

West Seattle/Duwamish

Level 2 alternatives

Evaluation Measures	ST3 Representative Project	Pigeon Ridge/West Seattle Tunnel	Oregon Street/Alaska Junction/Elevated	Golf Course/Alaska Junction/Tunnel	Oregon Street/Alaska Junction/Tunnel
<i>Provide high quality rapid, reliable, and efficient peak and off-peak light rail transit service to communities in the project corridors defined in ST3.</i>					
Potential Service Interruptions	Higher	Higher	Higher	Higher	Higher
Travel Times (minutes)	7 to 8	7 to 8	7 to 8	7 to 8	7 to 8
<i>Improve regional mobility by increasing connectivity and capacity through downtown Seattle to meet projected transit demand.</i>					
Network Integration	Medium	Medium	Medium	Medium	Medium
Passenger Carrying Capacity	Medium	Medium	Medium	Medium	Medium
Ridership Potential (2040 pop/emp) ⁽¹⁾	11,200	12,500	12,000	10,700	12,500
<i>Connect regional centers as described in adopted regional and local land use, transportation, and economic development plans and Sound Transit's Long-Range Plan.</i>					
Regional Growth Centers Served	N/A ⁽³⁾	N/A	N/A	N/A	N/A
Manufacturing/Industrial Centers Served	1	1	1	1	1
Accommodates Future LRT Extension	Lower	Medium	Lower	Higher	Medium
<i>Implement a system that is consistent with the ST3 Plan that established transit mode, corridor, and station locations and that is technically feasible and financially sustainable to build, operate, and maintain.</i>					
Mode, Route and Stations per ST3	Higher	Higher	Higher	Medium	Higher
Potential ST3 Schedule Effects	Higher	Lower	Higher	Lower	Lower
Potential ST3 Operating Plan Effects	Higher	Higher	Higher	Higher	Higher
Engineering Constraints	Medium	Lower	Medium	Medium	Higher
Constructability Issues	Lower	Lower	Lower	Lower	Medium
Operational Constraints	Medium	Higher	Medium	Medium	Medium
Conceptual Capital Cost Comparison	-	\$1,200M increase	Similar	\$700M increase	\$500M increase
Operating Cost Impacts	Higher	Medium	Higher	Medium	Medium
<i>Expand mobility for the corridor and region's residents, which include transit dependent, low income, and minority populations.</i>					
Opportunities for Low-Income/Minority (activity nodes/subsized rental units) ⁽¹⁾	Medium	Medium	Medium	Medium	Medium
	15%	13%	14%	15%	13%
Low-Income Population ^(1/2)	25% / 21%	24% / 21%	23% / 21%	26% / 21%	23% / 21%
Minority Population ^(1/2)	22% / 26%	23% / 26%	21% / 26%	23% / 26%	21% / 26%
Youth Population ^(1/2)	13% / 17%	14% / 17%	14% / 17%	13% / 17%	14% / 17%
Elderly Population ^(1/2)	16% / 13%	15% / 13%	15% / 13%	16% / 13%	15% / 13%
Limited English Proficiency Population ^(1/2)	3% / 4%	3% / 4%	3% / 4%	3% / 4%	3% / 4%
Disabled Population ^(1/2)	9% / 9%	9% / 9%	9% / 9%	9% / 9%	9% / 9%

(1) Within station walksheds

(2) Within 15 minute ride on connecting high frequency transit

(3) NA = Measure not applicable to this segment

Lower Performing

Medium
Performing

Higher Performing

West Seattle/Duwamish

Level 2 alternatives evaluation – Part 1 of 2

Evaluation Measures	ST3 Representative Project	Pigeon Ridge/West Seattle Tunnel	Oregon Street/Alaska Junction/Elevated	Golf Course/Alaska Junction/Tunnel	Oregon Street/Alaska Junction/Tunnel
<i>Provide high quality rapid, reliable, and efficient peak and off-peak light rail transit service to communities in the project corridors defined in ST3.</i>					
Potential Service Interruptions	Higher	Higher	Higher	Higher	Higher
Travel Times (minutes)	7 to 8	7 to 8	7 to 8	7 to 8	7 to 8
<i>Improve regional mobility by increasing connectivity and capacity through downtown Seattle to meet projected transit demand.</i>					
Network Integration	Medium	Medium	Medium	Medium	Medium
Passenger Carrying Capacity	Complicates future LRT extension	Medium	Complicates future LRT extension	Best accommodates future LRT extension	Medium
Ridership Potential (2040 pop/emp) ⁽¹⁾	12,500	12,500	12,500	12,500	12,500
<i>Connect regional centers as described in adopted transportation, and economic development strategies.</i>					
Regional Growth Centers Served	N/A ⁽³⁾	N/A	N/A	N/A	N/A
Manufacturing/Industrial Centers Served	1	1	1	1	1
Accommodates Future LRT Extension	Lower	Medium	Lower	Higher	Medium
<i>Implement a system that is consistent with the ST3 Plan that established transit mode, corridor, and station locations and that is technically feasible and financially sustainable to build, operate, and maintain.</i>					
Mode, Route and Stations per ST3	Higher	Higher	Higher	Medium	Higher
Potential ST3 Schedule Effects	Higher	Lower	Higher	Lower	Lower
Potential ST3 Operating Plan Effects	Higher	Higher	Higher	Higher	Higher
Engineering Constraints	Medium	Lower	Medium	Medium	Higher
Constructability Issues	Lower	Lower	Lower	Lower	Medium
Operational Constraints	Medium	Higher	Medium	Medium	Medium
Conceptual Capital Cost Comparison	-	\$1,200M increase	Similar	\$700M increase	\$500M increase
Operating Cost Impacts	Higher	Medium	Higher	Medium	Medium
<i>Expand mobility for the corridor and region's residents, which include transit dependent, low income, and minority populations.</i>					
Opportunities for Low-Income/Minority (activity nodes/subsized rental units) ⁽¹⁾	Medium	Medium	Medium	Medium	Medium
	15%	13%	14%	15%	13%
Low-Income Population ^(1/2)	25% / 21%	24% / 21%	23% / 21%	26% / 21%	23% / 21%
Minority Population ^(1/2)	22% / 26%	23% / 26%	21% / 26%	23% / 26%	21% / 26%
Youth Population ^(1/2)	13% / 17%	14% / 17%	14% / 17%	13% / 17%	14% / 17%
Elderly Population ^(1/2)	16% / 13%	15% / 13%	15% / 13%	16% / 13%	15% / 13%
Limited English Proficiency Population ^(1/2)	3% / 4%	3% / 4%	3% / 4%	3% / 4%	3% / 4%
Disabled Population ^(1/2)	9% / 9%	9% / 9%	9% / 9%	9% / 9%	9% / 9%

(1) Within station walksheds

(2) Within 15 minute ride on connecting high frequency transit

(3) NA = Measure not applicable to this segment

Lower Performing

Medium
Performing

Higher Performing

West Seattle/Duwamish

Level 2 alternatives evaluation – Accommodates Future LRT Extension



= Key Differentiators

Evaluation Measures	ST3 Representative Project	Pigeon Ridge/West Seattle Tunnel	Oregon Street/Alaska Junction/Elevated	Golf Course/Alaska Junction/Tunnel	Oregon Street/Alaska Junction/Tunnel
<i>Provide high quality rapid, reliable, and efficient peak and off-peak light rail transit service to communities in the project corridors defined in ST3.</i>					
Potential Service Interruptions	Higher	Higher	Higher	Higher	Higher
Travel Times (minutes)	7 to 8	7 to 8	7 to 8	7 to 8	7 to 8
<i>Improve regional mobility by increasing connectivity and capacity through downtown Seattle to meet projected transit demand.</i>					
Network Integration	Medium	Medium	Medium	Medium	Medium
Passenger Carrying Capacity	Medium	Medium	Medium	Medium	Medium
Ridership Potential (2040 pop/emp) ⁽¹⁾	11,200	12,500	12,000	10,700	12,500
<i>Connect regional centers as described in adopted regional and local land use, transportation, and economic development plans and that is consistent with the ST3 Plan's Long-Range Plan.</i>					
Regional Growth Centers Served	N/A ⁽³⁾	N/A	N/A	N/A	N/A
Manufacturing/Industrial Centers Served	1	1	1	1	1
Accommodates Future LRT Extension	Lower	Medium	Lower	Higher	Medium
<i>Implement a system that is consistent with the ST3 Plan that established transit mode, corridor, and station locations and that is technically, operationally, and financially sustainable to build, operate, and maintain.</i>					
Mode, Route and Stations per ST3	Higher	Higher	Higher	Medium	Higher
Potential ST3 Schedule Effects	Higher	Lower	Higher	Lower	Lower
Potential ST3 Operating Plan Effects	Higher	Higher	Higher	Higher	Higher
Engineering Constraints	Medium	Lower	Medium	Medium	Higher
Constructability Issues	Lower	Lower	Lower	Lower	Medium
Operational Constraints	Medium	Higher	Medium	Medium	Medium
Conceptual Capital Cost Comparison	-	\$1,200M increase	Similar	\$700M increase	\$500M increase
Operating Cost Impacts	Higher	Medium	Higher	Medium	Medium
<i>Expand mobility for the corridor and region's residents, which include transit dependent, low income, and minority populations.</i>					
Opportunities for Low-Income/Minority (activity nodes/subsized rental units) ⁽¹⁾	Medium	Medium	Medium	Medium	Medium
	15%	13%	14%	15%	13%
Low-Income Population ^(1/2)	25% / 21%	24% / 21%	23% / 21%	26% / 21%	23% / 21%
Minority Population ^(1/2)	22% / 26%	23% / 26%	21% / 26%	23% / 26%	21% / 26%
Youth Population ^(1/2)	13% / 17%	14% / 17%	14% / 17%	13% / 17%	14% / 17%
Elderly Population ^(1/2)	16% / 13%	15% / 13%	15% / 13%	16% / 13%	15% / 13%
Limited English Proficiency Population ^(1/2)	3% / 4%	3% / 4%	3% / 4%	3% / 4%	3% / 4%
Disabled Population ^(1/2)	9% / 9%	9% / 9%	9% / 9%	9% / 9%	9% / 9%

Tunnel options could affect schedule

- (1) Within station walksheds
(2) Within 15 minute ride on connecting high frequency transit
(3) NA = Measure not applicable to this segment

Lower Performing

Medium Performing

Higher Performing

West Seattle/Duwamish

Level 2 alternatives evaluation – Potential ST3 Schedule Effects



= Key Differentiators

Evaluation Measures	ST3 Representative Project	Pigeon Ridge/West Seattle Tunnel	Oregon Street/Alaska Junction/Elevated	Golf Course/Alaska Junction/Tunnel	Oregon Street/Alaska Junction/Tunnel
<i>Provide high quality rapid, reliable, and efficient peak and off-peak light rail transit service to communities in the project corridors defined in ST3.</i>					
Potential Service Interruptions	Higher	Higher	Higher	Higher	Higher
Travel Times (minutes)	7 to 8	7 to 8	7 to 8	7 to 8	7 to 8
<i>Improve regional mobility by increasing connectivity and capacity through downtown Seattle to meet anticipated transit demand.</i>					
Network Integration	Medium	Medium	Medium	Medium	Medium
Passenger Carrying Capacity	Medium	Medium	Medium	Medium	Medium
Ridership Potential (2040 pop/emp) ⁽¹⁾	11,200	11,200	12,000	10,700	11,200
<i>Connect regional centers as described in adopted regional and Sound Transit's Long-Range Plan.</i>					
Regional Growth Centers Served	N/A	N/A	N/A	N/A	N/A
Manufacturing/Industrial Centers Served	1	1	1	1	1
Accommodates Future LRT Extension	Lower	Medium	Lower	Higher	Higher
<i>Implement a system that is consistent with the ST3 Plan that established transit mode, corridor, and station locations and that is technically feasible and financially sustainable to build, operate, and maintain.</i>					
Mode, Route and Stations per ST3	Higher	Higher	Higher	Medium	Higher
Potential ST3 Schedule Effects	Higher	Lower	Higher	Lower	Lower
Potential ST3 Operating Plan Effects	Higher	Higher	Higher	Higher	Higher
Engineering Constraints	Medium	Lower	Medium	Medium	Higher
Constructability Issues	Lower	Lower	Lower	Lower	Medium
Operational Constraints	Medium	Higher	Medium	Medium	Medium
Conceptual Capital Cost Comparison	-	\$1,200M increase	Similar	\$700M increase	\$500M increase
Operating Cost Impacts	Higher	Medium	Higher	Medium	Medium
<i>Expand mobility for the corridor and region's residents, which include transit dependent, low income, and minority populations.</i>					
Opportunities for Low-Income/Minority (activity nodes/subsized rental units) ⁽¹⁾	Medium	Medium	Medium	Medium	Medium
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Minority Population ^(1/2)	22% / 26%	23% / 26%	21% / 26%	23% / 26%	21% / 26%
Youth Population ^(1/2)	13% / 17%	14% / 17%	14% / 17%	13% / 17%	14% / 17%
Elderly Population ^(1/2)	16% / 13%	15% / 13%	15% / 13%	16% / 13%	15% / 13%
Limited English Proficiency Population ^(1/2)	3% / 4%	3% / 4%	3% / 4%	3% / 4%	3% / 4%
Disabled Population ^(1/2)	9% / 9%	9% / 9%	9% / 9%	9% / 9%	9% / 9%

Most engineering constraints (tunnel through unstable slopes, widest water crossing, wide Union Pacific Argo railyard crossing, high voltage lines, etc.)

Fewer engineering constraints (avoids Pigeon Point steep slope)

- (1) Within station walksheds
(2) Within 15 minute ride on connecting high frequency transit
(3) NA = Measure not applicable to this segment

Lower Performing

Medium Performing

Higher Performing

West Seattle/Duwamish

Level 2 alternatives evaluation – Engineering Constraints



= Key Differentiators

Evaluation Measures	ST3 Representative Project	Pigeon Ridge/West Seattle Tunnel	Oregon Street/Alaska Junction/Elevated	Golf Course/Alaska Junction/Tunnel	Oregon Street/Alaska Junction/Tunnel
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Potential Service Interruptions	Higher	Higher	Higher	Higher	Higher
Travel Times (minutes)	7 to 8	7 to 8	7 to 8	7 to 8	7 to 8
<i>Improve regional mobility by increasing connectivity and capacity through downtown Seattle to meet projected transit demand.</i>					
Network Integration	Medium	Medium	Medium	Medium	Medium
Passenger Carrying Capacity	Medium	Medium	Medium	Medium	Medium
Ridership Potential (2040 pop/emp) ⁽¹⁾	11,200	12,500	12,000	10,700	12,500
<i>Connect regional centers as described in adopted regional and local land use, transportation, and economic development plans and Sound Transit's Long-Range Plan.</i>					
Regional Growth Centers Served	N/A ⁽³⁾	N/A	N/A	N/A	N/A
Manufacturing/Industrial Centers Served	1	1	1	1	1
Accommodates Future LRT Extension	Lower	Medium	Lower	Higher	Medium
<i>Implement a system that is consistent with the ST3 Plan that established transit mode, corridor, and station locations and that is technically feasible and financially sustainable to build, operate, and maintain.</i>					
Mode, Route and Stations per ST3	Higher	Higher			Higher
Potential ST3 Schedule Effects	Higher	Lower			Lower
Potential ST3 Operating Plan Effects	Higher	Higher			Higher
Engineering Constraints	Medium	Lower	Medium	Medium	Higher
Constructability Issues	Lower	Lower	Lower	Lower	Medium
Operational Constraints	Medium	Higher	Medium	Medium	Medium
Conceptual Capital Cost Comparison	-	\$1,200M increase	Similar	\$700M increase	\$500M increase
Operating Cost Impacts	Higher	Medium	Higher	Medium	Medium
<i>Expand mobility for the corridor and region's residents, which include transit dependent, low income, and minority populations.</i>					
Opportunities for Low-Income/Minority (activity nodes/subsized rental units) ⁽¹⁾	Medium	Medium	Medium	Medium	Medium
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Minority Population ^(1/2)	22% / 26%	23% / 26%	21% / 26%	23% / 26%	21% / 26%
Youth Population ^(1/2)	13% / 17%	14% / 17%	14% / 17%	13% / 17%	14% / 17%
Elderly Population ^(1/2)	16% / 13%	15% / 13%	15% / 13%	16% / 13%	15% / 13%
Limited English Proficiency Population ^(1/2)	3% / 4%	3% / 4%	3% / 4%	3% / 4%	3% / 4%
Disabled Population ^(1/2)	9% / 9%	9% / 9%	9% / 9%	9% / 9%	9% / 9%

Higher cost alternatives;
requires 3rd Party funding

(1) Within station walksheds
(2) Within 15 minute ride on connecting high frequency transit
(3) NA = Measure not applicable to this segment

Lower Performing

Medium Performing

Higher Performing

Evaluation Measures	ST3 Representative Project	Pigeon Ridge/West Seattle Tunnel	Oregon Street/Alaska Junction/ Elevated	Golf Course/Alaska Junction/ Tunnel	Oregon Street/Alaska Junction/ Tunnel
<i>Encourage equitable and sustainable urban growth in station areas through support of transit-oriented development, station access, and modal integration in a manner that is consistent with local land use plans and policies.</i>					
Compatibility with Urban Centers/Villages ⁽¹⁾	Medium	Medium	Medium	Medium	Lower
Station Land Use Plan Consistency	Higher	Higher	Higher	Higher	Higher
Activity Nodes Served ⁽¹⁾	40	41	42	38	42
Passenger Transfers	Medium	Higher	Medium	Medium	Higher
Bus/Rail and Rail/Rail Integration ⁽¹⁾	Medium	Higher	Medium	Medium	Higher
Bicycle Accessibility ⁽¹⁾	Higher	Higher	Higher	Higher	Higher
Pedestrian/Limited Mobility Accessibility ⁽¹⁾	Medium	Higher	Higher	Higher	Higher
Development Potential ⁽¹⁾	Medium	Medium	Medium	Higher	Medium
Equitable Development Opportunities	Lower	Lower	Medium	Medium	Higher
<i>Preserve and promote a healthy environment and economy by minimizing adverse impacts on the natural, built and social environments through sustainable practices.</i>					
Historic Properties/Landmarks ⁽²⁾	1	1	1	1	2
Potential for effects to Archaeological Resources ⁽¹⁾	Lower	Lower	Lower	Lower	Lower
Parks and Recreational Resources Effects (acres)	1.5	3.5	1.5	2.8	0.6
Water Resource Effects (acres)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fish and Wildlife Habitat Effects (acres)	3.7	5.3	3.7	3.7	1.9
Hazardous Materials Sites ⁽¹⁾	11	7	8	14	14
Visual Effects	Lower	Medium	Lower	Medium	Medium
Noise and Vibration Sensitive Receivers ⁽¹⁾	Lower	Lower	Lower	Medium	Lower
Potentially Affected Properties	Higher	Higher	Lower	Higher	Lower
Residential Unit Displacements	Medium	Lower	Lower	Higher	Lower
Square Feet of Business Displacements	Higher	Medium	Lower	Higher	Medium
Construction Impacts	Lower	Higher	Lower	Medium	Medium
Burden on Low-Income/Minority	Higher	Higher	Higher	Higher	Higher
Traffic Circulation and Access Effects	Lower	Higher	Medium	Higher	Medium
Effects on Existing Transportation Facilities	Lower	Higher	Medium	Medium	Higher
Effects on Freight Movement	Medium	Medium	Medium	Medium	Lower
Business and Commerce Effects	Medium	Higher	Lower	Medium	Medium

(1) Within station walksheds and/or defined buffer of alignment

(2) On properties that overlap with the project footprint

Lower Performing

Medium
Performing

Higher Performing

West Seattle/Duwamish

Level 2 alternatives evaluation – *Part 2 of 2*

Evaluation Measures	ST3 Representative Project	Pigeon Ridge/West Seattle Tunnel	Oregon Street/Alaska Junction/ Elevated	Golf Course/Alaska Junction/ Tunnel	Oregon Street/Alaska Junction/ Tunnel
Encourage equitable and sustainable urban growth in station areas through support of transit-oriented development, station access, and modal integration in a manner that is consistent with local land use plans and policies.					
Compatibility with Urban Centers/Villages ⁽¹⁾	Medium	Medium	Medium	Medium	Lower
Station Land Use Plan Consistency	Higher	Higher	Higher	Higher	Higher
Activity Nodes Served ⁽¹⁾	40	41	42	38	42
Passenger Transfers	Medium	Higher	Medium	Medium	Higher
Bus/Rail and Rail/Rail Integration ⁽¹⁾	Medium	Higher	Medium	Medium	Higher
Bicycle Accessibility ⁽¹⁾	Higher	Higher	Higher	Higher	Higher
Pedestrian/Limited Mobility Accessibility ⁽¹⁾	Medium	Higher	Higher	Higher	Higher
Development Potential ⁽¹⁾	Medium	Most effects to Duwamish Greenbelt	Medium	Higher	Medium
Equitable Development Opportunities	Lower		Medium	Medium	Higher
Preserve and promote a healthy environment and economy by minimizing adverse effects on natural resources and social environments through sustainable practices.					
Historic Properties/Landmarks ⁽²⁾	1	1	1	1	2
Potential for effects to Archaeological Resources ⁽¹⁾	Lower	Lower	Lower	Lower	Lower
Parks and Recreational Resources Effects (acres)	1.5	3.5	1.5	2.8	0.6
Water Resource Effects (acres)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fish and Wildlife Habitat Effects (acres)	3.7	5.3	3.7	3.7	1.9
Hazardous Materials Sites ⁽¹⁾	11	7	8	14	14
Visual Effects	Lower	Medium	Lower	Medium	Medium
Noise and Vibration Sensitive Receivers ⁽¹⁾	Lower	Lower	Lower	Medium	Lower
Potentially Affected Properties	Higher	Higher	Lower	Higher	Lower
Residential Unit Displacements	Medium	Lower	Lower	Higher	Lower
Square Feet of Business Displacements	Higher	Medium	Lower	Higher	Medium
Construction Impacts	Lower	Higher	Lower	Medium	Medium
Burden on Low-Income/Minority	Higher	Higher	Higher	Higher	Higher
Traffic Circulation and Access Effects	Lower	Higher	Medium	Higher	Medium
Effects on Existing Transportation Facilities	Lower	Higher	Medium	Medium	Higher
Effects on Freight Movement	Medium	Medium	Medium	Medium	Lower
Business and Commerce Effects	Medium	Higher	Lower	Medium	Medium

(1) Within station walksheds and/or defined buffer of alignment

(2) On properties that overlap with the project footprint

Lower Performing

Medium Performing

Higher Performing

West Seattle/Duwamish

Level 2 alternatives evaluation – Fish and Wildlife Habitat Effects



= Key Differentiators

Evaluation Measures	ST3 Representative Project	Pigeon Ridge/West Seattle Tunnel	Oregon Street/Alaska Junction/ Elevated	Golf Course/Alaska Junction/ Tunnel	Oregon Street/Alaska Junction/ Tunnel
<i>Encourage equitable and sustainable urban growth in station areas through support of transit-oriented development, station access, and modal integration in a manner that is consistent with local land use plans and policies.</i>					
Compatibility with Urban Centers/Villages ⁽¹⁾	Medium	Medium	Medium	Medium	Lower
Station Land Use Plan Consistency	Higher	Higher	Higher	Higher	Higher
Activity Nodes Served ⁽¹⁾	40	41	42	38	42
Passenger Transfers	Medium	Higher	Medium	Medium	Higher
Bus/Rail and Rail/Rail Integration ⁽¹⁾	Medium	Higher	Medium	Medium	Higher
Bicycle Accessibility ⁽¹⁾	Higher	Higher	Higher	Higher	Higher
Pedestrian/Limited Mobility Accessibility ⁽¹⁾	Medium	Higher	Higher	Higher	Higher
Development Potential ⁽¹⁾	Medium	Medium	Medium	Higher	Medium
Equitable Development Opportunities	Lower	Lower		Medium	
<i>Preserve and promote a healthy environment and economy by minimizing adverse impacts on the natural, built and cultural resources through sustainable practices</i>					
Historic Properties/Landmarks ⁽²⁾	1	Low guideway along Genesee	High guideway along Genesee; elevated along Oregon and 44th	Low guideway along Genesee	High guideway along Genesee; elevated Avalon Station
Potential for effects to Archaeological Resources ⁽¹⁾	Lower				
Parks and Recreational Resources Effects (acres)	1.5				
Water Resource Effects (acres)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fish and Wildlife Habitat Effects (acres)	3.7	5.3	3.7	3.7	1.9
Hazardous Materials Sites ⁽¹⁾	11	7	8	14	14
Visual Effects	Lower	Medium	Lower	Medium	Medium
Noise and Vibration Sensitive Receivers ⁽¹⁾	Lower	Lower	Lower	Medium	Lower
Potentially Affected Properties	Higher	Higher	Lower	Higher	Lower
Residential Unit Displacements	Medium	Lower	Lower	Higher	Lower
Square Feet of Business Displacements	Higher	Medium	Lower	Higher	Medium
Construction Impacts	Lower	Higher	Lower	Medium	Medium
Burden on Low-Income/Minority	Higher	Higher	Higher	Higher	Higher
Traffic Circulation and Access Effects	Lower	Higher	Medium	Higher	Medium
Effects on Existing Transportation Facilities	Lower	Higher	Medium	Medium	Higher
Effects on Freight Movement	Medium	Medium	Medium	Medium	Lower
Business and Commerce Effects	Medium	Higher	Lower	Medium	Medium

(1) Within station walksheds and/or defined buffer of alignment

(2) On properties that overlap with the project footprint

Lower Performing

Medium Performing

Higher Performing

West Seattle/Duwamish

Level 2 alternatives evaluation – Visual Effects



= Key Differentiators

Evaluation Measures	ST3 Representative Project	Pigeon Ridge/West Seattle Tunnel	Oregon Street/Alaska Junction/ Elevated	Golf Course/Alaska Junction/ Tunnel	Oregon Street/Alaska Junction/ Tunnel
<i>Encourage equitable and sustainable urban growth in station areas through support of transit-oriented development, station access, and modal integration in a manner that is consistent with local land use plans and policies.</i>					
Compatibility with Urban Centers/Villages ⁽¹⁾	Medium	Medium	Medium	Medium	Lower
Station Land Use Plan Consistency	Higher	Higher	Higher	Higher	Higher
Activity Nodes Served ⁽¹⁾	40	41	42	38	42
Passenger Transfers	Medium	Higher	Medium	Medium	Higher
Bus/Rail and Rail/Rail Integration ⁽¹⁾	Medium	Higher	Medium	Medium	Higher
Bicycle Accessibility ⁽¹⁾	Higher	Higher	Higher	Higher	Higher
Pedestrian/Limited Mobility Accessibility ⁽¹⁾	Medium	Higher	Higher	Higher	Higher
Development Potential ⁽¹⁾	Medium	Medium	Medium	Higher	Medium
Equitable Development Opportunities	Lower	Lower	Medium	Medium	Higher
<i>Preserve and promote a healthy environment and economy by minimizing</i>					
Historic Properties/Landmarks ⁽²⁾	1		1		
Potential for effects to Archaeological Resources ⁽¹⁾	Lower		Lower		
Parks and Recreational Resources Effects (acres)	1.5		1.5		
Water Resource Effects (acres)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fish and Wildlife Habitat Effects (acres)	3.7	5.3	3.7	3.7	1.9
Hazardous Materials Sites ⁽¹⁾	11	7	8	14	14
Visual Effects	Lower	Medium	Lower	Medium	Medium
Noise and Vibration Sensitive Receivers ⁽¹⁾	Lower	Lower	Lower	Medium	Lower
Potentially Affected Properties	Higher	Higher	Lower	Higher	Lower
Residential Unit Displacements	Medium	Lower	Lower	Higher	Lower
Square Feet of Business Displacements	Higher	Medium	Lower	Higher	Medium
Construction Impacts	Lower	Higher	Lower	Medium	Medium
Burden on Low-Income/Minority	Higher	Higher	Higher	Higher	Higher
Traffic Circulation and Access Effects	Lower	Higher	Medium	Higher	Medium
Effects on Existing Transportation Facilities	Lower	Higher	Medium	Medium	Higher
Effects on Freight Movement	Medium	Medium	Medium	Medium	Lower
Business and Commerce Effects	Medium	Higher	Lower	Medium	Medium

(1) Within station walksheds and/or defined buffer of alignment

(2) On properties that overlap with the project footprint

Lower Performing

Medium
Performing

Higher Performing

Elevated guideway and station at 44th increases residential and business effects

Tunnel station at Fauntleroy lessens residential and business effects

West Seattle/Duwamish

Level 2 alternatives evaluation – Residential and Business Displacements



= Key Differentiators

Evaluation Measures	ST3 Representative Project	Pigeon Ridge/West Seattle Tunnel	Oregon Street/Alaska Junction/ Elevated	Golf Course/Alaska Junction/ Tunnel	Oregon Street/Alaska Junction/ Tunnel
<i>Encourage equitable and sustainable urban growth in station areas through support of transit-oriented development, station access, and modal integration in a manner that is consistent with local land use plans and policies.</i>					
Compatibility with Urban Centers/Villages ⁽¹⁾	Medium	Medium	Medium	Medium	Lower
Station Land Use Plan Consistency	Higher	Higher	Higher	Higher	Higher
Activity Nodes Served ⁽¹⁾	40	41	42	38	42
Passenger Transfers	Medium	Higher	Medium	Medium	Higher
Bus/Rail and Rail/Rail Integration ⁽¹⁾	Medium	Higher	Medium	Medium	Higher
Bicycle Accessibility ⁽¹⁾	Higher	Higher	Higher	Higher	Higher
Pedestrian/Limited Mobility Accessibility ⁽¹⁾	Medium	Higher	Higher	Higher	Higher
Development Potential ⁽¹⁾	Medium	Medium	Medium	Higher	Medium
Equitable Development Opportunities	Lower	Lower	Medium	Medium	Higher
<i>Preserve and promote a healthy environment and economy by minimizing adverse impacts on the natural, built and social environments through sustainable practices.</i>					
Historic Properties/Landmarks ⁽²⁾	1	1	1	1	2
Potential for effects to Archaeological Resources ⁽¹⁾	Lower	Lower	Lower	Lower	Lower
Parks and Recreational Resources Effects (acres)	1.5	3.5	1.5	2.8	0.6
Water Resource Effects (acres)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fish and Wildlife Habitat Effects (acres)	3.7	5.3	3.7	3.7	1.9
Hazardous Materials Sites ⁽¹⁾	11	7	8	14	14
Visual Effects	Lower	Medium	Lower	Medium	Medium
Noise and Vibration Sensitive Receivers ⁽¹⁾	Lower	Lower	Lower	Medium	Lower
Potentially Affected Properties	Higher	Higher			
Residential Unit Displacements	Medium	Lower			
Square Feet of Business Displacements	Higher	Medium			
Construction Impacts	Lower	Higher			
Burden on Low-Income/Minority	Higher	Higher	Higher	Higher	Higher
Traffic Circulation and Access Effects	Lower	Higher	Medium	Higher	Medium
Effects on Existing Transportation Facilities	Lower	Higher	Medium	Medium	Higher
Effects on Freight Movement	Medium	Medium	Medium	Medium	Lower
Business and Commerce Effects	Medium	Higher	Lower	Medium	Medium

(1) Within station walksheds and/or defined buffer of alignment

(2) On properties that overlap with the project footprint

Elevated guideway on north side of West Seattle bridge; affects freight, port terminal facilities during construction

Lower Performing

Medium Performing

Higher Performing

West Seattle/Duwamish

Level 2 alternatives evaluation – *Effects on Freight Movement*



= Key Differentiators



KEY MAP

- West Seattle extension/Station area
- Ballard extension/Station area



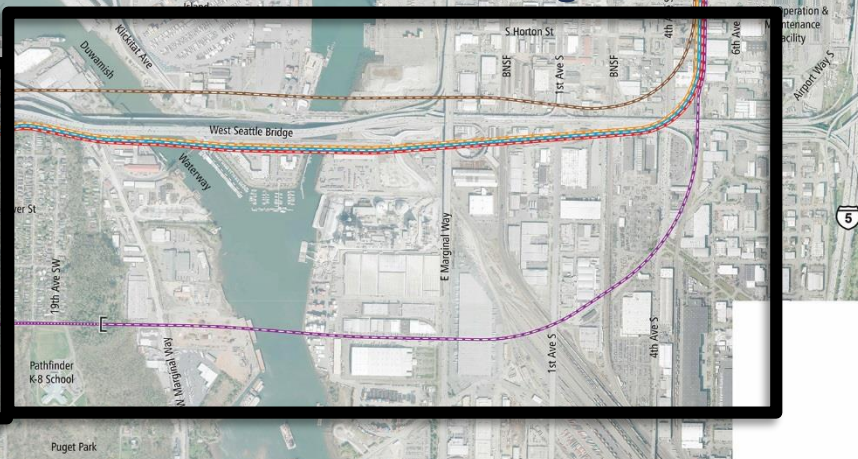
Alaska Junction



Avalon-Genesee-Delridge



Duwamish Crossing



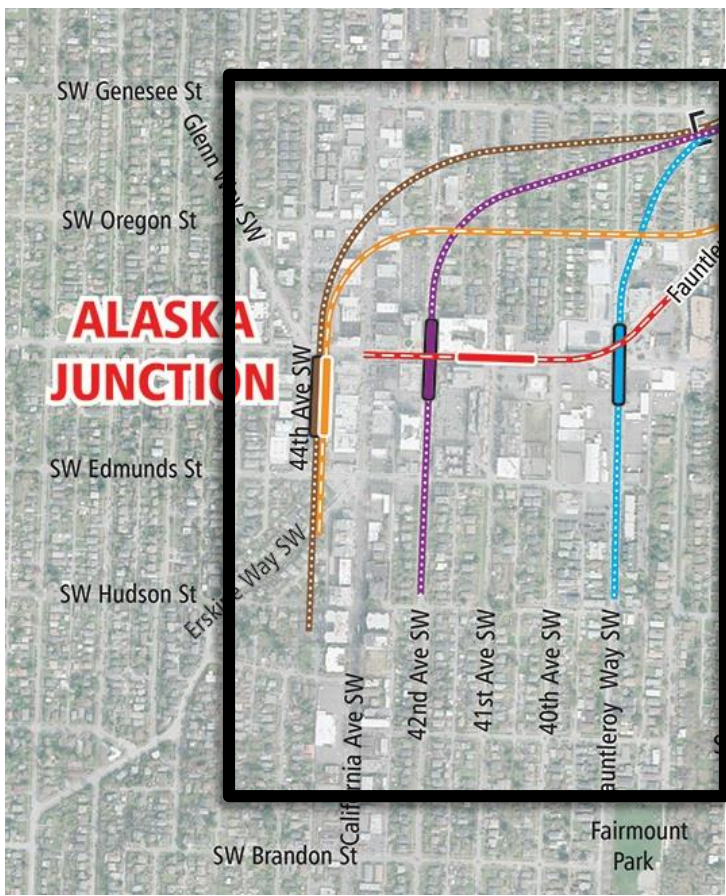
LEGEND

- ST3 representative project - West Seattle extension
- Pigeon Ridge/West Seattle tunnel
- Oregon Street/Alaska Junction/elevated
- Golf Course/Alaska Junction/tunnel
- Oregon Street/Alaska Junction/tunnel
- Approximate portal location
- Elevated
- Tunnel
- Elevated station
- Tunnel station



West Seattle/Duwamish

Key differentiators – *By sub-segment*



Alaska Junction:

Key differentiators

- Station location
- Residential/business effects
- Ease of future extension
- Guideway height in Delridge






LEGEND

- ST3 representative project - West Seattle extension
- Pigeon Ridge/West Seattle tunnel
- Oregon Street/Alaska Junction/elevated
- Golf Course/Alaska Junction/tunnel
- Oregon Street/Alaska Junction/tunnel
- Approximate portal location
- Elevated
- Tunnel
- Elevated station
- Tunnel station

West Seattle/Duwamish

Key differentiators – *Alaska Junction*

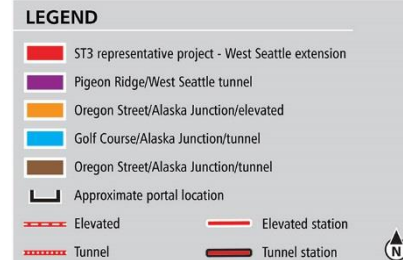
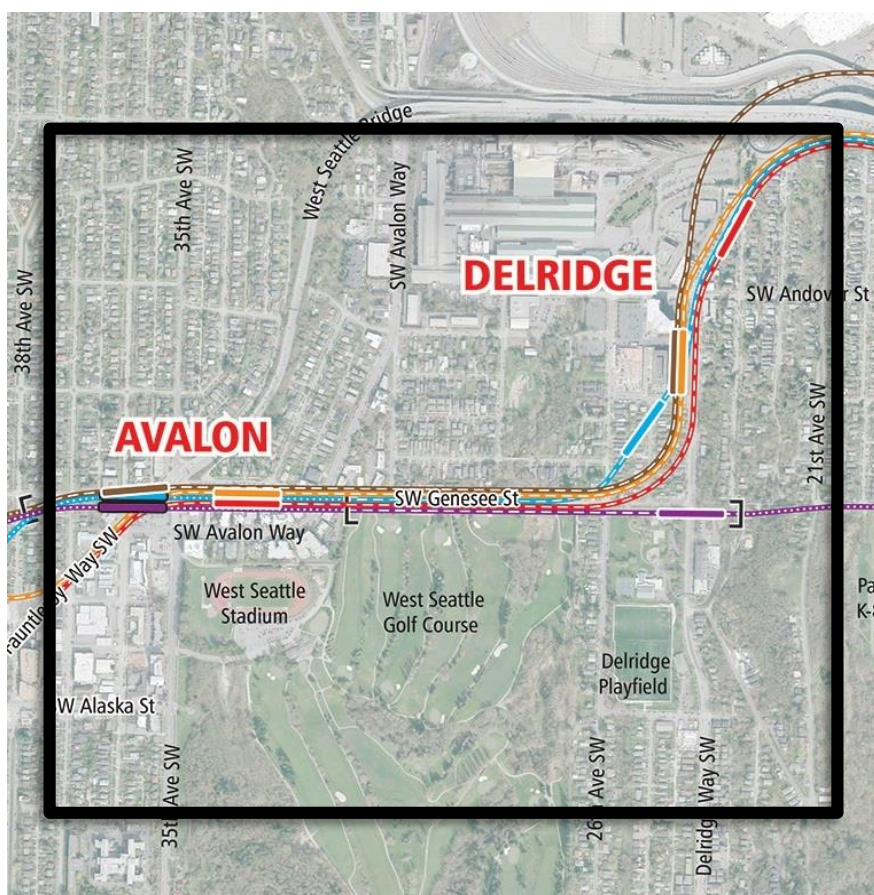
Key differentiators *Alaska Junction*

Alternative	Key differentiators
ST3 Representative Project 	
Pigeon Ridge / West Seattle Tunnel 	Tunnel station at 42 nd Ave SW Facilitates low guideway in Delridge (along Genesee) Includes tunnel; requires 3 rd Party funding
Oregon Street / Alaska Junction / Elevated 	Elevated station at 44 th Ave SW Increases residential and business effects Complicates future extension south
Golf Course / Alaska Junction / Tunnel 	Tunnel station at Fauntleroy Way SW Lessens residential and business effects Facilitates low guideway in Delridge (along Genesee) Includes tunnel; requires 3 rd Party funding
Oregon Street / Alaska Junction / Tunnel 	Tunnel station at 44 th Ave SW; tunnel portal in 37 th Ave SW vicinity Includes tunnel; requires 3 rd Party funding

Avalon-Genesee-Delridge:

Key differentiators






- Station location
- Residential/business effects
- Guideway height

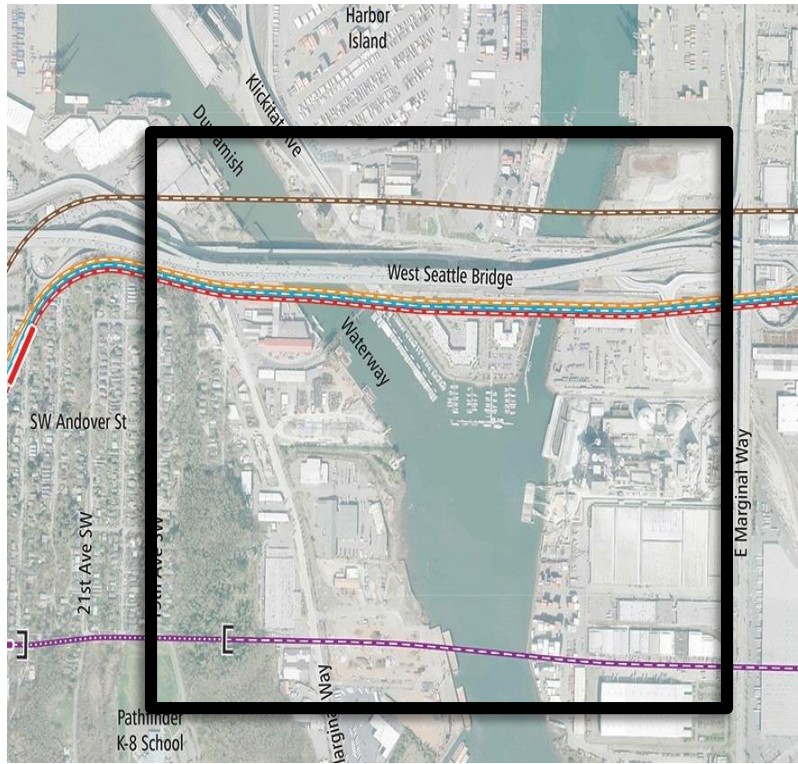


West Seattle/Duwamish

Key differentiators – *Avalon-Genesee-Delridge*

Key differentiators *Avalon-Genesee-Delridge*

Alternative		Key differentiators
ST3 Representative Project		
Pigeon Ridge / West Seattle Tunnel		Furthest south Delridge station location Lessens residential and business effects in Delridge Low guideway along Genesee; tunnel Avalon station
Oregon Street / Alaska Junction / Elevated		Delridge station south of SW Andover Street High guideway along Genesee; elevated Avalon station
Golf Course / Alaska Junction / Tunnel		Off-street Delridge station west of Delridge Way SW Low guideway along Genesee; tunnel Avalon station
Oregon Street / Alaska Junction / Tunnel		Delridge station south of SW Andover Street High guideway along Genesee; elevated Avalon station



Duwamish Crossing:

Key differentiators

- Crossing location
- Engineering constraints
- Fish and wildlife effects
- Freight movement

LEGEND






- ST3 representative project - West Seattle extension
- Pigeon Ridge/West Seattle tunnel
- Oregon Street/Alaska Junction/elevated
- Golf Course/Alaska Junction/tunnel
- Oregon Street/Alaska Junction/tunnel
- Approximate portal location
- Elevated
- Elevated station
- Tunnel
- Tunnel station





West Seattle/Duwamish

Key differentiators – *Duwamish Crossing*

Key differentiators *Duwamish Crossing*

Alternative	Key differentiators
ST3 Representative Project 	
Pigeon Ridge / West Seattle Tunnel 	Bridge crossing near Idaho Street; south of Harbor Island Most engineering constraints (tunnel through unstable slopes, widest water crossing, wide Union Pacific Argo railyard crossing, high voltage lines etc.) Most effects to Duwamish Greenbelt
Oregon Street / Alaska Junction / Elevated 	Bridge crossing on south side of West Seattle bridge Some engineering constraints (Pigeon Point steep slope) Some effects to Duwamish Greenbelt (Pigeon Point)
Golf Course / Alaska Junction / Tunnel 	
Oregon Street / Alaska Junction / Tunnel 	Bridge crossing on north side of West Seattle bridge Fewer engineering constraints (avoids Pigeon Point steep slope) Avoids effects to Duwamish Greenbelt Affects freight, port terminal facilities during construction

Summary *West Seattle / Duwamish*

Alternative	Key findings	Cost comparison*	Schedule comparison*
ST3 Representative Project 			
Oregon Street / Alaska Junction / Elevated 	<ul style="list-style-type: none"> • 3 elevated stations • Increases residential/business effects at Junction • Complicates future extension south • High guideway along Genesee 	Similar	Higher Performing
Oregon Street / Alaska Junction / Tunnel 	<ul style="list-style-type: none"> • 1 tunnel station; 2 elevated stations • High guideway along Genesee • Fewer engineering constraints • Affects freight, port terminal facilities during construction • Includes tunnel; requires 3rd Party funding 	+ \$500M	Lower Performing
Golf Course / Alaska Junction / Tunnel 	<ul style="list-style-type: none"> • 2 tunnel stations; 1 elevated station • Lessens residential/business effects at Junction • Low guideway along Genesee • Includes tunnel; requires 3rd Party funding 	+ \$700M	Lower Performing
Pigeon Ridge / West Seattle Tunnel 	<ul style="list-style-type: none"> • 2 tunnels; 2 tunnel stations; 1 elevated station • Most engineering constraints • Most effects to Duwamish Greenbelt • Low guideway along Genesee • Lessens residential and business effects in Delridge • Includes two tunnels; requires 3rd Party funding 	+ \$1,200M	Lower Performing

*Cost compared to cost of ST3 Representative Project for this segment. Schedule compared to overall ST3 schedule for this extension.

Station Charrette Feedback* *Delridge Station*



**Center Delridge
Elevated**

- Not further developed in charrette
- Farthest from community center and amenities
- Challenging for transit integration
- Challenging non-motorized access and wayfinding
- Limited TOD potential



**W Side Delridge
Elevated**

- Concerns about station height and bulk, compatibility with neighborhood
- Good transit integration, but would require access enhancements to east
- Good non-motorized access
- Some TOD potential



**25th Avenue S
Elevated**

- Lower guideway and station could be more compatible with neighborhood
- Close to community center and amenities
- Good transit integration, but would require wayfinding and access enhancements
- Considerable potential for TOD in partnership



**Genesee
Elevated**

- Lower guideway and station more compatible with neighborhood
- Directly serves community center and amenities, but affects skate park
- Excellent transit integration and non-motorized access
- Limited TOD potential



Station Charrette Feedback* *Avalon Station*



South Side Genesee
Elevated







Fauntleroy Span
Elevated and Cut and Cover

- Concern about station height and bulk, compatibility with neighborhood
- Concerns about potential traffic queuing lengths and intersection safety
- Challenging transit integration
- Limited non-motorized access; concerns about pedestrian and cyclist safety
- Limited TOD potential

- Concern about elevated station height and bulk, compatibility with neighborhood, but potential for gateway expression
- Concerns about potential traffic queuing lengths and intersection safety
- Challenging transit integration
- Good non-motorized access by siting entries on both sides of Fauntleroy
- Some TOD potential



Station Charrette Feedback* *Alaska Junction Station*

 SW Alaska St Elevated	 44th Ave SW Elevated or Tunnel	 42nd/41st Ave SW Tunnel	 Fauntleroy Way SW Tunnel
<ul style="list-style-type: none"> • Not explored further in charrette • Concern about station height and bulk, compatibility with neighborhood • Good transit integration and non-motorized access • Some TOD potential 	<ul style="list-style-type: none"> • Concern about effects to neighborhood character if elevated • Permanent effects to business parking likely • Excellent transit integration • Good non-motorized access • Limited TOD potential 	<ul style="list-style-type: none"> • Most compatible with neighborhood character • Great urban design potential • Opportunities for enhanced public realm • Excellent transit integration and non-motorized access • Considerable TOD potential 	<ul style="list-style-type: none"> • More distant from heart of business district, but closer to new development areas and amenities • Somewhat challenging for transit integration • Good non-motorized access • Some TOD potential

