

**BEFORE THE WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION**

**In the Matter of the Petition of:**

Douglas and Jessica Rupp; Kathie  
Dunn and Chris Hall; Melinda  
Inman; Verlin Jacobs; Anthony  
Williams; Christine and Samuel  
Inman; Robert Jacobs; and Sam  
Haverkemp and Chris Portrey,  
Petitioners

**NO. UT-050778**

v.

Verizon Northwest, Inc.,  
Respondent.

**DIRECT TESTIMONY OF**

**DOUGLAS B RUPP**

**ON BEHALF OF**

**RUPP, et al**

**ISSUE: Feasibility of alternative communication methods for Skyko 2**

**OCTOBER 12, 2005**

1 **Q. What is your name and address?**

2 A. Douglas B Rupp

3 PO Box 207

4 Index, WA 98256

5

6 **Q. What is the general topic of your testimony?**

7 A. Telephone communication alternatives for the Skyko 2 area.

8

9 **Q. What are your qualifications to testify on this topic?**

10 A. I have a Bachelor of Science in Electrical Engineering. I have lived in the

11 Skyko 2 area for 6 years.

12

13 **Q. What are the telephone communication alternatives for the Skyko 2 area.**

14 A. The alternatives are a radio-telephone link and a satellite link. Before

15 discussing those alternatives, it would first be helpful to see the geography of the

16 Skyko 2 area including the location of the full and part time residences (see

17 Exhibit No. \_\_\_\_\_(DBR-8)) and their location in relation to the end of the grid

18 (see Exhibit No. \_\_\_\_\_(DBR-9).

19

20 **Q. Please describe how a radio-telephone link works.**

1 A. A radio-telephone link consists of a base station device that plugs into the grid  
2 telephone line just like a telephone receiver but when an incoming call is  
3 received the voice signal is converted into microwaves and transmitted through  
4 an antenna to a remote site device antenna. At the remote site the microwave  
5 signal is converted back and rings at a plain old telephone. An outgoing call is  
6 handled similarly but in reverse.

7

8 **Q. How well would such a link work in your situation.**

9 A. It would be difficult to make it work reliably given the topography and heavy  
10 forestation.

11

12 **Q. Why is that?**

13 A. The problem is that the line of sight from the grid to Skyko 2 is marginal.

14

15 **Q. What is a "line of sight"?**

16 A. It's a clear, unobstructed view between the two antennas. Basically if you're  
17 standing at one antenna, you have to be able to see the other one.

18

19 **Q. Why is that important?**

1 A. All modern radio-telephone systems use microwave frequencies. Microwaves  
2 have very little penetrating ability and require a line of sight to operate.

3

4 **Q. Could you build towers at each end to get a line of sight?**

5 A. Theoretically yes, but there is only about a 250-300' rise in elevation between  
6 the end of the grid and Skyko 2 over a run of about 3 miles which would  
7 necessitate a shallow angle of transmission. That coupled with the heavy  
8 forestation and mountainous topography make it impossible to find a good  
9 corridor for the signal.

10

11 **Q. Could a repeater be used to overcome this problem?**

12 A. Theoretically yes, but the difficulty is how to power the repeater and again  
13 how to get its antennas above the trees. The possible locations are all in the  
14 national forest with no road access.

15

16 **Q. What about using a satellite link for telephone?**

17 A. Besides the obvious issues of latency making conversation difficult, the same  
18 issues of power and access arise. The only possible location for a satellite link is  
19 on the north side of the river, to which there is no road access.

20

1 **Q. Why would a satellite link have to be on the north side of the river?**

2 A. Satellite telephone systems all use geosynchronous satellites in a polar orbit  
3 around the earth. At our latitude the satellite dish has to point to the southern  
4 sky at a relatively shallow angle. The satellite dish would have to be placed on  
5 the north side of the river in order for the signal to clear the mountains.

6

7 **Q. What is your conclusion?**

8 A. That the only viable alternative is land line based telephone service.

9

10 **Q. Does this conclude your testimony on this subject?**

11 A. Yes.