

TRAFFIC IMPACT ANALYSIS

FOR

OLD MILL POINT

S90 F0105

WEBER'S RIDGE

CHRYSALIS ESTATES

January 14, 1994

Client(s): Mr. William Nelson, Old Mill Point
Ms. Donna Dixson, Weber's Ridge
Mr. Jack Estep, Chrysalis Estates

E15

Introduction:

The following report was prepared to identify the traffic related impacts of the proposed plats of Old Mill Point, Weber's Ridge and Chrysalis Estates. Since the three plats are contiguous, served by the same street network, and anticipated to be developed in the same time horizon, a joint report was prepared.

King County requested the report fulfill the requirements of a Level 2 traffic study. The County also required the analysis address the level of service analysis at the following intersections:

- o NE 37th Way and Sahalee Way
- o SR 202 and 192nd Place N.E.

With the construction of the plat of Old Mill Point, a new roadway connection will be provided connecting SR 202 to Sahalee Way via NE 42nd Street and NE 37th Way. It is anticipated that such a connection will modify existing traffic patterns within the neighborhood. As such, the County requested the analysis identify the traffic impacts of the new connection.

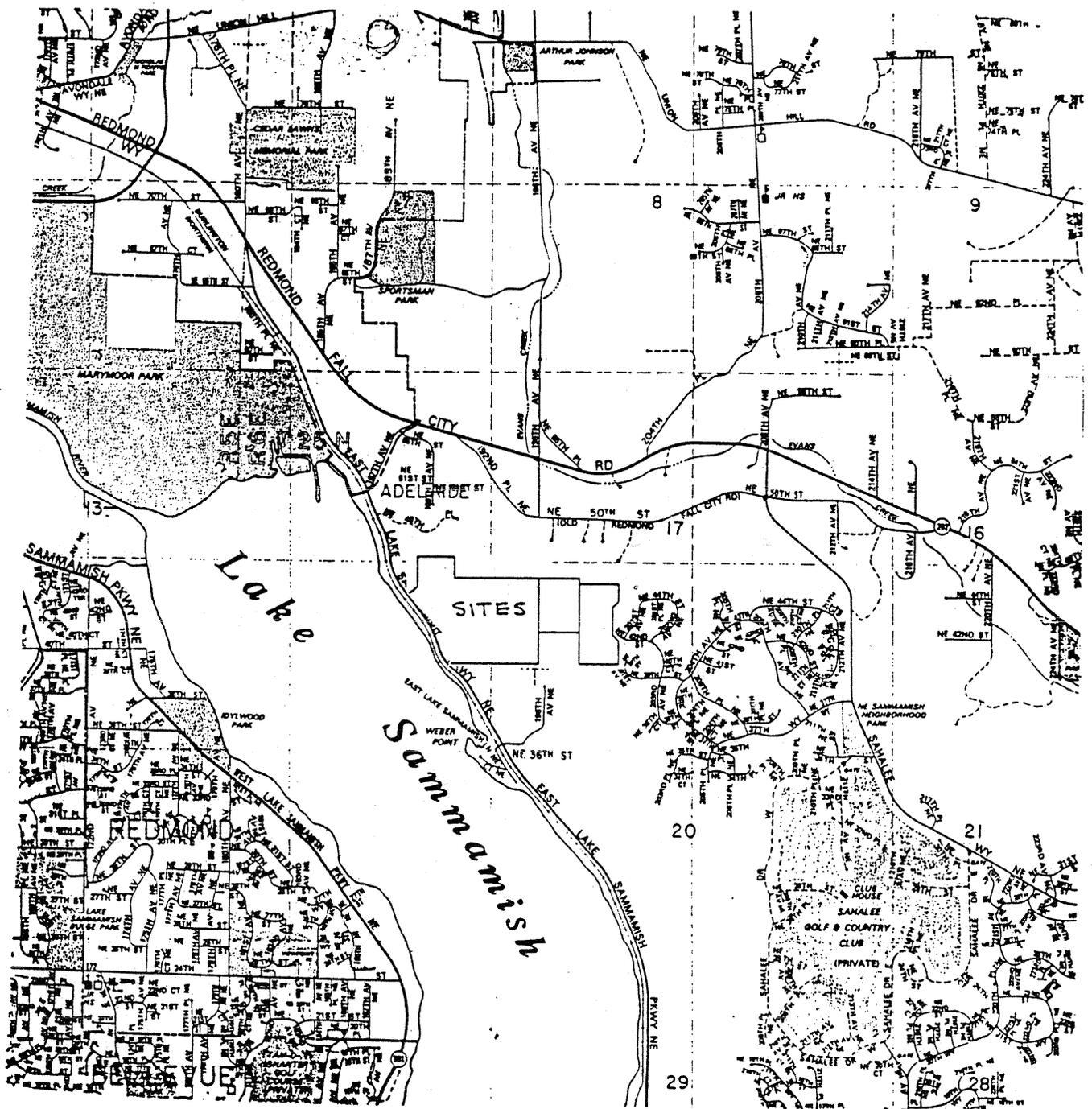
I. Project Identification

- A. Project Name(s): Old Mill Point
Weber's Ridge
Chrysalis Estates

- B. Project(s) Location: The projects are located in King County on the east side of East Lake Sammamish Parkway between 196th Avenue N.E. and 187th Avenue N.E. as shown in Figure 1.

- C. Developer Name(s): Mr. William C. Nelson, Old Mill Point
Ms. Donna Dixon, Weber's Ridge
Mr. Jack Estep, Chrysalis Estates
c/o Mr. De-En Lang,
Subdivision Management, Inc.
16031 119th Place N.E.
Bothell, WA 98011
Phone Number: 488-1111

- D. Development Description(s): Old Mill Point
1)Site Area = 60.15 acres
2)Lots = 76
3)Zoning = RS15000
Weber's Ridge
1)Site Area = 11.79 acres
2)Lots = 25
3)Zoning = RS15000
Chrysalis Estates
1)Site Area = 14.78 acres
2)Lots = 15
3)Zoning = RS15000



WILLIAM POPP
ASSOCIATES

VICINITY MAP

Figure 1

OLD MILL POINT
WEBER'S RIDGE
CHRYSALIS ESTATES

Home construction is expected to begin in 1997 with the plat of Old Mill Point. All plats are expected to be complete by 1998. For the purposes of this analysis, the horizon year or full occupancy of these developments is anticipated to be 1999. A site plan is shown in Figure 2.

II. Trip Generation

Trip generation in the horizon year includes traffic generated from the proposed plats, pipeline projects, and historical growth of existing AM and PM peak hour arterial traffic volumes.

A. Existing Traffic

Existing background traffic volumes were determined from actual peak period counts taken at the analysis intersections during December 1993 and January 1994. Existing peak hour volumes are presented in Figure 3.

B. Background Traffic Growth

Historical Growth

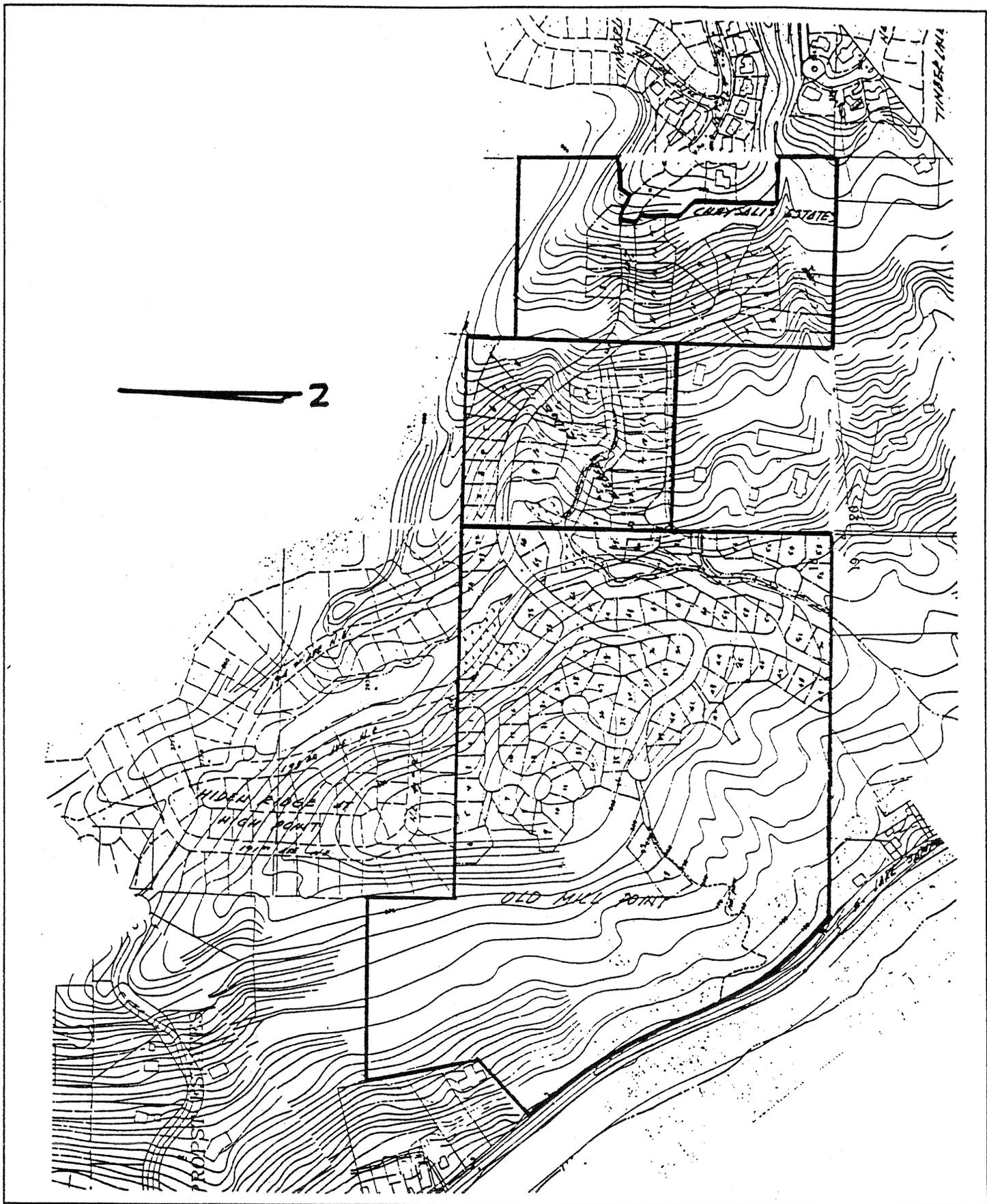
Historical growth in peak hour traffic was evaluated for the surrounding arterial network. Existing volumes on SR 202 are expected to grow at a rate of 3 percent per year based on historical counts obtained from the WSDOT for the section of SR 202 between 192nd Place NE and Sahalee Way NE. Traffic volumes on Sahalee Way NE are expected to grow at a rate of 6 percent per year based on historical counts supplied by King County.

Pipeline Projects

King County staff indicated there were two pipeline projects in the vicinity of the proposed plats. The two pipeline projects include Sterlingwood (62 SF dwelling units) and Timberline Ridge (232 SF dwelling units) located south and east of the proposed plats. In addition, a field review indicated that Hidden Ridge, located north of the proposed plats has 55 lots of the total 90 left to develop. The location of the pipeline projects is shown in Figure 4; trip generation is presented in Table 1.

C. Project Traffic

Vehicle trip generation for three plats as well as the pipeline projects was calculated using data published by the Institute of Transportation Engineers in "Trip Generation Report," 5th Edition, 1991, Land Use Category 210, Single Family. The results of the trip generation calculations for the three plats is presented in Table 1.

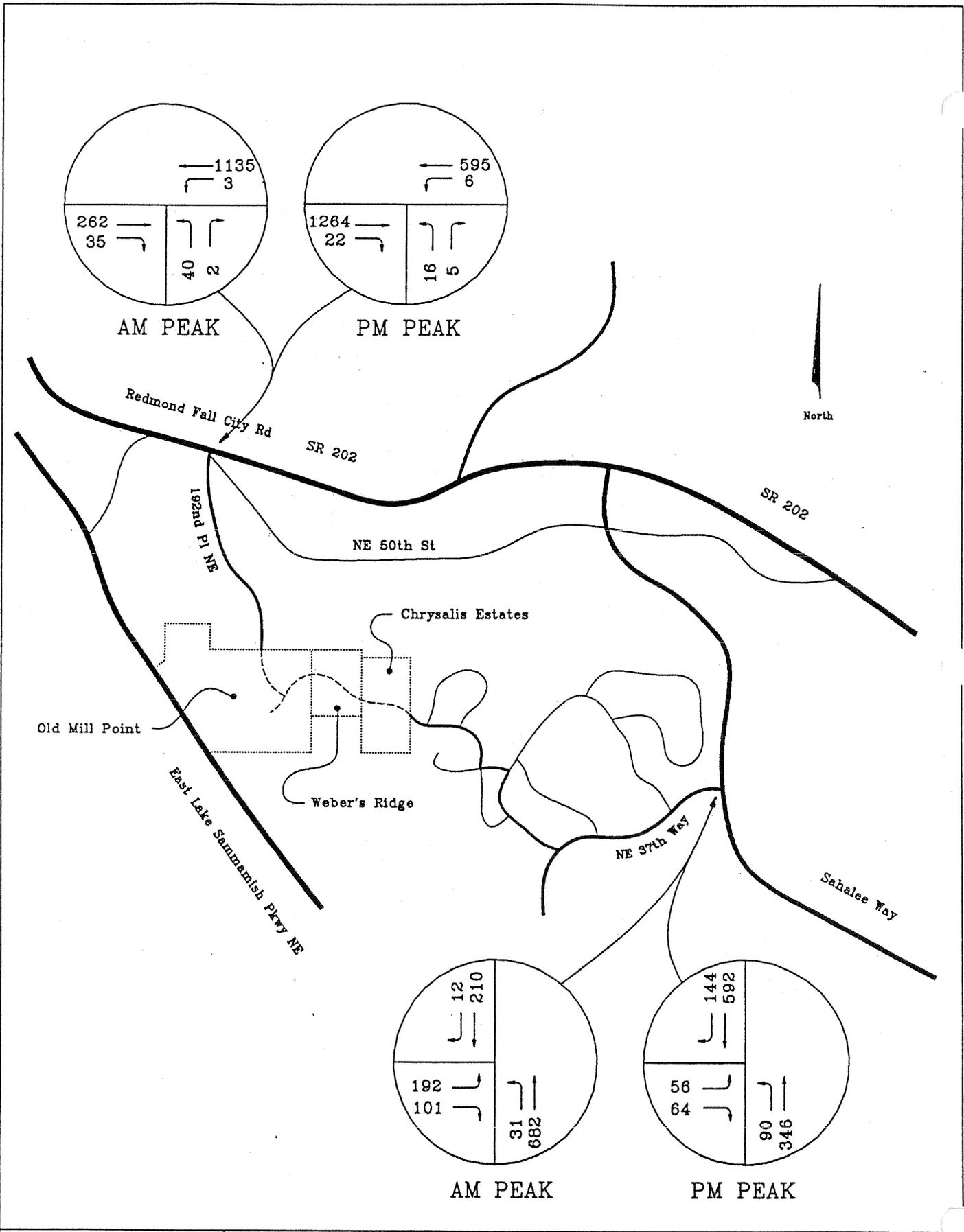


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ASSOCIATES

SITE PLAN

Figure 2

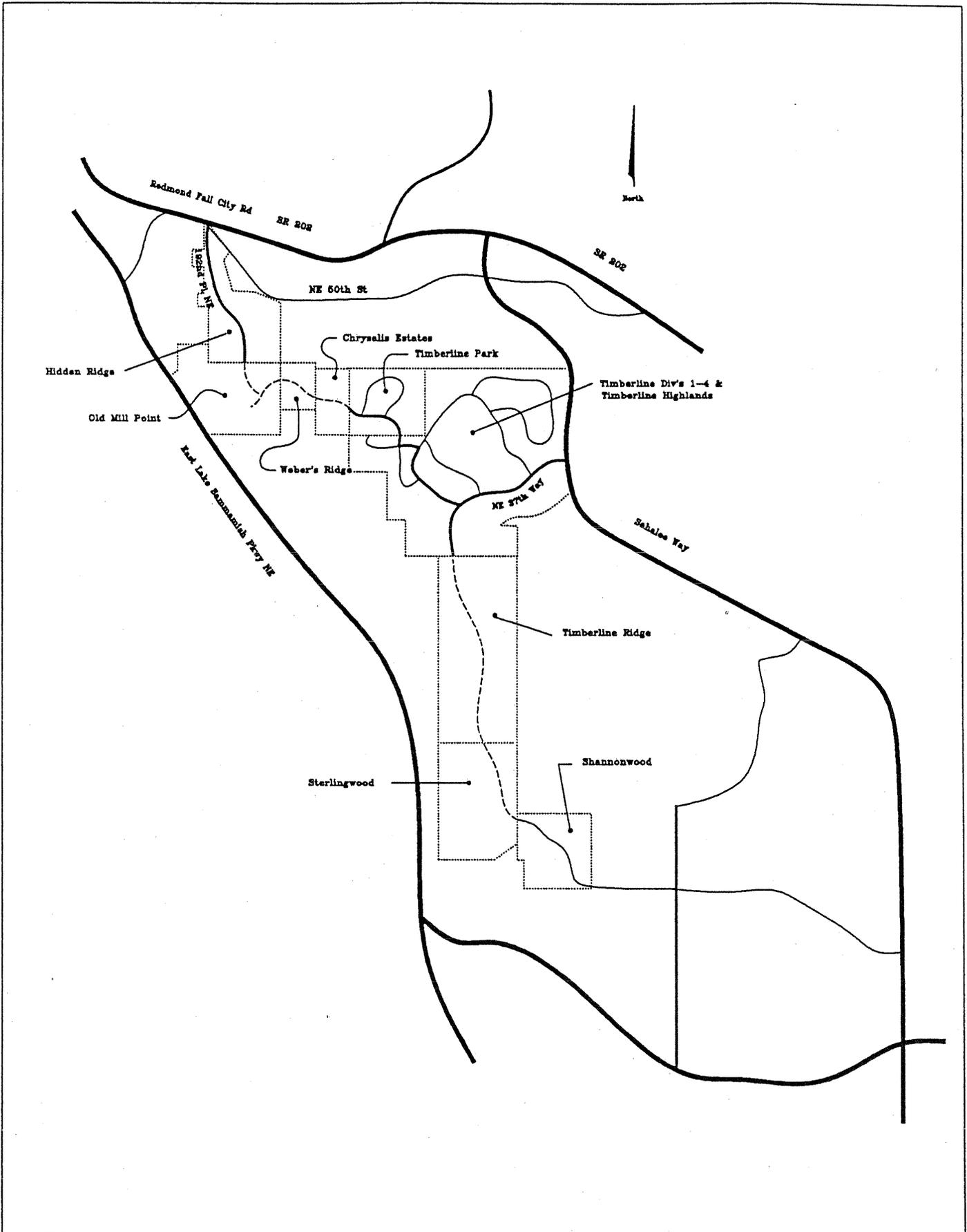
OLD MILL POINT
WEBER'S RIDGE
CHRYSALIS ESTATES



William Popp
Associates

1994 Existing
AM & PM Peak Hour Volumes
Figure 3

Old Mill Point
Weber's Ridge
Chrysalis Estates



William Popp
Associates

Existing & Proposed
Project Locations
Figure 4

Old Mill Point
Weber's Ridge
Chrysalis Estates

TABLE 1
Trip Generation

Land Use	AWDT	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Old Mill Point 76 Units	726	56	14	42	77	36	21
Weber's Ridge 25 units	239	19	5	14	11	3	8
Chrysalis Estates 15 units	143	11	3	8	15	10	5
Total	1,108	86	22	64	103	49	34
<u>Pipeline Projects</u>							
Timberline Ridge 232 units	2,216	172	44	128	255	153	102
Sterlingwood 62 units	592	46	12	34	63	41	22
Hidden Ridge 55 units	525	41	11	30	56	36	20
Total	3,333	259	67	192	374	230	144
Grand Total	4,441	345	89	256	477	279	178

III. Trip Distribution and Traffic Assignment

A. Project and Pipeline Developments

Trip distribution percentages applied to traffic volumes generated from the proposed plats and pipeline projects were based on existing traffic patterns determined from existing AM and PM peak hour turning movement counts at the analysis intersections. The external area trip distribution was further stratified based on patterns obtained from the King County traffic model used for the East Sammamish Community Plan.

Traffic assignment was based on minimum travel time path criteria. Minimum travel time routing is the traditional path selection technique used for traffic assignment to street networks, as motorists seek to minimize travel time in their daily trips. The minimum travel time routings were determined

from actual AM and PM peak period travel time runs conducted between the Timberline neighborhoods and the City of Redmond. For segments of roadway not yet constructed, an average speed of 20 MPH was assumed, although adjustments were made for the various grades encountered.

Based on these calculations, project generated traffic with northerly destinations was assigned to the SR 202/192nd Place NE intersection, whereas traffic with southerly destinations was assigned to the NE 37th Way/Sahalee Way NE intersection. For the pipeline projects, the upper 60 percent of Timberline Ridge was determined to use NE 37th Way/Sahalee Way NE for all destinations, whereas the lower 40 percent of the plat was assigned to the NE 37th Way/Sahalee Way NE intersection for all trips destined to the north and routes to the south for southerly destinations. Traffic assignment for the plat of Sterlingwood was accomplished similar to the lower 40 percent of Timberline Ridge.

B. Traffic Diversion

As a part of the proposed plats, a new roadway connection will be provided from NE 42nd Street to 193rd Avenue NE connecting the Timberline Park neighborhood to Hidden Ridge. With this connection, a new route will be provided from the Timberline neighborhoods to SR 202. In addition, when the Timberline Ridge plat is complete, a new north/south connection will be provided connecting the Timberline neighborhoods to the proposed plat of Sterlingwood and the existing plat of Shannonwood.

Using the results of the traveltime studies discussed above, anticipated traffic diversion was identified. The major minimum time path diversion point for Timberline traffic was approximately 600 feet northwest of the NE 37th Way/205th Place NE intersection in Timberline No. 1. It is assumed that only residents living north of this point would use the new connection for northbound trips. Of course, these minimum time path selection assumptions are theoretical. It can be argued that some motorists residing south of this point may proceed north and it can be argued that some north of the line may head south to NE 37th Way for trips to the north. The selection of an exact point however, is necessary for the calculation process.

Based on the travel time calculations, it was determined that 85 AM and 75 PM peak hour trips from the Timberline neighborhoods will use the NE 42nd Street connection. Traffic generated from the pipeline plats of Timberline Ridge and Sterlingwood will not benefit by using the NE 42nd Street connection and will most likely continue to use NE 37th Way.

Similarly, traveltime studies were done to estimate the portion of Hidden Ridge traffic that would use the new connection to access NE 37th Way for trips with southerly destinations. Based on these calculations, it was estimated that 5 AM and 18 PM peak hour trips from Hidden Ridge will use the NE 42nd Street connection.

Also, with the completion of Timberline Ridge and Sterlingwood, an alternative route will be provided for traffic generated in the existing plat of Shannonwood. Similar travel time studies were done as a part of the Timberline Ridge analysis to determine anticipated traffic diversion. A

portion of the Shannonwood traffic was calculated to use the NE 37th Way intersection.

C. *Project Impacts*

When the three proposed plats are fully developed, it is estimated that they will add 25 AM and 36 PM peak hour trips, or approximately 320 vehicle trips per day, through the Timberline neighborhoods for access to Sahalee Way NE. The three proposed plats will also add 60 AM and 79 PM, or approximately 740 vehicles per day, to 192nd Place NE through the Hidden Ridge neighborhood.

In summary, with the addition of the proposed plats, the new NE 42nd Street connection, and the north/south connection provided by the plat of Timberline Ridge, and Sterlingwood, traffic volumes will be reduced at the Sahalee Way NE/NE 37th Way intersection and increased at the SR 202/192nd Place NE intersection. A summary of the impacts are presented in Table 2.

TABLE 2
Intersection Impacts

Intersection	Additional Traffic	
	AM Peak (vph)	PM Peak (vph)
<hr/>		
NE 37th Way w/o Sahalee Way		
Proposed Plats (3)	25	36
Hidden Ridge	5	18
Existing Timberline Neighborhood Diversion	-85	-75
Timberline Ridge	153	202
Sterlingwood	30	38
Shannonwood	24	34
<hr/>		
Net Impact	152	253
<hr/>		
192nd Place NE s/o SR 202		
Proposed Plats (3)	60	79
Hidden Ridge (55 lots)	63	80
Existing Timberline Neighborhood Diversion	85	75
<hr/>		
Net Impact	208	234

The 1999 AM and PM peak hour background traffic volumes which include growth based on historical rates plus pipeline projects is presented in Figure 5. Project(s) traffic volumes for the AM and PM peak hour is presented in Figure 6, and the 1999 AM and PM

background, plus project(s), plus anticipated diversion traffic with the new connection is presented in Figure 7.

IV. Site Services Inventory

A. Roadways

East Lake Sammamish Parkway is a principal arterial extending north-south between SR 202 and eventually south to I-90. It is a 20-foot two-lane concrete road with 5-8 foot gravel shoulders except at recently improved intersections where the roadway is widened and shoulders are paved.

SR 202 (Redmond-Fall City Road) is a principal arterial that extends east and west joining Sahalee Way N.E. and SR 520. East of East Lake Sammamish Parkway, SR 202 is a 22-foot two-lane concrete road with 5-8 foot gravel shoulders.

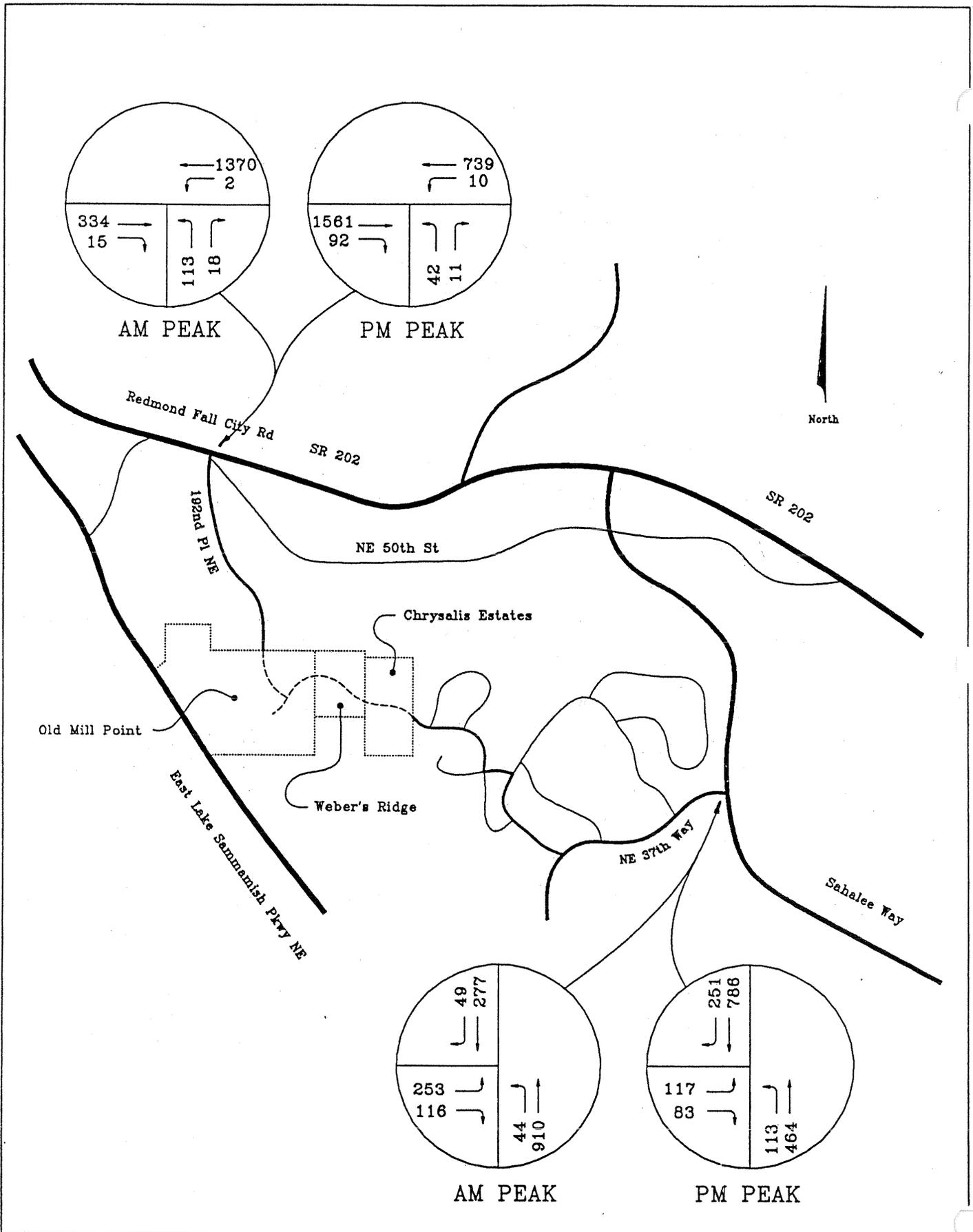
Sahalee Way - 228th Avenue N.E. is a minor arterial extending north-south direction joining SR 202 and the Pine Lake Plateau area to the south. Sahalee Way has two 11-foot lanes with one 8-foot paved shoulder and one 8-foot gravel shoulder.

B. Transit, Pedestrian, and Bicycle Facilities

Transit service to the area is provided by the Municipality of Metropolitan Seattle (METRO). The current route serving the area is Route 269. Route 269 provides two way AM and PM peak hour service between the Redmond Park 'n Ride and Issaquah Park 'n Ride via SR 202/Sahalee Way/228th Avenue NE/Issaquah Pine Lake Road/Issaquah-Fall City Road/East Lake Sammamish Parkway/SE 56th/ and Renton-Issaquah Road. Service begins at 5:30 AM with 4 trips in each direction concluding at 8:00 AM and 5 trips in the PM beginning at 4:00 PM concluding at 7:00 PM. There are no improvements to this service planned at this time.

There are no sidewalk or pedestrian facilities along any of the arterial access routes. However, the width of the shoulders allows adequate walking space for pedestrians although somewhat unprotected. Sidewalks will be provided throughout the three plats. A pedestrian pathway will also be provided from Old Mill Point to East Lake Sammamish Parkway.

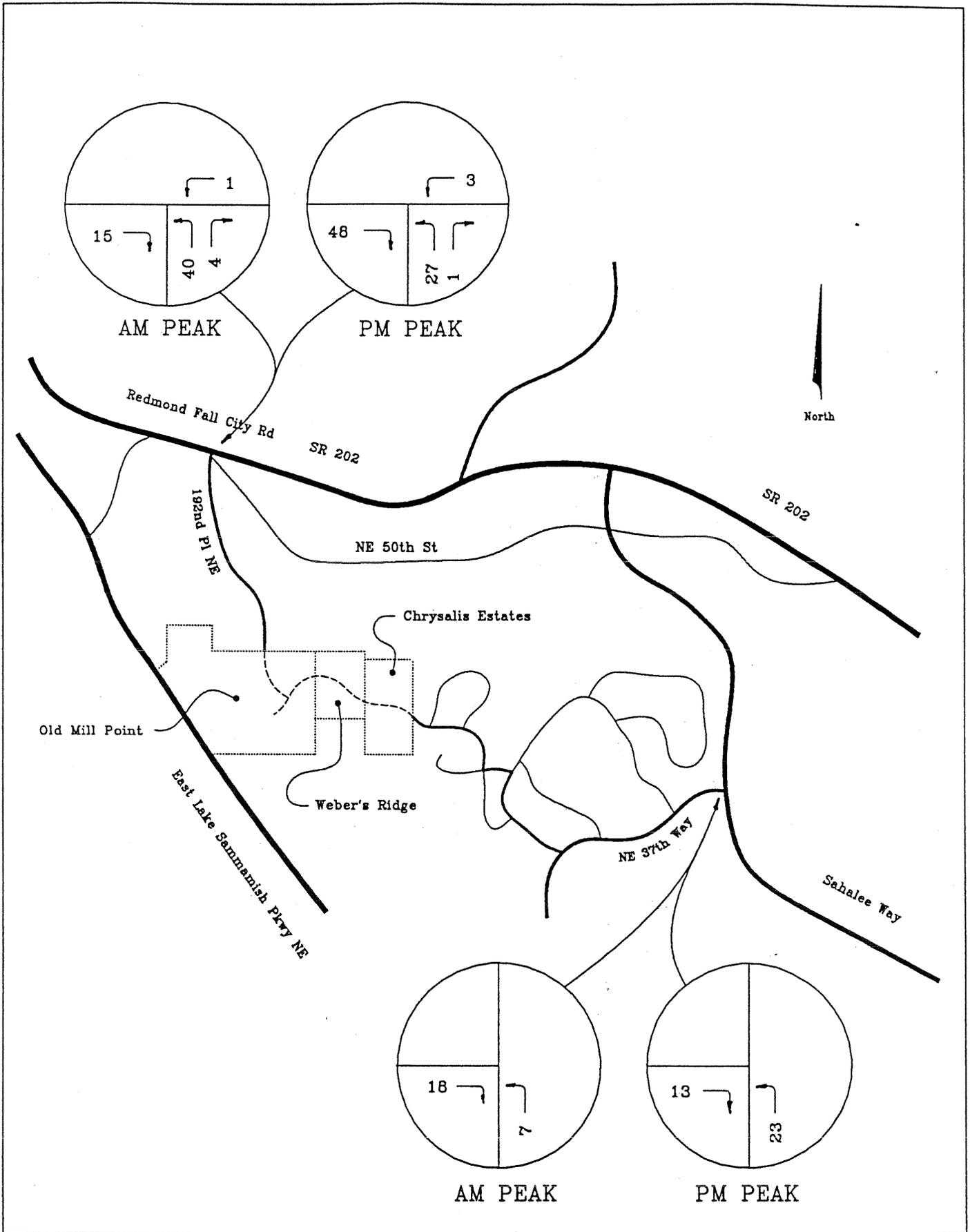
Although bicycle traffic can be accommodated adequately where shoulders are paved, a King County document published in 1983 entitled "Bicycling in King County" identifies bike routes on East Lake Sammamish Parkway, SR 202 and 228th Avenue NE in the vicinity of the proposed plats.



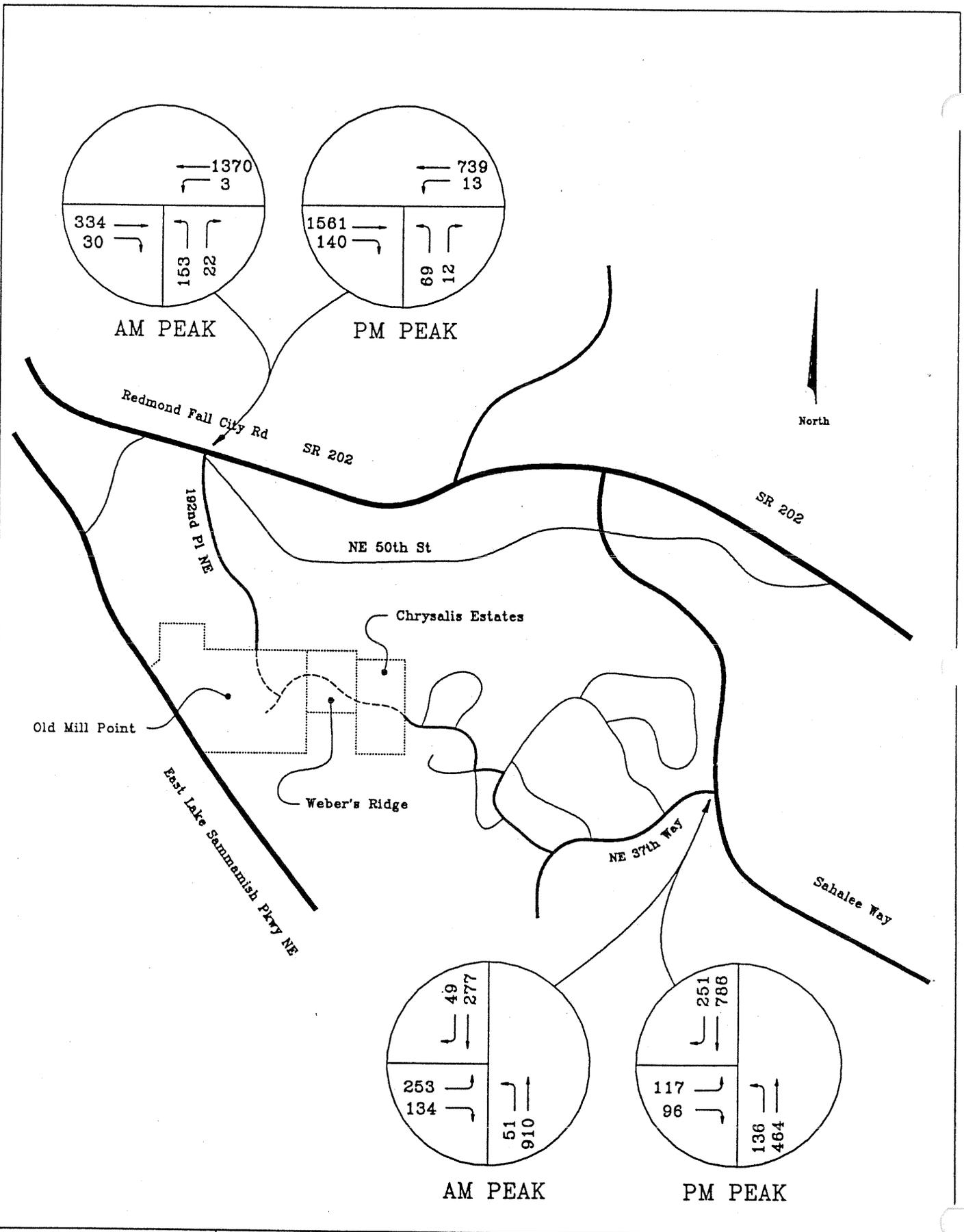
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1999 Background
AM & PM Peak Hour Volumes
Figure 5

Old Mill Point
Weber's Ridge
Chrysalis Estates



<p>William Popp Associates</p>	<p>Combined Projects AM & PM Peak Hour Volumes Figure 6</p>	<p>Old Mill Point Weber's Ridge Chrysalis Estates</p>
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William Popp
Associates

1999 Background Plus Projects
AM & PM Peak Hour Volumes
Figure 7

Old Mill Point
Weber's Ridge
Chrysalis Estates

V. Level-of-Service

Level-of-service was calculated using the 1985 Highway Capacity Manual techniques for the 1994 existing, 1999 without project, and 1999 with project conditions for the AM and PM time periods at the intersections of SR 202/192nd Place N.E and N.E. 37th Way/Sahalee Way N.E. The results of the level-of-service analysis are presented in Table 3.

TABLE 3
Level-of-Service

Intersection	Existing LOS		1999 w/o Project LOS		1999 w/Project LOS	
	AM	PM	AM	PM	AM	PM
	SR 202/192 Place N.E.	E	E	F	E	F F ¹ B ²
Sahalee Way NE/NE 37th Way	E	D	F	F	F B ³	F B ³

- 1) With 5 lane section on SR 202.
- 2) With 5 lane section on SR 202 plus signal.
- 3) With signal.

The results of the level of service analysis indicate that in the horizon year, during the AM and PM peak hour, the analysis intersections will operate at level of service F, which is unacceptable under King County standards, for both the with and without project conditions. It should be noted however, the level of service condition stated in Table 3 represents the level of service calculated for the sidestreet left turn. All other movements e.g. sidestreet right turn and mainline left turn at each intersection were calculated to operate at level of service D or above.

To mitigate the level of service problems in the 1999 with project condition, specific improvements were identified. With the widening of SR 202 to four lanes, as proposed by the WSDOT, the intersection of 192nd Place NE continues to operate at LOS F based on the level of service for the sidestreet (192nd Place NE) left turn. With the addition of a signal and the four lane widening of SR 202, the intersection will operate at LOS B for the AM condition and LOS A for the PM condition. An analysis of signal warrants using the 1999 with project volumes indicate that Warrant #2 "Interruption of Continuous Traffic" is met. The warrant however is not met without the addition of the traffic volumes generated by the three plats.

At the intersection of Sahalee Way NE and NE 37th Way, with the installation of a signal, the intersection will operate at LOS B for both the AM and PM conditions. The signal warrant analysis indicate the requirements for Warrant #1 "Minimum Vehicular Volume" and Warrant #2 "Interruption of Continuous Traffic" will be met in the 1999 horizon year with or without the project.

VI. Accidents

The three year accident history at the two access intersections, SR 202/192nd Place NE and NE 37th Way/Sahalee Way NE was provided by WSDOT and King County. Since the SR 202/192nd Place NE intersection was recently revised and improved to provide access to the new plat of Hidden Ridge, the three year accident history was not relevant. Alternatively, the accident history on the section of SR 202 from 192nd Place NE to Sahalee Way NE was considered. The 3 year accident history at these locations is provided in Table 4.

Table 4
Accident History

Location	Year				Rate
	1990	1991	1992	1993	
SR 202					
192nd Place NE to Sahalee Way	22	12	10	11	1.64 ¹
Sahalee Way NE/NE 37th Way	0	1	1	2	0.36 ²

- 1) Accidents per million vehicle miles of travel
2) Accidents per million entering vehicles

As shown in Table 4, the section of SR 202 between 192nd Place NE and Sahalee Way NE has experienced 55 accidents during the period from January 1, 1990 to August 31, 1993. The accident rate for this section during the 3+ year time period is 1.64 accidents per million vehicle miles of travel. This rate is considerably less than the statewide average for similar sections of 2.3 accidents per million vehicle miles of travel. Of the 55 accidents, 49 percent (27) were rear end accidents, 18 percent (10) were entering at angle, 15 percent (8) were fixed object and 11 percent (6) were head on accidents. There were no accidents recorded at the intersection of SR 202 and 192nd Place NE during this period.

The intersection of Sahalee Way NE and NE 37th Way had a total of 4 accidents during the same 3+ year period identified above. The accident rate for this intersection during this period was 0.36 accidents per million entering vehicles. This rate also is considerably less than the statewide average for similar intersections of 1.7 accidents per million entering vehicles. Of the 4 accidents, 75 percent (3) were right angle and 25 percent (1) was a fixed object.

VII. Planned and Programmed Improvements

King County and the Washington State Department of Transportation have identified several road improvements proposed for the surrounding area which will improve pedestrian, bicycle and vehicular traffic operations and safety. Such improvements include:

King County

CIP Projects - Projects scheduled within the next 6 years

- o East Lake Sammamish Parkway - SE 56th Street to Vaughn Hill Road. Project includes widening to 5 lanes with bicycle and pedestrian facilities on both sides.
- o East Lake Sammamish Parkway - Vaughn Hill Road to I-90. Project includes widening to 7 lanes with bicycle and pedestrian facilities on both sides.

Community Plan Projects - Projects scheduled after 2000

- o Sahalee Way/228th Avenue S.E. from SR 202 to Inglewood Hill Road (ES-11): Intersection/Operation Improvements.
- o East Lake Sammamish Parkway from SR 202 to Redmond City Limits (ES-23): Widen to three lanes with bikeway on road shoulders.
- o Sahalee Way at N.E. 37th Way (ES-26): Intersection/operational improvements including signalization.

MPS Projects

The three proposed plats are located within Zone 402 of the County's Mitigation Payment System program. The current CIP projects located within Zone 402 are as follows:

- NE 124th Street
- Avondale Road
- Novelty Hill Road
- East Lake Sammamish Parkway
- 228th Avenue NE/SE
- Issaquah-Pine Lake Road
- Inglewood Hill Road (50 percent of zonal funds)

Based on the trip distribution patterns used for this analysis, the three plats will not have any impact on Inglewood Hill Road which requires 50 percent of the Zone 402 project funds, and questionable impact on all other projects with the exception of 228th Ave NE/SE and East Lake Sammamish Parkway. Therefore, the three plats should not be required to participate in the full amount of the MPS fee.

City of Redmond Transportation Improvement Projects (1994-1999 TIP Numbers)

- #15 East Lake Sammamish Parkway/NE 65th Intersection Improvements to include signalization. Project scheduled for 1994. Funded.
- #57 East Lake Sammamish Parkway/Redmond Way/180th Avenue NE Intersection Improvements to include signal modifications and intersection realignment. Project scheduled for 1996. Unfunded.

- #73 East Lake Sammamish Parkway - Redmond Way to South City Limits. Widen to 3 lanes. Project scheduled for 1997. Unfunded.

WSDOT Projects

- o SR 520/SR 202 Interchange - Construction was scheduled for 1993 until the WSDOT withdrew CAT "C" funding. Funds are now expected to be available in 1995.
- o SR 202 from East Lake Sammamish Parkway to Sahalee Way: Widen to four/five lanes with widened curb lane for bicycle use. Project to be constructed in two phases. Phase 1 will include the section from East Lake Sammamish Parkway to 187th Avenue NE; Phase 2 includes the section from 187th Avenue NE to Sahalee Way NE. There is currently no funding for either phase. The project is expected to begin in 1997, however there is currently no funding.

VIII. Conclusions and Recommendations

A. *Level-of-Service*

The level of service at the two analysis intersections, SR 202/192nd Place NE and Sahalee Way NE/NE 37th Way, is below the accepted level based on King County standards for the 1999 with project conditions. For all but the PM peak hour condition at the SR 202/192nd Place NE intersection, the addition of project generated traffic does not affect the level of service condition because the LOS is already F. However, the signal would be warranted in 1999 without the proposed plats. Signalization of 192nd Place NE will not be warranted without the proposed plats.

To resolve these level of service deficiencies, specific improvements to include signalization at both intersections and widening of SR 202 to five lanes is recommended. The SR 202 widening has been proposed by WSDOT in the 1997 time horizon and signalization of NE 37th Way has been proposed by King County after 2000.

B. *Connection to N.E. 42nd Street*

With the construction of the proposed plat(s), a new roadway connection will be provided connecting SR 202 to Sahalee Way NE via NE 42nd Street and NE 37th Way. With this connection, it is estimated that 85 existing AM peak trips and 75 existing PM peak hour trips generated from the existing Timberline neighborhoods would divert from NE 37th Way to 192nd Place NE. Conversely, with full development of Hidden Ridge and the NE 42nd Street connection, 5 AM peak hour trips and 18 PM peak hour trips from Hidden Ridge will use NE 37th Way rather than 192nd Place NE for southbound trips.

Overall, the NE 42nd Street connection with the traffic generated from the three proposed plats, pipeline projects, and anticipated traffic diversion will have the net effect of increasing existing traffic on NE 37th Way by 152 AM and 253 PM peak hour trips and on 192nd Place NE by 208 AM and 234 PM peak hour trips.

The need for the NE 42nd Street connection has been discussed in three previous Environmental Impact Statements including Timberline Ridge, Hidden Ridge and Lake Harbour. The conclusion of these reports is that the NE 42nd Street connection will improve local neighborhood circulation and provide alternative ways for traffic to enter and exit the northerly Timberline area of the Sammamish Plateau. Furthermore, the NE 42nd Street connection will provide an alternative route to NE 37th Way for the Timberline neighborhoods to enhance emergency vehicle access or provide a secondary route in the event of a road closure. It is estimated that approximately 1,290 trips per day will use this new connection. As shown in Table 2, these trips are from the proposed plats, as well as diversion from the existing Timberline neighborhoods and Hidden Ridge.

C. *Street Design/Functional Classification/Neighborhood Traffic Control*

One of the issues to be considered as a part of this analysis is the functional classification and resultant roadway design standards for the roadway passing through the plat(s), 193rd Avenue NE as it passes through Hidden Ridge is designed as a neighborhood collector. Extension of this standard through the three plats would conflict with the plat(s) design as homes by virtue of the steep slopes are designed to front directly to the street. Conversely, the anticipated volume of 1,290 vehicles per day would support the neighborhood collector designation. The neighborhood collector requirement that homes do not front to the street is based on complaints the County has received from local residents regarding the speed and volume of traffic on neighborhood streets.

To resolve the issue for the current plats, the following recommendation is made:

1) 193rd Avenue NE

construct to neighborhood collector standards

adjust the lot layout to provide bubbles or mini cul-de-sacs which would set the homes away from the road

specify joint driveways so that vehicles could turn around before entering the street and access points to the street would be reduced by 50 percent

2) NE 42nd Street

construct to subcollector standards

volumes approximately 1000 vehicles per day

adjust lot layout to provide bubbles or mini cul-de-sacs

specify joint driveways so that vehicles could turn around before entering the street and access points to the street would be reduced by 50 percent

The subcollector alignments and standards may tend to discourage the use of the roadway by Timberline residents and thereby reduce the volume of diverting traffic which is the largest portion (750 vpd) of the anticipated plat roadway volumes (1,290 vpd).

IX. Mitigation

The following mitigation is either required or should be provided to support the proposed plat(s):

A. *Participation in SR 520/SR 202 Intersection Improvements*

The proposed plats will be required to contribute to the development impact mitigation program for the intersection of SR 520/SR 202. King County Ordinance 8258 requires all developments impacting the SR 520/SR 202 intersection participate on a fair-share basis in the cost of the proposed interchange improvements. The pro-rata share is \$355 per PM peak-hour trip using this intersection. Based on this analysis the three plats will generate 75 PM peak hour trips which will use the intersection. Applying the \$355 per trip fee yields a total mitigation amount of \$26,625.

B. *Level of Service Mitigation*

Based on the level of service analysis, traffic signals are required at the intersections of Sahalee Way NE/NE 37th Way and SR 202/NE 37th Way in the 1999 time horizon to provide an acceptable level of service. King County has scheduled signalization of NE 37th Way/Sahalee Way NE around 2000. There are however, no plans for signalization of 192nd Place NE. Proportional shares of this project may be required.

Widening of SR 202 to 5 lanes is programmed by the WSDOT in the 1997 biennium.

C. *MPS Mitigation*

Limit participation in the MPS program to the extent the three plats impact the identified CIP projects

No other mitigation is required.

TECHNICAL APPENDIX

Location: Sahalee Way/NE 37th Way

City/Town Redmond

Checker: JCN

Weather: Cloudy

Job: Old Mill Point

Date: 7-Jan-94

Start Time: 6:00 am

Pk Hr: 7:00 am 8:00 am

15 Min. Adj Factor; F(adj) =

1.0000

END TIME	FROM: NORTH					FROM: EAST				
	RIGHT	THRU	LEFT	TOTAL	TRUCKS	RIGHT	THRU	LEFT	TOTAL	TRUCKS
6:15 am	0	9	0	9	0	0	0	0	0	0
6:30 am	0	22	0	22	0	0	0	0	0	0
6:45 am	3	41	0	44	2	0	0	0	0	0
7:00 am	9	51	0	60	0	0	0	0	0	0
7:15 am	7	49	0	56	0	0	0	0	0	0
7:30 am	0	58	0	58	0	0	0	0	0	0
7:45 am	4	45	0	49	0	0	0	0	0	0
8:00 am	1	58	0	59	0	0	0	0	0	0

PK HR	12	210	0	222	0	0	0	0	0	0
Adj HR	12	210	0	222	0	0	0	0	0	0

END TIME	FROM: SOUTH					FROM: WEST				
	RIGHT	THRU	LEFT	TOTAL	TRUCKS	RIGHT	THRU	LEFT	TOTAL	TRUCKS
6:15 am	0	62	3	65	0	8	0	18	26	0
6:30 am	0	93	4	97	0	7	0	30	37	0
6:45 am	0	119	4	123	1	10	0	23	33	0
7:00 am	0	145	4	149	1	21	0	45	66	2
7:15 am	0	190	10	200	1	35	0	45	80	0
7:30 am	0	153	3	156	2	37	0	49	86	2
7:45 am	0	171	12	183	1	16	0	52	68	0
8:00 am	0	168	6	174	2	13	0	46	59	0

PK HR	0	682	31	713	6	101	0	192	293	2
Adj HR	0	682	31	713	6	101	0	192	293	2

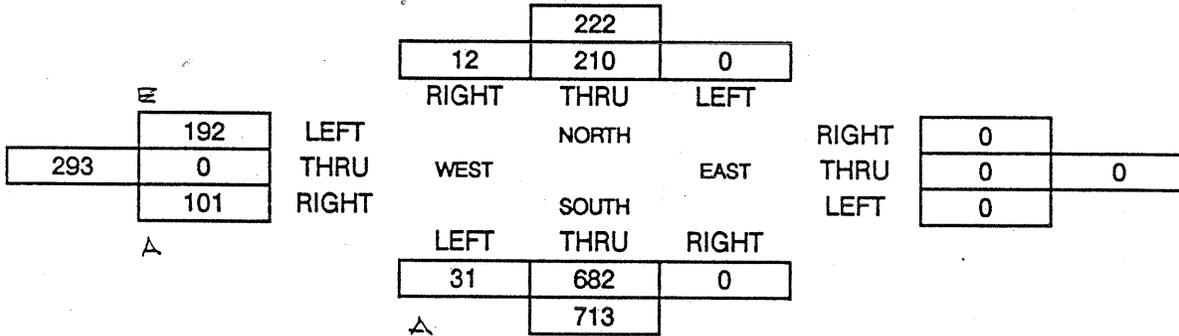
END TIME	15 Min TOTALS	Time		
		Start - End	hr vol	pk hr?
6:15	100			
6:30	156			
6:45	200			
7:00	275	6:00 - 7:00	731	no
7:15	336	6:15 - 7:15	967	no
7:30	300	6:30 - 7:30	1111	no
7:45	300	6:45 - 7:45	1211	no
8:00	292	7:00 - 8:00	1228	YES

INTERSECTION: Sahalee Way/NE 37th Way
 PEAK HOUR: 7:00 am 8:00 am
 DATE: 7-Jan-94
 SOURCE: WPA

PEAK HOUR DIRECTIONAL LEG VOLUMES

	222	874	
43			0
293			0
	311	713	

PEAK HOUR APPROACH VOLUME MOVEMENTS



ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:

From North:	0.94	SB
From South:	0.89	NB
From East:	n/a	WB
From West:	0.85	EB
Total	0.91	

Percent Trucks & Buses:

From North:	0.0%	SB
From South:	0.8%	NB
From East:	n/a	WB
From West:	0.7%	EB

Location: Sahalee Way/NE 37th Way

City/Town Redmond

Checker: JCN

Weather: Cloudy

Job: Old Mill Point

Date: 7-Jan-94

Start Time: 4:00 pm

Pk Hr: 5:00 pm 6:00 pm

15 Min. Adj Factor; F(adj) =

1.0000

END TIME	FROM: NORTH					FROM: EAST				
	RIGHT	THRU	LEFT	TOTAL	TRUCKS	RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 pm	33	123	0	156	0	0	0	0	0	0
4:30 pm	32	135	0	167	0	0	0	0	0	0
4:45 pm	31	141	0	172	2	0	0	0	0	0
5:00 pm	36	127	0	163	0	0	0	0	0	0
5:15 pm	29	145	0	174	0	0	0	0	0	0
5:30 pm	41	144	0	185	0	0	0	0	0	0
5:45 pm	35	142	0	177	0	0	0	0	0	0
6:00 pm	39	161	0	200	0	0	0	0	0	0

PK HR	144	592	0	736	0	0	0	0	0	0
Adj HR	144	592	0	736	0	0	0	0	0	0

END TIME	FROM: SOUTH					FROM: WEST				
	RIGHT	THRU	LEFT	TOTAL	TRUCKS	RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 pm	0	83	18	101	1	9	0	7	16	2
4:30 pm	0	100	21	121	2	18	0	13	31	0
4:45 pm	0	73	16	89	1	16	0	15	31	0
5:00 pm	0	89	26	115	0	10	0	17	27	0
5:15 pm	0	88	13	101	2	15	0	19	34	0
5:30 pm	0	77	29	106	1	14	0	11	25	1
5:45 pm	0	84	18	102	1	17	0	14	31	0
6:00 pm	0	97	30	127	0	18	0	12	30	0

PK HR	0	346	90	436	4	64	0	56	120	1
Adj HR	0	346	90	436	4	64	0	56	120	1

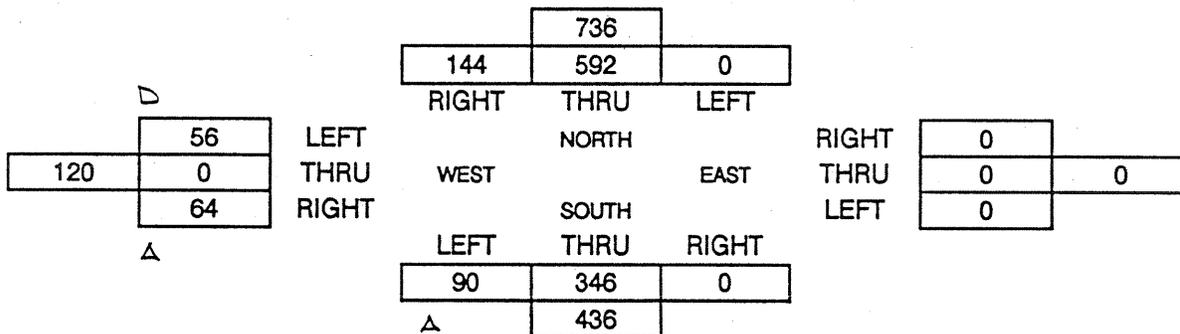
END TIME	15 Min TOTALS	Time			
		Start - End	hr vol	pk hr?	
16:15	273				
16:30	319				
16:45	292				
17:00	305				
17:15	309				
17:30	316				
17:45	310				
18:00	357				
		16:00 - 17:00	1189	no	
		16:15 - 17:15	1225	no	
		16:30 - 17:30	1222	no	
		16:45 - 17:45	1240	no	
		17:00 - 18:00	1292	YES	

INTERSECTION: Sahalee Way/NE 37th Way
 PEAK HOUR: 5:00 pm 6:00 pm
 DATE: 7-Jan-94
 SOURCE: WPA

PEAK HOUR DIRECTIONAL LEG VOLUMES

	736	402
234		0
120		0
	656	436

PEAK HOUR APPROACH VOLUME MOVEMENTS



ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:

From North:	0.92	SB
From South:	0.86	NB
From East:	n/a	WB
From West:	0.88	EB
Total	0.90	

Percent Trucks & Buses:

From North:	0.0%	SB
From South:	0.9%	NB
From East:	n/a	WB
From West:	0.8%	EB

Location: SR 202/192nd Ave NE

City/Town Redmond

Checker: JCN

Weather: Cloudy

Job: Old Mill Point

Date: 22-Dec-93

Start Time: 6:00 am

Pk Hr: 7:00 am 8:00 am

15 Min. Adj Factor; F(adj) =

1.0000

END TIME	FROM: NORTH					FROM: EAST				
	RIGHT	THRU	LEFT	TOTAL	TRUCKS	RIGHT	THRU	LEFT	TOTAL	TRUCKS
6:15 am	0	0	0	0	0	0	166	0	166	1
6:30 am	0	0	0	0	0	0	186	0	186	0
6:45 am	0	0	0	0	0	0	282	0	282	1
7:00 am	0	0	0	0	0	0	236	0	236	0
7:15 am	0	0	0	0	0	0	282	0	282	1
7:30 am	0	0	0	0	0	0	268	1	269	2
7:45 am	0	0	0	0	0	0	306	1	307	0
8:00 am	0	0	0	0	0	0	279	1	280	2

PK HR	0	0	0	0	0	0	1135	3	1138	5
Adj HR	0	0	0	0	0	0	1135	3	1138	5

END TIME	FROM: SOUTH					FROM: WEST				
	RIGHT	THRU	LEFT	TOTAL	TRUCKS	RIGHT	THRU	LEFT	TOTAL	TRUCKS
6:15 am	0	0	5	5	0	3	20	0	23	2
6:30 am	0	0	7	7	0	3	32	0	35	1
6:45 am	0	0	7	7	0	3	61	0	64	1
7:00 am	1	0	5	6	1	5	79	0	84	2
7:15 am	2	0	7	9	1	7	61	0	68	0
7:30 am	0	0	10	10	1	8	58	0	66	0
7:45 am	0	0	12	12	0	16	83	0	99	4
8:00 am	0	0	11	11	1	4	60	0	64	2

PK HR	2	0	40	42	3	35	262	0	297	6
Adj HR	2	0	40	42	3	35	262	0	297	6

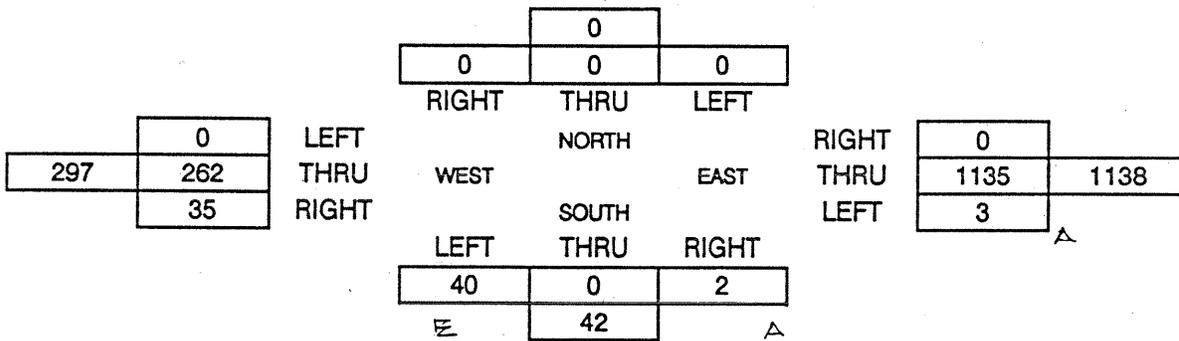
END TIME	15 Min TOTALS				
6:15	194				
6:30	228				
6:45	353				
7:00	326				
7:15	359				
7:30	345				
7:45	418				
8:00	355				
		Time			
		Start - End	hr vol	pk hr?	
		6:00 - 7:00	1101	no	
		6:15 - 7:15	1266	no	
		6:30 - 7:30	1383	no	
		6:45 - 7:45	1448	no	
		7:00 - 8:00	1477	YES	

INTERSECTION: SR 202/192nd Ave NE
 PEAK HOUR: 7:00 am 8:00 am
 DATE: 22-Dec-93
 SOURCE: WPA

PEAK HOUR DIRECTIONAL LEG VOLUMES

00	
1175	1138
297	264
38 42	

PEAK HOUR APPROACH VOLUME MOVEMENTS



ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:

From North:	n/a	SB
From South:	0.88	NB
From East:	0.93	WB
From West:	0.75	EB
Total:	0.88	

Percent Trucks & Buses:

From North:	n/a	SB
From South:	7.1%	NB
From East:	0.4%	WB
From West:	2.0%	EB

← CONSTRUCTION

Location: SR 202/192nd Ave NE

City/Town Redmond

Checker: JCN

Weather: Cloudy

Job: Old Mill Point

Date: 22-Dec-93

Start Time: 4:00 pm

Pk Hr: 5:00 pm 6:00 pm

15 Min. Adj Factor; F(adj) =

1.0000

END TIME	FROM: NORTH					FROM: EAST				
	RIGHT	THRU	LEFT	TOTAL	TRUCKS	RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 pm	0	0	0	0	0	0	198	0	198	3
4:30 pm	0	0	0	0	0	0	190	1	191	4
4:45 pm	0	0	0	0	0	0	159	1	160	3
5:00 pm	0	0	0	0	0	0	142	1	143	0
5:15 pm	0	0	0	0	0	0	157	0	157	1
5:30 pm	0	0	0	0	0	0	153	2	155	0
5:45 pm	0	0	0	0	0	0	152	0	152	0
6:00 pm	0	0	0	0	0	0	133	4	137	0

PK HR	0	0	0	0	0	0	595	6	601	1
Adj HR	0	0	0	0	0	0	595	6	601	1

END TIME	FROM: SOUTH					FROM: WEST				
	RIGHT	THRU	LEFT	TOTAL	TRUCKS	RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 pm	1	0	9	10	0	7	272	0	279	4
4:30 pm	0	0	2	2	1	7	259	0	266	3
4:45 pm	0	0	9	9	0	8	305	0	313	1
5:00 pm	0	0	6	6	0	6	296	0	302	1
5:15 pm	1	0	2	3	0	5	338	0	343	0
5:30 pm	0	0	3	3	0	8	305	0	313	0
5:45 pm	2	0	6	8	0	1	294	0	295	1
6:00 pm	2	0	5	7	0	8	327	0	335	1

PK HR	5	0	16	21	0	22	1264	0	1286	2
Adj HR	5	0	16	21	0	22	1264	0	1286	2

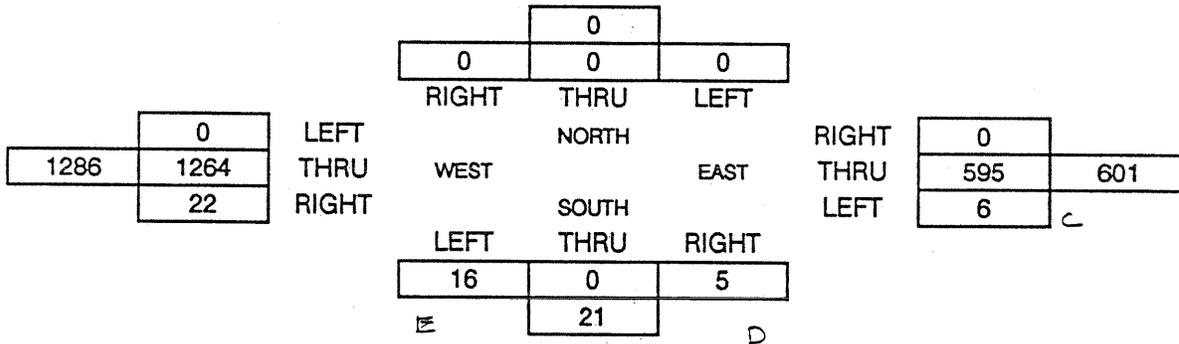
END TIME	15 Min TOTALS	Time			
		Start	End	hr vol	pk hr?
16:15	487	16:00	17:00	1879	no
16:30	459	16:15	17:15	1895	no
16:45	482	16:30	17:30	1907	no
17:00	451	16:45	17:45	1880	no
17:15	503	17:00	18:00	1908	YES
17:30	471				
17:45	455				
18:00	479				

INTERSECTION: SR 202/192nd Ave NE
 PEAK HOUR: 5:00 pm 6:00 pm
 DATE: 22-Dec-93
 SOURCE: WPA

PEAK HOUR DIRECTIONAL LEG VOLUMES

0 0	
611	601
1286	1269
28 21	

PEAK HOUR APPROACH VOLUME MOVEMENTS



ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:

From North:	n/a	SB
From South:	0.66	NB
From East:	0.96	WB
From West:	0.94	EB
Total	0.95	

Percent Trucks & Buses:

From North:	n/a	SB
From South:	0.0%	NB
From East:	0.2%	WB
From West:	0.2%	EB

NE 37TH WAY W/O SAHALEE WAY (EB) - Approach Volume

5/10/93

Ending Hour	Mon	Tue	Wed	Avg	PK 16 hour day	
1	0	1	3	2	1373	
2	0	3	1	2	1492	
3	0	0	3	2	1611	
4	0	4	4	4	1729	
5	0	18	20	19	1783	
6	0	84	76	80	1816	<<<
7	0	229	228	229	1773	
8	0	238	235	237	1557	
9	0	171	174	173	1325	
10	0	100	122	111		
11	0	87	55	71		
12	71	73	0	72		
13	65	77	0	71		
14	74	71	0	73		
15	105	136	0	121		
16	117	101	0	109		
17	141	100	0	121		
18	120	123	0	122		
19	111	128	0	120		
20	59	57	0	58		
21	45	59	0	52		
22	42	32	0	37		
23	12	12	0	12		
24	6	3	0	5		

Hour Ending	Volume	Rank	
8	237	1	
7	229	2	
9	173	3	
18	122	4	
15	121	5	
17	121	6	
19	120	7	
10	111	8	47%
16	109	9	
6	80	10	
14	73	11	
12	72	12	
11	71	13	
13	71	14	
20	58	15	
21	52	16	

NE 37TH WAY W/O SAHALEE WAY (WB)

5/10/93

Ending Hour	Mon	Tue	Wed	Avg	PK 16 hour day	
1	0	2	6	4	811	
2	0	4	5	5	1012	
3	0	2	2	2	1245	
4	0	1	2	2	1468	
5	0	3	4	4	1607	
6	0	5	5	5	1748	
7	0	31	28	30	1837	<<<
8	0	37	39	38	1847	
9	0	54	67	61	1823	
10	0	49	57	53		
11	0	54	38	46		
12	86	87	0	87		
13	94	80	0	87		
14	97	84	0	91		
15	123	135	0	129		
16	158	182	0	170		
17	216	194	0	205		
18	251	224	0	238		
19	224	227	0	226		
20	137	143	0	140		
21	143	147	0	145		
22	88	99	0	94		
23	36	43	0	40		
24	17	11	0	14		

Hour Ending	Volume	Rank	
18	238	1	
19	226	2	
17	205	3	
16	170	4	
21	145	5	
20	140	6	
15	129	7	
22	94	8	39%
14	91	9	
13	87	10	
12	87	11	
9	61	12	
10	53	13	
11	46	14	
8	38	15	
7	30	16	

NE 37TH WAY W/O SAHALEE WAY (BOTHWAYS)

5/10/93

Hour Ending	Bothways Avg Total	PK 16 hour day
1	6	2184
2	7	2503
3	4	2856
4	6	3197
5	23	3390
6	85	3564
7	258	3610 <<<
8	275	3403
9	233	3147
10	164	
11	117	
12	159	
13	158	
14	163	
15	250	
16	279	
17	326	
18	359	
19	345	
20	198	
21	197	
22	131	
23	52	
24	19	

Hour Ending	Volume	Rank
18	359	1
19	345	2
17	326	3
16	279	4
8	275	5
7	258	6
15	250	7
9	233	8 65%
20	198	9
21	197	10
10	164	11
14	163	12
12	159	13
13	158	14
22	131	15
11	117	16

SAHALEE WAY S/O NE 37TH WAY (NB)

####

Ending Hour	Mon	Tue	Wed	Avg	PK 16 hour day
1	0	13	8	11	4787
2	0	6	6	6	5230
3	0	4	6	5	5633
4	0	8	13	11	6059
5	0	49	50	50	6333
6	0	240	246	243	6513 <<<
7	0	616	614	615	6410
8	0	634	647	641	5865
9	0	582	603	593	5250
10	0	397	435	416	
11	0	315	282	299	
12	285	342	0	314	
13	321	337	0	329	
14	320	362	0	341	
15	383	405	0	394	
16	486	558	0	522	
17	464	443	0	454	
18	418	400	0	409	
19	392	471	0	432	
20	266	302	0	284	
21	223	237	0	230	
22	118	162	0	140	
23	68	71	0	70	
24	25	27	0	26	

Hour Ending	Volume	Rank
8	641	1
7	615	2
9	593	3
16	522	4
17	454	5
19	432	6
10	416	7
18	409	8
15	394	9
14	341	10
13	329	11
12	314	12
11	299	13
20	284	14
6	243	15
21	230	16

NB

SAHALEE WAY S/O NE 37TH WAY (SB)

####

Ending Hour	Mon	Tue	Wed	Avg	PK 16 hour day
1	0	31	32	32	3521
2	0	23	17	20	4084
3	0	14	11	13	4767
4	0	6	11	9	5325
5	0	14	11	13	5700
6	0	71	76	74	6068
7	0	195	211	203	6294 <<<
8	0	298	321	310	6238
9	0	291	282	287	5977
10	0	242	263	253	
11	0	267	213	240	
12	298	373	0	336	
13	345	347	0	346	
14	333	361	0	347	
15	548	505	0	527	
16	530	501	0	516	
17	622	567	0	595	
18	681	726	0	704	
19	536	604	0	570	
20	361	407	0	384	
21	382	378	0	380	
22	305	295	0	300	
23	133	161	0	147	
24	50	46	0	48	

Hour Ending	Volume	Rank
18	704	1
17	595	2
19	570	3
15	527	4
16	516	5
20	384	6
21	380	7
14	347	8
13	346	9
12	336	10
8	310	11
22	300	12
9	287	13
10	253	14
11	240	15
7	203	16

SB

SAHALEE WAY S/O NE 37TH WAY (Bothways)

####

Bothways PK
Avg 16 hour
Total day

42 8307
26 9313
18 10400
19 11384
62 12033
317 12581
818 12704 <<<
950 12103
879 11227
669
539
649
675
688
921
1038
1048
1113
1002
668
610
440
217
74

Hour	Volume	Rank
Ending 18	1113	1
17	1048	2
16	1038	3
19	1002	4
8	950	5
15	921	6
9	879	7
7	818	8
14	688	9
13	675	10
10	669	11
20	668	12
12	649	13
21	610	14
11	539	15
22	440	16

MAJOR ST
NB & SB

74%

OLD MILL POINT, WEBER'S RIDGE, CHRYSALIS ESTATES

1/17/94 4:46 PM

Growth Factor (SR 202) : 3.00%

Growth Factor (Sahalee Way) : 6.00%

NE 37th Way/Sahalee Way NE
PM PEAK

	Hidden			Extg			Total		Old			1999 Total		
	1994 Existing	Bckgrd Grwth	Hidden Ridge	Ridge Constr.	Timberline Ridge	Sterling- wood	Shannon- wood	imberlin Diversion	Pipeline Impacts	1999 Bckgrd	Chrysalis Estates		Weber Ridge	Mill Point
NBLT	90		10		13				23	113	3	5	15	136
NBT	346	117	7						1	464				464
NBRT	0								0	0				0
SBLT	0								0	0				0
SBT	592	200							-6	786				786
SBRT	144				116	24	21	-54	107	251				251
EBLT	56				55	14	13	-21	61	117				117
EBT	0								0	0				0
EBRT	64		1		18				19	83	2	3	8	96
WBLT	0								0	0				0
WBT	0								0	0				0
WBRT	0								0	0				0
	1292		18		202	38	22	-75	205	1814	5	8	23	1850

0.27% 0.43% 1.24%

LT MINOR RT MINOR LT MAJOR

1994 PM PK	OMP/PIPE	D	A	A
1999 PM PK w/o Old Mill Pt	" B	F -37	C	B
1999 PM PK w/ Old Mill Pt	" P	F -44	C	B
	" PM1	B (7.0)		N/SIGNAL

SR 202/NE 192nd Place NE
PM PEAK

	Hidden			Extg			Total		Old			1999 Total		
	1994 Existing	Bckgrd Grwth	Hidden Ridge*	Ridge Constr.	Timberline Ridge	Sterling- wood	Shannon- wood	imberlin Diversion	Pipeline Impacts	1999 Bckgrd	Chrysalis Estates		Weber Ridge	Mill Point
NBLT	16		21		-16				21	26	3	6	18	69
NBT									0	0				0
NBRT	5		11		-5				6	11			1	12
SBLT									0	0				0
SBT									0	0				0
SBRT									0	0				0
EBLT									0	0				0
EBT	1264	201			114	21	15	-54	96	1561				1561
EBRT	22		38		-22				54	70	7	10	31	140
WBLT	6		10		-6				4	10		1	2	13
WBT	595	95			52	11	7	-21	49	739				739
WBRT									0	0				0
	1908		80		-49	166	32	22	0	251	10	17	52	2534

*Assumes 90 lots based on ITE (construction and extg traffic thus omitted)

0.39% 0.67% 2.05%

1994 PM PK	OMP/PIPE	E 43	D	C
1999 PM PK w/o Old Mill Pt	" B	E 15	D	D
1999 PM PK w/ Old Mill Pt	" P	E -12	D	D
	" PM1	F -27	D	D
	" PM2	A (3.7)		-4L, SIGNAL

OLD MILL POINT, WEBER'S RIDGE, CHRYSALIS ESTATES

1/17/94 4:46 PM

Growth Factor : 3.00%

Growth Factor (Sahalee Way) : 6.00%

IE 37th Way/Sahalee Way NE

AM PEAK

	1994 Existing	Bckgrd Grwth	Hidden Ridge	Hidden Ridge Constr.	Timberline Ridge	Sterling-wood	Shannon-wood	Extg imberlin Diversion	Extg Pipeline Impacts	1999 Bckgrd	Chrysalis Estates	Weber Ridge	Old Mill Point	1999 Total
NBLT	31		4		9				13	44	1	2	4	51
NBT	682	231	1					-4	-3	910				910
NBRT	0								0	0				0
SBLT	0								0	0				0
SBT	210	71						-4	-4	277				277
SBRT	12				27	7	7	-4	37	49				49
EBLT	192				102	23	17	-81	61	253				253
EBT	0								0	0				0
EBRT	101		0		15				15	116	2	4	12	134
WBLT	0								0	0				0
WBT	0								0	0				0
WBRT	0								0	0				0
	1228		5		153	30	16	-85	119	1649	3	6	16	1674

0.18% 0.36% 0.96%

LT MINOR, RT MINOR, LT MAJOR

1994 AM PK	OMPLAE	E 28	A	A
1999 AM PK w/o Old Mill Pt	B	F -123	A	
1999 AM PK w/ Old Mill Pt	P	F -125	A	A
	PMI	B (10.3)		← SIGNAL

SR 202/NE 192nd Place NE

AM PEAK

	1994 Existing	Bckgrd Grwth	Hidden Ridge*	Hidden Ridge Constr.	Timberline Ridge	Sterling-wood	Shannon-wood	Extg imberlin Diversion	Extg Pipeline Impacts	1999 Bckgrd	Chrysalis Estates	Weber Ridge	Old Mill Point	1999 Total
NBLT	40		33	-40					80	73	113	5	9	26
NBT									0	0				0
NBRT	2		17	-2					1	16	18	1	1	2
SBLT									0	0				0
SBT									0	0				0
SBRT									0	0				0
EBLT									0	0				0
EBT	262	42			26	5	3	-4	30	334				334
EBRT	35		11	-35					4	-20	15	2	3	10
WBLT	3		2	-3					-1	2		0	1	3
WBT	1135	181			100	21	13	-80	54	1370				1370
WBRT									0	0				0
	1477		63		126	26	16	1	152	1852	8	13	39	1912

*Assumes 90 lots based on ITE (construction and extg traffic thus omitted)

0.42% 0.68% 2.04%

1994 AM PK	OMPLAE	E 36	A	A
1999 AM PK w/o Old Mill Pt	B	F -58	A	A
1999 AM PK w/ Old Mill Pt	P	F -99	A	A
	PMI	F -114	A	A
	PMZ	B (5.2)		← 4L, SIG

IDENTIFYING INFORMATION

 AVERAGE RUNNING SPEED, MAJOR STREET.. 45
 PEAK HOUR FACTOR..... 1
 AREA POPULATION..... 1000000
 NAME OF THE EAST/WEST STREET..... NE 37th Way
 NAME OF THE NORTH/SOUTH STREET..... Sahalee Way
 NAME OF THE ANALYST..... BPJ
 DATE OF THE ANALYSIS (mm/dd/yy)..... 01-10-1994
 TIME PERIOD ANALYZED..... 1999 am pk
 OTHER INFORMATION.... w/projects

INTERSECTION TYPE AND CONTROL

 INTERSECTION TYPE: T-INTERSECTION
 MAJOR STREET DIRECTION: NORTH/SOUTH
 CONTROL TYPE EASTBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	253	--	51	0
THRU	0	--	910	277
RIGHT	134	--	0	49

NUMBER OF LANES

	EB	WB	NB	SB
LANES	2	--	1	1

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	-----	---	---	-
NORTHBOUND	-4.00	90	20	N
SOUTHBOUND	4.00	90	20	N

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	1	0
WESTBOUND	---	---	---
NORTHBOUND	0	1	0
SOUTHBOUND	0	0	0

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
EB	6.10	5.60	0.00	5.60
MAJOR LEFTS				
NB	5.30	4.80	0.00	4.80
MINOR LEFTS				
EB	7.40	6.90	0.00	6.90

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... NE 37th Way
 NAME OF THE NORTH/SOUTH STREET..... Sahalee Way
 DATE AND TIME OF THE ANALYSIS..... 01-10-1994 ; 1999 am pk
 OTHER INFORMATION.... w/projects

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v(pcph)	POTEN- TIAL CAPACITY	ACTUAL MOVEMENT CAPACITY	SHARED CAPACITY	RESERVE CAPACITY		LOS
		c (pcph) p	c (pcph) M	c (pcph) SH	c = c - v R SH	v	
MINOR STREET							
EB LEFT	256	134	131	131	-125		F
RIGHT	135	773	773	773	637		A
MAJOR STREET							
NB LEFT	41	907	907	907	866		A

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... NE 37th Way
 NAME OF THE NORTH/SOUTH STREET..... Sahalee Way
 DATE AND TIME OF THE ANALYSIS..... 01-10-1994 ; 1999 am pk
 OTHER INFORMATION.... w/projects

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

INTERSECTION..NE 37TH WAY/SAHALEE WAY

AREA TYPE.....OTHER

ANALYST.....BPJ

DATE.....01-13-1994

TIME.....1999 AM PK

COMMENT.....w/projects, with signal

	VOLUMES				:	GEOMETRY						
	EB	WB	NB	SB		EB	WB	NB	SB			
LT	253	0	51	0	:	L	12.0	12.0	L	12.0	T	12.0
TH	0	0	910	277	:	R	12.0	12.0	T	12.0	R	12.0
RT	134	0	0	49	:		12.0	12.0		12.0		12.0
RR	0	0	0	0	:		12.0	12.0		12.0		12.0
					:		12.0	12.0		12.0		12.0
					:		12.0	12.0		12.0		12.0

	ADJUSTMENT FACTORS									
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	0.00	0.00	N	0	0	0.90	50	N	19.8	3
WB	0.00	0.00	N	0	0	0.90	50	N	19.8	3
NB	-4.00	1.00	N	0	0	0.90	50	N	11.3	3
SB	4.00	1.00	N	0	0	0.90	50	N	11.3	3

	SIGNAL SETTINGS					CYCLE LENGTH = 70			
	PH-1	PH-2	PH-3	PH-4		PH-1	PH-2	PH-3	PH-4
EB	LT X				NB	LT X			
	TH					TH X			
	RT X					RT			
	PD X					PD			
WB	LT				SB	LT			
	TH					TH X			
	RT					RT X			
	PD					PD X			
GREEN	20.0	0.0	0.0	0.0	GREEN	50.0	0.0	0.0	0.0
YELLOW	0.0	0.0	0.0	0.0	YELLOW	0.0	0.0	0.0	0.0

	LEVEL OF SERVICE						
	LANE GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	L	0.778	0.243	25.9	D	22.0	C
	R	0.412	0.243	14.8	B		
NB	L	0.078	0.671	3.0	A	8.0	B
	T	0.824	0.671	8.3	B		
SB	T	0.261	0.671	3.0	A	2.9	A
	R	0.056	0.671	2.5	A		

INTERSECTION: Delay = 10.3 (sec/veh) V/C = 0.812 LOS = B

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 45
 PEAK HOUR FACTOR..... 1
 AREA POPULATION..... 1000000
 NAME OF THE EAST/WEST STREET..... NE 37th Way
 NAME OF THE NORTH/SOUTH STREET..... Sahalee Way
 NAME OF THE ANALYST..... BPJ
 DATE OF THE ANALYSIS (mm/dd/yy)..... 01-10-1994
 TIME PERIOD ANALYZED..... 1999 pm pk
 OTHER INFORMATION.... w/projects

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION
 MAJOR STREET DIRECTION: NORTH/SOUTH
 CONTROL TYPE EASTBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	117	--	136	0
THRU	0	--	464	786
RIGHT	96	--	0	251

NUMBER OF LANES

	EB	WB	NB	SB
LANES	2	--	1	1

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	-----	---	---	-
NORTHBOUND	-4.00	90	20	N
SOUTHBOUND	4.00	90	20	N

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	1	0
WESTBOUND	---	---	---
NORTHBOUND	0	1	0
SOUTHBOUND	0	0	0

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
EB	6.10	5.60	0.00	5.60
MAJOR LEFTS				
NB	5.30	4.80	0.00	4.80
MINOR LEFTS				
EB	7.40	6.90	0.00	6.90

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... NE 37th Way
 NAME OF THE NORTH/SOUTH STREET..... Sahalee Way
 DATE AND TIME OF THE ANALYSIS..... 01-10-1994 ; 1999 pm pk
 OTHER INFORMATION..... w/projects

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v (pcph)	POTEN- TIAL CAPACITY c (pcph) P	ACTUAL MOVEMENT CAPACITY c (pcph) M	SHARED CAPACITY c (pcph) SH	RESERVE CAPACITY c = c - v R SH	LOS
MINOR STREET						
EB LEFT	118	92	74	74	-44	F
RIGHT	97	360	360	360	263	C
MAJOR STREET						
NB LEFT	109	411	411	411	302	B

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... NE 37th Way
 NAME OF THE NORTH/SOUTH STREET..... Sahalee Way
 DATE AND TIME OF THE ANALYSIS..... 01-10-1994 ; 1999 pm pk
 OTHER INFORMATION..... w/projects

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

 INTERSECTION..NE 37TH WAY/SAHALEE WAY
 AREA TYPE.....OTHER
 ANALYST.....BPJ
 DATE.....01-13-1994
 TIME.....1999 pm pk
 COMMENT.....w/projects, with signal

	VOLUMES				:	GEOMETRY					
	EB	WB	NB	SB		EB	WB	NB	SB		
LT	117	0	136	0	:	12.0	12.0	L	12.0	T	12.0
TH	0	0	464	786	:	12.0	12.0	T	12.0	R	12.0
RT	96	0	0	251	:	12.0	12.0		12.0		12.0
RR	0	0	0	0	:	12.0	12.0		12.0		12.0
					:	12.0	12.0		12.0		12.0
					:	12.0	12.0		12.0		12.0

ADJUSTMENT FACTORS										
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	0.00	0.00	N	0	0	0.90	50	N	14.5	3
WB	0.00	0.00	N	0	0	0.90	50	N	14.5	3
NB	-4.00	1.00	N	0	0	0.90	50	N	8.5	3
SB	4.00	1.00	N	0	0	0.90	50	N	8.5	3

SIGNAL SETTINGS										CYCLE LENGTH = 65.0	
	PH-1	PH-2	PH-3	PH-4		PH-1	PH-2	PH-3	PH-4		
EB	LT X				NB	LT X					
	TH					TH X					
	RT X					RT					
	PD X					PD					
WB	LT				SB	LT					
	TH					TH X					
	RT					RT X					
	PD					PD X					
GREEN	15.0	0.0	0.0	0.0	GREEN	50.0	0.0	0.0	0.0	0.0	0.0
YELLOW	0.0	0.0	0.0	0.0	YELLOW	0.0	0.0	0.0	0.0	0.0	0.0

LEVEL OF SERVICE								
	LANE	GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	L		0.474	0.185	19.0	C	17.4	C
	R		0.389	0.185	15.4	C		
NB	L		0.887	0.723	32.1	D	9.1	B
	T		0.390	0.723	2.3	A		
SB	T		0.688	0.723	4.2	A	3.6	A
	R		0.266	0.723	2.0	A		

INTERSECTION: Delay = 7.0 (sec/veh) V/C = 0.803 LOS = B

IDENTIFYING INFORMATION

 AVERAGE RUNNING SPEED, MAJOR STREET.. 55
 PEAK HOUR FACTOR..... 1
 AREA POPULATION..... 1000000
 NAME OF THE EAST/WEST STREET..... SR 202
 NAME OF THE NORTH/SOUTH STREET..... 192nd Pl NE
 NAME OF THE ANALYST..... BPJ
 DATE OF THE ANALYSIS (mm/dd/yy)..... 01-10-1994
 TIME PERIOD ANALYZED..... 1999 am pk
 OTHER INFORMATION.... w/projects

INTERSECTION TYPE AND CONTROL

 INTERSECTION TYPE: T-INTERSECTION
 MAJOR STREET DIRECTION: EAST/WEST
 CONTROL TYPE NORTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	0	3	153	--
THRU	334	1370	0	--
RIGHT	30	0	22	--

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	1	2	--

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	-3.00	90	20	N
WESTBOUND	3.00	90	20	N
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	----	---	---	-

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	2	0
WESTBOUND	0	1	0
NORTHBOUND	0	4	0
SOUTHBOUND	---	---	---

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	6.00	0.00	6.00
MAJOR LEFTS				
WB	5.50	5.00	0.00	5.00
MINOR LEFTS				
NB	8.00	7.50	0.00	7.50

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... SR 202
 NAME OF THE NORTH/SOUTH STREET..... 192nd Pl NE
 DATE AND TIME OF THE ANALYSIS..... 01-10-1994 ; 1999 am pk
 OTHER INFORMATION.... w/projects

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v (pcph)	POTEN- TIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M	SHARED CAPACITY c (pcph) SH	RESERVE CAPACITY c = c - v R SH	LOS
MINOR STREET						
NB LEFT	159	60	60	60	-99	F
RIGHT	23	666	666	666	643	A
MAJOR STREET						
WB LEFT	4	829	829	829	825	A

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... SR 202
 NAME OF THE NORTH/SOUTH STREET..... 192nd Pl NE
 DATE AND TIME OF THE ANALYSIS..... 01-10-1994 ; 1999 am pk
 OTHER INFORMATION.... w/projects

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

INTERSECTION..SR 202/192nd Place NE
AREA TYPE.....OTHER
ANALYST.....BPJ
DATE.....01-13-1994
TIME.....1999 am pk
COMMENT.....w/projects with 4L SR 202

	VOLUMES				:	GEOMETRY					
	EB	WB	NB	SB		EB	WB	NB	SB		
LT	0	3	153	0	:	12.0	L	12.0	L	12.0	12.0
TH	334	1370	0	0	:	12.0	T	12.0	R	12.0	12.0
RT	30	0	22	0	:	12.0	T	12.0		12.0	12.0
RR	0	0	0	0	:	12.0		12.0		12.0	12.0
					:	12.0		12.0		12.0	12.0
					:	12.0		12.0		12.0	12.0

	ADJUSTMENT FACTORS									
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	-3.00	2.00	N	0	0	0.90	50	N	11.3	3
WB	3.00	2.00	N	0	0	0.90	50	N	11.3	3
NB	0.00	0.00	N	0	0	0.90	50	N	25.8	3
SB	0.00	0.00	N	0	0	0.90	50	N	25.8	3

	SIGNAL SETTINGS					CYCLE LENGTH = 75.0				
	PH-1	PH-2	PH-3	PH-4		PH-1	PH-2	PH-3	PH-4	
EB	LT					NB	LT	X		
	TH	X					TH			
	RT	X					RT	X		
	PD	X					PD			
WB	LT	X				SB	LT			
	TH	X					TH			
	RT						RT			
	PD						PD			
GREEN	60.0	0.0	0.0	0.0	0.0	GREEN	15.0	0.0	0.0	0.0
YELLOW	0.0	0.0	0.0	0.0	0.0	YELLOW	0.0	0.0	0.0	0.0

	LEVEL OF SERVICE							
	LANE	GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	T		0.142	0.760	1.8	A	1.8	A
	R		0.029	0.760	1.7	A		
WB	L		0.004	0.760	1.6	A	3.3	A
	T		0.599	0.760	3.3	A		
NB	L		0.714	0.160	29.3	D	28.2	D
	R		0.100	0.160	20.4	C		

INTERSECTION: Delay = 5.2 (sec/veh) V/C = 0.619 LOS = B

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 55
 PEAK HOUR FACTOR..... 1
 AREA POPULATION..... 1000000
 NAME OF THE EAST/WEST STREET..... SR 202
 NAME OF THE NORTH/SOUTH STREET..... 192nd PL NE
 NAME OF THE ANALYST..... BPJ
 DATE OF THE ANALYSIS (mm/dd/yy)..... 01-10-1994
 TIME PERIOD ANALYZED..... 1999 pm pk
 OTHER INFORMATION.... w/projects

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION
 MAJOR STREET DIRECTION: EAST/WEST
 CONTROL TYPE NORTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	0	13	69	--
THRU	1561	739	0	--
RIGHT	140	0	12	--

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	1	2	--

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	-3.00	90	20	N
WESTBOUND	3.00	90	20	N
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	----	---	---	-

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	0	0
WESTBOUND	0	0	0
NORTHBOUND	0	0	0
SOUTHBOUND	---	---	---

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	6.00	0.00	6.00
MAJOR LEFTS				
WB	5.50	5.00	0.00	5.00
MINOR LEFTS				
NB	8.00	7.50	0.00	7.50

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... SR 202
 NAME OF THE NORTH/SOUTH STREET..... 192nd Pl NE
 DATE AND TIME OF THE ANALYSIS..... 01-10-1994 ; 1999 pm pk
 OTHER INFORMATION..... w/projects

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v(pcph)	POTEN- TIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M	SHARED CAPACITY c (pcph) SH	RESERVE CAPACITY c = c - v R SH	LOS
MINOR STREET						
NB LEFT	69	60	57	57	-12	F
RIGHT	12	115	115	115	103	D
MAJOR STREET						
WB LEFT	17	185	185	185	168	D

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... SR 202
 NAME OF THE NORTH/SOUTH STREET..... 192nd Pl NE
 DATE AND TIME OF THE ANALYSIS..... 01-10-1994 ; 1999 pm pk
 OTHER INFORMATION..... w/projects

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

 INTERSECTION..SR 202/192nd Place NE
 AREA TYPE.....OTHER
 ANALYST.....BPJ
 DATE.....01-13-1994
 TIME.....1999 PM PK
 COMMENT.....w/projects with 4L SR 202

	VOLUMES				:	GEOMETRY					
	EB	WB	NB	SB		EB	WB	NB	SB		
LT	0	13	69	0	:	12.0	L	12.0	L	12.0	12.0
TH	1561	739	0	0	:	12.0	T	12.0	R	12.0	12.0
RT	140	0	12	0	:	12.0	T	12.0		12.0	12.0
RR	0	0	0	0	:	12.0		12.0		12.0	12.0
					:	12.0		12.0		12.0	12.0
					:	12.0		12.0		12.0	12.0

	ADJUSTMENT FACTORS									
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	-3.00	2.00	N	0	0	0.90	50	N	8.5	3
WB	3.00	2.00	N	0	0	0.90	50	N	8.5	3
NB	0.00	0.00	N	0	0	0.90	50	N	20.5	3
SB	0.00	0.00	N	0	0	0.90	50	N	20.5	3

	SIGNAL SETTINGS				CYCLE LENGTH = 75.0			
	PH-1	PH-2	PH-3	PH-4	PH-1	PH-2	PH-3	PH-4
EB LT					NB LT	X		
TH	X				TH			
RT	X				RT	X		
PD	X				PD			
WB LT	X				SB LT			
TH	X				TH			
RT					RT			
PD					PD			
GREEN	60.0	0.0	0.0	0.0	GREEN	15.0	0.0	0.0
YELLOW	0.0	0.0	0.0	0.0	YELLOW	0.0	0.0	0.0

	LEVEL OF SERVICE							
	LANE	GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	T		0.662	0.760	3.7	A	3.6	A
	R		0.137	0.760	1.8	A		
WB	L		0.153	0.760	1.9	A	2.2	A
	T		0.323	0.760	2.2	A		
NB	L		0.322	0.160	21.5	C	21.3	C
	R		0.054	0.160	20.3	C		

INTERSECTION: Delay = 3.7 (sec/veh) V/C = 0.603 LOS = A

SIGNAL WARRANT ANALYSIS

Analysis Intersection: NE 37th Way/Sahalee Way

Major Street Direction:

NB/SB
1 ln(s)

 (NB/SB or EB/WB)
 Major Street # of Lanes:

1 ln(s)

 (approach)

Average Speed:

45 mph

 Minor Street # of Lanes:

2 ln(s)

 (approach)

Approximate 8th Highest Hour

Major Street: Based on 5/10/93 AWT counts the 8th highest hour for both approaches (represented as bothways is 74% of the peak hour (which is the 5:00 to 6:00 PM period)

Warrant Volume = $74\% * (600 + 1037) = 1211$ vph (8th highest hour; yr 1999)

Minor Street: Based on 5/10/93 AWT counts the 8th highest hour for the higher approach leg is 47% of the peak hour (which is the 7:00 to 8:00 AM period)

Warrant Volume = $47\% * (387) = 182$ vph (8th highest hour; yr 1999)

I. Warrant #1: Minimum Vehicular Volume

	Major Street	Minor Street	Vehicles per hour on	
			Major Street	Minor Street
			70%*	70%*
A	1	1	500 (350)	150 (105)
B	2 +	1	600 (420)	150 (105)
C	2 +	2 +	600 (420)	200 (140)
D	1	2 +	500 (350)	200 (140)

* A 70% threshold reduction is warranted if speeds exceed 40 mph on major street.

II. Warrant #2: Interruption of Continuous Traffic

	Major Street	Minor Street	Vehicles per hour on	
			Major Street	Minor Street
			70%*	70%*
A	1	1	750 (525)	75 (53)
B	2 +	1	900 (630)	75 (53)
C	2 +	2 +	900 (630)	100 (70)
D	1	2 +	750 (525)	100 (70)

* A 70% threshold reduction is warranted if speeds exceed 40 mph on major street.

III. Warrant check

	Warrant #1 Volume	Demand Volume	Warrant Justified?	
Major Street	(350)	1211 vph	Yes <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>YES</td></tr></table>	YES
YES				
Minor Street	(140)	182 vph	Yes	

	Warrant #2 Volume	Demand Volume	Warrant Justified?	
Major Street	(525)	1211 vph	Yes <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>YES</td></tr></table>	YES
YES				
Minor Street	(70)	182 vph	Yes	

SIGNAL WARRANT ANALYSIS

Analysis Intersection: SR 202/192nd Pl NE

Major Street Direction: EB/WB (NB/SB or EB/WB)
 Major Street # of Lanes: 2 ln(s) (approach)

Average Speed: 55 mph
 Minor Street # of Lanes: 1 ln(s) (approach)

Approximate 8th Highest Hour

Major Street: The 8th highest hour for both approaches - use the 54% to approximate

$$\text{Warrant Volume} = 54\% * (1701 + 752) = 1325 \text{ vph (8th highest hour; yr 1999)}$$

Minor Street: Based on 5/10/93 AWT counts at Sahalee/37th the 8th highest hour for the higher approach leg is peak hour (which is the 7:00 to 8:00 AM period)

$$\text{Warrant Volume} = 47\% * (175) = 82 \text{ vph (8th highest hour; yr 1999)}$$

I. Warrant #1: Minimum Vehicular Volume

	Major Street	Minor Street	Vehicles per hour on Major Street		Vehicles per hour on Minor Street	
			70%*		70%*	
A	1	1	500	(350)	150	(105)
B	2 +	1	600	(420)	150	(105)
C	2 +	2 +	600	(420)	200	(140)
D	1	2 +	500	(350)	200	(140)

* A 70% threshold reduction is warranted if speeds exceed 40 mph on major street.

II. Warrant #2: Interruption of Continuous Traffic

	Major Street	Minor Street	Vehicles per hour on Major Street		Vehicles per hour on Minor Street	
			70%*		70%*	
A	1	1	750	(525)	75	(53)
B	2 +	1	900	(630)	75	(53)
C	2 +	2 +	900	(630)	100	(70)
D	1	2 +	750	(525)	100	(70)

* A 70% threshold reduction is warranted if speeds exceed 40 mph on major street.

III. Warrant check

	Warrant #1 Volume	Demand Volume	Warrant Justified?
Major Street	(420)	1325 vph	Yes
Minor Street	(105)	82 vph	No

	Warrant #2 Volume	Demand Volume	Warrant Justified?
Major Street	(630)	1325 vph	Yes
Minor Street	(53)	82 vph	Yes

William Popp Associates

