

EXHIBIT R to Amendment No. 60

ADDENDUM 9 TO APPENDIX 8 TO SCHEDULE 3.3 TO THE COMPREHENSIVE INFRASTRUCTURE AGREEMENT
STATEMENT OF TECHNICAL APPROACH
MANAGED NETWORK SERVICES

**ADDENDUM 9 TO APPENDIX 8 TO SCHEDULE 3.3 TO THE
COMPREHENSIVE INFRASTRUCTURE AGREEMENT
MANAGED NETWORK SERVICES**

1 OVERVIEW

Managed Network Services may be provided for customers requiring WAN bandwidth with Managed Router or Managed Firewall Services. Managed Router Service can be purchased individually to provide wide-area network (WAN) connectivity or combined with the Managed Firewall Service to provide a secure WAN connection. Managed Network Services are designed for two categories of customers, which the Parties shall list in an Addendum to the Agreement.

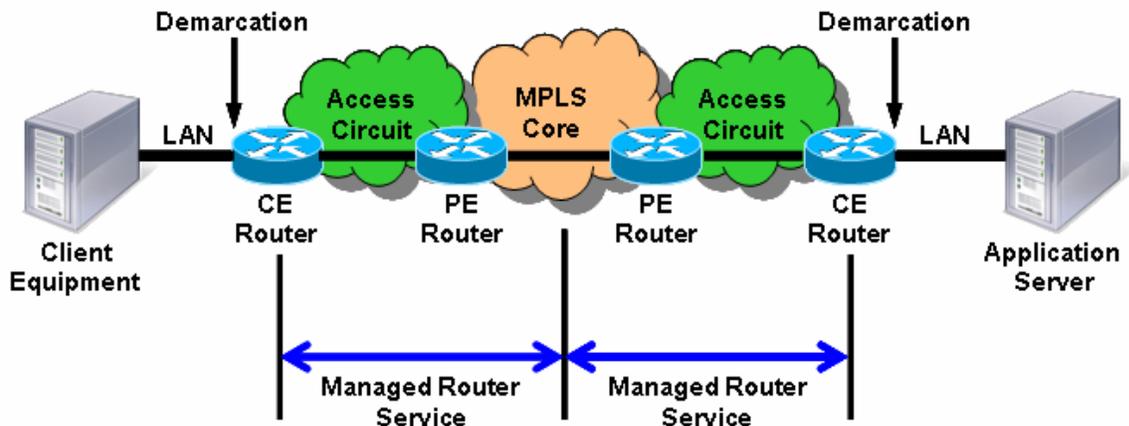
- Those out-of-scope customers who do not receive the full suite of Services including Data Network Service as defined in Appendix 8 to Schedule 3.3 (Data Network Services SOW) and are not part of the MPLS VPN, such as:
 1. Counties/Cities or Local Governments
 2. Local Government K-12 School Systems
 3. Commonwealth Colleges and Universities
 4. Non-Executive branch agencies
- ABC store sites and DSS Shared Support Services locations

2 MANAGED ROUTER SERVICE

The Managed Router service utilizes a Multi-Protocol Label Switching (MPLS) network that VITA is using throughout the Commonwealth of Virginia. Vendor's MPLS service is called Private Internet Protocol (PIP) and is a network-based Virtual Private Network (VPN) service enabling any-to-any communications over a secure network.

2.1 Technical Description

The Managed Router service will deliver secure and reliable IP transport utilizing the MPLS network for VPNs and Quality of Service (QoS). MPLS VPNs enable the separation of Vendor managed service traffic that results in the security and QoS of Layer 2 switching with the scalability and any-to-any connectivity of IP. Vendor will configure and manage the connectivity of Virtual LANs (VLANs) to MPLS VPNs to ensure separation of traffic across the MPLS network. Also, Vendor will assign one of the five QoS levels to support application requirements of loss, jitter and latency across the MPLS network. Vendor will work with public carriers and other Commonwealth circuit providers on behalf of the Commonwealth to ensure delivery of WAN Services. The Vendor shall serve as the single point of contact from the demarcation point to the MPLS core and access circuits. The diagram below describes the service and specifies the demarcation points where Vendor will manage and control the service.



For the Managed Router service, Vendor's demarcation point is the backplane of the customer or Commonwealth edge (CE) router. Anything beyond the demarcation point is the responsibility of the customer or Commonwealth. Vendor will serve as the single point of contact from the demarcation point to the MPLS core and access circuits.

2.2 Features

The Managed Router Service features are:

- Vendor will conduct a site survey to capture network specific information on the site for use in the design and configuration of the solution.
- A router is included in the solution that provides two (2) Ethernet ports on the LAN side of the router. Router technology refresh is also included.
- Vendor will configure, install and maintain the router, which includes proactive IOS patching.
- Wide-area network (WAN) connectivity with burst capability up to the bandwidth increment ordered and sustained average usage up to 67% of the bandwidth increment requested.
- Vendor will manage the VPNs to ensure security between communities of interest. This does not replace the security and protection associated with a firewall.
- Vendor will manage the router 24x7 from the Vendor's enterprise network operations center (NOC) including monitoring, problem resolution and change management.
- Vendor will provide basic performance and management reports as required by the Commonwealth or customer.

2.3 Service Tiers

The Managed Router Tiers are described in this section. The Managed Router service is offered in the following bandwidth increments with each increment being a Tier:

- 64Kbps
- 128Kbps
- 256Kbps
- 512Kbps
- 768Kbps
- 1.536Mbps
- 3.072Mbps
- 6.144Mbps
- 45Mbps

Vendor will work with the Commonwealth or customer to enable the customer to select the appropriate bandwidth increment based on the customer's utilization.

2.4 Average Bandwidth Utilization

Vendor targets an average utilization of 67% or less for each connection over the Peak Period. The Peak Period is defined as Normal Business Day Hours, 0700 – 1900. As average utilization exceeds 67%, performance degradation can occur. Vendor shall implement measurement and monitoring tools and produce the performance metrics and reports necessary to measure Average Bandwidth Utilization. Average utilization will be calculated by polling circuit utilization every 15 minutes. An average hourly utilization will be calculated from the four 15-minute readings. The twelve hourly data points, over the period 0700 – 1900, will be averaged to determine the average utilization for the day. Vendor shall provide VITA with a report of Average Bandwidth Utilization for each customer on a monthly basis. Upon request in

connection with an audit, and at no additional charge to VITA, Vendor shall provide VITA or its designees with information and access to tools and procedures used to produce such metrics. If the reports show that the customer's average utilization at a site exceeds 67% for three or more business days in a five-day business week or for two consecutive business days, Vendor may request the customer move up to the Service Tier, to maintain appropriate levels of performance. In such instances, the Vendor will provide VITA and the customer with the necessary report and supporting detail for the affected site. The customer will have sixty (60) calendar days from receipt of receiving such report and supporting details to provide Vendor with a response after which time Performance Credits are suspended. If the customer chooses not to change Service Tiers, Vendor will continue to support the service and report Service Level Agreement (SLAs), but Performance Credits associated with the Managed Router SLAs for the affected site will automatically be suspended until utilization drops below 67% or the customer requests a Service Tier increase.

2.5 Service Term and Fee Commitments

Each Managed Router Service Tier requires a minimum service term of thirty-six (36) months. A service disconnect request that occurs in less than 36 months that is not accompanied by a service move request will be charged an early termination fee that equals the number of months remaining in the 36-month term multiplied by the monthly recurring price for the Service Tier provided. Notwithstanding the minimum service term and fee commitments, VITA retains its rights under Sections 10.9 (Availability of Funds) and 14.7 (Termination by the Commonwealth for Lack of Funds) of the Agreement. In the event of such termination the above-identified early termination fees shall not apply. After the minimum service term of 36 months is achieved, the Commonwealth may disconnect the service at no additional cost. The Vendor shall be allowed to remove its equipment immediately upon notification of a service disconnect.

2.6 Service Location Moves

Vendor will allow an customer to move the service from one site to another site, "new" site, without penalty as long as the combined deployment at the two sites is greater than 36 months. Therefore, a customer may request a service disconnect at the "new" site, without incurring an early termination fee, if the combined deployment at the two sites is greater than 36 months. If the customer requests to disconnect the service at the "new" site and the combined deployments are less than 36 months, an early termination fee will be charged. Furthermore, a service move request from one site to another site will be charged a Managed Router Service Initiation and Move Fee as defined in Attachment 10.1.3 to Schedule 10.1 (Definition of Resource Units). For avoidance of doubt, all service location moves will maintain a continuity of service in relation to meeting the minimum service term.

2.7 Service Tier Upgrade

If a customer requests to upgrade the existing Managed Router Service bandwidth increment to a higher bandwidth (Service Tier), Vendor will charge a Managed Router Service Initiation and Move Fee as defined in Attachment 10.1.3 to Schedule 10.1 (Definition of Resource Units) for the new bandwidth increment and Service Tier. In addition, Vendor will provide a credit of the Managed Router Service Initiation and Move Fee as defined in Attachment 10.1.3 to Schedule 10.1 (Definition of Resource Units) for the previously provided Service Tier. In addition, Vendor will only reset the 36 month minimum service term if the customer is upgrading from a 1.536Mbps or less Service Tier to a 3.072Mbps or greater Service Tier. For avoidance of doubt, all other service upgrades will maintain a continuity of service in relation to meeting the minimum service term.

2.8 Termination for Failure to Perform

Following a third consecutive SLA failure of a site’s Managed Router Services to meet any SLAs associated with the Managed Router Service in a twelve (12) month period, the Commonwealth will have the right to immediately terminate the site’s Managed Router Services and Internet Access Services at no cost. The Commonwealth’s right to terminate will be exercisable within sixty (60) days from the date of the third performance failure. For purposes of this paragraph, the notice and cure provisions outlined in Section 28.32 of the Agreement do not apply.

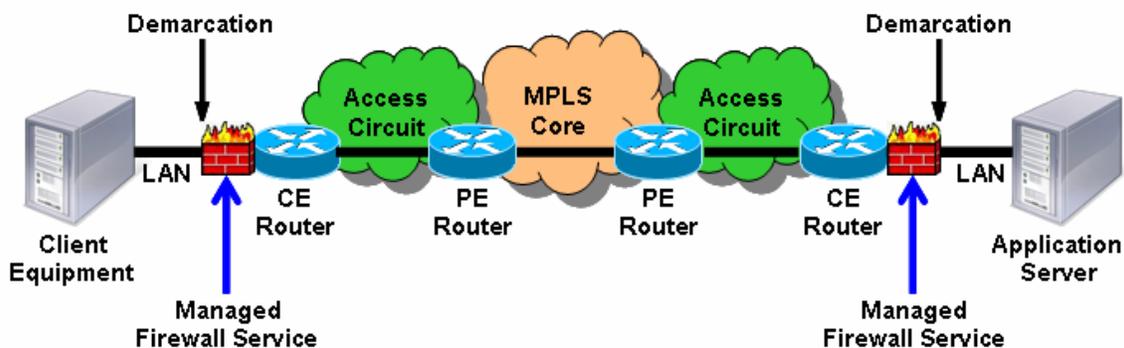
3 MANAGED FIREWALL SERVICE

Vendor’s Managed Firewall service allows customers to safeguard their IT infrastructure by preventing unauthorized access to their internal network, secure critical information or address federal government regulations or third-party compliance.

3.1 Technical Description

As a fully managed service, Vendor handles all installation, maintenance, configuration and software upgrades utilizing industry leading firewalls. Vendor also monitors the firewalls from its security operations center (SOC).

The diagram below further describes the Managed Firewall Service as well as defining the demarcation points.



For the Managed Firewall service, Vendor’s demarcation point is the backplane of the firewall. Anything beyond that point is the responsibility of the customer or Commonwealth. Vendor will serve as the single point of contact inside the demarcation points. Managed Firewall Services are intended for customers receiving either Vendor’s Data Network Services or Managed Router Services where Firewall Services are required.

3.2 Features

The Managed Firewall service includes a number of features. Below is a list of features that are included in the service offering.

- Industry leading firewall is included in the solution and provides one (1) Ethernet port on the LAN side of the firewall. Firewall technology refresh is also included.
- Vendor will configure, install and maintain the firewall Vendor will manage the firewall 24x7 from the SOC including monitoring, problem resolution and change management. Vendor will also handle policy updates as required and directed by the Commonwealth.

3.3 Service Tiers

The Managed Firewall service includes two (2) Service Tiers as outlined below:

- Managed Firewall with ten (10) or less users up to a bandwidth throughput of 45Mbps.

- Managed Firewall with unlimited users up to a bandwidth throughput of 45Mbps.

Vendor will select the appropriate firewall configuration based on the two Service Tiers outlined above.

3.4 Service Term and Fee Commitments

Each Managed Firewall Service Tier requires a minimum term of 36 months. A service disconnect request that occurs in less than 36 months that is not accompanied by a move request will be charged an early termination fee that equals the number of months remaining in the 36-month term multiplied by the monthly recurring price for the Service Tier provided. Notwithstanding these minimum service term and fee commitments, VITA retains its rights under Sections 10.9 (Availability of Funds) and 14.7 (Termination by the Commonwealth for Lack of Funds) of the Agreement. In the event of such termination the above-identified early termination fees shall not apply. After the minimum service term of 36 months is achieved, the Commonwealth may disconnect the service at no cost. The Vendor shall be allowed to remove its equipment immediately upon notification of a service disconnect.

3.5 Service Location Moves

Vendor will allow a customer to move the service from one site to another site, "new" site, without penalty as long as the combined deployment at the two sites is greater than 36 months. Therefore, a customer may request a service disconnect at the "new" site, without incurring an early termination fee, if the combined deployment at the two sites is greater than 36 months. If the customer requests to disconnect the service at the "new" site and the combined deployments are less than 36 months, an early termination fee will be charged. Furthermore, a service move request from one site to another site will be charged seventy-five percent (75%) of Firewall Service Initiation and Move Fee as defined in Attachment 10.1.3 to Schedule 10.1 (Definition of Resource Units) if the move is in conjunction with a move of the Managed Router Service and does not require configuration changes. Otherwise, the service move request will be charged one-hundred percent (100%) of the Firewall Service Initiation and Move Fee. For avoidance of doubt, all service location moves will maintain a continuity of service in relation to meeting the minimum service term.

3.6 Service Tier Upgrade

If a customer requests to upgrade Service Tier, Vendor will charge a Firewall Service Initiation and Move Fee as defined in Attachment 10.1.3 to Schedule 10.1 (Definition of Resource Units) for the Service Tier. In addition, Vendor will provide a credit of the Firewall Service Initiation and Move Fee as defined in Attachment 10.1.3 to Schedule 10.1 (Definition of Resource Units) for the previously provided Service Tier. For avoidance of doubt, all other service upgrades will maintain a continuity of service in relation to meeting the minimum service term.

4 INTERNET ACCESS SERVICES

4.1 Technical Description

Internet Access Services are only available to Department of Social Services customers at those sites which are subscribed to the Managed Router Service and other customers as mutually agreed upon between the Parties. Internet access is provided through an MPLS route to the CESC Data Center to the Internet Secure Gateway (VITA ISG).

Northrop Grumman's Internet Secure Gateway (VITA ISG) design provides a consolidated, security-focused Internet presence. The VITA ISG provides detailed reporting and administration control to the VITA Enterprise Security Operations Center (ESOC), facilitating a centralized security posture inclusive of enterprise content filtering capability.

4.2 Features

The Internet Access Service includes capabilities for content filtering, via the VITA ISG, and external Domain Naming Services (DNS). Standard content filter policies will apply and can be customized to meet customer requirements.

4.3 Service Tiers

The Internet Access Service is offered in several tiers and must match the subscribed service tier of the Managed Router Service at the site where internet access is required. Service tiers are:

- 64Kbps
- 128Kbps
- 256Kbps
- 512Kbps
- 768Kbps
- 1.536Mbps
- 3.072Mbps
- 6.144Mbps
- 45Mbps

4.4 Service Levels

There are no Service Level Agreements (SLAs) associated with the Internet Access Service. SLAs apply to Managed Network Services only as specifically identified in the applicable SOW.

4.5 Service Term and Fee Commitments

Each Internet Access Service tier requires a minimum term commitment of 36 months. A service disconnect request that occurs in less than 36 months that is not accompanied by a move request specified below, will be charged an early termination fee that equals the number of months remaining in the 36-month term multiplied by the monthly recurring price for the Service Tier provided. Notwithstanding these service term and fee commitments, VITA retains its rights under Sections 10.9 (Availability of Funds) and 14.7 (Termination by the Commonwealth for Lack of Funds) of the Agreement. In the event of such termination, the above-identified early termination fees shall not apply. After the minimum service term of 36 months is achieved, the Commonwealth may disconnect the service at no cost. Customers and VITA will allow Vendor to remove its equipment immediately upon notification of a service disconnect.

An existing Managed Router and Managed Firewall Service customer without Internet Access that requests adding Internet Access Service, will have a service term commitment for both the Managed Router and Managed Firewall Services of 36 Months to match the Internet Access Service.

4.6 Service Location Moves

Vendor will allow a customer to move the service from one site to another site, "new" site, without penalty as long as the combined deployment at the two sites is greater than 36 months. Therefore, a customer may request a service disconnect at the "new" site, without incurring an early termination fee, if the combined deployment at the two sites is greater than 36 months. If the customer requests to disconnect the service at the "new" site and the combined deployments are less than 36 months, an early termination fee will be charged.

4.7 Service Tier Upgrade

If a customer requests to upgrade the existing *Managed Router Service* bandwidth increment to a higher bandwidth (service tier), then the *Internet Access Service* level must also be upgraded to the same service tier as that of the Managed Router Service. Vendor will only reset the 36 month minimum service term if the customer is upgrading from a 1.536Mbps or less service tier to a 3.072Mbps or greater service tier. All other service upgrades maintain a continuity of service requirement to meet the minimum service term commitment.

5 TECHNICAL ASSUMPTIONS

5.1 (Intentionally left blank)

MNS can support voice and video traffic, if required.

5.2 Security Considerations for access to resources on the VITA Enterprise Network

Where customers have requirements for users at a Managed Router or Managed Firewall site to access hosted email services or internal applications that are not publicly available over the Internet, such access will be subject to the following security requirements:

| Requirement | Description | Responsible Party |
|--|---|--------------------------|
| Security Baseline | Establish the baseline for Information Technology security controls that include, but are not limited to, Commonwealth Security Standard – Sec 501 | VITA/Customer |
| System Hardening | Configure desktop operation system in accordance with Commonwealth Security Standard – Sec 501 | VITA/Customer |
| Patch Management | Perform product patch, “bug fix,” service pack installation and upgrades to the current installed version | VITA/Customer |
| Incident Response | Provide NG and VITA with a detailed explanation of outages due to security Incidents that identify the regional impact, source of breach, and preventative measures being taken to prevent future similar Incidents and outages | VITA/Customer |
| Audit of Workstations | Maintain all documentation required for security audits. | VITA/Customer |
| Vulnerability Scanning of Workstations | Conduct vulnerability & penetration testing as necessary to maintain current security posture. | VITA/Customer |

All users who access the NG/VITA supported infrastructure resources must abide by COV/VITA Security Policy and Standards. Vendor reserves the right (with or without cause) to monitor activity within the infrastructure. Vendor reserves the right to confirm the security posture of any devices accessing the NG/VITA infrastructure to confirm compliance with Commonwealth Security Policies or Sec 501.