

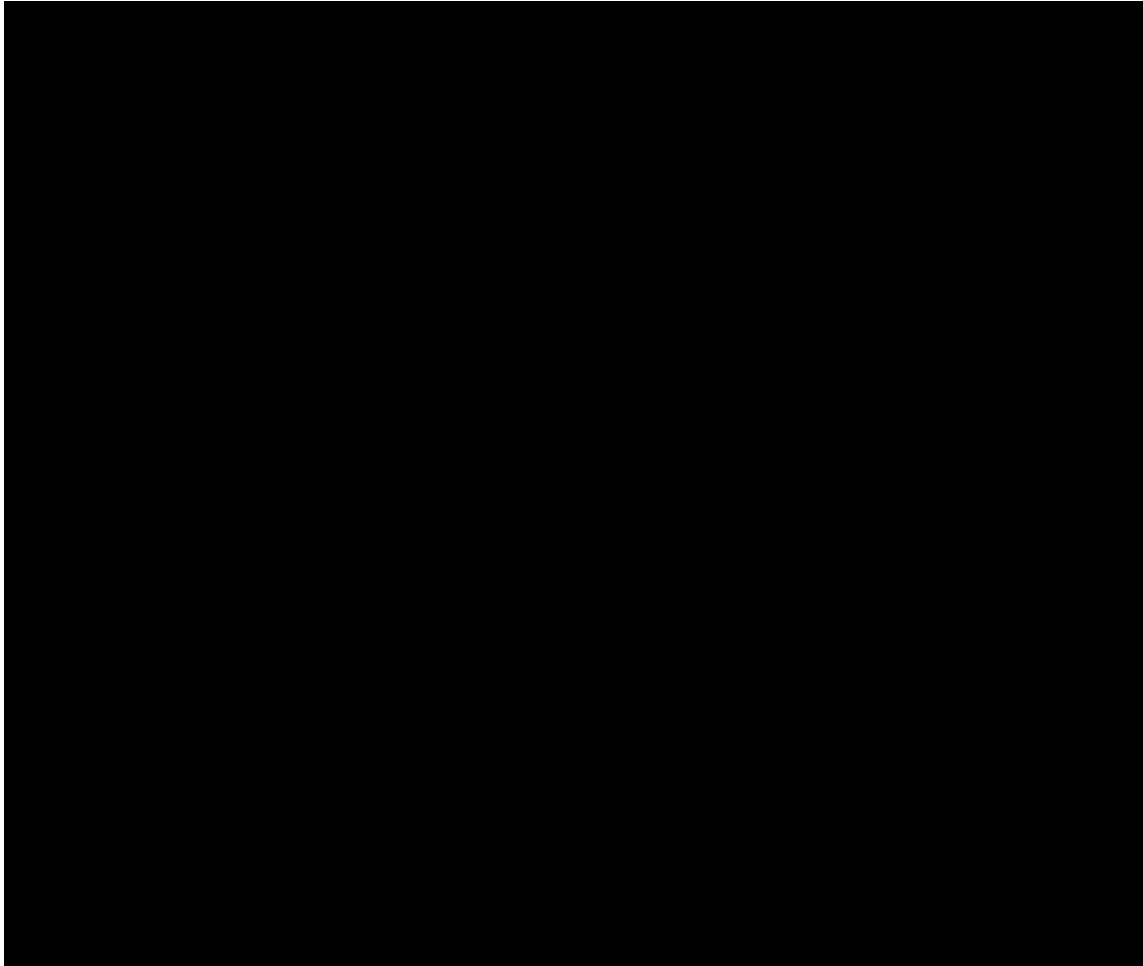
### **3.2 NETWORK MANAGEMENT (L.34.2.3.2, M.3.3)**

*GSA and Agencies expect a contractor who can provide continuous high quality service, reliable performance, and operational support. Qwest is committed to providing the highest levels of service via a world class network by hosting a suite of products and services supported by state-of-the-art tools and systems. This commitment extends from our highest levels of management to each employee involved in the day-to-day support of our customers and their networks.*

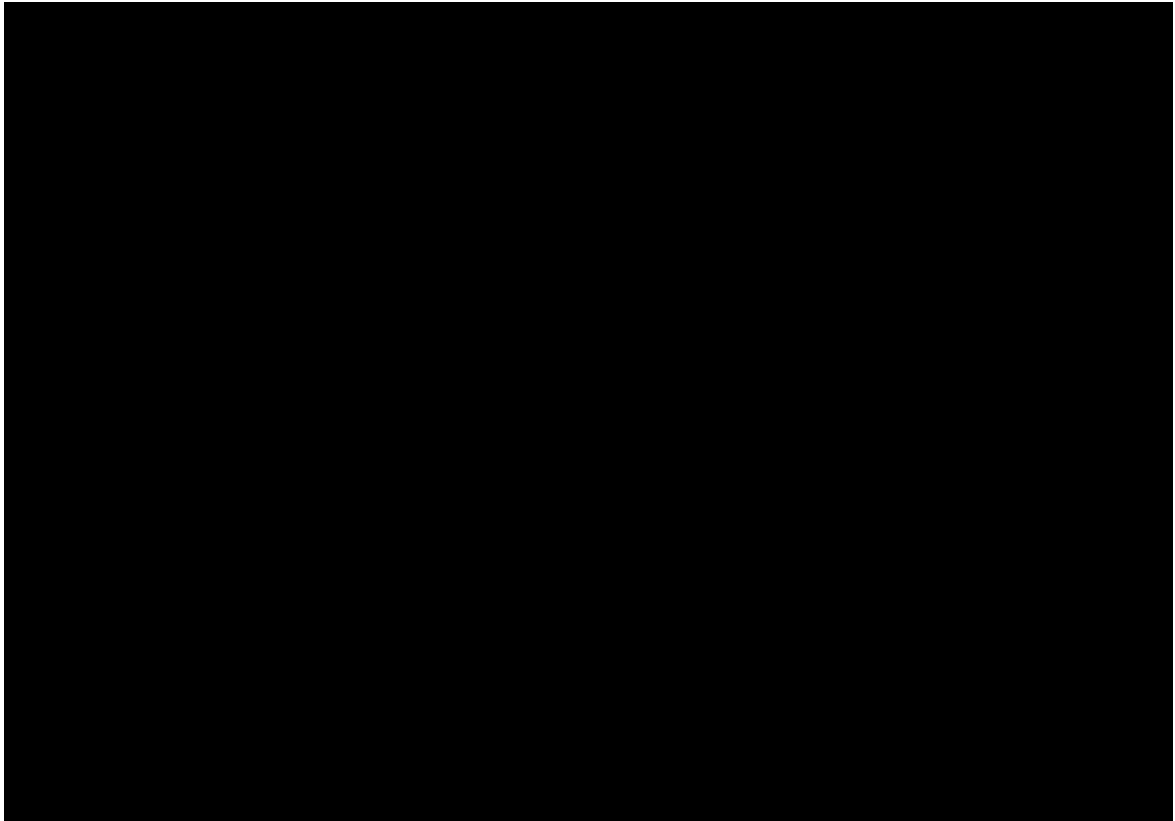
#### **3.2.1 Understanding of the Requirements**

Qwest understands GSA's need to ensure network quality and visibility at a variety of levels. By building on our existing network management organizations, processes and procedures, we have designed a network management approach that meets the requirements of the Networx program and will consistently exceed the expectations of both the GSA Networx Program Management Office (PMO) and Agencies.

The Qwest Team recognizes the importance of having established, proven network management policies and procedures. To this end, our policies address all five (5) areas of the International Organization for Standardization (ISO) network management model: 1) Fault Management; 2) Configuration Management; 3) Accounting Management; 4) Performance Management; and 5) Security Management - (FCAPS) [REDACTED]. Our process framework begins with security management and incorporates each of the components of FCAPS to: ensure the integrity of all network services; meet the needs of a large, heterogeneous, and geographically distributed user community; and consistently improve the quality of service.



Qwest will support the Networkx program with a comprehensive and secure Operational Support System (OSS) that performs a wide range of integrated functions including network management, trouble management, inventory management, billing, service ordering, customer support, and program management. Full integration of the Networkx OSS [REDACTED] [REDACTED] is the foundation for the development and delivery of all Networkx-related data, and it meets all Networkx system requirements.



Qwest's OSS features tightly integrated systems that support commercial and Government customers today. Qwest's embedded systems use a component-based architecture that facilitates building interfaces to subcontractor and other vendor systems. The Qwest Control Network Portal provides access to the back-end OSS. Qwest continues to design process flows that will generate efficiencies for the customer and Qwest.

Qwest has deployed a complete set of controls, including: access controls that manage users' access to specific systems based on identification and authorization; managed OSS security services, which protect systems from outside attacks; software configuration and patch management that ensure system applications are protected; and a robust monitoring system for managing the infrastructure.



### 3.2.1.1 Network Management Narrative Responses

The following table identifies RFP requirements and associated proposal response locations.

comp req_id	RFP Section	[REDACTED]
10109	C.3.3.1.2.1	[REDACTED]
10116	C.3.3.1.2.2	[REDACTED]
10119	C.3.3.1.2.2	[REDACTED]
10120	C.3.3.1.2.2	[REDACTED]
10121	C.3.3.1.2.3	[REDACTED]
10122	C.3.3.1.2.3	[REDACTED]
10123	C.3.3.1.2.3	[REDACTED]
10129	C.3.3.1.2.4	[REDACTED]
10147	C.3.3.1.2.4	[REDACTED]
10154	C.3.3.1.2.6	[REDACTED]
10155	C.3.3.1.2.6	[REDACTED]
10156	C.3.3.1.2.6	[REDACTED]

### 3.2.2 General Approach to Network Management

Qwest is an industry leader [REDACTED]. Our Spirit of Service™ conveys our Networkx team's approach to go above and beyond the call of duty to meet customer needs during critical times.

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Qwest

integrates processes and tools for each function to provide a cohesive platform for maximizing the availability and security of Networkx services.

Qwest will effectively manage network configuration changes to avoid interruptions in service or downtime. We will conduct configuration changes during a scheduled and agreeable maintenance window to minimize impact to customer services. Qwest will provide data and analyses along with assistance for optimizing configurations to ensure maximum utilization of bandwidth and potential cost savings to the Government. To support the Government's required tracking and reporting requirements, we will provide the Government with effective administrative support that reduces the burden of tracking, reporting, and billing. In addition, Qwest will provide operational support to maintain the suite of products and services offered under the Networkx program.

### **3.2.3 Accounting Management (L.34.2.3.2 (b), M.3.3(a), comp\_req\_id 10116, comp\_req\_id 10122)**

Qwest's Accounting Management focuses on gathering statistics, managing quotas and usage, and providing an accurate base of data for billing. It also allows the network to better control and analyze system utilization of Agencies, while helping Qwest make better use of the resources we manage. Network accounting allows Qwest to monitor trends and make forward-looking assumptions and decisions regarding the network.

The Portal will give Agencies access to usage data, statistics, and analyses provided by our Accounting Management systems. Qwest understands and complies with the Networkx requirements for reporting usage data, fraud, optimization, and abuse, and we will make these reports available via the Portal. Our accounting management system is able to provide the Government with ad hoc traffic and usage reports upon request to support the

Government's telecommunications planning, and avoidance of fraud, waste and abuse. Qwest currently provides a variety of reports for many of our commercial customers. For Network we will sample the data link utilization a minimum of twice per hour to meet Government requirements for data traffic reports. Qwest will also provide reporting for all network service components deployed to provide service to any Service Delivery Point (SDP), [REDACTED]

### **3.2.3.1 Accounting Management - Management Capabilities**

Qwest's Accounting Management capabilities focus on managing network usage levels and applying [REDACTED]. Qwest uses the accounting management system to report statistics that may point to a potential problem area in our network. If and when a problem occurs, the statistics are used in our analysis so we can detect, prioritize, and make immediate and informed decisions about our course of action. Qwest monitors performance thresholds and manages network alarms for corrective action.

Qwest's Network Management teams employ various tools to poll network elements and collect usage statistics in order to detect fraud and abuse [REDACTED]. Our security teams, working closely with the network operations centers, continually check for enhancements and improved tools to monitor the network and reduce the threat upon it from outside sources.

As part of our Spirit of Service™, Qwest has an existing process to work with Agencies on an annual basis to conduct an optimization analysis at no charge. The optimization identifies opportunities to save Agencies money or can be used to identify new means of meeting Agencies' needs. Qwest began this practice more than 10 years ago and it is well received by our customers.

Qwest can tailor a solution to benchmark typical utilization and identify when actual utilization deviates from predefined thresholds. Fraud and abuse tools can be tailored to include the capability to track applications that are being run at a given site for the purpose of assisting the identification of fraud and abuse.

Qwest has a proven track record in service continuity and effectiveness in transferring the Spirit of Service™ transparently to the customer in a way that minimizes our customers' exposure to serious service affecting faults. Qwest maintains multiple operating platforms to achieve the goal of service continuity. Qwest will work with Agencies to meet specific requirements encompassing network management of systems and services. Qwest will meet or exceed the expectations and Acceptable Quality Levels (AQLs) of Networx. Qwest will partner with Agencies to manage day-to-day needs and expectations related to mission activities, tracking, facility issues, and order and trouble management.

**3.2.3.2 Accounting Management - Technical Capabilities (comp\_req\_id 10121)**

Qwest has deployed a number of industry-leading tools and systems to collect and analyze utilization data from our network. These tools enable Qwest to perform network planning functions, and to identify and manage instances of fraud, waste, and abuse. Qwest uses performance management tools to gauge, monitor, and detect network faults that will allow us to meet and exceed Networx AQLs.

[REDACTED]



[Redacted text block containing multiple paragraphs of blacked-out content]

[REDACTED]

Qwest's network application tools are geared toward effective management of our network components and interoperating systems. Qwest has a strong toolset to manage routine and critical service issues and minimize impact to Agencies. [REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

The Qwest Control Network Portal is the point of interface for the Government to view accounting management information and reports.

Accordingly, the accounting management tools and systems identified by Qwest are integrated with the Portal.

From a customer-facing perspective, accounting management often manifests itself in the form of usage reports, traffic reports, billing detail and similar reports and notifications. Within Qwest and beyond the aforementioned customer-facing usage, traffic and billing reports, accounting management is viewed as measuring network utilization and managing the network such that network resources are operating efficiently and within their designed parameters. Accounting management is an integral part of Qwest's network management solution. In addition to enabling the optimization of network resources, accounting management also enables Qwest to detect faults and to identify network fraud and abuse.



The table area is almost entirely obscured by large black redaction bars. A blue border is visible around the table structure, which appears to have multiple columns and rows. The content within the cells is illegible due to the redaction.

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

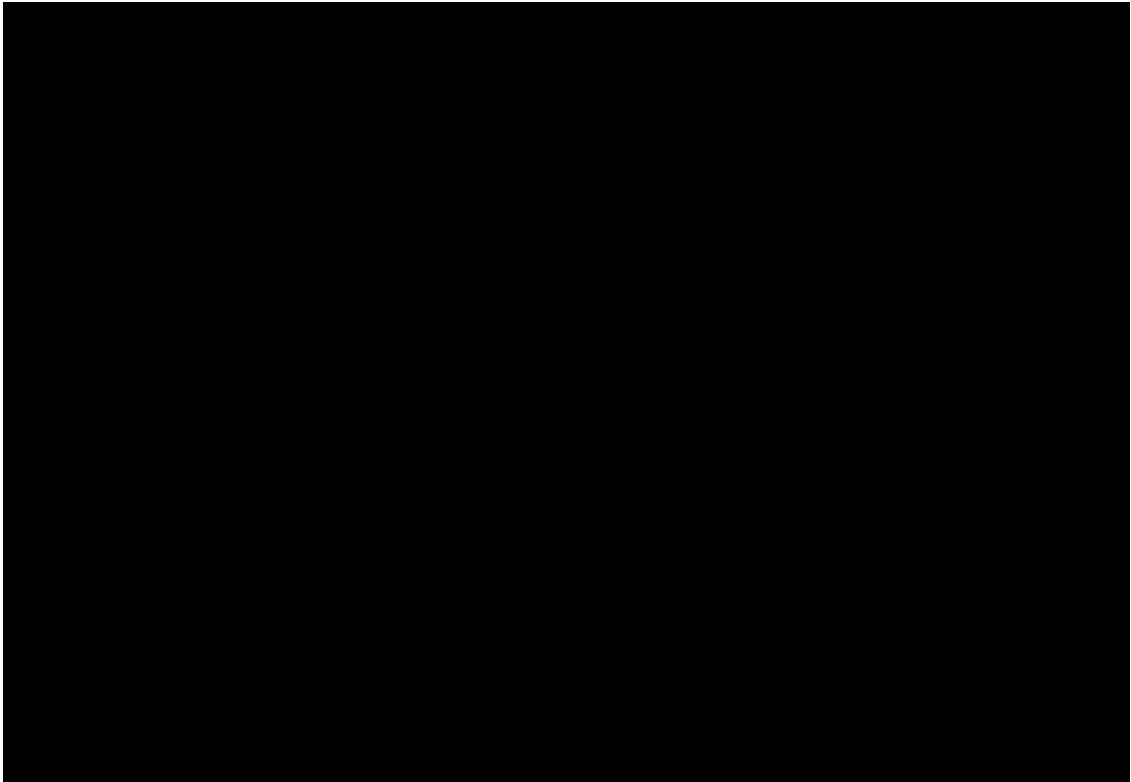
[REDACTED]

[REDACTED]

[REDACTED] Qwest currently supports other customers with similar data requests by providing reports and analysis showing customers their usage and pointing out where they are under-utilizing their bandwidth. [REDACTED]

[REDACTED]

[REDACTED]



**3.2.3.3 Accounting Management - Operational Capabilities (comp\_req\_id 10120, 10123)**

Qwest will provide voice and data traffic reports in the format and media requested by the Government, as prescribed in C.3.3.1.4.1.3 and C.3.3.1.4.1.4. Traffic reports contain the same data used to calculate SLAs such as the Grade of Service (Call Blockage) for Voice and Toll Free services as well as the Data Delivery Rate for Frame Relay services. [REDACTED]



As part of the operational process, these reports are produced using the software tools identified in Section 3.2.3.3, *Accounting Management Technical Capabilities*. The table in [REDACTED] shows how these tools are applied to all the Networkx services provided in Monitoring Performance, Network Planning and Optimization, and Fraud/Waste/Abuse identification as part of our ongoing operations.

Qwest operates a fraud operational center 24x7x365, staffed with analysts that are trained to detect suspected fraud or abuse on all voice services and data services. Qwest fraud services include continuous real-time call analysis based on unique rules and thresholds designed to identify fraud or abuse. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] The Government may need to make necessary changes or corrections within their premise equipment to safeguard their network. Qwest will partner with the Government, to implement necessary network solutions that will address any fraud exposure. [REDACTED]

[REDACTED]





[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]

This database will enable the Government to assess how network changes may impact services to Agencies, [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Qwest

will also provide Agencies with network configuration information applicable to their voice and data network through the Portal.

[REDACTED]

### **3.2.4 Configuration Management (L.34.2.3.2 (a), M.3.3(b) (comp\_req\_id 10116))**

Qwest understands that our execution of the Spirit of Service™ requires a state-of-the-art Configuration Management process and dedicated Configuration Management group. To this end, Qwest has a rigorous and standardized configuration management process across all of our network services support functions. The process includes notification to the impacted customers in a manner that meets the requirements set forth by the Government. The configuration management process includes a requirement to notify and/or obtain approval from impacted groups within Qwest and key customer accounts. Because we focus on customers' needs before, during, and after the change event, Qwest minimizes risk of service impact throughout the change event.

Qwest will schedule activities with a minimum lead time of [REDACTED] and understands the Government's right to reschedule within a [REDACTED] window. Qwest will work with GSA and Agencies when emergency situations arise and a [REDACTED] notice is not feasible. Qwest will also work with and notify the Agencies of any large scale changes in the Network that may have an impact on the network. Those changes might include major upgrades, software releases, or replacement of equipment. Qwest will identify and schedule

maintenance windows, as we do today during pre-determined times. These maintenance windows are scheduled to minimize any impact on Agencies' operations. [REDACTED]

[REDACTED]

Qwest's maintenance windows are scheduled based on local time at the location where the work is performed. Qwest will work with Agencies in coordinating and scheduling maintenance activity. [REDACTED]

[REDACTED]

[REDACTED] The Qwest configuration management process is flexible enough to handle international services that span multiple time zones.

Examples of this flexibility include:

- Planned maintenance is typically scheduled between [REDACTED], in the time zone in which the work is to occur.
- Qwest will take proactive steps to work with customers to find an appropriate time to work on international circuits when there are known scheduling issues. [REDACTED]

[REDACTED]

[REDACTED]

### **3.2.4.1 Configuration Management - Management Capabilities (comp\_req\_id 10116)**

Qwest has a dedicated Configuration Management group that manages all network change activities within Qwest. This group is responsible for the following:

- Acting as the control point to ensure that required internal organizations are involved and change tickets contain the most updated information and documentation
- Serving as the interface between Qwest and Agencies. The Configuration Management group notifies customers of network events that are potentially service impacting
- Evaluating all planned maintenance activities
- Incorporating all Agency contacts into the process
- Designating appropriate approval levels
- Governing the process for all levels, to ensure that the process for each change is followed
- Ensuring that fundamental technical and safety requirements are met

Qwest performs all of our network changes and configuration management activities during a designated maintenance window to minimize the impact to the customer. Maintenance activities are pre-planned and tracked via [REDACTED] which has an approval process to ensure that proper resources will be available, tools and equipment will be available, an approved Method of Procedure (MoP) has been developed, a back out plan has been prepared, and the technician has

the required training to complete the work. Network operations and field technicians also are engaged in the change management process, so that both are aware of and have resources available during the maintenance window.

### **3.2.4.2 Configuration Management - Technical Capabilities**

Underlying the standard process for controlling configuration change at Qwest is the technology strength we bring to the table. Whether it is the discipline we bring to the deployment of assets into our network or the system we use to manage and monitor the actual configuration change event, we use technology to ensure Qwest continually performs at or above the expectations of our customers.

Qwest manages configuration change requests [REDACTED] [REDACTED] which is specifically designed for effective change management. Qwest already has this system in place and uses it successfully and effectively in our commercial and Government market units. By standardizing the change management process [REDACTED] [REDACTED] Qwest has been able to manage changes to our network in a manner that minimizes risk to our customers.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[Redacted]

### **3.2.4.3 Configuration Management - Operational Capabilities**

Within Qwest, the configuration management process is rigorous and is designed to minimize risk to the Qwest network and our customer base.

[Redacted]

[Redacted]

[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]

[Redacted]

A MoP document is required for all significant change activities. The MoP is a multi-page document which details step-by-step instructions that specify how the change activity will be performed. The MoP is developed, reviewed, and approved weeks in advance of the scheduled change activity. If the MoP is lacking a back-out plan or is missing relevant steps, the change activity is not approved and changes are made to the MoP.

Significant change activities routinely include an audio conference bridge that is maintained throughout the duration of the change activity. The purpose of the audio bridge is to facilitate communication with all participants that need to be part of the change activity. [REDACTED]

[REDACTED] If, during the change, additional resources are required, the Operations Center pages the required staff members, who are summoned to the audio conference bridge.

Our operational experience dealing with required changes in the Qwest network to accommodate growth and customer requirements is an integral part of how we deliver the Spirit of Service™ to our customers. We are confident that this process will go far to provide GSA and Agencies with new levels of insight and confidence in the reliability and scalability of Qwest's networks under the Networx program.

To meet the specific requirements set forth by Agencies with respect to optional Network Monitoring and Management Services, Qwest will provide the additional hardware and software to access these services. Qwest has demonstrated experience in developing Network Monitoring and Management solutions using our Portal capabilities; we can deploy additional functionality, on an individual case basis, any additional hardware or software.

### **3.2.5 Fault Management (L.34.2.3.2(c), M.3.3(c)) (comp\_req\_id 10147)**

Qwest's Network Management organization is focused on network reliability and performance, to reduce the frequency, severity, and duration of fault events. Qwest proactively manages our network, using state-of-the-art tools and operational processes that make us a leading provider of telecommunications and data services. GSA and Agencies will have real-time



access through the Portal to obtain the latest information regarding network faults. Qwest will manage the reliability of our network and those of other carriers used, to provide end-to-end service in real-time. Agencies will have controlled access to fault management data through the Portal.

In addition, Qwest uses state-of-the-art communication tracking and development tools for [REDACTED] monitoring of events, traps, and alarms to ensure network integrity. Qwest's goal is to minimize any downtime, service dispatches, or repair issues. Through our systems and our Networx team members, Qwest will isolate and resolve issues before they impact service. Our goal is simple - Qwest will work toward ensuring that our network is always at optimal operating levels.

Qwest's state-of-the-art network is monitored continually to track, analyze, report, and record faults to meet specifications for our Government customers. Qwest already has both a Government and internal escalation policy for Government business activities, including pertinent contact information that is available through the Portal. Qwest will notify GSA and affected Agencies of faults, restoration updates, [REDACTED] and include in our report any outages of the Qwest network switches or facilities, or isolations impacting full service. Qwest will also include in this report any issues and concerns about catastrophic events (i.e., fires in a transport site) and any service-affecting concerns that may be initiated by a Qwest team member or vendor (i.e. maintenance window or software load). The report will provide tracking numbers, fault description reports, dates and detected times, identification of Agencies that are affected along with their locations, and any peripheral information regarding faults and/or locations. Qwest will provide an estimated time to repair, when possible, and the circuit Telecommunication Service Priority (TSP) status. [REDACTED]

████████████████████. We will do the same for our Government customers, providing Agencies with timely, proper notification of any network malfunctions of other significant system issues. Updates and status will be posted on the Portal Website, with viewing capability to affected Agencies for their services only and a total Network view for GSA.

The GSA PMO will have access to view all disruptions, updates, and status reports. Updates will be generated every ██████████, and Qwest will keep the final status update of a service-affecting fault on the Portal ██████████ after the trouble incident was closed. Access to fault management data and reports is available real-time through the Portal, on a 24x7x365 basis. Qwest is committed to resolve each outage for any Network service within ██████████ for restoration requiring dispatching of personnel except for non-domestic SDPs. Qwest will resolve ██████ percent of all service-affecting faults that do not require dispatch within four hours, as measured in aggregate at the Agency level. Qwest will resolve ██████ percent of all service-affecting faults that require a dispatch within ██████████, as measured at the Agency level. The Total Time to Restore (TTR) is calculated as the elapsed time between reporting the trouble and the restored time:

- Minus any time due to scheduled network configuration change or planned maintenance or
- Minus any time, as agreed to by the Government, for service restoration that cannot be worked due to Government caused delays. These may include:
  - The Agency was not available to allow Qwest to access the Service Delivery Point or other customer-controlled space or interface
  - The Agency gave Qwest an incorrect address for the SDP
  - The Agency failed to inform Qwest that a security clearance was required to access the SDP or Agency-controlled space

- The Agency required service at a remote site and agreed that a longer transit time was required

### 3.2.5.1 Fault Management - Management Capabilities

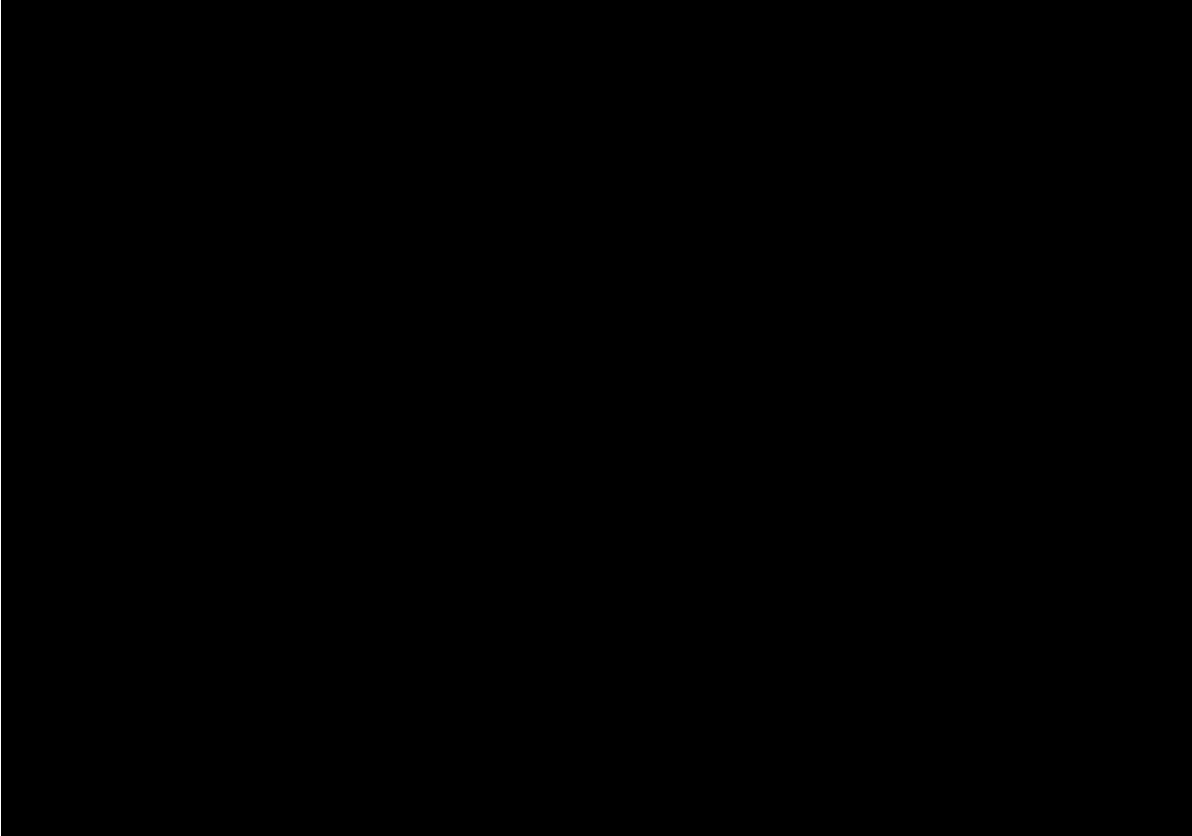


Qwest has deployed a robust network management strategy designed to minimize service disruptions for our customers. [REDACTED]

[REDACTED]. As a result, Qwest is able to identify problems and commence restoration activities [REDACTED]

[REDACTED]

[REDACTED]. Qwest takes an active approach in managing our network deliverables to all customers. We understand the importance of fault-free delivery systems and continuous operability relating to voice and data services. Qwest will take a hands-on active management approach in



promoting and proactively delivering services under the Networkx contract. Our service delivery and network management approaches sometimes require our active management of supplying vendors and teammates that deliver underlying services. Qwest will manage our team members to ensure that they share the same commitment level to our network management objectives, in a manner that will be transparent to GSA and Agencies. Qwest will provide the same expected level of service on a day-by-day basis, every day of the year.

For cases when Agencies have performance issues they wish to report, Qwest has established a Customer Support Office (CSO) for the purpose of providing a single point of contact for the Networkx Program. This enables Agencies to access the full breadth of Qwest's capabilities by making one call, rather than needing multiple contact points. This enhances

Agencies' repair experience, an outcome that has been reflected in our consistently high customer satisfaction survey results. At Qwest, trouble tickets are not closed until the Agency agrees that the issue is satisfactorily resolved.

For situations that require additional resources or management attention, Qwest provides customers with a thorough escalation process that includes access to higher levels of management. This process includes both customer-initiated and internal escalation of network events.

[REDACTED]

The benefit that the [REDACTED] process provides for the Agency is that the appropriate level of technical and management support personnel are immediately engaged whenever a given [REDACTED] is met or exceeded. [REDACTED]

[REDACTED] Qwest monitors network alarm status on a continuous basis, 24x7x365, within the Network Operations Centers.

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

### 3.2.5.2 Fault Management - Technical Capabilities

The key to effective fault management is using state-of-the-art tools and systems to sectionalize, isolate, and restore services. [REDACTED]

[REDACTED] Qwest has deployed redundant, state-of-the-art fault management systems that are geographically diverse. Qwest's toolbox includes the following:

#### Key Toolsets and Applications Provisioning

- Qwest uses an engineering order database containing initial and current service configuration information to effectively map critical service delivery points, equipment, and transport mediums.

- The Qwest [REDACTED] database allows a real-time look-up of customer circuits to find related Local Exchange Carrier (LEC) and circuit layout information.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

### **Trouble Ticketing**

- Qwest integrates easy-to-use trouble ticketing systems for creating and maintaining service trouble tickets [REDACTED]

[REDACTED]

[REDACTED]. These systems will be populated with data required for Agencies.

### **Troubleshooting**

- Qwest trouble ticketing systems assist in physical layer testing of customer circuits and help to isolate problems as LEC- or customer-related. These systems are critical and integral to performance management. They will provide Qwest a quick and real-time view into network management.

- [REDACTED]  
[REDACTED] Bulk statistics and configuration tool to trend performance and isolate chronic issues
- [REDACTED] – Provide critical performance data to isolate packet loss, latency, jitter, and voice Quality of Service (QoS) conditions on the network
- [REDACTED] – Provides two-factor authentication for secure access to Qwest equipment

These tools enable Qwest to manage our network and differentiate faults that are service impacting from those that are non-service impacting. This enables Qwest to focus our resources on events that are service impacting. The combination of the tools and systems previously listed and the resiliency of the Qwest network results in world-class service for Qwest's customers. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



In a continual effort to ensure that Agencies can be fully engaged in the ongoing management of provisioned telecommunications transport services, Qwest will provide Web access to the Portal that supports the service assurance and delivery requirements of the Networx program. This Portal includes a trouble management interface that will allow users to electronically input trouble tickets and check on their status.

This Portal is part of an ongoing evolution of Qwest's current systems that have been in place for many years, such as our provisioning system, order entry, billing, and trouble ticketing. [REDACTED]

[REDACTED]

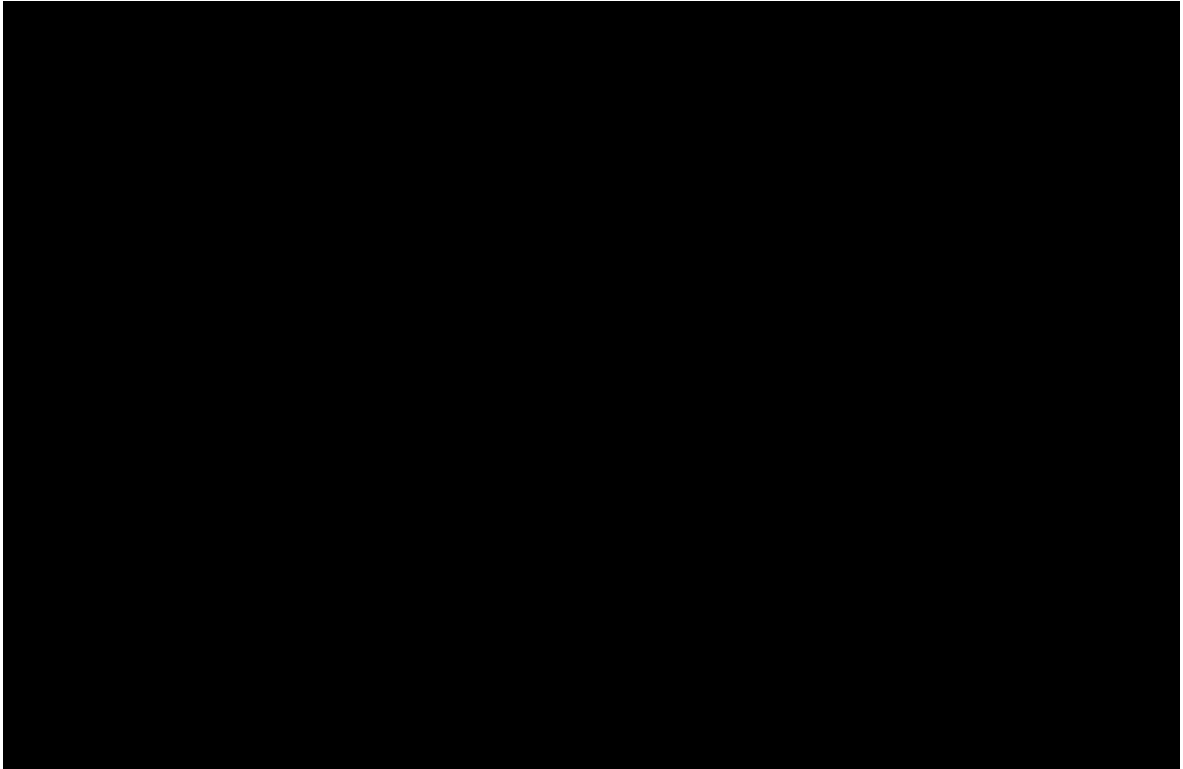
### **3.2.5.3 Fault Management - Operational Capabilities**

By using the network management tools and strategies outlined in this section, Qwest personnel are able to manage our network in a way that results in performance that is above industry standards. The NOC personnel are trained in specific areas of expertise to provide handling and resolution of network events. Qwest has established NOCs that operate 24x7x365 in geographically dispersed locations. This ensures continuous management across the different platforms that comprise the Qwest network.

[REDACTED]

[REDACTED] This enables Qwest to prioritize events and assign work to the events that are service impacting. [REDACTED]

[REDACTED]



[Redacted]
[Redacted]
[Redacted]
[Redacted]
[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Additionally, when Qwest fixes a fault, we fix it right the first time. We verify that the customer is back in service before closing the trouble ticket.

[REDACTED]

#### **3.2.5.4 Security Management (comp\_req\_id 10109)**

Qwest has a longstanding, robust security program with a proven history of providing industry-leading security services to protect Qwest's infrastructure, including information assurance processes applicable to databases and OSS and information processing systems upon which Networkx services will depend. Qwest is committed to protect Agencies against threats, attacks or failures of systems, in accordance with best commercial practices. Qwest employs a mature, process-based risk assessment approach to ensuring logical and physical security controls are in

place and appropriate for our computer centers, network operations centers, secure operations centers, CyberCenters™ and other Qwest facilities. Qwest's security-related services are intended to ensure the integrity, confidentiality and availability of information and network assets and to support Qwest resources and the wide range of customers and geographical locations we support.

Qwest provides services as an integrated network secure solutions team. The Qwest Team will assist with the identification of waste, fraud, and abuse. As required by RFP Section C.3.3.2, and as described in Section 3.3.2.2, the Qwest Network Fraud Operations Center operates [REDACTED] [REDACTED] and owns the responsibility of fraud prevention, detection, and reporting. Using a state-of-the art fraud detection system, the Fraud Operations group analyzes an Agency's daily calling and usage patterns for variations in the normalized traffic for the Agency. The group also monitors the network 24x7x365 for potential threats related to customer premise equipment. Within [REDACTED] of identifying an unusual or suspicious outage, blockage, or other service-affecting or fraud-related event, the CPO will report it [REDACTED] [REDACTED]

The Qwest integrated Networkx security team's commitment to Networkx is to provide reliable security services to the Government that meet or exceed the requirements set forth in the Networkx RFP. The Qwest integrated Networkx security team will ensure that all incidents are reported within the required time frame [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

### **3.2.6 Network Services Monitoring (L.34.2.3.2(d), M.3.3(d))**

Network monitoring is the linchpin for all aspects of Qwest's network management scheme. We currently monitor more than [REDACTED] globally to provide statistics and data for accounting, performance and fault management. We ensure environmental stability, and monitor remotely the progress of change management activities.

#### **3.2.6.1 Network Monitoring - Management Capabilities**

At Qwest, we [REDACTED] optimize our network and fix potential network issues before they become service-impacting events. To assist in managing our Network Monitoring capabilities, we constantly analyze results and [REDACTED] update our monitoring capabilities with emerging technologies. We have stringent requirements and network report cards to help determine our progress internally. Our self-checking strategies help define future goals and implementation procedures to ensure that we are prepared to exceed the expectations of our customers.

Signaling and voice operations are supported by the Switch Management Center. This center is located in [REDACTED] and is fully staffed 24x7x365. In the event of a catastrophic center failure, a back-up center is located in [REDACTED] failover exercises are performed to ensure proper operations continuity.

Switch Management utilizes various network management systems (NMS) to deliver alert/log status for operator review and action. [REDACTED] alarm system is used to monitor Time Division Multiplexing (TDM) alarms, as well as Signaling System 7 (SS7) alarms. [REDACTED] is used to monitor SNMP alarms for the Advanced Intelligent Networks and the Next Generation Voice over IP (VoIP) softswitch technologies. [REDACTED] currently monitors the Calling Card Platform, the Qwest Hosted Web Contact Center, and the Operator Services Platform. [REDACTED]

[REDACTED] technicians in Switch Management maintain command and control of alarms and outages reported through the NMS. They diagnose and repair troubles, then document actions taken to mitigate the alarm condition. [REDACTED] technicians also coordinate additional resources needed for repair and restoration with Field Operations [REDACTED]

[REDACTED] team manages and coordinates Configuration Management. [REDACTED] lab resources are used within engineering to regression test any change to production. Any problems identified during testing are addressed by the team before implementation into production is allowed. Once an optimal configuration is established, the templates are stored and used as the golden configurations for the network deployment and implementations to the production environment.

[REDACTED] establishes provisioning guidelines that are based on the engineering limits of the product and the results from capacity testing in the lab. These guidelines are turned into procedural documents for workgroup use. This prevents load balance issues from occurring at installation. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Performance Management includes [REDACTED] notifications that deliver measurement reports to various database systems. This allows individual workgroups to monitor the resource limits that are the threshold for each configuration. Thresholds are intentionally established at low values to provide early alerts to capacity issues. [REDACTED]

[REDACTED]



Security Management maintains control and access to switching elements. Switch level commands are established based on user responsibilities; access is limited to those with a specific business need. Each user in a workgroup is assigned an individual user identification or access mechanism to allow access to the level required to perform their functions. Activity logs are recorded and maintained for all switch access and command level entry. These logs are viewed daily by the security group for invalid

access attempts. [REDACTED]  
[REDACTED] This minimizes the opportunity for any Denial of Service (DoS) attack from entering the production network.

The [REDACTED] Center, which includes expertise in the areas of fiber protection, transport network management, and switch network management, monitors Qwest's backbone network to ensure the highest levels of network reliability. [REDACTED]  
[REDACTED]

[REDACTED] These functional areas combine to form a full service Network Operations Center that ensures network quality and reliability.

- Network technicians provide 24x7x365 customer and network support. These technicians are the first line of customer contact, providing immediate customer ticket awareness/status and issue escalation (within the first hour) to network engineers or the exchange carrier as warranted by each specific issue condition.

[REDACTED]  
[REDACTED]  
[REDACTED]

### **3.2.6.2 Network Monitoring - Technical Capabilities**

[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED] Prior to rolling out new services, we test these new tools to ensure that all aspects of [REDACTED] Network Monitoring capabilities are addressed. Specifically, we develop and test the rules that we will employ, to ensure that we capture what is most important to



our customers and that new services are integrated seamlessly into our existing suite of product offerings.

[REDACTED]

[REDACTED]

[REDACTED] The tools that we use for network monitoring have the capability to interface with our fault, accounting, and configuration management systems and tools. [REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

These Network Monitoring systems afford us the capability to identify and resolve network events [REDACTED].

**3.2.6.3 Network Monitoring – Operational Capabilities**

Network Monitoring and Fault Management go hand-in-hand. The geographically diverse 24x7x365 NOCs referenced under Fault Management are the same centers that monitor our network. Qwest has implemented an electronic automated [REDACTED] throughout the

nationwide backbone infrastructure to monitor the physical protection of the fiber and assist in locating any disturbances. [REDACTED]

### **3.2.7 Network Management Overview (L34.2.3.2 (d))**

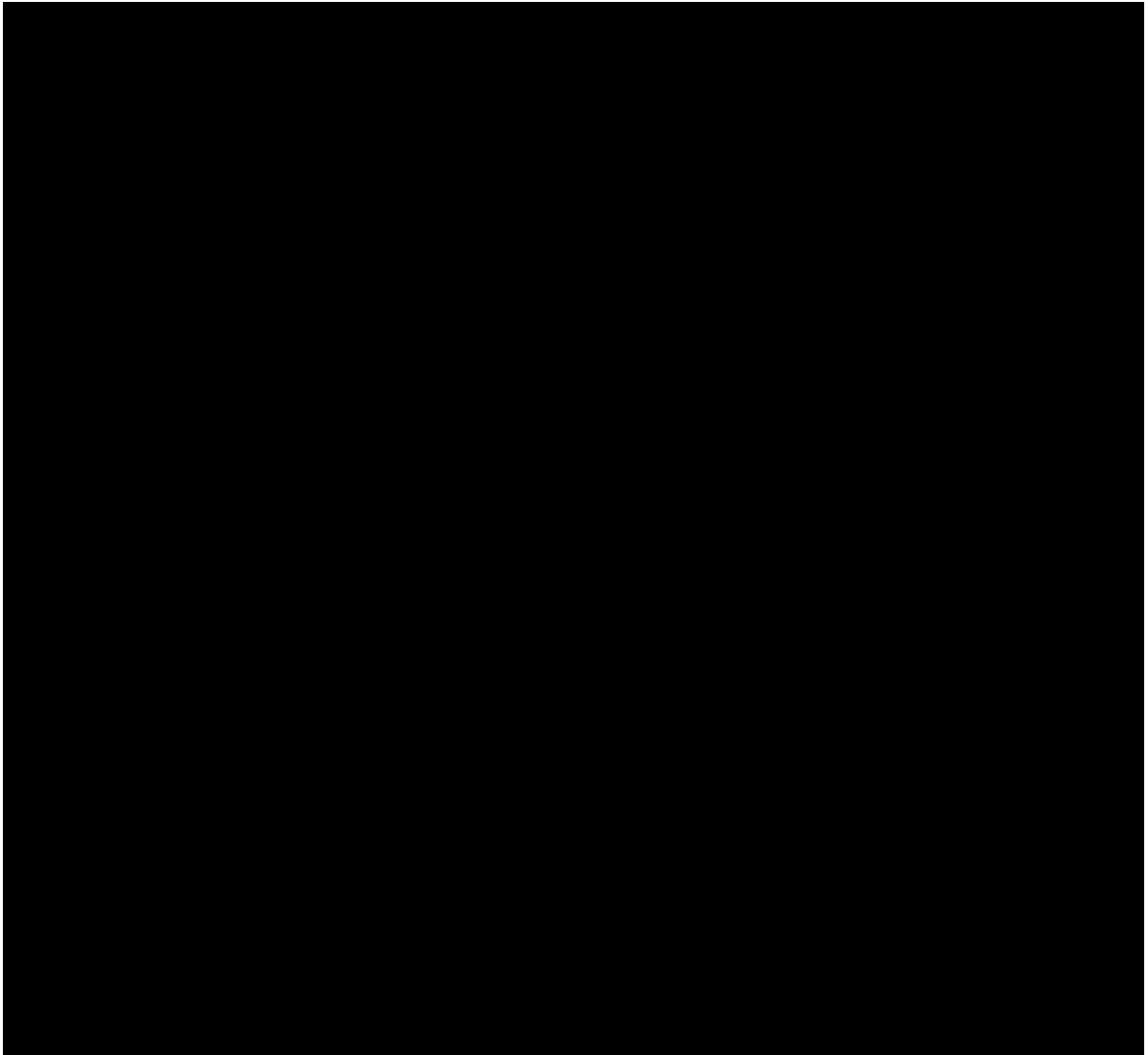
Qwest is a full service telecommunications and data networking provider with demonstrated reliability delivering a dependable suite of products to our customers around the world. Qwest is uniquely able to provide the broad list of products and services with a host of features and benefits that meet or exceed the requirements requested in the Networx RFP. To deliver outstanding network reliability, [REDACTED]

[REDACTED] Our model for network management follows the International Standards Organization's (ISO) framework for network management and will provide the Government with best-in-class reliability of our network and services.

#### **3.2.7.1 Organization**

[REDACTED]

This reporting structure gives expedited access to Qwest's highest level executives to escalate and resolve any issues. Should a problem arise that requires executive attention, they are available via telephone, email, Instant Messaging (IM), fax, or page.



### **3.2.7.2 Resources**

Qwest senior management has committed the full support of the corporation to be available for the needs of Networx. This commitment specifically means that the resources required for transition, installation, and on-going maintenance for a successful Networx program will be made available to the GSA PMO whenever a need exists. Each Qwest team member has made the same commitment.

To deal with evolving resource requirements, the Qwest Networkx Enterprise Program Director, Mr. John Gramiccioni, will have regularly scheduled meetings with key management organizations to ensure that an appropriate number of skilled resources are available to fulfill the program's requirements.

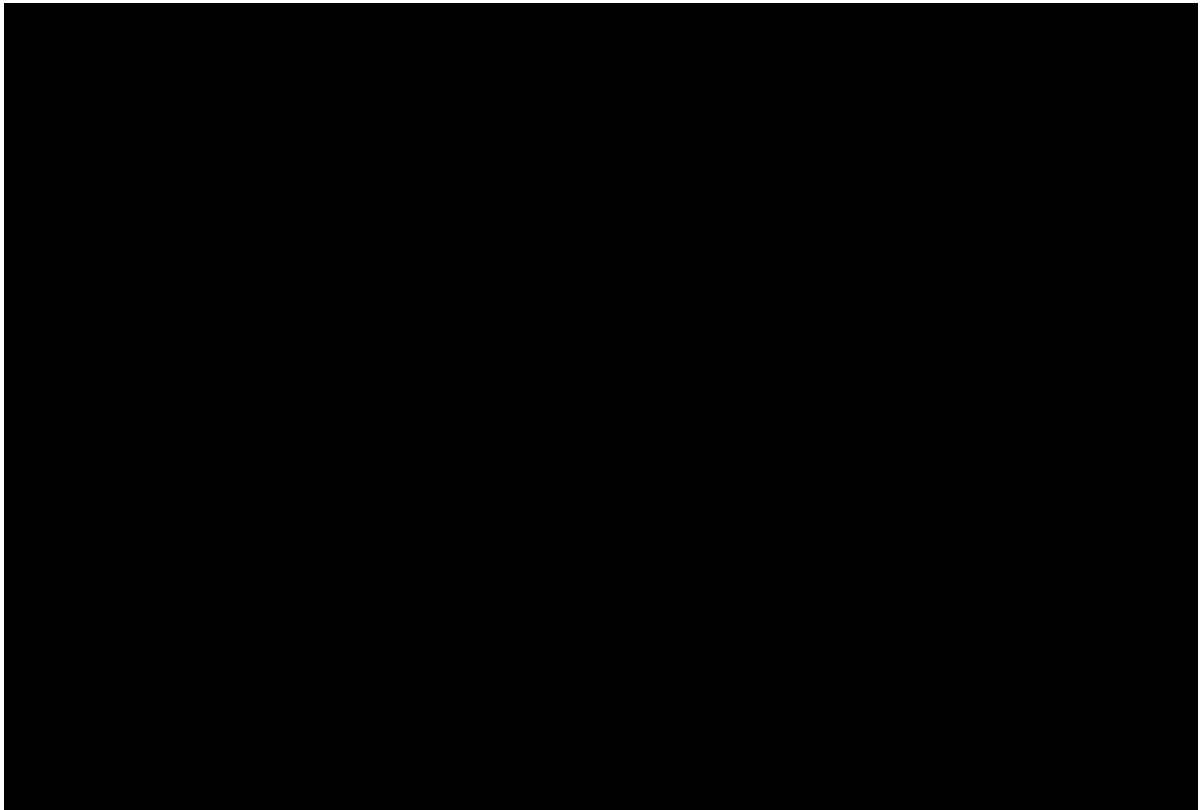
Additional resources in the form of systems, tools, and facilities will be made available to the program to ensure the quality of Qwest's network management. In the end, however, Qwest recognizes it is all about the people. Therefore, Qwest employs highly qualified specialists across the many disciplines required to operate Qwest's modern networks. To maintain the knowledge and skills of our employees with the evolving services that Qwest develops and employs, our employees are continually trained and certified. [REDACTED]

[REDACTED]. Qwest technical training occurs in the labs at the [REDACTED] center, where employees will spend one to five days in group training environments working with the very same equipment that is installed out in the field.

Qwest encourages management and line staff to pursue educational opportunities through tuition reimbursement programs and through our own network training and development programs, which are augmented with external training organizations. With a commitment to regular training and accessible on-site learning facilities, Qwest ensures that staff resources are properly equipped to perform all of the work required to support GSA and Agencies.

### **3.2.7.2.1 Qwest's Network Management Teams and Centers**

In direct support of Networkx, the following existing teams and centers will provide the required services to GSA and Agencies. [REDACTED]



The Qwest Federal Network Operations Center has designed capacity and capability to ensure secured operational support, with the capability to provide Networkx Managed Network Service. This fully staffed center is the primary network interface for monitoring Service Enabling Devices (SEDs) and providing quick resolution of alarms and jeopardy conditions.



This team is tasked to drive resolution of trouble tickets and act as an advocate for the customer subscribing to services managed by the Qwest National Network Services organization.



[REDACTED] Technicians are equipped and trained to quickly diagnose issues, engage additional resources, and expedite repairs. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The [REDACTED] provides 24x7x365 support for customers subscribing to Digital Signal Level 3 (DS-3) or greater access for Voice, IP, Data, and Broadband and Private Line Carrier services. Technicians are equipped and trained to quickly diagnose issues, engage additional resources as necessary, and expedite any repair actions required to recover the underlying transport facility.

The Customer Support Center (CSC), [REDACTED] is a premier trouble management team designed to provide 24x7x365, one-call resolution for customers' post-installation service issues. Technicians are equipped and trained to quickly diagnose issues, engage additional resources as necessary and expedite any repair actions required to support Qwest's voice, narrowband, and private line services.

The IP/MPLS Service Assurance Center has a presence in [REDACTED]. This center drives trouble resolution support and acts as an advocate for the customer within the Qwest National

Network Services organization. The Service Assurance Team provides support for Network Based IP-VPNS, Asynchronous Transfer Mode/Frame Relay (ATM/FR), dial, digital subscriber line (DSL), and Service Enabling Devices (SEDs) and is clustered by technology to provide real-time expertise.

Qwest's Networking Services Center, [REDACTED] is a premier trouble management team designed to provide one-call resolution for customers' post-installation service issues. Technicians are equipped and trained to quickly diagnose issues, engage additional resources as necessary and expedite any repair actions required to support Qwest's array of IP-based technologies (Internet, Private Routed Networks, Managed Services, and Managed Firewall), and associated SEDs.

The Consumer Access group, located in Minneapolis, MN, provides 24x7x365 support for Dial Access and DSL customers, including the industry's largest wholesale customers. Often recognized for superior performance and support, this team is equipped and trained to quickly diagnose issues, engage additional resources as necessary, and expedite any repair actions required.

The [REDACTED] group is an industry-recognized team of experts. The security staff utilizes Intrusion Detection Service (IDS), scan, and firewall tools to proactively survey and protect our network infrastructure from unauthorized access and attack. This staff is solely dedicated to security infrastructure management and maintenance. [REDACTED]

[REDACTED]

[REDACTED] These functions work within a policy and compliance assurance

framework set by our [REDACTED] organization, as described in the Appendix 2, Security Plan.

[REDACTED]

[REDACTED] The key functional tasks include:

- Surveillance of all network elements, trunks, and facilities
- Management of outages across all platforms, including escalation, dispatch, and restoration on proactive issues
- Maintenance, scheduled and unscheduled

The Switch Management Center, [REDACTED] supports Qwest's Signaling and Voice Operations and is fully staffed 24x7x365. [REDACTED]

[REDACTED]

[REDACTED] failover exercises are performed to ensure that proper operations and support functions are maintained.

The Fiber Protection Center manages the "Call Before You Dig" tickets to ensure that construction activities do not jeopardize Qwest cable.

### **3.2.7.2.2 The Qwest Team**

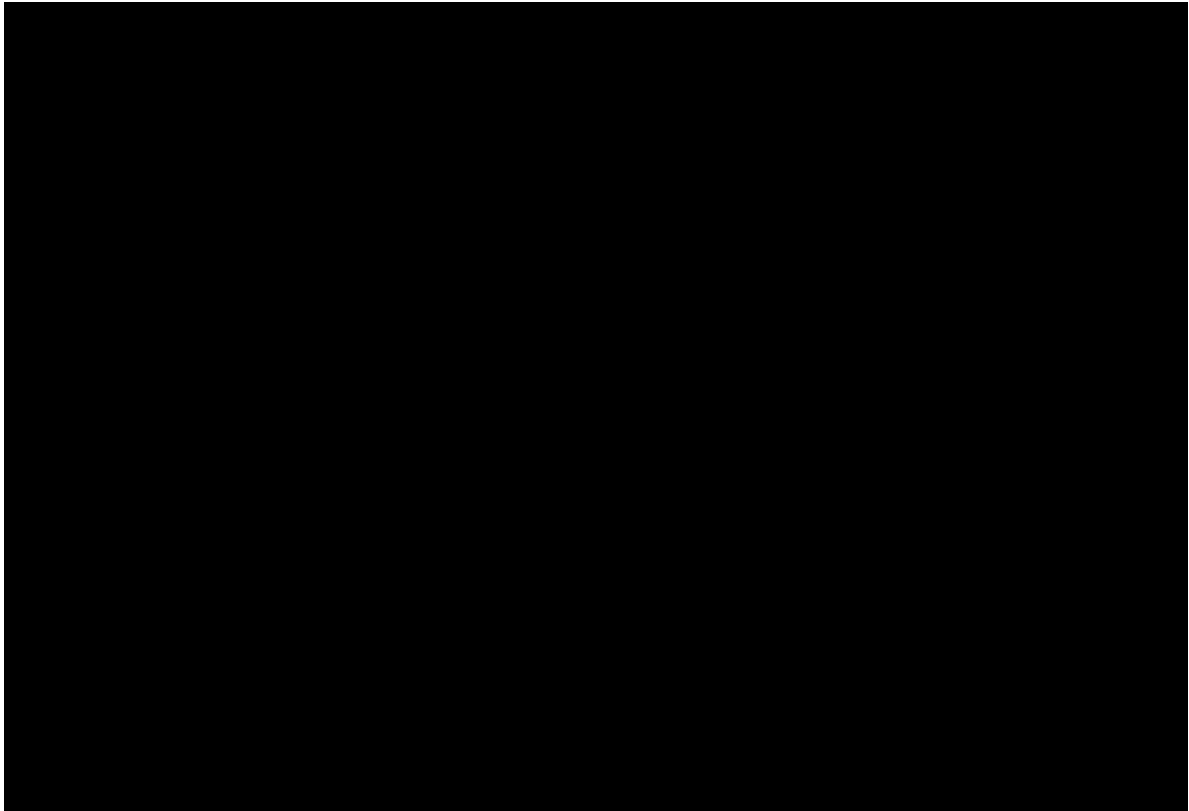
The Qwest Team is experienced in delivering the services required for the Networkx delivery model. As such, Qwest has brought together a top-notch team that mirrors our attitude and Spirit of Service™ in making this a successful venture. Our team members are held to the same high expectations and service delivery models and performance that Qwest delivers. Qwest has worked diligently to bring together the most highly credentialed service providers to meet the expectations we have in delivering quality of service to GSA.

In addition to the depth of resources listed previously, Qwest has engaged the finest team members and subcontractors to assist with some of the specific requirements, as listed below. Each of our team members is



accountable to the same level of Qwest quality assurance that is part of our  
business model [REDACTED]

[REDACTED]



[REDACTED]

A table with multiple rows and columns. The header row has a blue background. The cells within the table are filled with black redaction bars of varying lengths and widths, obscuring all data and text within the table's grid.


The Qwest Network Management Team has direct access to the team members to create an integrated solution that will be transparent to the Government. All of the services provided through the Qwest Team can be ordered via the Qwest Control Network Portal or through the other media as defined in the RFP. Qwest will use a disciplined, diligent approach to ensure end-to-end SLA compliance and superior service levels. For all of these products, Qwest will work with the Government and will actively manage our team members.

**3.2.7.3 Strategies**

At the core of Qwest's vision, mission, and values, our strategies are focused to deliver one thing to each and every customer: The Spirit of Service™. Within Qwest, all functions align with corporate goals to ensure that each function is contributing directly to the company's key strategies for success. Network Management is fully aligned with this process, with several objectives being focused specifically at the ongoing health, maintenance, and growth of the Qwest network. All employees are committed to these objectives and are rigorously held to standards

[Redacted text block]

Having navigated the complex process of integrating US West and Qwest into a streamlined network services provider, our network

management strategy has been and remains focused on ensuring the continued high reliability and service deployment that characterizes the Qwest customer experience. With a rigorous quality management process as the core of this objective, Qwest employs a continuous improvement process that utilizes the tools and systems in the network to deliver industry-leading performance to our customers. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

#### **3.2.7.4 Practices, Policies, Processes and Procedures**

The Network Management organization at Qwest is committed to following industry best practices to deliver the best network quality available in the market today. We follow a rigorous process of documenting Policies and Procedures within the network management function. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] which details the items that must be satisfied prior to actions being taken. Details of this process are presented above in proposal

Section 3.2.2. In addition to these internally derived processes, Qwest follows several industry guidelines and standards methodologies, including:

- ISO standards: Qwest conforms to ISO standards for documentation
- Network Reliability and Interoperability Council (NRIC) and other industry forums and standards groups: Qwest is an active member in NRIC and other forum/standards bodies
- National Security/Emergency Preparedness (NS/EP): Qwest has adapted network management processes for the needs of the NS/EP programs such as Telecommunications Service Priority (TSP) and other Government restoration requirements

**3.2.7.5 Tools, Systems, and Reports (comp\_req\_id 10122)**

At the core of Qwest's capabilities to deliver world-class network management performance to our customers are our best tools, [REDACTED]

[REDACTED]

[REDACTED] Our fundamental design principle is to ensure that Qwest will be able to grow the network for both capacity and new service capabilities while maintaining the network performance our customers have come to expect.

Qwest employs tools, systems, and reports across a diverse section of network management functions. For information about any of the specific tools, systems, or reports relating to the major network management functions, please see the technology discussion in Sections 3.2.3 through 3.2.6 above.

[REDACTED]

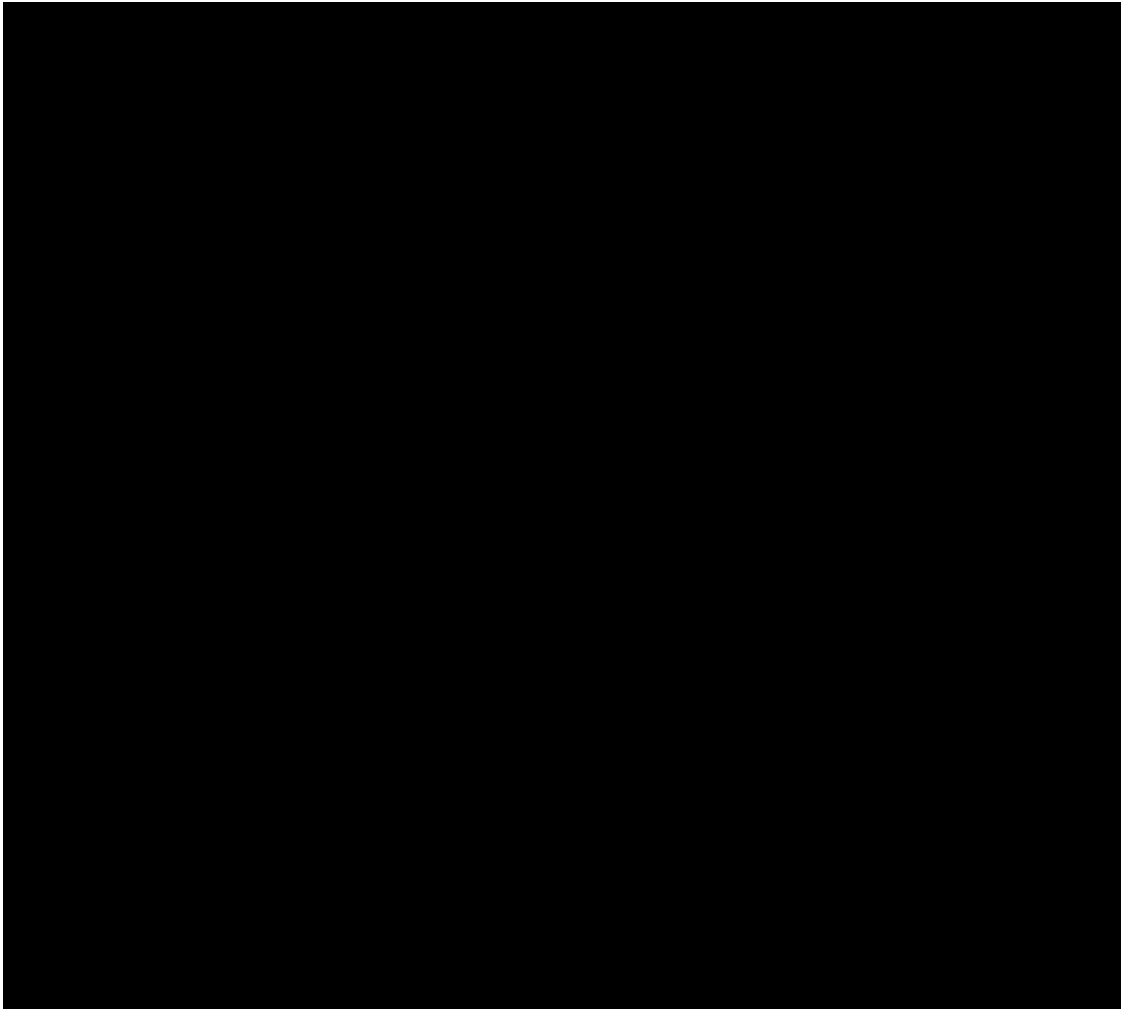
Qwest uses these tools to provide a suite of ad hoc query and reporting capabilities. We apply the power of analysis and data integration to create an easy-to-use [REDACTED] [REDACTED] capability to analyze summary data. These tools integrate the full breadth of statistical analysis and makes results available to all users in the form of results, charts, graphs, and geographic maps. With these tools, we are able to deliver results in various formats including Microsoft Office applications, Web Portal interfaces, text files, portable document format (.pdf), .csv files, and flat file formats.

Specifically, we will provide the Government with ad hoc traffic and usage reports. The same ad hoc reports that support telecommunications planning can also be used to support avoidance of fraud, waste, and abuse, by showing comparisons of traffic and usage data to help Agencies identify suspicious patterns.

[REDACTED]  
[REDACTED]  
Their function is to maintain the processes and business rules [REDACTED] [REDACTED]. To ensure that results are accurate, business rules are approved by upper level management and can only be changed by following a documented process.

[REDACTED] It displays key performance metrics and results. With this scorecard, we are able to view on a daily basis, dozens of performance metrics on virtually every product that Qwest provides. It is one of the tools that Qwest will use in reporting metrics for GSA.

The same ad hoc reports that support telecommunications planning can also be used to support avoidance of fraud, waste, and abuse, by



showing comparisons of traffic and usage data to help Agencies identify suspicious patterns.

[Redacted]

[Redacted]. All data for reports and scorecards comes from reporting databases or data warehouses built for the sole purpose of reporting. These reports databases are redundant to the production databases, have restricted access for protection of the data, and are updated throughout the day. If the reporting database were to become unavailable, data can be pulled from the production database for reporting. Qwest protects and safeguards the information flow and repository of information required for Networkx.

During the life of the Networkx contract, [REDACTED]

[REDACTED]

Qwest will continue to reduce the complexity of the Network Management Systems. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

### **3.2.8 Network Services Monitoring and Management (L.34.2.3.2 (d))**

#### **3.2.8.1 Overview (comp\_req\_id 10156, 10154)**

As Qwest has done for other customers that required a Network Services Monitoring and Management (NMM) solution, Qwest will provide

Government Agencies with a NMM solution that meets the specific needs of Agencies that choose to subscribe to this capability. Recognizing that one NMM solution can not be applied to the wide variety of network deployments, Qwest has worked with customers to ensure that each NMM solution is specific to the unique requirements of each customer. Qwest will work with requesting Agencies, perform a needs and requirements assessment, and determine the best solution that meets the needs of the Government Agencies.

Qwest will provide subscribing Agencies with access to our NMS via a secure Web browser or other means, enabling authorized users at subscribing Agencies to have access to Qwest's robust event management and service assurance capabilities. Qwest's NMM solution is flexible and customizable [REDACTED]

[REDACTED]. Qwest's NMS collects network event data from [REDACTED] heterogeneous environments. The events are analyzed, filtered and only the events that are germane to the subscribing Agency or Agencies will be accessible.

The Qwest NMM solution is secure and is configured to restrict access to authorized users only. Furthermore, access for authorized users is restricted to only the information that applies to the Agency's own selected services.

The Qwest NMM architecture features an event server, which is at the core of Qwest's NMM solution. The event server manages the requests for NMS data and publishes the requests to authorized users using standard HTTP and HTTPS Web protocols. Users have the ability to filter and sort at their own discretion, which enables the Agencies to quickly ascertain information about network events that are germane to the users' immediate needs.



Qwest will also provide [REDACTED] updates on the status of any problem resolution efforts in which Qwest is engaged. These updates will be available for all services through the Qwest Control Network Portal. [REDACTED]

[REDACTED]

Qwest will support the implementation of the NMM solution from ideation through deployment and on-going life-cycle support. As Qwest has done with other customer NMM solutions, Qwest will support the Government with installation, configuration, administration and operation of the Qwest NMM solution. Qwest will also provide training and user guides to NMM users.

To meet the specific requirements set forth by the customer with respect to optional Network Services Monitoring and Management Services, Qwest will provide the additional hardware and software to access said services. Qwest has demonstrated experience in developing Network Services Monitoring and Management solutions using our Portal capabilities; we can deploy additional functionality, on an individual case basis, with any additional hardware or software.

### **3.2.8.2 Architecture, Features, and Functions (comp\_req\_id 10155)**

Qwest will provide real-time informational updates on the status of any problem resolution efforts in which Qwest is engaged. These updates will be available for all services, available through the Qwest Control Network Portal. Updates will contain status, test results, log notes, and details [REDACTED] [REDACTED] that we may need to contact in the process of restoring service.

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

#### **3.2.8.2.1 Architecture**

Qwest currently [REDACTED] results to our customers. We will use current processes to acquire the data from various network surveillance systems and the trouble management system and then store the data in the data warehouse. We will then customize a delivery method in common file formats that best meets the needs of the requesting Agency. For most data and reporting, the Portal will provide access to Agency specific information. We will make [REDACTED] performance information available via the Portal.

#### **3.2.8.2.2 Features and Functions**

To access [REDACTED] data that Agencies have subscribed to for conducting their own measurement of KPIs and to obtain [REDACTED] updates on the status of any problem resolution efforts that Qwest is working, Agencies will access such information via the Portal. The Portal, which is a Qwest-designed and developed Web tool, has a significant number of features to provide the Government secure access to their information.

**Security:** The Portal is password protected so that only GSA and Agencies will have access to their data. By setting up password authentication and making use of Agency Hierarchy Codes, we can control access to data on a user-by-user and Agency-by-Agency basis. In no case will Agencies have access to data for another Agency unless they are so authorized. [REDACTED]

**Flexibility:** Accessing the Portal requires a user to have an account with a username and password and the appropriate browser connected to the Internet. No specialized software or tools are required.

**Real-time data:** Data is made available real-time for both performance information that Agencies subscribe to for conducting their own measurement of KPIs and for getting status on problem resolution efforts that Qwest is working. Network performance data will be made available from the multiple network monitoring tools that Qwest uses to monitor our network; the problem resolution efforts will come from our Trouble Management system. Qwest's Trouble Management System tracks status and status changes, the individual or individuals responsible for working the issue, log notes, test results, and escalation and carrier referral data all in one trouble ticket. This makes it very easy and convenient to provide meaningful real-time status updates to the Government.

**Simplicity of navigation:** The Portal is extremely intuitive and easy to navigate. With simple point and click menus, even first-time users can easily find their way around the site. Additionally, the reporting tool on the Portal is an industry-leading Business Intelligence application that is flexible, reliable, secure, and intuitive.

**Multiple delivery methods:** Reports that are delivered from the Portal can be downloaded in multiple file formats, including .pdf and .xls. When the

Agencies request different reporting formats, we can accommodate by delivering in other formats, such as .txt, .csv, etc. via FTP, or directly to a relational database.

#### **3.2.8.2.3 Security Features**

Monitoring and management capabilities will be made available through our secured Qwest Control Network Portal where Agencies will have to log-in to access, through secure protocols from our servers to the Agency if the Agency requests data be FTP'd, or delivered via a flat file or directly into a relational database. Agencies will only have access to data relevant to them, except GSA who will have access to all Network related data.

#### **3.2.8.2.4 Support to the Government to Install, Configure, Administer, and Operate the Solution**

As the Government and Qwest are negotiating the scope of the solution being requested, Qwest will provide appropriate support for Government requests regarding the installation, configuration, administration, and training of the desired solution.

Qwest's Network Management team will work with any Agency that requests real-time information regarding the health of their network. We anticipate that the majority of requests for access to [REDACTED] data will be handled through our Qwest Control Network Portal. To ensure the solution is properly administered and Agencies only have access to their information and data, we will secure the access via validation of Agency codes. If requested, we will maintain access authentication down to a user level with individual user ID and password combinations. To effectively maintain this service, we will utilize our existing processes that follow the [REDACTED] model described in the beginning of this proposal Section.

Qwest will work with Agencies requesting optional monitoring and management capability to configure the solution to meet reporting

requirements. Since the solution utilizes common file formats and data delivery methods, we will ensure that the configuration of the support is effective, so that the Agency can use existing technology whenever possible to reduce costs.

To ensure that only Agencies that have requested this optional capability [REDACTED] we will tie the design and installation process to our service ordering process that assigns the billing to the proper Agency Hierarchy Code. [REDACTED]

[REDACTED] If fulfillment of this service requires pushing data from Qwest servers to the Agencies, we will use secure transmission methods through our firewall into the Agencies' secured servers.

So that ongoing performance and maintenance of monitoring and management capability remains high, this service will have the same maintenance and support process in place that we use for all of our services. Agencies will be able to contact our CSO for resolution of any problems they are experiencing with the service.

#### **3.2.8.2.5 Services for Which Solution is Provided**

As NMM solutions are highly customizable, the specific Networx NMM solution will be tailored based on the specific needs of Agencies.

#### **3.2.9 Network Management Capabilities**

Qwest offers GSA and Agencies outstanding solutions for configuration management, accounting management, fault management, and network services monitoring and management. On FTS2001 and other major programs, we have demonstrated an understanding of the challenges that our customers face. In the following paragraphs, we describe the specific capabilities that will provide the Government with a high degree of confidence that Qwest will continue to be a strong partner.

### **3.2.9.1 Managing Network Services (L.34.2.3.2(a))**

Qwest has the capacity and proven capability to manage a wide range of services on a large scale. While other carriers may face the challenge of performing network management over multiple platforms, Qwest built our services over a next-generation Multi-protocol Label Switching (MPLS) core enabling the addition of a full range of services capabilities - including network management functions - more quickly and effectively. We view scalability as a cornerstone of the Qwest network architecture.

[REDACTED]

[REDACTED]

[REDACTED] Qwest is delivering these types of service requirements in both the commercial and Government markets today. We understand the challenges of delivering multiple services to large customers and have developed a robust subcontractor management capability to support the provision and service delivery of these [REDACTED] services to Agencies.

Linkages to Qwest's network management functions are required from all of our team members. We will ensure that Qwest has processes in place with each third-party provider to ensure that the network management functionality exists across the spectrum of services being delivered through Networkx. Qwest has integrated systems that support all aspects of network management [REDACTED]

[REDACTED]

### **3.2.9.2 Meeting Needs of User Community (L.34.2.3.2(b))**

Networkx demands a provider that can comfortably serve a wide range of customer requirements. Qwest is already there. [REDACTED]

[REDACTED] Qwest spans the globe with voice and data services connecting the world with our fault-resistant fiber backbone. Qwest will provide Networkx services to all [REDACTED] included in the Networkx Traffic Model, Tables J.2.2-1 thru J.2.2-9 (which include Voice, Toll Free Service, Circuit Switched Data Service, Frame Relay, IP Service, Private Line and Network Based IP Virtual Private Network Service), as identified in J.2.4, and where offered commercially by Qwest. Additionally, for Frame Relay, IP Service, Private Line and Network Based IP Virtual Private Network Service, Qwest will provide Networkx service to other non-mandatory [REDACTED]

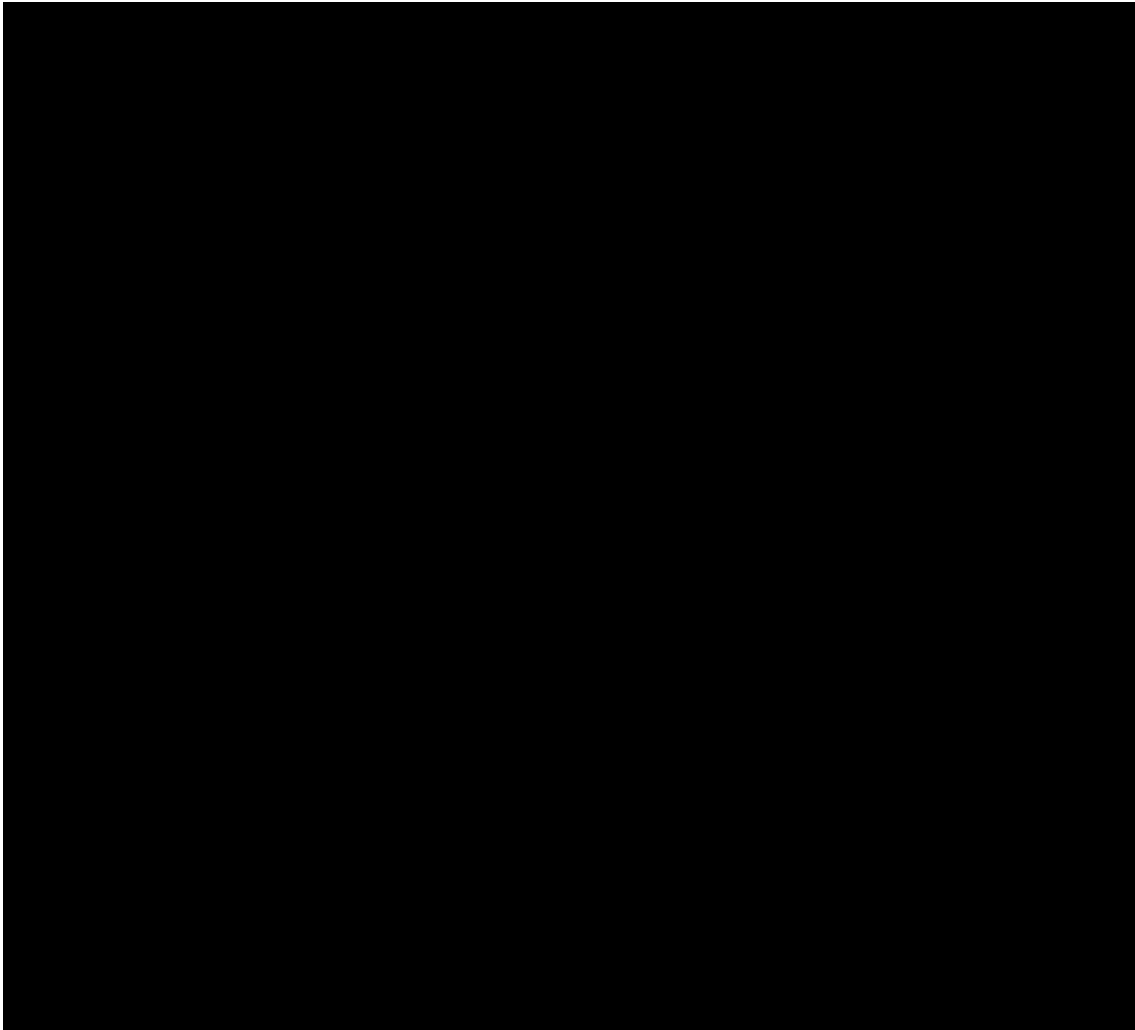
[REDACTED] and other countries. Qwest will be able to deliver service to the Agencies located in each of the required countries upon award.


[REDACTED]

[REDACTED] Qwest International Operations provides network and field support across all subsidiaries. Qwest Subsidiaries provide a local presence in-country for business planning and forecasting, service delivery, pricing, and operations.

Another key component of Qwest's international service strategy is based on direct investment in transoceanic and non-domestic transport facilities to provide voice and data services [REDACTED]

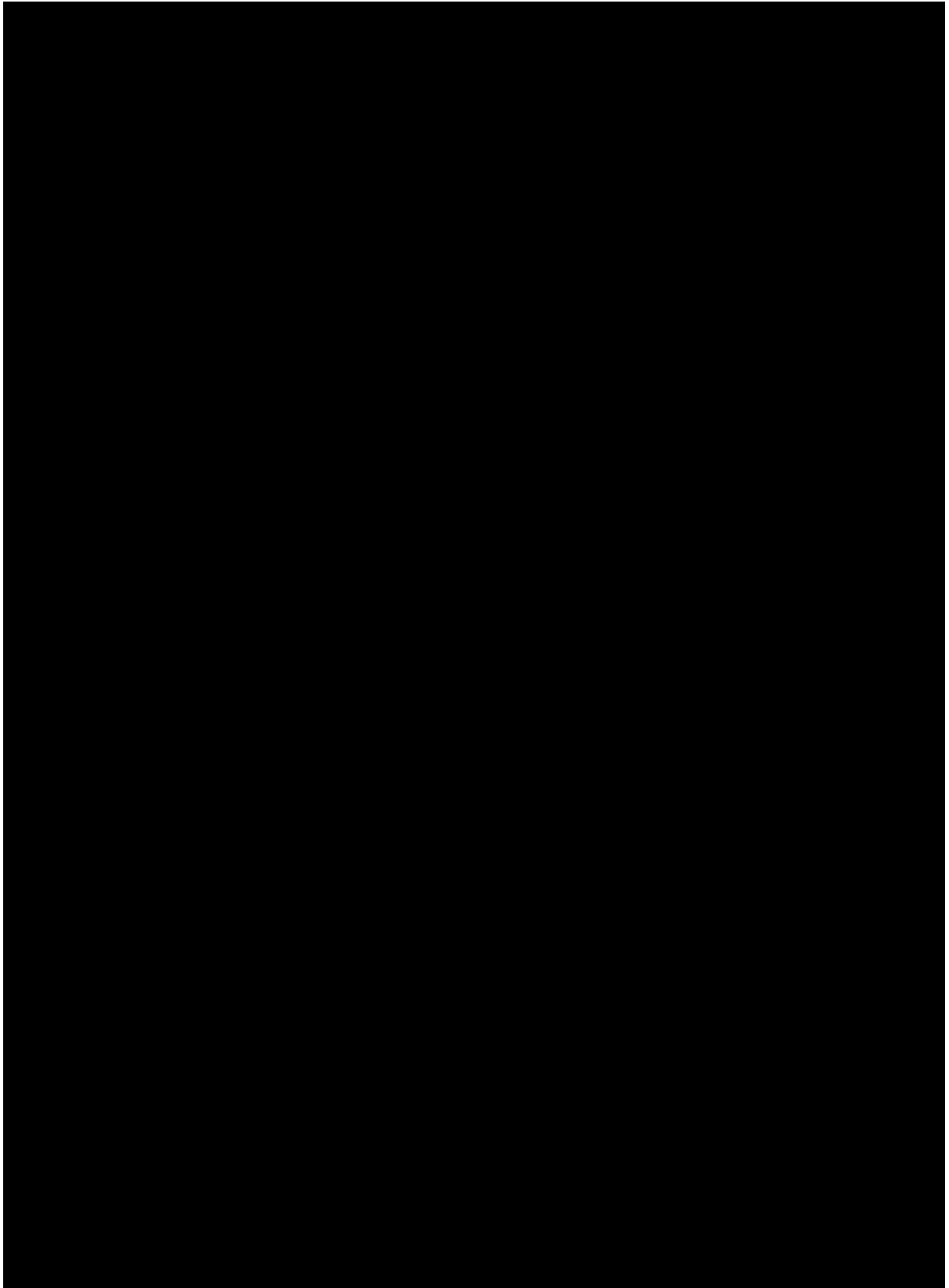
[REDACTED]



Additionally, Qwest has forged strategic alliances with Tier 1 carriers to meet Networkx requirements. 







[REDACTED]

Qwest has also negotiated long-term agreements that have a direct correlation to the Network effort. Qwest's vendors will be supplying services, maintenance and customer support during the term of this effort.

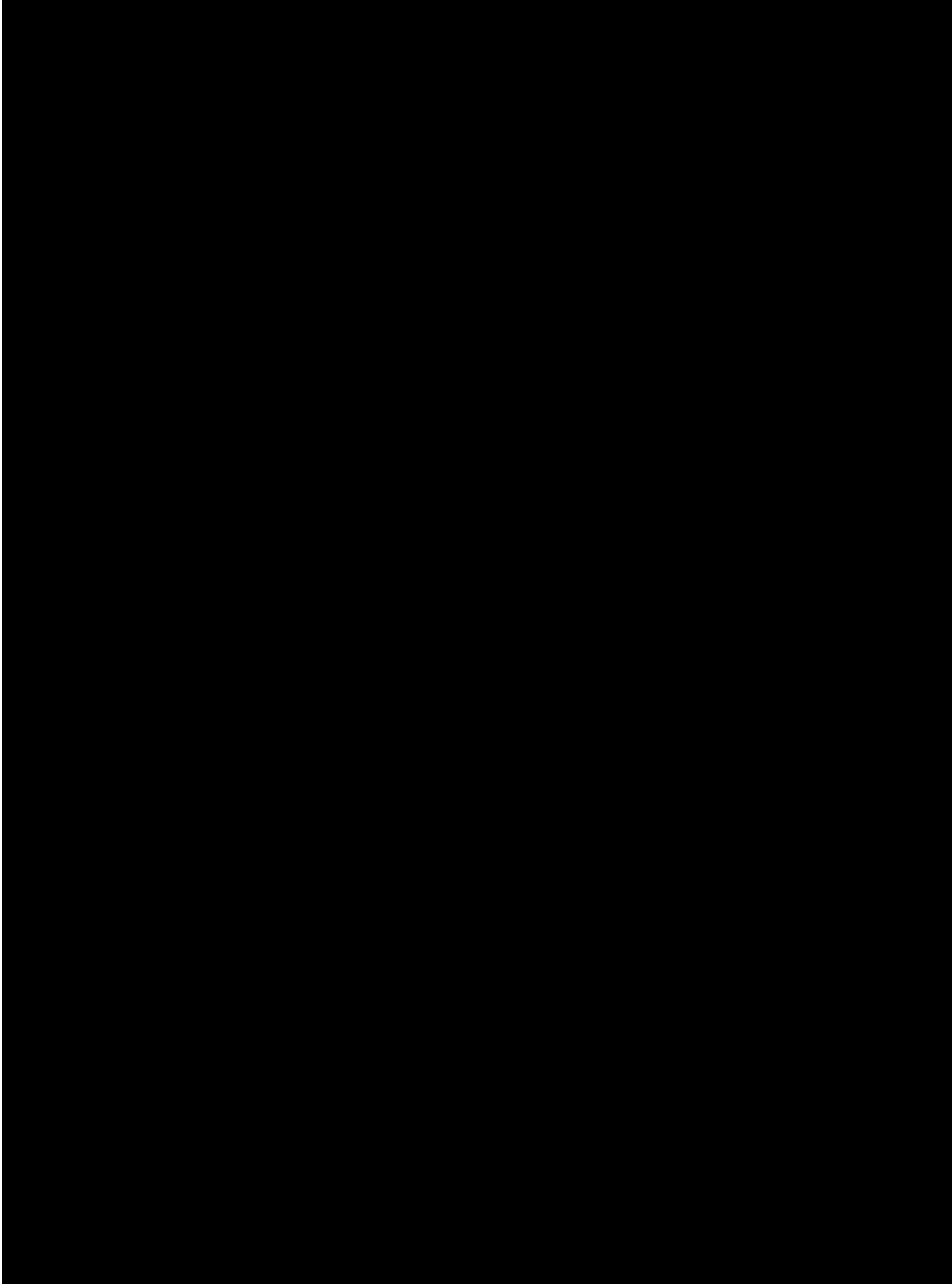
All of our team members have undergone a rigorous evaluation process that rates their network architecture, quality, coverage, product set, pricing, customer care, and brand recognition. Only best-of-breed team members are selected to service our [REDACTED] customers. Future Qwest-selected carriers will undergo this same evaluation process.

All Qwest international service will be provided to Agencies in the context of a consistent service delivery and assurance environment. Qwest will be responsible for all service delivery, including service ordering, notifications, acknowledgements, and service assurance functions like repair, configuration management, and trouble handling. [REDACTED]

[REDACTED]

[REDACTED]

Our capabilities have enabled us to be a continuing provider of bandwidth to [REDACTED] many [REDACTED] customers requiring connectivity that extends beyond the continental U.S. Our network was built with a keen eye to the future. This translates into significant additional capacity that allows us to scale our operations globally and serve the increasing bandwidth demands of customers around the world.



### **3.2.9.3 Ensuring Service Quality (L.34.2.3.2(c), comp\_req\_id 10129)**

As a part of our Spirit of Service™, Qwest maintains a continuous focus on the health and maintenance of our network. This focus is in place to ensure the quality of the services delivered over the Qwest network is consistently at or above industry best-in-class performance. We maintain a policy that ensures that additional capacity is supplied to the network ahead of demand, preventing service spikes from affecting our customers' service.

[REDACTED]

[REDACTED] Through our regular network monitoring, we identify areas where traffic is growing and apply additional network assets to these areas to stay ahead of the demands of our customers. [REDACTED]

[REDACTED]

[REDACTED] As detailed earlier, whenever we are altering the configuration of our network to accommodate incremental customer demand or to reconfigure the network to more closely match the overall traffic patterns, we ensure that any customer-affecting action we may take passes a strict set of conditions before proceeding. This approach ensures overall network quality and takes into consideration the effects of our actions on our customers.

Qwest has established escalation procedures for both our customers as well as internally-driven escalation procedures. Internally, Qwest uses escalations to engage the appropriate resources to drive the progress of repair efforts. Externally, Agencies can choose to escalate an issue when they believe it is not being resolved in a timely manner [REDACTED].

Qwest has established the CSO as our single point of contact for Agency-initiated escalations. The CSO will manage the escalation throughout the Network contract's lifecycle. The CSO provides updates [REDACTED] for non-TSP services to customers unless another timeframe has been negotiated that is commensurate with the event.



As stated previously, Qwest adheres to the [REDACTED] model, to provide management direction and effectiveness in overseeing a network management operation:

- [REDACTED] network problems are found and corrected. Potential problems are identified and steps are taken to prevent them from recurring. In this way, the network is kept operational and downtime is minimized.
- [REDACTED] network operation is monitored and controlled. Hardware and programming changes, including the addition of new equipment and programs, modification of existing systems, and removal of obsolete systems and programs, are coordinated. An inventory of equipment and programs is kept and updated regularly.

- [REDACTED] is devoted to distributing resources optimally and fairly among network subscribers. This makes the most effective use of the systems available, minimizing the cost of operation. This level also is responsible for ensuring that users are billed appropriately.
- [REDACTED] is involved with managing the overall performance of the network. Throughput is maximized, bottlenecks are avoided, and potential problems are identified. A major part of the effort is to identify which improvements will yield the greatest overall performance enhancement.
- [REDACTED] the network is protected against hackers, unauthorized users, and physical or electronic sabotage. Confidentiality of user information is maintained where necessary or warranted. The security systems also allow network administrators to control what each individual authorized user can (and cannot) do with the system.

#### **3.2.9.4 Improving Service Quality (L.34.2.3.2(d))**

Improving quality is a never-ending process of testing and validating emerging network technology to improve quality and performance of the network. [REDACTED]

[REDACTED] This process promotes continuous improvement in our service delivery. It includes all suppliers and customers as a part of the process [REDACTED]

[REDACTED] The Action Register drives and tracks the quality improvements that are being pursued. Typically, this will include quality reviews and changes in Service Levels from Qwest's suppliers. Qwest strives to maximize service optimization and performance at all levels of our network, and is constantly applying and adapting to emerging technologies.

**3.2.9.5 Network Services Changes (L.34.2.3.2(e), comp\_req\_id 10119, comp\_req\_id 10116)**

As indicated in Section 3.2.4 of this document, Qwest has existing Change Management and configuration management processes that minimize the risk of service impact to our customers. For network services, we use the same processes, approval authorities, and notifications [REDACTED]. Qwest performs all of our network change and configuration management activities during a designated maintenance window. Change Management activities are pre-planned and tracked [REDACTED] which has an approval process to ensure proper resources will be available, tools and equipment will be available, an approved MoP has been developed, a back-out plan has been prepared, and the technician has the required training to complete the work.

The GSA PMO will have access through the Qwest Network CPO to the resources responsible for managing changes in the Qwest network. As the contract progresses, changes to the services may come from a number of directions. Should the Government desire the addition of new next generation services to the contract, this organization will be ready to work with the GSA PMO to assess any impact to existing customers. Where changes to existing services may occur, the same group of dedicated technical talent will be there to ensure that customer service is impacted as little as possible, through our certification and change management process.

[REDACTED]

Our best-in-class configuration management process is able to adapt to these and other changes. With the dedicated Qwest CPO and streamlined communication processes for the Agencies, we will bring our track record of successful performance to the Networx program.

**3.2.9.6 Future Growth (L.34.2.3.2(f))**

Qwest continues to strategically invest in our network. Whether this investment takes the form of introducing tested new technology to derive additional performance improvements out of existing network assets or upgrading existing facilities to provide the latest in telecommunication service offerings, Qwest is ready to meet the demands of the changing market. We continue to turn up hundreds of incremental network elements every year to ensure that our network meets the demands of our customers.

Agencies will enjoy the benefits of having their traffic ride over one of the most advanced networks in the market today. Built with the future in mind, we are ready to leverage the advanced MPLS backbone of the Qwest long-haul network to provide the services of tomorrow as well as meeting today's requirements with a platform that allows us to operate more efficiently. The network management capabilities of this advanced network allow us to provide industry-leading insight into where our network will most benefit from incremental investment.

**3.2.9.7 Changes in Needs (L.34.2.3.2(g))**

During the process of integrating the US West operations into Qwest, we gained a unique insight into the changing needs of a large, diverse customer base. From small to large customers, we recognize the magnitude of effort required to change with the evolving needs of our customers. At Qwest, service change and evolution is what we are all about. Delivering excellence in the form of adapting to the changing environments of our customers is the essence of the Spirit of Service™.



With our existing Government and Agency relationships, we are accustomed to dealing with the many changes required by a dynamic Government environment. Our strengths in change management are well positioned to deal with the impacts customer changes can bring. Whether changing from one provider to another or dealing with the day-to-day changes that accompany requirements of the magnitude encompassed by Networx, Qwest is ready to deliver.

**3.2.9.8 Real-time Access to Mission-Critical Services Information  
(L.34.2.3.2(h))**

Qwest recognizes the demand within Networx for access to real-time, mission-critical services information. When providing telecommunications services to the Government, Qwest has been asked to provide information regarding the health and performance of our services. We understand this need and have set up processes and systems to respond to it for the Networx program.

From an access to information perspective, we are prepared to provide data through the Portal – a real-time access window into the various tools and systems Qwest uses to monitor and report on the performance of various elements within the Qwest network. Coupled for Portal access with information fed from our Qwest Networx team members, we will provide the information the Agencies will need to confidently manage mission-critical services.

In addition to this automated tool, Qwest is prepared to respond to ad hoc requests for data that are not typically contained in this medium. The Qwest CPO will respond to such ad hoc requests in a timely and accurate manner.

Qwest uses the same approach to meeting network management requirements for optional services as we use for mandatory services

### 3.2.10 Summary

Qwest's network management approach for the Networkx program will address all [REDACTED] areas of the ISO's network management model: [REDACTED]

[REDACTED] Through our systems and technology platforms, Qwest will deliver dynamic information that the Networkx program requires to address crucial operational objectives.