



**frontier**  
BUSINESS EDGE™

## Request for Information – Replace MPLS07

Proposal: CRFI ISC 1500000002

# State of West Virginia

**July 30, 2015**

Chad Stepp

Enterprise Account Executive

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07/30/15 12:57:55

WV Purchasing Division

July 30, 2015

Department of Administration, Purchasing Division  
Attn: Guy Nisbet, Buyer Supervisor  
2019 Washington Street East  
Charleston, WV 25305-0130

Dear Mr. Nisbet:

On behalf of Frontier Communications, thank you for giving us the opportunity to provide a response to State of West Virginia CRFI #ISC150000002 replacement to MPLS07 contract. Frontier will continue to be your conscientious and dedicated partner that can deliver the solutions and changes the State of West Virginia requires going forward, ensuring you a secure and profitable future.

With Frontier, you can consolidate your communications with one provider, giving you advantages such as:

- One Company for any issues impacting your network services. This will prevent the State of West Virginia from having to deal with multiple vendors for upgrading or troubleshooting.
- Direct Access to dedicated account management, engineering, and billing resources. This means dealing with people who know the State of West Virginia, your network, and you.
- Leading Edge, Reliable Services backed by Frontier technicians and around-the-clock network monitoring.

The reliability and security of the State of West Virginia's network is Frontier's first priority. Your account team includes experienced engineers and technicians, and we are available to serve you before, during and after installation. Should you have any questions or would like additional information, please do not hesitate to contact your Enterprise Account Executive, Chad Stepp at (304) 410-5696, [chad.stepp@ftr.com](mailto:chad.stepp@ftr.com).

Sincerely,



Michael Flynn  
Mid-Atlantic Area President

Frontier Communications is honored to respond to CRFI# ISC1500000002 with useful information regarding our industry leading suite of data services including the latest generation of Ethernet to expand on the Switched Ethernet Service. We have been providing to the State of West Virginia as part of MPLS07. Frontier West Virginia looks forward to the expansion and continuation of our mutually beneficial business relationship.

Frontier Communications is proud of its West Virginia history. We continue to invest in the state's communications infrastructure as a top corporate citizen. Our most recent investments have moved broadband availability in the Mountain State up to 90% coverage within our footprint which is an unprecedented 96% of our state's geography. We employ nearly 2,000 hard working men and women in West Virginia and have invested more than \$500 million dollars. We are a part of your community and look forward to developing and sustaining our home state as a leader in telecommunications technology and service availability.

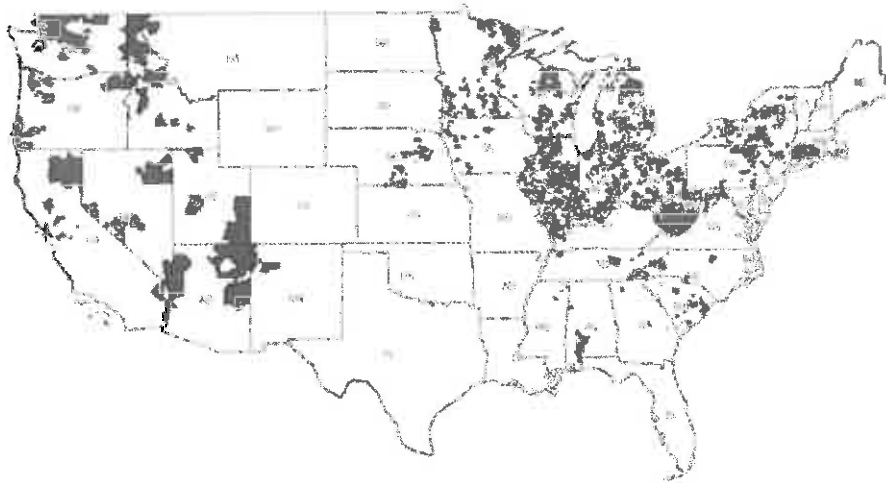
Our home base is located in Charleston, West Virginia. This serves, not only as Frontier's state headquarters, but also, as the Mid-Atlantic regional headquarters. This places many of our decision makers within eyesight of the state capitol.

As we continue to grow as a Fortune 500 company we gain more resources to create an information technology environment that enhances communications, learning, discovery, and collaboration while providing operational efficiencies and reducing costs. To this end, we consider our relationship with the State of West Virginia a strategic partnership and look forward to supporting your vision of the 21st century information environment. We do this with next-generation capabilities and commitment to promote enhanced learning, emergency management, and public safety.

Frontier is not simply satisfied to provide dial tone and data services. We consider ourselves to be a true partner to the state. We are more than willing to leverage our experience and corporate resources to keep West Virginia on technologies' leading edge.

### Frontier Communications Overview

Frontier Communications Corporation was founded in 1935 and is based in Delaware. Our Corporate Headquarters are in Norwalk, Connecticut. Frontier is a Fortune 500 company included in the S&P 500 index (NASDAQ:FTR).



Frontier is the nation's largest provider of communications services focused on rural America, offering Broadband, Phone, Satellite television, wireless Internet data access, PC security solutions and technical support, Internet-based television, carrier services, specialized bundles for small businesses and home offices, and advanced business communications for medium, large and commercial businesses in 28 states. Frontier's 17,800 plus employees are 100 percent U.S.-based.

Frontier is uniquely qualified to be the communications provider for your company, with decades of experience delivering a comprehensive range of services -- from traditional phone lines to high-performance voice, data, IP network, wireless and equipment solutions -- Frontier has the experience and capabilities to meet and exceed your expectations.

Frontier wants to be your first and only choice. We already make it possible for you to obtain reliable local, long distance, Internet and data services. Frontier is a state-of-the-art organization focused on excellence by offering you the added convenience of working with a ***dedicated Frontier Account Team*** who understands your business and focuses on the cost-effective handling of your communications needs – ***and*** your total satisfaction with Frontier products and services.

Our strong understanding of your organization and its requirements has been enhanced by many years of hands-on engineering support, account management and technical service. We will work with you, one-on-one, to understand your specific communications needs. Your success is our utmost priority. Together, we will determine the best solution for your business.

We make it our priority to be there when you need us, from first installation to the ongoing support of your specialized telecommunications solution. Our team of experienced engineers and highly trained technicians are available to assist you in taking full advantage of Frontier products and services. With the experience of the Frontier team behind you, you will be able to focus on other key areas vital to your core business.

**Why Frontier Should Be Your Choice**

Frontier Communications is committed to helping you succeed. We believe that our proposal demonstrates this commitment by recommending solutions utilizing technologies that are available today and that have the ability to harness future technologies and network enhancements.

We have the network, the technology, the expertise, and the tenured people to help you operate at peak communications efficiency. We deliver services that empower people around the world to communicate easily and exchange information quickly. With a Frontier Communications solution, you will benefit from outstanding service quality, product flexibility, and competitive pricing. Your Frontier Communications Account Team looks forward to consulting with you about how the proposed services can help you achieve your business objectives.

## Frontier Facts / West Virginia

- Frontier, which operates in all 55 West Virginia counties, is divided into six geographic markets. A general manager leads each market and is responsible for the overall customer experience, as well as sales, marketing, government relations and community relations.
- Frontier maintains its Mid-Atlantic Region headquarters in Charleston and has nearly **2,000 employees** in West Virginia.
- Frontier has made total capital expenditures in West Virginia of more than **\$500 million** since its acquisition of the Verizon markets in July 2010.
- Frontier has made broadband available to nearly 190,000 additional households since July 2010, pushing broadband availability in Frontier's acquired service areas from 62 percent to 90 percent of the households in the acquired areas.
- Frontier Communications built a middle-mile network across West Virginia that supports increased bandwidth and service reliability in the state. The **2,600-mile** network supports leading-edge broadband services and encourages business investment.
- Frontier has dramatically expanded the number of Ethernet switches in West Virginia. Today, Frontier has 237 copper and 222 fiber Ethernet switches for a total of **459 switches** – **up from 60 in 2010**. Ethernet switches allow businesses to establish high-speed communications networks that support investment, expansion and job creation.
- Frontier competes for business in these areas: voice services, data services, voice and data equipment on customers' premises and television services through DISH.
- Through the use of bonded Asymmetric Digital Subscriber Line (ADSL) and Very-high-data-rate Digital Subscriber Line (VDSL) technology, Frontier is upgrading speeds in many areas of West Virginia to support download speeds of up to 24 megabits per second (Mbps) for residential customers and 40 Mbps for business customers.
- In 2013 Frontier completed construction of its portion of a federally funded and state-managed project that resulted in 645 West Virginia schools, libraries, health facilities and other community anchor institutions having fiber-optic connections. West Virginia is one of the few states in the nation where all public schools have fiber-optic connectivity.
- Because of Frontier's improvements in the core telecommunications network in West Virginia, network troubles and customer complaints have declined substantially since 2010.

**Frontier Response  
To  
State of West Virginia  
Request For Proposal  
CRFI ISC1500000002**





Purchasing Division  
2019 Washington Street East  
Post Office Box 50138  
Charleston, WV 25305-0130

State of West Virginia  
Request for Information  
21 — Info Technology

Proc Folder: 120401  
Doc Description: Request for Information (CRFI) to replace MPLS contract  
Proc Type: Request for Information

Date Issued	Solicitation Closes	Solicitation No	Version
2015-06-25	2015-07-30 13:30:00	CRFI 0210 ISC1500000002	1

**BID RECEIVING LOCATION**


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

**VENDOR**

Vendor Name, Address and Telephone Number:  
Frontier Communications of America, Inc. on its own behalf, and where applicable, on behalf of its local exchange carrier and service affiliates; Frontier West Virginia Inc., and Citizens Telecommunication Company of West Virginia d/b/a Frontier Communications Company of West Virginia.  
1500 MacCorkle Ave. SE  
Charleston, WV 25396

**FOR INFORMATION CONTACT THE BUYER**

Guy Nisbet  
(304) 558-2596  
guy.l.nisbet@wv.gov

Signature X Buddy Reynolds  FCA - 06-1381497  
FEIN # CTCWV - 55-0276420 FWV - 55-0142020 DATE

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



Three identified areas of concern in specifying requirements for all three of the procurement components are:

- 1) Network Architecture and Design: Because different vendors approach telecommunication network design differently, WVOT needs to assess the vendors' network architecture in the State of WV for applicability in deploying the requested services.
- 2) Service/Support Infrastructure: Many vendors may be able to provide telecommunications services in WV; equally important to the State is their ability to support these services with qualified technical personnel on a 24x7x365 basis- either by telephone or onsite, whichever is necessary to resolve network issues affecting the services provided based upon the severity of the problem. On behalf of the State Agencies, the WVOT must assess the support infrastructure in place- the degree in which the vendor has identified criteria to measure its own customer service and maintenance performance (Average Response Times, Mean Time to Repair, etc.), network availability (Uptime statistics, Latency, Congestion, etc.), and communication plans for Severity Level 1, 2, 3 type outages and Network Change Management procedures, as well as documented results to assess the vendor's performance against their own metrics.
- 3) Security Practices: Due to the ever-growing need to focus on network security and associated vulnerabilities, the WVOT needs to consider the security policies and practices of vendors being considered for contracted services. Qualifiers would include documented corporate policies, access requirements, documented measures in place for security breaches, employee certifications and clearance plans, etc.
- 4) For the Ethernet Transport on a County-wide level, additional concerns include Limited Coverage, Service Offerings, Redundancy, and Support Staff. Competitive Carriers may have limited coverage areas, limited service offerings, and may have less redundancy and less support staff.
- 5) Lastly, WVOT is interested in any other issues the State should consider in a transition from a single vendor award to multiple vendor awards for Ethernet Transport at a County-wide level.

**RESPONSE REQUIREMENTS:**

1. There will not be a contract as a result of this RFI and the State is not liable for any cost incurred by vendors in replying to this RFI. If an RFO/RFP is issued, the information provided by the vendors in response to this RFI will assist the State of West Virginia in developing the procurement document. This RFI does not obligate the State to reply to the RFI responses, to issue an RFQ/RFP, or to include any RFI provisions or responses provided by the vendors in any RFQ/RFP.
  
2. Responses should address the following as they relate to the proposed development of the WVOT replacement vehicle for the current MPLS07 contract.
  - 2.1 Executive Summary. Provide an executive summary that includes an overview of your solution, its advantages, and what makes your solution unique.
  
  - 2.2 Provide informational responses to each of the five issues identified above
    - 2.2.1 Network Architecture and Design
      - 2.2.1.1 Statewide Transport Services
  
      - 2.2.1.2 Ethernet Transport for Counties
  
      - 2.2.1.3 Statewide IP Trunking and Related Services

Frontier will work with the State of West Virginia to develop the best possible network solution to support the State's current and future needs.

We can support the States existing ELAN network and can provide EVPL, Layer 3/MPLS/ IPVPN, along with Frame Relay, ATM or DS1/DS3 networks if requested.

**The Ethernet network configurations can be accomplished as follows:**

E-LAN (Ethernet LAN) Configuration:

Frontier E-LAN is a "fully meshed" topology from the customer's perspective. All locations within a specific an agency can be placed in a specific "VLAN" at the requested bandwidths. This will place all locations in a single Layer-2 VLAN topology. The State of West Virginia will be able to route traffic between the sites as they deem appropriate. All locations within a VLAN can be segmented by IEEE 802.1 customer VLAN tags.

**Frontier E-LAN Service**

Provide a reliable cost effective Ethernet-base replacement for TDM Private Line solutions.

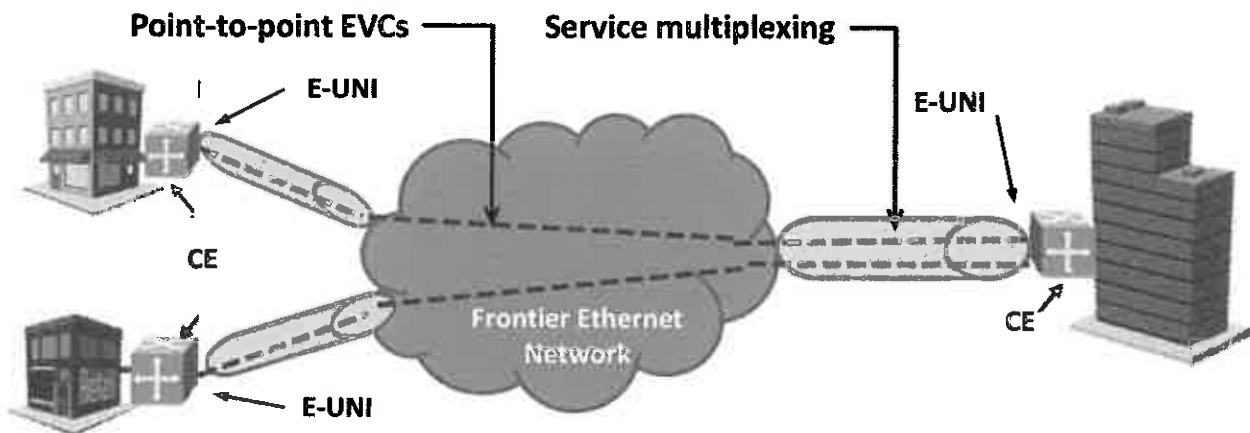
- Symmetrical data rates specified for individual sites available up to 10 Gbps
- Available over copper or fiber with service guarantees and a high degree of transparency
- Solutions span metro areas as well as intra and interstate WAN deployments
- Internet connectivity for any location can easily be added to the LAN / WAN

**EVPL (Ethernet Virtual Private Line) Configuration:**

Frontier EVPL is a point-to-point or point-to-multipoint Ethernet data transport service delivered over Frontier’s private layer 2 network infrastructures. Each LAN can be setup as a point to point “VLAN” at the requested bandwidths. Through service multiplexing, a single connection to the Frontier network supports virtual connections to multiple sites.

**Frontier E-LINE/EVPL Service**

- Point-to-point connectivity at virtually any symmetrical data rate to 10 Gbps & above
- Provides scalability and granularity that can be quickly tailored to meet future growth
- Available over copper and/or fiber with operational service guarantees
- Secure connection that meets security standards
- Configure in a hub-and-spoke topology connecting a data center to multiple locations to form a highly secure LAN



**E-UNI – External User-to-Network Interface**  
**EVC – Ethernet Virtual Connection**  
**CE – Customer Edge**

Frontier Metro Ethernet provides:

- Private, dedicated connection that addresses security concerns
- 24x7 Network Support from Frontier Network Operations Center

- Performance
  - Inherent performance benefits of Layer 2 transport combined with simplified architecture
  - Highest bandwidth speeds available with low latency
- Reliability
  - Redundant equipment architectures and fast rerouting algorithms
- Simplicity
  - Simplifying protocols creates a network more suitable to time sensitive protocols
  - Allows LAN style management for the WAN
- Flexibility
  - Customer can have their bandwidth service increased or changed faster
  - Changes do not require new equipment or coordinate a visit from a service technician
- Convergence
  - With CoS, Frontier EVPL supports application convergence, eliminating the resources and capital required to maintain multiple network platforms.
  - Ability to prioritize traffic based on your business needs
- EVPL Solution includes:
  - QoS/Cos (Silver - Best Effort, Gold - Priority Data, Platinum – Real-Time Data)
  - SLAs

In summary, the State can benefit from the higher bandwidth and high performance attributes of EVPL to support their current and evolving WAN connectivity requirements.

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**The Dedicated Internet Access configurations can be accomplished as follows:**

Dedicated Metro-Ethernet Internet Access:  
Ethernet Internet Access (EIA)

Frontier EIA provides high-speed access up to 1 Gbps. Our solution includes:

- Integrated Internet access solutions with a single point of contact for service needs
- Limited susceptibility to peak time usage fluctuations
- Enhanced service reliability and performance
- Primary & Secondary Domain Name Service
- Reverse DNS Service



**Dedicated Internet Access (DIA) supports services such as:**

- Data Backup & Recovery
- Hosted VoIP
- Wi-Fi Network Services
- Audio, Web, & Video Conferencing

**Standard Features:**

- Bandwidths from DS1 to 100 GigE
- Primary & Secondary domain name service
- Reverse DNS Service
- Up to 8 IP addresses at no charge
- Ten 50 MB email accounts
- Managed Router service
- 24/7 Internet technical support

**Benefits:**

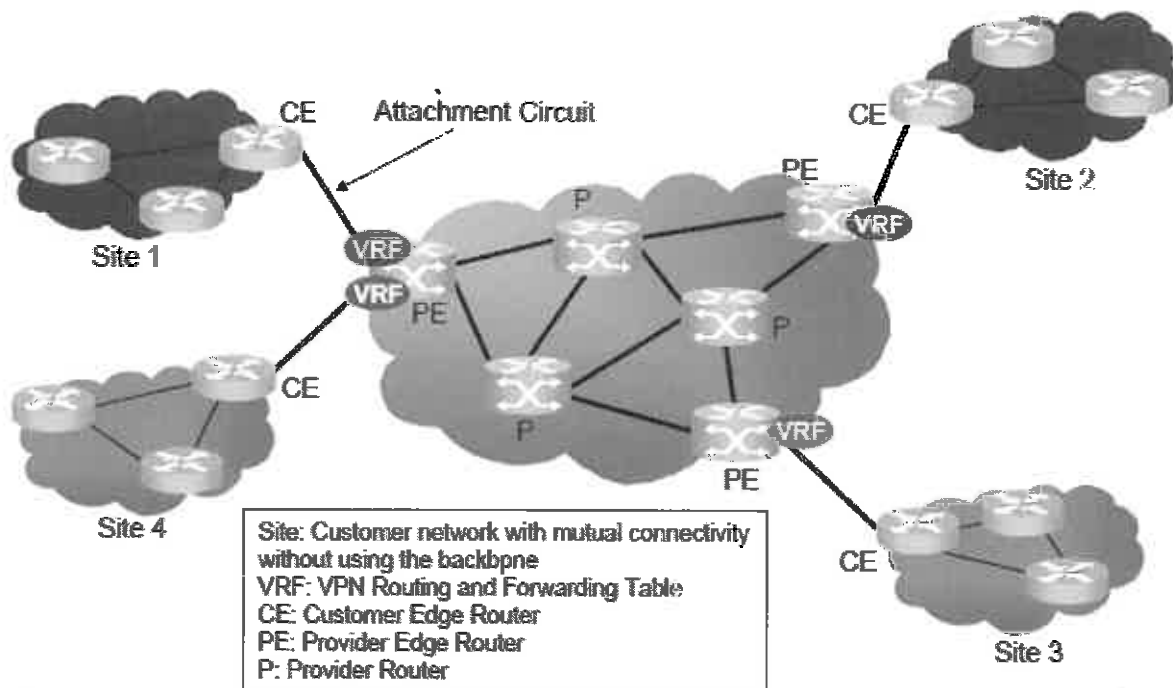
- Dedicated bandwidth providing you the assurance to run the applications needed for your business
- Scalable to accommodate customer growth and additional locations. Frontier can quickly increase service speed to meet demand
- Symmetrical upload and download speeds
- 24/7/365 monitoring providing a high level of availability and performance

**IP VPN**

Frontier managed IP VPN service is a site-to-site, network-based, Layer 3 solution providing any-to-any IP transport to enable interconnections across MPLS core network. The service supports full mesh, partial mesh or hub and spoke configurations.

**Network Design**

The diagram below is an example of two separate 2-site MPLS/IP VPN implementations. The first network (in red) shows customer site 1 connected to customer site 2. Each site includes a CE (customer edge) router - Although the CE can be any routing device, customer's purchasing Frontier's MPLS/IP VPN service must use a Frontier managed router as the CE device. The CE router connects to the MPLS network at the PE (provider edge) router using an attachment circuit which is normally either a dedicated TDM or Ethernet circuit. The MPLS network (the blue cloud in the diagram below), exists between the PE routers. The MPLS network is a fully meshed network in which all PE routers connect directly to each and every other PE router that is part of the MPLS network. In this diagram, customer site 1 connects to Customer site 2 using an attachment circuit at both ends, and a connection through the MPLS cloud in the middle.



**Service Elements**

MPLS/IP VPN service elements include the access circuit, the VPN port, the managed router, and Internet access. The access circuit, VPN port and managed router are all mandatory service elements

that must be purchased for each site that is part of the customer's network. Internet access is an optional service element that can be purchased for a single site, or for all sites of the customer network.

**Access Circuit**

Access to the MPLS network is available primarily through the use of an Ethernet or TDM access circuits. Ethernet access allows the customer to achieve bandwidth at each site from 1.5 Mbps up to Gbps+ levels, depending on the market. TDM access is available from 1.5 Mbps to 6 Mbps.

**VPN Port**

The VPN port represents the physical or virtual port of the MPLS router (usually referred to as a Provider Edger, or PE router). in which a customer site is be connected using either a TDM or Ethernet point-to-point access circuit.

**Managed Router**

Frontier's Managed Router service is a mandatory element of the IP VPN service unless otherwise approved by Frontier Engineering and Product Management. It enables Frontier to provide highly reliable, end-to-end connectivity and allows the customer to outsource the complexities of their network router selection, configuration, installation and management. In footprint, the router solution is provided by Frontier. Out-of-territory, the solution is provided by Level 3.

In the rare circumstances where the customer is insistent on using their own router it should be made clear to them that Frontier has no visibility to any problems that may occur between the Frontier network edge and the customer's site. Therefore any issues that arise can't be detected by Frontier and the customer assumes all the risk. The customer will be responsible for all management, routing and quality of service. In addition, SLA guarantees relative to MTTR are only applicable if customer agrees to provide the Frontier NOC access to their router during troubleshooting, and the actual MTTR metric must be approved by Product Management and Engineering.

**Internet Port (Optional)**

Frontier delivers Internet services over the same circuit as is used for access to the MPLS/VPN network. The physical circuit is divided logically into two virtual circuits, one carrying the VPN/WAN traffic while the other carries Internet traffic. This is accomplished by encapsulating the circuit as Frame Relay for Serial or SONET connections, or VLANs for Ethernet.

IP VPN customers can also elect to purchase Internet access from Frontier as a separate physical connection. In this case, pricing is consistent with that for DIA (Direct Internet Access).

### Network Topology Options

Frontier's MPLS/IP VPN service is available in the following configurations:

- Fully Meshed Network – Each customer site is allowed to send and receive data to any other site that is part of the VPN
- Hub and Spoke – Each remote site that is part of the VPN can only communicate with the host site. Remote sites cannot communicate directly with each other.

### Quality of Service (QoS)/Class of Service (CoS) classes

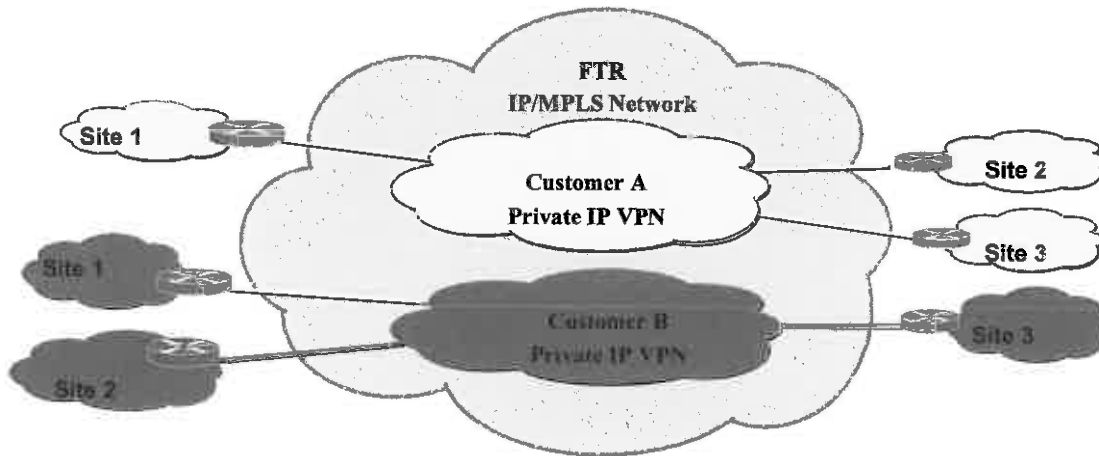
With Frontier's IP VPN service, QoS is delivered within the MPLS Cloud from PE-to-PE router. An exception to this rule is a customer implementation where a T-1 (or bonded T-1s) are used to attach the customer site to the MPLS cloud. When service is delivered using a dedicated T-1/bonded T-1, QoS capabilities can be extended all the way to the customer premises.

QoS is the ability to assign priority to various applications, users and data flows, guaranteeing a certain level of performance to a data flow. The prioritization is accomplished by assigning traffic to one of several Class-of-Service queues. The queues are prioritized so that the traffic that is most sensitive to delay is mapped to the queue that receives the highest priority, while the less time-sensitive traffic is mapped to lower priority queues. Frontier offers six CoS queues into which the customer maps their traffic based on their requirements for traffic prioritization.



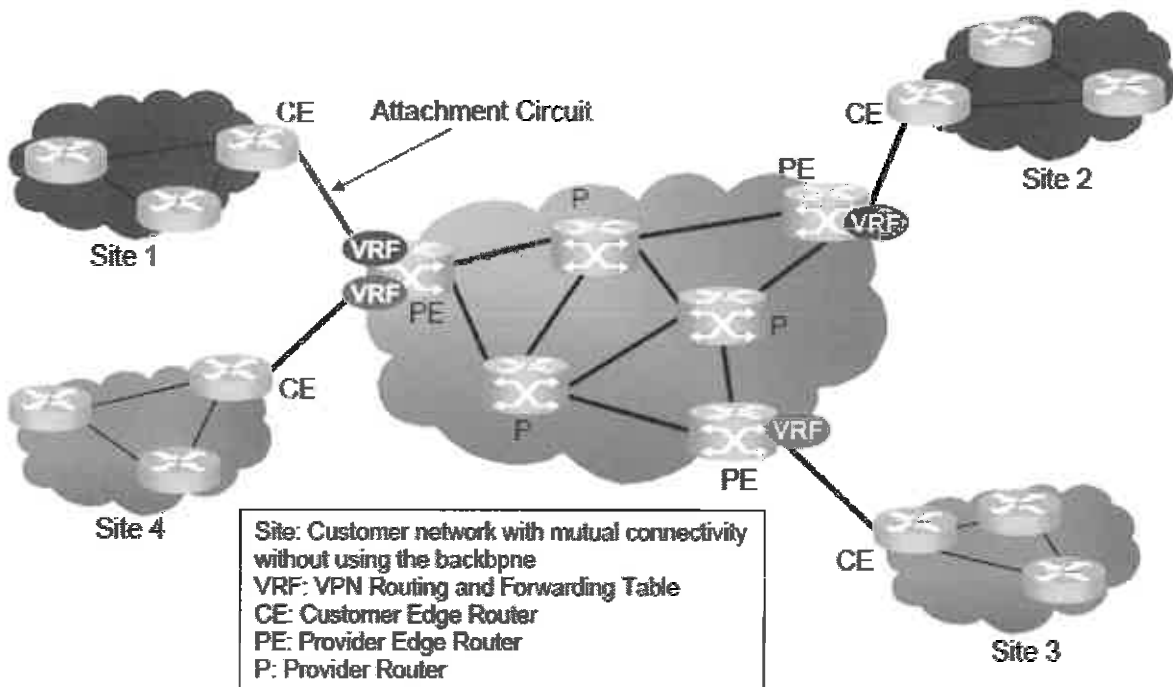
CoS Level	Description	Sensitivity	Traffic Types
Premium Plus	Traffic that has significant sensitivity to delay, loss, and jitter. This traffic must be protected at the expense of all lower priority traffic.	Traffic extremely sensitive to delay, loss, and jitter.	Real-time communication traffic like voice and video conferencing.
Premium	Traffic that has significant sensitivity to delay, loss, and jitter. This traffic must be protected at the expense of all lower priority traffic but will be dropped when network is congested in favor of Plus designation.	Traffic extremely sensitive to delay, loss, and jitter.	
Enhanced Plus	Traffic has moderate bounding delay and loss and is distinguishable between traffic that is best effort.	Traffic sensitive to delay and jitter.	SAP
Enhanced	Traffic has moderate bounding delay and loss and is distinguishable between traffic that is best effort but will be dropped when network is congested in favor of Plus designation.	Traffic sensitive to delay and jitter.	FTP
Basic Plus	Normal Internet traffic or best effort delivery traffic.	Data and Internet traffic.	DIA
Basic	Normal Internet traffic or best effort delivery traffic but traffic will be dropped when network is congested in favor of Plus designation..	Data traffic	Email

Layer 3 VPNs – Logical View

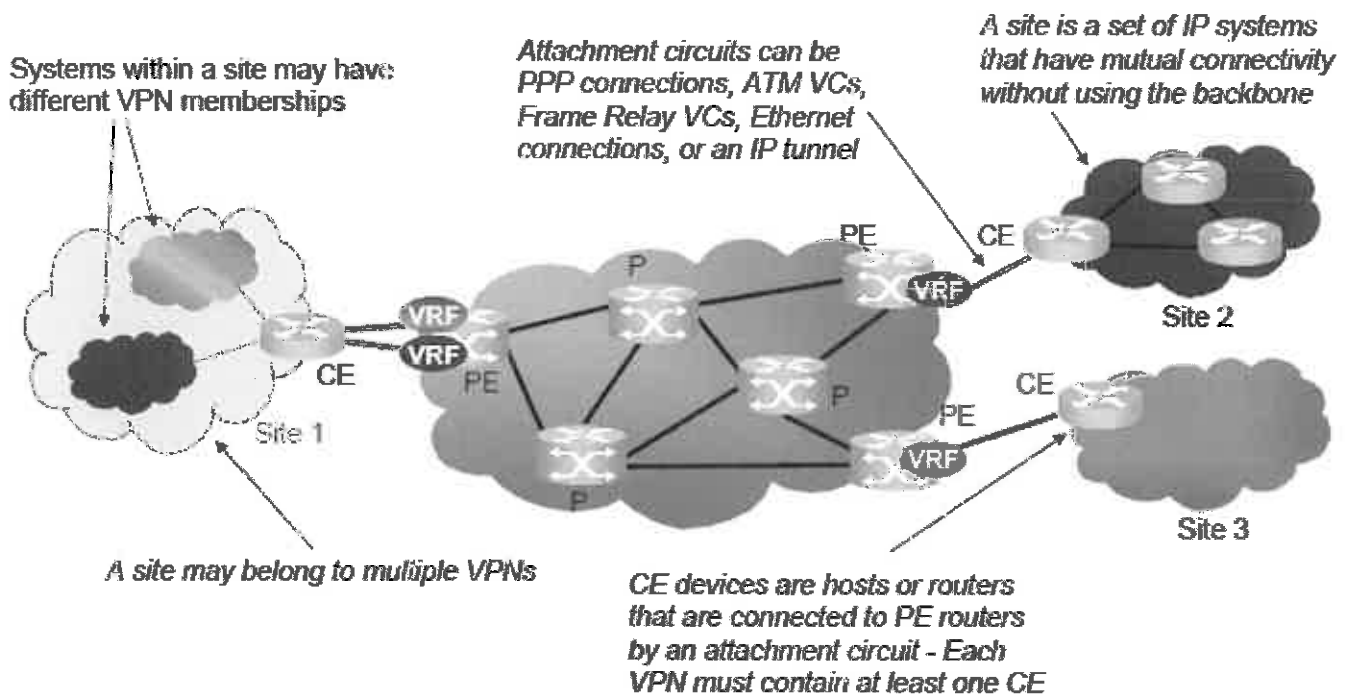


- Offers Private IP VPN service over a shared Infrastructure
- Based on RFC 2547 – Combines MPLS with other technologies
  - Multi-Protocol BGP (MP-BGP)
  - Virtual Router
- Provides any-to-any connectivity
- Customers can use private addressing

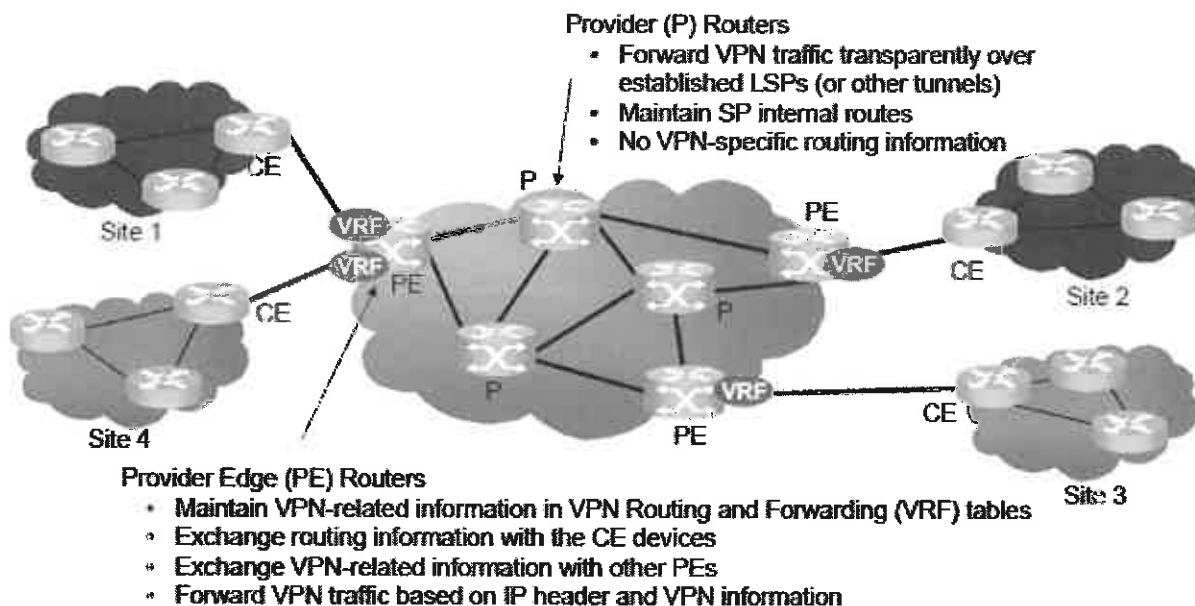
MPLS VPN Network Overview



MPLS – Sites and Customer Edge Devices



MPLS – Provider Edge and Core Routers



Basic MPLS Network Terms

- **MPLS:** Multi Protocol Label Switching – A switching technology that utilizes labels to route data across a network. MPLS offers the advantages of VPNs, Layer 2 transport, traffic engineering, as well as the ability to create end-to-end tunnels, or LSPs, over different types of Layer 1 and Layer 2 transport mediums.
- **Provider Router (PR):** Responsible for swapping labels in the network core
- **Provider Edge (PE) Router:** Responsible for Pushing and Popping MPLS labels. The PE router interfaces with the customer equipment, which does not have to be MPLS-enabled.
- **Label Switched Path (LSP):** An end-to-end path through an MPLS network. LSPs can be routed automatically or statically, as well as have backup LSPs in case of primary LSP failure (known as FRR, or Fast ReRoute).
- **Customer Edge Router (CE):** A router located on the customer premises that provides an Ethernet interface between the customer's LAN and the provider's core network. Normally this is a Frontier provided router as part of the Managed Router service. However, this can be any IP-based router as it does not actually communicate using MPLS or any MPLS signaling protocol, but instead is pure IP.

**Advantages of Frontier Ethernet:**

At Frontier we take pride in delivering quality service, a reasonable price, and the expertise you need in a communications partner. Here are just a few characteristics our Ethernet services deliver.

- Easy integration with existing networks and infrastructures
- High availability and performance
- Engineered lines configured for performance to limit noise and environmental factors.
- Symmetrical upload and download speeds enable uncompromised traffic flow
- Well planned and coordinated migration from other carriers with minimal downtime
- Commercial grade network with a coast-to-coast data backbone

**Metro Ethernet MEF 2.0 Certification**

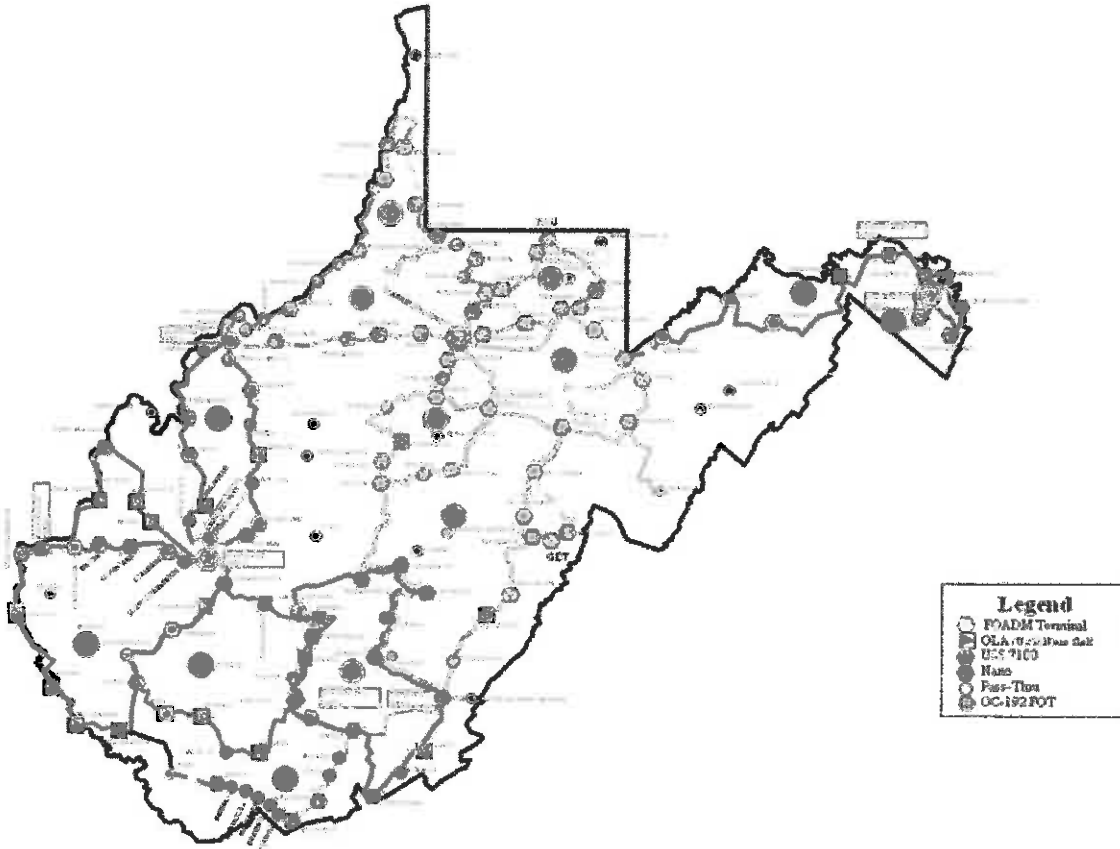
Frontier has successfully completed the Metro Ethernet Forum (MEF) 2.0 Certification for its Carrier Grade Ethernet portfolio "Frontier Ethernet Solutions", placing it in a select group of Certified Carrier Ethernet companies.

The MEF-CECP certification is the industry's first vendor neutral certification program and designates that Frontier has key competency and skills to design, market, deploy and support Carrier Ethernet equipment, networks and services representing the next-generation of telecommunications technology. Frontier's CE 2.0 Services certification process included rigorous testing for each type of standardized Ethernet service (E-Line, E-LAN, E-Tree and E-Access) and encompassed more than 600 test cases.



**Frontier Fiber 7.0 ROADM Network**

Frontier has invested over \$310 million in a statewide next-generation network that is the first of its kind in the United States. It has more than 100 nodes around West Virginia and has 13 redundant fiber optic rings around West Virginia. This network is a Reconfigurable Optical Add-Drop Multiplexor (ROADM) Network. All of Frontier's Ethernet Services provided to the State will connect to this Fiber 7.0 Core Network.



**Point-to-point Private Line Services can be accomplished as follows:**

Dedicated Point to Point Private Line Configuration:

Benefits of Private Line Service

When you choose a Frontier Private Line for your mission-critical communications, you'll enjoy:

- Security – A private Line is not part of a shared network. Your voice, data or video travels on a dedicated line from your location to another destination.
- Choice – Depending upon your specific bandwidth requirements, you can choose the Private Line connection that suits your needs.
- Video conferencing/Distance Learning – With a DS1/DS3 Private Line, you can conduct meetings and training sessions without having to incur costs for business travel.
- Disaster Recovery – DS1/DS3 Private Lines provide optional “survivability” features, including an alternate central office in the event of a power outage or other unforeseen event.
- Versatility – Your voice traffic may be heavier or lighter than your data traffic. DS1/DS3 Private Lines allow you to determine how much sustained bandwidth to allocate for each.
- PIP Cloud – The State’s current Private IP cloud service would be carried over Frontier’s core network.

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**VoIP SIP Protocol can be accomplished as follows:**

VoIP SIP protocol is a service that connects a company's IP-PBX or legacy PBX telephone system to the public switched telephone network via T1 or Ethernet access.

**Features:**

- Incoming and outgoing calls to the PSTN
- Local calling
- Caller ID name and number
- Directory Assistance
- Directory Listings
- E911

**Benefits:**

- Reduces the expense of maintaining and monitoring separate Voice & Data Networks
- Eliminates costly BRIs and PRIs
- Increases network capacity by conducting simultaneous calls over the same line
- Provides a choice of low cost long distance calling plans with optional features
- Enables unlimited local calling with site-to-site calling at no cost
- Allows for increased flexibility provisioning lines (“sessions”): Your business won’t need to add capacity in large increments (i.e., full PRIs)
- 24x7 network monitoring and help desk support through the Frontier Network Operations Center.

**2.2.2 Service/Support Infrastructure**

- 2.2.2.1 Statewide Transport Services
- 2.2.2.2 Ethernet Transport for Counties
- 2.2.2.3 Statewide IP Trunking and Related Services

**Frontier Response: Service Level Agreement for organizations of the size and complexity of the state are generally tailored to meet their specific needs and requirements. Frontier will be glad to discuss achievable, measurable criteria with the state.**

**2.2.3 Security Practices**

- 2.2.3.1 Statewide Transport Services
- 2.2.3.2 Ethernet Transport for Counties
- 2.2.3.3 Statewide IP Trunking and Related Services

**Frontier Response: Due to the very nature of this topic we cannot provide this information under this form. We'd be glad to discuss privately under a non-disclosure agreement.**

**Government agencies such as State of West Virginia will require customized data security systems; Frontier has assisted state and local agencies on a case-by-case basis partnering with these agencies to provide the best possible solution.**

**2.2.4 Ethernet Transport at a County Level**

- 2.2.4.1 Limited Coverage, Service Offerings, Redundancy, and Support Staff

**2.3 Other factors to consider in transitioning to a multi-vendor award**

**Frontier Response: Frontier's goal is to continue to be the state's primary carrier for voice and data services. Frontier will work with other carriers for the best interest of the state.**



ADDENDUM ACKNOWLEDGEMENT FORM  
SOLICITATION NO.:

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)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input type="checkbox"/> Addendum No. 2            | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3            | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> 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 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.

Frontier Communications  
Company

  
Authorized Signature

30 July 2015  
Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.  
Revised 6/8/2012