4.1.10.35 AHPS must provide the ability to specify any parts removed or other physical differences in a load.

i3-Celtic Response: We would need clarification.

4.1.10.36 AHPS must provide the ability to save and select a load type and load dimensions as a favorite.

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i3-Celtic Response:
New Feature: alternate solution is copy from
CTS-PARS has a "Copy From" functionality that allows customers to reuse previously issued permit details when applying for a new permit. This feature eliminates duplicate entry by automatically populating the new permit with the existing information, while still allowing customers to modify any necessary data as needed.

4.1.10.37 AHPS must store hauling unit types and trailing unit types as defined by Customer.

i3-Celtic Response:
Not Clear: we think vehicle module is the solution to this requirement
CTS-PARS captures vehicle details such as vehicle type, VIN, make, year, plate number, and unit number. The system includes a Vehicle module that allows users to save their account vehicles, reducing data entry time and minimizing errors.

4.1.10.38 AHPS must provide the ability to save and select vehicle information for a permit application from a list of favorites including but not limited to: truck information, trailer information, equipment type, registration number, VIN, number of axles, USDOT number, State.

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i3-Celtic Response:
CTS-PARS captures vehicle details such as vehicle type, VIN, make, year, plate number, and unit number. The system includes a Vehicle module that allows users to save their account vehicles, reducing data entry time and minimizing errors.

4.1.10.39 AHPS must provide the ability to store and select hauling vehicle and equipment information and trailers for a permit application.

i3-Celtic Response:
CTS-PARS captures vehicle details such as vehicle type, VIN, make, year, plate number, and unit number. The system includes a Vehicle module that allows users to save their account vehicles, reducing data entry time and minimizing errors.

4.1.10.40 AHPS support multiple trailer configurations when applying for a permit.

i3-Celtic Response:
We can support this customization to allow multiple
CTS-PARS allows customers to add multiple vehicles during the permit issuance process. All the vehicle details will be printed on the issued permit credential. i3-Celtic will collaborate with WVDOT to implement necessary changes based on their business requirements.

4.1.10.41 AHPS must provide the ability to enter and validate axle data.

i3-Celtic Response:
The CTS-PARS permit load and dimension section allows users to enter free-form load descriptions or by using a load list as a drop-down. The commodity type and the number of axles will be collected based on the WVDOT's business rules; the system has the ability to be configured to collect and validate the number of axles on the power unit, the trailer, the trailer combination, or a total of all axles.

4.1.10.42 AHPS must provide the ability to calculate the sum of the axle weights for a permit application.

i3-Celtic Response:
The CTS-PARS permit load and dimension section allows users to enter free-form load descriptions or by using a load list as a drop-down. The commodity type and the number of axles will be collected based on the WVDOT's business rules; the system has the ability to be configured to collect and validate the number of axles on the power unit, the trailer, the trailer combination, or a total of all axles. The system also displays the total weight requested on all the provided axles.

4.1.10.43 AHPS must provide and display an interactive axle spacing diagram.

i3-Celtic Response:
In CTS-PARS, the system displays the axle configuration diagram of the vehicles on the application page.

This diagram provides a visual representation of the vehicle's axle configuration, allowing users to easily understand and verify the information.

Additionally, when the permit credential is issued, the axle configuration diagram is printed on the permit credential itself. This ensures that the axle configuration details are prominently displayed and readily available for reference.

4.1.10.44 AHPS must provide the ability to enter permit application data for each axle including but not limited to: axle number, distance from previous axle, axle weight, manufacturers rated axle capacity, center to center wheel spacing, number of tires on each axle, and axle and tire width. It is preferred that this be accompanied by a checkbox to indicate if the axle is non-standard gage (NSG).

i3-Celtic Response:
The CTS-PARS allows customers to enter the axle details like axle number, distance from previous axle, axle weight, manufacturers rated axle capacity, axle type, number of tires on each axle etc.

i3-Celtic will collaborate with WVDOT to implement necessary changes based on their business requirements.

4.1.10.45 AHPS must provide the capability for a Customer to review, print, or clone permits and applications they have previously submitted.

i3-Celtic Response:
CTS-PARS has a "Copy From" functionality that allows customers to reuse previously issued permit details when applying for a new permit. This feature eliminates duplicate entry by automatically populating the new permit with the existing information, while still allowing customers to modify any necessary data as needed.

System gives the option to print the issued permit through "Reprint" option or print permit credential while applying for the permit.

4.1.10.46 AHPS must provide the capability to clone an existing permit application.

i3-Celtic Response:
CTS-PARS has a "Copy From" functionality that allows customers to reuse previously issued permit details when applying for a new permit. This feature eliminates duplicate entry by automatically populating the new permit with the existing information, while still allowing customers to modify any necessary data as needed.

4.1.10.47 AHPS must provide the ability to change the move start date to a future date on a cloned application.

i3-Celtic Response:
CTS-PARS has a "Copy From" functionality that allows customers to reuse previously

issued permit details when applying for a new permit. This feature eliminates duplicate entry by automatically populating the new permit with the existing information, while still allowing customers to modify any necessary data as needed.

4.1.10.48 AHPS must provide the ability to clone applications with all permit information included.

i3-Celtic Response:
CTS-PARS has a "Copy From" functionality that allows customers to reuse previously issued permit details when applying for a new permit. This feature eliminates duplicate entry by automatically populating the new permit with the existing information, while still allowing customers to modify any necessary data as needed.

4.1.10.49 AHPS must provide the ability to withdraw and clone a permit application in submitted status.

i3-Celtic Response:
The CTS-PARS has functionality called "Copy From" where customer is allowed to use the issued permit details in the new permit avoiding duplicate entry by the customer. System has the functionality for Cancelling the Permit in any status. i3-Celtic will collaborate closely with WVDOT to integrate clone functionality in any other status if required.

4.1.10.50 AHPS must provide the ability to delete and withdraw an in- process permit application.

i3-Celtic Response:
CTS-PARS includes a functionality that allows users to cancel permits in any status, including open, invoiced, paid, and other in-process statuses. This feature enables users to easily cancel permits that are no longer needed or have become invalid for any reason.

By utilizing the cancellation functionality within CTS-PARS, users can initiate the process of canceling a permit, regardless of its current status.

If the permit is already paid for the system will initiate a payment refund process.

4.1.10.51 AHPS must provide the ability to withdraw a permit application in submitted status.

i3-Celtic Response:
CTS-PARS includes a functionality that allows users to cancel permits in any status, including open, invoiced, paid, and other in-process statuses. This feature enables users to easily cancel permits that are no longer needed or have become invalid for any reason.

By utilizing the cancellation functionality within CTS-PARS, users can initiate the process of canceling a permit, regardless of its current status.

If the permit is already paid for the system will initiate a payment refund process.

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4.1.10.52 AHPS must provide the ability for the vehicle driver to sign/attest the permit electronically.

i3-Celtic Response:
Not Clear:

4.1.10.53 AHPS must provide the ability to populate data in subsequent fields that has had data entered into previous sections. AHPS must provide Customer the ability to auto populate data from a past approved permit and create a new permit request.

i3-Celtic Response:
CTS-PARS has a "Copy From" functionality that allows customers to reuse previously issued permit details when applying for a new permit. This feature eliminates duplicate entry by automatically populating the new permit with the existing information, while still allowing customers to modify any necessary data as needed.

4.1.10.54 AHPS must identify the impacted section of the roadway or bridge causing a denial in an automated notification.

i3-Celtic Response:
CTS-PARS includes a comprehensive restriction management module that captures various details related to restrictions. These details may include the restriction type, duration, impact, reason, and dimension restrictions, among others.

The information captured in the restriction management module is crucial for building a safe route and ensuring compliance with applicable restrictions. The system utilizes this data to generate notifications and alerts, which are sent to customers who have already been issued permits. These notifications provide valuable information regarding the specific restrictions that may affect their travel plans.

4.1.10.55 AHPS must allow a Customer to resubmit a denied application for reconsideration.

i3-Celtic Response:
CTS-PARS queue module includes a comment section where users can add the reason for denial, which is then included in the notification sent to the customer. Furthermore, the workflow has a unique feature that allows reviewers to provide feedback on application processing errors in the comments and assign them to the customer for correction. The customer can make the necessary corrections based on the feedback and resubmit the application for review.

4.1.10.56 AHPS must provide the ability to perform a route analysis on a submitted permit application.

i3-Celtic Response:
Authorized users in CTS-PARS have the capability to make modifications, corrections, and adjustments to submitted permits as necessary to align with business requirements. This functionality enables users to update and refine the permit details or adjust the route as needed, ensuring that the permit accurately reflects the intended travel and meets the specific business needs.

By allowing authorized users to perform these modifications, CTS-PARS ensures flexibility and adaptability in the permitting process, accommodating any changes or adjustments that may arise after the initial permit submission. This feature streamlines the workflow and allows for efficient management of permits within the system.

4.1.10.57 AHPS must provide the ability to save an in-process permit application as a draft.

i3-Celtic Response:
The CTS-PARS has the auto save functionality, on proceeding from one page system automatically saves that data of the application. Users can quit from that page and can continue from the saved location whenever required from resume permit module.

4.1.10.58 AHPS must prevent multiple Customers from being able to edit the same permit simultaneously.

i3-Celtic Response:
We would need to develop this capability.

4.1.10.59 AHPS must provide the capability to search existing permit applications specific to each Customer.

i3-Celtic Response:
CTS-PARS provides a variety of search options, including account number, legal name, permit type, load code, vehicle dimension, VIN, unit number, plate number, permit duration, status, route origin, route destination, and office location. These search options enable users to quickly locate specific permits or information within the system.

4.1.10.60 AHPS must support hyperlinks for display when selected from the map.

i3-Celtic Response:
CTS-PARS uses hyperlinks in its user interface (UI) to enhance the standard user experience. Examples include using hyperlinks for restrictions icons to display information windows, bridge icons to show bridge details, and Google Street View links for bridges. These hyperlinks provide additional details and resources to users within the application.

4.1.10.61 AHPS provide Customers as well as Authorized Users the ability to navigate around the map.

4.1.10.61.1 AHPS map must support click, drag, and pan for map navigation.

i3-Celtic Response:
CTS-PARS supports standard map features such as zooming in, zooming out, zooming to the state border, drawing a box to zoom into a specific area, dragging and panning the map.

It also allows map navigation using the mouse and keyboard, including the mouse wheel and keyboard number pad keys. These features provide users with convenient and flexible ways to interact with the map screens in the application.

4.1.10.61.2 AHPS map must support the use of the mouse scroll wheel for zooming in and out in map view.

i3-Celtic Response:
CTS-PARS supports standard map features such as zooming in, zooming out, zooming to the state border, drawing a box to zoom into a specific area, dragging and panning the map.

It also allows map navigation using the mouse and keyboard, including the mouse wheel and keyboard number pad keys. These features provide users with convenient and flexible ways to interact with the map screens in the application.

4.1.10.61.3 AHPS map must support drawing a box for center and zoom map navigation.

i3-Celtic Response:
CTS-PARS supports standard map features such as zooming in, zooming out, zooming to the state border, drawing a box to zoom into a specific area, dragging and panning the map.

It also allows map navigation using the mouse and keyboard, including the mouse wheel and keyboard number pad keys. These features provide users with convenient and flexible ways to interact with the map screens in the application.

4.1.10.61.4 AHPS map must be updated with WVDOH provided information within 24 hours. Industry external data must be updated as available.

i3-Celtic Response:
We will meet this requirement.

4.1.10.62 AHPS must support the use of map tool tips which allow a user to display information about a feature.

i3-Celtic Response:
i3-Celtic provides following out of the box system help:

- Product User Guide – A fully integrated on-line user guide for all functions of the system, navigates as per the application screens.

Context Sensitive Help - Assist users when mouse pointer is placed on the column or section.

4.1.10.63 AHPS must provide the capability to build and display a route using a graphic map interface.

i3-Celtic Response:
CTS-PARS provides the capability to build and display routes using a graphic map interface. Users can

interact with the map interface to define the origin, destination, and any waypoints along the route. The system then generates and displays the route on the map, providing a visual representation of the selected route. This allows users to easily visualize and plan their desired route using the intuitive graphic map interface provided by CTS-PARS.

4.1.10.64 AHPS must provide summarized construction and maintenance information and allow the user to display details including but not limited to: date, time, road name.

i3-Celtic Response: We will meet this requirement.

4.1.10.65 AHPS must provide the capability to route a trip for a load manually:

4.1.10.65.1 AHPS must provide local road data to support routing.

i3-Celtic Response:
CTS-PARS collaborates with WVDOT to acquire and finalize the required street data for generating routes. This ensures that the system has access to accurate and up-to-date street information, enabling the generation of reliable and precise routes for permit issuance and other purposes. The coordination with WVDOT ensures that CTS-PARS aligns with the official street data provided by the transportation authority, enhancing the overall effectiveness and accuracy of the system.

4.1.10.65.2 AHPS must provide road names with route naming convention on the permit.

i3-Celtic Response:
CTS-PARS can utilize ESRI SMP (Street Map Premium) GIS Data or state-provided GIS data as a data source to build the routes. In technical discussions with i3-Celtic, the available data source from ArcGIS Roads and Highways LRS will be assessed and understood.

When generating routes, CTS-PARS will display the route name based on the finalized road data obtained from the selected data source. This ensures that the permit credential and associated route information align with the specific road data used in the system. By integrating the route name from the road data source, CTS-PARS provides accurate and consistent information for permit-related routes.

4.1.10.65.3 AHPS must provide the ability to alter routes manually.

i3-Celtic Response:
CTS-PARS offers a user-friendly and feature-rich interface for performing route analysis. The system generates the best suitable route by considering numerous factors such as travel duration, vehicle details, route, and bridge restrictions, as well as temporary restrictions.

However, users have two approaches to generate desired alternate routes manually within the system:

1. Add Way Point: Users can manually add Way points between stops to customize the route. This allows them to specify specific locations they want the route to pass through, giving them more control over the generated

route.

2. Drag Route to Desired Location: Users have the option to zoom and pan to a desired location on the map. They can then drag the solved route to the desired location, prompting the system to automatically add a Way point at that location. This intuitive feature allows users to easily modify the route according to their preferences.

These manual approaches provide flexibility and allow users to fine-tune the generated routes to meet their specific needs within CTS-PARS.

4.1.10.65.4 AHPS must provide map point and click functions.

i3-Celtic Response:
In the route module of CTS-PARS, users have multiple ways to input stops and obtain the desired route. They can input stops using various methods including:

1. Address: Users can provide specific addresses as stops along the route.
2. Exit Number: Stops can be specified using exit numbers on highways or roadways.
3. Mile/Distance Marker: Users can input mile or distance markers to define stops.
4. Intersections: Stops can be defined by specifying the intersection of two or more roads.
5. Latitude/Longitude: Users have the option to input the latitude and longitude coordinates for stops.
6. Use Map: The "Use Map" feature allows users to interact directly with the map interface. They can click on the map to define a stop at a particular location.
7. State Border Crossing: Stops can be set at state border crossings.

Additionally, the map interface in CTS-PARS enables users to drag and drop existing stops to their desired locations, providing further flexibility and customization in defining the route.

4.1.10.65.5 AHPS must provide Waypoints.

i3-Celtic Response:
In the CTS-PARS route module, users can indeed input stops using various methods as mentioned before, including addresses, exit numbers, mile/distance markers, intersections, latitude/longitude coordinates, and state border crossings. These methods can be used not only for the origin and destination but also for adding waypoints along the route.

Users can specify multiple waypoints using any of the aforementioned methods to include additional stops and generate the desired route. This flexibility allows users to define complex routes with multiple intermediate stops, enabling efficient trip planning and customization within the CTS-PARS route module.

4.1.10.65.6 AHPS must provide the street addressee point to point.

i3-Celtic Response:
CTS-PARS address search feature is implemented using a locator. i3-Celtic will collaborate with WVDOT to

determine the source for the address locator. The current system utilizes an Esri address locator, which can generate point-to-point street addresses.

The Esri address locator provides robust functionality for accurately searching and locating addresses within the system. This ensures that users can easily input and find specific addresses for their route planning and analysis needs within CTS-PARS. The collaboration between i3-Celtic and WVDOT will ensure that the address locator is sourced appropriately and meets the requirements of the application.

4.1.10.66 AHPS provide the ability to perform a stand-alone route analysis for a load and route combination without applying for a permit.

i3-Celtic Response:
CTS-PARS will indeed include a module that allows users to perform route analysis without the need to apply for a permit. Users will be required to provide relevant vehicle details such as height, width, length, vehicle type, and axle configurations. Additionally, they will specify the origin, destination, and any waypoints along the route.

Using the provided information, the system will analyze and generate a route similar to the actual permit issuance process. The route analysis will consider the specific vehicle dimensions and configurations provided by the user, ensuring that the generated route is appropriate and adheres to relevant restrictions and regulations. This functionality enables users to evaluate potential routes without going through the permit application process.

CTS-PARS will also consider various restrictions. These restrictions may include road-attached limitations such as width, turn restrictions, and travel prohibitions, as well as bridge-attached restrictions like horizontal clearance, vertical clearance, and weight limitations.

4.1.10.67 AHPS must provide the ability to return an alternate route.

i3-Celtic Response:
CTS-PARS generates routes with turn-by-turn directions for requested stops. During the route generation process, the system takes into account the following factors:

1. Vehicle Dimensions: The system considers the dimensions of the vehicle to ensure that the route is suitable and can accommodate the size of the vehicle.
2. Road-Attached Restrictions: It takes into account various road restrictions such as width limitations, turn restrictions, and travel prohibitions. This ensures that the generated route adheres to these restrictions.
3. Bridge-Attached Restrictions: The system also considers restrictions associated with bridges, including horizontal clearance, vertical clearance, and weight restrictions. This helps in determining if a bridge along the route can safely accommodate the vehicle based on these restrictions.

If any of these restrictions are encountered along the route, the system will generate alternate routes that avoid the specific restrictions. It is capable of generating a second suitable alternate route as well, providing additional options for the user.

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4.1.10.68 AHPS user map interface must operate in Real Time to capture continuously changing data feeds received by the AHPS.

i3-Celtic Response:
Not Clear: -Need more details about what Real Time Data fields are

4.1.10.69 AHPS map interface must enable search and "zoom to" display searched criteria, including at a minimum: 4.1.10.69.1Mile marker, exit number, addresses, bridges, and intersections.

i3-Celtic Response:
CTS-PARS incorporates standard uniform widgets on all map screens, providing users with features such as zooming in, zooming out, zooming to a specific area, zooming to the state border, full-screen mode, base map selection, and location search.

The location search functionality allows users to search for various elements, including mile markers, exit numbers, addresses, bridge intersections, streets, counties, cities, and points of interest (POIs).

4.1.10.69.1 Road segments and construction projects.

i3-Celtic Response:
CTS-PARS incorporates standard uniform widgets on all map screens, providing users with features such as zooming in, zooming out, zooming to a specific area, zooming to the state border, full-screen mode, base map selection, and location search.

The location search functionality allows users to search for various elements, including mile markers, exit numbers, addresses, bridge intersections, streets, counties, cities, and points of interest (POIs).

i3-Celtic with work with WVDOT to identify any further options needs to be included.

4.1.10.69.2 State boundaries, counties, city/town boundaries, WVDOH Highway District boundaries.

i3-Celtic Response:
CTS-PARS incorporates standard uniform widgets on all map screens, providing users with features such as zooming in, zooming out, zooming to a specific area, zooming to the state border, full-screen mode, base map selection, and location search.

The location search functionality allows users to search for various elements, including mile markers, exit numbers, addresses, bridge intersections, streets, counties, cities, and points of interest (POIs).

4.1.10.69.3 AHPS must support a Customer initiated cancellation and refund of an issued permit so long as the move date of the load has not been started. However, the Vendor must maintain the ability to turn this option on or off at the direction of WVDOT.

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i3-Celtic Response:
CTS-PARS has the capability to allow users to cancel issued permits and receive a refund according to the business rules defined by the state. The system follows a role-based access model, enabling WVDOT to manage which transactions are allowed for each role group.

4.1.10.70 AHPS must provide the capability for a Customer to submit an annual permit renewal request, as defined by WVDOT.

i3-Celtic Response:
CTS-PARS offers a scheduled process for sending permit expiration notifications. Each permit can be configured through a permit definition to determine if renewal is allowed. If renewal is allowed, users can perform a renewal transaction to renew their existing permit.

4.1.10.71 AHPS must provide the capability to notify a Customer that their annual permit is about to expire.

i3-Celtic Response:
CTS-PARS provides a list of batch processes scheduled at intervals based on business needs. These batch processes can also be executed on demand by authorized users through the web UI in the application.

permit expiration notification batch process is sending an email notification to the customer when their permit is about to expire within the number of days configured by the state.

4.1.11 Automated Hauling Permit Routing Systems (AHPS) : Permit Team General Permit System Requirements

4.1.11.1 AHPS must provide fraud and abuse deterrent capabilities in the permit process. Provide a detailed description on how your proposed AHPS limits fraud and abuse by Customers in the permit process.

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i3-Celtic Response:

i3-Celtic has implemented an AAMVA-compliant barcode and check digit logic on the permit and a QR code to retrieve permit documents. During the requirements gathering sessions, i3-Celtic will demo and discuss our implementation to deter fraud and tampering.

4.1.11.2 AHPS must be configurable for future updates.

i3-Celtic Response:
CTS-PARS offers a very sophisticated permit definition module with an in-built rules engine for managing business rules for permit application rules, fee calculation rules, workflow, application rules, and check and restriction management rules. Permit definitions are divided into three sections:

Rules	Description
General Rules	General Section provides the following features: • Update Permit Status (Active / Close) • Define permit effective and expiration period. • Define the duration of the permit to be issued (days, months, year, quarter) • Business transaction rules allow for the definition of rules for permit cancellation, permit hold logic, amendments, auto issuance, and more) • Transaction Flow (includes an option to enable routing) • Authorize Roles to access permits. • Document collection rules for new, amendment, hold, and refund request applications. • Define load and Dimension rules
Fees Rules	The fees section allows for managing fixed and dynamic fees rules as follows: • Fixed fees based on fees type. • Dynamic fees are based on fixed fees and other criteria such as load and dimension, weight, distance, etc.
Permit Business Rules	Permit Business Rules Section allows for managing multiple validations and business rules as follows: • Edit Rules – Allows for managing business rules for different sections of the permit application that provide a hard stop with an appropriate message and allows the user to proceed with a warning message. • Application forwarding rules – Allows for managing business rules to add an application in the workflow for review by an authorized user or forward the application as an issue.
Restrictions	Permit Restriction Section allows for managing

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	restrictions associated with permit type and related business rules. CTS-PARS allows three types of restrictions – Standard, Non-Standard, and Additional. Standard and Non-Standard restrictions are pre-defined / re-usable, while additional restrictions are a user-defined, ad-hoc type.

4.1.11.3 AHPS must have configurable Map Layers in accordance with WVDOT requirements and must be configurable at WVDOT direction.

i3-Celtic Response: We will meet this requirement.

4.1.11.4 AHPS must be capable to add, delete, and edit map icons/symbols in accordance with WVDOT requirements.

i3-Celtic Response:
CTS-PARS offers an icon configuration module to edit map icons/symbols as WVDOT requirements.

4.1.11.5 AHPS must prevent multiple Authorized Users from simultaneously attempting to add, delete, or modify the same record.

i3-Celtic Response: internal vs external?

4.1.11.6 AHPS must allow the capability of uploading individual or batch files of any type to a permit application and/or record by both the customer and any authorized user.

i3-Celtic Response:
i3-Celtic leverages its integrated Document Management module (CTS-Doc) that allows inline scanning/uploading, indexing, collection, and storage of documents, along with queue management capability for subsequent batch scanning that allows mass document collection.

Documents collection rules can be configured using permit configuration.

CTS-Doc allows users to upload permit-specific and other relevant documents in formats including PDF, Excel, and CSV, with a configurable size of 4 MB per document.

4.1.11.7 AHPS must display the list of all files associated to a record regardless of media type.

i3-Celtic Response:
CTS-PARS will show all the documents related to permit record regardless of media type.

4.1.11.8 AHPS must allow multiple Authorized Users at different locations to simultaneously view the same files.

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i3-Celtic Response:
CTS-PARS allows authorized users to inquire permit details including uploaded documents regardless of office location.

4.1.11.9 AHPS must allow access to all documents within a retention period, as defined by WVDOT.

i3-Celtic Response:
Archiving and retention of the data will start with the business. Based on WVDOT's data-retention policies that involve cross-organizational teams (legal, compliance & records), i3-Celtic will outline the approaches to retain and purge data. After WVDOT's archival retention period has passed, i3-Celtic will delete the archived database and associated system package as required.

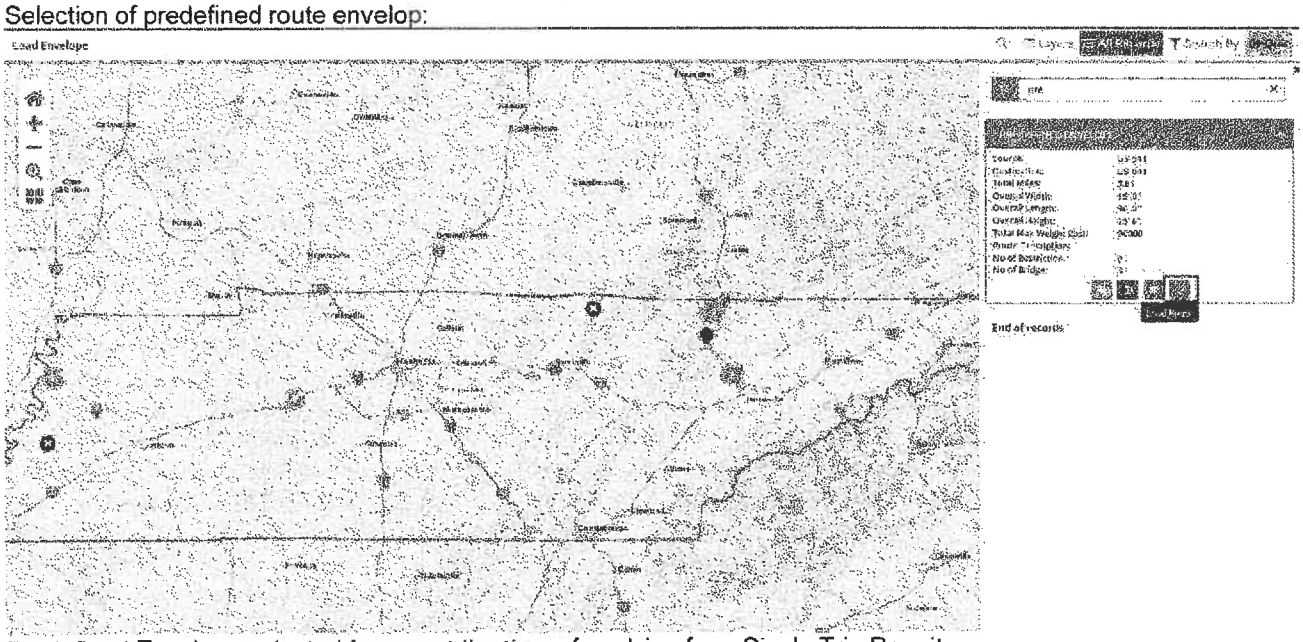
4.1.11.10 AHPS must allow Customers to apply for, maintain, and manage multiple WVDOT blanket/routine permits.

i3-Celtic Response:
CTS-PARS Route Envelope module allows authorized WVDOT users to create and update envelopes to predefine a route for the given vehicle thresholds, including height, width, length, and weight. Once an envelope is established, the system allows customers and internal users to select the route envelop for the issuance of permits selecting the envelope.

Permit requests with predefined/preapproved route envelop may not require approval by the WVDOT permitting office and allows for auto issuance, reducing the workload on the WVDOT staff.

Below are the screenshots and process illustrating predefined route envelope selection:

1. Selection of predefined route envelop:



2. Predefined Envelope selected for use at the time of applying for a Single Trip Permit.

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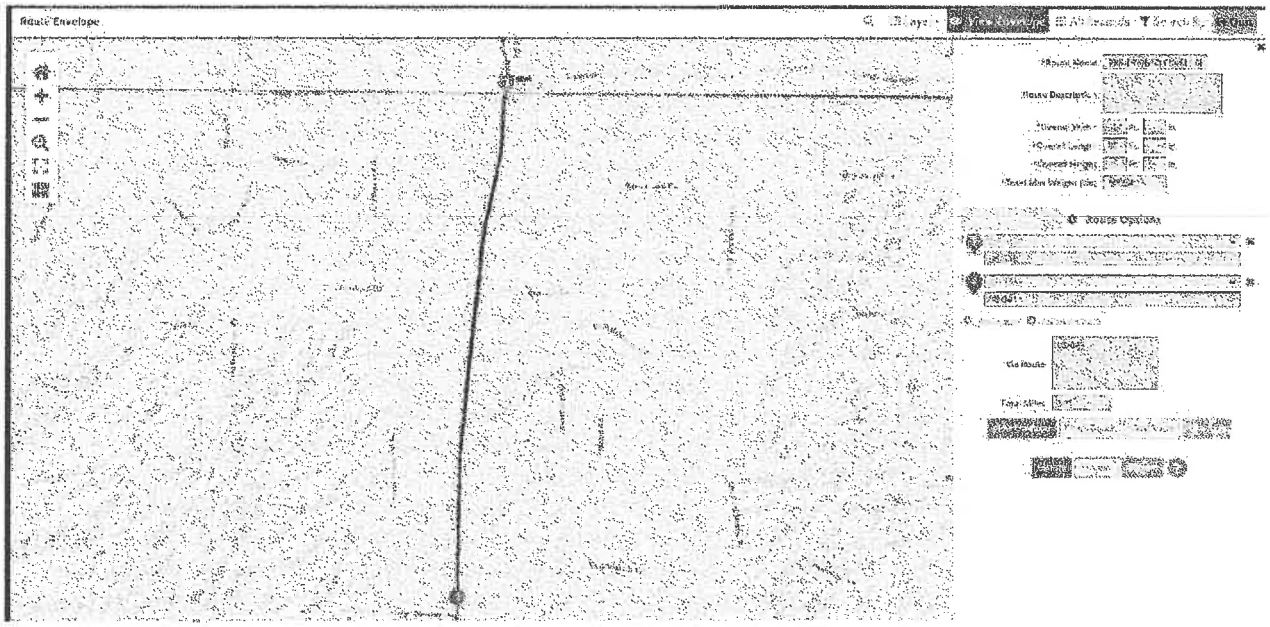

4.1.11.11 AHPS must provide notifications to Customers and Authorized Users.

i3-Celtic Response:
CTS-PARS sends notification to Customers and internal users at different events like, queue management approval status change or assignments, Restriction notification, permit expiration, escrow threshold etc.

4.1.11.12 AHPS must enforce that Customers first proceed past an entry page that can display important news and information posted by Authorized Users before allowing them to login.

i3-Celtic Response:
CTS-PARS meets the requirements by having an announcement module and a disclaimer page that must be agreed to by the user, in order to use the application. The announcement module allows authorized users to manage announcements in rich text format. This is the sample screen.

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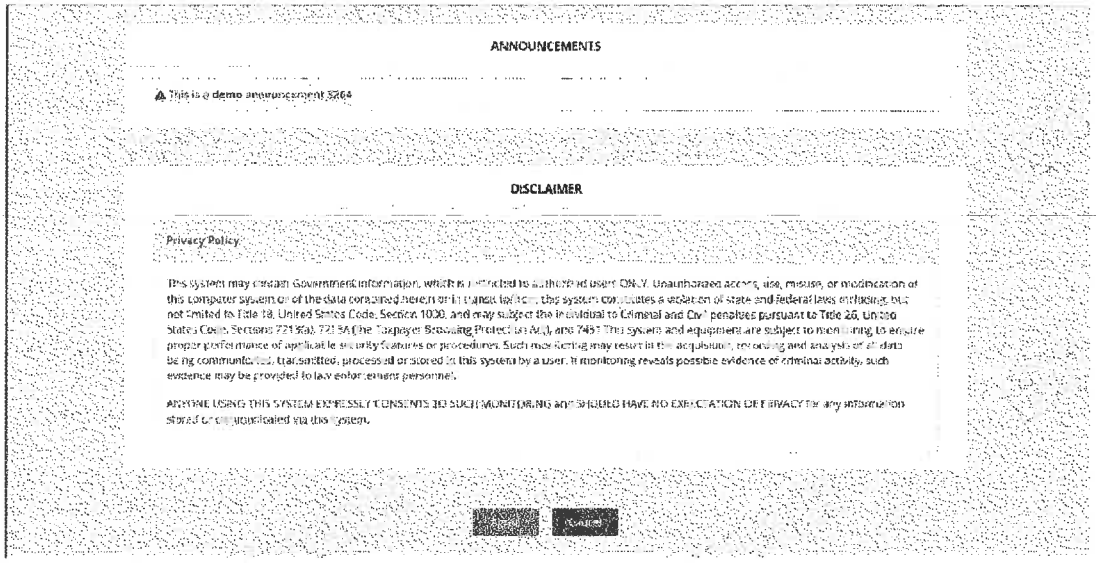

4.1.11.13 AHPS must provide an UI for Authorized Users to manage the news and information posted to the entry page.

i3-Celtic Response:
CTS-PARS has an announcement module which can be used to manage/show the news, essential information or alters to users while login to the system.

4.1.11.14 AHPS must provide a confirmation page to the user before final submission of any data changes.

i3-Celtic Response:
CTS-PARS has verification/confirmation for data entry screen including permit request. This gives the opportunity to users to review their final entry before submitting to the system.

4.1.11.15 AHPS must provide accessible help documentation and tooltips to assist users with the permit application and approval process.

i3-Celtic Response:
i3-Celtic provides following out of the box system help:

- Product User Guide – A fully integrated on-line user guide for all functions of the system
- Context Sensitive Help - Assist users when mouse pointer is placed on the column or section.
- Frequently Asked Question (FAQ) – Provides answers and screenshots to help the users through specific scenarios.
- Menu Search – Allows user to search for a specific business function.

4.1.11.16 AHPS must provide the capability to use and define email templates for all notification processes, including but not limited to: application submission, permits in-process, permit approval, permit denial, permit auto-cancel, annual expiration.

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i3-Celtic Response:
CTS-PARS includes a template management module that allows authorized users to create and modify templates used for communication, including email, letters, notifications, text messages, and standard reports.

4.1.11.17 AHPS must include the permit number on the email notification subject line.

i3-Celtic Response:
CTS-PARS includes required details in notification subject to identify the notification instance e.g., Notification Type, Account No., Application No., Permit No., Status etc.

4.1.11.18 AHPS must provide the ability to notify the Customer via email and text that a permit is denied.

i3-Celtic Response:
CTS-PARS sends notification to Customer and internal users at different events and stages of queue management like submit, reject, feedback, approval, reviewer assignment with the text (reason) or note entered by reviewed at the time of reviewing etc.

4.1.11.19 When a permit amendment is denied, AHPS must provide the reason(s) in the notification via email and text to the Customer.

i3-Celtic Response:
CTS-PARS sends notification to Customer and internal users at different events and stages of queue management like submit, reject, feedback, approval, reviewer assignment with the text (reason) or note entered by reviewed at the time of reviewing etc.

4.1.11.20 AHPS must provide the ability to notify the Customer via email and text of a manual review approval.

i3-Celtic Response:
CTS-PARS sends notification to Customer and internal users at different events and stages of queue management like submit, reject, feedback, approval, reviewer assignment with the text (reason) or note entered by reviewed at the time of reviewing etc.

4.1.11.21 AHPS must provide the ability to notify the Customer via email and text of an approved or denied permit amendment.

i3-Celtic Response:
CTS-PARS sends notification to Customer and internal users at different events and stages of queue management like submit, reject, feedback, approval, reviewer assignment with the text (reason) or note entered by reviewed at the time of reviewing etc.

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4.1.11.22 AHPS must provide system search capabilities.

i3-Celtic Response:
CTS-PARS allows authorized users to search the various data at various places in the application with different parameters like Transaction Search page, WIP, Queue Management, Inquiries and Reports etc.

4.1.11.23 AHPS must provide the capability to search by, but not limited to: load type, Town/City, District, vehicle type, timeframe, and location.

i3-Celtic Response:
CTS-PARS provides a variety of search options, including account number, legal name, permit type, load code, vehicle dimension, VIN, unit number, plate number, permit duration, status, route origin, route destination, and office location. These search options enable users to quickly locate specific permits or information within the system.

4.1.11.24 AHPS must provide the ability to search by State road names/numbers for, but not limited to: administrative messages, and permit applications.

i3 i3-Celtic Response: We will meet this requirement.

4.1.11.25 AHPS must provide the capability to search existing permit applications

i3-Celtic Response:
CTS-PARS allows users to search work in progress permit request application, already issued permit through resume application, application inquiry, permit inquiry or transaction.

4.1.11.26 AHPS must provide the ability to search and view recent applications.

i3-Celtic Response:
CTS-PARS allows you to search application by date range, additionally user can apply sorting on search result grid.

4.1.11.27 AHPS must provide the ability to view, search, and sort all restrictions by category, including but not limited to: construction and maintenance information.

i3-Celtic Response:
Not currently supported and would need to be developed.

4.1.11.28 AHPS must provide the ability to search for a permit application by any combination of, but not limited to: Application ID, permit number, account number, application status, route origin, route destination, State routes.

i3-Celtic Response:
CTS-PARS has extensive search options like search by account no., legal

name, permit type, Load code, vehicle dimension, VIN, Unit No., Plate number, permit duration, status, route origin, route destination, office location etc.

4.1.11.29 AHPS must provide the ability to identify the sort order returned by the permit application search.

i3-Celtic Response:

CTS-PARS will show soring order icon for all search result grids like below.

4.1.11.30 AHPS must provide the ability to export search results to Agency owned Microsoft Excel or Google Sheets.

i3-Celtic Response:
CTS-PARS has pdf, txt, csv or excel export capability based on module demand. i3-Celtic will work with WVDOT to identify needed export options screens.

4.1.11.31 AHPS must provide system search capabilities for permit applications.

i3-Celtic Response:
CTS-PARS has the option to search for permit applications using extensive search options.

4.1.11.32 AHPS must provide the ability to limit a search for permit applications by a date range for application dates, move start, move end and issue dates.

i3-Celtic Response:
CTS-PARS allows permit search by permit travel dates or issue dates.

4.1.11.33 AHPS must provide the ability to search for a permit application by vehicle make, model, and description

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i3-Celtic Response:
CTS-PARS allows permit search by VIN, Unit No., Plate number. Rest required fields can be added as needed by WVDOT.

4.1.11.34 AHPS must provide the ability to select a permit application from the load type search results.

i3-Celtic Response:
CTS-PARS allows permit search by load.

4.1.11.35 AHPS must provide the capability for Authorized Users to approve a permit application manually.

i3-Celtic Response:
CTS-PARS send applications for manual review if any one defined business rule fails. Authorized users can take necessary action e.g., approve, reject, seek for additional reviewer feedback, assign back to customer etc.

4.1.11.36 AHPS must display a list of reasons why a manual review is required.

i3-Celtic Response:
CTS-PARS shows list of rules pass or failed for each submitted permit application to review. Review can see the review reasons to take necessary action.

4.1.11.37 AHPS must provide the ability to enter an approval based on the manual review of a permit application.

i3-Celtic Response:
CTS-PARS allows authorized users to approve permit requests based on additional reviewer feedback. e.g. feedback to bridge engineer/reviewer.

4.1.11.38 AHPS must require a manual review for a permit application including, but not limited to: comments, route restrictions, bridge analysis, and routes crossing local areas.

i3-Celtic Response:
CTS-PARS offers a very sophisticated permit definition module with an in-built rules engine for managing business rules required for manual review which can be on, vehicle type, dimensions, weight, axles, load type, transaction type, municipality route involvement in route, account level check etc.

4.1.11.39 AHPS must display detailed review status for a permit under manual review.

i3-Celtic Response:
CTS-PARS keeps track of each reviewer's assignment, response, and change history. Authorized users can see all those details from the queue management module.

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4.1.11.40 AHPS must provide the ability to approve or deny a permit application when all reviews have been completed.

i3-Celtic Response:
CTS-PARS allows authorized users to approve or deny based on additional reviewer's feedback. e.g. feedback to bridge engineer/reviewer.

4.1.11.41 AHPS must provide the capability for an Authorized User to modify the move start and end dates on a permit application during the approval process.

i3-Celtic Response:
CTS-PARS allows authorized users to modify permit details of permit in review, including permit travel dates.

4.1.11.42 AHPS must display changes to AHPS in Real Time for Issued permits, user accounts, total permits in queue, permits in queue by review location, pending permits, approved permits, and denied permits.

i3-Celtic Response:
CTS-PARS permit transactions, inquiries, queue management, reports etc. to show real time data stored in the system.

4.1.11.43 AHPS UI must be web-based interface with MS Windows functions.

i3-Celtic Response:
CTS-PARS supports general shortcut functions for easy navigation, reducing the need for mouse interaction. These shortcuts include cut, copy, paste, delete, find, tab, and hotkeys for primary buttons on each screen.

4.1.11.44 AHPS must provide spell check, text wrapping, text copy, cut, and paste capabilities.

i3-Celtic Response:
CTS-PARS supports text wrapping, text copying, cutting, and pasting unless intentionally restricted by the system to meet specific business requirements.

Please note that spell check is a browser feature, not an application feature, and can be achieved through the use of third-party plugins.

4.1.11.45 AHPS UI for minimizing and maximizing the browser window must be fully functional.

i3-Celtic Response:
CTS-PARS

4.1.11.46 AHPS UI must support various monitor sizes, scaling window sizes, and includes scroll bars for window view positioning when necessary

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i3-Celtic Response:
CTS-PARS supports responsive UI. Hence supports various monitor screen resolution and size.

4.1.11.47 AHPS UI must support drag and drop functionality.

i3-Celtic Response:
CTS-PARS allows drag and drop functionality on routing page to move stops position, drag the solved route to change route, re-order stop sequence.

4.1.11.48 AHPS UI must support the browser back and forward buttons.

i3-Celtic Response:
Not currently supported and would need to be developed.

4.1.11.49 AHPS UI must support multiple browser tab usage.

i3-Celtic Response:
Not currently supported and would need to be developed.

4.1.11.50 AHPS must provide the same functionality to an Authorized User according to the Authorized User's system permissions, regardless of the device from which the Permit User and Authorized User accesses AHPS.

i3-Celtic Response:

CTS-PARS follows Role-Based Access Control (RBAC) and is a device-independent, web-based application. Therefore, any authorized user will have the same application functionality.

4.1.11.51 AHPS must have on-screen help for map and all HPS features.

i3-Celtic Response:
i3-Celtic provides following out of the box system help:

- Product User Guide – A fully integrated on-line user guide for all functions of the system, navigates as per the application screens.
- Context Sensitive Help - Assist users when mouse pointer is placed on the column or section.

4.1.11.52 AHPS help must provide, at minimum, a description of each link or form element.

i3-Celtic Response:
The user Guide currently does not have details for each form element and would need to be developed.

4.1.11.53 AHPS help window will be context sensitive to the specific screens being viewed when the help option is selected.

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i3-Celtic Response:
i3-Celtic provides following out of the box system help:

- Product User Guide – A fully integrated on-line user guide for all functions of the system, navigates as per the application screens.
- Context Sensitive Help - Assist users when mouse pointer is placed on the column or section.

4.1.11.54 At a minimum, AHPS must support the following, but not limited to, keystroke commands:
4.1.11.54.1ctrl + c = copy; **4.1.11.54.2**ctrl + f = find; **4.1.11.54.3**ctrl + x = cut; **4.1.11.54.4**ctrl + v = paste; **4.1.11.54.5**ctrl + p = print; **4.1.11.54.6**ctrl + z = undo; **4.1.11.54.7**ctrl + y = redo
4.1.11.54.8tab = next link or form element.

i3-Celtic Response:
CTS-PARS supports general shortcut functions for easy navigation, reducing the need for mouse interaction. These shortcuts include cut, copy, paste, delete, find, tab, and hotkeys for primary buttons on each screen.

4.1.11.55 Vendor cannot charge a service fee without approval from WVDOT. The service fee is a fee that is charged in addition to a basic fee charged by WVDOT for the permit.

i3-Celtic Response:
CTS-PARS follows RBAC (Role Based Access Control). Depending on the role the user has, will be granted access to specific functionality within the system.
System allows only authorized users to modify the fees calculation rule through permit definition module.

4.1.11.56 AHPS must provide the ability to calculate the fees associated with a permit as directed by WVDOT

i3-Celtic Response:
CTS-PARS has permit definition module with an in-built rules engine for managing business rules required for calculating the permit fees based on but not limited to vehicle type, dimensions, weight, axles, load type, transaction type etc.

4.1.11.57 AHPS must provide the ability to track permit fees charged to a Customer's account.

i3-Celtic Response: We will meet this requirement.

4.1.11.58 AHPS must provide the capability for a Customer with an account in good standing to submit a permit application.

i3-Celtic Response:
CTS-PARS has the ability to integrate with CVIEW or Safer interface to check the USDOT standing. To perform any transaction Customer and Account status must be in valid status.

4.1.11.59 AHPS must provide the ability to validate that the account is

active and unsuspended prior to submitting permit application.

i3-Celtic Response:
CTS-PARS has the status matrix in place that checks the account status at the time of starting the permit flow or continuing the permit from resume permit application module. System does not allow the user to work on the permit for which Account is not in active status.

4.1.11.60 AHPS must indicate to the Customer the cause that the account is suspended (e.g. Customer not current with account, Customer truck, trailer and not in compliance with safety regulations)

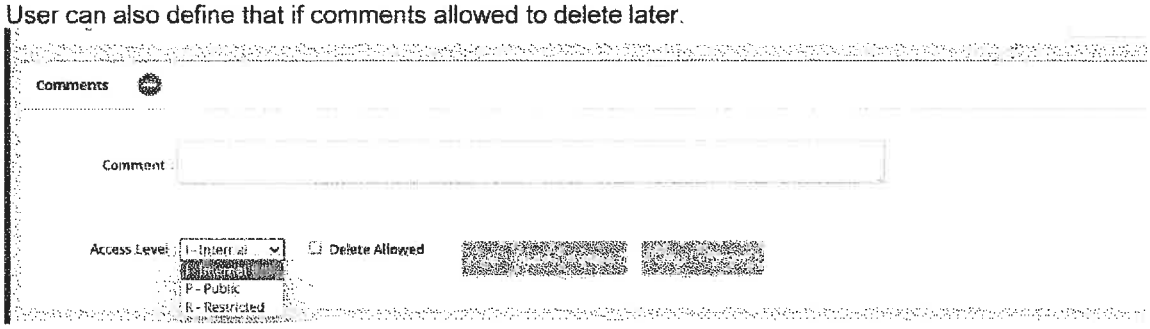
i3-Celtic Response:
i3-Celtic will work with WVDOT to decide the mode of indication/notification and do the needful to meet the business need.

4.1.11.61 AHPS must create, manage, and provide a viewing interface for Authorized User Notes Section that support the permitting process that is not viewable by the Customer. The Authorized User Notes Section must allow a minimum of 1500 characters

i3-Celtic Response:
CTS-PARS has the generic feature of comments on required screens. Internal users can add comments with different access levels.

1. Internal- visible to internal users only
2. Public-visible to all including customers.
3. Restricted- Visible to user roles (which are listed in the key in the configuration file)

User can also define that if comments allowed to delete later.



4.1.11.62 AHPS must provide a link to view messages related to denials.

i3-Celtic Response:
This feature is currently not supported and would need to be developed.

4.1.11.63 AHPS must provide the capability to display messages upon user login or receipt.

i3-Celtic Response:

This feature is currently not supported and would need to be developed.

4.1.11.64 AHPS must provide the ability to notify Motor Carriers of message edits and deletions.

i3-Celtic Response:
CTS-PARS comment section allows the authorized user to edit or delete the comments.

4.1.11.65 AHPS must provide the ability to create and search messages.

i3-Celtic Response:
This feature is currently not supported and would need to be developed.

4.1.11.66 AHPS must display construction and maintenance activities in messages.

i3-Celtic Response:
This feature is currently not supported and would need to be developed.

4.1.11.67 AHPS must provide the ability to issue permits for all roads and bridges within WVDOT jurisdiction.

i3-Celtic Response:
CTS-PARS can issue permits for all the roads participated in constructing road networks. i3-Celtic will work with WVDOT to finalize GIS data requirements to achieve business requirements.

4.1.11.68 AHPS must support the use of a collection of features that have properties or characteristics known as layers.

i3-Celtic Response:
i3-Celtic will collaborate closely with WVDOT to finalize the layer requirements for CTS-PARS.

The current implementation of CTS-PARS includes the following layers:

1. Restrictions
2. Counties
3. Bridges
4. Exits
5. Mile Marker
6. Interstate Roads
7. Federal Roads
8. State Roads
9. Local Roads

However, the specific layer requirements may vary based on WVDOT's needs and preferences. i3-Celtic will work diligently to understand and incorporate the required layers as per WVDOT's guidance.

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4.1.11.69 AHPS map must contain a legend that automatically updates as new icons are imported and associated with restriction types and locations.

i3-Celtic Response:
CTS-PARS includes an icon configuration module that allows users to manage and update icon for layers. When an icon is modified through this module, the changes are reflected on the map and legend automatically.

4.1.11.70 AHPS map must present layers based on data that can be individually enabled or disabled by a Customer or an Authorized User.

i3-Celtic Response:
CTS-PARS provides a toggle button option that enables users to turn on/off specific map layers. This feature allows users to customize their map view and focus on the information that is most important to them, resulting in a clear and personalized display.

4.1.11.71 AHPS must be configurable to auto-cancel permit applications that have passed their move date or were not accepted within a defined time frame.

i3-Celtic Response:
CTS-PARS has a batch process that marks old, incomplete, past-due transactions as stale-dated if they exceed the configured number of days. Stale-dated permit requests will not be visible in the system and will be internally considered as canceled by the system.

4.1.11.72 AHPS must include the capability to provide distribution lists for multiple types of communication including, but not limited to; email, SMS, and hard copy mailings. A distribution list will be used to send communications to multiple Customers based on type of permit issued.

i3-Celtic Response:
CTS-PARS has a nice feature called Notifications, which allows authorized users to send notifications to individuals as well as multiple users. Additionally, it supports user selection by county, role, customer account, and user ID. It also has the capability to schedule notifications for future dates and times.

4.1.11.73 AHPS must provide distribution lists, as defined by the type of permit obtained by the Customer, and generate configurable email messages.

i3-Celtic Response:
CTS-PARS Notification module can be used to achieve the requested requirement as it has multiple options to create distribute list and construct message. i3-Celtic will work with WVDOT to understand the business use case and will do the needful.

4.1.11.74 AHPS must auto generate email messages and be configurable to provide Authorized Users with an opportunity to edit and send messages.

i3-Celtic Response:
CTS-PARS includes a template management module that allows authorized users to create and modify templates used for communication, including email, letters, notifications, text messages, and standard reports.
Users can request notifications electronically for specific events, such as approval of or action required for the permit application, payment collection, updates related to restrictions, etc. The configuration includes the ability to enter an effective date and end date (sun setting), which is automatically calculated based on the business rules.
The forms or templates can be downloaded and edited using Crystal Reports designer. After completing an update, the new template can be uploaded and published for use in production.
CTS-PARS also provides functionalities to search, retrieve, and export data for further data analysis using multiple inquiries and ad-hoc reports.

4.1.11.75 AHPS must auto-populate the email message subject line and clearly identify if the message is the initial notification or a status update notification message.

i3-Celtic Response:
CTS-PARS includes required details in notification subject to identify the notification instance e.g., Notification Type, Account No., Application No., Permit No., Status etc.

4.1.11.76 AHPS must provide the Authorized User with an opportunity to edit (with spell check) the message prior to sending it.

i3-Celtic Response:
This feature is currently not supported and would need to be developed.

4.1.11.77 AHPS must provide notifications to the sender for system email that failed to be delivered.

i3-Celtic Response:
CTS-PARS notifies users about the email delivery failure.

4.1.11.78 The Authorized User must have the capability of sending auto-populated SMS messages to pre-defined distribution lists and individual contacts as defined by type of permit.

i3-Celtic Response:
CTS-PARS identifies the notification type and selects the involved users to define the distribution list, generating the message accordingly. For example, the application denial notification message and distribution list will be constructed by CTS-PARS.

4.1.11.79 AHPS must auto-populate SMS message body with restriction details to include at a minimum: restriction type, restriction severity, roadway name, roadway direction, mile marker, exit or cross street, lane closures, and alternate route information.

i3-Celtic Response:

CTS-PARS includes a powerful Restrictions Management module that allows authorized users to enter in real-time any permanent or temporary road restrictions, including seasonal road restrictions, and provides an interface to integrate with Agency's Restrictions Management System. When road restriction changes occur, affected permit holders can be automatically notified via WVDOT preferred electronic notification, including email or text messages.

4.1.11.80 AHPS must identify in the SMS message if this is an initial notification or a status update notification.

i3-Celtic Response:
This feature is currently not supported and would need to be developed.

4.1.11.81 AHPS must permit an Authorized User to edit (with spell check capability) the auto-populated email, SMS, messages prior to sending.

i3-Celtic Response:
This feature is currently not supported and would need to be developed.

4.1.11.82 The Authorized User must have the capability of sending address information for pre-defined distribution lists and individual contacts as defined by type of permit into a file for the purposes of a mail merge.

i3-Celtic Response: We would need clarification.
Not Clear

4.1.11.83 AHPS must auto-populate the file including at a minimum the Customers name, address, customer number.

i3-Celtic Response: We would need clarification.
Not Clear

4.1.11.84 AHPS must allow an Authorized User to create and edit individual contacts and distribution lists maintained within AHPS.

i3-Celtic Response:
CTS-PARS allows users to update contact details of user, permit account/customer contact details etc.

4.1.11.85 AHPS must provide the ability to manage workflow.

i3-Celtic Response:
CTS-PARS features a robust workflow module designed to manage the permit review process. It validates business rules to ensure review requirements and defines the involvement of reviewers at various stages. i3-Celtic will collaborate with WVDOT to gain a comprehensive understanding of the business workflow and make any necessary amendments.

4.1.11.86 AHPS must provide the ability to manage workflow to include, but not be limited to: assign a permit application for manual review; assign a permit application for review by

multiple WVDOT entities (Central Office Operations Division, District offices.); select a permit for manual review; update a permit application based on manual review; manually approve a permit application; and manually deny a permit application.

i3-Celtic Response:
CTS-PARS features a robust workflow module designed to manage the permit review process. It allows multiple reviewers to be involved in the approval process and each reviewer can provide independent feedback like approve/deny.

4.1.11.87 AHPS must identify permit applications that require a manual review and assign them simultaneously to affected WVDOT entities (Central Office Operations Division, District offices)

i3-Celtic Response:
CTS-PARS workflow module designed to manage the permit review process. It validates business rules to ensure review requirements and identifies the involvement of reviewers at various stages.

4.1.11.88 AHPS must provide a method for including comments on the work item that can be directed to the WVDOT entities (Central Office Operations Division, District offices). responsible for acting on the work item.

i3-Celtic Response:
The CTS-PARS workflow module includes a comment feature that enables communication of messages, information, and instructions between reviewers or customers.

4.1.11.89 AHPS must prevent a required District re-review if unaffected by another District's change.

i3-Celtic Response:
The CTS-PARS workflow module determines, based on the business logic, whether a re-review is required and submits the request accordingly. i3-Celtic will collaborate with WVDOT to understand the business logic and incorporate it into the system.

4.1.11.90 AHPS must remove withdrawn applications from the workflow queue.

i3-Celtic Response:
The CTS-PARS workflow queue only displays the permits that need to be reviewed by any authorized reviewer.

4.1.11.91 AHPS must apply all required business rules before sending approval or denial status notifications to the Customer.

i3-Celtic Response:
The CTS-PARS workflow utilizes business rules to determine whether a permit is eligible for Auto-Issuance Approval or requires manual review. When a

reviewer attempts to approve or deny the permit, the system validates the defined business rules. Only if the business rules are satisfied, the application is approved or denied, and the system sends a notification to the customer.

4.1.11.92 AHPS must provide notification to the appropriate WVDOT staff of a withdrawn application currently under manual review.

i3-Celtic Response:
This feature is currently not supported and would need to be developed – once in queue, customer cannot withdraw the permit application

4.1.11.93 AHPS must allow an Authorized User to review and process another WVDOT entity queue.

i3-Celtic Response:
The CTS-PARS workflow includes a feature that enables authorized users to define role-based access levels. Based on the defined access level, authorized users can review and process another WVDOT entity's queue.

4.1.11.94 AHPS must provide the ability to manage review assignments for multiple queues, including, but not limited to: Central Office Operations Division, District offices.

i3-Celtic Response:
The CTS-PARS workflow includes a feature that enables authorized users to define role-based access levels. Based on the defined access level, authorized users can manage review assignments for multiple queues.

4.1.11.95 AHPS must provide the ability to auto-refresh the review queue display.

i3-Celtic Response:
CTS-PARS Queue display screen will be refreshed at pre-defined intervals.

4.1.11.96 AHPS must provide the ability for WVDOT to deny a permit.

i3-Celtic Response:
The CTS-PARS workflow allows review to review the permits and takes appropriate decision like deny, approve, or assign back to customer for further action.

4.1.11.97 AHPS must provide the ability for WVDOT to click certain standard denial options and have a manual alpha numeric input field to manually input the reasoning why a permit is denied.

i3-Celtic Response:
This feature is currently not supported and would need to be developed. We have hard stop edits.

4.1.11.98 AHPS must display denial information from all affected

Divisions and Districts simultaneously.

i3-Celtic Response: We need clarification.
Not Clear

4.1.11.99 AHPS must provide detailed information concerning denial reasons and application processing errors.

i3-Celtic Response:
CTS-PARS queue module includes a comment section where users can add the reason for denial, which is then included in the notification sent to the customer. Furthermore, the workflow has a unique feature that allows reviewers to provide feedback on application processing errors in the comments and assign them to the customer for correction. The customer can make the necessary corrections based on the feedback and resubmit the application for review.

4.1.11.100 AHPS must provide the ability to deny a permit application when all reviews have been completed.

i3-Celtic Response:
CTS-PARS allows primary app
over to add multiple additional approvers. Based on all additional reviewer's response primary approver can take the decision to deny or approve the application.

4.1.11.101 AHPS must provide the ability to notify the Customer of a manual review denial.

i3-Celtic Response:
CTS-PARS queue module includes a comment section where users can add the reason for denial, which is then included in the notification sent to the customer.

4.1.11.102 AHPS must provide the ability for a Customer to request permit amendments and the ability for an Authorized User to approve a permit amendment

i3-Celtic Response:
CTS-PARS includes a transaction called "amendment" that allows users to edit the details of issued permits. The system evaluates the amendment based on predefined business logic. If the amendment meets the criteria, the system submits it to the queue for review. An authorized reviewer then assesses the amended permit and approves it if it meets the requirements.

4.1.11.103 AHPS must provide the capability to send a copy of an issued permit to the Motor Carrier using a selected mode of transmission.

i3-Celtic Response:
To comply with legal requirements, CTS-PARS sends a permit credential to the customer and also sends a copy to a predefined email address to maintain a record of the original permit credential. Moreover, the system provides a reprint option that allows for the reprinting of any previously issued permit at any given

time.

4.1.11.104 AHPS must provide the ability to generate a unique permit with identifier and print it out.

i3-Celtic Response:
i3-Celtic has implemented an AAMVA-compliant barcode and check digit logic on the permit, ensuring adherence to the standards set by the American Association of Motor Vehicle Administrators. Additionally, a QR code is included on the permit, enabling easy retrieval of permit documents. Each permit generated by CTS-PARS is assigned a unique permit number to ensure proper identification and tracking. Furthermore, the generated permit can be conveniently printed on a configured printer.

4.1.11.105 AHPS must provide the ability to send a copy of an issued permit to the Motor Carrier via an email or fax.

i3-Celtic Response:
CTS-PARS can send the generated permit to Customer via an email or fax.

4.1.11.106 AHPS must provide the ability for a Customer to print an issued permit within AHPS application.

i3-Celtic Response:
Printing any document from CTS-PARS, a web-based application, requires identification of the printer within the network. CTS-PARS provides the capability to generate permits in PDF format, which can then be printed by the customer using a network printer.

4.1.11.107 AHPS must provide the ability to send a paperless (electronic) permit.

i3-Celtic Response:
CTS-PARS provides the capability to generate permits in PDF format or can be sent via email.

4.1.11.108 AHPS must provide the capability to use and define a template for each type of issued permit. These templates would control the appearance and content of the physical permit as it would be printed.

i3-Celtic Response:
CTS-PARS includes a template management module that allows authorized users to create and modify templates used for communication, including email, letters, notifications, text messages, and standard reports.

The forms or templates can be downloaded and edited using Crystal Reports designer. After completing an update, the new template can be uploaded and published for use in production.

4.1.11.109 AHPS must provide the ability to notify a Customer of an

approved or denied permit amendment.

i3-Celtic Response:
CTS-PARS includes a transaction called "amendment". The system evaluates the amendment based on predefined business logic. If the amendment meets the criteria, the system submits it to the queue for review. An authorized reviewer then assesses the amended permit and approves or denies the request with the reason and that is sent to customer as notification.

4.1.11.110 AHPS must provide the capability to analyze the route on a permit application.

i3-Celtic Response:
Based on vehicle configurations, the route validation process ensures that the route does not impact the infrastructure and temporary restrictions. The system generates a safe GIS Route, provides the total distance between the origin and destination, and turn-by-turn directions.

4.1.11.111 AHPS must analyze the requested route including the following, but not be limited to: all bridge crossings, railroad crossings, posted roads, temporary restrictions, individual bridge or roadway restrictions, emergency road closures, turning moving restrictions, and alternate routes.

i3-Celtic Response:
This feature is currently not supported and would need to be developed. We would need the types of GIS data that is used from WVDOT.

4.1.11.112 AHPS must perform checks to determine the type of bridge analysis required for the load.

i3-Celtic Response:
For Bridge Engineer – how many types of Bridge analysis are required?

4.1.11.113 AHPS must provide the ability to notify the Motor Carrier that the requested route traverses a local area that requires local permission.

i3-Celtic Response:
i3-Celtic has implemented some validations related to local road travel like display of standard conditions on Permit Report and request being submitted to Queue for further approval for local roads, however i3-Celtic will collaborate with WVDOT for specific business rules to be implemented.

4.1.11.114 AHPS must determine if any date constraints need to be applied to a permit based on the requested move date.

i3-Celtic Response:
i3-Celtic has implemented some date constraints related to Holidays and weekend travel; however, i3-Celtic will collaborate with WVDOT for specific business rules to be implemented.

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4.1.11.115 AHPS must provide a method to review a single load/route and apply the approval across multiple permit requests.

i3-Celtic Response: This feature is currently not supported and would need to be developed.

4.1.11.116 AHPS must provide the ability to pre-approve multiple movements over a specified route.

i3-Celtic Response:
This feature is currently not supported and would need to be developed.
Not Supported- system does not track no. of movement but related condition can be added, and permit can be used till permit effective duration.

4.1.11.117 AHPS must provide the capability to manage pre-built and approved routes.

i3-Celtic Response:
CTS-PARS has a feature called envelope which allows authorized user to manage pre-defined route for known location considering vehicle dimension and weight details. It allows authorized users to create, edit, and delete pre-defined routes.

4.1.11.118 AHPS must provide the ability to create and save pre-built routes.

i3-Celtic Response:
CTS-PARS has a feature called envelope which allows authorized user to create and save pre-defined route for known location considering vehicle dimension and weight details.

4.1.11.119 AHPS must automatically check for updates and restrictions in saved routes.

i3-Celtic Response:
i3-Celtic has implemented a restriction notification batch process in CTS-PARS, which can be scheduled at predefined intervals. This batch process is responsible for checking restriction updates and identifying affected permits. Once identified, it triggers the sending of restriction notifications to the relevant recipients.

4.1.11.120 AHPS must provide the ability to notify a permit holder and WVDOT when an approved route's conditions change.

i3-Celtic Response:
CTS-PARS includes a powerful Restrictions Management module that allows authorized users to enter in real-time any permanent or temporary road restrictions, including seasonal road restrictions, and provides an interface to integrate with Agency's Restrictions Management System. When road restriction changes occur,

affected permit holders can be automatically notified via WVDOT-preferred electronic notification, including email or text messages.

4.1.12 Automated Hauling Permit Routing Systems (AHPS) : Project Implementation and Delivery of Technical Specifications

4.1.12.1 Vendor must coordinate with WVDOT's project team throughout the life of the contract.

i3-Celtic Response:

Working with WVDOT's IT and business groups throughout the life of the contract.

One of the first steps in the project will be to meet with the WVDOT project team to validate the requirements, perform a detailed "Fit Gap" analysis and drive out the detailed project plan with all sub-tasks and associated dates. We will derive an understanding of the exact meaning of each requirement, document them, and manage the requirements as the project evolves. A requirements traceability matrix (RTM) will be maintained to create bidirectional traceability among the requirements, project plan, and work products. The RTM will form the baseline for the project scope. Each requirement will be validated in each of the project steps, including Requirements, Design, Construction, Testing, and Implementation. In this way, we will be able to identify any inconsistencies between the project plan, work products, and requirements so that no requirement will fall through the cracks!

After the Requirements Traceability Matrix is finalized, we will work with WVDOT domain experts to go through the integrated COTS solution step by step and screen by screen to document the necessary modifications and configurations to meet the requirements. This document is called the Product Verification Document (PVD). The PVD will provide the design criteria needed for the development team to make the necessary changes to the programs that will result in the WVDOT International Fuel Tax Agreement (IFTA) and International Registration Plan (IRP).

During the RTM and PVD documentation processes, we will be configuring the infrastructure in the hosting environment as required by WVDOT hosted, or an Azure Government Cloud-based hosted environment, including the required hardware and system software, servers, firewalls, internet connectivity, backup/restore capability, disaster recovery capability all in a proposed load balanced and database mirroring set up for redundancy and maximum accessibility to the system. Part of this step is to work with the WVDOT IT experts to document all the required interfaces for access to other system data stores of information as required. During this step, we will create the Interface Control Document (ICD), which will define exactly how we will interface with the external systems.

To minimize the effect external interfaces, have on the applications when these

applications change, we have developed a Universal Interface Controller (UIC). Our UIC acts as an interpreter between external systems and our core CTS-PARS application. When an external system file format changes resulting in a change to how that system interfaces with our applications, the only thing that needs to be changed is the UIC, not the application.

After the PVD is finalized and all changes to the COTS product are approved as documented in the PVD, and the hosting environment is ready, code changes and configuration changes are made in conjunction with unit testing, followed by integration testing, system testing, stress testing, User Acceptance

Testing, Training, and cutover to production.

Show and Tell: Regular, incremental product releases for the extended team to get comfortable with what is coming.

An integral part of our approach is to deploy a "Sandbox" environment with the COTS application to provide an early user experience with respect to the "Look and Feel" of the solution. As the customization takes place, new deployments will be available, and users will be able to access the Sandbox to see the results of their efforts and feedback. This ensures there are no surprises at the time of implementation and is an excellent way to exercise the system early in the project, helping stabilize the programs and validate the converted data and feedback. We will help develop the skills and knowledge of the user community so they can perform their roles effectively and efficiently. We will manage risks by identifying potential problems before they occur so that risk-handling activities may be invoked as needed across the life of the project to mitigate adverse impacts on achieving project goals.

Compliant: Our products are running compliant processes in multiple jurisdictions; it comes Out of The Box!

The i3-Celtic Solution is compliant with the IRP & IFTA plans, including Audit features IRP Clearinghouse Modernization, and is fully PRISM compliant. We will work with WVDOT to ensure our customized solution is compliant with WVDOT Administrative Rules and department business rules for motor carrier registrants.

Proven Methodology: Evolved over the years and matured with every installation, our methodology has CTS-PARS specific interventions and tweaks.

We have anticipated the complexities associated with undertaking this project and have already built a skeletal work plan with the associated tasks required to make a smooth transition to the new and exciting AHPS Solution for the WVDOT.

The i3-Celtic Team will follow our proven Agile Methodology, combined with our internal processes and procedures, to complete this project on time and within the budget, as it has been done for 18 jurisdictions. i3-Celtic's development methodology is

designed to provide efficient and timely program development while ensuring the highest quality and accuracy.

Our development process has evolved, taking into consideration the best practices of Software Engineering, and combining them with the following standard industry business practices:

- Establish Detailed Project Plan – Each project activity will be defined using the Microsoft Project tracking tool, and a top-level work breakdown structure (WBS) will provide the baseline for measuring project progress and will be used for project status reporting to show adherence with the schedule clearly.
- Establish Configuration Management for Project Products
- Create and document the Requirement Traceability Matrix (RTM)
- Create the Product Verification Document (PVD) Specifications
- Create and document the technical Interface Control Document (ICD)
- Define the Data Conversion Plan (with multiple trial conversions and data cleanup reports)
- Develop Testing Plans (System, Integration, and User Acceptance)
- Code and Unit Test with Prototype Presentations (using a" Sandbox")
- Perform Integration Testing
- Perform System Testing
- Perform Stress Testing
- Perform Regression Testing as required
- Develop User Manuals, Training Plans, and materials
- Develop detailed Cutover plans
- Deliver Train the Trainer for leads
- Assist with User Acceptance Testing
- Deliver User Training
- Perform Final Conversion run and verification
- Implementation into Production
- Post Implementation Review
- Operations, Maintenance Support, and Enhancements

One area we believe will be able to add value to our proposed project plan is the data conversion from existing database structures to a true "Common Client" database structure between IRP, IFTA, and IFTA Audit. One of the most important steps in converting any database of information is to get to know the data you are converting. i3-Celtic will work closely with WVDOT to ensure the data is as free from inconsistencies as possible. We will run reports to identify inconsistencies in the existing data for WVDOT subject matter experts to review and resolve either by manual intervention or via some automated program correction. Our resources have converted IRP, IFTA, and IFTA Audit databases from State grown VSAM file structures and relational database stores to DB2, SQL Server and Oracle.

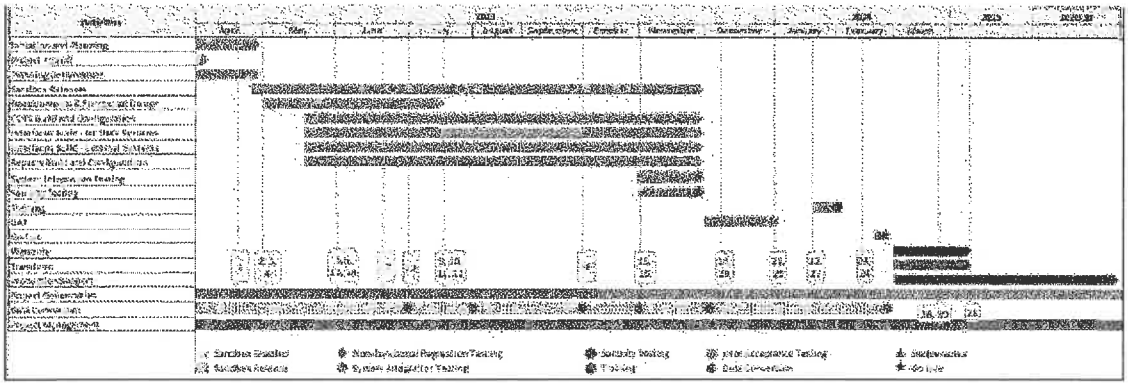
Once the Common Client database structures are in place, the new system will make for a much more efficient and effective database management platform.

i3-Celtic resources have successfully converted CTS-PARS databases for multiple jurisdictions in the past.

Goals and Objectives
i3-Celtic's goals and objectives for the WVDOT System Modernization are to provide WVDOT with an integrated CTS-PARS solution that takes maximum advantage of modern technologies to improve customer service and ensure compliance with business processing requirements.

Our COTS browser-based solution is designed by our experienced computer system technicians and architects together with i3-Celtic solution business area experts and with input from real-world Motor Carrier Business Area Experts from multiple jurisdictions over a period of 16 years. i3-Celtic will customize and configure our customer-centric and integrated solution for the State that will meet and exceed WVDOT expectations. Our solution utilizes the latest proven technologies and techniques to include lessons learned from our extensive experience over multiple implementations in the Motor Carrier Services Field. We will employ the most recent and proven platform-independent tools within the constraints of the State to accomplish the maximum benefit to the State.

Given below is the implementation timeline with key milestones.



4.1.12.2 Vendor must identify necessary tasks and resources.

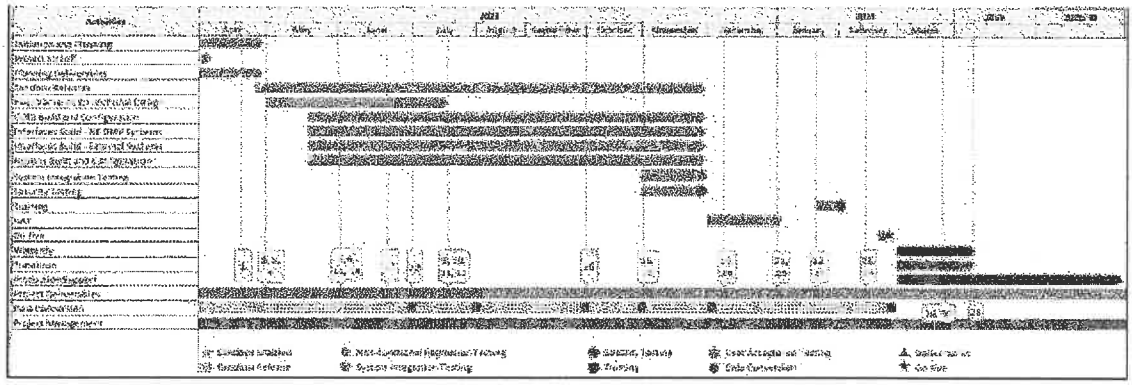
i3-Celtic Response:
i3-Celtic will adhere to the above requirement. We will identify necessary tasks and resources in collaboration with WVDOT as stated in our response to requirement 4.1.12.1.

4.1.12.3 Vendor must schedule for delivery and installation of services. The system should Go Live within twelve (12) month of contract award.

i3-Celtic Response:
i3-Celtic agrees to provide the delivery and installation of the system as a part of our scheduled

service. The installation will be scheduled in business or non-business hours based on the mutual agreement between WVDOT and i3-Celtic.

Below is the implementation timeline for the project with key milestones spanning 12 months from the award of contract.



4.1.12.4 Vendor must develop a plan for migrating and validating the transfer of WVDOT data (including data conversion and synchronization)

i3-Celtic Response:
i3-Celtic has performed data migration efforts for many clients, including some that have "homegrown" data in various formats, and converted it to our information database format. We will work with the state implementation manager to ensure the integrity and validity of the data. The below diagram depicts the various layers in the data migration development environment and the stages the data goes through prior to migration to the target system.

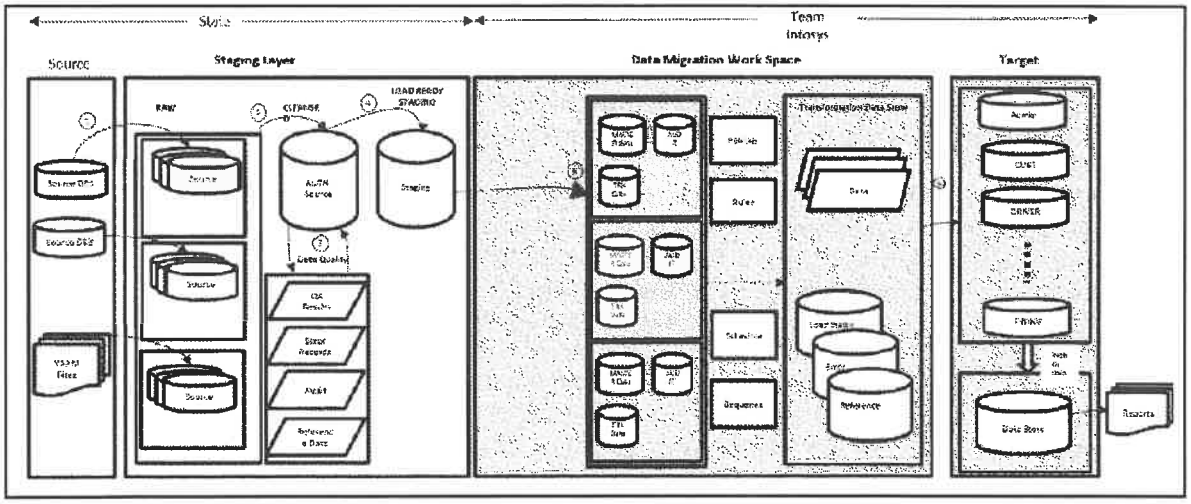


Figure 1 Data Migration Conceptual Model

The following steps are performed as part of Data Migration Development. i3-Celtic carries out steps five through six, whereas the State executes steps one through four.

1. Copy the data from the source into the landing zone - raw layer DB.
2. Consolidate and cleanse the data into load ready staging area.
3. Perform data quality checks, reprocessing, fix data gaps per policies, and identify authoritative data.
4. Push to load ready staging in the agreed layout.
5. i3-Celtic will follow the security policies of the State. Apply policies and data reconciliation.
6. Perform data conversion and load data from load-ready staging to AHPS.

Activities performed and resources involved:
The overall scope of data migration (steps given above) includes extracting data from legacy systems and authoritative source identification, transforming and loading the data to the target system, agreed processes, and system definition. Multiple teams are involved in performing these activities.

The State is responsible for bringing the data from the respective source systems, cleansing the data, identifying authoritative data, and publishing the same to i3-Celtic. i3-Celtic will source this data, transform it to acceptable AHPS standards, and load it to the AHPS system.

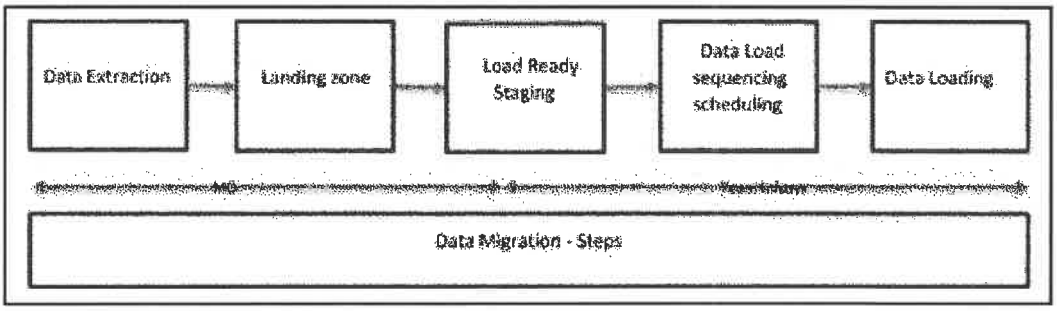


Figure 2 Data Migration Flow

Both teams also will maintain a mapping document to provide traceability of data elements. The State will maintain a mapping document tracing the data lineage from the source systems to the load-ready staging. i3-Celtic will maintain a mapping document that traces data movement from load-ready staging to the AHPS schemas.

The data migration team primarily consists of members from the following organizations.
WVDOT:

- Data architect
- Systems architect
- Infrastructure and security SME

i3-Celtic:

- Solution architect
- Data architect/lead

- DBA

Artifacts addressing data conversion, migration, and synchronization requirements:
Listed below are the artifacts which will be delivered in accordance with the State's requirements:

- Data migration and conversion plan and discovery phase deliverable.
  This document will explain the conversion and migration approach, big bang vs. incremental, and detail the data conversion and migration plan, data mapping specifications, data loading standards, process reporting, job statistics standards, cut-over process, notification standards, unit test plan, release documents, data quality report and data reconciliation report.
  Document the cluster-wise approach where each cluster represents a domain, such Permit, etc., to AHPS.
- Data model and data dictionary – discovery phase deliverable
  CTS-PARS OOTB data model and data dictionary will be shared with the State's team so that load-ready schema will be created based on the same.
- Data synchronization approach – discovery phase deliverable
- ETL - detail-level design for job creation
  This document will capture the ETL job design, which will extract the data from load-ready staging, perform the necessary transformations and load the AHPS target tables.
  This design also includes the audit and reconciliation job designs which helps to prepare the reconciliation reports and document the unit test plans for the ETL jobs.
- Data migration and conversion CTS-PARS OOTB scripts
  CTS-PARS OOTB scripts which will be used for the post-conversion execution report.
- Data mapping specifications
  i3-Celtic will maintain a mapping document that traces data movement from load-ready staging to AHPS schemas. The data-mapping document may contain the following information: target schema name, target entity name, target element name, source schema name, source entity name, source element name, transformations applied (if any)
- Data migration and conversion test results
  i3-Celtic QA team will validate AHPS with the migrated data to make sure the new system performs the functionality in accordance with the State's requirement after execution of the ETL jobs.
- Data Migration and Conversion progress reports
  During data migration/conversion – the data not loaded due to an error is written back to the write-back table with the detailed error, which the State will investigate and fix at the source. This report helps the State to identify how many records are migrated to AHPS and how many are in progress based on the migration criteria.
- Release documentation
- The list of ETL Jobs, along with the schedule for execution, shall be provided.

Approach for data conversion, data migration, data quality analysis and resolution, and data synchronization:
Our execution approach is contextualized, based on the best practices and past experiences of successful implementations of data migration framework, which is depicted below:

REQUEST FOR QUOTATION
Automated Routing OS/OW Permit System (81230076)
CRFQ DOT23*149

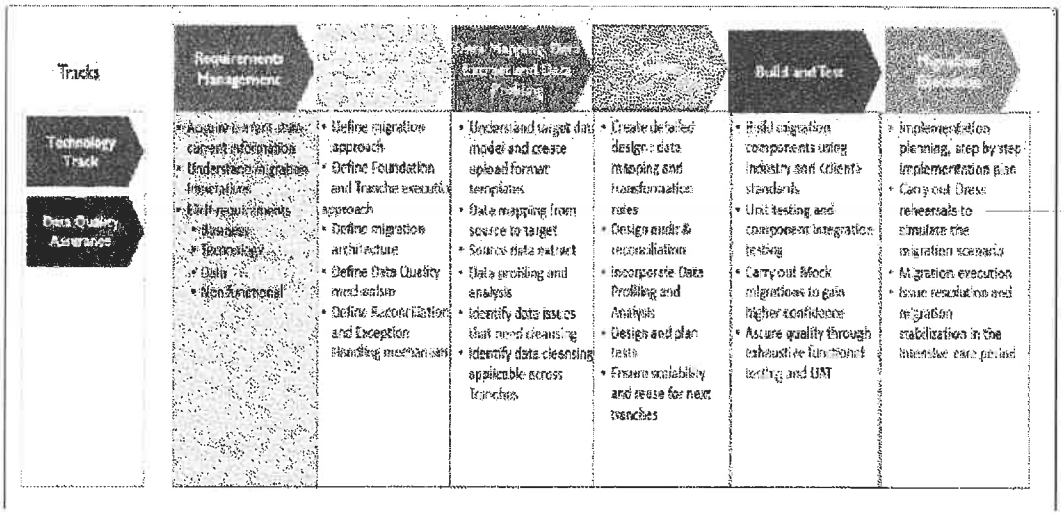


Figure 3 Execution Approach

- Determine the approach based on client business and functional requirements between the big bang and incremental load.
- Provide more focus on source data assessment and its quality.
- GAP analysis and rectification of gaps.
- Re-assess the existing load –granularity, frequency, and archival requirements and maintain only the required thresholds during ETL phases.
- Validate the history of incidents against the current loads. Identify the pattern and pro-actively fix them in all applicable/unnoticed areas.
- Re-validate the current 'as-is' design, data model, data loads, and overall schedule and look for more optimized ways of implementation in 'to-be' migration.
- Decommission the unnecessary- data flows, data loads, and landing zones.
- Handle the migration limitations through a workaround approach implementation using a combination of to-be technology.
- Break the migration into multiple phases through the logical grouping of applications/interfaces based on source/target systems, complexity, etc., that will eventually help in structured and successful migration releases.
- Document the data mapping from staging schema which is based on the common data model to target schema and obtain sign-off.
- The development will be in iterations where the first iteration will utilize the common data model, and the subsequent iteration will implement the customizations on the common data model in accordance with the State's functional requirements.
- Implement the latest or path-breaking features as applicable during development which will help develop the latest industry standards components.
- Deploy best practices, re-usable artifacts, automated tools, and accelerators as applicable across SDLC phases of migration which will help in productivity improvements.
- Conduct parallel testing – as is vs. to be components run to validate and compare the data results accuracy and performance benchmarking.
- Low latency is achieved through increased performance in job processing, optimized job scheduling,

and fine-tuned infrastructure for managing data loads.

- Production-like data (PHI-masked production data) to be used for building a new system and mock migrations to be performed in the pre-production environment with production data.
- Encourage collaboration and communication among teams and team members.
- Follow standardized procedures, terminologies, and guidelines.
- Timely closure of questions and data issues.
- Ensure that data changes to the legacy production platform are captured and migrated to the new platform.
- Repeated mock migrations iteratively using production data.
- Attempt to migrate data/entities touching multiple subject areas early on in mock migrations to uncover any data inconsistency.
- Deploy AHPS application on migrated (mock) data in test environments for early verification.

The below sections list the activities that will be performed by i3-Celtic based on insights gained from the past/previous implementation to ensure the success of the WVDOT data conversion/migration implementation.

- Determine the load sequence:
  The data in Load ready staging needs to be extracted, organized, and loaded into the AHPS system. The data in Load ready staging will be analyzed and identified by the nature of data into distinct categories like the master, transactional, historical, etc. (Shown in the diagram above). Master data may be transferred first, then transactional, and then historical/audit data. The exact load sequence will be determined during data migration development.
- Perform legacy vs. AHPS data transformation:
  The AHPS system may follow a set of configuration/code values different from the existing legacy systems. Hence the data from the legacy need to be transformed into a new set of values using conversion logic. This transformation logic will be reviewed with the State and sign-off and will be used while migrating the data from Load ready staging to the AHPS schema.
  For example, the legacy system may use codes '1' and '0' to indicate Active and Inactive status, whereas the AHPS system may use values 'A' and 'I'. This transformation logic will be captured in mapping and signed off by the State.
  The data extracted by the ETL tool from Load ready staging may be loaded into a workspace(optional) and then transformed per business rules/logic applied and loaded into the AHPS schemas. The data lineage may include this additional step in mapping.
- Perform data reconciliation process:
  i3-Celtic will ensure all valid data from the load-ready staging is migrated into the target system during the final production migration. Data reconciliation reports will be created and published to the stakeholders identified by the data governance committee or modernization PMO (project management office). These data reconciliation reports will be created during the mock migrations during the development phase of the project as well. This will help refine the data reconciliation process, mature the same, and indicate the expected outcome during the final production migration. The reconciliation reports can contain the following:
  - List of key entities
  - Number of records for the entity in load-ready staging, for example, the number of IRP Accounts
  - Number of records loaded into the target system
  - The number of records rejected

- Number of records violating a given rule, for example, referential integrity (as applicable)

- Discuss and document migration reversal strategy:
  A data migration reversal strategy works as a backup plan if things go unexpected or yield unexpected results. In case of data migration, for any reason, the phase 1 migration is called off, the target data could be deleted, and the legacy source system will be brought back to resume execution.
- Discuss and document cut over approach:
  The cutover is creating and executing the cutover plan to deploy the solution into production. The cutover plan for data migration should be created in alignment with the cutover plan for the entire program. This plan will include owners and signoffs responsible for conversions and verification and what conversions are required for their type during and sequence.
- Deployment confirmations:
  The assumptions are confirmed prior to the final deployment:
  - The state business unit is ready for changes with the new system, including changes to business activities.
  - Disabled the "update" capability in the old legacy systems, which will be replaced by the AHPS system – the old system is now used for inquiry purposes only.
  - Final conversion activities are known and tracked during the conversion weekend.
  - Deployment resources and assignments will be communicated and understood.
  - Identified the final decision meeting attendees. These resources determined the final go/no-go decision.
  - The state will provide service/help desk procedures post-conversion.
- Conduct final data conversion steps:
  The data cleansing activities will be reviewed before the final deployment to determine if all clean-up activities have been performed. The desired approach is to correct all identified data problems before extracting the final conversion data from the old systems. However, there may be instances where it is impossible to clean up all data before converting to the new system. In this instance, changes in the final deployment activities will need discussion and agree-upon the changes approved by the State. The final deployment/cut-over plan will require State acceptance of the converted data.
- Discuss and document cutover to production:
  The final cutover to production will be managed using a table (checklist) with all scheduled and backup activities. This plan will identify the resources required for approval of the individual tasks with the ultimate approval by the State.
  The production cutover plan will be executed over a period that will include detailed input from the other plans and areas:
  - Data conversion plan
  - Training plan
  - Testing plan
  - WBS (work breakdown structure)
  - PVD (product verification document)
  - ICD (interface control document)

  The final readiness review will be a checklist that will ensure the required areas have provided their agreement to proceed with the cutover to the new system. The cut-over checklist provides a list of items for the execution of all related activities.
  The net result of these activities is the "go/no go" decision to move forward with the final steps of the transition or to back out gracefully and remedy any issues prior to a subsequent transition.

- Confirm transition phase complete:
  Conduct post-cut-over diagnostic and lessons learned. The final acceptance of the production system follows this. As part of the transition, there could be fixed or enhanced items after the initial cutover, and a timeline will be laid out for any remaining post-transition activities.
- Recommended contingency plan:
  The recommended contingency plan will be to "rollback" and use the existing state Permitting and Automated Routing related systems in case any "showstopper" issues are identified during deployment. The method of rollback and reentry of any transaction into the legacy State system depends on the amount of time that has transpired from AHPS go-live to the point at which the rollback is initiated. It is recommended that a contingency/rollback plan be developed by the State (with i3-Celtic help). Any rollback plan should be of extremely short duration (a day at most), as any transactions executed during the rollback plan may have to be re-created manually.
- Discuss and document data quality strategy:
  The State legacy data loaded into the Load ready staging layer is expected to have undergone a data quality check and certified by the State. i3-Celtic will produce data reconciliation reports to review and ensure that this data available in the publish layer is consumed by the data migration scripts and appropriately loaded or rejected (if it violates key rules). The proposed solution may have additional code/scripts to validate and identify duplicates or other validation scenarios to maintain data integrity throughout the data migration process. As part of this broader strategy team, i3-Celtic may perform both unit testing and usability testing, as detailed below.
- Fixing source data quality issues
  - Migration unit testing: The main purpose of conversion unit testing is to verify whether migration scripts adhere to mapping specifications and to ensure that the converted data produced by these scripts are accurate compared to source data (load-ready staging layer).
  - Data Usability Testing: Data usability testing is performed to provide quantitative and qualitative measures on migrated data quality that will help guide towards better solutions. This usability testing is usually performed using the CTS-PARS application over the migrated data. A usability test is performed with real data early in the product test cycle to uncover bugs.
  - Perform mock migrations: The purpose of mock conversions is to identify and resolve any conversion program issues and configuration problems ahead of time. In addition, the mock migrations provide opportunities for independent data validation of the actual data volumes and assessment of data conversion readiness and ensure that the entire data conversion process can be finished within the timeframe allocated for data conversion cutover. Mock conversions may also focus on validating/evaluating the following:
    - Formatting of data
    - Data completeness
    - Data accuracy
    - Eliminate duplicate records
    - Resolve any unexpected issues

Approach to managing risk associated with data synchronization:
Database synchronization is the process of establishing data consistency between two or more databases. Data synchronization ensures accurate, secure, compliant data and successful team and customer experiences. Based on our experience working on various data migration projects, i3-Celtic will work with the state to manage the following data synchronization risks.

- Security: Security and confidentiality must meet certain regulatory standards as they relate to

specific industries and privacy laws. Unique systems have different policies and access requirements. Our data synchronization process will ensure that changes made to migrated data are updated to meet the standards set by state-specific security needs. i3-Celtic will collaborate with the state to prevent Data breaches or leak problems by using industry-standard data masking and encryption techniques.

- Data quality: multiple systems used by multiple business users mean that data is structured differently throughout its lifecycle. Ongoing updates and constant validation must be integrated and synchronized from all sources while maintaining strict integrity of information within a secure environment. i3-Celtic will place a seamless synchronization process.
- Regular synchronization of sources and targets continually improves your data's value but makes it work specifically for your business. In the case of the big bang approach, migration is executed during weekends and started early in the weekend, so after migration, ETL job execution – reconciliation reports and write-back tables can be analyzed. Based on the reconciliation report analysis, which indicates the records have not migrated to the target system, combined with a detailed error description captured in the write-back table, which helps the State's business team to analyze the root cause and fix the data at the source system. Once all the data issue is fixed at the source end for the errored records captured in the write-back table – the ETL Job should be re-executed to perform migration to the target system.
- Management: i3-Celtic will ensure that data organization must be managed and integrated in real-time to ensure accuracy and prevent errors like rejected records or data that is in an incorrect format. In the case of the Incremental load approach, migration should be executed as night loads soon after business hours to avoid business impacts and perform analysis of reconciliation reports and write back tables. Based on the reconciliation report analysis, which indicates the records not migrated to the target system, combined with detailed error description captured in the write-back table, that helps the Client business team to analyze the root cause and fix the data at the source system. Once all the data issue is fixed at the source end for the errored records captured in the write-back table – the ETL job should re-execute the following data during the night load to perform migration to the target system.
- Performance: In order to successfully synchronize data, it must pass through five phases:
  - Extraction from the source
  - Transfer
  - Transformation
  - Transfer
  - Load to target

i3-Celtic will ensure that these steps are not missed or incomplete, as they can impact the result. Perform data validation and reconciliation:

- Data validation and reconciliation (DVR) is a methodology that uses process information and statistics to ensure data validation and reconciliation by correcting measurements.
- Approach:
  - Record count check - The number of records identified from the source system based on the mapping document should match the target system. For example, the SELECT count (*) from the table will provide us with the number of records at the target, which is a quick and effective way to validate the record count.
  - Checking for distinct values - Check for distinct values available in the target table for any columns. If the specification document says that a column in the target table should have distinct columns, use a

SQL query.

- Missing values: Check for the mandatory field values based on application requirement. If there is no source value, then migration will default on the value.
- Incorrect values: Check for data transformation based on business rules.
- Badly Formatted Values: Data loaded to AHPS should satisfy specific formats according to the requirement. For example, the date column of the target table should store data in the format 'YYYYMMDD.'

- Data complexity: i3-Celtic will ensure that the more data, the more complexity will not become an issue to appropriately interface data in new situations while enabling it to continue to work with the old systems. Further, as technology changes, data that is updated to a new system must be consistent with its original source and target. Data synchronization stabilizes incoming and outgoing data, ensuring it is updated and compliant across the board.
- Data error resolution process:
  This section describes the process used to identify, escalate, and resolve data errors during the data conversion process.
  - Analyze the data during the error occurred.
  - Report an issue with the label "CONVERTED_DATA_ISSUE"
  Critical data errors prevent a record from being loaded into the target data storage and/or cause data integrity errors. These types of data errors need to be identified and addressed as soon as possible. If possible, these types of data errors need correction in the legacy system prior to subsequent extracts and loads. Critical data errors will likely prevent continuing with other conversion loads dependent on the failed records and must be resolved quickly, or these records should be skipped or removed from subsequent conversions until fixed. Non-critical data errors are those that have invalid values or missing configuration data that will not prevent a record from being loaded. These types of errors need to be identified and addressed for resolution.
  The data error resolution process involves:
  - Loading the non-critical erroneous data into the error table and analyzing data to remove the error.
  - Checking error logs for critical erroneous data and the support team does ensure correction of data immediately.

A sample Data Conversion and Migration Test Plan, sample Validation Test Plan, and sample Synchronization Test Plan from a similar project

A comprehensive data migration testing plan will be developed along with the support of the AHPS team. Along with data migration, it also needs to consider

referential constraints (setting and populating master tables first) and setting up new data in newly created target tables. Testing will also validate that default values have been assigned to target fields where values are mandatory in the target but not available in the source.

Data Conversion Testing Approach:

i3-Celtic will validate that the source data containing masked data from production is correctly transformed and migrated and made available in the target applications per the proposed solution. Checks such as database SQL queries, data verification through GUI, report analysis, etc., will be done to validate the migration process.

Unstructured Data:
Unstructured data will be migrated from source (unstructured) to target format as part of unstructured data migration by the data migration team, and the testing team will validate the data in the target system for data integrity as given in the mapping sheets.

Validation Test Approach:
Verifying the migrated data with the application will be done in the data migration environment. This will define critical business scenarios related to data migration and validate those scenarios. i3-Celtic team will support the AHPS team in the preparation and execution of data migration scenarios as a part of UAT support.

Synchronization Testing Approach:
The elevated level of migration accuracy will also be verified at a system level between the source and AHPS system with specific application flow and reports.

4.1.12.5 Vendor must support a minimum of one hundred fifty (150) concurrent users with an estimated increase of fifteen percent (15%) annually.

i3-Celtic Response:
i3-Celtic uses a framework (i.FRAME.wrk) for their motor vehicles and motor carrier solutions. This framework uses the latest technology and the most flexible/scalable Service Oriented Architecture (SOA).

Open Architecture: Easier to upgrade/ maintain, easier to remain at the cutting edge of technology.

Our CTS-PARS solution is fully mature, totally integrated, highly scalable, and ready to implement, satisfying the WVDOT's requirements. We employ continuous improvement techniques to capitalize on advanced technology and meet the advanced requirements of users, which was not possible in the past.

Large installed base: Wisdom of many jurisdictions built into products, and lessons learned from many installations built into the methodology.

Technically superior, scalable, modular, and flexible products: We have worked with carriers, jurisdictions, service providers, and truck drivers to design each screen and develop the optimal navigation for processing motor carrier transactions. We know there will always be improvements that can be made as technology advances and customer requirements change. Our support and maintenance team is constantly looking at ways to address new challenges from the motor carrier community.

4.1.12.6 AHPS must be scalable to accommodate a larger number of concurrent users as needed and requested by WVDOT.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement. i3-Celtic uses a framework (i.FRAME.wrk) for their

motor vehicles and motor carrier solutions that leverages the latest technology and the most flexible/scalable Service Oriented Architecture (SOA). Please refer to our response to requirement 4.1.12.5.

4.1.13 Automated Hauling Permit Routing Systems (AHPS) : General Project Implementation and Delivery Requirements

4.1.13.1 AHPS must be a SaaS system that meets WVDOT requirements contained within this RFQ.

i3-Celtic Response:
i3-Celtic offers CTS-PARS solution under two primary models as follows:

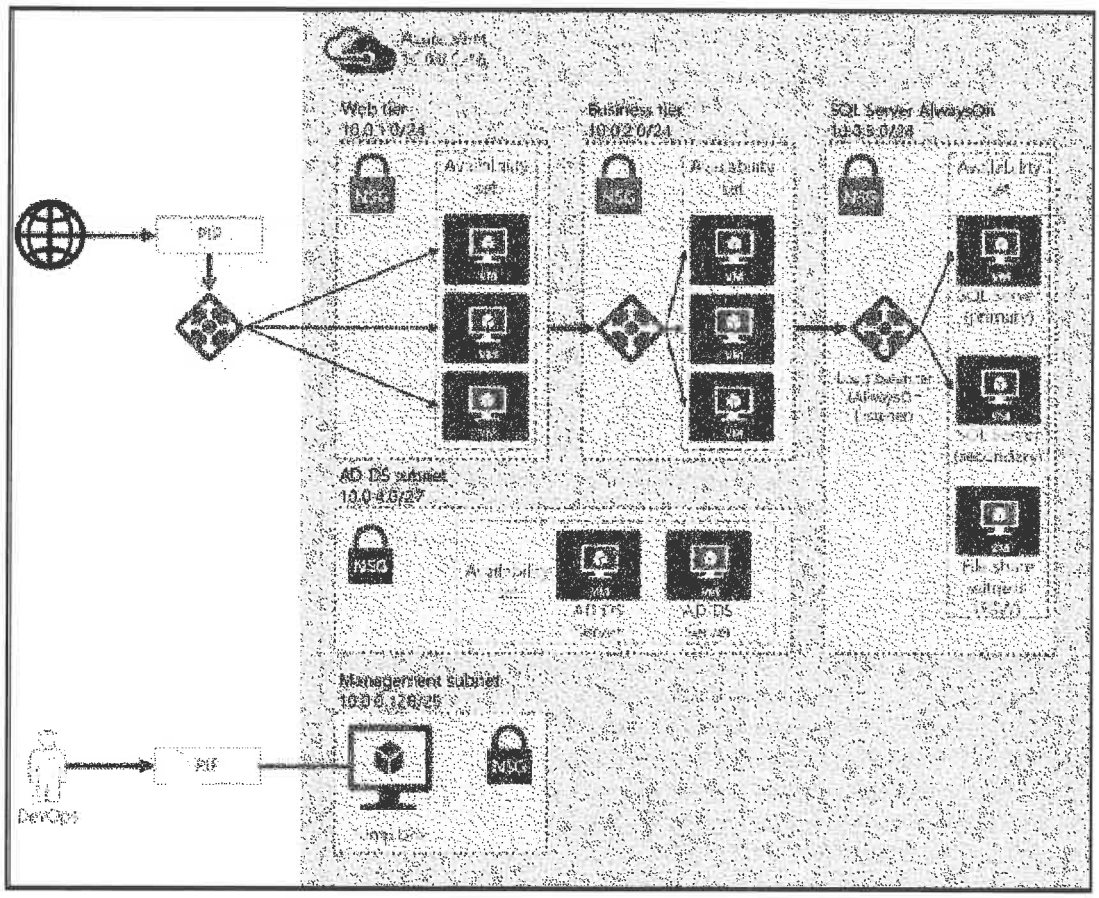
- Software as a service (SaaS); and
- On premise / TDOT Datacenter

i3-Celtic proposes Azure Government Cloud with a secured data center within CONUS. The Azure platform is pre-configured with all CIS standards and best practices that ensure TDOT that the system software platform is built and hardened, utilizing an industry-standard acceptable security architecture. The proposed infrastructure is secured with a virtual network and not exposed outside of this virtual network. The connection between TDOT and i3-Celtic will use a VPN tunnel to access the environments. External users will be restricted from accessing the application using secured HTTPS protocol.

i3-Celtics' solution architect and infrastructure lead will work with the TDOT team to do infrastructure sizing and design, setting up the environments that include network topology, subnets, and network inventory, machine interconnects, compute and storage resources, backup and disaster recovery environment specification, physical and logical diagrams.

The following is a sample of Azure Cloud architecture that represents multiple extensible servers for presentation, business logic, and data tiers.

REQUEST FOR QUOTATION
Automated Routing OS/OW Permit System (81230076)
CRFQ DOT23*149



CTS-PARS uses SSL (secure channel) to ensure secure data communication while in motion. Communication protocols used by CTS-PARS include:

- Transmission Control Protocol/Internet Protocol (TCP/IP): Used for communication between devices on the internet or a local network.
- Hypertext Transfer Protocol (HTTPs): Used for secured communication between web servers and clients, such as web browsers.
- Simple Mail Transfer Protocol (SMTP): Used for sending and receiving email messages.
- Secured File Transfer Protocol (SFTP): Used for transferring files between servers and clients.
- Secure Shell (SSH): Used for secure remote access and file transfer.

i3-Celtic and its hosting partner Microsoft Azure will be responsible for all software and hardware acquisition, maintenance, and support of the proposed CTS-PARS.

4.1.13.2 AHPS must run the latest HPS software version, as approved by WVDOT.

i3-Celtic Response:
i3-Celtic follows the ITIL processes for all the systems and systematically maintains the configuration

and release of each and every environment following the configuration management principles. i3-Celtic shall design, build, and manage the system so that all environments are updated with the latest version of the system on a regular basis.

4.1.13.3 Prior to Go Live, the Vendor must deliver key AHPS documentation for WVDOT's Acceptance. Final acceptance must be given in writing by the WVDOT before finale system acceptance will be executed.

i3-Celtic Response:
i3-Celtic will adhere to this requirement. We will deliver the essential system documentation before Go-live in accordance with WVDOT.

4.1.13.4 Vendor must document and define WVDOT specific customizations implemented in the production AHPS application, including identifying and defining Application Programming Interfaces (API) used by AHPS.

i3-Celtic Response:
i3-Celtic will build a Requirements Traceability Matrix (RTM) that will be used throughout the project to ensure all requirements are included in the solution and to ensure each requirement is fully tested and cross-referenced to a test case. A COTS Product Verification Document (PVD) will be created to ensure those pieces of functionality in the COTS product that have been addressed by FLHSMV Business Area Experts (BAEs) and the Subject Matter Experts (SMEs) is consistent with FLHSMV's requirements. Our Product Architect will review the PVD and decide the approach or division between customization and configuration.

In addition, The Interface Connectivity Document (ICD) defines all the external interfaces and communications carried out by the i3-Celtic system, with the jurisdictions existing systems, and any third-party systems that are necessary to the overall performance.

4.1.13.5 Vendor must provide a baseline Interface Control Document for externally exposed APIs.

i3-Celtic Response:
i3-Celtic will build and maintain the Interface Connectivity Document (ICD) that defines all the external interfaces and communications carried out by the i3-Celtic system, with the jurisdictions existing systems, and any third-party systems that are necessary to the overall performance.

4.1.13.6 Vendor must provide baseline configurations of network connected devices, including existing and newly implemented devices and equipment.

i3-Celtic Response:
After the Requirements Traceability Matrix is finalized, we will work with WVDOT domain experts to go through the COTS solution step by step and screen by screen to document the necessary modifications and configurations to meet the requirements. This document is called the Product Verification Document (PVD). The PVD will provide the design criteria needed for the development team to make the necessary changes to the programs that will result in the WVDOT AHPS.

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4.1.13.7 Vendor must provide baseline configuration of AHPS mapping including map layers and map functionality.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement in addition to our response to requirement 4.1.13.6.

4.1.13.8 Vendor must provide baseline configurations of system- generated notifications and error messages to both Customers and Authorized Users.

i3-Celtic Response:
CTS-PARS provides codified hard edits, soft edits, a warning message, and informative messages throughout the system. Messages are configurable and will be associated with WVDOT's business rules and other validations that help customer support to identify the related business rule when the authorized users (internal or external) receive an error message.

CTS-PARS also includes a correspondence module that can create and modify templates used for communication, such as email, letters, notifications, text messages and reports. Users can request notifications electronically for specific events, such as account registration, restriction updates, permit renewal, etc.

4.1.13.9 Vendor must document how authorization will be administered within AHPS.

i3-Celtic Response:
During the requirement gathering session/due diligence phase, i3-Celtic will finalize and document the authentication approach and techniques with WVDOT.

4.1.13.10 Vendor must provide a project documentation library.

i3-Celtic Response:
If not utilizing the State's repository, i3-Celtic will establish a project repository. We will ensure that the designated State staff receives training on repository usage, granting them full admin access to all areas. This will allow them to access detailed data, run reports, and utilize the repository effectively.

4.1.13.11 Vendor must provide status reports every 2 weeks, and live AHPS system demonstrations during the project execution phase (prior to Go Live). AHPS live demonstrations can be delivered through the Contractor's choice of method (e.g., WebEx).

i3-Cetlic Response:
i3-Celtic will adhere to this requirement. The designated i3-Celtic Project Manager will participate in the bi-weekly status meeting and live system demonstration post submission of project status reports based on the agreed-upon format and method.

The status reports will include the following minimum information:

- Accomplishments over the reporting period.
- Risk status for new or previously identified risks.
- Issue status for new or previously identified issues.
- Key activities planned for the next period.
- Schedule for the next period's activities, including deliverables and dates.
- Deliverables expected to finish and start in the next period.
- Identification and justification of any proposed adjustments to the Project Management Plan.
- Identification of schedule delays and recommended corrective action plans.
- Performance reporting, including variance analysis, trend analysis, and change requests.

i3-Celtic is committed to maintaining transparency and keeping the State informed of the project progress.

4.1.13.12 Vendor must test system using an industry standard and WVDOT approved testing methodology.

i3-Celtic Response:
i3-Celtic will apply industry standard quality processes and metrics to deliver a quality solution for the State.

Quality processes: Quality management, metrics, and performance improvement.

Quality has always been a key competitive driver for i3-Celtic. The definition of quality has widened and today the focus for i3-Celtic is on overall business excellence. It covers all of our processes: management, core, and support process to leverage our ability to ensure satisfaction of customers and all other stakeholders and ensures long-term excellence. Today, i3-Celtic strives towards business excellence under an integrated initiative called the i3-Celtic Excellence Initiative.

Quality Assurance activities will be based on the following approach:

- Reviews at all stages of delivery: i3-Celtic will employ stringent reviews and gating processes to ensure that no defect passes through any stages of the project. Each stage – Initial Discovery, Analysis and Design, Implementation and Setup and rollout – will have multiple rounds of internal and external reviews (peer or peer-to-peer) using exhaustive checklists to ensure that each stage is completed without any defect.
- Focus on preventive measures to ensure that root causes of defects are removed, and defect injection is minimized.
- Audits/Mini Assessments: i3-Celtic has a 400+ person strong independent quality department which will conduct regular audits on project processes and quality.
- Senior Management Review: As part of quality processes, i3-Celtic Senior management will review the work packet at regular intervals to ensure any risks to quality are mitigated and any issues handled immediately.
- Usage of Metrics: Detailed metrics will be provided to the State during regular milestone status

reporting.

i3-Celtic proposes a comprehensive QA methodology comprised of functional and non-functional testing by leveraging manual and automated tools across the life cycle of product customization and deployment. This takes into consideration defect management, knowledge management, project management and change management.

Defect Management Process:
Below is the high-level defect lifecycle process flow for the defects (includes core and legacy application defects).

Tester logs defects with all required defect information and attachments (test data, test case reference, snapshots, XMLs, etc.) which will be initially reviewed by track Test Lead.

Artifact	Frequency	Timeline	Key Considerations
Test Plan	One per each release	Within two weeks of Release commencement date	• Testing approach along with scope and process to achieve Quality
Test Scenarios	Per each Sprint	Starts during Sprint grooming session and completed during Sprint execution session	• User story to Test scenario traceability • Unique scenarios • 100% test coverage
Test Cases	Per each Sprint	Completed during Sprint execution in an Agile manner	• User story outcomes translated to test case execution outputs • Test data • Test steps and activities

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Test Scripts	Per each Sprint	Completed during Sprint execution in an Agile manner	• Automation scripts
Test Execution results	Per each Sprint	Completed during Sprint execution in an Agile manner	• Test data set-up (automated and manual) – masked migrated data and green field data • Defect management process and other QA practices • Automated regression testing for each new deployment • Daily test execution progress and defect reports • Capture and maintain all testing in WVDOT Test Management tools like JIRA
Test Completion report	One per each release	After completion of all testing by i3-Celtic and WVDOT	• Test scenarios and cases executed • Detailed test results from scenarios and cases executed • Detailed test results from automated scripts executed • Defects raised and resolved • Outstanding

			defects • Detailed confirmation for meeting all acceptance criteria
AHPS User Acceptance Testing support and associated deliverables	One per each program increment	UAT is planned per each program increment	• Test data set-up (automated and manual) – masked migrated data and green field data • Defect triage and assignment to Dev/Technical teams • Defect fix validations in lower environment

Testing Status Reporting:
As part of the project deliverable, a Testing Status report will be prepared for each planned test cycle that will provide a comprehensive report on the testing cycle for the application. This document consists of the following sections:

a) Testing Overview.
b) Test Results Summary (Including Defect Summary).
c) Analysis, Conclusion, and Recommendation on test cycle status.
d) MS Azure Boards can be used to track the progress of the project from various viewpoints. It can be used to check the Percentage of completion for test cases against the Planned Test Cases and also Pass/Fail status of the test cases. It can also be used for generating reports related to the number of defects open and other such reports.
e) Daily Status Reports: The status will be communicated daily and will contain any specific issues faced during the day, related questions and/or concerns requiring further escalations.
f) Weekly Status Reports: The status will be communicated on a weekly basis and will contain the completion status of planned activities for the week as well as future task planning.
g) Defect Report will be shared along with Test execution status during execution phase.
h) Defect Status calls will be scheduled as part of Defect Management process.

4.1.13.13 The scope of testing must include System Integration Testing (SIT) and User Acceptance Testing (UAT). SIT focuses on integration of AHPS with all external systems and interfaces, including but not limited to WVDOT's systems and third party Contractors. UAT focuses on end user operation and compliance with all RFQ requirements.

			defects • Detailed confirmation for meeting all acceptance criteria
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i3-Celtic Response:
The CTS-PARS solution baseline for functional requirements will be established when requirements are finalized. Test scenarios and scripts are developed for the component of this baseline. The unit test result, and the system integration test result will be the base of the user acceptance testing.

User Acceptance Testing (UAT) will be performed by the WVDOT team after the system integration testing and before go-live. UAT team will validate the system functionality based on the test scenarios and scripts and sign-off for the production move.

4.1.13.14 Vendor will be responsible for developing the test plan, test scenarios, test cases, test scripts, test data, and expected results.

i3-Celtic Response:
i3-Celtic will work with WVDOT to design and deliver a comprehensive security test plan, test cases, test scripts, and documentation for comprehensive test management and test strategy for WVDOT, but not limited to, the following sections:

1. Introduction
1.1. Purpose
1.2. Objective
1.3. Project Background
2. Release Scope
2.1. Test coverage for various releases
2.2. Types of Testing (functional, integration, end-to-end, automation, security, performance, multilingual, usability and accessibility, customer experience, cross-browser, data migration testing, etc.) and the testing approach. For e.g., End-to-end security testing covers the testing approach to ensure that the application is compliant to zero tolerance security model
3. Software Life cycle
3.1. Testing approach
3.2. Test planning
3.3. Test Execution
3.4. Entry and Exit criteria
3.5. Testing Tools (for e.g., HP ALM, TFS, CITS, Selenium, etc.)
3.6. Test Environment and Infrastructure
3.7. Test Data management
3.8. Test Results documentation
3.9. Test Suspension/Resumption Criteria
3.10. Configuration Management
4. Assumptions
5. Dependencies
6. Constraints
7. Risks and mitigation Plan
8. Project Management
8.1. Project Schedule
8.2. Roles and responsibilities
8.3. Testing Deliverables

8.4. Communication and status reporting
8.5. Testing Metrics
8.6. Code promotion/migration process
8.7. Change management
8.8. Escalation procedures
9. Defect Management
10. Testing Status Reporting
11. UAT (User Acceptance Testing) support

4.1.13.15 The test plan must be presented to WVDOT for approval prior to execution.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement and finalize the test plan in collaboration with WVDOT.

4.1.13.16 Vendor shall be responsible for independently executing the test plan and submitting certified results to WVDOT for review. WVDOT reserves the right to selectively execute any or all test cases prior to accepting AHPS.

i3-Celtic Response:
i3-Celtic will adhere to the above requirement as stated in our response to requirement 4.1.13.13.

4.1.13.17 Acceptance of System: If the test period produces no issues at a minimum, the agency will issue a Letter of Acceptance of the system and the first (1) year of service, support and maintenance period would start at that time.

i3-Celtic Response: We will meet this requirement.

4.1.13.17.1 Prior to an acceptance of the system the following criteria must be met: (1.) successful testing of all components, validating full functionality.

i3-Celtic Response:
User Acceptance testing will be the last step before the go live. UAT will be undertaken by WVDOT subject matter expert and/or a business user.
Similar to the system integration testing, effective governance will be enforced for UAT to ensure that strong quality gates along with the defined entry and exit criteria.
The key activities of each UAT phase are defined below:

Entry Gates

All user stories are completed and signed-off	UI Validations Completed
Completion of system and integration testing	Successful UAT sanity check is performed

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Completion of regression testing	Ensured that there are no open showstoppers / critical defects
Validations are undertaken against the functional specifications	All environments and access requests sorted out
Business users identified	

Objectives

All business functions are stable	Critical business processes are intact & work as expected

4.1.13.17.2 Once acceptance of the system is agreed to by Agency and the Vendor. The Agency will issue a request for Change Order to the West Virginia Purchasing Division stating acceptance of the system there by beginning the first (1) year of service, support and maintenance.

i3-Celtic Response:
i3-Celtic agrees to the above requirement.

4.1.14 Automated Hauling Permit Routing Systems (AHPS) : Restriction Administration Requirements

4.1.14.1 AHPS must permit Administrative Users to create route restrictions by selecting a specific location or an area on the map, and the location information must automatically populate within the restriction report.

i3-Celtic Response:

The CTS-PARS solution has Robust Restriction Management Module that allows the Authorized Administrative User to add and save the restrictions on Map by selecting the area on the Map and adding Point, Line of Polygon Restrictions.

All these restrictions are displayed with all the details in the restriction report as and when generated.

The system provides a restriction notification batch process that can be scheduled or can be executed on demand. Based on the effective date of restrictions, the system identifies impacted permits and notifies permit holders via email and/or text message.

4.1.14.2 AHPS must create a corresponding restriction type icon on the map and the icon must be placed according to geographic coordinate information from the restriction report when the restriction is saved.

i3-Celtic Response:

The CTS-PARS displays the added restriction types with unique icon on the specific location on the Maps. Restriction can be identified or distinguished easily with the icons.

Saved Active Restrictions will be displayed on the Map throughout the system.

4.1.14.3 AHPS restriction icons must show, for restrictions that span from one location to another, a graphical display over the segment of road that the restriction spans.

i3-Celtic Response:

The CTS-PARS displays the added restriction type with unique icon on the specific location on the Maps. Restriction can be identified or distinguished easily with the icons.

Point, Line, and polygon restrictions geometry will be viewed by clicking on zoom option from the icon information popup window.

Saved Active Restrictions will be displayed on the Map throughout the system.

4.1.14.4 AHPS must permit an Authorized User to draw a line on the map to define detour routes and restriction location information.

i3-Celtic Response:

The CTS-PARS solution has Restriction Management Module that allows the Authorized Administrative User to add and save the restrictions on map by drawing Point, Line of Polygon Restrictions.

i3-Celtic will collaborate closely with WVDOT to thoroughly understand the detour route requirements. This collaborative effort will involve gathering detailed information about specific road closures, construction zones, or any other situations that may require the establishment of detour routes. i3-Celtic will then leverage this information to implement an appropriate and effective solution within CTS-PARS. By working closely with WVDOT, i3-Celtic aims to ensure that the detour routes within CTS-PARS are accurate, reliable, and align with the specific requirements and guidelines provided by WVDOT.

4.1.14.5 AHPS must communicate temporary restrictions. WVDOT will provide construction information, size and weight restrictions, and road closures which AHPS must use limitations for the requested permit route requirements are listed in Administrative Rules and WVDOT CADD/GIS. These must be configurable by WVDOT without Vendor intervention.

i3-Celtic Response:
CTS-PARS is equipped with the capability to capture temporary restrictions, which are taken into consideration when building a safe route for permit issuance.

These restrictions can be added manually by authorized users through the restriction module. Additionally, restrictions can also be received through a GIS interface, allowing for automatic processing or user review and approval, depending on the available information.

4.1.14.6 AHPS must provide pre-scheduled restrictions including, but not limited to:

i3-Celtic Response:
The CTS-PARS provides a Restriction Management Module that enables authorized administrative users to add and save various types of restrictions. These restrictions can have future effective dates and can include warnings, complete closures, manual review requirements, and more. They may be caused by

4.1.14.3 AHPS restriction icons must show, for restrictions that span from one location to another, a graphical display over the segment of road that the restriction spans.

i3-Celtic Response:

The CTS-PARS displays the added restriction type with unique icon on the specific location on the Maps. Restriction can be identified or distinguished easily with the icons.

Point, Line, and polygon restrictions geometry will be viewed by clicking on zoom option from the icon information popup window.

Saved Active Restrictions will be displayed on the Map throughout the system.

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CTS-PARS is equipped with the capability to capture temporary restrictions, which are taken into consideration when building a safe route for permit issuance.

These restrictions can be added manually by authorized users through the restriction module. Additionally, restrictions can also be received through a GIS interface, allowing for automatic processing or user review and approval, depending on the available information.

4.1.14.6 AHPS must provide pre-scheduled restrictions including, but not limited to:

i3-Celtic Response:
The CTS-PARS provides a Restriction Management Module that enables authorized administrative users to add and save various types of restrictions. These restrictions can have future effective dates and can include warnings, complete closures, manual review requirements, and more. They may be caused by

factors such as highway maintenance, crashes, incidents, construction, and other reasons.

As part of the collaboration with WVDOT, i3-Celtic will work closely to identify any missing causes for restrictions and ensure that the system captures all relevant information accurately.

4.1.14.7 Construction Restrictions;

i3-Celtic Response:
Please see response of point 4.1.14.6. As part of the collaboration with WVDOT, i3-Celtic will work closely to identify any missing causes for restrictions and ensure that the system captures all relevant information accurately.

4.1.14.8 Maintenance Restrictions;

i3-Celtic Response:
Please see response of point 4.1.14.6. As part of the collaboration with WVDOT, i3-Celtic will work closely to identify any missing causes for restrictions and ensure that the system captures all relevant information accurately.

4.1.14.9 Recurring Restrictions;

i3-Celtic Response:
Please see response of point 4.1.14.6. As part of the collaboration with WVDOT, i3-Celtic will work closely to identify any missing causes for restrictions and ensure that the system captures all relevant information accurately.

4.1.14.10 Seasonal Road Closure Restrictions;

i3-Celtic Response:
Please see response of point 4.1.14.6. As part of the collaboration with WVDOT, i3-Celtic will work closely to identify any missing causes for restrictions and ensure that the system captures all relevant information accurately.

4.1.14.11 Special Restrictions (parades, festivals)

i3-Celtic Response:
Please see response of point 4.1.14.6. As part of the collaboration with WVDOT, i3-Celtic will work closely to identify any missing causes for restrictions and ensure that the system captures all relevant information accurately.

4.1.14.12 AHPS must support the use of point, line, and polygons for map features and restriction representation.

i3-Celtic Response:

The CTS-PARS solution has Restriction Management Module that allows the Authorized Administrative User to add and save the restrictions on map by drawing Point, Line of Polygon Restrictions.

4.1.14.13 AHPS must support restriction location as a pair of x, y coordinates represented as a point.

i3-Celtic Response:

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The CTS-PARS captures point restrictions using the ESRI point geometry format, which represents the location of the restriction using x and y coordinates on a defined spatial reference system. This allows for precise and accurate placement of point restrictions within the application. By utilizing the ESRI point geometry format, CTS-PARS ensures that the captured point restrictions are correctly positioned on the map and can be effectively used in the route generation and permit issuance processes.

4.1.14.14 AHPS must support the creation of a restriction location as a line segment, as a series of x, y coordinates pairs.

i3-Celtic Response:
The CTS-PARS captures line restrictions using the ESRI line geometry format, which represents the location of the restriction using path (array or list) of x and y coordinates on a defined spatial reference system. This allows for precise and accurate placement of line restrictions within the application. By utilizing the ESRI line geometry format, CTS-PARS ensures that the captured line restrictions are correctly positioned on the map and can be effectively used in the route generation and permit issuance processes.

4.1.14.15 AHPS must support the creation of a restriction region as a polygon, which is a line that ends at its beginning.

i3-Celtic Response:
The CTS-PARS captures polygon restrictions using the ESRI polygon geometry format, which represents the location of the restriction using path (array or list) of x and y coordinates that ends at its beginning on a defined spatial reference system. This allows for precise and accurate placement of polygon restrictions within the application. By utilizing the ESRI polygon geometry format, CTS-PARS ensures that the captured polygon restrictions are correctly positioned on the map and can be effectively used in the route generation and permit issuance processes.

4.1.14.16 AHPS must provide restriction reporting on the following:

i3-Celtic Response:
The CTS-PARS provides two methods for accessing restriction details and information, each offering extensive search capabilities based on various parameters. These methods are:

1. Restriction Report: This feature allows users to view restriction data in a grid format. Users can apply search parameters such as restriction name, category, reason, date range, width, height, length, weight, and more to filter and display the desired restrictions. Additionally, users have the option to generate a PDF report based on the selected search parameters, providing a convenient way to access and share restriction information.

2. Restriction Inquiry: With this functionality, users can access restriction data directly on the map interface. They can input search parameters and the system will display the relevant restrictions on the map, allowing users to visually analyze and explore the data. Users can zoom in and out, highlight specific restrictions, and even view the restriction history if available. This interactive approach enhances the user experience by providing a visual representation of the restrictions and their spatial context.

4.1.14.17 Restriction closures;

i3-Celtic Response:
Please see response of point 4.1.14.16. Restriction Category field in report will meet the requirement.

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4.1.14.18 Restriction durations; and

i3-Celtic Response:
Please see response of point 4.1.14.16. Restriction From Date and To Date fields in report will meet the requirement.

4.1.14.19 Restriction types: Construction, Maintenance, Recurring, Seasonal Road Closer, and Special Restrictions (parades, festivals).

i3-Celtic Response:
Please see response of point 4.1.14.16. Restriction Category and Restriction Reason fields in report will meet the requirement.

4.1.14.20 AHPS must provide restriction reporting for distribution, including, but not limited to, restriction counts

i3-Celtic Response:
Generated Restriction report has all important fields like Restriction Category, Restriction Reason, Restriction Name, Location At, Location To, Start Date/Time, End Date/Time, Status, Overall Width, Overall Length, Overall Height, Detour Plan ID, Detour Info, Comment, Description, Contact Information.

Last page of the report will display the total summary count.

4.1.14.21 AHPS must provide a restriction listing.

i3-Celtic Response:
Generated Restriction report will display all the filtered restrictions with all important fields like Restriction Category, Restriction Reason, Restriction Name, Location At, Location To, Start Date/Time , End Date/Time, Status, Overall Width, Overall Length, Overall Height, Detour Plan ID, Detour Info, Comment, Description, Contact Information.

4.1.14.22 AHPS restriction list must filter upcoming, open, and recently closed restrictions in ascending or descending order and by column headers.

i3-Celtic Response:
System has standard sorting functionality on all the available columns in the GRID in the application including restriction report screen.

4.1.14.23 AHPS restriction summary listing must be filterable to show restrictions meeting specified criteria including, at a minimum, restriction type, restriction sub-type, location of restriction, source manual entry, including date and time.

i3-Celtic Response:
Generated Restriction report and its GRID will display all the filtered restrictions with all important fields like Restriction Category, Restriction Reason, Restriction Name, Location At, Location To, Start Date/Time , End Date/Time, Status, Overall Width, Overall Length, Overall Height, Detour Plan ID, Detour Info, Comment, Description, Contact Information.

4.1.14.24 AHPS scheduled restriction listings must be sortable by user, specified date, and time period.

i3-Celtic Response:

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System has standard sorting functionality on all the available columns in the GRID in the application including restriction report screen.

4.1.14.25 Authorized Users must have the ability to modify or end a restriction record from the listing.

i3-Celtic Response:
The CTS-PARS includes a Restriction Management Module that allows authorized administrative users to add, modify, and manage different types of restrictions. This module provides the necessary tools and interfaces for users to input and update restriction details as per their authorization.

4.1.14.26 AHPS map must provide an icon library.

i3-Celtic Response:
In CTS-PARS, commonly used map symbols are employed based on the source data subject. These symbols help to represent various features and elements on the map accurately. The symbols are selected in accordance with standard cartographic conventions and industry best practices.

4.1.14.27 AHPS must provide the ability to associate the imported icons including at a minimum: restriction types, and locations on map.

i3-Celtic Response:
CTS-PARS provides an icon configuration module that allows users to edit and customize map icons or symbols. With this module, users have the flexibility to modify the appearance and representation of icons as per their preferences or specific requirements. This feature enables users to tailor the visual presentation of the map to align with their needs and improve the overall user experience.

4.1.14.28 AHPS color coding of icon to show restriction status information must be configurable by an Administrative User.

i3-Celtic Response:
Customization: Supports symbol configuration by admin
System has icon configuration support for displayed layers, authorized user can change and upload the required icon. System will also support the symbol configuration.

4.1.14.29 AHPS hover over functionality for icon display details of restriction icons must be configurable by an Administrative User.

i3-Celtic Response:
Customization: Hover information window is not configurable. It displays predefined fields through code.

4.1.14.30 AHPS must provide the ability to open a restriction without using the map.

i3-Celtic Response:
Not Clear:

4.1.14.31 AHPS must provide the ability to open any location based restriction from a specified location on the map.

i3-Celtic Response:

CTS-PARS provides interactive map UI having features like zoom-in, zoom-out, zoom to area, pan , icon hover information window , restriction search result to support the requested requirement.

4.1.14.32 AHPS must provide the capability for an Authorized User to select lane type and the number of lanes blocked on a roadway for a restriction location.

i3-Celtic Response:
Customization: Does not support lane blocks as ESRI SMP data does not lane information for implementation, it is handled manually using width restriction.

4.1.14.33 AHPS must provide the ability to the edit lane type and number of lanes blocked for the duration of restriction.

i3-Celtic Response:
Customization: Does not support lane blocks as ESRI SMP data does not lane information for implementation, it is handled manually using width restriction.

4.1.14.34 AHPS must log the date and timestamp for lane type and number of lanes blocked for all restriction entries and edits.

i3-Celtic Response:
Customization: Does not support lane blocks as ESRI SMP data does not lane information for implementation, it is handled manually using width restriction.

4.1.14.35 AHPS must clearly display all lane types, number of lanes blocked, lanes open, and identify the date and time stamp when lane statuses change as part of restriction timeline reports.

i3-Celtic Response:
Customization: Does not support lane blocks as ESRI SMP data does not lane information for implementation, it is handled manually using width restriction.

4.1.14.36 AHPS must support the ability to specify an end time at which a restriction must expire and close.

i3-Celtic Response:
The CTS-PARS includes a Restriction Management Module that allows authorized administrative users to add, modify, and manage different types of restrictions by adding restriction expiration date and time.

4.1.14.37 AHPS must be configurable to remind Authorized Users handling restriction(s) that it is set to expire in a specified amount of time

i3-Celtic Response:
New Feature: Need to develop new batch process for upcoming expiring restrictions.
The CTS-PARS will include "Upcoming Expiring Restriction" batch process to meet the above requirement.

4.1.14.38 AHPS must permit an Authorized User to draw on the map, via a graphic map interface, to define a pre-scheduled restriction location and create a restriction at that location.

i3-Celtic Response:
The CTS-PARS solution has Restriction Management Module that allows the Authorized Administrative

User to add and save the restrictions on map by drawing Point, Line of Polygon Restrictions.

System supports future effective date restrictions, allowing users to set restrictions that will come into effect at a specified future date. This feature enables the proactive management of restrictions, allowing users to plan and schedule restrictions in advance.

4.1.14.39 AHPS must manage restriction details including, but not limited to: identifier, creator, type, description, status, start time, end time, location identification (roadway, mile marker, latitude/longitude, polygon boundaries) lanes open, lanes blocked, district, city, exit, bridge, landmark, detour information.

i3-Celtic Response:
CTS-PARS captures all important fields like Restriction Category, Restriction Reason, Restriction Name, Location At , Location To, Start Date/Time , End Date/Time, Status, Overall Width, Overall Length, Overall Height, Detour Plan ID, Detour Info, Comment, Description, Contact Information.

i3-Cetlic will work with WVDOT to identify any additional field requirements.

4.1.14.40 AHPS must allow an Authorized User to manage restrictions in Real Time.

i3-Celtic Response:
The CTS-PARS solution includes a Restriction Management Module that enables authorized administrative users to add, modify, and save restrictions in real time. Any new additions or modifications to restrictions will have an immediate impact on the route generation process. This ensures that the system considers the latest restriction information when generating routes for permits.

4.1.14.41 AHPS must be a Real-Time system that does not require a manual refresh, closing, or reopening for restriction updates to be shown.

i3-Celtic Response:
System auto-refreshes the screen to reflect the updated restrictions. Any new additions or modifications to restrictions will have an immediate impact on the route generation process. This ensures that the system considers the latest restriction information when generating routes for permits.

4.1.14.42 AHPS must maintain the status of a restriction and the type of restriction. The types must include, but are not limited to, Full Closure, Lane Closure, Restriction, and Opened.

i3-Celtic Response:
The CTS-PARS provides a Restriction Management Module that enables authorized administrative users to add , modify and save various types of restrictions. These restrictions can have future effective dates and can include warnings, complete closures, manual review requirements, and more. They may be caused by factors such as highway maintenance, crashes, incidents, construction, and other reasons.

As part of the collaboration with WVDOT, i3-Celtic will work closely to identify any missing causes for restrictions and ensure that the system captures all relevant information accurately.

4.1.14.43 AHPS restriction details must be accessible for data input, review, editing and updating.

i3-Celtic Response:
The CTS-PARS provides a Restriction Management Module that enables authorized administrative users to add, modify and save various types of restrictions.