

## **Transmission Line Siting: One Agency's Approach to Public Involvement**

This paper provides a brief overview of the public involvement approach Western Area Power Administration has used in transmission line projects during the past 20 years.

### **Background**

Western is one of four Federal power marketing administrations, and markets and transmits power generated at Federal dams in the West. This Department of Energy agency operates in 15 Western and Midwestern states and owns and operates nearly 17,000 miles of high voltage transmission lines. Since 1980, Western has built 1,900 miles of steel pole line and 1,100 miles of wood pole lines. Of these, 1,200 miles were built in the 1990s and 1,800 miles were built in the 1980s. A detailed listing of Western's transmission line projects is provided in Appendix A.

As a Federal agency, Western is required to comply with the National Environmental Policy Act of 1969 when building transmission lines. This law requires environmental analysis of significant Federal actions that may impact the environment. One aspect of complying with NEPA includes involving members of the public in decisions that may impact them. To that end, Western has worked with stakeholders to identify and address their concerns related to siting transmission lines. Examples of Western's approach are outlined in this paper.

### **Public Involvement Framework**

Western has actively sought to inform, consult with, and involve affected and concerned stakeholders in many of its decisions, including its decisions to build transmission lines. While the agency has the power of eminent domain by virtue of our Federal status, we know that working with concerned citizens and landowners is a much more satisfying and productive approach to transmission line siting than fighting in court with angry opponents.

To this end, Western has generally managed its public involvement activities for transmission line siting at the Involve level, using IAP2's Public Participation Spectrum<sup>1</sup> (See Figure 1) as a measuring device.

IAP2 outlines the goal of this level of public participation as working "directly with the public throughout the process to ensure that public issues and concerns are consistently understood and considered." The spectrum also articulates a promise from the agency to the public. At the Involve level, the promise is: "We will work with you to ensure that your concerns and issues are directly reflected in the alternatives developed and provide feedback on how the public influenced the decision."

Western carries out its public involvement programs by integrating them in the overall project plan and making the project manager responsible for this aspect as well as other project activities. Western also clearly integrates public involvement activities into the project decision process, identifying information needed by the public and by the agency and the public involvement objectives at each step of the decision process. A sample of this planning approach is provided at Figure 2.

Western believes that public involvement activities must be tailored to each specific project and therefore cannot be applied uniformly across the board. Rather, each public involvement plan must both address the specific nature of the agency activity for which it is being developed and respond to the unique characteristics of the affected communities. Western uses a six-step process to design its public involvement programs:

1. Identify the decision-making process.
2. Identify the public involvement objectives for each stage of the decision process.
3. Identify the information exchange needed to complete each stage in the decision process.
4. Identify the publics with whom information must be exchanged.
5. Identify special circumstances surrounding the issues that could affect selection of public involvement techniques.
6. Identify the appropriate techniques—and their sequence—to accomplish the required information exchange.<sup>2</sup>

Public involvement techniques should be selected as a result of carefully analyzing exactly what is to be accomplished, with whom, when, and—only then—how. In the same way that the siting process for a transmission line must take into account a variety of technical and geographic factors, so must the supporting public involvement activities take into account the degree of impacts and levels of controversy over the proposed project.

Western staff historically used a narrative approach to determining and labeling the level of impacts and controversy surrounding proposed projects. A matrix approach, developed by IAP2, is planned for future use as part of the analytical process of determining these levels. These matrices can be used to compare impacts and controversy levels for different projects and then can be used to help project managers determine the level of NEPA compliance warranted. Sample matrices are found at Figures 3 and 4.

Closely related to identifying the issues is the need to identify those stakeholders who are impacted by the proposed project or believe they may be impacted by the proposed project. Western generally uses a combination of three methods to identify stakeholders:

- Participants self-select their involvement activities based on their interest in or concern about the issue or project.
- Staff identify stakeholders based on past interest in similar projects or a need to ensure certain viewpoints are considered.
- Other stakeholders who might be interested or concerned are identified by participants already involved.

Since new stakeholders can be identified and involved in a project throughout its life, Western make a practice of maintaining an ongoing summary of the proposed project, its status and when and how members of the public can be involved in the various decision steps.

Finally, once stakeholders are identified, Western assesses their level of interest and concern as well as the level of public participation desired by both internal and external stakeholders. These can be done qualitatively or by using a tool such as the matrices at Figures 5 and 6.

Once activities are selected and carried out to accomplish the desired purposes, the work is not over yet. The final step in any public involvement program is to monitor and evaluate the results. Three key areas Western evaluates are:

- Achieving a satisfactory and representative level of public input into project planning
- Degree to which the public involvement process lead to publicly acceptable plans and approaches
- How the management process helped or hindered public involvement activities

### **Sample public involvement activities**

While public involvement activities are designed to meet the needs of a specific proposed project, many transmission line projects have historically ended up with similar components because the public involvement objectives and the information needed from the public and the agency were similar. The matrix in Figure 2 shows some of these sample activities.

### **Public involvement impacts of Western's decisions**

Perhaps the greatest measure of the effectiveness of public involvement is the degree of impact the public has on a decision. Following are short examples of how Western's decisions were adjusted to accommodate stakeholders concerns:

#### *Flatiron-Erie 115-kV Transmission Line (Colorado)*

Western proposed to upgrade a 31-mile segment of this line to improve its ability to carry the required amount of power and to meet safety requirements for electrical clearance. The line runs through the city of Longmont. An earlier version of this project to double circuit the line garnered public opposition. As a result, Western conducted additional electrical system studies and determined the double circuiting could be postponed if various substation improvements and procedure changes were made and if the Flatiron-Erie line were updated. Because the local community was very interested in this project and viewed itself as being negatively impacted, Western determined it needed a proactive and extensive public involvement program. Activities included announcements about the project, a series of newsletters throughout the EIS process, meetings with various community and other groups. Western made a particular effort to repeat back to the public the concerns raised in the earlier project and to address those concerns in this action at the very beginning. Because the public raised health and safety concerns related to exposure to electric and magnetic fields, Western conducted additional analysis to evaluate the state of EMF health effects research and made a variety of information on this topic available to interested stakeholders. In the end, Western built the project according to its needs and the public has accepted the results.

#### *Charlie Creek-Belfield 345-kV Transmission Line (North Dakota)*

Western proposed to build a new 38-mile line segment to increase the transmission capacity, correct low voltages, reduce overloaded facilities and decrease outages in the area. Public scoping meetings in the area surfaced landowner concerns about the impacts to farming operations, EMF effects and the benefits to the local area from the project. Federal and state agencies raised a concern about the visual impact of the proposed project on the viewshed from nearby Theodore Roosevelt National Park. As a result of these concerns, Western evaluated a number of possible transmission corridors and rated them in terms of their impacts to land use

and viewshed. The environmentally preferred route turned out to also have the highest visual impact. The agency preferred route showed the least land use impacts. But because the rankings between these corridors were so close, both were carried forward for additional public comment in two series of workshops. Western ended up building a slightly longer line (40.74 miles) that had both the least visual and land use impact as a result of accommodating public concerns.

*Sidney-North Yuma 230-kV Transmission Line (Nebraska and Colorado)*

Western proposed to build an 80-mile transmission line between Sidney, Neb., and Yuma, Colo., in cooperation with Tri-State Generation and Transmission Association and Public Service Company of Colorado. The line was designed to increase the load-serving capability of the three utilities' transmission systems and to support the full transfer capability of the Sidney DC Tie. Western used a stepped approach to select the route for this line, shared its progress and invited public comment as route selection alternatives were refined. Several potential study corridors were identified. Each was evaluated against a set of criteria identifying most desirable aspects and least desirable aspects. Some corridors were immediately eliminated because of conflicting land use. Following an engineering review, route options were shared at public meetings in Yuma, Fleming and Sidney. Two new route links were added in response to public comments. Western used a series of ranking exercises based on 32 selection criteria to refine the route selection. Route adjustments were made several times to accommodate future planned land use. Of the 10 final routes evaluated, Western selected and built the line on the environmentally preferred route.

*Blue River-Gore Pass 230/345-kV Transmission Line (Colorado)*

Western proposed to build a 30-mile transmission line from Kremmling, Colo., to a new substation near Ute Pass Road. The line would provide additional capacity in Summit and Grand counties and provide an additional path between the generating plants in western Colorado and the major load area just east of the Front Range. The project was originally studied in the early 1980s and a decision was reached by the Rural Electrification Administration to build the line as part of a 90-mile line from Hayden to Blue River. After initially approving the project, Grand County revoked its approval. The US Forest Service, in response, stayed construction on lands it administers. The participating utilities (Western, Tri-State Generation and Transmission Association, Colorado Ute Electric Association and Platte River Power Authority) took another look at their needs and revised plans to improve the reliability of the underlying 115/69-kV system. In the revised proposal, Western planned to also remove several 115/69-kV line segments. During the planning stages, Western hosted several meetings with both counties, interested stakeholders and special interest communities. Consultation with the US Forest Service also resulted in route changes to avoid the pristine and remote areas in the Williams Fork drainage. Western worked with the local and state hang gliding associations to develop a routing that addressed their concerns. Western offered to develop an alternate hang gliding site when it appeared that the preferred route would impact the traditionally used site. The hang gliders initially accepted the alternate site but later retracted their acceptance. Despite this, Western continued to work with the hang gliders to make adjustments to the alternate site to maximize its suitability. In the Final Supplemental EIS, Western noted: "Western recognizes that the proposal will not satisfy every one, but [it] feels that it is the best compromise available that will allow the line to be built in a timely, cost effective and environmentally acceptable manner and still

provide a reasonable and safe project for all concerned.” Western selected and built the line on its preferred route.

### *California-Oregon Transmission Project (California and Oregon)*

Western and almost all of the publicly and privately owned utilities in California jointly proposed to build a 340-mile 500-kV transmission line from southern Oregon to Tesla Substation in central California. Related proposals included the Pacific Northwest Reinforcement Project and the 84-mile Los Banos-Gates Project. The project was designed to increase the transfer capability of power between California and the Pacific Northwest. Planning for COTP included significant public involvement. Scoping began with 34 meetings in California and Oregon. Numerous corridor and route workshops were held as well as another series to refine route selections during the EIS process. A series of newsletters was distributed every two to three months during planning and construction of the project. Extensive opportunities existed for the public to be involved in designing the proposed route during preparation of the Draft Environmental Impact Statement. However, public comments on the Draft EIS resulted in new routing options that were incorporated into the COTP preferred alternative. Public comments and the resulting changes were so extensive that the documentation in the final report fills four volumes. Volume 1 summarizes the changes to the project made as a result of public comments. Volumes 2A and 2B present written public comments and agency responses. Volume 3 documents the testimony comments and agency responses. The project was completed and energized in 1993.

### **Program accomplishments**

- In Western’s entire history, the agency has never been sued over the NEPA adequacy of any transmission line siting project.<sup>3</sup>
- All major transmission line proposals that have undergone NEPA compliance work, including public involvement activities, have been successfully been constructed with the exception of the Navajo Transmission Line which has not been built because the applicant has not been able to secure enough funding to complete the project.
- Western has rarely needed to invoke its eminent domain authority to secure rights-of-way for planned transmission projects.<sup>4</sup> For example, on the 350-mile 500-kV California-Oregon Transmission Project, Western secured ROW easements on 400 parcels. Of those, only three required condemnation actions. On Western’s newly completed Sutter-O’Bannion 230-kV transmission line, interconnecting Sutter Power Plant with Western’s system in northern California, only one condemnation action is pending out of 10 ROW acquisitions. The Griffith Energy Project interconnection in Kingman, Ariz., also completed in 2000, had just one condemnation out of 11 ROW acquisitions needed for a 30-mile transmission.

### **Notes:**

1. IAP2 is the International Association for Public Participation, headquartered in Alexandria, VA, [www.iap2.org](http://www.iap2.org). The Public Participation Spectrum, copyright 2000, is used by permission.
2. Public Involvement Handbook. Western Area Power Administration, Golden, CO, 1994. p2-1 and -2.

3. Western inherited a transmission project (Miles City-New Underwood) from its predecessor agency on which the NEPA compliance work was challenged. Western opted to prepare additional environmental studies to address the concerns raised.
4. Western's historical condemnation rate is 4 percent as compared to the Federal average of 10 percent. This success rate is due to ensuring stakeholders are well informed about Western's proposed actions and have an opportunity to have their concerns considered in the decision process. To the degree that information and involvement contribute to successful ROW negotiations, successful public involvement activities play a part.

Figure 1: IAP2's Public Participation Spectrum. © 2000, IAP2. Used with permission.

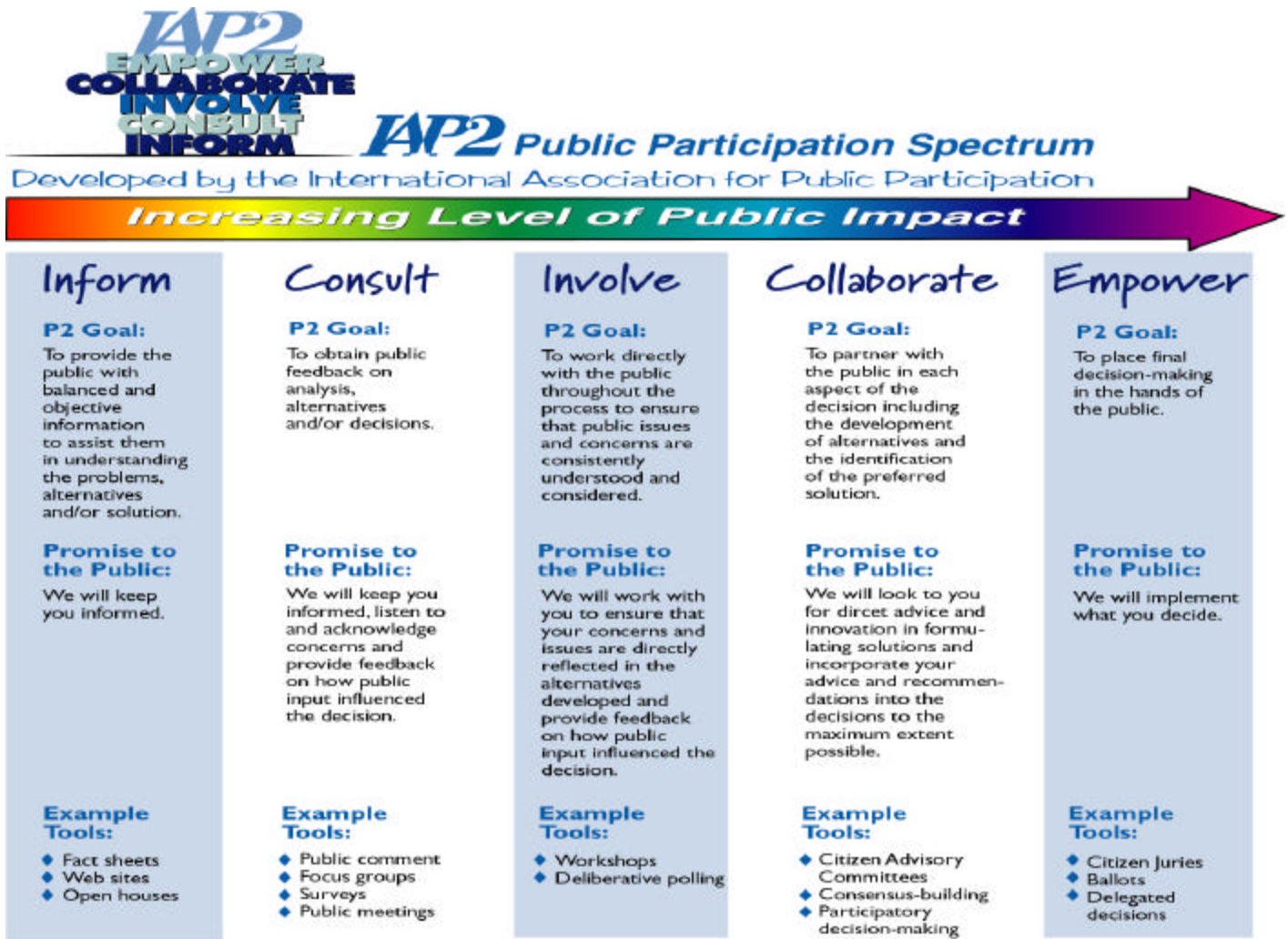


Figure 2. A planning approach to integrating public involvement into the decision process

<b>Decision step</b>	<b>Public involvement objective</b>	<b>Information needed <i>by</i> the public</b>	<b>Information needed <i>from</i> the public</b>	<b>Supporting public involvement activity</b>
Issue identification/ sensing public interest	<ul style="list-style-type: none"> <li>• Obtain a complete understanding of how the issue is viewed by all significant interests</li> <li>• Identify the level of interest in future public involvement opportunities surrounding the issue</li> </ul>	<ul style="list-style-type: none"> <li>• Nature of the study and decision process</li> <li>• What the proponent knows about the issue(s)</li> <li>• How to get information and opportunities for participation</li> <li>• What issues are likely to arise</li> </ul>	<ul style="list-style-type: none"> <li>• Perspectives identifying the issue(s)</li> <li>• Perspectives on the effects of the issue(s)</li> <li>• Identification of which publics are interested in the issue(s) or are affected by it</li> <li>• Degree of desired involvement</li> <li>• Which involvement techniques are most suitable/preferable</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Federal Register</i> Notice announcing the beginning of a public process</li> <li>• News release announcing the process, offering involvement opportunities and seeking initial comments</li> <li>• Direct mailing to identified stakeholders announcing the process, offering involvement opportunities and seeking initial comments</li> <li>• Initial or scoping meetings</li> <li>• Web site with information posted and feedback opportunity available</li> </ul>
Alternative formulation	<ul style="list-style-type: none"> <li>• Develop a complete “shopping list” of all possible alternative actions</li> </ul>	<ul style="list-style-type: none"> <li>• Summary of the issue as identified</li> <li>• List of the range of alternatives already identified</li> </ul>	<ul style="list-style-type: none"> <li>• Additional alternatives known to the public</li> <li>• Additional factors the public believes should be included in the analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Scoping report</li> <li>• Periodic newsletters reporting on progress</li> <li>• Workshops to develop/define alternatives</li> <li>• Feedback/comment opportunities</li> <li>• Web site with information posted and feedback opportunity available</li> </ul>
Alternative evaluation	<ul style="list-style-type: none"> <li>• Develop a complete understanding of the impacts of various</li> </ul>	<ul style="list-style-type: none"> <li>• Factors to be used in analyzing the alternatives</li> <li>• Methodology to be used in</li> </ul>	<ul style="list-style-type: none"> <li>• What various publics like and dislike about the detailed alternatives</li> </ul>	<ul style="list-style-type: none"> <li>• Newsletters reporting on alternatives, evaluation criteria and methodology</li> </ul>



	<p>alternatives, as viewed by the public(s)</p> <ul style="list-style-type: none"> <li>• Develop an assessment of the relative merit assigned to the alternatives by various interests, including their reason for these evaluations</li> </ul>	<p>analyzing alternatives</p>	<ul style="list-style-type: none"> <li>• Revisions to the alternatives that could make them more acceptable</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation/trade off exercise on alternatives</li> <li>• Web site with information posted and feedback opportunity available</li> </ul>
<p>Decision making</p>	<ul style="list-style-type: none"> <li>• Make a decision which is both technically feasible and politically acceptable</li> </ul>	<ul style="list-style-type: none"> <li>• An explanation of the agency's preferred alternative and the reasons for that choice</li> <li>• An explanation of the process for reviewing the decision</li> <li>• Announcement of the final decision and the reasons for it</li> </ul>	<ul style="list-style-type: none"> <li>• Reactions to the decision</li> <li>• Suggestions for modifications that could make the decision more acceptable</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Federal Register</i> notice announcing the decision</li> <li>• News release announcing the decision and how to get more information</li> <li>• Newsletter announcing the decision and providing reasons for it</li> <li>• Web site with the decision announcement and all the background on the reasons for it; feedback opportunity available</li> </ul>

Figure 3. Assessment of Potential Impacts. © 2000, IAP2. Used with permission.

<b>Assessment of Potential Impacts</b>				
<b>Potential and/or Perceived Impacts</b>	<b>No Impact</b>	<b>Low Impact</b>	<b>Medium Impact</b>	<b>High Impact</b>
Livelihood, employment, or lost productivity				
Property values				
Local economic vitality				
Personal health and safety				
Health and safety of family members or loved ones				
Endangered environmental resources				
Nuisance issues such as noise, odors or traffic				
Growth management				
Threats to cultural, racial, or gender identity				
Threats to community or religious culture or history				
Restricted freedom of choice				
Media coverage and/or interest				
Political controversy				
History of neglect or mistrust				
Other issues				

Figure 4. Assessment of Potential Controversy. © 2000, IAP2. Used with permission.

<b>Assessment of Potential Controversy</b>				
<b>Potential and/or Perceived Controversy</b>	<b>No Controversy</b>	<b>Low Controversy</b>	<b>Medium Controversy</b>	<b>High Controversy</b>
Livelihood, employment, or lost productivity				
Property values				
Local economic vitality				
Personal health and safety				
Health and safety of family members or loved ones				
Endangered environmental resources				
Nuisance issues such as noise, odors or traffic				
Growth management				
Threats to cultural, racial, or gender identity				
Threats to community or religious culture or history				
Restricted freedom of choice				
Media coverage and/or interest				
Political controversy				
History of neglect or mistrust				
Other issues				

Figure 5. Assessment of the level of public interest and concern. © 2000, IPA2. Used with permission.

<b>Sample Assessment: Level of Public Interest and Concern</b>					
<p>Not every issue requires public participation. It is important to assess the degree to which the public considers the issue significant. The public will become involved according to its perception of the seriousness of the issue. This table presents one way to think about the issue. Think about which questions you would ask to help gauge the level of public concern.</p>					
Assessment Questions	Very Low	Low	Moderate	High	Very High
1. What is the probable level of difficulty in solving the problem?					
2. What is the level of existing controversy on this or related issues?					
3. How significant are the potential impacts to the public?					
4. What is the level of significance of this issue to the major stakeholders?					
5. What degree of involvement does the public appear to desire?					
Count number of checks in each column					
Multiply number of checks by the ranking	x1	x2	x3	x4	x5
Enter column score					
Add total of all five column scores					
Divide total score by the number of questions	/5				
Average score					

Figure 6. Assessment of the level of internal need and the likely support for public participation.  
 © 2000, IAP2. Used with permission.

<b>Sample Assessment: Level of Internal Need and Likely Support for Public Participation</b>						
<p>Before determining the level of public participation that is appropriate, it is important to understand the internal issues related to getting public input. In particular, it is important to gauge the receptiveness of the organization to public input and the resource level that will be available. This table presents one way to think about these issues. Think about other questions you would ask to gauge internal issues.</p>						
Assessment Questions	Very Low	Low	Moderate	High	Very High	
1. What is the required level of public input?						
2. To what degree does the public appear to want to be involved?						
3. What is the potential for public impact on the potential outcome?						
4. How significant are the possible benefits of involving the public?						
5. How serious are the potential ramifications of not involving the public?						
6. What is the possibility that the media will become interested?						
7. What is the likelihood that decision makers will give full considerations to public input?						
8. What is the likelihood that adequate resources will be made available to support Public Participation?						
9. What is the likely level of political controversy on this issue?						
Count number of checks in each column						
Multiply number of checks by the ranking	x1	x2	x3	x4	x5	
Enter column score						
Add total of all five column scores	<div style="border: 1px solid black; width: 100%; height: 100%;"></div>					
Divide total score by the number of questions						/9
Average score						

## Appendix A

### Western Transmission Line Projects, 1984-2000

<u>FID</u>	<u>Line</u>	<u>Sec</u>	<u>SubSe</u>	<u>Stat</u>	<u>Name</u>	<u>kV</u>	<u>Type</u>	<u>InServi</u>	<u>Mileag</u>
			<u>c</u>	<u>e</u>				<u>ce</u>	<u>e</u>
BC FMW	1	03	0	CO	CHANGEPOLE-FMET	115	ST	4/1/84	5.17
BC FMW	1	06	0	CO	FMET-FMWEST	115	ST	4/1/84	1.69
BC FMW	1	01	0	CO	BEAVER CREEK-BRUSH TAP	115	WH	4/1/84	4.68
FMWKIC	1	01	0	CO	BIJOUTAP-FMWEST	115	WH	4/1/84	7.70
BC FMW	1	02	0	CO	BRUSHTAP-CHANGE POLE	115	WP	4/1/84	3.90
CODNC	0	00	0	WY	CODY-N.CODY	34.5	WP	6/1/84	1.03
CDYNC	0	00	0	WY	CODYSC-N.CODY	34.5	WP	6/1/84	0.75
FRCHK	0	00	0	CO	FRENCHCK-HOLYOKE	69	WH	10/1/84	0.50
GLANGL	1	01	0	AZ	GILA - NORTH GILA	69	WH	10/1/84	4.80
FRCWAN	1	02	0	CO	FRENCHPC-WAUNETA	115	ST	10/1/84	10.50
STGFRC	1	01	0	CO	FLEMING-HAXTUN	115	WH	10/1/84	11.50
STGFRC	1	02	0	CO	FLEMING-STERLING	115	WH	10/1/84	19.40
FRCWAN	1	01	0	CO	FRENCHCK-FRENCHPC	115	WH	10/1/84	7.49
STGFRC	1	03	0	CO	FRENCHCK-HAXTUN	115	WH	10/1/84	16.20
<b>Total Mileage - 1984</b>									<b>95.31</b>
FP HV	1	04	0	MT	HARLEM-HAVRE	161	WH	6/1/85	52.55
FP HV	1	03	0	MT	MALTA-HARLEM	161	WH	6/1/85	48.67
FP HV	1	01	0	MT	FORT PECK-RICHARDSON COULEE	161	WH	9/1/85	28.55
FP HV	1	02	0	MT	RICHARDSON COULEE - MALTA	161	WH	9/1/85	50.51
<b>Total Mileage - 1985</b>									<b>180.28</b>
TRYLLL	1	01	1	CA	SECTION 1	230	DS	1/1/86	2.14
TRYLLL	1	01	2	CA	SECTION 2	230	SS	1/1/86	10.60
WHY	1	01	0	CA	WHISKEYTOWN TAP-CARR KESWICK	230	SS	1/1/86	0.07
GTFCON	1	02	0	MT	BOLE - CONRAD	230	ST	7/1/86	30.83
GTFCON	1	01	0	MT	GREAT FALLS - BOLE	230	ST	7/1/86	43.28
WHY	2	01	0	CA	WHISKEYTOWN PP- WHISKEYTOWN SS*	4.19 9	WS	11/1/86	0.08
<b>Total Mileage - 1986</b>									<b>87.00</b>
WT SC	1	01	4	IA	SPLIT ROCK-SIOUX CITY IA SECTION 2	345	SS	3/1/87	0.50
CRGRFL	1	02	0	CO	RIFLE(WAPA)-RIFLE(UTE)	230	SS	7/1/87	3.70
RFL SJ	0	02	0	CO	GRAND JUNCTION-MONTROSE	345	SS	7/1/87	55.10
RFLSJ	1	04	0	NM	HESPERUS - WATERFLOW	345	SS	7/1/87	43.08
RFLSJ	1	03	0	CO	MONTROSE-HESPERUS	345	SS	7/1/87	107.80
RFL SJ	0	01	0	CO	RIFLE-GRAND JUNCTION	345	SS	7/1/87	56.50
RFLSJ	1	05	0	NM	WATERFLOW - SAN JUAN	345	SS	7/1/87	0.92
PHXMAR	1	02	0	AZ	LIBERTY-COOLIDGE	115	DS	10/1/87	33.70
COLLIB	0	00	0	AZ	COOLIDGE-LIBERTY	230	SS	10/1/87	82.00
<b>Total Mileage - 1987</b>									<b>383.30</b>

PK LU	1	01	0	WY	LUSK-LUSKTAP	69	WP	1/1/88	2.50
ARHSG 1	1	01	0	WY	ARCHER-MYERSTAP	115	SS	1/1/88	4.57
ARHSG 1	1	02	0	WY	LAGRANGE-ROUNDTOP	115	SS	1/1/88	19.70
ARHSG 1	1	03	0	NE	LAGRANGE-STEGALL	115	SS	1/1/88	17.20
ARHSG 1	1	04	0	WY	MYERS TAP-POLECK	115	SS	1/1/88	10.80
ARHSG 1	1	05	0	WY	POLECK-ROUNDTOP	115	SS	1/1/88	19.60
BY LN	1	01	0	CO	BIG SANDYCN-LIMONCN	115	WH	1/1/88	0.61
KOKWLD	1	03	0	CO	KODAKETP-WINDSOR	115	WH	1/1/88	0.57
ARPKOK	1	03	0	CO	KODAKWTP-WINDSOR	115	WH	1/1/88	0.13
DRLWAC	1	04	0	CO	WRAYWAPA-WRAYWPTP	115	WH	1/1/88	0.80
BC FMW	1	05	0	CO	FMESPL-FMET	115	WP	1/1/88	0.16
HVRMED4	1	01	1	NV	SECTION 1	230	DS	1/1/88	8.60
HVRMED5	1	01	1	NV	SECTION 1	230	DS	1/1/88	8.60
SCETHE	1	01	0	WY	BADWATER-SPENCE	230	SS	1/1/88	65.20
SCETHE	1	02	0	WY	BADWATER-THERMOP	230	SS	1/1/88	43.80
BRUGOT	0	00	0	CO	BLUE RIVER-GORE PASS	230	SS	1/1/88	30.22
SG WS	0	00	0	NE	STEGALL-WAYSIDE	230	SS	1/1/88	93.06
SCEDJ	0	00	0	WY	CASPRTM-SPENCE	230	ST	1/1/88	39.70
YT PY	0	00	0	WY	YELLOWBR-YELLOWTLP	230	UN	1/1/88	0.90
SDTSCSW	0	00	0	NE	SIDNEY-SIDNEYDC	230	WH	1/1/88	0.00
SDTSCSE	0	00	0	NE	SIDNEY-SIDNYDCE	230	WH	1/1/88	0.00
CASWM	1	01	0	WY	ARMN TAP-WALTMAN	69	WH	6/1/88	4.10
CASWM	1	02	0	WY	CASPER-TENMILE	69	WH	6/1/88	9.34
CASWM	1	03	0	WY	POWDER RIVER-TEN MILE	69	WH	6/1/88	27.58
CASWM	1	04	0	WY	POWDER RIVER-WALTMAN	69	WH	6/1/88	12.21
<b>Total Mileage - 1988</b>									<b>419.95</b>

BDWLCB	0	00	0	WY	BADWATER-LOST CABIN	69	WP	1/1/89	1.50
HV SH2	3	01	0	MT	SHELBY - SHELBY 2	115	WS	2/1/89	2.63
CONSH2	0	00	0	MT	CONRAD-SHELBY	230	SS	2/1/89	29.85
HDNGOT	0	00	0	CO	HAYDEN-GORE PASS	345	SS	2/1/89	60.00
CPLGLD	1	01	0	WY	CASPERPP-REFINERYCN	115	ST	6/1/89	5.50
CPLGLD	1	05	0	WY	GLENRSCN-REFNRYTP	115	WH	6/1/89	18.90
FOLRSC	1	01	2	CA	SECTION 2	230	SS	8/1/89	0.10
KE CW 3	1	01	0	CA	AIRPORT - COTTONWOOD	230	SS	9/1/89	9.38
					SECTION 1				
KE CW 3	2	01	0	CA	AIRPORT - COTTONWOOD	230	SS	9/1/89	0.52
					SECTION 2				
KE CW 3	4	01	0	CA	KESWICK AIRPORT SECTION 2	230	SS	9/1/89	0.52
SHRWTF	0	00	0	NM	SHIPROCK-WATERFLOW	13.8	WP	11/1/89	2.70
						0			
HVRMED4	1	01	2	NV	SECTION 2	230	DS	11/1/89	0.27
<b>Total Mileage - 1989</b>									<b>131.87</b>

BEABOZ	1	01	2	CO	COLORADO SECTION	345	SS	2/1/90	84.65
BEABOZ	1	01	1	UT	UTAH SECTION	345	SS	2/1/90	17.60
BBSHM	0	00	0	WY	BUFFALO BILL-HEART	69	DS	3/1/90	1.80
					MOUNTAIN				
BBSNC	0	00	0	WY	BUFFALO BILL-NORTH CODY	69	DS	3/1/90	5.70
HM NC	0	00	0	WY	HEARTMTN-N.CODY	69	DS	3/1/90	3.90
BBPBBS1	0	00	0	WY	BUFFALO BILL-BUFFALO BILL 1	69	SS	3/1/90	0.11
BBPBBS2	0	00	0	WY	BUFFALO BILL-BUFFALO BILL 2	69	SS	3/1/90	0.11
JT GK	1	02	0	ND	PICKERT-GRAND FORKS	230	WH	11/1/90	49.00
<b>Total Mileage - 1990</b>									<b>162.87</b>

SHACW 2	1	01	2	CA	SECTION 2	230	DS	1/1/91	5.72
TRYBNK	1	01	0	CA	SECTION 1	230	SS	1/1/91	0.18
SHACW 2	1	01	1	CA	SECTION 1	230	SS	1/1/91	23.78
TRYBNK	1	02	0	CA	SECTION 2	230	SS	1/1/91	2.12
LIBPAD2	2	01	0	AZ	LIBERTY-BUCKEYE	230	DS	3/1/91	6.21
LIBPAD2	3	01	0	AZ	LIBERTY-BUCKEYE	230	DS	3/1/91	6.21
LIBPAD2	2	02	0	AZ	BUCKEYE-EAGLE EYE	230	SS	3/1/91	53.20
LIBPAD2	2	03	0	AZ	EAGLE EYE-PARKER	230	SS	3/1/91	59.10
LV NC	1	03	0	WY	N.CODY-N.CODYPC	69	ST	4/1/91	0.50
LV NC	1	01	0	WY	GARLAND-LOVELL	69	WH	4/1/91	18.50
LV NC	1	02	0	WY	GARLAND-POWELLTP	69	WH	4/1/91	5.40
LV NC	1	04	0	WY	N.CODYPC-RALSTON	69	WH	4/1/91	14.90
LV NC	1	05	0	WY	POWELLTP-RALSTON	69	WH	4/1/91	9.60
HVRMED2	1	01	2	NV	SECTION 2	230	SS	4/1/91	0.71
HT KIC	1	02	0	CO	KIOWA CK-KIOWA CN	115	DS	6/1/91	1.14
FMWKIC	1	03	0	CO	KIOWA CK-KIOWA PC	115	ST	6/1/91	1.13
KICORC	0	00	0	CO	KIOWA CK-ORCHARD	115	ST	6/1/91	0.02
JT GK	1	01	0	ND	JAMESTOWN-PICKERT	230	WH	8/1/91	61.36
KRMWGP	1	01	0	CO	KREMLING-TROUBLE	138	ST	9/1/91	4.45
KRMWGP	1	02	0	CO	TROUBLE-WINDYGAP	138	ST	9/1/91	17.60
<b>Total Mileage - 1991</b>									<b>291.83</b>

HJ WAF	1	03	0	WY	WARREN-WARRNSPL	115	WH	1/1/92	2.10
RSCELVD	0	00	0	CA	ROSEVILLE-ELVERTA	230	DS	1/1/92	14.00
RSCELV2	0	00	0	CA	ROSEVILLE-ELVERTA #2	230	DS	1/1/92	13.24
HVRMED3	1	01	2	NV	SECTION 2	230	SS	1/1/92	0.63
CH MM	1	04	0	WY	MEDBOWCN-MIRACLEM	115	SS	2/1/92	6.60
HJ MM	1	03	0	WY	MIRACLEM-OASISMID	115	SS	2/1/92	6.60
MM S	1	01	0	WY	KORTES-KORTESTP	115	WH	2/1/92	0.64
MM S	1	02	0	WY	KORTESTP-MIRACLEM	115	WH	2/1/92	4.17
MM S	1	03	0	WY	KORTESTP-SEMINOE	115	WH	2/1/92	2.41
MM SN	1	01	0	WY	MIRACLEM-SEMINOTP	115	WH	2/1/92	6.70
HJ MM	1	04	0	WY	OASISMID-OASISTAP	115	WH	2/1/92	79.00
MM SN	1	02	0	WY	SEMINOE-SEMINOTP	115	WH	2/1/92	0.25
CCRBEF	0	00	0	ND	CHARLIE CREEK-BELFIELD	345	SS	3/1/92	40.74
GS MG	1	01	0	NE	BAYARDTP-CBAYRDTP	34.5	WP	5/1/92	0.99
GS MG	1	02	0	NE	BAYARDTP-MINITATP	34.5	WP	5/1/92	13.00
GS MG	1	03	0	NE	CBAYRDTP-CTBAYARD	34.5	WP	5/1/92	0.99
GS MG	1	05	0	NE	GERING-MINITATP	34.5	WP	5/1/92	7.10
GC PWL	0	00	0	AZ	GLEN CANYON-POWELL (CITY	69	WH	7/1/92	2.70
OF PAGE)									
PHXMAR	1	01	0	AZ	LIBERTY-PHOENIX	115	DS	10/1/92	2.20
LIBPHX	1	01	1	AZ	SECTION 1	230	DS	10/1/92	19.90
LIBPHX	1	01	2	AZ	SECTION 2	230	DS	10/1/92	2.20
<b>Total Mileage - 1992</b>									<b>226.16</b>

COPPB	1	04	0	WY	BOYSEN-COPPERMT	34.5	WH	2/1/93	3.00
CPJODA	0	00	0	CA	CAPTAIN JACK-OLINDA	500	SS	3/1/93	148.00
ODATCY	1	02	0	CA	MAXWELL - TRACY	500	SS	3/1/93	112.00
ODATCY	1	01	0	CA	OLINDA - MAXWELL	500	SS	3/1/93	80.00
TCYTSJ2	0	00	0	CA	TESLA-TRACY (TESLA BYPASS)	500	SS	3/1/93	7.00
TCYTSJ1	0	00	0	CA	TRACY-LOS BANOS (TESLA	500	SS	3/1/93	7.00



BYPASS)									
CASGLDN	1	03	0	WY	CASPCN2-CASPCN3	115	ST	10/1/93	0.46
CASGLDN	1	04	0	WY	CASPCN3-CASPCN4	115	ST	10/1/93	12.89
CASGLDN	1	01	0	WY	CASPCN1-CASPCN2	115	WH	10/1/93	1.01
CASGLDN	1	02	0	WY	CASPCN1-CASPERLM	115	WH	10/1/93	1.86
CASGLDN	1	05	0	WY	CASPCN4-GLENRCKN	115	WH	10/1/93	18.90
<b>Total Mileage - 1993</b>									<b>392.12</b>

SDTNYU	1	01	0	CO	NYUMASPL-SIDNYSTL	230	WH	1/1/94	27.00
SDTNYU	1	02	0	NE	SIDNEY-SIDNYSTL	230	WH	1/1/94	13.00
HT TRR	1	03	0	CO	ERIECN-TERRYST	115	WH	2/1/94	14.10
HVRMED6	1	01	3	NV	SECTION 3	230	SS	4/1/94	1.51
LIML	1	04	0	NE	HARTVLTP-LIMESTON	34.5	DS	5/1/94	1.26
LIML	1	05	0	WY	LINGLE-LINGLRUR	34.5	DS	5/1/94	1.69
LIMPPPL	1	01	0	WY	LIMESTON-TGUERNTP	34.5	ST	5/1/94	1.26
LIML	1	01	0	WY	AMOCO-FTLARATP	34.5	WP	5/1/94	1.86
LIML	1	02	0	WY	AMOCO-LINGLRUR	34.5	WP	5/1/94	6.49
GS MG	1	04	0	NE	CBAYRDTP-MCGREW	34.5	WP	5/1/94	10.00
GS WLC	1	01	0	NE	CTYMTCHL-MITCHELL	34.5	WP	5/1/94	1.46
GS WLC	1	02	0	NE	CTYMTCHL-WEST SUB	34.5	WP	5/1/94	0.95
EMLLY	1	01	0	NE	E.MORRIL-LYMANRUL	34.5	WP	5/1/94	5.87
TO WLC	1	01	0	NE	E.MORRIL-MORRILL	34.5	WP	5/1/94	1.42
TO WLC	1	02	0	NE	E.MORRIL-WILDCAT	34.5	WP	5/1/94	2.97
LIML	1	03	0	WY	FTLARATP-HARTVLTP	34.5	WP	5/1/94	9.45
GS WLC	1	03	0	NE	GERING-SEIVERPI	34.5	WP	5/1/94	7.13
TO WLC	1	03	0	WY	HENRY-HENRYSTL	34.5	WP	5/1/94	0.40
TO WLC	1	05	0	NE	HENRYSTL-MORRILL	34.5	WP	5/1/94	5.47
TO WLC	1	04	0	NE	HENRY-TORINGTN	34.5	WP	5/1/94	9.90
L TO	1	01	0	WY	LINGLE-TLINGLE	34.5	WP	5/1/94	2.64
EMLLY	1	02	0	WY	LYMAN-LYMANTN	34.5	WP	5/1/94	12.13
EMLLY	1	03	0	WY	LYMANRUL-LYMANTN	34.5	WP	5/1/94	3.62
GS WLC	1	04	0	NE	MITCHELL-SEIVERPI	34.5	WP	5/1/94	3.30
LIMPPPL	1	02	0	WY	PLATPIPE-TGUERNTP	34.5	WP	5/1/94	4.33
L TO	1	02	0	WY	TLINGLE-TORRRURL	34.5	WP	5/1/94	8.68
L TO	1	03	0	WY	TORINGTN-TORRRURL	34.5	WP	5/1/94	0.25
GS WLC	1	05	0	NE	WEST SUB-WILDCAT	34.5	WP	5/1/94	2.15
HVRMED7	1	01	3	NV	SECTION 3	230	SS	5/1/94	1.43
HVRMED8	1	01	3	NV	SECTION 3	230	SS	6/1/94	1.34
TH CM	0	00	0	WY	CARTERMT-THERMOPL	115	ST	11/1/94	41.40
<b>Total Mileage - 1994</b>									<b>204.46</b>

BGGCM	1	01	0	WY	BIGGEORG-HODOO	69	WH	9/1/95	0.10
BGGCM	1	02	0	WY	CARTER MOUNTAIN-MEETSETP	69	WH	9/1/95	8.00
BGGCM	1	03	0	WY	HODOO-PTCHF KTP	69	WH	9/1/95	16.30
BGGCM	1	04	0	WY	MEETEETS-MEETSETP	69	WH	9/1/95	0.10
BGGCM	1	05	0	WY	MEETSETP-PTCHF KTP	69	WH	9/1/95	3.80
<b>Total Mileage - 1995</b>									<b>28.30</b>

	0	02	0	AZ	ED5 SUB-SUGUARO NO. 1	115	SS	1/1/00	17.20
	0	01	0	AZ	ED2 SUB-ED5 SUB	115	WP	1/1/00	18.50
	0	00	0	AZ	DOME TAP-WELLTON MOHAWK LIGURTA	161	WH	1/1/00	11.30
				AZ	GRIFFITH-MCCONNICO	230	SS	1/1/00	7.78

**Total Mileage - 2000**

**54.78**