5.4 TELEWORKING SERVICE (TWS) (L.34.1.5, C.2.12.1, C.2.12.1.1)

Qwest's Networx TWS is interoperable with a multitude of channels, allowing for seamless delivery to Government Agencies.

Qwest's TeleWorking Services (TWS) offering enables Agency employees to work remotely. The service includes a range of capabilities up to a fully managed service with customizable features. TWS offers a feature-rich virtual assistant designed to enhance an Agency's ability to manage alternative work arrangements and its authorized remote workers. TWS is a "bandwidth-neutral" solution that allows remote workers to connect back to their secured Local Area Networks (LANs) and/or Internet via any available bandwidth option (dial-up, wireless fidelity (WiFi), broadband, etc.) from a single client interface. It includes a full range of telecommunication and security services necessary to support full teleworker productivity. Additionally, Qwest's TWS offering includes a full range of managed operations and maintenance (O&M) and security services, secure remote access to applications, and collaboration tools.

Figure 5.4-1 provides an easy reference to correlate narrative requirement to Qwest's proposal response.

Figure 5.4-1. Responses to Narrative Mandatory Service Requirements

Req_ID	RFP Section	RFP Requirement	Proposal Response
3521	C.2.12.1.1.3	For TWS, the contractor shall provide seamless communications from a teleworker location to an Agency.	5.4.1.1.1
3520	C.2.12.1.1.4 (1)	1. TWS shall provide connectivity to enable data and voice services for a remote teleworker location (or center) to communicate with Agency specified host sites and applications.	5.4.1.1.2
3518	C.2.12.1.1.4 (2) (a)	2. a. Tier 1 - Basic: The contractor shall provide the basic connectivity and related components necessary to establish telework capabilities for the subscriber.	5.4.1.1.3

Req_ID	RFP Section	RFP Requirement	Proposal Response
3516	C.2.12.1.1.4 (2) (b)	2. Tier 2 - Enhanced: b The contractor shall design and implement a custom service for the subscribing Agency.	5.4.1.1.4
3515	C.2.12.1.1.4 (3)	3. The contractor's TWS shall be secure and provide authentication and encryption capabilities to identify and authenticate subscribers who are authorized access to TWS before providing such access.	5.4.1.1.5
3512	C.2.12.1.1.4 (4) (a)	'The contractor shall provide TWS service that meets the following minimum requirements: 4.a. activity log / audit trails.	5.4.1.1.6
3511	C.2.12.1.1.4 (4) (b)	'The contractor shall provide TWS service that meets the following minimum requirements: 4.b. Management utilities.	5.4.1.1.7
3510	C.2.12.1.1.4 (4) (c)	The contractor shall provide TWS service that meets the following minimum requirements: 4.c. Class of service capabilities	5.4.1.1.8
3509	C.2.12.1.1.4 (4) (d)	'The contractor shall provide TWS service that meets the following minimum requirements: 4.d. Transmission of multiple protocols.	5.4.1.1.9
3507	C.2.12.1.1.4 (5)	5.The contractor shall provide the capability to deliver TWS to different teleworker endpoint devices.	5.4.1.1.10
3499	C.2.12.1.1.4 (6)	6. The contractor shall provide instructions and TWS-specific training for the teleworker on how to establish and maintain TWS connections.	5.4.1.1.11
3494	C.2.12.1.1.4 (10)	10. The contractor's TWS shall be compat ble with Agency teleworker applications and client software including but not limited to Netscape Messenger, MS Outlook/Exchange, IBM Lotus Notes, Novell Group Wise, or MS NetMeeting.	5.4.1.1.12
3482	C.2.12.1.2.1 (6)	6. Managed Moves, Adds, and Changes Support. The contractor shall provide management support and act as a single point of contact for Agency Moves, Adds, and Changes with respect to TWS service. (RFP Reference changed from C.2.12.1.2.1(6)(6) to C.2.12.1.2.1(6))	5.4.1.1.13
3472	C.2.12.1.2.1 (8)	8. Video Conferencing [Optional]. The contractor shall enable TWS subscribers to utilize point to point and multipoint desktop video conference capability.	5.4.1.1.14
3456	C.2.12.1.3.1 (1)	Teleworking Services is an application-layer service that uses underlying network service(s) to transport traffic from the service delivery points (SDP's) for teleworker endpoints such as the Agency data center or teleworker location. Please refer to the Interface requirements section for the UNIs and SDPs for the respective services listed below as applicable: 1. C.2.2 Voice Services	5.4.1.1.15
3455	C.2.12.1.3.1 (2)	Teleworking Services is an application-layer service that uses underlying network service(s) to transport traffic from the service delivery points (SDP's) for teleworker endpoints such as the Agency data center or teleworker location. Please refer to the Interface requirements section for the UNIs and SDPs for the respective services listed 2. C.2.4 Internet Services	5.4.1.1.15

Req_ID	RFP Section	RFP Requirement	Proposal Response
3454	C.2.12.1.3.1 (3)	Teleworking Services is an application-layer service that uses underlying network service(s) to transport traffic from the service delivery points (SDP's) for teleworker endpoints such as the Agency data center or teleworker location. Please refer to the Interface requirements section for the UNIs and SDPs for the respective services listed below as applicable: 3. C.2.5.1 Private Line Services [Optional]	5.4.1.1.15
3453	C.2.12.1.3.1 (4)	Teleworking Services is an application-layer service that uses underlying network service(s) to transport traffic from the service delivery points (SDP's) for teleworker endpoints such as the Agency data center or teleworker location. Please refer to the Interface requirements section for the UNIs and SDPs for the respective services listed below as applicable: 4. C.2.6 Combined Services	5.4.1.1.15
3452	C.2.12.1.3.1 (5)	Teleworking Services is an application-layer service that uses underlying network service(s) to transport traffic from the service delivery points (SDP's) for teleworker endpoints such as the Agency data center or teleworker location. Please refer to the Interface requirements section for the UNIs and SDPs for the respective services listed below as applicable: 2. C.2.7 Virtual Private Network Services	5.4.1.1.15

5.4.1 Technical Approach to Teleworking Service Delivery (L.34.1.5.1)

5.4.1.1 Approach to Teleworking Service Delivery (L.34.1.5.1 (a))

Qwest uses a Mobility client/server application to deliver Teleworking Services (TWS) to its customers. The Qwest Mobility client can be used as either an Internet-only access client or as a VPN access client to securely connect the user to the Agency's Intranet over any supported Internet access type.

This Qwest remote access service is a flexible suite of business-class, global remote Internet access and Virtual Private Network (VPN) solutions that provide mobile professionals and teleworkers with encrypted VPN access to the corporate LAN using a variety of transport methods (wireless broadband, home broadband, dial-up, etc.).

[redacted]

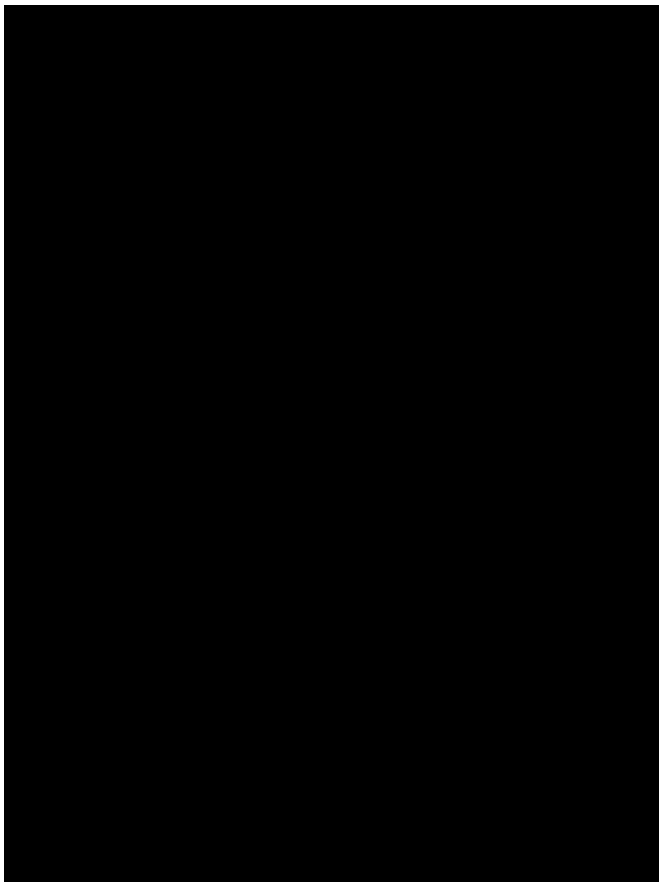
Qwest provides options to seamlessly integrate Qwest's one-click smart client for VPN communication with an Agency's own VPN gateway and existing VPN authentication methods or to use the service for mobile employee Internet access only.

Qwest Mobility Client Overview

When used as an Internet-only access client or when used for VPN access over the Internet, Qwest Mobility supports a common directory and connect button user interface, for use with the following Internet access types:

- Dial-up analog or Integrated Services Digital Network (ISDN) telephone line (Qwest global dial access numbers; integration of Agency own dial-up phone book)
- IEEE 802.11b/g Wi-Fi locations (Qwest Wi-Fi locations; non-Qwest Wi-Fi locations; private Wireless LAN.
- An existing non-Qwest Internet access connection (e.g., home broadband, non-Qwest hotel broadband or other).

When used as a VPN access client, Qwest Mobility provides a VPN login user interface that is compatible with a wide variety of VPN solutions [redacted]



For Government Agencies that support multiple types of VPN gateways, the Qwest Mobility client enables the integration of mixed types of VPN gateways, all using a single VPN user interface, thus reducing help desk costs. [redacted]

[redacted]

[redacted]

The Qwest TWS service includes comprehensive engineering and help desk support that offers the teleworker two tiers of service:

Tier 1 – Basic: Qwest provides the basic connectivity and related components necessary to establish teleworker capabilities for the subscriber. With this service, Qwest provides a functional group within the Qwest Customer Support Office (CSO) to oversee the installation, configuration, and provisioning of a wide variety of transport services that are offered under the Networx contract. Under this option, the teleworker's supporting agency would provide technical support for teleworker's software and applications.

[redacted]

The Qwest approach to service delivery combines highly-trained program management and help desk support personnel, geographically diverse and best-in-class automated customer care centers, and underlying network and security services to enable remote communications to agency applications from the teleworkers' remote work locations. [redacted] depicts the components that comprise Qwest's service delivery approach.

The following describes the components of the Qwest service delivery architecture:

Highly Trained Program Management and Help Desk Support Personnel: The Networx TWS customer receives the benefit of having highly-trained individuals who are experienced and adept at responding to

networking and applications queries of any type affecting their operating environment.

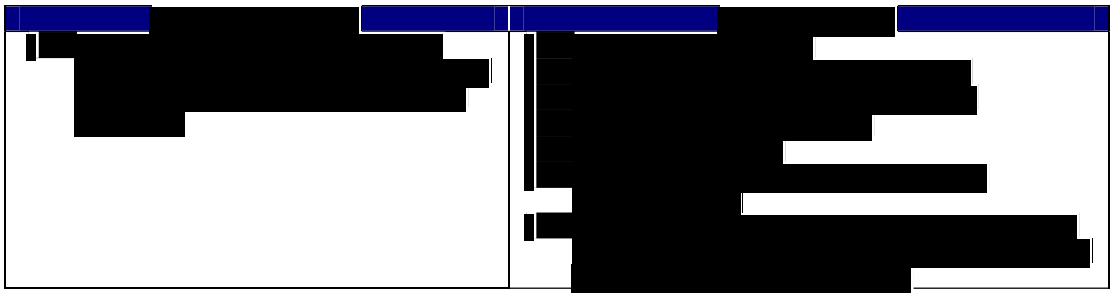
The Qwest Help Desk will be the customer's primary point of contact for post-sales questions about the use of the services (to be defined service by service) and will act as a resource to direct customers to other Qwest resources who can help resolve the customer's issue. The Qwest Help Desk will continue to be the customer's primary point of contact for portal navigation and education; administration and account management; site functionality trouble resolution; inventory verification; PC configuration issues and basic trouble shooting; execution of fall-out procedures and table/system updates. The Qwest Help Desk will provide customers a consistent level of resolution, irrespective of the access channels: fax, telephone, postal service, click-to-chat, or email. Additionally, the Qwest Help Desk will be Telecommunications Display Device (TDD) Accessible.

[redacted]

Qwest offers a best-in-class automated Customer Support Office (CSO) enabling support through various mechanisms, including the Qwest Control Networx Portal, Interactive Voice Response, email, fax, postal service, and click-to-chat. Qwest's centers are TDD capable and are configured with robust physical and network infrastructures.

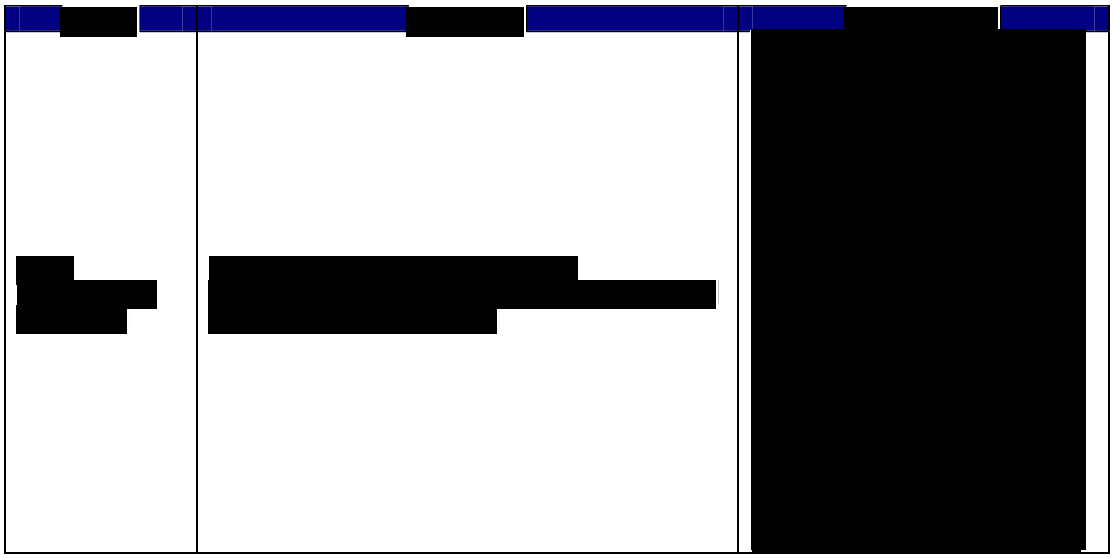
The Qwest Team uses "move," "add," and "change" features from Qwest's automated technology, the benefit of which is to minimize the time needed to resolve a teleworker's service installation and set-up.

Network and Security Services: The Qwest Team's TWS will provide network and security services critical to the teleworker's data and communications security. [redacted]



Qwest Mobility Security Policy Management

Security and policy enforcement are important aspects of the service and are being used with great success by customers. As a Qwest Mobility® customization option, this service currently supports two optional methods of policy enforcement: [redacted]



Qwest's pre-sales engineering will assist the agency's teleworkers in developing an optimal solution to ensure a cost effective and secure TWS capability using underlying security and communications services such as, network-based IP VPN services, ISDN, Broadband, or Private Line services. Qwest's provisioning and operations groups will ensure that the solution is installed and maintained to meet the Government's requirements.

5.4.1.1.1 Communications from Teleworker Location to Agency (Req_ID 3521: C.2.12.1.1.3)

Qwest provides options to seamlessly integrate a one-click smart client for VPN communication with the Agency-owned VPN gateway and authentication methods. Section 5.4.1.1 and Figure 5.4.1-3 show how Qwest provides seamless communications from a teleworker's location to an Agency's Intranet (corporate LAN). Figure 5.4.1-5 shows that within the Qwest Mobility client, the teleworkers choose from among the list of available connections (Existing Internet, Paid Wireless, Free Wireless, Paid Ethernet, Dial-up and 3G Internet access) and then, for all access types, the teleworker seamlessly clicks the same connect button. For Qwest Mobility directory

searches the teleworker clicks the directory button and, for all access types, can seamlessly search the directory by location (country, state, city) in addition to other types of directory searches (by dial-up access number, access type and by location type (e.g., Hotel).

5.4.1.1.2 Data and Voice Connectivity (Req_ID 3520: C.2.12.1.1.4 (1))

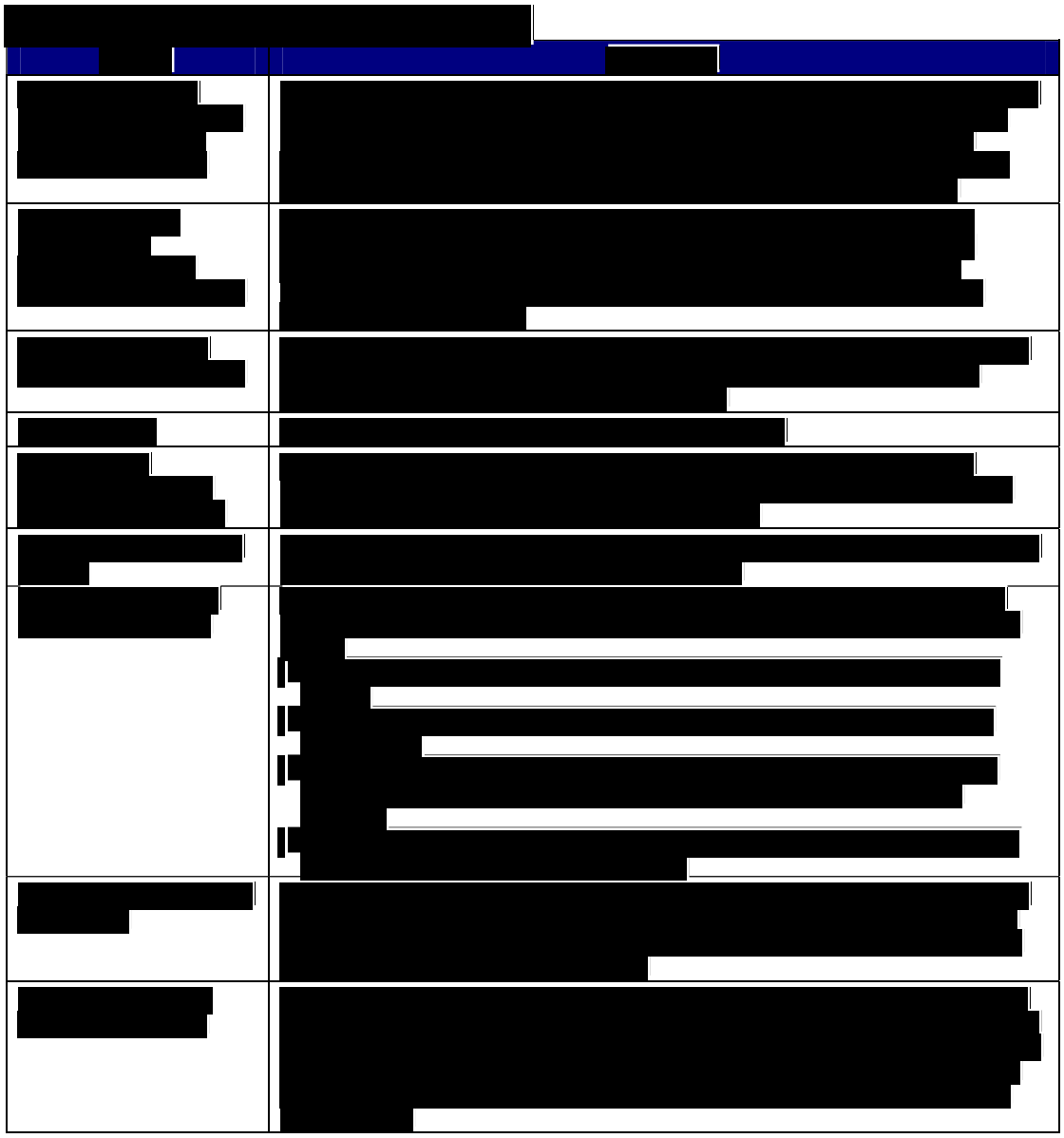
[redacted]

5.4.1.1.3 Tier 1 Basic Subscriber Capabilities (Req_ID 3518: C.2.12.1.1.4 (2)(a))

With a single click on the “Download Client” button, the Qwest Control Networx Portal enables the Agency mobile workforce and teleworkers to download and automatically install the Qwest Mobility client software. [redacted]

5.4.1.1.4 Tier 2 Enhanced Custom Service (Req_ID 3516: C.2.12.1.1.4 (2)(b))

[redacted]



5.4.1.1.5 Authentication and Encryption Capabilities (Req_ID 3515: C.2.12.1.1.4 (3))

Via Agency user Internet access accounts, hosted either by Qwest RADIUS servers or Agency-owned RADIUS servers, the service enables Agency mobile or remote employees to utilize a single account at thousands

of dial-up and wireless broadband Internet access locations. These Qwest wireless broadband locations and dial-up access numbers are integrated within the Qwest Mobility client directory and are updated automatically.

[redacted]

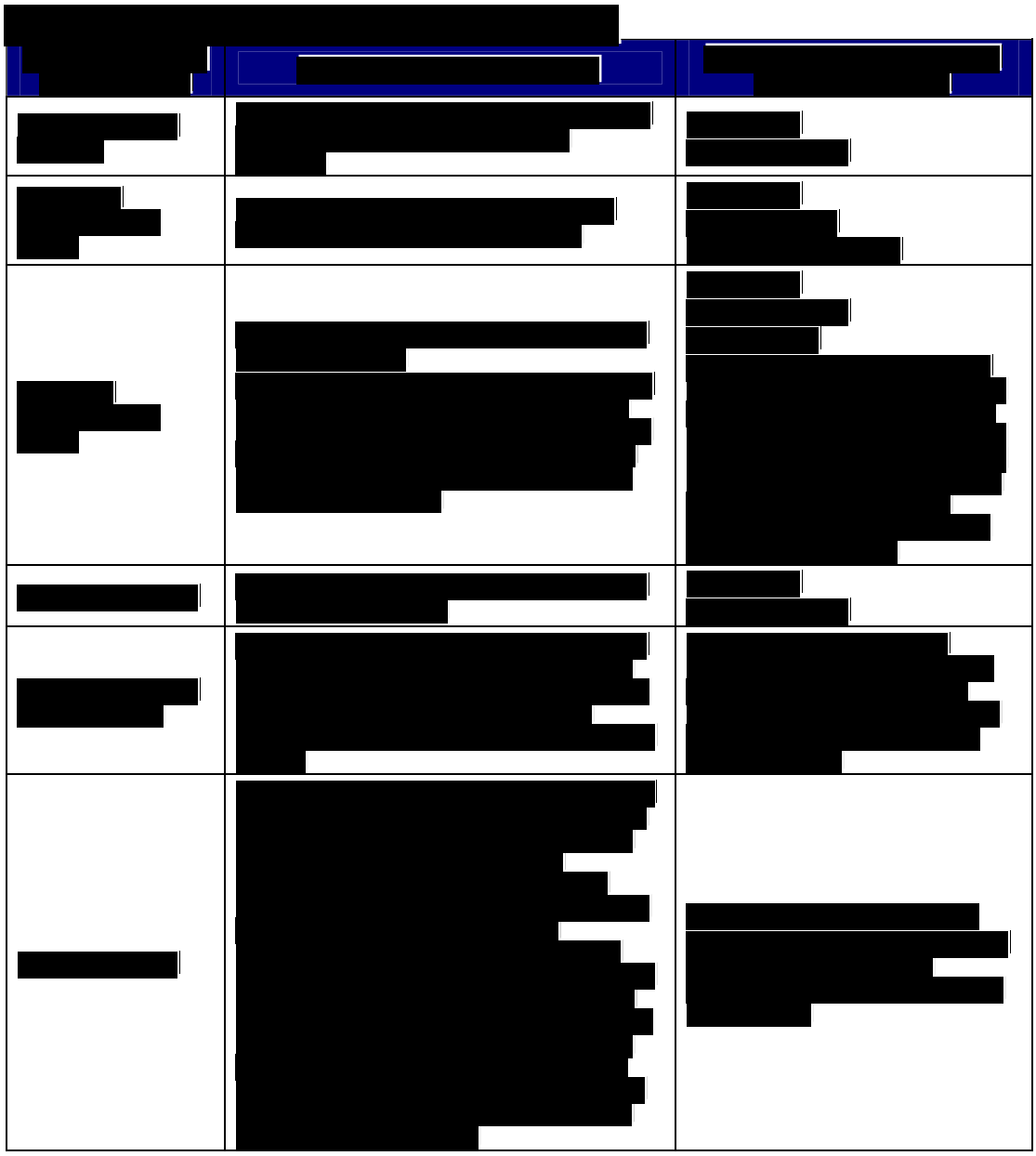
Depending on Agency security requirements, the service gives Agencies the option of selecting between three credentials identification protocols: Challenge/Handshake Authentication Protocol, MS-CHAP V1, or the Password Authentication Protocol for authentication of all users of Qwest's global dial-up network.

[redacted]

The Qwest Mobility client seamlessly integrates with a variety of AAA credential authentication methods, including User ID and Fixed Password, SecurID, and Safeword.

[redacted]

[redacted]



[redacted]

5.4.1.1.6 Activity Log/Audit Trails (Req_ID 3512: C.2.12.1.1.4 (4)(a))

5.4.1.1.7 Management Utilities (Req_ID 3511: C.2.12.1.1.4 (4)(b))

Qwest Mobility Administrative Access Overview

The service includes a secure, client configuration and management Web-based administrative portal called the Qwest Control Networx Portal. Through this portal, Agency authorized personnel can gain highly granular central configuration, management, and security policy enforcement of the Qwest Mobility client, optional integrated VPN client, Agency personal firewall, or other software configuration of a mobile employee's remote systems. Such software can be pushed out to specific groups of mobile, remote users in a manner specified and controlled by the Agency. This enables Agencies to hide remote system configuration complexities from users, reducing Agency support costs, while ensuring machine compliance with the Agency security policy.

Authorized Agency personnel can use the Qwest Control Networx Portal to manage administrative requirements [redacted]

[redacted]

5.4.1.1.8 Class of Service Capabilities (Req_ID 3510: C.2.12.1.1.4 (4)(c))

Teleworkers using the TWS have access to multiple classes of service associated with the underlying transport services being used for the remote communication. [redacted]

5.4.1.1.9 Transmission of Multiple Protocols (Req_ID 3509: C.2.12.1.1.4 (4)(d))

Qwest Mobility is an IP-centric service that enables transmission of any communication application data and application protocol that is normally seen in IP-based corporate Intranets or the Internet (e.g., web server access, email, collaboration applications, and network folder access). [redacted]

5.4.1.1.10 Delivery to Different Endpoint Devices (Req_ID 3507: C.2.12.1.1.4 (5))

Qwest will provide TWS to a variety of end-point devices using underlying network IP services (such as IP VPN Services), ISDN, Broadband, or Private Line services. [redacted]

5.4.1.1.11 Training for Connection Maintenance (Req_ID 3499: C.2.12.1.1.4 (6))

Qwest will provide a Qwest Mobility user guide and training for the teleworker on how to establish and maintain TWS connections. This training will be Web-based [redacted]

The service includes a user guide that explains how the teleworker can register in the portal, download the Qwest Mobility client and access directory (and all administrator-defined software, VPN client, and settings), and connect to the Internet and the Agency's VPN or Intranet via the various supported Internet access types. [redacted]

5.4.1.1.12 Compatibility with Agency Teleworker Applications and Client Software (Req_ID 3494; C.2.12.1.1.4 (10))

Qwest TWS is backed by a highly-trained team of Qwest pre-sales experts in application services. The Qwest Team will work with the Agency to ensure the solution will support the teleworker applications and client software. Qwest Mobility is an IP-centric service that enables transmission of any IP-based communication application data and application protocol, such as MS Outlook/Exchange and IBM Lotus Notes, that are normally used in IP-based corporate Intranets or the Internet. [redacted]

5.4.1.1.13 Managed Moves, Adds, and Changes Support (Req_ID 3482; C.2.12.1.2.1 (6))

The Qwest solution for moves, adds, and changes for TWS is supported by the [redacted]. The service includes a 24x7x365 toll-free technical support number for any issue that may arise. Qwest's support personnel are dedicated exclusively to Remote Access end users. End users are supported around the clock to resolve any technical or service problem they may encounter (e.g., client software installation issues: unable to connect; can connect, but not authenticate; unable to browse; experiences severe latency; or is disconnected abnormally).

[redacted]

5.4.1.1.14 Video Conferencing (Optional) (Req_ID 3472; C.2.12.1.2.1 (8))

[redacted]

5.4.1.1.15 Interface Requirements (C.2.12.1.3.1 (1)(2)(3)(4)(5))

[redacted] Please refer to the following subsections for UNI details by service.

1. Voice Services - 4.1.1.3.3 of Qwest's response. [Req_ID 3456]

2. Internet Protocol Services - 4.1.14.3.1.3 of Qwest's response. [Req_ID 3455]
3. Private Line Services - 4.1.5.3.1.3 of Qwest's response. [Req_ID 3454]
4. Combined Services - 4.1.4.3.1.3 of Qwest's response. [Req_ID 3453]
5. Virtual Private Network Services: [Req_ID 3452]
   - NBIP-VPNs – 4.1.9.3.1.3 of Qwest's response.
   - PBIP-VPNs – 4.1.8.3.1.3 of Qwest's response.
   - L2IP-VPNs – 4.2.4.3.3 of Qwest's response.

5.4.1.2 Benefits of Teleworking Service Technical Approach (L.34.1.5.1(b))

Figure 5.4.1-13 summarizes the benefits of the Qwest Team's TWS service offering.

Federal Enterprise Architecture (FEA) goals and the benefits of the Qwest Team's approach to TWS appear in ***Figure 5.4.1-14***.

Figure 5.4.1-14. Support of FEA Goals. *The Qwest Team's approach to TWS is compatible with and supports Federal Enterprise Architecture goals through design and delivery features that are standards compliant.*

FEA Goals	[redacted]
Enhance Cost Savings and Avoidance	[redacted]
Increase Cross-Agency and Inter-Government Collaboration	[redacted]

5.4.1.3 Solutions to Teleworking Service Problems (L.34.1.5.1(c))

[redacted]

5.4.2 Satisfaction of Teleworking Service Performance Requirements (L.34.1.5.2)

Qwest employs highly-skilled, customer-focused engineers, and structured processes to ensure satisfaction for Agencies using TWS.

5.4.2.1 Teleworking Service Quality of Service (L.34.1.5.2(a))

In order to meet the time to restore requirement for TWS services, Qwest employs highly-skilled, customer-focused engineers to respond to any outages. These resources use automated management tools that automatically notify necessary personnel in the event of an outage. The Qwest TWS help desk seamlessly interfaces with telecommunications NOCs and security services to ensure conformance to the Key Performance Indicator (KPI) measurements. ***Figure 5.4.2-1***, Qwest TWS Service Goals, highlights Qwest's KPIs and performance thresholds. [redacted]

Figure 5.4.2-1. Qwest TWS Service Goals.

KPI	Service Level	Performance Standard (Threshold)	Acceptable Quality Level (AQLs)	[redacted]
Time to Restore	Without Dispatch	4 hours	≤ 4 hours	[redacted]
	With Dispatch	8 hours	≤ 8 hours	[redacted]

5.4.2.2 Approach for Monitoring and Measuring Teleworking Service (L34.1.5.2 (b))

Qwest monitors and measures the KPIs and AQLs of the Qwest network services via automated processes that pull data from the root source, manipulate it, and display it via Web tools. [redacted] Qwest's scorecards are reviewed daily at the executive level to ensure the proper attention and focus. Qwest's scorecards are also viewed by all levels of management so that first-

level supervisors as well as upper-level management are viewing the same results and responding on the same issues.

5.4.2.3 Verification of Teleworking Service (L34.1.5.2(c))

Qwest deploys systems monitoring tools to support performance verification for both Qwest's management systems and Qwest's network performance.

Management Systems: The Qwest help desk management systems provide reporting which facilitates management verification of performance of the TWS service.

Real-Time Reports: Enable supervisory viewing of personnel status and help desk queue information in a simple format. [redacted]

Analytical Historical Reporting: Analytical tools will be used to assess the historical performance of the contact center personnel to assist with long-term planning and contact center optimization. [redacted]

[redacted]

Network: [redacted] Network performance is tracked by [redacted] a series of automated online trend and Pareto charts [redacted]

We build Qwest's tools to be able to drill down to individual products and show detailed metrics. Within Qwest's scorecards we show dozens of

metrics, with results over several years for each product, to give a complete picture of performance over time. [redacted]

[redacted]

5.4.2.4 Teleworking Service Performance Level Improvements (L34.1.5.2 (d))

[redacted]

5.4.2.5 Additional Teleworking Service Performance Metrics (L34.1.5.2 (e))

[redacted]

5.4.3 Satisfaction of Teleworking Service Specifications (L.34.1.4.3)

[redacted]

5.4.3.1 Satisfaction of Teleworking Service Requirements (L.34.1.4.3 (a))

[redacted]

[redacted]

[redacted]

Additionally, ***Figure 5.4.3-1*** summarizes the proposed Qwest service offering features that are available. Qwest fully complies with all mandatory stipulated and narrative features, capabilities, and interface requirements for TWS. The text in the following table is intended to provide the technical description required per L.34.1.4.3(a) and does not limit or caveat Qwest's compliance in any way.

Figure 5.4.3-1. Qwest Technical Approach to TWS Service Features

Name of Feature	Description	[redacted]
Anti-Virus Management	The contractor will provide the capability to protect the TWS agency and subscr ber from a virus. Minimum capabilities include detection, notification, and removal of a virus.	[redacted]
Follow-Me Service (Optional)	The contractor will provide the capability to route inbound calls (at a minimum, to three alternate numbers) with options for sequential or parallel routing to destination phone numbers (i.e., ring simultaneous phone numbers), or to voice mail. The subscriber will be able to manage a "find me list" and select any combination of different phone numbers in a user-defined search order to ensure delivery of important calls.	[redacted]

Name of Feature	Description	[redacted]
Intrusion Detection and Prevention	The contractor will provide monitoring, attack recognition, and response to network security threats.	
Managed Firewall	The contractor will provide a managed firewall service to protect the agency network endpoint(s) from unauthorized inbound Internet-based intrusion.	
Managed Moves, Adds, and Changes Support	The contractor will provide management support and act as a single point of contact for agency moves, adds, and changes with respect to TWS.	
Teleworker Firewall	The contractor will protect teleworkers' end-point from unauthorized inbound Internet-based intrusion with anti-virus protection and filtering capabilities. The firewall is premises-based and located at the teleworker TWS end point.	
Video Conferencing	The contractor will enable TWS subscribers to utilize point-to-point and multipoint desktop video conference capability.	

Name of Feature	Description	[redacted]
Voice Mail	The contractor will provide a voice mail box, including voice messaging transmission, reception, and 24/7storage, except for periodic scheduled maintenance. The contractor will provide the following minimum requirements: 1. At least thirty minutes of storage time (or 15 messages) 2. Ability to remotely access voice mail services 3. Secure access to voice mail via a password or PIN 4. Automatic notification when a message is received 5. Capability to record custom voice mail greetings 6. Call answering for a busy or "ring, no answer" condition	[redacted]
Voice Service	The contractor will provide inbound and outbound voice calling capabilities with the following minimum capabilities: 1. Call Waiting 2. Caller ID 3. Caller ID Block (permanent or on a per call basis) 4. Three-Way Conference Call	[redacted]
Vulnerability Scanning	The contractor will provide real-time network scanning for potential entry points exposed to malicious attack through an automated scanning service that probes Internet-facing devices for vulnerability.	[redacted]

5.4.3.2 Proposed Enhancements for Teleworking Service (L.34.1.4.3 (b))

[redacted]

5.4.3.3 Risk Implications on the Network Modifications (L.34.1.5.3(c))

[redacted]

5.4.3.4 Qwest's Experience in Delivering Teleworking Services (L.34.15.3(d))

[redacted]

5.4.3.5 Proposed Enhancements for Teleworking Service (L.34.1.5.3(e))

If the TWS customer orders Managed Network Services (MNS), Qwest will provide the basic connectivity and related components necessary to establish teleworker capabilities for the subscriber. Qwest's TWS Customer Care Center will oversee the installation, configuration, and provisioning of Managed Network services. [redacted]

Design and Engineering: Based on Qwest's experience with providing MNS [redacted] a dedicated resource will be assigned to oversee the initial design, ordering, provisioning, implementation, and management [redacted]

[redacted]

***Implementation*:** Once this process is complete, the SPOC will assist the customer in formalizing the required documentation needed for the ordering and provisioning on the required services. [redacted]

[redacted]

***Management and Maintenance*:** During the course of provisioning, various check point meetings will be set up, depending on the length of implementation and the complexity of the process. These meetings will provide for a means by which the customer can ask questions and receive real-time status from both the SPOC and from the provisioning team. [redacted]