

INVITATION FOR BID  
IFB C4DNCS19  
Data Networks and Communications Services  
**CATEGORY 24 – FLAT RATE INTERNET  
SERVICES**

Charter Communications Operating, LLC

Statement of Work

TECHNICAL REQUIREMENTS

March 5, 2020

BAFO

Issued by:

STATE OF CALIFORNIA

California Department of Technology Statewide  
Procurement

PO Box 1810

Rancho Cordova, CA 95741

Disclaimer: The original PDF version and any subsequent addendums of the IFB released by the Procurement Official of this Bid remain the official version. In the event of any inconsistency between the Bidder's versions, articles, attachments, specifications or provisions which constitute the Contract, the official State version of the IFB in its entirety shall take precedence.

## AMENDMENT LOG

<b>Amendment #</b>	<b>Date</b>	<b>Amendment Description</b>
1	12/31/20	Product Names changed to Charter Communications Added Product IDs to Table 24.2.7
2	4/10/23	Table 24.2.5.1.c – Unsolicited Internet Flat Rate Service Offering added additional bandwidth options
10	2/7/25	Table 24.2.7 – Additional Unsolicited Internet Services added Managed Firewall/Router/SD-WAN, Managed Switch, Managed Virtual Machine for Cloud Service Provider, and Managed WiFi. Section 24.6.8 – Technical Service Level Agreements added Managed Firewall/Router/SD-WAN, E-Managed Firewall/Router/SD-WAN, Managed Switch, Managed Virtual Machine for Cloud Service Provider, and Managed WiFi.
13	7/28/25	Table 24.2.7 – Additional Unsolicited Internet Services added Managed Network Edge vMX-XL

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## TECHNICAL REQUIREMENTS

### CATEGORY 24 – Flat Rate Internet Services

#### 24.1 OVERVIEW

This Category 24 IFB C4DNCS19 (IFB) provides the State's solicitation for best value solutions for Flat Rate Internet Services. This IFB also describes the technical requirements necessary to support the CALNET program requirements.

This IFB will be awarded to Bidders that meet the award criteria as described in IFB C4DNCS19 Part 1, Bid Evaluation. The CALNET Data Networks and Communications (DNCS) Contract(s) that result from the award of this IFB will be managed on a day-to-day basis by the CALNET Contractor Management Organization (CALNET CMO).

##### 24.1.1 Bidder Response Requirements

Throughout this IFB, Bidders are required to acknowledge acceptance of the requirements described herein by responding to one of the following:

1. Example A (for responses that require confirmation that the Bidder understands and accepts the requirement):

**“Bidder understands this requirement and shall meet or exceed it?”**

Or,

2. Example B (for responses that require the Bidder to provide a description or written response to the requirement):

**“Bidder understands the requirements and shall meet or exceed them? ”**

**Description:”**

Or,

3. Example C (for responses contained in Technical Feature and/or Service Tables):

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No.
1					Yes

### 24.1.2 Designation of Requirements

All Technical Requirements specified in this IFB are Mandatory and must be responded to as identified in IFB Part 1, SOW Mandatory Technical Requirements by the Bidder. Additionally, some Mandatory requirements are “Mandatory-Scorable” and are designated as “(M-S)”.

Costs associated with services shall be included in the prices provided by the Bidder for the individual items included in the Category Cost Worksheets.

Items not listed in the Category Cost Worksheets will not be billable by the Contractor. If additional unsolicited items include the features described in this IFB and are not included as billable in the Category Cost Worksheets, the cost associated with the features shall not be included in the unsolicited price.

Services and features included in the Category Cost Worksheets are those that the Bidder must provide. All Bidders must provide individual prices as indicated in the Category Cost Worksheets in the Bidder's Final Proposal. Items submitted with no price will be considered as offered at no cost.

### 24.1.3 Pacific Time Zone

Unless specified otherwise, all times stated herein are times in the Pacific Time Zone.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

## 24.2 FLAT RATE INTERNET SERVICE

The Contractor shall provide dedicated Internet access service that provides high-speed Internet access through communications facilities managed by the Contractor.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

### 24.2.1 Internet Services General Requirements

The Contractor's network shall connect a Customer's Local Area Network (LAN) or application to the Internet by providing highly reliable transport and Internet Protocol (IP) connectivity. The service shall use the Transmission Control Protocol/Internet Protocol (TCP/IP) to interconnect customer premise equipment (CPE) to the public Internet Service Provider (ISP) networks.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

## 24.2.2 Network Capabilities

The Contractor's network shall have:

1. Established public peering arrangements from the Contractor's network to the Internet.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

2. Private peering arrangements established from the Contractor's network with redundant links to connect to its private peering partners.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

3. Support for Customer assigned and Internet Corporation for Assigned Names and Numbers (ICANN) registered IP addresses and domain names.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

4. Primary and Secondary Domain Name Service (DNS) to provide an authoritative name server for the Customer.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

5. The Contractor shall provide support for the border gateway protocol (BGP) for Customers with registered Autonomous System (AS) numbers, if applicable.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

### 24.2.2.1 Contractor Wi-Fi Hotspot Service Offerings

The Contractor shall not configure services utilizing state-funded (or leased) infrastructure or resources to provide Contractor branded Wi-Fi hotspots for a fee/subscription to the general public. Use of any publicly funded power, facilities, or infrastructure in State leased or owned buildings to provide Contractor fee based Wi-Fi services is considered a gift of public funds.

The Contractor shall not provide Contractor branded Wi-Fi hotspot services for non-CALNET users by piggybacking onto CALNET Customer primary installations or by any other means that utilize publicly funded assets. This restriction includes but is not limited to installation of secondary equipment, circuits, or data channels both land based and wireless.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

### 24.2.3 Standards

Dedicated Internet Services shall comply with the following standards, as applicable, and when commercially available by the Contractor:

1. Internet Engineering Task Force (IETF) Requests for Comments (RFCs);

**Bidder understands this Requirement and shall meet or exceed it? Yes**

2. ANSI T1;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

3. ATM Forum

**Bidder understands the Requirement and shall meet or exceed it? Yes**

4. ITU TSS Recommendations;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

5. Frame Relay Forum implementation agreements;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

6. North American ISDN Users Forum (NIUF);

**Bidder understands the Requirement and shall meet or exceed it? Yes**

7. IEEE 802.3 Ethernet Standards;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

8. Metro Ethernet Forum (MEF);

**Bidder understands the Requirement and shall meet or exceed it? Yes**

9. IETF RFCs for IPv6 when offered commercially by the Contractor;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

10. All new versions, amendments, and modifications to the above documents and standards as they become commercially available.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

### 24.2.4 Network Operations and Management

#### 24.2.4.1 General Description

The Contractor's data network(s) shall meet established industry standards.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.2.4.2 Network Operations Center

The Contractor shall maintain a Network Operations Center (NOC) that is staffed 24x7 that coordinates and manages all data traffic.

The NOC shall perform the following services:

1. Network surveillance;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

2. Fault management (trouble identification, isolation and notification); and,

**Bidder understands the Requirement and shall meet or exceed it? Yes**

3. Monitor network performance in near real-time to identify capacity blockages and implement controls to optimize network health and performance immediately.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.2.4.3 Security

24.2.4.3.1 Physical Access

Contractor shall physically secure all data and networking facilities through which data traverses Contractor's WAN complying with the physical security controls of NIST SP 800-53, ISO/IEC 27001, or equivalent standards.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.2.4.3.2 Network Security

The Contractor's network security solution shall incorporate the following features:

1. The Contractor's network equipment locations and data centers shall use carrier grade platforms; and,
2. All equipment shall be in a hardened facility and all unnecessary services shall be disabled or removed.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.2.4.3.3 Security Incident Notifications

Upon discovery, the Contractor shall provide the Customer and designated State representatives with Security Incident notifications that impact CALNET Customers, via telephonic means and email. For purposes of this section, Security Incident is defined in the State Administrative Manual (SAM), Section 5300.4.

### **Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.2.4.3.4 Data Breach Reporting

If Contractor determines that a breach of data has occurred that may involve CALNET Customer data, the nature and scope of the breach (as it affects Customer data) shall be reported to both the Customer and the CALNET CMO within 24 hours of that determination.

### **Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.2.5 Dedicated Internet Flat Rate Services Technical Requirements

The service shall connect a Customer's LAN or application to the Internet by providing highly reliable transport and IP connectivity to the internet.

The speeds in the Feature Names in Table 24.2.5.1b indicate download speeds. Bidder shall indicate the upload speeds in the Bidder's Product Description in Tables 24.2.5.1.b, 24.2.5.2.a, 24.2.5.3.b.

### **Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.2.5.1 Internet Flat Rate Service (InFRa)

The Contractor shall provide Internet Flat Rate Service (InFRa) at the speeds identified in Table 24.2.5.1.b. The services shall consist of a dedicated Internet port and transport, on the Contractor's private network, from the Customer site to the nearest Contractor Point-of-Presence (POP). The service shall include all equipment, cabling and labor required to provide a User-to-Network Interface (UNI) at the Customer premise Minimum Point of Entry (MPOE).

The Bidder shall describe the User-to-Network Interface characteristics in the Bidder's Product Description, Features, Limitations and Restrictions column row provided in Table 24.2.4.1.b using Table 24.2.4.1.a below, which is provided only as a guide. Contractors shall follow the format as closely as

possible if the guide content does not align with a particular Contractor technology or offering.

The Bidder's Product Description shall include the following at a minimum:

1. Interface/Access Type(s);
2. Network-Side Interface, if applicable;
3. Protocol(s) applicable to each speed; and,
4. Upload Speed.

**Table 24.2.5.1.a – InFRA UNI Guide**

Line Item	Interface/Access Type	Network-Side Interface	Protocol
1	Cable High Speed Access	DOCSISx	Point-to-Point Protocol, IPv4/v6
2	Ethernet Interface	1 Mbps up to 1 GbE (Gigabit Ethernet) 10 GbE	Point-to-Point Protocol, IPv4/v6
3	IP over SONET Service	OC-3c OC-12c OC-48c OC-192c	IP/PPP over SONET
4	Private Line Service (PLS)	T1 Fractional T3 T3 OC-3c OC-12c OC-48c OC-192c	IPv4/v6 over PLS
5	DSL Service	xDSL Access	Point-to-Point Protocol IPv4/v6
6	Other		

Bidders must provide at least one service/solution for each InFRA speed listed in Table 24.2.5.1.b. Additional Internet Flat Rate Services that utilize different UNI's with different product identifiers and associated costs should be listed in an Unsolicited table in the same fashion as Table 24.2.5.1.b.

**Table 24.2.5.1.b – Internet Flat Rate Service**

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
1	InFRa @ 1.544 Mbps	Internet Flat Rate Service (InFRa) at 1.544 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 20M RJ45	24.FIA.00001.C	Yes
2	InFRa @ 5 Mbps	Internet Flat Rate Service (InFRa) at 5 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 20M RJ45	24.FIA.00005.C	Yes
3	InFRa @ 10 Mbps	Internet Flat Rate Service (InFRa) at 10 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; User Network Interface:	24.FIA.00010.C	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
			RJ45, Ethernet; Product description: FIA 20M RJ45		
4	InFRa @ 15 Mbps	Internet Flat Rate Service (InFRa) at 15 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 20M RJ45	24.FIA.00015.C	Yes
5	InFRa @ 20 Mbps	Internet Flat Rate Service (InFRa) at 20 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 20M RJ45	24.FIA.00020.C	Yes
6	InFRa @ 25 Mbps	Internet Flat Rate Service (InFRa) at 25 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 30Mbps; Upload Speed: 30Mbps; User	24.FIA.00025.C	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
			Network Interface: RJ45, Ethernet; Product description: FIA 30M RJ45		
7	InFRa @ 30 Mbps	Internet Flat Rate Service (InFRa) at 30 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 30Mbps; Upload Speed: 30Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 30M RJ45	24.FIA.00030.C	Yes
8	InFRa @ 35 Mbps	Internet Flat Rate Service (InFRa) at 35 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 50Mbps; Upload Speed: 50Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 50M RJ45	24.FIA.00035.C	Yes
9	InFRa @ 40 Mbps	Internet Flat Rate Service (InFRa) at 40 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 50Mbps; Upload	24.FIA.00040.C	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
			Speed: 50Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 50M RJ45		
10	InFRa @ 45 Mbps	Internet Flat Rate Service (InFRa) at 45 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 50Mbps; Upload Speed: 50Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 50M RJ45	24.FIA.00045.C	Yes
11	InFRa @ 50 Mbps	Internet Flat Rate Service (InFRa) at 50 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 50Mbps; Upload Speed: 50Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 50M RJ45	24.FIA.00050.C	Yes
12	InFRa @ 55 Mbps	Internet Flat Rate Service (InFRa) at 55 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed	24.FIA.00055.C	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
			100Mbps; Upload Speed: 100Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 100M RJ45		
13	InFRa @ 60 Mbps	Internet Flat Rate Service (InFRa) at 60 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 100Mbps; Upload Speed: 100Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 100M RJ45	24.FIA.00 060.C	Yes
14	InFRa @ 100 Mbps	Internet Flat Rate Service (InFRa) at 100 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 100Mbps; Upload Speed: 100Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 100M RJ45	24.FIA.00 100.C	Yes
15	InFRa @ 150 Mbps	Internet Flat Rate Service (InFRa) at 150 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6;	24.FIA.00 150.C	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
			Download Speed 200Mbps; Upload Speed: 200Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 200M RJ45		
16	InFRa @ 200 Mbps	Internet Flat Rate Service (InFRa) at 200 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 200Mbps; Upload Speed: 200Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 200M RJ45	24.FIA.00 200.C	Yes
17	InFRa @ 500 Mbps	Internet Flat Rate Service (InFRa) at 500 Mbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 500Mbps; Upload Speed: 500Mbps; User Network Interface: RJ45, Ethernet; Product description: FIA 500M RJ45	24.FIA.00 500.C	Yes
18	InFRa @ 1 Gbps	Internet Flat Rate Service (InFRa) at 1 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-	24.FIA.01 000.C	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
			Point Protocol, IPv4/v6; Download Speed 1Gbps; Upload Speed: 1Gbps; User Network Interface: RJ45, Ethernet; Product description: FIA 1G RJ45		
19	InFRa @ 10 Gbps	Internet Flat Rate Service (InFRa) at 10 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 10Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 10Gbps; Upload Speed: 10Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 10G MMF	24.FIA.10000.M	Yes

The Contractor may offer Unsolicited Flat Rate Internet Service or features in Table 24.2.5.1.c.

**Table 24.2.5.1.c – Unsolicited Internet Flat Rate Service Offering**

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
1	InFRa @ 20 Mbps MMF	Internet Flat Rate Service (InFRa) at 20Mbps. Includes dedicated Internet port and transport. User Interface Ethernet MMF	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; User Network Interface: MMF,	24.FIA.00020.M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
			Ethernet; Product description: FIA 20M MMF	
2	InFRa @ 30 Mbps MMF	Internet Flat Rate Service (InFRa) at 30Mbps. Includes dedicated Internet port and transport. User Interface Ethernet MMF	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 30Mbps; Upload Speed: 30Mbps; User Network Interface: MMF, Ethernet; Product description: FIA 30M MMF	24.FIA.0003 0.M
3	InFRa @ 50 Mbps MMF	Internet Flat Rate Service (InFRa) at 50Mbps. Includes dedicated Internet port and transport. User Interface Ethernet MMF	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 50Mbps; Upload Speed: 50Mbps; User Network Interface: MMF, Ethernet; Product description: FIA 50M MMF	24.FIA.0005 0.M
4	InFRa @ 100 Mbps MMF	Internet Flat Rate Service (InFRa) at 100Mbps. Includes dedicated Internet port and transport. User Interface Ethernet MMF	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 100Mbps; Upload Speed: 100Mbps; User Network Interface: MMF, Ethernet; Product description: FIA 100M MMF	24.FIA.0010 0.M
5	InFRa @ 200 Mbps MMF	Internet Flat Rate Service (InFRa) at 200Mbps. Includes dedicated Internet port and transport. User Interface Ethernet MMF	Interface/Access Type(s): Ethernet; Network-Side Interface: 1 Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 200Mbps; Upload Speed: 200Mbps; User Network Interface: MMF, Ethernet; Product description: FIA 200M MMF	24.FIA.0020 0.M

<b>Line Item</b>	<b>Feature Name</b>	<b>Feature Description</b>	<b>Bidder's Product Description, Restrictions and Limitations</b>	<b>Bidder's Product Identifier</b>
6	InFRa @ 500 Mbps MMF	Internet Flat Rate Service (InFRa) at 500Mbps. Includes dedicated Internet port and transport. User Interface Ethernet MMF	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 500Mbps; Upload Speed: 500Mbps; User Network Interface: MMF, Ethernet; Product description: FIA 500M MMF	24.FIA.0050 0.M
7	InFRa @ 1 Gbps MMF	Internet Flat Rate Service (InFRa) at 1Gbps. Includes dedicated Internet port and transport. User Interface Ethernet MMF	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 1Gbps; Upload Speed: 1Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 1G MMF	24.FIA.0100 0.M
8	InFRa @ 2 Gbps	Internet Flat Rate Service (InFRa) at 2 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 10Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 10Gbps; Upload Speed: 10Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 10G MMF	24.FIA.0200 0.M
9	InFRa @ 5 Gbps	Internet Flat Rate Service (InFRa) at 5 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 10Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 5Gbps; Upload Speed: 5Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 5G MMF	24.FIA.0500 0.M
10	InFRa @ 20 Gbps	Internet Flat Rate Service (InFRa) at 20 Gbps. Includes	Interface/Access Type(s): Ethernet; Network-Side Interface: 100Gbps port on SMF;	24.FIA.2000 0.M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		dedicated Internet port and transport.	Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Gbps; Upload Speed: 20Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 20G MMF	
11	InFRa @ 30 Gbps	Internet Flat Rate Service (InFRa) at 30 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 100Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 30Gbps; Upload Speed: 30Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 30G MMF	24.FIA.3000 0.M
12	InFRa @ 40 Gbps	Internet Flat Rate Service (InFRa) at 40 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 100Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 40Gbps; Upload Speed: 40Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 40G MMF	24.FIA.4000 0.M
13	InFRa @ 50 Gbps	Internet Flat Rate Service (InFRa) at 50 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 100Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 50Gbps; Upload Speed: 50Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 50G MMF	24.FIA.5000 0.M
14	InFRa @ 60 Gbps	Internet Flat Rate Service (InFRa) at 60 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 100Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 60Gbps; Upload Speed:	24.FIA.6000 0.M

<b>Line Item</b>	<b>Feature Name</b>	<b>Feature Description</b>	<b>Bidder's Product Description, Restrictions and Limitations</b>	<b>Bidder's Product Identifier</b>
			60Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 60G MMF	
15	InFRa @ 70 Gbps	Internet Flat Rate Service (InFRa) at 70 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 100Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 70Gbps; Upload Speed: 70Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 70G MMF	24.FIA.7000 0.M
16	InFRa @ 80 Gbps	Internet Flat Rate Service (InFRa) at 80 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 100Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 80Gbps; Upload Speed: 80Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 80G MMF	24.FIA.8000 0.M
17	InFRa @ 90 Gbps	Internet Flat Rate Service (InFRa) at 90 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 100Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 90Gbps; Upload Speed: 90Gbps; User Network Interface: MMF, Ethernet; Product description: FIA 90G MMF	24.FIA.9000 0.M
18	InFRa @ 100 Gbps	Internet Flat Rate Service (InFRa) at 100 Gbps. Includes dedicated Internet port and transport.	Interface/Access Type(s): Ethernet; Network-Side Interface: 100Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 100Gbps; Upload Speed: 100Gbps; User Network Interface: MMF, Ethernet;	24.FIA.1000 00.M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
			Product description: FIA 100G MMF	

### 24.2.5.2 Internet Flat Rate with Managed Router Service (InFRaM)

The Contractor shall provide Internet Flat Rate with Managed IP Enabled Routing Device Service at the speeds identified in Table 24.2.5.2.a. The services shall consist of a dedicated Internet Port and Transport from the Customer site to the nearest contractor POP. The service shall include all equipment, cabling and labor required to provide a UNI at the Customer premise MPOE and a Contractor owned, maintained and managed IP enabled routing device.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

The service shall include a Contractor owned, maintained and managed IP enabled routing device. Bidder shall provide a description of the type of equipment, maintenance and management services that the Contractor will deploy to satisfy this requirement.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

All Bidder equipment, tasks and services required for provisioning of the services described in Table 24.2.5.2.a will be included in the charges for the features/services listed in those tables unless specifically identified as not part of the mandatory service and proposed in Table 24.2.5.2.b.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

The Contractor's managed IP enabled routing device service shall include proactive Customer notification as identified in the Service Level Agreements.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

The Contractor shall provide customers full read only access to the managed router or managed IP enabled routing device.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

The Contractor shall offer the InFRaM Services detailed in Table 24.2.5.2.a.

The Bidder shall describe the User-to-Network Interface characteristics in the Bidder’s Product Description, Restrictions, and Limitations column row provided in Table 24.2.5.2.a using Table 24.2.5.1.a, which is provided only as a guide. Contractors shall follow the format as closely as possible if the guide content does not align with a particular Contractor technology or offering.

The Bidder’s Product Description shall include the following at a minimum:

1. Interface/Access Type(s);
2. Network-Side Interface, if applicable;
3. Protocol(s) applicable to each speed; and,
4. Upload Speed.

**Table 24.2.5.2.a – Internet Flat Rate with Managed Router Service**

Line Item #	Feature Name	Feature Description	Bidder’s Product Description, Restrictions and Limitations	Bidder’s Product Identifier	Bidder Meets or Exceeds? Yes/No
1	InFRaM @ 1.544 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 1.544 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 20M RJ45	24.FIA.00001.MRS.C	Yes

<b>Line Item #</b>	<b>Feature Name</b>	<b>Feature Description</b>	<b>Bidder's Product Description, Restrictions and Limitations</b>	<b>Bidder's Product Identifier</b>	<b>Bidder Meets or Exceeds? Yes/No</b>
2	InFRaM @ 5 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 5 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 20M RJ45	24.FIA.00005.MRS.C	Yes
3	InFRaM @ 10 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 10 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 20M RJ45	24.FIA.00010.MRS.C	Yes
4	InFRaM @ 15 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 15	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-	24.FIA.00015.MRS.C	Yes

Line Item #	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
		Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 20M RJ45		
5	InFRaM @ 20 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 20 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 20M RJ45	24.FIA.00020.MRS.C	Yes
6	InFRaM @ 25 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 25 Mbps. Includes dedicated Internet port, transport, and a Contractor owned,	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 30Mbps; Upload Speed: 30Mbps; MRS User Network Interface:	24.FIA.00025.MRS.C	Yes

Line Item #	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
		maintained and managed IP enabled routing device.	RJ45, Ethernet; Product description: FIA w/ MRS 30M RJ45		
7	InFRaM @ 30 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 30 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 30Mbps; Upload Speed: 30Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 30M RJ45	24.FIA.00030.MRS.C	Yes
8	InFRaM @ 35 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 35 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 50Mbps; Upload Speed: 50Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 50M RJ45	24.FIA.00035.MRS.C	Yes

<b>Line Item #</b>	<b>Feature Name</b>	<b>Feature Description</b>	<b>Bidder's Product Description, Restrictions and Limitations</b>	<b>Bidder's Product Identifier</b>	<b>Bidder Meets or Exceeds? Yes/No</b>
9	InFRaM @ 40 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 40 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 50Mbps; Upload Speed: 50Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 50M RJ45	24.FIA.00040.MRS.C	Yes
10	InFRaM @ 45 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 45 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 50Mbps; Upload Speed: 50Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 50M RJ45	24.FIA.00045.MRS.C	Yes
11	InFRaM @ 50 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 50	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-	24.FIA.00050.MRS.C	Yes

Line Item #	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
		Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Point Protocol, IPv4/v6; Download Speed 50Mbps; Upload Speed: 50Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 50M RJ45		
12	InFRaM @ 55 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 55 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 100Mbps; Upload Speed: 100Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 100M RJ45	24.FIA.00055.MRS.C	Yes
13	InFRaM @ 60 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 60 Mbps. Includes dedicated Internet port, transport, and a Contractor owned,	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 100Mbps; Upload Speed: 100Mbps; MRS User Network Interface:	24.FIA.00060.MRS.C	Yes

Line Item #	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
		maintained and managed IP enabled routing device.	RJ45, Ethernet; Product description: FIA w/ MRS 100M RJ45		
14	InFRaM @ 100 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 100 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 100Mbps; Upload Speed: 100Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 100M RJ45	24.FIA.00100.MRS.C	Yes
15	InFRaM @ 150 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 150 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 200Mbps; Upload Speed: 200Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 200M RJ45	24.FIA.00150.MRS.C	Yes

<b>Line Item #</b>	<b>Feature Name</b>	<b>Feature Description</b>	<b>Bidder's Product Description, Restrictions and Limitations</b>	<b>Bidder's Product Identifier</b>	<b>Bidder Meets or Exceeds? Yes/No</b>
16	InFRaM @ 200 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 200 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 200Mbps; Upload Speed: 200Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 200M RJ45	24.FIA.00200.MRS.C	Yes
17	InFRaM @ 500 Mbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 500 Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 500Mbps; Upload Speed: 500Mbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 500M RJ45	24.FIA.00500.MRS.C	Yes
18	InFRaM @ 1 Gbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 1	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-	24.FIA.01000.MRS.C	Yes

Line Item #	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes/No
		Gbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Point Protocol, IPv4/v6; Download Speed 1Gbps; Upload Speed: 1Gbps; MRS User Network Interface: RJ45, Ethernet; Product description: FIA w/ MRS 1G RJ45		
19	InFRaM @ 10 Gbps	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 10 Gbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device.	Interface/Access Type(s): Ethernet; Network-Side Interface: 10Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 10Gbps; Upload Speed: 10Gbps; MRS User Network Interface: MMF, Ethernet; Product description: FIA w/ MRS 10G MMF	24.FIA.10000.MRS.M	Yes

The Contractor may offer Unsolicited Flat Rate Internet Service or features in Table 24.2.5.2.b.

**Table 24.2.5.2.b – Unsolicited Internet Flat Rate with Managed Router Service**

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
1	InFRaM @ 20 Mbps MMF	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 20Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device with a MMF user Ethernet connection.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 20Mbps; Upload Speed: 20Mbps; MRS User Network Interface: MMF, Ethernet; Product description: FIA w/ MRS 20M MMF	24.FIA.00020.MRS.M
2	InFRaM @ 30 Mbps MMF	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 30Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device with a MMF user Ethernet connection.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 30Mbps; Upload Speed: 30Mbps; MRS User Network Interface: MMF, Ethernet; Product description: FIA w/ MRS 30M MMF	24.FIA.00030.MRS.M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
3	InFRaM @ 50 Mbps MMF	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 50Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device with a MMF user Ethernet connection.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 50Mbps; Upload Speed: 50Mbps; MRS User Network Interface: MMF, Ethernet; Product description: FIA w/ MRS 50M MMF	24.FIA.00050.MRS.M
4	InFRaM @ 100 Mbps MMF	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 100Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device with a MMF user Ethernet connection.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 100Mbps; Upload Speed: 100Mbps; MRS User Network Interface: MMF, Ethernet; Product description: FIA w/ MRS 100M MMF	24.FIA.00100.MRS.M
5	InFRaM @ 200 Mbps MMF	Internet Flat Rate Service with Managed IP	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on	24.FIA.00200.MRS.M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		Enabled Routing Device (InFRaM) at 200Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device with a MMF user Ethernet connection.	SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 200Mbps; Upload Speed: 200Mbps; MRS User Network Interface: MMF, Ethernet; Product description: FIA w/ MRS 200M MMF	
6	InFRaM @ 500 Mbps MMF	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 500Mbps. Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device with a MMF user Ethernet connection.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 500Mbps; Upload Speed: 500Mbps; MRS User Network Interface: MMF, Ethernet; Product description: FIA w/ MRS 500M MMF	24.FIA.00500.MRS.M
7	InFRaM @ 1 Gbps MMF	Internet Flat Rate Service with Managed IP Enabled Routing Device (InFRaM) at 1Gbps.	Interface/Access Type(s): Ethernet; Network-Side Interface: 1Gbps port on SMF; Protocol(s): Point-to-Point Protocol, IPv4/v6; Download Speed 1Gbps;	24.FIA.01000.MRS.M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		Includes dedicated Internet port, transport, and a Contractor owned, maintained and managed IP enabled routing device with a MMF user Ethernet connection.	Upload Speed: 1Gbps; MRS User Network Interface: MMF, Ethernet; Product description: FIA w/ MRS 1G MMF	

### 24.2.5.3 LTE Backup Service Options

If the Contractor provides LTE backup services for Managed Equipment the Contractor shall use current CALNET Cellular providers. All Bidders are required to indicate below that they understand the requirement regardless of their intent to provide LTE backup services.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

### 24.2.6 Internet Service Geographic Service Areas

Bidder shall identify the locations where their InFRa, InFRaM, BHIS and BHIMS Internet Services are available in Table 24.2.6.a. The Contractor shall provide the service where commercially available through Contractor owned facilities, third-party agreements, and as allowed by State or Federal regulations. Commitment to provide service is subject to facility availability as determined by the Bidder at time of bid submission and may be reassessed by Contractor at time of service order.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

Special construction charges that may be required to provide this service are not included in this offering or contained within the CALNET contracts and must be acquired by the customer directly through other procurement means.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

Bidders may reference Table 24.2.6.a in their Catalog A.

**Table 24.2.6.a – Bidder’s Flat Rate Internet Service Locations**

<b>Line Item</b>	<b>Service Location - City</b>	<b>InFRa</b>	<b>InFRaM</b>
1	Acton, Adelanto, Agoura Hills, Alhambra	Yes	Yes
2	Altadena, Alturas, Anaheim, Anderson	Yes	Yes
3	Apple Valley, Aptos, Arcadia, Aromas	Yes	Yes
4	Arroyo Grande, Artesia, Atascadero, Avila Beach	Yes	Yes
5	Azusa, Bakersfield, Baldwin Park, Banning	Yes	Yes
6	Barstow, Beaumont, Bell Gardens, Bellflower	Yes	Yes
7	Beverly Hills, Big Bear City, Big Bear Lake, Bloomington	Yes	Yes
8	Blue Jay, Bonsall, Boron, Brea	Yes	Yes
9	Bryn Mawr, Buena Park, Burbank, Calabasas	Yes	Yes
10	California City, Calimesa, Camarillo, Cambria	Yes	Yes
11	Canoga Park, Canyon Country, Capitola, Cardiff By The Sea	Yes	Yes
12	Carlsbad, Carmel, Carnelian Bay, Carson	Yes	Yes
13	Castaic, Castroville, Cathedral City, Cayucos	Yes	Yes
14	Cedar Glen, Cedarpines Park, Ceres, Cerritos	Yes	Yes
15	Chatsworth, Chino, Chino Hills, Chualar	Yes	Yes
16	Chula Vista, Claremont, Clovis, Coachella	Yes	Yes
17	Colton, Compton, Corona, Corona Del Mar	Yes	Yes
18	Coronado, Costa Mesa, Cottonwood, Covina	Yes	Yes

<b>Line Item</b>	<b>Service Location - City</b>	<b>InFRa</b>	<b>InFRaM</b>
19	Crescent City, Crestline, Culver City, Cutler	Yes	Yes
20	Cypress, Daggett, Del Mar, Delhi	Yes	Yes
21	Denair, Desert Hot Springs, Diamond Bar, Dodgertown	Yes	Yes
22	Downey, Duarte, Edwards AFB, El Cajon	Yes	Yes
23	El Monte, El Segundo, Empire, Encinitas	Yes	Yes
24	Encino, Escalon, Escondido, Fallbrook	Yes	Yes
25	Fawnskin, Fillmore, Fontana, Forest Falls	Yes	Yes
26	Fountain Valley, Freedom, Fullerton, Garden Grove	Yes	Yes
27	Gardena, Gasquet, Gilroy, Glendale	Yes	Yes
28	Glendora, Gonzales, Granada Hills, Grand Terrace	Yes	Yes
29	Green Valley Lake, Greenfield, Grover Beach, Guadalupe	Yes	Yes
30	Hacienda Heights, Harbor City, Hawaiian Gardens, Hawthorne	Yes	Yes
31	Hemet, Hermosa Beach, Hesperia, Hickman	Yes	Yes
32	Highland, Hilmar, Hinkley, Hollister	Yes	Yes
33	Homeland, Hughson, Huntington Beach, Huntington Park	Yes	Yes
34	Idyllwild, Indian Wells, Indio, Inglewood	Yes	Yes
35	Irvine, Joshua Tree, Keyes, King City	Yes	Yes
36	Kings Beach, La Canada Flintridge, La Crescenta, La Habra	Yes	Yes
37	La Jolla, La Mirada, La Palma, La Puente	Yes	Yes
38	La Quinta, La Verne, Lake Arrowhead, Lake Elsinore	Yes	Yes
39	Lake Hughes, Lakewood, Lancaster, Lawndale	Yes	Yes

<b>Line Item</b>	<b>Service Location - City</b>	<b>InFRa</b>	<b>InFRaM</b>
40	Littlerock, Livingston, Loma Linda, Lomita	Yes	Yes
41	Long Beach, Los Alamitos, Los Angeles, Los Osos	Yes	Yes
42	Lynwood, Lytle Creek, Malibu, Manhattan Beach	Yes	Yes
43	March Air Reserve Base, Marina Del Rey, Maywood, Menifee	Yes	Yes
44	Mentone, Midway City, Mira Loma, Mission Hills	Yes	Yes
45	Modesto, Mojave, Monrovia, Montclair	Yes	Yes
46	Montebello, Monterey Park, Montrose, Moorpark	Yes	Yes
47	Moreno Valley, Morgan Hill, Morongo Valley, Morro Bay	Yes	Yes
48	Moss Landing, Murrieta, National City, Newbury Park	Yes	Yes
49	Newhall, Newport Beach, Nipomo, Norco	Yes	Yes
50	North Hills, North Hollywood, North Palm Springs, Northridge	Yes	Yes
51	Norwalk, Nuevo, Oak Park, Oak View	Yes	Yes
52	Oakdale, Oceano, Oceanside, Ojai	Yes	Yes
53	Ontario, Orange, Orange Cove, Oro Grande	Yes	Yes
54	Orosi, Oxnard, Pacific Palisades, Pacoima	Yes	Yes
55	Palm Desert, Palm Springs, Palmdale, Palos Verdes Peninsula	Yes	Yes
56	Panorama City, Paramount, Pasadena, Paso Robles	Yes	Yes
57	Pearblossom, Perris, Phelan, Pico Rivera	Yes	Yes
58	Piru, Pismo Beach, Placentia, Playa Del Rey	Yes	Yes
59	Playa Vista, Pomona, Port Hueneme, Port Hueneme Cbc Base	Yes	Yes

<b>Line Item</b>	<b>Service Location - City</b>	<b>InFRa</b>	<b>InFRaM</b>
60	Porter Ranch, Poway, Quail Valley, Rancho Cucamonga	Yes	Yes
61	Rancho Mirage, Rancho Palos Verdes, Rancho Santa Fe, Red Bluff	Yes	Yes
62	Redding, Redlands, Redondo Beach, Reseda	Yes	Yes
63	Rialto, Rimforest, Ripon, Riverbank	Yes	Yes
64	Riverside, Rosamond, Rosemead, Rowland Heights	Yes	Yes
65	Running Springs, Salida, Salinas, San Bernardino	Yes	Yes
66	San Diego, San Dimas, San Fernando, San Gabriel	Yes	Yes
67	San Jacinto, San Juan Bautista, San Luis Obispo, San Marcos	Yes	Yes
68	San Marino, San Martin, San Miguel, San Pedro	Yes	Yes
69	Santa Ana, Santa Clarita, Santa Cruz, Santa Fe Springs	Yes	Yes
70	Santa Margarita, Santa Monica, Santa Paula, Seal Beach	Yes	Yes
71	Seeley, Shasta Lake, Sherman Oaks, Sierra Madre	Yes	Yes
72	Signal Hill, Simi Valley, Skyforest, Smith River	Yes	Yes
73	Solana Beach, Soledad, Somis, South El Monte	Yes	Yes
74	South Gate, South Lake Tahoe, South Pasadena, Stanton	Yes	Yes
75	Stevenson Ranch, Studio City, Sugarloaf, Sun City	Yes	Yes
76	Sun Valley, Sunland, Sunset Beach, Surfside	Yes	Yes
77	Sylmar, Tahoe City, Tahoe Vista, Tarzana	Yes	Yes
78	Tehachapi, Temecula, Temple City, Templeton	Yes	Yes
79	Thermal, Thousand Oaks, Thousand Palms, Topanga	Yes	Yes

Line Item	Service Location - City	InFRa	InFRaM
80	Torrance, Tres Pinos, Truckee, Tujunga	Yes	Yes
81	Turlock, Tustin, Twentynine Palms, Twin Peaks	Yes	Yes
82	Universal City, Upland, Valencia, Valley Village	Yes	Yes
83	Van Nuys, Venice, Ventura, Verdugo City	Yes	Yes
84	Victorville, Villa Park, Vista, Walnut	Yes	Yes
85	Waterford, Watsonville, West Covina, West Hills	Yes	Yes
86	West Hollywood, Westlake Village, Westminster, Whittier	Yes	Yes
87	Wildomar, Wilmington, Winchester, Winnetka	Yes	Yes
88	Woodland Hills, Wrightwood, Yermo, Yorba Linda	Yes	Yes
89	Yucaipa, Yucca Valley	Yes	Yes

### 24.2.7 Additional Unsolicited Internet Services

All Bidder equipment, tasks and services required for provisioning of the services shall be identified in Table 24.2.7.

**Table 24.2.7 – Additional Unsolicited Internet Services**

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
1	1 Static IP	1 static publically accessible IP address	Charter Communications provides the identified number of IP addresses for the customer to statically assign to their customer equipment and also provides	24.IP.1

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
			forward and reverse DNS for these IPs.	
2	5 Static IPs	5 static publically accessible IP address	Charter Communications provides the identified number of IP addresses for the customer to statically assign to their customer equipment and also provides forward and reverse DNS for these IPs.	24.IP.5
3	13 Static IPs	13 static publically accessible IP address	Charter Communications provides the identified number of IP addresses for the customer to statically assign to their customer equipment and also provides forward and reverse DNS for these IPs.	24.IP.13
4	29 Static IPs	29 static publically accessible IP address	Charter Communications provides the identified number of IP addresses for the customer to statically assign to their customer equipment and also provides forward and reverse DNS for these IPs.	24.IP.29
5	61 Static IPs	61 static publically accessible IP address	Charter Communications provides the identified number of IP addresses for the customer to statically assign to their	24.IP.61

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
			customer equipment and also provides forward and reverse DNS for these IPs.	
6	125 Static IPs	125 static publically accessible IP address	Charter Communications provides the identified number of IP addresses for the customer to statically assign to their customer equipment and also provides forward and reverse DNS for these IPs.	24.IP.125
7	253 Static IPs	253 static publically accessible IP address	Charter Communications provides the identified number of IP addresses for the customer to statically assign to their customer equipment and also provides forward and reverse DNS for these IPs.	24.IP.253
8	Managed Firewall/Router/SD-WAN – up to 100 Mb	Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management,	Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices;	24.MNE.100M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to the Cisco Meraki MX68 or a successor model. Supports up to 100 Mbps throughput.</p>		
9	E-Managed Firewall/Router/SD-WAN – up to 100 Mb	<p>Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2</p>	<p>Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.</p>	24.ENE.100M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to the Fortinet FG40F or a successor model. Supports up to 100 Mbps throughput.</p>		
10	Managed Firewall/Router/SD-WAN – up to 200 Mb	<p>Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, and supports 2 WAN/internet connections for use as a single</p>	<p>Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.</p>	24.MNE.200M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to the Cisco Meraki MX68 or a successor model. Supports up to 200 Mbps throughput.</p>		
11	E-Managed Firewall/Router/SD-WAN – up to 200 Mb	<p>Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2 WAN/internet connections for use as a single site router,</p>	<p>Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.</p>	24.ENE.200M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to the Fortinet FG40F or a successor model. Supports up to 200 Mbps throughput.</p>		
12	Managed Firewall/Router/SD-WAN – up to 500 Mb	<p>Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed</p>	<p>Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.</p>	24.MNE.500M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to the Cisco Meraki MX85 or a successor model. Supports up to 500 Mbps throughput.</p>		
13	E-Managed Firewall/Router/SD-WAN – up to 500 Mb	<p>Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software</p>	<p>Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.</p>	24.ENE.500M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to the Fortinet FG40F or a successor model. Supports up to 500 Mbps throughput.</p>		
14	Managed Firewall/Router/SD-WAN – up to 1 Gb	<p>Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN.</p>	<p>Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.</p>	24.MNE.1G

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		Delivered over a device such as or equivalent to the Cisco Meraki MX95 or a successor model. Supports up to 1 Gbps throughput.		
15	E-Managed Firewall/Router/SD-WAN – up to 1 Gb	Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a	Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.	24.ENE.1G

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		device such as or equivalent to the Fortinet FG100F or a successor model. Supports up to 1 Gbps throughput.		
16	Managed Firewall/Router/SD-WAN – up to 2 Gb	Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to the Cisco Meraki	Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.	24.MNE.2G

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		MX105 or a successor model. Supports up to 2 Gbps throughput.		
17	E-Managed Firewall/Router/SD-WAN – up to 2 Gb	Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to the Fortinet FG200F or a	Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.	24.ENE.2G

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		successor model. Supports up to 2 Gbps throughput.		
18	E-Managed Firewall/Router/SD-WAN – up to 5 Gb	Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to Fortinet FG600E or a successor model. Supports	Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.	24.ENE.5G

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		up to 5 Gbps of throughput.		
19	E-Managed Firewall/Router/SD-WAN – up to 10 Gb	Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device equivalent such as or to Fortinet FG-600F or a successor model. Supports	Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.	24.ENE.10G

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		up to 10 Gbps of throughput.		
20	E-Managed Firewall/Router/SD-WAN – up to 20 Gb	Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to Fortinet FG3400E or a successor model. Supports up to 20 Gbps of throughput.	Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.	24.ENE.20G

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
21	E-Managed Firewall/Router/SD-WAN – up to 30 Gb	Managed secure router with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to Fortinet FG3600E or a successor model. Supports up to 30 Gbps of throughput.	Requires an internet connection at each client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.	24.ENE.30G
22	E-Managed Firewall/Router/SD-	Managed secure router	Requires an internet connection at each	24.ENE.50G

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
	WAN – up to 50 Gb	with integrated security and 24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to Fortinet FG4200F or a successor model. Supports up to 50 Gbps of throughput.	client site. NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.	
23	E-Managed Firewall/Router/SD-WAN – up to 100 Gb	Managed secure router with integrated security and	Requires an internet connection at each client site. NRC is required and excludes	24.ENE.100G

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>24/7/365 technical support provided by Charter. Includes proactive monitoring, hardware, license, cloud management, remote access capability, and supports 2 WAN/internet connections for use as a single site router, multisite secure router, or in a managed Software Defined Wide Area Network / SD-WAN. Delivered over a device such as or equivalent to Fortinet FG6500F or a successor model. Supports up to 100 Gbps of throughput.</p>	<p>inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time. Remote access capability is included with Fortinet devices.</p>	
24	Managed Switch 8 Port POE_M	Managed switch service with integrated security and 24/7/365 support provided by	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday	24.MS.8PT.POE.M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>Charter, delivered using Cisco Meraki MS120 or successor model switch device. Includes proactive status monitoring, integrated management portal, licensing and device break/fix. Ideal for connecting wired devices in small office area. Supports 8 ports and provides Power over Ethernet. Uplink is 2 × 1GbE SFP.</p>	<p>between 8:00 a.m. and 4:59 p.m. local time.</p>	
25	Managed Switch 24 Port POE_M1	<p>Managed switch service with integrated security and 24/7/365 support provided by Charter, delivered using Cisco Meraki MS120 or equivalent model switch device. Includes proactive status monitoring,</p>	<p>NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	24.MS.24PT.POE.M1

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		integrated management portal, licensing and device break/fix. Supports 24 ports, uplink is 4 × 1GbE SFP and PoE is 370W.		
26	Managed Switch 24 Port POE_M2	Managed switch service with integrated security and 24/7/365 support provided by Charter, delivered using Cisco Meraki MS210 or equivalent model Layer 2 stackable switch device. Includes proactive status monitoring, integrated management portal, licensing and device break/fix. Supports 24 ports, uplink is 4 × 1GbE SFP and PoE is 370W.	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.	24.MS.24PT.POE.M2
27	Managed Switch 24 Port POE_M3	Managed switch service with integrated security and	NRC is required and excludes inside wiring. Installation will occur during regular hours.	24.MS.24PT.POE.M3

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>24/7/365 support provided by Charter, delivered using Cisco Meraki MS225 or equivalent model Layer 2 stackable switch device. Includes proactive status monitoring, integrated management portal, licensing and device break/fix. Supports 24 ports, uplink is 4 × 10GbE SFP+ and PoE is 370W.</p>	<p>Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	
28	Managed Switch 24 Port POE_M4	<p>Managed switch service with integrated security and 24/7/365 support provided by Charter, delivered using Cisco Meraki MS250 or equivalent model Layer 2 stackable switch device. Includes proactive status monitoring, integrated</p>	<p>NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	24.MS.24PT.POE.M4

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		management portal, licensing and device break/fix. Supports 24 ports, uplink is 4 × 10GbE SFP+ and PoE is 370W.		
29	Managed Switch 24 Port POE_M5	Managed switch service with integrated security and 24/7/365 support provided by Charter, delivered using Cisco Meraki MS350 or equivalent model Layer 3 switch device. Includes proactive status monitoring, integrated management portal, licensing and device break/fix. Supports 24 ports, uplink is 4 x 10GbE SFP+, 8 X mGbE RJ45 and PoE is 740W.	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.	24.MS.24PT.POE.M5
30	Managed Switch 24 Port POE_M6	Managed switch service with integrated security and	NRC is required and excludes inside wiring. Installation will occur during regular hours.	24.MS.24PT.POE.M6

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>24/7/365 support provided by Charter, delivered using Cisco Meraki MS355 or equivalent model Layer 3 switch device. Includes proactive status monitoring, integrated management portal, licensing and device break/fix. Supports 24 ports, uplink is 2 x 40GbE QSFP+, 4 x 10GbE SFP+, 8 X mGbE RJ45 and UPoE is 740W.</p>	<p>Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	
31	Managed Switch 48 Port POE_M1	<p>Managed switch service with integrated security and 24/7/365 support provided by Charter, delivered using Cisco Meraki MS125 or equivalent model switch device. Includes proactive status</p>	<p>NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	24.MS.48PT.POE.M1

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>monitoring, integrated management portal, licensing and device break/fix. Supports 48 ports, uplink is 4 × 10GbE SFP+ and PoE is 370W.</p>		
32	Managed Switch 48 Port POE_M2	<p>Managed switch service with integrated security and 24/7/365 support provided by Charter, delivered using Cisco Meraki MS210 or equivalent model Layer 2 stackable switch device. Includes proactive status monitoring, integrated management portal, licensing and device break/fix. Supports 48 ports, uplink is 4 × 1GbE SFP and PoE is 740W.</p>	<p>NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	24.MS.48PT.POE.M2
33	Managed Switch 48 Port POE_M3	<p>Managed switch service with integrated</p>	<p>NRC is required and excludes inside wiring. Installation will occur</p>	24.MS.48PT.POE.M3

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>security and 24/7/365 support provided by Charter, delivered using Cisco Meraki MS225 or equivalent model Layer 2 stackable switch device. Includes proactive status monitoring, integrated management portal, licensing and device break/fix. Supports 48 ports, uplink is 4 × 10GbE SFP+ and PoE is 370W.</p>	<p>during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	
34	Managed Switch 48 Port POE_M4	<p>Managed switch service with integrated security and 24/7/365 support provided by Charter, delivered using Cisco Meraki MS250 or equivalent model Layer 3 switch device. Includes proactive status monitoring,</p>	<p>NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	24.MS.48PT.POE.M4

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		integrated management portal, licensing and device break/fix. Supports 48 ports, uplink is 4 × 10GbE SFP+ and PoE is 740W.		
35	Managed Switch 48 Port POE_M5	Managed switch service with integrated security and 24/7/365 support provided by Charter, delivered using Cisco Meraki MS350 or equivalent model Layer 3 switch device. Includes proactive status monitoring, integrated management portal, licensing and device break/fix. Supports 48 ports, uplink is 4 x 10GbE SFP+ and PoE is 740W.	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.	24.MS.48PT.POE.M5
36	Managed Switch 48 Port POE_M6	Managed switch service with integrated security and	NRC is required and excludes inside wiring. Installation will occur during regular hours.	24.MS.48PT.POE.M6

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>24/7/365 support provided by Charter, delivered using Cisco Meraki MS355 or equivalent model Layer 3 switch device. Includes proactive status monitoring, integrated management portal, licensing and device break/fix. Supports 48 ports, uplink is 2 x 40GbE QSFP+ 4 x 10GbE SFP+, 16 X mGbE RJ45 and UPoE is 740W.</p>	<p>Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	
37	Managed Switch 16 Port AGG_M1	<p>Managed switch service with integrated security and 24/7/365 support provided by Charter, delivered using Cisco Meraki MS410 or equivalent model aggregation switch device.</p>	<p>NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	24.MS.16PT.AGG.M1

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		Includes proactive status monitoring, integrated management portal, licensing and device break/fix. 16 1G SFP ports and two 10G SFP+ uplinks.		
38	Managed Switch 8 Port_F	Managed switch service with integrated security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix. Delivered using a Fortinet FS108F or equivalent model switch device. Layer 2 switch controller supports 8 RJ45 + 2 SFP ports. Fanless.	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.	24.MS.8PT.F
39	Managed Switch 8 Port POE_F	Managed switch service with integrated	NRC is required and excludes inside wiring. Installation will occur	24.MS.8PT.F.M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix. Delivered using a Fortinet FS124F or equivalent model switch device. Layer 2 switch supports 8 RJ45 + 4 10G SFP+ ports. Fanless.</p>	<p>during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	
40	Managed Switch 24 Port_F	<p>Managed switch service with integrated security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix. Delivered using a Fortinet FS124F</p>	<p>NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	24.MS.24PT.F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		or equivalent model switch device. Layer 2 switch supports 24 RJ45 + 4 10G SFP+ ports. Fanless.		
41	Managed Switch 24 Port POE_F	Managed switch service with integrated security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix. Delivered using a Fortinet FS124F-FPOE or equivalent model switch device. Layer 2 PoE+ switch supports 24 RJ45 + 4 10G SFP+ ports, 24 port PoE with maximum 185 W limit.	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.	24.MS.24PT.POE.F
42	Managed Switch 24 Port Campus_F	Managed switch service with integrated	NRC is required and excludes inside wiring. Installation will occur	24.MS.24PT.CAMP.F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix. Delivered using a Fortinet FS424E or equivalent model switch device. Layer 2/3 switch supports 24 RJ45, 4x 10 GE SFP + ports.</p>	<p>during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	
43	Managed Switch 24 Port Campus POE_F	<p>Managed switch service with integrated security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix. Delivered using a Fortinet</p>	<p>NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.</p>	24.MS.24PT.CAMP.PC E.F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		FS424E-FPOE or equivalent model switch device. Layer 2/3 switch with 24 GE RJ45, 4x 10 GE SFP + ports, 24 port PoE+ with maximum 433.7 W limit.		
44	Managed Switch 48 Port Campus POE_F	Managed switch service with integrated security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix. Delivered using a Fortinet FS448E-FPOE or equivalent model switch device. Layer 2/3 switch supports 48 RJ45, 4x 10 GE SFP + ports, 48 port PoE+with maximum 421 W limit.	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.	24.MS.48PT.CAMP.PC E.F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
45	Managed Switch 48 Port_F	Managed switch service with integrated security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix. Delivered using a Fortinet FS148F or equivalent model switch device. Layer 2 switch supports 48 RJ45 + 4 10G SFP+ ports.	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.	24.MS.48PT.F
46	Managed Switch 48 Port Campus_F	Managed switch service with integrated security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix.	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.	24.MS.48PT.CAMP.F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		Delivered using a Fortinet FS448E or equivalent model switch device. Layer 2/3 switch supports 48 RJ45, 4x 10 GE SFP + ports.		
47	Managed Switch 48 Port POE_F	Managed switch service with integrated security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix. Delivered using a Fortinet FS148F-FPOE or equivalent model switch device. Layer 2 PoE+ switch supports 48 RJ45 + 4 10G SFP+ ports, 48 port PoE with maximum 370 W limit.	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.	24.MS.48PT.POE.F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
48	E-Managed Switch Aggregation_F	Managed switch service with integrated security and 24/7/365 support provided by Charter. Includes proactive status monitoring, equipment, integrated management portal, licensing and device break/fix. Delivered using a Fortinet FS1024E or equivalent model switch device. Layer 2/3 switch supports 24x GE/10 GE SFP/SFP+ slots. Dual AC power supplies.	NRC is required and excludes inside wiring. Installation will occur during regular hours. Regular business hours are Monday to Friday between 8:00 a.m. and 4:59 p.m. local time.	24.MSA.ENE.F
49	Mng Virtual Machine for Cloud Srv Provider S	Extends SD-WAN functionality to private and public clouds.	1. Customer responsible for purchasing a virtual instance with cloud service provider to host Virtual Edge separately. 2. Cannot be sold as a standalone service. Connection to at least one Managed	24.MVM.MNE.S

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
			Router/Firewall/SDWAN edge is required. Delivered over Meraki.	
50	E-Mng Virtual Machine for Cloud Srv Provider S	Extends SD-WAN functionality to private and public clouds.	1. Customer responsible for purchasing a virtual instance with cloud service provider to host Virtual Edge separately. 2. Cannot be sold as a standalone service. Connection to at least one Managed Router/Firewall/SDWAN edge is required. Delivered over Fortinet.	24.MVM.ENE.S
51	Mng Virtual Machine for Cloud Srv Provider M	Extends SD-WAN functionality to private and public clouds.	1. Customer responsible for purchasing a virtual instance with cloud service provider to host Virtual Edge separately. 2. Cannot be sold as a standalone service. Connection to at least one Managed Router/Firewall/SDWAN edge is required. Delivered over Meraki.	24.MVM.MNE.M
52	E-Mng Virtual Machine for Cloud Srv Provider M	Extends SD-WAN functionality to private and public clouds.	1. Customer responsible for purchasing a virtual instance with cloud service provider to host Virtual Edge separately. 2. Cannot	24.MVM.ENE.M

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
			be sold as a standalone service. Connection to at least one Managed Router/Firewall/SDWAN edge is required. Delivered over Fortinet.	
53	Mng Virtual Machine for Cloud Srv Provider L	Extends SD-WAN functionality to private and public clouds.	1. Customer responsible for purchasing a virtual instance with cloud service provider to host Virtual Edge separately. 2. Cannot be sold as a standalone service. Connection to at least one Managed Router/Firewall/SDWAN edge is required. Delivered over Meraki.	24.MVM.MNE.L
54	E-Mng Virtual Machine for Cloud Srv Provider L	Extends SD-WAN functionality to private and public clouds.	1. Customer responsible for purchasing a virtual instance with cloud service provider to host Virtual Edge separately. 2. Cannot be sold as a standalone service. Connection to at least one Managed Router/Firewall/SDWAN edge is required. Delivered over Fortinet.	24.MVM.ENE.L
55	E-Mng Virtual Machine for Cloud Srv Provider XL	Extends SD-WAN functionality to	1. Customer responsible for purchasing a virtual	24.MVM.ENE.XL

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		private and public clouds.	instance with cloud service provider to host Virtual Edge separately. 2. Cannot be sold as a standalone service. Connection to at least one Managed Router/Firewall/SDWAN edge is required. Delivered over Fortinet.	
56	E-Mng Virtual Machine Cloud Srv Provider XXL	Extends SD-WAN functionality to private and public clouds.	1. Customer responsible for purchasing a virtual instance with cloud service provider to host Virtual Edge separately. 2. Cannot be sold as a standalone service. Connection to at least one Managed Router/Firewall/SDWAN edge is required. Delivered over Fortinet.	24.MVM.ENE.XXL
57	E-Mng Virtual Machine Cloud Srv Provider XXXL	Extends SD-WAN functionality to private and public clouds.	1. Customer responsible for purchasing a virtual instance with cloud service provider to host Virtual Edge separately. 2. Cannot be sold as a standalone service. Connection to at least one Managed Router/Firewall/SDWAN	24.MVM.ENE.XXXL

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
			edge is required. Delivered over Fortinet.	
58	Managed WiFi Indoor_1	Managed WiFi service with general purpose characteristics and 24/7/365 support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management portal and security, licensing, and device break/fix. Delivered using a Meraki MR36 or equivalent or successor model access point device. The monthly recurring charge applies per access point, and larger sites generally require multiple access points to ensure appropriate coverage. WiFi installation requiring mounting at	Professional WiFi installation on-site adheres to specific conditions: WiFi installation onsite requires adequate space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot exceed 200 feet in cabling distance. The access point installation location is contingent upon approval by Charter. Approval may be granted following a site survey of the installation location. Standard installations occur from Monday to Friday, 8:00 a.m. to 4:59 p.m., local time.	24.MW11.MNE.MR36

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		heights of greater than 12 feet/ non-standard installation will require an order for Managed WiFi Advanced installation.		
59	E-Managed WiFi Indoor_1	Managed WiFi service with general purpose characteristics and 24/7/365 support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management portal and security, licensing, and device break/fix. Delivered using a Fortinet 231F or equivalent or successor model access point device. The monthly recurring charge applies per access point, and larger sites generally require	Professional WiFi installation on-site adheres to specific conditions: WiFi installation onsite requires adequate space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot exceed 200 feet in cabling distance. The access point installation location is contingent upon approval by Charter. Approval may be granted following a site survey of the installation location. FortiAP installations necessitate connection to a Fortinet managed Router/Firewall/SDWAN	24.MW11.ENE.231F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		multiple access points to ensure appropriate coverage. WiFi installation requiring mounting at heights of greater than 12 feet/ non-standard installation will require an order for Managed WiFi Advanced installation.	edge device. Standard installations occur from Monday to Friday, 8:00 a.m. to 4:59 p.m., local time.	
60	Managed WiFi Indoor_2	Managed WiFi service with high-performance characteristics and 24/7/365 support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management portal and security, licensing, and device break/fix. Delivered using a Meraki MR46 or equivalent or successor model	Professional WiFi installation on-site adheres to specific conditions: WiFi installation onsite requires adequate space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot exceed 200 feet in cabling distance. The access point installation location is contingent upon approval by Charter. Approval may be granted following a	24.MWI2.MNE.431F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>access point device. The monthly recurring charge applies per access point, and larger sites generally require multiple access points to ensure appropriate coverage. WiFi installation requiring mounting at heights of greater than 12 feet/ non-standard installation will require an order for Managed WiFi Advanced installation.</p>	<p>site survey of the installation location. Standard installations occur from Monday to Friday, 8:00 a.m. to 4:59 p.m., local time.</p>	
61	E-Managed WiFi Indoor_2	<p>Managed WiFi service with high-performance characteristics and 24/7/365 support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management</p>	<p>Professional WiFi installation on-site adheres to specific conditions: WiFi installation onsite requires adequate space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot</p>	24.MWI2.ENE.431F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		portal and security, licensing, and device break/fix. Delivered using a Fortinet 431F or equivalent or successor model access point device. The monthly recurring charge applies per access point, and larger sites generally require multiple access points to ensure appropriate coverage. WiFi installation requiring mounting at heights of greater than 12 feet/ non-standard installation will require an order for Managed WiFi Advanced installation.	exceed 200 feet in cabling distance. The access point installation location is contingent upon approval by Charter. Approval may be granted following a site survey of the installation location. FortiAP installations necessitate connection to a Fortinet managed Router/Firewall/SDWAN edge device. Standard installations occur from Monday to Friday, 8:00 a.m. to 4:59 p.m., local time.	
62	Managed WiFi Indoor_3	Managed WiFi service with high throughput/high-performance characteristics and 24/7/365	MR46E device offer requires Indoor Antenna offer to be added to order. Professional WiFi installation on-site	24.MWI3.MNE.831F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management portal and security, licensing, and device break/fix. Delivered using a Meraki MR46E or equivalent or successor model access point device. The monthly recurring charge applies per access point, and larger sites generally require multiple access points to ensure appropriate coverage. WiFi installation requiring mounting at heights of greater than 12 feet/ non-standard installation will require an order for Managed</p>	<p>adheres to specific conditions: WiFi installation onsite requires adequate space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot exceed 200 feet in cabling distance. The access point installation location is contingent upon approval by Charter. Approval may be granted following a site survey of the installation location. Antennas sold separately. Standard installations occur from Monday to Friday, 8:00 a.m. to 4:59 p.m., local time.</p>	

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		WiFi Advanced installation.		
63	E-Managed WiFi Indoor_3	Managed WiFi service with high throughput/high-performance characteristics and 24/7/365 support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management portal and security, licensing, and device break/fix. Delivered using a Fortinet 831F or equivalent or successor model access point device. The monthly recurring charge applies per access point, and larger sites generally require multiple access points to ensure appropriate coverage. WiFi installation requiring	MR46E device offer requires Indoor Antenna offer to be added to order. Professional WiFi installation on-site adheres to specific conditions: WiFi installation onsite requires adequate space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot exceed 200 feet in cabling distance. The access point installation location is contingent upon approval by Charter. Approval may be granted following a site survey of the installation location. Antennas sold separately. FortiAP installations necessitate connection to a Fortinet managed Router/Firewall/SDWAN edge device.	24.MWI3.ENE.831F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		mounting at heights of greater than 12 feet/ non-standard installation will require an order for Managed WiFi Advanced installation.	Standard installations occur from Monday to Friday, 8:00 a.m. to 4:59 p.m., local time.	
64	Managed WiFi Indoor_4	Managed WiFi service with ultra-high-performance characteristics and 24/7/365 support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management portal and security, licensing, and device break/fix. Delivered using a Meraki MR57 or equivalent or successor model access point device. The monthly recurring charge includes one access point,	MR57 device requires UPoE switch for power. Professional WiFi installation on-site adheres to specific conditions: WiFi installation onsite requires adequate space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot exceed 200 feet in cabling distance. The access point installation location is contingent upon approval by Charter. Approval may be granted following a site survey of the installation location. Standard installations occur from Monday to	24.MWI4.MNE.MR57

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		and sites of any significant size generally require multiple access points to ensure appropriate coverage. WiFi installation requiring mounting at heights of greater than 12 feet/ non-standard installation will require an order for Managed WiFi Advanced installation.	Friday, 8:00 a.m. to 4:59 p.m., local time.	
65	Managed WiFi Outdoor_1	Managed WiFi service with general-purpose outdoor characteristics and 24/7/365 support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management portal and security, licensing, and device break/fix. Delivered using	Professional WiFi installation on-site adheres to specific conditions: WiFi installation onsite requires adequate space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot exceed 200 feet in cabling distance. The access point installation location is contingent upon	24.MWO1.MNE.234F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>a Meraki MR76 or equivalent or successor model access point device. The access point is rated to withstand outdoor environments. The monthly recurring charge applies per access point, and larger sites generally require multiple access points to ensure appropriate coverage. WiFi installation requiring mounting at heights of greater than 12 feet/ non-standard installation will require an order for Managed WiFi Advanced installation.</p>	<p>approval by Charter. Approval may be granted following a site survey of the installation location. Standard installations occur from Monday to Friday, 8:00 a.m. to 4:59 p.m., local time.</p>	
66	E-Managed WiFi Outdoor_1	<p>Managed WiFi service with general-purpose outdoor characteristics and 24/7/365</p>	<p>Professional WiFi installation on-site adheres to specific conditions: WiFi installation onsite requires adequate</p>	24.MWO1.ENE.234F

<b>Line Item</b>	<b>Feature Name</b>	<b>Feature Description</b>	<b>Bidder's Product Description, Restrictions and Limitations</b>	<b>Bidder's Product Identifier</b>
		<p>support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management portal and security, licensing, and device break/fix. Delivered using a Fortinet 234F or equivalent or successor model access point device. The access point is rated to withstand outdoor environments. The monthly recurring charge applies per access point, and larger sites generally require multiple access points to ensure appropriate coverage. WiFi installation requiring mounting at heights of greater than 12</p>	<p>space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot exceed 200 feet in cabling distance. The access point installation location is contingent upon approval by Charter. Approval may be granted following a site survey of the installation location. FortiAP installations necessitate connection to a Fortinet managed Router/Firewall/SDWAN edge device. Standard installations occur from Monday to Friday, 8:00 a.m. to 4:59 p.m., local time.</p>	

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		feet/ non-standard installation will require an order for Managed WiFi Advanced installation.		
67	Managed WiFi Outdoor_2	Managed WiFi service with high-performance outdoor characteristics and 24/7/365 support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management portal and security, licensing, and device break/fix. Delivered using a Meraki MR86 or equivalent or successor model access point device. The access point is rated to withstand outdoor environments. The monthly	MR86 offer requires Outdoor Antenna to be added to order. Professional WiFi installation on-site adheres to specific conditions: WiFi installation onsite requires adequate space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot exceed 200 feet in cabling distance. The access point installation location is contingent upon approval by Charter. Approval may be granted following a site survey of the installation location. Antennas sold separately. Standard installations occur from Monday to Friday, 8:00	24.MWO2.MNE.432F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		recurring charge applies per access point, and larger sites generally require multiple access points to ensure appropriate coverage. WiFi installation requiring mounting at heights of greater than 12 feet/ non-standard installation will require an order for Managed WiFi Advanced installation.	a.m. to 4:59 p.m., local time.	
68	E-Managed WiFi Outdoor_2	Managed WiFi service with high-performance outdoor characteristics and 24/7/365 support provided by Charter. Includes proactive status monitoring, next-gen equipment, integrated management portal and security,	MR86 offer requires Outdoor Antenna to be added to order. Professional WiFi installation on-site adheres to specific conditions: WiFi installation onsite requires adequate space for equipment/material and an internet connection. Access points can be placed up to 12 feet high from the floor and access point location cannot	24.MWO2.ENE.432F

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>licensing, and device break/fix. Delivered using a Fortinet 432F or equivalent or successor model access point device. The access point is rated to withstand outdoor environments. The monthly recurring charge applies per access point, and larger sites generally require multiple access points to ensure appropriate coverage. WiFi installation requiring mounting at heights of greater than 12 feet/ non-standard installation will require an order for Managed WiFi Advanced installation.</p>	<p>exceed 200 feet in cabling distance. The access point installation location is contingent upon approval by Charter. Approval may be granted following a site survey of the installation location. Antennas sold separately. FortiAP installations necessitate connection to a Fortinet managed Router/Firewall/SDWAN edge device. Standard installations occur from Monday to Friday, 8:00 a.m. to 4:59 p.m., local time.</p>	
69	Managed WiFi Advanced Equip Inst	Charter Communications charge for non-	Requires the purchase of Managed WiFi.	24.AEI.01.R

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
		<p>standard Access Point installation. Includes non-standard cabling and/or installation for access points above 12 feet. Customer must have adequate pathways, determined during survey. Only to be used for installation in conjunction with Charter Communications Managed WiFi.</p>		
70	Managed Network Edge vMX-XL	<p>Extends SD-WAN functionality to private and public clouds.</p>	<p>Customer responsible for purchasing a virtual instance with cloud service provider to host Virtual Edge separately. 2. Cannot be sold as a standalone service. Connection to at least one Managed Router/Firewall/SDWAN edge is required. Delivered over Meraki. Only provided in conjunction with AWS.</p>	24.VMX.MNE.XL

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## **24.3 NETWORK DISASTER/OPERATIONAL RECOVERY**

### 24.3.1 Telecommunications Service Priority (TSP) Program

When applicable, the Contractor shall comply with the Telecommunications Service Priority (TSP) Program, a Federal Communications Commission (FCC) mandate for prioritizing service requests by identifying those services critical to National Security and Emergency Preparedness (NS/EP) and be in compliance with all related CPUC and FCC requirements.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

## **24.4 DISTRIBUTED DENIAL OF SERVICE MITIGATION SERVICES**

The Contractor shall provide a network based Distributed Denial of Service (DDoS) detection and mitigation service, in support of Contractor's Internet services. All hardware/software necessary to provide service shall reside in the Contractor's network and shall be maintained, monitored and supported by the Contractor. Mitigation shall occur in the Contractor IP Network before traffic reaches Customer edge router. Contractor shall establish User and Entity Behavior Analytical (UEBA) traffic patterns to minimize false positives during the detection/mitigation process and perform periodic "tuning" of normal traffic patterns established. The Contractor shall analyze, identify, report and alert on anomalies in Customer traffic under DDoS attacks. Upon detection of a DDoS attack, Contractor shall reroute traffic to a network based mitigation center where DDoS attack packets are identified and dropped. Valid packets shall be routed to the Customer edge router. Upon Contractor determination that the DDoS attack has subsided, Contractor shall restore the normal routing of Customer traffic.

The Bidder's DDoS solution shall mitigate volumetric, protocol or resource, and application layer (Layers 3, 4 & 7) attacks.

Bidder's DDoS offering shall defend against the following threats/attacks at a minimum:

1. Network flood attacks (SYN, SYN-ACK, TCP, UDP, IP, ICMP, etc.);

**Bidder understands the Requirement and shall meet or exceed it? Yes**

2. Address, port scanning and sniffing attacks;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

3. DNS attacks;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

4. Web application attacks (HTTP flood attacks, etc.); and,

**Bidder understands the Requirement and shall meet or exceed it? Yes**

5. Protocol abuse attacks.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.4.1 DDoS Initiation

The Contractor shall support the initiation of DDoS mitigation described below:

1. Customer identifies the DDoS attack and initiates the mitigation; or,
2. Contractor identifies the DDoS attack and Customer authorizes the mitigation.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.4.2 DDoS Activities

The Contractor shall perform the following activities at a minimum:

1. Monitoring of Customer traffic patterns;
2. Establish network traffic baselines;
3. Detection of Customer traffic anomalies;
4. Scrubbing of Customer traffic by dropping DDoS attack packets;
5. Perform detection and anomaly analysis;
6. Develop and provide access to a strategy for identifying and mitigating real time attacks;
7. Issuance of email alert and a verbal person-to-person telephone call to authorized users within 15 minutes when an anomaly or attack is detected;
8. Issuance of email alert and a verbal person-to-person telephone call to authorized users within 15 minutes of when mitigation services commence; and,
9. Analyze attack patterns throughout Contractor IP backbone and alerting authorized users of IP threats, provide authorized users the information via secure portal for addressing/mitigating IP threats.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.4.2.1 U.S. Based DDoS Mitigation Services Waiver

The provisions detailed in eVAQ General Provisions Section 92, U.S. Based Services, will not apply to the Contractor's DDoS mitigation efforts under the following conditions:

1. Attacks where malicious traffic originates outside of the U.S. and is mitigated outside of the U.S.;
2. Contractor personnel located outside the U.S. may access public information (including Public IP address information) only to the extent necessary to mitigate a DDoS attack; and,
3. CPNI shall not be provided to individuals outside of the U.S.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.4.3 DDoS Detection and Mitigation Web Portal and Reporting

Contractor shall provide a secure web based portal for authorized users.

Contractor's portal shall provide authorized users the following at a minimum:

1. A view of their traffic patterns;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

2. A view of the real time attack and mitigation strategy;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

3. IP threat alerts;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

4. Information for addressing and mitigating IP threats; and,

**Bidder understands the Requirement and shall meet or exceed it? Yes**

Contractor's portal shall provide authorized users access to the following reports:

1. Traffic anomaly detection;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

2. TCP and UDP protocol summary; and,

**Bidder understands the Requirement and shall meet or exceed it? Yes**

3. Top IP "talkers" summary.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.4.4 DDoS Detection and Mitigation Features

The Contractor shall offer the DDoS Detection and Mitigation Service detailed in Table 24.4.4.a.

**Table 24.4.4.a – DDoS Detection and Mitigation Service**

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
1	DDoS Mitigation 1.544–10 Mbps	DDoS Mitigation Services for 1.544–10 Mbps of traffic flow.	DDoS Protection 100Mb - Available with InFra or InFram services only	24.DD.00100	Yes
2	DDoS Mitigation 15 Mbps	DDoS Mitigation Services for 15 Mbps of traffic flow.	DDoS Protection 100Mb - Available with InFra or InFram services only	24.DD.00100	<b>Yes</b>
3	DDoS Mitigation 25 Mbps	DDoS Mitigation Services for 25 Mbps of traffic flow.	DDoS Protection 100Mb - Available with InFra or InFram services only	24.DD.00100	<b>Yes</b>
4	DDoS Mitigation 50 Mbps	DDoS Mitigation Services for 50 Mbps of traffic flow.	DDoS Protection 100Mb - Available with InFra or InFram services only	24.DD.00100	<b>Yes</b>
5	DDoS Mitigation 100 Mbps	DDoS Mitigation Services for 100 Mbps of traffic flow.	DDoS Protection 100Mb - Available with InFra or InFram services only	24.DD.00100	<b>Yes</b>
6	DDoS Mitigation 250 Mbps	DDoS Mitigation Services for 250 Mbps of traffic flow.	DDoS Protection 500Mb - Available with InFra or InFram services only	24.DD.00500	<b>Yes</b>

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
7	DDoS Mitigation 500 Mbps	DDoS Mitigation Services for 500 Mbps of traffic flow.	DDoS Protection 500Mb - Available with InFra or InFram services only	24.DD.00500	Yes
8	DDoS Mitigation 1 Gbps	DDoS Mitigation Services for 1 Gbps of traffic flow.	DDoS Protection 1Gb - Available with InFra or InFram services only	24.DD.01000	Yes
9	DDoS Mitigation 5 Gbps	DDoS Mitigation Services for 5 Gbps of traffic flow.	DDoS Protection 5 Gb - Available with InFra or InFram services only	24.DD.05000	Yes

The Contractor may offer Unsolicited DDoS Detection and Mitigation features in Table 24.4.4.b.

**Table 24.4.4.b – Unsolicited DDoS Detection and Mitigation Service and Features**

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier
1	DDoS Mitigation 10 Gbps	DDoS Mitigation Services for 10 Gbps of traffic flow.	DDoS Protection 10 Gb - Available with InFra or InFram services only	24.DD.10000
2				
3				

## 24.5 OTHER SERVICES

### 24.5.1 Hourly Rates for Services

The hourly classifications of hours worked for services described in this section will be as follows:

1. Regular Hours – Hours worked between 8:00AM and 4:59PM, Monday through Friday.
2. Overtime Hours – Hours worked between 5:00PM and 7:59AM, Monday through Friday and all day Saturday.
3. Sunday and Holiday Hours – Any hours worked on Sunday or State of California holidays.

When coordinated scheduling for projects between the State and the Contractor occurs, the State and the Contractor may mutually agree that hours worked between 5:00PM and 7:59AM, Monday through Friday and all day Saturday and any hours worked on Sunday or State of California holidays can be classified as Regular Hours in accordance with the State of California Department of Industrial Relations.

**Bidder understands the Requirement and shall meet or exceed it? Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.5.2 Services Related Infrastructure (SRI)

The Contractor shall offer infrastructure service as defined below.

##### 24.5.2.1 Extended Demarcation Wiring Services

The Contractor shall provide Extended Demarcation (Extended Demarc) wiring to support the services covered by this IFB C4DNCS19 Category for all of the Customer occupied buildings where services under this Contract are being offered. Extended Demarc wiring includes wire/cable related activities required to extend the demarcation point to the Customer defined termination location or cross-connect point from the Contractor's MPOE.

**Bidder understands the Requirement and shall meet or exceed it? Bidder understands the Requirement and shall meet or exceed it? Yes**

Extended Demarc wiring shall include the necessary wire/cable, connectors, jumpers, panel, and jack. Extended Demarc wiring shall also include associated trouble shooting, testing and labeling. Extended Demarc wiring is limited to the following:

1. Installation of cabling for extending services from the MPOE location

- to the Customer's point of utilization;
2. Installation of cross-connects or rearrangement of existing jumpers;
  3. Identification and testing of existing cabling beyond the MPOE to the Customer's Equipment location; and,
  4. Installation intervals shall be in accordance with the timeframes identified for the services that this cabling will support, and shall be subject to the SLAs associated with that service.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

The Contractor shall not be required to complete Extended Demarc wiring from the MPOE to the extended Demarc location if:

1. The wire/cable pathway is blocked, and cannot be cleared without significant effort or damage to the Customer site;
2. The wire/cable pathway is in an asbestos or other environment hazardous to the Contractor's personnel, or where such work would be hazardous to the public or to the Customer's staff; or,
3. Upon written release provided by either the Customer or by the CALNET Program.

The Bidder shall provide a price in the Cost Worksheets for all labor and materials required for Extended Demarc wiring necessary to complete the provisioning of one Demarc extension as described herein. The Bidder shall provide one price for each media identified.

Wiring will be installed according to industry Standards and cabling recommendations published in the State Telecommunications Management Manual (STMM), Facilities Management Chapter, and Uniform Building Cabling/Wiring current at the time of this IFB and as periodically updated by the CALNET Program. Additionally, all wiring installation and maintenance activities will be in accordance with all applicable EIA/TIA, BICSI, and ITU-T recommended standards current at the time of installation or maintenance.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

Bidder shall provide the Extended Demarcation Wiring Services described in Table 24.5.2.1

**Table 24.5.2.1 – Extended Demarcation Wiring Services**

<b>Line Item</b>	<b>Feature Name</b>	<b>Feature Description</b>	<b>Bidder's Product Description, Restrictions and Limitations</b>	<b>Bidder's Product Identifier</b>	<b>Bidder Meets or Exceeds? Yes or No</b>
1	Extended Demarcation -Copper – Regular Hours	Wiring services to extend Facilities from the Customer's MPOE to the Customer's point of utilization from a copper trunk or trunking equipment. Includes 300 feet of four-pair cable and an RJ48 or equivalent jack.	Cat5e UTP cabling work terminated into RJ45 jacks or patch panels within same building, using customer-supplied cable pathway, without core drills or firewall penetrations. For new or existing services only.	2x.FO.ED.01.R	Yes
2	Extended Demarcation -Copper – Overtime Hours	Wiring services to extend Facilities from the Customer's MPOE to the Customer's point of utilization from a copper trunk or trunking equipment. Includes 300 feet of four-pair cable and an RJ48 or equivalent jack.	Cat5e UTP cabling work terminated into RJ45 jacks or patch panels within same building, using customer-supplied cable pathway, without core drills or firewall penetrations. For new or existing services only.	2x.FO.ED.01.O	Yes
3	Extended Demarcation -Copper – Sunday and Holiday Hours	Wiring services to extend Facilities from the Customer's MPOE to the Customer's point	Cat5e UTP cabling work terminated into RJ45 jacks or patch panels within same	2x.FO.ED.01.H	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
		of utilization from a copper trunk or trunking equipment. Includes 300 feet of four-pair cable and an RJ48 or equivalent jack.	building, using customer-supplied cable pathway, without core drills or firewall penetrations. For new or existing services only.		
4	Extended Demarcation -Copper 25 Pair – Regular Hours	Wiring services to extend Facilities from the Customer's MPOE to the Customer's point of utilization from a copper trunk or trunking equipment. Includes 300 feet or less of Category 5 25-pair CMP cable, one patch panel and mounting hardware. Ten Category 5e, three meter jumpers; one 24-port patch panel to be provided in the MPOE and Intermediate Distribution Frame (IDF) for all circuits being extended. Includes	Cabling work within same building, using customer-supplied cable pathway, without core drills or firewall penetrations. For new or existing services only.	2x.FO.ED.02.R	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
		associated troubleshooting, testing, and labeling.			
5	Extended Demarcation -Copper 25 Pair – Overtime Hours	Wiring services to extend Facilities from the Customer's MPOE to the Customer's point of utilization from a copper trunk or trunking equipment. Includes 300 feet or less of Category 5 25-pair CMP cable, one patch panel and mounting hardware. Ten Category 5e, three meter jumpers; one 24-port patch panel to be provided in the MPOE and Intermediate Distribution Frame (IDF) for all circuits being extended. Includes associated troubleshooting, testing, and labeling.	Cabling work within same building, using customer-supplied cable pathway, without core drills or firewall penetrations. For new or existing services only.	2x.FO.ED.02.O	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
6	Extended Demarcation -Copper 25 Pair – Sunday and Holiday Hours	Wiring services to extend Facilities from the Customer's MPOE to the Customer's point of utilization from a copper trunk or trunking equipment. Includes 300 feet or less of Category 5 25-pair CMP cable, one patch panel and mounting hardware. Ten Category 5e, three meter jumpers; one 24-port patch panel to be provided in the MPOE and Intermediate Distribution Frame (IDF) for all circuits being extended. Includes associated troubleshooting, testing, and labeling.	Cabling work within same building, using customer-supplied cable pathway, without core drills or firewall penetrations. For new or existing services only.	2x.FO.ED.02.H	Yes
7	Extended Demarcation - Optical Fiber Link –	Wiring services to extend Facilities from the Customer's MPOE to the	Multi-mode fiber optic cabling work within same building, using customer-	2x.FO.ED.03.R	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
	Regular Hours	Customer's point of utilization from a fiber trunk or trunking equipment, Strand count required to provision one/each service only. Includes up to 1,000 feet of 62.5/125 – or 50/125 – micron, two-strand CMP fiber drop cable with adapters, enclosures, connectors, and two SC-SC duplex patch cords for each single circuit extension. Includes associated troubleshooting, testing and labeling.	supplied cable pathway, without core drills or firewall penetrations. For new or existing services only.		
8	Extended Demarcation - Optical Fiber Link – Overtime Hours	Wiring services to extend Facilities from the Customer's MPOE to the Customer's point of utilization from a fiber trunk or trunking	Multi-mode fiber optic cabling work within same building, using customer-supplied cable pathway, without core drills or firewall	2x.FO.ED.03.O	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
		equipment, Strand count required to provision one/each service only. Includes up to 1,000 feet of 62.5/125 – or 50/125 – micron, two-strand CMP fiber drop cable with adapters, enclosures, connectors, and two SC-SC duplex patch cords for each single circuit extension. Includes associated troubleshooting, testing and labeling.	penetrations. For new or existing services only.		
9	Extended Demarcation - Optical Fiber Link – Sunday and Holiday Hours	Wiring services to extend Facilities from the Customer's MPOE to the Customer's point of utilization from a fiber trunk or trunking equipment, Strand count required to provision	Multi-mode fiber optic cabling work within same building, using customer-supplied cable pathway, without core drills or firewall penetrations. For new or existing services only.	2x.FO.ED.03.H	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
		one/each service only. Includes up to 1,000 feet of 62.5/125 – or 50/125 – micron, two-strand CMP fiber drop cable with adapters, enclosures, connectors, and two SC-SC duplex patch cords for each single circuit extension. Includes associated troubleshooting, testing and labeling.			

24.5.2.2 Unsolicited Services Related Infrastructure

Bidder may offer additional unsolicited Services Related Infrastructure in Table 24.5.2.2.

**Table 24.5.2.2 – Unsolicited Services Related Infrastructure**

Line Item	Feature Name	Bidder's Product Identifier	Bidder's Product Description, Restrictions and Limitations
1	None		
2			
3			
4			
5			

Line Item	Feature Name	Bidder's Product Identifier	Bidder's Product Description, Restrictions and Limitations
6			
7			
8			
9			
10			

### 24.5.3 Services Related Hourly Support

The Contractor shall provide labor for the diagnosis and/or repair of services listed in this Contract and all costs for repair are the responsibility of the service provider unless it is specifically determined that the cause of service failure is outside the scope of the Contractor's responsibilities. Work performed under this Section 24.5.3 is authorized only for situations where the Contractor has dispatched personnel to diagnose a service problem that is discovered to be caused by factors outside the responsibility of the Contractor or no trouble is found.

#### **Bidder understands the Requirement and shall meet or exceed it? Yes**

In Cost Worksheet 24.5.3, the Contractor shall provide a fixed hourly rate schedule for the labor classifications required to diagnose and/or repair the contracted services. The rates identified shall only be used for the diagnosis and/or repair of contracted services and no materials shall be included in the rates. The total amount of labor hours permitted to be performed is ten hours per dispatch/occurrence.

#### **Bidder understands the Requirement and shall meet or exceed it? Yes**

The Contractor shall offer emergency restoration services as detailed in Table 24.5.3.

**Table 24.5.3 – Services Related Hourly Support**

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
1	Field Service	Field technician properly	At the customer's request, dispatch of an expert level	2x.FO.LH.00.R	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
	Repair Technician Regular Hours	trained to an expert level for the service being dispatched to diagnose and/or repair a CALNET DNCS service problem that turns out to be caused by factors outside the responsibility of the Contractor.	technician during regular hours to diagnose a service-related issue that is resolved to be external to the Contractor's service responsibility. Deployed technicians are equipped with materials needed to resolve issues related to contracted service offerings. While on site, technicians check that contracted services are working properly and take the necessary steps to resolve issues for services to be fully functional. Expert technicians have an escalation capability if resolution of the customer complaint regarding service is not reached. Restrictions and Limitations: Dispatched technician is responsible for ensuring contracted services are fully		

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
			functional but is not responsible for resolving technical issues within the customer's local area network.		
2	Field Service Repair Technician Overtime Hours	Field technician properly trained to an expert level for the service being dispatched to diagnose and/or repair a CALNET DNCS service problem that turns out to be caused by factors outside the responsibility of the Contractor.	At the customer's request, dispatch of an expert level technician during overtime hours to diagnose a service-related issue that is resolved to be external to the Contractor's service responsibility. Deployed technicians are equipped with materials needed to resolve issues related to contracted service offerings. While on site, technicians check that contracted services are working properly and take the necessary steps to resolve issues for services to be fully functional. Expert technicians have an escalation capability if resolution of the customer complaint	2x.FO.LH.00.O	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
			<p>regarding service is not reached. Restrictions and Limitations: Dispatched technician is responsible for ensuring contracted services are fully functional but is not responsible for resolving technical issues within the customer's local area network.</p>		
3	Field Service Repair Technician Sunday and Holiday Hours	Field technician properly trained to an expert level for the service being dispatched to diagnose and/or repair a CALNET DNCS service problem that turns out to be caused by factors outside the responsibility of the Contractor.	<p>At the customer's request, dispatch of an expert level technician during Sunday and Holiday hours to diagnose a service-related issue that is resolved to be external to the Contractor's service responsibility. Deployed technicians are equipped with materials needed to resolve issues related to contracted service offerings. While on site, technicians check that contracted services are working properly and take</p>	2x.FO.LH.00.H	Yes

Line Item	Feature Name	Feature Description	Bidder's Product Description, Restrictions and Limitations	Bidder's Product Identifier	Bidder Meets or Exceeds? Yes or No
			<p>the necessary steps to resolve issues for services to be fully functional. Expert technicians have an escalation capability if resolution of the customer complaint regarding service is not reached.</p> <p>Restrictions and Limitations: Dispatched technician is responsible for ensuring contracted services are fully functional but is not responsible for resolving technical issues within the customer's local area network.</p>		

## 24.6 SERVICE LEVEL AGREEMENTS (SLA)

The Contractor shall provide Service Level Agreements (SLAs) as defined below. The intent of this section is to provide Customers, CALNET Program and the Contractor with requirements that define and assist in the management of the SLAs. This section includes the SLA formats, general requirements, stop clock conditions, and the Technical SLAs for the services identified in this solicitation.

### 24.6.1 Service Level Agreement Format

The Contractor shall adhere to the following format and include the content as described below for each Technical SLA added by the Contractor throughout the Term of the Contract:

1. SLA Name – Each SLA Name must be unique;
2. Definition - Describes what performance metric will be measured;
3. Measurements Process - Provides instructions how the Contractor will continuously monitor and measure SLA performance to ensure compliance. The Contractor shall provide details describing how and what will be measured. Details should include source of data and define the points of measurement within the system, application, or network;
4. Service(s) - All applicable services will be listed in each SLA;
5. Objective(s) – Defines the SLA performance goal/parameters; and,
6. Rights and Remedies
7. Per Occurrence: Rights and remedies are paid on a per event basis during the bill cycle; and,
8. Monthly Aggregated Measurements: Rights and remedies are paid once during the bill cycle based on an aggregate of events over a defined period of time.

The Contractor shall proactively apply a credit or refund when an SLA objective is not met. CALNET SLA Rights and Remedies do not require the Customer to submit a request for credit or refund.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.6.2 Technical Requirements versus SLA Objectives

Sections 24.2 (Flat Rate Internet Services), 24.3 (Network Disaster/Operational Recovery), 24.4 (DDoS Mitigation Services), and 24.5 (Other Services) define the technical requirements for each service. These requirements are the minimum parameters each Bidder must meet in order to qualify for Contract award. Upon Contract award the committed technical requirements will be maintained throughout the remainder of the Contract.

Committed SLA objectives are minimum parameters which the Contractor shall be held accountable for all rights and remedies throughout Contract Term.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

### 24.6.3 Methods of Outage Reporting: Customer or Contractor

There are two methods in which CALNET service failures or quality of service issues may be reported and Contractor trouble tickets opened: Customer reported or Contractor reported.

The first method of outage reporting results from a Customer reporting service trouble to the Contractor's Customer Service Center via phone call or opening of a trouble ticket using the on-line Trouble Ticket Reporting Tool (SOW Business Requirements Section G.10.4, Trouble Ticket Reporting Tool (TTRT)).

The second method of outage reporting occurs when the Contractor opens a trouble ticket as a result of network/system alarm or other method of service failure identification. In each instance the Contractor shall open a trouble ticket using the Trouble Ticket Reporting Tool (SOW Business Requirements Section G.10.4) and monitor and report to Customer until service is restored.

#### **Bidder understands the Requirement and shall meet or exceed it? Yes**

### 24.6.4 Bidder Response to Service Level Agreements

Many of the Service Level Agreements described below include multiple objective levels – Basic, Standard and Premier. Bidders shall indicate one specific objective level they are committing to for each service in space provided in the “Objective” section of each SLA description.

#### **Bidder understands the Requirement and shall meet or exceed it? Yes**

### 24.6.5 Contractor SLA Management Plan

Within 90 calendar days of Contract award, the Contractor shall provide CALNET CMO with a detailed SLA Management Plan that describes how the Contractor will manage the Technical SLAs for services in this IFB. The SLA Management plan shall provide processes and procedures to be implemented by the Contractor. The SLA Management Plan shall define the following:

1. Contractor SLA Manager and supporting staff responsibilities;
2. Contractor's process for measuring objectives for each SLA. The process shall explain how the Contractor will continuously monitor and measure SLA performance to ensure compliance. The Contractor shall provide details describing how and what will be measured. Details should include source of data and define the

- 
- points of measurement within the system, application, or network;
3. Creation and delivery of SLA Reports (SOW Business Requirements Section G.10.5). The Contractor shall include a sample report in accordance with SOW Business Requirements Section G.10.5, SLA Reports for the following: SLA Service Performance Report (SOW Business Requirements Section G.10.5.1), SLA Provisioning Report (SOW Business Requirements Section G.10.5.2), SLA Catastrophic Outage Reports (SOW Business Requirements Section G.10.5.3), and Trouble Ticket and Provisioning/SLA Credit Report (SOW Business Requirements Section G.10.5.4). The Contractor shall commit to a monthly due date. The reports shall be provided to the CALNET Program via the Private Oversight Website (SOW Business Requirements Section G.10.2);
  4. SLA invoicing credit and refund process;
  5. Contractor SLA problem resolution process for SLA management and SLA reporting. The Contractor shall provide a separate process for Customers and CALNET Program; and,
  6. Contractor SLA Manager to manage all SLA compliance and reporting. The Contractor shall include SLA Manager contact information for SLA inquiries and issue resolution for Customer and CALNET Program.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.6.6 Technical SLA General Requirements

The Contractor shall adhere to the following general requirements which apply to all CALNET Technical SLAs (Section 24.6.8):

1. With the exception of the Provisioning SLA (Section 24.6.8.9), the total SLA rights and remedies for any given month shall not exceed the sum of 100% of the Total Monthly Recurring Charges (TMRC). Services with usage charges shall apply the Average Daily Usage Charge (ADUC) in addition to any applicable TMRC rights and remedies;
2. If a circuit or service fails to meet one or more of the performance objectives, only the SLA with the largest monthly Rights and Remedies will be credited to the Customer, per event;
3. The Contractor shall apply CALNET SLAs and remedies for services provided by Subcontractors and/or Affiliates;
4. The Definition, Measurement Process, Objectives, and Rights and

Remedies shall apply to all services identified in each SLA. If a Category or Subcategory is listed in the SLA, then all services under that Category or Subcategory are covered under the SLA. Exceptions must be otherwise stated in the SLA; and,

5. TMRC rights and remedies shall include the service, option(s), and feature(s) charges.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

6. The Contractor shall proactively and continuously monitor and measure all Technical SLA objectives.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

7. The Contractor shall proactively credit all rights and remedies to the Customer within 60 calendar days of the trouble resolution date on the trouble ticket or within 60 calendar days of the Due Date on the Service Request for the Provisioning SLA.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

8. To the extent that Contractor offers additional SLAs, or SLAs with more advantageous rights and/or remedies for same or similar services offered through tariffs, online service guides, or other similarly situated government contracts (Federal, State, County, City), The State will be entitled to the same rights and/or remedies therein. The Contractor shall present the SLAs to CALNET Program for possible inclusion via amendments;
9. The Contractor shall apply CALNET DNCS SLAs and remedies to services provided in all areas the Contractor provides service and/or open to competition (as defined by the CPUC). Any SLAs and remedies negotiated between Contractor and Incumbent Local Exchange Carriers in territories closed to competition shall be passed through to the CALNET DNCS Customer;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

10. The election by CALNET Program of any SLA remedy covered by this Contract shall not exclude or limit CALNET Program or any Customer's rights and remedies otherwise available within the Contract or at law or equity;
11. The Contractor shall apply rights and remedies when a service fails to meet the SLA objective even when backup or protected services provide Customer with continuation of services;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

12. The Contractor shall act as the single point of contact in coordinating all entities to meet the State's needs for provisioning, maintenance, restoration and resolution of service issues or that of their Subcontractors, Affiliates or resellers under this Contract;
13. The Customer Escalation Process and/or the CALNET CMO Escalation Process shall be considered an additional right and remedy if the Contractor fails to resolve service issues within the SLA objective(s);
14. Trouble reporting and restoration shall be provided 24x7 for CALNET services;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

15. SLAs apply 24x7 unless SLA specifies an exception;
16. Contractor invoices shall clearly cross reference the SLA credit to the service Circuit ID in accordance with SOW Business Requirements Section G.6;

**Bidder understands the Requirement and shall meet or exceed it? Yes**

17. The Contractor shall provide a CALNET DNCS SLA Manager responsible for CALNET DNCS SLA compliance. The SLA Manager shall attend regular meetings and be available upon request to address CALNET Program SLA oversight, report issues, and problem resolution concerns. The CALNET DNCS SLA Manager shall also coordinate SLA support for Customer SLA inquiries and issue resolution;
18. The Contractor shall provide Customer and CALNET Program support for SLA inquiries and issue resolution; and,
19. Any SLAs and remedies negotiated between Contractor and third party service provider in territories closed to competition shall be passed through to the CALNET DNCS Customer.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.6.7 Trouble Ticket Stop Clock Conditions

Only the following conditions shall be allowed to stop the duration of the Service Level Agreements. The Contractor shall document durations using the Stop Clock Condition (SCC) listed in Table 24.6.7.a, which must include start and stop time stamps in the Contractor's Trouble Ticket Reporting Tool (SOW Business Requirements Section G.10.4) or Customer provisioning Service Request for each application of an SCC.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

The Contractor shall not consider “cleared while testing” or “no trouble found” as a SCC.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

Contractor observation timeframes, not requested by End-User, after incident resolution shall not be included in Outage Duration reporting.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

Note: The Glossary (SOW Appendix A) defines term “End-User” as the “individual within an Entity that is receiving services and/or features provided under the Contract.”

**Table 24.6.7 – Stop Clock Conditions**

Line Item	Stop Clock Condition (SCC)	SCC Definition
1	END-USER REQUEST	Periods when a restoration or testing effort is delayed at the specific request of the End-User. The SCC shall exist during the period the Contractor was delayed, provided that the End-User’s request is documented and time stamped in the Contractor’s trouble ticket or Service Request system and shows efforts are made to contact the End-User during the applicable Stop Clock period.
2	OBSERVATION	Time after a service has been restored but End-User request ticket is kept open for observation. If the service is later determined by the End-User to not have been restored, the Stop Clock shall continue until the time the End-User notifies the Contractor that the Service has not been restored.
3	END-USER NOT AVAILABLE	Time after a service has been restored but End-User is not available to verify that the Service is working. If the service is later determined by the End-User to not have been restored, the Stop Clock shall apply only for the time period between Contractor’s reasonable attempt to notify the End-User that Contractor believes the service has been restored and the time the End-User notifies the Contractor that the Service has not been restored.

Line Item	Stop Clock Condition (SCC)	SCC Definition
4	WIRING	Restoration cannot be achieved because the problem has been isolated to wiring that is not maintained by Contractor or any of its Subcontractors or Affiliates. If it is later determined the wiring is not the cause of failure, the SCC shall not apply.
5	POWER	Trouble caused by a power problem outside of the responsibility of the Contractor.
6	CUSTOMER PROVISIONING DELAY	Delays to Provisioning caused by lack of Customer's building entrance Facilities, conduit structures that are the Customer's responsibilities or Extended demarcation wiring. If the Service Providing Contractor has been contracted by the Customer for extended demarcation, this SCC shall not apply to missed dates/times. The Customer Provisioning Delay SCC is restricted to Provisioning SLAs only.
7	ACCESS	<p>Limited access or contact with End-User provided the Contractor documents in the trouble ticket several efforts to contact End-User for the following:</p> <ul style="list-style-type: none"> <li>a. Access necessary to correct the problem is not available because access has not been arranged by site contact or End-User representative;</li> <li>b. Site contact refuses access to technician who displays proper identification;</li> <li>c. Customer provides incorrect site contact information which prevents access, provided that Contractor takes reasonable steps to notify End-User of the improper contact information and takes steps to obtain the correct information; or,</li> <li>d. Site has limited hours of business that directly impacts the Contractor's ability to resolve the problem.</li> </ul>

Line Item	Stop Clock Condition (SCC)	SCC Definition
		If it is determined later that the cause of the problem was not at the site in question, then the Access SCC shall not apply.
8	STAFF	Any problem or delay to the extent caused by End-User's staff that prevents or delays Contractor's resolution of the problem. In such event, Contractor shall make a timely request to End-User staff to correct the problem or delay and document in trouble ticket.
9	APPLICATION	End-User software applications that interfere with repair of the trouble.
10	CPE	Repair/replacement of Customer Premise Equipment (CPE) not provided by Contractor if the problem has been isolated to the CPE. If determined later that the CPE was not the cause of the service outage, the CPE SCC will not apply.
11	NO RESPONSE	Failure of the trouble ticket originator or responsible End-User to return a call from Contractor's technician for on-line close of trouble tickets after the Service has been restored as long as Contractor can provide documentation in the trouble ticket substantiating the communication from Contractor's technician.
12	MAINTENANCE	An outage directly related to any properly performed scheduled maintenance or upgrade scheduled for CALNET DNCS service. Any such stop clock condition shall not extend beyond the scheduled period of the maintenance or upgrade. SLAs shall apply for any maintenance caused outage beyond the scheduled maintenance period. Outages occurring during a scheduled maintenance or upgrade period and not caused by the scheduled maintenance shall not be subject to the Maintenance SCC.
13	THIRD PARTY	Any problem or delay caused by a third party not under the control of Contractor, not preventable by Contractor, including, at a minimum, cable cuts not caused by the Contractor. Contractor's Subcontractors and Affiliates shall be deemed to be under the control of Contractor with respect to

Line Item	Stop Clock Condition (SCC)	SCC Definition
		the equipment, services, or Facilities to be provided under this Contract.
14	FORCE MAJEURE	Force Majeure events, as defined in the eVAQ General Provisions - Telecommunications, Section 28 (Force Majeure).
15	Customer Environmental	An outage directly caused by customer premise environmental conditions, which are outside the control and responsibility of the Contractor. This includes a non-secured location, excessive heat or lack of cooling. If determined later that the environmental conditions were not the cause of the service outage, or a result of the Contractor modifying Contractor provided equipment without Customer's approval, the Customer Environmental SCC will not apply.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

The Contractor shall provide and manage the following Technical SLAs.

24.6.8 Technical Service Level Agreements (SLA)

24.6.8.1 Availability (M-S)

**SLA Name:** Availability

**Definition:**

The percentage of time a CALNET DNCS service is fully functional and available for use each calendar month.

**Measurement Process:**

The monthly Availability Percentage shall be based on the accumulative total of all Unavailable Time derived from all trouble tickets closed, for the individual affected service (per Circuit ID or Service ID), per calendar month. The monthly Availability Percentage equals the Scheduled Uptime per month less Unavailable Time per month divided by Scheduled Uptime per month multiplied by 100. Scheduled Uptime is based on 24 x number of

days in the month. All Unavailable Time applied to other SLAs, which results in a remedy, will be excluded from the monthly accumulated total.

**Services:**

- Flat Rate Internet Service
- Managed Firewall/Router/SD-WAN Service
- E-Managed Firewall/Router/SD-WAN Service
- Managed Switch Service
- Managed Virtual Machine for Cloud Service
- Managed WiFi Service

**Objectives:**

The objective will be based on the access type identified in the table below:

<b>Service Type</b>	<b>Basic (B)</b>	<b>Standard (S)</b>	<b>Premier (P)</b>	<b>Bidder's Objective Commitment (B, S or P)</b>
InFRa	≥ 99.2%	≥ 99.5%	≥ 99.9%	P
InFRaM	≥ 99.2%	≥ 99.5%	≥ 99.9%	P
Managed Firewall/Router/SD-WAN Service	≥ 99.2%	≥ 99.5%	≥ 99.9%	P
E-Managed Firewall/Router/SD-WAN Service	≥ 99.2%	≥ 99.5%	≥ 99.9%	P
Managed Switch Service	≥ 99.2%	≥ 99.5%	≥ 99.9%	P
Managed Virtual Machine for Cloud Service	≥ 99.2%	≥ 99.5%	≥ 99.9%	P
Managed WiFi Service	≥ 99.2%	≥ 99.5%	≥ 99.9%	P

**Rights and Remedies:**

1. Per Occurrence:
  - End-User Escalation Process

- CALNET CMO Escalation Process
2. Monthly Aggregated Measurements:
- First month service fails to meet the committed SLA objective shall result in a 15% credit or refund of the TMRC.
  - The second consecutive month to fail to meet the committed SLA objective shall result in a 30% credit or refund of TMRC.
  - Each additional consecutive month to fail to meet the committed SLA objective shall result in a 50% credit or refund of the TMRC.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.6.8.2 Catastrophic Outage 1 (CAT 1) (M-S)

**SLA Name:** Catastrophic Outage 1 (CAT 1)

**Definition:**

The total loss of service at a single site resulting in the loss of service to five or more circuits or any single service at 500Mbps or greater.

**Measurement Process:**

The Outage Duration begins when a network alarm is received by the Contractor from an outage-causing event or the opening of a trouble ticket by a Customer, or the Contractor, whichever occurs first. The Contractor shall open a trouble ticket for each service (Circuit ID or Service ID) affected by the common cause. Each End-User service is deemed out of service from the first notification until the Contractor determines the End-User service (Circuit ID or Service ID) is restored minus SCC. Any service reported by a Customer as not having been restored shall have the outage time adjusted to the actual restoration time.

**Services:**

- Flat Rate Internet Service
- Managed Firewall/Router/SD-WAN Service
- E-Managed Firewall/Router/SD-WAN Service
- Managed Switch Service
- Managed Virtual Machine for Cloud Service

**Objectives:**

The objective restoral time will be:

<b>Service Type</b>	<b>Basic (B)</b>	<b>Standard (S)</b>	<b>Premier (P)</b>	<b>Bidder's Objective Commitment (B, S or P)</b>
Internet Flat Rate Service	≤ 3 hours	≤ 2 hours	≤ 1 hour	P
Managed Firewall/Router/SD-WAN Service	≤ 3 hours	≤ 2 hours	≤ 1 hour	P
E-Managed Firewall/Router/SD-WAN Service	≤ 3 hours	≤ 2 hours	≤ 1 hour	P
Managed Switch Service	≤ 3 hours	≤ 2 hours	≤ 1 hour	P
Managed Virtual Machine for Cloud Service	≤ 3 hours	≤ 2 hours	≤ 1 hour	P

**Rights and Remedies:**

1. Per Occurrence:
  - 100% credit or refund of the TMRC for each End-User service not meeting the committed objective for each CAT 1 fault.
2. Monthly Aggregated Measurements:
  - N/A

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.6.8.3 Catastrophic Outage 2 (CAT 2) (M-S)

**SLA Name:** Catastrophic Outage 2 (CAT 2)

**Definition:**

A total failure of a service type in a central office (or equivalent facility), other than access, that results in a CALNET DNCS service failure. Or, a backbone failure or failure of any part of the equipment associated with the backbone that causes a CALNET DNCS service failure.

**Measurement Process:**

The Outage Duration begins when a network alarm is received by the Contractor from the outage-causing event or the opening of a trouble ticket by the Customer or Contractor, whichever occurs first. Upon notification from the Customer or network alarm, the Contractor shall compile a list for each End-User service affected by the common cause for tracking and reporting of the SLA rights and remedies. Outage Duration shall be measured on a per-End-User service (Circuit ID or Service ID) basis from information recorded from the network equipment/system or a Customer reported trouble ticket. Each End-User service (Circuit ID or Service ID) is deemed out of service from the first notification until the Contractor determines the End-User service is restored. Any End-User service reported by the End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time.

**Services:**

- Flat Rate Internet Service
- Managed Firewall/Router/SD-WAN Service
- E-Managed Firewall/Router/SD-WAN Service
- Managed Virtual Machine for Cloud Service

**Objectives:**

The objective restoral time will be:

<b>Service Type</b>	<b>Basic (B)</b>	<b>Standard (S)</b>	<b>Premier (P)</b>	<b>Bidder's Objective Commitment (B, S or P)</b>
Internet Flat Rate Service	≤ 1 Hour	≤ 30 Minutes	≤ 15 Minutes	P
Managed Firewall/Router/SD-WAN Service	≤ 1 Hour	≤ 30 Minutes	≤ 15 Minutes	P
E-Managed Firewall/Router/SD-WAN Service	≤ 1 Hour	≤ 30 Minutes	≤ 15 Minutes	P
Managed Virtual Machine for Cloud Service	≤ 1 Hour	≤ 30 Minutes	≤ 15 Minutes	P

**Rights and Remedies:**

1. Per Occurrence:

- 100% credit or refund of the TMRC for each End-User service not meeting the committed objective per occurrence objective for a single CAT 2 fault.

2. Monthly Aggregated Measurements:

- N/A

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.6.8.4 Catastrophic Outage 3 (CAT 3) (M-S)

**SLA Name:** Catastrophic Outage 3 (CAT 3)

**Definition:**

The total loss of Internet Service on a system wide basis.

**Measurement Process:**

The Outage Duration begins when a network alarm is received by the Contractor from an outage-causing event or the opening of a trouble ticket by the Customer or the Contractor, whichever occurs first. Upon notification from the Customer or network alarm, the Contractor shall open a trouble ticket and compile a list for each End-User service (Circuit ID or Service ID) affected by the common cause for tracking and reporting of the SLA rights and remedies. Outage Duration shall be measured on a per-End-User service (Circuit ID or Service ID) basis from information recorded from the network equipment/system or trouble ticket. Each End-User service (Circuit ID or Service ID) is deemed out of service from the first notification until the Contractor determines the End-User service is restored. Any End-User service reported by the End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time.

**Services:**

Flat Rate Internet Service

**Objectives:**

The objective restoral time will be:

<b>Access Type</b>	<b>Basic (B)</b>	<b>Standard (S)</b>	<b>Premier (P)</b>	<b>Bidder's Objective Commitment (B or P)</b>
Internet Flat Rate Service	≤ 30 Minutes	N/A	≤ 15 Minutes	P

**Rights and Remedies:**

1. Per Occurrence:
  - 100% credit or refund of the TMRC for each service (Circuit ID or Service ID) not meeting the committed objective for each Cat 3 fault.
2. Monthly Aggregated Measurements:
  - N/A

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.6.8.4.a Managed SD-WAN Service Catastrophic Outage 3 (SD-WAN CAT 3)

**SLA Name:** Managed SD-WAN Service Catastrophic Outage 3 (SD-WAN CAT 3)

**Definition:**

The total loss of Managed SD-WAN Services on a system wide basis.

**Measurement Process:**

The Outage Duration begins when a network alarm is received by the Contractor from an outage-causing event or the opening of a trouble ticket by the Customer or the Contractor, whichever occurs first. Upon notification from the Customer or network alarm, the Contractor shall open a trouble ticket and compile a list for each End-User service (Circuit ID or Service ID) affected by the common cause for tracking and reporting of the SLA rights and remedies. Outage Duration shall be measured on a per-End-User service (Circuit ID or Service ID) basis from information recorded from the network equipment/system or trouble ticket. Each End-User service (Circuit ID or Service ID) is deemed out of service from the first notification until the Contractor determines the End-User service is restored. Any End-

User service reported by the End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time.

**Services:**

Managed Firewall/Router/SD-WAN Service  
E-Managed Firewall/Router/SD-WAN Service

**Objectives:**

The objective restoral time will be:

Service Type	Basic (B)	Standard (S)	Premier (P)	Bidder's Objective Commitment (B or P)
Managed SD-WAN Service	≤ 30 Minutes	N/A	≤ 15 Minutes	P

**Rights and Remedies:**

1. Per Occurrence:
  - 100% credit or refund of the TMRC for each service (Circuit ID or Service ID) not meeting the committed objective for each Managed SD-WAN Cat 3 fault.
2. Monthly Aggregated Measurements:
  - N/A

24.6.8.5 DDoS Mitigation (M-S)

**SLA Name:** DDoS Time to Initiate Mitigation

**Definition:**

The time to initiate DDoS mitigation upon the identification of an attack.

**Measurement Process:**

The amount of time between the detection via Customer or Contractor identification of an anomaly or attack, and the initiation of the mitigation process.

**Services:**

DDoS Mitigation

**Objectives:**

Mitigation shall begin within:

Access Type	Basic (B)	Standard (S)	Premier (P)	Bidder's Objective Commitment (B, S or P)
DDoS Mitigation	≤ 45 Minutes	≤ 30 Minutes	≤ 15 Minutes	B

**Rights and Remedies:**

1. Per Occurrence:

Basic Time to Initiate Mitigation Minutes	Standard Time to Initiate Mitigation Minutes	Premier Time to Initiate Mitigation Minutes	Credit or Refund Percentage of TMRC for all components of DDoS feature per event
46 – 75	31 – 45	16 – 30	25%
76 – 135	46 – 75	31 – 45	50%
136 and over	76 and over	46 and over	100%

2. Monthly Aggregated Measurements:

- N/A

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.6.8.6 Excessive Outage (M-S)

**SLA Name:** Excessive Outage

**Definition:**

Any failure that prevents full functionality of the service that remains unresolved for more than the committed objective level.

**Measurement Process:**

This SLA is based on trouble ticket Unavailable Time. The circuit or service is not fully functional during the time the trouble ticket is reported as opened until restoration of the service, minus SCC. If the Customer reports a partial or complete service that is not fully functional and remains unresolved after the closure of the trouble ticket by the Contractor, the Unavailable Time shall be adjusted to the actual restoration time.

**Services:**

- Flat Rate Internet Service
- Managed Firewall/Router/SD-WAN Service
- E-Managed Firewall/Router/SD-WAN Service
- Managed Switch Service
- Managed Virtual Machine for Cloud Service
- Managed WiFi Service

**Objectives:**

The Unavailable Time objective shall not exceed:

<b>Service Type</b>	<b>Basic (B)</b>	<b>Standard (S)</b>	<b>Premier (P)</b>	<b>Bidder's Objective Commitment (B, S or P)</b>
Internet Flat Rate Service	16 Hours	12 Hours	8 Hours	B
Managed Firewall/Router/SD-WAN Service	16 Hours	12 Hours	8 Hours	B
E-Managed Firewall/Router/SD-WAN Service	16 Hours	12 Hours	8 Hours	B
Managed Switch Service	16 Hours	12 Hours	8 Hours	B
Managed Virtual Machine for Cloud Service	16 Hours	12 Hours	8 Hours	B
Managed WiFi Service	16 Hours	12 Hours	8 Hours	B

**Rights and Remedies:**

1. Per Occurrence:

- 100% credit or refund of the TMRC for each service (Circuit ID or Service ID) out of service for a period greater than the committed objective level.
- Upon request from the Customer or the CALNET Program, the Contractor shall provide a briefing on the excessive outage restoration.

2. Monthly Aggregated Measurements:

- N/A

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.6.8.7 Managed Service Proactive Notification (M-S)

**SLA Name:** Managed Service Proactive Notification

**Definition:**

The proactive outage notification SLA provides credits if the Contractor fails to open a trouble ticket and notify Customer of an Outage for a managed service. Notification to the Customer shall occur through means agreed to by Contractor and CALNET Program.

An Outage is defined as an unscheduled period in which the managed service is interrupted and unavailable for use by Customer for 60 continuous seconds or more than 60 cumulative seconds within a 15-minute period measured by the Contractor.

**Measurement Process:**

The Outage Duration start shall be determined by the first Contractor network alarm resulting from the outage-causing event or the opening of a trouble ticket by the Customer, whichever occurs first. The Contractor has fifteen minutes (Notification Period) to open a trouble ticket and notify the Customer from the start point of the first network alarm. The Contractor is in compliance with the proactive outage notification SLA if the Customer opened the trouble ticket prior to the network alarm or Customer is notified by the Contractor within the Notification Period.

**Services:**

Flat Rate Internet Service with Managed Router or IP Enabled  
Routing Device  
Managed Firewall/Router/SD-WAN Service  
E-Managed Firewall/Router/SD-WAN Service  
Managed Switch Service  
Managed Virtual Machine for Cloud Service  
Managed WiFi Service

**Objectives:**

15 Minutes

**Rights and Remedies:**

1. Per Occurrence:
  - Customer will receive a credit or refund equal to 10% of the TMRC for each Contractor Managed Service (Circuit ID) that was impacted during an outage if the Customer was not proactively notified within the notification period
2. Monthly Aggregated Measurements:
  - N/A

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.6.8.8 Notification

**SLA Name:** Notification

**Definition:**

The Contractor notification to the CALNET Program and designated stakeholders in the event of a CAT 2 or CAT 3 failure, terrorist activity, threat of natural disaster, or actual natural disaster which results in a significant loss of telecommunication services to CALNET DNCS End-Users or has the potential to impact services in a general or statewide area. The State understands initial information requiring the nature of the outage may be limited.

**Measurement Process:**

The Contractor shall adhere to the Network Outage Response requirements (SOW Business Requirements Section G.3.3, Network Outage Response) and

notify the CALNET Program and designated stakeholders for all CAT 2 and CAT 3 Outages or for network outages resulting in a significant loss of service. Notification objectives will be based on the start time of the outage failure determined by the opening of a trouble ticket or network alarm, whichever occurs first. For events based on information such as terrorist activity or threat of natural disaster, the Contractor shall notify the CALNET Program and designated stakeholders when information is available for dissemination to the Customers.

**Services:**

- Internet Flat Rate Service
- Managed Firewall/Router/SD-WAN Service
- E-Managed Firewall/Router/SD-WAN Service
- Managed Switch Service
- Managed Virtual Machine for Cloud Service
- Managed WiFi Service

**Objectives:**

Within 60 minutes of the above mentioned failures' start time, the Contractor shall notify the CALNET Program and designated stakeholders using a method defined in SOW Business Requirements, Network Outage Response.

At 60-minute intervals, updates shall be given on the above-mentioned failures via the method defined in SOW Business Requirements, Network Outage Response.

This objective is the same for Basic, Standard and Premier Commitments.

**Rights and Remedies:**

1. Per Occurrence:
  - Senior Management Escalation
2. Monthly Aggregated Measurements:
  - N/A

**Bidder understands the Requirement and shall meet or exceed it? Yes**

### 24.6.8.9 Provisioning (M-S)

**SLA Name:** Provisioning

**Definition:**

Provisioning shall include new services, moves, adds and changes, completed by the Contractor on or before the due dates. The Provisioning SLA shall be based on committed installation intervals established in this SLA or due dates negotiated between the Customer and the Contractor documented on the Contractor's order confirmation notification or Contracted Project Work SOW in accordance with SOW Business Requirements Section G.2.5.4, Provisioning and Implementation. The Contractor shall meet the committed interval dates or due date negotiated with the Customer. If the Customer agrees to a negotiated due date, the negotiated due date supersedes the committed interval. At the Customer's discretion, if the scope of the Service Request(s) meets the Coordinated or Managed Project criteria, negotiated due dates will be established and documented in the Project Timeline per SOW Business Requirements Section G.8, Contracted Service Project Work.

**Provisioning SLAs have two objectives:**

Objective 1: Individual service installation; and,  
Objective 2: Successful Install Monthly Percentage by service type.  
Note: Provisioning timelines include extended demarcation wiring when appropriate.

**Measurement Process:**

Objective 1: Individual Service Installations: Install intervals are based on the committed installation intervals established in this SLA or due dates negotiated between the Customer and the Contractor. This objective requires the Contractor to meet the due date for each individual service installation. This includes individual circuit/service level installations for Coordinated and Managed Projects.

Objective 2: Successful Install Monthly Percentage per Service Type: The Contractor shall sum all individual installations per service, as listed below, meeting the objective in the measurement period and divide by the sum of all individual service installations due per service in the measurement

period and multiply by 100 to equal the percentage of service installations completed on time. The Contractor must meet or exceed the objective below in order to avoid the rights and remedies.

**Services:**

Features must be installed in conjunction with the service except when listed below:

Service Type	Committed Interval Days	Coordinated/Managed Project
InFRa	30	Coordinated/Managed Project
InFRaM	30	Coordinated/Managed Project
Managed Firewall/Router/SD-WAN Service	30	Coordinated/Managed Project
E-Managed Firewall/Router/SD-WAN Service	30	Coordinated/Managed Project
Managed Switch Service	30	Coordinated/Managed Project
Managed Virtual Machine for Cloud Service	30	Coordinated/Managed Project
Managed WiFi Service	30	Coordinated/Managed Project

**Objectives:**

Objective 1: Individual service installation: Service provisioned on or before the due date per installation Service Request.

Objective 2: Monthly Average percent by service type:

Service Type	Basic (B)	Standard (S)	Premier (P)	Bidder's Objective Commitment (B or P)
InFRa	≥ 90%	N/A	≥ 95%	B
InFRaM	≥ 90%	N/A	≥ 95%	B
Managed Firewall/Router/SD-WAN Service	≥ 90%	N/A	≥ 95%	B
E-Managed Firewall/Router/SD-WAN Service	≥ 90%	N/A	≥ 95%	B
Managed Switch Service	≥ 90%	N/A	≥ 95%	B

<b>Service Type</b>	<b>Basic (B)</b>	<b>Standard (S)</b>	<b>Premier (P)</b>	<b>Bidder's Objective Commitment (B or P)</b>
Managed Virtual Machine for Cloud Service	≥ 90%	N/A	≥ 95%	B
Managed WiFi Service	≥ 90%	N/A	≥ 95%	B

**Rights and Remedies:**

1. Per Occurrence:
  - Objective 1: Individual service installations: 50% of installation fee credited to the Customer for any missed committed objective.
2. Monthly Aggregated Measurements:
  - Objective 2: 100% of the installation fee credited to the Customer for all service installations (per service type) that did not complete within the committed objective during the month if the Successful Install Monthly Percentage is below the committed objective.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

24.6.8.10 Time to Repair (M-S)

**SLA Name:** Time to Repair

**Definition:**

Any failure that prevents full functionality of the service that remains unresolved for more than the committed objective level.

**Measurement Process:**

This SLA is based on trouble ticket Unavailable Time per service (Circuit ID or Service ID). The circuit or service is not fully functional during the time the trouble ticket is reported as opened until restoration of the service, minus SCC. If the Customer reports a service that is not fully functional and remains unresolved after the closure of the trouble ticket by the Contractor, the Unavailable Time shall be adjusted to the actual restoration time. This SLA is applied per occurrence.

**Services:**

- Flat Rate Internet Service
- Managed Firewall/Router/SD-WAN Service
- E-Managed Firewall/Router/SD-WAN Service
- Managed Switch Service
- Managed Virtual Machine for Cloud Service
- Managed WiFi Service

**Objectives:**

The Unavailable Time objective shall not exceed:

<b>Service Type</b>	<b>Basic (B)</b>	<b>Standard (S)</b>	<b>Premier (P)</b>	<b>Bidder's Objective Commitment (B, S or P)</b>
Internet Flat Rate Service	6 Hours	5 Hours	4 Hours	P
Managed Firewall/Router/SD-WAN Service	6 Hours	5 Hours	4 Hours	P
E-Managed Firewall/Router/SD-WAN Service	6 Hours	5 Hours	4 Hours	P
Managed Switch Service	6 Hours	5 Hours	4 Hours	P
Managed Virtual Machine for Cloud Service	6 Hours	5 Hours	4 Hours	P
Managed WiFi Service	6 Hours	5 Hours	4 Hours	P

**Rights and Remedies:**

1. Per Occurrence:
  - 25% credit or refund of the TMRC for each service (Circuit ID or Service ID) out of service for a period greater than the committed objective level.
2. Monthly Aggregated Measurements:
  - N/A

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.6.8.11 Unsolicited Service Enhancement SLAs

All unsolicited service enhancements shall be considered a feature of the service, and therefore shall be included as such under the SLAs as defined in this section.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.6.8.12 Proposed Unsolicited Offerings

The Contractor shall provide SLAs as defined in SLA Section 24.6.8 for each unsolicited offering determined by the CALNET Program not to be a feature of a service or a component of an unbundled service identified in the technical requirements. SLA tables shall be amended after Contract award to include all new unsolicited services.

**Bidder understands the Requirement and shall meet or exceed it? Yes**

#### 24.6.8.13 Contract Amendment Service Enhancement SLAs

All Contract amendment service enhancements shall be considered a feature of the service, therefore included as such under the SLAs as defined in Section 24.6.8.

**Bidder understands the Requirement and shall meet or exceed it? Yes**