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September 17, 1998

DOCKET FILE COPY ORIGINAL

Magalie Roman Salas, Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

**Re: Federal-State Joint Board on Universal Service,
CC Docket No. 96-45;
Nomination for Membership on Rural Task Force**

Dear Ms. Salas:

On behalf of Western Wireless Corporation ("Western Wireless"), I am writing in response to the Federal-State Joint Board on Universal Service's recent Public Notice soliciting additional nominations for a wireless representative to serve on its Rural Task Force. 1/ Specifically, I would like to supplement my previous nomination of Gene DeJordy, Executive Director of Regulatory Affairs for Western Wireless, to serve as a wireless representative to the Rural Task Force. 2/

As noted in the attached August 13, 1998 nomination letter, Western Wireless provides cellular and broadband PCS service in 22 states (including many rural and high cost areas) and is actively participating in universal service proceedings before the FCC and a number of state commissions. Following the submission of the nomination letter, moreover, Western Wireless completed filing applications to serve as an Eligible Telecommunications Carrier ("ETC") for the

1/ Federal-State Joint Board on Universal Service Solicits Additional Nominations for Wireless Representative to Serve on Rural Task Force, *Public Notice*, FCC 98J-3, CC Docket 96-45 (released September 10, 1998) ("*Public Notice*").

2/ Letter from Michele C. Farquhar, Counsel for Western Wireless, to Magalie Roman Salas, Secretary, Federal Communications Commission, dated August 13, 1998. In its recent *Public Notice*, the Joint Board noted that it would "include Western Wireless's nominee, Gene DeJordy, among the nominations received in response to the Public Notice." *Public Notice* at 2 n.5.

Day

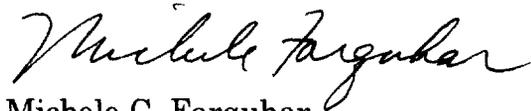
receipt of support from the federal and state universal service programs in 13 states. 3/ Many of these ETC applications have already been set for hearing, and Western Wireless intends to pursue these applications vigorously before all 13 state commissions.

In addition, Western Wireless has begun to submit for the record in this proceeding a forward-looking wireless cost model that would complement efforts already underway and make a significant contribution to the Joint Board's and the Commission's efforts to analyze high-cost support issues. In the attached comments filed with the FCC and Joint Board last month, Western Wireless outlined features of its wireless cost model designed by HAI Consulting, Inc., which estimates the cost of providing universal service over wireless networks in each ILEC wire center (and can be used in conjunction with whatever platform the FCC selects to estimate forward-looking cost).

Finally, it is also important to note that if Mr. DeJordy is selected to serve on the Rural Task Force, he intends to represent the interests of all wireless carriers who may seek to provide supported services in rural areas in competition with incumbent local exchange carriers. Mr. DeJordy has been an active participant in wireless and competitive carrier associations and forums, 4/ and he would make every effort to survey the views of other wireless carriers regarding important task force issues.

If you have any questions about this matter, please contact me.

Respectfully submitted,



Michele C. Farquhar
Counsel for Western Wireless Corporation

Enclosure

cc: Sheryl Todd, Service List

3/ Western Wireless filed ETC applications in Colorado, Kansas, Minnesota, Montana, North Dakota, Nebraska, New Mexico, Nevada, Oklahoma, South Dakota, Texas, Utah, and Wyoming during late August, 1998. These applications also seek authority to provide universal service in areas presently served by rural telephone companies.

4/ Likewise, John Stanton, Chairman and CEO of Western Wireless, is currently serving as Chairman of the Cellular Telecommunications Industry Association.

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August 13, 1998

Magalie Roman Salas, Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

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AUG 13 1998
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

**Re: Federal-State Joint Board on Universal Service,
CC Docket No. 96-45;
Nomination for Membership on Rural Task Force**

Dear Ms. Salas:

On behalf of Western Wireless Corporation ("Western Wireless"), I am writing to respectfully request that an additional member be added to the Federal-State Joint Board's Rural Task Force ("RTF"), and to nominate Gene DeJordy, Executive Director for Regulatory Affairs, Western Wireless, to that position.

We realize that the period for nominating members for the RTF has closed and that a list of members has been compiled. ^{1/} But none of the current members of the RTF represents the interests of wireless carriers that seek to provide supported services in rural areas in competition with incumbent local exchange carriers. Including a representative of Western Wireless would fill that void and enhance the economic, social, geographic, and competitive diversity of the RTF to ensure that the membership is well-balanced.

^{1/} See Public Notice FCC 97J-1, *Federal-State Joint Board Announces the Creation of a Rural Task Force; Solicits Nominations for Membership on Rural Task Force*, in CC Docket 96-45 (released September 17, 1997); *Federal-State Joint Board on Universal Service Announces Rural Task Force Members*, Public Notice, FCC 98J-1 (rel. July 1, 1998). Western Wireless respectfully requests that Mr. DeJordy be placed on the RTF in Category 7, Other Non-ILEC Participants.

Western Wireless, which provides cellular and broadband PCS service in 22 states, is actively participating in universal service proceedings before the FCC and a number of state commissions. Western Wireless operates in many rural and high cost areas, and is seriously interested in providing universal service and in helping to realize the goals of Section 254 of the Act. In Reese River Valley and Antelope Valley, Nevada, for example, Western Wireless already provides basic local exchange and enhanced services using wireless local loops to approximately 50 residential consumers who would not otherwise have access to telecommunications services, pursuant to a stipulation reached with Nevada Bell and the Nevada Public Service Commission.

In addition, Western Wireless is sponsoring and preparing to submit for the record in this proceeding a forward-looking wireless cost model that would complement efforts already underway and make a significant contribution to the Joint Board's and the Commission's efforts to analyze high-cost support issues. Because the RTF's primary mission is to study the establishment of a forward-looking economic cost mechanism for rural carriers, the RTF can benefit from Western Wireless's significant efforts in this area over the past few months, as well as its extensive experience in serving rural and high cost areas for many years.

Moreover, Mr. DeJordy is particularly well-suited to serve on the RTF given his expertise in this area and his understanding of the engineering, economics, and policy concerns in this area. He will have sufficient resources to devote to the project, including adequate funding for travel and other expenses. A brief biography of Mr. DeJordy is enclosed.

If you have any questions about this matter, please contact me. Thank you very much.

Respectfully submitted,



Michele C. Farquhar
Counsel for Western Wireless Corporation

Enclosure

cc: Astrid Carlson
Service List

Biography of Gene DeJordy

Gene DeJordy is an attorney and Executive Director of Regulatory Affairs for Western Wireless Corporation. In this capacity, Mr. DeJordy is responsible for all federal and state regulatory and legislative affairs for the Company, and he positions the Company to take advantage of opportunities presented by the changing legal and regulatory environment. Mr. DeJordy also is responsible for negotiating and implementing new interconnection agreements with the local exchange carriers in Western Wireless' service area, which includes more than 20 western states.

Through Mr. DeJordy's efforts, Western Wireless became the first CMRS provider in the United States to establish in state commission arbitration proceedings cost-based, reciprocal compensation arrangements with local exchange carriers under the Telecommunications Act of 1996. Additionally, Mr. DeJordy is responsible for coordinating Western Wireless' entry into the competitive local exchange and long distance markets, including obtaining state certifications, if applicable, negotiating interconnection agreements, and addressing local competition issues. He has also been leading Western Wireless' efforts to provide universal service in many high cost and rural areas.

Prior to working for Western Wireless, Mr. DeJordy was an attorney with the Washington, D.C. law firm of Swidler and Berlin, Chartered, where his practice focused on federal and state regulatory issues affecting competitive local service providers, including wireless carriers. Before working at Swidler and Berlin, Mr. DeJordy was an attorney with the Federal Communications Commission in the Common Carrier Bureau. Mr. DeJordy holds a Juris Doctorate degree from Catholic University of America, a Master of Science degree in Telecommunications Policy from George Washington University, and a Bachelor of Science degree from the University of Maryland.

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August 28, 1998

Magalie Roman Salas
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Re: **Federal-State Joint Board on Universal Service,
CC Docket No. 96-45;
Forward-Looking Mechanism for High Cost Support for
Non-Rural LECs, CC Docket No. 97-160;
Common Carrier Bureau Seeks Comment on Model
Platform Development, DA 98-1587**

Dear Ms. Salas:

I am enclosing for filing the original and five copies of Western Wireless Corporation's Comments on Model Platform Development, pursuant to the Public Notice in the above-captioned proceedings, DA 98-1587, released on August 7, 1998. Please contact me if you have any questions regarding this filing.

Respectfully submitted,



David L. Sieradzki
Counsel for Western Wireless Corp.

Enclosures

cc: Attached service list

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Federal-State Joint Board on Universal Service)	CC Docket No. 96-45
)	
Forward-Looking Mechanism for High-Cost Support for Non-Rural LECs)	CC Docket No. 97-160
)	
Common Carrier Bureau Seeks Comment On Model Platform Development)	DA 98-1587
)	

**WESTERN WIRELESS CORPORATION
COMMENTS ON MODEL PLATFORM DEVELOPMENT**

Western Wireless Corporation ("Western Wireless"), by its attorneys,
submits these comments in response to the Public Notice, DA 98-1587, released
August 7, 1998. ^{1/}

Introduction

Western Wireless is a cellular and personal communications service ("PCS") carrier specializing in the provision of high-quality, affordable, and reliable wireless services to subscribers in both rural/high-cost and higher-density urban areas. Western Wireless currently provides commercial mobile radio service

^{1/} Public Notice, *Common Carrier Bureau Seeks Comment on Model Platform Development*, CC Docket Nos. 96-45 & 97-160, DA 98-1587 (released Aug. 7, 1998) ("Public Notice").

("CMRS") to more than 700,000 subscribers under licenses in 22 states, covering over 60 percent of the continental United States, as well as Hawaii. In some regions, we believe it will be less costly to provide supported telecommunications services using wireless technologies than by using the wireline systems of incumbent local exchange carriers ("ILECs"). Thus, Western Wireless is seriously interested in providing universal service and helping realize the goals of Section 254 of the Act.

Western Wireless is participating in this proceeding to advance the overall policy goal of *technological and competitive neutrality* in the system for supporting universal service in high-cost and rural areas. ^{2/} To achieve this goal, the Commission must ensure, first, that consumers in high-cost and rural areas have the right to choose to obtain supported services from CMRS providers and other new entrants as well as from ILECs. Second, there must be parity between the revenue support available to all eligible telecommunications carriers, regardless of those carriers' technologies, rate structures, or regulatory status. Third, support must be available for mobile, as well as stationary, services that meet the Commission's definitions of supported universal service, and for wireless as well as wireline local loops.

^{2/} This goal already has been endorsed by the Commission and the Joint Board. *Federal-State Joint Board on Universal Service, First Report and Order, 12 FCC Rcd 8776, 8858, 8932, ¶¶ 145, 287 (1997), pet. for review pending.*

The HAI Wireless Model

The Commission has observed that "to the extent practical, the selected mechanism should estimate the cost of providing the supported services using wireless technology in areas where wireless technology is likely to be the least-cost, most efficient technology." ^{3/} At the same time, the Commission stated that it had received "almost no information regarding how to estimate such costs," and sought comment on "including an additional component in the mechanism that would compare the cost of providing service via a wireless network with the cost of providing service via a wireline network and would choose the lowest-cost technology to calculate the costs of providing the supported services." ^{4/}

Western Wireless is endeavoring to fill this gap. We have retained HAI Consulting, Inc. to design a wireless cost model. This model estimates the cost of providing universal service over wireless networks in each ILEC wire center area, making it possible to determine whether it is less costly to provide service in that area using wireline technology (as projected by the model or platform to be selected by the Commission) or using wireless technology (projected by the HAI wireless cost model). The HAI wireless cost model can be used in conjunction with whatever platform or hybrid mechanism that the Commission selects to estimate

^{3/} *Federal-State Joint Board on Universal Service, Forward-Looking Mechanism for High Cost Support for Non-Rural LECs*, CC Docket Nos. 96-45 & 97-160, Further Notice of Proposed Rulemaking, 12 FCC Rcd 18514, 18555, ¶ 99 (1997).

^{4/} *Id.*

the forward-looking cost, based on the most cost-effective technology, of providing universal service.

While the HAI wireless cost model is still in an early stage of development, Western Wireless believes that it will show that wireless technology is the least-cost technology in a substantial proportion of high-cost exchanges of non-rural ILECs as well as "rural telephone companies." Western Wireless intends to submit the actual model to the Commission within the next few months, and will provide additional information in the near term. We believe that this wireless cost model can be developed in time to incorporate its results as a factor in determining the level of non-rural ILEC high cost support beginning in July 1999.

Accordingly, Western Wireless strongly agrees with the Commission's tentative conclusion that, in geographic areas where the cost of wireless technology is less than the cost of wireline technology, "providing support based on the cost of a wireless network to provide the supported services would meet the statutory directive that support be 'sufficient.'" 5/ Moreover, the Commission *cannot* ignore the results of wireless cost models, because "basing support solely on wireline costs, when wireless technology may offer a less expensive option," certainly would *not* "be consistent with the Commission's conclusion that the mechanism should use the least-cost, most-efficient . . . technology available." 6/

5/ *Id.*, 12 FCC Rcd at 18556, ¶ 101.

6/ *Id.*

Features of the HAI Wireless Cost Model

The HAI wireless cost model estimates the total service cost, using wireless technology, of providing telecommunications in each ILEC wire center area. The model can reflect the engineering features of AMPS (*i.e.*, analog cellular) technology, which tends to be the least-cost wireless technology in high-cost and rural areas, or can reflect other technologies, such as various formats of digital cellular and PCS.

The HAI wireless cost model uses the switching, transport, and signalling information generated by the standard HAI wireline model, as well as standard expense-to-investment and uncollectible factors. The principal difference is the use of wireless technology to estimate "loop" costs. We believe the wireless model could be used as a "module" in connection with whatever basic wireline platform the Commission selects.

The model uses several conservative assumptions to project the costs of universal service using wireless technology. First, the model examines the cost of providing *fixed* wireless local loop service, which is more costly to deploy than *mobile* wireless service. The additional cost is due in part to the cost of special customer premises equipment ("CPE") used for converting signals from the AMPS format to the format used by standard wireline telephones. In addition, the model projects traffic loads, and the necessary infrastructure to handle such traffic (including cell sites and backhaul facilities), based on the amount of traffic that

users typically generate on wireline telephone networks, even though wireless mobile users typically generate significantly less traffic.

Two of the key factors in the model are the geographical location of customers ^{7/} and the traffic generated by those customers, which together are the main determinants of the number and location of cell sites. In turn, the geographic area covered by each cell site is correlated with the height of the tower, which is an important cost component. The model also accounts for the costs of microwave or landline backhaul from cell sites to wireless switching offices. The cost of spectrum is estimated based on data from the Broadband PCS D-E-F bands spectrum auctions, per-pop bid amounts, adjusted to reflect the difference between the amount of spectrum available in the D-E-F bands and that available to RSA cellular operators.

A summary presentation regarding the model is attached as Appendix A.

Platform Issues

The Public Notice seeks comment on geocoded customer location data and other approaches for modeling the location and grouping of customers. Western Wireless observes that the location of customers may be less significant with respect to the wireless cost model than it is for wireline cost models, for several reasons.

^{7/} We discuss the customer location issues raised in the Public Notice in the following section.

First, while customer location is a relevant factor in the cost of wireless service, it is less significant as a determinant of the total cost of service for wireless than for wireline service, due to obvious technological differences. In particular, given that the HAI wireless model estimates the cost of *total* service over a wireless network (*i.e.*, like the wireline models, it assumes that all customer demand is served by the wireless network), traffic capacity tends to overwhelm customer location and grouping as the most significant factor in determining the number of cell sites, in most cases for which the model has been run to date.

Moreover, once the assumption used in the HAI Wireless Model of *fixed* wireless service is relaxed, the fact that customers may use wireless telecommunications on a *mobile* basis renders the locations of their residences less significant as a cost determinant. For these reasons, the exact methodology used to determine customer location and grouping is less significant -- and requires less precision -- for the wireless model than for the wireline models.

Conclusion

In sum, wireless carriers like Western Wireless can play a significant role in providing supported universal service in high-cost areas. The wireless cost model that we are preparing to submit will demonstrate that wireless carriers can provide universal service, in a significant number of areas, more efficiently and at a lower cost than wireline ILECs. The Commission must take into account these wireless cost factors in its process of analyzing platforms and cost models for determining the level of support in high-cost areas. This will ensure that the total

cost of the high-cost support program is based on the most efficient and least costly technology -- and will empower Americans in high-cost areas to choose their universal service from a range of competing providers and technologies.

Respectfully submitted,

WESTERN WIRELESS CORPORATION

By: David Sieradzki

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Attorneys for Western Wireless Corp.

Dated: August 28, 1998

HWM

HAI Consulting, Inc. Wireless Model



Washington D.C.

August 26, 1998



HWM Overview

- ◆ Development sponsored by Western Wireless Corporation
- ◆ Engineering and cost model that calculates the cost of providing wireless local access
- ◆ Examines AMPS technology (cost effective in low density areas)
- ◆ Uses inputs from HM 5.0a wireline model results

*Western Wireless Corp.
HAI Consulting, Inc.*



HWM Features

- ◆ Incorporates cluster, cost and investment data from HM5.0a
- ◆ Provides results by state and wire center
- ◆ Estimates wireline and wireless investment, monthly costs and USF subsidy levels
- ◆ Provides data suitable for mapping

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HAI Consulting, Inc.*



HWM Approach and Modeling Environment

- ◆ “Bottom Up” modeling process
- ◆ Uses Cluster data and current wireline access traffic loads to determine cell site, radio equipment and backhaul requirements
- ◆ Integrates transport, switching, signaling and other cost data from HM5.0a
- ◆ Model developed using Microsoft Excel and Access

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HAI Consulting, Inc.*



Data Pre-processing

- ◆ Before creating a specific state model, data “pre-processing” is required
- ◆ Cluster Pre-processing (MS Access)
 - ◆ Pulls data for a state from HM 5.0a Cluster database
 - ◆ Based technology specific engineering parameters, clusters are analyzed and divided by line count
 - ◆ Cell site coverage and capacity requirements are determined
 - ◆ Data written to an Excel spreadsheet and copied into HWM template

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HAI Consulting, Inc.*



Cluster Analysis

- ◆ Clusters over a certain line size are considered “Target Clusters”
 - ◆ Target Cluster area and line data are averaged
 - ◆ Target Clusters have cell sites built specifically to serve them with adequate height and channels to meet calculated coverage and traffic load
- ◆ “Non Target Clusters”
 - ◆ Area and line data are aggregated for clusters that do not meet requirements to be Target Clusters
 - ◆ Cell sites are specified to meet total coverage and traffic load for Non Target Cluster area

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Data Pre-processing (Cont'd)

- ◆ **HM 5.0a Pre-processing**
 - ◆ **HM 5.0a is run for all companies in a state. Default values are used.**
 - ◆ **Data from "Investment Input" output sheet aggregated by wire center into a single Excel worksheet**
 - ◆ **Aggregated data put into a HWM pre-processing workbook, resulting new worksheet copied into HWM template**

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HAI Consulting, Inc.*



Wireless Model Cost Factors

- ◆ **Two cost factors derived from HM 5.0a results are used in HWM**
 - ◆ **Radio equipment monthly cost factor**
 - ◆ **The ratio of annual cost and overhead factors to total investment**
 - ◆ **Applied to wireless investment to determine a monthly cost**
 - ◆ **Retail uncollectible factor**
 - ◆ **The cost of uncollectible billings as a % of monthly cost**

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HWM State Model Template

- ◆ MS excel 97 workbook with integrated worksheets
 - ◆ “Model Assumptions”
 - ◆ “Lookup Tables”
 - ◆ “Cluster and Cell Analysis”
 - ◆ Cluster pre-processing data
 - ◆ “HM Costs”
 - ◆ HM 5.0a pre-processing data and factors
 - ◆ “WC Data”
 - ◆ “Summary Model Results”

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HWM Variable Inputs

- ◆ Model Assumptions Worksheet
 - ◆ User interface for costs and inputs to the model
 - ◆ Capacity Variables
 - ◆ Backhaul Facilities Expense Variables
 - ◆ Recurring Subscriber Expense Variables
 - ◆ Subscriber and Subscriber Premises Investment, Acquisition and Operating Variables
 - ◆ USF Subsidy Thresholds
 - ◆ Also generates inputs for Cluster pre-processing

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HWM Variable Inputs (Cont'd)

- ◆ **Lookup Tables Worksheet**
 - ◆ **Site Investment**
 - ◆ Varying height towers based on coverage requirement
 - ◆ Provides tower and structure investment detail
 - ◆ **Traffic Analysis and Radio Channel Investment**
 - ◆ Based on offered load from cluster lines in cell
 - ◆ **Microwave System Costs**
 - ◆ Based on backhaul requirements

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The WC Data Worksheet

- ◆ **The "Engine" of HWM**
 - ◆ Performs all wireless cost and investment calculations by wire center
 - ◆ Integrates inputs, data and factors from HM 5.0a and Model Assumptions to produce results
 - ◆ Contrasts wireless vs. wireline results
 - ◆ Identifies wireless or wireline advantages by wire center
 - ◆ Performs certain results checking tests

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Summary Model Results Worksheet

- ◆ **State Geographic and Demand Data**
 - ◆ General information in, and results from, the model
- ◆ **Investment Summary for The Entire State**
- ◆ **USF Subsidy Summary Results**
- ◆ **USF Subsidy Analysis**
 - ◆ Wireline vs. Wireless

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Summary Model Results (Cont'd)

- ◆ **Estimated "Tapered" Subsidy**
 - ◆ Analysis of the subsidy requirements if the most cost-effective technology is selected for each wire center
- ◆ **Wireless vs. Wireline Costs - All Wire Centers**
 - ◆ CLLIs With A Wireline Cost Advantage
 - ◆ CLLIs With A Wireless Cost Advantage
- ◆ **Cell Site Coverage Tests**
 - ◆ Engineering validation to be sure no CLLIs with a wireless cost advantage have had more cell sites calculated than can realistically be built

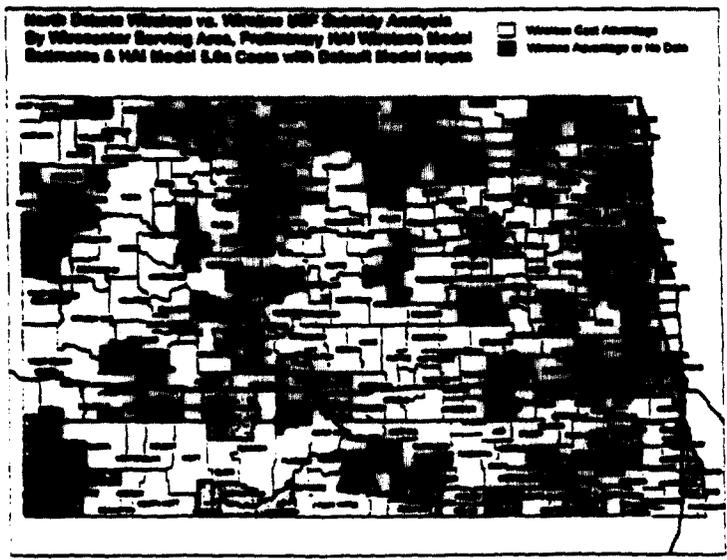
*Western Wireless Corp.
HAI Consulting, Inc.*



Other Model Features

- ◆ ILEC Summary Worksheet
 - ◆ Predefined Pivot Table for additional analysis
- ◆ Mapping Data Worksheet
 - ◆ Highlights certain results for export to MapInfo and similar mapping programs

*Western Wireless Corp.
HAI Consulting, Inc.*



*Western Wireless Corp.
HAI Consulting, Inc.*

Service List

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