

**Kitsap Transit**

**SR 305 Corridor Enhanced Transit**

**Alternatives Analysis Technical Study**

**Draft Report**

---

**November 2010**

***Nelson | Nygaard***  
consulting associates



WANNAMAHER CONSULTING INC.  
ENVIRONMENT • COMMUNITY • PEOPLE



**fp**  
FEHR & PEERS  
TRANSPORTATION CONSULTANTS





## Table of Contents

	Page
<b>1. Executive Summary .....</b>	<b>1</b>
<b>2. Study Overview .....</b>	<b>3</b>
2.1. Study Guidance and Participation.....	3
2.2. Planning Context and History .....	4
2.3. Corridor Conditions.....	11
2.4. Study Area Problem Statement .....	12
2.5. Study Area Purpose and Need Statement .....	12
2.6. Additional Data Collection.....	13
<b>3. Mode and Alignments Alternatives Considered .....</b>	<b>15</b>
3.1. Mode Alternatives.....	15
3.2. Alignment Alternatives .....	15
3.2.1. Segment A1 — Bainbridge Island Ferry Terminal to High School Road.....	18
3.2.2. Segment A2 – High School Road to Suquamish Way .....	19
3.2.3. Segment B – Suquamish Way to Hostmark Street .....	19
3.2.4. Segment C – Hostmark Street to Bond Road .....	19
3.2.5. Segment D –Bond Road to SR 3.....	19
<b>4. Screening and Evaluation Process.....</b>	<b>21</b>
4.1. Tier I Screening Criteria and Results .....	21
4.2. Tier II Screening Criteria and Results .....	22
4.2.1. Alternatives Removed from Further Study .....	29
4.2.2. Mode Alternatives Removed from Further Study .....	29
4.2.3. Alignment Alternatives Removed from Further Study .....	29
4.3. Alternatives Advanced for Further Analysis .....	30
4.3.1. Mode Alternatives Advanced to Tier III Evaluation.....	30
4.3.2. Alignment Alternatives Advanced to Tier III Evaluation.....	30
4.3.3. Identification of Additional Alternatives.....	30
<b>5. Definition of Alternatives.....</b>	<b>31</b>
5.1. Alternative 1: No Action .....	31
5.1.1. Overview .....	31
5.1.2. Physical Characteristics .....	32
5.1.3. Operating Characteristics .....	36
5.1.4. Capital Improvements.....	41
5.1.5. Operating Costs.....	41
5.2. Common Features of the Bus Rapid Transit Alternatives.....	42
5.2.1. Alignment.....	42
5.2.2. Station Locations, Characteristics, Costs .....	42
5.2.3. Vehicle Characteristics .....	47
5.2.4. Future Park & Ride Locations and Capacity .....	50
5.2.5. Storage and Maintenance Requirements.....	51
5.2.6. BRT Operating Plan .....	51
5.2.7. Operating Costs.....	54
5.2.8. Common Capital Costs of BRT Alternatives .....	54
5.3. Alternative 2: BRT with Exclusive Reversible Center Lane .....	56
5.3.1. Overview.....	56
5.3.2. Physical Characteristics .....	57

5.3.3.	Operating Characteristics .....	60
5.3.4.	Operating Costs.....	61
5.4.	Alternative 3: BRT with Select Intersection Improvements .....	62
5.4.1.	Overview.....	62
5.4.2.	Physical Characteristics .....	62
5.4.3.	Operating Characteristics .....	65
5.4.4.	Capital Costs .....	65
5.4.5.	Operating Costs.....	66
5.5.	Alternative 4: BRT with Dedicated Northbound Transit (HOV) Lane .....	66
5.5.1.	Overview.....	66
5.5.2.	Physical Characteristics .....	67
5.5.3.	Operating Characteristics .....	70
5.5.4.	Capital Costs .....	70
5.5.5.	Operating Costs.....	71
5.6.	Alternative 5: BRT with Agate Pass Bridge Access Improvements .....	72
5.6.1.	Overview.....	72
5.6.2.	Physical Characteristics .....	72
5.6.3.	Operating Characteristics .....	75
5.6.4.	Capital Costs .....	75
5.6.5.	Operating Costs.....	76
<b>6.</b>	<b>Tier III Evaluation Criteria .....</b>	<b>77</b>
6.1.	Evaluation Tests.....	77
<b>7.</b>	<b>Alternatives Evaluation .....</b>	<b>83</b>
7.1.	Mobility Criteria.....	83
7.2.	Reliability Criteria.....	86
7.3.	Safety .....	87
7.4.	Costs .....	88

## Appendices

**Appendix A Revised Peak Hour Travel Conditions**

**Appendix B Stakeholder and Public Involvement Results and Comment Summaries**

**Appendix C Traffic Data Collection**

**Appendix D Fall 2008 Ridecheck Results**

**Appendix E Revised Transit and Park & Ride Demand**

## Table of Figures

	Page
Figure 2-1 SR 305 Transit Study Area .....	5
Figure 3-1 SR 305 Alignment Alternatives .....	17
Figure 4-1 Tier I Screening Criteria and Results .....	22
Figure 4-2 Tier II Screening Criteria.....	24
Figure 4-3 Tier II Screening Results .....	25

**SR 305 Corridor Enhanced Transit Project**

*DRAFT Alternatives Analysis Technical Study Report*

KITSAP TRANSIT

Figure 5-1 No Action Alternative Corridor Overview ..... 33

Figure 5-2 Typical No Action Cross Section..... 34

Figure 5-3 North Kitsap Park & Ride Capacity and Occupancy (August 2006)..... 36

Figure 5-4 Service Characteristics for Planned Study Area Transit Service ..... 38

Figure 5-5 Existing Study Area Transit Services ..... 40

Figure 5-6 Stop Locations for All BRT Alternatives ..... 43

Figure 5-7 BRT Station Locations ..... 44

Figure 5-8 Typical BRT Conceptual Station Cross-Section for Side Platforms ..... 47

Figure 5-9 BRT Vehicle Characteristics ..... 49

Figure 5-10 Park & Ride Demand (2030)..... 50

Figure 5-11 BRT Operating Plan Characteristics ..... 52

Figure 5-12 BRT Operating Concept ..... 53

Figure 5-13 Operating Costs..... 54

Figure 5-14 Common BRT Capital Cost Estimates (\$2010) ..... 56

Figure 5-15 Reversible Center Lane Alternative Corridor Overview ..... 59

Figure 5-16 Typical Alternative 2 Cross Section ..... 60

Figure 5-17 Typical BRT Conceptual Station Cross-Section for Center Lane Operation ..... 60

Figure 5-18 Alternative 2 Capital Cost Estimates (\$2010)..... 61

Figure 5-19 Select Intersection Improvements Alternative Corridor Overview..... 64

Figure 5-20 Typical Alternative 3 Cross Section ..... 65

Figure 5-21 Alternative 3 Capital Cost Estimates (\$2010)..... 65

Figure 5-22 Northbound Transit Lane Alternative Corridor Overview ..... 69

Figure 5-23 Typical Alternative 4 Cross Section ..... 70

Figure 5-24 Alternative 4 Capital Cost Estimates (\$2010)..... 70

Figure 5-25 Agate Pass Bridge Access Improvements Alternative Corridor Overview ..... 74

Figure 5-26 Typical Alternative 5 Cross Section ..... 75

Figure 5-27 Alternative 5 Capital Cost Estimates (\$2010)..... 76

Figure 6-1 Tier III Evaluation Criteria ..... 78

Figure 7-1 Transit Travel Time - Winslow Ferry Terminal to Suquamish Way NE ..... 83

Figure 7-2 Automobile Travel Time - Winslow Ferry Terminal to Suquamish Way NE ..... 84

Figure 7-3 Impact on Traffic Circulation in the SR 305 Corridor ..... 84

Figure 7-4 2030 PM Peak Hour Intersection Level of Service and Delay (Seconds) ..... 85

Figure 7-5 Miles of Dedicated Lanes ..... 86

Figure 7-6 Number of Signalized Intersections with TSP ..... 86

Figure 7-7 Impact on the Safety of Autos, Pedestrians, Bikes and Transit ..... 87

Figure 7-8 Cost Comparison ..... 88

