West Virginia Office of Technology
Data Transport Services

Technical Proposal

October 13, 2022
Solicitation: CRFP 0212 SWC2300000001

ORIGINAL

Submitted to
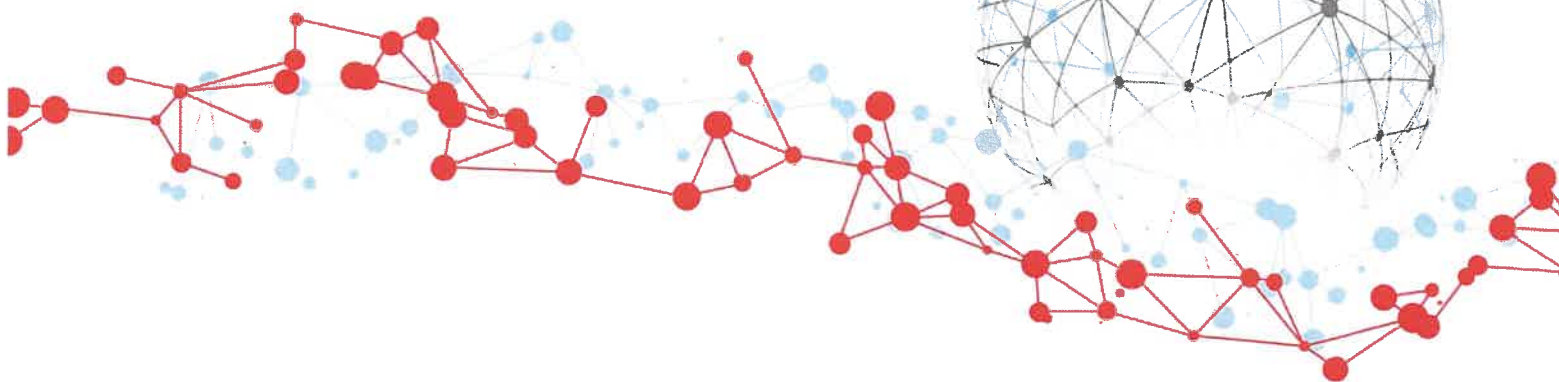Bid Clerk
Department of Administration
Purchasing Division
2019 Washington St. E
Charleston, WV 25305

10/13/22 11:32:20
WV Purchasing Division

Submitted by
Sandy Hawkins
Sr. Client Executive
4700 Maccorkle Avenue SE
Charleston, WV 25304
304-807-0207
sandra.k.hawkins@verizon.com

verizon✓

verizon✓

Sandra Hawkins
Sr. Client Executive
4700 MacCorkle Ave. SE
Charleston, WV 25304

October 13, 2022

Jessica L. Hovanec, Senior Buyer
2019 Washington Street East
Charleston, WV 25305

Re: CRFP 0212 SWC2300000001 – The Statewide Contract for Data Transport Services

Dear Ms Hovanec,

On behalf of Verizon, I am pleased to provide the enclosed document that outlines how our unique combination of local capabilities and depth of subject matter expertise will align with and address the State of West Virginia's stated requirements.

Our comprehensive solution will provide secure, flexible, reliable, and cost-effective services tailored to meet your needs. As your current technology vendor, Verizon will continue to leverage multiple technology solutions to achieve the State of West Virginia's goal of delivering the most secure, robust, reliable and comprehensive WAN and Dedicated Internet Access services for the State and its Agencies. We will meet the State's requirements by providing:

- **A Trusted Partner**: As a trusted partner with demonstrated experience in managing networks, Verizon will provide the expertise to manage your network and make sure it stays reliable, up to date, secure and operating at the speed of your organization.

- **Connectivity**: Integrated, hybrid connectivity. Verizon will provide a broad array of reliable, secure connectivity options, integrated as a hybrid network for optimal performance and security to support the State of West Virginia's experience needs and outcomes.

- **Security**: Verizon's end-to-end cyber detection and response delivers broad visibility, actionable intelligence and adaptive response against potential threats. Our portfolio of services of Professional Services, Monitoring and Analytics, Network and Gateway Security and Incident Response can help keep your agencies cyber resilient.

- **Visibility**: Proven network management services and digital platform. As operators of one of the world's largest, seamlessly connected global IP networks, we are able to provide the State and its Agencies automated and centrally controlled network functionality simplifying operations and management.

We are living in dynamic times. A strategic partner who combines both technology and possibility in new ways will help the State of West Virginia move forward. What serves your enterprise today is merely groundwork for what will propel it tomorrow.

With the right partner, you can do more than react to the future. You can lead into it.

Verizon's proposal presents a comprehensive, cost-efficient solution tailored to your needs and highlights the advantages of continuing our long-standing strategic partnership. We look forward to moving into the next discussion phase and building upon our partnership.

Sincerely,

Sandy Hawkins

Sr. Client Executive

TABLE OF CONTENTS

	Department of Administration	**State of West Virginia**
	Purchasing Division	**Centralized Request for Proposals**
	2019 Washington Street East	**Info Technology**
	Post Office Box 50130	
	Charleston, WV 25305-0130	

Proc Folder:	1111127	**Reason for Modification:**
Doc Description:	Statewide Contract for Data Transport Services	

Proc Type:	Statewide MA (Open End)		
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2022-09-28	2022-10-13 13:30	CRFP 0212 SWC2300000001	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 : Verizon Business Network Services LLC on behalf of MCI Communications Services LLC dba Verizon Business Services

Address :

Street :   4700 MacCorkle Ave. SE

City :   Charleston

State : WV	**Country :** U.S.	**Zip :** 25304

Principal Contact : Sandra Hawkins

Vendor Contact Phone: 304-807-0207   **Extension:**

FOR INFORMATION CONTACT THE BUYER
Jessica L Hovanec
304-558-2314
jessica.l.hovanec@wv.gov

Vendor
Signature X _(signature)_   **FEIN#**   47-0751768   **DATE** 10/12/2022
All offers subject to all terms and conditions contained in this solicitation

The West Virginia Purchasing Division is soliciting responses on behalf of the West Virginia Office of Technology (WVOT) to provide statewide Wide Area Network (WAN) services that will be utilized by the WVOT and other Statewide agencies, per the specifications and terms and conditions as attached hereto.

****ONLINE SUBMISSIONS FOR THIS REQUEST FOR PROPOSAL (RFP) ARE PROHIBITED****

****ADDITIONALLY, the Vendor should clearly separate and identify the cost proposal from the technical proposal in a separately sealed envelope.****

INVOICE TO	SHIP TO
ALL STATE AGENCIES VARIOUS LOCATIONS AS INDICATED BY ORDER No City WV 99999 US	STATE OF WEST VIRGINIA VARIOUS LOCATIONS AS INDICATED BY ORDER No City WV 99999 US

Line	Comm Ln Desc	Qty	Unit of Measure	Unit Price	Total Price
1	Telecom/Data Transport Services - See Pricing Page	1.00000	EA		

Comm Code	Manufacturer	Specification	Model #
1700			

Extended Description:
Telecom/Data Transport Services - See Pricing Page

SCHEDULE OF EVENTS

Line	Event	Event Date

	Department of Administration **Purchasing Division** 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130	**State of West Virginia** **Centralized Request for Proposals** **Info Technology**

Proc Folder:	1111127	**Reason for Modification:**
Doc Description:	Addendum #1 Statewide Contract for Data Transport Services	Addendum #1 to provide additional information related to the specifications.
Proc Type:	Statewide MA (Open End)	

Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2022-10-07	2022-10-13 13:30	CRFP 0212 SWC2300000001	2

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code:

Vendor Name : Verizon Business Network Services LLC on behalf of MCI Communications Services LLC dba Verizon Business Services

Address :

Street : 4700 MacCorkle Ave. SE

City : Charleston

State : WV

Country : U.S.

Zip : 25304

Principal Contact : Sandra Hawkins

Vendor Contact Phone: 304-807-0207

Extension:

FOR INFORMATION CONTACT THE BUYER
Jessica L Hovanec
304-558-2314
jessica.l.hovanec@wv.gov

Vendor
Signature X _(signature)_   FEIN# 47-0751768   DATE 10/12/2022

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

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFP SWC2300000001

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[X] Addendum No. 1	[ ] Addendum No. 6
[ ] Addendum No. 2	[ ] Addendum No. 7
[ ] Addendum No. 3	[ ] Addendum No. 8
[ ] Addendum No. 4	[ ] Addendum No. 9
[ ] Addendum No. 5	[ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Verizon Business Network Services LLC on behalf of MCI
Communications Services LLC dba Verizon Business Services
_____
Company

Agl Chmengeda
_____
Authorized Signature

10/12/2022
_____
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

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

State of West Virginia
Centralized Request for Proposals
Info Technology

Proc Folder:	1111127		**Reason for Modification:**
Doc Description:	Addendum #2 Statewide Contract for Data Transport Services		Addendum #2 to modify the Terms and Conditions
Proc Type:	Statewide MA (Open End)		

Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2022-10-12	2022-10-13 13:30	CRFP 0212 SWC2300000001	3

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code:

Vendor Name : Verizon Business Network Services LLC on behalf of MCI Communications
Services LLC dba Verizon Business Services

Address :

Street :   4700 MacCorkle Ave. SE

City :   Charleston

State :   WV   **Country :**   U.S.   **Zip :**   25304

Principal Contact :   Sandra Hawkins

Vendor Contact Phone: 304-807-0207   **Extension:**

FOR INFORMATION CONTACT THE BUYER
Jessica L Hovanec
304-558-2314
jessica.l.hovanec@wv.gov

Signature X _[signature]_   **FEIN#** 47-0751768   **DATE** 10/12/2022

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

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFP SWC2300000001

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Verizon Business Network Services LLC on behalf of MCI
Communications Services LLC dba Verizon Business Services
_____
Company

_____
Authorized Signature

10/12/2022
_____
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

EXECUTIVE SUMMARY

Verizon and the State of West Virginia have worked together to build a strong partnership over the last few decades. We remain committed to supporting you.

Based on our comprehensive knowledge of your network, we are confident that we have designed a solution that will provide a secure, robust, reliable, and comprehensive WAN and Dedicated Internet Access service that supports the next-generation Data Transport 2.0 Network for the State and its Agencies. Our approach offers you value that is relevant to your business and leverages the investments that Verizon has made in emerging technologies so that the benefits can be passed on to you.

We thank you for the opportunity.
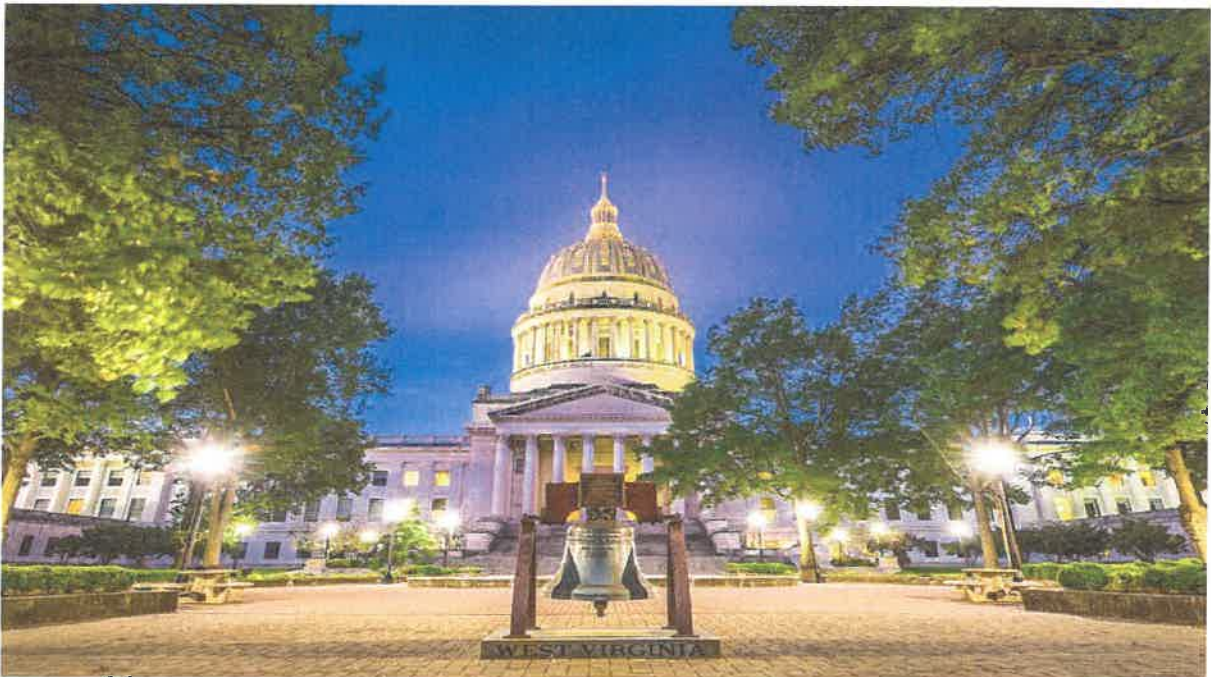
We've Listened

The State of West Virginia is under ever-increasing pressure to transform, which requires an understanding of the current business situations and the desired outcomes.

As your current strategic partner, Verizon has provided comprehensive solutions to help you at every stage of your business transformation. With demonstrated experience in managing networks, Verizon will provide the State the expertise to manage its network and ensure it stays reliable, up to date, secure and operating at the speed of your organization.

Investing in technology is critical to today's digital-driven eco-structure, and it is a vital element to your success. That success requires a strategic partner that is committed to delivering excellence and has considered every factor in solving your unique technology requirements. The flexibility of our solution will provide the State a hybrid-model of services with a mix of wired, wireless, and private/public internet to achieve agency missions and meet constituent needs with one vendor to manage it all.

We've Understood

Being able to easily and reliably communicate with your customers is one of the most critical elements in today's digital economy.

Transforming to a new network is a complex journey, and a smooth migration is the key to success. As the State of West Virginia's strategic partner, Verizon successfully managed the State's network transformation to the current contract. We will continue to leverage the local account team, our partners and IT professionals to support the State's needs and ensure consistent and redundant service.

Verizon's approach to building customer networks starts off with continuous investment in our technology platforms that support our customers' digital journey.

We also ensure that we hire and retain highly skilled resources who have a passion for developing and managing the world's best communications systems.

We've Designed

Based upon the critical success factors defined in your RFP and our knowledge of your current technology environment, our solution design accounts for the major attributes that you seek today, along with the technological elements necessary to ensure the success of your digital transformation. Verizon's recommended solution for the State of West Virginia includes the following elements:

- **Network**: Verizon has proposed a robust network to support your Ethernet WAN, DIA, and 4G/5G Service Requirements that includes:
  - **Ethernet Access:** Verizon will continue to provide state-wide access to facilities through the use of agreements with multiple vendors throughout the state providing the ability for carrier diversity for agency locations.
  - **Private IP:** Verizon's world-class Private IP network provides secure any-to-any network connectivity along with Quality of Services (QoS) and network resiliency to the State of WV network solution.
  - **SD-WAN:** Verizon SD-WAN provides an overlay network solution that gives the State the agility, flexibility, efficiency, and high-performance of a hybrid network solution.
  - **Internet:** Verizon Internet Dedicated Services provide highly reliable, high-bandwidth dedicated connections to our global IP network with stringent SLAs and 24x7x365 monitoring.
  - **4G/5G:** Verizon's award-winning 4G LTE/5G Business Internet service can provide an alternative to broadband internet service for remote offices or as backup service for State agency locations.
- **CPE:** Verizon has designed a solution for you that incorporates Cisco routers. The Cisco hardware platform provides you with the quality, reliability, scalability, and flexibility that will meet all of your business requirements for a high-performance network.
- **Comprehensive Support:** The Verizon's Enterprise Center on-line customer portal and MyVerizon Enterprise mobile app gives you access to 24x7x365 customer service and advanced reporting capabilities.
- **Service Level Agreements:** Verizon services include competitive service level agreements and objectives.

We've Understood

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- **Service Level Agreements:** Verizon services include competitive service level agreements and objectives.

- **Managed Services:** With Verizon's Managed WAN Service, the State can leverage our technical expertise in design, planning, implementation, and network management.

Our Commitment to the State of West Virginia

Verizon is the partner of choice and we will continue to demonstrate our commitment to the State of West Virginia. Our actions will be guided by what is right for the State and its Agencies, our long-term relationship and the achievement of mutual success. Each and every day, customers count on Verizon to be their long-standing, trusted partner and rely on us to remain flexible and innovative as technology changes and evolves. We are excited about the opportunity to continue as the trusted partner to the State of West Virginia and are honored to respond to this RFP. Verizon is committed to help the State of West Virginia in this effort to choose the right partner to build an integrated set of solutions that leverage technology to provide a secure, robust, reliable, and comprehensive WAN solution for the State.

We look forward to moving into the next discussion phase and refining our partnership together.

SECTION 1: GENERAL INFORMATION

1.1   Introduction:

The West Virginia Department of Administration, Purchasing Division (hereinafter referred to as the "Purchasing Division") is issuing this solicitation as a request for proposal ("RFP"), as authorized by W.Va. Code §5A-3-10b, for the West Virginia Office of Technology (hereinafter referred to as the "Agency") to provide statewide Wide Area Network (WAN) services.

The RFP is a procurement method in which vendors submit proposals in response to the request for proposal published by the Purchasing Division. It requires an award to the highest scoring vendor, rather than the lowest cost vendor, based upon a technical evaluation of the vendor's technical proposal and a cost evaluation. This is referred to as a best value procurement. Through their proposals, vendors offer a solution to the objectives, problem, or need specified in the RFP, and define how they intend to meet (or exceed) the RFP requirements.

Verizon's Response

Verizon has read, understands, and will comply.

verizon✓

SECTION 2: 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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.

Verizon's Response

Verizon has read and understands.

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:

2019 Washington Street, East Charleston, WV 25305

Fax: (304) 558-3970

Email:

Verizon's Response

Verizon has read and understands.

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.*

Verizon's Response

Verizon has read and understands.

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 wvOASIS, 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 wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. 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 wvOASIS 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 wvOASIS. 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_____ONE (1) convenience copy 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:

BUYER: Jessica L. Hovanec

SOLICITATION NO.: CRFP SWC2300000001

BID OPENING DATE: October 13, 2022

BID OPENING TIME: 1:30 PM ET

FAX NUMBER: 304-558-3970

Verizon's Response

Verizon has read, understands, and will comply.

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 wvOASIS (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: October 13, 2022 at 1:30 PM ET

Bid Opening Location: Department of Administration, Purchasing Division

2019 Washington Street East

Charleston, WV 25305-0130

Verizon's Response

Verizon has read and understands.

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.

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.

Verizon's Response

Verizon has read, understands, and will comply.

15A. RECIPROCAL PREFERENCE:

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.*

Verizon's Response

Verizon has read and understands.

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.*

Verizon's Response

Verizon has read and understands.

18.   ELECTRONIC FILE ACCESS RESTRICTIONS: *Vendor must ensure that its submission in wvOASIS 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.*

Verizon's Response

Although this requirement is not applicable, Verizon has read, understands, and will comply.

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."*

Verizon's Response

Verizon has read and understands.

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."*

Verizon's Response

Verizon has read and understands.

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.

verizon✓

West Virginia Office of Technology
Data Transport Services
Technical Proposal

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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 wvOASIS or the Purchasing Division's website to determine when a contract has been awarded.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read and understands.

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Solicitation: CRFP 0212 SWC2300000001 | October 13, 2022

SECTION 3: GENERAL TERMS AND CONDITIONS

Terms and conditions begin on the next page.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read and understands.

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 <u>Three (3) Years</u>*

_____. 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 <u>Three (3)</u>   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 _ 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)*

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 _____ days.*

☐   **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:*

☐   *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 _____*

Verizon's Response

Verizon has read and understands.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read and understands.

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.

Verizon's Response

Verizon has read and understands.

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.

Verizon's Response

Verizon has read, understands, and will comply.

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 per occurrence.*

☒ *Automobile Liability Insurance in at least an amount of: $1,000,000 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: _$3,000,000 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.*

Verizon's Response

Verizon has read, understands and will comply.

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.*

Verizon's Response

Verizon has read, understands and will comply.

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.*

Verizon's Response

Verizon has read, understands and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.)*

Verizon's Response

Verizon will allow the use of a Purchasing Card and/or credit card as a payment option, only as an auto-recurring payment option. Verizon's preferred payment options are 1) electronic Automated Clearing House (ACH) payment; 2) electronic bank account Wire Transfer; or 3) paper check payment. Both electronic payment options can be set up through the Customer's account on Verizon's online billing portal, the Verizon Enterprise Center online portal.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

Verizon acknowledges the customer's tax exemption status. Documentation may need to be submitted in order to process this benefit.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

Verizon agrees to not charge additional fees or charges outside of the pricing sheet but will include any applicable tax, governmental charge, surcharge or pass-through charges. A report can be provided with invoices to break out individual surcharges.

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.

Verizon's Response

Verizon has read and understands.

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.*

Verizon's Response

Verizon has read and understands.

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

Verizon's Response

Verizon has read and understands.

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.*

Verizon's Response

Verizon has read and understands.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read and understands.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read and understands.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read and understands.

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.

Verizon's Response

Verizon has read, understands, and will comply.

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.

Verizon's Response

Verizon has read and understands.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Per Addendum #2, Term 36. INDEMNIFICATION is withdrawn from this Solicitation.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

Verizon represents to the best of its knowledge that no conflicts of interest exist. We publish our Code of Conduct for employees, and this document also lets our customers know that integrity and respect underscore how we do business. Within our Code of Conduct we have a chapter on "Avoiding Conflicts of Interest." Verizon's Code of Conduct can be found at:

http://www.verizon.com/about/our-company/code-conduct

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.

Verizon's Response

Verizon has read, understands, and will comply.

The Verizon Enterprise Center portal contains many different reporting options. If a report is not available to fit the State of West Virginia's needs, the Verizon Program Management Office will work with the State to provide the requested reports.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read and understands. Verizon is a publicly traded company.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

Verizon has read, understands, and will comply.

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.*

Verizon's Response

(Printed Name and Title) Sandra Hawkins, Sr. Client Executive

(Address) 4700 Maccorkle Avenue SE, Charleston, WV 25304

(Phone Number) / (Fax Number) 304-807-0207 / 877-294-3612

(email address) sandra.k.hawkins@verizon.com

CERTIFICATION AND SIGNATURE: *By signing below, or submitting documentation through wvOASIS, 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.

(Company)

(Signature of Authorized Representative)

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

(Phone Number) (Fax Number)

(Email Address)

Verizon's Response

Verizon has read, understands, and will comply.

Verizon's completed and signed Certification statement is provided on the following page.

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) ___Sandra Hawkins, Sr. Client Executive___

(Address) ___4700 MacCorkle Ave. SE, Charleston, WV 25304___

(Phone Number) / (Fax Number) ___Phone: 304-807-0207 / Fax: 877-294-3614___

(email address) ___sandra.k.hawkins@verizon.com___

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.

Verizon Business Network Services LLC on behalf of MCI Communications Services
LLC dba Verizon Business Services
_____
(Company)

_____
(Signature of Authorized Representative)

Angel Arrazola   SR Analyst-Contract Management   10/12/2022
(Printed Name and Title of Authorized Representative) (Date)

Phone: 304-807-0207 / Fax: 877-294-3614 (local contact)
(Phone Number) (Fax Number)

sandra.k.hawkins@verizon.com (local contact)
(Email Address)

Revised 09/12/2022

verizon✓

SECTION 4: PROJECT SPECIFICATIONS

4.1 Background and Current Operating Environment:

The State of West Virginia operates and maintains statewide networks for data, video and voice transmission that are shared between government and education entities including state agencies, higher education, K-12 schools, libraries, and county/municipal units of government.

The next-generation statewide Wide Area Network (WAN) known as Data Transport 2.0, has been designed to enable a single vendor to provide secure, flexible, reliable and cost-effective services including Ethernet WAN services and dedicated Internet access, and to enable value-added support services from the Vendor. The current WAN services contract is set to expire on June 30, 2022.

The services will be brokered and/or managed by the West Virginia Office of Technology (WVOT), where applicable. It is the State's intent that Data Transport 2.0 leverage the cost efficiencies of shared services (centralized billing, ordering, technology support, network services, and cybersecurity services).

There are approximately 1000 WAN circuits and services installed statewide under existing telecommunications contracts. The winning Vendor will be expected to provide services to existing sites and at new sites during the contract term. There is no guarantee that existing sites detailed in this RFP will require services under the new Vendor contract, since the State is continually opening and closing sites.

The Vendor will be required to work with other technology service provider(s), where necessary, for both the transition from legacy WAN services and for the installation of new WAN services defined in this RFP at various locations across the state. The State's goal is to award a contract to a single Vendor, who will leverage a variety of technology solutions and partner with other technology companies to provide the most secure, robust, reliable and comprehensive WAN solution for the State. Other technology companies may include (but are not limited to) cellular/wireless carriers, Internet Service Providers (ISPs), Wireless Internet Service Providers (WISPs), and Cable TV companies.

The contract resulting from this RFP is intended to provide a comprehensive procurement vehicle for all listed services and value-added solutions defined in this RFP. The Vendor awarded the contract will be the single responsible party for coordination and installation as well as ongoing maintenance and billing for all of their services and will include all service from the Vendor's technology subcontracting partners.

*This is a re-solicitation of a previous RFP (CRFP SWC22*01) with the following modifications:*

Ethernet WAN and SD-WAN speeds have been modified. Vendors must provide Ethernet WAN speeds of 5 Mbps to 40 Gbps. Vendors must provide SD-WAN speeds of 5 Mbps to 5 Gbps.

4G and 5G wireless services are more clearly defined. 4G wireless services are required across the state and 5G wireless are acceptable, when available. In all cases, 4G wireless services must be provided.

Invoicing corrections and dispute resolutions have also been updated, specifically how long the Vendor has to correct invoicing errors and acknowledging the State's dispute rights.

Verizon's Response

Verizon has read and understands.

4.2   DEFINITIONS and ACRONYMS:

The terms and abbreviations listed below shall have the meanings assigned to them below.

- **"AS"** *means Autonomous System*

- **"ASN"** *means Autonomous System Number*

- **"BGP"** *means Border Gateway Protocol*

- **"Contract Item"** *or* **"Contract Items"** *means the services defined in Section Four.*

- **"DDOS"** *means Distributed Denial of Service Attack*

- **"Dedicated Internet Access"** *(DIA) means a private connection to the Internet that is exclusively dedicated to a business or government for their use.*

- **"DHCP"** *means Dynamic Host Configuration Protocol*

- **"DIA"** *means Dedicated Internet Access*

- **"Distributed Denial of Service Attack"** *(DDOS) means a malicious attempt to disrupt the normal traffic of a targeted server, service or network by overwhelming the target or its surrounding infrastructure with a flood of Internet traffic.*

- **"DNS"** *means Domain Name Services*

- **"Edge Router"** *means a specialized router located at a network boundary that enables an internal network (LAN) to connect to external networks (WAN).*

- **"ESL"** *means Eligible Services List*

- **"Ethernet WAN Service"** *means a service delivered by network and telecom vendors that provides a high-speed connection between sites utilizing a standardized Ethernet connection.*

- **"ETP"** *means Eligible Telecommunications Provider*

- **"FCC"** *means Federal Communications Commission*

- **"FCDL"** *means Funding Commitment Decision Letter*

- **"Force Majeure"** *means an extraordinary event or circumstance beyond the control of the parties involved.*

- **"FRN"** *means Funding Request Number*

- **"Gbps"** *means Gigabits, or one billion bits per second.*

- **"GETS"** *means Government Emergency Telecommunications Service*

- **"IEEE"** *means Institute of Electrical and Electronic Engineers*

- **"ILEC"** *means Incumbent Local Exchange Carrier*

- *"IPv4"* means Internet Protocol Version 4

- *"IPv6"* means Internet Protocol Version 6

- *"LAN"* means a Local Area Network (LAN) that connects network devices over a relatively short distance. A networked office building, school, or home usually contains a single LAN, though sometimes one building will contain a few small LANs.

- *"LCP"* means Lowest Corresponding Price

- *"Mbps"* means Megabits, or one million bits per second.

- *"MTTR"* means Mean Time To Repair

- *"Non-Recurring"* means one-time or installation costs for service, in the Pricing Section.

- *"PIA"* means Program Integrity Assurance

- *"Point of Presence (PoP)"* means a point of presence that is an access point to a carrier's network at a building or facility. It may be housed either in the facilities of a telecommunications provider (building entrance or closet) or a location separate from the telecommunications provider (extended PoP).

- *"Postalized"* means rates or prices that are structured so that they are not distance or location sensitive but are dependent on other factors such as type of service, speed of service, etc.

- *"Pricing Section"* means the pricing evaluation sheets where the types and quantities of services are identified. The Vendor should provide pricing per type of transport.

- *"Quality of Service" (QOS)* means a set of technologies that work on a network to guarantee its ability to dependably run high-priority applications and traffic under limited network capacity. QoS technologies accomplish this by providing differentiated handling and capacity allocation to specific flows in network traffic.

- *"Recurring"* means monthly recurring costs for solicited services, per the Pricing Section

- *"SD-WAN"* means Software Defined Wide Area Network

- *"SLD"* means Schools and Libraries Division

- *"SLA"* means Service Level Agreement

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

- *"Special Construction"* means when there are no existing telecommunications facilities to fulfill the need for a new service installation to a physical location and new physical network facilities will need to be built to accommodate the new services requested or to accommodate new service requirements.

- *"SPIN"* means Service Provider Identification Number

- *"TCR"* means Telecommunications Request Form

- *"TSP"* means Telecommunications Service Priority

- *"USAC"* means Universal Service Administrative Company

- *"USF"* means Universal Service Fund

- *"Vendor Response Sheet"* means the information sheet where the Vendor provides details about its company and provides references that match the services being proposed within this solicitation.

- *"VLAN"* means Virtual Local Area Network

- *"VOIP"* means Voice Over Internet Protocol

- *"VPN"* means Virtual Private Network

- *"WAN"* means Wide Area Network, a computer network that covers a large geographical area. WAN includes the technologies to transmit data, image, audio and video information over long distances and among different LANs.

- *"Wireless 4G/5G service"* means a cellular wireless broadband communication service leveraging 4G (4th generation) or 5G (5th Generation) protocols and equipment.

- *"Wireless Bandwidth Throttling"* means that a cellular wireless carrier artificially limits the bandwidth availability for their service

- *"WVOT"* means West Virginia Office of Technology

- *"WVDA"* means West Virginia Department of Administration

- *"WVDE"* means West Virginia Department of Education

- *"WVLC"* means West Virginia Library Commission

Verizon's Response

Verizon has read and understands.

4.3   Project Desirables and Goals, and Mandatory Requirements:

The State of West Virginia's goal is to award a contract to a single Vendor, who will leverage a variety of technology solutions and partner with other technology companies when required to provide the most secure, robust, reliable, and comprehensive WAN and Dedicated Internet Access services for the State.

Vendor should describe its approach and methodology to providing their services by addressing the mandatory requirements as well as the goals and objectives identified below. Mandatory requirements relate to the goals and objectives and must be met by the Vendor as a part of its submitted proposal. Vendor should describe how it will comply with the mandatory requirements and include any areas where its proposed solution exceeds the mandatory requirement. Failure to comply with mandatory requirements will lead to disqualification, but the approach/methodology that the vendor uses to comply, and areas where the mandatory requirements are exceeded, will be included in technical scores where appropriate.

Vendor's response should include any information about how the proposed approach is superior to other possible approaches as well as identify areas where the proposed solution exceeds the project expectations.

The State has divided this RFP into four major parts, each with their own mandatory requirements and goals and objectives.

- *Part 1: Technology Service and Solution for Ethernet WAN, DIA and 4G/5G Services*

- *Part 2: Ethernet WAN Service Migration Approach*

- *Part 3: Service and Support for WAN and DIA and 4G/5G Services*

- *Part 4: Security for WAN and DIA Services*

Verizon's Response

Verizon has read and understands.

4.3.1   Goals and Objectives
4.3.1.1   Part 1: Technology Service and Solution for Ethernet WAN, DIA and 4G/5G Services

4.3.1.1.1.Ethernet WAN Service

4.3.1.1.1.1.   The State desires that the Vendor have an online performance management and support portal that, at a minimum, the State can use to enter and track new trouble tickets, review pending trouble tickets and the performance statistics of installed services. The State desires that the Vendor have an online performance management and support portal that at minimum the State can use to enter and track new trouble tickets, review pending trouble tickets and the performance statistics of installed services. Please describe your solution's ability to provide an online portal for Ethernet WAN services that meets or exceeds this goal.

Verizon's Response

Verizon has read, understands, and complies.

The Verizon Enterprise Center is a one-stop portal for accessing critical information and resources on-demand. The State of WV can access both Verizon and Verizon Wireless details, providing a single location for key data, voice, and wireless information. This enables you to manage your Verizon services, streamline business processes, and control critical business functions. Supported by a host of powerful, comprehensive electronic self-service capabilities, the portal is available 24 hours a day, seven days a week. The Verizon Enterprise Center can provide you with the ability to track and customize your Verizon products to make them work for your business. The State of WV can also control costs and simplify business management by leveraging these self-service tools. Refer to **Appendix A** for a presentation of Verizon Enterprise Center capabilities.

Managed Network Services (MNS) customers can also access MNS-specific information. From the Verizon Enterprise Center, users can simply click on the link on the Network Tools tab titled "Access Managed Services." (The State of WV may also pull information from the "Account Explorer" tab.)

The State of WV can see both a macro and micro view of your network by reviewing inventory, circuits, and contacts across the network. You can do this either from the customer level or manage each location's hardware, and change management at a site level. This functionality helps you

manage your network more effectively, identify cross-location trouble spots, and leverage information from one location to the other.

The Verizon Enterprise Center and its Managed Services area can provide customer with:

- An easy to navigate, web-based tool;
- Secure views into your managed network services;
- Methods to track circuit and CPE inventory;
- A way to track the status of an install or upgrade in progress;
- A tool that is available to you at no additional cost.

Features

Through the use of the Verizon Enterprise Center and Managed Services information, customer can:

- View your managed network (WAN, LAN, IP PBX) by:
  - Location;
  - Projects (Active install and/or upgrade);
  - Customer level.
- Review alarms on an account or site-level basis;
- Submit Change Management (Standard and/or Optional) requests;
- Review managed services alarms across the network and identify appropriate ticket numbers;
- View Device/CPE Feature capabilities. This functionality can enable customers to see features available on each device under management. The Feature Details page includes a "managed" indicator as well as a new management and product section;
- Access your trouble tickets from the "Repairs" tab:
  - As part of the standard Verizon Enterprise Center applications, "Desktop Alerts" can be set up for automatic notification of ticket status. If this feature is enabled, you will receive two notifications of a ticket. You can "opt" out of one notification in order not to receive duplicate notifications.
- View Verizon and customer contacts available by function, name, and location;
- View Network Analysis (NA) reports from the "Reports" tab if included in your contract.

The Verizon Enterprise Center online portal provides line of sight into the following services:

- Ethernet WAN Services [4.3.1.1.1]
- Dedicated Internet Access Service (DIA) [4.3.1.1.2]
- 4G/5G Wireless Service [4.3.1.1.3]

In addition, the Private IP Dynamic Network Manager is an enhanced feature that exceeds the goal and allows the State to take ownership of managing their traffic in the wide area network space as needed. Dynamic Network Manager provides the ability to review circuit utilization, schedule port changes (if desired), receive threshold utilization alerts, and access management reports for private wide area network traffic through the Verizon Enterprise Center.

4.3.1.1.1.2.   The State desires that the Vendor provide Ethernet WAN services that utilize SD-WAN overlay services as defined in the Metro Ethernet Forum (MEF) 3.0 standards.

https://www.mef.net/service-standards/overlay-services/sd- wan/. Please describe your company's ability to meet this goal.

Verizon's Response

Verizon has read, understands, and meets this goal.

Verizon is proposing a fully Managed SD-WAN overlay solution that can utilize both private and public Ethernet WAN connections. This solution takes advantage of Verizon's long-standing strategic partnership with **Cisco** enabling virtualized functionality, centralized management and integration through application programming interfaces (APIs).

The State of West Virginia can leverage our technical expertise in design, planning, implementation, and network management. The State of West Virginia can utilize the flexible reporting and policy portal capabilities available from Verizon, along with specific vendor partner technology, to select the best solution that meets the business and technology requirements. Verizon Managed SD WAN offers a fully managed network service.

Verizon has achieved MEF 3.0 SD-WAN and MEF 3.0 Carrier Ethernet certification of their services by the Metro-Ethernet Forum (MEF) Services Certification Registry. MEF certification validates that Verizon demonstrated that our solution conforms to rigorous specifications established by the industry's defining authority for standardized network-based services. MEF 3.0 SD_WAN Certification requires compliance with "MEF 70 SD-WAN Service Attributes and Services, July 2019" specification and passing mandatory test cases in "MEF 90 SD-WAN Certification Test Requirements, July 2020" specification. Verizon's SD-WAN Service passed all required and optional test cases: 57 test cases were passed.

Verizon has extensive experience for managed network services, backed by a full suite of Professional Services, and a Network Operations Center (NOC) and Security Operations Center (SOC) that provides global customer support services.

Verizon provides standard global availability of fully managed SD WAN services in 75 countries and optional custom delivery options in 150+ countries. SD WAN is offered with an "As a Service" pricing model with bundled deployment platform options.

Verizon provides end-to-end provisioning including network design, implementation, testing, and project management. This service is generally provided using low-touch provisioning to automate the remote configuration of SD WAN profiles to instances, either on purpose-built or uCPE devices in the field, from Verizon hosted controllers.

Verizon's solution includes Managed SD WAN with performance and application SLAs with an integrated service assurance model for repair and reporting.

4.3.1.1.2.   Dedicated Internet Access Service (DIA)

4.3.1.1.2.1.   The State desires that the Vendor have an online performance management and support portal that, at a minimum, the State can use to enter and track new trouble tickets, review pending trouble tickets and the performance statistics of installed services. Please describe your solution's ability to provide an online portal for DIA services that meets or exceeds this goal.

Verizon's Response

Verizon has read, understands, and complies.

The Verizon Enterprise Center online portal, described in section 4.3.1.1.1.1, is your one-stop shop for tracking trouble tickets, reviewing trouble tickets and performance statistics of installed services.

In addition, Internet Reporting Statistics (IPR) is a reporting application that provides traffic statistics, usage trends and analyses for Internet Dedicated services via the Verizon Enterprise Center. This application will enable the State to interactively view statistics and trends for each site using graphical and tabular formats.

4.3.1.1.3.   *4G/5G Wireless Service*

4.3.1.1.3.1.   *State desires a single bill from Vendor that includes wireless service as well as Ethernet WAN and DIA services. Please describe your solution's ability to provide an integrated services bill that meets or exceeds this goal.*

Verizon's Response

Verizon will be providing multiple bills until IT development can be completed to accommodate a single bill.

4.3.1.2   Part 2: Vendor Ethernet WAN Services Migration Plan

4.3.1.2.1.   *The State desires a finalized and agreed upon an Operations Plan within sixty (60) calendar days of contract effective date for the management, support, and maintenance of the State's current WAN infrastructure. Please describe your company's ability to deliver the finalized Operations Plan to the State within sixty (60) calendar days of contract effective date with scheduling the appropriate meetings, making changes after State input, and meeting deadlines.*

Verizon's Response

Verizon has read, understands, and will comply.

As the incumbent provider of the State's WAN services, Verizon will continue to provide management, support and maintenance for the existing network services without anticipated interruptions. Through a proven, low-risk "back-office transition" approach, Verizon will migrate the State's existing Verizon services to the new contract through a simple administrative process that requires no additional effort by State personnel and no downtime. The transition to the new rates will occur within 90 days.

Verizon will work with the State's contacts to document an Operations Plan within sixty (60) calendar days for the continued management of the Verizon WAN services.

4.3.1.2.2.   *The State desires all sites listed in Exhibit B be migrated to vendor Ethernet WAN service within 365 calendar days from contract effective date. The State reserves the right to reprioritize this list as necessary. Please describe your company's plan to accomplish these migrations. Please describe your company's ability to migrate all sites listed in Exhibit B within 365 calendar days from contract*

Verizon's Response

Verizon has read, understands, and will comply.

As Verizon provides the existing WAN services to the State of West Virginia, the majority of the WAN circuits will not require migration. Verizon will work with the State's contacts to plan for the migration

of 20 Mbps sites listed in Exhibit B: to an upgraded speed (change order) or to a different solution, i.e. Dedicated Internet. Verizon will continue to meet weekly, or more frequently if required, to identify and migrate these sites to the new requested service after receiving a TCR.

4.3.1.3 Part 3: Service and Support for WAN and DIA and 4G/5G Services

4.3.1.3.1. *If the Vendor's work requires them to be at a State site, the Vendor should provide Agency at least 72 hours' notice before arriving at the site and comply with State law and all Agency policies, including but not limited to background checks for contractors, vendors, and visitors. Please describe your approach and methodology in your solution/response.*

Verizon's Response

Verizon has read, understood and will comply.

A successful implementation of your new service requires your active involvement. Verizon will provide the agency contact 72 hours' notice before arriving at the site. We've provided the below steps to help you understand what to expect and how to prepare your facility in ample time for a smooth installation.

We will need access for service installation and help coordinating and addressing necessary preparations including power, space, and cabling paths.

Verizon's approach/methodology and what you can expect for each installation:

1. A phone call from a Verizon representative shortly after submitting your order request to verify the following:

    a. The Verizon services ordered.

    b. Information for a knowledgeable local contact including name, address, phone number, and email. This person will need to provide access to the premises, telecommunications closets, and other network facilities at the location.

2. We will then perform a remote or a physical site survey of your premises.

    a. If a physical site survey is NOT required, a Verizon order manager will contact you to discuss installation and service activation.

    b. If a physical site survey IS required, a Verizon technical representative will schedule one with the local contact.

3. We will provide the local contact with your site responsibilities, including space, power, and cabling path requirements.

    a. The local contact must verify receipt of these "room ready" requirements and provide Verizon a date on which they will be completed.

    b. Verizon will respond with a committed delivery date based on the site readiness date.

4. The local contact will prepare the site for service installation. This responsibility includes:

    a. Providing adequate, secure space for service equipment.

b. Providing power levels for the circuit and equipment as communicated by Verizon.

c. Providing a conduit and cabling path within the building to the designated installation space.

5. The local contact must notify Verizon when the site is ready, or if there are any delays in room preparation.

a. If the site is deemed not ready by Verizon, service installation and activation will be delayed.

6. Verizon will dispatch the installation team(s).

a. The local contact must ensure that technicians have access to all on-premises wiring and space locations.

7. Following the physical installation, please notify your Verizon order manager to complete service activation.

Verizon will comply with the background check as stated in the Instruction to Vendors Submitting Bids. Once the request from the State is received Verizon will arrange for electronic fingerprinting at a Live Scan Fingerprinting facility.

4.3.1.3.2.   Vendor should describe their company's ability to hold regular meetings on each of these topics, as well as their company's implementation plans for starting these discussions:

4.3.1.3.2.1.   Architecture and Design

4.3.1.3.2.2. Implementation

4.3.1.3.2.3. Ordering and Billing

4.3.1.3.2.4. Service and Support

4.3.1.3.2.5. Project Management

Verizon's Response

Verizon has read, understands, and complies.

Verizon's account team, based in Charleston, brings deep knowledge of the existing infrastructure and a thorough understanding of the State's data transport goals. Sandra Hawkins, Verizon's Account Manager for the State of West Virginia for 18 years, is the single point of contact for all matters with the State. Regardless of the nature of the request, she is prepared to respond or to bring together the correct resources to meet the requirements of the State. As the dedicated Billing/Service Manager, also located in Charleston, Melanie Lopez will provide support for billing, service and provisioning issues to the State. Melanie brings 28 years of telecommunications industry experience to her role.

As she has for the last four years, Melanie will continue to meet monthly or more often as needed for billing and service issues. The Project Manager will continue to meet weekly, or more often as needed, with the State to discuss order status, issues, pending orders, expected orders and ordering process. Verizon's Technical Lead, Andrew "Kevin" Walker, is a seasoned telecommunications

professional with 30 years of industry experience. Kevin will continue to meet weekly with the engineering team for architecture and design initiatives.

Figure 4.3.1-1. Meetings with State of WV.

Topics	Ongoing Regular Meetings and Discussions with the State of West Virginia
Architecture and Design [4.3.1.3.2.1]	Our Technical lead has weekly calls with the WV engineering team about architecture and design. They review and prioritize existing requests and plan roadmap items to be responsive to future needs.
Implementation [4.3.1.3.2.2]	Our Project Manager holds weekly calls to review implementation schedule and work breakdown structure, project requests, coordinate logistics, and prioritize open action items.
Ordering and Billing [4.3.1.3.2.3]	The dedicated Service Manager conducts monthly as well as ad-hoc meetings to review billing and service issues. This includes a First Invoice Review to validate rates and ordered products and services.
Service and Support [4.3.1.3.2.4]	The dedicated Service Manager conducts monthly services reviews with the West Virginia Operations Team to review trouble ticket activity, correlate trends, identify root causes to include a service improvement plan as needed.
Project Management [4.3.1.3.2.5]	Project Manager conducts weekly meetings with the State to discuss order status, issues, pending orders, expected orders and ordering process.

Verizon will continue to partner with the State of West Virginia and utilize industry standards, recognized management frameworks and best practices.

4.3.1.3.3.   The State desires a service order tracking web portal, including real-time updates for new and pending service orders. The State desires details including the following data elements:

4.3.1.3.3.1.   Telecommunications Change Request (TCR) Form Number

4.3.1.3.3.2.   Date order was received

4.3.1.3.3.3.   Department/Agency Name where service is being installed

4.3.1.3.3.4.   Department/Agency where service is being installed address

4.3.1.3.3.5.   Projected due date

4.3.1.3.3.6.   Rate element identifier (circuit ID or other)

4.3.1.3.3.7.   Additional order details

The State will place orders, disconnects, and changes through its established TCR process; however, the State desires this portal to provide more transparency and faster updates without the need to contact the Vendor. Please describe your company's ability to provide this portal, as well as any requirements from the State needed to implement such a program.

Verizon's Response

Verizon has read, understands and will comply.

The following elements are or can be included in our Verizon Enterprise Center portal:

- Telecommunications Change Request (TCR) Form Number [4.3.1.3.3.1.]
- Date order was received [4.3.1.3.3.2.]
- Department/Agency Name where service is being installed [4.3.1.3.3.3.]
- Department/Agency where service is being installed address [4.3.1.3.3.4.]
- Projected due date [4.3.1.3.3.5.]
- Rate element identifier (circuit ID or other) [4.3.1.3.3.6.]
- Additional order details [4.3.1.3.3.7.]

The Verizon Enterprise Center located at https://verizonenterprise.com will be available once you have registered and set up entitlements (entitlements help safeguard your account information). The dedicated Service Manager will assist the State's contacts in registering in the Verizon Enterprise Center, determining roles and product tools needed along with providing Customer Training information. Refer to 4.3.1.1.1.1 and **Appendix A** for more information on the Verizon Enterprise Center portal.

4.3.1.3.4.   Vendor should contact the State's engineering points of contact by phone within thirty (30) minutes of a vendor network outage that affects multiple sites on the State's network. This verbal notification should be followed with a written report that provides an explanation of the problem, the cause of the problem, the solution to the problem, the estimated time for recovery, and the steps taken or to be taken to prevent a reoccurrence. The Vendor should provide onsite staff to the location, as necessary, within twelve (12) hours of the outage. To that end, please describe your company's notification procedures in the case of an outage.

Verizon's Response

Verizon has read, understands and will comply.

With Verizon's Monitor and Notify service, the State will be notified by email within 15-20 minutes of outages affecting individual sites in the network. This individual email notification would be a basis for outages affecting multiple sites. Verizon will coordinate with the State's contacts to provide verbal notification within 30 minutes of the awareness of an outage affecting multiple sites. A written report including an explanation of the problem, the cause of the problem, the solution to the problem, the estimated time to resolve the issue and the steps taken to prevent a reoccurrence will be provided. If necessary to resolve the issue, Verizon will dispatch staff to the site within 12 hours or as soon as possible.

4.3.1.3.5.   Vendor should provide written notification of ten (10) business days or more in advance of any planned upgrades, modifications, etc. that may affect the State's customers to the State's engineering points of contact. Please describe your company's notification process for planned maintenance.

Verizon's Response

Verizon has read, understands, and will comply.

Verizon's Change Management program governs planned and emergency changes including maintenance changes (e.g., software upgrades, hardware introduction etc.) which have varying levels of customer impact or no impact at all.

In cases where a customer impact will be experienced, by policy, customers are to be notified via their account teams or directly via email that the maintenance event will occur a minimum of ten (10) calendar days in advance. Approvals for all maintenance are conducted by the management of the requesting organization.

Except under certain emergency situations, all maintenance is conducted during our standard maintenance window periods.

In all cases, the execution of the maintenance requires the following:

- Maintenance notifications are published and receive appropriate approvals;

- Maintenance is restricted under most scenarios during the standard maintenance window period from 12AM to 6AM;

- The technician or engineer conducting the maintenance must have a Verizon engineering approved method of procedure with a back out plan.

4.3.1.3.6.   Vendor should provide notification of three (3) business days or more in advance of emergency maintenance. While the State understands emergency outages and/or unplanned maintenance windows occur, it is expected that these situations are kept to a minimum. Please describe your company's notification process for emergency maintenance and outages.

Verizon's Response

Verizon has read and understands.

Verizon makes every effort to minimize service interruptions to its customers and provide notice of emergency planned outages as quickly as possible via email notification. When service impact is imminent and remediation cannot wait until the appropriate maintenance window, the situation will be resolved as quickly as possible.

4.3.1.3.7.   The Vendor's solution should include a documented support and escalation structure to address outages. The State prefers the severity of the issue/support problem to determine the average problem resolution response time, as outlined below:

4.3.1.3.7.1.   Severity Level 1 is defined as an urgent situation, where the customer's services are unavailable, and the customer is unable to use/access the network. The Vendor should resolve Severity Level 1 problems as quickly as possible, which on average should not exceed two (2) business hours. If repair inside the 2-hour window is not feasible, then regular 1-hour updates are desired.

4.3.1.3.7.2.   Severity Level 2 is defined as significant outages and/or repeated failures resulting in limited effective use by the customer. The service may operate but is severely restricted (i.e., slow response, intermittent but repeated inaccessibility, etc.). The Vendor should resolve Severity Level 2 problems as quickly as possible, which on average should not exceed four (4) business hours. If repair inside the 4-hour window is not feasible, then regular 2-hour updates are desired.

4.3.1.3.7.3.   Severity Level 3 is defined as a minor problem that exists with the service, but most of the functions are still usable, and some circumvention may be required to provide service. The Vendor should resolve Severity Level 3 problems as quickly as possible, which on average should not exceed ten (10) business hours. If repair inside the 10-hour window is not feasible, then updates are desired at the start of the next business day and every day thereafter until repairs are complete.

Figure 4.3.1-2. Verizon's Escalation Structure.

Escalation Path

Level 5–Managing Director
Randall Cade
randall.cade@verizon.com
919-609-9052

Level 4–Sr. Manager
Suki Loy
suki.loy@verizon.com
919-377-7319

Level 3–Duty Supervisor

Terry Sayre	**Kevin Kain**
terry.sayre@verizon.com	kevin.kain@verizon.com
919-377-7381	919-377-5679

Level 2–Team Lead
GNSC.Team.Leaders@one.verizon.com
800-293-5844

Level 1–VEC or Assigned Engineer
etms@verizon.com
800-293-5844

Trouble Ticket → **Ticket Analysis** ⟷ • Priority Level - 1, 2, 3, 4
• Escalation Path

With the proposed Monitor and Notify and Full Management services, Verizon will provide the following 24x7x365 support to address outages:

- Poll the State's devices under management every three minutes to ensure they are functioning properly
- Respond to alarms generated by failed polls (indicates that a fault condition has occurred)
- Open a trouble ticket on the customer's behalf
- Begin initial testing and triage to isolate the fault condition to either access or CPE
- Engage local partners as necessary to continue triage and/or resolution
- Work with the State's contacts for necessary research, joint testing, access
- Provide email updates to the State's contacts throughout the outage time period.

This severity/priority level indicates the extent of the event and the effect it has on the customer's service and is used to determine the resources allocated for resolving the ticket, time frames for resolution and escalation matrix. Please see **Figure 4.3.1-3** comparing the alignment of the State's categorization to Verizon's Priority Level descriptions.

Figure 4.3.1-3. State of WV Categories and Verizon Priority Levels

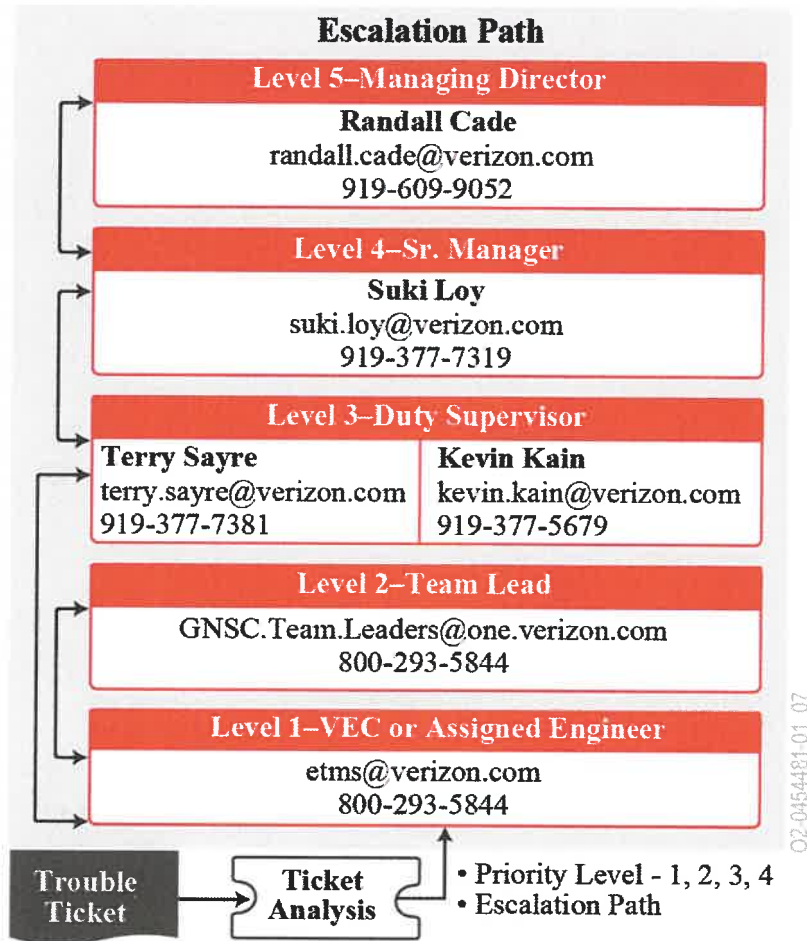| State of WV Severity Levels	Associated Verizon Priority Level and Impact
Severity Level 1 is defined as an urgent situation, where the customer's services are unavailable, and the customer is unable to use/access the network. The Vendor should resolve Severity Level 1 problems as quickly as possible, which on average should not exceed two (2) business hours. If repair inside the 2-hour window is not feasible, then regular 1-hour updates are desired. [4.3.1.3.7.1.]	**Priority 1** (Service Outage) has a 4-hour repair objective ▪ Complete loss of service; ▪ Customer is unable to use the circuit; ▪ The service is degraded to the extent where the customer is unable to use it and is prepared to release it for immediate and continuous testing.
Severity Level 2 is defined as significant outages and/or repeated failures resulting in limited effective use by the customer. The service may operate but is severely restricted (i.e., slow response, intermittent but repeated inaccessibility, etc.). The Vendor should resolve Severity Level 2 problems as quickly as possible, which on average should not exceed four (4) business hours. If repair inside the 4-hour window is not feasible, then regular 2-hour updates are desired. [4.3.1.3.7.2.]	**Priority 2** (Degraded Service) has an 8-hour repair objective ▪ The customer is able/still wants to use the circuit and is not prepared to release it for immediate testing; ▪ All quality type issues like error rate, package/cell loss, and slow response times; ▪ Calls to a specific area/and or number range fail (Indirect/Direct Voice); ▪ Indirect Switched Voice – more than 50% of calls failing; ▪ Destination faults.
Severity Level 3 is defined as a minor problem that exists with the service, but most of the functions are still usable, and some circumvention may be required to provide service. The Vendor should resolve Severity Level 3 problems as quickly as possible, which on average should not exceed ten (10) business hours. If repair inside the 10-hour window is not feasible, then updates are desired at the start of the next business day and every day thereafter until repairs are complete. [4.3.1.3.7.3.]	**Priority 3** (Minor Service) Quality issues that threaten the performance of the service including Scheduled Maintenance. Voice services – Single number destination problem, all quality type issues such as 'one-way audio', noise or call cut-off.
State of West Virginia does not have a Severity Level 4.	**Priority 4** (Assistance Request) ▪ Assistance request, customer requests – Access arrangements for Co-locate services, technical assistance when it is not directly incident related, tests on equipment or verification of connectivity; ▪ Non-service affecting customer request for an 'Incident Report' on a Priority 1 incident that has been handled by the Customer Service Center; ▪ Wholesale Standard Routing (WSR) ASR Issues.

4.3.1.3.8. *The Vendor's network operation support center should provide: all tiers of support, advanced technical expertise, be staffed with resources that are proficient in spoken and written English, maintain and take responsibility for trouble tickets reported by the State until resolved, and*

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Trouble Ticket → **Ticket Analysis** →
- Priority Level - 1, 2, 3, 4
- Escalation Path

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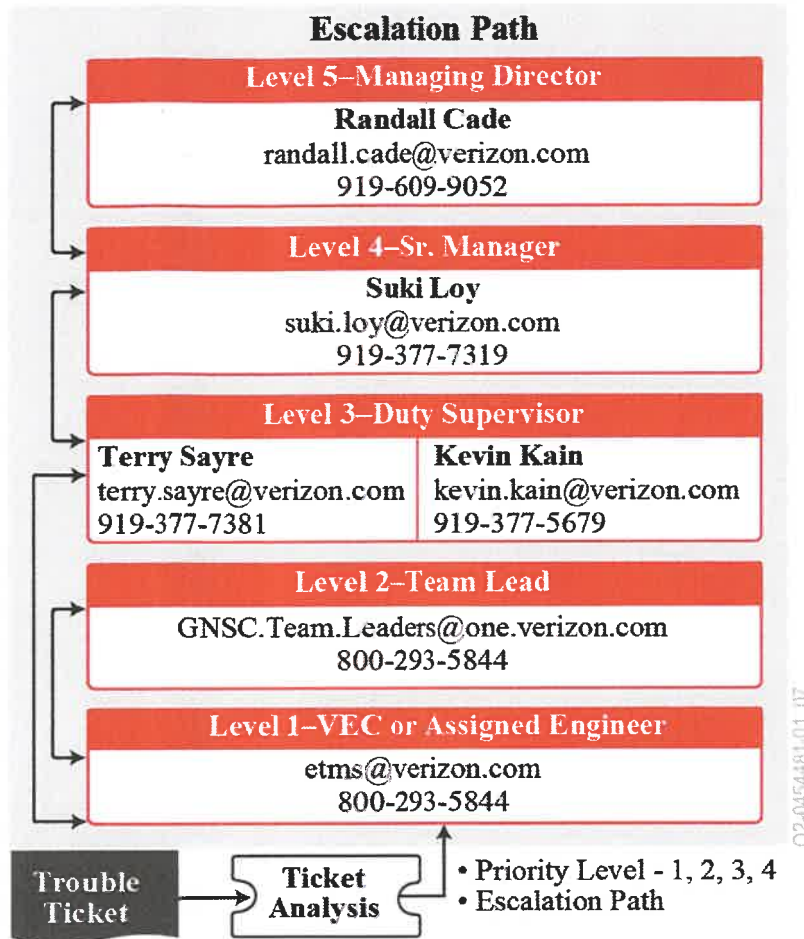
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Trouble Ticket → **Ticket Analysis**
- Priority Level - 1, 2, 3, 4
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This severity/priority level indicates the extent of the event and the effect it has on the customer's service and is used to determine the resources allocated for resolving the ticket, time frames for resolution and escalation matrix. Please see **Figure 4.3.1-3** comparing the alignment of the State's categorization to Verizon's Priority Level descriptions.

provide a tiered support escalation process. Please describe your network operation support center's structure, processes, and procedures for handling trouble tickets, resolving those tickets, and reporting back to the State's point of contacts.

Verizon's Response

Verizon has read, understands, and complies.

Verizon's Network Operations Center (NOC) provides operational (Tier 1) and advanced support (Tier 2 and Tier 3) for public sector customers via regionally aligned locations (Cary, NC or Ashburn, Virginia), employing US-based staff with options for online ticketing support or by calling 1-800-293-5844. NOC personnel are proficient in spoken and written English.

Verizon's solution includes Managed WAN - Monitor & Notify service which includes polling the State's devices every three minutes and creating proactive tickets when alarms are generated from detected faults. Triage of these proactive tickets begins with automated testing. If the outage continues, the ticket is assigned to an Engineer for further research and fault isolation working with local exchange partners, internal Verizon teams and the customer contacts until the issue is resolved and closed. Verizon's tiered escalation process is included in response to 4.3.1.3.7.

For all Managed WAN Services levels, Verizon will proactively monitor your network, isolate faults, and notify you in the event of an alarm. Rapid Fault Isolation enables Verizon to test network elements in parallel, automatically. Verizon can proactively detect a customer outage, perform fault isolation, and initiate repair action, in many cases without human intervention.

Verizon will dispatch support in the event of router hardware trouble for customers subscribing to the Full Management service level. Support for the Full Management service level includes all physical and logical router configuration management support.

24x7x365 Shift

The 24x7x365 shifts are made up of teams providing coverage; each team consists of a Duty Manager, Senior Engineer and Engineers. The shift is responsible for the pro-active fault monitoring via IMPACT, the proactive notification to the customer in the event of an outage and the technical repair of any issues including hardware, software, configuration, circuit and/or routing.

Tier 2

The Tier 2 team acts as the next level of technical support for the shift as well as managing the repair of any repeat or chronic faults.

Tier 3

The Tier 3 support team is the next level of technical support, dealing with the most complex issues and highly escalated tickets. In addition to this role, Tier3 engineers also deal with the vendor relations, special bids, engineering liaison and internal training.

The NOC is fully and professionally staffed 24 hours a day, 7 days a week which provides you proactive monitoring of the network around the clock. In the event of a problem, you will be promptly notified by a mutually agreed upon method. If you identify a problem on its own, the Network Operations Center is available 24x7x365 to troubleshoot issues. The NOC performs automatic

alarm detection, fault isolation, trouble-ticket generation, event and maintenance correlation, customer notification and regular updates, in many cases without the manual intervention of network support staff. The NOC also provides deep visibility into the circuits and equipment that make up your network to help more effectively manage your services.

In addition to the 24x7x365 support center services, The Verizon Account Team includes a dedicated Service Manager as an escalation point of contact to assist with incident management as needed.

4.3.1.4 Part 4: Security for WAN and DIA Services

4.3.1.4.1.   The Vendor should support customer evaluation of security incidents and also compliance verification evaluations, as deemed necessary by the customer.

Verizon's Response

Verizon has read, understands and will comply.

Verizon is providing commercial commodity services for WAN and DIA that are managed out of our MNS service organization. The customer will be responsible for the security of their data running across the proposed services. Verizon MNS service organization will support customer inquiries pertaining to their services under management. Verizon Corporation has a corporate security incident management program detailed 4.3.1.4.3.

4.3.1.4.2.   The Vendor should have an established and documented policy governing personnel security to include the validation of employee trustworthiness.

Verizon's Response

Verizon has read, understands, and complies.

Verizon is committed to hiring employees who meet the requirements and qualifications of the position for which they are applying. In support of this commitment, Verizon has established an employment background investigations process to verify information provided by applicants who are extended a conditional offer of employment. The results of these employment background investigations are utilized in the hiring and employment decisions made by Verizon.

Background investigations (BI) will be conducted for all new hires and/or when required for employees who work on U.S. Federal or State government contracts as well as specific customer contracts. For those applicants or employees who must receive a security clearance to perform their job duties, the receipt of such security clearance designation shall satisfy the requirements of this background investigation policy for such applicants or employees, except as otherwise required by Verizon or government contract. Verizon will conduct background investigations in compliance with applicable law and regulation, including, but not limited to, the Fair Credit Reporting Act.

Background investigation results are valid for one year from the date of the report's completion. Former Verizon employees who passed a background investigation during their employment and who are rehired more than one year following their termination date are required to undergo a new background investigation. Former Verizon employees who did not undergo a background investigation during their employment and who are rehired at any time following their termination date are required to undergo a background investigation.

The background investigation will consist of the following components, unless prohibited by law: criminal history, employment history, educational verification, and social security number verification

(US only). Driver's license status and driving record are checked when candidates are required to drive a Company or personal vehicle in the regular performance of their duties. In addition, Verizon performs pre-employment background checks and drug testing of all new employees (except that unionized employees may be subject to limited or different testing standards).

Verizon considers the results of background investigations in making its hiring or rehiring decisions. Additionally, in those instances when an employee undergoes a background investigation pursuant to a government or customer contract requirement, Verizon may use the results to evaluate an employee's suitability for continued employment. To the extent that Verizon uses background investigation results as a basis for making an adverse employment decision (e.g., a no-hire or a termination decision), the Company shall provide any required legal notices to applicants or employees in connection with such decisions. See **Figure 4.3.1-4** for a summary of the procedures.

Figure 4.3.1-4. Background Investigational Procedures

BI Components	BI Parameter	When Required
Criminal History	Felony and misdemeanor convictions within the country, state or county of residency, education and employment (including military service) for the previous seven (7) years. Current status of pending criminal charges and outstanding warrants. Status of current participation in a pretrial probation or alternative rehabilitative program.	Always
Driver's License Status and Driving Record	Validity and current status of driver's license. Driving offenses and moving traffic violations for the previous three (3) years.	When the job position requires driving a Company or personal vehicle in the regular performance of duties. Talent Management will request record search when required.
Employment History	Previous five (5) years of employment and military service are verified.	Always
Educational Verification	Verification made of the highest diploma or degree earned. When necessary, licenses and certifications are verified.	Always
Social Security Number (US) and Other National Identification Number Verification	Determine names to which Social Security Number (US) and Other National Identification Number is attributed.	Always (US and some International)
International Search	Applicants relocating directly from one country to another country will be subject to background search in their country of residency.	When the applicant has resided in the country for less than one year

4.3.1.4.3.   The Vendor should describe its company's cyber security and privacy management program including an overview of the governance structure, cyber security strategy, and the experience of personnel in key security and privacy roles.

Verizon's Response

Verizon has read, understands, and will comply.

Verizon invests in people, processes, and technology to protect our company and our customers. A successful security program requires a partnership between skilled security leadership and teams involved in day to day business decision making. Verizon employs hundreds of experienced security professionals, some of whom work directly for the Chief Information Security Officer (CISO) on establishing and governing the Company's information security strategy, policy, standards, architecture and risk management. Other security professionals support lines of business directly, partnering with Corporate Information Security (CIS) to facilitate information security and protect customer data.

Verizon's Corporate Information Security Program has implemented administrative, technical and physical safeguards that help to protect the confidentiality, integrity and availability of systems, networks, and information. Verizon's written information security policies and practices correlate to the National Institute of Standards and Technology Cybersecurity Framework (NIST-CSF). The following describes Verizon's Corporate Information Security Program:

IDENTIFY

Asset Management (NIST – CSF ID.AM)

Verizon maintains an asset management program which utilizes discovery tools and core physical asset information to facilitate the full lifecycle of its information technology and data center assets. Verizon classifies data according to four major classes (i.e., Public, Private, Confidential, and Highly Confidential Information). Verizon's risk-based strategy has increasing levels of security safeguard requirements for each type of data asset maintained.

Assets, such as physical servers, virtual servers, business applications, network devices, mobile devices, printers etc., are required to be tracked and inventoried in one of Verizon's approved central repositories. Documentation in this system must include information such as the person or group responsible for the asset and additional details such as its business purpose, criticality, and the Verizon classification of the data it stores, processes or transports.

Corporate issued devices, such as standard issue Company laptop and mobile phones, are owned and maintained by identifiable individuals who are responsible and accountable for their protection as well as the security of the data they process. Verizon assets must be physically locked or comparably secured whenever traveling with, transporting or utilizing equipment in non-Verizon physical environments.

Security Governance (NIST – CSF ID.GV)

Verizon's Business Unit (BU) Information Security Officers (ISOs) are responsible for implementing appropriate security processes within their BU of responsibility. These ISOs work with the complexities of their specific BU to determine the best means of implementing Verizon security policy. ISOs serve as the key interface between the business and security governance executive committees, who coordinate, supervise and assist in the cross-functional prioritization of security program components.

In collaboration with the CISO, the security governance executive committee also provides direction to protect the confidentiality, integrity and availability of Verizon's information resources. The actions of the executive committee, CISO and ISOs within the company, in combination with Corporate

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Policy, comprise the core of Verizon's Information Security Program. This integrated security framework allows Verizon's Corporate Information Security Office to drive the information security program, strategy, policies and threat management throughout the Company.

Additionally, Verizon has established processes to identify, track and determine applicable legal and regulatory information security and privacy regulations as defined and implemented by external governing bodies (e.g. international, Federal, state and local governments).

Defined policies are documented to establish governance over risk management which establishes the ownership of risk acceptance and/or mitigation decisions. Risk management strategy is championed at the executive level to facilitate consistent, organization-wide application. Accepted risk must be visible and affirmed at the both the BU and CIS executive levels.

Risk Assessment (NIST – CSF ID.RA)

Verizon has created corporate information security policies to address risk management strategy that specifies risk tolerances, threat sources and the process for identifying, assessing and evaluating risks. This framework allows Verizon to care for and reduce identified threats to the Company and its customers. Security risk assessments are conducted to identify potential internal and external threats to Verizon assets, business processes and customers to analyze the capability of the safeguards to withstand these threats. Business Unit management, ISOs, Internal Audit and risk analysts work cross-functionally to participate in the overall risk management process.

Risks associated with known and identified vulnerabilities affecting Verizon assets are tracked and documented. Additionally, Verizon uses external threat information feeds to monitor and stay well-informed of threats and vulnerabilities. Once a material risk is identified, Verizon develops an operational plan to respond to, assign responsibility for and manage risks identified in the risk assessment.

PROTECT

Access Control (NIST – CSF PR.AC)

At Verizon, logical access control policies are defined, documented and managed to ensure that only authorized personnel have access to critical business applications and systems based on position and job requirements.

Verizon utilizes the Principle of Least Privilege in which a user is granted the minimum level of access to perform actions necessary for the job function. Privileged access for production network, system or application functions is controlled and restricted to as few personnel as operationally feasible and is authorized on a "by need to know" or "event by event" basis. Verizon's policy is to assign each user a unique user ID for accountability of actions. Authorization reviews and role change processes alert administrators to modify and/or revoke access rights when an employee no longer requires access or is no longer employed by Verizon.

Verizon's Access Control Policy requires that user access credentials must uniquely identify an individual person, system or service and that user access credentials are to be safeguarded. Access must be reviewed on a periodic basis to validate that it is still required. Access must be de-provisioned or removed when no longer required (e.g. job role change) or in the event of a termination.

Remote login access to internal systems requires the use of multi-factor authentication. Where appropriate and based on risk, network integrity is further protected by incorporating network segregation between production systems.

Verizon implements controls to restrict physical access to facilities housing Verizon systems to authorized personnel. Depending on the type of facility, access may be permitted by electronic card access readers, keys, security guards, or local company personnel.

CCTV cameras are deployed to strategic locations to protect personnel, operations and property. Verizon's policy outlines that visitors are required to have and display Verizon issued Visitor badges and are to be escorted at all times. Each visitor is required to sign-in to a Visitor's Log prior to receiving a visitor badge. Personnel at Verizon facilities are required to wear a company issued ID badge at all times.

Awareness and Training (NIST – CSF PR.AT)

Verizon has a formal Cyber Security Awareness Program to ensure Verizon personnel are provided with cybersecurity awareness education and are adequately trained to perform their information security-related duties and responsibilities consistent with policy and the underlying control framework.

Verizon employees receive security awareness training for both physical and logical information security as part of the on-boarding process. Training is reinforced by security awareness articles posted on the corporate intranet and by on location in-person awareness events. Security awareness bulletin boards and posters are also deployed in strategic locations throughout Verizon facilities.

Supplemental, role-based training is also provided to Verizon personnel who have additional information security responsibilities and accountability specific to their role (e.g. Developers, system administrators, etc.).

Data Security (NIST – CSF PR.DS)

Verizon manages data protection in a systematic and structured manner to enforce confidentiality requirements throughout the data's lifecycle of creation, transmission, storage, modification, retention and destruction. Based on risk, industry standard encryption is used to protect data-in-transit and data-at-rest.

Verizon has processes in place to destroy or dispose of data once the specified data retention period has passed. Data is purged or securely overwritten on assets storing media prior to disposal or reuse of the asset. Magnetic, solid state and optical media containing Verizon information (i.e. CDs/DVDs, hard drives, tapes or other portable or removable storage media) is purged by overwriting, degaussing or destroying in a manner that prevents information from being reassembled into a useable form. Additionally, the use of removable storage devices (e.g. CDs/DVDs, USB drives and magnetic media) are controlled and are subject to physical and logical protections. Confidential paper documents are required to be physically secured and destroyed by using a shredding device.

Verizon assets enable the timely and reliable access to and use of data and information systems by maintaining redundancy and backup arrangements in line with business needs and appropriate capacity to accommodate peak traffic volume.

Administrators are required to make regular backups of critical files and take appropriate precautions to protect information from compromise, loss or damage. In addition, administrators are required to perform periodic testing of backup/disaster recovery restoration procedures.

Information Protection Processes and Procedures (NIST – CSF PR.IP)

Verizon maintains security baselines for systems and infrastructure that protect sensitive information. Verizon development teams are required to implement secure design and testing controls throughout the system development lifecycle and require the use of secure coding practices.

Formal change control procedures are implemented and maintained. Changes to Verizon's networks, devices and software configurations are required to be reviewed and approved according to authorized change control processes.

Data backup policies and procedures are formally maintained.

Procedures and processes to manage new and existing vulnerabilities (e.g. scanning, patching and/or deploying compensating safeguards) are documented and implemented. Internal and external vulnerability scans are performed on a periodic basis and system owners may also schedule real-time vulnerability system scans as needed. Penetration testing is performed on Verizon internal and external environments based on risk. Identified vulnerabilities are assessed based on the risk of each individual platform and security maintenance is performed accordingly.

In order to maintain a high level of functionality and security of its networks and hosted systems, Verizon has an established patch management processes for production hardware and software installed on the Verizon network. Vendor security patches are initially assessed to determine risk and their deployment priority. Once a patch has passed the proper testing procedures, it is then released for scheduling to be deployed into production.

Antivirus software is also installed on Verizon workstations and laptops to protect applications and data from infection by malicious code, malware and viruses. Virus definition updates are centrally controlled and scheduled for automatic deployment.

Maintenance (NIST – CSF PR.MA)

At Verizon, asset maintenance and repair services are approved and recorded prior to being performed. Service Level Agreements (SLAs) are established for maintenance of critical assets. Remote asset maintenance is performed using secure, authenticated network connections and communication channels. Access is restricted to assets subject to the maintenance request and is individually approved prior to implementation. Verizon policy restricts equipment servicing to authorized personnel only and requires that records be maintained of all repairs and maintenance. Two-factor authentication is used to secure remote access to Verizon's internal network resources.

DETECT

Security Continuous Monitoring (NIST – CSF DE.CM)

Critical Verizon assets and systems are configured to generate event logs that may indicate a system compromise, denial-of-service or other security violation and are subject to security monitoring controls via the Threat Management Center. Hardware and software-based tools have been deployed throughout the Verizon network to provide real-time alerting from devices such as firewalls, intrusion detection systems, routers and switches.

Security event logs have controls in place to protect them from tampering and access to logging data is limited to authorized users only. Event logs are stored in a central location and retained in accordance with data retention and regulatory requirements. Security event data is reviewed and analyzed on a scheduled basis. Detected security events are required to be promptly escalated when pre-determined event thresholds are exceeded and responded to in accordance with a defined incident management process.

RESPOND

Response Planning (NIST – CSF RS.RP)

Verizon's dedicated Incident Response team has the responsibility for the response to and management of security incidents. The primary objectives of the Incident Response Plan are to ensure timely reaction to suspected or verified security incidents, to minimize losses during an incident and to securely recover IT systems and related business processes impacted. Additionally, the Incident Response Plan is designed to allow Verizon to comply with the laws of the countries in which it conducts business and the contractual obligations to which it has agreed.

Verizon's Incident Response Plan reflects the following processes:
- Preparation – defined roles and responsibilities with collaborative procedures
- Monitoring – continuously observe systems and networks for suspicious activity
- Detection - identify impacted systems and scope of the incident
- Containment – limit the damage and prevent any further damage from occurring

- Eradication – removal and sanitization of impacted systems
- Recovery - restoring the availability of systems and services impacted
- Lessons Learned – the technical and operational improvements that can be made to reduce the impact of a similar incident
- Forensics and Threat Intelligence – evidence collection, preservation and management

Verizon leverages and, as applicable, shares incident-related intelligence with law enforcement, industry peers and information-sharing organizations (i.e., Information Sharing and Analysis Centers (ISACs)) to maintain appropriate security response strategies and an understanding of emerging threats. Verizon's Incident Response team receives appropriate and regular training in relevant domains. Newly hired team members learn the policies, procedures and guidelines of threat management, while advanced training is provided to existing personnel to enable them to stay current on the latest defense and mitigation strategies for cyber threats and attack vectors. Periodic tabletop exercises are also conducted at a department and at a Company level to ensure coordination across business units to both socialize and practice the documented procedures. Verizon's Legal and Regulatory teams are integrated with the Incident Response process, to help ensure that these areas are properly addressed as part of the incident response function.

RECOVER

Recovery Planning (NIST – CSF RC.RP)

Verizon has an established recovery plan to restore information systems and business operations by rebuilding systems, restoring data backups, closing of the information security incident, and restoring security controls after an incident has taken place. Internal stakeholders, including executives and management teams, are kept informed as to the progress of incident recovery activities.

Verizon Security Operations Centers (SOC) Experience and Qualifications

Verizon has Managed Security Services and regional Security Operations Centers (USA: Ashburn, VA and Cary, NC) where our Security Analysts deliver monitoring and management services on a 24x7x365 in region for customers who subscribe to Managed Security Services.

Verizon has approximately 80 people working for the Managed Security Service (MSS) department at the US locations. These include Security Analysts, Product Management, billing, etc., with approximately 230 people working in the Security Operation Centers (SOCs) operations worldwide.

Typically:

- Each SOC has approximately 21 security experts.
- Each SOC has 1 SOC manager on duty during operating hours, as well as a Shift Supervisor and 2 team leaders.
- Verizon strives to hire seasoned professionals with a minimum of 3 years of experience in security services. We estimate that the ratio of senior associates to associates is 2:1.
- Verizon Managed Security Services SOCs adhere to the following Information Security Standards and Practices and Certifications include ITIL Foundations training / certification, Security Certification CCNA, CCSA, CCSP, CCSE, CISSP, SIEM Certifications (e.g. Splunk), SANS GIAC certifications, ISO/IEC 27001, ISO 9001, and ISAE3402 and SSAE18.
- Verizon's security personnel are available 24x7x365 basis, through rotating SOCs and SOC shifts. At any given point in time, approximately 25% of support personnel are on-duty.

Summary

Verizon's substantial investment in the people, processes and tools necessary to secure the products and services that our customers trust and depend on, demonstrates our commitment to security excellence every day. Our continuous improvement strategy strives to stay ahead of the curve by implementing forward thinking security controls and techniques to protect customer data and the Verizon Network. We are honored to have you as a customer and our continued goal is to provide you with the best security assurance possible to strengthen our business relationship.

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4.3.2   Mandatory Requirements
4.3.2.1   Part 1: Technology Service and Solution for Ethernet WAN, DIA and 4G/5G Services

4.3.2.1.1.   Ethernet WAN Service

4.3.2.1.1.1.   The Vendor must provide Ethernet WAN services that will terminate into existing State network equipment.

Verizon's Response

Verizon has read, understands, and will comply.

Verizon currently provides Ethernet WAN services to the State of West Virginia. This service can terminate into existing state equipment as well as Verizon-managed equipment. A description of our Ethernet Service is as follows:

Ethernet Access

Scalable Access to Public IP, Private IP, and Ethernet Services

Ethernet Access bypasses the need for dedicated ports, modules, and termination devices at the State of West Virginia's premises (CSUs/DSUs). It is available for E-Line, E-LAN, and IP Services and offers a number of benefits:

- Meets increasing data bandwidth demands and provides TCO (total cost of ownership) benefits – Ethernet Access delivers higher and more flexible bandwidth

- Supports a wide range of applications, such as Cloud computing, video and imaging transmissions, and data applications that drive demand for the dynamic bandwidth capacity of Ethernet networks

- Converged architecture provides common platform for access, simplifying operations and facilitating continued market migrations from TDM to Ethernet based services

- Simplified CPE using standard Ethernet handoffs of 10/100BaseT, 100BaseFX, and GigE (electrical and optical) and 10GigE with multiple connector/jack types

- Scalable bandwidth from 1 Mbps to 10 Gbps, on 10 M, 100 M, GigE and 10GigE user network interfaces (UNIs). Access speed and WAN interface combinations may vary by off-net location.

- Flexibility to terminate one or more Ethernet, Internet Dedicated and/or Private IP (MPLS) services over the same User Network Interface (UNI) across a common platform

- Verizon's Ethernet Access Services are available in over 100 countries to managed and unmanaged Networking Services

Multiple Ethernet Services over a Single Connection

The Multi-Service feature of Ethernet enables the State of West Virginia to terminate multiple services or EVCs from the same and/or different networking services over a single user network interface. It simplifies IT support and brings you the flexibility to take advantage of Private IP, Public IP, E-Line and E-LAN services over the same access connection.

Architecture and Availability

Verizon has a wide variety of Ethernet access options available. We can provide the right access method for the State of West Virginia based on your bandwidth, Operational and Application performance, and budgetary needs. Examples of access designs used by Verizon are:

- On-net Access services, which we have available across the US,

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- On-net Access services, which we have available across the US,

- Off Net Access services based on native Ethernet services from a third-party via Ethernet User to Network Interface (UNI), Dense Wavelength Division Multiplexing (DWDM), and/or Network Node Interface (NNIs), using technologies such as Switched Ethernet, which can be delivered via Ethernet Hybrid Fiber Coax, Ethernet over Gigabit Passive Optical Network (GPON), Ethernet over Copper, and Ethernet over Fiber.

Every third-party carrier we use to deliver off-network Ethernet Access is put through a rigorous analysis and certification process. Carrier technology offerings must meet Verizon engineering qualifications based on operational and application performance. It enables us to deliver a consistent customer experience using Verizon Ethernet Access. We have certified over 400 third-party native Ethernet Access providers, including multiple certified third-party carrier options in each country. New providers and certified services are added regularly.

We believe the ability to offer our own On-Net Ethernet services outside the U.S., as well as the extensive use of local carriers to extend the options we have for the State of West Virginia makes us an Ethernet leader among the global carriers.

Regardless of the access method used, we provide quality and reach that will help meet the State of West Virginia's expectations.

Our Proposed Solution

In order to run your business and drive outcomes, first and foremost your network must be reliable and secure. You expect your network to be effective and private. MPLS technology provides traffic separation to help protect corporate data and resources, which maintains enterprise-grade network traffic performance.

Private IP delivers the scalability and connectivity of IP with the security and reliability of proven network technologies. Tailored to organizations of all sizes in both the public and private sectors, Private IP helps you capitalize on data growth without a sky-high annual IT budget.

A key benefit of the Verizon Private IP solution is the ability to quickly and virtually manage your bandwidth online, right from your desktop, to enable your network needs to quickly adapt with your business requirements.

Additional Features and Offerings

We are constantly making updates and changes to our Private IP solution in order to enhance the offering. Private IP enables you to take advantage of:

- Inherent service benefits of layer 2 and 3 protocols. Specifically, privacy and security.
- Flexibility and scalability of IP

This combination enables you to connect sites in any-to-any configuration with eased network configuration and management. Additional features are shown in **Figure 4.3.2-1.**

Figure 4.3.2-1. Additional Features

Feature	Description
Scalability	Ease of expanding the network.
Security	Full layer 2 security for an IP network.
Any-to-any connectivity	Any location on the Private IP network can connect to any other location on the Private IP network.

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Feature	Description
Extensive Ethernet Access	Connectivity to our global Ethernet footprint to our Private IP network.
Class of Service (CoS)	The ability to prioritize traffic and offer better than best effort service.
Access to the Public Internet	You can gain access to the Public Internet either via the Secure Gateway - Firewall solution, enabled by Secure Gateway.
Platform to enable e-business applications	The Private IP network is able to support many e-business applications. Verizon can partner with you in developing your overall communication solutions.
Private IP Extranet Feature	The ability to create secure extranet connections for business to business (B2B) e-commerce trading partners, and vendors.
Diversity	Service edge or geographic diversity
Dynamic Network Manager	Enables you to manage your Private IP Port and Gold CAR speeds.
WAN Analysis Reporting	Offers a one-stop solution for proactive performance management, capacity analysis and reporting on Verizon-provided network infrastructure. Offering different reporting tiers of service at the Provider Edge, Customer Edge, and Application level details. At an additional cost.
Converged IP	Designed to address the need for private and public IP connectivity using two Private IP ports.

Verizon Private IP

Organizational needs are evolving at a record-pace. New business demands and working models require innovative technologies and dynamic applications to compete and thrive in the modern business environment. But unreliable networks and slow connections can bog down productivity and sales, costing valuable time and money.

Whether your apps are in the cloud or at your data center, you need cloud-ready, high-performance network connectivity, like Private IP, that is flexible, reliable and secure to power business growth.

Verizon's Private IP delivers superior performance for dynamic applications and is a critical foundation for high-performing hybrid networks using SD WAN.

As part of an SD WAN solution or as a stand-alone connection, Private IP helps ensure your mission-critical workloads get the performance and reliability they need.

Secure and reliable

Traffic runs over a network-based VPN that is separate from the public Internet to help mitigate the risk of cyberattacks.

- Reliable, high-performing connectivity backed by 24-hour customer service
- Advanced reporting capabilities and competitive Service Level Agreements (SLAs)

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Varying classes of service

Multiple routing protocols guide network traffic along the best routes with six classes of service.

- Prioritize low latency, low jitter and high availability, depending on need
- Consolidate data, voice and video services through a single connection to help control costs

Cloud-ready and scalable

Quickly connect multiple locations and configurations within your local or global VPN to new or existing cloud ecosystems.

- Available with private, pre-provisioned bandwidth on-demand
- Consumption-based and fixed-cost access to Cloud Service Providers (CSPs) globally
- Same-day activation with over 200 CSPs

Flexible

Multiple levels of control are available to meet your needs, from simple monitoring and notification, to professional services and fully outsourced network management.

- Automated dynamic bandwidth allows for near real-time and scheduled changes
- Support multiple services and oversubscription on select Ethernet access circuits

If the State of West Virginia wants to pair with Verizon Wireless 5G service for private connectivity to deliver enhanced solutions including mobile applications, remote workers, IOT, and temporary location services, Verizon can provide Private Wireless Gateway service at an additional cost.

- Power your business with high speed, low latency wireless connectivity to grow business opportunities
- Provide diverse wireless access for inaccessible locations and innovative solutions

Powering your growth

Whether you manage your own network or join the more than 4,000 customer networks under the care of our managed services team, you'll get the experience necessary to build a solution that can help power the growth of your enterprise.

Private IP is available in 185+ countries and territories around the world.

Why Verizon

Verizon's Private IP MPLS service is a foundation that can enable more effective business operations and innovation. Private IP supports our commitment to continue to implement new technologies and network enhancements that can deliver a broad range of new value-added business solutions. In addition to providing secure, global connectivity, you can transform your business model to stay ahead of the competition. Verizon has the unique ability to bring together a variety of access, network, and cloud resources to customize a solution to help you achieve your business objectives.

As defined in the background and current operating environment (Section 4.1), Verizon leverages multiple service providers to bring the last mile access, at a postalized rate to the State of WV. This solution provides many advantages to the State of West Virginia, including carrier diversity, potentially minimizing individual carrier network outages. This solution will also minimize special construction or long install intervals with Verizon being able to leverage existing carrier interconnection agreements already in place for areas where certain providers may not have an

existing presence. Verizon will be a single point of contact and will be responsible to resolve any network anomalies (e.g., cable cuts, network outages, etc.).

4.3.2.1.1.2.   The State requires the Vendor to provide standard Ethernet interface options to include 10/100/1000 and 4G/5G.

Verizon's Response

Verizon has read, understands, and will comply.

Verizon's Ethernet/Private IP service connects customer locations together at native LAN speeds and Ethernet interfaces of 10, 100, 1000 Mbps and/or 10 Gbps or 100 Gbps Ethernet.

All 10 Mbps and many 100 Mbps Ethernet interfaces use standard electrical connectors (aka 100BaseT) with unshielded twisted pair (copper) + RJ45. Therefore, Verizon-owned and maintained equipment at the customer premises performs an electrical to single-mode fiber optical conversion on the network side. 1GigE, 10GigE, and 100GigE is typically an optical handoff with Multimode Fiber (MMF) at the customer premises and Single mode Fiber (SMF) on the network side. SMF can be requested as the customer hand-off at the time of service ordering. The optical connector is a LC type connector.

4G/5G uses standard Ethernet interface.

4.3.2.1.1.3.   Vendor must propose service options that range between 5Mbps through 40Gbps for standard Ethernet service and 5Mbps through 5Gbps for SD-WAN enabled service.

Verizon's Response

Verizon has read, understands, and will comply.

Pricing for service options have been included in the Exhibit A – Pricing Page in the Cost Proposal.

4.3.2.1.1.4.   The Vendor will be responsible for all service continuity associated with their WAN service, whether issues are within the Vendor's networks, alternative local-loop vendors, 4G/5G vendors, WISPS, Cable TV vendors or other technology vendors engaged to provide WAN services to the State. The Vendor must be able to coordinate, test and troubleshoot the service continuity and integrity end-to-end.

Verizon's Response

Verizon has read, understands, and will comply.

Verizon is responsible for service continuity end to end and Verizon backs this up with competitive SLAs to support the proposed WAN solution.

Verizon added in-state PIP nodes and 100G Ultra Long-Haul (ULH) Fiber Links to reduce latency and increase survivability for the State of West Virginia network. The Private IP backbone diversity with dynamic rerouting of traffic with no loss of service if one uplink fails. In addition, Verizon has Access carrier NNIs with 4 major access providers in WV with 11 interconnects with the 4 Vendors.

Every third-party carrier we use to deliver off-network Ethernet Access is put through a rigorous analysis and certification process. Carrier technology offerings must meet our engineering qualifications based on operational and application performance. It enables us to deliver a consistent

customer experience using our Ethernet Access. Verizon has certified hundreds of third-party native Ethernet Access providers, including multiple certified third-party carrier options. New providers and certified services are added regularly.

We believe the ability to offer our own On-net Ethernet services, as well as the extensive use of local carriers to extend the options we have makes us an Ethernet leader among the global carriers.

Regardless of the access method used, we provide quality and reach that will help meet your expectations.

4.3.2.1.1.5.   The Vendor must provide services capable of supporting dynamic routing and sharing routes between autonomous systems (AS) on provider networks as well as other public and private networks.

Verizon's Response

Verizon has read, understands, and will comply.

Dynamic routing and route sharing between autonomous systems is supported on both Verizon's Private IP (MPLS) network as well as our Dedicated Internet Services.

Private IP

Verizon supports static and dynamic routing between the PE and the CE. Dynamic routing protocols include BGP, RIPv2, and OSPF (OSPF requires engineering approval).

BGP always-compare-MED is enabled on all Private IP PE routers. The BGP always-compare-MED command ensures the comparison of the MED for paths from neighbors in different autonomous systems. This will enable Private IP customers to utilize unique autonomous system numbers at each of their locations, but still be able to influence routing based on MED or AS Path or other BGP attributes associated with the BGP routing algorithm.

Private IP customers can change MED or AS Path, or other Standard BGP attributes associated with the routes that are injected into Private IP and these attributes will be propagated along with the routes across their Private IP VPN and be utilized in the BGP algorithm decision process to determine the optimal route across the Private IP network.

Another feature that can be enabled for Private IP customers is the Send Community feature which will preserve and propagate the CE assigned BGP Standard Communities across the Private IP network. Private IP Customers can use these BGP Standard Communities coupled with the appropriated inbound/outbound BGP route-maps to influence routing behavior within their CE routers.

Dedicated Internet Service:

In order to ensure stable and scalable global network routing, Verizon Enterprise has defined route policies between the various Verizon Enterprise continental or national networks as well as with customers and Peers.

Verizon Enterprise will accept IPv4 route prefixes all the way to /32 in length, however, prefixes between /25 and /32 will only be supported locally within the immediate network and not advertised to the other Verizon Enterprise (or Verizon Wireless) networks, customers, or Peers.

customer experience using our Ethernet Access. Verizon has certified hundreds of third-party native Ethernet Access providers, including multiple certified third-party carrier options. New providers and certified services are added regularly.

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Routes larger or equal to /24 will be distributed to all dynamically connected parties unless the customer specifies restrictions using BGP community tags (as described later in this document).

The Verizon Enterprise global network is divided into four primary continental regions, each with a unique Autonomous System Number (ASN):

- AS701: North America (including Canada, Mexico, and the United States)
- AS702: EMEA (Europe, Middle East, Africa)
- AS703: Asia Pacific
- AS14551: Latin and South America

BGP Route Change Management

Verizon Enterprise Customer Network Support (CNS) provides customers with direct technical support for addressing BGP route change requests (from authorized customer representatives) from a single network route change up to larger bulk route changes.

Verizon Enterprise supports "prefix-list" route filtering in order to ensure accurate routing between the CE and PE. Autonomous System Number route filtering is not supported in order to protect the network and the customers from any erroneous or accidental route advertisements.

Customer BGP Peer Group (Route Table) Options

Verizon Enterprise customers using Border Gateway Protocol (version 4, or aka BGP4) have a variety of options in what type (or size) route table to receive.

Each table provides a different size view of the Internet as received through the connection to Verizon. Customers may want to determine the memory capacity of their CPE before choosing a route table to receive. Keep in mind that since BGP is intended to be used when there are two or more unique peers, there may be two or more route tables to receive.

Peer Groups:

full-routes

Customers will receive a full version of the Internet routing table.

full-routes-med

Customers will receive a full version of the Internet routing table. Each route will have a BGP med assigned to it which corresponds to the Interior Gateway Protocol (IGP) metric. Verizon Public IP networks uses Intermediate System to Intermediate System (IS-IS), as its IGP.

full-med-default

Customers will receive a full version of the Internet routing table. Each route will have a BGP med assigned to it which corresponds to the Interior Gateway Protocol (IGP) metric. Verizon Public IP networks uses Intermediate System to Intermediate System (IS-IS), as its IGP. Customers will also receive a default route. The default route is also called the gateway of last resort and is shown in the routing table as the 0.0.0.0 route.

full-and-default

Customers will receive a full version of the Internet routing table. Customers will also receive a default route. The default route is also called the gateway of last resort and is shown in the routing table as the 0.0.0.0 route.

uunet-and-customer-routes

Customers will receive Verizon internal prefixes and Verizon customer prefixes.

uunet-and-customer-and-default

Customers will receive Verizon internal prefixes and Verizon customer prefixes. Customers will also receive a default route. The default route is also called the gateway of last resort and is shown in the routing table as the 0.0.0.0 route.

uunet-global

Customers will receive Verizon internal prefixes from all Verizon global networks (AS701, AS702, AS703, AS14551).

uunet-global-and-default

Customers will receive Verizon internal prefixes from all Verizon global networks (AS701, AS702, AS703, AS14551). Customers will also receive a default route. The default route is also called the gateway of last resort and is shown in the routing table as the 0.0.0.0 route.

uunet-only-routes

Customers will receive only those Verizon internal prefixes local to the specific ASN (AS701, AS702, AS703, AS14551) of which the customer is directly connected.

uunet-only-and-default

Customers will receive only those Verizon internal prefixes local to the specific ASN (AS701, AS702, AS703, AS14551) of which the customer is directly connected. Customers will also receive a default route. The default route is also called the gateway of last resort and is shown in the routing table as the 0.0.0.0 route.

default-only

Verizon will only send a default route (default-originate) to the customer.

no-routes (not really a peer group, but it's an option)

Verizon will send no routes to the customer.

verizon-voip-only

Customers will receive just the routes associated with Verizon's VoIP infrastructure elements.

Prefixes announced by AS701 to a customer receiving "full-routes" and "uunet-and-customer-routes":

Customer BGP Community Tag Options

Customer BGP communities provide customers with additional control in how they advertise routes to Verizon.

The identifier on the left side of the colon is the Verizon ASN that the customer wishes to impact. If the customer is in North America and connected to AS701 and wants to influence how their routes are seen by and handled by AS701, then they would use "701:x". However, a customer could in fact exist in AS701 and still use a BGP community tag that begins with a different continental ASN (such as 702/EMEA, 703/Asia-Pacific, or 14551/Latin America). The use of "0" (in place of 701, 702, 703, or 14551) sets a tag as global (see **Figure 4.3.2-2**).

Figure 4.3.2-2. Community Tag Functions

Community	Function
701:1	701 will appear one additional time in the AS path as seen by Peers for the associated route.
701:2	701 will appear two additional times in the AS path as seen by Peers for the associated route.
701:3	701 will appear three additional times in the AS path as seen by Peers for the associated route.
701:4	701 will appear four additional times in the AS path as seen by Peers for the associated route.
701:20	Propagate route to customers, but not Peers.
701:30	Propagate route to customers and Peers, but not to other Verizon regions (702, 703, 14551).
701:70	Prevents advertisement to customers or Peers.
701:80	Sets local_pref to "80" on the associated route.
701:90	Sets local_pref to "90" on the associated route.
701:110	Sets local_pref to "110" on the associated route.
701:120	Sets local_pref to "120" on the associated route.
701:9881	DDoS mitigation, redirects traffic to security center for cleaning (extra, must be ordered).
701:9999	Blackholes the route at our edge. Requires customer to run eBGP-multihop.
no-export	Prevents advertisement of the route beyond the directly connected AS.

*4.3.2.1.1.6.	The proposed WAN services must support the transport of existing applications and services currently being utilized by the State of West Virginia. The Vendor proposed solution must allow existing or future 3rd party applications and services (example: Google Cloud, AWS, Azure) to be accessed or to function in a robust, secure, and reliable manner from the vendors core network. Some existing applications and services include, but are not limited to:*

*4.3.2.1.1.6.1.	Unified Communication services including VOIP and Video*

Verizon's Response

Verizon has read, understands, and will comply.

*4.3.2.1.1.6.2.	Commodity Internet access*

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.1.6.3.   *Internet 2 access*

Verizon's Response

Verizon has read, understands, and will comply Verizon can provide the access connection to the Internet 2 Peering location and the customer network.

4.3.2.1.1.6.4.   *High Volume Database transmissions*

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.1.6.5.   *Desktop Virtualization*

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.1.6.6.   *Server Synchronization*

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.1.6.7.   *Network Monitoring (not an application)*

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.1.6.8.   *Security Monitoring (not an application)*

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.1.6.9.   *Content Filtering (not an application)*

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.1.6.10.   *Virtual Private Networking*

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.1.6.11.   Cloud hosted platforms like the Google Workspace for Business

Verizon's Response

Verizon has read, understands, and will comply.

Verizon has proposed the following related products that can benefit Verizon Private IP customers.

- **Managed SD WAN:** Our Managed SD WAN solutions use application-aware routing to make sure all your data travels the right path to its destination. So you can keep your private networks clear for demanding apps while sending less critical data over public networks. All without taking your IT team away from core projects.
- **Managed WAN:** Our managed and professional services provide a cost-effective alternative to in-house network monitoring and management. With comprehensive tools and industry-leading SLAs, we can help free up your IT staff to focus on revenue-generating projects instead.

Optional Related Services can be purchased at an additional cost include:

- **Converged IP:** Converged IP is a networking solution that has been specifically designed and crafted to address the need for cost-effective private and public IP connectivity by leveraging MPLS transport over a single Ethernet access circuit as well as virtual cloud-based security to the internet.
- **Secure Cloud Interconnect:** You can quickly and easily connect to a growing ecosystem of public CSPs and applications around the globe. Today, we have Secure Cloud Interconnect connections with many different leading cloud service providers and continue to on-board more over time.
- **Software Defined Secure Network:** Software Defined (SD) Secure Branch services can help you extend your business reach and streamline IT across your WAN.
- **Secure Gateway:** Secure Gateway provides secure, cost-effective reliable connectivity for small offices, home offices and retail locations to the Private IP WAN.
- **Private Wireless Gateway:** Private IP Wireless Access provides primary and backup private access to the Verizon Private IP network, without utilizing the public Internet. This solution helps eliminate the risk of a wire line network outage by providing a diverse broadband access method and enabling the ability to continue revenue-generating operations. It may also decrease costs associated with wire line network outages by enabling consistent productivity levels. Wireless access leverages mobile broadband access together with tunneling across the Verizon Wireless backbone to deliver virtually private mobile connectivity.

Managed WAN

Verizon Managed WAN Services provides comprehensive network monitoring and management functions for wide area and IP networks that include MPLS, Internet and LTE services. Leveraging our extensive global network and technical expertise, Our Managed WAN Services enable you to focus on your core business, while controlling investment risk and providing support for challenges such as upgrades, changes, globalization, and other complex network issues.

Managed WAN Services' comprehensive service capabilities include design and implementation, proactive monitoring, fault isolation and restoration, proactive notification, change management, and performance reporting. And, Managed WAN Services are backed by comprehensive service level agreements (SLAs).

Customers have three Managed WAN service levels to choose from to meet their business and technology requirements:

- Monitor & Notify
- Physical Management
- Full Management

Each level builds upon the previous, providing monitoring services, physical fault management, and up through logical connectivity control.

This enables you to choose the level of service you are comfortable with today, and you can expand the scope as your network grows in complexity.

<u>Monitor & Notify</u>

Monitor & Notify, the first level of service, takes the task of monitoring the network on a 24x7x365 basis.

Monitoring and rapid notification of issues:
- Verizon provides 24x7x365 monitoring of the equipment and circuit.
- Verizon notifies authorized contact of a fault.
- You are responsible for all logical and physical configurations.
- You initiate and are responsible for fault resolution. *

*Managed Services Operations will open a trouble ticket for Verizon-provided transport.

Select this level of service if you have the internal expertise to manage the fault resolution, once identified.

Verizon takes responsibility for identifying a fault within the network and advises you to take actions for resolution.

<u>Physical Management</u>

Physical Management, the second level of service, provides physical management of circuits and equipment.

With the Physical Management service level, we will provide physical fault isolation and resolution. You are still responsible for the logical configuration of the CPE.

Physical Management service provides:

- Monitoring and rapid notification of issues plus
- Physical fault remediation
  - Circuit issues
  - Physical hardware failures on premises equipment
- Fault Isolation - Open a trouble ticket with the circuit provider and ensure restoration:
  - Isolation of Physical vs. Logical faults
    - If a hardware problem, Verizon coordinates restoration of failed CPE
    - Our customers control the logical configuration of the network and remediate logical issues

Select this level of service to out-task all the elements of physical fault management of the circuits and the equipment. We build upon the Monitor & Notify service and are responsible for opening trouble tickets with the appropriate transport and maintenance providers.

Our customers retain the responsibility of the logical configuration of the network.

Full Management

Full Management, the highest level of service, is a full service providing physical management of and logical connectivity management of equipment and circuits.

In the third level of service, we provide full management of the devices. This includes physical fault isolation and resolutions as well as logical configuration of the devices. Internal resources can be redirected to meet business objectives and planning.

Full Management service provides all aspects of network management:

- Fault
- Configuration
- Accounting
- Performance

Security management of the network based on your business objectives

Select this level of service to out-task all the elements of physical and logical management of the circuits and the equipment. We build upon the Physical Management service, and are responsible for the logical connectivity of the network as well.

Secure Cloud Interconnect

Secure Cloud Interconnect addresses the challenges of connecting to your Cloud Service Providers (CSPs). This offering, which is part of our Software Defined Networking Strategy, provides a secure, seamless and flexible solution by extending the Verizon Private IP network directly to an ecosystem of leading CSPs. Secure Cloud Interconnect offers on-demand bandwidth which instantly scales as business needs dictate, along with consumption-based pricing for bandwidth.

Customer Challenges

Meeting network demands is more challenging with the proliferation of data, mobility and devices as well as fluctuating bandwidth requirements. As a result, enterprises are looking to the cloud to meet their business needs with:

- Flexible bandwidth connectivity to multiple CSPs around the globe that can be easily spun up and down so that you can get the full benefit of cloud resources.
- The ability to keep sensitive corporate data protected and secure.
- The capability to take full advantage of on-demand cloud resources and secure network connectivity to those clouds that can be spun up in minutes or hours rather than days or weeks.
- A consistent, reliable user experience and improved performance with quality of service (QoS) allowing the support of real-time applications.
- End-to-end visibility from wireless devices all the way through the WAN infrastructure and into the cloud.

Verizon's Networking Strategy

Verizon's integrated portfolio helps address your business challenges. By combining our network platform and application platform with the management of the entire integrated portfolio, Verizon connects people, places and things around the globe allowing our customers to focus on their core imperatives.

We provide an integrated portfolio, of which Secure Cloud Interconnect is an important component, that helps deliver better business outcomes to our customers. At the center of the portfolio is our

network platform that allows us to connect our customer's users and supply chain to any business applications, whether they exist in their data center, with an external partner, or even with a CSP.

Solving the challenge of connecting an exploding array of people, places and things with fast moving opportunities can add considerable cost and complexity. That's why Verizon developed our Application Enablement Solutions to help our customers get the most from their network resources and simply, securely and reliably access and optimize leading cloud resources.

Our Application Enablement Solutions help you:

- Capitalize on a data driven world by seamlessly extending your WAN to an ecosystem of key CSPs around the globe and helping you to optimize those workloads.
- Deliver the adaptive enterprise with agile services, tools, and pricing that provide scalable solutions that easily adjust to the needs of the business.
- Mitigate risk and maintain continuity by leveraging private connectivity to cloud resources that keeps traffic completely separate from the public Internet.
- Personalize the customer experience with reliable, high-performing services to optimize end user experience for critical applications.

Secure Cloud Interconnect Solution

Three Connectivity Scenarios

There are three ways for a customer to connect to the CSPs:

Cloud via public internet

This model might seem cost-effective; however, it comes with potential security and performance issues. Also, it can lack end-to-end visibility.

Cloud via point-to-point

Building direct connections to cloud providers might work if you were building out to one CSP. However, you would still typically be using traditional dedicated connections that can limit your ability to get true dynamic capabilities to the cloud. And these connections can be expensive, especially building out connections to more than one CSP. Additionally, as this picture depicts, this can quickly get complex to build and manage.

Closed ecosystem via Secure Cloud Interconnect

Secure Cloud Interconnect ties the performance and security of MPLS networking to the flexibility and cost benefits of the cloud. It provides secure, on-demand, scalable connections to multiple CSP partners. Secure Cloud Interconnect is not a cloud service. It extends your MPLS access to an ecosystem of CSPs. The solution keeps sensitive corporate data protected and secure while maintaining a consistent and reliable user experience.

Secure Cloud Interconnect Hub Technology

Secure Cloud Interconnect hub topology enables workload movement and interactions between CSPs. The ability for the customer to connect all of their cloud resources provides a number of business benefits:
- Interconnect multiple providers with one partner.
- Use a secure entry point into the cloud ecosystem.
- Leverage cost-effective geographic redundancy for cloud resources.

- Simply assign corporate cloud resources, as needed.

For example, a customer could interconnect virtual machines, which are configured on different CSP platforms (e.g., Microsoft® Azure™ and Amazon Web Services) and/or between different regions of the same CSP.

Secure Cloud Interconnect Availability

The Secure Cloud Interconnect ecosystem of key CSPs enables you to take advantage of their applications across the globe, and our list of providers and locations continues to expand.

Secure Cloud Interconnect Value Proposition

Secure Cloud Interconnect lets you easily connect to a global ecosystem of public CSPs and applications that we continue to expand.

- Secure Cloud Interconnect uses private connections to leading CSPs that are completely separated from public internet traffic – offering secure, consistent performance.
- Secure Cloud Interconnect provides pre-provisioned access to cloud resources, which enables you to get up and running with a new CSP in a matter of days rather than weeks. Once you are connected, bandwidth is available to adapt to your changing business needs.
- Using Private IP, the solution provides built-in security and visibility.
- By providing virtual rather than dedicated connections, you have true scalable bandwidth. Secure Cloud Interconnect leverages high-speed connections into CSP resources to provide you with bandwidth when you need it. Because Secure Cloud Interconnect is built on virtual connections, there are no port-speed commitments or dedicated connections required. This also means that you can more easily connect your WAN with the CSPs without the complexity or cost of dedicated equipment and circuits.
- Consumption-based pricing enables you to pay for the service needed to access CSPs with either flat-rate pricing per GB based strictly on usage or with predictable data plan rates that include built-in volume discounts for higher usage commitments. With the ability to aggregate bandwidth usage across all of your CSPs by region to attain a larger volume discount, you can benefit from additional savings and simplified budget planning.
- Secure Cloud Interconnect ties the performance and security of MPLS networking to the flexibility and cost-efficiencies of the cloud. Backed by Verizon's Network Service Level Agreements (SLAs), business applications maintain performance and can specify the applications and QoS they need.

Within the Verizon Enterprise Center portal, you can view and manage your Secure Cloud Interconnect connections. With self-service tools, the portal enables you to set threshold alerts, monitor usage and traffic patterns, and add, delete, and modify your Secure Cloud Interconnect connections.

How It Works

The Secure Cloud Interconnect architecture consists of deploying two redundant provider edge (PE) routers at a meet-point with a CSP. The CSP will deploy its own pair of PEs. The two pairs of PEs are connected by separate 10 Gigabit NNIs to provide full redundancy for the connection between Verizon and the CSP. When a Secure Cloud Interconnect port is ordered, Verizon will configure the port on these two Verizon PEs and add that port to your Private IP VRF/VPN.

Verizon, together with the CSP, will also complete the connection to the CSP PEs. You are then able to communicate with your CSP services through that Secure Cloud Interconnect port. Traffic will route along the most optimal and lowest-latency path to the CSP's network.

As Secure Cloud Interconnect uses automation to establish connections with the CSPs, no local loops or additional build-out is required.

You also have the ability to access the Secure Cloud Interconnect port from Verizon Wireless. The following diagram highlights the high level architecture.

Complementary Solutions

Verizon offers access to a suite of solutions that work in tandem with Secure Cloud Interconnect and help your enterprise achieve high levels of control, performance, security and efficiency.

- Virtual Network Services - Security: This optional single-tenant service is part of a comprehensive suite of network services that supports virtual network functions built on Verizon's Hosted Network Services platform rather than on legacy, appliance-based network equipment. This service is available in conjunction with Palo Alto and Check Point to help secure cloud traffic without expensive, dedicated hardware. Three different levels of service for security incident monitoring are provided as well as optional Managed Security Services (MSS) Analytics for heuristics and correlation analysis. [Note: Only available for Virtual Private Cloud (VPC) Secure Cloud Interconnect customers.]
- Intelligent Cloud Control: Powered by Turbonomic, this service automates hybrid cloud resource management and orchestration to help you control costs, maintain workload performance, and improve efficiencies.

Verizon Intelligent Cloud Control is the brain for the hybrid cloud infrastructure. This software solution unlocks the value of complex cloud resources for the customer who is currently utilizing or contemplating moving to the Amazon Web Services, Microsoft Azure, or IBM Cloud public clouds.

Intelligent Cloud Control is a cloud "intelligence as-a-service" solution which evaluates, in near real-time and continuously, how apps hosted in the public clouds are performing and recommends actions to take, if needed. This solution utilizes prescriptive intelligence to balance workload performance and cost efficiency.

Intelligent Cloud Control:
- Prescriptively maintains workload performance using the actual demands of the apps.
- Controls complex cloud costs across one or multiple CSPs.
- Avoids IT break/fix fire drills by managing cloud resources in near real-time and continuously.
- Bridges IT skill gap and drives IT staff efficiency.
- Orchestrates multi-cloud ecosystems from a single, actionable interface.

Intelligent Cloud Control is the perfect complement to Verizon's Secure Cloud Interconnect. Secure Cloud Interconnect connects the customer to their apps - simply, securely and reliably. Intelligent Cloud Control automatically maintains performance of apps hosted in the public clouds.

4.3.2.1.2.   Dedicated Internet Access

4.3.2.1.2.1.   Vendor must provide dedicated DIA services purchased from the State demarcation point to the Internet backbone.

Verizon's Response

Verizon has read, understands, and will comply.

Verizon Internet Dedicated Services

Designed for critical data transport in support of comprehensive solutions for businesses that demand high performance, our suite of Internet Dedicated Services provides enterprise grade, reliable Internet access over Verizon's Tier 1 Public IP network. Our services deliver the performance and bandwidth required when the urgency of the data transmitted is paramount to business operations.

With Verizon Internet Dedicated Services you can combine multiple services to help keep the State of West Virginia up and running flexibly and securely.

Verizon Internet Dedicated Services are available in approximately 40 countries globally and support IPv4 and IPv6 addressing.

Features of Internet Dedicated Services

- Business-quality Internet connectivity available in locations around the world.
- Reliable high-bandwidth – Ethernet access services from 5 Mbps to 100,000 Mbps (100 GigE).
- 24x7x365 proactive monitoring.
- Supports Dual Stack (IPv4 plus IPv6), native IPv6, and tunneled IPv6 in North America.
- Quality of Service options to assign priority levels to business-critical traffic.
- Manage Verizon services via online service portal.
- Certified premises equipment.
- Border Gateway Protocol (BGP) routing.
- IP address space & domain name services.
- Gartner industry recognized stringent service level agreements.

Other features include:

- DNS Hosting – Primary and Secondary.
- DNS Caching Name Services.
- IP Address Allocation.

Take advantage of the ultrafast, full-duplex connections offered by Internet Dedicated Services that help keep your agency connected. Our single-provider dedicated internet access is supported by an extensive global IP network for all your public IP activity.

When you choose Internet Dedicated Services for your organization, you'll get:

- Reliability
- Meet your mission with bandwidth that boosts continuity of operations
- Depend on reliable internet connectivity running on our global IP network
- Choose from self-service options and trusted managed service
- Flexibility
- Easily upgrade your network with new technologies that help streamline your business
- Adjust bandwidth on demand as your organization's demands change
- Control
- Keep critical data on a dedicated network
- Enjoy access speeds from 5 Mbps to 100 Gbps
- Use Verizon Enterprise Center to monitor and control your network

Our Internet Dedicated Services can be combined with equipment purchase options, voice over IP (VoIP), Managed Network Services (MNS), Security Services and other networking solutions.

Why you can rely on Verizon

We offer exceptional service and network performance with our Internet Dedicated Services. And we make it easy on you by providing comprehensive solutions backed by competitive service level agreements (SLAs).

With our broad portfolio of technology solutions, Verizon is the best partner to help you meet your mission goals through your network than ever before. Look to a partner you can trust to ease the complexity associated with dedicated internet implementation and support.

4.3.2.1.2.2.   Vendor must provide DIA Service Level Agreements (SLAs) that meet or exceed the following service categories and associated benchmarks:

Verizon's Response

Verizon has read, understands, and will comply.

Verizon has included our SLA for Internet Dedicated Service in **Appendix B**.

4.3.2.1.2.2.1.   Service Availability: Vendor DIA Service will be available 99.999% of the time.

Verizon's Response

Verizon has read, understands, and will comply.

Availability Scope. Verizon's Availability Service Level Standard provides that the Network (as defined in the applicable Agreement) will be available 100% of the time. Verizon added in-state Private IP nodes and 100G Ultra Long-Haul (ULH) Fiber Links to reduce latency and increase survivability for the State of West Virginia network. The Private IP backbone diversity with dynamic rerouting of traffic with no loss of service if one uplink fails.

Refer to Section 2 of the SLA for Internet Dedicated Service in **Appendix B** for full details.

4.3.2.1.2.2.2.   Denial of Service: Vendor must respond to Denial of Service attacks reported by State within 15 minutes of State opening a trouble ticket.

Verizon's Response

Verizon has read, understands, and will comply.

DOS Attack Response Scope. Verizon will respond to DOS attacks reported by Customer within 15 minutes of Customer opening a complete trouble ticket with the Verizon Customer Support.

Verizon defines a DOS attack as more than 95% bandwidth utilization.

- **DOS Attack Response Process.** To open a Trouble Ticket for DOS, Customer must call the Verizon Customer Support and state: "I am under a Denial of Service Attack". A complete Trouble Ticket consists of Customer's Name, Account Number, Caller Name, Caller Phone Number, Caller Email Address and Possible Destination IP address / Type of Attack. Once engaged, Verizon Customer Support within the Security Operations Centre (SOC) will investigate the problem. They will provide confirmation that the Customer is targeted by a DOS attack (rather than experiencing an internal or external routing issue). If the SOC concludes that the Customer is under active attack, they will take measures commercially appropriate for the type and level of attack. These measures may include placing filters on the routers in our network, black holing connections from the attack source network or active co-operation with the Internet Provider that provides service

to the source of the attack when it can be clearly defined. Any remedies offered will be subject to the full cooperation of Customer. Verizon cannot guarantee that they will be able to mitigate or find a resolution that provides continued service to Customer.

- **DOS Attack Response Remedy**. If Verizon fails to meet the DOS Attack Response Service Level Standard in a month, Customer shall be entitled to receive a Service Credit equivalent to the prorated Charges for 1 day of the Verizon MRC for the Service with respect to which this DOS Attack Response Service Level Standard has not been met, provided that Customer may obtain no more than 1 Service Credit per day, irrespective of how often in that day Verizon failed to meet the DOS Attack Response Service Level Standard.

Refer to the SLA for Internet Dedicated Service in **Appendix B** for full details.

4.3.2.1.2.2.3.   Latency: Vendor service must provide for average round-trip transmissions of 45 milliseconds or less between their regional core backbone routers and the State designated core routers.

Verizon's Response

Verizon has read, understands, and will comply.

Network Latency Scope. Verizon's Network Latency Service Level Standard provides average round-trip transmissions times in milliseconds (ms) for the following network areas: North America: 45 ms or less between Hub Routers in North America. Verizon added in-state PIP nodes and 100G Ultra Long-Haul (ULH) Fiber Links to reduce latency and increase survivability for the State of West Virginia network.

Refer to the SLA for Internet Dedicated Service in **Appendix B** for full details.

4.3.2.1.2.2.4.   Network Packet Delivery: Vendor service must provide for a monthly packet delivery of 99.5% or greater between Vendor designated regional core backbone routers and the State designated core routers.

Verizon's Response

Verizon has read, understands, and will comply.

Network Packet Delivery Scope. Verizon's Network Packet Delivery Service Level Standard provides average packet delivery percentages for the following network areas: North America: 99.5% between Hub Routers in North America.

Refer to the SLA for Internet Dedicated Service in **Appendix B** for full details.

4.3.2.1.2.3.   Vendor must supply IP address blocks up to and including a full Class-C block.

Verizon's Response

Verizon has read, understands, and will comply.

Customers can specify the size of IP Block they need and Verizon will allocate the requested IP Block. If the requested size is a full Class C (/24) or smaller, then no IP Justification (IPJ) form is required to be submitted to ARIN.

If no size is specified Verizon will assign a /30 block by default. If more IP space is required after install, then an IP Justification (IPJ) form may need to be submitted for any other blocks of /29 or larger. This form must be filled out and submitted to the help4u@verizon.com alias by the customer.

4.3.2.1.2.4.   *Vendor must provide bandwidth pricing for the following levels of Service:*

4.3.2.1.2.4.1.   *50mbps*

4.3.2.1.2.4.2.   *100mbps*

4.3.2.1.2.4.3.   *500mbps*

4.3.2.1.2.4.4.   *1Gbps*

4.3.2.1.2.4.5.   *2Gbps*

4.3.2.1.2.4.6.   *5Gbps*

4.3.2.1.2.4.7.   *10Gbps*

4.3.2.1.2.4.8.   *25Gbps*

4.3.2.1.2.4.9.   *40Gbps*

Verizon's Response

Verizon has read, understands, and will comply. See **Exhibit A --** Pricing Page in Verizon's Cost Proposal.

4.3.2.1.3.   *E-Rate*

The Universal Service Fund (USF) was established as the result of the Telecommunications Act of 1996, when Congress directed the Federal Communications Commission (FCC) to "establish competitively neutral rules to enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunication and information services for all public and non-profit elementary and secondary school classrooms and libraries." The FCC then empowered the Universal Service Administrative Company (USAC) to administer the program. A division within USAC, later to become known as the Schools and Libraries Division (SLD), now administers the approximate

$4.9 billion (annual) program known as E-Rate. Schools and libraries must apply for eligible services from eligible service providers every year. The eligible services fall into the following categories:

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.1.   *Category 1: Telecommunications, Telecommunications Services & Internet Access*

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.2. Category 2: LAN and WLAN Internal Connections & Basic Maintenance of Internal Connections

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3. General E-Rate Requirements

4.3.2.1.3.3.1. The Vendor must comply with the requirements of the Universal Service Fund (USF) program. E-Rate eligible entities utilizing the contract(s) resulting from this solicitation reserve the right to proceed with orders prior to receiving any funding commitments from the USF. They also reserve the right to proceed or not to proceed regardless of the outcome of USF funding commitments.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.2. All services and products requested within this solicitation will be made available to schools, RESAs, consortia, and libraries statewide and therefore must meet all E-Rate guidelines for eligible services and products, service providers, and contracts.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.3. The Vendor must prove eligibility for E-Rate by providing its Service Provider Identification Number (SPIN).

Verizon's Response

Verizon's SPIN is 143001197.

4.3.2.1.3.3.4. The Vendor must meet all required participation guidelines.

Verizon's Response

Verizon has read, understands, and will comply.

Verizon is one of the largest telecommunication providers serving education today and can offer the State of WV the following ongoing value.

Verizon is an authorized provider of E-rate eligible products and services. Verizon supports both the Billed Entity Applicant Reimbursement (BEAR) and Service Provider Invoice (SPI) reimbursement methods. Applicants can choose from Category One (Telecommunications Services and Internet Access) or Category Two (Internal Connections, Managed Internal Broadband Services, and Basic Maintenance). Additionally, Verizon has dedicated E-rate personnel who can provide the following:

- An avenue for expediting questions and answers associated with discounting support for K-12 & Library customers in all aspects of the E-rate program.

- Knowledge of E-rate program processes, and product and service eligibility.

Verizon and its affiliates fully participate in the E-rate program and can assist applicants, to the extent permitted by FCC rules, with obtaining the benefits of the E-rate funding for which they have been approved. Verizon and its affiliates fully support the USAC Schools and Libraries Division (SLD) application and funding processes.

Verizon provides support to clients throughout the life of the application, including Program Integrity Assurance, Selective Review (pre-audit), service implementation and service substitution, technology migration, discount reimbursement, etc. for all Funding Request Numbers (FRN) associated with the filing of the application for the applicable funding year.

Verizon can provide the State of WV with the following:

- Stable state-of-the-art networks and product implementations that will provide the quality, reliability, and scalability necessary to support advanced applications now and in the future.
- Expert on-going technical support and dedicated account management.
- Project management resources with experience in executing plans that provide a sound implementation of large-scale projects within the time frame required.
- Professional services available to provide expertise designed to address the special needs of your industry and aid in the integration of technology.
- Adheres to the Lowest Corresponding Price (LCP) requirements to ensure that our customers are provided a competitively priced solution.

A strategic relationship with Verizon offers the following advantages as clients implement technology tools into the classroom for students, faculty, and staff:

- Dedicated Verizon account team that understands the needs and drivers of the education market.
- Decades of service and product experience with telecommunication implementation and integration within education.
- Expert on-going technical support.
- A leader in Quality of Service standards.
- Tier 1 Internet Access provider.

Verizon K-12 Education Commitment and Experience

Verizon has compiled impressive credentials as a corporate leader on both a national and regional level as a strategic partner in implementation of educational applications and tools via either a Wireline or Wireless platform.

As one of the largest communications service providers to education (public and private) in the nation, Verizon takes pride in providing services to schools and libraries across the United States.

For additional information, please go to https://www.verizon.com/business/solutions/public-sector/education/k-12/.

4.3.2.1.3.3.5.   The Vendor must provide eligible entities the "Lowest Corresponding Price" (LCP) for services (refer to FCC 47 CFR § 54.500(f) and 47 CFR § 54.511(b)).

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.6.   Service providers shall offer schools and libraries services at the lowest corresponding prices throughout its geographic service areas that include all non-residential customer offerings that are similarly situated to a school or library. The "geographic service area" shall be the area in which a service provider Vendor is seeking to serve customers with any of its E- Rate services.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.7.   The FCC will only permit service

providers to offer schools and libraries prices above prices charged to other similarly situated customers when those Vendors can show that they face demonstrably and significantly higher costs to serve the school or library seeking service.

Factors that could affect the cost of service include volume, mileage from facility, and length of contract.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.8.   Vendor must operate within Rule 47 CFR § 54.511(b) which states that the provider of eligible services shall not charge schools, school districts, libraries, library consortia, or consortia including any of these entities a price above the Lowest Corresponding Price (LCP) for supported services, unless the FCC, with respect to interstate services or the state commission with respect to intrastate services, finds that the Lowest Corresponding Price is not compensatory.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.9.   The Vendor, regardless of the size of the company, must provide LCP for a school or library. A service provider's obligation to provide the LCP shall not be tied to a response to an FCC Form 470 or this solicitation and should carry over throughout the billing life of the contract, as well.

Verizon's Response

Verizon has read, understands, and will comply with 47 CFR Section 54.511(b).

4.3.2.1.3.3.10.   The Vendor must agree to abide by all E-Rate rules, regulations, and limitations as described by FCC, USAC, and SLD. For a complete program overview, the Vendor can visit the following link: http://www.universalservice.org/SL/d efault.aspx.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.11.   Successful Vendor of telecommunication services must meet certain qualifications to be eligible to provide the services and receive USAC reimbursement.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.12.   Must contribute to the Universal Service Fund

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.13.   Must provide telecommunications services on a common carrier basis

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.14.   Must file an FCC Form 498, Service Provider Information Form and obtain a Service Provider Identification Number (SPIN), providing that number as part of this bid response, and an FCC Registration number tied to their IEN tax ID number

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.15.   Must file an FCC Form 473, Service Provider Annual Certification Form, on an annual basis

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.16.   Must file an FCC Form 499-A, Annual Telecommunications Reporting Worksheet, on an annual basis.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.17.   Must complete the FCC Forms 949- A,/Q (Annual and Quarterly Telecommunications Reporting Worksheets) and receive a Filer ID. The FCC Forms 499-A/Q Filer ID will be tied to your SPIN. Certain service providers are not required to file or complete all items on an FCC Forms 499-A/Q, either because the company has a de minimis status or meets one of the exceptions noted in the "Filing Requirements and General Instructions" section of the instructions on the Contributors Forms page.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.18.   You can refer to the Service Providers section or the Contributors section of the USAC website for more detailed information on these forms and instructions.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.19. The Vendor must work with the applicant to ensure that all services for which E-Rate discounts are being requested under the contracts resulting from this solicitation, are indeed eligible services as described in the Eligible Services List (ESL) which can be found at the link provided below: http://www.universalservice.org/sl/ap plicants/beforeyoubegin/eligible- services-list.aspx

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.20. Prior to the contract award, the Vendor must specify the name, phone number, fax number, and e-mail address of the person responsible for E-Rate within the Vendor's company. The Vendor must provide updated information should that contact information change, and must do so within 7 days of the change.

Verizon's Response

Verizon has read, understands, and will comply.

Your Verizon Account Manager, Sandra Hawkins, is the single point of contact for all matters with the State. Regardless of the nature of the issue, the Account Manager will be prepared to respond or to bring together the correct resources to meet the requirements of the State.

In addition, the following resources are available for general E-rate queries:

For Sales and Product Information:

Email: erate-info@verizon.com
Phone: 1-833-722-0229
Hours: 8 a.m. - 6 p.m. EST

For E-Rate Reimbursement/Discounting issues or General E-Rate Questions:

Phone: 1-800-547-5474
Fax: 717-232-4092
Hours: 8 a.m. - 5 p.m. EST Monday - Friday

4.3.2.1.3.3.21. The Red Light Rule states that the FCC shall withhold action on any request for benefits made by any applicant or service provider that is delinquent in its non-tax debts owed to the FCC. USAC shall dismiss any outstanding requests for funding if a service provider (or applicant) has not paid the outstanding debt, or made otherwise satisfactory arrangements, within 30 days of being notified

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.22. The result of a Red Light could be that all payments are stopped on all Funding Request Numbers (FRN) for that service provider (or applicant) and no invoices will be paid.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.23. The Vendor must agree to notify the State of West Virginia, WVDE and WVLC within 24 hours in the event the Vendor/Service Provider has been subjected to the "Red Light Rule".

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.3.3.24. In the event of an E-Rate audit or Program Integrity Assurance (PIA) review, the Vendor must respond within 3 calendar days for 7 day deadline reviews and 7 calendar days for 15 day deadline reviews to any and all questions associated with its contracts, proposals, or processes.

Verizon's Response

Verizon has read, understands, and will comply with USAC requirements.

4.3.2.1.3.3.25. The Vendor must maintain all bids, quotes, records, correspondence, receipts, vouchers, delivery information, and other data relating to the Vendor's services to the eligible entities in the State of West Virginia. All such records must be retained for ten (10) years after last date of service or whatever retention period is required by the rules in effect at the time that services are delivered and shall be subject to inspection and audit by the customer.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.1.3.3.26. The Vendor must have an internal audit process in place to ensure compliance with E-Rate program rules and regulations.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.1.3.3.27. If requested by an applicant, service providers must use the Service Provider Invoice (SPI) method for invoicing the applicant. It is understood that should a provider extend this service to an applicant, that the applicant will be responsible for the discounted portion of those invoices should E-Rate funding be denied; however, applicants will not be responsible for any discounted portion that is the direct result of negligence or error in the SPI invoicing process on the part of the service provider.

Verizon's Response

Verizon has read, understands, and will comply with E-rate program rules.

4.3.2.1.3.3.28. The Vendor must commit to work with the E-rate eligible entities using the resulting contract regarding E-rate discounts and billing.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.4.   4G and 5G Wireless Service

4.3.2.1.4.1.   As part of its WAN solution, Vendor must provide 4G wireless services across the state. Further, 5G wireless service is also acceptable if it is available in the area. In all cases, 4G wireless services must be provided.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.4.2.   Upon request from the State, wireless services will be installed at locations where wireless service is available and satisfies the location bandwidth requirements. The state plans to utilize wireless services as a full time or interim WAN service, or to provide back- up/redundant service for a site's Ethernet WAN service.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.4.3.   Vendor will be responsible for coordination of the installation and ongoing management of the wireless service.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.1.4.4.   State requires that both 4G and 5G wireless service options include unlimited data.

Verizon's Response

Verizon has read and understands this requirement. Verizon's 4G LTE and 5G wireless data options include unlimited data. The 4G LTE plan affords unlimited data; however, should the State exceed more than 300GB of data usage on the 4G LTE data plan, Verizon reserves the right to discontinue offering the 4G LTE data plan for subsequent service activations. Based on the analysis of the State's usage, the average usage per site is 50GB and should be well within the plan limits. See Verizon's Cost Proposal for further clarification. 4G LTE service cannot be used for streaming video applications.

4.3.2.1.4.5.   Throttling of wireless services data is strictly and wholly prohibited.

Verizon's Response

Verizon has read, understands, and will comply. Verizon's 4G LTE and 5G wireless data options do not include throttling. Throttling, whereas data throughput speeds are reduced when a user exceeds a specific data consumption threshold in a given billing cycle, will not be invoked on the plans proposed.

4.3.2.2   Part 2: Vendor Ethernet WAN Services Migration Plan

4.3.2.2.1.   The Vendor must provide a detailed project plan and Project Manager for transitioning the legacy installed WAN services to its Ethernet WAN services.

Verizon's Response

Verizon has read, understands, and complies.

As the incumbent, all Ethernet WAN services are currently implemented – please see 4.3.1.2.2.

A Project Manager (PM) will be assigned when the contract is awarded and for the life of the contract. The PM will act as the primary point of escalation for any customer implementation issues. In addition, the PM will secure appropriate Verizon resources to support implementation of new services, coordinate kick off calls with the account team and the customer, coordinate the acceptance plan and test criteria with the customer, establish customer service dates, and confirm project milestones are met. The State of West Virginia will have a single point of contact for timely, consistent, and smooth implementation of services.

Verizon will use our proven Back Office Transition (BOT) process to migrate the State of West Virginia's existing Verizon "like-for-like" services to the new contract. This low-risk, less disruptive administrative transition process is a back-office billing process that systematically moves services from one contract vehicle to another and requires no service downtime. The process will support everything from complex customer services and inventory to simple structured global products. Verizon's transition platform, called Migration Factory, has been designed specifically for moving legacy inventory and invoicing of select products from one contract vehicle to another. Verizon provisioning systems are not changed, and the involvement of local exchange carriers is not necessary.

Verizon's BOT approach will also help greatly reduce agency administrative tasks, such as submitting orders. We will create transition orders as defined by the State of West Virginia-approved transition plan. BOT allows for:

- Use of the latest technology for inventory analysis, such as artificial intelligence and machine learning (AI/ML).
- Fewer administrative tasks, since no orders are necessary from the State of West Virginia.
- No limit to the number of services that can transition in any given month (dependent upon clean inventory).
- Rate validations to agency task order rates during the transition process.
- Pre-migration test runs for comprehensive validation prior to production.
- No provisioning impact or service downtime.
- Rollback procedures that serve as transition safeguards.

A sample project Plan for the migration to the new contract is provided in **Appendix F**.

4.3.2.2.2.   Vendor project plan must include details on how it will coordinate service migrations with WVOT and include details for their plan to mitigate any gaps in service (interruption of service).

Verizon's Response

Verizon has read, understands and will comply.

As Verizon provides the existing WAN services to the State of West Virginia, the majority of the WAN circuits will not require migration. Verizon will work with the State's contacts to plan for the migration of 20 Mbps sites listed in Exhibit B: to an upgraded speed (change order) or to a different solution,

i.e. Dedicated Internet. Verizon will continue to meet weekly, more if required, to identify and once a TCR is received will migrate these sites to the new requested service.

State agencies may choose to move to another Verizon offering which would require an in-out order via the TCR process. Verizon will ensure that all services are completed, tested and accepted for the new product offering prior to disconnecting the existing service. See 4.3.2.2.1.

4.3.2.2.3.   Vendor must coordinate new services acceptance and billing for new services with WVOT in a manner that eliminates any duplicate billing between legacy services and new Vendor services.

Verizon's Response

Verizon has read, understands and will comply.

Verizon will provide a Project Manager for the coordination of new services. Verizon will place disconnect orders once the Telecommunications Change Request (TCR) from the State of West Virginia is received to stop the billing. All new services will be billed on the service installation and acceptance date. See 4.3.2.3.5,

4.3.2.2.4.   Vendor must assign an experienced and skilled Project Manager who will provide a high-level project management plan including key components such as a project charter, issue tracking, statements of work (SOW), work breakdown structures (WBS), implementation schedules, etc. in accordance with the Project Management Body of Knowledge (PMBOK) or other industry standard project management methodology stated in West Virginia State Code (§5A-6-4b). The link can be found at: http://www.legis.state.wv.us/WVCODE/Code.cfm?chap= 05a&art=6#06

Verizon's Response

Verizon has read, understands and will comply.

Verizon's Project Management organization provides a comprehensive methodology for use by the Project Management team, who are experienced in the technical aspects of our service areas. Verizon's methodology provides best practice processes and documentation, deliverables, and milestones to meet your implementation needs.

In partnering with Verizon, you will benefit from the experience of Verizon's Global Project Management Organization which comprises over 700 project managers worldwide with significant experience in managing large, complex programs and projects. In order to ensure the successful delivery of all projects and meet the standards required by our Clients, Verizon's Project Managers hold industry and globally recognized certifications across the Project/Program Management field.

Verizon will mobilize a team utilizing best practice Project Management methodologies based on the Project Management Institute's (PMI's) Project Management Body of Knowledge (PMBOK®) and PRINCE2®, in addition to the Infrastructure Technology Information Library (ITIL v3).

You will receive a predictable, consistent, and high quality experience by following industry-standard Project Management processes:

Integration Management: Project plan development, project plan execution, and integrated change control;

Scope Management: Initiation, scope planning, scope verification, and scope change control;

Time Management: Activity definition, sequencing, duration estimating, schedule development, and schedule control;

Cost Management: Resource planning, cost control

Quality Management: Quality planning, quality assurance, and quality control;

Communications Management: Information distribution, performance reporting, and administrative closure;

Risk Management: Risk identification, qualitative and quantitative risk analysis, remediation and mitigation planning, and risk monitoring and control;

Project Management Office: Comprehensive management of a collection of projects as a single portfolio consisting of reports that capture project objectives, costs, timelines, accomplishments, resources, risks, and other critical factors;

Stakeholder Management: Processes required identifying the people, groups, or organizations that could impact or be impacted by the project, to analyze their expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution.

Your Transition & Transformation (T&T) project will be governed by Verizon's repeatable Plan, Design, Implement, Operate and Manage methodology. Using a proven project delivery method based on industry best practices and standards created by the PMI and years of experience delivering numerous consulting and integration results for our clients across Security, IT, Communications and Network solutions, Verizon's Project Management organization will bring transparency and control to your transitional/transformational activities throughout the life of the contract.

Designed to take you through the entire solution lifecycle, our processes ensure a smooth continuum from strategy development and initial assessments all the way through to managing and continued improvement of the end solution.

Verizon Project Management is provided to plan the schedule, manage Verizon resources, report on progress, mitigate issues and assess changes.

The Project Manager (PM) is a remote resource working normal business hours Monday-Friday and hosts meetings via Verizon provided online conferencing tools. Project Management includes the processes and deliverables defined in this Service Description.

Project Management Process

Project Management utilizes practices based on Project Management Institute (PMI) methodology (as well as Prince2 for Europe and Asia Pacific countries where applicable) and is organized around 5 process phases.

1.   Initiation

Customer and Verizon stakeholders will meet to define and finalize the scope of the Project. The Verizon PM will document the products, quantities and overall timeline in a Scope Statement which will be presented to the Customer at a project kick-off meeting for input and concurrence. It is recommended that the Initiation Phase is completed within 2 weeks of project kick-off. Once the Scope Statement is agreed, the Initiation Phase is complete and the Planning Phase begins.

After Initiation, the Project Scope Statement will only be altered as the result of formal project change to include impact assessment and concurrence by both Customer and Verizon. If products, quantities or timeline requirements change, additional assessment will be required and custom Project Management fees will apply.

2.   Planning

The Project Planning Phase involves the creation of a plan to guide the work and resources through the Executing and Closing Phases of the project. The plan created during this phase will manage communications, changes and produce the project schedule. The Planning Phase will be progressed during weekly stakeholder meetings to prepare the following project artifacts:

Project Communication Plan

- Weekly Project Meeting cadence will be set during the Planning Phase.
- An Open Action Item Register will be introduced during project planning and updated during weekly meetings. Open Action Items will be assigned an owner and a critical resolution date.
- A Risk and Issue Register will be created during project planning and will consist of known or assumed risks against delivering the project scope. During planning, mitigation strategies will be identified and documented. The Risk Register will be reviewed, updated, and published weekly.
- A Project Status Report will be introduced during project planning. Verizon will provide an industry best-in-class automated report on a weekly basis to document key project accomplishments, project % complete, upcoming activities and issue updates.

Project Schedule

The Project Schedule will include project milestones and deliverables sequenced by planned delivery date. The Verizon PM leverages a templated project schedule that is reviewed and adjusted with input from key stakeholders during weekly meetings.

Project Change Register

- If a change is required that alters the scope of the project, a formal change will be managed.
- The project Change Management process will be defined to include logging a requested change, duration to perform a change, impact assessment and change approval process.

3.   Executing

The Executing Phase is a set of recurring processes and activities to deliver the products in scope and on time against the Project Schedule. This is the longest phase of the project and the duration varies based on the project timeline and the scope. The Verizon PM will ensure the following tasks are carried out:

- Manage implementation according to the Project Schedule
- Ensure timely receipt of orders from Customer
- Manage the Verizon resources that deliver orders and provide status of inquiries
- Actively coordinate scheduling of resources, tools, services and equipment
- Coordinate resources to perform activations
- Deploy mitigation strategies for risks that occur and impact the Project Schedule
- Request Service Acceptance

4.   Monitor and Control

The Monitor and Control Phase is where the PM is collecting, measuring, and disseminating progress/status information, and assessing measures to effect process improvements. This phase occurs simultaneously with Execution. During Monitor & Control, the Verizon PM will:

- Manage the communication plan
- Evaluate the impact of Project Change Requests with the stakeholder team
- Drive resolution of Open Action Items as defined in the Open Action Item Register
- Evaluate project performance against the Project Schedule and identify areas for improvement
- Assess risk level and secure plans for issue resolution

5. Closing

Closing is the post-implementation activity to formally complete the Project. At Project Closing, the products in scope have been delivered to the Customer. The Verizon PM will perform the following Closing activities:

- Ensure all project action items are completed
- Host the final project meeting to review all accepted deliverables and transition implemented services to the service and operations support teams
- Provide a final project report
- Request that Customer participate in a customer satisfaction survey

4.3.2.2.5.   The project management plan must be submitted and approved by the WVOT Project Management Office (PMO) prior to engaging the first agency for Ethernet WAN services implementation.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.2.6.   The successful Vendor's Project Manager must track and report (via written status reports) the following: schedule, scope, budget, issues, risks, specified performance indicators, and other metrics determined appropriate throughout the project and each site implementation.

Verizon's Response

Verizon has read, understands, and will comply.

Verizon will meet weekly and continue to provide a TCR log that tracks TCR, date received, customer requested date, order type, office move, customer, department/agency, address, status, next steps, comments, service order/TIN, customer accepted date or cancel date, NSPE Number, Circuit ID, Special Construction, Order ID, Circuit ID, Verizon committed due date, expedite flag, product, access speed, telco circuit ID, telco FOC date, PIP configlet, managed, MSOF number, managed status, DMARC, activation date, cancel date, and Telco build required. Verizon and the State will work together to edit the log to accommodate the new services on the contract and any additional metric items the state would like to track. Please refer to 4.3.2.2.4 for PM processes and deliverables.

4.3.2.3   Part 3: Service and Support for WAN and DIA and 4G/5G Services

4.3.2.3.1.Vendor must provide a network operation support center(s) for all tiers of support that is available 24x7x365 and is accessible via a toll-free number.

After Initiation, the Project Scope Statement will only be altered as the result of formal project change to include impact assessment and concurrence by both Customer and Verizon. If products, quantities or timeline requirements change, additional assessment will be required and custom Project Management fees will apply.

2.   Planning

The Project Planning Phase involves the creation of a plan to guide the work and resources through the Executing and Closing Phases of the project. The plan created during this phase will manage communications, changes and produce the project schedule. The Planning Phase will be progressed during weekly stakeholder meetings to prepare the following project artifacts:

Project Communication Plan

- Weekly Project Meeting cadence will be set during the Planning Phase.
- An Open Action Item Register will be introduced during project planning and updated during weekly meetings. Open Action Items will be assigned an owner and a critical resolution date.
- A Risk and Issue Register will be created during project planning and will consist of known or assumed risks against delivering the project scope. During planning, mitigation strategies will be identified and documented. The Risk Register will be reviewed, updated, and published weekly.
- A Project Status Report will be introduced during project planning. Verizon will provide an industry best-in-class automated report on a weekly basis to document key project accomplishments, project % complete, upcoming activities and issue updates.

Project Schedule

The Project Schedule will include project milestones and deliverables sequenced by planned delivery date. The Verizon PM leverages a templated project schedule that is reviewed and adjusted with input from key stakeholders during weekly meetings.

Project Change Register

- If a change is required that alters the scope of the project, a formal change will be managed.
- The project Change Management process will be defined to include logging a requested change, duration to perform a change, impact assessment and change approval process.

3.   Executing

The Executing Phase is a set of recurring processes and activities to deliver the products in scope and on time against the Project Schedule. This is the longest phase of the project and the duration varies based on the project timeline and the scope. The Verizon PM will ensure the following tasks are carried out:

- Manage implementation according to the Project Schedule
- Ensure timely receipt of orders from Customer
- Manage the Verizon resources that deliver orders and provide status of inquiries
- Actively coordinate scheduling of resources, tools, services and equipment
- Coordinate resources to perform activations
- Deploy mitigation strategies for risks that occur and impact the Project Schedule
- Request Service Acceptance

4.   Monitor and Control

Verizon's Response

Verizon has read, understands, and will comply.

Verizon has five major global Network Operations Centers in the United States, Europe and Asia-Pacific. They are located in Ashburn, Virginia; Cary, North Carolina; Manila, Philippines; Amsterdam, The Netherlands; and Dortmund, Germany. The State of West Virginia will be supported either through our Cary, North Carolina NOC as they are today or our Ashburn, Virginia NOC.

The Verizon Network Operations Center (NOC) is fully and professionally staffed 24 hours a day, 7 days a week which provides you proactive monitoring of the network around the clock. In the event of a problem, you will be promptly notified by a mutually agreed upon method. If you identify a problem on your own, the NOC is available 24x7x365 to troubleshoot the issues with you. The Regional Number for the United States is 1 (800) 293-5844.

Verizon's (NOC provides operational (Tier 1) and advanced support (Tier 2 and Tier 3) for public sector customers via regionally aligned locations (Cary, NC or Ashburn, Virginia) employing US-based staff with options for online ticketing support or by calling 1-800-293-5844.

Verizon's solution includes Managed WAN - Monitor & Notify service which includes polling the State's devices every three minutes and creating proactive tickets when alarms are generated from detected faults. Triage of these proactive tickets begins with automated testing. If the outage continues, the ticket is assigned to an Engineer for further research and fault isolation working with local exchange partners, internal Verizon teams and the customer contacts until the issue is resolved and closed. Verizon's tiered escalation process is included in response to 4.3.1.3.7.

For all Managed WAN Services levels, Verizon will proactively monitor your network, isolate faults, and notify you in the event of an alarm. Rapid Fault Isolation enables Verizon to test network elements in parallel, automatically. Verizon can proactively detect a customer outage, perform fault isolation, and initiate repair action, in many cases without human intervention.

Verizon will dispatch support in the event of router hardware trouble for customers subscribing to the Full Management service level. Support for the Full Management service level includes all physical and logical router configuration management support.

24x7x365 Shift

The 24x7x365 shifts are made up of teams providing coverage; each team consists of a Duty Manager, Senior Engineer and Engineers. The shift is responsible for the pro-active fault monitoring via IMPACT, the proactive notification to the customer in the event of an outage and the technical repair of any issues including hardware, software, configuration, circuit and/or routing.

Tier 2

The Tier 2 team acts as the next level of technical support for the shift as well as managing the repair of any repeat or chronic faults.

Tier 3

The Tier 3 support team is the next level of technical support, dealing with the most complex issues and highly escalated tickets. In addition to this role, Tier3 engineers also deal with the vendor relations, special bids, engineering liaison and internal training.

The NOC is fully and professionally staffed 24 hours a day, 7 days a week which provides you proactive monitoring of the network around the clock. In the event of a problem, you will be promptly notified by a mutually agreed upon method. If you identify a problem on its own, the Network Operations Center is available 24x7x365 to troubleshoot issues. The NOC performs automatic alarm detection, fault isolation, trouble-ticket generation, event and maintenance correlation, customer notification and regular updates, in many cases without the manual intervention of network support staff. The NOC also provides deep visibility into the circuits and equipment that make up your network to help more effectively manage your services.

In addition to the 24x7x365 support center services, The Verizon Account Team includes a dedicated Service Manager as an escalation point of contact to assist with incident management as needed.

4.3.2.3.2.   Vendor must work with the WVOT using the established Telecommunications Change Request (TCR) procedures for ordering and implementing these telecommunications services.

Verizon's Response

Verizon has read, understands and will comply.

Verizon will only accept orders from WVOT authorized users accompanied by a TCR that has been approved by the WVOT.

4.3.2.3.3.   For auditing, billing, and support purposes, the State requires any service with an associated rate to be identified on its monthly bill. As such, the State must be provided, at a minimum, the following:

4.3.2.3.3.1.   Billing Month

4.3.2.3.3.2.   Billed Entity Name

4.3.2.3.3.3.   Customer Name/Account (if different from billed entity)

4.3.2.3.3.4.   Service Location

4.3.2.3.3.5.   Service Period

4.3.2.3.3.6.   Circuit or Service ID

4.3.2.3.3.7.   Price Sheet Billing Component (Ex. Ethernet WAN 10MB)

4.3.2.3.3.8. Itemized Cost for Individual Billing Components

4.3.2.3.3.9. Itemized Cost for Any One-Time or Non-Recurring Charges

4.3.2.3.3.10. Itemized Cost for Any Surcharges and Total Cost

4.3.2.3.3.11. The cost identified in the bill must match the contract rates for the specified services.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.4.   The Vendor must provide the State's monthly bill in an editable format such as Excel and/or csv, and the State must be able to open the file in Google Sheets without the need for modifications. The Vendor's bill must be received within ten (10) business days from the end of the billing cycle. The Vendor should provide a copy of their bill as part of their response.

Verizon's Response

Verizon has read, understood and will comply.

Verizon has provided an editable invoice report sample in **Appendix C**.

4.3.2.3.5.   The Vendor must invoice on a consistent monthly billing cycle across all services. Services installed or disconnected for a partial month must be prorated based on the date the service is accepted by the State or by the disconnect due date on the TCR. For new services, the Vendor must not bill the State until the State has accepted the services as functional. The Vendor shall not bill the State for services after the disconnect due date listed on the submitted TCR.

Verizon's Response

Verizon has read, understands and will comply.

For new services, Verizon will begin billing when acceptance of the new service has been received from West Virginia Office of Technology (WVOT). This acceptance can take the form of an email or phone call from the WVOT authorized representative identifying the TCR that has been accepted by WVOT. Should no acceptance be received from the WVOT authorized representative within 30 days of the installation and network acceptance date, billing of services will commence.

When requesting disconnection of a circuit, Verizon requires thirty-day written notice for disconnects. Verizon will make reasonable efforts to meet the customer's requested due date. Any charges billed after the requested disconnect date will be credited in full.

4.3.2.3.6.   If a billing error is discovered by the State, the State shall notify the Vendor, in writing, of the errors and the errors should be corrected prior to the next billing cycle, but must be corrected within two (2) billing cycles.

Verizon's Response

Verizon has read, understands and will comply.

The State of WV may dispute charges and may withhold the disputed amount until such time as the parties agree on a course of action. In the event that the State reasonably determines that there is a material discrepancy between Verizon's invoiced charges and the State's calculation of charges owed, the State may withhold only the disputed amount of the invoice.

A "Disputed" amount is one for which the State has given Verizon written notice, adequately supported by bona fide explanation and documentation. Any invoiced amount not disputed within 6 months of the invoice date is deemed correct and binding on the State. Verizon will make every commercially reasonable effort to resolve disputed amounts as promptly as possible.   All corrective actions, when necessary, will be mutually agreed upon between both parties. In some cases a corrective order may be required and it would take one or two bill cycles to be reflected on the invoice.

4.3.2.3.7.   Vendor billing errors must be credited back to the State from the effective date of the error. The State reserves the right to withhold payment, in part or in full, until credit is received. Additionally, the Vendor must acknowledge and accept that the State cannot unilaterally waive any of its dispute rights.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.3.8.   If the Vendor has multiple contracts with the State of West Virginia, the Vendor must provide separate billing for each contract.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.3.9.   The Vendor must provide and update a weekly status report using the provided TCR log and agree to meetings to discuss as needed.

Verizon's Response

Verizon has read, understands, and will comply.

Verizon currently meets and will continue to meet weekly with the State of West Virginia Office of Technology to discuss TCR log status.

4.3.2.3.10.   All unplanned service outages at the individual circuit level must be fully resolved within 24 hours. For each day beyond the initial 24-hour outage that an individual service is not fully functional, one day of credit will be applied to the State's bill. Credit shall be received starting at Hour 25 and no partial-day credits will be accepted. Service credit will be defined as monthly service cost divided by the number of days in that month. Service outage credits must not be averaged across all State installed services. Service outage credits must be applied against the individual site/service where the outage occurred.

Verizon's Response

Verizon has read, understands and will comply. See SLA documents in **Appendix B**.

4.3.2.3.11.   The State requires an Account team (including Account Support Representative, Technical Support Representative, Solution Implementation Support Representative, Contract Manager, Billing Support Representative, Security/Compliance Specialist, and Project Manager) for the winning solution and life of the contract. Vendor must describe in detail the responsibilities of key roles and staff's experience in working in these roles. The State reserves the right to request, and the Vendor must provide a new employee for any reason.

Verizon's Response

Verizon has read, understands, and complies.

.As the Verizon Account Team for the State of West Virginia we have a highly experienced workforce of consultants, engineers, and specialists focused on helping you recognize technology's opportunities– empowering you to perform, execute, and grow in new and better ways.

Your Verizon Account Team is available to answer any service or industry related questions and investigate the right mix of new and converging technologies. We want to understand your business and operation objectives to help fully satisfy your expectations.

The following information includes an account relationship plan to provide timely and effective reporting as well as an outline of account team roles and responsibilities, trouble reporting, and escalation procedures.

Account Management Plan

Verizon is a service company, and we believe all organizations within the company, whether they interface directly with customers or simply provide support to those organizations that do, should be dedicated to providing the best customer experience.

We are continually focused on simplifying key areas of our business to serve you even better, including:

- Customer satisfaction;
- Sales effectiveness;
- Operating efficiency.

We will engage with you strategically in order to understand your business and build a mutually beneficial, long-term relationship.

To achieve this goal, we continue to refine operations so they run efficiently and at high performance levels to deliver excellent service. Because company resources are aligned with our sales and customer support organizations, we're better able to serve you.

We also understand that the way to deliver an exceptional support experience to the State of West Virginia is to empower our sales and service personnel with the resources and tools they need to help you make the best decisions for your business. Today's emerging solutions require unique skills, capabilities, and support structures that we've built into our support organizations.

We are focused on developing stronger solutions and sales capabilities. Our sights are set on being the world's leading platform-based solutions provider, and your ultimate partner to navigate the technology landscape and drive your business.

Roles and Responsibilities (See Appendix D – Resumes for experience)

Account Manager (AM) (Account Support Representative/Contract Management) (See resume in Appendix D.1 for experience)

- Provides solutions from the Verizon product range to help enable the achievement of your business outcomes.
- Serves as the primary sales team interface working in partnership with the entire account team and internal resources to grow the partnership and overall relationship between you and Verizon.
- Proactively develops and maintains relationships with executives as well as building new relationships within State of West Virginia.

- Provides recommendations during contract negotiations for supportable and executable terms included in this agreement, amendments and SOWs.
- Facilitates communication between State of West Virginia and Verizon executives including escalation and resolution of Verizon or performance issues as required.

Solution Architect (Technical Support Representative) (See resume in Appendix D.2 for experience)

- The Solution Architect will be your technical expert/architect and provides on-going solution development to solve complex business challenges.
- Will own technical relationship with the State of West Virginia, including managing product and solution briefings, proof-of-concept work, coordination of additional technical resources, and obtaining client requirements and translating these into a client-specific Solution Design.
- Leads prioritization of client solution /technical requirements and championing the resolution of solution.
- Recommends the network requirements, network design topology architecture and technology upgrades aligning with Verizon product offerings.

Client Service Manager/Technical Service Manager/Financial Service Manager (Billing Support Representative and Service Manager) (See resume in Appendix D.3 for experience)

- Monitors Verizon contractual key performance indicators ("KPIs"), service levels, and operating level agreements ("OLAs") as determined with State of West Virginia at engagement planning and kick off.
- Manages the Verizon portfolio of services for change management processes, planning future services demands, and oversight of contract financial compliance between Verizon and State of West Virginia.
- Oversees the initiation and resolution of performance issues requiring escalation and works with State of West Virginia and Verizon technical teams to define overall remediation plans.
- Facilitates beneficial enablement by identifying and executing strategies to increase self-service utilization and expand self-service. Drives online and electronic media tool enablement and adoption.
- Understands your service requirements to facilitate Verizon's integrated solutions ability to meet such requirements.
- Accelerates billing and accounts payable issue resolution by engagement of appropriate State of West Virginia and Verizon resources.
- Financial Management – oversees the identification and resolution of issues negatively affecting State of West Virginia and Verizon financial relationship, such as revenue trends, contractual commitments, accounts payable, etc.
- Reviews SLAs not being met and works with involved departments to execute corrective action. Identification and corrective trends would be represented in a Service Improvement Plan.
- Identifies opportunities for service improvement and risk mitigation and engages appropriate State of West Virginia and Verizon resources to execute associated plans.
- Supports your billing operations to provide efficient and timely communication.
- Monitors and supports the resolution of all billing related inquiries and the communication with you on progress and conclusion.
- Proactive review of your invoices to pre-empt any billing issues.

- Handles escalated service issues when you are dissatisfied with business as usual processes including updates/escalations.

- Manages conference bridges (as applicable) and manages an Action Plan to restore service.

- Escalates and manages repair teams, carriers/third parties for remedial solutions.

- Provides Incident (RFO) Reports if required.

Security Domain Specialist (Security/Compliance Specialist) (See resume in Appendix D.4 for experience)

- Works together with the Technical Support Representative and Account Manager and acts as the primary customer interfacing points of contact for security.

- Provides solutions from Verizon's full range of security services to help enable the achievement of your business outcomes.

- Proactively develops and maintains relationships with executives as well as building new relationships within the State of West Virginia.

Project Manager (PM) (Solution Implementation Manager)

- Responsible for delivering the services agreed at the outset using resources and budget as defined in the Project Initiation Document (PID) and Statement of Works (SOW), aligned with your contracted deliverables;

- Tracks and reports status of schedule, scope, issues, risks, specified performance indicators, and other metrics determined appropriate throughout the project and each site implementation.

- Seeks your approval if any changes are identified in contractual/agreed approaches;

- Acts as your primary contact for all project activities;

- Delivers regular project dashboards and written status reports to stakeholders as defined in the communications plan;

- The Project Manager leads all Verizon activities in support of the project and maintains the lifecycle support thereafter.

4.3.2.3.12. The Vendor's bill must show E-rate discounts per Funding Request Number (FRN) on the bill for E-rate eligible entities.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.13. The State expects full, complete, and timely cooperation in disentangling the relationship in the event that the Agreement expires or terminates for any reason. In the event of expiration or termination, the State expects that the Vendor shall, among other things: return all State data and documentation to the State, including but not limited to configuration information; transfer ownership of all leased equipment at no cost to the State (other than the payments already received by the Vendor under the Agreement); and, allow the State or the replacement provider(s) continued access to all billing, ordering, and trouble ticketing systems, and processes that have been employed in servicing the State, in accordance with methods and procedures to be agreed upon and established in the Agreement. Please acknowledge your acceptance of this.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.14.   *If, as part of its proposal, the Vendor submits appendices or other supplemental materials, the Vendor must denote specifically in those materials where the relevant information is located.*

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.15.   *The Vendor's installation services must include all required products and services needed to install a functional service. This includes planning/engineering, termination, cross-connects, splices, terminating hardware setup, programming, mounting, and related documentation.*

Verizon's Response

Verizon has read, understands and will comply.

Verizon will provide all the fiber cabling, patching and cross connects needed to provide the customers purchased services under this contract. Cables, patching and cross connects for the equipment owned and operated by the customer are not part of the service. The customer will be provided with an Ethernet handoff to connect to their equipment.

4.3.2.3.16.   *The Vendor must be capable of extending the service to the required termination location beyond the minimum point of entry. The additional cost for the extension of service must be provided in the Pricing Section.*

Verizon's Response

Verizon has read, understands and will comply.

A DMARC extension is the transmission path originating from the interface of the access provider's side of a telecommunications circuit Demarcation Point within a premise and ending at the termination point prior to the interface of the edge Customer Premises Equipment. Verizon will provide Category 5E/6 copper. If fiber optic cable is required, project specific pricing will be provided on ICB basis prior to installation. Installation of conduit or large concrete cores will be considered an additional cost on ICB basis and will be placed after approval of additional charges. All installations will follow industry standards. DMARC extension hourly rate added to Exhibit A in Verizon's Cost Proposal.

4.3.2.3.17.   *The Vendor must clearly label demarcation points with the site-specific service identification information, including demarcation extensions to the location of customer equipment where applicable. along with the identification of whether the Vendor or subcontractor will be providing the extension.*

Verizon's Response

Verizon has read, understands and will comply.

See 4.3.2.3.16. Verizon will label demarcation points as requested.

4.3.2.3.18.   *The Vendor must comply with all applicable codes, licenses, certifications, and standards in the State of West Virginia as it relates to the proposed installation services.*

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.19.   The Vendor must perform adequate testing after installation services are performed to ensure services are operating properly when turned up for the customer. The Vendor may be required to provide documentation of test results if so requested.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.20.   The Vendor must agree to the following installation timelines:

4.3.2.3.20.1.   Forty-five days (45) where no special construction is required.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.20.1.1.   For each day beyond the forty-five (45) day installation intervals defined or agreed to above, where the new service is not installed within the installation timelines, liquidated damages of $500 per day will be assessed at the State's discretion.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.20.1.2.   Where special construction is required, Vendor must provide an installation timeline which must be approved by the state.

Verizon's Response

Verizon has read, understands and will comply.

Special Construction is handled on an individual case basis (ICB). Verizon utilizes the various Local Exchange Carriers throughout the State taking the best advantage of the strengths in each area. By not relying on one carrier's presence, Verizon can leverage the maximum coverage with minimal capital payout from the State. When Special Construction is required Verizon will provide the State of West Virginia the charge and approximate timeline. It is mutually agreeable that both parties would need to agree on final costs and timelines before proceeding. The TCR will require amending to approve the Special Construction cost.

4.3.2.3.21.   The Vendor must provide a cost associated with expediting a service installation request on the Cost Sheet.

Verizon's Response

Verizon has read, understands and will comply.

Verizon has provided costs associated with expediting a service installation request in **Exhibit A**: Pricing Page in our Cost Proposal.

4.3.2.3.21.1.   The vendor will refund in full service expedite fee should agree upon expedite date not being met.

Verizon's Response

Verizon has read, understands and will comply.

See Verizon provided expedite fee costs in **Exhibit A**: Pricing Page in our Cost Proposal.

4.3.2.3.22.   The State will only pay special construction costs for new or legacy sites if other options (e.g.: 4G/5G wireless or other service provider facilities) are not available or if increased State bandwidth requirements cannot be met by existing telecommunication carrier facilities at the location. Special construction shall be approved at the State's discretion.

Verizon's Response

Verizon has read, understands and will comply. See 4.3.2.3.20.1.2.

4.3.2.3.23.   The Vendor must provide the following two value- added installation and managed service options.

4.3.2.3.23.1.   Leased Router:

4.3.2.3.23.1.1.   Vendor provided edge router (Cisco or equal) will be leased by the state and must support access speed of service.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.23.1.2.   Vendor retains ownership of the Router and is responsible for all licensing fees and maintenance costs.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.23.1.3.   Vendor must replace/upgrade the Router within 24-months following the Cisco End of Support notification in order to maintain support and software update eligibility.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.3.23.1.4.   Vendor is required to provide replacement router upon failure within 8x5xNext Business Day.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.3.23.1.5.   Vendor must replace/upgrade Router as requested by the State to support increased bandwidth demands and provide adequate throughput.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.23.1.6. WVOT retains management responsibility of the Router including configuration, installation, and monitoring.

Verizon's Response

Verizon has read, understands and will comply.

Unless WVOT selects a full management option, they will retain management responsibility of the Router.

4.3.2.3.23.2. Managed Internet Service

4.3.2.3.23.2.1. Vendor provides a bundled rate for managed services inclusive of the following:

4.3.2.3.23.2.1.1. Circuit, Edge router and Internet access

4.3.2.3.23.2.1.2.Installation and ongoing support for bundled service

Verizon's Response

Verizon has read, understands and will comply.

Verizon has provided Managed Internet Service in **Exhibit A**: Pricing Page in our Cost Proposal.

4.3.2.3.23.2.2. Vendor retains ownership of the Router and is responsible for all licensing fees and maintenance costs.

Verizon's Response

Verizon has read, understands and will comply.

4.3.2.3.23.2.3. Vendor must replace/upgrade the Router within 24-months following the Cisco End of Support notification in order to maintain support and software update eligibility.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.3.23.2.4. Vendor is required to provide replacement router upon failure within 8x5xNext Business Day.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.3.23.2.5. Vendor must replace/upgrade Router as requested by the State to support increased bandwidth demands and provide adequate throughput.

Verizon's Response

Verizon has read, understands, and will comply.

4.3.2.4   Part 4: Security for WAN and DIA Services

4.3.2.4.1.   The Vendor will be responsible for the physical and cyber security of the network infrastructure that provides services to the State.

Verizon's Response

Verizon has read, understands and will comply.

Verizon invests in people, processes, and technology to protect our company and our customers. A successful security program requires a partnership between skilled security leadership and teams involved in day to day business decision making. Verizon employs hundreds of security professionals, some of whom work directly for the Chief Information Security Officer (CISO) on establishing and governing the Company's information security strategy, policy, standards, architecture and risk management. Other security professionals support lines of business directly, partnering with Corporate Information Security (CIS) to facilitate information security and protect customer data.

Verizon's Corporate Information Security Program has implemented administrative, technical and physical safeguards that help to protect the confidentiality, integrity and availability of systems, networks, and information. The following is a summary of Verizon's written information security policies and practices which correlate to the National Institute of Standards and Technology Cybersecurity Framework (NIST-CSF).

The Verizon Private IP and network components comply with best practice security that correlates to applicable security requirements. These security measures apply to the network environment and components within Verizon's management. Verizon cannot protect network elements (customer-owned and operated) outside of our management control.

Physical access controls include but are not limited to the following:

- Personnel access controls including: need-to-know verification, access lists, and badging.
- Physical protection of processing areas, including access limitation devices such as guard services, electronic card readers, surveillance cameras, and limited markings on sensitive locations.
- Use of automated physical control systems at major sites that interfaces with Verizon Human Resources files so that active employees can be identified and authenticated.
- Protection against denial of service attacks by physically limiting access to network terminals and resources.
- Physical protection of hardware, software, or documentation, if such access to components or information may be utilized to eliminate, circumvent, or otherwise render ineffective the security safeguards of the system.

The Verizon physical security philosophy is based upon four levels of security. The first level is the outer layer of security, the site perimeter. The second level is the public area or lobby. The third level is the interior workspace, and the fourth is highly sensitive areas within the interior of the facility.

Every effort is made in the development of the overall security system to match a site's security strategies to the required level of protection. Perimeter protection may involve fences and gates,

lighting, cameras, monitoring, and patrolling. Protection of the public area is maintained by minimizing the number of entrances to ensure that only authorized personnel pass beyond the public space into the interior workspace. The workspace security objective is to allow only authorized personnel to enter the working environment of our network equipment inside a Verizon facility.

Verizon co-locates its hub equipment in telephone company facilities and data centers, which are subject to physical access restrictions. Verizon also uses LAN switching equipment, rather than LAN hubs, to reduce the risk that in the case of a server breach, traffic not destined for the breached server could be captured.

We have taken several steps within our own facility to limit the amount of key knowledge that is readily available. The passwords for "root" login to the management platforms are not given out to the operational floor. The distribution of the passwords is limited to the group leaders of the first level engineers and the second level support engineers who perform the advanced troubleshooting and change management. We use building security as a means for MSO to prevent non-Verizon personnel access to any floors in the building. Also any new personnel hired into the MSO are not given the router passwords or access to them until their identity and access rights are verified.

The security of Verizon's network is critical to both Verizon and its customers, and Verizon Information Security Group is focused on maintaining that security. Verizon' security staff includes engineers with extensive backgrounds in computer security policy and implementation.

Private IP Security

Commercially available as a service option since 2000, Private IP is Verizon's Multi-Protocol Label Switching (MPLS)-based, Layer 3 VPN service. The solution connects customers to their disparate locations around the globe, providing flexible and robust design options while also offering the ability to interconnect with complementary Verizon services.

Private IP service is based upon RFC 4364 and provides Layer 3 VPN services over an MPLS architecture. MPLS can be a powerful tool and is used for three main reasons:

- Engineering the network core more efficiently (manages capacity and congestion, provides traffic routing control and prioritization)
- Providing VPN services (e.g., MPLS VPNs)
- Enhancing network resiliency through the use of MPLS Fast Reroute

While Private IP (and MPLS itself) is widely accepted within the industry, many businesses are still unfamiliar with the protocol, specifically when it comes to security. Because of this, questions concerning Private IP's security regularly arise in our everyday discussions with clients. Verizon will provide an overview of Private IP security by looking at general MPLS security components, as well as the Verizon Private IP service architecture itself.

High-Level Verizon Private IP Architecture

The Verizon Private IP service is based on RFC 4364, which describes a method for providing VPN services over an MPLS and IP backbone. The key physical and logical components are described below.

Customer edge (CE) router

The customer edge router is the IP router at the customer premises. This is the device that connects to and peers with the provider edge (PE) router. CEs do not peer with each other. CEs are

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considered part of the customer's VPN and do not participate in any core routing. The CE is not MPLS- aware and is only configured for standard IP routing.

Provider edge (PE) router

The PE router resides in the service provider's (Verizon's) core. The PE learns IP routes from the CE, usually via a dynamic routing protocol, and stores them in a separate Virtual Routing and Forwarding (VRF) instance for each connected CE interface. An 8-byte route distinguisher (RD) is prepended to every IP address to create globally unique VPN-IPv4/v6 addresses. The PE uses Multiprotocol BGP (MP-BGP) to distribute VPN-IPv4/v6 routes to other Pes in the customer's VPN.

Virtual routing and forwarding (VRF) instance

The VRF is effectively a separate routing table per customer VPN — many VRFs exist in every PE. VRF membership is determined based upon the ingress interface on the PE.

A customer's VPN is then the collection of the participating VRFs.

Provider (P-core) router

P-core routers are those routers in Verizon's backbone that do not connect to CE routers and, in most cases, form the core of the network. P-core routers are not VPN-aware (do not contain any customer routes) and only forward MPLS- labeled packets between PEs.

A high-level, simplified description of customer data flow is described: Customer traffic enters the network at the CE and flows toward the PE, with which it peers across an access network. The PE router maintains a VRF, which is associated with the ingress interface and will contain advertised customer networks. MP-BGP is used to distribute routing information between PEs. The MPLS protocol then encapsulates the IP data, adding labels and switching traffic along pre-signaled label switched paths. The MPLS encapsulated traffic arrives at the far-end PE, where the labels are removed and the customer's IP traffic is sent across the access network to the destination CE.

Security requirements of MPLS networks

The following will describe the inherent security mechanisms built into the VPN service provided by Private IP-characteristics that are traditionally associated with Layer 2 VPNs (e.g., frame relay). MPLS security is based upon three basic principles:

- Necessity for address and routing separation
- Keeping the internal structure of the core network hidden from the outside
- Providing resistance to attacks

Address space and routing separation

MPLS-based VPN services must provide customers the flexibility of maintaining their own unique addressing plans and freedom to use either public or private address space. This means that between any two non-intersecting VPNs, the address space between these different VPNs is independent. For example, two separate, non-intersecting customer VPNs would be able to use the same 10.0.0.0/16 network without fear of conflict. From a routing perspective, this means that each end system in a VPN has a unique address and all routes to this address point to the same end system.

Specifically:

- A VPN must be able to use the same address space as any other VPN or the MPLS core.

- Routing between any two VPNs must be independent.

- Routing between any VPN and the core must be independent.

Address space

Private IP service allows distinct VPNs to use the same address space, which can be publicly registered or private IPv4 address spaces (RFC 1918). Customers also have the option of using IPv6 addressing obtained either directly from ARIN or their ISP with the Private IP service. This address uniqueness is made possible by adding a 64-bit RD to each IPv4 or IPv6 route, making these addresses not only VPN unique but also unique across the MPLS core. This address is also sometimes called a "VPN-IPv4 address" or "VPN-IPv6" when IPv6 addressing is present.

Routing separation

Routing separation between Private IP customers is provided by each PE router maintaining a separate routing table for each connected VPN – or a VRF instance. The VRF contains only the routes for the VPN that it is associated with and that were learned either statically or through a dynamic routing protocol (e.g., BGP, RIP). These VRFs are separate from each other as well as from the global routing table. The Private IP core does not contain customer routes, but only those routes required for providing core reachability. These individual VRFs are further secured through the use of import and export targets with MP-BGP. A customer VPN is configured with a specific set of route targets and the associated VRFs only import/export routes for the specified VPN, helping protect them from non-customer route injections. VPNs only contain routes associated with their corporate VPN.

Hiding the MPLS core structure

The second security principle of MPLS-based VPN design requires that knowledge of the core of the network is limited or completely hidden from the outside. In general terms, if a potential attacker does not know the detail (e.g., IP addressing) of their potential target, it makes that target difficult, if not impossible, to attack. So, Private IP does not unnecessarily reveal this and other information, even to customer VPNs.

When a dynamic routing protocol is run between the PE and CE (e.g., external BGP [eBGP]), the only information that is required is the address of the PE router. When security requirements dictate even stricter measures, static routing can be configured between the PE and CE, which would allow the Private IP MPLS core to be kept completely hidden.

Resistance to attacks

Because of the routing separation provided to Private IP customers, it is impossible to gain access to other VPNs unless it has been explicitly configured (e.g., via an extranet configuration). The use of PRIVATE IP SECURITY 4 MP-BGP and route targets constrain the routing within the VPN only to those routes learned through the customer's CE-to-PE connection (static or dynamic). By design, there is no direct connectivity between the Private IP network and the public Internet. Private IP PEs are dedicated to providing the private Level 3 VPN service. Furthermore, the Verizon core is dedicated to MPLS switching and does not contain any Internet or customer routes. This architecture design limits the potential for unauthorized users and for external attacks.

Even though the potential for attack may be low and unlikely, the Verizon Private IP MPLS architecture does provide protection mechanisms against the following basic types of attacks:

- **Intrusions** – Where the underlying goal is to gain unauthorized access to resources

- **Denial of service (DoS) attacks** – Where resources become unavailable to authorized users

We have already discussed the inherent security provided by limiting customer VPN access to only those sites and interfaces explicitly configured. Through this mode of configuration, it is not possible to directly intrude into other VPNs. There are also numerous device-level controls in place that restrict access to and protect the Verizon Private IP service nodes and core from unauthorized use. These safeguards already provide a great deal of protection from intrusion at both the device and VPN levels. The Private IP core does not reveal unnecessary information about itself (e.g., addressing), which helps to further protect against unwanted attention and access.

The option of configuring static routing also exists, whereby the PE routers are manually configured with only those routes to specific customer networks listed behind each CE. The CEs themselves are then configured to statically point to the PE router for any network in other parts of the VPN (mostly a default route). If the CE-configured route to the PE points to the local interface, the CE router doesn't need to know any IP address of the core network, not even of the PE router.

Taking these optional steps provides additional levels of network security, as it is only visible and accessible to those resources and individuals who need it.

To help reduce the risks of DoS and unauthorized intrusion, the PE's routing processes are securely configured. This is done in various ways:

Access control lists (ACLs)

ACLs are used on Private IP interfaces to restrict the routing protocol to only the CE router and nowhere else. Furthermore, ACLs are used to limit access to the PE from only known entities.

Parameter configuration

Where practical, PE configurations are given parameters that are tuned to further secure communication. For example, Private IP VRFs are configured with a maximum number of routes, which helps to protect the router from receiving an abnormally large number of routes in a DoS attempt.

MD-5

This is an optional configuration for authentication for routing protocols. This is available for BGP (RFC 2385) and Open Shortest Path First (OSPF) (RFC 2154) Private IP customers. It avoids the packets that could be spoofed from other parts of the customer network than the CE router. Note that this requires Verizon and the customer to agree on a shared secret between all CE and PE routers.

In summary, Verizon's PE routers offer multiple levels of security, especially on their interfaces to the CE routers. ACLs are configured to limit access only to the port(s) of the routing protocol and only from the CE router. MD-5 authentication is an optional customer configuration item and can be used on CE-PE peering.

Label spoofing

Within the Private IP service core, network packets are forwarded based on labels that are prepended by the PE routers. The interface between any CE router and its PE router is an IP interface. The CE router is unaware of the MPLS. The "intelligence" or MPLS switching is all done within the PE device and the Private IP core. Because of this, a PE router will not accept a packet

with a label from a CE router. Labeled packets arriving from a CE will be dropped by the receiving PE. As such, it is extremely difficult to insert or spoof "fake" labels.

Verizon security standards

Verizon has several internal organizations that provide support functions for the Private IP network. All of these internal groups and their personnel have strict policies and controls in place to allow secure communication with and support of the Private IP architecture. These groups range from ordering and provisioning to monitoring, reporting, and service on the network once in place. Over all of these groups and components, Verizon's internal security organization and the Verizon Network Security Operations Center (NSOC) has primary responsibility for internal security policies and their enforcement.

Verizon security organization

Verizon's security organization has developed a consolidated approach and set of controls so that the Private IP service operates within designed levels of confidentiality, security, and availability. The security organization is responsible for the protection of all company assets, facilities, and information, as well as providing for those policies governing employee access for support of the Verizon service network.

Preventing incidents before they occur may be the most important aspect of Verizon's security plan. To this end, Verizon has in place a continual process of identifying, measuring, and implementing safeguards to reduce risk of an event impacting the integrity or availability of the Private IP service.

This process involves the regular scanning of internal systems and networks for vulnerabilities and remediation of any gaps found within. This is based on current understanding of existing and upcoming threats and risks within the industry and through direct participation in several security associations and continual research.

Personnel safeguards

Verizon bases its own internal personnel security mechanisms upon widely accepted best practices. Verizon policies provide for the following:

- Verizon pre-employment screening and mandatory drug screening
- National Industrial Security
- Program requirements for U.S. government employees
- Ongoing security training and awareness covering a range of topics

The personnel security program provides clear roles and responsibilities for employees based upon the definition of their job function. Employees are only provided access to internal network and devices based on need as defined by their function. Whether due to normal termination of a job function (e.g., short-term, contractor) or other reasons, network access is swiftly removed per company policies so that access is available only when specifically required.

Verizon physical and environmental protection

The physical protection of the actual facilities that house Verizon network equipment and systems is just as important to the overall security architecture as protection from network-level threats. Verizon categorizes physical security at several levels.

The first two levels address those areas of a facility where the public may have access. This is the building perimeter and internal "public space." These areas use appropriate signage, barriers (locked

doors, manned desks, and turnstiles), and badge readers-among other mechanisms-so that individuals are made aware they are entering a secured area.

The third security level is defined as the employee space and is accessible only by workers and contractors as needed to conduct their work.

The fourth level is the highest security level assigned to facility access and is reserved for those locations and areas that house Verizon assets and information that may be accessed only by select employees. The Private IP network nodes are provided this level-4 protection, which includes these additional components:

- Personnel access controls, including access lists and badging-as well as the ability to authenticate active employees against HR records
- Physical protection using guard services, electronic card readers, and surveillance cameras
- Protection through physically limiting access to network terminals and resources, as well as sensitive software and documentation
- Physical controls during software development and related activities to help protect the software that is used for handling customer-sensitive information and data.

Private IP device-level safeguards

Numerous controls have been put in place to help protect Verizon network devices from unauthorized access and the inadvertent or malicious modification and destruction of data. At a high level, direct access to the Private IP PE routers is not permitted, and access is allowed only across the Verizon internal data network. Mechanisms include, but are not limited to:

- ACLs restricting access to required external devices and services only
- Turning off all unnecessary interfaces and services
- Internal Verizon user access limited to required personnel only, which is constantly monitored using two-factor authentication
- Logging of user actions on Verizon equipment with further controls allowing for administration and restriction of privilege levels, recording, and review of actions
- Performing configuration changes associated with provisioning or customer service via automation or application access whenever possible to help reduce the chance of manual error
- Backups of device-level configurations and other critical files, as well as regular testing of disaster recovery and restoration processes conducted on a regular basis.

Private IP network architecture assessment

Verizon utilizes a third-party vendor (SecureTrust, a Sysnet company) to conduct a Security Controls GAP Assessment focused within Verizon MPLS (Multiprotocol Network Switching) Information Solutions (Verizon MPLS) using Federal Information Management Act (FISMA) guidelines. The objective of this assessment is to perform a documentation and physical security review of the Private IP platform using NIST Special Publication (SP) 800-53 Rev. 5 and NIST SP 800-171 as security reference models. This is reviewed approximately every 3 years and the latest engagement was conducted from July 6th to November 19, 2021. A summary of Verizon MPLS's "overall" compliance with NIST can be provided upon request.

Summary and conclusions

The Private IP service provides full address and routing separation. By design, Private IP does not reveal the addressing structures of the core or other VPNs, and its security controls help prevent intrusions into the core or other VPNs by abuse of MPLS mechanisms.

Verizon has put in place an internal security organization to help implement the proper controls, so that the Private IP service operates within designed levels of confidentiality, security, and availability.

For environments that require stricter control measures, additional optional security mechanisms may be put in place to meet customers' unique internal needs. Customer- managed CE-CE encrypted tunnels, such as GetVPN or point-to-point or multipoint GRE + IPsec, are one such option and are supported across Private IP.

It should be noted that the overall security of any architecture depends on all solution components. While the Private IP service includes many security controls and features, public Internet access, remote access solutions, and traditional internal network access must also be secured to help prevent compromise to your network design.

Internet Network Security

Our IP network offers high–quality performance as well as multiple levels of data security. To protect its network, we use a combination of traditional defense-in-depth approaches along with perimeter security approaches. We implement many layers of security, including physical, perimeter, host–based, personnel, and procedural security.

We collocate our hub equipment in telco facilities, all of which are subject to strong access restrictions. These facilities offer the highest degree of physical security. Our Internet network is also designed to keep transit traffic (e.g., IP packets being switched between hubs) away from any general–purpose computing systems (e.g., our mail or news servers) that could be used to capture transit traffic in the event of a security breach.

We also use LAN switching equipment, rather than ordinary LAN hubs, to help ensure that even in the case of a server breach, capturing traffic not destined for the breached server would be very difficult.

We isolate our internal computing infrastructure from external access electronically as well as physically. Internal support servers are kept separate (physically and topologically) from our IP backbone network links and customer service servers (e.g., mail and news).

We deploy extensive cryptographic authentication and encryption. These techniques greatly reduce the possibility of passwords passing over the network in the clear, and in many cases eliminate the need for reusable passwords that can be compromised.

In addition to other methods, we deploy Kerberos based authentication systems internally, while running SSL, and other industry standard remote access services for external connectivity.

Connections to our internal systems from outside the firewall are extremely limited, reinforced by security methods, including strong encryption, two factor authentication, firewall restrictions limiting specific services to a single IP, and use of internal DMZs where necessary.

In addition to using cryptography to authenticate users and encrypt traffic, we also rely on Kerberos–authenticated applications to administer service machines. We use Intrusion Detection Systems as well as log monitoring to detect anomalous behavior.

These systems strive to run the minimum number of Internet services needed to perform their functions, thus minimizing other possible points of attack. Our position in the Internet industry, combined with an Information Security Group that works closely with the company's vendors, gives us access to information on new attacks and methods to counter these attacks long before the general user community is aware of them.

The security of our IP network is critical to us and our customers, and our Information Security Group is devoted to maintaining that security. Our security staff includes security policy experts and engineers with extensive backgrounds in computer security.

This group maintains the proper levels of protection on our IP network, ensuring that all new projects and products comply with our rigid security standards and procedures. This group's knowledge of the necessary technologies, and its relationships with the FBI, CERT, Secret Service, and other agencies, enable them to achieve this goal.

4.3.2.4.2   The Vendor will be responsible for resolving all security vulnerabilities that may affect equipment or transmission services provided to the customer.

Verizon's Response

Verizon has read, understands and will comply.

Within the Verizon Corporate infrastructure Verizon provides regular Nessus vulnerability scans. Nessus is an industry standard scanning tool that Verizon uses to scan our internal assets. Verizon MNS uses the Vulscan vulnerability management tool for scanning and remediating Verizon managed customer devices. Verizon MNS uses the results from Vulscan to determine appropriate remediation requirements based upon the severity of the vulnerability.

Verizon has a comprehensive Enterprise Vulnerability Management (EVM) program designed to identify and protect Verizon infrastructure components against this ever increasing threat landscape. Verizon's EVM program is based on the National Institute of Standards and Technology (NIST) Cybersecurity Framework and ensures that Verizon has sufficient tools, processes and people working to manage this risk.

Verizon's EVM Program includes the following:

Policy – Verizon anchors the EVM program across its enterprise with a comprehensive policy which outlines the core components, cadence and personnel responsibilities necessary to sustain a healthy and well-balanced vulnerability management program.

Identification - Verizon uses various external threat and vulnerability information sources to maintain a vigilant awareness of the current threat and vulnerability landscape. These sources include, but are not limited to, commercial, government, vendor, and publicly available sources (e.g. Common Vulnerabilities and Exposures (CVE)).

Detection – Verizon leverages both manual and automated detection methods, on a scheduled and real-time basis, to identify deployed IT assets within its network infrastructure. The discovery process of assets with potential vulnerabilities is performed with multiple techniques at the network and application layers.

- Network vulnerability scans of systems, devices, and network elements are performed on a scheduled basis.

- Static Application Security Testing (SAST) is performed to analyze application source code, byte code and binaries for coding and design conditions that are indicative of security vulnerabilities

- Dynamic Application Security Testing (DAST) is performed to detect conditions symptomatic of a security vulnerability in an application in its running state

Risk Evaluation – Identified vulnerabilities are assigned a severity classification based on their evaluated risk using an industry standard scoring model.

Remediation - Identified vulnerabilities are reported to the appropriate owners and custodians of the affected assets and who are included in the remediation process. Vulnerabilities that are determined not to be false-positives are then tracked and remediated per an established policy timeline. If remediation is not feasible within the policy timeframe, a work plan is developed and tracked. In rare circumstances, an exception may be approved, which is tracked in a central system of record as mitigating or compensating controls are considered and deployed.

Metrics & Reporting - Data is collected and retained for the purposes of stakeholder reporting and executive management visibility to ultimately ensure vulnerable assets have been remediated. Additionally, this data may serve other needs such as threat trending and the strategic planning of ongoing EVM program improvements.

Verizon Network Security group engages in a number of activities to proactively test the security of the Verizon network. Examples of such activities include:

- Periodically scanning our internal IP address ranges for vulnerabilities and targeting critical systems and network elements Monitoring access control lists (ACLs) and firewall rule lists from critical routers in our "demilitarized zone (DMZ)" every hour to verify device integrity.

- Auditing systems to closely scrutinize remote access to, and unusual data patterns within, our systems, the backbone, and our managed customers' systems. More specifically, some of these auditing tasks include:

- Auditing and validating security rules on critical backbone routers.

- Parsing firewall log messages in real–time from firewalls on backbone routers for analysis.

- Automating attack responses; processing millions of external security events per day such as network/host scans. These automatic responses identify network owners of the attacking systems and send notifications back to the network owner. This data is also analyzed for any indication of DDoS or other unusual network activity via a fully automated program that runs hourly and that provides automated notifications and alerts to security experts. Information is routinely shared with the U.S. National Coordination Center (NCC).

- Mitigating DOS attacks for customers by experienced teams that are on–call at all times using industry leading techniques and experience; tools include Blackhole Route Server and ICMP Backscatter Traceback.

Verizon utilizes a defense–in–depth strategy that incorporates a multi–tiered approach of security at each of these levels:

- Firewalls

- Network segmentation

- Authentication and authorization

- Encryption of authentication information

- Non–repudiation of transactions

- Audit trails

- Intrusion detection

- Honey pots

- Incident response

Please note that Verizon has made a conscious decision to not provide vulnerability reports to customers as doing so would potentially put all of our customers at risk due to the sensitive nature of the information contained. If the State of West Virginia is looking for Verizon to perform vulnerability scans of their environment that would be a Managed Security or Professional Services engagement that is not in scope of the RFP. For the same reason, Verizon does not answer questions about the status of specific vulnerabilities with regard to the use and/or nonuse of specific hardware, software, or third-party products deployed within the Verizon infrastructure. Verizon's substantial investment in the people, processes and tools necessary to secure the products and services that our customers trust and depend on each day, demonstrates our continued commitment to security excellence.

4.3.2.4.3   The Vendor's policies, services, processes, or employees cannot create conflicts with the State's standard security policy requirements. In the event of a standard security policy conflict, the State's policy will prevail. (Policies available at http://www.technology.wv.gov)

Verizon's Response

Verizon read, understands and will comply.

Verizon's proposed solution provides commercial commodity services based upon a Verizon IT system that is separate from the state's IT systems. Verizon will not be accessing the state's IT systems, applications, or data. Verizon's IT systems adhere to Verizon's Information Security Corporate Policy Instruction 810 (CPI-810), which correlates to the NIST CyberSecurity Framework (CSF). Where applicable, Verizon employees that are required to be onsite at State facilities and required to access State IT Systems will adhere to any potential State policy deviations.

4.4   Qualifications and Experience:

Vendor should provide information and documentation regarding its qualifications and experience in providing services similar to those requested in this RFP. Information and documentation should include, but is not limited to, copies of any staff certifications or degrees applicable to this project, proposed staffing plans, descriptions of past projects completed (descriptions should include the location of the project, project manager name and contact information, type of project, and what the project goals and objectives where and how they were met.), references for prior projects, and any other information that vendor deems relevant to the items identified as desirable or mandatory below.

Verizon's Response

Verizon has read, understands, and complies.

Verizon is a Proven and Demonstrated Leader in Network Quality as indicated by the Industry Recognition below:

- Verizon is the most awarded for Network Quality, 27 times in a row according to J.D. Power -- more than any other carrier.

- Verizon has earned more than 170 J.D. Power Awards for Network Quality over the last 17 years.

- Verizon received the J.D. Power award in all six regions -- achieving the best score across all study factors.

- Verizon wins for overall network performance by RootMetrics, the nation's most rigorous and scientific network tester.

- This is Verizon's 16th consecutive RootMetrics win for overall network performance and network reliability.

Verizon is a Proven and Demonstrated Leader in Managed Services as indicated by the Industry Recognition below:

- Leader in the Gartner Magic Quadrant for Network Services for fourteen years. Gartner evaluates vendors on completeness of vision, and in 2020, Verizon continues to maintain its Leader position.

- Leader in the Magic Quadrant for Managed Internet of Things (IoT) Connectivity Services, Worldwide - With a comprehensive portfolio of transportation and asset management, home security, telematics, and utilities IoT solutions, we continue to innovate in this rapidly growing space.

- Leader in Gartner Magic Quadrant for Managed Security Services Worldwide for seven years in a row for our ability to execute and completeness of vision.

- Verizon recognized as Leader in Managed SD-WAN Services Worldwide in IDC MarketScape Report.

- Ranked Top 100 Government Contractor by Washington Technology.

Figure 4.4-1 provides a list of Verizon Account Team qualifications and proposed staffing plan.

Figure 4.4-1. Verizon Account Team Qualifications and Proposed Staffing Plan

Role	Name	Education	Certifications and Training	Proposed Staffing Plan
Account Manager (AM) (Account Support Representative/Contract Management)	Sandra K. Hawkins	University of Charleston, Charleston, WV Bachelor of Science in Business Management Executive Master of Business (EMBA)		*Dedicated local resource*
Solution Architect (Technical Support Representative)	Kevin Walker	Bachelor of Science in Electrical Engineering (B.S.E.E.) West Virginia Institute of Technology, Montgomery, WV	• MEF Carrier Ethernet Certified Professional ██████ • FCC Technician Amateur Radio License • Cradlepoint Certified Network Associate • Cradlepoint Certified Sales Associate	Dedicated local resource

Role	Name	Education	Certifications and Training	Proposed Staffing Plan
Client Service Manager/Technical Service Manager/Financial Service Manager(Billing Support Representative and Service Manager)	Melanie Lopez	West Virginia Institute of Technology, Montgomery, WV, BS –Mathematics, University of Kentucky , Lexington, KY Studied Applied Mathematics, 1986		Dedicated local/remote resource
Project Manager (PM Solution Implementation Manager)	TBD upon award		IT Infrastructure Library (ITILV3) Certification	Dedicated local/remote resource
Security Domain Specialist (Security/Compliance Specialist)	Sonya S. Hefferan	North Carolina State University B.S. Business Management, Marketing and Information Systems Concentration		Dedicated remote resource

4.4.1   Qualification and Experience Information:

Vendor should describe in its proposal how it meets the desirable qualification and experience requirements listed below.

4.4.1.1   Vendor should provide three (3) examples demonstrating at least three (3) years of experience in providing state-wide or region-wide Ethernet Wan Services of a similar size and scope as this project, with at least one example being a public entity. Vendor should provide a summarization of each project including goals and objectives, total number of circuits deployed, length of time deployment took, if still in service, and reference for each example.

Verizon's Response

Verizon has read, understands, and complies. Please refer to the following references.

Past Experience 1 - Commonwealth of Virginia:

Doug Leslie
Strategic Sourcing Consultant
Virginia Information Technology Agencies
11751 Meadowville Lane
Chester, Virginia 23836
804-416-6161
doug.leslie@vita.virginia.gov

Project Summary:

Verizon provided Managed WAN/LAN/WLAN Services, Ethernet Private IP, Internet, and various technology-based services to the Commonwealth of Virginia and the Commonwealth of Virginia Executive Branch Agencies. All services and connections provided enable secure digital government for the Commonwealth and its Agencies. Verizon provides IP and Ethernet-based services to over 1500 locations across the Commonwealth of Virginia. Verizon has refreshed over 9000+ network devices and upgraded over 400+ sites from TDM to Ethernet. This transition was over a twenty-four month period, and Verizon continues to work to migrate the legacy TDM sites to Ethernet. The Commonwealth of Virginia has been a Verizon contracted customer for over 20 years and currently has several contracts that support both Wireless and Wireline services.

Past Experience 2 - State of Maryland

Denis McElligott
Director of Network Services
Department of Information Technology
100 Community Place
Crownsville, MD 21032, Room 2.645
410-697-9394
denis.mcelligott@maryland.gov

Project Summary:

Verizon provides Ethernet WAN Services to the Maryland State Government for a large statewide network. The service provides site to site connectivity to both in LATA and Across State lines. The objective of this network is to provide communications services to State agencies as well as other government locations. The current total number of Ethernet locations is 254 with speeds up to 10G. The timeframe for each site installation was 3 - 4 weeks. The contract began in 2016 and the state is continuing to build out the network by adding new sites and replacing TDM services where feasible.

Past Experience 3 - Commonwealth of Pennsylvania

Kevin Paul
ETSO Bureau of Service Value Management
Pennsylvania Office of Administration
1 Technology Park, Harrisburg, PA 17110
717-346-2727
kepaul@pa.gov

Project Summary:

Verizon provided Managed WAN/LAN/MWLAN Services, Ethernet Private IP, and various technology-based services to the Commonwealth of Pennsylvania Executive Branch Agencies. All services and connections provided enable secure digital government for the Commonwealth and its Agencies. Verizon provides over 1,600 IP and Ethernet-based services to locations with speeds up to 10G across the Commonwealth of Pennsylvania. The timeframe for installation was approximately 2 to 2/12 years. Verizon continues to work to migrate the legacy TDM sites to Ethernet. The Commonwealth of Pennsylvania has been a Verizon contracted customer for over 25 years and currently has several contracts that support both Wireless and Wireline services.

4.4.1.2 The State desires an Account Team (including Account Support Representative, Technical Support Representative, Solution Implementation Support Representative, Contract Manager, Billing Support Representative, Security/Compliance Specialist, and Project Manager) for the winning

solution and life of the contract. Vendor should describe in detail the responsibilities of key roles and staff's experience in working in these roles.

Verizon's Response

Verizon has read, understands, and will comply. Please see Section 4.3.2.3.11.

4.4.1.3 Vendor should describe their experience and provide an overview of their incident management process and cyber threat intelligence sharing process for incidents associated with the vendor provided solution.

Verizon's Response

Verizon has read, understands and complies.

Verizon's Incident Response Plan provides a vehicle that will allow for an effective response to information security incidents of varying sizes and complexity. Verizon's Incident Response teams have the responsibility for responding to security incidents across the enterprise and are composed of technical and security experts company-wide.

The primary objectives of the Incident Response Plan are to ensure timely reaction to suspected or verified security incidents, to minimize losses during an incident and the secure recovery of IT systems and related business processes affected by security incidents. Additionally, the Incident Response Plan is designed to allow Verizon to comply with the laws of the countries in which it conducts business and the contractual obligations to which it has agreed. Cybersecurity and information security issues and vulnerabilities (InfoSec/Cyber Risks) may be initially identified through various methods, such as Help Desks, technical support teams, IT workers or by customers simply noticing something suspicious. In general, a Verizon employee or contractor seeking to report an InfoSec/Cyber Risk is required to submit an email to a mailbox monitored by one of our Incident Response teams, although special procedures are established for specific types of events/incidents. Customers and other external parties can report cyber or information security issues to Verizon by calling the Verizon Security Control Center at 800.294.3496 or submitting an email to. EmergencyCyberReport@verizon.com. Instructions for reporting cyber vulnerabilities can also be found in the "Contact Us" section of the www.verizon.com home page. The person wishing to report can simply select the "Report a Security Vulnerability" at the bottom of the page, under "Tools," which then displays a Security Vulnerabilities page. Instructions and contact information for reporting a cyber security vulnerability appear at the bottom of that page.

Verizon's Incident Response Plan reflects the following processes:

- Preparation – defined roles and responsibilities with collaborative procedures
- Monitoring – continuously observe systems and networks for suspicious activity
- Detection - identify impacted systems and scope of the incident
- Containment – limit the damage and prevent any further damage from occurring
- Eradication – removal and restoration of affected systems
- Recovery - getting systems back online and restoring availability of affected services
- Lessons Learned – what improvements can be made in the event of a similar incident
- Forensics and Threat Intel – evidence collection, preservation and management

Verizon's Incident Response teams receive appropriate and regular training in relevant domains. New team members learn the basics of the policies, procedures and guidelines of Incident Response, while ongoing training is provided to personnel performing Incident Response to enable them to stay current on the latest advances in incident response, threats, attacks and other related information security topics. Periodic tabletop exercises are also conducted at a department and at an enterprise level to ensure coordination across business units and to verify documented procedures. Verizon's legal and regulatory support personnel are integrated with its Incident Response teams, so that Verizon's legal and regulatory interests are addressed as part of its Incident Response functions.

Verizon's Incident Response Plan is regularly reviewed and updated as required, no less than once per year. If Verizon learns of an incident, concerning its systems, that it has determined resulted in the unauthorized disclosure of a customer's confidential information, Verizon will comply with applicable legal, regulatory and contractual obligations in connection with that incident. Our general practice when responding to an unauthorized disclosure of a customer's confidential information is to use commercially reasonable efforts to (i) promptly notify the customer, and (ii) assist the customer in investigating and assessing the extent and nature of the unauthorized disclosure.

Verizon has unrivaled research over the last 14 years providing actionable insights into cyber threats with our Data Breach Investigations Report, Payment Security Report, Cyber Espionage Report, Mobile Security Index, Insider Threat Report.

Verizon's substantial investment in the people, processes and tools necessary to secure the products and services that our customers trust and depend on, demonstrates our commitment to security excellence every day. Our continuous improvement strategy strives to stay ahead of the curve by implementing forward thinking security controls and techniques to protect customer data and the Verizon Network. We are honored to have you as a customer and our continued goal is to provide you with the best security assurance possible to strengthen our business relationship.

4.5 Oral Presentations (Agency Option):

The Agency has the option of requiring oral presentations of all Vendors participating in the RFP process. If this option is exercised, points will be allocated in Section 6.2 below at the time the RFP is issued, or via addendum prior to technical bid opening. During oral presentations, Vendors may not alter or add to their submitted proposal, but only clarify information.

4.5.1 The State is not requiring oral presentations as part of this RFP.

Verizon's Response

Verizon has read and understands.

SECTION 5: VENDOR PROPOSAL

5.   Economy of Preparation: Proposals should be prepared simply and economically providing a concise description of the items requested in Section 4. Emphasis should be placed on completeness and clarity of the content.

Verizon's Response

Verizon has read, understands and will comply.

5.1.   Incurring Cost: Neither the State nor any of its employees or officers shall be held liable for any expenses incurred by any Vendor responding to this RFP, including but not limited to preparation, delivery, or travel.

Verizon's Response

Verizon has read, understands and will comply.

5.2.   Proposal Format: Vendors should provide responses in the format listed below:

5.2.1.   Two-Part Submission: Vendors must submit proposals in two distinct parts: technical and cost. **Technical proposals must not contain any cost information** *relating to the project. Cost proposal must contain all cost information and must be sealed in a separate envelope from the technical proposal to facilitate a secondary cost proposal opening.*

Verizon's Response

Verizon has read, understands and will comply.

5.2.2.   Title Page: State the RFP subject, number, Vendor's name, business address, telephone number, fax number, name of contact person, e-mail address, and Vendor signature and date.

Verizon's Response

Verizon has read, understands and will comply.

5.2.3.   Table of Contents: Clearly identify the material by section and page number.

Verizon's Response

Verizon has read, understands and will comply.

5.2.4.   Response Reference: Vendor's response should clearly reference how the information provided applies to the RFP request. For example, listing the RFP number and restating the RFP request as a header in the proposal would be considered a clear reference.

Verizon's Response

Verizon has read, understands and will comply.

5.2.5. *Proposal Submission: All proposals (both technical and cost) must be submitted to the Purchasing Division prior to the date and time listed in Section 2, Instructions to Vendors Submitting Bids as the bid opening date and time.*

Verizon's Response

Verizon has read, understands and will comply.

SECTION 6: EVALUATION AND AWARD

6. *Evaluation Process: Proposals will be evaluated in two parts by a committee of three (3) or more individuals. The first evaluation will be of the technical proposal and the second is an evaluation of the cost proposal. The Vendor who demonstrates that it meets all of the mandatory specifications required, attains the minimum acceptable score and attains the highest overall point score of all Vendors shall be awarded the contract.*

Verizon's Response

Verizon has read and understands.

6.1. *Evaluation Criteria: Proposals will be evaluated based on criteria set forth in the solicitation and information contained in the proposals submitted in response to the solicitation. The technical evaluation will be based upon the point allocations designated below for a total of 70 of the 100 points. Cost represents 30 of the 100 total points.*

Evaluation Point Allocation:

Project Goals and Proposed Approach (§ 4.2)

- *Approach & Methodology to Goals/Objectives (§ 4.2.1) 55 Points Possible*

Part 1: Technology Service and Solution for

Ethernet WAN, DIA and 4G/5G Services   30 Points Possible

Part 2: Vendor Ethernet WAN Services

Migration Plan 5 Points Possible

Part 3: Service and Support for WAN and DIA

and 4G/5G Services   10 Points Possible

Part 4: Security for WAN and DIA Services   10 Points Possible

- *Approach & Methodology to Compliance with*

Mandatory Project Requirements (§ 4.2.2)   5 Points Possible Qualifications and experience (§ 4.3)

- *Qualifications and Experience Generally (§ 4.3.1)   10 Points Possible*

(Oral interview, if applicable) (§ 4.4)   0 Points Possible

Total Technical Score: 70 Points Possible

Total Cost Score: 30 Points Possible

Total Proposal Score: 100 Points Possible

Verizon's Response

Verizon has read and understands.

6.2.   Technical Bid Opening: At the technical bid opening, the Purchasing Division will open and announce the technical proposals received prior to the bid opening deadline. Once opened, the technical proposals will be provided to the Agency evaluation committee for technical evaluation.

Verizon's Response

Verizon has read and understands.

6.3.   Technical Evaluation: The Agency evaluation committee will review the technical proposals, assign points where appropriate, and make a final written recommendation to the Purchasing Division.

Verizon's Response

Verizon has read and understands.

*6.4.   **Proposal Disqualification:***

6.4.1. Minimum Acceptable Score ("MAS"): Vendors must score a minimum of 70% (49 points) of the total technical points possible in order to move past the technical evaluation and have their cost proposal evaluated. All vendor proposals not attaining the MAS will be disqualified.

Verizon's Response

Verizon has read and understands.

6.4.2. Failure to Meet Mandatory Requirement: Vendors must meet or exceed all mandatory requirements in order to move past the technical evaluation and have their cost proposals evaluated. Proposals failing to meet one or more mandatory requirements of the RFP will be disqualified.

Verizon's Response

Verizon has read and understands.

*6.5.   **Cost Bid Opening:** The Purchasing Division will schedule a date and time to publicly open and announce cost proposals after technical evaluation has been completed and the Purchasing Division has approved the technical recommendation of the evaluation committee. All cost bids received will be opened. Cost bids for disqualified proposals will be opened for record keeping purposes only and will not be evaluated or considered. Once opened, the cost proposals will be provided to the Agency evaluation committee for cost evaluation.*

The Purchasing Division reserves the right to disqualify a proposal based upon deficiencies in the technical proposal even after the cost evaluation.

Verizon's Response

Verizon has read and understands.

6.6. **Cost Evaluation:** *The Agency evaluation committee will review the cost proposals, assign points in accordance with the cost evaluation formula contained herein and make a final recommendation to the Purchasing Division.*

Cost Evaluation Formula: *Each cost proposal will have points assigned using the following formula for all Vendors not disqualified during the technical evaluation. The lowest cost of all proposals is divided by the cost of the proposal being evaluated to generate a cost score percentage. That percentage is then multiplied by the points attributable to the cost proposal to determine the number of points allocated to the cost proposal being evaluated.*

Step 1: *Lowest Cost of All Proposals / Cost of Proposal Being Evaluated = Cost Score Percentage*

Step 2: *Cost Score Percentage X Points Allocated to Cost Proposal = **Total Cost Score***

Example:

Proposal 1 Cost is $1,000,000 Proposal 2 Cost is $1,100,000

Points Allocated to Cost Proposal is 30

Proposal 1:   Step 1 – $1,000,000 / $1,000,000 = Cost Score Percentage of 1 (100%)
Step 2 – 1 X 30 = Total Cost Score of 30

Proposal 2:   Step 1– $1,000,000 / $1,100,000 = Cost Score Percentage of 0.909091 (90.9091%)
Step 2 – 0.909091 X 30 = Total Cost Score of 27.27273

Verizon's Response

Verizon has read and understands.

6.7.   *Availability of Information: Proposal submissions become public and are available for review immediately after opening pursuant to West Virginia Code §5A-3-11(h). All other information associated with the RFP, including but not limited to, technical scores and reasons for disqualification, will not be available until after the contract has been awarded pursuant to West Virginia Code of State Rules §148-1-6.3.d.*

By signing below, I certify that I have reviewed this Request for Proposal in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that, to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

_____

(Company)

_____

(Representative Name, Title)

_____

(Contact Phone/Fax Number)

_____

(Date)

Verizon's Response

Verizon has read, understands and complies.

Verizon's completed and signed certification statement is provided on the following page.

6.7. **Availability of Information:** Proposal submissions become public and are available for review immediately after opening pursuant to West Virginia Code §5A-3-11(h). All other information associated with the RFP, including but not limited to, technical scores and reasons for disqualification, will not be available until after the contract has been awarded pursuant to West Virginia Code of State Rules §148-1-6.3.d.

By signing below, I certify that I have reviewed this Request for Proposal in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that, to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Verizon Business Network Services LLC on behalf of
MCI Communications Services LLC dba Verizon
Business Services
_____
(Company)

_____
(Representative Name, Title)

Phone: 304-807-0207 / Fax: 877-294-3614
_____
(Contact Phone/Fax Number)

10/12/2022
_____
(Date)

EXHIBIT A - PRICING PAGE

Please see Verizon's Cost Proposal for Exhibit A – Pricing Page.

verizon✓

EXHIBIT B - LIST OF SITES

Street Address	Speed in MBPS
1 DEPOT ST, ROMNEY, WV 26757	10
1 DOT DR, MOUNDSVILLE, WV 26041	100
1 FREEDOMS WAY, CLARKSBURG, WV 26301	100
1 LOIS LN, GREENWOOD, WV 26415	50
1 LORY PL, ,JULIAN, WV 25529	20
1 MOUNTAINSIDE WAY, MOUNT OLIVE, WV 25185	100
1 O HANLAN PL, BARBOURSVILLE, WV 25504	10
1 O HANLAN PL, BARBOURSVILLE, WV 25504	50
1 PLAYERS CLUB DR, CHARLESTON, WV 25311	10
1 W VIRGINIA 97, MULLENS, WV 25882	10
1 WALDEN ROUSH WAY, POINT PLEASANT, WV 25550	10
10 MCJUNKIN RD, NITRO, WV 25143	300
100 COURT ST N, RIPLEY, WV 25271	20
100 DEE DR, CHARLESTON, WV 25311	100
100 MARKET PLACE MALL, WESTON, WV 26452	10
100 MUNICIPAL PLZ, WEIRTON, WV 26062	10
100 THORN CREEK RD, FRANKLIN, WV 26807	10
1000 CHAPLINE ST, WHEELING, WV 26003	20
1000 CONFERENCE CENTER DR, LOGAN, WV 25601	10
1001 ARMY RD, KINGWOOD, WV 26537	100
1001 CENTRE WAY, CHARLESTON, WV 25309	50
101 BEECH ST, GRAFTON, WV 26354	10
1012 KANAWHA BLVD E, CHARLESTON, WV 25301	10
1014 S RALEIGH ST, MARTINSBURG, WV 25401	20
1018 KANAWHA BLVD E, CHARLESTON, WV 25301	10
1019 PICKENS RD, PICKENS, WV 26230	5
102 3RD ST, LOGAN, WV 25601	10
102 N MAIN ST, KEYSER, WV 26726	10
1020 BROAD ST, SUMMERSVILLE, WV 26651	3
1023 N RANDOLPH AVE, ELKINS, WV 26241	10
1025 MAIN ST, WHEELING, WV 26003	10
1025 N RANDOLPH AVE, ELKINS, WV 26241	10
1027 N RANDOLPH AVE, ELKINS, WV 26241	50
1029 N RANDOLPH AVE, ELKINS, WV 26241	10
103 ACADEMY DR, GLENVILLE, WV 26351	50
103 E MAIN ST, BRIDGEPORT, WV 26330	10
105 S EISENHOWER DR, BECKLEY, WV 25801	100
105 S RAILROAD ST, PHILIPPI, WV 26416	10
106 MARTIN DR, MOUNT HOPE, WV 25880	20
106 SAND MINE RD, BERKELEY SPRINGS, WV 25411	10
106B DEER VIEW DR, CHARLESTON, WV 25312	10
107 CAPITOL ST, CHARLESTON, WV 25301	100
107 DAVIS ST, ELKINS, WV 26241	10
107 E 4TH AVE, RANSON, WV 25438	10
107 PINECREST DR, BECKLEY, WV 25801	10
108 BACK VALLEY RD, LINDSIDE, WV 24951	10
108 LEE ST E, CHARLESTON, WV 25301	10
1081 COUNTRY CLUB RD, FAIRMONT, WV 26554	10
109 HCC BLVD, HUTTONSVILLE, WV 26273	100
109 TAVERN RD, MARTINSBURG, WV 25401	10
11 COMMERCE DR, WESTOVER, WV 26501	10
110 N MAIN ST, WEBSTER SPRINGS, WV 26288	20
110 N MAIN ST ,WEBSTER SPRINGS, WV 26288	10

Street Address	Speed in MBPS
110 PARK AVE, WELCH, WV 24801	10
110 STOCKTON ST, CHARLESTON, WV 25387	10
1101 GEORGE KOSTAS DR, LOGAN, WV 25601	300
1101 N RANDOLPH AVE, ELKINS, WV 26241	100
1106 RAILROAD ST, FARMINGTON, WV 26571	10
111 S EISENHOWER DR, BECKLEY, WV 25801	50
1110 RAILROAD ST, FARMINGTON, WV 26571	10
1116 SMITH ST ,CHARLESTON, WV 25301	10
112 NORTHERN REG CORRECTIONAL DR	50
1124 SMITH ST, CHARLESTON, WV 25301	500
11264 OHIO RIVER RD, WEST COLUMBIA, WV 25287	100
113 RANDOLPH ST, BECKLEY, WV 25801	5
1139 I 70 W, WHEELING, WV 26003	3
114 GRACE ST, DELBARTON, WV 25670	10
114 S HIGH ST, MORGANTOWN, WV 26501	10
115 AIKENS CTR, MARTINSBURG, WV 25404	10
115 CHURCH ST, SPENCER, WV 25276	10
11522 OHIO RIVER RD, WEST COLUMBIA, WV 25287	100
1159 NICK RAHALL GREENWAY, FAYETTEVILLE, WV	300
116 LIBERTY SQ, HURRICANE, WV 25526	10
1163 WILDLIFE RD, POINT PLEASANT, WV 25550	10
117 COURT ST N, RIPLEY, WV 25271	10
118 ADAMS ST, FAIRMONT, WV 26554	20
1186 N MILDRED ST, RANSON, WV 25438	10
119 RAILCROSS RD, CLARKSBURG, WV 26301	10
11923 CHARLESTON RD, RED HOUSE, WV 25168	5
120 WATER PLANT DR, MOOREFIELD, WV 26836	10
1200 AIRPORT RD, BEAVER, WV 25813	10
1200 HARRISON AVE, ELKINS, WV 26241	10
1201 DUNBAR AVE, DUNBAR, WV 25064	10
1201 GREENBRIER ST, CHARLESTON, WV 25311	100
1207 QUARRIER ST, CHARLESTON, WV 25301	20
1236 N STATE ROUTE 2, NEW MARTINSVILLE, WV 26155	20
1236 N STATE ROUTE 2, NEW MARTINSVILLE, WV 26155	50
124 COURT ST, ELIZABETH, WV 26143	20
124 MCGRAW ST, RIPLEY, WV 25271	10
1240 PAUL E MALONE RD, GRAFTON, WV 26354	10
1249 PRICHARD RD, PRICHARD, WV 25555	3
125 W MAIN ST, HARRISVILLE, WV 26362	10
12531 WINFIELD RD ,WINFIELD, WV 25213	20
1255 DYER HILL RD, SUTTON, WV 26601	50
1275 WARWOOD AVE, WHEELING, WV 26003	10
130 ACADEMY DR, DUNBAR, WV 25064	5
130 STRATTON ST, LOGAN, WV 25601	100
1300 GASTON CAPERTON DR, HOLDEN, WV 25625	50
1301 34TH ST, VIENNA, WV 26105	10
1301 OLD LEETOWN PIKE, KEARNEYSVILLE, WV 25430	10
131 HIGHLAND DR, WESTON, WV 26452	100
1317 HANSFORD ST, CHARLESTON, WV 25301	10
131A PENINSULA ST, WHEELING, WV 26003	50
1321 PLAZA E, CHARLESTON, WV 25301	100
1324 CHAPLINE ST, WHEELING, WV 26003	10
1325 COOK PKWY, OCEANA, WV 24870	10
13285 MOUNTAINEER DR, RIVERTON, WV 26814	5

Street Address	Speed in MBPS
1339 PLAZA E, CHARLESTON, WV 25301	10
1343 N PRESTON HWY ,KINGWOOD, WV 26537	10
1356 HANSFORD ST, CHARLESTON, WV 25301	50
137 PEACH CT, DANVILLE, WV 25053	10
1385 LOCUST AVE, FAIRMONT, WV 26554	10
14 COMMERCE DR, WESTOVER, WV 26501	50
140 SCHOOL ST, OAK HILL, WV 25901	5
1400 12TH ST, VIENNA, WV 26105	10
1400 VIRGINIA ST, OAK HILL, WV 25901	50
1406 KANAWHA ST ,POINT PLEASANT, WV 25550	10
1408 KANAWHA ST, POINT PLEASANT, WV 25550	10
141 FORESTRY CAMP RD, DAVIS, WV 26260	20
1411 N WALKER ST, PRINCETON, WV 24740	10
14115 N PRESTON HWY, BRUCETON MILLS, WV 26525	5
1415 EARL L CORE RD, MORGANTOWN, WV 26505	10
1439 MANSFIELD DR, PHILIPPI, WV 26416	5
144 JERRY LN, AUGUSTA, WV 26704	20
145 PILGRIM ST, INWOOD, WV 25428	10
146 STONEHOUSE RD, LEWISBURG, WV 24901	100
1471 WV HIGHWAY 5 E, GLENVILLE, WV 26351	10
148 MAPLEWOOD AVE, LEWISBURG, WV 24901	10
149 ROBERT C BYRD INDUSTRIAL PARK, MOOREFIELD,	10
1493 WV HIGHWAY 5 E, GLENVILLE, WV 26351	10
150 HOPEMONT DR, TERRA ALTA, WV 26764	20
150 ROBERT C. BYRD INDUSTRIAL PARK, MOOREFIELD,	10
1501 EOFF ST, WHEELING, WV 26003	50
151 ROBERT C BYRD INDUSTRIAL PARK, MOOREFIELD,	10
1513 HARRISON AVE, ELKINS, WV 26241	10
1520 WINCHESTER AVE, MARTINSBURG, WV 25405	10
1525 DECKERS CREEK BLVD, MORGANTOWN, WV 26505	10
153 W MAIN ST, CLARKSBURG, WV 26301	20
1530 NORWAY AVE, HUNTINGTON, WV 25705	100
156 RESOURCE LN, FOSTER, WV 25081	50
159 DAVIS ST, PRINCETON, WV 24739	10
15933 APPALACHIAN HWY, THOMAS, WV 26292	5
1600 HARPER RD, BECKLEY, WV 25801	10
162 ARKWRIGHT AVE, MORGANTOWN, WV 26505	1000
163 WILDLIFE RD, FRENCH CREEK, WV 26218	10
1655 S PLEASANTS HWY, SAINT MARYS, WV 26170	10
166 DOH LN, BERKELEY SPRINGS, WV 25411	10
167 11TH AVE, SOUTH CHARLESTON, WV 25303	100
16964 CACAPON RD, GREAT CACAPON, WV 25422	3
17 MCDOWELL ST, WELCH, WV 24801	10
1700 MACCORKLE AVE SE, CHARLESTON, WV 25314	50
1701 5TH AVE, CHARLESTON, WV 25387	20
1703 COONSKIN DR, CHARLESTON, WV 25311	20
1740 UNION CARBIDE DR, SOUTH CHARLESTON, WV	20
1767 BEARHOLE RD, PINEVILLE, WV 24874	20
18 N TORNADO WAY, KEYSER, WV 26726	10
180 ASSOCIATION DR, CHARLESTON, WV 25311	10
1822 MAIN ST E, OAK HILL, WV 25901	10
1824 MURDOCH AVE, PARKERSBURG, WV 26101	10
18351 VETERANS MEMORIAL HWY, KINGWOOD, WV	10
186 HOSPITAL DR, GRANTSVILLE, WV 26147	10

Street Address	Speed in MBPS
1867 ROCK CLIFF DR, MARTINSBURG, WV 25401	10
19 CIRCLE DR, LOGAN, WV 25601	3
19 PUTNAM VILLAGE DR, HURRICANE, WV 25526	10
1900 KANAWHA BLVD E, CHARLESTON, WV 25305	100
1900 KANAWHA BLVD E, CHARLESTON, WV 25305	100
1900 KANAWHA BLVD E, CHARLESTON, WV 25305	100
1900 KANAWHA BLVD E, CHARLESTON, WV 25305	1000
1900 KANAWHA BLVD E, CHARLESTON, WV 25305	100
1900 KANAWHA BLVD E, CHARLESTON, WV 25305	5000
1900 KANAWHA BLVD E, CHARLESTON, WV 25305	100
192 INDUSTRIAL PARK LN, BEECH BOTTOM, WV 26030	10
1948 WILTSHIRE RD, KEARNEYSVILLE, WV 25430	10
195 DAVIS ST, PRINCETON, WV 24739	10
195 DAVIS ST, PRINCETON, WV 24739	10
196 N TORNADO WAY, KEYSER, WV 26726	10
198 DAVIS ST, PRINCETON, WV 24739	10
1993 SMITHTON RD, WEST UNION, WV 26456	10
2 ARMORY WAY, SUMMERSVILLE, WV 26651	10
2 BROWN AVE, WESTON, WV 26452	10
2 O HANLAN PL, BARBOURSVILLE, WV 25504	20
200 ARLINGTON ST, CHELSEA, MA 02150-2375	500
200 DAVIS ST, PRINCETON, WV 24739	20
200 MAIN ST, SPENCER, WV 25276	10
200 N COURT ST, LEWISBURG, WV 24901	10
200 NEW RIVER TOWN CTR, BECKLEY, WV 25801	10
200 S VIKING WAY, MARTINSBURG, WV 25401	10
200 SAMARITAN DR, SHADY SPRING, WV 25918	10
200 STATE ST, MADISON, WV 25130	100
200 W MAIN ST, CLARKSBURG, WV 26301	10
2006 ROBERT C BYRD DR, BECKLEY, WV 25801	10
2006 TRAP SPRINGS RD, GRAFTON, WV 26354	50
2020 UNION CARBIDE DR, SOUTH CHARLESTON, WV	1000
203 DOH GARAGE RD, DANVILLE, WV 25053	10
203 E 3RD AVE, WILLIAMSON, WV 25661	10
203 KENOVA AVE, WAYNE, WV 25570	20
2031 PLEASANT VALLEY RD, FAIRMONT, WV 26554	50
206 SENIOR LN, PARSONS, WV 26287	10
209 MARION SQ, FAIRMONT, WV 26554	10
210 BROOKS ST, CHARLESTON, WV 25301	10
210 MAIN ST, MIDDLEBOURNE, WV 26149	10
211 6TH ST, PARKERSBURG, WV 26101	50
211 E 5TH AVE, RANSON, WV 25438	10
211 VALHALLA LN, MARLINTON, WV 24954	10
212 E MAIN ST, GLENVILLE, WV 26351	10
2120 NORTHWESTERN TPKE, BURLINGTON, WV 26710	100
213 KENMORE DR, DANVILLE, WV 25053	10
215 W MAIN ST, CLARKSBURG, WV 26301	10
22 HERBERT AVE, SMITHBURG, WV 26436	20
220 W MAIN ST, HARRISVILLE, WV 26362	10
222 PAYNE ST, HILLSBORO, WV 24946	50
222 S VIKING WAY, MARTINSBURG, WV 25401	10
22278 NORTHWESTERN PIKE, ROMNEY, WV 26757	10
22288 NORTHWESTERN PIKE, ROMNEY, WV 26757	10
22445 ALLEGHENY HWY, HARMAN, WV 26270	5

Street Address	Speed in MBPS
225 E 3RD AVE, WILLIAMSON, WV 25661	10
225 HOLIDAY HILLS DR, PARKERSBURG, WV 26104	50
2266 PENNSYLVANIA AVE, CHARLESTON, WV 25302	5
229 E MARTIN ST, MARTINSBURG, WV 25401	10
23 HOSPITAL DR, PETERSBURG, WV 26847	10
23 WABASH AVE, PHILIPPI, WV 26416	10
230 HEAVNER AVE, ELKINS, WV 26241	10
231 CAPITOL ST, CHARLESTON, WV 25301	10
2310 KANAWHA BLVD E, CHARLESTON, WV 25311	100
2311 OHIO AVE, PARKERSBURG, WV 26101	50
23236 GEORGE WASHINGTON HWY, AURORA, WV 26705	5
235 BARRETT ST, GRAFTON, WV 26354	10
239 COURT AVE, WESTON, WV 26452	10
239 WILLOW SPRING DR, CHARLES TOWN, WV 25414	10
24 RULAND RD, KEARNEYSVILLE, WV 25430	10
2403 FAIRLAWN AVE, DUNBAR, WV 25064	20
2403 FAIRLAWN AVE, DUNBAR, WV 25064	50
242 MAIN ST, CASS, WV 24927	10
245 POINT MOUNTAIN RD, VALLEY HEAD, WV 26294	5
2460 MURPHYS RUN RD, BRIDGEPORT, WV 26330	100
248 DUNHAM CUT RD, BELINGTON, WV 26250	5
24940 NORTHWESTERN PIKE, ROMNEY, WV 26757	10
24948 NORTHWESTERN PIKE, ROMNEY, WV 26757	10
24954 NORTHWESTERN PIKE, ROMNEY, WV 26757	10
25 BRUSH COUNTRY RD, MARLINTON, WV 24954	5
25 RED OAKS SHOPPING CTR ,RONCEVERTE, WV 24970	3
2507 9TH AVE, PARKERSBURG, WV 26101	10
255 DEPOT ST, WESTON, WV 26452	10
257 N STATE ROUTE 2, NEW MARTINSVILLE, WV 26155	10
2619 PENNSYLVANIA AVE, WEIRTON, WV 26062	10
26452 EAST LYNN RD, WAYNE, WV 25570	20
26452 EAST LYNN RD, WAYNE, WV 25570	50
269 AIKENS CTR, MARTINSBURG, WV 25404	20
269 CHARLESTON RD, SPENCER, WV 25276	5
2699 PARK AVE, HUNTINGTON, WV 25704	100
270 MYLAN PARK LN, MORGANTOWN, WV 26501	50
2700 CHARLES AVE, DUNBAR, WV 25064	10
2800 WASHINGTON ST W, CHARLESTON, WV 25387	5
2807 JACKSON AVE, POINT PLEASANT, WV 25550	10
2807 JACKSON AVE, PT PLEASANT, WV 25550	10
281 TUNNEL HILL RD, SALEM, WV 26425	5
284 FACTORY ST, CLARKSBURG, WV 26301	10
2850 5TH AVE, HUNTINGTON, WV 25702	10
286 BLUE PRINCE RD, BLUEFIELD, WV 24701	10
2880 N PLEASANTS HWY, SAINT MARYS, WV 26170	100
2935 COMMERCE ST, WELLSBURG, WV 26070	5
295 SKIDMORE LN, SUTTON, WV 26601	10
2959 US ROUTE 52, HANOVER, WV 26839	5
299 CONFEDERATE RD, FRANKLIN, WV 26807	10
300 CAPITOL ST, CHARLESTON, WV 25301	10
300 LAKEVIEW CTR, PARKERSBURG, WV 26101	100
300 TECHNOLOGY DR, SOUTH CHARLESTON, WV 25309	5
301 AMBROSE LN, PRINCETON, WV 24739	5
301 EAGLE MOUNTAIN RD, CHARLESTON, WV 25311	10

Street Address	Speed in MBPS
304 SCOTT AVE, MORGANTOWN, WV 26508	10
3100 16TH STREET RD, HUNTINGTON, WV 25701	10
312 3RD AVE, HINTON, WV 25951	10
313 ANTHONY CENTER RD, WHITE SULPHUR SPRINGS,	50
3134 AMMA RD, AMMA, WV 25005	5
314 FAYETTE PIKE, MONTGOMERY, WV 25136	100
315 N OHIO AVE, CLARKSBURG, WV 26301	3
316 HOWARD AVE, MULLENS, WV 25882	10
316 MAPLEWOOD AVE, LEWISBURG, WV 24901	50
32 RANDOLPH AVE, ELKINS, WV 26241	10
320 ADAMS ST, FAIRMONT, WV 26554	10
320 SUMMERS ST, HINTON, WV 25951	10
321 MARKET ST, SPENCER, WV 25276	10
322 70TH ST SE, CHARLESTON, WV 25304	3
3225 ROBERT C BYRD DR, BECKLEY, WV 25801	10
32353 VETERANS MEMORIAL HWY, TERRA ALTA, WV	5
324 4TH AVE, SOUTH CHARLESTON, WV 25303	100
326 CENTRAL AVE, WAYNE, WV 25570	5
3266 WINFIELD RD, WINFIELD, WV 25213	10
3293 JEFFERSON ST N, LEWISBURG, WV 24901	10
33 MOUNTAINHEART LN, MATHENY, WV 24860	10
33 SOUTHFORK PLAZA DR, BUCKHANNON, WV 26201	10
330 HARPER PARK DR, BECKLEY, WV 25801	20
330 RED OAKS SHOPPING CTR, RONCEVERTE, WV 24970	20
34 AUCTION LN, BUCKHANNON, WV 26201	20
34 STATE HL, CAPON BRIDGE, WV 26743	5
3405 WINFIELD RD, WINFIELD, WV 25213	10
350 CAPITOL ST, CHARLESTON, WV 25301	300
3549 MAIN ST, WEIRTON, WV 26062	10
355 DOLAN DR, AUGUSTA, WV 26704	20
3554 TEAYS VALLEY RD, HURRICANE, WV 25526	10
357 WALNUT ST, HAMLIN, WV 25523	10
357 WALNUT ST, HAMLIN, WV 25523	10
36 ALLENS FORK RD, SISSONVILLE, WV 25320	5
360 OLD ROUTE 73, BRUCETON MILLS, WV 26525	5
367 GUS R DOUGLASS LN, CHARLESTON, WV 25312	20
3708 SUTTON LN, SUTTON, WV 26601	50
3772 TEAYS VALLEY RD, HURRICANE, WV 25526	5
378 MAIN ST, GRANTSVILLE, WV 26147	10
38 GRAPEVINE RD, MARTINSBURG, WV 25405	50
38 SEVERNA PKWY MARTINSBURG, WV 25403	10
3870 NATIONAL RD, TRIADELPHIA, WV 26059	10
397 MID ATLANTIC PKWY, MARTINSBURG, WV 25404	50
40 14TH ST, WHEELING, WV 26003	10
40 COMMERCE DR, WESTOVER, WV 26501	50
400 5TH ST, PARKERSBURG, WV 26101	20
400 ABBEY RD, BELINGTON, WV 26250	50
400 TELETECH DR, MOUNDSVILLE, WV 26041	50
401 2ND ST, PARKERSBURG, WV 26101	10
401 GUFFEY ST, FAIRMONT, WV 26554	10
404 MAIN ST, POINT PLEASANT, WV 25550	10
405 CAPITOL ST, CHARLESTON, WV 25301	10
407 NEVILLE ST, BECKLEY, WV 25801	50
408 ALEXANDER ST, CEDAR GROVE, WV 25039	10

Street Address	Speed in MBPS
408 EB SAUNDERS WAY, CLARKSBURG, WV 26301	10
408 LEON SULLIVAN WAY, CHARLESTON, WV 25301	20
409 VIRGINIA ST E, CHARLESTON, WV 25301	100
409 WOOD MOUNTAIN RD, GLEN JEAN, WV 25846	10
410 S MAIN ST, MOOREFIELD, WV 26836	10
416 ADAMS ST, FAIRMONT, WV 26554	100
4188 WASHINGTON ST W, CHARLESTON, WV 25313	10
4190 WASHINGTON ST W, CHARLESTON, WV 25313	100
428 MAIN ST, LOGAN, WV 25601	10
4285 CEDAR LAKES DR, RIPLEY, WV 25271	10
430 S 2ND AVE, PADEN CITY, WV 26159	10
431 RUNNING RIGHT WAY, JULIAN, WV 25529	100
4319 DENMAR RD, HILLSBORO, WV 24946	50
433 MID ATLANTIC PKWY, MARTINSBURG, WV 25404	100
4476 TRIPLETT RIDGE RD, CLAY, WV 25043	50
4496 CEDAR LAKES DR, RIPLEY, WV 25271	10
45 18TH ST, WHEELING, WV 26003	10
450 S 1ST AVE, PADEN CITY, WV 26159	10
452 MAIN ST, CLAY, WV 25043	10
453 VAN VOORHIS RD, MORGANTOWN, WV 26505	50
454 MCDOWELL ST, WELCH, WV 24801	50
454 MCDOWELL ST, WELCH, WV 24801	100
467 MAIN ST, MADISON, WV 25130	10
47 SCHOOL ST, PHILIPPI, WV 26416	300
4701 MACCORKLE AVE SE, CHARLESTON, WV 25304	10
4720 BRENDA LN, CHARLESTON, WV 25312	100
4752 CHIMNEY DR, CHARLESTON, WV 25302	10
4757 POTOMAC HIGHLANDS TRL, GREEN BANK, WV	50
489 MID ATLANTIC PKWY, MARTINSBURG, WV 25404	10
49 HAWKS NEST PARK RD, ANSTED, WV 25812	10
49 MATTALIANO DR, PHILIPPI, WV 26416	10
493 MUD LICK RD, BUCKHANNON, WV 26201	10
4947 ELK GARDEN HWY, ELK GARDEN, WV 26717	5
4994 ELK RIVER RD S, ELKVIEW, WV 25071	10
4994 ELK RIVER RD S, ELKVIEW, WV 25071	50
50 COURT ST, WELCH, WV 24801	10
500 QUARRIER ST, CHARLESTON, WV 25301	10
500 SUMMERS ST, CHARLESTON, WV 25301	1000
500 TELETECH DR, MOUNDSVILLE, WV 26041	10
5000 GREENBAG RD, MORGANTOWN, WV 26501	10
502 EAGLE MOUNTAIN RD, CHARLESTON, WV 25311	10
505 CAPITOL ST, CHARLESTON, WV 25301	10
512 WATER ST, BARBOURSVILLE, WV 25504	10
515 CENTRAL AVE, CHARLESTON, WV 25302	10
5187 US ROUTE 60, HUNTINGTON, WV 25705	10
5205 HUSKY HWY, MANNINGTON, WV 26582	5
5206 GAULEY TPKE ,HEATERS, WV 26627	5
53 KIESS DR, PETERSBURG, WV 26847	10
532 PENNSYLVANIA AVE, FAIRMONT, WV 26554	10
535 NORTH ST, UNION, WV 24983	10
537 ENTERPRISE DR, GASSAWAY, WV 26624	10
540 N JEFFERSON ST, LEWISBURG, WV 24901	10
541 HARLEY O STAGGERS DR, KEYSER, WV 26726	10
549 MALL RD, OAK HILL, WV 25901	10

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Street Address	Speed in MBPS
550 INDUSTRIAL DR, OAK HILL, WV 25901	10
56 DOH DR, ROMNEY, WV 26757	10
56 PICKENS GRADE RD ,HACKER VALLEY, WV 26222	5
5707 MACCORKLE AVE SE, CHARLESTON, WV 25304	300
5900 GUYAN RIVER RD, BARBOURSVILLE, WV 25504	10
60 MANFRED HOLLAND WAY ,DUNBAR, WV 25064	20
60 PENNSYLVANIA ST, WEST UNION, WV 26456	10
600 7TH ST, MOUNDSVILLE, WV 26041	1000
600 CHURCH ST S, RIPLEY, WV 25271	10
605 CHERRY ST, SAINT MARYS, WV 26170	10
60B MOOREFIELD INDUSTRIAL PARK ,MOOREFIELD, WV	20
611 7TH AVE, HUNTINGTON, WV 25701	10
619 VIRGINIA ST W, CHARLESTON, WV 25302	100
62 REGAL CT, BERKELEY SPRINGS, WV 25411	10
6200 US ROUTE 60 E, BARBOURSVILLE, WV 25504	5
624 DEPOT ST, PARKERSBURG, WV 26101	100
627 LUBECK AVE, PARKERSBURG, WV 26101	10
6402 WEBSTER RD, COWEN, WV 26206	5
641 N STATE ROUTE 2, NEW MARTINSVILLE, WV 26155	5
67 N TORNADO WAY, KEYSER, WV 26726	10
677 RIPLEY RD, SPENCER, WV 25276	10
69 16TH ST, WHEELING, WV 26003	20
7 INDUSTRIAL BLVD, INDUSTRIAL, WV 26426	50
7 PLAYERS CLUB DR, CHARLESTON, WV 25311	100
701 22ND ST, POINT PLEASANT, WV 25550	10
703 7TH AVE, HUNTINGTON, WV 25701	20
707 PROFESSIONAL PARK DR, SUMMERSVILLE, WV	50
71 WAYNE ST, FORT GAY, WV 25514	10
712 N MAIN ST, MOOREFIELD, WV 26836	10
714 WELLS ST, SISTERSVILLE, WV 26175	10
731 ELLENBORO RD, HARRISVILLE, WV 26362	5
738 WARD RD, ELKINS, WV 26241	10
738 WARD RD, ELKINS, WV 26241	10
750 5TH AVE, HUNTINGTON, WV 25701	10
7619 S CALHOUN HWY, MILLSTONE, WV 25261	5
765 JEFFERSON ST S, LEWISBURG, WV 24901	10
768 BRUSHY FORK RD, BUCKHANNON, WV 26201	10
795 VIRGINIA AVE, WELCH, WV 24801	50
80 N MAIN ST, WEBSTER SPRINGS, WV 26288	10
800 NEW RIVER TOWN CTR, BECKLEY, WV 25801	10
801 MADISON AVE, HUNTINGTON, WV 25704	100
8051 BLOOMERY PIKE, SLANESVILLE, WV 25444	3
808 B ST, SAINT ALBANS, WV 25177	10
812 QUARRIER ST, CHARLESTON, WV 25301	100
8174 OLD LOGAN RD, CHAPMANVILLE, WV 25508	10
818 CACAPON LODGE DR, BERKELEY SPGS, WV 25411	10
819 3RD AVE, MARLINTON, WV 24954	10
82 EMERGENCY DR, NEW CUMBERLAND, WV 26047	10
82 FFA DR, RIPLEY, WV 25271	50
8209 COURT AVE, HAMLIN, WV 25523	10
83 BRUSHY FORK RD, BUCKHANNON, WV 26201	100
830 NORTHSIDE DR, SUMMERSVILLE, WV 26651	10
830 VIRGINIA AVE, WELCH, WV 24801	10
836 LUNICE CREEK HWY, PETERSBURG, WV 26847	10

Street Address	Speed in MBPS
837 CHESTNUT RIDGE RD, MORGANTOWN, WV 26505	1000
8388 MARSHALL HWY, RAYSAL, WV 24879	3
840 VIRGINIA AVE, WELCH, WV 24801	10
843 SHELTER RD, PRINCETON, WV 24739	20
848 NORTHSIDE DR, SUMMERSVILLE, WV 26651	10
85 INDUSTRIAL DR, GRANTSVILLE, WV 26147	20
851 N STREETCAR WAY, MOUNT CLARE, WV 26408	5
852 NORTHSIDE DR, SUMMERSVILLE, WV 26651	10
8581 UNION HWY, MOUNT STORM, WV 26739	5
875 SWEET SPRINGS VLY RD, UNION, WV 24983	5
878 E MAIN ST, MILTON, WV 25541	20
88 SENIOR SQ, ELIZABETH, WV 26143	10
888 BURNSVILLE RD, BURNSVILLE, WV 26335	5
89 RICHARD D MINNICH DR, SUTTON, WV 26601	100
89 RICHARD D MINNICH DR, SUTTON, WV 26601	1000
900 EMMETT ROUSCH DR, MARTINSBURG, WV 25401	20
900 PENNSYLVANIA AVE, CHARLESTON, WV 25302	300
901 8TH ST, MOUNDSVILLE, WV 26041	10
901 SHELTER RD, PRINCETON, WV 24739	10
904 OLD FRAME RD, ELKVIEW, WV 25071	5
907 MISSION DR, PARKERSBURG, WV 26101	20
908 BULLITT ST, CHARLESTON, WV 25301	100
91 ARNOLD RD, WESTON, WV 26452	10
92 MCDOWELL ST, WELCH, WV 24801	10
9209 SENECA TRL, PARSONS, WV 26287	10
9288 COAL RIVER RD, SETH, WV 25181	5
9346 SENECA TRL, PARSONS, WV 26287	20
936 SHARPE HOSPITAL RD, WESTON, WV 26452	100
937 US HIGHWAY 19 S, WESTON, WV 26452	10
9390 RIVER RD, MULLENS, WV 25882	5
94 GRAPEVINE RD, MARTINSBURG, WV 25405	10
94 MAIN ST, CLAY, WV 25043	20
9407 SENECA TRL, MILL CREEK, WV 26280	5
95 GOSHEN RD, MORGANTOWN, WV 26508	5
956 YATES AVE, GRAFTON, WV 26354	3
980 ALTMAN AVE, PARKERSBURG, WV 26104	100

Verizon's Response

Verizon has read and understands.

APPENDIX A   VERIZON ENTERPRISE CENTER ONLINE PORTAL CAPABILITIES PRESENTATION

Please see the following pages for an overview of the Verizon Enterprise Center online portal capabilities.

Verizon Enterprise Center

Overview

August 2021

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Easily control your services.

Whenever.
Wherever.

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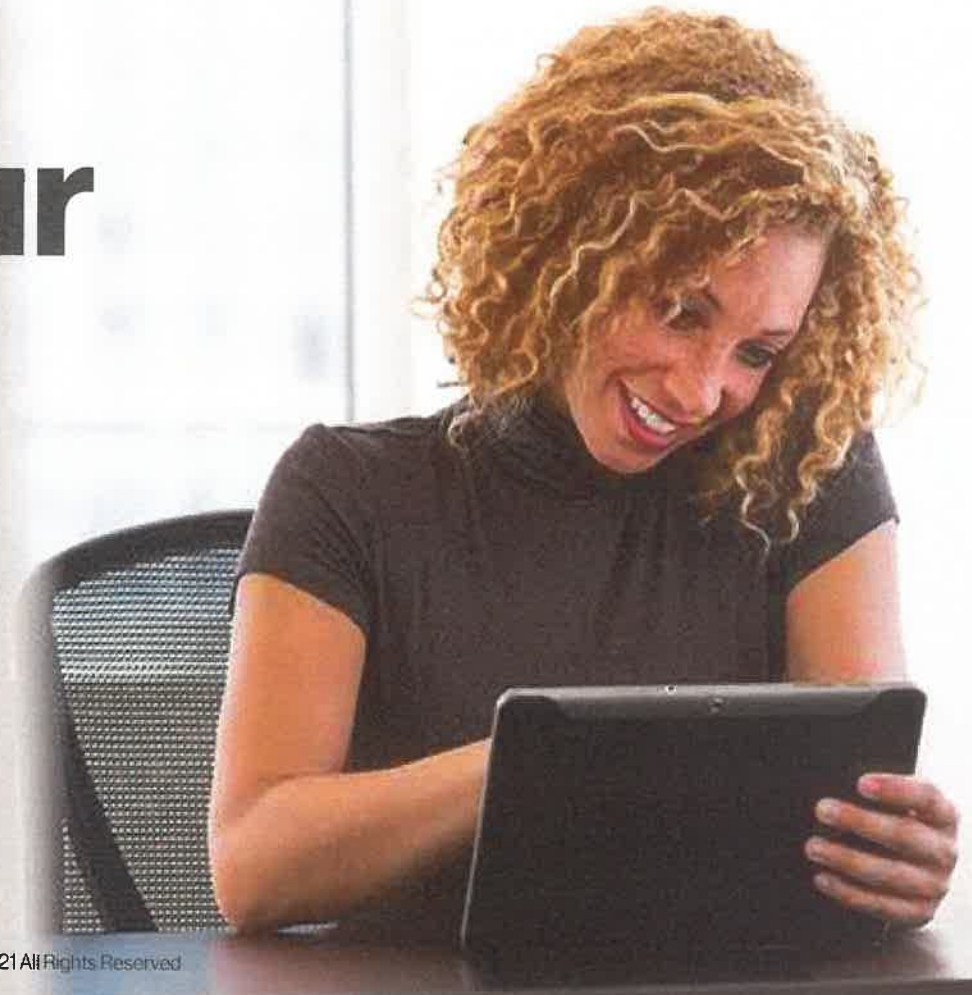
Powerful tools to manage your business in one place

Order

Save time and control costs with a simple ordering process.

Analyze

Make informed decisions about your network investments.

Pay

Manage your billing information in one place.

Upgrade

Fine-tune your network infrastructure.

Monitor

Access near real-time data about your network's performance.

Repair

Create and track change requests and incident tickets.

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Why Verizon Enterprise Center?

- Manage your Verizon services, streamline business processes, and control critical business functions in the office or on the go

- Get secure, simple and fast access to capabilities like opening trouble tickets, paying bills, and ordering new services

- Access powerful reporting tools for instant access to the information you need to make business decisions

- Use a comprehensive suite of digital tools to manage your services and support your business goals

- Take your business on the go or leave it all behind at the office - flex seamlessly between desktop, tablet and smartphone

- Stay ahead of the curve, managing your products in real-time by making changes to services that impact your network and business

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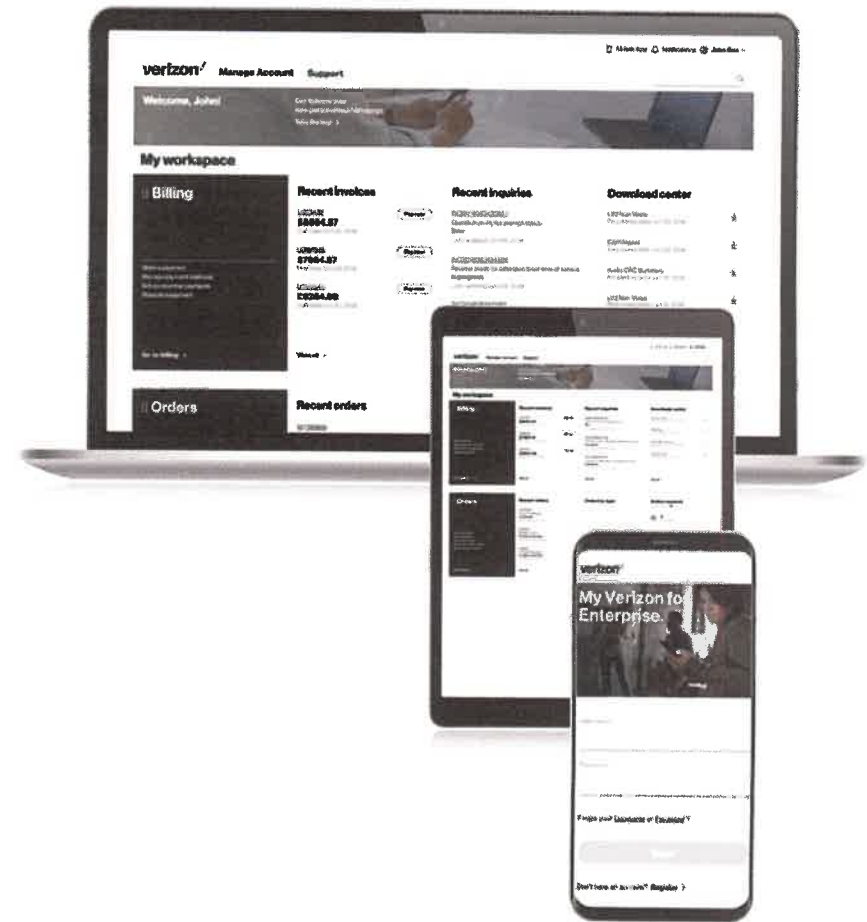
Customizable homepage

Personalize your dashboard to highlight what matters most to you.

Key features:

- View highly relevant data as soon as you sign in
- Visualize key performance metrics to uncover quick insights
- Track activity that supports your business processes
- Take action directly from your homepage
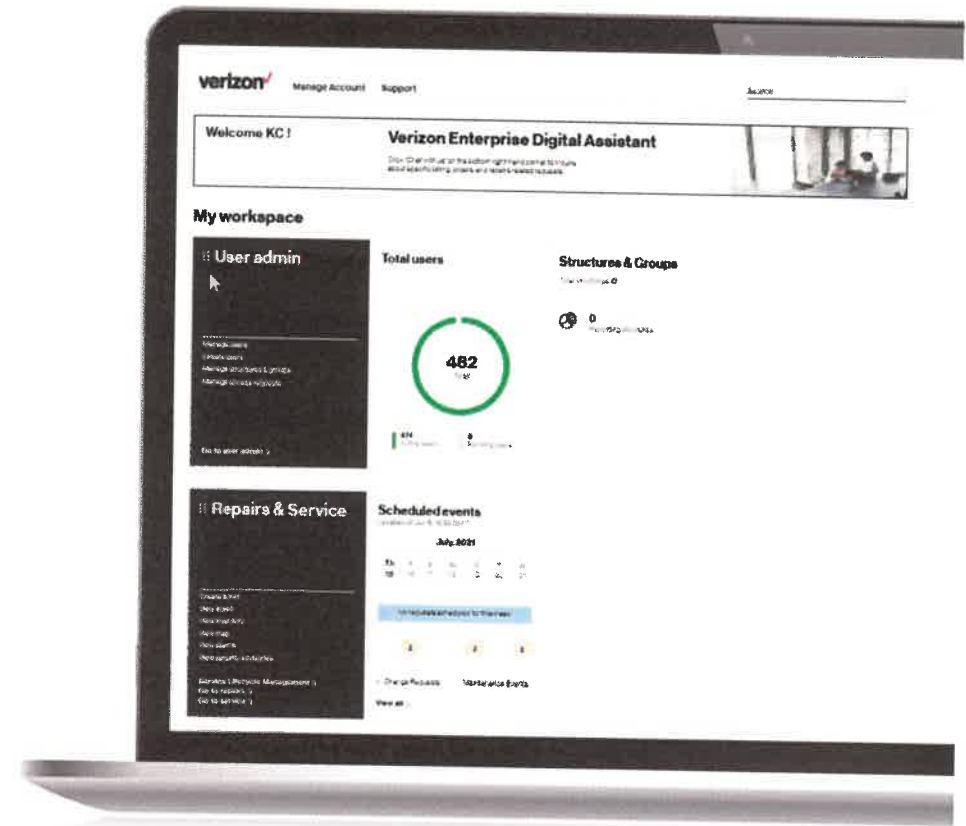
Service management

Access the data and the tools you need to better manage your services.

Key features:

- View network health at-a-glance on a color-coded map
- Manage services: Place move, add, change and disconnect requests
- Access calendar of maintenance events and change requests impacting your services
- View and download inventory
- Replace equipment that has reached end-of-life
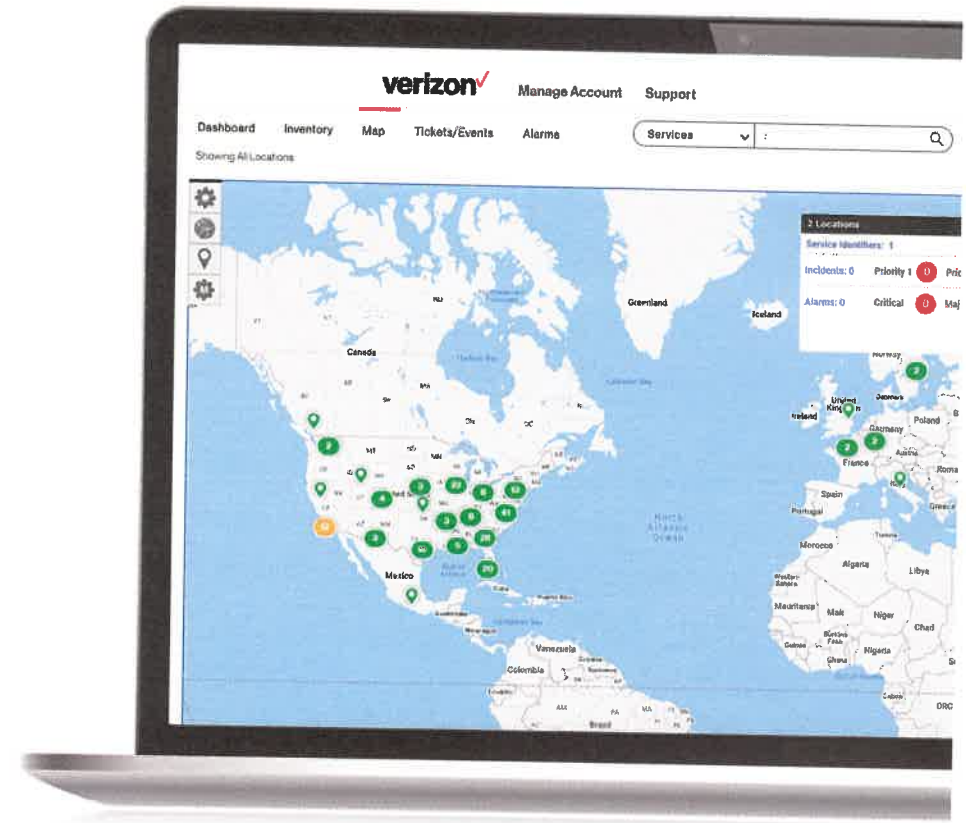
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Product management tools

Verizon Enterprise Center offers a variety of tools to manage products like Private IP, SD-WAN, Secure Cloud Interconnect, VoIP, and UCaaS to help you:

- Configure and route Voice, Data and Internet services
- Track product performance and customize services
- Upgrade bandwidth on demand
- Manage inbound numbers more efficiently
- Build alternate routing plans
- Generate reports to analyze capacity, view utilization and traffic statistics
- Track application and network performance
- Make network policy management changes

verizon   Manage Account   Support

Home   Product tools

Product Tools

Network Management
Configure and route your Voice, Data and Internet services

Application Assurance - Internet
Monitor your network flow-based performance, reporting and application responsiveness. For customers signing in through the public internet.

Aplication Assurance - PIP
Monitor your network flow-based performance, reporting and application responsiveness. For customers signing in through the Verizon PIP network.

Mobile Workforce Manager
Manage the Verizon wireless applications on your employees' mobile devices.

Hosted IVR Feature Manager
Quickly access and manage your contact center's interactive voice reponse (IVR) capabilities.

Dynamic Network Manager
Change your PIP data rate parameters in near real-time based on network statistics reports.

Network Reporti
View up to date usage, se Internet services.

Call Detail and summary
View comprehensive traf inbound, traditional and IP

PBX Report
View the private branch e sold by Verizon.

Custom solution and re
Perform intelligent routin

VoIP SLA
View the service level agn

IP Performance reporti
View your Public IP and S and quality of service on s

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Role-based access

Manage user permissions with ease.

Key features:

- User administration capabilities (create, delete and update users)
- Grant and revoke Customer Proprietary Network Information (CPNI)
- Manage access to accounts and product tools
- Monitor active vs. pending users and take actions
- Review and approve access requests
- Grant access to productivity tools for users to manage the network and take action in real-time
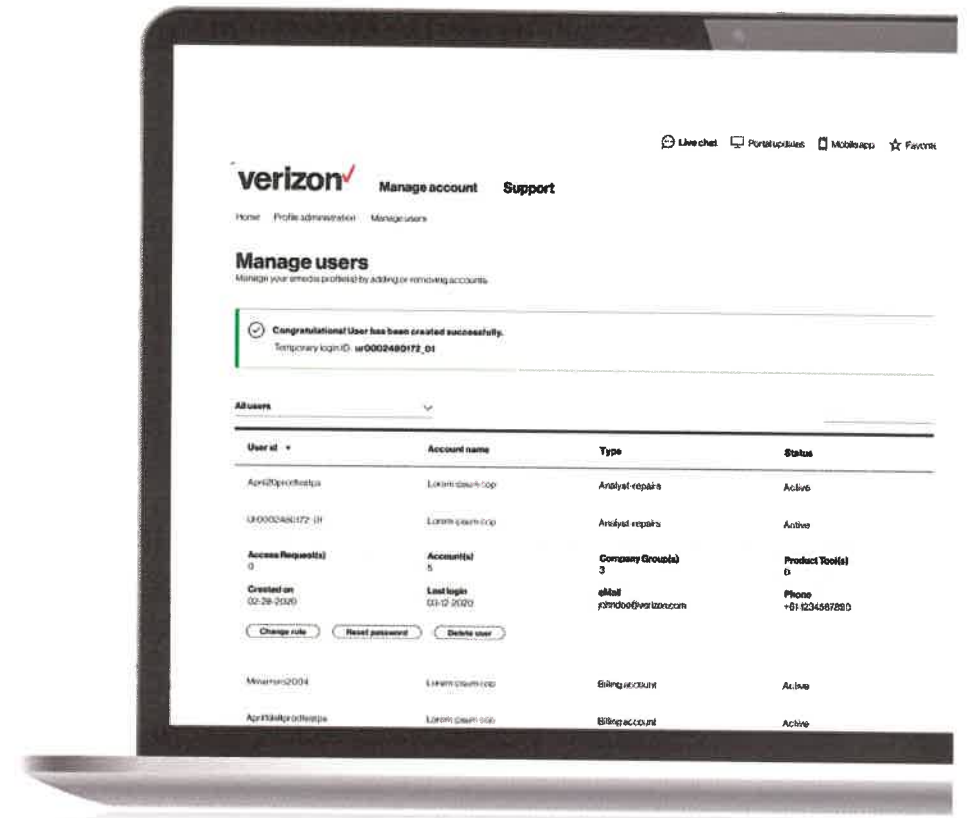
Primary Contact Authorization requests

Review and authorize Primary Contact (POC) authorization requests quickly and easily.

The Primary Contact (POC) role enables customers to assign a company administrator to determine who can access the Verizon Enterprise Center.

Top 5 tasks a Primary Contact can perform in Verizon Enterprise Center:

- Create and delete users
- Change users' roles and permissions
- Grant access to additional accounts
- Grant access to most product tools
- Organize your services into custom groups
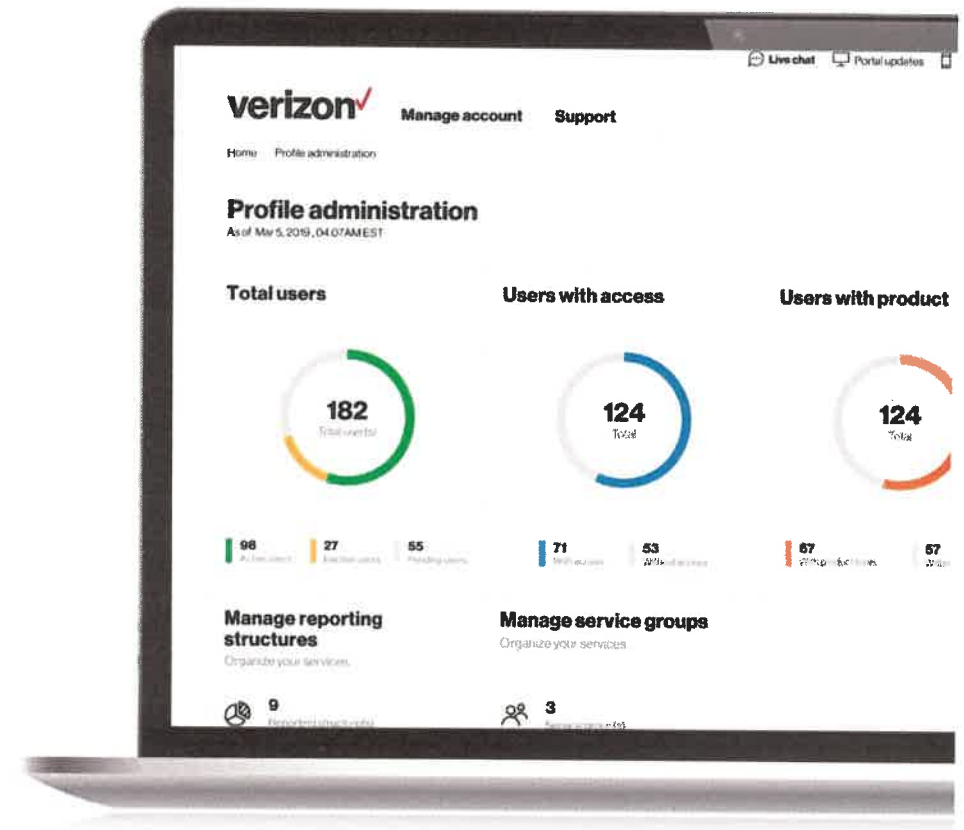
Billing & payments

Manage invoices.

- Retrieve invoices (up to seven years of past data)

- View invoices in print-image PDF or drill-down format

- Manage paperless and other bill media (i.e., EDI, Direct Data)

- Submit billing inquiries online

Pay invoices (billed in US$).

- Make payments via bank/credit card or ACH (Bank Account)

- One-time, recurring and scheduled payments

- Review payment status and history
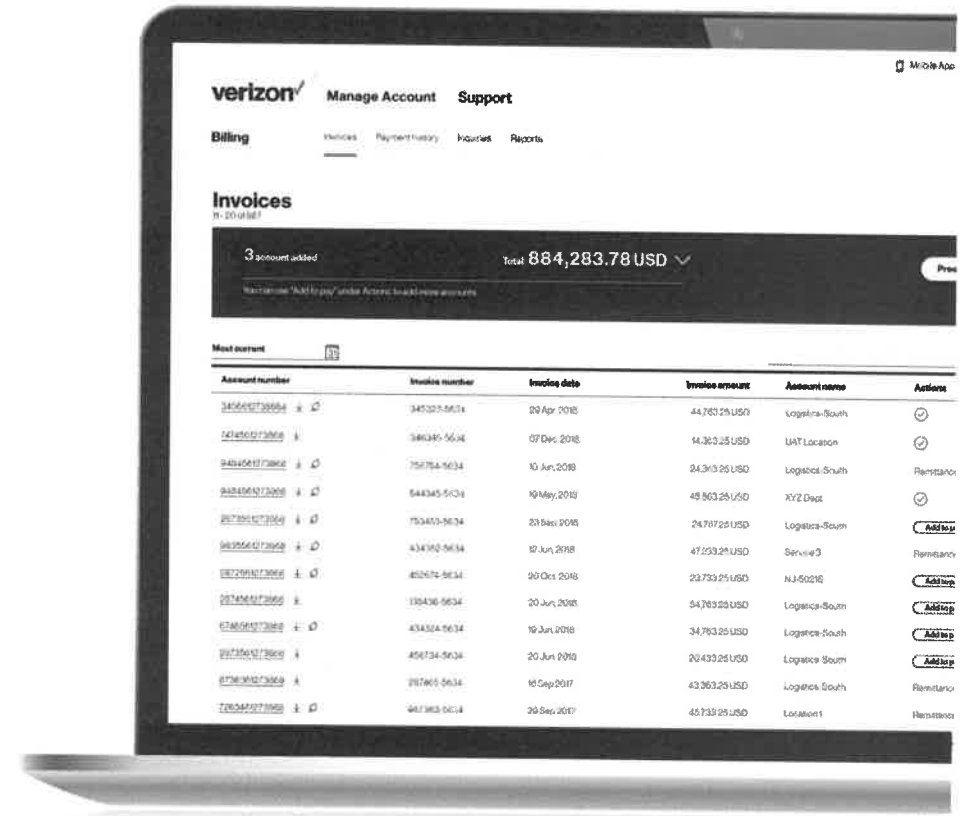
Analytics & reporting

Quickly access reports using dashboard settings and keyword searches. Generate reports using simple filters and customizations.

Key features:

- Dashboard view
- Keyword search
- Simplified report providing option for field filters
- Defined reporting categories for favorite and customized reports
- Scheduled reports
- Recent reports
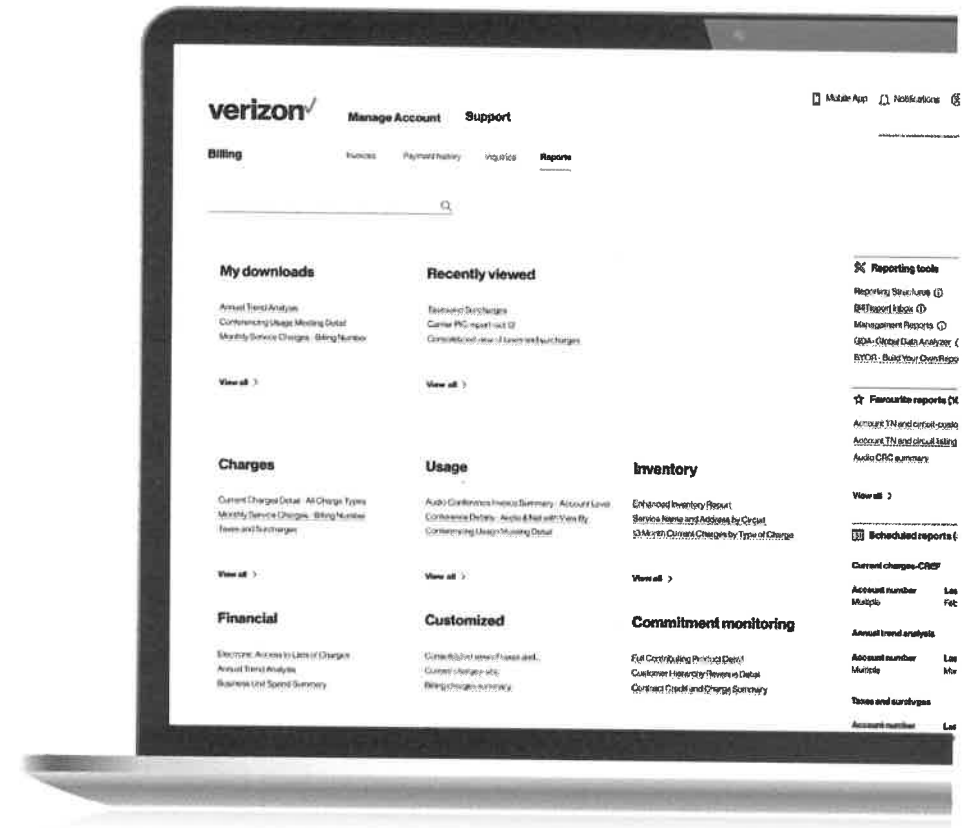
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Repairs

Open, track, or update trouble tickets. Find Service IDs on an interactive map.

Key features:

- Manage time sensitive repair requests on Verizon Enterprise Center, no need to call Verizon to open a ticket

- Seamless access point to internal Verizon repair SMEs via ticket update options

- Holistic, personalized workspace flexible for one or multiple repair tickets

- Pre-defined options such as request for update, add additional information, request escalations

- Powerful filters enabling drill-down based on criteria meaningful to you and your organization

- Ideal for multi-user incident managers - enables teams to see singular view and in near real-time

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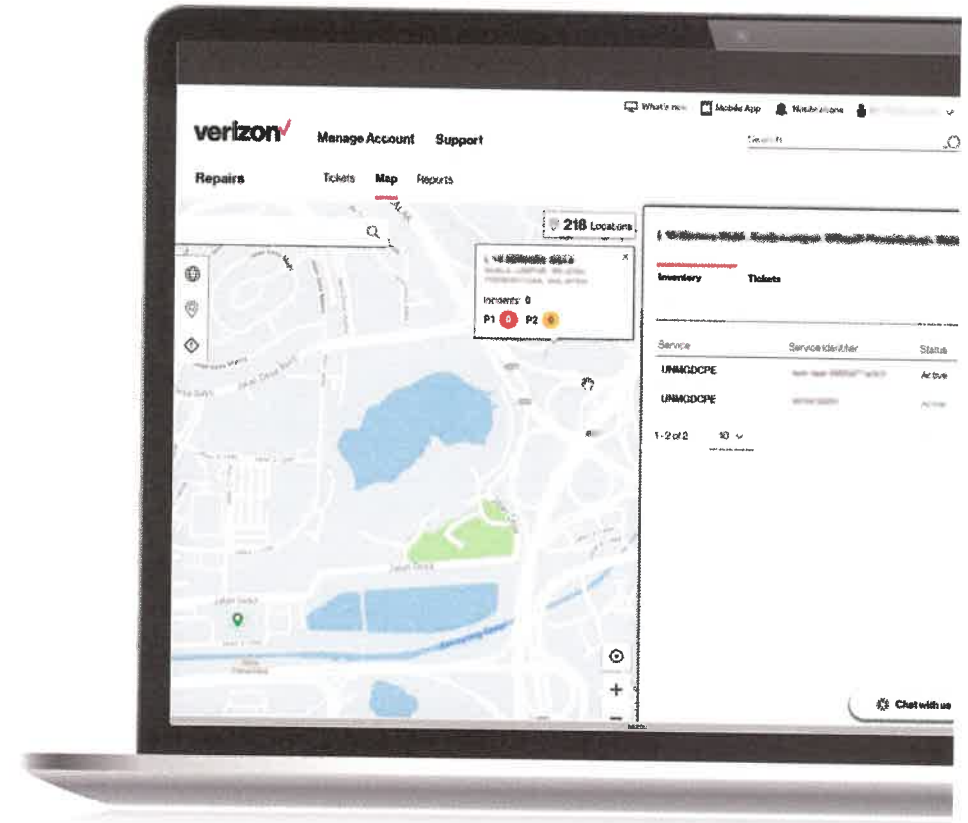
Orders

A simple quoting and ordering process helps you save time and manage costs.

Key features:

- View, accept and manage price quotes online for 32 global products
- Manage multiple quotes and orders easily
- Verify orders online quickly and easily
- Track the status of your global orders
- Select services from robust inventory to request changes, moves and disconnects - globally
- Contractual pricing displayed using the automated ordering tool for U.S. locations of VoIP, Private IP, Internet Dedicated and Secure Cloud Interconnect
- For VoIP: porting checks online, add/remove call paths, add more numbers
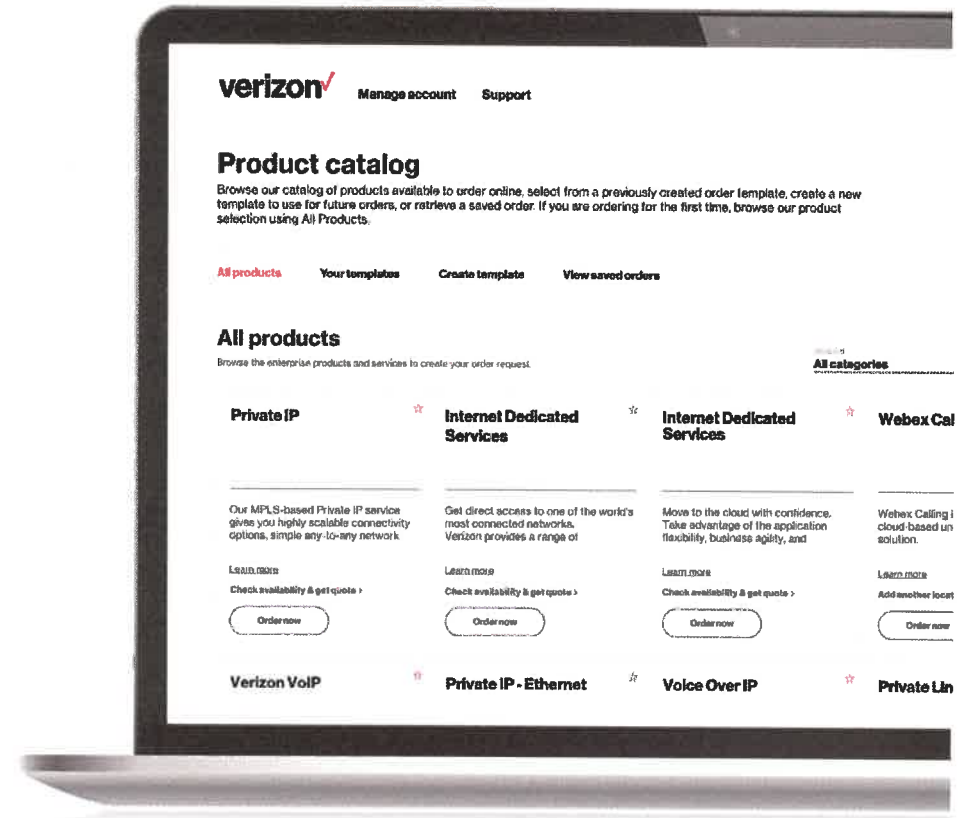
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My Verizon for Enterprise

A mobile app to conveniently manage your Verizon accounts from nearly anywhere at anytime.

Key features:

- Personalized homepage
- Repairs ticket submission and ticket lifecycle management
- View invoices and billing inquiries
- Push notifications for repair tickets and alarms
- Review and track orders
- View inventory by country, service and service group
- View network health by service group
- View scheduled events and change requests
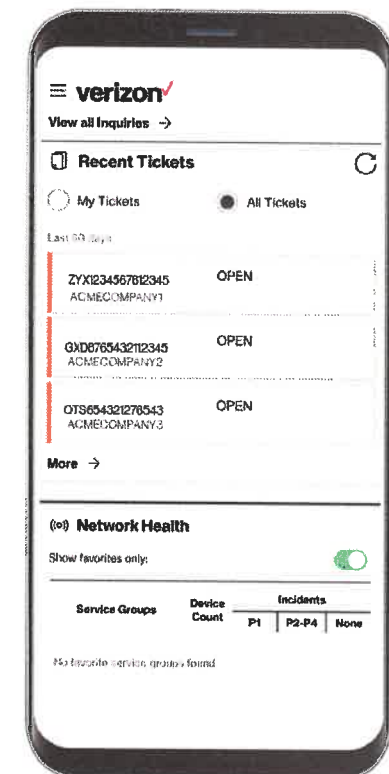
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Customer Training & Resources

Register at: customertraining.verizon.com

- Create your User ID and password
- Sign in with your credentials
- Access complimentary training resources: Instructor-led classes and Self-paced tutorials
- Once registered, you can access the New User Orientation Program which includes the following self-paced training:
  - Verizon Enterprise Center - Overview
  - Verizon Enterprise Center - Navigation Video
  - Verizon Enterprise Center - Registration
  - Verizon Enterprise Center - Roles & Permissions
  - Verizon Enterprise Center - Primary Contact
- Click here for additional information about Verizon Enterprise Center
- Need more information? Click here to view Verizon Enterprise Center Support pages
- View the different user roles and what each role can see and do in Verizon Enterprise Center

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APPENDIX B   SERVICE LEVEL AGREEMENTS (SLAs)

B.1   VERIZON INTERNET DEDICATED SERVICES SLA

Verizon's Internet Dedicated Services SLA is provided on the following pages.

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INTERNET DEDICATED SERVICES SERVICE LEVEL AGREEMENT

1 General

1.1 **Germany Specific Terms.** For Agreements under German law, all of the quality objectives that follow should be understood as voluntary commitments on the behalf of Verizon, rather than amendments to the services description for the Service, which forms part of the SOF. They are not assurances in the sense of warranties for which Verizon is liable. These commitments are made free of charge and they are not meant to be guarantees by the means of the German Civil Code (BGB). They shall furthermore not extend the rights Customer is entitled to by the BGB if Verizon is in breach of contract. Claims for compensation are determined solely by the scope of services defined in the Service Description and the quality levels given therein.

1.2 **Austrian Specific Terms.** For Agreements under Austrian law, all of the quality objectives that follow should be understood as voluntary commitments on the behalf of Verizon, rather than amendments to the services description for the Service, which forms part of the SOF. They are not assurances in the sense of warranties for which Verizon is liable. These commitments are made free of charge and any liability of Verizon for their achievement is excluded.

1.3 **Claims.** In order to make a valid claim the Customer needs to: Report any fault that constitutes a failure to meet the Service Level Agreement (SLA) to Verizon by raising a trouble ticket within 72 hours of the fault; and make a claim in writing within 30 days from the time the trouble ticket is closed.

1.4 **Maximum Credit.** The maximum credit payable in any month in relation to the Service shall be the MRC in respect thereof.

1.5 **General Exclusions.** No Service Credits will be payable, if the failure to reach any Service Level Standard is due to

- CPE associated with the Service,
- Customer-ordered access circuits,
- Customer's applications, equipment or facilities,
- acts or omissions of Customer or user of the Internet Dedicated Service authorized by Customer, including any scheduled maintenance on the part of Customer, Customer contractors or Customer vendors,
- scheduled maintenance on the part of Verizon,
- acts or omissions on the part of any third party other than a local access provider over which Verizon exercises control,
- periods of Service degradation, such as slow data transmission, where a Priority 1 trouble ticket has not been opened with Verizon and Customer has not released its Service for immediate testing, A "Priority 1 trouble ticket" means a total loss of Service or degraded Service to the extent that it is unusable by Customer and Customer is prepared to release its Service for immediate testing.
- Customer inquiry for circuit monitoring purposes only,
- Force Majeure Events.

1.6 **"Scheduled Maintenance"** shall mean any maintenance on the Verizon hub to which Customer's circuit is connected of which Customer is notified 7 days in advance. Notice of Scheduled Maintenance will be provided to Customer's designated point of contact by a method elected by Verizon (e.g., email). Upon receiving such notice, Customer may request to have such maintenance postponed to a later date if agreed to by Verizon.

1.7 **Measurement of Network performance.** Network Latency, Network Packet Delivery, Network Jitter, and Network Mean Opinion Score (MOS) shall be measured by averaging sample measurements taken during a calendar month between Verizon-designated backbone routers ("Hub Routers"). Each month's Network performance statistics relating to Network Latency, Network Packet Delivery, Network Jitter, and Network MOS shall be posted at http://www.verizonenterprise.com/about/network/latency/.

2 Availability Service Level Standard

2.1 **Availability Scope.** Verizon's Availability Service Level Standard provides that the Network (as defined in the applicable Agreement) will be available 100% of the time.

2.2 **Network Availability.** "Network Unavailability" consists of the number of minutes that the Network or a Verizon-ordered access circuit was not available to Customer, and includes unavailability associated with any maintenance at the Verizon data center where Customer's circuit is connected other than Scheduled Maintenance (defined above).

Network Unavailability will not include any unavailability resulting from causes set out in the General Exclusions section above.

2.3 **Availability Remedy.** If Verizon fails to meet the Service Availability Service Level Standard during any given calendar month in accordance with the above, for each cumulative hour of Network Unavailability or fraction thereof in any calendar month, Customer shall be entitled to receive a Service Credit equivalent to the pro-rated charges for 1 day of the MRC for the Service with respect to which a Service Availability Service Level Standard was not met and the pro-rated charges for 1 day of the MRC Customer pays for Verizon-provided Access to the Service. For Services delivered in Spain, such Service Credit will be refunded to Customer automatically in the following invoice.

3 Time to Repair (TTR) Service Level Standard

3.1 **TTR Scope.** The TTR Service Level Standard is to restore the Service following an event that results in the outage of a circuit within

- 4 hours in USA,
- 5 hours in Canada, Europe and AsiaPacific, and
- 8 hours in Latam.

3.2 **TTR Measurement.** The TTR time starts when a trouble ticket is opened by Verizon or Customer after the outage of a circuit other than for outages associated with the General Exclusions stated above, and concludes with the restoration of the affected circuit.

3.3 **TTR Remedy.** If Verizon fails to meet the TTR Service Level Standard in a month, Customer shall be entitled to receive a Service Credit equivalent to the pro-rated charges for 1 day of the Verizon MRC for the Service with respect to which this TTR Service Level Standard has not been met, provided that Customer may obtain no more than 1 Service Credit per day, irrespective of how often in that day Verizon failed to meet the TTR Service Level Standard. For Services delivered in Spain, such Service Credit will be refunded to Customer automatically in the following invoice.

4 Network Latency Service Level Standard

4.1 **Network Latency Scope.** Verizon's Network Latency Service Level Standard provides average round-trip transmissions times in milliseconds (ms) for the following network areas:

- North America: 45 ms or less between Hub Routers in North America.
- Europe: 30 ms or less between Hub Routers in Europe.
- Transatlantic: 90 ms or less between a Hub Router in the New York metropolitan area and a Hub Router in the London metropolitan area.
- Transpacific: 160 ms or less between a Hub Router in the Los Angeles metropolitan area and a Hub Router in the Tokyo metropolitan area.
- Europe to Asia Pacific: 250 ms or less between a Hub Router in the United Kingdom and in a Hub Router in India.
- Asia Pacific: 125 ms or less between Hub Routers in Asia Pacific.
- Latin America: 140 ms or less between Hub Routers in Latin America.

4.2 **Network Latency Remedy.** If Verizon fails to meet any Network Latency Service Level Standard in a month, Customer's account shall be automatically credited for that month. The credit will equal the pro-rated charges for 1 day of the Verizon MRC for the Internet Dedicated Service with respect to which the Service Level Standard has not been met.

5 Network Packet Delivery Service Level Standard

5.1 **Network Packet Delivery Scope.** Verizon's Network Packet Delivery Service Level Standard provides average packet delivery percentages for the following network areas:

- North America: 99.5% between Hub Routers in North America
- Europe: 99.5% between Hub Routers in Europe.
- Transatlantic: 99.5% between a Hub Router in the New York metropolitan area and a Hub Router in the London metropolitan area.
- Transpacific: 99% between a Hub Router in the Los Angeles metropolitan area and a Hub Router in the Tokyo metropolitan area.
- Europe to Asia Pacific: 99% between a Hub Router in the United Kingdom and in a Hub Router in India.
- Asia Pacific: 99% between Hub Routers in Asia Pacific.
- Latin America: 99% between Hub Routers in Latin America

5.2 **Network Packet Delivery Remedy.** If Verizon fails to meet any Network Packet Delivery Service Level Standard in a month, Customer's account shall be automatically credited for that month. The credit will equal the pro-rated charges for 1 day of the Verizon MRC for the Internet Dedicated Service with respect to which the Service Level Standard has not been met.

6 **Network Jitter Service Level Standard** (available only for service in the USA and in Europe)

6.1 **Network Jitter Scope.** Verizon's Network Jitter Service Level Standard provides that average jitter will not exceed 1 ms between Hub Routers in North America, and between Hub Routers in Europe.

6.2 **Network Jitter Remedy.** If Verizon fails to meet the Network Jitter Service Level Standard in a month, Customer shall be entitled to receive a Service Credit equivalent to the pro-rated charges for 1 day of the Verizon MRC for the Internet Dedicated Service with respect to which the Network Jitter Service Level Standard has not been met.

7 **Network Mean Opinion Score (MOS) Service Level Standard** (available only for service in the USA and in Europe)

7.1 **Network MOS Scope.** Verizon's MOS Service Level Standard provides that the average MOS performance is not less than 4.0 between Hub Routers in North America, and between Hub Routers in Europe.

7.2 **Network MOS Remedy.** If Verizon fails to meet the Network MOS Service Level Standard in a month, Customer shall be entitled to receive a Service Credit equivalent to the pro-rated charges for 1 day of the Verizon MRC for the Internet Dedicated Service with respect to which the MOS Service Level Standard has not been met.

8 **Outage Reporting Service Level Standard**

8.1 **Outage Reporting Scope.** Verizon's Outage Reporting Service Level Standard is to notify Customer within 15 minutes after Verizon's determination that Customer's service is unavailable.

8.2 **Outage Reporting Process.** Verizon's standard procedure is to ping Customer's router. If Customer's router does not respond after 2 consecutive 5-minute ping cycles (for service in the Asia Pacific region, North America and Latin America) or 5 2.5-minute ping cycles (for service in Europe), Verizon will deem the service unavailable and will contact Customer's designated point of contact by a method elected by Verizon (e.g., e-mail). Customer is solely responsible for providing Verizon accurate and current contact information for Customer's designated points of contact. Verizon will be relieved of its obligations under this Outage Reporting Service Level Standard if Verizon's contact information for the Customer is out of date or inaccurate.

8.3 **Outage Reporting Remedy.** If Verizon fails to meet the Outage Reporting Service Level Standard, Customer shall be entitled to receive a Service Credit equivalent to the pro-rated charges for 1 day of the MRC for the Service with respect to which the Outage Reporting Service Level Standard has not been met, provided that Customer may obtain no more than 1 Service Credit per day, irrespective of how often in that day Verizon failed to meet this Outage Reporting Service Level Standard.

9 **Denial of Service (DOS) Attack Response Service Level Standard**

9.1 **DOS Attack Response Scope.** Verizon will respond to DOS attacks reported by Customer within 15 minutes of Customer opening a complete trouble ticket with the Verizon Customer Support. Verizon defines a DOS attack as more than 95% bandwidth utilization.

9.2 **DOS Attack Response Process.** To open a Trouble Ticket for DOS, Customer must call the Verizon Customer Support and state: "I am under a Denial of Service Attack". A complete Trouble Ticket consists of Customer's Name, Account Number, Caller Name, Caller Phone Number, Caller Email Address and Possible Destination IP address / Type of Attack. Once engaged, Verizon Customer Support within the Security Operations Centre (SOC) will investigate the problem. They will provide confirmation that Customer is targeted by a DOS attack (rather than experiencing an internal or external routing issue). If the SOC concludes that the Customer is under active attack, they will take measures commercially appropriate for the type and level of attack. These measures may include placing filters on the routers in our network, black holing connections from the attack source network or active co-operation with the Internet Provider that provides service to the source of the attack when it can be clearly defined. Any remedies offered will be subject to the full co-operation of Customer. Verizon cannot guarantee that they will be able to mitigate or find a resolution that provides continued service to Customer.

9.3 **DOS Attack Response Remedy.** If Verizon fails to meet the DOS Attack Response Service Level Standard in a month, Customer shall be entitled to receive a Service Credit equivalent to the pro-rated Charges for 1 day of the Verizon MRC for the Service with respect to which this DOS Attack Response Service Level Standard has not been met, provided that Customer may obtain no more than 1 Service Credit per day, irrespective of how often in that day Verizon failed to meet the DOS Attack Response Service Level Standard.

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10 Installation Service Level Standard

10.1 Installation Scope. Verizon's Installation Service Level Standard is to have installation of a Verizon-ordered access circuit and activation of a Verizon port completed by the date to which Verizon commits to deliver the Service ("Customer Due Date").

10.2 Installation Measurement. The Installation Service Level Standard is calculated by computing the period of time beginning on the date Verizon accepts the Customer order and ending on the Service Activation Date.

10.3 Installation Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section above, the Service Installation Service Level Standard does not include any minutes associated with the following:

- Delays in installation related to Customer actions, moves or scheduling difficulties.
- Delays resulting from changes to a previously accepted order for Service from Customer, its agents or vendors.
- Any delays resulting from unavailability of Customer's premises, equipment, or facilities required to install the Service.
- Delays attributed to extending the Local Access demarcation point.
- Delays resulting from inaccurate or incorrect order information from Customer.
- Delays resulting from an order suspension due to credit issues involving Customer.

Any periods of delay attributable to the reasons above will be deducted from the Service installation time period.

10.4 Installation Remedy. If Verizon fails to meet the Installation Service Level Standard, Customer shall be entitled to receive a Service Credit equivalent to 50% of the first month's MRC for the applicable service.

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B.2   VERIZON PRIVATE IP SERVICE + GLOBAL PRIVATE IP SLA

Verizon's Private IP Service SLA is provided on the following pages.

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PRIVATE IP SERVICE + GLOBAL PRIVATE IP SERVICE LEVEL AGREEMENT

1. **Service Level Agreement Summary.** The Private IP Service Level Agreement ("PIP SLA") covers Global Private IP Services (collectively, the "Service" or "Private IP Service"). The PIP SLA consists of several service level standards ("Service Level Standards"). Customer may qualify for credits when the Verizon PIP Network performance fails to meet the stated thresholds established for a Service Level Standard. The PIP SLA may also cover the transport components (not the CPE components) of the Managed Private IP Service product if offered as a part of a Managed Private IP solution. The managed service components of a Managed Private IP solution may be covered in a separate Managed Services, Service Level Agreement.

2. **Definitions of Terms.** Terms used in this document are defined in the Terms and Definitions section at the end of this document.

3. **Service Level Standard Performance Measures.** The PIP SLA Service Level Standards are:

Parameter	Access Type	Scope	U.S.	Global Tier A	Global Tier B	Global Tier C
Availability	Platinum	End-to-End	100%	100%	100%	NA
	Wireline/Wireline Dual Connection*** Gold/Silver/Bronze + Gold/Silver/Bronze	End-to-End	100%	100%	100%	NA
	Wireline/Wireless Dual Connection**** Gold/Silver/Bronze + Wireless Private Network	End-to-End	100%	NA	NA	NA
	Gold	End-to-End	99.9%	99.9%	99.9%	99.5%
	Silver	End-to-End	99.5%	99.5%	99.5%	99.0%
	Bronze	End-to-End	99.0%	99.0%	99.0%	99.0%
Time To Repair (TTR)	Platinum	End-to-End	2 Hours	4 Hours	4 Hours	NA
	Gold	End-to-End	4 Hours	5 Hours	8 Hours	8 Hours
	Silver	End-to-End	4 Hours	8 Hours	8 Hours	8 Hours
	Bronze	End-to-End	24 Hours	24 Hours	24 Hours	24 Hours
Service Installation		End-to-End	≤1.5M** 30 Business Days ≤ 45M** 45 Business Days Others 100% by	100% by Customer's Due Date	100% by Customer's Due Date	100% by Customer's Due Date

			Customer's Due Date			
Moves, Adds or Changes (MAC)		End-to-End	10 Business Days (Excluding Local Access Requests)	100% by Customer's Due Date	100% by Customer's Due Date	100% by Customer's Due Date
Core Network Transit Delay (C-NTD)*		P-Core	⩽ 36 ms	NA	NA	NA

*Core Network Transit Delay (C-NTD) is only applicable to the US P-Core Network. Measurements between distinct PE pairs are given by the Packet Transit Delay (PTD) Service Level Standard in the table below.
**Excludes any facilities builds.
***Wireline/Wireline Dual Connection: Verizon provides a second equivalent circuit for the same Customer Site that may be configured as either active or passive, and as providing either Geographic Diversity or Router Diversity, as Customer elects. If a site has Dual Connection then only Dual Connection SLA can be claimed and not the individual circuit availability SLAs. Dual Connection SLA can only be claimed if both primary and secondary circuits are down. Dual Connection SLA will be paid on both primary and secondary Port and Access MRR.
****Wireline/Wireless Dual Connection: Verizon Mobile Private Network provides wireless back-up for Private IP service. If a site has Dual Connection then only Dual Connection SLA can be claimed and not the individual circuit availability SLAs. Dual Connection SLA can only be claimed if both primary and secondary circuits are down. Dual Connection SLA will be paid on the primary (Wireline) Port and Access MRR.

Parameter	Scope	EF/COS5	AF4x/COS4	AF3x/COS3	AF2x/COS2	AF1x/COS1	BE/COS0
Packet Delivery Ratio (PDR)*	PE-to-PE	⩾ 99.995%	⩾ 99.99%	⩾ 99.99%	⩾ 99.99%	⩾ 99.99%	⩾ 99.5%
Packet Transit Delay (PTD)	PE-to-PE	See applicable Packet Transit Delay standards below					
Jitter	PE-to-PE	< 5 ms	< 15 ms	NA	NA	NA	NA
Mean Opinion Score (MOS)**	P-Core	⩾ 4.0	NA	NA	NA	NA	NA

*Packet Delivery Ratio (PDR): for Private IP Secure Cloud Interconnection ("SCI"), only BE/COS0 applies.
**Mean Opinion Score (MOS) is only applicable to the U.S., EMEA and APAC regions.

Private IP Gateway:

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Parameter	Service Type	Scope	U.S.	Global Tier A	Global Tier B	Canada, Puerto Rico, U.S.
Availability	SCI*	PE-to-PE	100%	100%	100%	N/A
	Satellite Gateway**	End-to-End	99.5%	N/A	N/A	99.5%
	Private Wireless Gateway	PE-to-PE	100%	100%	N/A	N/A
Time To Repair (TTR)	SCI*	PE-to-PE	4 Hours	4 Hours	4 Hours	N/A
	Satellite Gateway**	PE-to-PE	4 Hours	N/A	N/A	4 Hours
	Private Wireless Gateway	PE-to-PE	4 Hours	4 Hours	N/A	N/A

*Private IP Secure Cloud Interconnection
**The Satellite Gateway SLA is based on Verizon's standard CPE recommendations designed to support the specified customer service parameters. The Satellite Gateway SLA for Availability is measured between Verizon's origination (Satellite earth station Hub) and Customer's destination demarcation point, as measured by Verizon.

The PIP SLA Performance Measures and exclusions are defined in detail below.

4. **Coverage Categories.** Service Level Standards vary by Class of service, Access type, Outage type and Geographic location. These Service Level Standards are defined below.

4.1 **Class of Service.** The PIP SLA class of service delivery methodology and traffic priority Class of Service are identified as follows:

Private IP Layer 3 Queue	Private IP Layer 2 Queue	Naming
EF*	COS5*	Real Time / Voice
AF4 AF41, AF42/43	COS4	Video / Priority Data
AF3 AF31, AF32/33	COS3	Mission Critical Data
AF2 AF21, AF 22/23	COS2	Transactional Data
AF1 AF11, AF12/13	COS1	General Data
BE	COS0	General Business - Default

*The EF and COS5 queues are not designed for packets larger than 300 bytes or Bursty Traffic.

4.2 **Access Types.** The PIP SLA Service Level Standard metrics may be based on the following Access Types as indicated on the Customer's Master Service Order Form.
- Platinum
- Gold
- Silver
- Bronze

4.3 **Outage Type.** The PIP SLA defines Service disruptions as:
- Hard Outage
- Service Issue

4.3.1 The Service restoration priority determines the ranking of the repair actions against other Service Issues.

Priority Level Criteria	
Priority 1	Total loss of Service or degraded Service to the extent that it is unusable by Customer and Customer is prepared to release its Service for immediate testing
Priority 2	Degraded Service, however Customer is able to use the Service and is not prepared to release its Service for immediate testing
Priority 3	A problem with the Service that does not impact the functionality of the Service; including a single non-circuit specific quality of Service inquiry.
Priority 4	Non Service affecting requests (e.g. a Customer request for an incident report) and all other queries not covered by Priority 1 – 3 above. Scheduled maintenance

4.3.2 A Hard Outage has Priority 1 Service restoration priority with the exception of Bronze Hard outages which are handled as a Priority 2 ticket. Availability and TTR apply to Hard Outages.

4.3.3 A Service Issue has Priority 2 Service restoration priority. PTD, PDR and Jitter apply to Service Issues.

4.3.4 Priority 3 and Priority 4 issues will be addressed by Verizon. However, Priority 3 and Priority 4 issues are not eligible for SLA credits.

4.4 **Geographical Location.** The PIP SLA covers Service in all countries where PIP Service is offered, except as specified in the exclusions and limitations stated below. The PIP SLA is divided into geographic regions because Service Levels available from access Providers around the world differ between countries. The location and access method of a Customer Site will determine the applicable Service Levels. As a result of continuing expansion of the Verizon Private IP Network the listing of the Global Tier countries is dynamic and changes periodically as new countries are added. At Customer's request Verizon will confirm country status and/or provide a listing of countries that fall into these categories. The countries covered under this SLA are divided into the following categories:
- **U.S.:** Contiguous 48 United States, Hawaii and Alaska.
- **Global Tier A:** Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Singapore, South Korea, Spain, Sweden, Switzerland, United Kingdom.
- **Global Tier B:** Argentina, Argentina MVIC (via Telmex), Australia, Brazil, Brazil MVIC (via Embratel), Bermuda, Bulgaria, Chile, Chile MVIC (via Telmex), China, China MVIC (via China Unicom, China Telecom, China Mobile or CITIC), Colombia, Colombia MVIC (via Telmex), Costa Rica, Czech Republic,

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Dominican Republic, Greece, Guam, Hungary, India, Indonesia, Israel, Latvia, Malaysia, Mexico, Mexico MVIC (via TelMex, Axtel or MetroRed), Morocco, New Zealand, Panama, Peru, Peru MVIC (via TelMex), Philippines, Poland, Portugal, Puerto Rico, Romania, Russia, Slovakia, Taiwan, Thailand, Turkey, Ukraine, United Arab Emirates (UAE), and Uruguay.

- **Global Tier C:** Albania, Algeria MVIC (via CMC Networks or Tawasul), Angola MVIC (via CMC Networks or Vodacom), Anguilla, Anguilla MVIC (via C&W), Antigua and Barbuda, Antigua and Barbuda MVIC (via C&W), Argentina MVIC (via Claro), Azerbaijan, Bahamas, Bahamas MVC (via C&W), Bahrain, Bahrain MVIC (via Tawasul), Bangladesh, Barbados, Barbados MVIC (via C&W), Belarus, Belize, Belize MVIC (via C&W), Benin MVIC (via CMC Networks), Bermuda, Bermuda MVIC(via C&W), Bolivia MVIC (via Tigo), Bosnia & Herzegovina, Botswana (via CMC Networks or Vodacom), Bulgaria, Burkina Faso (via CMC Networks), Burundi MVIC (via CMC Networks), British Virgin Island, British Virgin Islands MVIC (via C&W), Cameroon MVIC (via CMC Networks or Vodacom), Cape Verdi MVIC (via CMC Networks), Cayman Islands, Cayman Islands MVIC (via C&W), Central African Republic MVIC (via CMC Networks), China, Colombia MVIC (via C&W or Tigo), Cote d'Ivoire MVIC (via CMC Networks or Vodacom), Congo Democratic Republic MVIC (via CMC Networks), Costa Rica, Costa Rica MVIC (via C&W and Tigo), Croatia, Curacao, Curacao MVIC (via C&W), Djibouti MVIC (via CMC Networks or Vodacom), Dominica, Dominica MVIC (via C&W), Dominican Republic, Dominican Republic MVIC (via C&W), Ecuador, Egypt, Egypt MVIC (via TE Data), El Salvador, El Salvador MVIC (via C&W or Tigo), Estonia, Ethiopia MVIC (via CMC Networks or Vodacom), Gabon MVIC (via CMC Networks or Vodacom), Gambia MVIC (via CMC Networks), Ghana MVIC (via CMC Networks or Vodacom), Greece, Grenada, Grenada MVIC (via C&W), Guatemala, Guatemala MVIC (via C&W or Tigo), Guinea MVIC (via CMC Networks), Guyana, Guyana MVIC (via C&W), Haiti, Haiti MVIC (via C&W), Honduras, Honduras MVIC (via C&W or Tigo), Iceland, India MVIC (via Bharti or Reliance), Iraq MVIC (via Tawasul), Jamaica, Jamaica MVIC (via C&W), Japan MVIC (via Softbank), Jordan, Jordan MVIC (via Tawasul) Kazakhstan, Kenya MVIC (via CMC Networks or Vodacom), Kuwait, Kuwait MVIC (via Tawasul), Latvia, Lebanon, Lebanon MVIC (via Tawasul), Lesotho MVIC (via CMC Networks or Vodacom), Liberia MVIC (via CMC Networks), Lithuania, Macao, Macedonia, Madagascar MVIC (via CMC Networks or Vodacom), Malawi MVIC (via CMC Networks or Vodacom), Mali MVIC (via CMC Networks), Malta, Mauritius MVIC (via CMC Networks or Vodacom), Monaco, Montenegro, Mozambique MVIC (via CMC Networks or Vodacom), Namibia MVIC (via CMC Networks or Vodacom), Nicaragua, Nicaragua MVIC (via Tigo or C&W), Niger MVIC (via CMC Networks), Nigeria MVIC (via CMC Networks or Vodacom), Oman, Oman MVIC (via Tawasul), Pakistan, Panama, Panama MVIC (via C&W or Tigo), Paraguay, Paraguay MVIC (via Tigo), Puerto Rico, Puerto Rico MVIC (via C&W), Qatar, Reunion, Romania, Russia MVIC (via Beeline), Rwanda MVIC (via CMC Networks), Saudi Arabia, Saudi Arabia MVIC (via STC), Senegal MVIC (via CMC Networks), Serbia, Sierra Leone MVIC (via CMC Networks), Slovakia, Slovenia, South Africa, South Africa MVIC (via CMC Networks or Vodacom), Sri Lanka, St. Kitts and Nevis, St. Kitts and Nevis MVIC (via C&W), Saint Maarten MVIC (via C&W), St. Lucia, St. Lucia MVIC (via C&W) St. Martin, St. Martin MVIC (via C&W), St. Vincent, St. Vincent MVIC (via C&W), Sudan MVIC (via CMC Networks), Suriname, Suriname MVIC (via C&W), Swaziland MVIC (via CMC Networks or Vodacom), Tanzania MVIC (via CMC Networks or Vodacom), Togo MVIC (via CMC Networks), Trinidad and Tobago, Trinidad and Tobago MVIC (via C&W), Tunisia MVIC (via CMC Networks), Turkey, Turkey (Turknet), Turks and Caicos, Turks and Caicos MVIC (via C&W), United Arab Emirates (UAE) MVIC (via Etisalat), Uganda MVIC (via CMC Networks or Vodacom), Uruguay, U.S. Virgin Islands, U.S. Virgin Islands(via C&W), Venezuela, Vietnam, Yemen MVIC (via Tawasul), Zambia MVIC (via CMC Networks or Vodacom), Zimbabwe MVIC (via CMC Networks or Vodacom).

Service in the countries without a MVIC designation listed above is provided via a backhaul to the nearest Verizon Provider Edge device. The PTD, PDR, and Jitter Service Level Standards for these locations are based on measurements at Verizon's Provider Edge device. Additional information on the locations of the Verizon Provider Edge is available through Customer's account team or on the Verizon Looking Glass portal for Private IP.

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5. Service Level Standards Defined

5.1 Availability

5.1.1 Definition. End-to-end Circuit up-time.

5.1.2 Standard. See Service Level Standard for Performance Measurements above. Availability includes the local access from the Customer Edge (CE) to the Verizon PIP Provider Edge (PE) and the PIP Network. Availability excludes CPLL and the Customer CPE.

5.1.3 Calculation. Availability is determined by computing the total number of Eligible Hard Outage Minutes per Priority 1 trouble tickets in a calendar month for a specific Customer Circuit divided by the total number of minutes based on a 30-day calendar month. Availability is calculated after a trouble ticket is opened with Verizon and represents the percentage of time that the Circuit is available within a given calendar month.

$$\text{Availability (\%)} = \left(1 - \left(\frac{\text{Total Eligible Hard Outage Minutes per Circuit per month}}{30 \text{ days} * 24 \text{ hours/day} * 60 \text{ minutes/hour}}\right)\right) \times 100$$

5.1.4 Credit Structure. The credit is based on the number of Eligible Hard Outage Minutes. Availability applies only in those cases in which a PIP trouble ticket is opened with Verizon and the Customer subsequently allows the necessary physical or logical access to its premises and facilities for testing if required by Verizon.

Availability credit table:

Availability				Credits as a percent of MRC					
PIP Network Down Time		% of Up Time		All Global Tiers and US	U.S. and Global Tier A	Global Tier B	Global Tier C	U.S. and Global Tier A	U.S. and Global Tier A & B
From (Mins)	To (Mins)	From %	To %	(Platinum or Gold/Silver /Bronze + Wireless Private Network)	(Gold, Silver or Bronze)	(Gold, Silver or Bronze)	(Gold, Silver or Bronze)	Satellite	SCI and Private Wireless Gateway
1	43	< 100%	≥ 99.9%	5%	NA	NA	NA	NA	5%
44	86	< 99.9%	≥ 99.8%	10%	10%	5%	NA	NA	10%
87	216	< 99.8%	≥ 99.5%	15%	10%	5%	NA	NA	15%
217	432	< 99.5%	≥ 99.0%	25%	15%	10%	5%	5%	25%
433	648	< 99.0%	≥ 98.5%	30%	15%	10%	10%	10%	30%
649	864	< 98.5%	≥ 98.0%	40%	20%	10%	10%	10%	40%
> 864		< 98.0%		50%	20%	10%	10%	10%	50%

5.1.5 Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, Availability Service Level Standard measurements do not include the following:
- Any act or omission on the part of any third party other than a local access provider over which Verizon exercises control.

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- Periods of Service degradation, such as slow data transmission, where a Priority 1 trouble ticket has not been opened with Verizon and Customer has not released its Service for immediate testing.
- Customer inquiry for circuit monitoring purposes only.
- Availability Service Level Standards for MVIC services are only applicable for MVIC locations where local access is provided by one of the corresponding MVIC partners identified above.
- Off-Net Bronze hard outage to be handled as a Priority 2 ticket.
- Verizon Wireless Private Network charges are excluded.

5.2 Time To Repair (TTR)

5.2.1 Definition. Time taken to restore end-to-end Services during a Hard Outage on a specific Circuit.

5.2.2 Standard. See Service Level Standard Performance Measurements table above. TTR includes the Local Access from the Customer Edge (CE) to the Verizon PIP Provider Edge (PE) and the PIP Network. TTR excludes CPLL and the Customer CPE.

5.2.3 Calculation. TTR is determined by computing the time taken to repair each Eligible Hard Outage Priority 1 trouble ticket in a calendar month for a specific Customer Circuit with the exception of Hard Outages for Bronze which is handled as a Priority 2 ticket. The duration of each Hard Outage on a specific Circuit is calculated after a trouble ticket is opened with Verizon. TTR (Hrs) = Time taken to repair a specific Circuit experiencing an Eligible Hard Outage Priority 1 trouble. Bronze hard outage to be handled as a Priority 2 ticket.

5.2.4 Credit Structure. The credit is based on the number of Eligible Hard Outage Minutes. TTR applies only in those cases in which a PIP Hard Outage Priority 1 trouble ticket is opened with Verizon and the Customer subsequently allows the necessary physical or logical access to its premises and facilities for testing if required by Verizon and with the exception of Hard Outages for Bronze, which are handled as a Priority 2 ticket. Circuits may qualify for the TTR Service Level Standard in addition to the Availability Service Level Standard.

TTR credit table:

TTR		Credit as a Percent of MRC						
PIP Network Outage Time		U.S.	Global Tiers A & B	U.S.	Global Tier A	Global Tier B	Global Tiers C	U.S. and Global Tier A & B
From Hr:Min:Sec	To Hr:Min:Sec	(Platinum)	(Platinum)	(Gold, Silver or Bronze)	(Gold, Silver or Bronze)	(Gold, Silver or Bronze)	(Gold, Silver or Bronze)	SCI, Satellite and Private Wireless Gateway
2:00:00	3:59:59	4%	NA	NA	NA	NA	NA	N/A
4:00:00	4:59:59	4%	4%	2%	NA	NA	NA	4%
5:00:00	7:59:59	10%	10%	4%	4%	NA	NA	10%
8:00:00	11:59:59	10%	10%	4%	4%	4%	4%	10%
≥ 12:00:00		10%	10%	4%	4%	4%	4%	10%

5.2.5 Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, TTR Service Level Standard measurements do not include the following:
- Any act or omission on the part of any third party, other than a Local Access provider over which Verizon exercises control.

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- Periods of Service degradation, such as slow data transmission, where a Priority 1 trouble ticket has not been opened with Verizon and Customer has not released its Service for immediate testing.
- Customer inquiry for circuit monitoring purposes only.
- TTR Service Level Standards for MVIC services are only applicable for MVIC locations where Local Access is provided by one of the corresponding MVIC partners identified above.
- Bronze hard outage to be handled as a Priority 2 ticket.

5.3   Core Network Transit Delay (C-NTD)

5.3.1   **Definition.** Core Network round trip delay average between Verizon-designated core backbone network nodes across a specific region.

5.3.2   **Standard.** See Service Level Standard Performance Measurements table above.

5.3.3   **Calculation.** Verizon calculates the C-NTD by using 64-byte packets for measuring round trip transit delay in milliseconds between Verizon-designated backbone network nodes across a specific region and averaging the results over a 30 day period. The measurements exclude any traffic that is re-routed as a result of a network outage or scheduled maintenance. The monthly measurements are available at the following link: https://www.verizon.com/business/terms/latency/#pip.

5.3.4   **Credit Structure.** To receive a credit, Customer must submit their request within 30 business days after the month in which the C-NTD Service Level Standard was not met. Such credit will equal the pro-rated charges for one day of the MRC for the Customer's Connections within the specific region during the calendar month in which the C-NTD Service Level Standard was not met.

C-NTD credit table:

For Standard not met	Credit
Core Network Transit Delay (C-NTD)	The pro-rated charges equal to one day's MRC for the Customer's Connections

5.3.5   **Exclusions.** In addition to the General Exclusions, as set out in the General Exclusion Section below, C-NTD Service Level Standard measurements do not include the following:
- All Customer data traffic that is marked EF/COS5 by Customer and is not compliant with the subscribed EF/COS5 Real Time CAR or any other data traffic that is not compliant with the applicable subscribed CAR.
- All Customer data traffic that is marked by Customer using IP Precedence/DSCP settings not supported by the Verizon PIP Network.
- Core Network Transit Delay (C-NTD) is only applicable to the US P-Core Network

5.4   Packet Transit Delay (PTD)

5.4.1   **Definition.** Round trip data packets delay between origination and destination Ports.

5.4.2   **Standard.**
- PE PTD is the provider edge PE-to-PE monthly average round trip transit delay in milliseconds between respective Provider Edge device pairs on the Verizon PIP Network.
- The PE PTD Service Level Standards is applicable for the following traffic priority classes:
  - o Standard PIP Service

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- o Enhanced Traffic Management (ETM) option
- PE PTD Service Level Standard Performance Measurements for international and U.S. locations are stated in the PIP PTD Matrix located in the Verizon Secure Guide portal at: https://www.verizon.com/business/service_guide/secure/cp_pip_sla_matrix_SG.xlsx.

5.4.3 **Calculation.** PTD is determined by using 64-byte packets for measuring transit delay in milliseconds across the Verizon PIP Network and averaging the results over a thirty day period.
- PTD calculation is as follows: PTD = T2 – T1. Where: T1 is the time in milliseconds when an IP packet leaves the ingress reference point (i.e., Packet exit event) and T2 is the time in milliseconds when an IP packet arrives back at the ingress reference point (i.e. Packet return event).
- PE PTD is measured between the respective origination and destination infrastructure ports, i.e. between the points where the packet enters and exits Verizon's PIP Network, regardless of the mode of access to Verizon's PIP Network. External factors, including, but not limited to, Local Access issues, are excluded from the measurement.

5.4.4 **Credit Structure.** If the PTD Service Level Standard is not met, it is a Service Issue and is considered a Service Restoration Priority 2. If the PTD metric for a pair of Customer Connections or Customer Sites is not being met, Customer may be eligible for a credit. To obtain a credit, a trouble ticket must be opened with Verizon when a PTD Service Level Standard is not being met or if a Service Issue is identified. Verizon will work with Customer to confirm that a PTD issue exists and repair the problem(s), as applicable. Once Verizon confirms that the PTD Service Level Standard is not being met, Verizon will have 30 calendar days to repair the Service to meet the PTD Service Level Standard and close the applicable trouble ticket, and in such an event, Customer will not be eligible for a credit. If, after 30 calendar days of opening the trouble ticket, the PTD Service Level Standard continues to not be met, Customer will qualify for a credit. Customer's measurement of PTD prior to opening a trouble ticket may be considered by Verizon in determining the need to repair the Service.

PTD credit table:

For Standard not met	Credit as % of MRC
Packet Transit Delay (PTD)	20%

5.4.4.1 Service Issues occur between pair Ports of the Private IP Network. Consequently, two Customer connections will be impacted by each Service Issue. For Service Issue Service Level Standard credit purposes, the MRC will be defined as the average of the MRCs for each of the two impacted Customer Connections.

5.4.5 **Exclusions.** In addition to the General Exclusions, as set out in the General Exclusion Section below, PTD Service Level Standard measurements do not include the following:
- All Customer data traffic that is marked EF/COS5 by Customer and is not compliant with the subscribed EF/COS5 Real Time CAR or any other data traffic that is not compliant with the applicable subscribed CAR.
- All Customer data traffic that is marked by Customer using IP Precedence/DSCP settings not supported by the Verizon PIP Network.
- PTD Service Level Standards for MVIC locations are based on measurements at the Verizon owned Provider Edge devices and not the MVIC partner location.
- Any delay or dropped data packets caused by a Customer who subscribes to Access Oversubscription and Customer's traffic over a circuit exceeds 100% of the Access speed of the circuit.

5.5 **Packet Delivery Ratio (PDR)**

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5.5.1 **Definition.** Effectiveness in transporting and delivering customer packets across the PIP Network.

5.5.2 **Standard.**
- PE PDR is the PE-to-PE monthly average Packet Delivery Ratio. The PE PDR Service Level Standards is applicable for the following traffic priority classes: Standard PIP Service and Enhanced Traffic Management (ETM) option.
- PE PDR Service Level Standard is:
- For the EF/COS5 traffic priority class: 99.995%
- For the AF/COS4, COS3, COS2, COS1 traffic priority class: 99.99%
- For the BE/COS0 traffic priority class: 99.5%

5.5.3 **Calculation.**
- PDR is determined by using 64-byte packets for measuring the number of packets within a specified traffic priority class that are successfully delivered divided by the total number of packets sent within the specified traffic priority class during a calendar month. For data consisting of packets within the specified traffic priority class, the PDR is as follows:

$$PDR\ (\%)\ =\ \frac{Packets\ Delivered}{Packets\ Offered}\ \times 100$$

- PE PDR is measured between the respective origination and destination infrastructure Ports, i.e. between the points where the packet enters and exits Verizon's PIP Network, regardless of the mode of access to Verizon's PIP Network. External factors, including, but not limited to, Local Access issues, are excluded from the measurement.

5.5.4 **Credit Structure.** If the PDR Service Level Standard is not met, it is a Service Issue and is considered Service Restoration Priority 2. If the PDR metric for a pair of Customer Connections or Customer Sites is not being met, Customer may be eligible for a credit. To obtain a credit, a trouble ticket must be opened with Verizon when a PDR Service Level Standard is not being met or if a Service Issue is identified. Verizon will work with Customer to confirm that a PDR issue exists and repair the problem(s), as applicable. Once Verizon confirms that the PDR Service Level Standard is not being met, Verizon will have 30 calendar days to repair the Service to meet the PDR Service Level Standard and close the applicable trouble ticket, and in such an event, Customer will not be eligible for a credit. If, after 30 calendar days of opening the trouble ticket, the PDR Service Level Standard continues to not be met, Customer will qualify for a credit. Customer's measurement of PDR prior to opening a trouble ticket may be considered by Verizon in determining the need to repair the Service.

PDR credit table:

For Standard not met	Credit as % of MRC
Packet Delivery Ratio (PDR)	20%

5.5.4.1 Service Issues occur between pair Ports of the Private IP Network, including SCI. Consequently, two Customer connections will be impacted by each Service Issue. For Service Issue Service Level Standard credit purposes, the MRC will be defined as the average of the MRCs for each of the two impacted Customer Connections.

5.5.5 **Exclusions.** In addition to the General Exclusions, as set out in the General Exclusion Section below, PDR Service Level Standard measurements do not include any of the following:

- Packets that are not delivered due in whole or in part to factors unrelated to Verizon's PIP/PIPL2 Network.
- Packets dropped at infrastructure ingress or egress due to improper Customer Port speed specifications of Customer Port speeds.
- All Customer data traffic that is marked EF/COS5 by Customer and is not compliant with the subscribed EF/COS5 Real Time CAR or any other data traffic that is not compliant with the applicable subscribed CAR.
- All Customer data traffic that is marked by Customer using IP Precedence/DSCP settings not supported by the Verizon PIP Network.
- PDR Service Level Standards for MVIC locations are based on measurements at the Verizon owned Provider Edge devices and not the MVIC partner location.
- Any delay or dropped data packets caused by a Customer who subscribes to Access Oversubscription and Customer's traffic over a circuit exceeds 100% of the Access speed of the circuit.

5.6 Jitter

5.6.1 Definition. Displacement of data packets from their ideal sequence or position in time.

5.6.2 Standard.
- PE Jitter is the monthly average mean deviation of the difference in packet arrival time at the receiver compared to the sender for a pair of packets one-way between respective Provider Edge Devices. The Jitter Service Level Standards is applicable for the following traffic priority classes:
- Enhanced Traffic Management (ETM) option:
  - ○ PE Jitter is applicable to data packets marked EF by Customer and compliant with the subscribed EF Real Time CAR.
  - ○ PE Jitter is applicable to data packets in the AF4 traffic class and compliant with the AF4 forwarding priority.
  - ○ Other traffic classes are not available for PE Jitter Service Level Standards.
- PE Jitter Service Level Standard provides that the maximum delay variance between Verizon Private IP PE devices is less than 5 ms one-way for the EF traffic class and less than 15 ms one-way for the AF4 traffic class.
- If a Jitter issue is identified, packet fragmentation technologies or similar capability may be required to remedy the issue.

5.6.3 Calculation.
- Jitter is determined by using 64-byte packets for measuring the mean deviation of the difference in packet spacing at the receiver compared to the sender for a pair of packets. The mean is determined by sampling the PIP Network frequently and averaging the results over a thirty day period. The calculation for Jitter (Ji) for two consecutive packets i and i+1 is as follows: Jitter $(J_i) = \Delta T_i - \Delta T_i'$
  Where:
  T_i = time 1st byte of packet i is received by the source Port (ingress time)
  T_{i+1} = time 1st byte of packet i+1 is received by the source Port (ingress time)
  T_i' = time 1st byte of packet i is received at the destination Port (egress time)
  T_{i+1}' = time 1st byte of packet i+1 is received at the destination Port (egress time)
  And:
  $\Delta T_i = T_{i+1} - T_i$ (ΔT_i is the time interval between packets at ingress)
  $\Delta T_i' = T_{i+1}' - T_i'$ ($\Delta T_i'$ is the time interval between packets at egress)
  The Average Jitter (J-avg) is calculated as follows:
  Average Jitter $(J\text{-avg}) = \sum | J_i | / (N-1)$
  Where:

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N is the number of sample packets over 30 day period
- PE Jitter is measured between the respective origination and destination infrastructure Ports, i.e. between the points where the packet enters and exits Verizon's PIP Network, regardless of the mode of access to Verizon's PIP Network. External factors, including, but not limited to, Local Access issues, are excluded from the measurement.

5.6.4 **Credit Structure.** If the Jitter Service Level Standard is not met it is a Service Issue and is considered Service Restoration Priority 2. If the Jitter metric for a pair of Customer Connections or Customer Sites is not being met, Customer may be eligible for a credit. To obtain a credit, a trouble ticket must be opened with Verizon when a Jitter Service Level Standard is not being met or if a Service Issue is identified. Verizon will work with Customer to confirm that a Jitter issue exists and repair the problem(s), as applicable. Once Verizon confirms that the Jitter Service Level Standard is not being met, Verizon will have 30 calendar days to repair the Service to meet the Jitter Service Level Standard and close the applicable trouble ticket, and in such an event, Customer will not be eligible for a credit. If, after 30 calendar days of opening the trouble ticket, the Jitter Service Level Standard continues to not be met, Customer will qualify for a credit. Customer's measurement of Jitter prior to opening a trouble ticket may be considered by Verizon in determining the need to repair the Service.

Jitter credit table:

For Standard not met	Credit as % of MRC
Jitter	20%

5.6.4.1 Service Issues occur between pair Ports of the Private IP Network. Consequently, two Customer connections will be impacted by each Service Issue. For Service Issue Service Level Standard credit purposes, the MRC will be defined as the average of the MRCs for each of the two impacted Customer Connections.

5.6.5 **Exclusions.** In addition to the General Exclusions, as set out in the General Exclusion Section below, Jitter Service Level Standard measurements do not include any of the following:
- PE Jitter applicable to the AF4 traffic class is available only for Video traffic that uses either AF41 or CS4 classification when the AF4 queue facilitating such Video traffic is not mixed with any other type of traffic.
- All Customer data traffic that is marked EF by Customer and is not compliant with the subscribed EF Real Time CAR or any other data traffic that is not compliant with the applicable subscribed CAR.
- All Customer data traffic that is marked by Customer using IP Precedence/DSCP settings not supported by the Verizon Private IP Network.
- Jitter Service Level Standards for MVIC locations are based on measurements at the Verizon owned Provider Edge devices and not the MVIC partner location.
- Jitter Service Level Standard is not applicable to Private IP Layer 2 services.

5.7 Service Installation

5.7.1 **Definition.** Period of time beginning on the Order Acceptance date and ending on the date Verizon completes installation of the Service and the Service is up and billable. Customer's Due Date is defined as the date to which Verizon commits to deliver the Service.

5.7.2 **Standard.** See Service Level Standard Performance Measurements table above.

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5.7.3 **Calculation.** The Service Installation Service Level Standard is calculated by computing the period of time beginning on the Order Acceptance date and ending on the date Verizon completes installation of the Service and the Service is up and billable.

5.7.4 **Credit Structure.** To obtain a credit, Customer must report the delay in Service installation to the Verizon account team as described in the in the Credit Section of the SLA.

Service Installation credit table:

For Standard not met	U.S.	Global Tier A	Global Tier B	Global Tier C
Service Installation	50% of the first month's MRC on the applicable Connection	50% of the first month's MRC on the applicable Connection	50% of the first month's MRC on the applicable Connection	50% of the first month's MRC on the applicable Connection

5.7.5 **Exclusions.** In addition to the General Exclusions, as set out in the General Exclusion Section below, the Service Installation Service Level Standard does not include any minutes associated with the following:
* Delays in installation related to Customer actions, moves or scheduling difficulties.
* Delays resulting from changes to a previously accepted order for Service from Customer, its agents or vendors.
* Any delays resulting from unavailability of Customer's premises, equipment, or facilities required to install the Service.
* Delays attributed to extending the Local Access demarcation point.
* Delays resulting from inaccurate or incorrect order information from Customer.
* Delays resulting from an order suspension due to credit issues involving Customer.

Any periods of delay attributable to the reasons above will be deducted from the Service Installation time period.

5.8 Moves, Adds or Changes (MAC)

5.8.1 **Definition.** The MAC interval is the period of time beginning on the Order Acceptance date and ending on the date Verizon completes the Order for the Service. Customer's Due Date is defined as the date to which Verizon commits to deliver the Service.

5.8.2 **Standard.** See Service Level Standard Performance Measurements table above.

5.8.3 **Calculation.** The MAC Service Level Standard is calculated by computing the period of time beginning on the Order Acceptance date and ending on the date Verizon completes the order for the Service.

5.8.4 **Credit Structure.** To obtain a credit, Customer must report the delay in Service order completion to the Verizon account team as described in the Credit Section of the SLA.

MAC credit table:

For Standard not met	U.S.	Global Tier A	Global Tier B	Global Tier C

MAC	50% of MRC on the applicable Connection	50% of MRC on the applicable Connection	50% of MRC on the applicable Connection	50% of MRC on the applicable Connection

5.8.5 **Exclusions.** In addition to the General Exclusions, as set out in the General Exclusion Section below, the MAC Service Level Standard does not include any minutes associated with the following:
- Delays in installation related to Customer actions, moves or scheduling difficulties.
- Delays resulting from changes to a previously accepted order for Service from Customer, its agents or vendors.
- Any delays resulting from unavailability of Customer's premises, equipment, or facilities required to install the Service.
- Delays attributed to extending the Local Access demarcation point.
- Delays resulting from inaccurate or incorrect order information from Customer.
- Delays resulting from an order suspension due to credit issues involving Customer.
- MAC problems for services provided pursuant to any promotional Move, Add or Change offerings might not be eligible for credit refunds.

Any periods of delay attributable to the reasons above will be deducted from the MAC installation time period.

5.9 Mean Opinion Score (MOS)

5.9.1 **Definition.** Quality level of the audio fidelity and clarity of a voice call.

5.9.2 **Standard.** See Service Level Standard Performance Measurements table above.

5.9.3 **Calculation.** Verizon calculates MOS by sampling performance scores for the EF traffic class, using the standards based ITU-T G.107 (E-model) and assuming a G.711 codec, between Verizon-designated core backbone network nodes and averaging the results over a thirty day period. The monthly measurements are available at the following link: https://www.verizon.com/business/terms/latency/#pip.

5.9.4 **Credit Structure.** To receive a credit, Customer must submit their request within 30 business days after the month in which the MOS Service Level Standard was not met. Such credit will equal the pro-rated charges for one day of the MRC for the Customer's Connections within the specific region during the calendar month in which the MOS Service Level Standard was not met.

MOS credit table:

For Standard not met	Credit
Mean Opinion Score (MOS)	The pro-rated charges equal to one day's MRC for the Customer's Connections

5.9.5 **Exclusions.** In addition to the General Exclusions, as set out in the General Exclusion Section below, MOS Service Level Standard measurements do not include the following:
- The MOS Service Level Standard applies only to data packets marked EF by Customer and compliant with the Customer's subscribed EF Real Time CAR.
- The MOS Service Level Standard applies only to the U.S., EMEA and APAC regions.
- The MOS Service Level Standard is not applicable to the Private IP Layer 2 services.

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6. Credit Requests and Application Process

6.1 Service Level Agreement Credit Application Structure.

- For any calendar month in which Verizon fails to meet any of the Service Level Standards stated in this document the credit structure for the Service Level Standards listed above will be applied to the corresponding net billing MRC for the specific Connection(s) affected by a PIP Network Hard Outage(s) or Service Issue(s).
- The total of all credits within any one month is limited to a maximum of 100% of the MRC for the specific Connection or Site, as applicable, which was impacted by any non-compliance with the Service Level Standard(s). Credits are not cumulative month to month.
- Credits for Hard Outages are determined based on Eligible Hard Outage Minutes and Customer may claim the TTR Service Level Standard credit in addition to the Availability Service Level Standard credit in a given calendar month. Customer may claim only one credit within a particular Service Issue Service Level Standard category during a given month. Customer cannot claim credits from both the Hard Outage and Service Issue categories for the same event. Customer can request to have compliance checked for all of the standard Service Level Standard commitments when requesting credits in any given month.
- To receive a credit, a trouble ticket must be opened with Verizon and Customer must submit their credit request no later than the stipulated time allowed to claim the specific Service Level Standard credit. The appropriate refund amount will be credited to the Customer's account at the billing account number (BAN) level in one lump sum, as opposed to each individual circuit or all circuits under multiple BANs. The appropriate refund amount will be appearing as a line item on a bill delivered within 90 calendar days following Verizon's confirmation of non-compliance with the Service Level Standard.
- Credits do not apply to Local Access or backhaul charges.

6.2 Process for Customer to Apply for Service Level Agreement Credits.
The process to apply for SLA credits is provided below for each of the Service Level Standards.

6.2.1 Opening a Trouble Ticket.
In the case that a trouble ticket is required to document an outage or service event for credit compliance, this can be done either through the Customer Service Center or through the web-based Verizon Enterprise Center. The number for the assigned Customer Service Center is printed on Customer's invoice. Access to the Verizon Enterprise Center can be requested at the first use by registering at the Verizon Enterprise Center portal https://enterprisecenter.verizon.com/.

6.2.2 Submitting a Service Level Agreement Credit Request.
The request for a SLA credit is submitted in writing from Customer to the account team. The timing and content of the request varies by Service Level Standard. This communication can be through email or by fax.

6.2.3 Trouble Ticket and Credit Request by Service Level Agreement

6.2.3.1 Availability and Time To Repair (TTR).
In order for the Hard Outage to qualify for an SLA credit Customer must do the following:

6.2.3.1.1
A trouble ticket is opened with Verizon within 72 hours of the time the Hard Outage.

6.2.3.1.2
Submit an SLA credit request to Verizon within 30 days of the closing of the trouble ticket. The request may be submitted in writing to Customer's account team or via the Verizon Enterprise Center portal. The credit request must contain the following information:
- The date the Hard Outage occurred.
- The time the Hard Outage began and ended.

- The circuit ID(s) for each circuit(s) that was impacted.

6.2.3.2 **Packet Transit Delay (PTD), Packet Delivery Ratio (PDR) and Jitter.** In order for the Service Issue to qualify for an SLA credit Customer must do the following:
- A trouble ticket is opened with Verizon within 72 hours of the time the Service Issue arose.
- Submit an SLA credit request to Verizon within 30 days of the closing of the trouble ticket. The request may be submitted in writing to Customer's account team or via the Verizon Enterprise Center portal. The credit request must contain the following information:
  - The date the Service Issue occurred.
  - The time the Service Issue began and ended.
  - The circuit ID(s) for each circuit(s) that was impacted.

6.2.3.3 **Core Network Transit Delay (C-NTD) and Mean Opinion Score (MOS).** To receive a credit, Customer must make a credit request in writing (e-mail or fax) to the Verizon account team within 30 business days after the month in which the C-NTD or MOS Service Level Standard was not met.

6.2.3.4 **Service Installation and Moves, Adds, or Changes (MAC).** Customer must report the delay in Service installation or MAC to the appropriate Customer Service Center when the target date is missed. Customer must make a credit request in writing (e-mail or fax) to Verizon account team within 30 days of the date that Verizon completes the installation of the circuit. Customer must document the following information when requesting the credit:
- The date on which the Service Installation Period or MAC interval began.
- The date specified for Service Installation or Service order completion in the Customer's order.
- The date installation or Service order was completed.
- The Port and Local Access ID numbers for the installed Service or the related Service order.

6.3 **Service Level Agreement Credit Time Limitation.** Service Credits made by Verizon to Customer under this Service Level Agreement are the sole and exclusive remedy available to Customer in respect of any failure to meet a Service Level Standard. Notwithstanding the preceding sentence, Customer may pursue the following options after three consecutive months of non-compliance with the PIP Service SLA:

6.3.1 Customer may elect to continue the Service for the affected connection inclusive of the credit. Customer can only receive a maximum of six months of credits for any individual Service Level Standard within a 12-month period regardless of the number of Connections.

6.3.2 Customer may elect to discontinue all PIP Service for an affected Connection without liability except for charges incurred prior to discontinuation of the Service. To cancel the Service for a Connection, Customer must submit a written disconnect notice to its Verizon account team within 30 days following the end of either the third or subsequent consecutive month of Verizon's failure to meet the Service Level Standard.

7. **General Exclusions.** The following exclusions apply to all Service Level Standards contained in this document:

7.1 Service Level Standards is limited to measurements taken at and service events occurring at or within the Provider Edge for Private IP services delivered when using the following access methods to Private IP:
- Network to network interface (NNI) partner via a MVIC.
- Satellite Port.
- Customer Provided Access.
- International Private Line (IPL).

7.2 No Service Level Standards are provided for the following nor will any Service level standard not met be considered for:

- Service installations prior to acceptances by Customer.
- Packets marked EF/COS5 by Customers that are larger than 300 bytes.
- Bursty Traffic in the EF/COS5 queue.

7.3 Private IP Layer 2 Specific Exclusions:

- Private IP Layer 2 excludes Mean Opinion Score (MOS) and Jitter Service Level Standards.
- Private IP Layer 2 Coverage Exclusions:
  - All MVIC locations.
  - The following countries: Argentina, Brazil, Canada, Chile, Colombia, Mexico, Panama, Peru, Puerto Rico and Venezuela.

7.4 Service Level Standard measurements do not include periods of PIP Network Outage resulting in whole or in part from one or more of the following causes:

- Any Hard Outage minutes associated with failure of CPLL.
- CPE associated with the PIP Service.
- Any act or omission on the part of the Customer, its contractors or vendors, or any other entity over which the Customer exercises control or has the right to exercise control.
- Any scheduled maintenance on the part of Customer, Customer contractors or Customer vendors.
- Any scheduled maintenance on the part of Verizon or Verizon Service partners which are within Verizon's maintenance windows.
- Any scheduled maintenance on the part of Verizon's Service partners, including without limitations, MVICs.
- Any Force Majeure events as defined in the Contract.

8. Terms and Definitions

Term	Definition
Assured Forwarding (AF)	A set of priority Class of Service types intended to support data prioritization and precedence.
Best Effort (BE)	A Class of Service type intended to support General Business transactions.
Billing Account Number (BAN)	The account number to which all the Service charges are linked.
Bursty Traffic	Traffic where the minimum packet arrival gap in ms is the same or less than [(the largest expected voice packet sizes in bytes)*8000/(link speed in bits/sec)].
CE-to-HUB	Satellite Gateway SLA is measured between Verizon's-origination (Satellite earth station Hub) and customer-destination demarcation point.
Circuit	A circuit is a Connection, port, CAR and local access.
Class of Service (COS)	Priority classes that enable the network to differentiate data packages and assign routing precedence based on the customer data networking settings.
Committed Access Rate (CAR)	Committed Access Rate (CAR) is the amount of bandwidth to which Customer subscribes on a logical port by logical port basis. CAR can be equal to or less than the logical port speed.
Connection	Connection is a port on Customer's virtual private network (VPN) connected to the Verizon PIP Network. Customer subscribes to a CAR for each Connection.
Core Network	The Core Network, also referred as the Provider Core or P-Core Network, is a dedicated and redundant backbone network with a resilient topology engineered to optimized network routes, maximize stability and minimize failover times. The

	Core Network has been designed to provide quality of service excellence and to enable intelligent adaptability to new generation technologies. The Core Network is a secure, reliable and fast backbone network platform dedicated solely to Private MPLS network traffic. The Core Network supports Private MPLS network traffic but does not support direct customer access connections.
CPE	Customer Premise Equipment. Telecommunications equipment located at the Customer Site.
Customer Edge (CE)	Routers and CPE connected to the local access loop.
CE-to-CE	Customer Edge to Customer Edge. The network segment to and from the customer demarcation point that includes the local loop and the PIP network but excludes the customer CPE.
Customer Provided Local Loop (CPLL)	Customer remits payment for local access directly to their local access provider and Verizon does not invoice Customer for local access charges.
Customer Service Center	Verizon locations where Customer reports Service issues.
Eligible Hard Outage Minutes	Total number of Connection Hard Outage minutes less any Outage minutes attributed to events excluded by the PIP SLA.
End-to-End	The network segment in which Verizon Business has control. It includes the Local Loops if it is furnish or ordered by Verizon Business or a Verizon Affiliate from a third party carrier, and where Verizon Business invoices the Local Access cost to Customer. It excludes the CPE.
Enhanced Traffic Management Service (ETM)	Service that provides priority traffic routing with Class of Service features.
Expedited Forwarding (EF)	A priority Class of Service type intended to support applications that require real time traffic flows.
Hard Outage	Complete loss of Service where Customer cannot use the Service and is prepared to release it for immediate testing.
Hub	The satellite infrastructure located at a Verizon earth station which is interconnected to Private IP.
International Private Line(IPL)	Provides dedicated connections (point-to-point or point-to-multipoint circuits) between customer sites in numerous countries around the globe.
IP	Internet Protocol.
Layer 2	The Data Link Layer of the OSI Model.
Layer 3	The Network Layer of the OSI Model.
Local Access	On-Net, Off-Net or Customer Provided connection from the Provider Edge to the Customer Edge.
Managed Services	A Verizon Service designed to provide customers with a range of management options, from the proactive monitoring to complete outsourcing, of the Customer's data or voice networks.
MPLS	Multi-Protocol Label Switching. An IETF standard.
MRC	Monthly Recurring Charge. MRC includes net port and CAR charge, less any applicable discounts, and does not include local access charges.
MVIC	Private IP MPLS VPN Interconnect Services provided through a partner network and interconnected with Verizon through the MVIC.
Network	Verizon MPLS VPN Service, known as PIP. A network-based IP VPN service that utilizes IP-over-MPLS (Multi-Protocol Label Switching) technology to deliver IP VPN services to its customers in a secure, reliable and fast manner.
Network Outage	A Network Outage is defined as an unscheduled period in which the Service is interrupted and unavailable for use by Customer for 60 or more Unavailable

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	Seconds (UAS). UAS is the American National Standards Institute standard (ANSI) T1.231.
NNI	Network to Network Interface (NNI) which provides an efficient interface between two data networks.
Off-Net	A location that is interconnected to Verizon Business using Local Access Circuits not wholly furnished via facilities owned or operated by Verizon Business or a Verizon Affiliate but ordered by Verizon Business or a Verizon Affiliate from a third party carrier. Off–net is offered at three levels of performance: Premium, Standard and Basic.
On-Net	A location that is interconnected to Verizon Business using Local Access Circuits wholly furnished via facilities owned or operated by Verizon Business or a Verizon Business Affiliate.
Order Acceptance	When Customer has provided all information required by Verizon, Customer has successfully passed a credit check (if required), and Verizon's ordering systems has processed the Customer's information and have accepted the order as ready for provisioning.
OSI Model	Open Systems Interconnection Reference Model. A standard description for how data should be transmitted between any two points in a telecommunication network. Its main purpose is to define the networking framework for the consistent delivery of products and services over a telecommunications network. The reference model defines seven layers of functions that take place at each end of a telecommunication network: Application (Layer 7), Presentation (Layer 6), Session (Layer 5), Transport (Layer 4), Network (Layer 3), Data-Link (Layer 2) and Physical (Layer 1).
P-Core	Provider Core. Dedicated and redundant backbone network with a resilient topology engineered to optimized network routes, maximize stability and minimize failover times. The P-Core has been designed to provide quality of service excellence and to enable intelligent adaptability to new generation technologies. The P-Core is a secure, reliable and fast backbone network platform dedicated solely to Private MPLS network traffic. The P-Core supports Private MPLS network traffic but does not support direct customer access connections.
PIP	Private IP Service.
PIP Network	The Verizon Private IP Network consisting of the devices and transport making up the MPLS cloud.
Port	An entrance to and/or exit from a network.
Provider Edge (PE)	The edge of the Verizon PIP Network. It is the point in which customer traffic enters or exits the Verizon PIP Network.
PE-to-PE	Provider Edge to Provider Edge. The network segment consisting of the PIP Network but excluding the Local Loops and the customer CPE.
Private IP Layer 2	Private IP Layer 2 is a technology using Virtual Private Wire Services (VPWS) to provide point-to-point routing and to allow Customers to retain control of routing, architectural and topology changes.
Private IP Layer 3	Private IP Layer 3 is a Network-Based IP VPN service using IP-over-MPLS technology to deliver high-performance IP VPN solutions to customers in a secure, reliable and fast manner.
Service or PIP Service	Service or Private IP Service is defined as Customer port and CAR and Local Accesses.
SLA	Service Level Agreement.

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Service Restoration Priorities	Process by which Service disruptions are ranked by the Customer Service Center. A "Priority 1" is a total loss of Service, or degraded Service to the extent that it is unusable by Customer and Customer is prepared to release its Service for immediate testing. A "Priority 2 is degraded Service, however Customer is able to use the Service and is not prepared to release its Service for immediate testing.
Site	A site is Customer's Service location which includes CPE and a Connection.
Service Issue	A degradation of Service where Customer is able to use the Service and is not prepared to release the Service for immediate testing. Service Issues are a Priority 2 restoration priority.
Trouble Ticket	A trouble ticket is defined as the official method used to document a perceived problem with the Service or non-compliance with a Service Level Standard.
Virtual Private Network (VPN)	A virtual network that provides the equivalent of a dedicated private network service over a shared data telecommunications infrastructure. A VPN maintains privacy through security network protocols. A VPN uses a logical connection to route traffic between network sites. One of the key attributes of a VPN is that it can provide the same capabilities of a Private Network but usually at a much lower cost.

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APPENDIX C EDITABLE INVOICE REPORT SAMPLE

An editable invoice report sample is provided on the following page(s).

Customer Name	ID	Acct. #	Date	Invoice #	Billing Name	Billing Address	Location ID	Location Name	Location Address

Service	Circuit ID	Speed	Description	Charge Period	Charge Type	Quantity	Unit of Measure	Amount	Per Call Amount

Discounts Promotions	AEF	CARC	CCRC	FUSF	L911	TRSF	FET	PGRTS	PSLST

PTRC	WVLUET	Tax & Surcharges - VAT	Total

APPENDIX D VERIZON RESUMES

D.1   Account Manager (AM) (Account Support Representative/Contract Management)
Sandra K. Hawkins – Senior Client Executive

Work Experience

(2004-Present)   **Verizon Business-Charleston, West Virginia**

Senior Client Account Manager

- Manages an assigned revenue plan.
- Directs the activities of the account team of sales, service and technical support to ensure optimum customer satisfaction with Verizon Business products and services.
- Develops strategic plans based on industry trending and customer analysis.
- Participates in contract negotiations and bid responses.
- Develop applications and service recommendations that match needs for   overall best solution for the State of WV and State of Ohio.
- Lead Cross Functional Team meetings discussing strategy, opportunities and achieving targets to deliver outcomes.

(2003-2004)   **Verizon Information Services-Charleston, West Virginia**

Premise Sales Representative

- Develop solutions by creating and designing directory advertising print (SuperPages) and electronic (SuperPages.com) to Virginia and West Virginia business customers
- Meet and exceed revenue and strategic product growth goals.
- Meet all publishing deadlines, ensured excellent quality of work, and handled customer inquiries.

(2002-2003)   **Ntelos-Charleston, West Virginia**

Account Executive

- Sale of wireline telephone services. (Voice and Data services)

(1982-2001)   **Verizon (former Bell Atlantic Network Services, Inc)-Charleston, WV**

Implementation Specialist, Customer Service Coordinator, Communication Consultant, Call Center Team Leader, Consultant Billing & Collections

- Trained customers on use of company products and services geared toward minimizing customer complaints
- Handled billing inquiries with 100% resolution
- Coordinated multiple departments, verified order accuracy and managed all technical implementations.
- Analyzed customer complaint data and developed coaching and training initiatives for 200+ consultants, exceeding the company objective.
- Led, developed and managed a call-out program to insure Small Business customers understood and benefited from their services, resulting in a one month improvement of 50%
- Facilitated monthly multi-department continuous improvement meetings with supervisors
- Negotiated with Small Business customers to market telecommunication voice and data services for Virginia, Maryland, DC, & West Virginia (ISDN BRI/PRI, DDS, DS1, DS3, Frame Relay, CustoPak, CustoFlex, PBX, voice messaging services, Auto Attendant)
- Organized trade shows

- Effectively led and managed a team of associates, and significantly reducing overhead expenses
- Regionalized change of service requests for Small Business customers, (WV, VA, DC, and MD) managing six associates, achieving 24-hour turnaround time.
- Collected delinquent accounts for Small Business customers in WV, VA, DC, and MD

Education

University of Charleston, Charleston, WV

- Bachelor of Science in Business Management
- Executive Master of Business (EMBA)

D.2   Solution Architect (Technical Support Representative)

Kevin Walker – Solutions Architect

Work Experience

(2020 – Present)   **Verizon, Charleston, WV**

Solutions Architect

- Own technical relationship with clients, including managing product and solution briefings, proof of concept work, coordination of technical resources, and obtaining client requirements and translating them into a client specific solution design and/or Verizon solution design/offer.
- Develop individual skill-set and expand product knowledge to maximize value and deliver quality services to clients.

(2010 – 2020)   **Frontier Communications, Charleston, WV**

Solutions Engineer

- Deliver pre-sales engineering support for Sales Account Executives to provide custom network solutions for customers.
- Work closely with customers, vendors, operations, and engineering departments on the implementation and coordination of network solutions.
- Generate customer presentations of designed solutions and assist in training initiatives on new technologies, processes, and company procedures that affect service delivery.

(2000-2010)   **Verizon, Charleston, WV**

Specialist – Network Trouble Center

- Provided 24x7x365 Tier II support for trouble investigation and resolution, billing referral resolution, Carrier Access Services and Wireless Services investigations, and E-911 Emergency reroutes.
- Awarded a departmental "Ovation" award for role in WV 10-Digit Overlay Project.
- Awarded Departmental Achievement Award and nominated for Verizon Excellence Award for role in win-back project by minimizing customer outage involving City Police, Fire Department, and Mayor's office involving 24 PRI's and 5,280 DID numbers.
- Specialist – Voice Network Creation & Provisioning
- Exceeded as an individual contributor, without direct supervision, in a position requiring a high degree of expertise and professionalism.
- Maintained translations, the software defined portion of Central Office Switches, for Siemens EWSD, Lucent 5ESS, Nortel DMS, and GTD-5 switch types.
- Served as Technical expert witness on behalf of Verizon in court hearing proceeding in which Verizon obtained a favorable ruling from the judge – received a letter of commendation from President of Verizon, WV for outstanding work.

(1994-2000)   **Bell Atlantic, Charleston, WV**

Translations Engineer

- Designed and maintained Bell Atlantic's network for business customer applications to ensure revenue by supporting all functions of Network Operations.
- Met 100% of dates requested for projects including an NPA Split in VA, Local Number Portability, Automatic Route Selection (ARS), and Primary Rate ISDN (PRI).
- Supported standardization efforts and helped group obtain ISO-9000 certification.

- Systems Engineer
- Provided technical support including the design, sales, and implementation of telecommunication systems involving voice, data, and video applications for over 50 large business customers.
- Developed custom sales proposals in response to customer Request for Proposals (RFPs).
- Assisted five Account Managers in meeting revenue objectives over $10 million.

(1992-1994)   **Anchor Hocking Packaging, Lancaster, OH**

Design Engineer

- Designed, implemented, and performed troubleshooting for the electrical control systems of sealing machines utilized in the food packaging industry.
- Coordinated projects with customers, equipment manufacturers, and outside consulting firms for automation of complete packaging lines.
- Designed wiring and interconnect diagrams in adherence to the National Electric Code and programmed PLCs and variable frequency drives for motor control applications.

(1987-1990)   **Virginia Power, Richmond, VA**

Project Engineer

- Managed voice and data projects for Virginia Power's telecommunications headquarters as part of a Cooperative Education program with West Virginia Institute of Technology.
- Coordinated installation of voice and data circuits on radio, fiber optic, and leased facilities.
- Designed equipment used to test supervisory control and data acquisition (SCADA) master computers and remote terminal units (RTUs), designed closed circuit television (CCTV) security system, multiple zone public address (PA) system, and voice frequency channel (VFC) system.

Certifications and Skills

- MEF Carrier Ethernet Certified Professional
- FCC Technician Amateur Radio License
- Cradlepoint Certified Network Associate
- Cradlepoint Certified Sales Associate
- Project Management

- SLC Programmable Logic Controllers
- AutoCAD / Visio
- Microsoft Word / PowerPoint/ Excel
- Siemens EWSD Training
- Lucent 5ESS Training
- Nortel DMS 100/200 Training

Education

West Virginia Institute of Technology, Montgomery, WV
- Bachelor of Science in Electrical Engineering (B.S.E.E.)

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D.3   Client Service Manager/Technical Service Manager/Financial Service Manager (Billing Support Representative and Service Manager)

Melanie L Lopez

Experience	
▪ Experienced inClient Services Management ▪ Contract Management ▪ Technical Design Sales and Project Management	▪ Federal and WV State Code, Regulatory Rules, Tariff Interpretations ▪ Policy Witness Advocacy ▪ Network Planning and Engineering

Work Experience

Lead Specialist - Client Services Manager (Verizon)

- Responsible for life cycle relationship, governance, and support of contractual commitments for the State of WV voice over IP and Data contracts. Oversees the operational health of Verizon services from delivery through lifecycle support.
- Ensures and manages internal & external resources to deliver services to maintain compliance with contractual commitments.
- Governs reporting and financial management relative to contractual commitments and Service Level Agreements, including billing account strategy, setup and optimization.
- Responsible to coordinate the establishment of customer specific Service Plans with strategic focus on Continual Service Improvement.
- Acts as escalation point of contact to the State of West Virginia for all Service related matters.
- Leads efforts to escalate across internal and external functional groups to resolve Service or State of West Virginia business impacting issues.

Information Services Manager – WV Office of Technology (WVOT) (State of WV)

- Assisted Agencies and the Accounts Payable team in the understanding of contractual terms, service descriptions and rates, and the auditing of invoices for IT contracts.
- With the WV Board of Risk Management and the State Privacy Officer, examined and cared for contractual risks including cyber security threats and controls for sensitive data sets.
- Managed IT Procurement and CTO review personnel, working with the WVOT technical teams to develop concise specifications, solicitations and evaluations as well as vendor performance management; contracts valued at over $8M annually.
- Directed efficient CTO review and approval processes authorized by WV Code for the technical interoperability and economical feasibility of IT purchases for the WVOT and State Agencies purchases estimated at over $300M annually.

Customer Relationship and Project Manager (State of WV)

- Managed Customer Relationship Managers, worked as technical liaisons supporting Agency contacts to understand business requirements and provide business analysis and technical support for IT-based projects and work requests.
- Project managed Verizon-provided hosted VoIP and Virtual Contact Center services, collaborating with Network Engineering team and Agency/customer contacts to document project requirements, milestones, communication plans.

Regional Alternate Channel Manager (Frontier)

- Managed third-party relationships with multiple sales partners contracted to sell Frontier residential and commercial services. Sales channels included: Outbound Telemarketing, Door-to-Door (D2D), Retail Agents, Aggregators (on-line partners). Responsible for Alternate Channel

sales objectives in the states of New York, Pennsylvania, West Virginia, North Carolina and South Carolina (East Region).
- Successfully met Cost per Gross Add (CPGA) goals for new acquisitions while managing a $5M annual budget.
- Successfully project managed the development and execution of a commercial door-to-door (B2B) program in April 2012, initially requested by the Southeast Region, made available nationally for all Regions. The development of this program led to the prospective on-boarding of a sales partner to target winback customers with Frontier's newly available Small Business IP Voice service in West Virginia.

Senior Consultant – Regulatory/Public Policy (Verizon)

- Successfully project managed the Verizon WV apportionment of the federal Universal Service Fund - High Cost Fund that included more than $60M in network infrastructure improvements.
- Testified before the WV Public Service Commission (PSC) on modifications of LATA boundaries resulting from community of interest issues. As a result, the proceeding was dismissed in Verizon's favor with no requirement to petition the FCC for a modification of the LATA boundary or any requirement for additional network construction.
- Contributed to the approval of a statewide E911 database system and rate restructure ($1M annual new revenue) with Verizon as the statewide provider; responsible for the coordination of other ILEC costs and the evaluation of the Verizon cost study with the Public Service Commission (PSC) Staff and Consumer Advocate Division (CAD).
- Accountable for the Verizon WV implementation of the Federal Low Income Fund. Successfully managed the implementation as a liaison with the WV PSC Staff, CAD and the WV Department of Health and Human Resources.
- Provided staff support for legal counsel and other witnesses on wholesale and retail issues leading to positive results for Verizon. Results included the reclassification of all digital data services and business exchange services to "competitive" in 2005 and 2008, respectively, allowing for significant increased revenues; the successful mediation of a key interconnection agreement proposal, resulting in a valuable precedent for Verizon's use nationwide; and the successful petition for a waiver of the harmful rules regarding "slamming" and issues surrounding customer of record changes.
- Responsible for the regulatory oversight of Verizon retail services' implementations, billing, tax and accounting implementations, including an emphasis of understanding and interpreting WV Public Service Commission rules, Verizon state and federal tariffs and WV law.
- Successfully served as liaison to the PSC Staff and CAD for regulatory issues.

Sales Engineer III – Enterprise Solutions Group (Verizon/Bell Atlantic)

- Established rapport and technical relationships with key customer contacts. Provided sales and technical design assistance for data networking implementations, including both transport and premise equipment expertise with significant sales results including: Gigabit Ethernet over Dedicated SONET ring sales to WV Treasury and Charleston Area Medical Center (CAMC) including data CPE sale to CAMC; outsourced IP sale to City Holding (valued at $9M); multiple Frame Relay and ATM services to various customers; integrated network, CPE and maintenance services to Walker Machinery, Northwood Health Systems; Intellilight Entrance Facility service to McJunkin Corporation and General Electric Corporation.
- Promoted from Sales Engineer II to Sales Engineer III in August 2001 based on performance and results.
- Selected as the branch Subject Matter Expert for new managed services in 2000; awarded marketing's Sales Engineering honor in recognition of Virtual Office Solution sales to Connection Depot and Charleston Area Medical Center.
- Attended Verizon, Cisco and other educational training; developed working knowledge of leading edge security, disaster recovery and storage area networking solutions.

Engineer - Interoffice Facility Planning and Engineering, Circuit Administration Center (Verizon/Bell Atlantic)

- Successfully planned and engineered the interoffice facility (IOF) network for the geographic area of southern West Virginia. Duties included capital budgeting and overall coordination of the installation of new technologies including SONET and asynchronous survivable transport systems, digital cross-connect systems, synchronization systems and testing systems.
- Served as the planning and provisioning liaison with other local exchange carriers and wholesale providers for the purpose of interconnection facilities.
- Provisioned high capacity service orders for both retail and wholesale customers, designed and maintained the strict circuit diversity requirements for critical services including the SS7 and E911 networks.
- Worked with Outside Plant Planning, Customer Network Engineering and Sales personnel to implement custom solutions for business customers.
- Forecasted and serviced the switched trunking network for approximately fifty WV central offices.
- Represented C&P Telephone in the joint planning of the message network with other local exchange carriers and wholesale providers (cellular and long distance).
- Performed exchange code (NXX) administration and associated routing instructions for network switching implementations.

Education

West Virginia Institute of Technology	**1985**
Montgomery, WV	*BS -Mathematics*
University of Kentucky	**1986**
Lexington, KY	*Studied Applied Mathematics*

D.4   Security Domain Specialist (Security/Compliance Specialist)

Sonya S. Hefferan

Summary

Over 21 years of sales and marketing experience. Strong demonstrated ability to achieve annual sales and profit objectives while maintaining positive and supportive relationships with others. Helping my customers navigate complex security solutions in regulatory environments. Dedicated, resourceful team player with a passion for taking ownership and achieving positive results in:

- Customer Centric Outcome Selling
- Adept and Agile Learner
- Building Strategic Relationships
- Developing and Delivering Customer Centric Value
- Strategic Account Planning
- Analytical leader who translates insights into action

Experience

Verizon

Principal Consultant Verizon Enterprise Solutions   ***2019-Present***

A veteran Cyber Security Client Executive with a broad background in Enterprise Software Sales, Technical Sales, and Professional Services. A security practitioner and problem solver with a keen ability to position risk as a component of business value to both IT and the Line of Business stakeholders.

As a Public Sector Domain Security Specialist I am focused on assisting our customers in identifying and mitigating risk to protect their brand, intellectual property and clients.

- Increasing net new security sales opportunities by 90% in supporting investment and vertical accounts.
- Coordinating with Verizon Client Executives and business partners to increase security revenues by 88% in the South region.
- Delivered the value proposition, positioning and messaging for the latest Verizon Security software, attended completed Rutgers Cybersecurity training and successfully completed Verizon Cybersecurity Accreditation Program.

Verizon is one of the world's leading providers of communications, information and entertainment products and services to consumers, businesses and governmental agencies. With a presence around the world, Verizon offers voice, services, data, video and solutions on our wireless and wireline networks that are designed to meet customers' demand for mobility, reliable network connectivity, and security.

IBM

IBM Security Client Executive   ***2015-2019***

IBM offers a deep enterprise security portfolio customized to your company's needs. Unmatched in ability to help you disrupt new threats, deploy security innovations and reduce the cost and complexity of IT security, IBM can safeguard your most critical data from compromise.

- Achieved 120% and 417% of sales quota in supporting accounts in the MidAtlantic Region.
- Supported Public Sector, enterprise, commercial accounts in the MidAtlantic to create 90% growth in IBM BigFix software.
- Coordinated with IBM Portfolio Managers and Technical Engineers to provide enterprise class IBM security solutions to customers.

- Accelerated contract negotiations and successfully responded to RFP's in both state local government agencies including public safety and large enterprise accounts.
- Developed a marketing plan for the territory which includes the market positioning and IBM's value proposition within the market segment.
- Interface to the business leaders and develop a thorough understanding of the market.
- Delivered the value proposition, positioning and messaging for the latest IBM Security software.
- Spearheaded net new IBM QRadar User Groups in both South and North Carolina.

IBM Partner Technologent   **2014-2015**

Enterprise Account Executive

- Coordinating with IBM Client Managers and Systems Engineers to provide enterprise-class infrastructure, FlashSystem and datacenter solutions to customers.
- Managing enterprise and commercial accounts in the Carolina's to accelerate 80% growth in IBM business.
- Achieving $7 million in revenue in IBM hardware and software in enterprise and commercial accounts in the Carolina's.
- Interface to the business leaders and develop a thorough understanding of the market.
- IBM Storage and Software Certified.

NetApp   **2008-2014**

Enterprise Field Account Manager, Carolinas

- Produced over $4.1 Million in closed revenue thus far and over $8 Million in pipeline.
- Coordinated with WWT, Datalink, and other major partners to drive 75% increase in business at Enterprise Fortune 500 accounts.
- Overachieving NetApp Accredited Sales Professional, generating over 25 net new opportunities in challenging Enterprise accounts.
- Utilized customer focused sales methodology and sales research tools to broaden our reach with key targets and "C" Level Executives.
- Increased technical knowledge through monthly NetApp University Storage Architect workshops and training.
- Led six major NetApp Executive Briefings and participated in several technical marketing events to generate NetApp brand awareness and train customers.

Account Manager, Enterprise Southeast and South Central Regions

- Achieved 290% of my goal in FY12.
- Won "Director's Award" for my dedication to the business and sales overachievement.
- Discovered 87 opportunities in large whitespace accounts with over $4,125,000 in converted pipeline and revenues.
- Building strong relationships with customers and partners, selling solutions, and keeping them apprised of new product and service introductions.
- Developed and strategized on Door Opener Campaigns with Field and Corporate Marketing, partners, GSI and the On Command teams.

Account Manager

- Generated $2,150,000 in net new sales opportunities in the Florida District.
- Worked in cross-functional teams in NetApp Marketing, CRM, SalesForce.com, and Product Marketing to support sales functions.
- Identified the need for, and provided a quote to the customer for technology refresh, product upgrades, service upgrades, renewal options.

- Ensured customers had the products, services, education and support to meet their technology and business needs.

Business Development Representative

- Exceeded sales quota closed revenue of $1,650,000 in net new accounts in fiscal year 2010.
- "Business Development Representative of the Month" for July and November 2009.
- Achieving the 2nd highest Pipeline Revenue with the MW and Chicago Commercial in the US $2,263,429 in fiscal year 2009.
- Ranked in Top 10% of Inside Sales Development team in lead setting.
- Led pilot with NetApp Marketing team on Oracle customer management tool and Email Marketing Campaigns content.
- Trained new employees on Oracle CRM tool, created Oracle and sales techniques quick reference guides.

SAS Institute   2006-2008

Account Executive, Financial Services and Manufacturing

Accomplishments:

- Increasing SAS software sales and awareness in the Mid-Market Insurance companies for the world's largest privately held software company.
- Designed and implemented marketing campaign to "C" Level Executives in over 10 states.
- Maintained relationships at 134% renewal rate of existing customer solutions.

Glaxo SmithKline Inc.   1998-2006

Senior Pharma Sales Representative, 1999-2006

Accomplishments:

- Ranked in Top 20% of the nation.
- Increased territory ranking from 32 to 14.
- Increased sales volume of Advair 11.2% quarter ending June 2006, Ranked 6th of 23 in the region.
- Achieved 42.3% total prescription market share Imitrex, Ranked 3rd of 23 in the region.

Sales Responsibilities

- Updated territory business plans, brand bonding ladder, and monthly prescriber reports for the team.
- Coordinated with counterparts on therapeutic and disease state clinical programs.
- Learned Evidence-Based Medicine techniques to identify and evaluate clinical trials.

Leadership Experience

- Represented the district on the 2006 Glaxo SmithKline Leadership Team.
- Trained two new representatives in leadership role during re-alignment of the Hurricane region.

Computer Training Assistant, (through contract)   1998-1999

- Facilitated Passport computer training for initial and advanced sales representatives.

Additional Experience

Industrial Extension Service, Raleigh, NC   1998

Marketing Assistant

- Performed sales calls on industrial engineering and manufacturing consultants.

NC Bar Association, Raleigh, NC   **1998**

Marketing Research Assistant

- Created and implemented marketing survey phone survey to over six hundred lawyers in Wake and Mecklenburg counties.

Software Completions, Inc., Raleigh, NC

Marketing and Sales Assistant

- Increased sales for software fulfillment company.

Education

North Carolina State University   **1998**
B.S. Business Management, Marketing and Information Systems Concentration

Community Service   **2008-Present**
- Food Bank of North Carolina, Rise Against Hunger, Fundraising for St. Baldrick's for Research in Children's Cancer, Backpack Buddies, Habitat for Humanity

North Carolina Junior Chamber of Commerce   **1999-2008**
- Board of Directors, Director of Membership, Director of Community Development, Director of Individual Development
- Fundraising for Duke Cancer Center, Jaycee Burn Center, Habitat for Humanity, Food Bank, Carolina House Assisted Living, and other North Carolina Charities

APPENDIX E ACRONYM LIST

Acronym	Definition
ACH	Automated Clearing House
ACL	Access Control List
AI/ML	Artificial Intelligence and Machine Learning
API	Application Programming Interfaces
ARS	Automatic Route Selection
AS	Autonomous Systems
ASN	Autonomous System Number
ASR	Access Service Request
ATM	Asynchronous Transfer Mode
B2B	Business to Business
BGP	Border Gateway Protocol
BI	Background Investigations
BOT	Back Office Transition
BU	Business Unit
CAD	Consumer Advocate Division
CAMC	Charleston Area Medical Center
CAR	Customer Premises Equipment
CCNA	Cisco Certified Network Associate
CCSA	Check Point Certified Security Administrator
CCSE	Certification Security Certification CCNA CCSA CCSP
CCSP	Cisco Certified Security Professional
CCTV	Closed Circuit Television
CE	Customer Edge
CIS	Corporate Information Security
CISO	Chief Information Security Officer
CISSP	Certified Information Systems Security Professional
CNS	Customer Network Support
CPE	Customer Provided Equipment
CPGA	Cost Per Gross Add
CSF	Cybersecurity Framework
CSP	Cloud Service Providers
CTO	Chief Technology Officer
CVE	Common Vulnerabilities And Exposures
CoS	Class of Service
D2D	Door-to-Door
DAST	Dynamic Application Security Testing
DDOS	Distributed Denial of Service Attack
DHCP	Dynamic Host Configuration Protocol
DIA	Dedicated Internet Access
DMARC	Domain-Based Message Authentication, Reporting, and Conformance
DMZ	Demilitarized Zone
DNS	Domain Name Services
DWDM	Dense Wavelength Division Multiplexing
DoS	Denial of Service
EMBA	Executive Master of Business
ESL	Eligible Services List
ETP	Eligible Telecommunications Provider
EVC	Ethernet Virtual Connection
EVM	Enterprise Vulnerability Management

Acronym	Definition
FCC	Federal Communications Commission
FCDL	Funding Commitment Decision Letter
FISMA	Federal Information Management Act
FRN	Funding Request Numbers
GETS	Government Emergency Telecommunications Service
GIAC	Global Information Assurance Certification
GPON	Gigabit Passive Optical Network
HR	Human Resources
ICB	Individual Case Basis
IDS	Internet Dedicated Service
IEEE	Institute of Electrical and Electronic Engineers
IGP	Interior Gateway Protocol
ILEC	Incumbent Local Exchange Carrier
IOF	Interoffice Facility
IP	Internet Protocol
IPJ	IP Justification
IPR	Internet Reporting Statistics
IPv4	Internet Protocol Version 4
IPv6	Internet Protocol Version 6
IS-IS	Intermediate System to Intermediate System
ISAC	Information Sharing And Analysis Centers
ISDN	Integrated Services Digital Network
ISO	Information Security Officers
ISP	Internet Service Providers
IT	Information Technology
ITIL	Infrastructure Technology Information Library
IoT	Internet of Things
KPI	Key Performance Indicators
LAN	Local Area Network
LATA	Local Access and Transport Area
LCP	Lowest Corresponding Price
MAS	Minimum Acceptable Score
MBPS	Megabits per Second
MEF	Metro Ethernet Forum
MMF	Multimode Fiber
MNS	Managed Network Services
MP-BGP	Multiprotocol BGP
MPLS	Multiprotocol Label Switching
MRC	Monthly Recurring Charge
MSO	Management Services Organization
MSOF	Managed Services Order Form
MSS	Managed Security Service
MTTR	Means Mean Time To Repair
N/A	Not Applicable
NA	Network Analysis
NCC	National Coordination Center
NIST	National Institute of Standards and Technology
NIST-CSF	National Institute of Standards and Technology Cybersecurity Framework
NNI	Network Node Interface
NOC	Network Operations Center

Acronym	Definition
NSOC	Network Security Operations Center
NSPE	Number Circuit ID Special
OLA	Operating Level Agreement
OSA	Operational Support And Analysis
OSPF	Open Shortest Path First Protocol
OWASP	Open Web Application Security Project
PA	Public Address
PBX	Private Branch Exchange
PE	Provider Edge
PIA	Program Integrity Assurance
PID	Project Initiation Document
PIP	Private IP
PLC	Programmable Logic Controller
PMBOK	Project Management Body Of Knowledge
PMI	Project Management Institute
PMO	Project Management Office
PMP	Project Management Professional
PPO	Planning Protection And Optimization
PRI	Primary Rate ISDN
PSC	Public Service Commission
PoP	Point of Presence
QoS	Quality of Services
RAN	Radio Access Network
RCV	Release Control Validation
RD	Route Distinguisher
RFC	Request for Change
RFO	Reason for Outage
RFP	Request for Proposal
RTU	Remote Terminal Units
SAST	Static Application Security Testing
SCADA	Supervisory Control and Data Acquisition
SD	Software Defined
SD-WAN	Software Defined Wide Area Network
SIEM	Security Incident and Event Management
SLA	Service Level Agreements
SLC	Synchronous Link Control
SLD	Schools and Libraries Division
SMF	Single Mode Fiber
SOA	Service Offerings and Agreements
SOC	Security Operations Center
SOW	Statement of Work
SP	Special Publication
SPI	Service Provider Invoice
SPIN	Service Provider Identification Number
SSL	Secure Sockets Layer
T&T	Transition Transformation
TCO	Total Cost of Ownership
TCR	Telecommunications Change Request
TDM	Time Division Multiplex

Acronym	Definition
TIN	Transaction Identification Number
TSP	Means Telecommunications Service Priority
ULH	Ultra Long Haul
UNI	User Network Interface
USAC	Universal Service Administrative Company
USB	Universal Serial Bus
USF	Universal Service Fund
VFC	Voice Frequency Channel
VLAN	Virtual Local Area Network
VOIP	Voice Over Internet Protocol
VPC	Virtual Private Cloud
VPN	Virtual Private Network
VRF	Virtual Routing and Forwarding
VRF	Virtual Routing Forwarding
VoIP	Voice over IP
WAN	Wide Area Network
WBS	Work Breakdown Structures
WISP	Wireless Internet Service Providers
WLAN	Wireless Local Area Network
WSR	Wholesale Standard Routing
WVDA	Means West Virginia Department of Administration
WVDE	West Virginia Department of Education
WVLC	West Virginia Library Commission
WVOT	West Virginia Office of Technology

APPENDIX F. SAMPLE BACK OFFICE TRANSITION PLAN

A sample project plan is provided on the following pages.

West Virginia Office of Technology Data Transport 2.0 Transformation

Back Office Transition Plan

Date: Post Contract Award

Project Manager: Assigned Post Contract Award

Version: 1.0

Project Scope

The Back Office Transition (BOT) project includes the transformation and migration of Verizon Private IP WAN service, including Monitor & Notify (M&N) service, at approximately 550 WV Agency locations from the legacy ordering and billing systems to the current ordering and billing systems (Current Platform). This will include the review of the current inventory of services that need to be changed prior to migration to the Current Platform.

This project will include the Private IP and M&N products and will be performed over six-nine months to allow for the IT development to support the State's specific billing requirements. This low-risk, less disruptive administrative transition process is a back-office billing process that systematically moves services from one contract vehicle to another and requires no downtime.

Assumptions

During the Project Schedule development, WVOT may be assigned certain tasks per the needs of the project. Examples of such WVOT assigned tasks may include, but are not limited to the following migration preparation steps:

- Coordinate change orders for Gold Car speeds that are not available on the Current Platform.
- Review existing 20M circuit inventory to determine which Verizon offering best fits the Agency's needs.
- Validate location addresses as needed.
- Plan for 72-hour moratorium on change orders during scheduled migration dates.

Project Resources

Preparation Review and Planning

The Preparation Review and Planning will involve both WVOT and Verizon staff responsible for inventory parity review and analysis, and the preparation of format changes for old and new circuits.

Verizon responsibilities include the following preparation requirements: providing the parity analysis, delivering the migration reports.

WVOT responsibilities include preparing for format changes for old and new circuits within the WV billing recovery systems, receiving required approvals within WVOT on the plan, providing technical and design support if needed, and finalizing for migration. Design support may be required for specific Gold Car speeds and 20M circuits that will need to be changed prior to migration. WVOT's inventory must be in parity to migrate data from legacy systems to Current Platform.

Verizon Migration Factory

The Migration Factory consists of the Verizon subject matter experts whose sole focus is billing migrations for all Verizon customers. This team will coordinate migration to the Current Platform and provide status updates and the final legacy/Current Platform/Service ID mapping to WVOT.

This team is responsible for rate validations to agency order rates during transition process; pre-migration test runs for comprehensive validation prior to production and rollback procedures for that service as a transition safeguard.

Billing Team

The Billing Team will consist of representatives from WVOT and a Verizon Service Consultant. Once migrations have been completed, the Verizon Service Consultant will work with the WVOT to verify contractual invoicing accuracy, including research and resolution as required. Verizon will establish VEC entitlements for new accounts and circuits.

Verizon Project Manager

The Verizon Project Manager has overall accountability for the Back Office Transition project. The Project Manager is responsible for performing overall project management; acting as ultimate point of escalation for the project; developing and providing senior management status reports; developing joint communication requirements between Verizon and WVOT; publishing open action items and status reports; hosting conference calls and ensuring overall project delivery is compliant with the contract.

Issue Management

Project issues will be documented and tracked by the Project Manager. Each issue will be assigned an Issue Owner and Target Resolution Date. The Issue Owner will update the active issue assigned to them with a current status at least once per week

Communication Plan

During this project, there will be multiple forms of communication between Verizon and WVOT updating the team on project progress. The type, format, and frequency of these communications will be agreed upon by WVOT and Verizon. As the Project Manager will be the central point of contact for communications to the project team, Verizon Project Manager should be copied on all communications.

The VZ Project Manager will disseminate information to the WVOT nominated point of contact, in accordance with this Communication Plan, for distribution within their organization. Project communications to Verizon, originating from WVOT should include Verizon Project Manager.

Meeting Minutes

The Verizon Project Manager is responsible for recording project meeting minutes. This information will be sent to the distribution list via e-mail.

verizon✓

Migration Tracking

Project-related migration activity will be tracked in a Tracking Spreadsheet. This document will contain all of the necessary information for Verizon to migrate the requested services and should be reviewed internally with the Migration Factory and shared with WVOT, on a mutually agreed upon basis to review target migration dates and any jeopardies which may impact these dates.

Project Schedule

The initial Project Schedule is developed jointly with project team members and updated with both internal and customer input to ensure that all tasks and timelines are mutually agreed upon and understood. The initial Project Schedule should be agreed upon and base lined with WVOT. The Project Schedule includes major milestones, tasks, and critical dates and updates to its progress will be shared by the Project Manager on a weekly basis.

Project Closeout

Formal project close-out will take place when the following conditions have been met:

- Completion of all services moved to the Current Platform.
- Billing has been confirmed.

The details of that meeting will be captured and shared in the project closure report so that any ongoing actions have defined owners etc.