




## Memorandum

**Date:** July 23, 2009

**To:** Joe Tovar, Director of Planning

**From:** Mark Relph, Director of Public Works 

**Subject:** Comments on Point Wells Traffic Analysis

Following is a summary of the analysis undertaken by Public Works to evaluate the Draft SEIS, and the subsequent FEIS. The analysis was undertaken by staff with the assistance of HW Lochner and Associates and DKS and Associates. Lochner assisted with the synchro model analysis and the evaluation and cost estimation of mitigation for the full build-out scenario. We also asked DKS and Associates to review the modeling work to verify that our assumptions, scenario development and synchro analysis were solid.

### FEIS Responses

Shoreline submitted several comments on the Draft SEIS. Included in these comments was a basic assumption that the background traffic growth estimates were too high. Our comment was based on the fact that, with the exception of commercial areas, Shoreline is close to being "built out" and our traffic counts indicate that we have been experiencing negative traffic growth for the past four years. Assuming a 2% growth rate does not make sense. In our traffic analysis of the build-out scenario, we utilized a 0.25% annual traffic growth factor. Overestimation of background traffic growth may equate to a lowered level of impact from the proposed development, and therefore potentially a lower estimated mitigation cost and responsibility.

### Traffic Analysis

Attached to this memo is a table summarizing our Level of Service analysis for the build-out scenario using our background data (0.25% annual growth). It indicates that four intersections would reach LOS (Level of Service) "F" (failure) by 2025 with the Point Wells build-out project. In addition, two intersections would reach LOS-E. Attached to this memo is also a summary of mitigation needs to address intersections with LOS problems, intersections with safety issues, and street segments needing sidewalks to ensure pedestrian safety and to encourage transit usage.

Collision rates are fairly high on this corridor, with the intersection of 3<sup>rd</sup> Avenue NW and NW Richmond Beach Road, ranked as the intersection with the highest collision rate in Shoreline. In this location, we believe the high collision rates can be mitigated by the addition of left-turn pockets on the east and west legs of the intersection.

### **Cost to Mitigate Build-out Scenario**

The conclusion of our analysis indicates the build-out scenario will require mitigation on nine intersections or street segments. The total cost of mitigation is approximately \$32 million. There are four sidewalk projects and four signal/intersection improvements to address both safety, efficiency and to encourage multi-modality. The three sidewalk projects include sidewalks on Richmond Beach Drive NW from NW 196<sup>th</sup> Street to NW 205<sup>th</sup> Street, NW 196<sup>th</sup> Street from Richmond Beach Drive NW to 24<sup>th</sup> Avenue NW, and NW 196<sup>th</sup> Street from 24<sup>th</sup> Avenue NW to 20<sup>th</sup> Avenue NW. The intersection projects include NW 195<sup>th</sup> Street at 20<sup>th</sup> Avenue NW and 24<sup>th</sup> Avenue NW, and NW Richmond Beach Road at 15<sup>th</sup> Avenue NW, 8<sup>th</sup> Avenue NW and 3<sup>rd</sup> Avenue NW.

Because of the many challenges in this corridor, as well as its unique characteristics, we recommend that the developer fund a Richmond Beach Corridor study of the NW Richmond Beach Road/Drive corridor, spanning from the NW 205<sup>th</sup> Street entrance to Point Wells to Aurora Avenue N at N 185<sup>th</sup> Street. This study should examine and identify safety enhancements, roadway efficiencies and accommodation and promotion of alternative modes. The study should include input from the neighborhood residents, as well as transit providers and the developer representatives. Shoreline Public Works staff should manage the study. It would result in a corridor plan that would be approved by the City Council and would identify specific projects, with scope and costs to mitigate the Point Wells proposed project. We estimate that this study would cost approximately \$200,000.

### **Conclusion**

I have several attachments to supplement the above. They include a level of service analysis summary table and summarized project planning level cost estimates. Please keep in mind that, with a corridor study, the project descriptions could change, as well as the cost estimates.

## **Point Wells Traffic and Safety Analysis**

### **Introduction**

This analysis was prepared in response to the draft SEIS prepared for Snohomish County's exploration of a rezone of the Point Wells site to accommodate redevelopment at a higher density. The purpose of this analysis is to evaluate traffic and safety impacts, as well as mitigations required of the proposed rezone and redevelopment.

### **Background**

An initial analysis was conducted in 2006 by David Evans and Associates, a consultant for the developer group exploring the feasibility of redeveloping the Point Wells site. That analysis was limited in scope to the NW Richmond Beach Rd corridor. In order to understand the impacts and address early issues raised by residents, Snohomish County decided to take a more comprehensive look at a larger area. A draft and final SEIS were subsequently prepared by IFC Jones & Stokes.

### **Modeling Assumptions and Analysis**

City of Shoreline staff and consultants initially reviewed the draft SEIS and expressed a number of concerns with the traffic analysis (see attachment A). In particular, Shoreline did not agree with some of the conclusions in the draft SEIS traffic analysis (such as growth rate, trip distribution, and overall mitigation). Therefore, utilizing many of the assumptions from the draft SEIS, Shoreline developed its own models to take a more detailed look at Point Wells redevelopment impacts within the City of Shoreline.

In order to develop the more detailed City model, several of assumptions were made. The first assumption is that the PM peak hour resulted in the most significant impacts in the draft SEIS, and therefore the Shoreline model focused on the PM peak hour impacts in the updated model.

The next assumption is that Shoreline's Aurora Phase II project will break ground during the fourth quarter of 2009. The Aurora Phase III project, currently in design, will most likely be completed by 2025, the future target year in the draft SEIS. The Shoreline models were configured to incorporate the changes planned through these projects.

The volumes used in the future 2025 base model were taken from the draft SEIS when available. Since the Shoreline analysis modeled additional intersections, the future 2025 background volumes were developed using a 0.25% annual growth rate over existing conditions. The IFC Jones and Stokes model assumed a sustained annual growth rate of approximately 1.5% with some areas even higher. This higher growth rate assumption dilutes the impact of new trips being generated by the proposed development, therefore under estimating mitigation for the development.

Once the model was developed for the year 2025, eight different residential growth scenarios were created to explore the effects of various levels of residential development and the associated vehicle trips.

Residential vehicle trip generation was determined by using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 7th edition. Vehicle trip generation was estimated for the proposed project using ITE Land Use Code 230, Residential/Townhouse. All scenarios assumed the same trip generation corresponding to the full build-out of the proposed office and retail for the development, which equated to a 528-employee general office building and a 136-employee retail space.

The eight different residential scenarios evaluated were chosen based on increasing numbers of residential units in increments of 500 units as follows (again, with office and retail assumption remaining constant through the scenarios):

Total Residential Trips			Total w/ Proposed Office/Retail Trips		
Units	Entering	Exiting	Entering	Exiting	Combined Trips
500	131	64	225	325	550
1000	231	114	325	375	700
1500	322	159	410	415	825
2000	408	200	495	455	950
2500	489	241	590	510	1,100
3000	568	280	675	550	1,225
3220	602	297	710	576	1,286
3500	645	318	760	590	1,350

The results of the eight different Point Wells scenarios, in addition to the existing and future 2025 base conditions, are summarized in attachment B, and the mitigation is discussed below.

### **Evaluation and Mitigation**

Any redevelopment at the Point Wells site will have impacts along the Richmond Beach Road corridor. These impacts include the increased risk to pedestrians where sidewalks do not exist, and improvement to intersections to maintain an adequate level of service and to maintain safe travel through the intersection. Shoreline’s analysis and recommendation below are divided into two categories: Mitigation Projects for All Scenarios and Mitigation Projects Required for 825 Trips and Above. The mitigation costs are summarized in Attachment D.

#### **Mitigation Projects for All Scenarios**

##### 1. Multimodal Safety and Corridor Study:

The City of Shoreline Transportation Master Plan, in anticipation of a future development of Point Wells, has identified the need for a corridor study from the Point Wells site, down Richmond Beach Drive NW, then up the corridor to Aurora. This analysis should be funded by the developer and undertaken in cooperation with the City of Shoreline, and the residents and business community on the Richmond Beach Road corridor. The study needs to address multimodal usage (buses, bikes and pedestrians), capacity and traffic flow, as well as safety improvements and impacts. This analysis should ultimately be approved by the Shoreline City Council and would form the basis for developer mitigation.

2. NW 196th Street between Richmond Beach Drive NW and 24<sup>th</sup> Avenue NW – Sidewalk and Safety:

NW 196<sup>th</sup> Street is a collector arterial with a speed limit of 25 MPH. It consists of two 12-foot wide lanes, one in each direction. The terrain between Richmond Beach Road NW and 24<sup>th</sup> Avenue NW is made up of a generally uniform grade sloping down towards Richmond Beach Drive NW. There are no sidewalks.

Improvements shown include, at a minimum, sidewalks on both sides of the street. Should more than 825 trips (fourth scenario) be approved, a continuous two-way center turn lane should also be required to help maintain traffic flow and improve pedestrian access across NW 196<sup>th</sup> Street. This is a more effective and less expensive mitigation than the four-lane option in the draft SEIS.

3. NW 196th Street between 24<sup>th</sup> Avenue NW and 20<sup>th</sup> Avenue NW – Sidewalk and Safety:

NW 196<sup>th</sup> Street is a collector arterial with a speed limit of 25 MPH. It consists of two 12-foot wide lanes in each direction. The terrain between Richmond Beach Road NW and 24<sup>th</sup> Avenue NW is made up of a generally uniform grade sloping down towards 24<sup>th</sup> Ave NW. There is a sidewalk on the north side of the roadway, and part of the south side. A complete continuous sidewalk will be needed for any development at the Point Wells site.

4. NW 195th Street & 20<sup>th</sup> Avenue NW – Intersection Improvement:

This intersection is currently controlled by stop signs on all approaches. The model assumes this intersection will be signalized as per recommendations in the SEIS.

5. NW Richmond Beach Road & 15<sup>th</sup> Avenue NW – Intersection Improvement:

This intersection has offset north and south approaches. The south approach is currently controlled by stop signs on all approaches. The model assumes this intersection will be signalized as per recommendations in the SEIS. However, an option in lieu of a traffic signal may be twin roundabouts.

6. NW Richmond Beach Road & 3<sup>rd</sup> Avenue NW – Intersection Improvement:

NW Richmond Beach Road has four lanes without room for separate left turn lanes. This is a contributing factor to a number of reported collisions. Widening of NW Richmond Beach Road will be required to accommodate any increase in trips from the Point Wells development.

7. Richmond Beach Drive NW between NW 196<sup>th</sup> Street and NW 205<sup>th</sup> Street – Sidewalks and Safety:

Richmond Beach Drive NW is a collector arterial with a speed limit of 25 MPH. It is the only road to serve the Point Wells site, and would carry all trips entering and exiting the development. It consists of two 12-foot wide lanes, one in each direction. The terrain between NW 196<sup>th</sup> Street and NW 205<sup>th</sup> Street is made up of a number of horizontal and vertical curves. There are no sidewalks, and only the east side has some areas wide enough to park. The current 50 afternoon peak-hour trips (averaging one car every 72 seconds) allow for numerous gaps in traffic to allow easy pedestrian access along and across Richmond Beach Drive NW. Under existing conditions, even with the lack of sidewalks and pedestrian amenities, the low volume of vehicles can make the area seem friendlier to walkers and bicyclists.

Staff reviewed the impacts of the eight different scenarios, and the increase in PM peak hour volumes in all the scenarios will require roadway safety improvements to mitigate the impacts of the development. *Adding just 550 trips as stated in the SEIS equates to an average of one car every 6.5 seconds in the peak hour.*

Improvements should include, at a minimum, a sidewalk on one side of the street. If more trips are approved, additional widening will be required to help maintain traffic flow and improve pedestrian access across Richmond Beach Drive NW.

**8. NW Richmond Beach Road & 8<sup>th</sup> Avenue NW – Intersection Improvement:**

This intersection is controlled by a traffic signal. It has five approaches, which adds to overall intersection delay. Should 550 trips or more be approved, this intersection will operate at a LOS (Level of Service) “E” or worse. Additional mitigations will be required, such as an intersection reconfiguration to eliminate the Southwest approach, or possibly a roundabout.

**Mitigation Projects Required for 825 Trips and Above**

**9. Richmond Beach Drive NW & NW 196<sup>th</sup> Street – Intersection Improvement:**

The model assumes this intersection will utilize additional stop signs to reduce overall driver delay. However, should more than 825 trips (fourth scenario) be approved, additional mitigations may be required, such as a channelized westbound to northbound right turn, an intersection reconfiguration, or even a roundabout. The draft SEIS recommends widening NW 196<sup>th</sup> Street to four lanes. However, given the movements to and from the Point Wells site, the extra lanes may not be of much benefit at this intersection.

**10. NW 196<sup>th</sup> Street & 24<sup>th</sup> Avenue NW – Intersection Improvement:**

The model assumes this intersection will utilize additional stop signs to reduce overall driver delay. However, should more than 825 trips (4<sup>th</sup> Scenario) be approved, additional mitigations may be required, such as an intersection reconfiguration, or even a roundabout.

**Safety Analysis**

Residents in the Richmond Beach community have raised concerns about the number of vehicle collisions on NW Richmond Beach Road, especially between 12<sup>th</sup> Avenue NW and 15<sup>th</sup> Avenue NW. A review of the City of Shoreline collision records for a three-year period (2006, 2007, and

2008) revealed 13 reported collisions, five reported injuries, and one fatality. *This equates to a collision rate of 2.99 crashes per million vehicle miles (MVM), making this roadway segment rank 39<sup>th</sup> in Shoreline for this time period.* In comparison, WSDOT's 2007 "Annual Collision Data Summary" report shows that the collision rate for minor arterial routes in urban areas within the Northwest region is 3.79 collisions per MVM.

An analysis of the collision record for the intersection of 3<sup>rd</sup> Avenue NW and NW Richmond Beach Road for the three-year period (2006, 2007 and 2008) revealed a collision rate of 0.81 per million entering vehicles. This location ranks #1 in the City of Shoreline among intersections for reported frequency of collisions and by collision rate. The operation and safety of the intersection of 3<sup>rd</sup> Avenue NW & NW Richmond Beach Road can be improved by building separate left-turn pockets. Of the 19 reported collisions, 13 are the type correctable by the addition of signalized left turn lanes.

Attachment C is the City of Shoreline reported collision report from 1/1/2006 to 12/31/2008, sorted by rate.

Shoreline's collision data are based on collision data provided by Washington Department of Transportation (WSDOT); however, there is a difference between the two databases as to how the collision data are assigned to the databases. The City of Shoreline, as do most municipalities, records intersection collisions as those *that actually occur within the intersection area*; in comparison, WSDOT's *includes all collisions occurring within 20 feet of all approaches and within the entire length of any of the turn pockets for all approaches.*

When comparing results of the collision records from WSDOT's and Shoreline's data bases, it is important to understand these differences between how collisions are recorded in the two systems. For example, a collision history request for Richmond Beach Road NW would generate a higher number from WSDOT's database than from Shoreline's for the reasons stated above.

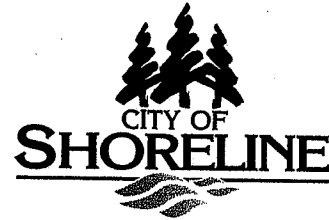
Collision patterns and types are influenced by factors other than traffic volumes, such as roadway geometry, speed, number of lanes and compliance with regulatory signs and rules of the road. While increased traffic generated by the Point Wells development would likely result in a proportionate increase in the number of traffic collisions, those increases would not necessarily mean an increase in severity. As congestion and the proportionate number of collision increase, there would tend to be more of a change in collision *types*, such as an increase in rear-end collisions.

## **Appendix**

- Attachment A – Initial City comments on draft SEIS
- Attachment B – Summarized results of Models
- Attachment C – Collision Data
- Attachment D – Mitigation Planning Level Cost Estimates

**APPENDIX A**

**City Comments of Draft SEIS**



March 23, 2009

Mr. Steve Skorney  
Snohomish County Planning and Development Services M/S #604  
3000 Rockefeller Ave  
Everett, WA 98201-4201

Subject: Paramount Docket XIII DSEIS Comment

The City of Shoreline appreciates the opportunity to comment on the DSEIS. This comment letter is a follow up to our comments presented at the February 25 Planning Commission hearing orally and in writing; those comments are incorporated into this letter by reference.

The City's comments in this letter will focus solely on the contents of the DSEIS issued on February 6, 2009. It will not focus on the merits of the proposal. Our additional comments on the merits of the proposal will be offered prior to or at the County Council Public Hearing which has not yet been scheduled.

Shoreline's DSEIS comments focus on three areas:

1. Transportation
2. Police and Fire Provision
3. Other Service Provision

### **Transportation**

#### **Transportation Model Assumptions Are Flawed**

1. Model assigns too high a proportion of trips coming from and going to Snohomish County

Figures 3.11-5 & 6 – the study assumes that 60% of all trips generated for Point Wells are related to Snohomish County, and only 40% for King County, including Seattle. Of these, perhaps 5% to the north and 5% to the south may be destined for the eastside. Given that the major population and employment center for the region lies to the south of Point Wells, it appears that the trip distribution assumption should be more 50%-50%, or even 40%-60% instead. By designating only 40% of the trips to the south, the model does not adequately address impacts in King County and the City of Shoreline.

## 2. Assumption about Background Traffic Growth is High

It appears that one of the assumptions used to develop the future scenario uses a sustained background traffic growth rate of approximately 1.5%, with some areas even higher. This may not be valid for a couple reasons. First, the City of Shoreline is essentially "built-out", with development occurring either on scattered lots throughout the city, through sub-division of individual parcels, or demolition of existing structures. Second, the City of Shoreline has been experiencing a decline in traffic volumes over the last 4 years (2004 to 2008) in the range of -6%. While there may be some years of positive traffic growth, it is unlikely that there will be sustained growth for 18 years, especially given the current economic outlook.

The impact of the lower traffic growth is very important in understanding the significances of the Point Wells development. With little traffic growth, the need for some of the future capacity and safety projects is focused not on background growth but rather the redevelopment of Point Wells itself as the major trigger.

Perhaps stated differently, the DSEIS traffic modeling overstates the background growth, thereby diluting the true impact of the proposed development as the traffic disperses through the network of streets. Therefore, the mitigation for the development is likely to be understated.

## 3. Assumption about future Bus Service are optimistic

The DSEIS references the Community Transit and Metro routes located in the study area. However, as the DSEIS correctly identifies, the nearest part of the project site is approximately ½ mile from the nearest transit route. Metro is the only transit provider this close to the site. Currently, Metro has two routes that provide service in the vicinity of the proposed project. One is an all day, local route that travels from Richmond Beach to the Northgate Transit center. The other route is a weekday, peak only route that travels from Richmond Beach to downtown Seattle. (The DSEIS incorrectly identifies only one route in this area – the all day, local route.) While the proposed zoning may result in density sufficient to support transit, there are no assumptions made in the DSEIS that transit service to the site will increase.

On a side note, there are reasons to believe that it is unlikely that transit service would be extended to the site. Community Transit provides no service in the area and would not travel through Shoreline to serve this site. Metro's service is overwhelmingly located within King County, with only three routes that cross very slightly into Snohomish County. The development may be able to fund some service extensions but, there is no description of how this will be accomplished and for how long. Over the past few years, King County has trended toward removing their service in Snohomish County. As an agency that is primarily supported by King County tax dollars and facing significant budget constraints, it is highly unlikely that Metro would extend any routes to serve Snohomish County, solely because there is a large population concentration nearby.

4. Model assumes a greater dispersion of traffic onto local streets than is likely to occur

Appendix C lists the existing and assumed future traffic volumes assigned to each turning movement at study intersections. It appears that the model assumptions allocate too many trips onto local streets and collectors instead of using the minor and principal arterials. For example, in following the eastbound PM trips from Point Wells, 87% of the traffic disbursts off of NW Richmond Beach Rd before Fremont Ave N. The traffic modeling in the DSEIS assumes that only 13% of the trips make it to SR99, where 4% turn north, 2% turn south, and 9% continuing east. SR 99 is a state highway and a principal arterial and a significant north/south connector. Our modeling shows and staff concurs that a more reasonable assumption is that a much higher percentage of trips, perhaps 60%, will reach SR 99 and use it to travel both north and south and to make connections to I-5. This may trigger a need for additional roadway improvements that is not recognized in the modeling done for the DSEIS.

5. Planned transportation improvements in King County are not included in the model; staff is unsure of the effect on the model if these improvements were to be included.

Appendix E – The travel demand forecasting report lists the highway improvement projects in the pipeline for 2015 and 2025. However, only Snohomish county projects are listed, most with little to no significance to the Point Wells proposal. Absent are any projects in King County, especially those that are significant to the DSEIS, such as the Aurora Corridor Improvement Project, phases II and III.

6. Zonal analysis of traffic flow south of Richmond Beach Road is lacking, leading to less accuracy in traffic forecast

Appendix E, Figure 2 shows the zones used to develop the model. The main corridor for access to the site is NW Richmond Beach Road in Shoreline. There were a number of new split zones created north of NW Richmond Beach Rd to help improve the accuracy of the forecasting model. However, there was only one split created to the south. If splitting up the zones improves the accuracy of the model, then the lack of this attention in the region of the most impact brings into question the accuracy of the forecast in the area.

### **Traffic Safety is not adequately addressed**

In the area of traffic safety, the report mentions the intersection of 3rd Ave NW and NW Richmond Beach Rd along with the roadway segments of NW Richmond Beach Road between 15th Ave NW and 12th Ave NW, and between 8th Ave NW and 3rd Ave NW as having some of the highest collision rates in the study area. However, there does not appear to be any discussion on the impacts of the development on safety nor offer mitigation to improve safety. A significant increase in volumes associated with the Point Wells development may decrease safety and increase congestion in the corridor, and specifically at 3rd Ave NW and NW Richmond Beach Rd. It is likely that more projects to improve safety and traffic flow will be required in addition to those listed in the study

## Conclusion

The DSEIS does a reasonable job considering the Snohomish County impacts, but does not achieve a thorough analysis of the impacts and mitigation needed along the only access route, primarily through the City of Shoreline. Considering that the effect of some of the assumptions in the traffic model that understate the vehicle trips along the roadway system in the City of Shoreline, it is our staff conclusion that full development of the Point Wells site will result in greater impacts than discussed in the study. Corrections to the present and future conditions need to be made to improve confidence in the model output and conclusions.

With current information, it is difficult to estimate the true impacts of increased traffic on Shoreline's streets with the information in the DSEIS.

Staff's initial analysis suggests that the impacts of a development of 3500 units on Shoreline's streets would result in impacts that will be impossible to mitigate.

There will be considerable impact to Richmond Beach Dr NW. Current daily traffic volumes are 790 vpd, with 50am and 50pm peak hour trips. The study indicates that the am peak hour volume will increase to 1,085, and the pm peak hour to 1,310 vehicles. Given the narrow, winding geometry of this roadway, it may not be able to handle this traffic without considerable congestion and delay.

This leads to the following conclusions:

- Development of this area will need to be significantly scaled back for the concepts identified in the DSEIS.
- Traffic model should be modified to address its failings, especially related to trip distribution, and to the background traffic assumptions. The model needs to be re-run to account for these unrealistic assumptions. The analysis should identify unavoidable significant impacts if the property is developed at the levels assumed in the DSEIS, and if impacts can be mitigated to an acceptable level and an acceptable cost, identification of mitigations, their cost, and who should be responsible for bearing the cost.
- If significant impacts cannot be mitigated or if the cost of mitigation is unreasonably high, alternative (less intense) growth scenarios should be identified and analyzed to learn if the reduced growth scenario can be adequately mitigated.
- When considering mitigation measures, traffic and pedestrian safety measures should be taken into account and costs defined.

Shoreline staff would be pleased to assist in reviewing assumptions and outputs of the traffic modeling to make sure that it reflects an accurate representation of reality.

## **Police and Fire Provision**

The Point Wells properties owned by proponent Paramount of Washington, Inc. connects to the regional road network only via Richmond Beach Road in the City of Shoreline. Neither Snohomish County nor the Town of Woodway currently provide vehicular access, police, fire, or emergency medical services to the Paramount property, nor have they indicated their ability to provide such urban services or facilities in the future.

In DSEIS comment letters from Shoreline Fire Department (dated March 9, 2009) and King County Police (dated March 11, 2009), these departments clearly stated that they will not be providing service to Point Wells if it develops as an urban center and is not annexed to Shoreline. If these two entities do not provide service and the Point Wells site is redeveloped as a mixed use center, it is important to identify in the Final SEIS where Police and Fire services come from, and how long the response times will be. It is important to know this information to determine whether the response times should be considered to be significant adverse impacts.

We have enclosed a map of the closest County Police and Fire facilities and their approximate distance to Point Wells.

## **Other Service Provision**

In addition to not providing police or fire protection to this area, neither Snohomish County nor the Town of Woodway current provide parks, code compliance, or sewer service to the Paramount property. These services are integral to a creating and maintaining a residential community. We request that the Final SEIS address these issues in some detail – for example, given the proximity of Snohomish County parkland and library facilities, where are they located and what is the likelihood that Point Wells residents would use Snohomish County facilities when Shoreline facilities are much closer?

Our staff is available to answer questions or assist with analysis. Please contact Steven Cohn at 206-801-2511 or [scohn@shorelinewa.gov](mailto:scohn@shorelinewa.gov)

Sincerely,







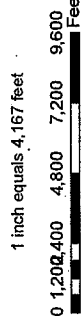
Joseph W. Tovar, FAICP  
Director, Planning and Development Services

Attachment: Map of Police and Fire Stations

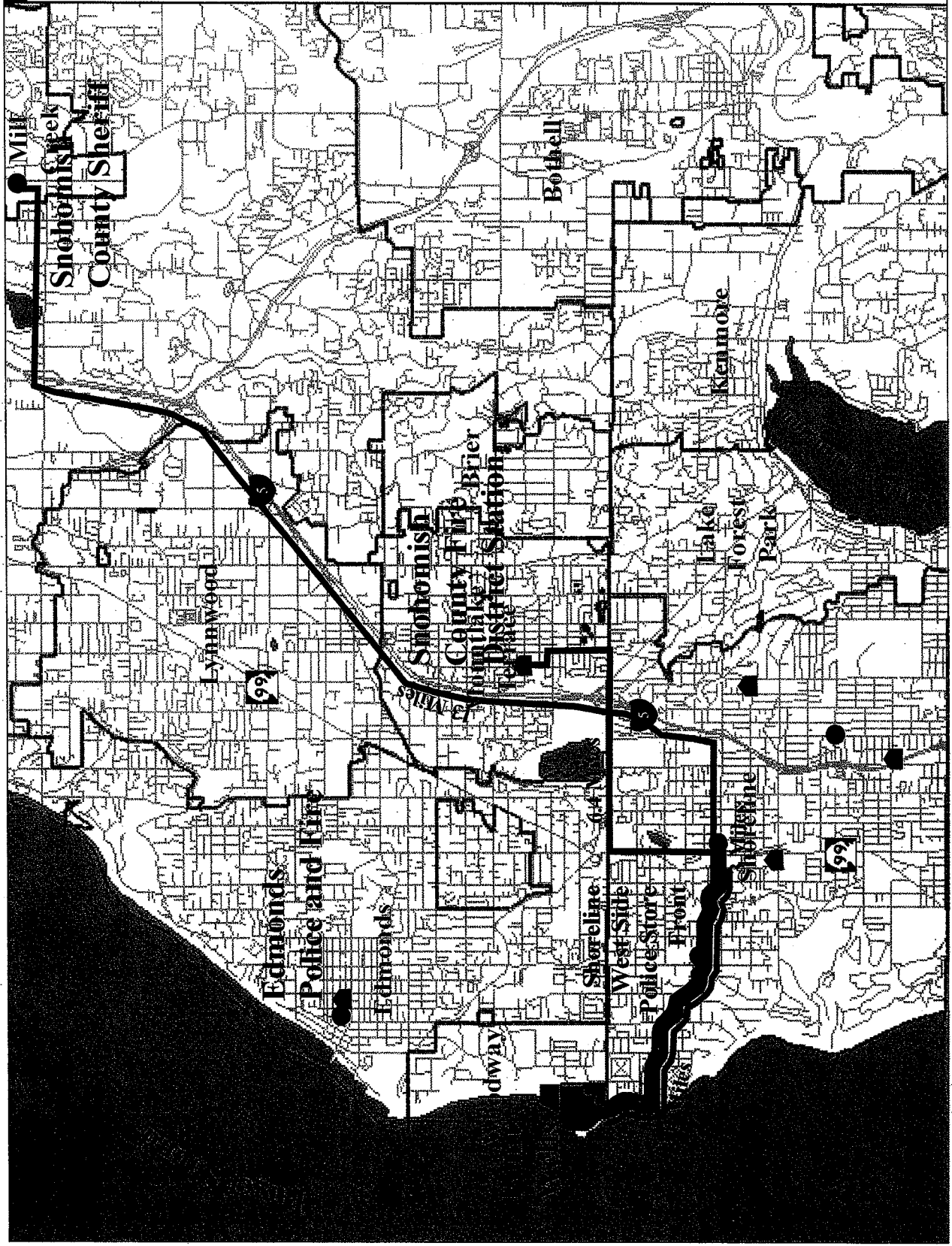
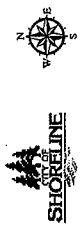
# Fire and Police Stations Distance to Pt. Wells

## Public Facility

-  Fire Department
-  Police
-  City
-  Point Wells



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## **APPENDIX B**

### **Analysis Model Summary**

Richmond Beach Rd - Point Wells Impact Analysis Model

Intersection Analysis	2007 Base - Shoreline						2025 Base - Shoreline							
	Overall LOS	Approach LOS				Ave Intersect Delay	Intersect Capacity Utilization	Overall LOS	Approach LOS				Ave Intersect Delay	Intersect Capacity Utilization
		EB	WB	NB	SB				EB	WB	NB	SB		
Richmond Beach Dr NW/NW 196th St	A	A				6.5	18.9	A	A	A	A	7.4	21.1	
NW 196th St/24th Ave NW	A	A	A	A	A	7.3	25.3	A	A	A	A	7.7	26.3	
NW 196th St/20th Ave NW	A	A	A	A	B	9.1	39.6	B	B	B	A	11.9	47.2	
NW Richmond Bch Rd/15th Ave NW (w)	A				B	1.5	27.3	A	A	A		C	3.6	32.2
NW Richmond Bch Rd/15th Ave NW (e)	A	A	B	A		9.8	38.1	A	A	A	C		3.6	45.5
NW Richmond Bch Rd/8th Ave NW	C	C	C	D	D	30.5	61	D	D	D	E	D	52.9	86
NW Richmond Bch Rd/3rd Ave NW	A	A	A	B	B	5.5	62.2	A	A	A	B	C	9.2	66.5
N Richmond Bch Rd/Dayton Ave N	B	B	A	C		12.2	41.6	B	B	A	C		12.5	50
N 185th St/Fremont Ave N	C	C	C	D	D	33.4	59.4	C	C	B	D	D	33.3	73.3
N 185th St/Linden Ave N	C	C	B	D	D	21.9	42.4	B	A	B	D	D	16.8	49.4
N 185th St/Midvale Ave N	A	A	A	A	A	6.1	47.7	B	B	B	C	C	18.9	61.8
Aurora Ave N/N 205th St	D	F	E	B	D	42.3	90	E	F	F	E	E	74.7	110.8
Aurora Ave N/N 200th St	C	E	E	B	B	29.2	85.9	C	F	F	C	B	33.7	95.6
Aurora Ave N/N 192nd St	A	E	E	A	A	8.7	61.7	B	F	E	A	B	14	75.4
Aurora Ave N/N 185th St	C	E	E	C	B	29.6	77.6	D	E	F	D	C	54.2	94.7
Aurora Ave N/N 175th St	C	E	D	C	C	34.2	75.3	D	E	E	D	D	50.7	98.1
Midvale Ave N/N 175th St	B	A	A	E	E	10.6	48.4	B	B	A	C	C	11.8	63.8
Fremont Ave N/N 175th St	A	B	B	A	A	7.4	55.9	A	B	B	A	A	8.1	63.4
Arterial Route Analysis	Travel Time	Distance (mi)			Ave Speed	Arterial LOS	Travel Time	Distance (mi)			Ave Speed	Arterial LOS		
EB Richmond Bch Rd btwn 15th Ave NW/Dayton Ave N	217.2	1.4			22.9	C	252.3	1.4			20.3	C		
EB N 185th St btwn Dayton Ave N/Midvale Ave N	193.5	0.6			11.3	E	193.5	0.6			11.3	E		
WB N 185th St btwn Midvale Ave N/Fremont Ave N	178.1	0.4			8.9	E	202.8	0.4			7.8	E		
WB Richmond Bch Rd btwn Fremont Ave N/20th Ave NW	170.4	1.1			22.5	C	280.2	1.7			21.7	C		
NB Aurora Ave N btwn N 205th St/N 175th St	257.1	1.7			24	C	363.1	1.7			17	D		
SB Aurora Ave N btwn N 205th St/N 175th St	240.6	1.7			24.8	C	276.9	1.7			21.6	D		

Richmond Beach Rd - Point Wells Impact Analysis Model

Intersection Analysis	2025 Point Wells - 0550 trips							2025 Point Wells - 0700 trips								
	Overall LOS	Approach LOS				Ave Intersect Delay	Intersect Capacity Utilization	Overall LOS	Approach LOS				Ave Intersect Delay	Intersect Capacity Utilization		
		EB	WB	NB	SB				EB	WB	NB	SB				
Richmond Beach Dr NW/NW 196th St	B		B	A	B	12.8	52.1	C		B	A	C	16.6	61		
NW 196th St/24th Ave NW	B	C	B	B	A	13.2	45.5	C	C	C	B	A	17.6	45.7		
NW 196th St/20th Ave NW	A	A	A	A	A	8.2	62.6	A	A	A	A	B	8.7	66.8		
NW Richmond Bch Rd/15th Ave NW (w)	A	A	A		E	5.8	40.8	A	A	A		C	3.2	42.1		
NW Richmond Bch Rd/15th Ave NW (e)	A	A	A		E	4	60.2	A	A	A		C	3	64.2		
NW Richmond Bch Rd/8th Ave NW	E	E	D		F	D	66	91.2	E	E	E	F	E	78	93.5	
NW Richmond Bch Rd/3rd Ave NW	A	A	A		C	C	9.9	71.3	B	A	A	C	C	11.3	73.7	
N Richmond Bch Rd/Dayton Ave N	B	B	A		C		13.3	58	B	B	A	C	13.4	59.4		
N 185th St/Fremont Ave N	D	C	D		D	D	37.8	78.4	D	C	B		E	E	37.2	80.5
N 185th St/Linden Ave N	A	A	A		C	C	9.7	55	B	A	A		D	D	12.4	55.9
N 185th St/Midvale Ave N	C	B	B		D	D	21.5	63	B	B	B		C	C	19.1	63.6
Aurora Ave N/N 205th St	E	F	F		E	E	79.2	112.4	E	F	F		E	E	79.3	112.8
Aurora Ave N/N 200th St	C	F	F		C	B	34.9	97.6	D	F	E		D	B	38.3	98
Aurora Ave N/N 192nd St	B	F	E		A	B	14.6	77.2	B	F	E		A	B	13.9	77.5
Aurora Ave N/N 185th St	D	F	F		D	C	53.8	98.7	D	F	F		D	D	54.5	99.5
Aurora Ave N/N 175th St	D	F	F		D	C	50.8	101.1	D	F	F		D	C	50.7	102.2
Midvale Ave N/N 175th St	B	A	A		F	F	14.5	64.9	B	A	A		F	F	14.4	65.1
Fremont Ave N/N 175th St	A	B	B		A	A	8.1	64.5	A	B	B		A	A	9.5	64.7
Arterial Route Analysis	Travel Time	Distance (mi)		Ave Speed		Arterial LOS		Travel Time	Distance (mi)		Ave Speed		Arterial LOS			
EB Richmond Bch Rd btwn 15th Ave NW/Dayton Ave N	251.4	1.4		20.3		C		276.2	1.4		18.5		C			
EB N 185th St btwn Dayton Ave N/Midvale Ave N	207.6	0.6		10.5		E		193.6	0.6		11.3		E			
WB N 185th St btwn Midvale Ave N/Fremont Ave N	234.5	0.4		6.7		F		210.6	0.4		7.5		E			
WB Richmond Bch Rd btwn Fremont Ave N/20th Ave NW	274.1	1.7		22.2		C		301.5	1.7		20.2		C			
NB Aurora Ave N btwn N 205th St/N 175th St	366.9	1.7		16.8		E		380.5	1.7		16.2		E			
SB Aurora Ave N btwn N 205th St/N 175th St	272.5	1.7		21.9		D		281.5	1.7		21.2		D			

Richmond Beach Rd - Point Wells Impact Analysis Model

Intersection Analysis	2025 Point Wells - 0825 trips						2025 Point Wells - 0950 trips							
	Overall LOS	Approach LOS				Ave Intersect Delay	Intersect Capacity Utilization	Overall LOS	Approach LOS				Ave Intersect Delay	Intersect Capacity Utilization
		EB	WB	NB	SB				EB	WB	NB	SB		
Richmond Beach Dr NW/NW 196th St	C	C	A	D	22.9	68.5	E	D	A	E	36.6	76		
NW 196th St/24th Ave NW	D	D	D	B	B	25.3	45.9	E	E	F	B	B	43.2	49
NW 196th St/20th Ave NW	A	A	A	A	B	9.2	70.2	A	A	B	B	B	9.6	73.8
NW Richmond Bch Rd/15th Ave NW (w)	A	A	A		C	3.4	43.1	A	A	A		C	3.1	44.2
NW Richmond Bch Rd/15th Ave NW (e)	A	A	A	C		3	67.5	A	A	A	C		3.1	70.8
NW Richmond Bch Rd/8th Ave NW	E	E	E	F	E	76.6	95.5	F	E	F	F	E	83.6	97.4
NW Richmond Bch Rd/3rd Ave NW	B	A	A	C	D	12.3	76.8	B	A	A	C	D	13.7	78.7
N Richmond Bch Rd/Dayton Ave N	B	B	A	C		13.5	60.5	B	B	A	C		13.6	61.7
N 185th St/Fremont Ave N	D	C	C	E	E	38.8	82.3	D	C	C	E	E	40.8	84.1
N 185th St/Linden Ave N	B	A	A	D	D	11.8	56.6	B	A	A	D	D	11.9	57.4
N 185th St/Midvale Ave N	B	B	B	C	C	18.6	64	B	B	B	C	C	18.7	64.5
Aurora Ave N/N 205th St	F	F	F	E	E	80.5	113	F	F	F	F	E	82.4	113.3
Aurora Ave N/N 200th St	D	F	F	C	B	35.7	98.3	D	F	F	C	B	36	98.6
Aurora Ave N/N 192nd St	B	F	E	A	B	14.8	77.7	B	F	E	A	B	14.8	77.9
Aurora Ave N/N 185th St	E	F	F	D	D	59.5	100.1	E	F	F	D	D	62.2	101.7
Aurora Ave N/N 175th St	D	F	F	D	C	51.3	102.9	D	F	F	D		54	103.8
Midvale Ave N/N 175th St	B	A	A	F	F	14.3	65.2	A	A	A	D	D	9.6	65.4
Fremont Ave N/N 175th St	A	B	B	A	A	8.1	64.9	A	B	B	A	A	8.1	65.2
Arterial Route Analysis	Travel Time	Distance (mi)			Ave Speed	Arterial LOS	Travel Time	Distance (mi)			Ave Speed	Arterial LOS		
EB Richmond Bch Rd btwn 15th Ave NW/Dayton Ave N	255.3	1.4			20	C	259.5	1.4			19.7	C		
EB N 185th St btwn Dayton Ave N/Midvale Ave N	194.8	0.6			11.2	E	195.8	0.6			11.1	E		
WB N 185th St btwn Midvale Ave N/Fremont Ave N	229.8	0.4			6.9	F	239.9	0.4			6.6	F		
WB Richmond Bch Rd btwn Fremont Ave N/20th Ave NW	312.2	1.7			19.5	C	322.7	1.7			18.9	C		
NB Aurora Ave N btwn N 205th St/N 175th St	376.6	1.7			16.4	E	384.4	1.7			16.1	E		
SB Aurora Ave N btwn N 205th St/N 175th St	291.4	1.7			20.5	D	292.3	1.7			20.4	D		

Richmond Beach Rd - Point Wells Impact Analysis Model

Intersection Analysis	2025 Point Wells - 1100 trips							2025 Point Wells - 1225 trips						
	Overall LOS	Approach LOS				Ave Intersect Delay	Intersect Capacity Utilization	Overall LOS	Approach LOS				Ave Intersect Delay	Intersect Capacity Utilization
		EB	WB	NB	SB				EB	WB	NB	SB		
Richmond Beach Dr NW/NW 196th St	F		F	A	F	71.6	84.9	F		F	A	F	101.6	92.4
NW 196th St/24th Ave NW	F	F	F	B	B	77.8	54	F	F	F	B	B	113.2	58.4
NW 196th St/20th Ave NW	B	A	B	B	B	10.1	78	B	A	B	B	B	10.4	81.5
NW Richmond Bch Rd/15th Ave NW (w)	A	A	A		C	3.2	46.3	A	A	A		C	3	48.6
NW Richmond Bch Rd/15th Ave NW (e)	A	A	A	C		3.8	74.8	A	A	A	C		3.4	78.2
NW Richmond Bch Rd/8th Ave NW	F	E	F	F	E	88.1	99.6	F	E	F	F	E	94.5	101.6
NW Richmond Bch Rd/3rd Ave NW	B	A	A	C	D	14.5	80.9	B	B	A	C	D	15.8	82.9
N Richmond Bch Rd/Dayton Ave N	B	B	A	C		14.1	63.2	B	B	A	C		14.5	64.3
N 185th St/Fremont Ave N	D	C	C	E	E	43.8	86.2	D	C	D	E	E	47.7	88
N 185th St/Linden Ave N	B	A	A	D	D	11.6	58.9	B	A	A	D	D	11.3	60.2
N 185th St/Midvale Ave N	B	B	B	C	C	19.2	64.9	B	B	B	C	C	19.4	65.4
Aurora Ave N/N 205th St	F	F	F	F	E	81.5	113.6	F	F	F	F	E	82.2	113.9
Aurora Ave N/N 200th St	D	F	F	D	B	40.8	99.1	D	F	F	D	B	41.9	99.4
Aurora Ave N/N 192nd St	B	F	E	A	C	15.7	78.2	B	F	E	A	C	15.5	78.5
Aurora Ave N/N 185th St	E	F	F	D	E	65.4	103.7	E	F	F	D	E	69.2	105.5
Aurora Ave N/N 175th St	D	F	F	D	C	54	104.8	E	F	F	D	C	55.5	105.6
Midvale Ave N/N 175th St	B	A	A	D	D	10.5	65.6	A	A	A	D	D	9.6	65.7
Fremont Ave N/N 175th St	A	B	B	A	A	8.1	65.4	A	B	B	A	A	8.2	65.6
Arterial Route Analysis	Travel Time	Distance (mi)			Ave Speed	Arterial LOS	Travel Time	Distance (mi)			Ave Speed	Arterial LOS		
EB Richmond Bch Rd btwn 15th Ave NW/Dayton Ave N	261.6	1.4			19.6	C	260	1.4			19.7	C		
EB N 185th St btwn Dayton Ave N/Midvale Ave N	196.6	0.6			11.1	E	198.1	0.6			11	E		
WB N 185th St btwn Midvale Ave N/Fremont Ave N	249.7	0.4			6.3	F	264.9	0.4			6	F		
WB Richmond Bch Rd btwn Fremont Ave N/20th Ave NW	328.3	1.7			18.6	C	342.4	1.7			17.8	D		
NB Aurora Ave N btwn N 205th St/N 175th St	403	1.7			15.3	E	407.5	1.7			15.2	E		
SB Aurora Ave N btwn N 205th St/N 175th St	301.2	1.7			19.8	D	311.3	1.7			19.2	D		

Richmond Beach Rd - Point Wells Impact Analysis Model

Intersection Analysis	2025 Point Wells - 1286 trips							2025 Point Wells - 1350 trips						
	Overall LOS	Approach LOS				Ave Intersect Delay	Intersect Capacity Utilization	Overall LOS	Approach LOS				Ave Intersect Delay	Intersect Capacity Utilization
		EB	WB	NB	SB				EB	WB	NB	SB		
Richmond Beach Dr NW/NW 196th St	F		F	A	F	120.7	96	F		F	A	F	142	99.9
NW 196th St/24th Ave NW	F	F	F	B	B	130.8	60.2	F	F	F	B	B	154.5	62.9
NW 196th St/20th Ave NW	B	A	B	B	B	10.6	83.2	B	A	B	B	B	11	85
NW Richmond Bch Rd/15th Ave NW (w)	A	A	A		C	3	49.5	A	A	A		C	4.3	50.8
NW Richmond Bch Rd/15th Ave NW (e)	A	A	A	C		3.5	79.8	A	A	A	C		4.6	81.5
NW Richmond Bch Rd/8th Ave NW	F	E	F	F	E	97.6	102.4	F	E	F	F	F	97.3	103.6
NW Richmond Bch Rd/3rd Ave NW	B	B	A	C	D	16.6	83.7	B	B	B	C	D	15.8	84.8
N Richmond Bch Rd/Dayton Ave N	B	B	B	C		14.8	65	B	B	B	C		15	65.5
N 185th St/Fremont Ave N	D	C	D	E	E	49.3	88.7	D	C	C	E	F	49.8	89.8
N 185th St/Linden Ave N	B	A	A	D	D	10.8	60.8	B	A	A	D	D	11.1	61.7
N 185th St/Midvale Ave N	B	B	B	C	C	19.4	65.6	B	B	B	C	C	19.4	65.8
Aurora Ave N/N 205th St	F	F	F	F	E	82.6	114.1	F	F	F	F	E	82.9	114.2
Aurora Ave N/N 200th St	D	F	F	D	B	42.3	99.6	D	F	F	D	B	43	99.7
Aurora Ave N/N 192nd St	B	F	E	A	C	16.1	78.6	B	F	E	A	C	16	78.7
Aurora Ave N/N 185th St	E	F	F	D	E	71.6	106.3	E	F	F	D	E	71	107.2
Aurora Ave N/N 175th St	E	F	F	D	C	56.1	105.9	E	F	F	D	C	56.5	106.5
Midvale Ave N/N 175th St	A	A	A	D	D	9.6	65.8	A	A	A	D	D	9.6	65.9
Fremont Ave N/N 175th St	A	B	B	A	A	8.2	65.7	A	B	B	A	A	8.2	65.8
Arterial Route Analysis	Travel Time	Distance (mi)			Ave Speed	Arterial LOS	Travel Time	Distance (mi)			Ave Speed	Arterial LOS		
EB Richmond Bch Rd btwn 15th Ave NW/Dayton Ave N	261.5	1.4			19.6	C	259.4	1.4			19.7	C		
EB N 185th St btwn Dayton Ave N/Midvale Ave N	198.7	0.6			11	E	199.5	0.6			10.9	E		
WB N 185th St btwn Midvale Ave N/Fremont Ave N	270.9	0.4			5.8	F	267.9	0.4			5.9	F		
WB Richmond Bch Rd btwn Fremont Ave N/20th Ave NW	350.8	1.7			17.4	D	347.9	1.7			17.5	D		
NB Aurora Ave N btwn N 205th St/N 175th St	410.7	1.7			15.1	E	410.1	1.7			15.1	E		
SB Aurora Ave N btwn N 205th St/N 175th St	316.2	1.7			18.9	D	311.6	1.7			19.2	D		

**APPENDIX C**  
**Collision Reports**

## City of Shoreline - Intersection Collision Report

Reported Collisions from 1/1/2006 to 12/31/2008 sorted by Rate

Crash Rate per million entering vehicles per year

	Location	Signal	# of Crashes	# of Injuries	# of Fatal	Crash Rate	Injury Rate	Fatal Rate
1	3rd Ave NW & NW Richmond Beach Rd	y	19	11	0	0.81	0.47	0
2	10th Ave NE & NE 175th St	y	14	14	0	0.72	0.72	0
3	Meridian Ave N & N 155th St	y	15	7	0	0.70	0.33	0
4	25th Ave NE & NE 150th St		5	4	0	0.69	0.55	0
5	Linden Ave N & N 175th St		7	4	0	0.58	0.33	0
6	Linden Ave N & N 185th St	y	10	6	0	0.58	0.35	0
7	Greenwood Ave N & Carlyle Hall Rd N		5	0	0	0.58	0.00	0
8	15th Ave NE & NE Perkins Way	y	10	8	0	0.54	0.43	0
9	Fremont Ave N & N 200th St		5	0	0	0.50	0.00	0
10	Linden Ave N & N 160th St		5	2	0	0.46	0.18	0
11	Meridian Ave N & N 200th St	y	7	6	0	0.43	0.37	0
12	Midvale Ave N & N 185th St	y	6	4	0	0.42	0.28	0
13	Ashworth Ave N & N 185th St		6	8	0	0.42	0.55	0
14	5th Ave NE & NE 155th St	y	7	5	0	0.40	0.28	0
15	15th Ave NE & NE 155th St	y	8	6	0	0.36	0.27	0
16	Meridian Ave N & N 175th St	y	15	7	0	0.35	0.16	0
17	Fremont Ave N & N 185th St	y	8	5	0	0.34	0.21	0
18	5th Ave NE & NE 175th St	y	8	3	0	0.33	0.12	0
19	Meridian Ave N & N 185th St	y	8	3	0	0.33	0.12	0
20	15th Ave NE & NE 168th St		6	6	0	0.31	0.31	0
21	15th Ave NE & NE 150th St	y	6	6	0	0.31	0.31	0
22	19th Ave NE & Ballinger Way NE	y	9	6	0	0.28	0.19	0
23	15th Ave NE & NE 146th St		5	2	0	0.27	0.11	0
24	19th Ave NE & NE 205th St	y	5	1	0	0.24	0.05	0
25	Midvale Ave N & N 175th St	y	6	2	0	0.23	0.08	0
26	Westminster Wy N & N 155th St	y	5	3	0	0.23	0.14	0
27	Aurora Ave N & N 182nd St		8	4	0	0.19	0.10	0
28	Aurora Ave N & N 200th St	y	6	3	0	0.15	0.07	0
29	Aurora Ave N & N 165th St	y	6	1	0	0.14	0.02	0
30	Aurora Ave N & N 195th St		5	6	0	0.14	0.17	0
31	Aurora Ave N & N 192nd St	y	5	2	0	0.14	0.06	0
32	Aurora Ave N & N 185th St	y	7	3	0	0.14	0.06	0
33	Aurora Ave N & N 155th St	y	7	5	0	0.12	0.09	0
34	Aurora Ave N & N 160th St	y	5	5	0	0.11	0.11	0
35	Aurora Ave N & N 175th St	y	5	2	0	0.09	0.03	0

## City of Shoreline - Mid-Block Collision Report

Reported Collisions from 1/1/2006 to 12/31/2008 sorted by Rate

Crash Rate per million vehicle-miles per year

	<u>Location</u>	<u># of Crashes</u>	<u># of Injuries</u>	<u># of Fatal</u>	<u>Crash Rate</u>	<u>Injury Rate</u>	<u>Fatal Rate</u>
1	N 175th St from Linden Ave N to Aurora Ave N	14	7	0	35.06	17.53	0.00
2	Aurora Ave N from Westminster Way N to N 160th St	19	4	0	28.10	5.92	0.00
3	Meridian Ave N from N 175th St to N 176th St	9	9	0	22.49	22.49	0.00
4	N 167th St from Aurora Ave N to Stone Ave N	5	2	0	18.62	7.45	0.00
5	N 185th St from Aurora Ave N to Midvale Ave N	17	6	0	18.22	6.43	0.00
6	N 155th St from Aurora Ave N to Midvale Ave N	14	4	0	17.33	4.95	0.00
7	N 185th St from Meridian Ave N to Meridian Ct N	5	4	0	17.32	13.86	0.00
8	Aurora Ave N from N 184th St to N 185th St	18	8	1	12.45	5.53	0.69
9	3rd Ave NW from NW Richmond Beach Rd to NW 189th St	6	1	0	11.79	1.96	0.00
10	19th Ave NE from NE 199th St to Ballinger Way NE	7	3	0	10.63	4.56	0.00
11	Aurora Ave N from N 199th St to N 200th St	22	9	1	9.87	4.04	0.45
12	Meridian Ave N from N 203rd St to N 205th St	10	1	0	9.11	0.91	0.00
13	N 160th St from Linden Ave N to Aurora Ave N	10	3	0	8.81	2.64	0.00
14	15th Ave NE from NE 154th St to NE 155th St	7	4	0	7.73	4.42	0.00
15	5th Ave NE from NE 145th St to 145th St I-5 rp	5	1	0	7.29	1.46	0.00
16	15th Ave NE from NE 172nd St to NE 175th St	16	8	0	7.20	3.60	0.00
17	Aurora Ave N from N 175th St to Ronald PI N	54	21	0	6.98	2.71	0.00
18	Aurora Ave N from N 185th St to N 192nd St	33	20	0	6.98	4.23	0.00
19	15th Ave NE from NE 146th St to NE 147th St	7	2	0	6.78	1.94	0.00
20	N 175th St from Aurora Ave N to Ronald PI N	6	1	0	6.00	1.00	0.00
21	N 200th St from Aurora Ave N to Aurora Vill Mall N	8	7	0	5.94	5.20	0.00
22	Aurora Ave N from N 152nd St to N 155th St	37	16	0	5.80	2.51	0.00
23	Aurora Ave N from Ronald PI N to N 175th St	19	10	0	5.52	2.90	0.00
24	15th Ave NE from NE 175th St to NE 177th St	10	7	0	4.82	3.38	0.00

## City of Shoreline - Mid-Block Collision Report

Reported Collisions from 1/1/2006 to 12/31/2008 sorted by Rate

Crash Rate per million vehicle-miles per year

	<u>Location</u>	<u># of Crashes</u>	<u># of Injuries</u>	<u># of Fatal</u>	<u>Crash Rate</u>	<u>Injury Rate</u>	<u>Fatal Rate</u>
25	NE 175th St from 12th Ave NE to 15th Ave NE	9	7	0	4.42	3.44	0.00
26	Aurora Ave N from N 167th St to N 170th St	22	8	0	4.21	1.53	0.00
27	NW Richmond Beach Rd from 1st Ave NW to 2nd Ave NW	5	2	0	4.14	1.66	0.00
28	Aurora Ave N from N 198th St to N 199th St	8	6	0	3.66	2.74	0.00
29	Aurora Ave N from N 149th St to N 152nd St	20	14	0	3.61	2.53	0.00
30	Aurora Ave N from N 160th St to N 163rd St	18	6	0	3.47	1.16	0.00
31	19th Ave NE from Ballinger Way NE to NE 205th St	6	1	0	3.19	0.53	0.00
32	N 185th St from Linden Ave N to Aurora Ave N	6	2	0	3.19	1.06	0.00
33	N 175th St from Corliss Ave N to 175th St RAMP SB	6			3.17	0.00	0.00
34	Aurora Ave N from N 182nd St to N 184th St	14	10	0	3.15	2.25	0.00
35	N 175th St from Midvale Ave N to Ashworth Ave N	14	7	0	3.10	1.55	0.00
36	15th Ave NE from Forest Park Dr NE to NE 205th St	7	4	0	3.07	1.76	0.00
37	Aurora Ave N from Ronald PI N to N 182nd St	9	5	0	3.03	1.68	0.00
38	Aurora Ave N from N 145th St to N 149th St	21	4	0	3.01	0.57	0.00
39	NW Richmond Beach Rd from 12th Ave NW to 15th Ave NW	13	5	1	2.99	1.15	0.23
40	Ballinger Way NE from 19th Ave NE to NE 205th St	23	11	0	2.96	1.41	0.00
41	N 175th St from Wallingford Ave N to Meridian Ave N	9	3	0	2.94	0.98	0.00
42	N 175th St from Meridian Ave N to Corliss Ave N	17	4	0	2.90	0.68	0.00
43	Aurora Ave N from N 165th St to N 167th St	15	11	0	2.78	2.04	0.00
44	Aurora Ave N from Firlands Way N to N 198th St	8	7	0	2.76	2.42	0.00
45	Aurora Ave N from N 170th St to Ronald PI N	18	13	0	2.71	1.96	0.00
46	NW Richmond Beach Rd from 3rd Ave NW to 8th Ave NW	13	7	0	2.61	1.41	0.00
47	Aurora Ave N from N 192nd St to N 195th St	17	9	0	2.57	1.36	0.00
48	NE 175th St from 8th Ave NE to 10th Ave NE	5	1	0	2.46	0.49	0.00

## City of Shoreline - Mid-Block Collision Report

Reported Collisions from 1/1/2006 to 12/31/2008 sorted by Rate

Crash Rate per million vehicle-miles per year

	<u>Location</u>	<u># of Crashes</u>	<u># of Injuries</u>	<u># of Fatal</u>	<u>Crash Rate</u>	<u>Injury Rate</u>	<u>Fatal Rate</u>
49	Aurora Ave N from N 155th St to Westminster Way N	17	13	0	2.39	1.82	0.00
50	Ballinger Way NE from NE 195th St to 23rd Ave NE	11	3	0	2.11	0.58	0.00
51	NE 205th St from Ballinger Way NE to 19th Ave NE	6	4	0	1.99	1.33	0.00
52	Aurora Ave N from N 163rd St to N 165th St	10	3	0	1.93	0.58	0.00
53	Aurora Ave N from N 200th St to N 205th St	16	1	0	1.84	0.12	0.00
54	N Richmond Beach Rd from 1st Ave NW to Dayton Ave N	6	1	0	1.66	0.28	0.00

## **APPENDIX D**

### **Mitigation Planning level Cost Estimates**

**Point Wells Mitigation  
Planning Level Cost Estimates**

<u>Location</u>	<u>Description of Improvement</u>	<u>Estimate</u>
1 Richmond Beach Corridor Study	Safety, Efficiency, Multimodal Plan	\$200,000.00
2 NW 196th Street Richmond Beach Drive NW to 24th Ave NW	Sidewalk on both sides of roadway	\$2,053,773.00
3 NW 196th Street 24th Avenue NW to 20th Avenue NW	Sidewalk on the east side of roadway	\$300,000.00
4 NW 195th Street & 20th Avenue NW	Traffic Signal with additional EB-WB left turn lanes	\$1,330,973.00
5 NW Richmond Beach Road NW & 15th Avenue NW	Traffic Signal and additional EB-WB left turn lanes	\$2,208,156.00
6 NW Richmond Beach Road NW & 3rd Avenue NW	Widen & replace traffic signal for EB-WB left turns	\$2,316,775.00
7a Richmond Beach Drive NW NW 196th Street to NW 205th Street	Sidewalk on the east side of roadway	\$1,557,414.00
7b Richmond Beach Drive NW NW 196th Street to NW 205th Street	Sidewalk & Street Improvements on the west side of roadway	\$16,683,236.00
8 Richmond Beach Road NW & 8th Avenue NW	Intersection Safety and Capacity Improvements	\$2,131,458.00
9 Richmond Beach Road NW & 24th Avenue NW	Intersection Improvements	\$1,527,870.00
10 NW 196th Street & 24th Avenue NW	Intersection Improvements	<u>\$1,882,294.00</u>
	<b>TOTAL</b>	<b>\$32,191,949.00</b>