

1                                   **BEFORE THE PUBLIC UTILITIES COMMISSION OF THE**  
2                                   **STATE OF SOUTH DAKOTA**

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4   IN THE MATTER OF THE PETITION FOR LOCAL NUMBER       )  
5   PORTABILITY SUSPENSION OR MODIFICATION            )  
6   ON BEHALF OF INTERSTATE TELECOMMUNICATIONS       )   Docket No. TC08-024  
7   COOPERATIVE, INC.    )  
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11                                   **PRE-FILED DIRECT TESTIMONY OF**  
12                                   **JOHN DE WITTE**

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14   **Q: What is your name and address?**

15   A: My name is John M. De Witte. My business address is 2211 N. Minnesota Street,  
16       Mitchell, South Dakota 57301.

17   **Q: By whom are you employed and in what capacity?**

18   A: I am the Vice President of Engineering of Vantage Point Solutions, Inc. (VPS).  
19       VPS is a telecommunications engineering and consulting firm in Mitchell, South  
20       Dakota with a full-time staff of over 80 employees. Our client base of VPS is made  
21       up of rural independent Local Exchange Carriers (LECs). I focus on assisting the  
22       small LECs with nearly all technical and financial aspects of their operations. My  
23       direct staff and I have provided engineering, financial, and regulatory services to  
24       many of the South Dakota LECs, as well as LECs in several other states.

25   **Q: What is your educational and business background?**

26   A: I received a Bachelors of Science in Computer Engineering (1982) from Iowa State  
27       University (Ames, IA) and a Masters of Business Administration (1992) from  
28       Kennesaw State College (Kennesaw, GA). I am a Registered Professional Engineer  
29       in South Dakota and 11 other states.

1 I have been active in the telecommunications industry since 1983. Previous to VPS,  
2 I worked for Martin Group, Inc., based in Mitchell, South Dakota. At Martin  
3 Group, I was Assistant Director of Engineering of the Telecom Consulting and  
4 Engineering Business Unit, providing engineering and consulting services to rural  
5 telecommunications providers throughout the nation. Prior to this, I worked in a  
6 variety of engineering, marketing, and management positions at Nortel Networks,  
7 Inc., a telecommunications equipment manufacturer in Raleigh, NC and Atlanta,  
8 GA. I am a regular speaker at many state, regional, and national telephone  
9 company organization events, including the National Telephone Cooperative  
10 Association (NTCA) and the Organization for the Promotion and Advancement of  
11 Small Telecommunications Companies (OPASTCO). In this capacity, I often  
12 advise telephone company managers and board members regarding a variety of  
13 technical and financial issues.

14 **Q: On whose behalf are you testifying in this proceeding?**

15 A: My direct pre-filed testimony is submitted on behalf of Interstate  
16 Telecommunications Cooperative, Inc. (ITC).

17 **Q: What is the purpose of your testimony?**

18 A: I will provide testimony on technical and cost issues relative to ITC of  
19 implementing the transport for intermodal LNP that is pertinent to this hearing.

20 **Q: Are you familiar with current telephone network technologies, including**  
21 **switching equipment, transmission equipment, and outside plant**  
22 **architectures?**

1 A: I have provided engineering and consulting services to more than 100 rural LECs  
2 across the United States. I am familiar with nearly all of the technologies and  
3 architectures of a rural LEC network, including transport equipment, switching  
4 equipment, digital loop carrier equipment, broadband networks, along with copper  
5 and fiber outside plant cable. I have engineered both landline networks and  
6 wireless networks for my clients. In addition, I've provided engineering and  
7 consulting services to ITC for several projects over the past decade.

8 **Q: Do you understand the various methods and requirements that are required to**  
9 **support Intramodal (wireline to wireline or wireless to wireless) and**  
10 **Intermodal (wireline to wireless) Local Number Portability?**

11 A: Yes I do.

12 **Q: With the number of variants for LNP, which implementation of LNP is the**  
13 **focus of your testimony?**

14 A: In general, the methodologies, rules, and implementation processes for wireline  
15 Intramodal (wireline to wireline or wireless to wireless) LNP are clearly defined. In  
16 general, Intramodal LNP requires the competing carriers to establish well-defined  
17 points of interconnection and the associated transport arrangements for the  
18 exchange of LNP traffic as part of the Interconnection Agreement. The  
19 methodologies, rules, and implementation processes for Intermodal (wireline to  
20 wireless) LNP are less well defined. The costs of transport regarding Intermodal  
21 LNP relating to wireline to wireless ports will be the focus of my direct testimony.

1 **Q: What unique challenges are presented to a rural Independent Local Exchange**  
2 **Carrier (ILEC) with the implementation requirements of Intermodal LNP?**

3 A: There are several technical and economic issues facing rural ILECs as they evaluate  
4 the implementation of Intermodal LNP. These challenges for the small rural ILECs  
5 concern how calls to ported numbers can be rated as local given the current  
6 interconnection of wireless and wireline networks. The Petitioner has several  
7 existing direct connections with various CMRS carriers in their network. However,  
8 the Petitioner does not have existing direct points of connection to the wireless  
9 carriers' networks in the majority of the rate centers it serves. Where there are no  
10 direct points of connection with the wireless carriers, only conventional, switched  
11 toll routes are available to transport calls to ported numbers. Other transport  
12 options may be possible. However, the wireless carriers have not made any special  
13 arrangements with the Petitioner concerning translating, routing, rating or cost  
14 recovery for Intermodal LNP. To consider an option other than either a direct  
15 connection or the use of toll routes for transport of calls to ported numbers, some of  
16 the issues that need to be addressed include: (1) to what point should calls to ported  
17 numbers be routed, (2) how will the Petitioner be able to maintain the original rate  
18 center designation and rating when the number is ported to a point of  
19 interconnection that is located outside the original rate center, when the wireless  
20 service area and the Petitioner's service area vary greatly, and (3) who will pay for  
21 the transport. These issues are unique in rural areas, such as the Petitioner's service  
22 area, where few, if any interconnection arrangements exist and there are fewer

1 subscribers (in comparison to metropolitan areas where there are thousands of  
2 subscribers) over which to spread the costs of Intermodal LNP. The uncertainty  
3 surrounding these and other issues is likely to cause significant customer confusion,  
4 complaints to the Petitioner and the SDPUC, and the resulting perception of  
5 degraded customer service on the part of the Petitioner's members.

6 **Q: Are there other costs to Petitioner in connection with intermodal LNP?**

7 **A:** Yes. In addition to the transport costs that are anticipated in connection with  
8 Intermodal LNP, the Petitioner will incur other costs for the implementation of  
9 LNP such as switching software upgrades, monthly recurring LNP database dip  
10 fees, Service Order Administration (SOA) fees, and other operational costs. These  
11 LNP implementation costs, including the cost of transport, will benefit only those  
12 few subscribers that choose to leave ITC, while encumbering the entire remaining  
13 number of ITC subscribers with the burden of funding the LNP porting benefit. As  
14 shown on Confidential Exhibit JMD1, the cost to implement intermodal LNP  
15 (excluding transport) is estimated **\*\*BEGIN CONFIDENTIAL\*\* \*\*END**  
16 **CONFIDENTIAL\*\*** However, as we will see later, these costs represent a very  
17 small portion of the total intermodal LNP implementation costs.

18 **Q: Didn't the wireless carriers incur costs to implement LNP?**

19 **A:** Yes. But there are three important differences. First, as stated before, the wireless  
20 carriers have many more subscribers over which to spread the cost of LNP.  
21 Second, the wireless carriers can benefit from intermodal LNP by porting numbers  
22 (and customers) from the wireline carrier. However, ITC cannot benefit from

1 intermodal LNP because current intermodal LNP rules do not allow wireless  
2 subscribers to port to ITC's wireline services. Third, the wireless carriers were  
3 required to implement LNP to provide intramodal (wireless to wireless) LNP and to  
4 provide LNP in major markets (Qwest territory). Beyond the small cost of the  
5 incremental LNP database dips the CMRS carriers will incur in an intermodal LNP  
6 environment, it is my understanding that the CMRS carriers will not incur  
7 significant additional costs to require LNP from ITC.

8 **Q: Does the lack of Intermodal LNP have any correlation to the apparent**  
9 **purchasing decisions by wireless subscribers in South Dakota?**

10 A: There does not appear to be any evidence that the lack of Intermodal LNP has had a  
11 negative effect on the CMRS carrier's ability to compete in South Dakota. The  
12 evidence is quite to the contrary according to the reports submitted for inclusion in  
13 the Universal Service Administration Company (USAC) reports. Even though the  
14 Commission granted a suspension of LNP in 2004 and many rural LECs in South  
15 Dakota have not implemented LNP, the number of consumers subscribing to  
16 wireless service has grown significantly and continues to increase. In the fourth  
17 quarter of 2006, the number of wireless subscribers in South Dakota was estimated  
18 at 270,210. Of this total, 176,502 wireless subscribers were estimated in current  
19 Qwest service areas and 93,708 wireless subscribers were estimated within ILEC  
20 services areas. For the first quarter of 2008, the number of wireless subscribers in  
21 South Dakota is estimated at 287,122. Of this total, 182,283 wireless subscribers  
22 were estimated in current Qwest service areas and 104,839 wireless subscribers

1 were estimated within ILEC services areas. This increase in wireless subscribers  
2 represents approximately a three percent (3%) growth rate in wireless customers in  
3 Qwest areas and a twelve percent (12%) growth rate in wireless customers in ILEC  
4 service areas.<sup>1</sup> While the Petitioner does not have wireless subscriber estimates  
5 specific to its service territory, it is likely that the wireless subscriber growth rates  
6 in the Petitioner's service area mirror the South Dakota ILEC wireless subscriber  
7 growth estimates derived from the USAC reports.

8 **Q: What are the anticipated transport-related costs of implementing Intermodal**  
9 **LNP?**

10 A: The anticipated costs of implementing transport for Intermodal LNP can be  
11 evaluated by two (2) options as described in Confidential Exhibit 2 of the ITC  
12 Petition. This Exhibit is attached as Confidential Exhibit JMD2. The first option  
13 explored in the Exhibit is the anticipated transport costs utilizing the existing  
14 CMRS direct connections. The second option explored in the Exhibit assumes No  
15 Direct Connections. These transport cost options will be identified in the following  
16 paragraphs.

17 **Option 1 – Utilize CMRS Direct Connections**

18 In this option, the existing CMRS Direct Connections were utilized. Based on the  
19 Direct Connection information provided at the time the petition was filed, ITC had  
20 existing **\*\*BEGIN CONFIDENTIAL\*\* \*\*END CONFIDENTIAL\*\*** ITC did not

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<sup>1</sup> These wireless subscriber estimates were calculated using wireless loop data reported in USAC's High Cost Loop Projected by State Study Area (USAC Appendix HC05) and the USAC CETC Reported Lines by Incumbent Study Area – Interstate Access Support (USAC Appendix HC020) for the appropriate time periods.

1 have an existing Direct Connection with Sprint. The cost of establishing a direct  
2 connection with Sprint was assumed to be the cost of a standard special access DS1  
3 (24 DS0s) from Clear Lake to South Dakota Network (SDN) using a quote provided  
4 by SDN for this circuit. The SDN DS1 Quote is attached as Confidential Exhibit  
5 JMD3. In addition, ITC estimated an Intracompany Transport Rate for each CMRS  
6 carrier. The Intracompany Transport Rate was designed to recover the costs of  
7 transporting the LNP calls to the CMRS direct connection. This Intracompany  
8 Transport Rate was based on the existing Reciprocal Compensation rates for each  
9 of these carriers (with the exception of Sprint). For this cost estimate option, the  
10 Reciprocal Compensation Rate for Sprint was assumed to be the lowest of the  
11 existing Reciprocal Compensation rates provided. To calculate the cost impact for  
12 the LNP Ported traffic, ITC assumed that 60 Intermodal ports would occur over the  
13 span of five (5) years. To estimate the Ported Intermodal LNP traffic, it was  
14 assumed that each of the ported Directory Numbers (DNs) would average five (5)  
15 calls a day averaging three (3) minutes each in duration. The total Ported LNP  
16 Traffic was then allocated to each CMRS carrier based on the number of existing  
17 (or new) direct connection. Each carrier's transport cost impact was estimated by  
18 calculating their proportional share of the Ported LNP traffic that was transited to  
19 the CMRS' applicable Direct Connection and applying the Intracompany Transport  
20 Rate to those minutes. In the case of Sprint, the recurring and non-recurring costs  
21 of the SDN DS1 lease were added to the cost of transiting the Ported LNP traffic.  
22 When considering only the cost of transport related to Intermodal LNP

1 implementation for the existing CMRS carriers, ITC's Intermodal LNP Transport  
2 costs were estimated at **\*\*BEGIN CONFIDENTIAL\*\*** **\*\*END**  
3 **CONFIDENTIAL\*\***

4 **Option 2 – No CMRS Direct Connections**

5 In this option, it is assumed that facilities would be established for the Ported LNP  
6 traffic to South Dakota Network (SDN) from Clear Lake. In addition, it is assumed  
7 that the CMRS carriers would remove their existing Direct Connections and utilize  
8 the facilities established by the Petitioner for both Ported LNP traffic and other  
9 wireless traffic (formerly routed on the CMRS carrier's Direct Connections). The  
10 cost of establishing a direct connection with CMRS carriers was assumed to be the  
11 cost of a standard special access DS1 (24 DS0s) from Clear Lake to SDN using a  
12 quote provided by SDN for this circuit. The quantity of DS0s required for each  
13 CMRS carrier was based on the number of DS0s currently deployed by each CMRS  
14 carrier. For CMRS carriers without an existing Direct Connection, it was assumed  
15 that each carrier would require **\*\*BEGIN CONFIDENTIAL\*\*** **\*\*END**  
16 **CONFIDENTIAL\*\*** In addition, ITC estimated an Intracompany Transport Rate  
17 for each CMRS carrier. The Intracompany Transport Rate was designed to recover  
18 the costs of transporting the LNP calls to the CMRS transport connection. This  
19 Intracompany Transport Rate was based on the existing Reciprocal Compensation  
20 rates for each of these carriers (with the exception of Sprint). For this cost estimate  
21 option, the Reciprocal Compensation Rate for Sprint was assumed to be the lowest  
22 of the existing Reciprocal Compensation rates provided. To calculate the cost

1 impact for the LNP Ported traffic, ITC assumed that 60 Intermodal ports would  
2 occur over the span of five (5) years. To estimate the Ported Intermodal LNP  
3 traffic, it was assumed that each of the ported DNs would average five (5) calls a  
4 day averaging three (3) minutes each in duration. In addition, the total monthly  
5 traffic carried by each DS1 was estimated to be 182,500 Centum Call Seconds  
6 (CCS). This was estimated by assuming the High Day Busy Hour (HDBH) for a 24  
7 hour period represented approximately 14 percent (14%) of the total traffic using  
8 511 CCS as the maximum capacity of a single DS1 at a Grade of Service (GoS) of  
9 B.005<sup>2</sup>. Each carrier's transport cost impact was estimated by calculating their  
10 proportional share of the Ported LNP traffic and the wireless traffic that would have  
11 normally been routed on a Type 2B Direct Connection that was transited to the  
12 applicable route to SDN and applying the Intracompany Transport Rate to those  
13 minutes. When considering only the cost of transport related to Intermodal LNP  
14 implementation for the existing CMRS carriers, ITC's Intermodal LNP Transport  
15 costs were estimated **\*\*BEGIN CONFIDENTIAL\*\* \*\*END CONFIDENTIAL\*\***

16 **Q: Do the per Access Line Intermodal LNP Transport cost estimates identified**  
17 **above include all of the potential CMRS or other carriers?**

18 A: No they do not. The Intermodal LNP implementation transport cost estimates  
19 provided in the previous exhibits address only the primary carriers that are known  
20 to be operating in ITC's service area. If other entities enter ITC's geographical  
21 market including CMRS (PCS, 700 MHz, etc.) or other VoIP providers that are not

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<sup>2</sup> Reference [www.USDA.gov](http://www.USDA.gov) for details. Per RUS Bulletin 1753E-001 (Form 522), Section 16.1.1 --

1 carriers, and require ITC to establish transport, the overall LNP related transport  
2 costs will very likely increase.

3 **Q: Are there any other potential costs that could impact ITC with the**  
4 **implementation of Intermodal LNP?**

5 A: With the implementation of Intermodal LNP, ITC will be required to perform a  
6 LNP database dip on all calls destined for connecting carriers on EAS routes to  
7 ensure that ported calls are being routed properly. This will result in additional  
8 recurring LNP database dip charges for ITC. In addition, all other connecting  
9 carriers with EAS arrangements with ITC and their customers will be impacted  
10 because the other carrier will have to LNP dip all EAS calls as well. These  
11 additional LNP database dip fees would increase the cost of EAS between ITC and  
12 the other carriers and could result in a loss of EAS options to the customer or an  
13 increase in the cost of the EAS service.

14 **Q: Are there other options that could be considered concerning the transport of**  
15 **wireless traffic (including Ported LNP traffic)?**

16 A: As I stated before, there may be other options. However, the Petitioner cannot  
17 speculate on the feasibility or likelihood of implementation of options not in  
18 existence. The Petitioner provided cost estimates to implement Intermodal LNP  
19 Transport based on known transport methods that it could implement.

20 **Q: What would be the timeframe required for the Petitioner to fully implement,**  
21 **test and place Intermodal LNP into commercial service, if required to do so?**

1 A: ITC estimates that it would require approximately four (4) months. This projected  
2 timeframe is due to several regulatory requirements. As an example, the Petitioner  
3 would be required to make Telcordia Local Exchange Routing Guide (LERG)  
4 changes to the NPA-NXXs in its network that are not already marked as “portable”  
5 with the applicable Local Routing Number (LRN). The standard interval for this  
6 type change is typically 66 days<sup>3</sup>. After the NPA-NXX is assigned as “portable”,  
7 the Petitioner will need time to coordinate implementation and testing of Intermodal  
8 LNP porting in its network. As with any planning horizon, this  
9 timeline does not take into account holidays or other unforeseen delays. In addition, it  
10 should be noted that if several South Dakota ILECs implement Intermodal LNP in  
11 their networks simultaneously, the implementation time horizon will likely need to  
12 be expanded to six (6) months to accommodate the scheduling of vendor and  
13 technical resources.

14 **Q: Does this conclude your direct testimony?**

15 A: Yes. I also reserve the opportunity to revise or modify this pre-filed direct  
16 testimony at or before the hearing if I receive additional information pertaining to  
17 the issues I presented herein.

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<sup>3</sup> Per Section 6.1.2 of ATIS-0300051 – Central Office Code (NXX) Assignment Guidelines (COCAG)  
Final Document issued January 18, 2008. Pages 21-22