AN INVESTIGATION INTO THE EFFECTIVENESS OF ICE WARNING SIGN PLACEMENT PRACTICES
Volume II Appendices

WA-RD 446.2

Draft Research Report
September 1997

Washington State Department of Transportation

Washington State Transportation Commission
Planning and Capital Program Management
in cooperation with:
U.S. DOT - Federal Highway Administration

Draft Research Report
Research Project T9903, Task 72
Advanced Technology Branch Support

AN INVESTIGATION INTO THE EFFECTIVENESS OF ICE WARNING SIGN PLACEMENT PRACTICES
VOLUME II: APPENDICES

by

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Washington State Transportation Commission
Department of Transportation
and in cooperation with
U.S. Department of Transportation
Federal Highway Administration

September 1997

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15. SUPPLEMENTARY NOTES

This study was undertaken to assist WSDOT traffic engineers understand the effectiveness of ice warning signs.

16. ABSTRACT

Road surface conditions, particularly ice and snow, are not a permanent feature of the roadway. This lack of permanence in hazard formation, location, and duration makes effective signing difficult. To compensate for this difficulty in predicting ice warning signing requirements, two practices have emerged: oversigning and standard sign placement. The purpose of the project was to provide (1) insight into the effectiveness of current ice warning signing placement practices based on other state practices, ice-related accident locations and frequencies, and public attitudes toward the warning signs; (2) insight into driver behavior related to ice warning signs based on public response and observed driver behavior; and (3) possible recommendations for ice-related accident "trouble spots" not currently signed.

The research approach comprised four primary tasks: (1) conducting a national review to learn of previous ice warning sign experiences, (2) identifying current placement practices for ice warning signs in Washington, (3) considering public attitudes about and responsiveness to Washington's ice warning signs, and (4) examining problems related to public safety and state liability in Washington.

On the basis of positive public support for ice warning signs, WSDOT's perceived liability in the event of an ice warning sign accident, and the terms required to escape or minimize liability damages (i.e., proof of a reasonable and systematic process for placing signs), the continued use of ice warning signs is recommended. However, signs should be placed not at standard, sometimes irrelevant locations (e.g., entrances to state routes) but rather at high-risk areas (e.g. at bridges or locations identified by motorists) or locations with a history of ice-related accidents.

17. KEY WORDS	18. DISTRIBUTION STATEMENT
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DISCLAIMER

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Washington State Transportation Commission, Department of Transportation, or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

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Aberdeen
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Bellingham
Chehalis
Cle Elum
Colfax
Colville
Davenport
East Selah
Ephrata
Everett
Goldendale
Kent
Mt. Vernon
Okanogan
Pasco
Port Angeles
Port Orchard
Raymond
Spokane
Tacoma
Vancouver
Walla Walla
Wenatchee

APPENDIX A: NATIONAL SURVEY CONTACT LIST

State	Contact Name	Phone Number	Fax Number
Alabama	Billy Joe DeRamus Assistant Traffic Operations Engineer Alabama DOT	(334) 242-6756	(334) 242-6378
Alaska	Loren Rasmussen, P.E. Acting Director Division of Engineering and Operations Department of Transportation and Public Facilities	(907) 465-2960	(907) 465-2460
Arizona	Bill Hayden Arizona DOT	(602) 255-7524	(602) 255-6672
Arkansas	Jim Barnett State Maintenance Engineer Arkansas Highway and Transportation Department	(501) 569-2231	(501) 569-2014
California	Gerry K. California Department of Transportation Division of Traffic Operations Office of Support Services Headquarters	(916) 654-5251	(916) 653-3055
Colorado	Francis Joe Bastedo Assistant Plans and Specs Engineer Staff Traffic and Safety Branch Colorado DOT	(303) 757-0355	(303) 757-9219
Connecticut	William W. Stoeckert Manager of Highway Operations Connecticut DOT, Bureau of Engineering and Highway Operations	(203) 594-2630	(203) 594-2655
Delaware	Richard Fain Traffic Operations Engineer Delaware DOT	(302) 739-4366	(302) 730-6792
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NATIONAL SURVEY CONTACT LIST (Continued)

State	Contact Name	Phone Number	Fax Number
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Kentucky	Lance C. Gorman Branch Manager for Operations, Division of Traffic, Department of Highways Kentucky Transportation Cabinet	(502) 564-3020	(502) 564-3532
Louisiana	Francis A. Becnel Traffic Services Engineer Administrator Department of Transportation and Development	(504) 935-0100	(504) 935-0262
Maine	Russell I. Knowles Engineering Tec. III, Traffic Section Maine DOT	(207) 287-3775	(207) 623-2526
Maryland	K.C. Keith Traffic Engineer Maryland DOT	(301) 729-8400	(301) 729-6968
Massachusetts	Robert L. Fay Manager of signs and Pavement Markings Massachusetts Highway Department	(617) 973-7375	(617) 973-8037
Michigan	Tom Wessel Supervisor, Traffic and Safety Michigan DOT	(517) 335-2625	(517) 373-2330
Minnesota	Michael Weiss Signing Engineer Minnesota Department of Transportation	(612) 582-1080	(612) 582-1-33
Mississippi	Edward A. Bailey State Traffic Engineer, Traffic Engineering Mississippi DOT	(601) 944-9333	(601) 944 9475
Missouri	David Musser Traffic Studies Engineer Missouri Highway and Transportation Department	(573) 751-2088	(573) 526-4868
Montana	Patrick G. Brannon Support Services Supervisor Montana DOT, Maintenance Division James H. Cornell Jr. Designer - Signing Crew Montana DOT, Traffic Engineering Section	(406) 444-6157 (406) 444-6222	(406) 444-7684 (406) 444-7220

NATIONAL SURVEY CONTACT LIST (Continued)

State	Contact Name	Phone Number	Fax Number
Nebraska	Ron Dooley Traffic Controls Engineer Nebraska Department of Roads/Traffic	(402) 479-4594	(402) 47904325
Nevada	Mark D. Mindrum Supervisor III, Traffic Engineering Nevada Department of Transportation	(702) 888-7555	(702) 888-7401
New Hampshire	James S. Colburn, P.E. State Traffic Engineer Hew Hampshire Department of Transportation, Bureau of Traffic	(603) 271-2291	(603) 271-6083
New Jersey	William Anderson New Jersey DOT	(609) 530-3717	(609) 530-4567
New Mexico	Ernest Archulete Traffic Services Engineer, Traffic Services Section New Mexico State Highway and Transportation Department	(505) 827-5525	(505) 827-3202
New York	Peter Ordway Maintenance Division NY DOT	(518) 48 5-1495	(518) 457-4203
North Carolina	Fred Rosendahl North Carolina DOT	(919) 733-3915	(919) 733-2261
North Dakota	Al Covlin Traffic Operations Engineer, Planning Division North Dakota Department of Transportation	(701) 328-4398	(701) 328-1404
Ohio	James M. Roth, P.E. Signing Engineer, Office of Traffic Engineering Ohio DOT	(614) 351-2853	(614) 35-1-2854
Oklahoma	Randy Lee Oklahoma Department of Transportation	(405) 521-6460	(405) 521-2524
Oregon	Orville Gaylor Sign Specialist, Traffic Management Section Oregon DOT	(503) 986-3603	(503) 986-4063
Pennsylvania	Mark Alexander Manager, Sign Standard and Manufacturing Pennsylvania DOT	(717) 783-6261	(717) 787-9507
Rhode Island	Thomas JackVony Rhode Island DOT	(401) 277-2378	(401) 277-2963
South Carolina	Don S. Turner State Traffic Operations Engineer South Carolina DOT	(803) 737-1462	(803) 737-0271

NATIONAL SURVEY CONTACT LIST (Continued)

State	Contact Name	Phone Number	Fax Number
South Dakota	Ron Merriman Traffic Operations Engineer South Dakota DOT	(605) 773-4759	(605) 773-3921
Tennessee	Joseph W. Holt Operation Specialist, Maintenance Division Tennessee DOT	(615) 741-2027	(615) 741-3169
Texas	Carl Wenzel Engineering Specialist Texas DOT	(210) 731-5233	(210) 731-5310
Utah	E. Fred Lewis Traffic and Safety Operations Engineer Utah DOT	(801) 965-4285	(801) 965-3845
Vermont	Ann Kreis Traffic Design Engineer Vermont Agency of Transportation, Traffic and Safety Section	(802) 828-2695	(802) 828-2437
Virginia	David C. Fogg Transportation Engineer Senior Virginia DOT	(804) 255-3833	(804) 786-2888
West Virginia	Charles R. Lewis III Planning and Research Engineer Traffic Engineering Division West Virginia DOT, Division of Highways	(304) 558-8912	(304) 558-1209
Wisconsin	Chuck Spang Chief Marking and Signing Implementation Engineer Wisconsin DOT, Bureau of Highway Operations	(608) 266-1260	(608) 261-6295
Wyoming	Gene Legevstii Traffic Engineer (Signing), Division of Traffic Wyoming DOT	(307) 777-4351	(307) 777-3993

APPENDIX B: NATIONAL SURVEY

Ice Warning Sign Placement Practices

Ice warning signs are used to alert drivers of potentially hazardous road surface conditions. However, the lack of permanence in hazard (i.e., snow and ice) formation, location, and duration makes effective signing difficult. Currently, little guidance exists for Washington State Department of Transportation traffic engineers to determine the effectiveness of current sign placement practices. This national survey provides insight into the effectiveness of current ice warning sign placement practices on the basis of other state's practices. The Washington State Transportation Center (TRAC) at the University of Washington, supported by the Washington State Department of Transportation, is conducting this survey.

Your help in supplying this information is greatly appreciated. Please return the survey using the Facsimile cover sheet provided. Questions may be directed to Jennifer Nee at (206) 685-9202.

Name: _____

Title: _____

Agency/Branch: _____

Telephone: _____ **Fax:** _____

Address: _____

_____

QUESTIONS:

1. Do you use ice warning signs anywhere in your state?
   - Number of ice warning signs installed?
   - Sign features (flashing lights, variable message)?
   - Message displayed?

2. Are ice warning sign practices consistent statewide?

3. How are ice warning sign locations determined?

4. When are ice warning signs erected and removed?

5. What triggers the ice warning sign erection or removal (i.e., set date, other work priorities, weather information)?

6. What is the mechanism for ice warning sign erection or removal (i.e., removable sign with post, fold-up signs, sign covers)?

7. Has your state experienced any problems with safety related to ice warning signs?

8. Has your state experienced any problems with liability related to ice warning signs?

THANK YOU FOR COMPLETING THIS SURVEY!

APPENDIX C: MAINTENANCE PERSONNEL CONTACT LIST

EASTERN REGION

Tom Nichols
Maintenance Superintendent - Colfax
WSDOT
PO Box 150
Colfax, Washington 99111
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Tom Welch
Colfax Maintenance Area
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Colfax, Washington 99111
(509) 397-3051

Bryan Hausman
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WSDOT
PO Box 230
Colville, Washington 99114
(509) 684-7434

Richard W. Shroll
Maintenance Superintendent - Davenport
WSDOT
1407 Morgan Street
Davenport, Washington 99122
(509) 324-6583

Dale Ellard
Maintenance Superintendent - Spokane
WSDOT
North 12223 Division
Spokane, Washington 99218
(509) 324-6586

NORTH CENTRAL REGION

Dewayne Standerford
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Ephrata, Washington 98823
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Gary Myers
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PO Box 608
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MAINTENANCE PERSONNEL CONTACT LIST (Continued)

NORTHWEST REGION

Jim McDonald
Maintenance Superintendent - Area 1
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Ted Dempsey
Maintenance Superintendent - Area 2 Mt. Vernon
WSDOT
MS: NB 82-42
(360) 428-1386

Dave Pierce
Maintenance Superintendent - Area 3 Everett
WSDOT
MS: NB 82-43
(206) 339-1780

Vern Riley
Maintenance Superintendent - Area 4 Kent
WSDOT
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(206) 872-6470

Phil George
Maintenance Superintendent - Area 5 Bellevue
WSDOT
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OLYMPIC REGION

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Tacoma, WA 98499-4694
MS: WT-11
(206) 589-7255

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Maintenance Superintendent - Area 2 Port Orchard
WSDOT
8293 Spring Creek Road SE
Port Orchard, WA 98366-9613
MS: WB-18
(360) 895-4753

Bob Loshonkohl
Maintenance Superintendent - Area 3 Port Angeles
WSDOT
1707 South C Street
Port Angeles, WA 98363-0047
(360) 457-2713

Don Clotfelter
Maintenance Supervisor - Area 3 Port Angeles
WSDOT
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Port Angeles, WA 98363-0047
(360) 457-2713

Ron Bashon
Maintenance Superintendent - Area 4 Aberdeen
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Aberdeen, WA 98520
MS: WA-48
(360) 533-9354

Jim Kniert
Area 4 Aberdeen
WSDOT
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Aberdeen, WA 98520
MS: WA-48
(360) 533-9354

MAINTENANCE PERSONNEL CONTACT LIST (Continued)

SOUTH CENTRAL REGION

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Maintenance Superintendent - East Selah
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Pasco, Washington 99301
(509) 545-2202

Mike Trout
Maintenance Superintendent - Walla Walla
WSDOT
Route 4
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Walla Walla, Washington 99362-9804
(509) 527-4548

SOUTHWEST REGION

Steve Canter
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WSDOT
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Vancouver, Washington 98668-1709
(360) 905-2133

Cheryl Bauer
Maintenance Superintendent - Chehalis
WSDOT
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PO Box 829
Chehalis, Washington 98532
(360) 748-2181

Norm Fitzhugh
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WSDOT
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Jack Manicke
Maintenance Superintendent - Raymond
WSDOT
103 Fifth Street
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(360) 942 2092

APPENDIX D: MAINTENANCE PERSONNEL SURVEY

PART I Ice Warning Signs Location Matrix

1. Please indicate on the table which signs are placed as general ice warnings and which signs are placed in response to specific ice surface problems. If the sign location shown in the table is incorrect, please correct it (remember that this information is as of 1994).

2. Please indicate which roadways are routinely sanded during ICY conditions.

_____

_____

_____

PART II Additional Questions

1. Please indicate for your maintenance area:

   Number of ice warning signs installed _____

   Sign features (flashing lights, variable messages) _____

   Messages displayed _____

2. How are ice warning sign locations determined in your maintenance area? What is the standard procedure, if any, for the placement of ice warning signs? _____

_____

3. When are ice warning signs erected and removed? _____

_____

4. What is the mechanism for ice warning sign erection or removal (e.g., removable sign with post, fold-up signs, sign covers)? _____

_____

5. Has your maintenance area experienced any problems with safety or liability related to ice warning signs? _____

_____

6. What was your ice control budget for fiscal year 1994? _____

_____

7. Do you have any additional comments or ideas related to ice warning sign placement practices? (Do you think ice warning signs are of any value? Why?) _____

_____

APPENDIX E. GENERAL PUBLIC SURVEY—ZONES 1-6

MOTORIST SURVEY
ICY ROAD CONDITIONS

The Washington State Department of Transportation and the Washington State Transportation Center at the University of Washington are working together to improve the level of safety on state roadways (i.e., highways, interstates) during icy conditions. Specifically, we are looking at short-term, isolated patches of ice on highways or interstates typically found on bridges or in shaded areas; not the long-term, compact snow and ice typically found over mountain passes. To help our study, please answer the following questions related to (1) your driving experience, (2) your opinion of various icy road countermeasures, and (3) your background. All responses are confidential. Thank you for your participation.

YOUR DRIVING EXPERIENCE

1. What type of vehicle do you typically drive? (Check only one vehicle type.)

	FRONT-WHEEL DRIVE	REAR-WHEEL DRIVE	4- WHEEL DRIVE
❑ motorcycle			
❑ passenger car	❑	❑	❑
❑ full-size van or minivan	❑	❑	❑
❑ sport utility vehicle	❑	❑	❑
❑ pickup truck	❑	❑	❑
❑ heavy truck (>10,000 lbs GVW)			
❑ other _____	❑	❑	❑

2. When do you typically drive? (Check all that apply.)

❑ 6 am to 9 am ❑ 9 am to 3 pm
❑ 3 pm to 6 pm ❑ 6 pm to midnight
❑ midnight to 6 am

3. What is the total number of miles you drive in a typical day?

WEEKDAY _____ miles
WEEKEND _____ miles

4. How often do you slow down and exercise caution when the following cold weather conditions exist?

	ALWAYS	SOMETIMES	SELDOM	NEVER
• visible snow or ice on roadway	❑	❑	❑	❑
• ice warning signs	❑	❑	❑	❑
• other vehicles slowing	❑	❑	❑	❑
• sand on the road	❑	❑	❑	❑
• vehicles off the road	❑	❑	❑	❑
• temperatures at or below freezing	❑	❑	❑	❑
• radio/television warnings	❑	❑	❑	❑
• other_____	❑	❑	❑	❑

5. Have you ever been involved in an ice- (not snow) related accident?

❑ yes (Please go to Questions 5.a., b., and c.)
❑ no (Please go to Question 6.)

5.a. Where did your most recent ice-related accident occur? (Check only one location.)

❑ bridge or overpass
❑ known icy trouble spots
❑ mountain pass
❑ shaded area
❑ curve in roadway
❑ other_____

5.b. How far from your home did your most recent ice-related accident occur? (Check only one distance.)

❑ less than 10 miles
❑ 11 to 25 miles
❑ 26 to 50 miles
❑ more than 50 miles

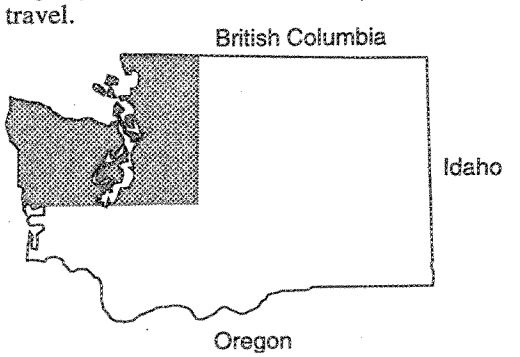
Please Continue

YOUR DRIVING EXPERIENCE (Continued)

5.c. What type of vehicle were you driving or riding in? (Check only one vehicle type.)

	FRONT-WHEEL DRIVE	REAR-WHEEL DRIVE	4-WHEEL DRIVE
☐ motorcycle			
☐ passenger car	☐	☐	☐
☐ full-size van or minivan	☐	☐	☐
☐ sport utility vehicle	☐	☐	☐
☐ pickup trucks	☐	☐	☐
☐ heavy truck (>10,000 lbs GVW)			
☐ other	☐	☐	☐

6. Highlight on the map or describe in the space below the highway or interstate routes that you typically travel.

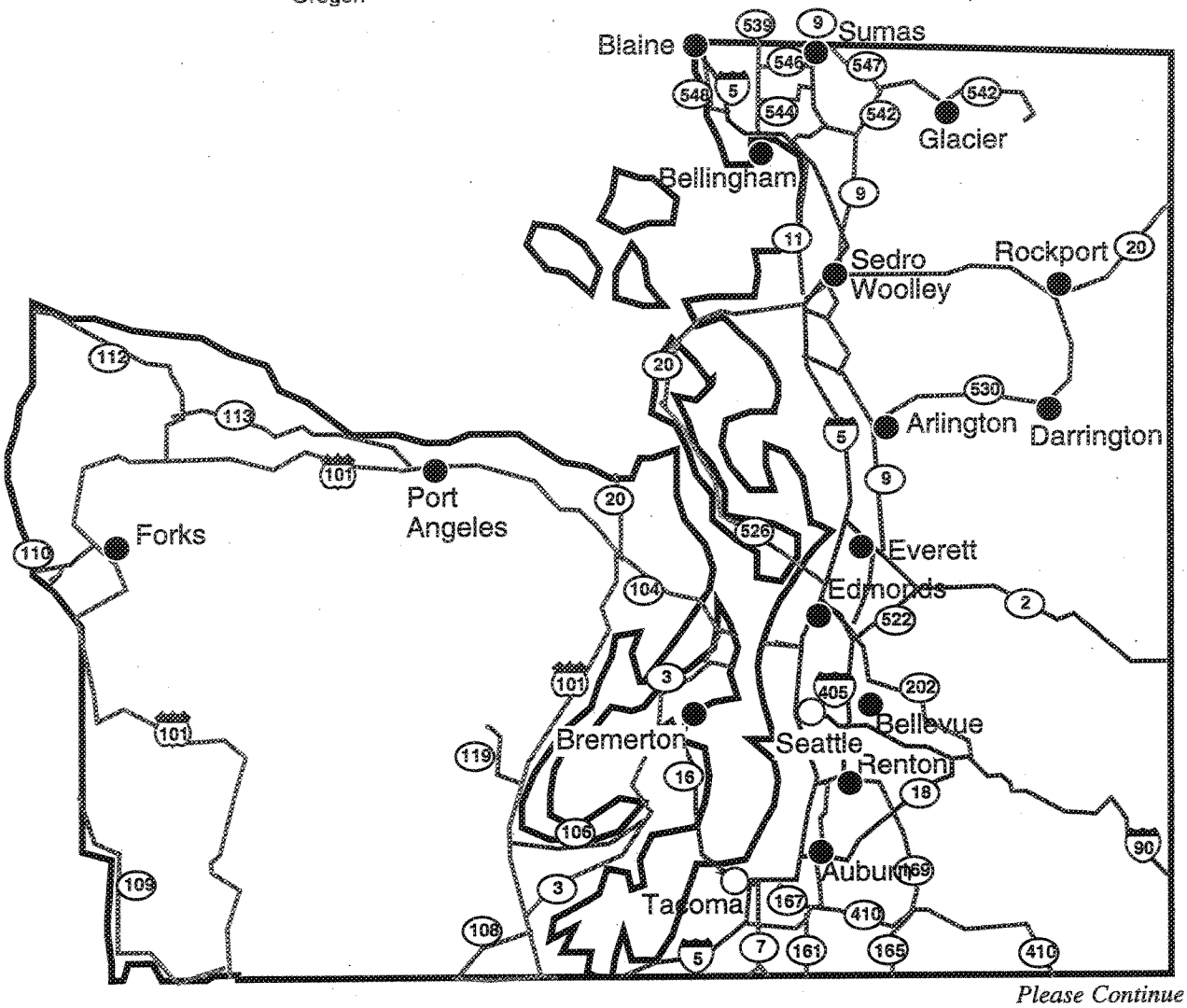


TRAVEL ROUTES

_____

_____

_____



Please Continue

YOUR DRIVING EXPERIENCE (Continued)

7. At what locations are you most likely to slow down during icy (not snowy) conditions? (Check all that apply.)

- ❑ bridge or overpass
- ❑ known trouble spots
- ❑ mountain pass
- ❑ shaded area
- ❑ curve in roadway
- ❑ other_____

8. At what hours of the day or night are you most likely to slow down during icy (not snowy) conditions? (Check all that apply.)

- ❑ 6 am to 9 am
- ❑ 9 am to 3 pm
- ❑ 3 pm to 6 pm
- ❑ 6 pm to midnight
- ❑ midnight to 6 am

YOUR OPINIONS

9. In your opinion, who is at fault if an ice-related accident occurs? (Check all that apply.)

- ❑ no one
- ❑ driver(s) involved
- ❑ roadway maintenance department
- ❑ other _____
- ❑ vehicle designer/manufacturer

10. In your opinion, how effective are each of the following for improving safety and preventing accidents during icy (not snowy) conditions?

	VERY EFFECTIVE	SOMEWHAT EFFECTIVE	NO OPINION	SOMEWHAT INEFFECTIVE	VERY INEFFECTIVE
• ice warning signs	❑	❑	❑	❑	❑
• sanding the road	❑	❑	❑	❑	❑
• vehicle traction devices (i.e., chains, studded tires)	❑	❑	❑	❑	❑
• special vehicle features (i.e., 4-wheel drive, antilock braking systems)	❑	❑	❑	❑	❑
• reduced vehicle speeds	❑	❑	❑	❑	❑
• radio/television warnings	❑	❑	❑	❑	❑
• other_____	❑	❑	❑	❑	❑

11. In your opinion, should the use of the following be:

	INCREASED?	DECREASED?	ABANDONED?
• ice warning signs	❑	❑	❑
• sanding the road	❑	❑	❑
• radio/television warnings	❑	❑	❑
• other_____	❑	❑	❑

ABOUT YOU

12. Are you ❑ male? ❑ female?

13. Are you ❑ married? ❑ single?

14. What is your age?

- ❑ 16 to 30
- ❑ 31 to 45
- ❑ 45 to 60
- ❑ over 60

15. What is your annual household income?

- ❑ under $10,000
- ❑ $10,001 - $30,000
- ❑ $30,001 - $50,000
- ❑ $50,001 - $70,000
- ❑ $70,001 - $90,000
- ❑ over $90,000

16. What is your highest level of education?

- ❑ did not finish high school
- ❑ high school
- ❑ community college
- ❑ college or university
- ❑ post graduate work

ADDITIONAL COMMENTS

_____

_____

Thank you for taking the time to complete this survey. When you are finished, please refold the survey form so that the 'University of Washington' address is displayed, secure with tape, and drop it in a mailbox before November 30, 1996. No postage is necessary.

MOTORIST SURVEY
ICY ROAD CONDITIONS

The Washington State Department of Transportation and the Washington State Transportation Center at the University of Washington are working together to improve the level of safety on state roadways (i.e., highways, interstates) during icy conditions. Specifically, we are looking at short-term, isolated patches of ice on highways or interstates typically found on bridges or in shaded areas; not the long-term, compact snow and ice typically found over mountain passes. To help our study, please answer the following questions related to (1) your driving experience, (2) your opinion of various icy road countermeasures, and (3) your background. All responses are confidential. Thank you for your participation.

YOUR DRIVING EXPERIENCE

1. What type of vehicle do you typically drive? (Check only one vehicle type.)

	FRONT-WHEEL DRIVE	REAR-WHEEL DRIVE	4- WHEEL DRIVE
❑ motorcycle			
❑ passenger car	❑	❑	❑
❑ full-size van or minivan	❑	❑	❑
❑ sport utility vehicle	❑	❑	❑
❑ pickup truck	❑	❑	❑
❑ heavy truck (>10,000 lbs GVW)			
❑ other _____	❑	❑	❑

2. When do you typically drive? (Check all that apply.)

❑ 6 am to 9 am ❑ 9 am to 3 pm
❑ 3 pm to 6 pm ❑ 6 pm to midnight
❑ midnight to 6 am

3. What is the total number of miles you drive in a typical day?

WEEKDAY _____ miles
WEEKEND _____ miles

4. How often do you slow down and exercise caution when the following cold weather conditions exist?

	ALWAYS	SOMETIMES	SELDOM	NEVER
• visible snow or ice on roadway	❑	❑	❑	❑
• ice warning signs	❑	❑	❑	❑
• other vehicles slowing	❑	❑	❑	❑
• sand on the road	❑	❑	❑	❑
• vehicles off the road	❑	❑	❑	❑
• temperatures at or below freezing	❑	❑	❑	❑
• radio/television warnings	❑	❑	❑	❑
• other_____	❑	❑	❑	❑

5. Have you ever been involved in an ice- (not snow) related accident?

❑ yes (Please go to Questions 5.a., b., and c.)
❑ no (Please go to Question 6.)

5.a. Where did your most recent ice-related accident occur? (Check only one location.)

❑ bridge or overpass
❑ known icy trouble spots
❑ mountain pass
❑ shaded area
❑ curve in roadway
❑ other _____

5.b. How far from your home did your most recent ice-related accident occur? (Check only one distance.)

❑ less than 10 miles
❑ 11 to 25 miles
❑ 26 to 50 miles
❑ more than 50 miles

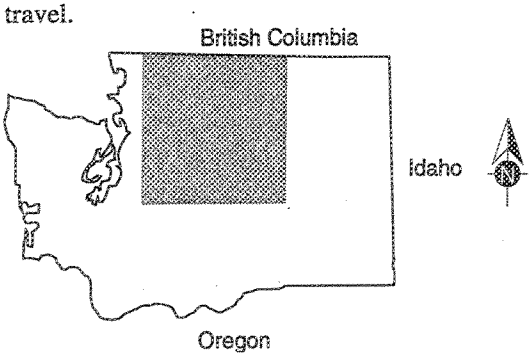
Please Continue

YOUR DRIVING EXPERIENCE (Continued)

5.c. What type of vehicle were you driving or riding in?
(Check only one vehicle type.)

	FRONT-WHEEL DRIVE	REAR-WHEEL DRIVE	4-WHEEL DRIVE
☐ motorcycle			
☐ passenger car	☐	☐	☐
☐ full-size van or minivan	☐	☐	☐
☐ sport utility vehicle	☐	☐	☐
☐ pickup trucks	☐	☐	☐
☐ heavy truck (>10,000 lbs GVW)			
☐ other	☐	☐	☐

6. Highlight on the map or describe in the space below the highway or interstate routes that you typically travel.



TRAVEL ROUTES

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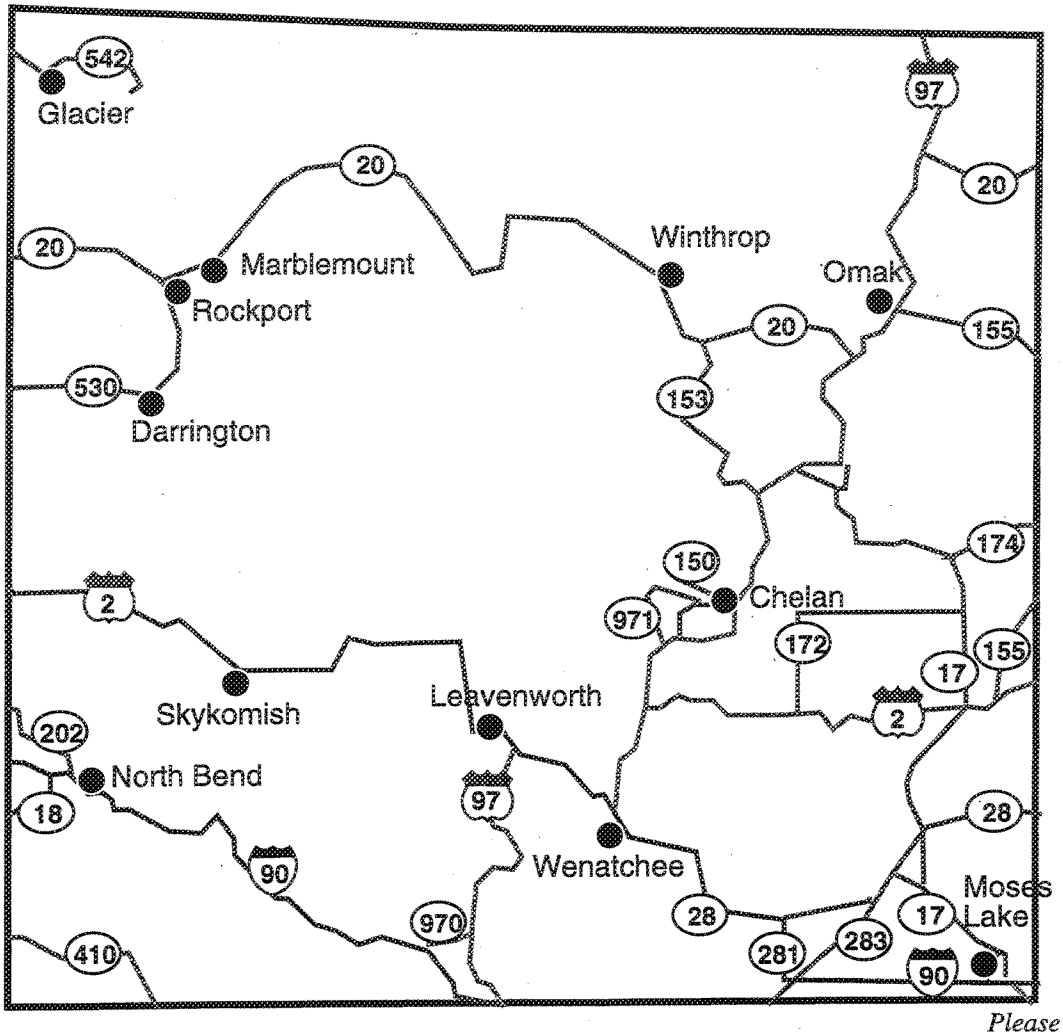

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YOUR DRIVING EXPERIENCE (Continued)

7. At what locations are you most likely to slow down during icy (not snowy) conditions? (Check all that apply.)

- ❑ bridge or overpass
- ❑ known trouble spots
- ❑ mountain pass
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8. At what hours of the day or night are you most likely to slow down during icy (not snowy) conditions? (Check all that apply.)

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- ❑ 3 pm to 6 pm
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- ❑ midnight to 6 am

YOUR OPINIONS

9. In your opinion, who is at fault if an ice-related accident occurs? (Check all that apply.)

- ❑ no one
- ❑ driver(s) involved
- ❑ roadway maintenance department
- ❑ other _____
- ❑ vehicle designer/manufacturer

10. In your opinion, how effective are each of the following for improving safety and preventing accidents during icy (not snowy) conditions?

	VERY EFFECTIVE	SOMEWHAT EFFECTIVE	NO OPINION	SOMEWHAT INEFFECTIVE	VERY INEFFECTIVE
• ice warning signs	❑	❑	❑	❑	❑
• sanding the road	❑	❑	❑	❑	❑
• vehicle traction devices (i.e., chains, studded tires)	❑	❑	❑	❑	❑
• special vehicle features (i.e., 4-wheel drive, antilock braking systems)	❑	❑	❑	❑	❑
• reduced vehicle speeds	❑	❑	❑	❑	❑
• radio/television warnings	❑	❑	❑	❑	❑
• other_____	❑	❑	❑	❑	❑

11. In your opinion, should the use of the following be:

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• sanding the road	❑	❑	❑
• radio/television warnings	❑	❑	❑
• other_____	❑	❑	❑

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12. Are you ❑ male? ❑ female?

13. Are you ❑ married? ❑ single?

14. What is your age?

- ❑ 16 to 30
- ❑ 31 to 45
- ❑ 45 to 60
- ❑ over 60

15. What is your annual household income?

- ❑ under $10,000
- ❑ $10,001 - $30,000
- ❑ $30,001 - $50,000
- ❑ $50,001 - $70,000
- ❑ $70,001 - $90,000
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16. What is your highest level of education?

- ❑ did not finish high school
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- ❑ college or university
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ADDITIONAL COMMENTS

_____

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1. What type of vehicle do you typically drive? (Check only one vehicle type.)

	FRONT-WHEEL DRIVE	REAR-WHEEL DRIVE	4- WHEEL DRIVE
❑ motorcycle			
❑ passenger car	❑	❑	❑
❑ full-size van or minivan	❑	❑	❑
❑ sport utility vehicle	❑	❑	❑
❑ pickup truck	❑	❑	❑
❑ heavy truck (>10,000 lbs GVW)			
❑ other _____	❑	❑	❑

2. When do you typically drive? (Check all that apply.)

❑ 6 am to 9 am ❑ 9 am to 3 pm
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3. What is the total number of miles you drive in a typical day?

WEEKDAY _____ miles
WEEKEND _____ miles

4. How often do you slow down and exercise caution when the following cold weather conditions exist?

	ALWAYS	SOMETIMES	SELDOM	NEVER
• visible snow or ice on roadway	❑	❑	❑	❑
• ice warning signs	❑	❑	❑	❑
• other vehicles slowing	❑	❑	❑	❑
• sand on the road	❑	❑	❑	❑
• vehicles off the road	❑	❑	❑	❑
• temperatures at or below freezing	❑	❑	❑	❑
• radio/television warnings	❑	❑	❑	❑
• other_____	❑	❑	❑	❑

5. Have you ever been involved in an ice- (not snow) related accident?

❑ yes (Please go to Questions 5.a., b., and c.)
❑ no (Please go to Question 6.)

5.a. Where did your most recent ice-related accident occur? (Check only one location.)

❑ bridge or overpass
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❑ mountain pass
❑ shaded area
❑ curve in roadway
❑ other_____

5.b. How far from your home did your most recent ice-related accident occur? (Check only one distance.)

❑ less than 10 miles
❑ 11 to 25 miles
❑ 26 to 50 miles
❑ more than 50 miles

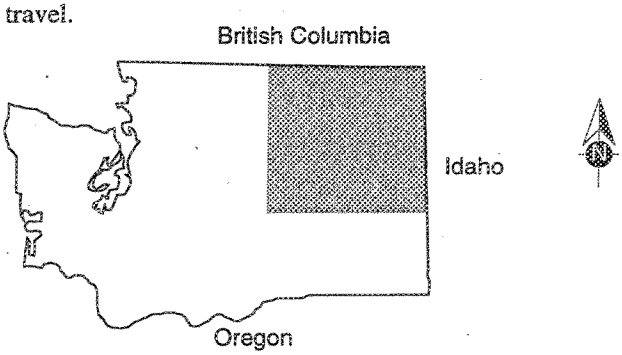
Please Continue

YOUR DRIVING EXPERIENCE (Continued)

5.e. What type of vehicle were you driving or riding in?
(Check only one vehicle type.)

	FRONT-WHEEL DRIVE	REAR-WHEEL DRIVE	4-WHEEL DRIVE
☐ motorcycle			
☐ passenger car	☐	☐	☐
☐ full-size van or minivan	☐	☐	☐
☐ sport utility vehicle	☐	☐	☐
☐ pickup trucks	☐	☐	☐
☐ heavy truck (>10,000 lbs GVW)			
☐ other	☐	☐	☐

6. Highlight on the map or describe in the space below the highway or interstate routes that you typically travel.



TRAVEL ROUTES

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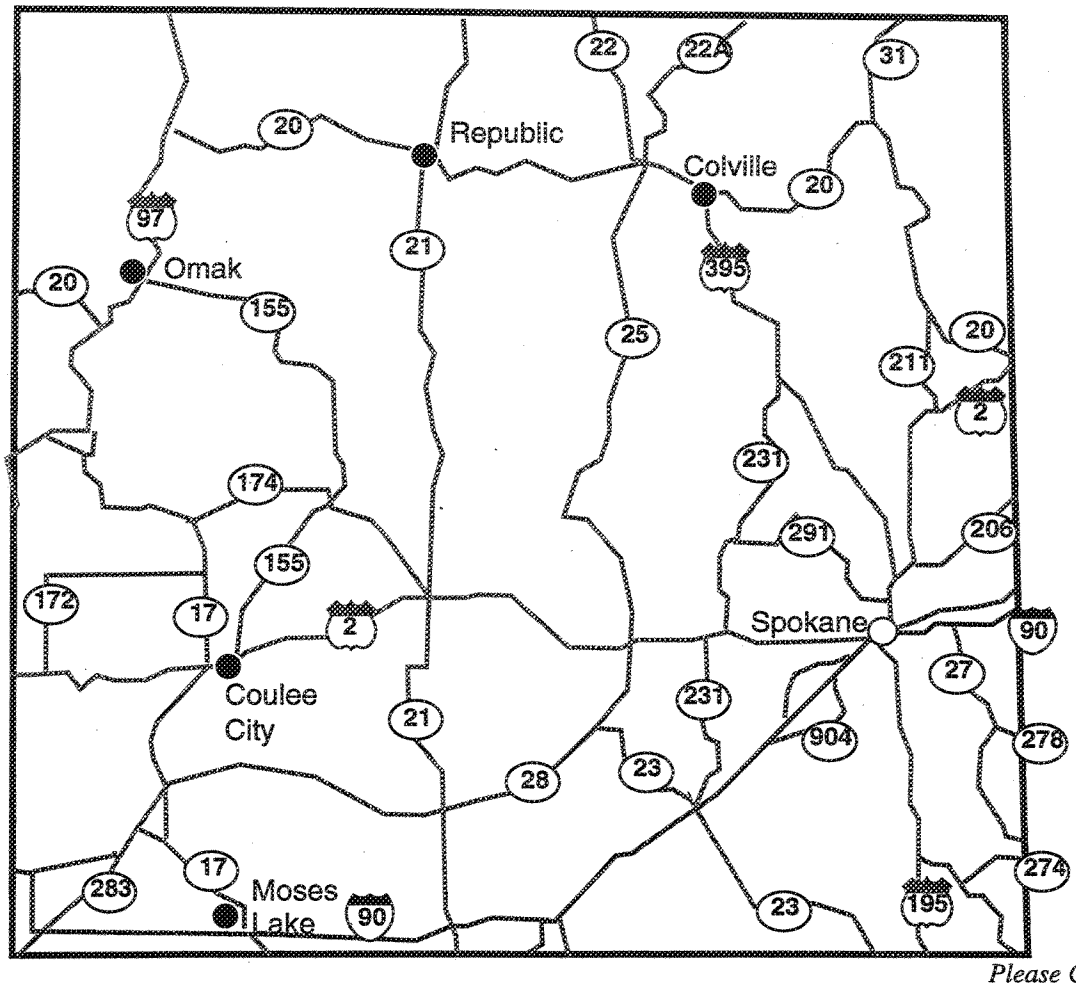

Please Continue

YOUR DRIVING EXPERIENCE (Continued)

7. At what locations are you most likely to slow down during icy (not snowy) conditions? (Check all that apply.)

- ❑ bridge or overpass
- ❑ known trouble spots
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8. At what hours of the day or night are you most likely to slow down during icy (not snowy) conditions? (Check all that apply.)

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YOUR OPINIONS

9. In your opinion, who is at fault if an ice-related accident occurs? (Check all that apply.)

- ❑ no one
- ❑ driver(s) involved
- ❑ roadway maintenance department
- ❑ other _____
- ❑ vehicle designer/manufacturer

10. In your opinion, how effective are each of the following for improving safety and preventing accidents during icy (not snowy) conditions?

	VERY EFFECTIVE	SOMEWHAT EFFECTIVE	NO OPINION	SOMEWHAT INEFFECTIVE	VERY INEFFECTIVE
• ice warning signs	❑	❑	❑	❑	❑
• sanding the road	❑	❑	❑	❑	❑
• vehicle traction devices (i.e., chains, studded tires)	❑	❑	❑	❑	❑
• special vehicle features (i.e., 4-wheel drive, antilock braking systems)	❑	❑	❑	❑	❑
• reduced vehicle speeds	❑	❑	❑	❑	❑
• radio/television warnings	❑	❑	❑	❑	❑
• other_____	❑	❑	❑	❑	❑

11. In your opinion, should the use of the following be:

	INCREASED?	DECREASED?	ABANDONED?
• ice warning signs	❑	❑	❑
• sanding the road	❑	❑	❑
• radio/television warnings	❑	❑	❑
• other_____	❑	❑	❑

ABOUT YOU

12. Are you ❑ male? ❑ female?

13. Are you ❑ married? ❑ single?

14. What is your age?

- ❑ 16 to 30
- ❑ 31 to 45
- ❑ 45 to 60
- ❑ over 60

15. What is your annual household income?

- ❑ under $10,000
- ❑ $10,001 - $30,000
- ❑ $30,001 - $50,000
- ❑ $50,001 - $70,000
- ❑ $70,001 - $90,000
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16. What is your highest level of education?

- ❑ did not finish high school
- ❑ high school
- ❑ community college
- ❑ college or university
- ❑ post graduate work

ADDITIONAL COMMENTS

_____

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❑ motorcycle			
❑ passenger car	❑	❑	❑
❑ full-size van or minivan	❑	❑	❑
❑ sport utility vehicle	❑	❑	❑
❑ pickup truck	❑	❑	❑
❑ heavy truck (>10,000 lbs GVW)			
❑ other _____	❑	❑	❑

2. When do you typically drive? (Check all that apply.)

❑ 6 am to 9 am ❑ 9 am to 3 pm
❑ 3 pm to 6 pm ❑ 6 pm to midnight
❑ midnight to 6 am

3. What is the total number of miles you drive in a typical day?

WEEKDAY _____ miles
WEEKEND _____ miles

4. How often do you slow down and exercise caution when the following cold weather conditions exist?

	ALWAYS	SOMETIMES	SELDOM	NEVER
• visible snow or ice on roadway	❑	❑	❑	❑
• ice warning signs	❑	❑	❑	❑
• other vehicles slowing	❑	❑	❑	❑
• sand on the road	❑	❑	❑	❑
• vehicles off the road	❑	❑	❑	❑
• temperatures at or below freezing	❑	❑	❑	❑
• radio/television warnings	❑	❑	❑	❑
• other_____	❑	❑	❑	❑

5. Have you ever been involved in an ice- (not snow) related accident?

❑ yes (Please go to Questions 5.a., b., and c.)
❑ no (Please go to Question 6.)

5.a. Where did your most recent ice-related accident occur? (Check only one location.)

❑ bridge or overpass
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❑ mountain pass
❑ shaded area
❑ curve in roadway
❑ other_____

5.b. How far from your home did your most recent ice-related accident occur? (Check only one distance.)

❑ less than 10 miles
❑ 11 to 25 miles
❑ 26 to 50 miles
❑ more than 50 miles

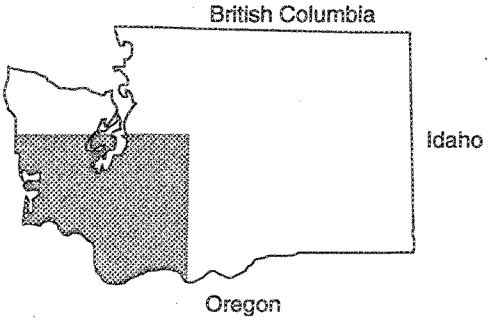
Please Continue

YOUR DRIVING EXPERIENCE (Continued)

5.c. What type of vehicle were you driving or riding in?
(Check only one vehicle type.)

	FRONT-WHEEL DRIVE	REAR-WHEEL DRIVE	4-WHEEL DRIVE
☐ motorcycle			
☐ passenger car	☐	☐	☐
☐ full-size van or minivan	☐	☐	☐
☐ sport utility vehicle	☐	☐	☐
☐ pickup trucks	☐	☐	☐
☐ heavy truck (>10,000 lbs GVW)			
☐ other _____	☐	☐	☐

6. Highlight on the map or describe in the space below the highway or interstate routes that you typically travel.



TRAVEL ROUTES

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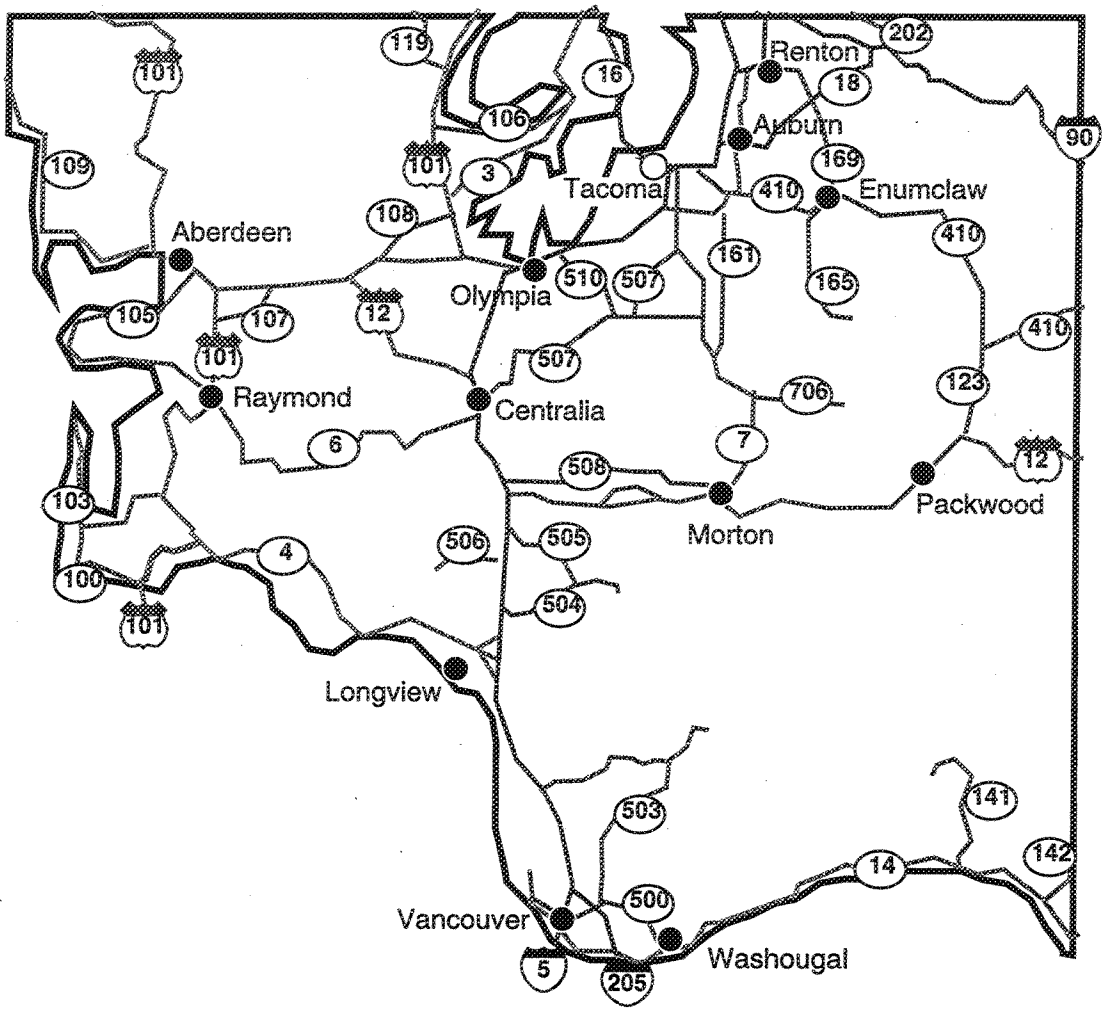

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YOUR DRIVING EXPERIENCE (Continued)

7. At what locations are you most likely to slow down during icy (not snowy) conditions? (Check all that apply.)

- ❑ bridge or overpass
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8. At what hours of the day or night are you most likely to slow down during icy (not snowy) conditions? (Check all that apply.)

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• sanding the road	❑	❑	❑	❑	❑
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• sand on the road	❑	❑	❑	❑
• vehicles off the road	❑	❑	❑	❑
• temperatures at or below freezing	❑	❑	❑	❑
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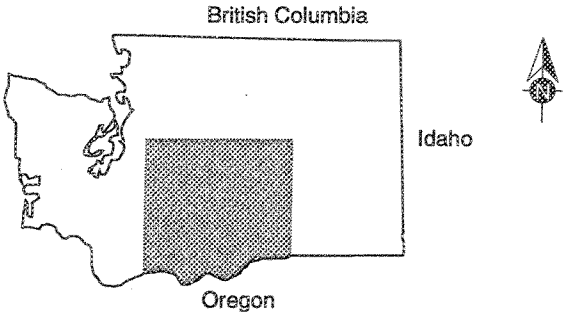

TRAVEL ROUTES

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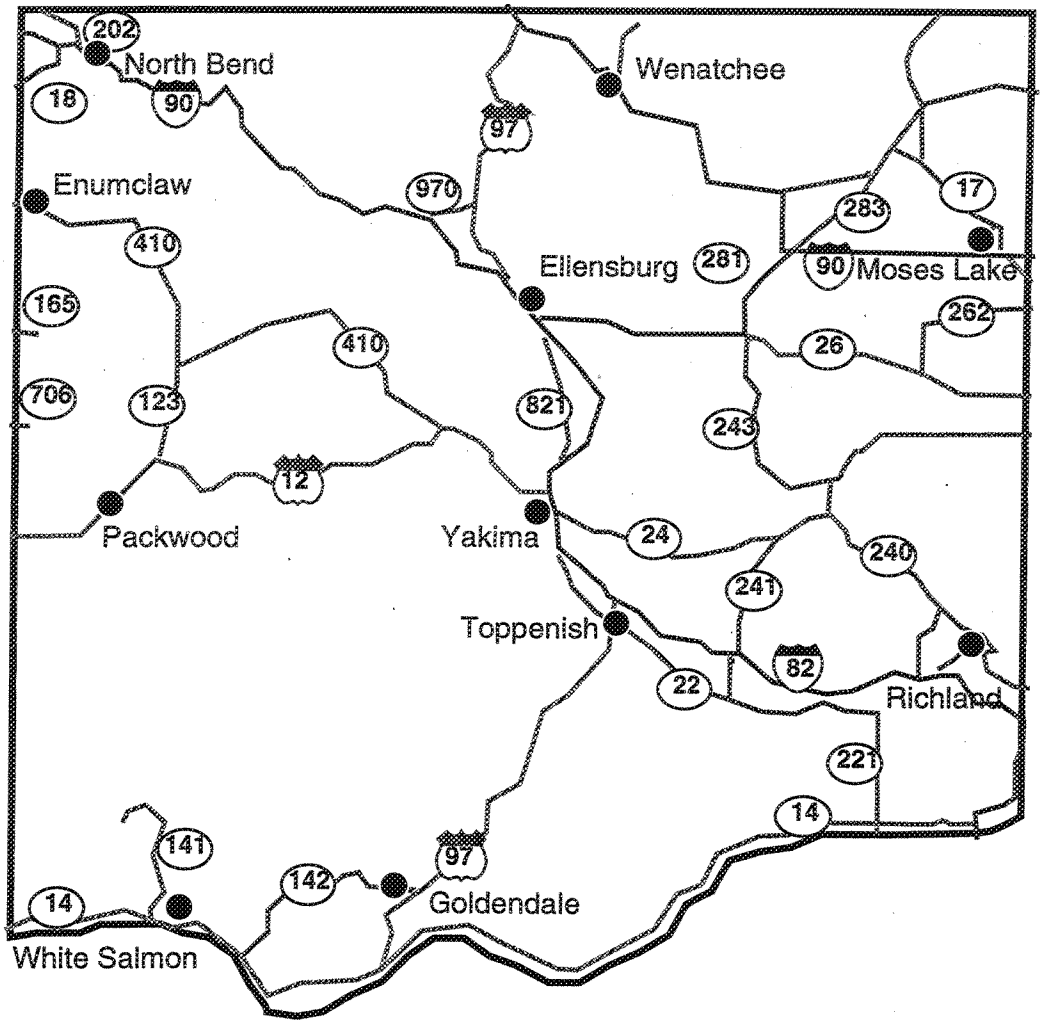

Please Continue

YOUR DRIVING EXPERIENCE (Continued)

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• ice warning signs	❑	❑	❑	❑	❑
• sanding the road	❑	❑	❑	❑	❑
• vehicle traction devices (i.e., chains, studded tires)	❑	❑	❑	❑	❑
• special vehicle features (i.e., 4-wheel drive, antilock braking systems)	❑	❑	❑	❑	❑
• reduced vehicle speeds	❑	❑	❑	❑	❑
• radio/television warnings	❑	❑	❑	❑	❑
• other_____	❑	❑	❑	❑	❑

11. In your opinion, should the use of the following be:

	INCREASED?	DECREASED?	ABANDONED?
• ice warning signs	❑	❑	❑
• sanding the road	❑	❑	❑
• radio/television warnings	❑	❑	❑
• other_____	❑	❑	❑

ABOUT YOU

12. Are you ❑ male? ❑ female?

13. Are you ❑ married? ❑ single?

14. What is your age?

- ❑ 16 to 30
- ❑ 31 to 45
- ❑ 45 to 60
- ❑ over 60

15. What is your annual household income?

- ❑ under $10,000
- ❑ $10,001 - $30,000
- ❑ $30,001 - $50,000
- ❑ $50,001 - $70,000
- ❑ $70,001 - $90,000
- ❑ over $90,000

16. What is your highest level of education?

- ❑ did not finish high school
- ❑ high school
- ❑ community college
- ❑ college or university
- ❑ post graduate work

ADDITIONAL COMMENTS

_____

Thank you for taking the time to complete this survey. When you are finished, please refold the survey form so that the 'University of Washington' address is displayed, secure with tape, and drop it in a mailbox before November 30, 1996. No postage is necessary.

MOTORIST SURVEY
ICY ROAD CONDITIONS

The Washington State Department of Transportation and the Washington State Transportation Center at the University of Washington are working together to improve the level of safety on state roadways (i.e., highways, interstates) during icy conditions. Specifically, we are looking at short-term, isolated patches of ice on highways or interstates typically found on bridges or in shaded areas; not the long-term, compact snow and ice typically found over mountain passes. To help our study, please answer the following questions related to (1) your driving experience, (2) your opinion of various icy road countermeasures, and (3) your background. All responses are confidential. Thank you for your participation.

YOUR DRIVING EXPERIENCE

1. What type of vehicle do you typically drive? (Check only one vehicle type.)

	FRONT-WHEEL DRIVE	REAR-WHEEL DRIVE	4- WHEEL DRIVE
❑ motorcycle			
❑ passenger car	❑	❑	❑
❑ full-size van or minivan	❑	❑	❑
❑ sport utility vehicle	❑	❑	❑
❑ pickup truck	❑	❑	❑
❑ heavy truck (>10,000 lbs GVW)			
❑ other _____	❑	❑	❑

2. When do you typically drive? (Check all that apply.)

❑ 6 am to 9 am ❑ 9 am to 3 pm
❑ 3 pm to 6 pm ❑ 6 pm to midnight
❑ midnight to 6 am

3. What is the total number of miles you drive in a typical day?

WEEKDAY _____ miles
WEEKEND _____ miles

4. How often do you slow down and exercise caution when the following cold weather conditions exist?

	ALWAYS	SOMETIMES	SELDOM	NEVER
• visible snow or ice on roadway	❑	❑	❑	❑
• ice warning signs	❑	❑	❑	❑
• other vehicles slowing	❑	❑	❑	❑
• sand on the road	❑	❑	❑	❑
• vehicles off the road	❑	❑	❑	❑
• temperatures at or below freezing	❑	❑	❑	❑
• radio/television warnings	❑	❑	❑	❑
• other_____	❑	❑	❑	❑

5. Have you ever been involved in an ice- (not snow) related accident?

❑ yes (Please go to Questions 5.a., b., and c.)
❑ no (Please go to Question 6.)

5.a. Where did your most recent ice-related accident occur? (Check only one location.)

❑ bridge or overpass
❑ known icy trouble spots
❑ mountain pass
❑ shaded area
❑ curve in roadway
❑ other_____

5.b. How far from your home did your most recent ice-related accident occur? (Check only one distance.)

❑ less than 10 miles
❑ 11 to 25 miles
❑ 26 to 50 miles
❑ more than 50 miles

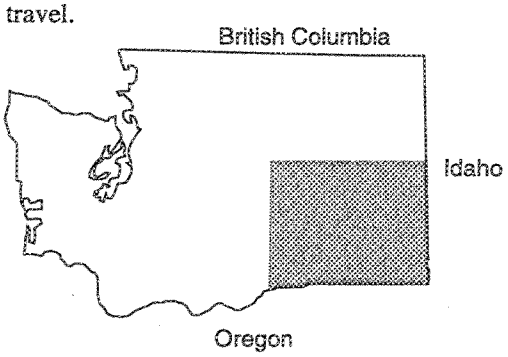
Please Continue

YOUR DRIVING EXPERIENCE (Continued)

5.a. What type of vehicle were you driving or riding in?
(Check only one vehicle type.)

	FRONT-WHEEL DRIVE	REAR-WHEEL DRIVE	4-WHEEL DRIVE
☐ motorcycle			
☐ passenger car	☐	☐	☐
☐ full-size van or minivan	☐	☐	☐
☐ sport utility vehicle	☐	☐	☐
☐ pickup trucks	☐	☐	☐
☐ heavy truck (>10,000 lbs GVW)			
☐ other _____	☐	☐	☐

6. Highlight on the map or describe in the space below the highway or interstate routes that you typically travel.

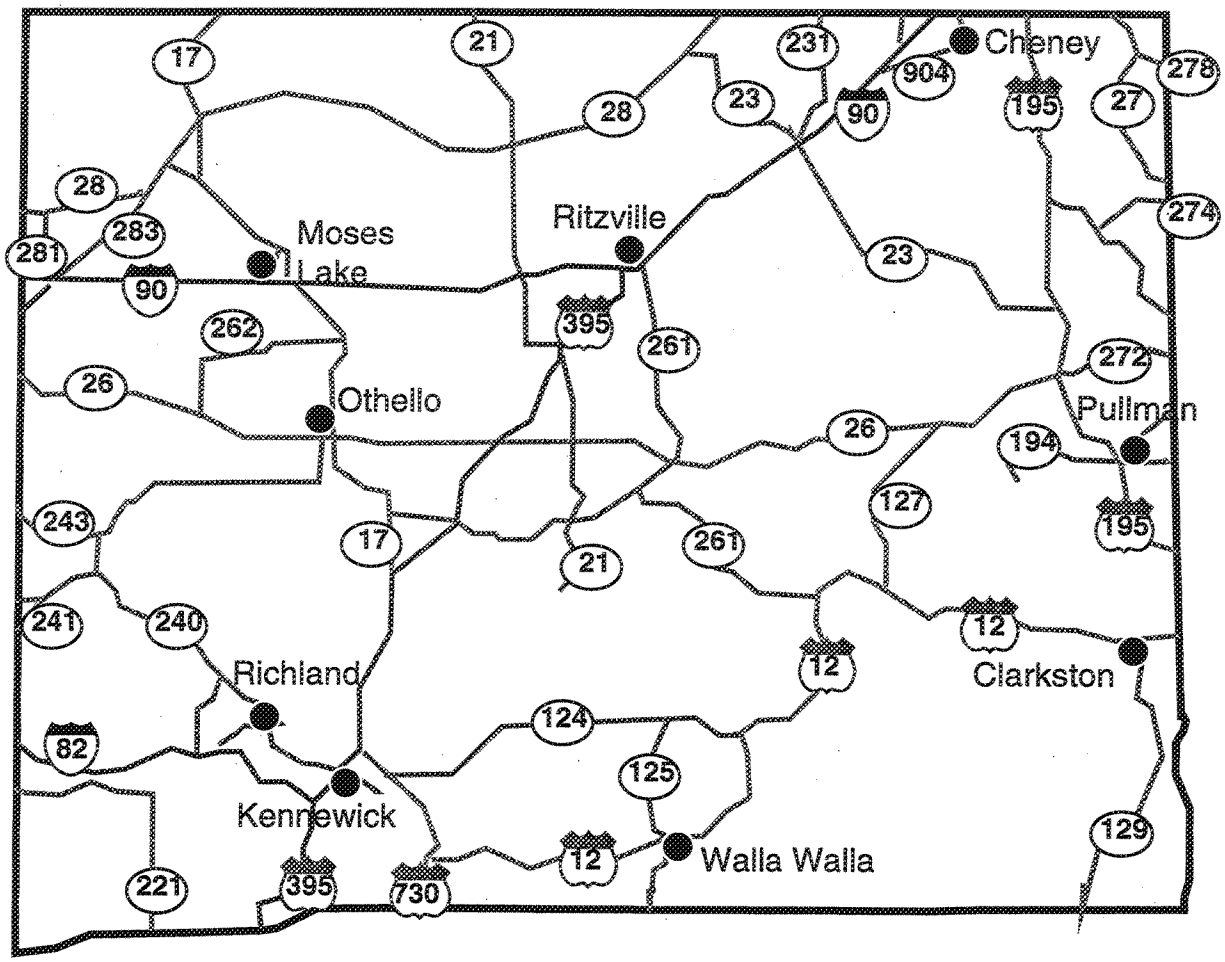


TRAVEL ROUTES

_____

_____

_____



Please Continue

YOUR DRIVING EXPERIENCE (Continued)

7. At what locations are you most likely to slow down during icy (not snowy) conditions? (Check all that apply.)

- ❑ bridge or overpass
- ❑ known trouble spots
- ❑ mountain pass
- ❑ shaded area
- ❑ curve in roadway
- ❑ other_____

8. At what hours of the day or night are you most likely to slow down during icy (not snowy) conditions? (Check all that apply.)

- ❑ 6 am to 9 am
- ❑ 9 am to 3 pm
- ❑ 3 pm to 6 pm
- ❑ 6 pm to midnight
- ❑ midnight to 6 am

YOUR OPINIONS

9. In your opinion, who is at fault if an ice-related accident occurs? (Check all that apply.)

- ❑ no one
- ❑ driver(s) involved
- ❑ roadway maintenance department
- ❑ other _____
- ❑ vehicle designer/manufacturer

10. In your opinion, how effective are each of the following for improving safety and preventing accidents during icy (not snowy) conditions?

	VERY EFFECTIVE	SOMEWHAT EFFECTIVE	NO OPINION	SOMEWHAT INEFFECTIVE	VERY INEFFECTIVE
• ice warning signs	❑	❑	❑	❑	❑
• sanding the road	❑	❑	❑	❑	❑
• vehicle traction devices (i.e., chains, studded tires)	❑	❑	❑	❑	❑
• special vehicle features (i.e., 4-wheel drive, antilock braking systems)	❑	❑	❑	❑	❑
• reduced vehicle speeds	❑	❑	❑	❑	❑
• radio/television warnings	❑	❑	❑	❑	❑
• other_____	❑	❑	❑	❑	❑

11. In your opinion, should the use of the following be:

	INCREASED?	DECREASED?	ABANDONED?
• ice warning signs	❑	❑	❑
• sanding the road	❑	❑	❑
• radio/television warnings	❑	❑	❑
• other_____	❑	❑	❑

ABOUT YOU

12. Are you ❑ male? ❑ female?

13. Are you ❑ married? ❑ single?

14. What is your age?

- ❑ 16 to 30
- ❑ 31 to 45
- ❑ 45 to 60
- ❑ over 60

15. What is your annual household income?

- ❑ under $10,000
- ❑ $10,001 - $30,000
- ❑ $30,001 - $50,000
- ❑ $50,001 - $70,000
- ❑ $70,001 - $90,000
- ❑ over $90,000

16. What is your highest level of education?

- ❑ did not finish high school
- ❑ high school
- ❑ community college
- ❑ college or university
- ❑ post graduate work

ADDITIONAL COMMENTS

_____

_____

Thank you for taking the time to complete this survey. When you are finished, please refold the survey form so that the 'University of Washington' address is displayed, secure with tape, and drop it in a mailbox before November 30, 1996. No postage is necessary.

APPENDIX F: GENERAL PUBLIC SURVEY COMMENTS

AREA 1

The fixed ice on roadway signs are ignored. The large electric flashing portable warning signs would draw much more attention.

Most often most ice problems are greater at the onset of the first freezing, rain times during the fall before people or transportation department are prepared to deal with these sudden occurrences.

Drivers should read again and again the fundamental of safety driving in all conditions.

I usually don't drive very much in icy conditions.

Ice warning signs would mean much more if they appeared only when and where there was ice.

AREA 2

I would like to see signs that change color when the temperature drops below freeze (like the signs Oregon state uses over the Siskiyou's in southern Oregon).
Thank you for doing this survey!

I believe the best way to keep our roads safe in adverse conditions is to impose mandatory decreased speed limits - too many people have no common sense and think they are exempt (truckers especially!).

Driver awareness about following too close at high speeds and ice and snow practice in controlled conditions (on parking lot) will help.

Young drivers and drivers who are unaware of where black ice can form, are usually the culprits.

AREA 3

Thank you for your time and concern. Start early, slow down, distance between vehicles.

The best way to reduce accidents, due to weather, is by reducing speed and increasing space between cars.

This survey will not improve conditions; Drive education is the only way.

Studded tires are ruining our road surfaces. The best substitute for studded tires is common sense!

AREA 4

More usage of "icy" road sighs that, with falling temperatures, change color to warn drivers.

Drivers need more education and more severe testing of driving ability.

Secondary roads are ignored too often.

GENERAL PUBLIC SURVEY COMMENTS

AREA 4 (Continued)

The change in lifestyle has caused people to always be in a hurry; Many don't use common sense anymore.

Studded tires should be banned - the ruts and road damage is very dangerous and costly.

More sanding is necessary in the Vancouver area to WSU.

There should be better road maintenance.

AREA 5

There have been many accidents at this location (curve at milepost 5, I-97), yet there is no extreme danger warning.

I have never seen an ice warning sign.

When ice warning signs are left up long after the condition is mitigated, people tend to pay little attention.

Seminars for drivers to educate about hazardous driving conditions (i.e., insurance company mandate for young drivers).

I found only extreme caution and not over driving road conditions will help on ice or rear wheel drive.

Road reports are very poor - not accurate nor updated often enough. Common sense is the greatest asset on winter roads.

I-82 between Ellensburg and Yakima should be monitored better.

AREA 6

Overall, the state does an excellent job of keeping the highways safe. Could use more sanding in critical areas.

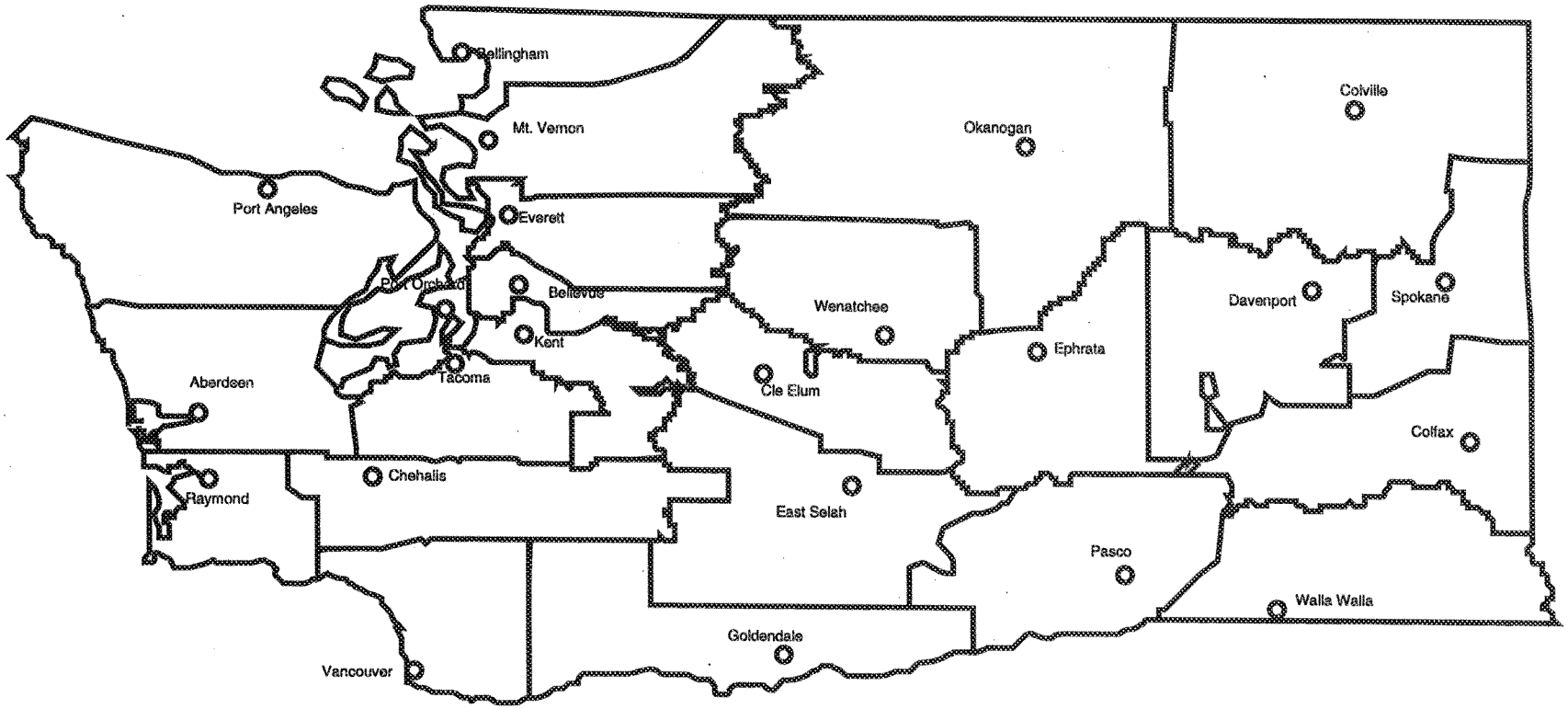
Extra road sanding is important in shaded areas (and early in the AM)!

I learned to drive in Montana. People over here (Tri-City Area) seem to be totally stupid when it comes to winter driving.

Too much trust in front wheel, 4-wheel drive vehicles...ice is ice.

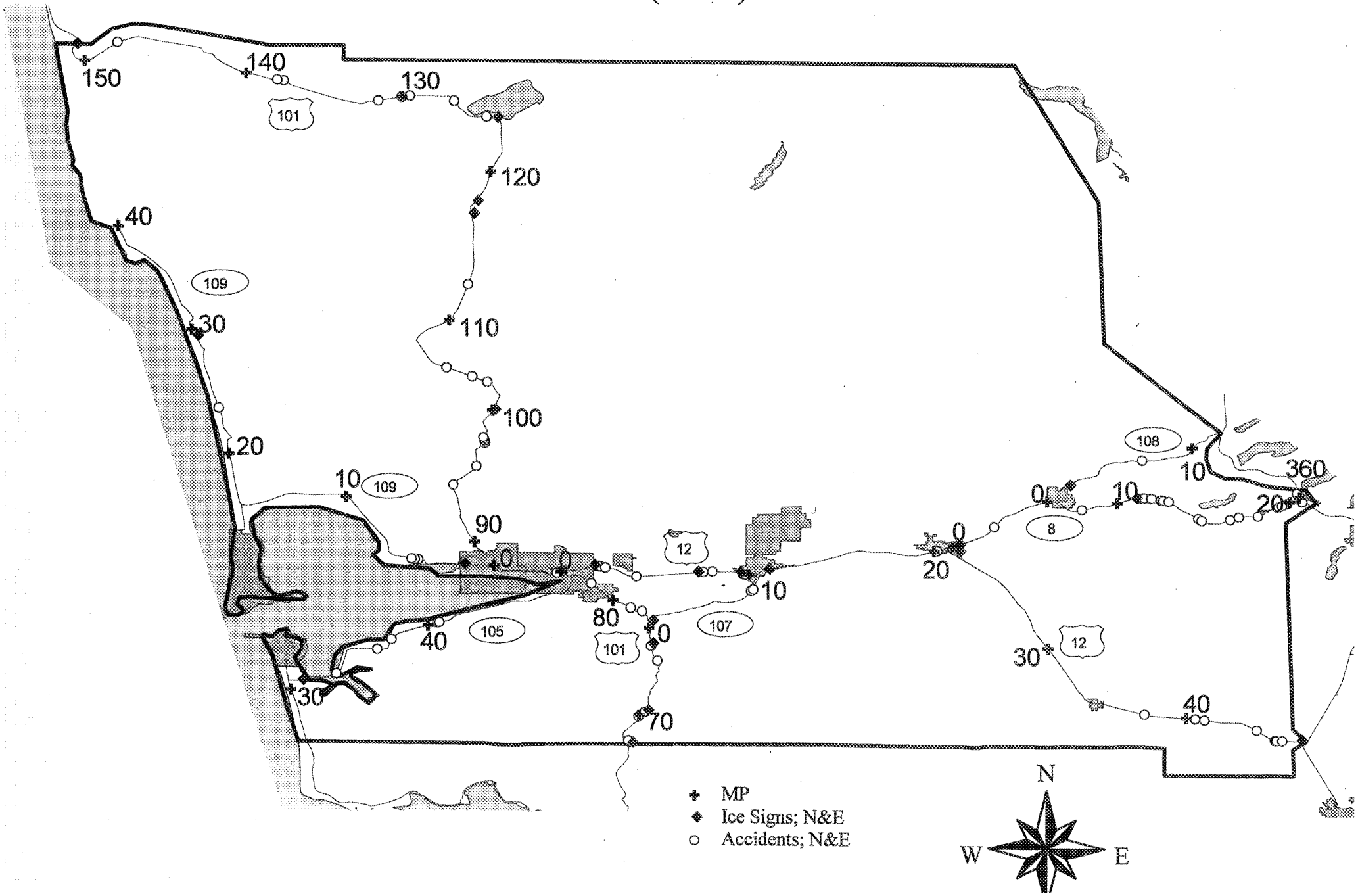
We usually drive only when we have to on icy roads and use the older rigs on 4x4's.

APPENDIX G.
RECOMMENDED ICE WARNING PLACEMENT MAPS



WSDOT Maintenance Areas

Aberdeen (N&E)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140
130
101
120
40
109
30
110
100
20
10
109
90
0
0
12
10
80
0
101
107
40
105
30
70
0
20
8
108
10
10
360
20
30
12
40
MP
Ice Signs; N&E
Accidents; N&E
N
W
E

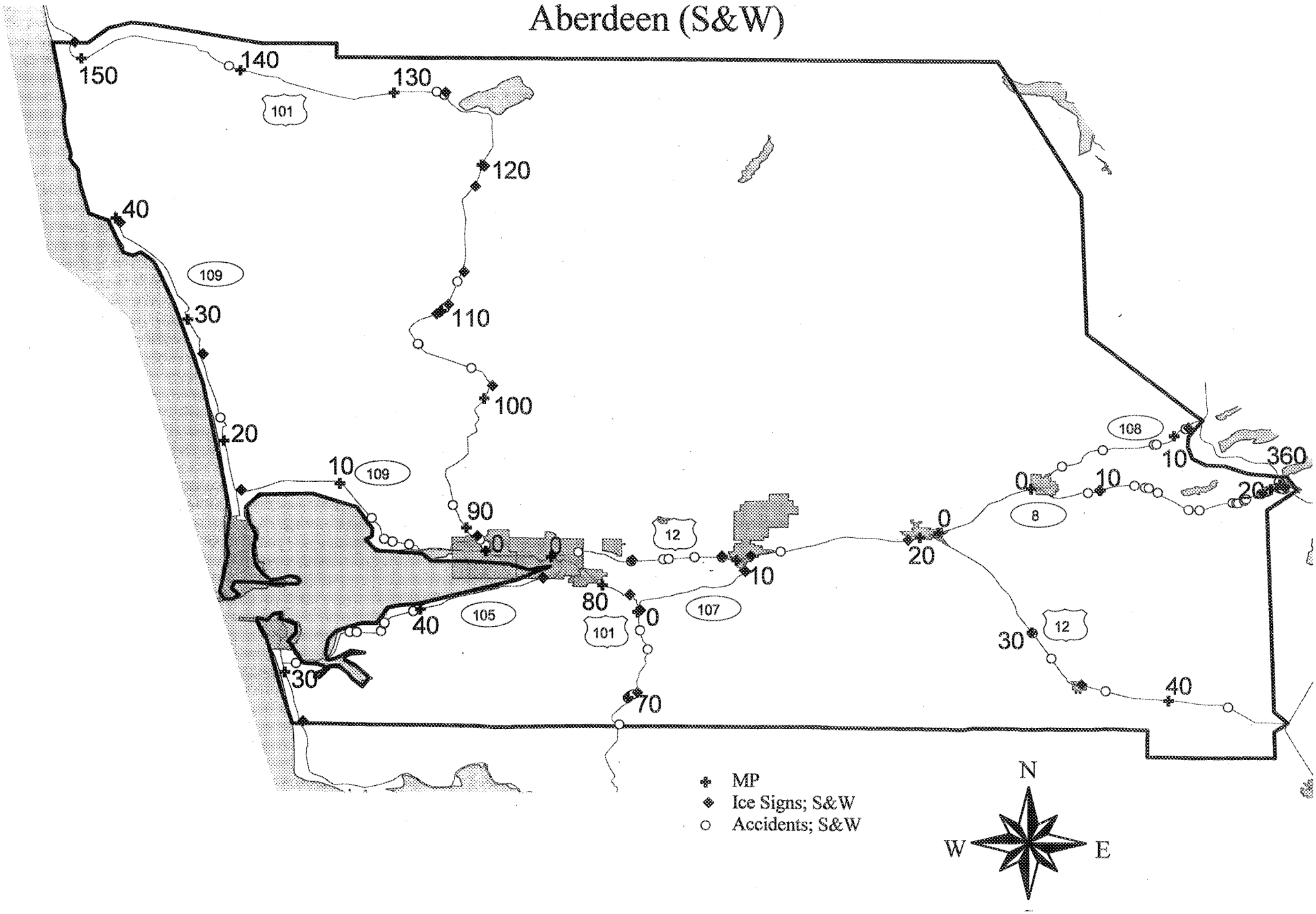
Aberdeen (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
8	0.25	2.62
	10.94	8.03
		11.20
		11.30
		11.50
		11.88
		11.90
		12.41
		12.50
		12.50
		12.55
		12.85
		14.70
		14.91
		16.52
		17.02
		18.06
		19.30
		19.51
		19.81
12	1.68	0.09
	7.20	2.00
	9.42	2.05
	11.01	2.10
	21.76	2.40
	46.21	4.10
		7.60
		8.08
		9.70
		9.86
		20.15
		37.61
		40.46
		40.96
		43.80
		44.92
		44.98
		44.99
		45.30

Aberdeen (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
101	67.21	67.30
	70.53	67.51
	75.76	69.90
	99.99	70.41
	117.50	74.50
	123.67	75.63
	133.70	78.11
	151.42	78.86
		81.70
		83.89
		93.90
		95.80
		97.56
		97.70
		97.81
		97.93
		102.20
		103.20
		104.90
		112.57
		124.20
		126.60
		126.60
		126.62
		129.49
		130.01
		131.49
		137.63
		138.03
		147.79
		360.84
		361.52
		361.54
		361.56
105	30.88	32.99
		36.16
		37.30
		40.10
		40.20
107	0.37	6.76
		6.91
108	2.20	6.97
109	1.59	4.20
	29.44	4.40
		4.59
		23.80

Aberdeen (S&W)


150
140
130
101
120
40
109
30
110
100
20
10
109
90
0
0
12
10
80
0
101
107
40
105
30
70
0
20
8
108
10
10
360
20
30
12
40
MP
Ice Signs; S&W
Accidents; S&W
N
W
E

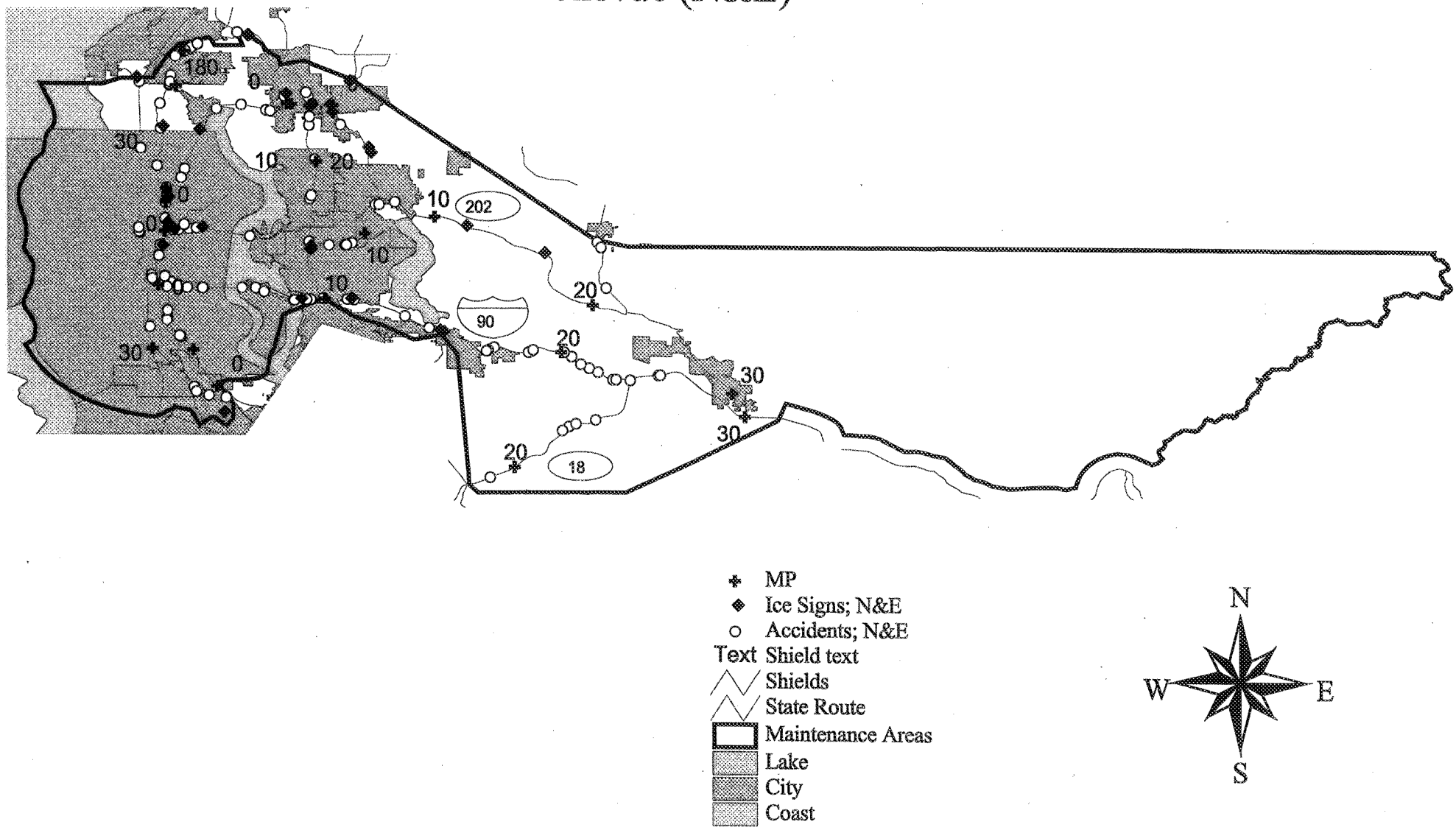
Aberdeen (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
8	9.80	9.31
	19.30	11.91
		12.50
		12.71
		13.26
		15.21
		15.21
		15.82
		17.70
		17.90
		18.00
		18.39
		18.50
		18.51
		19.41
		19.71
		19.81
		19.81
		20.38
		20.50
		20.53
		20.60
		20.60
		20.62
		20.63
		20.63
		20.63
		20.63
		20.64
		20.65
		20.65
12	4.30	1.50
	9.05	4.40
	10.64	6.10
	19.18	6.38
	34.49	7.76
		9.22
		12.41
		30.05
		32.01
		36.20
		43.21

Aberdeen (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
101	70.53	67.30
	76.96	69.98
	78.36	70.20
	89.17	70.21
	100.82	70.40
	109.45	74.00
	109.65	75.58
	112.78	88.03
	119.50	88.75
	127.24	91.66
	135.20	102.70
	143.65	106.44
	151.42	106.48
	361.34	110.29
		112.18
		126.72
		127.29
		140.78
		360.94
		361.39
		361.60
105	25.76	31.01
	46.65	34.99
		35.39
		36.80
		37.25
		37.30
		39.11
107	7.11	
108	10.80	2.99
		5.70
		8.65
		8.80
		10.80
109	16.00	4.30
	27.00	5.29
	39.59	5.80
		7.30
		22.04

Bellevue (N&E)


180
0
30
10
20
0
0
10
202
10
10
20
90
20
30
30
0
30
20
18
MP
Ice Signs; N&E
Accidents; N&E
Text Shield text
Shields
State Route
Maintenance Areas
Lake
City
Coast
N
W
E
S

Bellevue (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5	155.32	156.44
	167.10	156.48
	168.60	160.98
	170.20	161.10
	174.90	161.11
		162.34
		162.34
		162.39
		162.39
		162.48
		162.91
		164.32
		165.00
		166.48
		167.13
		167.13
		168.82
		168.86
		169.83
		170.35
		170.51
		170.71
		170.75
		170.81
		170.82
		172.37
		174.78
		176.41
		177.68
		177.75
		177.75
		177.85
		177.87
		177.88
		178.25
		179.38
		179.95
		180.02
		180.40
		180.73
		180.78
		180.81
18		18.10
		22.80
		22.80
		23.20
		23.60
		24.67
		27.78

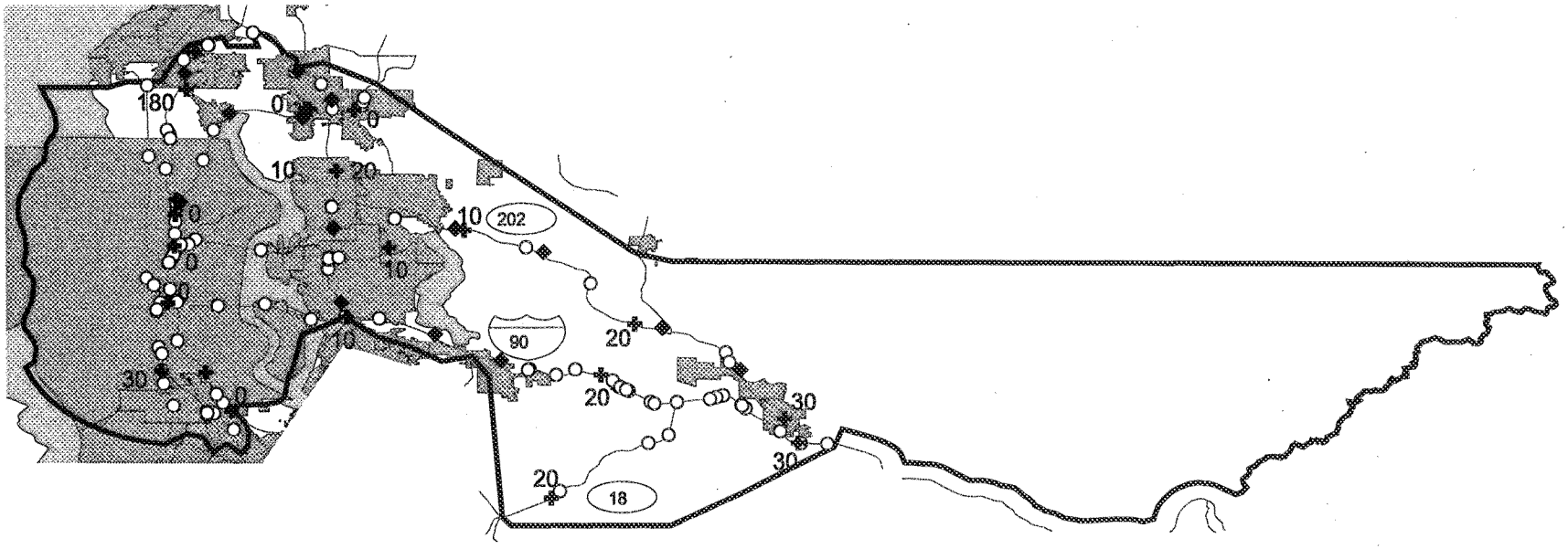
Bellevue (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90	8.79	2.75
	11.10	3.10
	13.60	3.11
	13.80	3.55
		4.25
		4.28
		6.05
		6.70
		7.12
		8.55
		8.57
		8.60
		9.15
		9.34
		9.92
		11.03
		11.35
		13.87
		15.12
		18.14
		18.24
		18.30
		18.54
		20.25
		20.40
		20.50
		22.07
		22.50
		23.09
		23.53
		23.99
		24.79
		24.95
		27.00
		27.10
99		22.65
		22.96.
		22.96
		26.77
		26.77
		30.10
		30.72
		34.40
		34.50
		34.73
		39.46
		43.62
104	27.55	
	27.56	

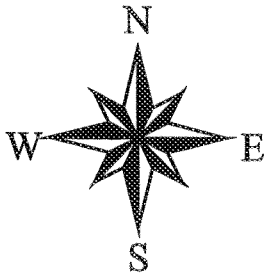
Bellevue (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
202	.68 3.89 4.22 4.24 1.156 1.570	1.62
203		1.82 4.37 4.72
405	14.40 14.60 29.20 29.26	11.16 14.93 17.64 17.85 20.17 22.40 22.92 22.92 23.73 23.74 24.25 24.57 29.65 29.65 29.70 29.71
513		0.23
520	.32 1.64	0.40 0.65 1.14 1.50 3.98 7.99 8.82 8.88 9.18 11.80 12.00 12.83
522	4.28 10.80 10.95 11.80 13.69	1.13 1.75 6.00 7.21 8.42 8.62
527	.58	0.47
599		0.70 0.71

Bellevue (S&W)



MP
Ice Signs; S&W
Accidents; S&W
Text Shield text
Shields
State Route
Maintenance Areas
Lake
City
Coast



Bellevue (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5	170.62	155.91
	178.50	158.01
		158.60
		162.33
		164.50
		164.52
		165.36
		166.96
		167.00
		167.22
		167.34
		167.35
		167.50
		167.50
		167.71
		168.75
		169.50
		170.37
		170.60
		172.76
		174.85
		175.11
		179.23
		179.90
		179.90
		180.71
		180.75
18		20.02
		25.17
		26.28
90	13.82	2.50
	14.99	4.35
	15.00	6.38
		8.45
		8.46
		11.42
		18.52
		18.60
		19.82
		20.74
		22.55
		22.92
		23.00
		23.29
		23.30
		23.40

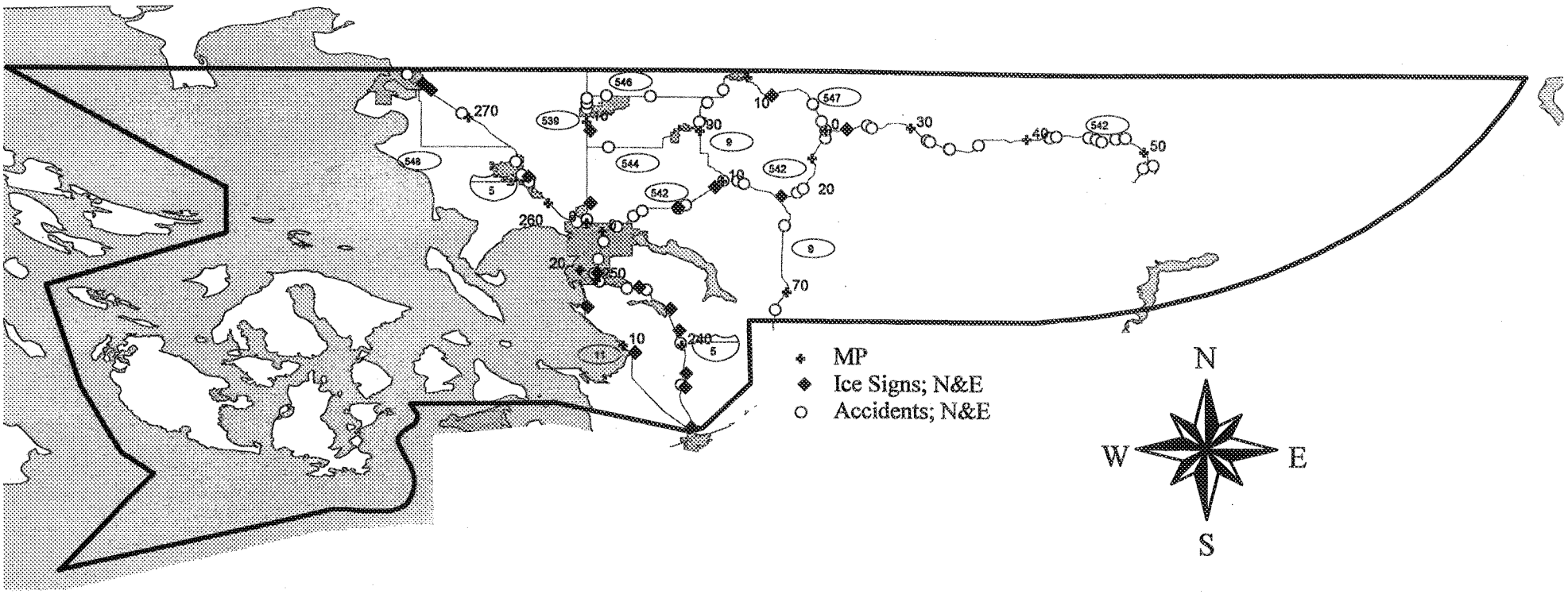
Bellevue (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		24.49
		24.68
		25.69
		27.20
		27.50
		27.80
		28.76
		28.80
		29.00
		30.90
		31.70
		32.90
99		22.80
		22.90
		22.97
		26.50
		26.79
		28.52
		28.58
		28.58
		28.96
		31.95
		32.54
		39.46
104	32.21	27.90
202	9.40	13.00
	13.70	16.68
	21.12	25.28
	26.47	25.88
405	12.00	11.15
	16.53	14.20
	24.26	14.74
	24.26	14.80
		14.82
		14.85
		17.89
		23.72
		23.72
		25.31
		29.62
		29.63
509		27.89
		27.89
		29.28
		29.59
513		0.18

Bellevue (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
520		0.10 0.27 0.50 0.54 0.60 3.77 7.40 11.53
522	9.15	2.92 4.75 12.53 12.75 12.98
523		0.89
527	2.30	2.39
599		1.39 1.72 1.75 1.75

Bellingham (N&E)



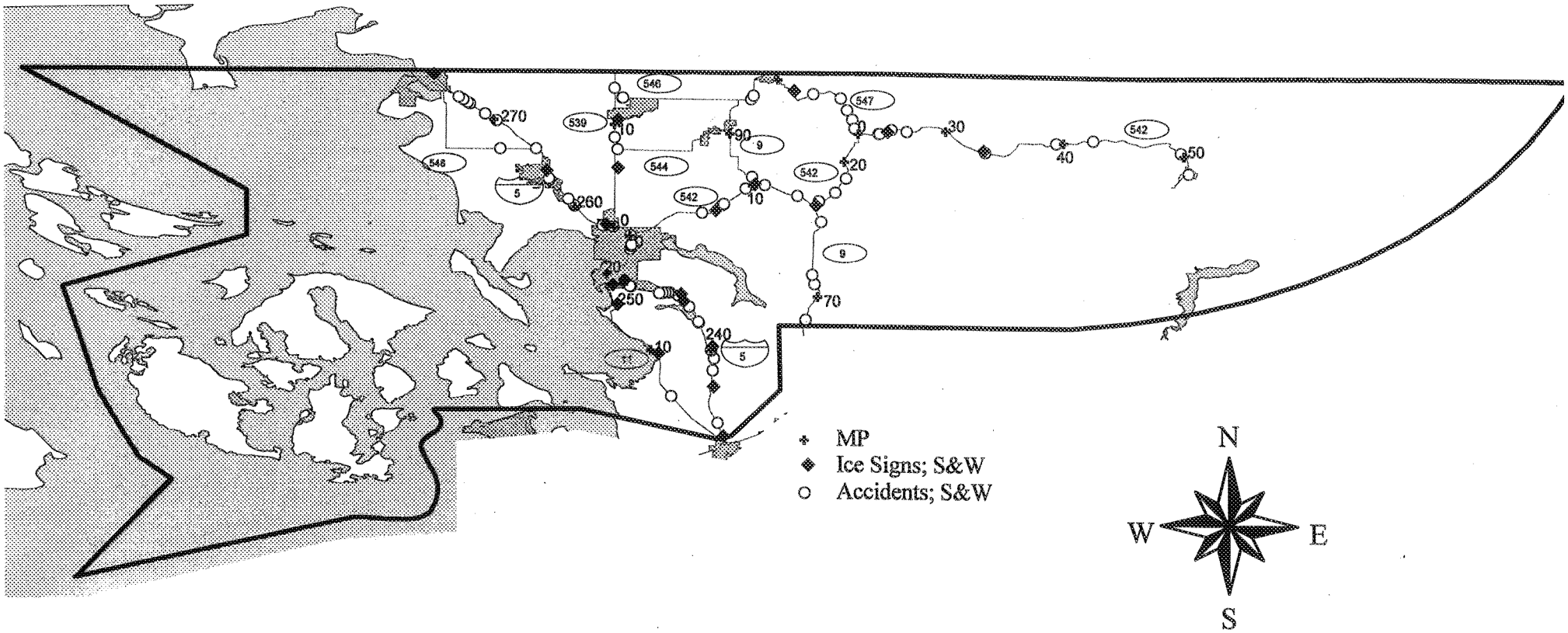
Bellingham (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5	235.71 237.08 241.43 243.47 246.78 250.48 262.89 273.80 274.61	236.06 240.22 245.89 247.47 249.74 250.57 252.02 253.80 256.26 257.05 262.37 263.05 263.07 263.15 263.20 263.24 263.25 264.49 270.60 275.83
9		67.94 76.51 90.86 93.07 95.37
11	.33 8.89 15.26	
539	1.80 8.97	0.30 11.25 11.79 12.29

Bellingham (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
542	5.80	1.11
	8.97	2.59
	14.20	3.35
	24.30	6.08
		6.70
		10.06
		11.08
		11.57
		16.14
		16.80
		22.22
		22.91
		26.26
		26.70
		31.60
		31.85
		33.46
		33.49
		35.90
		41.80
		41.88
		42.40
		45.00
		45.60
		46.07
		47.20
		47.20
		47.90
		47.95
		51.86
		54.04
547	7.14	1.52
		1.54
		1.30
		4.21
		1.03
		2.66
		2.70

Bellingham (S&W)



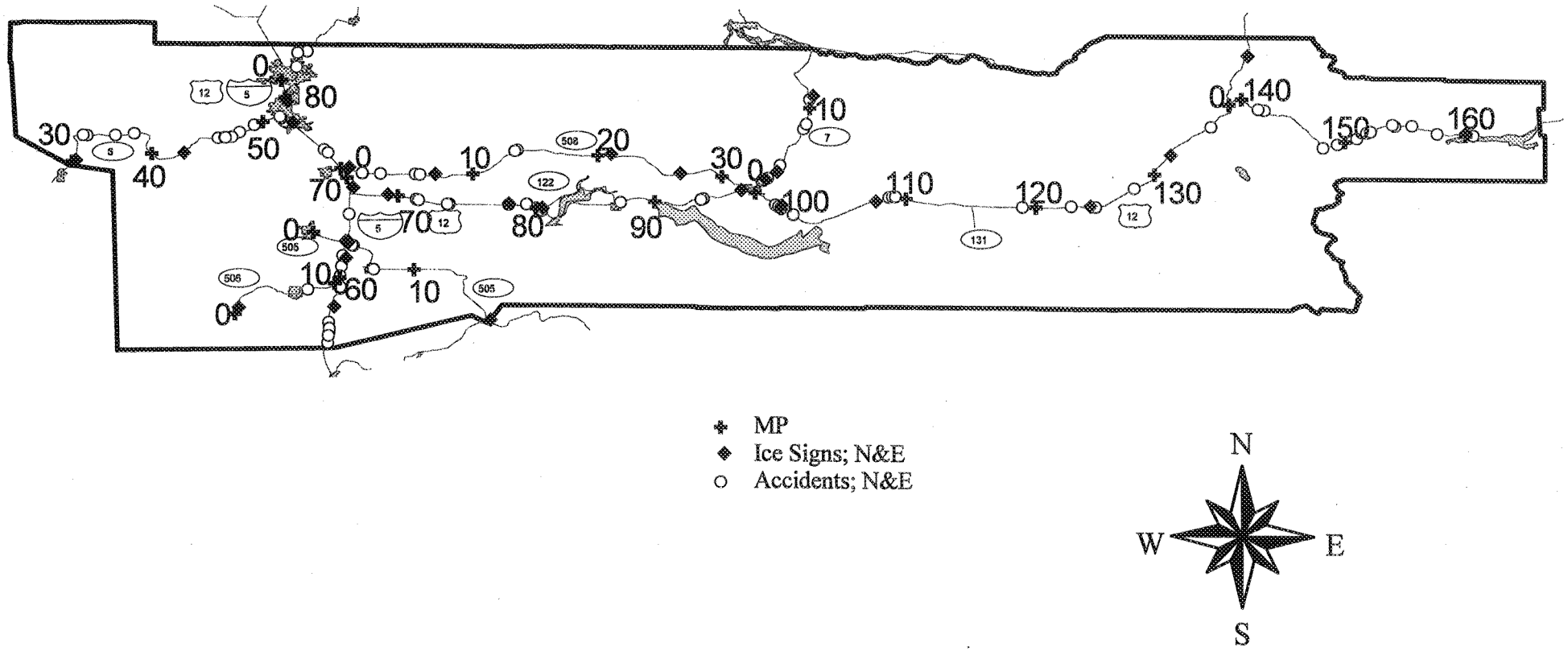
Bellingham (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5	231.40	232.83
	236.39	238.04
	240.30	239.16
	245.06	239.16
	245.67	239.96
	250.26	240.00
	257.20	240.00
	263.89	242.80
	275.92	242.80
		242.89
		244.28
		245.60
		246.30
		246.44
		246.65
		246.68
		246.89
		247.14
		249.37
		249.47
		253.45
		253.75
		253.90
		254.80
		256.30
		257.21
		260.07
		260.14
		260.83
		262.77
		263.00
		263.15
		266.02
		269.79
		270.79
		272.20
		272.40
		272.80
		273.20
9	79.27	67.34
	94.69	67.44
		71.40
		72.32
		77.57
		84.75
		94.62
		95.10
11	16.10	5.43
	17.95	

Bellingham (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
539	5.61	8.67
	10.32	13.50
542	6.43	5.66
	9.90	7.28
	24.89	7.46
	33.12	9.40
		10.85
		13.30
		15.21
		16.85
		18.40
		24.48
		24.55
		25.50
		26.75
		33.48
		39.41
		42.30
		42.30
		49.67
		53.54
		53.55
544		0.20
546		0.50
		0.53
547	8.24	0.70
		1.51
		2.39
		3.46
		5.92
548		2.85

Chehalis (N&E)


0
80
12
5
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122
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10
7
100
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131
120
12
130
0
140
150
160
0
505
70
5
12
80
90
506
10
60
10
505
0
MP
Ice Signs; N&E
Accidents; N&E
N
W
E
S

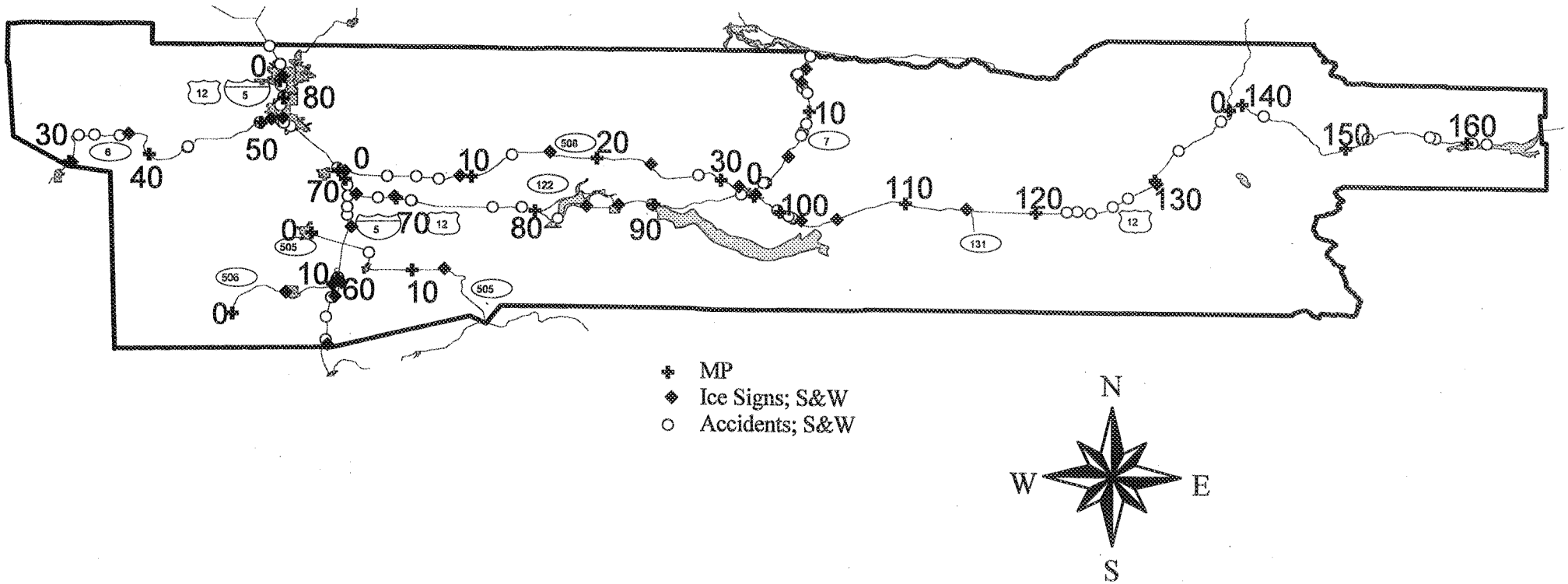
Chehalis (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5	56.74	53.30
	61.80	54.00
	63.42	54.30
	68.87	54.71
	76.84	55.31
	79.44	58.94
		59.09
		59.13
		60.17
		61.11
		62.17
		66.37
		72.78
		73.20
		77.05
		77.30
		77.40
		77.69
		77.87
6	29.97	33.00
	42.49	33.00
		33.30
		35.56
		37.06
		46.06
		46.55
		46.60
		46.66
		47.17
		47.21
		47.90
		49.25
7	1.35	1.31
	2.79	1.51
	11.00	2.00
		3.72
		7.95
		8.50
		10.80
12	69.00	71.30
	77.71	71.50
	80.21	73.57
	96.37	73.70
	99.74	77.97
	107.40	79.24
	123.98	79.28
	131.75	80.20
	159.72	80.47

Chehalis (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
12 (cont.)		87.37
		93.56
		93.76
		99.50
		99.75
		100.01
		100.01
		101.00
		101.02
		108.70
		108.97
		109.02
		109.20
		118.94
		122.74
		124.65
		128.00
		135.86
		141.70
		142.20
		148.21
		149.40
		151.02
		151.92
		152.32
		154.20
		154.49
		155.76
		157.81
		160.57
123	5.39	
505	2.70	3.52
	19.09	3.65
		6.81
506	.48	7.63
507		2.39
		3.68
		4.60
508	.35	1.64
	6.84	2.99
	20.70	2.99
	26.40	5.60
		5.95
		13.67
		13.69
		13.90

Chehalis (S&W)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80
12
5
30
6
40
50
0
10
508
20
10
7
30
0
122
70
70
12
5
80
90
100
110
120
130
12
131
0
505
506
10
60
10
505
0
0
140
150
160
MP
Ice Signs; S&W
Accidents; S&W
N
W
E
S

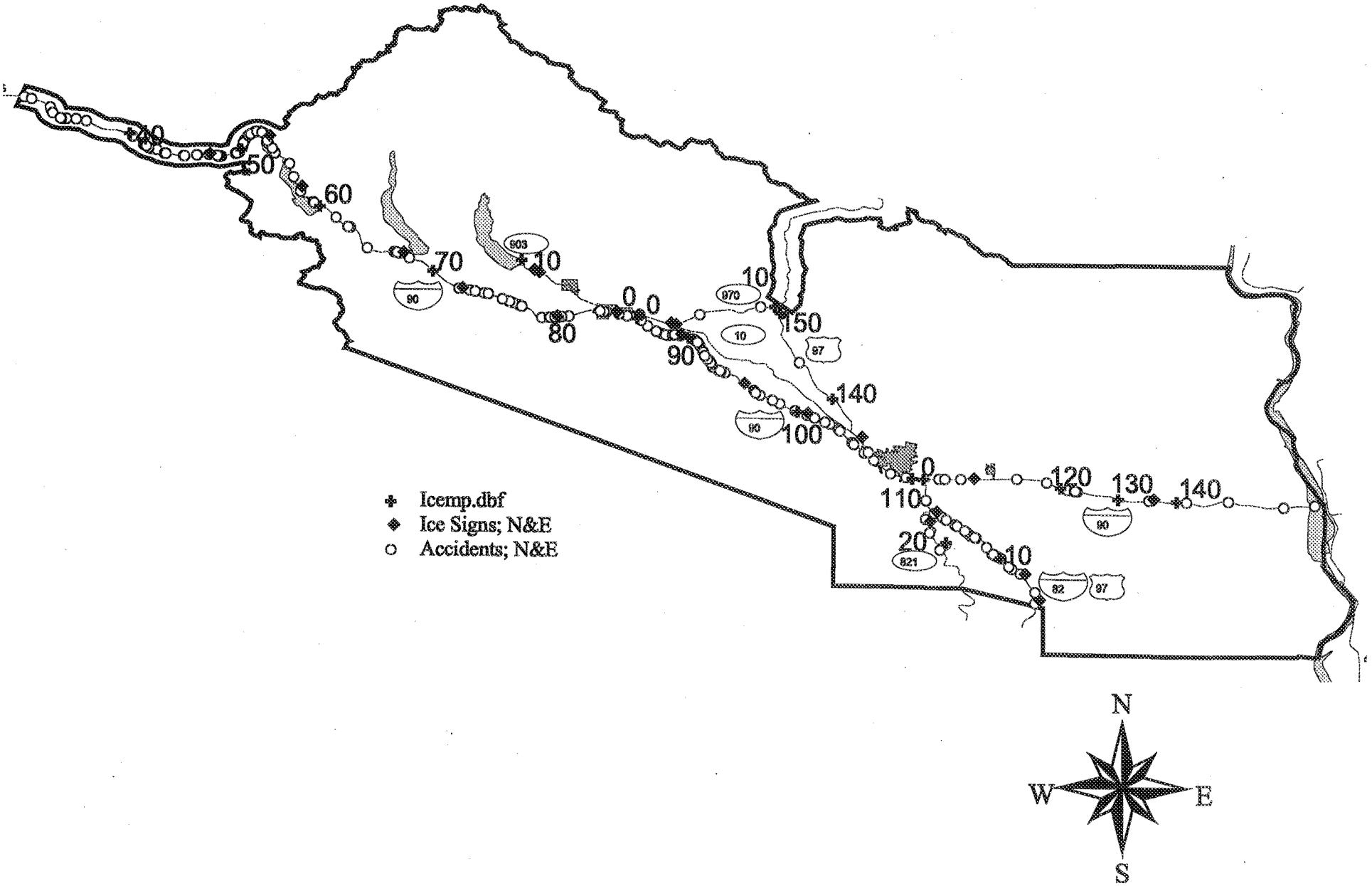
Chehalis (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5	52.89	53.51
	57.78	55.80
	59.38	57.79
	65.08	60.00
	70.75	66.37
	77.72	67.22
	82.01	68.30
		69.39
		71.28
		76.55
		77.20
		77.23
		77.30
		77.54
		79.20
		79.31
		80.08
		81.20
		83.28
		85.30
6	29.82	32.85
	36.52	34.10
	50.57	36.10
		43.51
		43.59
		43.59
		43.61
		43.61
		49.90
7	4.88	1.61
	12.99	1.61
	14.83	1.62
		1.72
		1.80
		1.86
		7.60
		7.95
		8.82
		11.75
		12.36
		12.40
		14.10
		14.15
		14.25
		16.30

Chehalis (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
12	66.88	68.69
	69.61	71.06
	84.55	71.10
	87.02	76.91
	97.51	78.97
	101.48	79.00
	104.33	82.00
	114.39	89.85
	129.62	96.71
		99.75
		100.70
		100.80
		101.00
		101.10
		122.39
		123.20
		124.25
		124.25
		126.06
		127.40
		133.00
		137.06
		142.10
		152.02
		157.08
		157.51
		160.40
		161.48
505	12.24	5.16
506	5.62	
	9.58	
508	8.85	3.61
	16.15	5.80
	23.95	7.50
	31.23	13.50
		28.10

Cle Elum (N&E)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0
10
10
20
10
0
903
90
970
10
97
90
821
82
97
90
Icemp.dbf
Ice Signs; N&E
Accidents; N&E
N
W
E
S

Cle Elum (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
10	88.43	
82	3.37	2.00
	12.30	2.03
	14.89	3.40
		4.11
		4.51
		5.32
		5.51
		6.22
		6.42
		6.72
		6.82
		7.22
		7.32
		8.50
		9.20
		9.25
		9.32
		9.52
		9.71
		10.05
		11.00
		11.32
		12.11
		14.01
		15.04
		15.10
90	47.47	33.50
	52.80	34.02
	57.82	35.51
	67.30	35.71
	72.38	35.91
	79.71	36.58
	84.14	36.61
	89.22	36.63
	95.40	36.99
	100.55	37.67
	125.99	37.68
	126.30	38.40
		41.87
		42.87
		42.97
		43.07
		43.27
		43.47
		43.87
		44.47
		44.57

Cle Elum (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		45.83
		45.88
		45.88
		46.73
		46.78
		47.62
		48.19
		48.30
		48.38
		48.49
		49.49
		49.59
		49.79
		50.24
		50.49
		50.69
		51.12
		51.30
		51.61
		51.61
		51.64
		51.79
		51.81
		52.01
		52.01
		52.21
		52.21
		52.26
		52.27
		52.30
		52.31
		52.31
		52.34
		52.60
		52.60
		52.81
		53.00
		53.03
		53.19
		53.19
		53.19
		53.28
		53.41
		53.50
		54.02
		54.39
		54.49
		54.51

Cle Elum (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		55.87
		56.90
		58.10
		59.50
		59.58
		59.60
		61.50
		61.50
		62.60
		62.64
		62.80
		64.80
		66.80
		66.82
		66.94
		67.02
		67.02
		67.02
		67.02
		67.22
		68.01
		72.32
		73.11
		73.51
		74.17
		74.50
		75.55
		76.00
		76.00
		76.10
		76.40
		76.80
		77.05
		78.80
		79.33
		79.40
		79.40
		79.50
		79.60
		79.75
		79.80
		79.94
		79.94
		79.98
		80.24
		80.75
		83.11
		83.41

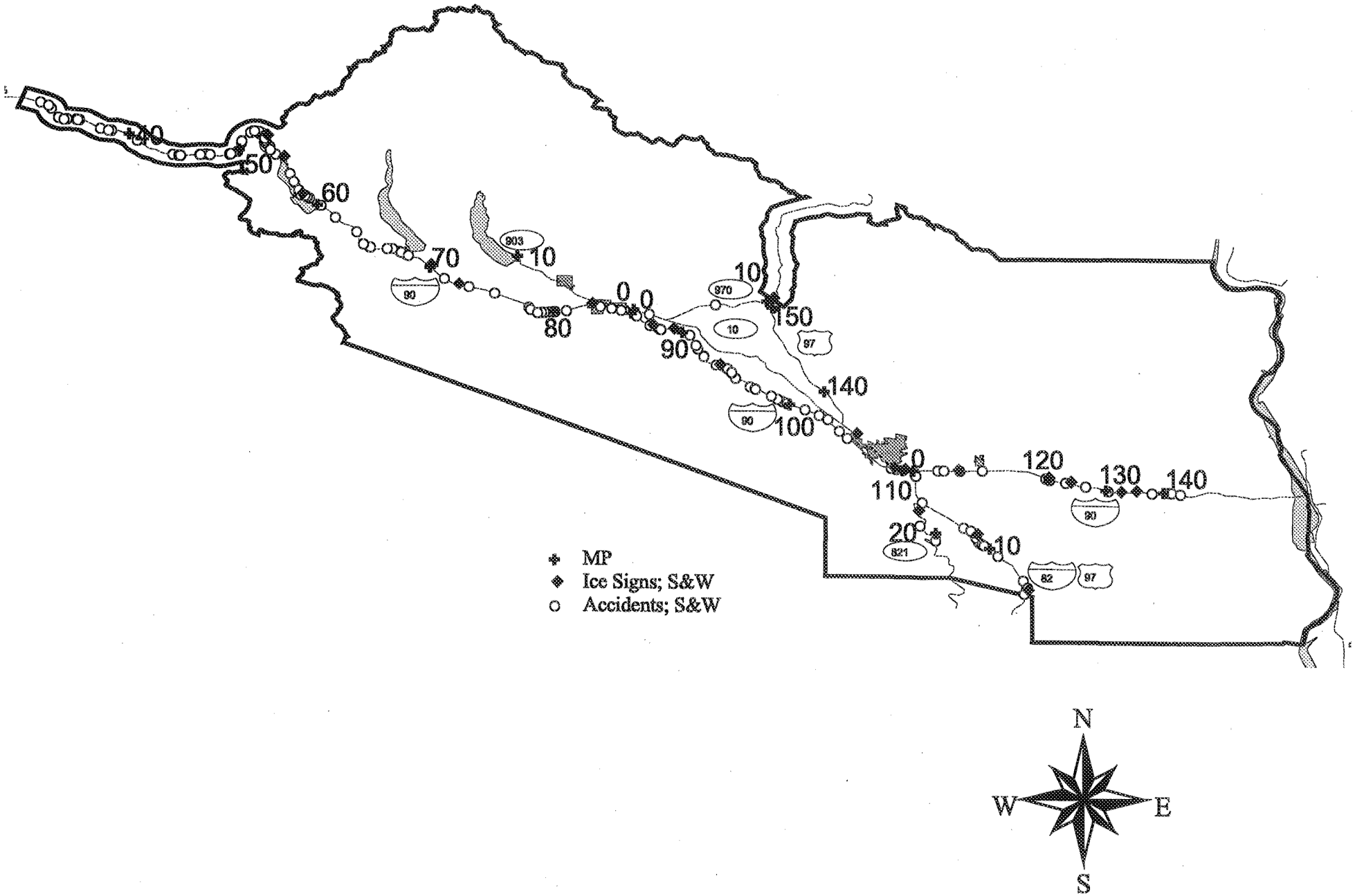
Cle Elum (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		83.60
		84.51
		85.10
		86.19
		86.80
		86.80
		87.50
		87.50
		87.60
		87.95
		87.99
		88.24
		88.26
		88.29
		88.46
		88.56
		88.76
		88.91
		89.33
		90.29
		90.39
		90.49
		90.68
		90.69
		90.70
		90.70
		90.79
		90.79
		90.99
		91.49
		91.50
		91.79
		91.79
		91.79
		92.09
		92.15
		92.34
		92.49
		92.59
		92.79
		93.30
		93.42
		93.42
		93.49
		93.82
		96.39
		96.49
		96.64
		97.00

Cle Elum (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2 (cont.)		97.94 97.99 97.99 98.57 99.79 100.69 101.29 102.09 102.09 102.49 103.18 103.19 103.39 104.59 104.60 104.79 105.75 106.65 108.28 109.50 111.90 112.28 113.31 117.01 119.01 120.47 120.93 120.97 121.01 121.11 125.87 128.34 131.15 131.15 134.81 136.87
97	135.70	134.16 144.25
821	23.58	18.50 22.00 23.90
903	8.40 8.80	
970	2.44	0.34 4.76 8.99

Cle Elum (S&W)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100
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150
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110
120
130
140
20
10
903
90
10
970
10
97
90
821
82
97
MP
Ice Signs; S&W
Accidents; S&W
N
W
E
S

Cle Elum (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
82	8.27	0.34
	14.97	0.50
		3.15
		7.17
		7.77
		8.02
		8.40
		8.40
		8.40
		8.40
		8.52
		8.95
		9.25
		9.45
		10.97
		13.91
		14.64
		14.81
		15.25
90	52.83	34.60
	55.28	35.21
	58.49	35.51
	69.83	36.37
	72.38	36.78
	82.73	36.78
	87.60	37.00
	89.15	37.65
	93.80	37.76
	109.15	37.87
	110.01	39.50
	119.80	40.07
	121.30	40.29
	125.74	42.35
	126.00	45.12
	137.00	45.53
		45.64
		47.03
		47.08
		47.49
		47.78
		47.78
		49.19
		49.30
		49.81
		50.48
		50.59
		50.62

Cle Elum (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		51.51
		51.71
		51.79
		52.17
		52.32
		52.48
		52.80
		52.99
		53.00
		53.20
		53.41
		53.49
		53.50
		53.71
		53.91
		54.21
		54.80
		56.70
		57.40
		57.40
		57.51
		58.13
		58.40
		58.58
		58.90
		59.10
		59.30
		60.33
		61.70
		63.62
		64.69
		65.20
		65.25
		66.53
		66.92
		67.44
		67.44
		67.60
		67.94
		68.16
		71.39
		73.31
		75.25
		77.99
		78.19
		78.80
		78.80

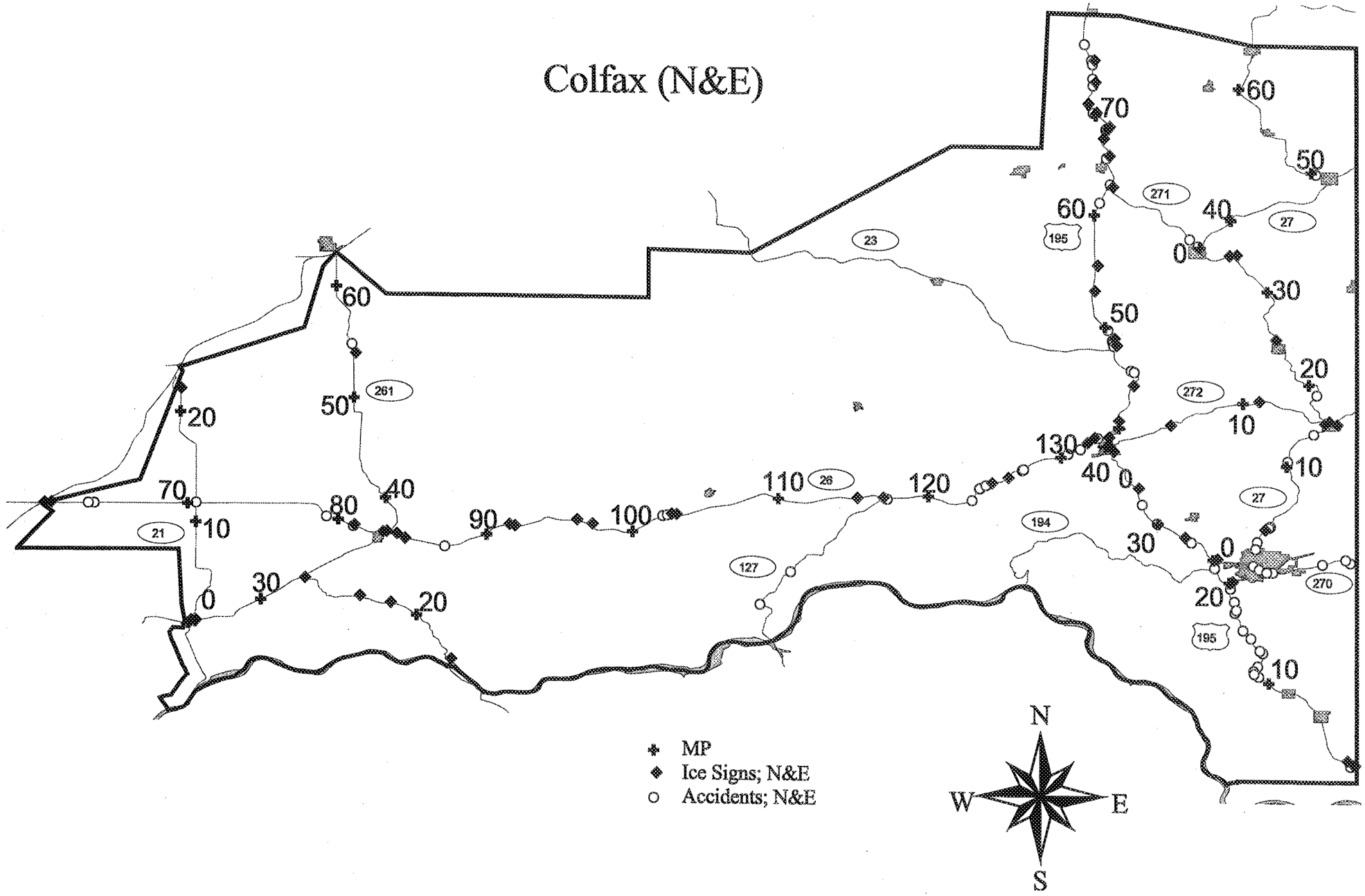
Cle Elum (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		79.04
		79.10
		79.30
		79.71
		79.98
		80.10
		80.94
		83.52
		84.37
		85.10
		86.29
		87.52
		88.24
		88.29
		88.29
		88.34
		88.36
		88.39
		90.59
		91.49
		91.79
		92.49
		92.52
		93.68
		94.49
		94.59
		94.99
		95.00
		95.49
		96.79
		97.19
		97.20
		98.49
		98.99
		99.39
		99.79
		101.19
		102.30
		103.02
		104.19
		105.00
		109.10
		109.49
		112.50
		112.91
		113.97
		115.48
		119.76

Cle Elum (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		120.03 121.11 122.46 124.01 126.95 128.04 128.24 128.84
97	135.20 149.70	
821	23.80	18.95 21.66
906		0.17
970	10.22	1.51 6.35

Colfax (N&E)


MP
Ice Signs; N&E
Accidents; N&E
N
W
E
S
21
261
23
26
127
194
195
271
272
27
270

Colfax (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
21	.13 22.02	11.70
26	61.12 61.53 80.95 82.84 83.74 84.35 91.47 91.85 96.03 97.07 102.62 102.94 115.00 116.77 124.69 125.87 131.88 132.46	63.89 64.24 79.20 81.04 87.16 102.20 102.51 117.21 123.03 123.95 123.98 124.00 124.00 124.04 124.05 124.45 127.19 127.30 130.51 131.40 132.86
27	3.04 15.52 25.19 33.70 34.29	1.52 2.06 3.60 3.76 10.37 13.60 18.50 49.64
127		13.80 17.48
194		20.91

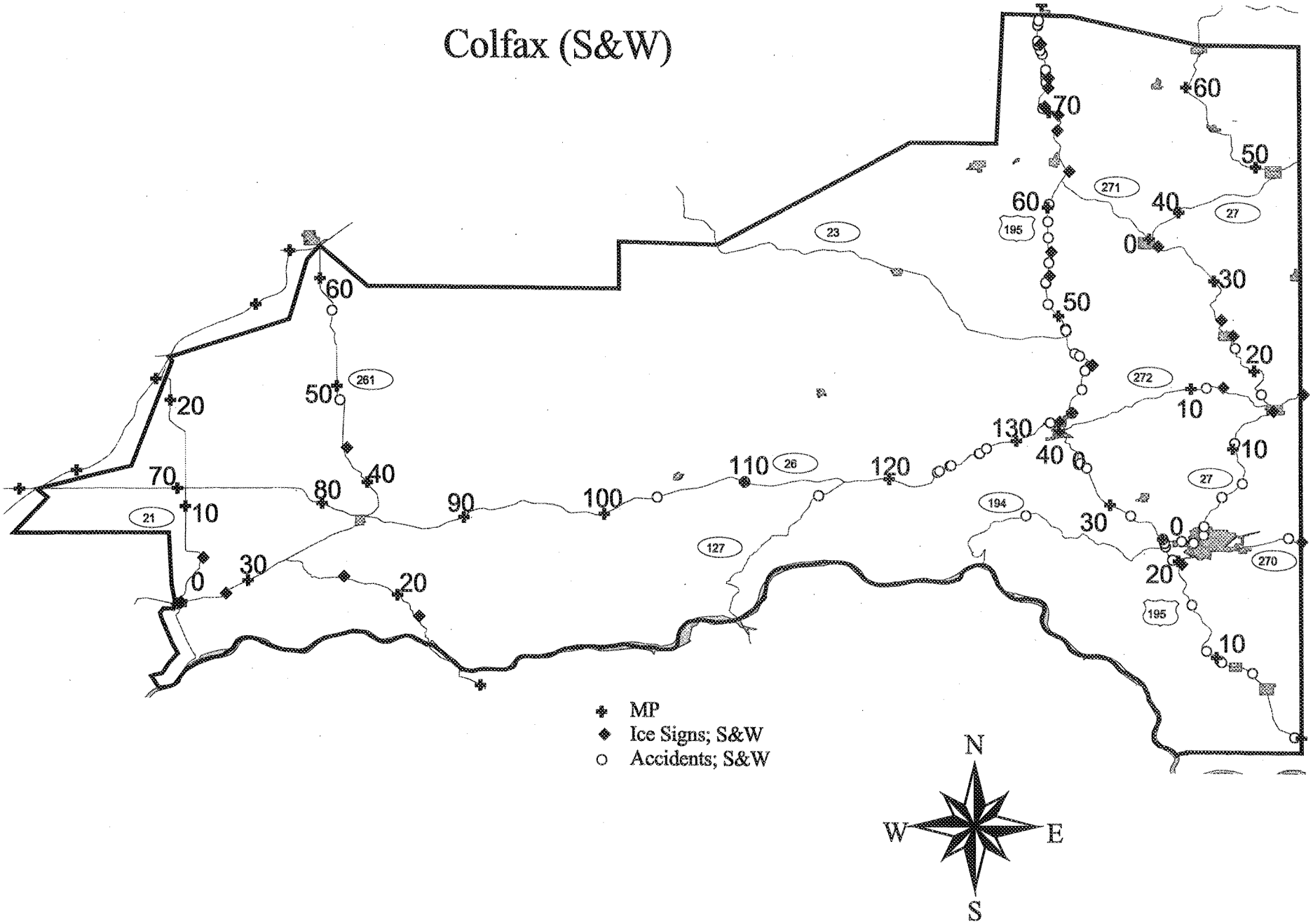
Colfax (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
195	.00	.12
	.06	.13
	.70	10.96
	19.99	11.39
	27.88	11.62
	33.22	12.10
	37.05	13.31
	38.61	13.60
	40.52	14.81
	43.74	15.74
	48.18	17.39
	48.78	17.64
	53.43	18.39
	55.64	19.50
	65.39	27.10
	67.03	30.10
	67.92	31.98
	68.16	45.30
	69.97	45.55
	71.26	48.20
	73.21	48.30
	75.09	48.50
		48.67
		49.66
		61.10
		62.89
		65.28
		67.94
		68.07
		70.07
		73.01
		73.61
		74.81
		75.16
		76.60
260	25.06	
261	15.48	54.52
	22.27	
	24.58	
	29.25	
	36.10	
	53.65	

Colfax (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
270	.11	2.80 3.25 3.63 3.83 3.95 4.21 7.51 9.07 9.42
271	8.34	.19 1.00
272	.09 4.53 10.92 16.26 17.20	

Colfax (S&W)


MP
Ice Signs; S&W
Accidents; S&W
N
W
E
S
21
261
23
26
127
194
195
271
272
27
270

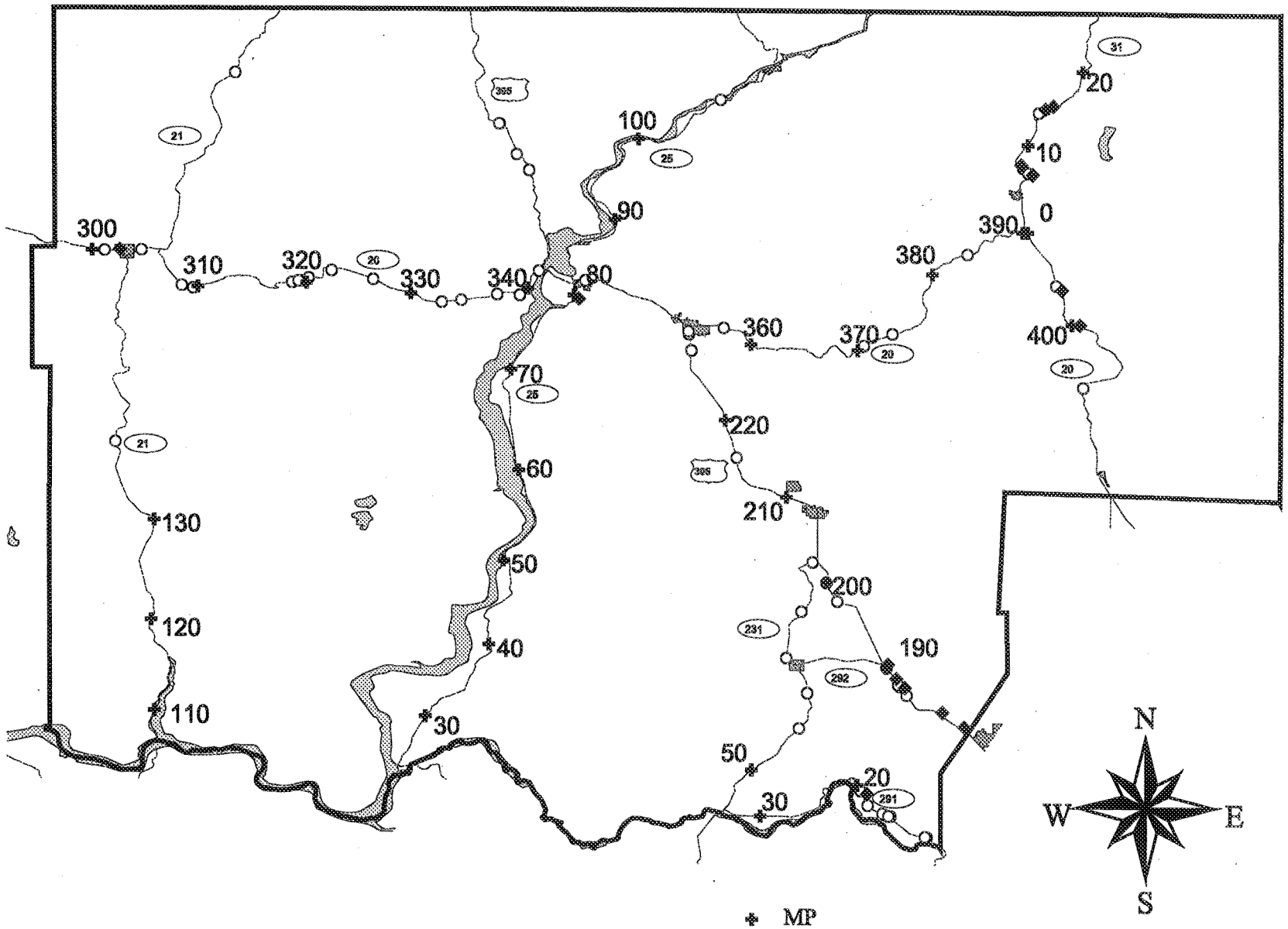
Colfax (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
21	4.38	
26	133.21	103.85
		110.00
		123.85
		124.05
		124.87
		124.87
		124.91
		124.96
		127.20
		127.23
		127.80
		132.75
27	14.80	.93
	23.98	1.52
	26.02	1.66
	35.96	4.59
		4.63
		6.63
		10.49
		17.01
		22.89
127		24.70
194		8.60
195	19.60	.20
	44.49	6.75
	53.84	9.45
	55.96	9.60
	63.52	11.01
	67.38	15.89
	69.10	20.46
	70.72	21.69
	72.60	22.00
	73.44	28.19
	76.54	33.53
		34.13
		37.95
		39.94
		42.34
		43.98
		44.54
		45.91
		46.35
		48.50
		48.55
		48.69

Colfax (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
195 (cont.)		51.43 53.31 53.35 55.11 57.31 58.75 60.31 70.63 73.19 73.61 74.01 74.19 74.26 75.68 76.05 76.54 76.60 76.86 78.21 78.27 78.63
260	24.70 28.00	
261	17.65 24.55 43.85	48.58 56.78
270	9.75	.00 1.25 2.07 8.97 11.08
272	12.12 19.20	

Colville (N&E)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320
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340
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90
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10
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400
70
60
50
40
30
220
210
200
190
130
120
110
50
30
20
N
W
E
S
MP
Ice Signs; N&E
Accidents; N&E

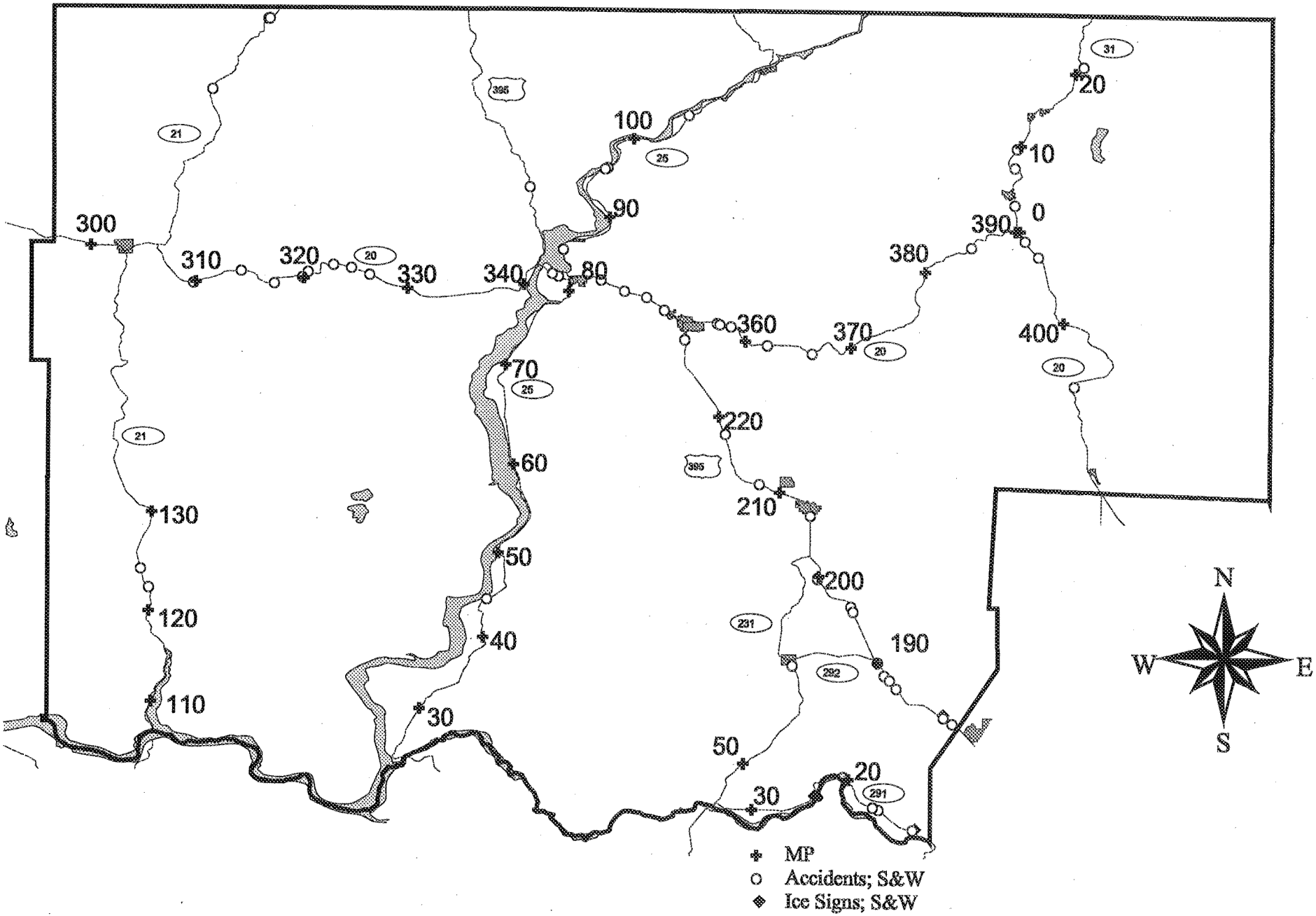
Colville (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
20	301.77 396.46 400.41	300.99 303.99 308.77 309.69 318.89 319.41 319.66 320.67 323.41 326.83 332.70 334.28 337.18 339.09 341.83 357.34 370.70 373.20 383.59 396.00 410.94
21		139.11 159.40
25	79.53	108.52
31	5.95 7.48 13.67 14.59	6.20 6.93 13.28
231		55.80 59.47 63.81 68.50 74.70
291	19.01	12.66 12.80 16.09 16.25 16.25 16.62 16.78 18.15 19.42

Colville (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
395	181.22	187.17
	181.40	188.10
	183.77	188.27
	187.74	190.05
	188.84	197.96
	190.23	200.01
		216.53
		227.40
		228.92
		229.19
		238.22
		252.02
		254.10
		257.56
		257.61

Colville (S&W)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40
30
220
210
200
190
130
120
110
50
30
20
N
W
E
S
MP
Accidents; S&W
Ice Signs; S&W

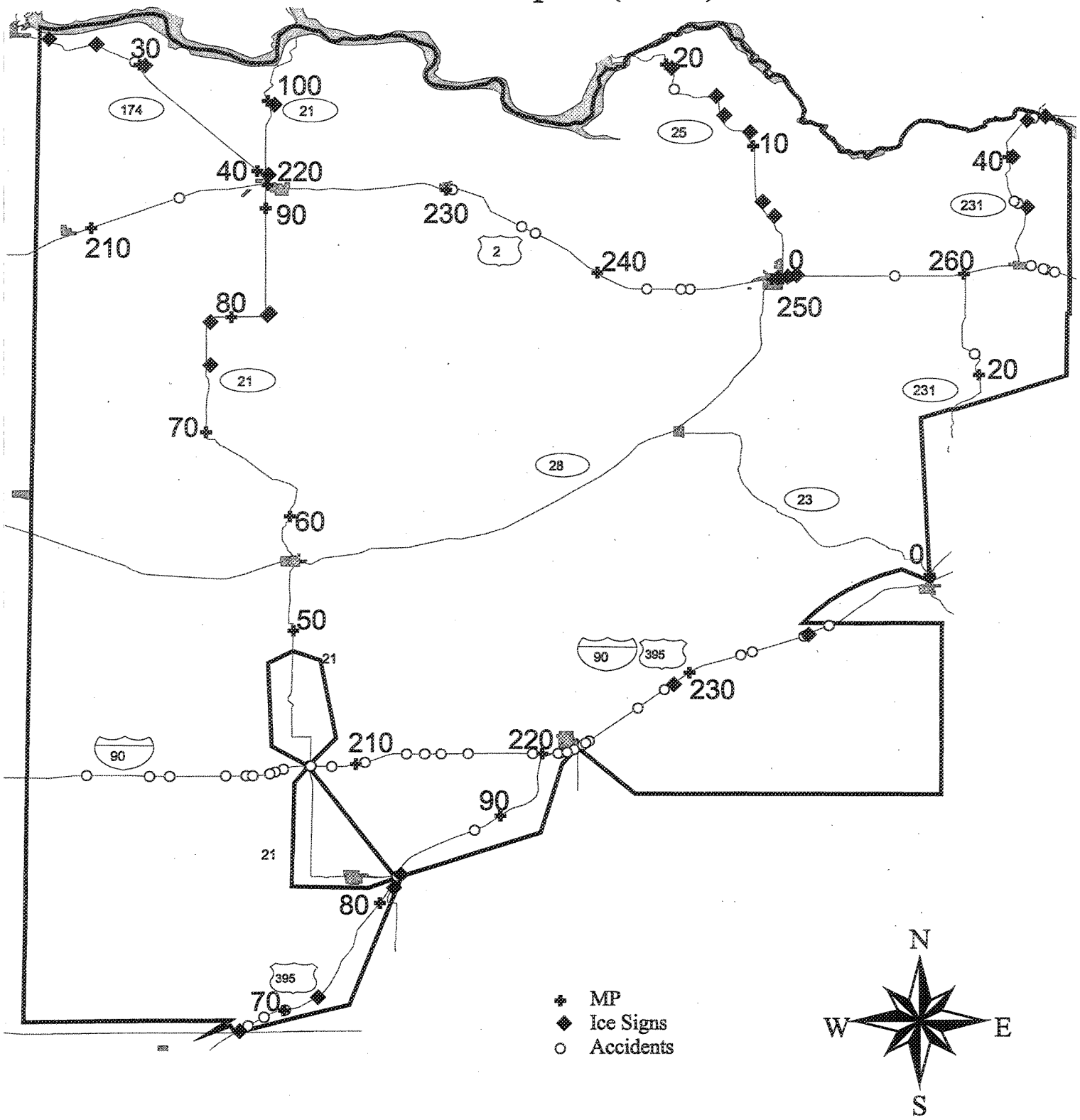
Colville (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
20		309.85 313.89 316.93 319.95 320.86 323.77 325.26 326.83 357.20 357.50 358.39 362.00 365.89 384.79 391.50 393.39 411.00
21		99.86 122.28 165.80 165.93 181.12
25		44.18 84.17 95.69 95.92 105.70
31		2.59 7.03 9.49 20.98
231		61.59
291	13.04 24.85	12.98 16.29 16.80

Colville (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
395	182.60	181.31
		182.32
		187.30
		187.30
		188.20
		188.78
		190.08
		195.10
		195.60
		199.80
		199.85
		205.98
		212.10
		218.31
		228.00
		231.32
		232.95
		234.68
		236.62
		239.99
		240.51
		250.10

Davenport (N&E)



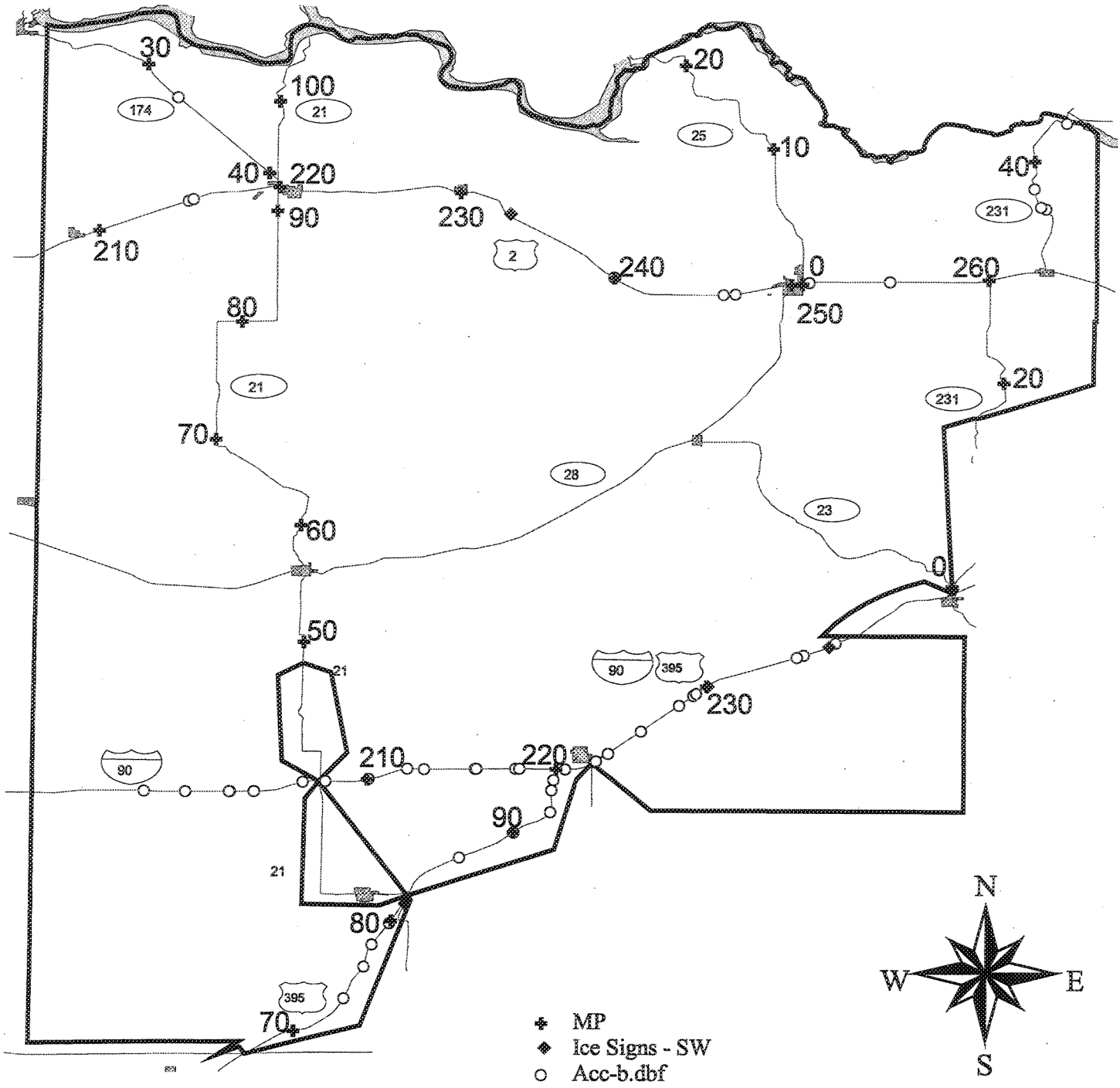
Davenport (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2	251.10	216.08
	251.63	231.36
	251.63	235.97
	251.63	236.81
	252.10	243.99
	252.10	245.91
	252.10	246.41
		251.89
		257.40
		264.66
		265.36
		265.46
		265.48
		266.00
21	23.56	
	74.80	
	77.85	
	82.20	
	82.43	
	99.51	
25	4.60	17.95
	5.90	
	11.01	
	13.40	
	15.09	
	19.60	
90	228.60	195.05
	228.60	198.40
	237.16	199.44
	237.16	202.43
		203.50
		203.84
		204.74
		205.05
		205.50
		206.90
		206.98
		206.99
		208.10
		209.90
		212.20
		213.16
		214.03
		215.47
		219.49
		220.84
		220.94

Davenport (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
		221.34 221.75 222.28 222.50 222.74 226.25 228.20 233.23 233.95 237.12 237.32 237.41 238.71 238.73
174	23.70 26.85 30.20 40.55	29.65
231	35.50 39.90 43.00 44.60	21.77 36.14 36.50 43.98
395	66.52 72.13 72.13 82.10	67.44 68.60 70.09 82.10 88.07

Davenport (S&W)



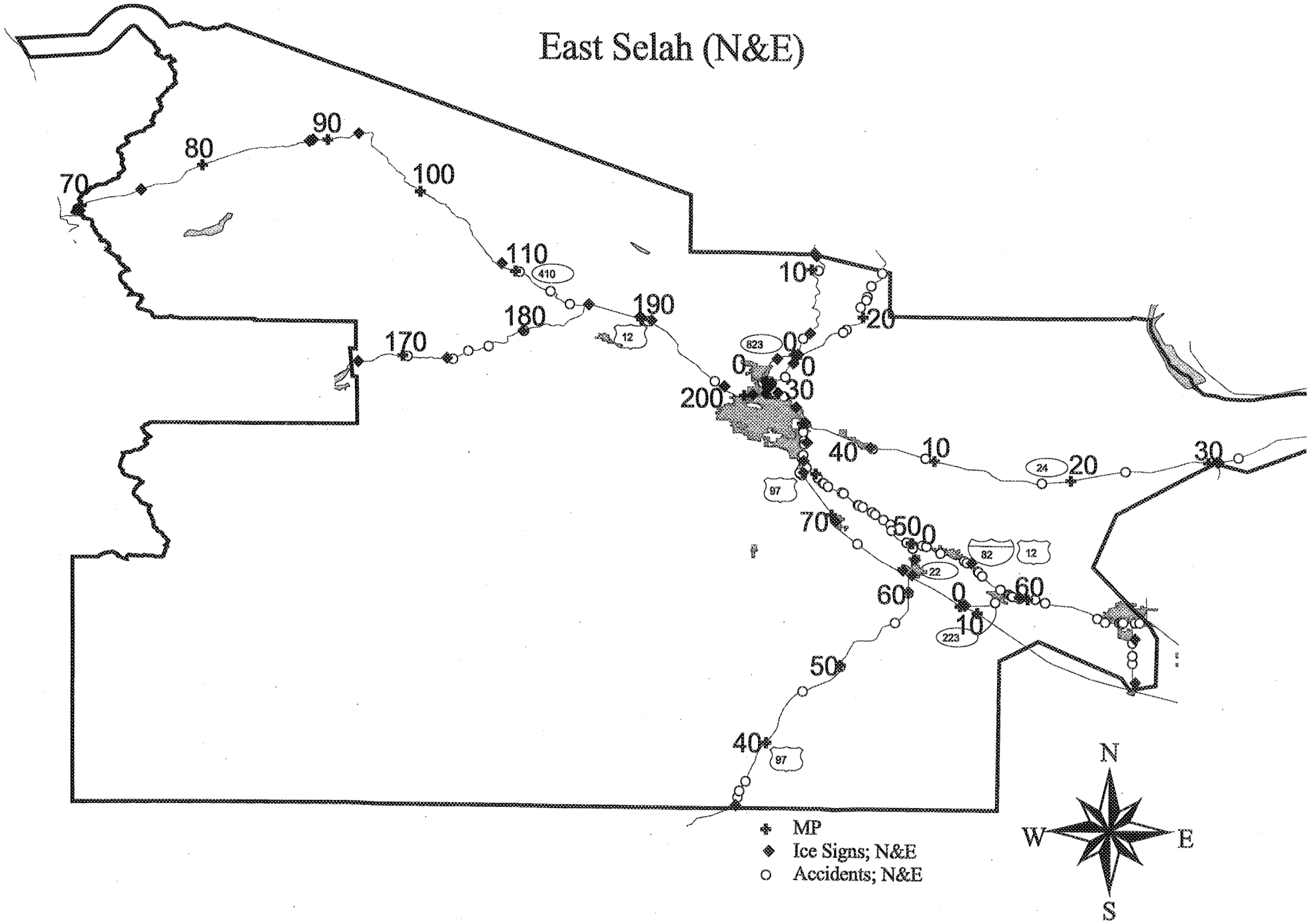
Davenport (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2	234.10	216.02
		216.29
		240.96
		247.20
		247.86
		251.89
		256.00
90	229.82	197.70
	229.82	199.82
	237.29	199.82
	237.29	202.10
		202.15
		203.40
		206.00
		207.20
		209.50
		211.60
		212.49
		215.17
		215.23
		217.29
		217.50
		220.49
		222.12
		222.12
		222.17
		222.21
		223.04
		225.35
		228.01
		229.02
		229.24
		229.24
		229.25
		235.53
		235.93
		237.93
174		32.79
231		36.03
		36.45
		37.89
		44.38

Davenport (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
395	81.22	74.00
	81.22	76.47
		78.02
		79.81
		86.19
		90.00
		92.70
		94.12
		94.80

East Selah (N&E)



East Selah (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
12	166.34 173.12 185.60 189.65 190.56 198.20 200.55 201.56 202.50	170.34 173.77 175.08 176.68 180.05 190.50 197.53 202.11 202.19 202.35 202.50
22	2.38 4.07 8.74	1.17
24	5.13 30.38 30.51 38.37	5.53 9.40 17.98 23.98 32.15 40.48 40.53 43.68
82	27.12 30.10 30.38 33.24 34.77 36.79 54.74 59.20	15.53 17.06 18.03 18.05 18.33 18.33 19.11 21.74 22.07 28.40 30.80 30.99 31.89 35.14 35.50 35.61 36.50 36.80 38.50 38.55 38.61 38.61 38.80 39.04 40.37

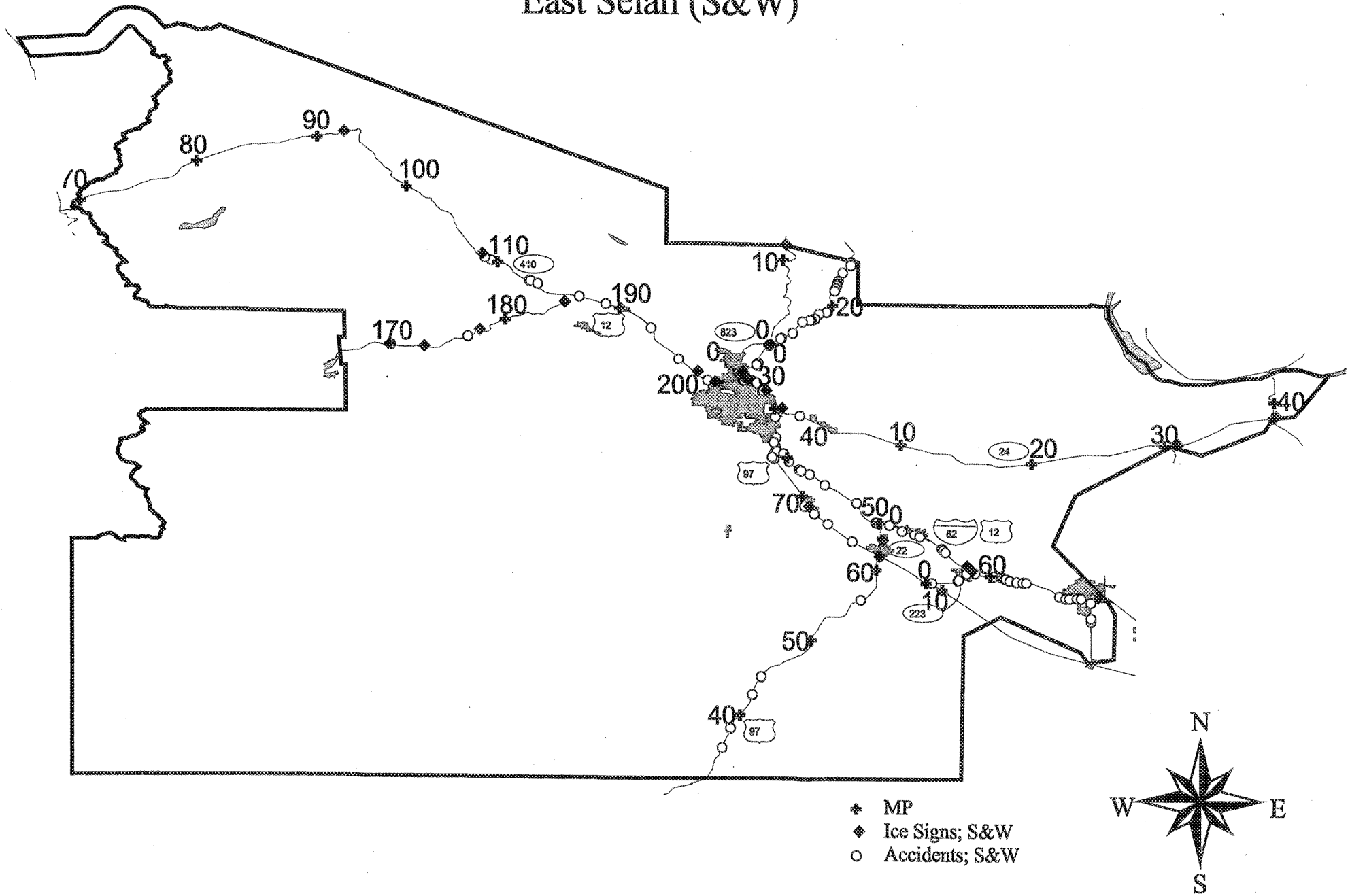
East Selah (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
82 (cont.)		41.00
		41.10
		41.50
		42.74
		42.90
		44.41
		44.50
		44.82
		45.70
		46.00
		46.80
		47.50
		47.98
		49.61
		50.90
		51.20
		52.40
		54.30
		54.55
		55.62
		55.66
		55.68
		55.68
		55.72
		56.09
		57.83
		58.54
		58.63
		58.80
		58.88
		59.40
		60.52
		61.30
		65.30
		65.93
		66.94
		66.97
		67.10
		67.20
		67.22
		68.08
		68.40

East Selah (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
97	32.63 33.63 62.24 69.33 74.32 75.63	34.52 35.07 36.10 45.69 49.88 56.79 59.92 66.55 74.17 74.40 74.46 76.00 76.30
223	0.14	2.63
241	0.66 4.58	2.51 3.21 4.33
410	69.32 74.52 88.30 88.62 92.26 108.62	110.32 113.18 115.25
821	0.42 2.60 12.53 12.76	2.08 10.59
823	0.60 2.90 4.40	0.08 0.58

East Selah (S&W)



East Selah (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
12	172.52	170.08
	177.21	176.31
	184.81	186.70
	198.00	188.88
	199.60	192.99
	202.30	196.37
		199.17
		202.09
		202.12
		202.15
22	2.53	4.29
24	0.37	2.03
	30.76	
	38.77	
82	26.35	15.44
	30.40	15.50
	32.91	15.73
	57.81	16.76
	68.20	17.58
		17.63
		17.83
		17.93
		17.98
		17.98
		18.03
		18.28
		18.53
		20.71
		20.81
		21.41
		21.91
		22.21
		22.31
		22.35
		22.95
		24.14
		25.10
		25.20
		26.20
		28.33
		28.57
		30.49
		30.87
		31.38
		31.40
		31.79
		31.89

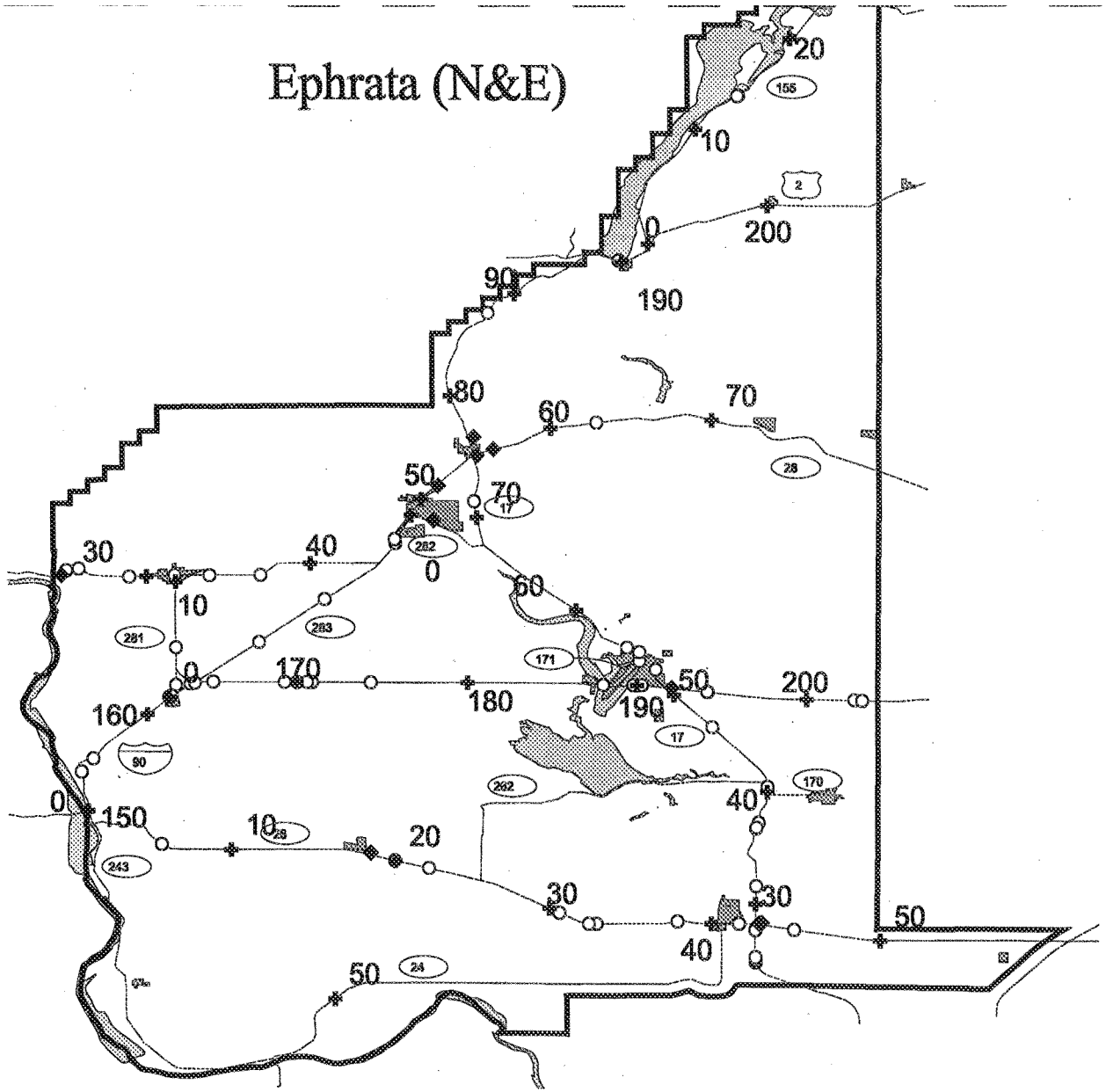
East Selah (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
82 (cont.)		32.84
		35.61
		37.73
		38.49
		38.90
		39.50
		40.35
		41.50
		41.54
		41.55
		41.60
		41.70
		42.50
		44.09
		47.20
		49.70
		49.70
		49.80
		49.81
		50.86
		52.00
		53.02
		53.46
		55.50
		55.52
		55.52
		55.52
		55.60
		55.65
		55.90
		58.02
		58.78
		58.80
		60.22
		60.82
		60.97
		61.10
		61.20
		61.20
		61.20
		61.50

East Selah (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
82 (cont.)		62.02 62.50 62.74 62.74 65.50 66.00 66.30 66.84 67.16
97	61.10 68.92	36.60 38.50 42.19 44.00 56.50 63.87 66.52 67.98 68.01 69.09 69.09 74.17 74.43 74.43 75.99 75.99
223	3.62	0.46 2.49 2.57 3.37
241		4.00 4.30 5.78
410	92.01 108.40	108.90 109.45 112.99 113.09 113.70
821	12.80	
823		0.22 0.24

Ephrata (N&E)



MP
Ice Signs; N&E
Accidents; N&E
Text Shield text

N
W
E

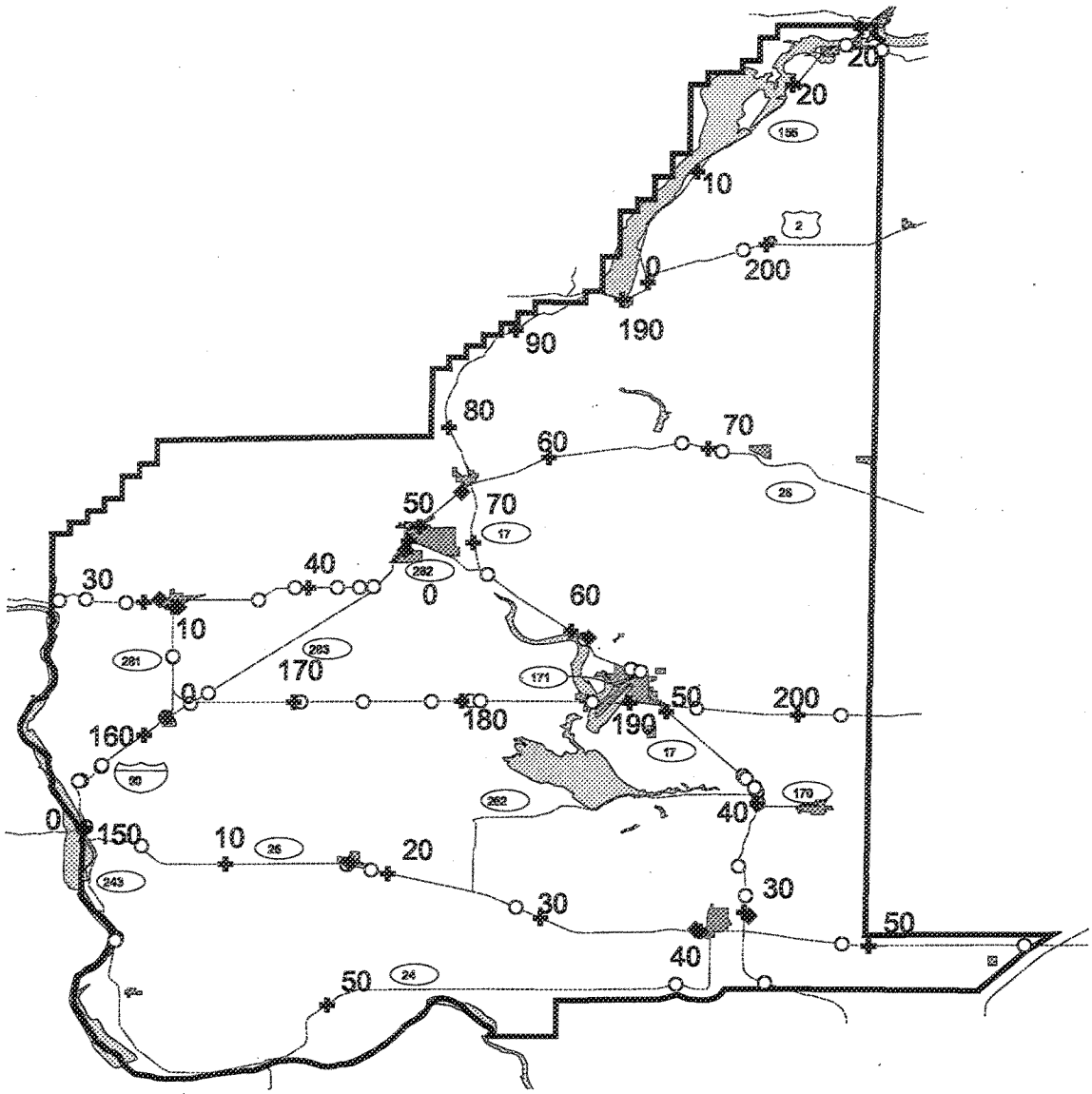
Ephrata (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2		190.81
17	28.28	25.63
	50.59	25.77
	75.15	26.00
	76.52	27.91
		31.48
		36.68
		36.80
		37.25
		37.26
		40.39
		46.38
		52.60
		54.73
		55.60
		55.60
		71.36
		87.40
26	18.25	5.69
	42.75	19.97
		22.10
		30.67
		32.60
		33.06
		37.94
		41.61
		44.89
28	22.37	23.01
	49.27	23.81
	53.98	26.94
		29.70
		31.80
		34.80
		44.07
		44.40
		44.40
		60.81

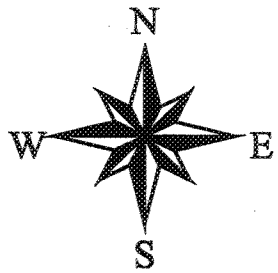
Ephrata (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90		140.75 142.55 149.78 149.93 151.39 151.69 152.79 156.99 157.69 158.29 158.59 162.01 175.70 177.49 177.89 178.00 181.85 181.87 181.89 190.50 190.95
155		13.99 14.07
171		2.89
174		20.28
281		1.37 4.50
282	1.21	
283		5.11 10.42

Ephrata (S&W)



- MP
- Ice Signs; S&W
- Accidents; S&W



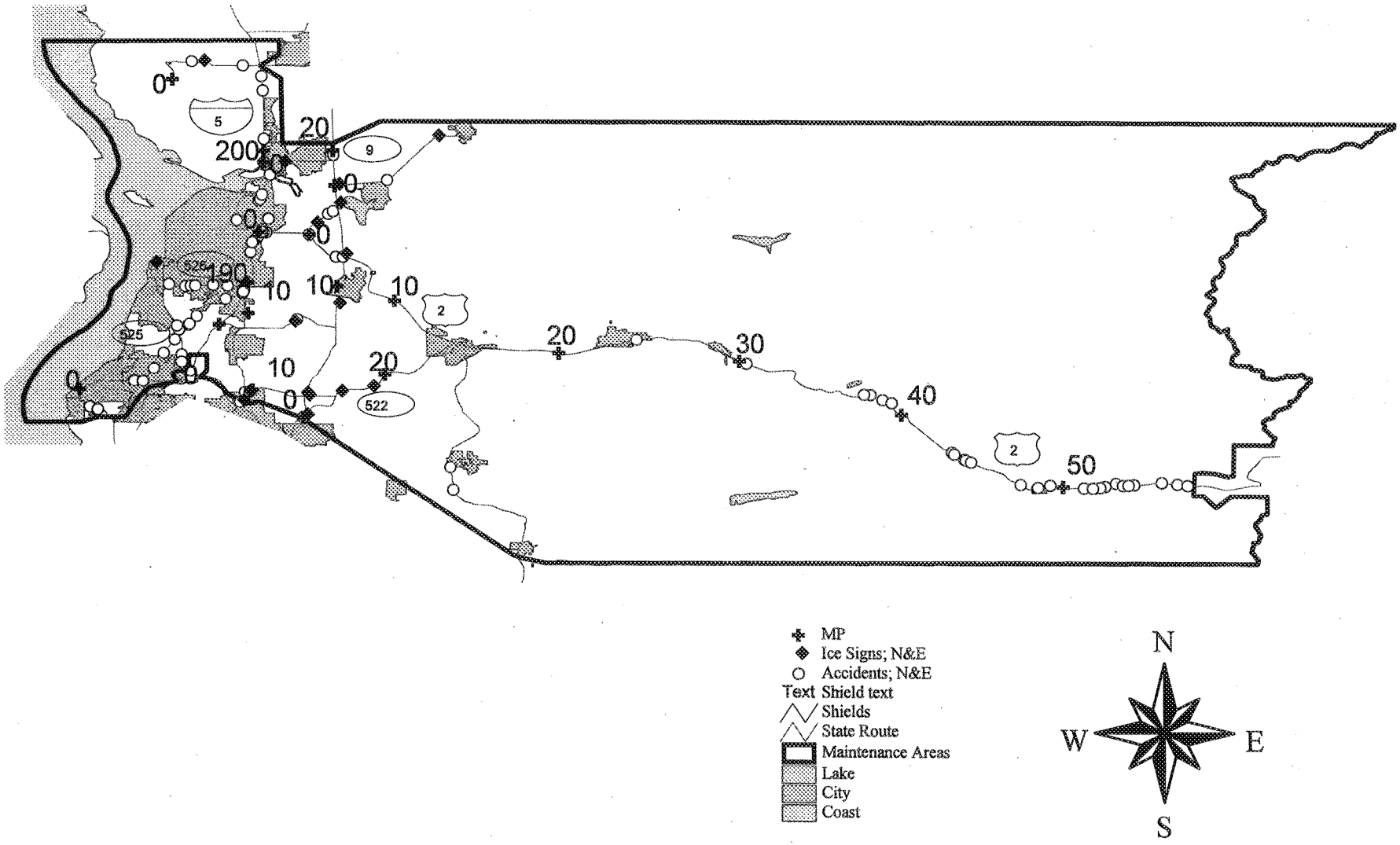
Ephrata (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2		199.54
17	29.49 58.92	23.59 31.41 34.20 40.07 40.98 41.34 41.39 42.29 42.59 54.22 54.92 58.91 67.04
24		73.20
26	17.34 39.42	4.40 17.40 18.91 28.25 48.41 59.09
28	28.68 45.60 51.68	22.61 24.35 26.84 34.79 37.19 39.72 41.06 41.90 66.28 68.86
90		137.66 137.91 137.93 141.65 141.85 143.72 143.84 143.84 151.60 158.09 161.79 165.88 168.19 168.78 175.42 181.69 190.22

Ephrata (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
155		25.17
174		23.30
243		19.38 19.58
281	9.83	0.02 5.56 5.60
283		1.30

Everett (N&E)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200
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526
190
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10
2
525
20
30
0
10
20
0
522
40
2
50
MP
Ice Signs; N&E
Accidents; N&E
Text Shield text
Shields
State Route
Maintenance Areas
Lake
City
Coast
N
W
E
S

Everett (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2		0.14
		0.19
		0.26
		0.47
		2.20
		4.54
		24.12
		30.29
		37.40
		37.76
		38.46
		39.05
		43.32
		43.48
		43.48
		44.10
		44.20
		44.50
		47.50
		48.51
		49.19
		51.02
		51.50
		51.57
		51.60
		51.90
		52.18
		52.80
		53.20
		53.50
		53.50
		53.80
		55.29
		56.15
		56.70
		56.71

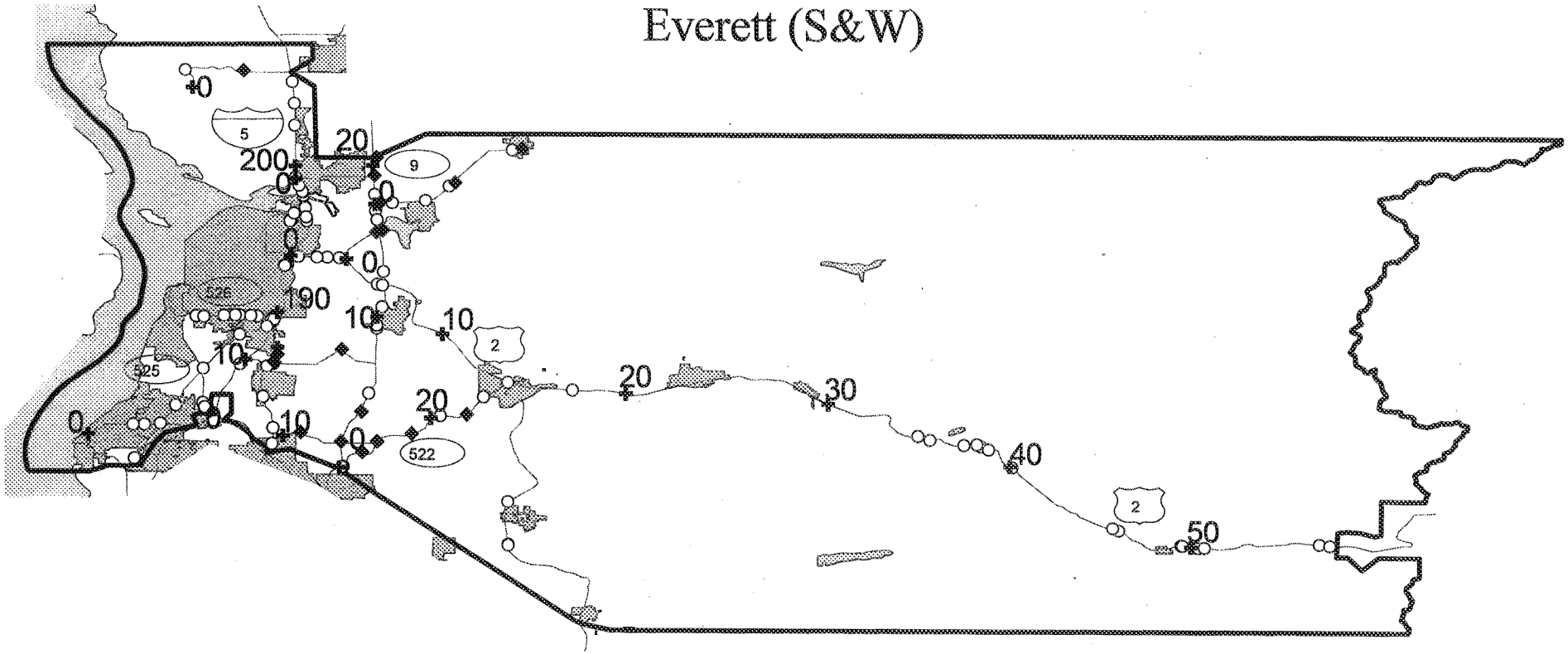
Everett (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5		189.21 189.21 189.33 189.34 189.34 192.20 192.87 192.87 193.01 193.02 193.43 193.92 194.86 198.00 198.89 199.11 200.78 204.24 205.28
9	.14 1.73 8.70 12.43 16.15	12.30 19.66
92	.07 6.47	2.91
96	4.03	4.35
99		46.85 47.92 49.11 50.22 51.54 51.61 52.26 54.31 55.40
104		26.06 26.53 26.61
203		12.62 14.09
204	.77	1.74 2.04
522	16.92 18.80	14.09
524	9.64 12.95	3.11 9.56 9.80

Everett (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
525		0.10 0.10 0.95 1.42 3.04 3.36
526		0.64 1.50 1.77 1.77 1.82 2.00 2.91 3.63 4.45 4.51
527	3.03	2.96
529	.87	2.28 3.85 4.00 4.30 4.30
531	3.09	2.55 5.46

Everett (S&W)



MP
Ice Signs; S&W
Accidents; S&W
Text Shield text
Shields
State Route
Maintenance Areas
Lake
City
Coast

N
W
E
S

Everett (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2		0.46
		1.23
		1.57
		1.97
		4.64
		4.94
		17.33
		34.89
		35.49
		37.20
		37.86
		38.06
		38.45
		40.00
		45.79
		46.10
		49.42
		49.50
		50.20
		50.28
		50.56
		56.20
		56.20
		56.20
		56.70
5		186.02
		189.45
		189.68
		193.05
		193.13
		196.25
		196.50
		197.05
		197.12
		197.77
		197.80
		198.00
		198.05
		198.53
		199.20
		202.57
		204.00
		205.40

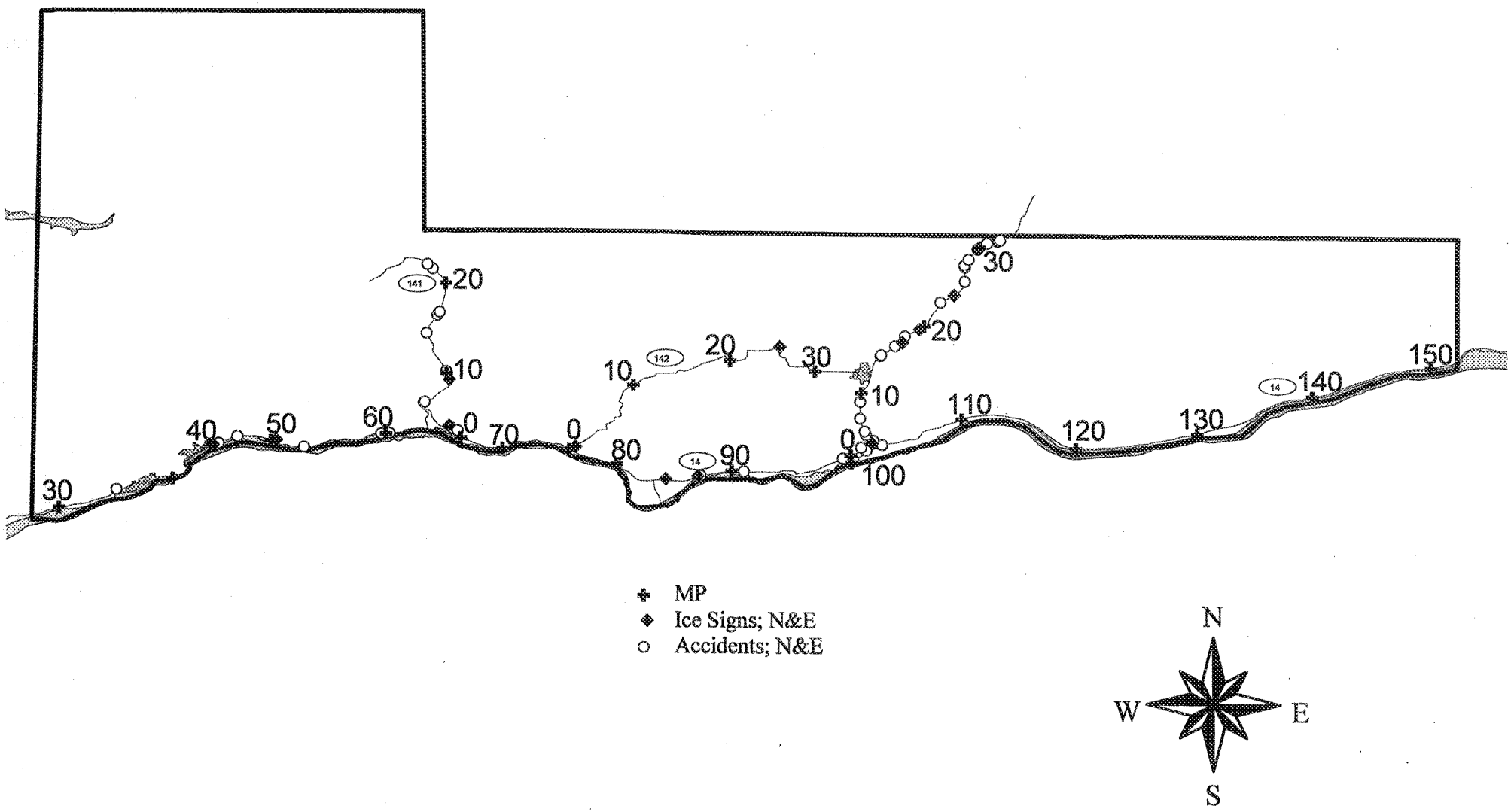
Everett (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
9	3.72 15.69 17.42 20.45	5.09 9.25 9.47 10.77 13.10 16.48 17.05 18.12
92	4.03 7.95	0.84 2.47 3.87 7.67
96	1.23 4.79	
99		44.43 46.95 48.29 50.95 53.60 55.10
203		12.81 12.87 15.36
204	2.00	
522	15.41 18.42 21.69	14.19 14.28 20.50 20.50 23.15 24.61
524	10.70 12.70 14.46	2.34 2.87
525		0.60 0.68 0.96
526		1.00 1.35 2.25 2.56 2.75 2.96 3.45 3.75 3.75 4.41 4.47 4.50

Everett (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
527	9.34	3.38 4.37 6.43 8.41 8.85
528	3.34	
529		3.85 3.90 3.94 4.00 4.09 4.33 4.36
531	3.91	0.99

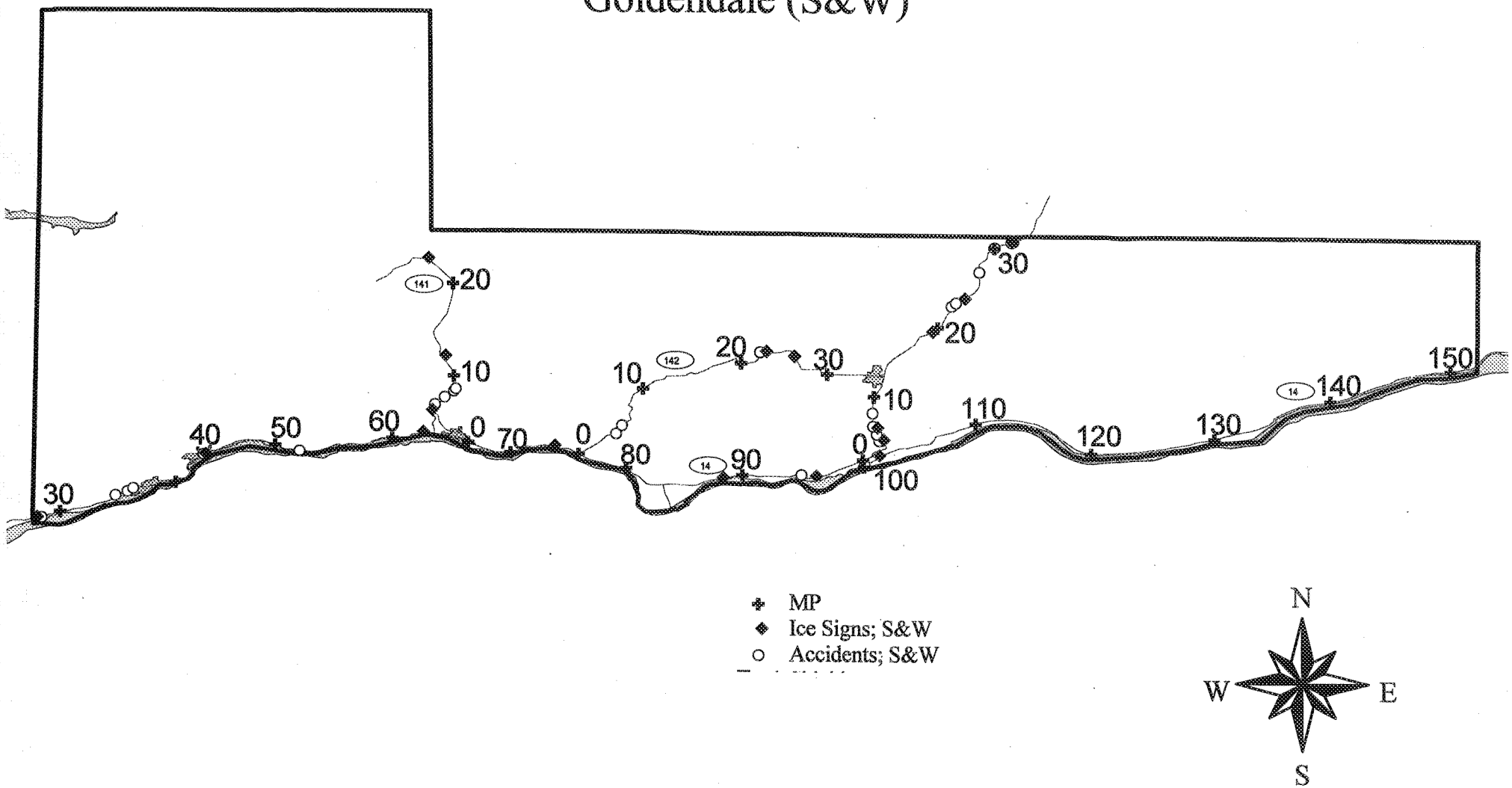
Goldendale (N&E)



Goldendale (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
14	44.65	35.20
	50.17	45.44
	84.28	47.15
	86.94	52.87
		59.61
		60.30
		87.46
		90.99
		99.32
		101.58
		102.95
97	3.63	0.35
	16.97	2.80
	19.10	4.40
	23.98	5.47
	29.50	5.86
		7.32
		9.04
		14.87
		14.97
		16.53
		17.87
		22.89
		26.02
		27.36
		27.55
		28.29
		28.29
		29.71
		29.81
		30.81
		31.81
		31.92
		32.09
141	1.91	0.78
	9.16	5.52
		5.65
		10.19
		14.55
		16.67
		17.08
		21.88
		22.55
142	.27	
	24.91	

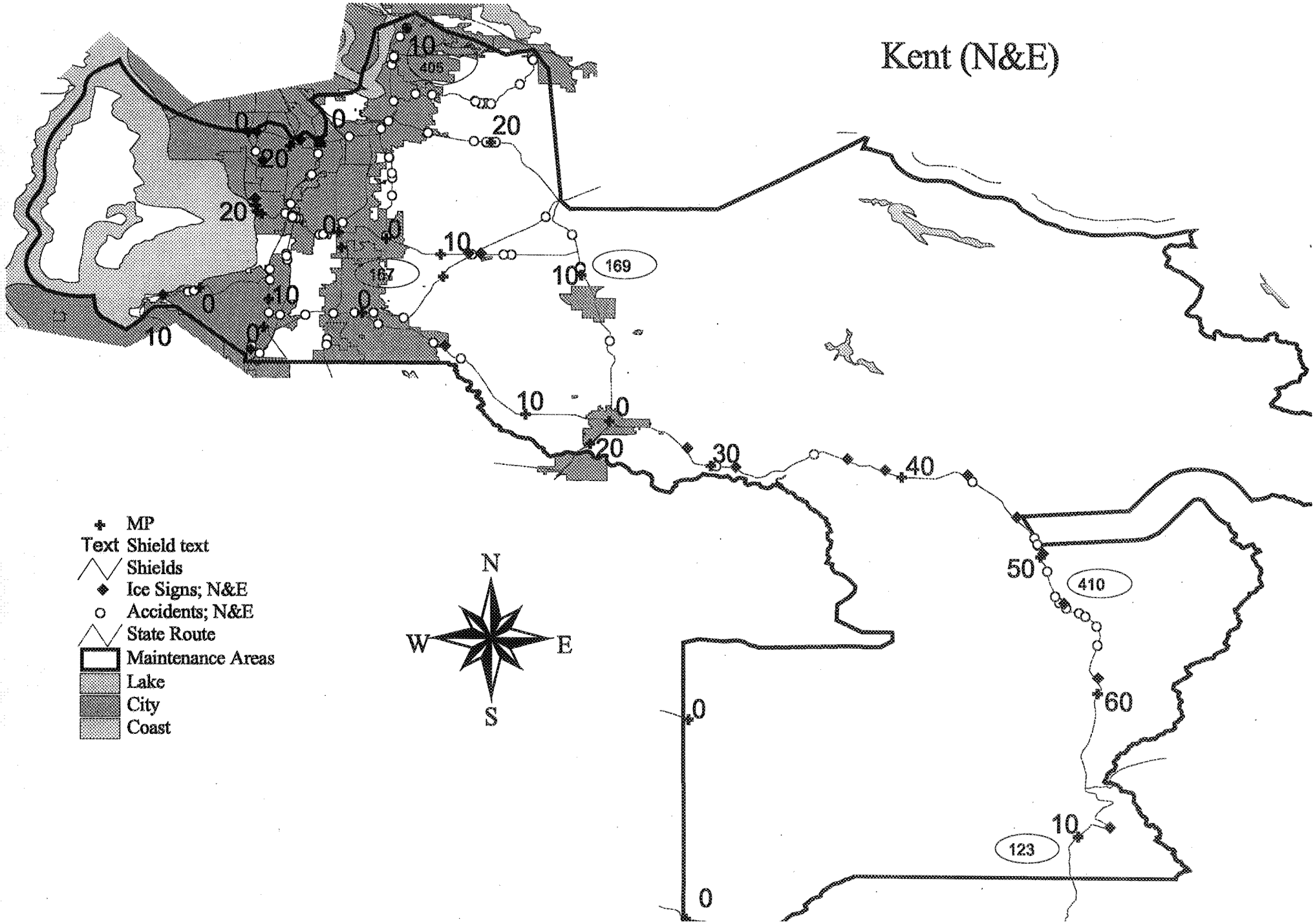
Goldendale (S&W)



Goldendale (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
14	27.71	28.36
	43.66	34.84
	62.37	35.95
	73.54	36.49
	88.18	43.77
	95.76	52.09
		94.70
97	1.72	0.25
	5.14	5.14
	6.68	5.26
	19.08	6.06
	23.66	6.96
	31.52	8.30
		22.50
		23.04
		26.99
		30.02
		31.71
		31.89
141	5.01	5.99
	12.15	7.20
	23.61	8.27
		8.27
		8.61
142	22.62	3.99
	25.80	5.15
		22.34

Kent (N&E)


MP
Text Shield text
Shields
Ice Signs; N&E
Accidents; N&E
State Route
Maintenance Areas
Lake
City
Coast
N
W
E
S
169
167
406
410
123

Kent (N & E)

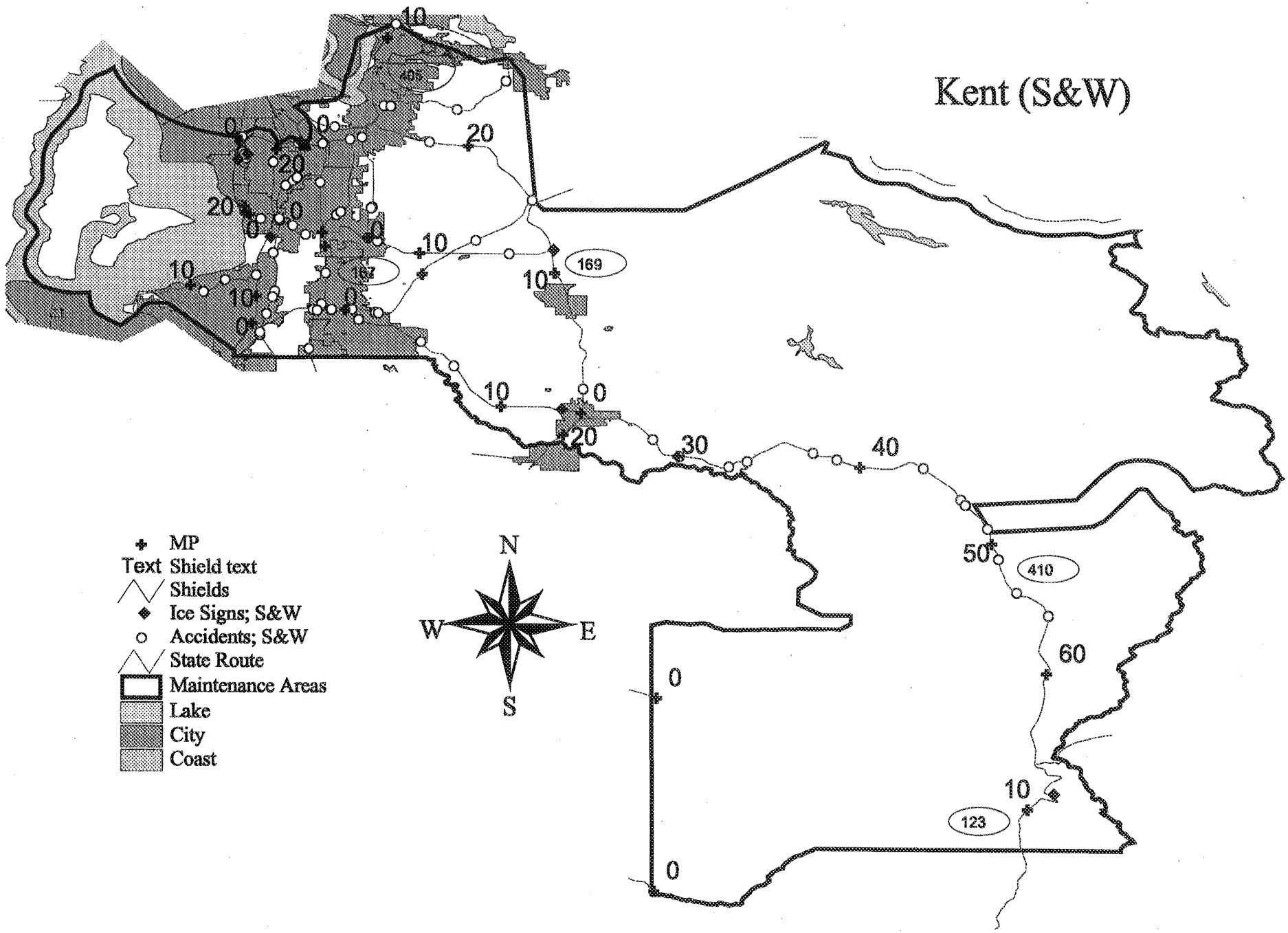
Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5		140.15 142.84 146.47 146.71 146.83 146.84 149.17 149.17 149.19 149.20 149.20 149.22 149.23 149.23 149.31 149.32 150.00 152.16 152.26 152.31 153.65
18		1.52 3.82 4.74 6.36 11.41 15.69
99	6.45	6.81 9.12 11.24 11.86 11.90
123	11.89	
164	4.77	1.30 4.27 5.90 5.90
167		12.30 12.67 14.35 14.35 20.21

Kent (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
169		5.33
		10.38
		10.42
		10.50
		10.50
		12.52
		19.77
		19.77
		19.77
		20.25
		20.87
		23.24
405		1.41
		3.73
		5.20
		7.47
		7.87
		7.97
		9.29
		10.00
410	28.34	30.25
	31.08	35.44
	37.04	43.80
	39.02	48.80
	43.27	49.21
	47.13	49.30
	49.86	50.96
	53.12	52.50
	58.96	52.96
		53.48
		54.31
		54.71
		55.62
		56.80
509	7.80	9.33
	20.52	9.63
	23.67	24.35
515		0.16
		2.84
		3.96
		4.24
		5.29
		5.34
		5.34
		5.34
		7.38

Kent (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
516	11.16 11.73	1.64 2.19 2.35 3.83 4.02 12.87 13.21
518	.25 2.71	2.76
900		13.39 14.29 16.67 16.69 16.96 17.07 17.26 17.51 19.38 21.03


Kent (S&W)
MP
Text Shield text
Shields
Ice Signs; S&W
Accidents; S&W
State Route
Maintenance Areas
Lake
City
Coast
N
W
E
S
405
167
169
410
123

Kent (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5		141.40 142.67 143.85 144.07 144.25 146.81 146.84 148.99 149.08 149.16 149.16 149.17 151.40 151.51 151.96 152.10 152.12 152.12 152.16 152.20 152.25 152.26 152.28 152.30
18		2.66 3.50 3.52 3.52 3.52 4.54 5.83 6.00 6.00 12.96
99	13.98	19.10
123	12.55	
161		34.21
164	13.33	1.23 4.71 6.92

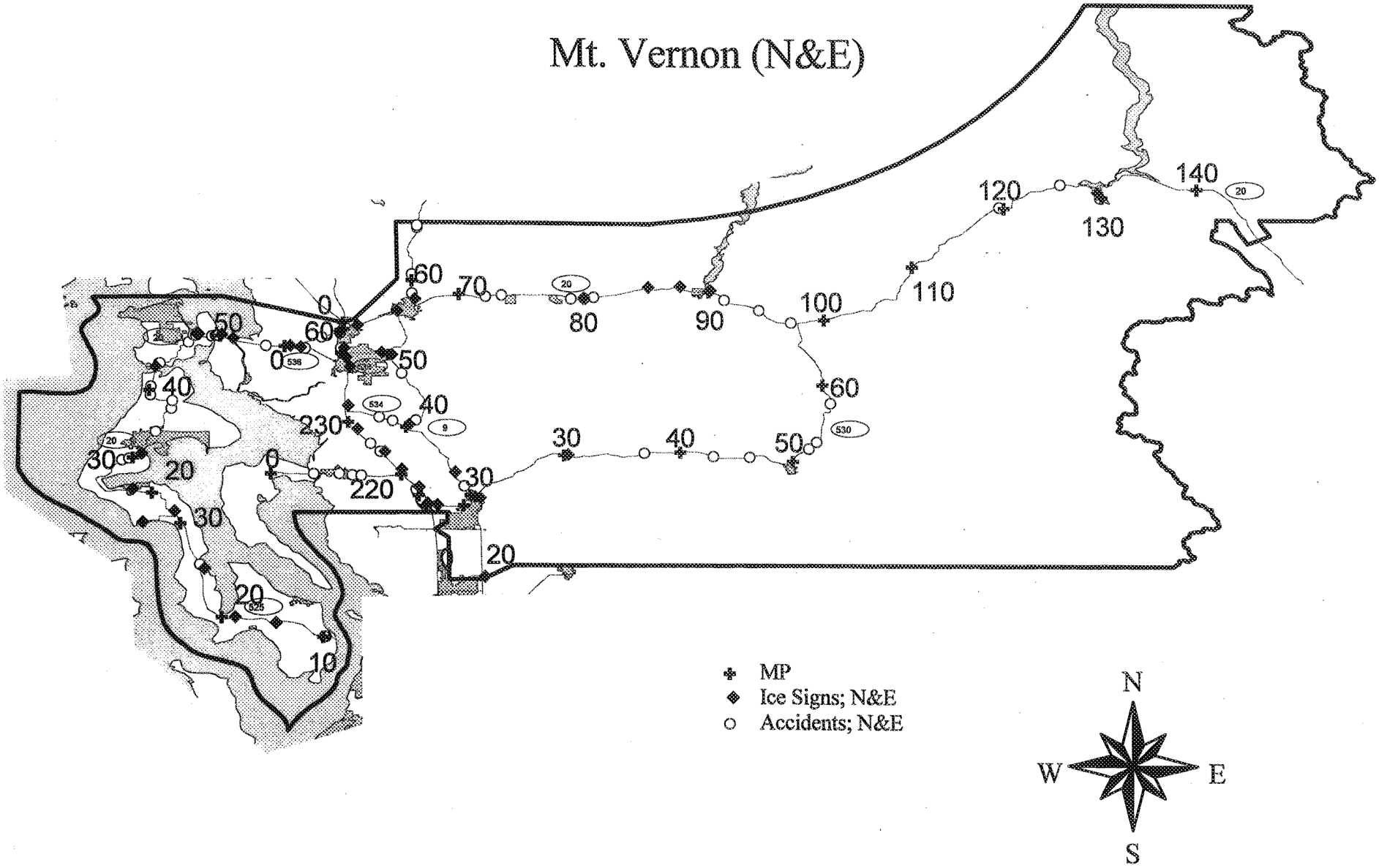
Kent (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
167		11.73 11.74 14.33 14.34 14.35 14.82 16.91 21.05 21.40
169		1.63 15.33 22.07
181		8.62
405		0.91 2.25 11.08
410		28.32 30.05 32.68 33.71 37.39 38.73 43.49 46.58 46.98 47.01 49.04 51.09 53.48 56.05
509	23.38 24.29 25.17	10.98 12.35 14.20 19.72 24.08 24.35 24.53 24.64
515		2.02 2.07 2.15 7.00

Kent (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
516	16.19	0.93 3.00 3.89 3.89 7.32 7.82 14.22
518	3.45	0.10 0.23 3.48
900		8.71 12.56 13.01 16.89 20.28

Mt. Vernon (N&E)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80
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110
120
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140
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60
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536
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40
534
40
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230
30
20
0
220
30
30
40
50
60
530
20
30
20
20
625
10
MP
Ice Signs; N&E
Accidents; N&E
N
W
E
S

Mt. Vernon (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5	208.95	208.67
	210.75	209.17
	213.22	209.37
	215.54	209.50
	218.99	210.32
	221.62	210.39
	225.75	210.51
	226.93	210.61
	228.15	215.70
		216.89
		216.89
		227.83
		228.25
		229.92
		229.97
9	20.70	29.96
	29.70	31.29
	33.05	41.60
	40.10	47.61
	49.90	58.61
	57.85	60.68
		66.22
		66.46

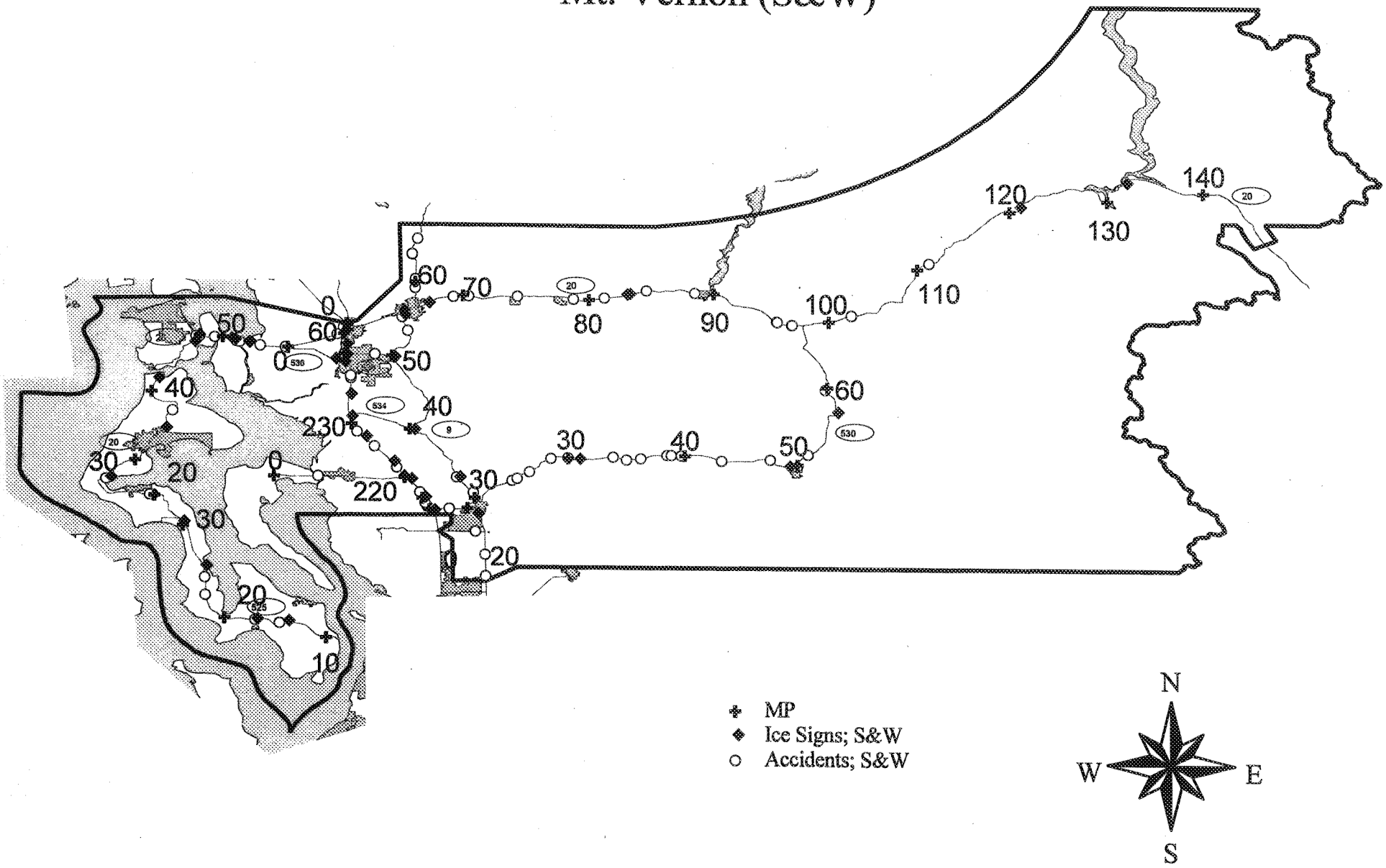
Mt. Vernon (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
20	13.02	29.05
	17.01	29.71
	22.10	33.58
	30.56	36.44
	42.22	37.37
	47.89	39.54
	47.89	40.44
	47.98	43.17
	48.08	43.24
	49.85	43.27
	50.80	47.04
	59.22	47.97
	60.99	48.18
	64.42	49.42
	79.69	49.70
	84.86	49.81
	87.42	49.81
	89.88	49.90
	129.13	49.93
		53.67
		58.09
		60.27
		72.20
		73.48
		78.99
		80.04
		80.78
		91.49
		94.39
		97.19
		119.64
		119.66
		125.79
		129.89
525	15.10	9.50
	19.05	9.64
	25.20	25.51
530	17.59	17.72
	21.31	37.00
	30.05	42.79
		45.82
		51.75
		52.61
		57.49
532		3.31
		5.25
		6.26
		6.95

Mt. Vernon (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
534		2.78 3.88
536	.19 1.10	1.76
538	2.85	

Mt. Vernon (S&W)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230
220
30
20
0
30
20
525
10
30
40
50
60
530
30
20
MP
Ice Signs; S&W
Accidents; S&W
N
W
E
S

Mt. Vernon (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5	208.40	208.99
	209.97	209.45
	212.31	210.59
	214.65	213.94
	218.20	216.82
	220.70	219.06
	223.00	224.84
	227.52	225.08
	228.69	227.69
	230.99	230.67
9	28.14	21.05
	32.82	23.47
	39.77	30.58
	49.75	32.91
	55.40	53.82
		55.31
		59.35
		60.06
		60.30
		60.35
		63.20
		63.24
		65.14

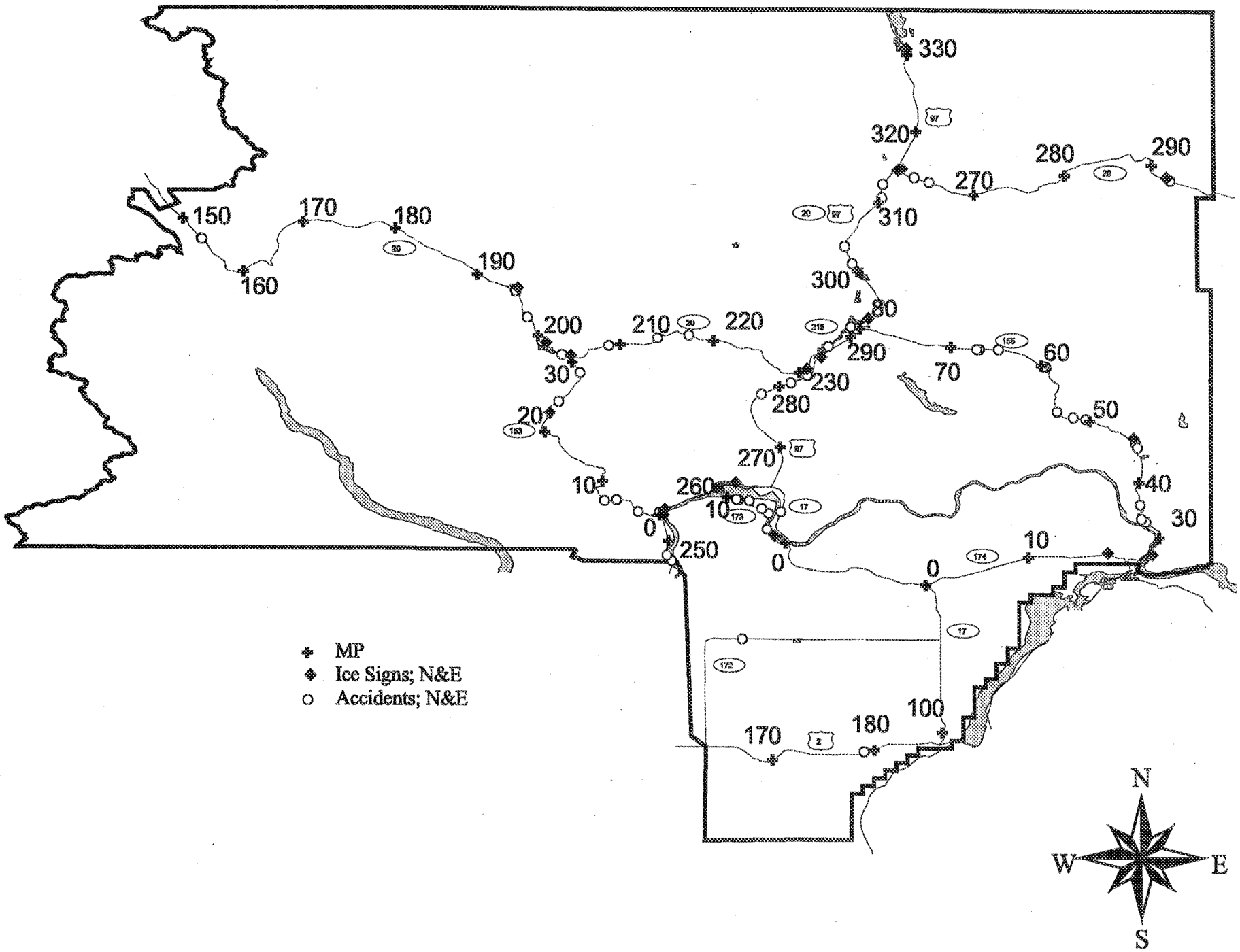
Mt. Vernon (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
20	26.75	20.17
	34.18	20.28
	41.22	20.47
	47.05	26.63
	47.93	36.31
	50.48	47.91
	50.77	48.25
	51.83	49.41
	51.90	51.16
	59.40	51.40
	64.78	52.99
	67.00	54.92
	82.78	59.07
	83.01	60.27
	120.95	69.29
	132.78	70.49
		74.38
		78.80
		81.28
		84.63
		88.55
		95.62
		95.69
		96.85
		96.89
		102.08
		111.25
525	14.10	14.48
	17.20	16.92
	25.60	22.68
	30.30	24.30
530	30.75	18.50
	48.70	24.84
	56.76	25.31
		26.52
		28.70
		30.17
		33.98
		35.11
		36.30
		38.51
		38.86
		39.68
		43.10
		47.16
		49.82
		51.24
		59.66
531		9.18

Mt. Vernon (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
532	9.74	3.39
536	4.02 4.85	
538	3.55	2.32

Okanogan (N&E)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280
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20
270
40
10
260
10
30
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250
0
10
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100
170
180
MP
Ice Signs; N&E
Accidents; N&E
N
W
E
S

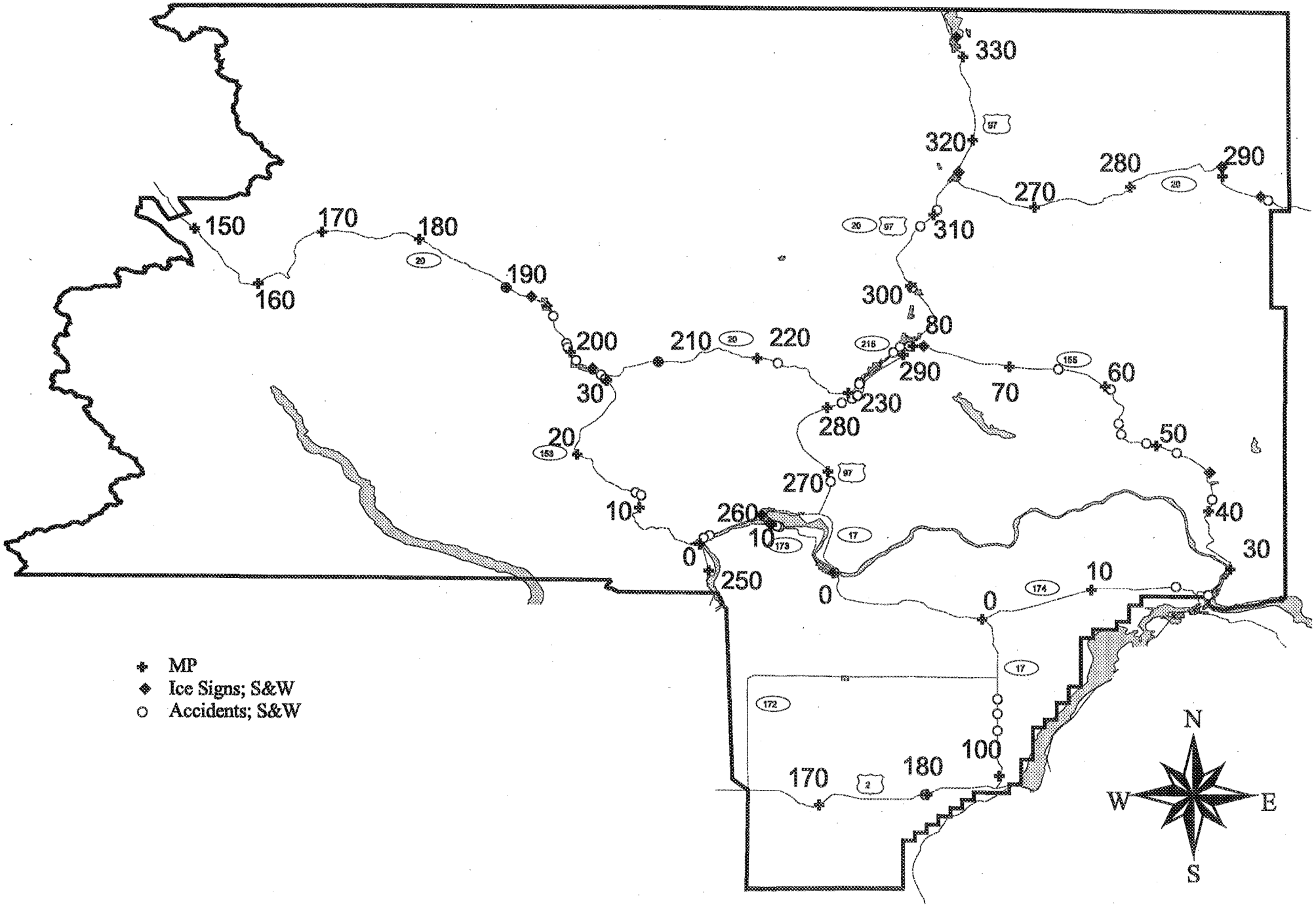
Okanogan (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2		180.11
17		140.30
20	194.37	153.30
	200.99	153.40
	204.19	194.60
	230.60	194.76
	262.19	197.80
	292.07	200.75
		203.50
		208.87
		213.99
		217.46
		263.88
		265.40
		292.80
97	253.20	247.09
	254.02	247.10
	261.53	247.43
	285.97	248.01
	292.69	253.67
	314.48	259.97
	330.82	277.76
		281.40
		283.44
		291.00
		295.18
		301.08
		303.26
		310.62
		312.41
		330.38
153	.06	2.53
	22.30	5.60
		7.00
		24.30
		28.55

Okanogan (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
155	29.78 45.10	34.52 35.02 37.35 44.00 44.45 50.48 51.83 53.87 59.50 59.50 59.78 59.79 59.79 65.00 67.02 67.30
172		14.52
173	1.64	2.60 4.46 5.70 7.50 8.67 8.73 8.80 8.92
174	17.12	
215		1.45 4.75

Okanogan (S&W)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270
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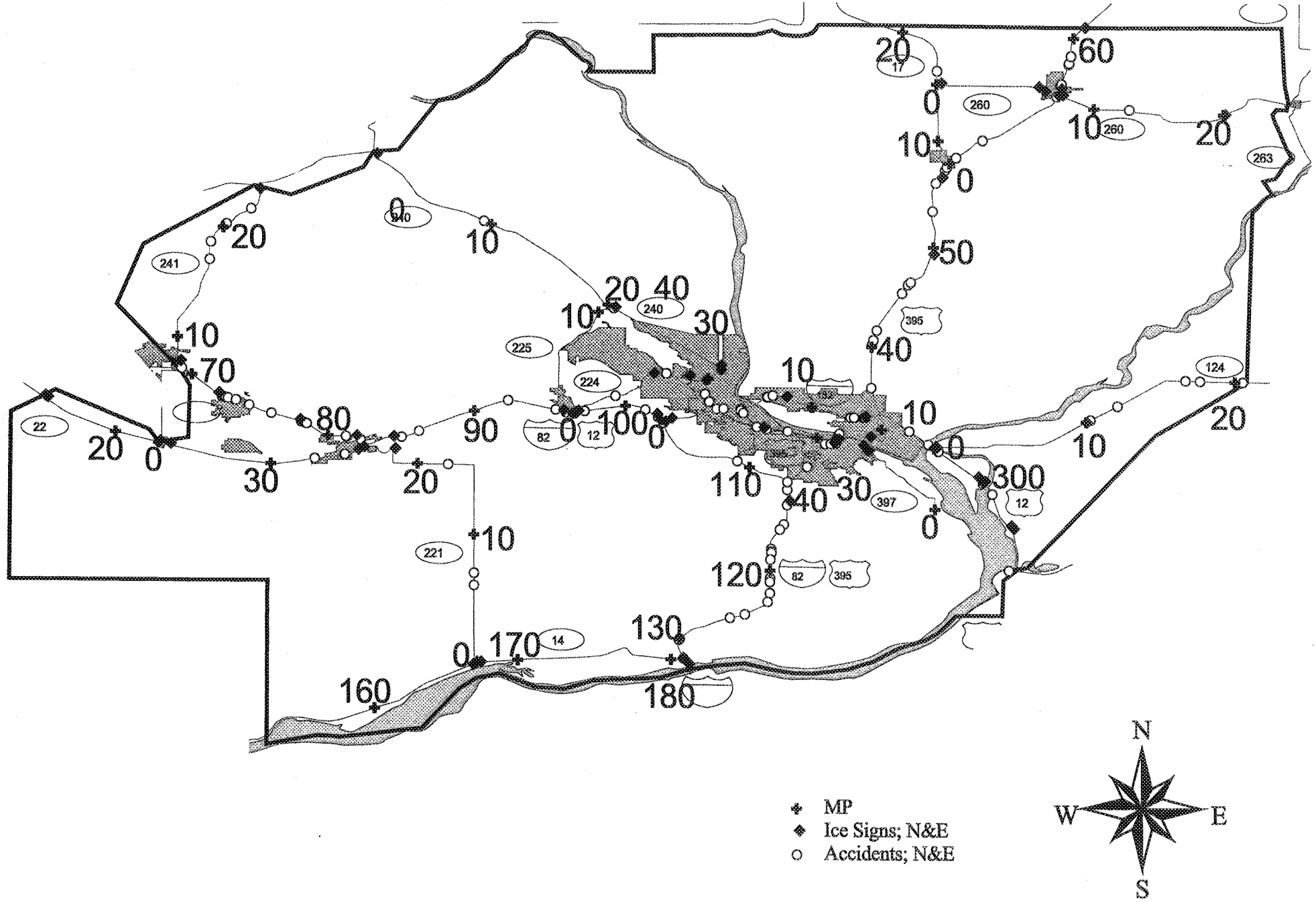
260
40
10
30
0
250
0
10
0
100
170
180
MP
Ice Signs; S&W
Accidents; S&W
N
W
E
S

Okanogan (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2		180.92
17		105.81 107.88 109.60 135.92
20	192.42 202.81 289.10 294.16	190.00 195.93 199.10 199.52 201.03 204.09 210.08 222.06 231.39 231.57 295.19
97	259.67 315.64 332.81	254.18 254.75 268.89 281.65 282.84 283.50 283.53 291.00 299.72 308.03 310.62
153		11.50 12.20 30.20
155	43.96 79.21	28.26 41.19 47.82 51.04 54.00 55.11 59.39 65.10
173	10.53	9.15 9.40 9.75
174		17.40
215		3.40 4.30

Pasco (N&E)



Pasco (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
12	295.20	293.58
	299.30	294.85
	299.90	295.70
	304.00	301.10
	304.30	
14	166.97	
	167.51	
	180.59	
17		15.63
22	14.57	32.79
	14.78	34.74
	22.89	
	23.56	
	35.49	
82	72.10	69.19
	77.80	72.52
	81.70	72.70
	84.30	72.80
	95.80	72.94
	102.00	73.50
	102.77	73.51
	114.27	74.46
	132.01	76.04
		78.02
		78.12
		78.26
		78.40
		81.15
		82.15
		84.98
		86.18
		92.29
		95.43
		96.12
		96.66
		97.36
		101.31
		102.26
		102.80
		109.05
		113.35
		114.53
		116.10
		116.61
		118.35
		118.55
		118.65

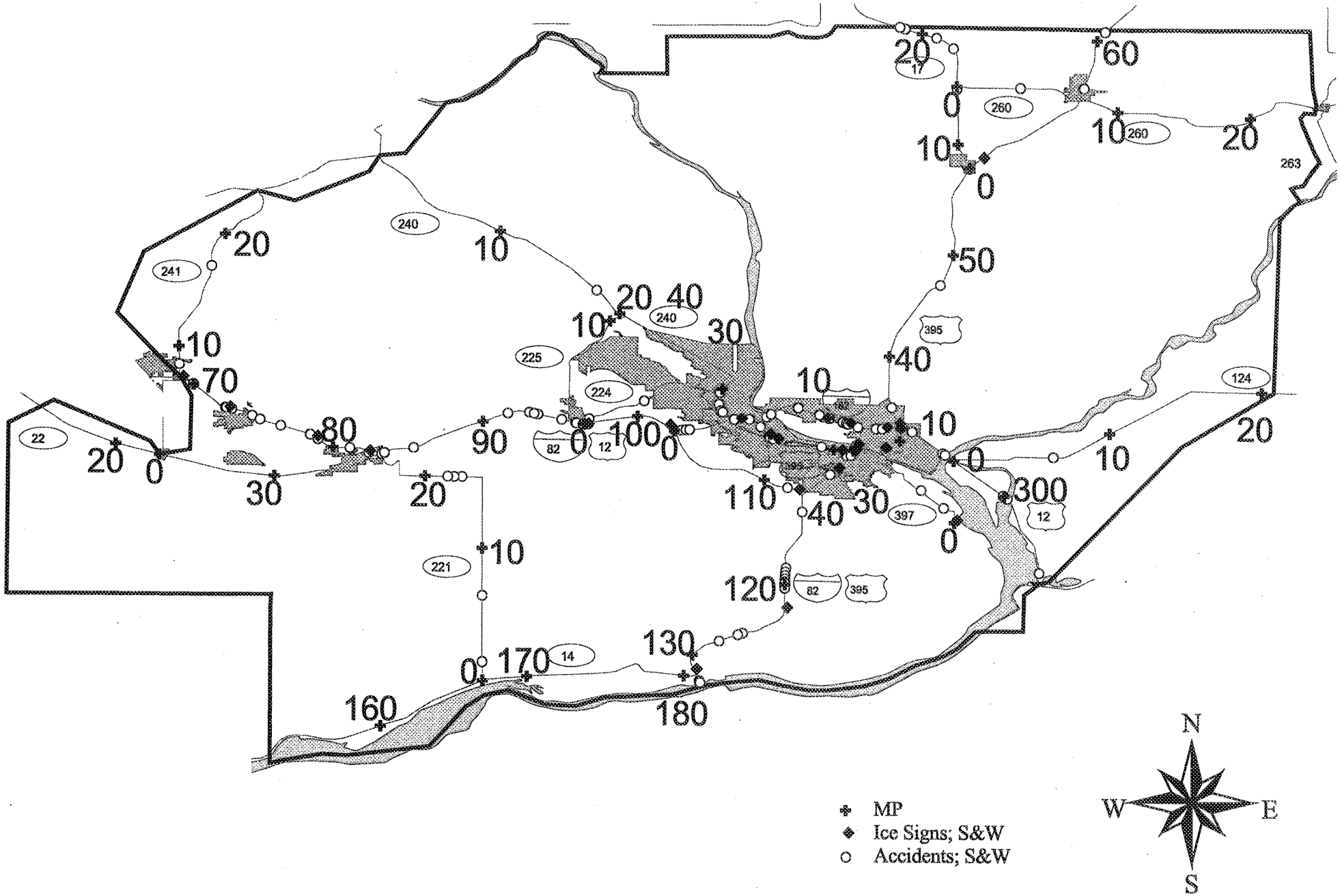
Pasco (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
82 (cont.)		119.17 120.59 120.59 120.87 121.73 122.43 124.47 125.67 129.98 130.05 130.08 131.60
124	0.01 9.85	10.29 12.20 16.89 17.80 20.49
182	0.52 8.10 13.70	3.59 4.02 5.09 6.96 7.01 7.33 9.98 12.68 12.96 13.77 13.79 13.89
221	0.07 22.99 25.91	6.19 7.13 17.60
224	0.01 6.10 8.58 9.77	3.04 7.13
225	0.02 11.24	
240	0.23 28.66 30.88 38.08	9.43 20.47 33.03 33.80 36.23 36.47 37.76 38.41 39.83

Pasco (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
241	8.00 24.75	12.25 12.35 12.35 16.97 18.40 20.39 22.81
260	0.11 6.15 6.63 7.74 19.92	13.76
395	17.76 18.31 37.80 44.40 55.00 55.60 61.10	13.11 14.90 17.28 17.67 18.07 18.33 18.37 18.76 18.91 18.91 18.94 19.06 19.06 19.08 25.10 28.64 29.05 29.90 33.64 34.50 34.80 41.50 43.89 45.21 45.51 46.51 48.72 55.00 55.90 55.93 56.09 57.80 57.90 58.50
397	6.30 6.88 7.85	5.47

Pasco (S&W)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395
40
225
10
70
224
124
10
80
90
82
0
12
100
0
10
20
22
20
0
30
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110
40
30
397
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300
12
10
221
120
82
395
130
0
170
14
160
180
MP
Ice Signs; S&W
Accidents; S&W
N
W
E
S

Pasco (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
12		291.90
		292.52
		294.51
		294.67
		299.90
		300.30
		306.65
17		14.49
		17.48
		18.94
		21.31
		21.70
82	69.00	69.95
	72.74	72.60
	78.70	72.60
	82.20	72.68
	96.70	73.05
	102.00	74.47
	112.30	74.47
	121.80	75.05
	131.20	76.42
		78.34
		78.36
		78.92
		81.05
		82.31
		83.20
		83.40
		85.30
		91.66
		93.05
		93.35
		93.61
		95.15
		96.05
		96.09
		96.51
		96.56
		96.86
		102.49
		111.65
		114.05
		118.75
		119.05
		119.32
		119.57
		119.77
		119.87
		119.87

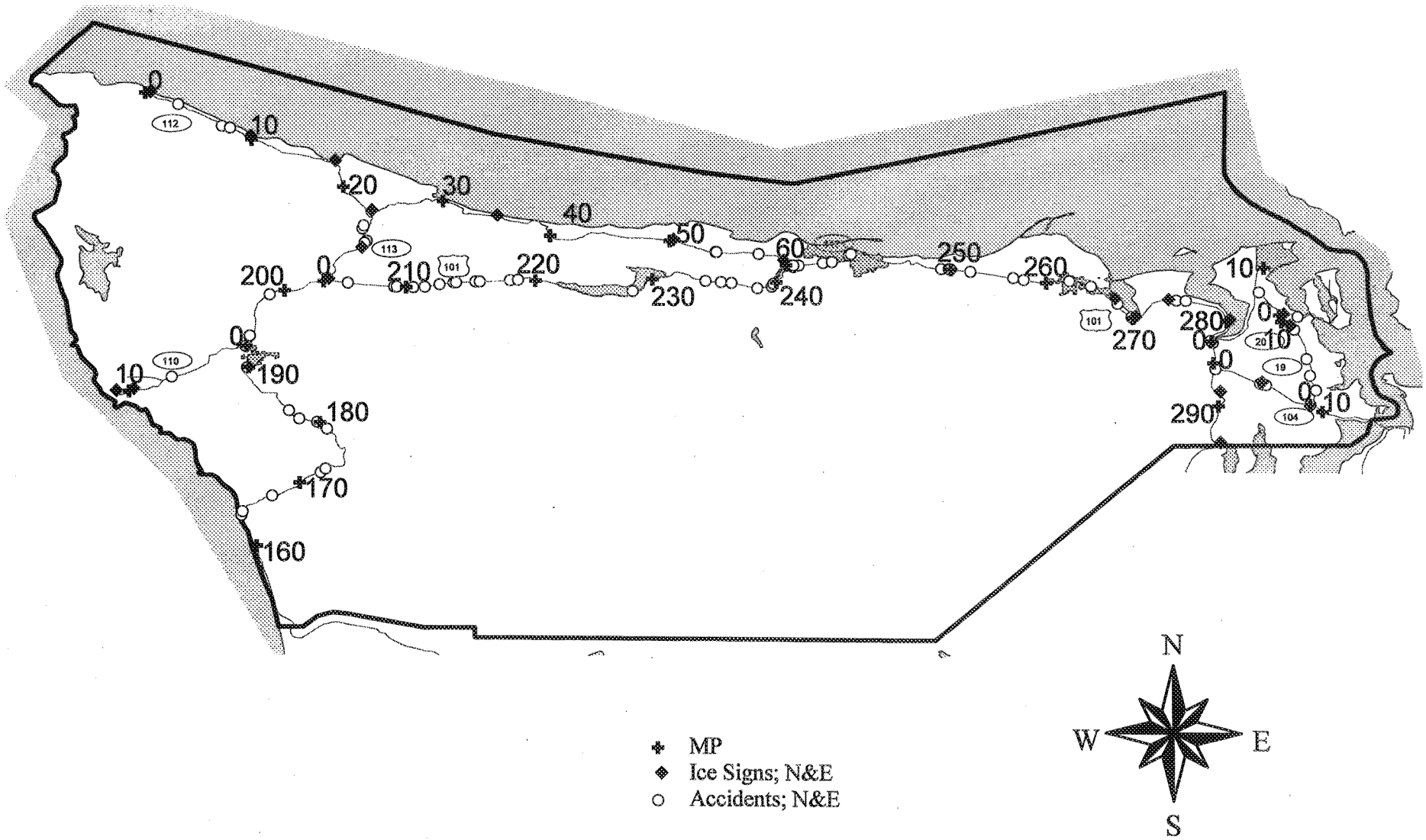
Pasco (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
82 (cont.)		120.27
		125.76
		126.15
		127.66
		131.96
		132.06
		132.06
124		6.17
182	4.10	0.42
	11.30	0.70
	14.10	0.93
		3.80
		4.70
		5.80
		6.14
		8.00
		9.40
		10.08
		10.95
		11.16
		11.30
		11.94
		13.36
		13.89
221		1.39
		6.48
		17.15
		17.75
		18.25
224		0.35
		4.24
240	37.43	17.76
	38.03	32.08
	42.25	33.02
		33.56
		33.76
		36.70
		37.53
		37.64
		37.85
		41.04
		43.01
241		8.59
		17.07
260		3.81

Pasco (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
395	16.10	15.50
	18.46	17.63
	19.10	17.92
	22.90	18.63
	46.90	18.70
		18.76
		19.00
		19.03
		19.06
		19.07
		24.32
		35.80
		55.93
		60.95
397	0.10	1.45
	7.67	3.25
	11.00	

Port Angeles (N&E)



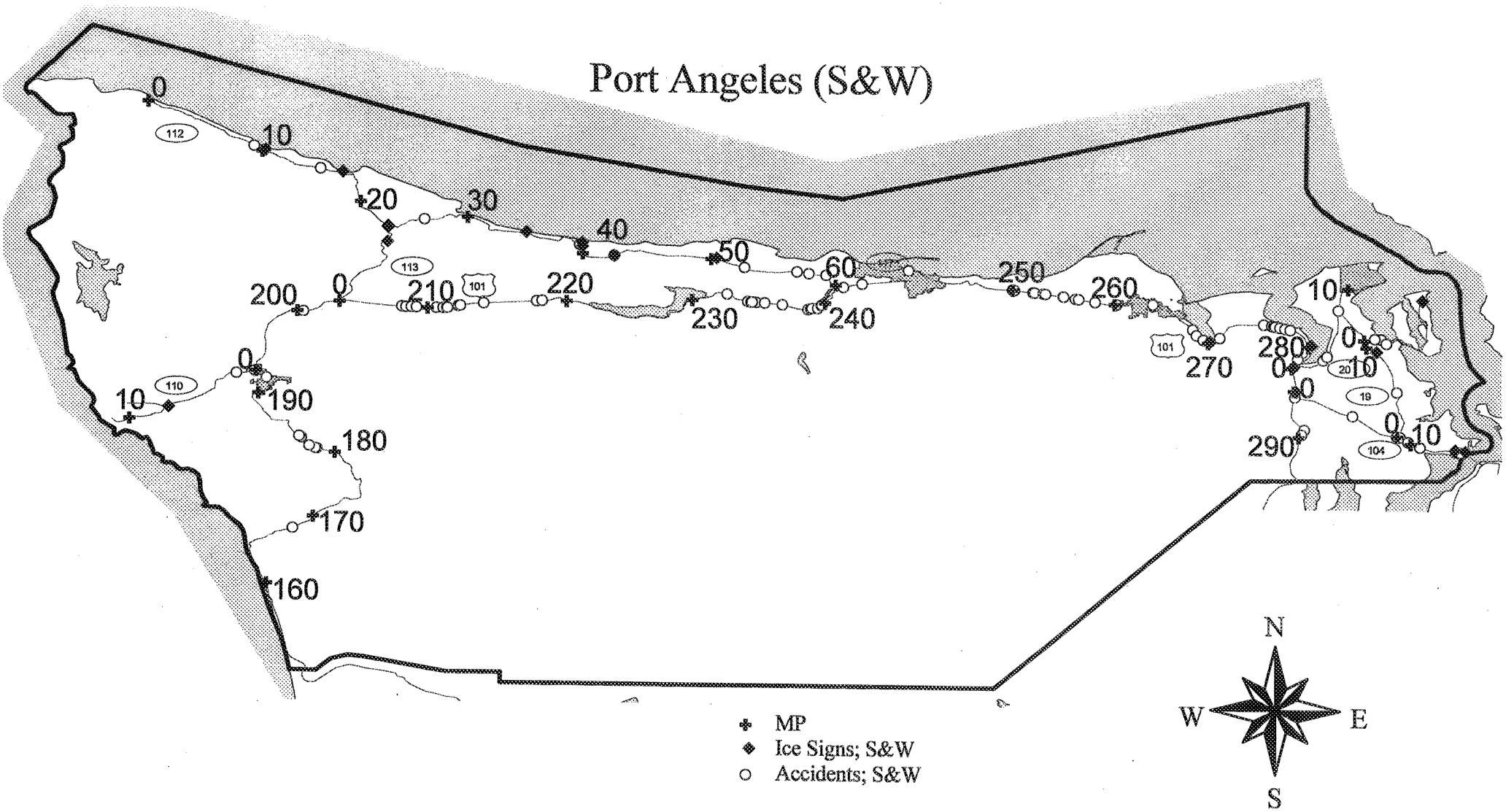
Port Angeles (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
19	9.15	1.60
	9.19	3.20
		5.10
		8.35
		13.57
101	267.07	163.20
	269.87	163.20
	274.06	163.61
	279.91	167.19
	288.21	172.39
	293.98	172.96
		179.23
		180.40
		180.40
		182.10
		183.40
		189.98
		194.10
		194.17
		198.70
		205.70
		209.23
		209.43
		210.68
		211.56
		212.71
		213.79
		213.99
		213.99
		215.45
		215.79
		218.09
		218.71
		228.27
		234.63
		235.80
		236.60
		238.60
		239.73
		240.01
		240.03
		242.21
		242.41
		242.67
		244.61
		245.33
		249.38

Port Angeles (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
101 (cont.)		250.01
		250.07
		250.18
		252.18
		256.60
		257.68
		262.32
		264.58
		267.81
		269.82
		275.10
		275.87
		282.46
		282.58
		282.72
104	4.40	0.80
		4.51
		4.80
		4.80
		4.81
		4.87
		4.96
		5.00
		8.87
110	9.89	0.08
	11.07	7.00
112	0.12	3.00
	9.55	7.20
	17.23	7.91
	23.32	53.93
	34.65	54.00
	50.01	57.45
	59.51	60.39
		60.65
		60.70
113	0.19	5.70
	4.89	5.98
		7.50
		7.85
116	0.11	1.79
117		0.73
		0.99

Port Angeles (S&W)



Port Angeles (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
19	9.08	0.01
		4.55
		14.16
20		3.00
		3.48
101	269.87	168.03
	279.94	181.73
	282.45	181.90
	285.29	182.50
		183.58
		183.79
		192.04
		200.61
		208.30
		208.60
		208.98
		209.34
		210.75
		211.23
		211.49
		211.54
		212.31
		212.46
		214.13
		217.90
		218.29
		232.90
		234.50
		234.72
		234.81
		235.10
		235.70
		236.96
		238.82
		239.02
		239.02
		239.04
		239.13
		239.53
		239.95
		240.00
		242.21
		243.61
		250.20
		250.38

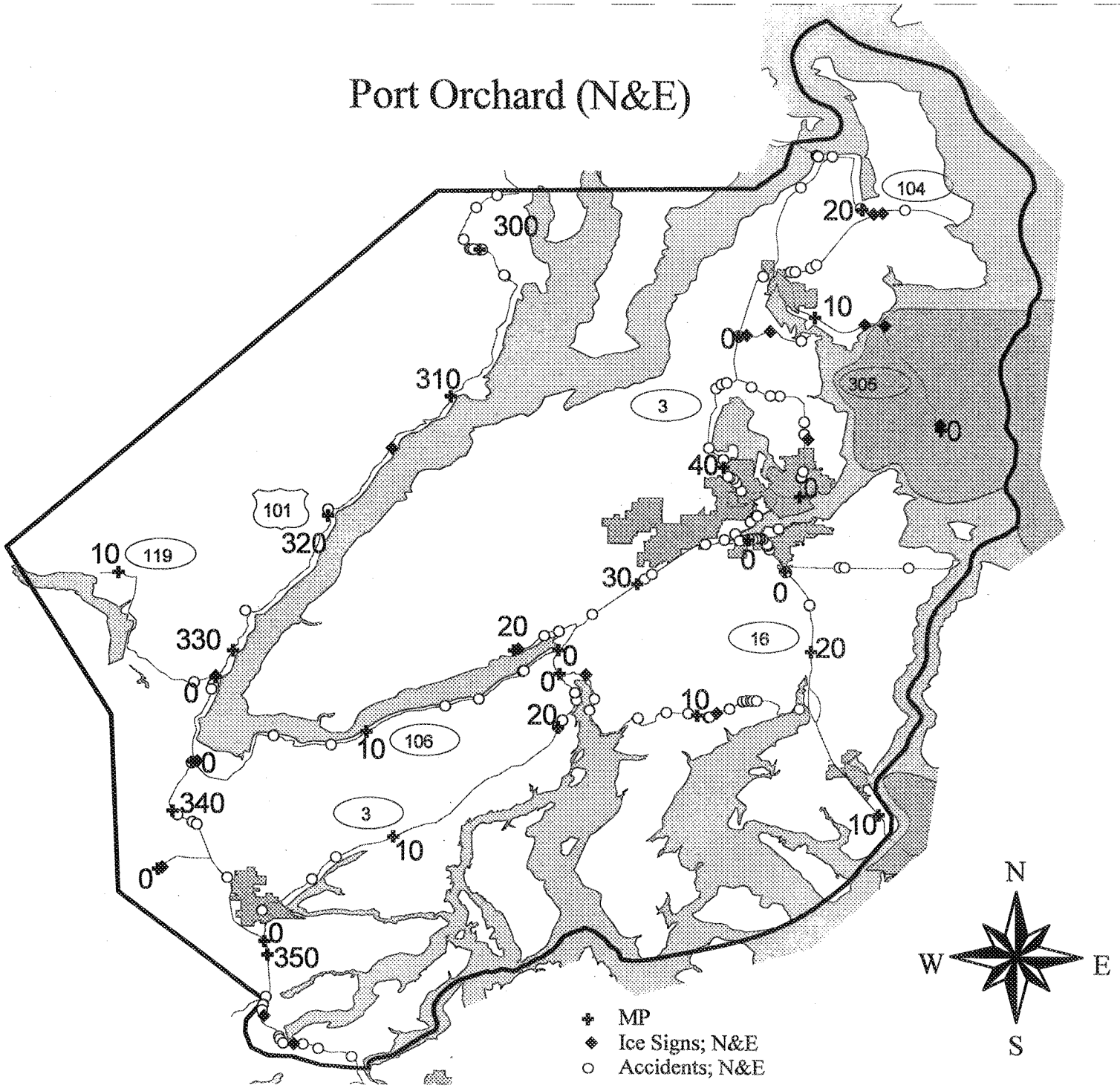
Port Angeles (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
101 (cont.)		252.13
		252.13
		252.13
		252.13
		252.14
		252.15
		252.28
		253.20
		253.20
		253.40
		255.07
		255.10
		256.22
		256.52
		258.08
		260.15
		260.15
		263.59
		268.01
		268.70
		269.46
		271.39
		275.80
		276.44
		276.60
		276.60
		276.71
		277.08
		277.50
		277.90
		281.41
		289.04
		289.65
104	13.10	0.70
	13.84	5.20
		8.81
		9.06
		9.74
		10.70
		13.40
		13.50
		13.63
		13.70
110	7.84	0.10
		1.50

Port Angeles (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
112	9.99 16.46 23.05 34.71 38.94 39.40 42.25 50.15	9.20 9.20 9.20 14.90 26.45 39.09 42.50 52.68 56.71 57.62 58.94
113	8.01 9.96	
116	9.81	0.90 1.40 2.00
117		1.34

Port Orchard (N&E)



Port Orchard (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
3		2.14
		5.30
		6.94
		19.99
		20.37
		21.59
		21.98
		27.42
		27.43
		30.40
		30.81
		33.70
		35.10
		36.20
		36.66
		38.31
		38.33
		38.83
		39.12
		39.30
		39.42
		40.40
		40.41
		41.43
		44.70
		45.08
		45.38
		48.49
		48.49
		48.50
		48.51
		48.54
		52.17
		58.00
16		22.65
		22.69
		25.05
		26.49
		26.70
		26.78
		27.10
		27.22
		27.30
		27.40
		27.45

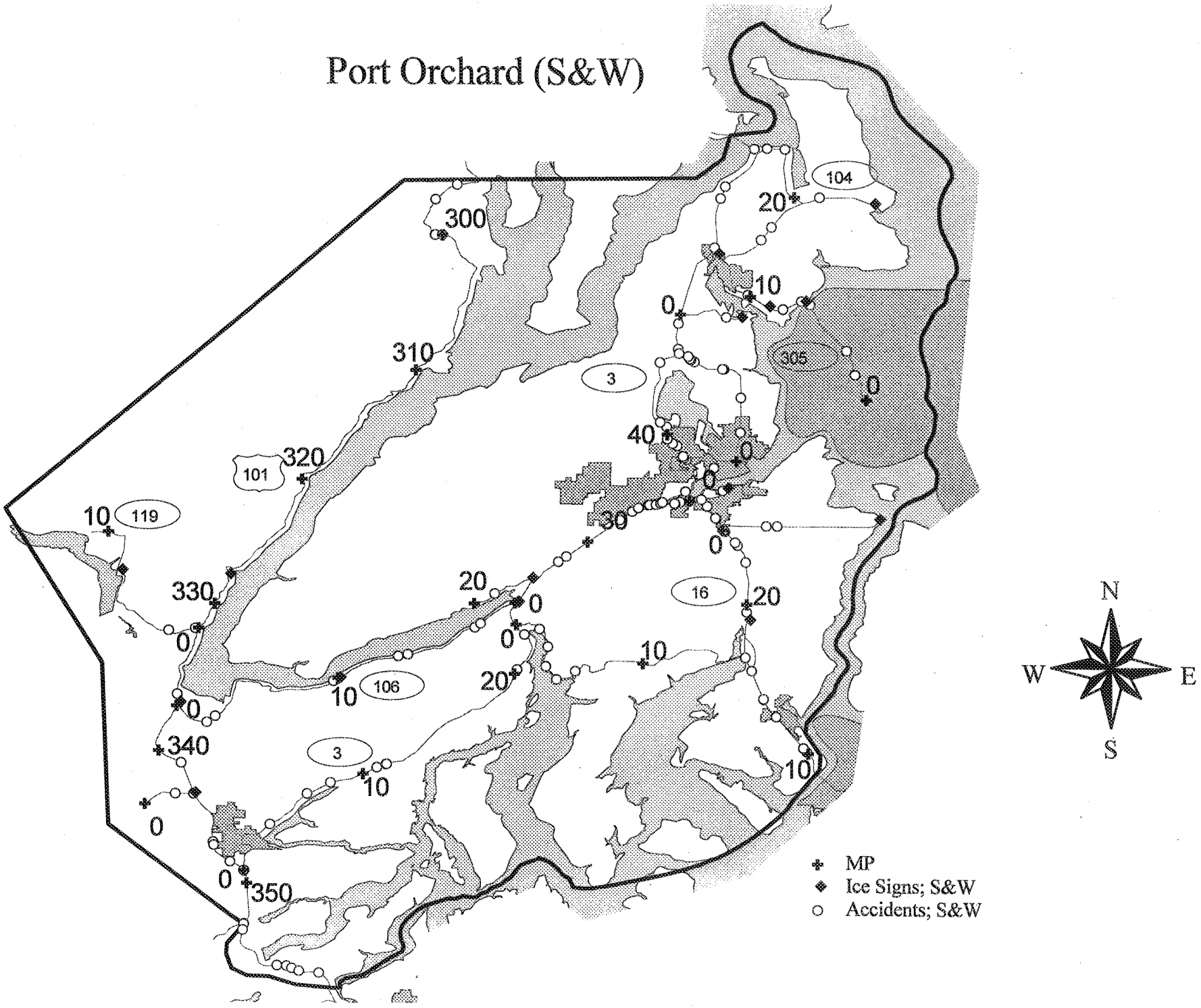
Port Orchard (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
16 (cont.)		27.61
		27.86
		28.18
		28.28
		29.03
101	314.94	295.52
	354.47	296.80
	356.82	296.80
		298.89
		299.49
		299.58
		299.69
		300.13
		301.96
		302.02
		319.65
		327.44
		332.21
		332.49
		337.06
		340.35
		341.24
		341.50
		344.81
		353.34
		353.81
		353.83
		354.11
		356.00
		356.16
		356.42
		357.42
		358.20
		359.90
102	0.04	
104	20.48	15.10
	20.82	15.14
		15.20
		15.98
		19.88
		22.00
106	0.07	5.21
		8.21
		13.91
		15.52
		18.00
		18.06
119	0.16	1.13

Port Orchard (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
160		2.34 2.54 5.22
166		0.03 0.06 0.06 1.75
300	0.03	1.57 2.33
302	1.29 10.77	2.80 3.45 6.80 8.60 9.58 10.51 10.57 11.58 12.28 12.45 12.63 12.74 12.90 15.41
303	2.82	0.84 0.89 0.90 1.20 3.14 3.77 6.17 6.67 7.78
304		0.06
305	0.35 6.27 7.38	
307		0.39 0.60 1.38 1.68
308	0.2 1.29	2.94

Port Orchard (S&W)



Port Orchard (S & W)

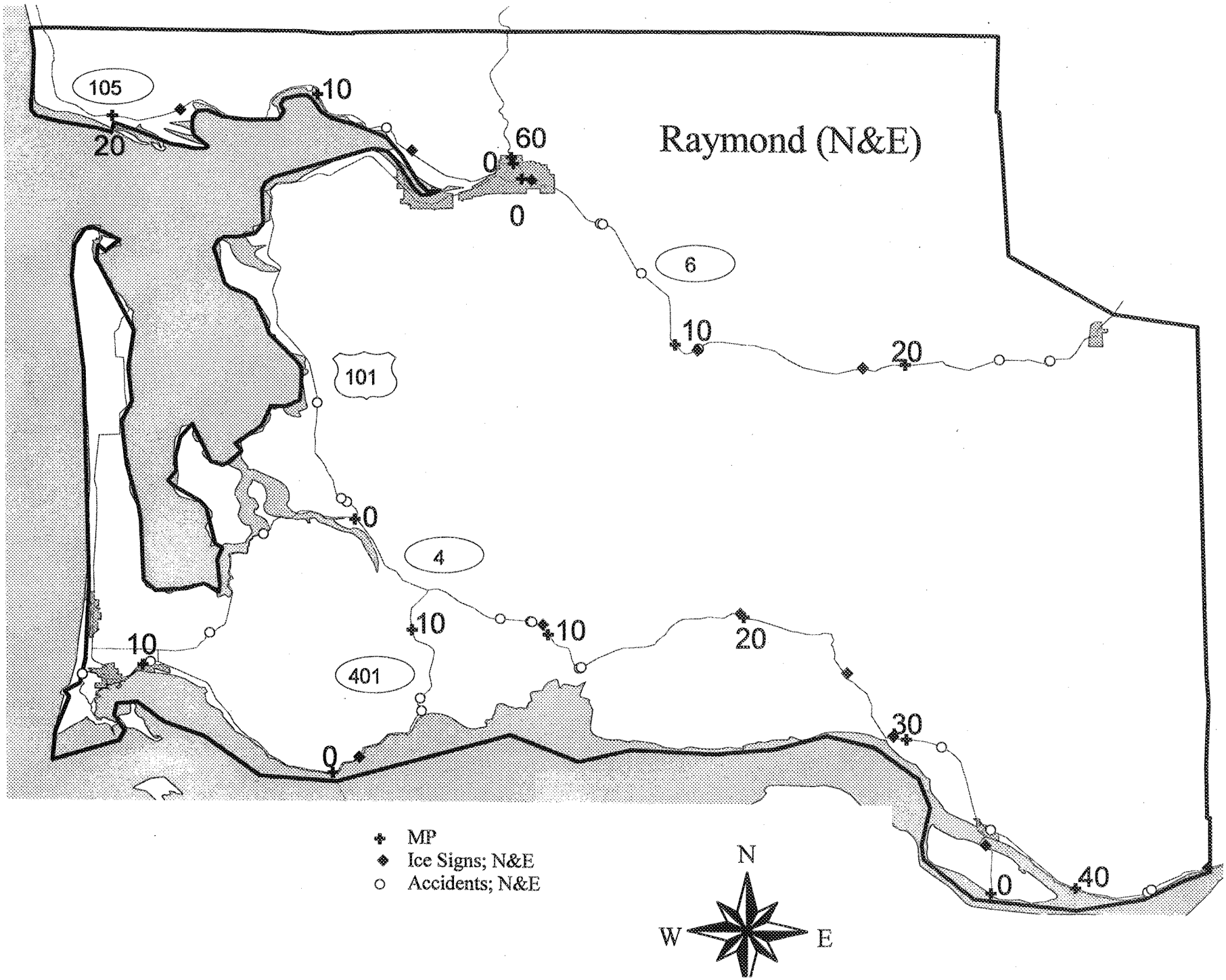
Route	Ice Warning Sign Location (MP)	Accident Location (MP)
3	24.89	4.18
		6.80
		8.17
		10.78
		11.29
		11.32
		20.23
		22.49
		28.20
		28.68
		31.96
		32.72
		33.08
		33.62
		33.67
		34.00
		34.24
		34.34
		35.59
		38.02
		38.19
		38.31
		38.31
		39.01
		39.31
		39.75
		40.45
		40.93
		44.69
		46.23
		47.90
		52.92
		53.16
		56.28
		57.03
16	18.96	10.11
		10.42
		12.74
		13.97
		15.68
		19.50
		22.61
		23.80
		24.05
		24.97

Port Orchard (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
16 (cont.)		25.00
		25.00
		25.10
		25.85
		25.90
		26.66
		26.67
		26.68
		26.70
		27.17
		27.85
		28.36
		28.65
		28.65
		28.68
101	328.01	295.60
	336.82	297.10
		299.56
		299.59
		299.98
		336.29
		341.50
		346.62
		346.80
		348.21
		349.16
		353.50
		353.52
		353.53
		353.86
		357.30
		357.80
		358.10
		358.50
		359.55
102	2.77	1.84
		2.85
104	23.87	15.23
		16.00
		17.02
		21.35
106	9.98	1.77
	20.00	2.31
		9.73
		13.26
		13.75
		17.53
		17.90

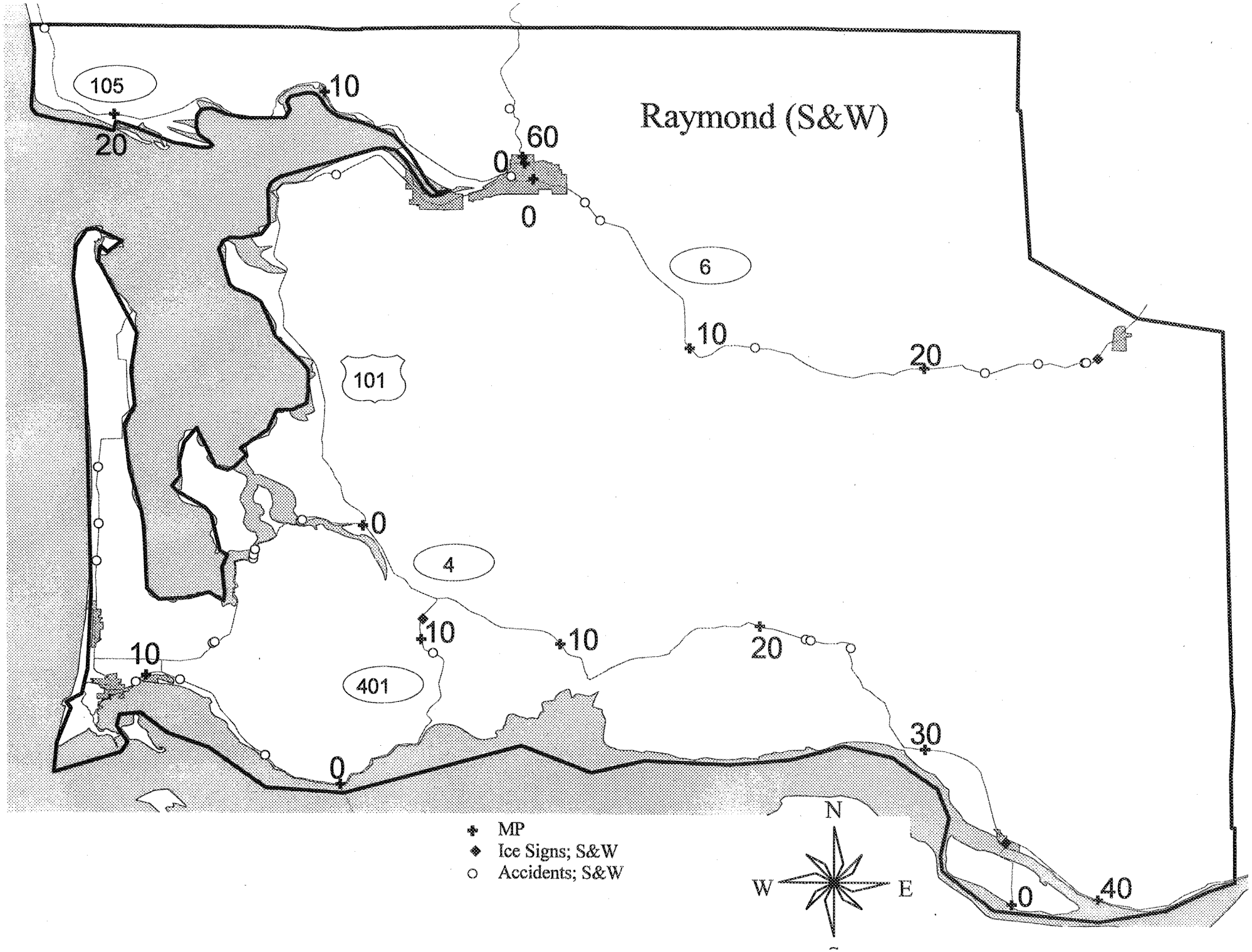
Port Orchard (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
119	7.05	0.18 1.73
160	7.21	2.04 2.54
166	2.22	2.05
300	3.16	1.17
302		1.49 2.71 3.90 4.90 6.00 16.05
303		1.50 3.50 5.84 5.90 5.93 7.66 7.89 7.97 8.14 8.69 8.70 8.70
304		1.20
305	6.77 8.92 13.22	1.67 3.08 6.37 6.88 8.00 10.18 10.18
307		2.32 3.15
308	2.99	2.36


Raymond (N&E)
105
20
10
60
0
0
6
10
20
101
0
4
10
10
20
10
401
30
0
0
40
MP
Ice Signs; N&E
Accidents; N&E
N
W
E

Raymond (N & E)

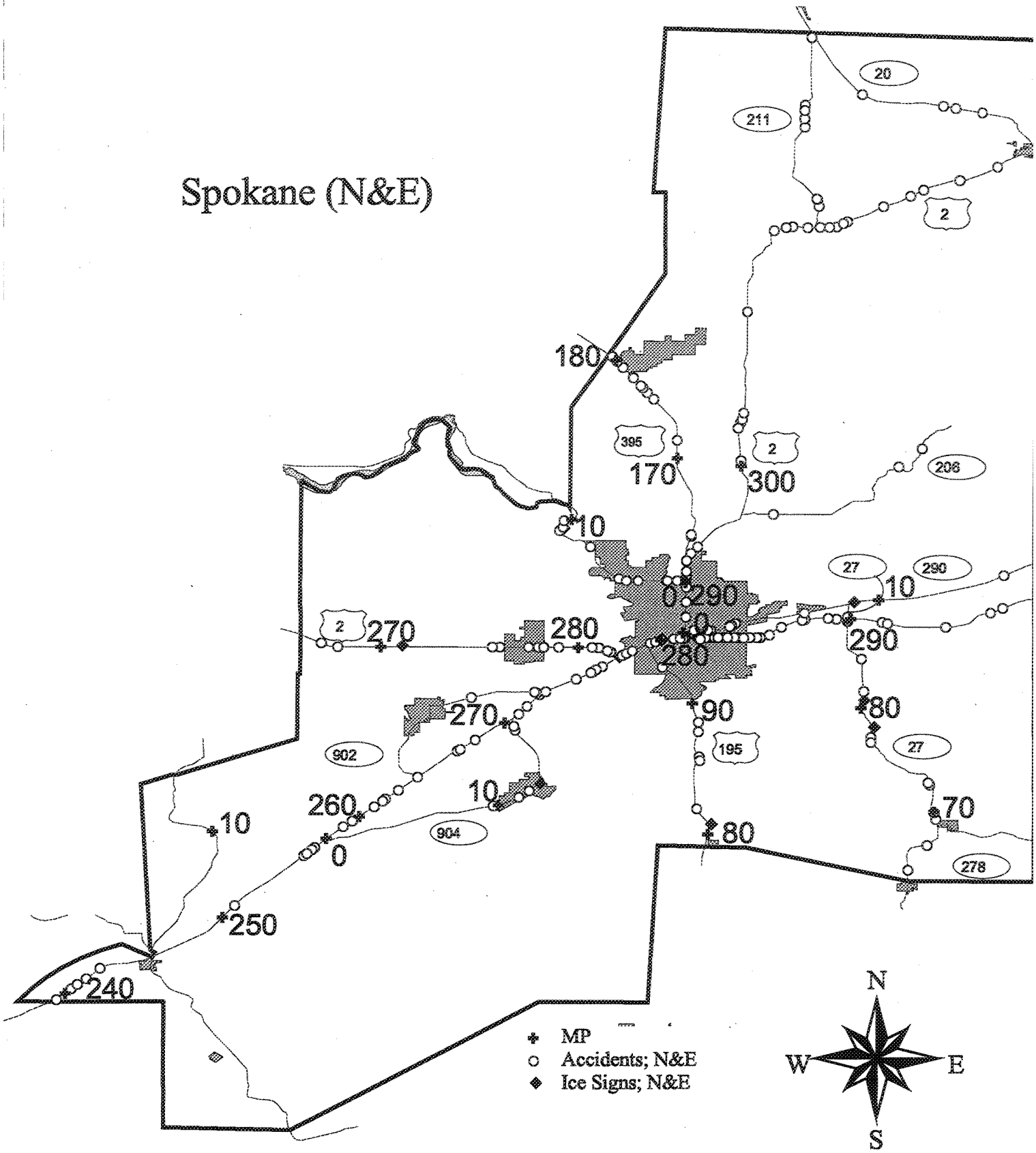
Route	Ice Warning Sign Location (MP)	Accident Location (MP)
4	9.49 19.70 25.76 29.29 45.54	7.86 9.04 9.11 12.20 12.29 12.30 31.53 35.80 35.80 42.99 43.18
6	.29 10.94 18.08	3.84 3.95 6.55 11.14 11.14 24.00 26.09 26.11
100		1.24
101		9.70 18.30 24.36 29.90 30.20 34.90
105	5.00 17.24	6.42
401	1.35	5.40 6.10
409	2.59	


Raymond (S&W)
105
20
10
60
0
0
6
10
20
101
0
4
10
10
20
10
401
0
30
0
40
MP
Ice Signs; S&W
Accidents; S&W
N
W
E

Raymond (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
4		22.00 22.20 22.21 22.22 24.08
6	27.05	2.35 3.29 12.90 22.50 24.70 26.60 26.66
101		3.86 8.60 10.50 18.21 18.21 18.31 23.19 23.35 23.59 26.10 26.20 48.26 57.41 62.70
103		4.99 6.87 9.78
105		25.50
401	10.87	9.09
409	3.48	

Spokane (N&E)


20
211
2
180
395
170
2
300
206
10
27
290
10
0
290
0
2
270
280
280
290
270
90
80
902
195
27
10
260
10
904
0
80
70
278
250
240
N
W
E
S
MP
Accidents; N&E
Ice Signs; N&E

Spokane (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2	271.95	267.99
		268.86
		276.61
		277.00
		278.47
		278.96
		279.17
		279.23
		280.00
		281.70
		282.02
		282.03
		282.06
		282.50
		282.67
		282.68
		287.00
		288.44
		289.55
		290.65
		290.93
		291.27
		291.55
		291.86
		292.63
		292.67
		293.23
		293.81
		301.39
		303.82
		304.24
		304.53
		305.00
		312.59
		318.75
		319.50
		319.89
		320.83
		321.54
		322.09
		322.49
		322.90
		323.11
		325.20
		326.74
		327.49
		329.50
		331.70

Spokane (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
20		426.04
		430.69
		431.40
		432.94
27	78.34	64.67
	80.43	67.30
		67.30
		69.47
		69.95
		72.03
		72.23
		77.36
		77.72
		81.15
		83.40
		86.45
		86.69
		86.72
		86.76
90	277.51	239.40
	279.95	240.40
	281.91	240.81
	281.98	241.40
		242.34
		250.97
		255.95
		256.19
		256.59
		256.79
		258.90
		259.51
		261.03
		261.63
		261.83
		262.74
		264.10
		266.81
		267.02
		268.03
		271.00
		271.70
		272.80
		273.18
		275.00
		275.89
		276.00
		276.02
		276.22
		276.59

Spokane (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		277.83
		277.94
		278.11
		278.44
		279.48
		279.75
		280.03
		280.62
		280.93
		281.00
		281.10
		281.14
		281.16
		281.30
		281.60
		282.06
		282.07
		282.09
		282.25
		282.25
		282.35
		282.36
		282.47
		282.47
		282.75
		282.92
		282.93
		282.93
		282.93
		283.25
		283.40
		283.51
		283.52
		283.67
		283.69
		283.69
		283.75
		283.79
		283.83
		283.85
		283.99
		284.23
		284.55
		284.91
		285.10
		285.61
		286.35
		287.50
		287.65

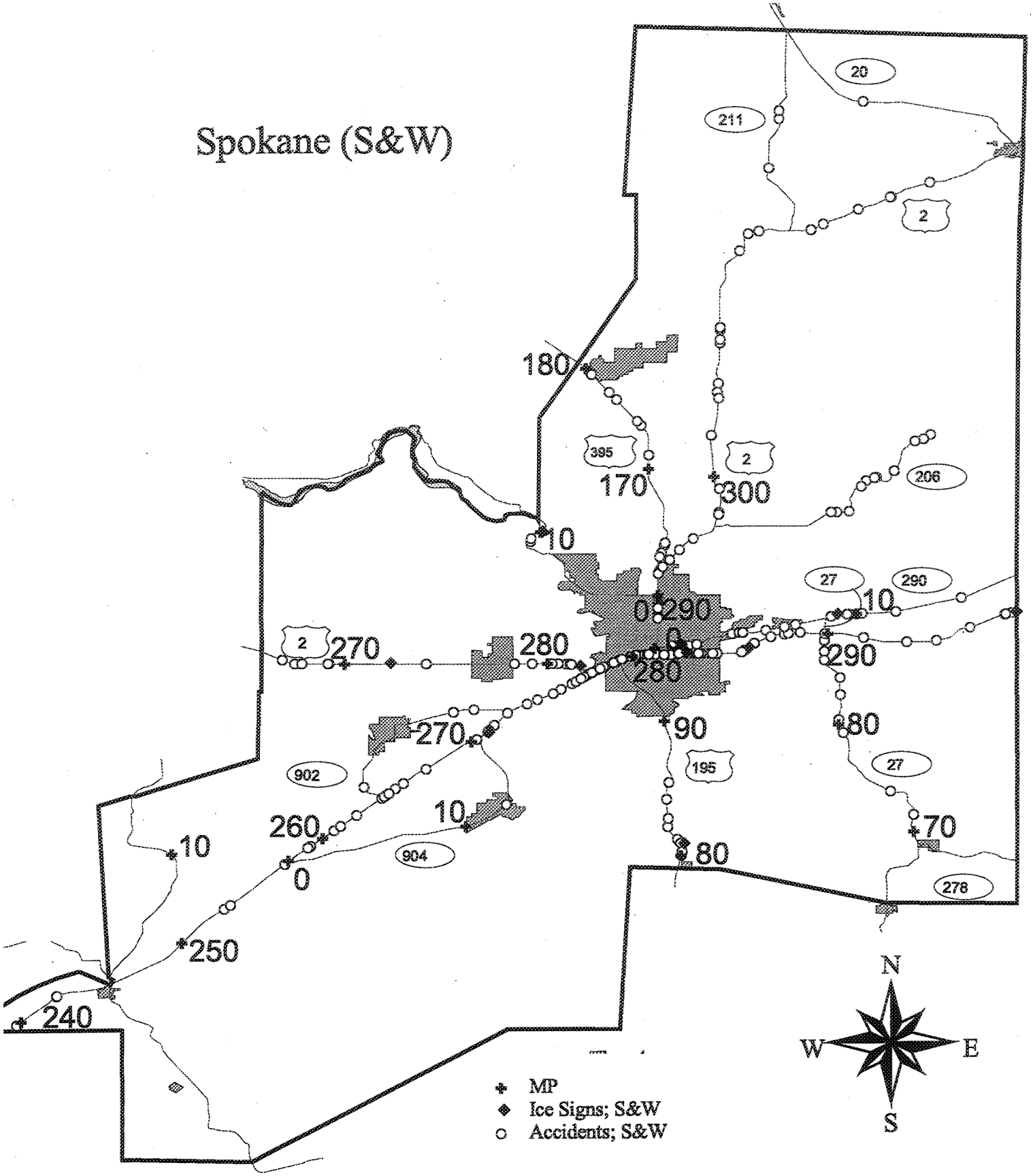
Spokane (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		288.85 289.29 289.86 289.87 291.64 291.92 294.91 297.41 298.10
195	80.65	82.62 86.21 86.46 86.50 88.40 89.10 94.00
206		1.87 10.69 13.06
211		1.59 2.09 2.14 2.19 8.26 8.90 9.49 9.89 14.89
290	8.57	.47 1.16 1.30 2.28 2.39 2.60 2.62 6.15 16.64

Spokane (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
291	8.94	.47
		.50
		1.07
		1.12
		1.12
		2.72
		3.39
		3.85
		3.85
		6.52
		8.84
		9.10
		9.54
395		166.08
		166.18
		172.99
		176.42
		177.02
		177.46
		177.69
		178.40
		178.45
		179.40
		179.96
		180.43
		180.46
902		8.28
		12.01
		12.16
		12.19
		12.19
904	12.56	9.68
		11.24
		11.95
		16.28
		16.50

Spokane (S&W)


20
211
2
180
395
170
2
300
206
10
27
290
10
0
290
0
280
2
270
280
290
270
90
80
902
195
27
10
260
10
904
0
80
70
278
250
240
N
W
E
S
MP
Ice Signs; S&W
Accidents; S&W

Spokane (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2	273.13	267.97
	282.50	268.58
		268.91
		268.95
		270.18
		270.23
		274.99
		279.35
		280.22
		280.22
		281.22
		281.52
		281.90
		282.10
		282.16
		282.17
		289.43
		289.45
		289.50
		289.66
		290.18
		290.19
		290.30
		290.52
		292.67
		292.95
		293.23
		293.23
		293.81
		294.64
		295.68
		298.11
		298.28
		300.06
		304.01
		306.77
		307.20
		307.82
		310.77
		311.04
		311.70
		311.74
		311.84
		311.91
		311.91
		317.47
		318.76
		319.40
		322.39

Spokane (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2 (cont.)		323.10
		325.09
		326.83
		326.90
		329.02
20		427.49
27		71.22
		73.85
		79.36
		80.34
		82.03
		83.20
		84.87
		85.44
		85.44
		85.44
		86.14
		86.19
90	270.95	239.70
	282.57	242.30
	285.75	242.33
	299.64	253.07
		253.47
		257.39
		259.01
		259.11
		259.19
		260.78
		261.23
		262.34
		264.04
		264.24
		264.38
		264.54
		265.01
		265.52
		267.02
		270.30
		271.10
		271.20
		271.65
		272.73
		273.91
		274.51
		275.43
		275.93

Spokane (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		276.57
		276.59
		276.82
		277.13
		277.31
		277.50
		277.57
		277.63
		277.78
		277.80
		278.08
		278.27
		278.45
		278.50
		278.95
		279.05
		279.25
		279.48
		279.48
		279.92
		280.17
		280.20
		280.31
		280.60
		280.71
		280.73
		280.74
		280.76
		280.95
		281.35
		281.86
		281.88
		282.05
		282.05
		282.18
		282.29
		282.34
		282.35
		282.80
		283.06
		283.06

Spokane (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
90 (cont.)		283.29
		283.29
		283.29
		283.29
		283.29
		283.29
		283.29
		283.29
		283.29
		283.30
		283.31
		283.38
		283.45
		283.85
		284.00
		284.02
		284.04
		284.24
		285.48
		285.64
		286.25
		287.10
		287.83
		288.02
		288.63
		289.86
		291.82
		293.96
		295.44
		297.31
		299.19
		299.24
		299.55
195	80.79	80.00
		80.29
		81.31
		81.40
		81.55
		81.75
		82.84
		83.42
		84.72
		85.91

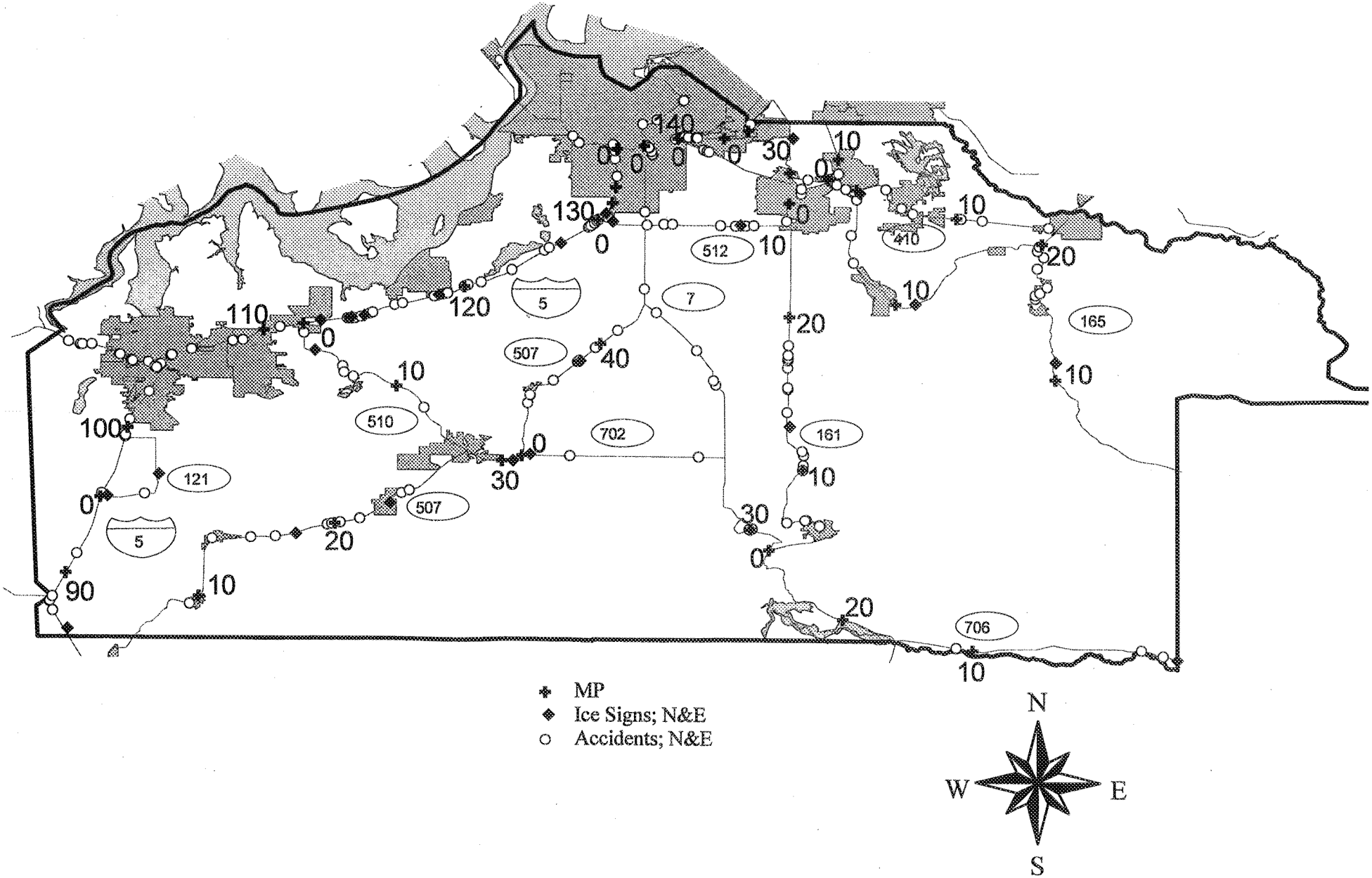
Spokane (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
206		6.73
		7.07
		7.75
		9.60
		10.04
		10.54
		10.65
		12.19
		14.40
		14.90
		15.38
211		5.24
		8.89
		9.49
290	1.25	.74
	8.89	.74
		.95
		1.17
		1.24
		1.44
		1.58
		1.97
		3.78
		4.12
		4.29
		5.43
		6.33
		6.35
		6.89
		8.68
		9.51
		9.51
		9.65
		10.01
		10.27
		11.95
		15.30
291	9.95	9.01
		9.20

Spokane (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
395		165.52 165.80 166.32 166.50 172.69 174.84 175.21 177.19 177.90 179.53 179.58 179.63
902		1.38 6.25 9.19
904		12.56

Tacoma (N&E)


140
0
0
0
0
30
10
0
0
130
0
512
10
410
10
20
10
5
7
120
110
0
20
165
507
40
10
10
100
510
702
0
161
121
30
10
0
507
30
5
20
0
90
10
20
706
10
MP
Ice Signs; N&E
Accidents; N&E
N
W
E
S

Tacoma (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5	86.00	87.34
	112.61	87.96
	114.04	87.96
	114.65	88.00
	125.13	88.30
	139.54	91.38
	149.00	95.50
		99.38
		99.47
		100.50
		100.50
		102.67
		104.28
		104.30
		104.30
		104.31
		104.32
		104.32
		104.60
		105.23
		105.30
		106.32
		108.35
		108.38
		108.87
		110.80
		114.00
		114.10
		114.11
		114.14
		114.15
		114.15
		114.16
		114.16
		114.16
		114.20
		114.36
		114.63
		115.10
		115.24
		116.40
		116.79
		118.41
		118.80
		119.00
		119.10

Tacoma (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5 (cont.)		120.00
		120.20
		120.86
		120.88
		122.53
		124.39
		124.67
		126.86
		126.89
		126.90
		127.00
		127.22
		127.38
		127.38
		127.48
		127.51
		130.71
		131.85
		132.38
		133.65
		133.71
		133.71
		133.71
		133.72
		133.77
		134.93
		135.18
		135.30
		135.30
		135.33
		135.36
		135.36
		135.36
		135.36
		135.36
		135.36
		135.36
		135.41
		135.59
		135.99
		136.06
		139.09
		139.30

Tacoma (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
7		29.90 30.09 40.66 40.96 43.12 46.47 48.33 53.37 57.83 57.87 58.08 58.08 58.36 58.40 58.42
16		0.13 0.15 0.31 2.11 2.59
101		362.80 363.41 363.51 363.97 365.41 365.45 366.03 366.07 366.12 366.90 367.30 367.39 367.40
121	0.19 4.00	2.41

Tacoma (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
161	13.25 32.60	3.95 3.97 3.97 3.98 3.99 3.99 4.01 4.01 4.04 4.90 5.01 6.16 10.00 10.00 10.30 11.00 11.30 14.18 15.60 15.70 16.90 17.36 17.48 17.67 18.27
162	0.23 11.05	0.52 4.99 6.57 6.59
165	10.97	15.44 15.67 15.96 16.62 18.00 18.80 19.35 19.80
167		1.45 1.65 1.76 5.98 7.15 7.15 7.21 7.59 7.66 7.80

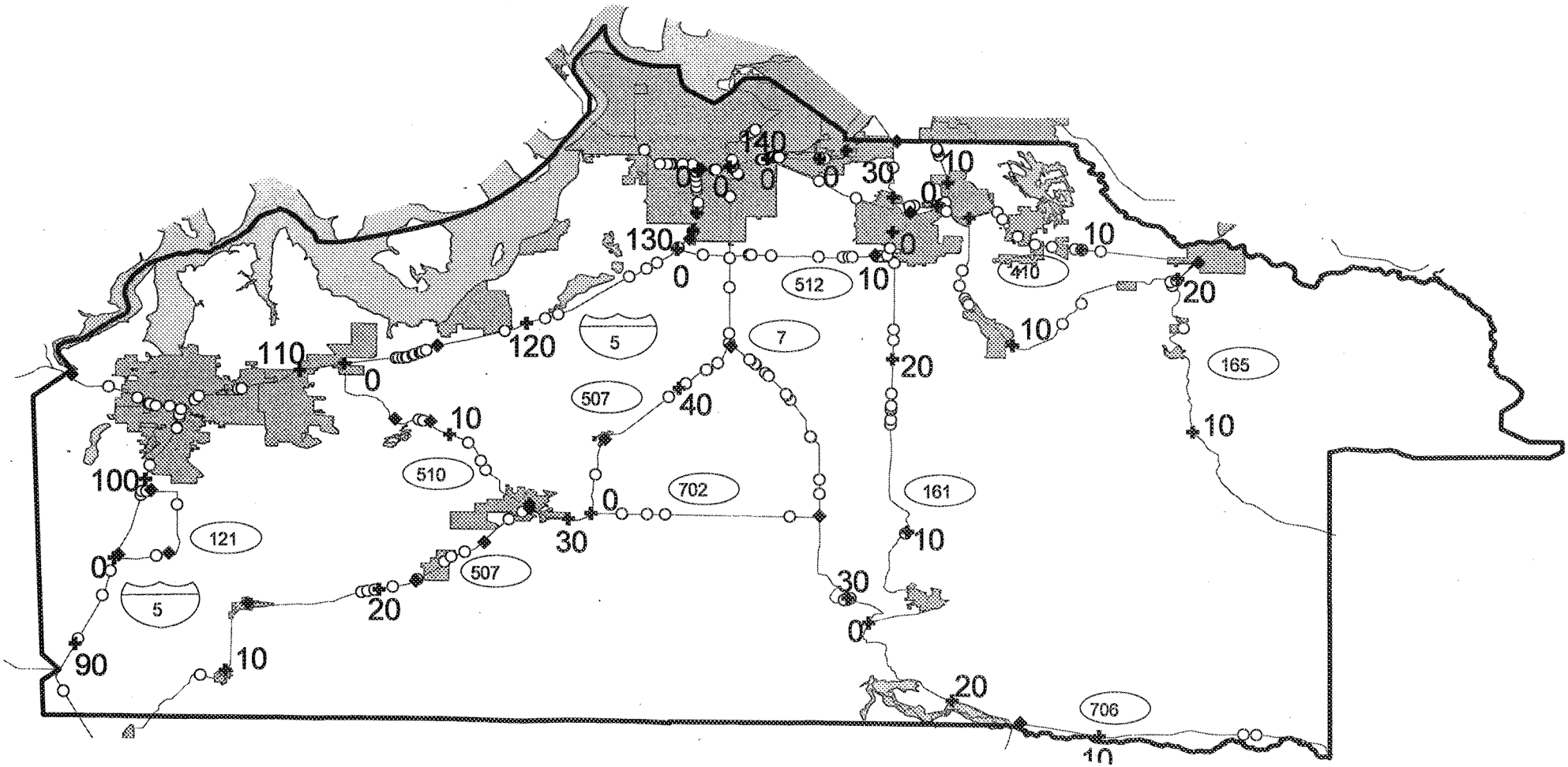
Tacoma (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
410		9.18
		9.32
		9.82
		10.10
		10.24
		11.92
		13.17
		13.79
		16.05
		16.10
		17.12
		20.28
507	17.68	9.36
	22.98	13.39
	30.39	15.46
	38.28	16.77
		19.60
		19.84
		20.29
		21.35
		23.98
		24.42
		34.19
		34.69
		36.53
		38.29
		38.34
		38.43
		39.63
		41.26
509		0.22
		1.03
		2.74
		2.79
510	4.39	2.63
		6.45
		6.80
		7.39
		12.00

Tacoma (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
512	0.55 6.47 6.47	0.02 2.32 3.09 3.10 3.50 5.70 6.39 6.84 6.87 7.22 8.84 11.12 11.43
702	0.21	2.19 8.11
706	0.38	1.00 2.05 10.80

Tacoma (S&W)



MP
Ice Signs; S&W
Accidents; S&W

N
W
E
S

Tacoma (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5	95.36	87.00
	115.75	90.30
	132.49	93.07
	149.28	94.50
		99.07
		99.28
		100.80
		103.38
		103.39
		104.06
		104.18
		104.48
		105.22
		105.46
		107.20
		107.35
		114.08
		114.08
		114.18
		114.35
		114.50
		114.54
		114.78
		114.86
		115.10
		115.13
		115.15
		115.22
		115.40
		118.98
		120.86
		121.47
		125.03
		125.87
		126.40
		127.58
		128.86
		130.00
		130.36
		130.59
		131.33
		131.33
		131.51
		131.82

Tacoma (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5 (cont.)		132.13
		132.13
		132.13
		132.39
		132.39
		132.39
		132.41
		132.43
		132.94
		132.98
		132.98
		132.98
		133.72
		133.79
		133.79
		133.85
		134.81
		134.87
		135.16
		135.25
		135.27
		135.30
		135.31
		135.31
		135.36
		135.51
		135.51
		135.59
		137.45
		137.70
7		29.89
		30.10
		30.12
		30.18
		30.20
		30.22
		37.33
		38.09
		40.56
		40.60
		42.93
		43.23
		43.30
		44.64
		44.87
		45.55
		45.63
		45.92
		45.98

Tacoma (S & W) (cont.)

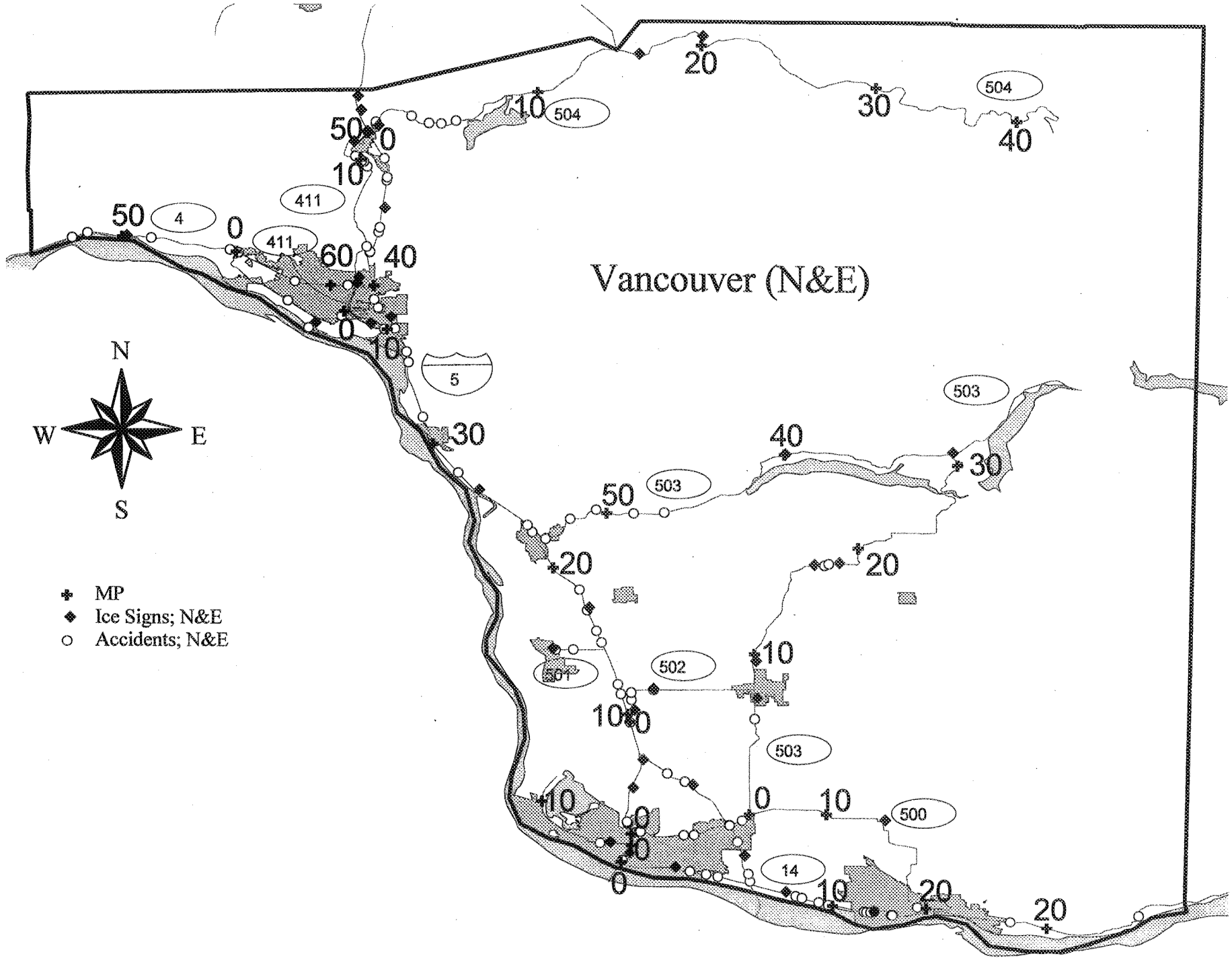
Route	Ice Warning Sign Location (MP)	Accident Location (MP)
7 (cont.)		47.37
		47.38
		47.38
		47.95
		50.69
		52.40
		55.88
		57.99
		58.08
		58.58
16		0.10
		0.38
		0.84
		1.28
		1.39
		1.39
		1.43
		1.57
		1.57
		1.57
		1.91
		2.89
99		0.02
101	361.02	364.12
		365.46
		366.00
		366.07
		366.32
		366.91
121	2.44	2.01
	7.41	5.38
		7.46
161	32.48	9.86
		16.48
		16.75
		17.27
		17.37
		17.50
		18.15
		21.01
		21.59
		25.19
		31.08

Tacoma (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
162		5.10
		5.86
		6.56
		6.76
		6.90
		13.08
		14.50
165	21.09	16.57
		19.38
		19.60
		19.90
167		2.58
		4.45
		5.98
		6.00
		7.32
		7.50
		7.56
		10.30
		10.52
		10.56
		10.66
		10.68
410		9.03
		9.03
		9.32
		11.64
		12.02
		13.07
		13.90
		14.63
		14.63
		15.60
		15.90
		16.70
507	13.58	8.65
	21.59	19.16
	25.34	19.45
	28.04	19.79
	34.95	20.64
	43.33	21.86
		23.38
		23.80
		24.48
		27.11
		27.82

Tacoma (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
507 (cont.)		33.14 39.29 40.40 41.67 41.69 41.70 41.73 42.38
509		1.11 1.50 1.69
510	6.88 8.73 15.43	8.31 8.54 11.00 12.10 12.60
512	8.00 11.54	1.10 3.00 3.06 3.10 3.91 5.84 6.83 7.07 7.21 8.21 8.34 8.64 9.05 11.98 11.99
702	9.18	1.26 2.29 3.02 8.11
705		0.01 0.02 0.40
706	13.49	3.43 3.96


Vancouver (N&E)
N
S
W
E
MP
Ice Signs; N&E
Accidents; N&E
4
411
411
5
504
504
503
503
503
502
501
500
14

Vancouver (N & E)

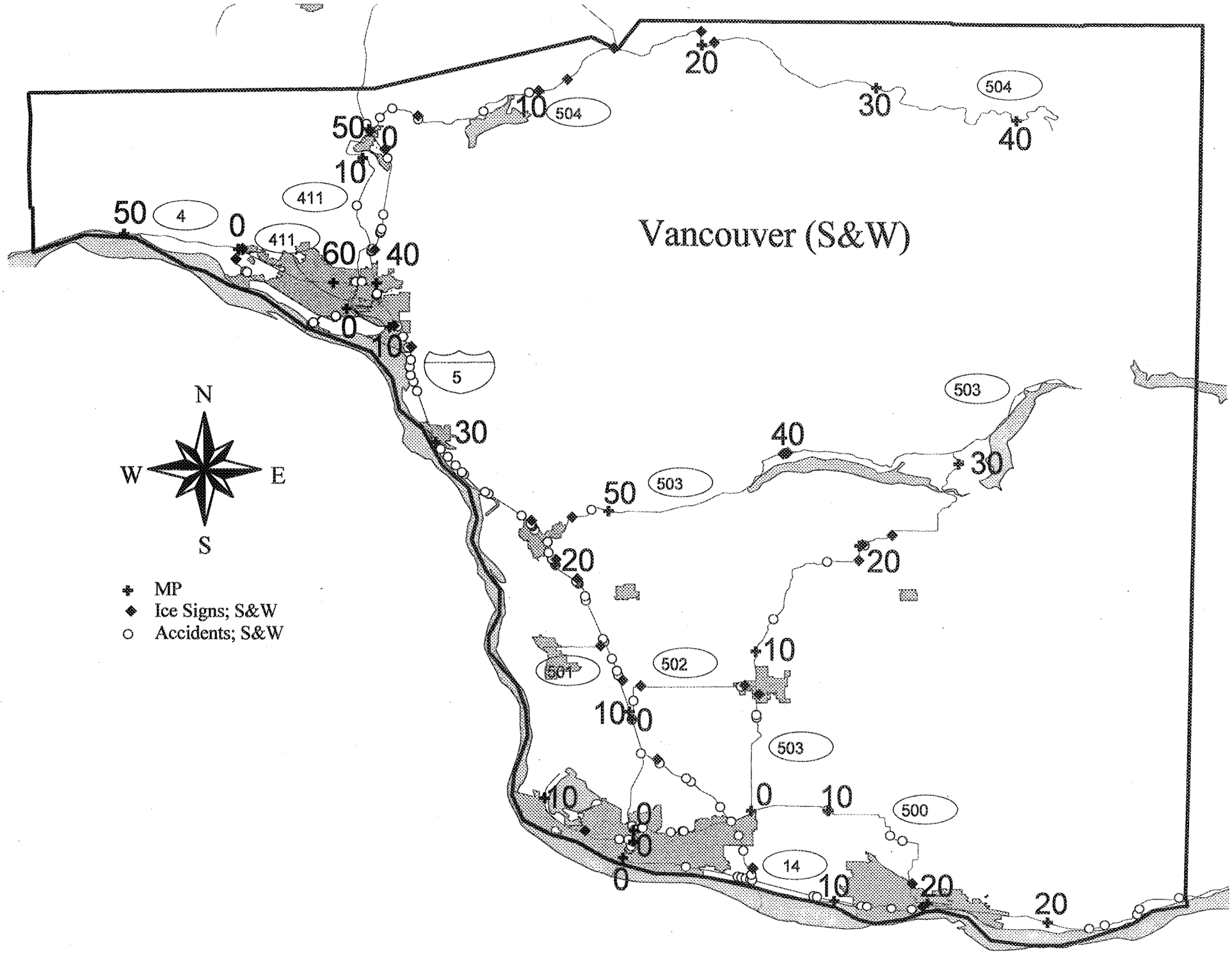
Route	Ice Warning Sign Location (MP)	Accident Location (MP)
4	50.07	47.70
	61.14	48.42
		51.31
		54.94
		55.34
		58.29
		60.79
5	1.00	0.54
	5.12	2.90
	6.99	2.98
	16.78	3.03
	26.33	9.49
	37.72	11.30
	44.84	11.90
	51.32	14.61
	52.21	15.36
		16.67
		17.97
		22.31
		22.31
		22.80
		27.80
		27.80
		31.62
		34.88
		35.50
		36.97
		38.43
		38.56
		38.58
		39.17
		42.05
		42.10
		43.39
		43.69
		46.59
		46.79
		48.02
		49.91

Vancouver (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
14	2.43 7.63 11.80	3.24 4.00 4.55 8.24 8.54 9.34 9.80 11.48 11.60 11.60 11.78 11.79 11.96 12.80 12.82 12.85 18.30 25.01
205	28.80 33.91	27.10 27.58 29.75 30.94 34.25 35.30
411	2.13 11.98	2.58 9.40 9.77 9.91 10.07 10.11 10.38
432	9.16	4.30 4.31 4.31 4.31 7.67 9.88
433	0.64	0.40

Vancouver (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
500	13.01	0.21 0.37 0.37 0.44 2.53 3.01 4.76 5.44 19.54
501	2.56 17.38	3.20 3.20 17.63 18.45
502	0.56 2.52	1.10 1.45 2.66
503	7.51 9.55 16.30 17.70 31.42 40.09	6.50 17.24 17.50 47.40 48.89 50.76 52.20 53.95
504	0.49 15.75 19.56	0.60 0.70 2.87 3.87 4.50 5.35


Vancouver (S&W)
N
W
E
S
MP
Ice Signs; S&W
Accidents; S&W
4
411
411
5
504
504
503
503
503
502
501
500
14
50
0
10
60
40
0
10
30
20
10
30
40
50
20
10
0
10
0
0
0
10
0
10
20
20
30
40

Vancouver (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
4	55.31	61.08
		61.38
5	11.92	1.00
	18.56	1.09
	20.30	1.24
	22.90	1.58
	35.59	1.66
	41.99	2.51
	48.49	7.29
		9.49
		9.49
		9.50
		9.50
		9.51
		12.30
		12.30
		12.30
		12.56
		13.35
		14.47
		14.65
		17.10
		17.35
		18.21
		18.22
		18.24
		18.25
		18.29
		18.31
		18.42
		20.00
		20.40
		20.82
		22.29
		22.54
		22.60
		22.69
		22.69
		22.69
		22.69
		22.70
		23.42
		25.70
		25.92

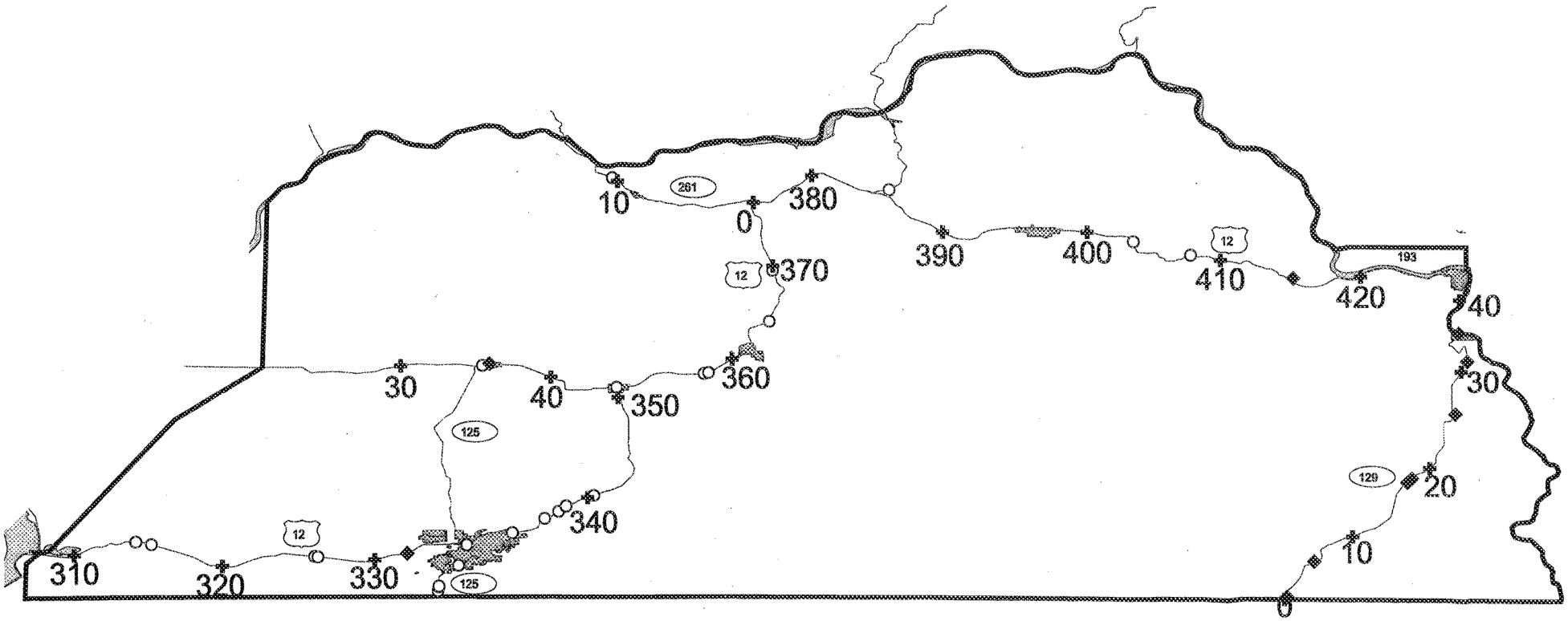
Vancouver (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
5 (cont.)		27.52
		27.67
		27.70
		28.23
		28.23
		28.89
		29.50
		33.03
		33.60
		34.00
		34.48
		34.88
		35.62
		36.30
		36.97
		39.27
		39.34
		39.37
		39.37
		41.96
		41.99
		42.14
		43.21
		43.29
		43.46
		44.34
		47.90
		50.36
14	14.04	2.97
		5.40
		5.57
		5.77
		5.99
		6.08
		9.01
		9.18
		11.28
		11.54
		12.72
		13.69
		22.20
		22.21
		23.00
		24.75
		25.06
		27.27

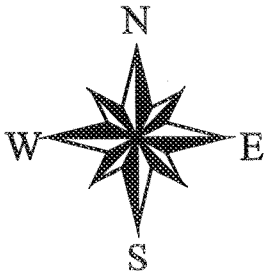
Vancouver (S & W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
205	27.60 27.65 36.27	27.23 27.23 27.24 28.91 29.92 30.93 31.89 33.99 34.29 35.95
411		6.69
432	0.69 10.06	1.60 1.70 7.04
433		0.44 0.49 0.55
500	18.18	0.04 0.15 0.38 0.42 0.45 1.82 2.38 2.42 9.95 14.17 14.92
501	5.14 19.48	0.24 0.88 1.69
502	1.81 6.87	0.92 6.83
503	7.55 18.67 19.97 21.85 40.06 40.30 52.15	6.41 6.58 12.27 17.33 20.50 51.10 54.23
504	2.99 9.82 11.42 14.42 19.32 20.54	0.90 1.71 3.20 6.78 9.49

Walla Walla (N&E)



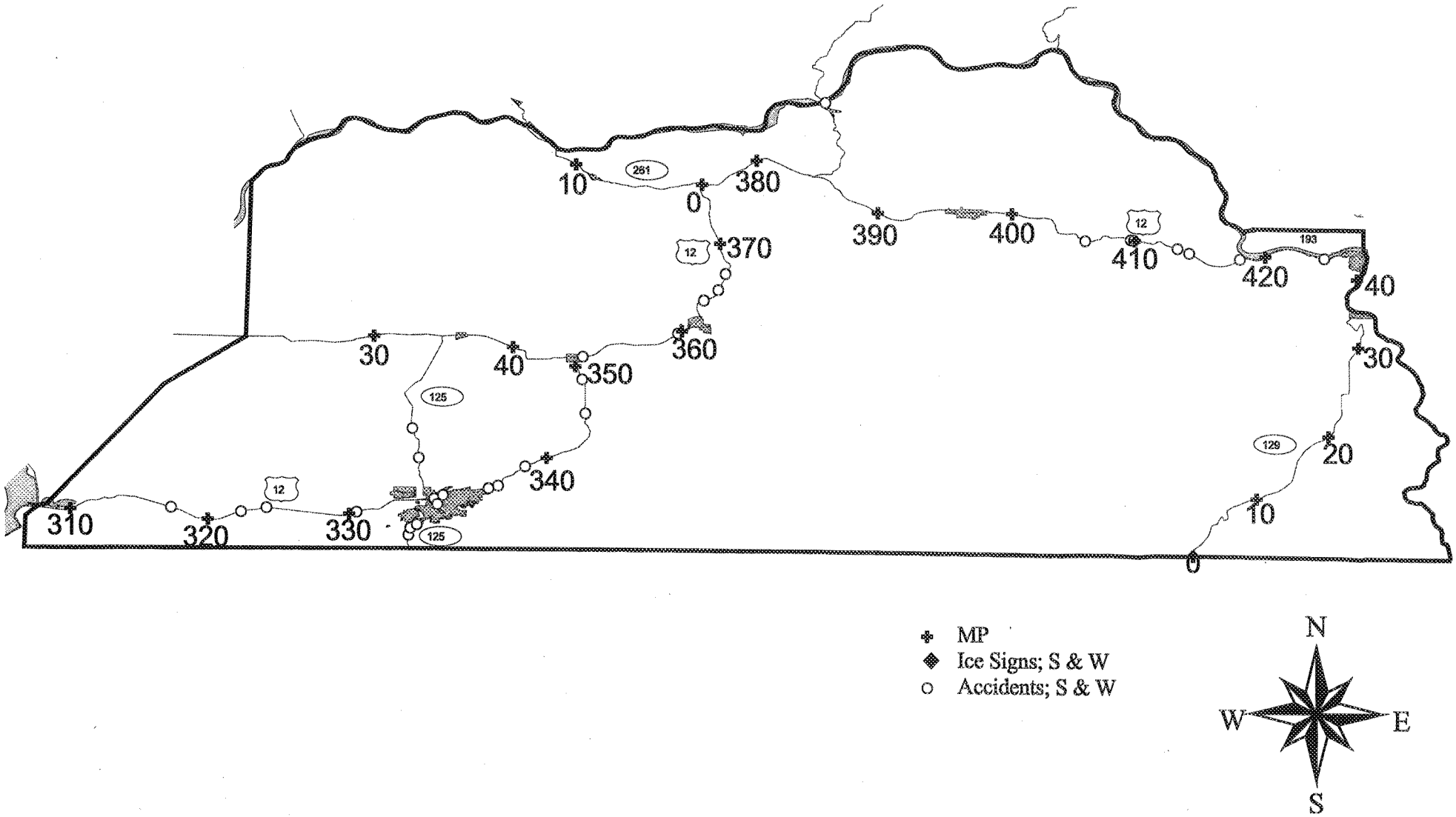
MP
Ice Signs; N&E
Accidents; N&E



Walla Walla (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
12	331.90 421.93	314.16 314.17 315.19 326.08 326.30 339.77 343.10 344.29 344.96 345.01 347.27 357.59 364.29 364.65 371.84 376.48 410.05 414.74
124	35.66	35.39
125		0.50 0.83 0.84 0.89 3.42 5.83
127		1.87
129	0.12 4.44 17.22 17.77 25.75 30.88 36.08	
261		10.44

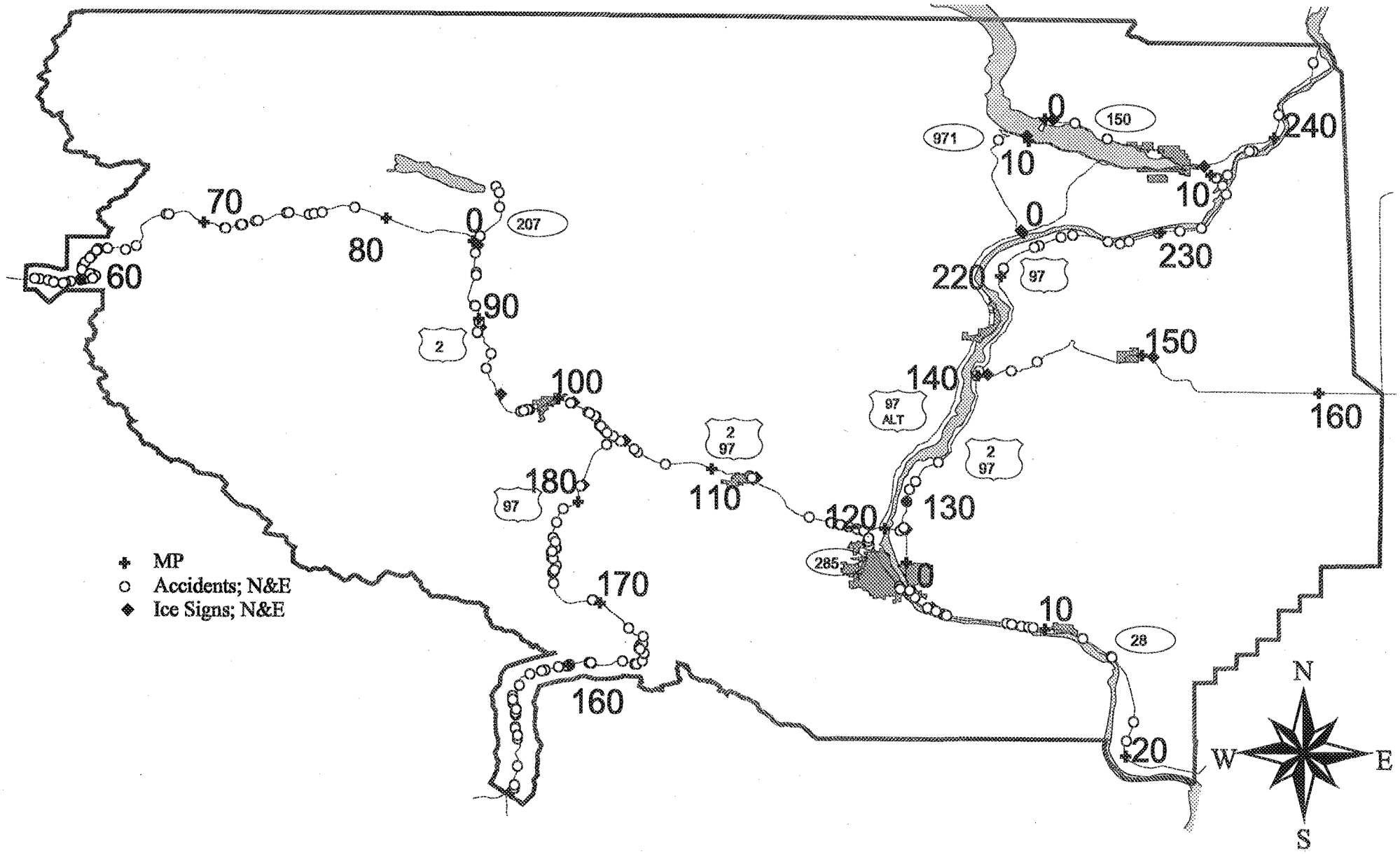
Walla Walla (S&W)



Walla Walla (S & W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
12		317.30
		322.40
		324.20
		330.52
		336.19
		336.95
		340.78
		342.05
		344.88
		352.80
		355.60
		358.20
		366.38
		370.72
		370.72
		372.33
		373.81
		412.99
		416.49
		416.71
		420.04
		420.98
		424.97
		431.26
125		1.19
		1.84
		2.48
		5.34
		10.67
		13.65
127		9.65

Wenatchee (N&E)



Wenatchee (N & E)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2	85.10	57.50
	90.49	57.75
	95.37	58.20
	100.71	58.49
	104.78	58.50
	112.21	58.50
	127.95	58.50
	140.45	58.98
	150.46	58.99
		59.10
		59.40
		59.90
		60.10
		60.30
		60.37
		60.50
		60.50
		60.80
		61.00
		61.10
		61.60
		61.80
		62.03
		62.40
		62.53
		62.91
		63.01
		63.02
		63.51
		64.42
		65.06
		67.70
		67.70
		67.83
		71.01
		71.05
		71.88
		71.94
		71.95
		72.00
		72.69
		72.82
		74.40
		74.51
		75.61
		75.87
		76.30
		78.12
		85.50

Wenatchee (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2 (cont.)		86.74
		86.84
		86.90
		89.00
		89.01
		89.05
		90.09
		90.70
		90.75
		92.40
		93.54
		97.35
		97.50
		97.55
		97.59
		97.60
		97.80
		97.90
		97.91
		100.69
		100.69
		101.89
		102.01
		102.35
		102.40
		102.45
		103.07
		103.15
		103.50
		103.59
		103.73
		104.16
		105.53
		105.54
		105.78
		107.38
		111.98
		112.13
		115.89
		117.03
		117.09
		117.23
		117.56
		117.99
		118.46
		118.50
		118.82
		118.82

Wenatchee (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2 (cont.)		120.53 128.09 128.12 129.85 130.65 131.35 133.35 141.88 143.40
28	3.40	0.31 1.26 1.56 1.77 1.80 2.18 2.29 2.42 5.81 6.09 6.65 7.05 7.29 7.30 10.18 12.04 12.10 16.00 17.11
97	149.89 181.01	150.30 150.50 151.69 153.40 153.60 154.01 154.10 154.79 154.90 155.10 155.50 155.70 155.92 156.67 157.67 158.37 158.37 158.38 158.58 159.38 159.88

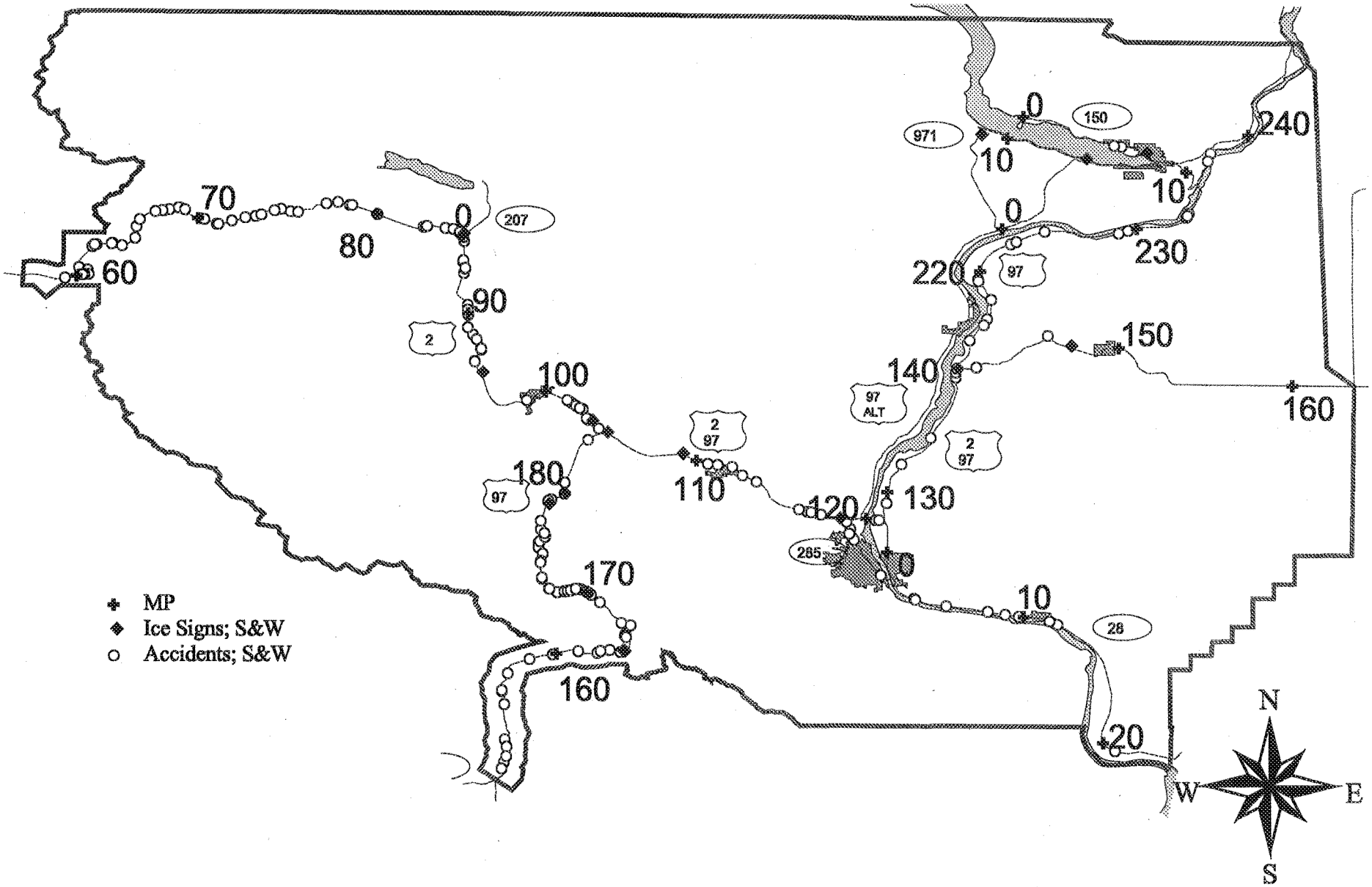
Wenatchee (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
97 (cont.)		160.03
		161.20
		161.30
		161.32
		163.20
		163.98
		164.10
		164.50
		164.95
		164.98
		165.00
		165.37
		165.47
		165.50
		165.71
		165.89
		165.89
		166.57
		167.67
		170.47
		170.51
		173.66
		174.35
		174.46
		174.56
		174.86
		175.32
		175.41
		175.82
		175.85
		175.90
		175.90
		175.91
		176.02
		176.16
		176.20
		176.22
		176.75
		177.05
		178.02
		179.00
		181.01
		184.09
		184.98

Wenatchee (N & E) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
97 (cont.)		213.00 213.59 220.31 222.47 222.76 224.08 224.76 226.80 227.50 228.01 229.73 229.74 230.97 232.19 234.67 235.28 235.98 238.11 238.32 241.37 245.72
150	.57 9.23	1.85 3.85 10.33 10.40
207	.10	0.50 2.89 3.79 4.20
285		0.00 0.12 0.29 0.33 0.59 0.85 1.03 4.16 4.40 4.42 4.62
971	.31 9.64	6.60

Wenatchee (S&W)



Wenatchee (S &W)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2	84.60	59.27
	94.33	59.28
	103.45	60.10
	108.98	60.10
	118.37	60.10
	147.02	60.20
		60.30
		60.30
		60.30
		60.40
		60.50
		61.02
		61.51
		62.91
		63.06
		63.16
		63.95
		63.99
		64.48
		65.31
		65.97
		66.44
		67.39
		67.75
		67.84
		68.15
		68.65
		68.70
		69.00
		70.00
		70.20
		70.90
		71.01
		71.79
		72.54
		73.08
		73.40
		74.15
		74.51
		75.01
		75.43
		77.08
		77.72
		78.37
		78.50
		79.94

Wenatchee (S &W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2 (cont.)		82.50
		82.61
		82.70
		83.68
		84.10
		84.10
		84.47
		84.48
		84.79
		85.04
		86.21
		86.30
		86.73
		86.73
		86.78
		87.06
		89.40
		89.70
		90.01
		90.85
		91.45
		91.85
		92.50
		92.50
		92.55
		92.60
		93.50
		93.53
		98.55
		101.35
		101.48
		101.70
		101.70
		101.71
		102.01
		102.25
		102.30
		102.50
		103.15
		103.28
		103.30
		104.16
		110.53
		111.09
		111.89
		112.60
		113.41

Wenatchee (S &W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
2 (cont.)		116.27
		116.74
		116.94
		117.46
		118.88
		120.23
		120.43
		129.16
		131.98
		134.77
		139.17
		139.60
		139.91
		141.07
		145.44
28		1.62
		1.71
		3.50
		5.91
		6.90
		7.68
		9.48
		9.98
		18.85
97	163.94	150.69
	164.04	151.09
	178.56	151.49
	184.91	152.05
		152.51
		154.69
		155.49
		155.55
		156.67
		158.37
		158.37
		159.78
		161.34
		162.48
		162.70
		163.30
		163.97
		165.37
		165.37
		165.50
		165.67

Wenatchee (S &W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
97 (cont.)		166.47
		167.06
		168.96
		169.67
		169.89
		170.03
		170.36
		170.55
		170.71
		170.80
		171.05
		171.27
		171.45
		171.90
		171.90
		172.49
		172.52
		173.26
		173.35
		174.36
		174.46
		175.00
		175.45
		175.80
		175.92
		176.35
		176.42
		176.60
		176.62
		176.96
		177.51
		178.82
		178.88
		178.90
		178.90
		179.07
		179.94
		180.66
		180.69
		180.69
		183.76
		215.20
		216.40
		216.80
		218.00
		219.29
		219.40

Wenatchee (S &W) (cont.)

Route	Ice Warning Sign Location (MP)	Accident Location (MP)
97 (cont.)		222.33 222.68 224.42 228.79 229.35 232.87 232.92 233.00 233.16 236.71 237.20
150	7.26	5.54 5.95
285		1.01 3.79 3.99 4.29 4.59
971	6.75 14.86	