EXHIBIT TRF-49T

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH §271(C) OF THE TELECOMMUNICATIONS ACT OF 1996.	**)**	**DOCKET NO. UT-003022**

SUPPLEMENTAL TESTIMONY OF

THOMAS R. FREEBERG

ON BEHALF OF QWEST CORPORATION

REGARDING CHECKLIST ITEM 1

May 16, 2001

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION, EMPLOYER AND ADDRESS.

A. My name is Thomas R. Freeberg. I am employed by Qwest Communications ("Qwest") as a Director in the Wholesale Local Markets division. My business address is 301 W. 65th St, Suite 100, Richfield, Minnesota, 55423. I filed Direct and Rebuttal Testimony in this proceeding for Workshop #2 (Checklist Item 1 – Interconnection).

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. The purpose of this testimony is to address issues surrounding forecasting by CLECs for interconnection trunking. Specifically, I will review the SGAT language that describes how the parties should participate in joint forecasting, the frequency of the forecasts, and how Qwest uses such forecasts.

Q. PLEASE SUMMARIZE THE TESTIMONY PRESENTED HERE.

A. Interconnection forecasting, as described here, gives each carrier a comprehensive picture of future switching and transport needs. This allows the parties to arrange for the necessary equipment and staff to meet commitments for provisioning Access Service Requests in a timely manner. In Washington

during the most recent 12 months, the volume of interconnection increased by an average of 14,215 trunks each month. Qwest continues to fulfill demand for interconnection orders in Washington as reflected in Exhibit TRF-50 to this testimony.

Forecasts are used to time and size capacity additions to interconnected networks and to develop budgets. It is critical that accurate forecast information be supplied because anticipated traffic volume is the primary factor in deciding how to augment the network. Network augments for trunking involve both switching and transport. Qwest's suppliers of transport and switching material can not respond to Qwest's orders that dictate short intervals. For Qwest to be responsive to CLEC orders for transport and termination of local interconnection traffic, it is imperative that parties develop reliable forecasts so that new transport and switching capacity can be reflected as idle and assignable Qwest inventory at the time of receipt of CLEC orders for interconnection.

When a CLEC overestimates future demand, Qwest is placed in the position of building unnecessary facilities -- where there is no demand. This results in stranded facilities and gross inefficiencies. This renders useless a substantial investment.

When a CLEC underestimates its eventual demand, the demand can exceed the capability of a trunk group in service. Further, the availability of additional

facilities for a new trunk group is likely to be delayed. In the interim, service quality across existing trunk groups is adversely affected as traffic loads increase.

Since a forecast is a prediction on the future, precision is not expected or required. This is not to say that forecasting accuracy is not important.

Qwest uses the forecasts:

1) to secure the necessary personnel to process Access Service Requests, including designing and engineering;

2) to ensure that the network has sufficient capacity to fill future orders and carry calls without undue blockage; and,

3) to form budgets and arrange financing.

Forecasting allows the carriers to be prepared to fill future orders, to meet commitments and to predictably send calls between networks.

III. TESTIMONY

A. SGAT Requirements

Q. WHAT DOES THE SGAT REQUIRE THE PARTIES TO PROVIDE REGARDING FORECASTING?

A. Two weeks before a forecasting meeting, Qwest provides a CLEC the following information.

1. Information on major network projects anticipated for the following year that may impact the forecast.[1]

2. A report reflecting tandem-routed interconnection trunking that has exceeded 512 Busy Hour CCS.[2]

3. Reports comparing trunks-in-service to trunks-required (utilization).[3]

4. A report reflecting current spare capacity at each Qwest switch that may impact the interconnection traffic.[4]

5. A report reflecting recent blocking rates of local direct and alternate final trunk groups, interconnection and non-interconnection alike. A CLEC is provided interconnection trunk group data on its own trunks.[5]

6. Through the Telcordia Local Exchange Routing Guide (LERG) or the Qwest Interconnection Database (ICONN):[6]

    a) Geographic locations of Qwest tandem and end office switches;

    b) Common Language Location Identifier codes;

    c) Business and Residence retail working line counts;

    d) Switch manufacturer and model; and

    e) Current and planned switch software versions.

7. Deployment information for specific technical capabilities (e.g., ISDN and 64 Clear Channel Capability).[7]

Forecasting information is proprietary, provided under non-disclosure and to be used for interconnection network planning. Forecasts are Confidential Information, and forecasts are shared with a limited set of Qwest employees.

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[1] SGAT 7.2.2.8.7
[2] SGAT 7.2.2.8.7
[3] SGAT 7.2.2.8.7
[4] SGAT 7.2.2.8.7
[5] SGAT 7.2.2.8.7
[6] SGAT 7.2.2.8.9

Qwest does not distribute or reveal, in any form, CLEC forecasts to its retail marketing, sales, or strategic planning personnel. Qwest reveals CLEC forecasts to network planning and legal personnel on a need-to-know basis only. These personnel are informed of the confidentiality of CLEC forecasts and they are further informed that they, upon threat of termination, may not reveal or use such information beyond that necessary to plan network growth.[8]

For each trunk group, the forecast must include trunk type, CLLI codes, trunk group serial number, number of trunks in service, number of trunks pending on submitted firm orders, and number of trunks projected to be added in order to carry offered load in each quarter of the subsequent two years.[9] Forecasts can be submitted electronically. The CLEC's Qwest Account Team is available to help a new CLEC develop its forecast. The forecast form and instructions are Exhibits TRF-51 and TRF-52 to this testimony and can be found on Qwest's wholesale web site. Qwest expects that a CLEC will produce the first view of the forecast. Qwest provides a CLEC its view of the forecast within three weeks of forecast cycle close.

Q. HAVE THE PARTIES PREVIOUSLY FOCUSED UPON TRUNK FORECASTING IN OTHER COLLABORATIVE WORKSHOPS?

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[7] SGAT 7.2.2.8.10

[8] SGAT 7.2.2.8.12

[9] WorldCom opposed the entry of "trunks added" on the forecast form. WorldCom preferred entry of "total trunk group members" following an augment. Qwest does not understand that it is at fault in selecting one approach over the other.

A. Yes, the state of Colorado hosted a workshop on March 19, 2001.

Q. WHAT ISSUES WERE CONTENTIOUS IN THAT WORKSHOP?

A. The Colorado Commission's Issues List (COIL) contains three open trunk forecasting matters. Issue FOR-2 states that WorldCom needed time to review language which further described a pro-rata refund of a deposit. Issue FOR-4 asks Qwest to consider providing a forecast to the CLEC prior to a joint planning meeting. Qwest is prepared to agree to this request and it memorializes this agreement in an excerpt of the SGAT (Section 7.2.2.8.2) that is Exhibit TRF-54 to this testimony. Issue FOR-5 asks if Qwest is prepared to provide feedback to a CLEC regarding the forecast it submits. Regarding FOR-5, to the extent Qwest thinks a CLEC's forecast is overstated or understated, Qwest will provide feedback to a CLEC within three weeks. Qwest agreed to this condition and that agreement is recorded at SGAT section 7.2.2.8.6.1.

The SGAT formerly required the parties to participate in quarterly joint forecasting. In Colorado collaborative workshops intervenors proposed semi-annual rather than quarterly forecasting. Qwest agrees that semi-annual joint forecasting is sufficient. Qwest memorializes this in the SGAT at sections 7.2.2.8.2, 7.2.2.8.3 and 7.2.2.8.4.

Intervenors also reiterated their previously stated objection to Qwest's expectation of a deposit in any circumstance. Qwest has addressed this matter in briefs previously filed in this case.

B. Forecast Creation

Q. HOW DO THE PARTIES CREATE A FORECAST?

A. On an Access Service Request, a CLEC may choose to arrange one-way or two-way trunking. Most CLECs agree that two-way trunking is preferred. A trunk forecast is an estimate of the future number of members needed in a trunk group to carry anticipated traffic without undue blockage. A two-way trunk group is sized for traffic flowing in both directions. A two-way trunk group is not typically forecast by estimating the traffic flowing in one direction and then in the opposite direction, and finally adding the two forecasts together. Instead, the total number of members in the trunk group are typically reviewed at points in time historically. The growth trend for the group is generally extrapolated forward. Because this is true, trunk forecasting should be a joint process between Qwest and each CLEC. Forecasts identify requirements for a two-year rolling period.

C. Use of Information

Q. HOW DOES QWEST USE THE INFORMATION THAT IT COLLECTS IN THE TRUNK FORECASTING PROCESS?

A. During joint planning sessions, the parties discuss future ordering and network impacts (i.e., transport, switch and routing/translations). From the forecast close date, Qwest has one month to aggregate various needs and place orders with manufacturer-suppliers. Switch manufacturers generally require a

six-month interval to deliver network capacity augments. Cable and electronics placement can require a similar interval. Verizon and SBC use this same interval.[10] Therefore, obtaining forecasts is necessary to ensure that carriers pre-provision sufficient equipment and staff. For this reason, Qwest asks that a trunk forecast be submitted two quarters prior to submission of an order. In order to measure and improve forecast accuracy, the parties should compare this projection to the quantity of trunks subsequently ordered and the quantity of trunks subsequently required.

Qwest invites a CLEC to identify changes in near-term demand. This is accomplished via submission of the Unforecast Demand Notification Form, which is discussed later in this testimony.[11]

D. Forecasting Accuracy

Q. HOW ACCURATE IS TRUNK FORECASTING?

A. In aggregate, regionwide, CLECs forecast that over 64,000 DS1s of additional interconnection trunking would be added during 2001. This much additional capacity would require a $550,000,000 investment on Qwest's part. However, CLECs seldom order as many trunks as they forecast. For the third quarter of 2000 the following results are offered:

[10] Verizon , Massachusetts' Federal 271 declaration of Lacouture/Ruesterholz at paragraph 18 and SBC Kansas/Oklahoma Federal 271 declaration of W.C. Deere at paragraph 62.

[11] This form is attached hereto as Exhibit TRF-53. This form was created to respond to WorldCom's suggestion that forecasts needed to be amendable during the six-month construction interval.

	DS1s Forecasted	DS1s Ordered
Washington	15,064	2479

Despite the overestimates, Qwest recognizes that it must build toward a CLEC forecast if a CLEC has certainty about a higher forecast than Qwest anticipates. This is assured in the SGAT at section 7.2.2.8.6.1 and it is discussed later in this testimony.

E. Forecasting vs. Ordering

Q. DOES QWEST REJECT OR DELAY ORDERS THAT ARE INCONSISTENT WITH A CLEC'S FORECAST?

A. No, Qwest does not reject or delay orders that are inconsistent with a CLEC's forecast. Although Qwest's SGAT requires a CLEC to participate in joint forecasting, a CLEC can place an order for interconnection trunks at any time. The order may or may not be associated with a forecast. Qwest does not reject orders that are not tied to a forecast. When facilities are available, Qwest will provision trunks associated with orders. When facilities are unavailable, Qwest constructs new facilities.

Q. DID QWEST CHANGE THE SGAT TO CAREFULLY FOLLOW ADVICE ON FORECASTING FROM THE WUTC'S DRAFT INITIAL ORDER FOR THE SECOND 271 WORKSHOP?

A. Qwest proposed significant changes to the forecasting section of the SGAT, but not explicitly as proposed in the Draft Initial Order. The advice at paragraph 129 said, ". . . it is reasonable that there should be a deposit . . . . deposits should not be based on overforecasts or underutilization of trunk groups in other geographic areas. Qwest should guarantee the availability of the forecasted trunks for which the CLEC paid a deposit. . . . Parties should address the pro-rata formula." Regarding the pro-rata formula and the guarantee, Qwest has added explicit language to section 7.2.2.8.6.1 in accordance with the advice in the order. It has incorporated the same language into the SGATs of other states.

Regarding the "other geographic area" matter, Qwest responded by deleting language that formerly asked for a deposit when Qwest provisioned capacity toward a forecast lower than the one the CLEC submitted. Qwest might do so if the CLEC's historic forecast-to-order ratio was consistently high. Qwest understood that the WUTC was concerned that Qwest might require a deposit on a metropolitan trunk group (that was overwhelmed) when, at the same time, trunk groups outside the metropolitan area contributed to a low statewide average for the CLEC. Qwest did not change the *statewide average* utilization to the *trunk group specific average* utilization as the determinant for return of the deposit. A trunk group augment likely would not be ordered until seven to ten months after the deposit had been collected. At the time the augment is completed, the trunk group specific utilization will likely fall dramatically, and the

six month interval that follows might not be enough time to reach trunk-group specific 50% utilization. Furthermore, Qwest would need to hold the deposit 13 to 16 months rather than six months. For these reasons, Qwest retained the statewide average language as the determinant for return of the deposit six months after receipt. Qwest incorporated this same language into the SGATs of other states. Qwest hopes this comports with the WUTC's recommendations on this matter.

F. Disputes

Q. HOW DO THE CARRIERS RESOLVE DIFFERENCES OF OPINION REGARDING, ESPECIALLY, A TWO-WAY TRUNK GROUP FORECAST?

A. Qwest, as the incumbent carrier, in a nondiscriminatory manner, assumes the obligation to provision trunks at the request of each CLEC. If, in Washington, Qwest had constructed to CLEC's forecasts without dispute, the result would be idle trunk capacity estimated at over $80,000,000. Inefficient use of resources cannot be ignored in the forecasting process. Qwest must do what it can to ensure its network is utilized efficiently. Qwest does *not* reject orders where a CLEC has not utilized existing trunks well. Intervenors prescribe that Qwest's SGAT can *not* allow Qwest to reduce the size of trunk groups that have been underutilized for some duration of time.

If the parties fail to reach resolution informally, Qwest's SGAT contains language which would avoid formal disputes by allowing for refundable

deposits. This is Qwest's obligation in the SGAT at section 7.2.2.8.6. If the parties fail to reach resolution informally, formal Dispute Resolution proceedings can be initiated. Qwest's SGAT contains language which would avoid disputes by allowing for refundable deposits.

G. Deposits

Q. WHAT ALTERNATIVES ARE AVAILABLE WHEN DISPUTES ARISE REGARDING FORECAST QUANTITIES?

A. Three weeks after the close of the forecast cycle, Qwest will provide a CLEC with its forecast. The SGAT contains two alternatives when Qwest and a CLEC have been interconnected for eighteen months and a dispute arises regarding forecast quantities. First, Qwest will make new capacity available in accordance with Qwest's presumably lower forecast level without asking for a deposit. Second, Qwest will construct facilities according to the CLEC's higher disputed forecast if the CLEC provides Qwest a refundable deposit of the estimated cost to provision the new trunks.[12] This estimate is trunk-group specific. The trigger event for such a deposit is the CLEC's trunk use, over the prior eighteen (18) months, of less than fifty percent (50%) of its forecast each month.

Q. HOW WOULD A REFUNDABLE DEPOSIT BE RETURNED OR RETAINED?

A. Qwest returns the deposit if the CLEC's statewide average trunk usage (utilization) ratio exceeds fifty percent (50%) any month within six (6) months of the forecasting period to which the deposit applies. If the CLEC does not achieve the fifty percent (50%) utilization within six (6) months, Qwest retains a pro-rata portion of the deposit to cover the capital costs of provisioning more idle trunks. Ancillary trunks (e.g. mass calling, E911 and directory assistance) are excluded from this calculation.

This practice protects Qwest from additional stranded investment caused by abandoned or underutilized trunk groups and it resolves forecast disputes. In addition, this approach incents a CLEC to forecast accurately. This is arguably a better approach than Qwest's forced downsizing of underutilized trunk groups or Qwest's rejection of orders associated with historic underutilization. This requires that forecast projections be measured.[13]

H. Trunk Utilization

Q. HOW IS TRUNK UTILIZATION CALCULATED?

A. Utilization is the ratio of the number of trunks required to handle a recent traffic load compared to the number of trunks in service or forecast for the same time period. For example, if a trunk group is forecast to need 100 members to carry the average peak offered load in the fourth quarter of 2001 and, shortly after

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[12] SGAT section 7.2.2.8.6.1

[13] WorldCom has opposed measurement of trunk forecasting accuracy by comparison of six month projections to subsequent actual ordering and use.

that quarter has passed, it is determined that 50 members were required to handle the load of the group, the trunk group in this example is fifty percent (50%) utilized. A second example illustrates another form of utilization. For example, if a trunk group now contained 100 members in service and the next month it is determined that 50 members were required to handle the offered peak traffic load of the group, the trunk group in this example could be described as fifty percent (50%) utilized. Utilization can be an indicator of how well trunk groups (1) are sized or (2) were forecast. The SGAT at sections 7.2.2.8.13 and 7.2.2.8.6.1 describe these two forms of utilization.

Q. HOW IS THE "TRUNKS REQUIRED" ESTIMATE GENERATED?

A. Required trunk counts are calculated using industry-defined data elements:

- ***Usage:*** the total time trunks are held in conversation.
- ***Peg Count:*** total number of attempted calls.
- ***Overflow:*** the peg count unsuccessful due to insufficient trunks.
- ***Peakedness:*** a measure of the call arrival rate within each hour.
- ***Day-to-Day Variation:*** a measure of how traffic varies around one or two specific weekdays.

Qwest validates and accumulates the aforementioned data for twenty-business-day study periods. Data is collected for each hour across the period. The Busy Hour is defined as that hour of the day, each day during the study period, in which the greatest average number of trunks is required. The

number of required trunks is calculated from Erlang B (B.01) or Neal-Wilkinson (B.005) tables using historic offered load during the Busy Hour as determined by this measurement system. Busy Hour measuring is a time-tested industry practice.[14]

I. Construction

Q. DOES QWEST CONSTRUCT FACILITIES IN RESPONSE TO A FORECAST?

A. When the aggregated forecasts from retail and wholesale sources are projected to exceed available capacity on a switch or transport system, Qwest arranges for the engineering and installation of new capacity.[15] It would be rare to find a one-to-one relationship between a single forecast and single construction project. One construction project typically provides capacity for several forecasts. To avert a delay associated with the provisioning of a future order, capacity must be reflected in Qwest inventory systems when an order is received from a customer. Qwest incorporates all submitted forecasts into the aggregate demand for a component of the network. Qwest uses its best judgment to evaluate the reliability of the totality of forecasts for a given switch or span before proceeding with construction. In some cases, only a portion of a span may require augmentation. To be clear, Qwest will consistently construct facilities in response to a forecast submitted with a refundable deposit.

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[14] e.g. Telcordia SR-TAP-000191.

[15] Unforecast demand must also be considered.

Since an Access Service Request (ASR) is more detailed and complete than a forecast and since a party often changes its plans during the months between the time that it submits a forecast and the time that it submits an ASR, Qwest cannot fully provision an ASR in advance of receiving it.

J. Forecast Revision

Q. MAY A CLEC NOTIFY QWEST AT ANY TIME THAT IT WISHES TO REVISE ITS FORECAST?

A. Yes, if a CLEC recognizes that it needs to inform Qwest that a previously submitted forecast was either lacking or overstated, Qwest accepts that information on an Unforecast Demand Notification form.[16] This simple form is attached as Exhibit TRF-53 to this testimony and Qwest invites a CLEC to submit this form whenever it chooses. This form can be used in a joint planning session, but it can also be submitted at other times. Qwest submits unforecasted demand and forecasted demand to the same transport and switch capacity management personnel immediately upon receipt.

IV. CONCLUSION

Q. WHAT CONCLUDING THOUGHTS ARE IMPORTANT?

A. Trunk forecasting gives Qwest and a CLEC a projection of switching and

[16] SGAT section 7.2.2.8.3

transport demand that must be pre-provisioned with the support of manufacturer/suppliers. This forecasting approach allows for a holistic and accurate comparison of actual traffic and projected traffic. The SGAT positions a CLEC to develop accurate forecasts which result in Qwest's preparedness for a CLEC's future ordering of trunking infrastructure. This concludes my testimony.

INDEX OF EXHIBITS

Description	Exhibits
Trunks in Service Monthly Growth	TRF-50
Trunk Forecast Form	TRF-51
Trunk Forecasting Instructions	TRF-52
Unforecasted Demand Notification Form	TRF-53
SGAT Section 7.2.2.8	TRF-54