

Land Use Technical Report

I-5 Trade Corridor Study

Prepared for:

**Oregon Department of Transportation
Region 1
123 NW Flanders
Portland, OR 97209**

and

**Washington Department of Transportation
P.O. Box 1709
Vancouver, WA 98668-1709**

Prepared by:

**David Evans and Associates, Inc.
2828 SW Corbett Avenue
Portland, Oregon 97201**

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1. EXECUTIVE SUMMARY

1.1 Project Background

The Oregon Department of Transportation (ODOT), in partnership with the Washington State Department of Transportation (WSDOT), conducted the Portland/Vancouver I-5 Transportation and Trade Partnership Study to identify and evaluate options for managing travel demand on I-5 between I-84 in Portland and I-205 in Clark County.

Phase I of the I-5 Trade Corridor Study was completed in March 2000. It identified the major current and projected future deficiencies in the corridor and developed criteria for evaluating and comparing a broad range of scenarios for addressing those deficiencies. The project has progressed to Phase II, which includes conceptual design and evaluation of a set of options developed following extensive public input and in consideration of the results from the Phase I analysis.

Two of the evaluation criteria relate to land use:

1. Consistency of each option with local and regional ability to achieve adopted plan goals and
2. The impact of each option on existing land uses, specifically the amount of additional right-of-way and displacements.

This technical report outlines the methodology used for the land use impact analysis and summarizes the potential impacts from each option. A review of existing planning documents provides a context for I-5 Corridor options as they relate to the region's planning goals, and evaluates each option for consistency with the goals and policies outlined in each plan.

1.2 Methods

1.2.1 Study Area

Generally, the land use impact analysis is focused on a 2000-foot wide corridor (1000 feet on either side of centerline of I-5). Almost all of the improvements for each option would occur within this corridor. The exceptions are some new interchanges, park-and-rides (P&R) and an arterial corridor approximately 0.6 miles west of I-5 through North Portland and Vancouver. All potential impacts are included in this assessment (except where noted). Improvements outside the corridor are listed with each option.

1.2.2 Data Sources

Metro's Regional Land Information System (RLIS) and Clark County's geographic information system (GIS) system were the primary data sources used for mapping and evaluating the potential impacts to existing and planned land uses. The computerized database systems contain information on existing and planned land uses, the location of sensitive resources, historic resources, and infrastructure (roads, water, sewer, etc.).

There are differences in how Clark County and RLIS classify existing and planned land uses because each community, through their zoning codes and comprehensive plans, independently designates land uses. To be consistent, the existing and planned land use classifications contained within the separate GIS systems were recategorized using Metro’s simplified set of land use classifications used in the *South-North Environmental Impact Statement*. Some land use classifications were not comparable with these simplified categories. Those land use classifications were included in an *other* category. Where appropriate, when *other* land uses are identified in the impact area for a particular option, a footnote describes the specific land use.

The two GIS systems were combined using the simplified land use. The generalized existing and planned land use categories are:

- Single-family residential
- Multi-family residential
- Mixed use
- Public/open space
- Industrial
- Commercial
- Rural
- Water
- Other

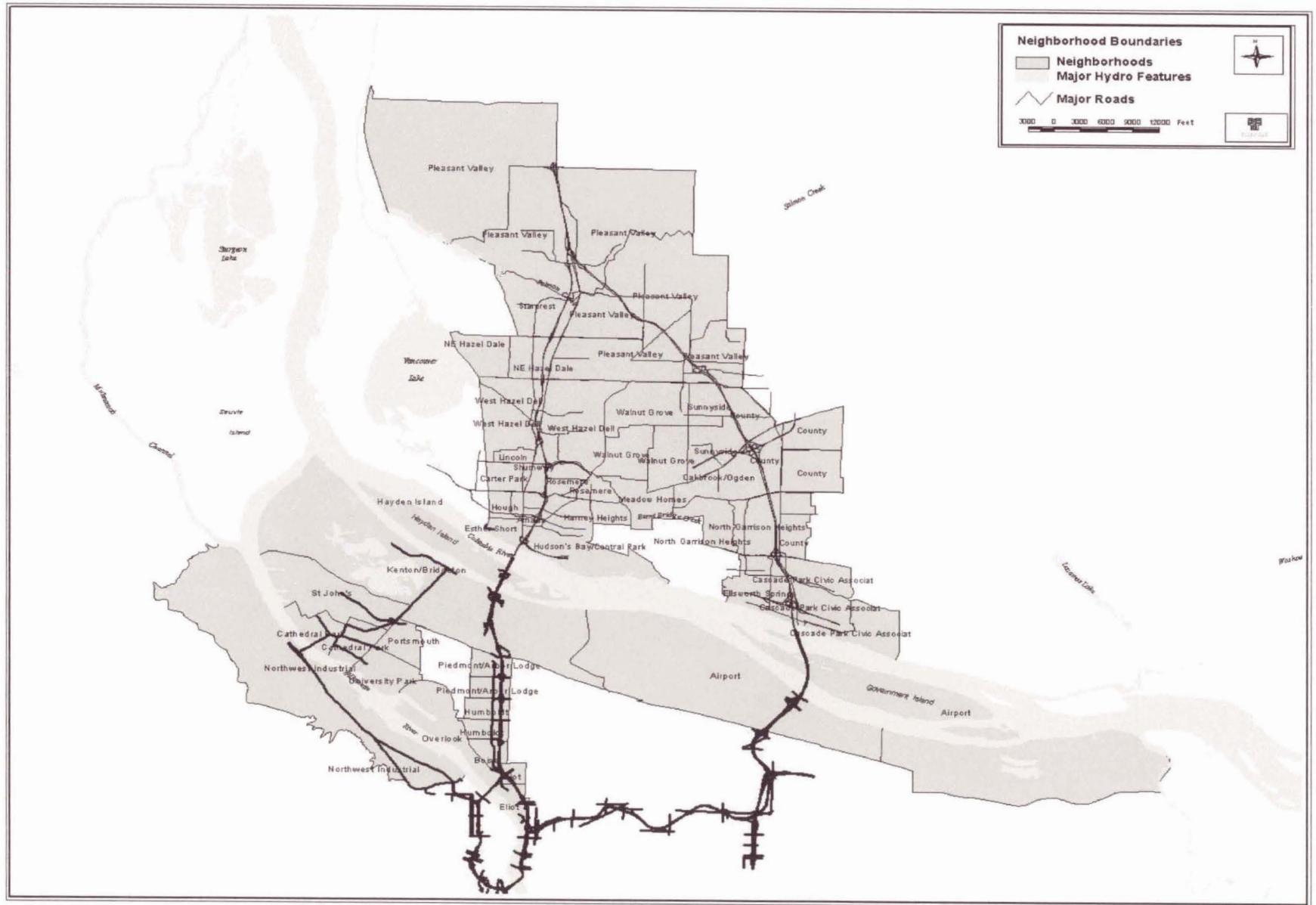
Land use impacts are reported for the corridor as a whole, by county, and by neighborhood. Neighborhood boundaries are based on those established by each local jurisdiction (i.e., the Cities of Portland and Vancouver and Clark County). Areas without neighborhood designations, such as the area north of Vancouver from the 83rd Street/I-5 interchange to the I-5/I-205 interchange, are labeled as “county.” Neighborhood boundaries are shown in Figure 1.2.3.1.¹

1.2.3 Related Laws and Regulations Considered

The relationship between land use and transportation is well documented in state and regional plans. Many of the plans included in this analysis identify, as a goal or policy, the coordination between land use and transportation as an essential element for comprehensive growth management at the state, county, and local level. County and local jurisdictions have refined (or are in the process of refining) their comprehensive plans to incorporate transit supportive land use patterns for areas adjacent to the I-5 corridor options.

¹ Neighborhood boundaries were used in several of the technical reports, including the land use, cultural, and environmental justice documents. In order to be consistent, a set of neighborhood boundaries was developed by comparing existing neighborhood and census tract boundaries. Some census tract and neighborhood boundaries were similar, although others were not, requiring slight modifications to match the census tract.

Figure 1.2.3.1 Neighborhood Boundaries



The review of consistency with local plans focuses on the region where the study corridor is located. Federal and state level plans were not reviewed. Cities and counties in Oregon are required to adopt enforceable comprehensive plans to implement the nineteen Oregon State Land Conservation and Development Goals. In Washington, the Growth Management Act requires local comprehensive plans to be consistent with Washington State land use laws. Therefore, local plans reflect and incorporate state goals and policies.

All applicable plans (including neighborhood, sub area and local plans) within the two-county region were reviewed for policies related to the I-5 corridor options. The results of the analysis are reported below.

1.2.4 Impact Assessment Methodology

Impacts of potential I-5 improvements on land use patterns that are expected to occur *directly as a result* of the option were determined by overlaying the conceptual designs onto the land use information described in Section 1.2.2. An examination of the baseline options revealed that the base mapping for the conceptual drawings did not match the GIS system as expected. This may make it appear that there would be impacts to nearby parcels, when actually there may not be any effects from the proposed option. The discrepancy is more noticeable in Washington than in Oregon. The incompatibility between the base mapping for the conceptual design and GIS information means that a more general impact assessment has been completed:

- No Impact: There would be no impact to existing or planned land uses on these parcels;
- Minor Impact: The proposed option would take less than half of the affected parcel;
- Major Impact: The proposed option would take half or more of the parcel, but would likely still conform to existing land use codes; and
- Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

It is not possible to determine the exact square footage of the impact using the current set of designs and GIS database. However, by careful comparison and through discussions with designers and field verification, the impacts were determined using the above categories. During the next phase, when the options have been narrowed and more detailed design is undertaken, it may be possible to avoid some of the identified impacts. The overall impacts for each option are reported for the region as a whole, by county, and by neighborhood.

2. PROJECT IMPACTS

2.1 Plan Consistency

Each option was evaluated to determine if it would support or conflict with the adopted goals and policies listed in Appendix B. Other plans were reviewed, but did not have goals related to this effort (See Appendix C). All of the options evaluated are generally consistent with adopted

plans. However, some would do more to help the region achieve those goals related to multi-modal transportation than others. Impacts to cultural and environmental resources vary from option to option, but all options would have some negative effects as currently designed.

Generally none of the options, as currently conceptually designed would conflict with adopted plan goals and policies. The minor impacts to wetlands, wildlife habitat, and park space could be mitigated. To the extent that they result in improved traffic flow, the options would reduce noise and air quality impacts on adjacent land uses. Impacts to residential uses would also be mitigated and conform to rules relating to displacement and fair market compensation.

2.2 Existing Land Uses

The overall impacts for each option vary considerably, affecting not only the I-5 corridor, but also surrounding neighborhoods. The majority of impacts would occur in Washington, except for Option 8, where improvements would be located almost exclusively in the Oregon. Generally, for all options, the greatest number of potential encroachments and/or displacements would be to commercial and industrial properties (Table 2.2.1 and Table 2.2.2). This is overwhelmingly the case for the baseline options, which would have only two minor encroachments to single-family residential uses.

Once the planned improvements to the I-5 corridor have been made (the baseline), the options that build on the baseline would have much greater impacts to residential property. Options 2, 3a and Option 6 would have the most significant effects to single-family residential uses, with the greatest number of encroachments from Option 6 (Table 2.2.1). Option 8 would have the fewest residential and nonresidential impacts of any non-baseline option. In contrast, Option 6 would have the highest number of encroachments to residential uses, with the two bridge configurations having the greatest impacts to existing and planned land uses.

**Table 2.2.1
Potential Encroachments to Existing Land Uses²**

	Residential ¹	Nonresidential ²	Public/Open Space	Total
Option Baseline				
Option 1a	0	45	0	45
Option 1c	0	52	0	52
Option 1d	2	58	0	60
Non baseline				
Option 2	13	54	3	70
Option 3a	18	40	10	68
Option 6 w/ 4-lane tunnel	50	53	3	106
Option 6 w/ 6-lane bridge	51	61	4	116
Option 6 w/ 10-lane bridge	51	64	5	120
Option 8	14	29	4	47
Total (Baseline and Option)				
Option 2	15	112	3	130
Option 3a	20	98	10	128
Option 6 w/ 4-lane tunnel	52	111	3	166
Option 6 w/ 6-lane bridge	53	119	4	176
Option 6 w/ 10-lane bridge	53	122	5	180
Option 8	16	87	4	107

1. Residential impacts include single-family residential, multi-family-residential, and mixed-use land uses.
2. Nonresidential impacts include industrial, commercial, rural, and other land uses.

² Encroachments are any land use impact that would likely allow the existing or planned land use to continue. These include any minor impacts.

**Table 2.2.2
Potential Displacements to Existing Land Uses³**

	Residential ¹	Nonresidential ²	Public/Open Space	Total
Option Baseline				
Option 1a	0	16	0	16
Option 1c	0	17	0	17
Option 1d	0	20	0	20
Non baseline				
Option 2	28	46	1	75
Option 3a	13	76	2	91
Option 6 w/ 4-lane tunnel	35	31	1	67
Option 6 w/ 6-lane bridge	38	36	2	76
Option 6 w/ 10-lane bridge	35	34	3	72
Option 8	12	34	2	48
Total (Baseline and Option)				
Option 2	28	66	1	95
Option 3a	13	96	2	111
Option 6 w/ 4-lane tunnel	35	51	1	87
Option 6 w/ 6-lane bridge	38	56	2	96
Option 6 w/ 10-lane bridge	35	54	3	92
Option 8	12	54	2	68

1. Residential impacts include single-family residential, multi-family-residential, and mixed-use land uses.

2. Nonresidential impacts include industrial, commercial, rural, and other land uses.

Although Option 6 has the greatest number of encroachments and cumulative impacts (encroachments and displacements) to residential and nonresidential development, Options 2 and 3a would have an equal or higher number of nonresidential displacements as Option 6. For nonresidential uses, Option 3a would have by far the highest number of nonresidential displacements. In contrast, Option 3a would have one of the lowest numbers of residential displacements, only Option 8 would be lower. Option 6 would have the most residential displacements of any option.

2.3 Planned Land Uses

The number of parcels affected is the same for existing or planned land uses, however the proportion of each land use type changes. Acquiring land for transportation improvements eliminates the potential availability of that land for the planned use. This could affect the ability of local jurisdictions to accommodate planned population and employment growth. Although the impacts are minimal in terms of the total available land planned for each use, there may be some areas where the impact falls largely in one or a few land use categories. Generally, each option shows a greater impact to planned single and multi-family residential uses than existing land uses, largely because some areas are planned to change from an existing use

³ Displacements are impacts that would likely require the existing land use to relocate or not allow a future planned use. These include any major or full impacts.

that is less intensive, such as rural, to more intensive, such as single and multi-family residential. The most notable changes between existing and planned land uses are in Clark County, where impacts to existing rural areas change to impacts to planned residential uses. This is most noticeable in the Pleasant Valley area, where that majority of impacts to existing rural areas would change to impacts to planned residential uses.

In Oregon, the difference in impacts to existing and planned land uses is less because the areas where the improvements would occur in Oregon are already developed. In any case, Option 8 would have the least impact in terms of number of parcels affected, and Option 6 would have the greatest cumulative impact (total encroachments and displacements), although the level of impact, primarily to commercial and industrial lands would vary based on the bridge configuration.

Although Option 6 would have the greatest impact, Option 3a would have the highest number of encroachments to nonresidential uses (Table 2.3.1) Option 3a would also have one of the lowest impacts to residential uses, only Option 8 would have fewer residential impacts. Option 6 would have the highest number of residential encroachments of any option.

**Table 2.3.1
Potential Encroachments to Planned Land Uses⁴**

	Residential ¹	Nonresidential ²	Public/Open Space	Total
Option Baseline				
Option 1a	23	22	0	45
Option 1c	24	28	0	52
Option 1d	26	34	0	60
Non baseline				
Option 2	40	27	3	70
Option 3a	19	39	10	68
Option 6 w/ 4-lane tunnel	78	27	1	106
Option 6 w/ 6-lane bridge	79	35	2	116
Option 6 w/10-lane bridge	77	38	5	120
Option 8	14	29	4	47
Total (Baseline and Option)				
Option 2	66	61	3	130
Option 3a	45	73	10	128
Option 6 w/ 4-lane tunnel	104	61	1	166
Option 6 w/ 6-lane bridge	105	69	2	176
Option 6 w/ 10-lane bridge	103	72	5	180
Option 8	40	63	4	107

1. Residential impacts include single-family residential, multi-family-residential, and mixed-use land uses.

2. Nonresidential impacts include industrial, commercial, rural, and other land uses.

⁴ See footnote 2.

**Table 2.3.2
Potential Displacements to Planned Land Uses⁵**

	Residential ¹	Nonresidential ²	Public/Open Space	Total
Option Baseline				
Option 1a	8	8	0	16
Option 1c	8	9	0	17
Option 1d	8	12	0	20
Non baseline				
Option 2	28	46	1	75
Option 3a	20	69	2	91
Option 6 w/ 4-lane tunnel	35	29	3	67
Option 6 w/ 6-lane bridge	38	34	4	76
Option 6 w/ 10-lane bridge	37	32	3	72
Option 8	12	34	2	48
Total (Baseline and Option)				
Option 2	36	58	1	95
Option 3a	28	81	2	111
Option 6 w/ 4-lane tunnel	43	41	3	87
Option 6 w/ 6-lane bridge	46	46	4	96
Option 6 w/ 10-lane bridge	45	44	3	92
Option 8	20	46	2	68

1. Residential impacts include single-family residential, multi-family-residential, and mixed-use land uses.

2. Nonresidential impacts include industrial, commercial, rural, and other land uses.

Although Option 6 has the greatest cumulative impacts (encroachments and displacements) to residential and nonresidential development, Options 2 and 3a would have a higher number of nonresidential displacements (Table 2.3.2.). Option 3a would have the highest number of displacements for any options, especially for nonresidential uses, which would have by far the highest number of nonresidential displacements. In contrast, Option 3a would have one of the lowest numbers of residential displacements, only Option 8 would be lower. Option 6 would have the highest number of residential displacements of any option. Option 6 would have roughly an equal number of residential and nonresidential displacements, spreading the impacts across several different land uses.

⁵ See footnote 3.

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1. LAND USE IMPACTS OVERVIEW

1.1 Project Background

The Oregon Department of Transportation (ODOT), in partnership with the Washington State Department of Transportation (WSDOT), conducted the Portland/Vancouver I-5 Transportation and Trade Partnership Study to identify and evaluate options for managing travel demand on I-5 between I-84 in Portland and I-205 in Clark County.

Phase I of the I-5 Trade Corridor Study was completed in March 2000. It identified the major current and projected future deficiencies in the corridor and developed criteria for evaluating and comparing a broad range of scenarios for addressing those deficiencies. The project has progressed to Phase II, which includes conceptual design and evaluation of a set of options developed following extensive public input and in consideration of the results from the Phase I analysis.

Two of the evaluation criteria relate to land use:

1. Consistency of each option with local and regional ability to achieve adopted plan goals;
2. The impact of each option on existing land uses, specifically the amount of additional right-of-way and displacements.

This technical report outlines the methodology used for the land use impact analysis and summarizes the potential impacts from each option. A review of existing planning documents provides a context for I-5 Corridor options as they relate to the region's planning goals, and evaluates each option for consistency with the goals and policies outlined in each plan.

1.2 Methods

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Generally, the land use impact analysis is focused on a 2000-foot wide corridor (1000 feet on either side of centerline of I-5). Almost all of the improvements for each option would occur within this corridor. The exceptions are some new interchanges, park-and-rides (P&R) and an arterial corridor approximately 0.6 miles west of I-5 through North Portland and Vancouver. All potential impacts are included in this assessment (except where noted). Improvements outside the corridor are listed with each option.

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There are differences in how Clark County and RLIS classify existing and planned land uses because each community, through their zoning codes and comprehensive plans, independently designates land uses. To be consistent, the existing and planned land use classifications contained within the separate GIS systems were recategorized using Metro's simplified set of land use classifications used in the *South-North Environmental Impact Statement*. Some land use classifications were not comparable with these simplified categories. Those land use classifications were included in an *other* category. Where appropriate, when *other* land uses are identified in the impact area for a particular option, a footnote describes the specific land use.

The two GIS systems were combined using the simplified land use designations (see Appendix A for what is included in each category). The generalized existing and planned land use categories are:

- Single-family residential
- Multi-family residential
- Mixed use
- Public/open space
- Industrial
- Commercial
- Rural
- Water
- Other

Existing land use data in the RLIS and Clark County systems are based on county assessor information. Each assessor's office has a somewhat different protocol for classifying existing land uses. As a result, there are differences in the way that specific land uses are handled from area to area. (For example, a park/playground adjacent to a school may be classified as open space, park or public facility.) These differences in classification were not adjusted in the database. Only obvious errors in classification on large parcels were corrected on the maps and in the database.

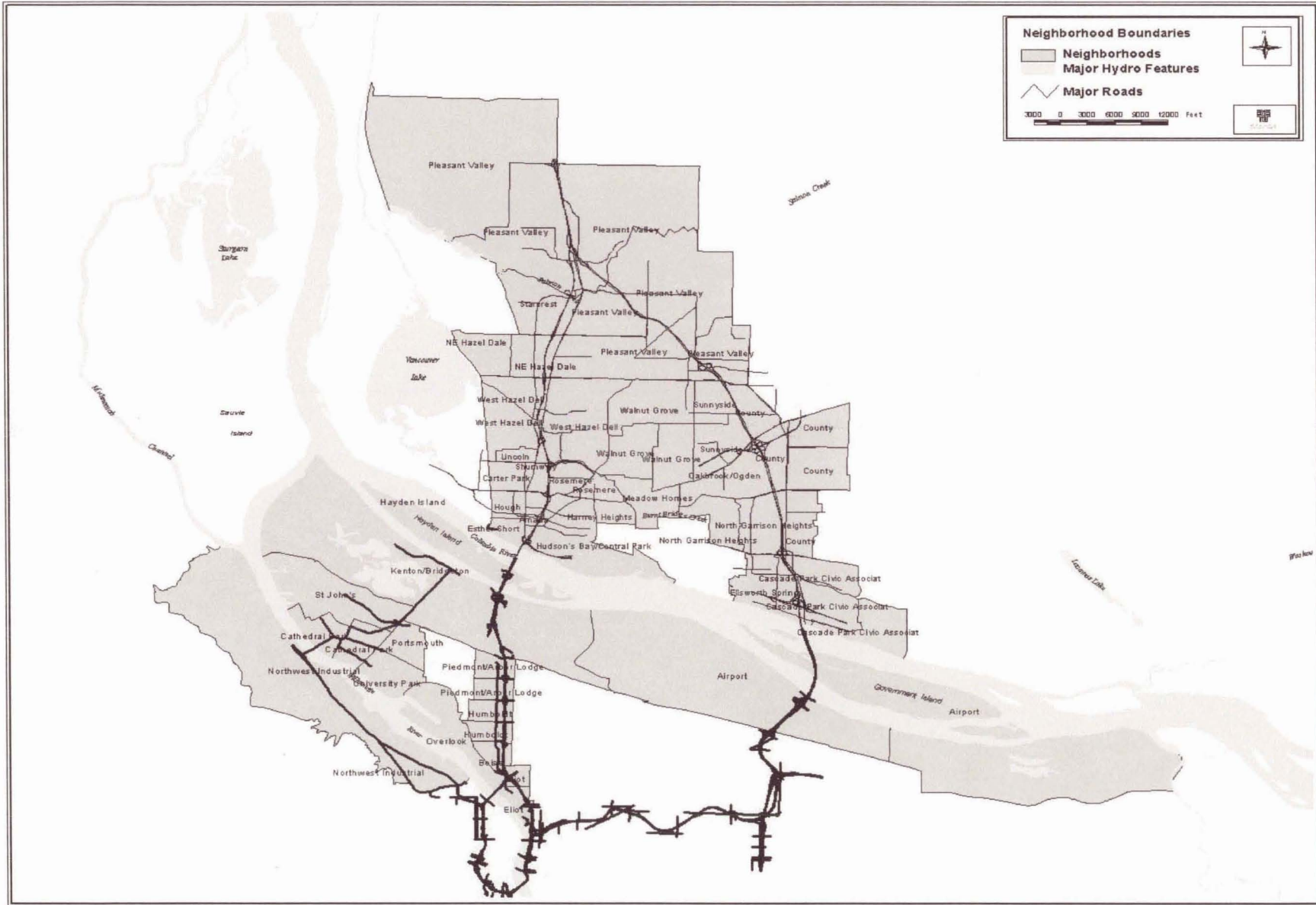
In Oregon, the new Interstate MAX (IMAX) line runs parallel to I-5 and is within the buffer area. To reduce the chance of double counting any potential impacts (areas already purchased but not yet used as ROW for IMAX), any land use impacts as a result of the IMAX construction independent of the I-5 options were removed from the overall calculation of effects. The IMAX related impacts are already well documented in the *North Corridor Interstate MAX Light Rail Project Final Environmental Impact Statement*.

Land use impacts are reported for the corridor as a whole, by county, and by neighborhood. Neighborhood boundaries are based on those established by each local jurisdiction (i.e., the

Cities of Portland and Vancouver and Clark County). Areas without neighborhood designations, such as the area north of Vancouver to the 83rd Street/I-205 interchange, are labeled as “county.”⁶ Neighborhood boundaries are shown in Figure 1.2.2.1.

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Figure 1.2.2.1 Neighborhood Boundaries



1.3 Related Laws and Regulations

1.3.1 Federal and State Level Planning

The relationship between land use and transportation is well documented in state and regional plans. Many of the plans included in this analysis identify, as a goal or policy, the coordination between land use and transportation as an essential element for comprehensive growth management at the state, county, and local level. County and local jurisdictions have refined (or are in the process of refining) their comprehensive plans to incorporate transit supportive land use patterns for areas adjacent to the I-5 corridor options.

The review of consistency with local plans focuses on the study corridor. Federal and state level plans were not reviewed. Cities and counties in Oregon are required to adopt enforceable comprehensive plans to implement the nineteen Oregon State Land Conservation and Development Goals. In Washington, the Growth Management Act requires local comprehensive plans to be consistent with Washington State land use laws. Therefore, local plans reflect and incorporate state goals and policies.

1.3.2 Regional and Local Level Planning

Metro is the Metropolitan Planning Organization (MPO) for Multnomah, Clackamas and Washington Counties in Oregon; the Regional Transportation Council (RTC) is the MPO for Clark County, Washington. Together, they have developed a series of regional transportation plans that contain goals and policies relating to transportation system development and public transit. Metro has also prepared and adopted the *Region 2040 Concept Plan*, the *Urban Regional Growth Management Functional Plan*, the *Regional Transportation Plan*, and the *Regional Framework Plan*, which was adopted to implement the 2040 growth concept. The goals and policies developed as a part of that planning process (the *Regional Urban Growth Goals and Objectives* or RUGGOs) were also considered in evaluating potential impacts of the study options.

All applicable plans (including neighborhood, sub area and local plans) within the two-county region were reviewed for policies related to the I-5 corridor options. The results of the analysis are reported below.

Oregon

The *City of Portland's Comprehensive Plan* was reviewed to determine its relation to the study options affecting the City of Portland. As a part of the Comprehensive Plan, the City has also instituted a system of community, sub area and neighborhood master plans that provides more detailed policy guidance for land use and transportation in specific areas. The following sub area plans were reviewed:

- Albina Community Plan
- Central City Plan
- Columbia Corridor Transportation Study

- Central City Transportation Management Plan
- Willamette River Eastbank Review Report

The City of Portland Neighborhood Plans that were reviewed include:

Arbor Lodge Neighborhood Plan, Boise Neighborhood Plan, Bridgeton Neighborhood Plan, Eliot Neighborhood Plan, Humboldt Neighborhood Plan, Kenton Neighborhood Plan, Overlook Neighborhood Plan, and the Piedmont Neighborhood Plan.

Washington

The Clark County Comprehensive Growth Management Plan, the City of Vancouver Comprehensive Plan, and The Shoreline Management Plan goals and policies were reviewed as they relate to the I-5 Corridor options. Specific subarea and community plans reviewed for policies relating to any of the options include:

- Mobility Management Element for the Vancouver Urban Area
- Salmon Creek/Fairgrounds Regional Road Plan
- Clark County High Occupancy Vehicle Study
- Metropolitan Transportation Plan for Clark County

The City of Vancouver Neighborhood Action Plans reviewed were:

Arnada Action Plan, Bagley Downs Action Plan, Burton Ridge Action Plan, Esther Short Action Plan, Fourth Plain Village Action Plan, Hudson's Bay Action Plan, Lincoln Action Plan, Oakbrook Action Plan, Rosemere Action Plan, Shumway Action Plan, Van Mall Action Plan, and West Minnehaha Action Plan.

The plans all have goals and policies directly relating to the I-5 Corridor options. Each option was evaluated to determine if it would support or conflict with the adopted goals and policies. The applicable goals and policies are reported in Appendix B. Other plans were reviewed, but did not have I-5 related goals.

1.4 Affected Environment

Direct effects on existing and planned land uses were also analyzed. This information is reported for the Corridor as a whole as well as by county and by neighborhood.

1.5 Impact Assessment

Impacts of potential I-5 improvements on land use patterns that are expected to occur *directly as a result* of the option were determined by overlaying the conceptual designs onto the land use information described in Section 1.2.2. An examination of the baseline options revealed that the base mapping for the conceptual drawings did not match the GIS system as expected. This may make it appear that there would be impacts to nearby parcels, when actually there may not be any effects from the proposed option. The discrepancy is more noticeable in Washington than in

Oregon. The incompatibility between the base mapping for the conceptual design and GIS information means that a more general impact assessment has been completed:

- No Impact: There would be no impact to existing or planned land uses on these parcels;
- Minor Impact: The proposed option would take less than half of the affected parcel;
- Major Impact: The proposed option would take half or more of the parcel, but would likely still conform to existing land use codes; and
- Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

It is not possible to determine the exact square footage of the impact using the current set of designs and GIS database. However, by careful comparison and through discussions with designers and field verification, the impacts were determined using the above categories. During the next phase, when the options have been narrowed and more detailed design is undertaken, it may be possible to avoid some of the identified impacts. The overall impacts for each option are reported for the region as a whole, by county, and by neighborhood.

2. OPTION DESCRIPTIONS

Several options were designed and tested to determine the impacts specific corridor improvements might have on the existing traffic patterns within the I-5 corridor. These options are described below by a summary of the proposed improvements. The skipped option numbers refer to options no longer considered feasible based on discussions with designers and the project's advisory committee.

2.1 Baseline Options

Four 2020 baseline options were evaluated to test variations in potential corridor performance and land use impacts. The baseline options encompass projects that are "in the pipeline" already. They address differing transit investment levels and certain key highway-capacity improvements, namely in the Delta Park/Lombard and Rose Quarter areas.

Each baseline option includes projects identified in Metro's adopted 2020 Regional Transportation Plan (RTP) and the Southwest Regional Transportation Council's (RTC) Metropolitan Transportation Plan (MTP). The baseline options build upon the preceding baseline option.

2.1.1 Baseline Option 1a: No Build

Baseline Option 1a includes only projects that are already under or planned for construction. This option is also referred to as the "financially committed" system, and represents the lowest level of I-5 corridor and regional transportation investment. It includes the existing

transportation system, projects currently under construction, and projects committed to be built within the next six years. Key highway projects include the following:

- I-5 widening to add third lane each direction (southbound lane for HOV use during the morning peak period) from Main Street to 99th Street (under construction today);
- I-5 widening to add third lane each direction (southbound lane for HOV use during the morning peak period) from 99th Street to 134th Street; and
- Restriping southbound I-5 from Main Street to Mill Plain Blvd. to provide a continuous southbound HOV lane from 134th Street to Mill Plain Blvd.

This option does not include any construction projects on Oregon

2.1.2 Baseline Option 1b: Constrained Baseline Without Delta/Lombard & Rose Quarter Improvements

Except for the improvements described in the Option 1a, no additional I-5 corridor projects are identified under Option 1b. Option 1b includes improvements outside of the I-5 Corridor that are not included in the land use impact analysis because they fall outside of the study area described in Section 1.2.1 and because their effects have been analyzed in other studies. Option 1b includes a number of off-corridor transportation improvements:

- Widening of Marine Drive to five lanes from Terminal 6 to Portland Road;
- Providing a new four-lane bridge to Hayden Island from Marine Drive;
- Improving the Columbia/Killingsworth intersection area and its connection to I-205; and
- Providing a North Lombard overcrossing into Rivergate.

2.1.3 Baseline Option 1c: Constrained Baseline With Delta/Lombard & Rose Quarter Improvements:

Option 1c includes improvements in the Delta Park/Lombard and Rose Quarter areas:

- Widening to add a third southbound travel lane through the Delta Park/Lombard area for morning peak period HOV use, and improving I-5's northbound shoulders in this area; and
- Improving Rose Quarter ramps to address specific weaving, merging, and diverging issues associated with the existing close ramp spacing along this four-lane segment of I-5.

2.1.4 Baseline Option 1d: Priority Baseline With Planned Regional Improvements

Option 1d would have the highest level of investment of the four baseline options. It includes specific transportation improvements identified in the RTP and MTP priority investment systems, and increased planned regional transit service levels. In addition to the improvements described in the previous options, Option 1d also:

- Adds a third lane on I-5 in each direction for general purpose traffic use through the Rose Quarter area between I-84 and I-405; and
- Implements specific ramp improvements that address specific weaving, merging, and diverging issues associated with the existing interchange ramp spacing.

Option 1d also tests two alternatives, labeled 1d(a) and 1d(c). Alternative 1d(a) provides new access between Columbia Boulevard and I-5 to/from the north. Traffic from Columbia Blvd. would access northbound I-5 via the Victory Blvd. interchange while southbound I-5 would access Columbia Blvd. at a new at-grade signalized intersection.

If a decision is made to not build a new Columbia River crossing, Alternative 1d(c) offers a potential opportunity to remove the existing I-5/Hayden Island interchange by rerouting traffic through the Marine Drive Interchange. Marine Drive to Hayden Island access under this spot improvement would be provided along a new arterial roadway across North Portland Harbor.

Both alternatives could occur with or without adding a fourth freeway lane throughout the I-5 corridor. Alternative 1d(a) is included in Option 6 as a part of the proposed improvements.

2.2 Option 2: Express Bus Without Corridor-Wide Capacity Increase

Option 2 includes the operation of directional peak period express bus transit service between Clark County and the Expo Center/PIR Interstate Max transit center. This option does not include a corridor-wide capacity increase except for the construction of a new four-lane arterial and HOV/express bus bridge over the Columbia River.

Key features of this option package include:

- Converting the inside existing/planned third northbound travel lane from Mill Plain Blvd. to 134th Street for afternoon peak period HOV use;
- Establishing a new four-lane joint use arterial and HOV/express bus bridge across the Columbia River -- serving Hayden Island and matching existing/planned HOV lanes in Oregon and Washington;
- Establishing a northbound HOV system from Going Street to 134th Street and a southbound HOV system from 134th Street to approximately Lombard Street;
- Adding direct express bus ramps to/from Expo/PIR transit center;
- Removing the existing I-5/Hayden Island interchange and providing a new connection with Hayden Island via the new bridge; and
- Providing mid-day truck access between Marine Drive and the new arterial/HOV facility.

2.3 Option 3b: LRT from Expo Park-and-ride to Clark College on LRT Only Bridge

Option 3b is centered on a regional light rail transit (LRT) system without corridor-wide freeway capacity increases. Two variations have been established for this option package to test the performance/benefits of two separate investment levels in light rail, construction of an arterial parallel to I-5 from Vancouver south to Columbia Blvd., and no investment in I-5 freeway capacity. Key features of each variation follow:

- Constructing an LRT segment from Expo/PIR to Clark College only;
- Constructing an LRT only bridge over the Columbia River;
- No additional investment in I-5 freeway or parallel arterial roadways; and

Option 3b represents a pure LRT only option.

Since the impacts associated with this option are already well documented in the *South-North Corridor Project Draft Environmental Impact Statement*, this option was not included in this evaluation.

2.4 Option 3c: Clark County LRT Loop With Joint-Use Arterial/HOV Bridge

Option 3c includes highway and Columbia River crossings that are nearly identical to those described in Option 2.

Key features of this option include:

- Establishes a new four-lane arterial roadway west of and parallel to I-5, with access to downtown Vancouver, Hayden Island, Marine Drive, and Columbia Blvd;
- Includes a new joint use arterial/LRT bridge across the Columbia River to supplement the existing I-5 structures, increasing Columbia River crossing capacity to 10 lanes;
- Includes an LRT loop system with the following segments:
 - Expo park-and-ride to Clark College
 - Clark College to 83rd park-and-ride lot with service to Vancouver Mall
 - 83rd park-and-ride to Parkrose transit center with service to Vancouver Mall

Removing the existing I-5/Hayden Island interchange – access to Hayden Island would be provided via the new bridge;

2.5 Option 4: Commuter Rail

Option 4 includes dual passenger-only rail lines from the Coliseum/Rose Quarter area alongside existing freight rail tracks to the City of Woodland. These rails would be located on the east side of, and adjacent to, the existing freight rail tracks on east side of Willamette River. There would also be another set of single rail tracks (joint use by freight and passenger rail traffic) from near the existing railroad bridge over the Columbia River (as well as proposed new dual passenger rail tracks over or under the Columbia River) to the Camas/Washougal area.

This impacts associated with this option are not included in this evaluation. They are being evaluated separately.

2.6 Option 6: Express Bus With Corridor-Wide Capacity Increase

Option 6 includes the operation of directional express bus transit service in I-5 HOV lanes between Clark County and downtown Portland. It also includes widening I-5 to add a fourth travel lane in each direction between I-405 and I-205. Option 6 would require additional Columbia River Bridge crossing capacity.

Key features of this option include:

- Widening I-5 from 134th Street to approximately I-405 to support operation of three general purpose lanes and one HOV lane in each direction, resulting in a directional corridor HOV system from 134th Street to approximately I-405;
- Adding Columbia River crossing capacity compatible with 4-lane, 6-lane and 10-lane bridge and Columbia River tunnel concepts; and
- HOV specific facility treatments such as a directional HOV/express bus connection between I-5 and SR 14 to/from the south.

2.7 Option 7: LRT with Corridor-Wide Capacity

Option 7 includes an LRT loop system, as well as a corridor-wide highway capacity increase in the form of a two-lane reversible express lane facility on I-5 between 134th Street and I-405.

Key features of this option include:

- Providing five lanes of peak direction roadway capacity, including HOV, resulting in the maximum person-carrying capacity for any of the alternatives under consideration;
- Constructing an LRT loop system with the following segments:
 - Expo Center to Clark College
 - Clark College to 83rd park-and-ride lot with service to Vancouver Mall
 - 83rd park-and-ride lot to Parkrose transit center with service to Vancouver Mall

- Adding limited express lane access at 134th Street, SR 500, SR 14, Columbia Blvd., and I-405/I-5;
- Columbia River crossing capacity improvements, including 4-lane, 6-lane, and 10-lane Columbia River Bridge concepts and with Columbia River tunnel concepts

No conceptual design was completed for this option, therefore, no land use or environmental impacts could be determined.

2.8 Option 8: New Western Arterial Corridor

Option 8 would build upon the Option Package 1d (Priority Baseline) and would involve construction of a new arterial connecting US 30 near the Linnton neighborhood and St. John's Bridge in Portland to Vancouver at Mill Plain Blvd. The new arterial would be four lanes (two in each direction) with bicycle lanes and sidewalks. Access to/from the arterial and adjacent street system would be limited to Mill Plain Blvd., Hayden Island, Marine Drive, Columbia Blvd., Lombard Street, and US 30.

The arterial would follow an alignment from Vancouver near Mill Plain Blvd. across the Columbia River along North Portland Road. Just north of Columbia Blvd., the arterial would transition to a grade-separated structure above the existing BNSF rail lines to a point just north of the Willamette River. From there, the arterial would cross the Willamette River on a new bridge to US 30.

The arterial is intended to draw "local" freight and general-purpose traffic between North Portland and Vancouver from I-5 and major east-west arterials including Columbia Blvd. and Lombard Street.

3. PROJECT IMPACTS

Direct impacts are caused by right-of-way acquisition that affects all land use categories. Direct impacts are reported for each option under consideration by corridor, county, and neighborhood and are further described as a minor, major, or full impact.

Direct impacts are reported for both existing and planned land use categories because planned land uses sometimes vary from existing uses. For example land is vacant now that is planned and designated for a variety of uses.

3.1 Plan Consistency

Each option was evaluated to determine if it would support or conflict with the adopted goals and policies listed in Appendix B.

3.1.1 Baseline Options

None of the baseline options, as currently conceptually designed would conflict with adopted plan goals and policies. The minor impacts to wetlands, wildlife habitat, and park space could be mitigated. To the extent that they result in improved traffic flow, the baseline options would reduce noise and air quality impacts on adjacent land uses.

3.1.2 Option 2

Option 2, as currently designed, would not conflict with any adopted plan goals and policies. The improvements would result in improved traffic flow and potentially fewer single-occupancy vehicles, reducing noise, traffic, and air quality impacts on adjacent land uses.

3.1.3 Option 3c

Option 3c, as currently designed would not conflict with any adopted plan goals and policies relating to land use and livability goals. Option 3c would conflict with adopted environmental goals and policies that protect wetland and habitat areas, although the impacts to wetlands, wildlife habitat, and park space could be mitigated. Option 3c could reduce traffic within the corridor, reducing noise, traffic, and air quality impacts on adjacent land uses.

3.1.4 Option 6

The Columbia River crossing alternatives included in Option 6 would not conflict with the majority of adopted plan goals and policies. Option 6 would require the displacement of residential housing, which could be mitigated. Option 6 could reduce traffic within the corridor, reducing noise, traffic, and air quality impacts on adjacent land uses.

3.1.5 Option 8

Option 8 would conflict with more adopted plan goals and policies than any other option, although the majority of goals and policies would still support it. Option 8 would require a new road that would affect wetlands and other habitat areas, which could be mitigated. Option 8 could improve traffic flow reducing noise, traffic, and air quality impacts on land uses adjacent to I-5, but could increase traffic, noise, and air quality impacts near the new alignment.

3.2 Existing Land Uses

The impacts to existing and planned land uses described in the following are based on the conceptual designs and like the conceptual designs, these impacts are likely to change as more detailed designs are completed. The impact analysis should only be used for comparing options.

3.2.1 Baseline Option 1a

Potential impacts to existing land uses are included in Table 3.2.1.1.

Corridor Impacts

Option 1a does not include improvements in Oregon, limiting the corridor impacts to Washington. Overall, this option would affect 61 parcels with the majority of impacts minor and allowing the existing land use to continue. The majority of impacts would be in areas with rural uses (24 parcels), followed by commercial (26 parcels). 10 industrial parcels would also be affected.

Although the majority of impacts would be minor, as currently designed Option 1a would require acquisition of 14 parcels. Nine of these parcels are in commercial areas. Three industrial and two rural parcels would be acquired. These impacts would likely require existing businesses or residences to relocate and would limit any potential future development on remaining land.

Option 1a would have two park-and-rides located within the I-5 Corridor, one located at 99th Street and I-5, and one at the 83rd Street/I-205 interchange. All of the impacts for the two park-and-rides would be in the Pleasant Valley area and would include 6 acquisitions, one partial acquisition, and one encroachment on commercial property. There would also be one minor impact encroachment to a rural parcel at the 99th Street park-and-ride. All of these impacts are included in impacts for this option.

County Impacts

The only impacts would be in Clark County. Countywide impacts are the same as those included in Corridor Impacts.

Neighborhood Impacts

Option 1a would affect four neighborhoods/areas. The majority of impacts would occur in Pleasant Valley with 22 affected parcels, primarily minor impacts (encroachments) to commercial parcels, followed by West Hazel Dell with 18 affected parcels, and NE Hazel Dell with 14 affected parcels. In addition to I-5 improvements, two park-and-ride's (99th Street, and 83rd Street/I-205 intersection) are included in this option. These impacts are included in the affected parcels for the Pleasant Valley area, totaling 9 parcels.

The majority of impacts in Clark County would be minor. Nine commercial parcels within the Pleasant Valley neighborhood would be affected by a frontage road that was redesigned as a part of the proposed/ongoing improvements near 78th Street (WA) to provide access to existing businesses. Another frontage road directly across I-5 from the frontage road described above would affect seven rural parcels within the NE Hazel Dell neighborhood.

**Table 3.2.1.1 Option 1a
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial ^{1,2}			Rural ²			Other			Total
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Type of Impact*																									
Neighborhood/Area																									
Washington																									
NE Hazel Dell																2 1 3			8						14
Pleasant Valley										3 3			10 6												22
Starcrest																			4 1 2						7
West Hazel Dell										4			4			10									18
Total Washington	0	0	0	0	0	0	0	0	0	0	0	0	7	0	3	16	1	9	22	1	2	0	0	0	61
Total Corridor	0	0	0	0	0	0	0	0	0	0	0	0	7	0	3	16	1	9	22	1	2	0	0	0	61

The following park-and-ride facilities are include in the overall impacts to existing land uses for Option 1a:

1. The park-and-ride facility at 83RD Street/I-205 would result in full acquisition of three commercially used parcels.
2. The park-and-ride facility at 99th Street and I-5 would result in full acquisition of three commercially used parcels, one major encroachment, and one minor encroachment to commercial uses. This park-and-ride also would have a minor impact to one rural parcel.

* Minor Impact: The proposed option would take less than half of the affected parcel;
Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.2.2 Baseline Option 1b

Option 1b would include improvements outside of I-5 corridor described in Section 2.1.2. Impacts within the corridor would be the same as Option 1a.

3.2.3 Baseline Option 1c

Potential impacts to existing land uses are included in Table 3.2.3.1.

Corridor Impacts

Option 1c builds from Option 1a and Option 1b (impacts outside of the I-5 corridor are not included in this analysis). Overall, this option would affect eight additional parcels as well as the 61 parcels affected by previous options, totaling 69 parcels. In Oregon, there would be eight affected parcels in the Hayden Island and Kenton/Bridgeton neighborhoods; all of these are in industrial uses. Seven of the eight parcels are minor (encroachment) impacts.

In Washington, the impacts would be the same as Option 1a.

Corridor-wide, the majority of impacts would be minor. Of the 69 affected parcels, Option 1c would likely require acquisition of 15 parcels. Nine of these parcels are commercial uses, four industrial and two rural uses. These impacts would likely require any existing businesses or other uses to relocate and would limit the potential of any future development.

County Impacts

In Multnomah County, there would be eight affected parcels, all of those industrial uses. Seven of the eight parcels would be minor impacts.

In Clark County, the impacts would be the same as Option 1a.

Neighborhood Impacts

Option 1c would affect two neighborhoods in Multnomah County. The Kenton/Bridgeton neighborhoods would have the majority of impacts, with six minor encroachments and one full acquisition. All impacts would be to commercial uses. Hayden Island would have one minor impact to a commercial parcel.

Impacts to Clark County neighborhoods, would be the same as Option 1a.

**Table 3.2.3.1 Option 1c
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total	
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Type of Impact	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Neighborhood/Area																										
Oregon																										
Hayden Island										1															1	
Kenton/Bridgeton										6		1													7	
Total Oregon	0	0	0	0	0	0	0	0	0	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	8	
Washington																										
NE Hazel Dell													2	1	3	8										14
Pleasant Valley										3		3	10		6											22
Pleasant Valley																4	1	2								7
West Hazel Dell										4			4			10										18
Total Washington	0	0	0	0	0	0	0	0	0	7	0	3	16	1	9	22	1	2	0	0	0	0	0	0	0	61
Total Corridor	0	0	0	0	0	0	0	0	0	14	0	4	16	1	9	22	1	2	0	0	0	0	0	0	69	

* Minor Impact: The proposed option would take less than half of the affected parcel;
Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.2.4 Baseline Option 1d

Potential impacts to existing land uses are included in Table 3.2.4.1, 3.2.4.2, and 3.2.4.3. There would be no impacts south of Lombard Street to I-405 because the improvements would be within existing right-of-way.

Corridor Impacts

Option 1d builds from option 1a, 1b, and 1c (Option 1b impacts outside of the corridor are not included in this analysis). Overall, this option would affect 11 additional parcels, for a total of 80 parcels affected. The majority of impacts (60 parcels) would be minor encroachment impacts. 22 impacts would be to rural uses, 21 commercial, and 12 industrial uses. There would also be 2 minor impacts to single-family residential parcels.

Corridor-wide, the majority of impacts would be minor. Option 1d would likely require acquisition of 18 parcels, the same as Option 1c. Nine of these impacts would be to commercial uses, seven to industrial and two to rural uses. These impacts would likely require the any existing businesses or other uses to relocate or would limit the potential for any future development on these parcels.

Option 1d also tests two alternatives, labeled 1d(a) and 1d(c). These impacts are not included in the overall baseline impacts because they may or may not be included as a part of the improvements for this option. However, the potential impacts are illustrated in Table 3.2.4.2 and Table 3.2.4.3.

County Impacts

In Multnomah County, 19 parcels would be affected, 11 more than Option 1c. Nine of the affected parcels are in industrial use; eight of the nine would experience minor impacts. Eight commercial parcels would be affected, five of those would experience minor encroachments and three would be major impacts requiring at least partial acquisition, but leaving the use in place. This option would also have two minor impacts to single-family residential parcels.

If Alternative 1da were implemented, it would require acquisition of 9 parcels and have one minor impact to industrial parcels and one minor impact to a commercial parcel. If 1dc is implemented it would have one minor impact to an industrial parcel and one minor impact to an public/open space parcel.

In Clark County, the impacts would be the same as Option 1a, 1b, and 1c.

Neighborhood Impacts

Option 1d would affect three neighborhoods in Multnomah County. As in previous options, the Kenton/Bridgeton neighborhoods would have the majority of impacts, with nine minor, one major requiring partial acquisition, and one full acquisition. All impacts would be to commercial

and industrial properties. Hayden Island would have four minor and two major impacts to commercial parcels. Two single-family residential parcels would also be affected in the Piedmont/Arbor Lodge neighborhood. The impacts would be minor encroachments.

Option 1d would have the same impacts in Clark County and as in previous options.

If Alternative 1da were implemented, it would require acquisition of nine industrial parcels and have minor impact to another. There would also be minor impact to industrial parcels and one minor impact to a commercial parcel. All of these impacts are within the Kenton/Bridgeton neighborhood. If 1dc is implemented it would have one minor impact to an industrial parcel and one minor impact to a public/open space parcel. These impacts are also within the Kenton/Bridgeton neighborhood

**Table 3.2.4.1 Option 1d
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Type of Impact	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Neighborhood/Area																									
Oregon																									
Hayden Island										1			3	2											6
Kenton/Bridgeton										7	1		2	1											11
Piedmont/Arbor Lodge	2																								2
Total Oregon	2	0	0	0	0	0	0	0	0	8	0	1	5	3	0	0	0	0	0	0	0	0	0	0	19
Washington																									
NE Hazel Dell													2	1	3	8									14
Pleasant Valley											6		10		6										22
Starcrest																4	1	2							7
West Hazel Dell										4			4			10									18
Total Washington	0	0	0	0	0	0	0	0	0	4	0	6	16	1	9	22	1	2	0	0	0	0	0	0	61
Total Corridor	2	0	0	0	0	0	0	0	0	12	0	7	21	4	9	22	1	2	0	0	0	0	0	0	80

Note: Includes impacts from Option 1a, Option 1c, and Option 1d. The impacts listed above do not include the potential impacts for alternatives 1da and 1dc. These are illustrated in Table 3.2.4.2 and Table 3.2.4.3.

* Minor Impact: The proposed option would take less than half of the affected parcel;
Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

**Table 3.2.4.2 Option 1d-Alternative 1da
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Neighborhood/Area																									
Oregon Kenton/Bridgeton										1	0	9			1										11
Total Oregon	0	0	0	0	0	0	0	0	0	1	0	9	1	0	0	0	0	0	0	0	0	0	0	0	11
Total Corridor	0	0	0	0	0	0	0	0	0	1	0	9	1	0	0	0	0	0	0	0	0	0	0	0	11

**Table 3.2.4.3 Option 1d-Alternative 1dc
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Neighborhood/Area																									
Oregon Kenton/Bridgeton									1				1												2
Total Oregon	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Corridor	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2

* Minor Impact: The proposed option would take less than half of the affected parcel;
 Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
 Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.2.5 Option 2

Potential impacts to existing land uses are included in Table 3.2.5.2 with baseline impacts listed in bold. Impacts for improvements to the I-5/I-205 interchange are also documented in the *Interstate-5 / Interstate-205 North Corridor Study Route Development Plan and Interstate 5 / Interstate 205 Corridor Strategy Report* prepared by The Washington Department (WSDOT) of Transportation in February, 2001.

Option 2 includes many of the planned improvements listed in the above document, however, this option also includes other improvements throughout the I-5 corridor that are not reflected in the interchange report.

Corridor Impacts

Option 2 builds from the priority baseline (option 1d) which is described in Section 3.2.4. In addition to the 80 impacts included in the baseline, Option 2 would affect an additional 145 parcels. Overall, Option 2 would affect 225 parcels, the majority (181 parcels) in Washington. Impacts would be primarily to commercial uses (85 parcels), followed by rural (57 parcels), single-family residential (43 parcels), industrial (42 parcels), and public/open space (4 parcels).

Corridor-wide, the majority of impacts would be minor. Of the total 225 affected parcels, 131 would be minor impacts, mainly to rural, commercial, and single-family residential uses. Option 2 would require acquisition of 81 parcels, the majority are in commercial use, although 26 single-family residences would be acquired. Any existing businesses, homes, or other uses on the acquired parcels would have to relocate and future use or development would be limited.

In addition to the Central County and 99th St. park-and-rides included in Option 1a, this option would also add new park-and-rides or increase capacity at existing facilities. Table 3.2.5.1 lists all of the park-and-rides included in this option. Only three park-and-rides, Salmon Creek, 99th Street, and Central County (in bold) fall within the I-5 corridor and are included in the overall impacts to existing land use. The remaining facilities are included for reference, but are not included in the overall impacts for this option because they are not within the I-5 corridor boundary.

County Impacts

In Multnomah County, 25 parcels would be affected in addition to the 19 parcels affected by the baseline improvements, for a total of 44 parcels. 23 of these parcels are in commercial use, eleven commercial parcels would be acquired, and seven would experience minor impacts. This option would affect 17 industrial parcels, only one would be a full impact. The majority (15 of 17 total impacts) of impacts to industrial uses would be minor. The remaining impacts would be minor impacts to single-family residential and public/open space, two affected parcels of each type.

The majority of impacts would be in Clark County, where 120 parcels would be affected in addition to the 61 affected parcels from the baseline, totaling 181 affected parcels. Impacts

would be concentrated in commercial areas with about an equal number of minor and full acquisition impacts (31 minor encroachments and 28 full acquisitions). Impacts to rural (51 land uses would be mostly minor out of 57 parcels). Single-family residential areas (41 total parcels) would experience 26 full acquisitions and 13 minor encroachments.

Table 3.2.5.1 New and Increased Capacity at Park-and-rides

P&R Facility	Existing Capacity	Option Package 2 Capacity	Total Acreage
Battle Ground Park-and-ride	35 spaces	300 spaces	3
BPA Park & Ride	250 spaces	400 spaces	4
Salmon Creek Park-and-ride	479 spaces	600 spaces	6
Washougal Park-and-ride	40 spaces	600 spaces	6
Evergreen Park-and-ride	290 spaces	300 spaces	3
Fishers Landing Park-and-ride	550 spaces	900 spaces	9
Ridgefield Junction Park-and-ride	35 spaces	600 spaces	6
Planned 99th St. P&R	N/A	600 spaces	6
Fairgrounds	N/A	800 spaces	8
219th	N/A	600 spaces	6
Central County	N/A	600 spaces	6

Neighborhood Impacts

Option 2 would affect three neighborhood/areas in Multnomah County. The impacts to Hayden Island and Kenton/Bridgeton would be the same 21 parcels each. These would be concentrated in industrial and commercial areas with 12 full acquisitions, 6 major encroachments, and 24 minor impacts to commercial, industrial, and public/open space areas. The Piedmont/Arbor Lodge neighborhoods would experience minor impacts to two single-family residences. All new impacts from Option 2 would fall within the Kenton/Bridgeton and Hayden Island neighborhoods.

Option 2 would affect eight neighborhoods/areas in Clark County. The majority of impacts would occur in Pleasant Valley with 84 affected parcels (primarily minor impacts to commercial and rural uses) followed by Rosemere with full acquisition of 24 single-family residences. Other affected neighborhoods would include West Hazel Dell with 20 affected parcels, NE Hazel Dell and Esther Short each with 14 affected parcels, primarily to commercial uses. In the Shumway neighborhood, there would be 12 impacts, mostly minor, to single-family residences. Parcels in the Starcrest and Arnada neighborhood would also have mostly minor impacts to rural and single-family residential uses. All impacts to residential uses would be from Option 2. No residential impacts were seen in the baseline impacts for neighborhoods within Clark County.

**Table 3.2.5.2 Option 2
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial ¹			Commercial			Rural			Other			Total	
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Neighborhood/Area																										
Oregon																										
Hayden Island										1						2, 3	2, 2	11							21	
Kenton/Bridgeton							2			7, 7	1	1				2	1								21	
Piedmont/Arbor Lodge	2																								1	
Total Oregon	2	0	0	0	0	0	0	0	0	15	1	1				7	5	11	0	0	0	0	0	0	0	44
Washington																										
Arnada	2	1														1										4
Esther Short																3	2	9								14
NE Hazel Dell																2	1	3	8							14
Pleasant Valley										5	2	8, 6	11, 10					7, 6	28							84
Rosemere			24																							24
Shumway	9	1	2																							12
Starcrest	2																		4	1	2					9
West Hazel Dell							1	1		4						4			10							20
Total Washington	13	2	26	0	0	0	0	0	0	1	1	0	9	2	14	31	3	28	51	2	4	0	0	0	0	181
Total Corridor	15	2	26	0	0	0	0	0	0	3	1	0	24	3	15	38	8	39	51	2	4	0	0	0	0	225

Note: Numbers in bold denote baseline impacts.

1. Constructing the Salmon Creek Park-and-ride would result in full acquisition of eight industrial parcels in Pleasant Valley.

* Minor Impact: The proposed option would take less than half of the affected parcel;
 Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
 Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.2.6 Option 3b: LRT from the Expo Center Park-and-Ride to Clark College

The LRT alignment included in this option is already well documented in the *South/North Corridor Project Draft Environmental Impact Statement*. Refer to that document for specific information about potential land use impacts.

3.2.7 Option 3c: Clark County LRT Loop With Joint-Use Arterial Bridge

Option 3c would include several park-and-rides already evaluated in the *North Corridor Interstate MAX Light Rail Final Environmental Impact Statement* and the environmental assessment completed for the Airport MAX. These park-and-rides, including those specific to Option 3c, are described in Table 3.2.7.1. Park-and-rides already evaluated in the reports listed above are not included in the overall impacts for this option.

Potential impacts to existing land uses are included in Table 3.2.7.2 with baseline impacts in bold. Tri-Met provided preliminary real estate impacts associated with the conceptual design. These were used to verify the land use impacts analysis using GIS.

Corridor Impacts

Option 3c builds from the priority baseline (option 1d), which is described in Section 3.2.4. In addition the 80 parcels affected by the baseline, Option 3c would affect an additional 159 parcels. Overall, Option 3c would affect 239 parcels, the majority (197 parcels) in Washington. Impacts would be primarily to commercial uses (133 parcels), followed by rural (36 parcels), single-family residential (30 parcels), industrial (25 parcels), public/open space (12 parcels), and multi-family residential (3 parcels).

Corridor-wide, the majority of impacts would be minor. Of the 239 affected parcels, 128 would be minor impacts, mainly to commercial, rural, industrial, and single-family residential uses. This option would involve a full acquisition of 80 parcels, the majority in commercial use. Full acquisition would require any existing businesses, homes, and other uses to relocate or would limit potential future development or use the property.

In addition to the Central County and 99th St. Park-and-rides included in Option 1a, this option also would add several new park-and-rides. Table 3.2.7.1 lists all park-and-rides included in this option. Park-and-rides also related to Interstate Max and Airport MAX are not included in the overall impacts because they have been separately evaluated. All other impacts are included, either as a part of the baseline (99th Street and Central County) or as impacts related to this option.

County Impacts

In Multnomah County, 23 parcels would be affected in addition to the 19 parcels affected by the baseline; totaling 42 affected parcels. 22 of those impacts are in commercial uses with 10 full acquisitions and seven minor impacts. This option would affect 15 industrial parcels, although only one would be a full acquisition; the majority of impacts to industrial uses would be minor

(13 of 15 parcels). The remaining impacts would be minor impacts to three public/open space parcels and two single-family residential parcels.

The majority of impacts would be in Clark County with 136 parcels affected, in addition to the 61 affected by the baseline, for a total of 197 parcels affected. Impacts would be heavily concentrated in commercial areas with an equal number of minor encroachments and full acquisition impacts (48 minor and 48 full acquisition impacts). Impacts in rural areas would be mostly minor (26 minor impacts out of 36 parcels), as would impacts to single-family residential parcels (15 minor and 8 full acquisitions). In industrial areas, seven parcels would be full acquisitions and four would have minor encroachments.

Table 3.2.7.1 Park-and-rides

P&R Facility	Planned Capacity	Total Acreage
Clark County LRT System		
I-5 at VA Hospital	1000	10
SR500 at Falk Road	550	5.5
SR500 at Andresen Rd.	1000	10
SR500 at Vancouver Mall	910	9
I-205 at Crossroads	1200	12
I-205 at NE 18 th Street	830	8
Baseline¹		
Planned 99th St. P&R	600	6
Central County (I-205 and 83 rd)	600	6
Airport MAX²		
Parkrose/Sumner	193	2
Interstate MAX²		
PIR	300	3
Expo Center	300	3

1. Park-and-ride impacts are included in the baseline.
2. Airport and Interstate MAX are not included in the overall impacts for Option 3. The impacts associated for these park-and-rides are included in the *South-North Environmental Impact Statement* and/or the EA completed for the Airport MAX.

Neighborhood Impacts

Option 3c would affect three neighborhood/areas in Multnomah County. Hayden Island and Kenton/Bridgeton would have the same number of affected parcels, totaling 20 each. These are concentrated in commercial and industrial areas. The Piedmont/Arbor Lodge neighborhood would have two minor impacts to single-family residential parcels. All new impacts from this option would fall within the Kenton/Bridgeton and Hayden Island neighborhoods. These impacts are primarily from the bridge structure.

Option 3c would affect 13 neighborhoods/areas in Clark County. The majority of impacts would occur in Pleasant Valley with 58 affected parcels, followed by Meadow Homes with 38 affected parcels. The majority of these impacts would be to single-family residential and commercial

areas, with 21 impacts to single-family residences. Eight would be minor impacts, although there would also be five major encroachments and 15 full acquisition impacts. Other affected neighborhoods would include West Hazel Dell, Esther Short, Sunnyside, Starcrest, Ellsworth, Springs/Fellman, Arnada, Walnut Grove, and county areas outside designated neighborhoods. The majority of these impacts would be in commercial and rural areas, with impacts to single-family residential limited to the Meadow Homes and Springs/Fellman neighborhoods.

**Table 3.2.7.2 Option 3c
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total		
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full			
Type of Impact*																											
Neighborhood/Area																											
Oregon																											
Hayden Island															1			2, 3	2, 2	10						20	
Kenton/Bridgeton							2		1				5, 7	1	1			2	1							20	
Piedmont/Arbor Lodge	2																										
Total Oregon	2	0	0	0	0	0	0	0	0	2	0	1	13	1	1			7	5	10	0	0	0	0	0	0	42
Washington																											
Arnada																		3	1	2						6	
County																		12								15	
Ellsworth Springs/Fellman	7																									7	
Esther Short																		1	1	13						15	
Hudson's Bay/Central Park							7		1																	8	
Meadow Homes	8	5	8															4	2	9	2					38	
NE Hazel Dell																		2	1	3	8					14	
Pleasant Valley															6			6, 10	9	14, 6	1	2	4			58	
Starcrest																					4	1	2			7	
Sunnyside							1										6	1								8	
Walnut Grove																				1	1					3	
West Hazel Dell													4					4			10					18	
Total Washington	15	5	8	3	0	0	0	0	0	8	1	0	4	0	6			48	15	48	26	4	6	0	0	0	
Total Corridor	17	5	8	3	0	0	0	0	0	10	1	1	17	1	7			55	20	58	26	4	6	0	0	0	239

Note: Numbers in bold denote baseline impacts.

- * Minor Impact: The proposed option would take less than half of the affected parcel;
- Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
- Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.2.8 Option 4: Commuter Rail

This impacts associated with this option are not included in this evaluation. They are being evaluated separately.

3.2.9 Option 6

Potential impacts to existing land uses are included in Tables 3.2.9.1, 3.2.9.2, and 3.2.9.3 with baseline impacts in bold. Option 6 would add several new park-and-rides, or increase the capacity of existing facilities, although additions/improvements are the same as those included in option 2 (see Table 3.2.5.1). Only three of the listed park-and-rides, Salmon Creek, 99th Street, and Central County, fall within the I-5 corridor and are included in the overall impacts on existing land use. The remaining facilities are included for reference, but are not included in the overall impacts for this option.

Corridor Impacts

In addition to the 80 parcels affected by the baseline, Option 6 would affect 173-192 parcels, depending on the new Columbia River crossing configuration. Option 6 tests three separate alternatives for crossing the Columbia River. All would have varying degrees of impacts to existing land uses.

Corridor Impacts with a Four Lane Tunnel

Option 6 with a four-lane bridge would affect 173 parcels in addition to the 80 parcels included in the baseline, totaling 253 affected parcels. The majority of impacts (175 parcels) would be located in Washington. Impacts would be primarily to single-family residential uses (76 parcels), followed by commercial uses (67 parcels), rural (53 parcels), industrial (42 parcels), multi-family residential, (11 parcels), and public/open space (4 parcels).

Corridor-wide, the majority of impacts would be minor. Of the total 253 affected parcels, 166 would experience minor encroachments, mainly to rural, single-family residential, commercial, and industrial uses. There would be full acquisition of 73 parcels, 30 single-family residences, 21 in commercial use, and 16 industrial uses. Full acquisition would require any existing businesses, homes, and other uses to relocate or would limit potential future development or use.

Corridor Impacts with a Six-Lane Bridge

Option 6 with a six-lane bridge would affect 192 parcels in addition to the 80 parcels that would be affected by the baseline improvements, for a total of 272 parcels. The majority of impacts (193 parcels) would occur in Washington. Impacts would primarily to single-family residences (80 parcels), followed by commercial (79 parcels), rural (53 parcels); industrial (43 parcels), multi-family residential (11 parcels), and public/open space (6 parcels).

Corridor-wide, the majority of impacts would be minor. Of the total 272 affected parcels, 176 would experience minor encroachments, mainly to rural, commercial, single-family residential,

and industrial uses. There would be full acquisition to 82 parcels (33 single-family residential, 26 commercial, 16 industrial uses, and 4 to multi-family residential, 2 rural, and 1 public/open space).

Corridor Impacts with a Ten-Lane Bridge

Option 6 with a ten-lane bridge would affect 192 in addition to the 80 parcels included in the baseline, for a total of the 272 parcels. The majority of impacts (183 parcels) would be located in Washington. Impacts would be primarily to single-family residential uses (77 parcels), followed by commercial (73 parcels), rural (53 parcels), industrial (50 parcels), multi-family residential (11 parcels), and public/open space (8 parcels).

Corridor-wide, the majority of impacts would be minor. Of the total 272 affected parcels, 180 would be minor impacts, mainly to rural, single-family residential, commercial, and industrial uses. However, full acquisition of 76 parcels (30 single-family residential parcels, 22 commercial, 16 industrial, 4 multi-family residential, 2 rural, and 2 public/open space) would be required.

County Impacts

County Impacts with a Four Lane Tunnel

In Multnomah County, 59 parcels would be affected, in addition to the 19 affected by baseline improvements, for a total of 78 affected parcels. Single-family residential uses would be most affected parcels with 32 parcels with minor encroachments and four full acquisitions, followed by commercial with one full acquisition, six major encroachments, and nine minor impacts. This option would affect 15 industrial parcels that would include 12 minor impacts (one major encroachment and two full acquisitions). Eleven parcels used for multi-family residences would be affected (seven minor and four full acquisitions).

The majority of impacts would be in Clark County, with 114 parcels affected in addition to the 61 parcels affected by baseline improvements, for a total of 175 affected parcels. Impacts would be concentrated in single-family residential, commercial, rural, and industrial areas. Forty single-family residences would be impacted; 13 would be minor encroachments, but there would also be 26 full acquisitions. Fifty-one commercial parcels would be affected, the majority minor (29 parcels), but 20 parcels would be full acquisitions. Rural and industrial uses would also see some impacts, primarily minor, although 14 parcels in industrial use would be acquired for right-of-way.

County Impacts with a Six-Lane Bridge

In Multnomah County, 60 parcels would be affected in addition to the 19 affected by baseline improvements, for a total of 79 affected parcels. Single-family residential uses would be most

affected with 32 minor encroachments and four full acquisitions. Two industrial parcels would be full acquisitions, two would have major encroachments, and there would be minor impacts on 12 parcels. This option would affect 15 commercial parcels, seven would be minor impacts. Eleven multi-family residential parcels would be affected - seven minor and four full impacts. This option would also have one minor impact to a public/open space parcel.

The majority of impacts would be in Clark County, with 132 parcels affected in addition to 61 that would be affected by baseline improvements, totaling 193 affected parcels. Impacts would occur in single-family residential, commercial, rural, and industrial areas. There would also be impacts to public/open space. Forty-four single-family residential parcels would be impacted; 14 would be minor encroachments, but there would also be 29 full acquisitions. Sixty-four commercial uses would be impacted, the majority (39) would be minor impacts, but there would also be 22 full acquisitions. Rural and industrial uses would also see some impacts, primarily minor, although 14 industrial parcels would be acquired and existing uses displaced.

County Impacts with a Ten-Lane Bridge

In Multnomah County, 70 parcels would be affected in addition to the 19 affected by baseline improvements. Most affected parcels are in single-family residential use (33 minor and four full acquisitions) followed by 23 affected industrial parcels. Eighteen commercially used parcels would be affected (two full acquisitions, four major encroachments, and 12 minor impacts). Eleven multi-family residential parcels would be impacted (seven minor encroachments and four full acquisitions).

The majority of impacts would be in Clark County, with 122 affected parcels in addition to the 61 affected by baseline improvements, for a total of 183 affected parcels. Impacts would occur to commercial, rural, and single-family residential areas. Commercial areas would have 55 parcels affected (33 minor encroachments and 20 full acquisitions). Forty single-family residences would be impacted. The majority (26) would be full acquisitions. Rural and industrial uses would also see some impacts, primarily minor, although 14 industrial uses would be acquired and relocated.

Neighborhood Impacts

Corridor Impacts with a Four Lane Tunnel

Option 6 with a four-lane tunnel would affect five neighborhood/areas in Multnomah County. The Piedmont/Arbor Lodge neighborhoods would have the majority of impacts with 38 parcels affected (34 minor encroachments and four full acquisitions), primarily to single-family residential uses. In the Kenton/Bridgeton neighborhoods 12 parcels in industrial and commercial uses would be affected. On Hayden Island 11 industrial and commercial uses would be affected. The Boise and Humboldt neighborhoods would also see some impacts, mostly minor and primarily to multi-family residential and industrial uses.

Option 6 with a four-lane tunnel would affect seven neighborhoods/areas in Clark County. The majority of impacts would occur in Pleasant Valley with 88 parcels affected including minor, major, and full impacts to commercial, rural, and industrial uses. Impacts in the Rosemere neighborhood would include 24 full acquisitions of single-family residential parcels. Other affected neighborhoods would include West Hazel Dell with 20 parcels affected, Shumway with 16 residential parcels affected (13 would be minor), and NE Hazel Dell with 14 parcels affected. In the Hudson's Bay/Central Park area there would be two minor impacts to park/open space parcels and four full impacts to commercial uses. Parcels in the Starcrest neighborhood would also experience some impacts, mostly minor to rural uses.

Corridor Impacts with a Six-Lane Bridge

Option 6 with a six-lane bridge would affect five neighborhood/areas in Multnomah County. The Piedmont/Arbor Lodge neighborhoods would have the majority of impacts with 38 (34 minor and four full acquisitions), primarily to single-family residential and commercial uses. In the Kenton Bridgeton neighborhoods 14 parcels would be affected in industrial, commercial, and public/open space areas, 10 of those impacts would be minor. On Hayden Island 10 parcels in industrial and commercial uses would be affected. The Boise and Humboldt neighborhoods also would see some impacts, primarily to multi-family residential and industrial areas.

Option 6 with a six-lane bridge would affect nine neighborhoods/areas in Clark County. The majority of impacts would occur in Pleasant Valley with 88 parcels affected, including minor encroachments and full acquisition of commercial, rural, and industrial uses. Impacts in the Rosemere neighborhood would include 24 full acquisitions of single-family residential parcels. Other affected neighborhoods would include West Hazel Dell with 20 parcels affected, Shumway with 16 (13 minor) single-family residential parcels affected, and NE Hazel Dell with 14 parcels affected, primarily in commercial uses. In the Hudson's Bay/Central Park area 12 parcels would be affected - two minor and one full acquisition of park/open space, and six commercial parcels acquired for right-of-way. Parcels in Arnada, Starcrest, and Esther Short neighborhoods would also be affected, mostly minor impacts to rural and commercial uses.

Corridor Impacts with a Ten-Lane Bridge

Option 6 with a ten-lane bridge would affect five neighborhood/areas in Multnomah County. The Piedmont/Arbor Lodge neighborhoods would be most affected with 39 (35 minor encroachments and four full acquisitions), primarily to single-family residential uses. On Hayden Island 18 industrial and commercial parcels would be affected, 11 of those would be minor impacts. In the Kenton/Bridgeton neighborhoods 15 industrial and commercial, 11 of those impacts would be minor. The Boise and Humboldt neighborhoods would see some impacts, primarily to multi-family residential and industrial areas.

Option 6 with a ten-lane bridge would affect nine neighborhoods/areas in Clark County. The majority of impacts would occur in Pleasant Valley with 88 parcels affected including commercial, rural, and industrial uses. Impacts in the Rosemere neighborhood would include 24 full acquisitions of single-family residential parcels. Other affected neighborhoods would include West Hazel Dell with 20 parcels affected, Shumway with 16, and NE Hazel Dell with 14

parcels affected. In the Hudson's Bay/Central Park area 12 parcels would be affected – half currently in park/open space and commercial uses. Parcels in the Starcrest and Esther Short neighborhoods would also have impacts, mostly minor impacts to rural and commercial uses.

**Table 3.2.9.1 Option 6-4-Lane Tunnel
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial ¹			Commercial			Rural			Other			Total			
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full				
Neighborhood/Area																												
Oregon																												
Boise				7		4							1	1	1													14
Hayden Island													1			2, 3	2, 2	1										11
Humboldt													3															12
Kenton/Bridgeton													7		1	2	1, 1											38
Piedmont/Arbor Lodge	30, 2		4													2												
Total Oregon	32	0	4	7	0	4	0	0	0	0	0	0	12	1	2	9	6	1	0	0	0	0	0	0	0	0	0	78
Washington																												
Hudson's Bay/Central Park										2								4										6
NE Hazel Dell																2	1	3	8									14
Pleasant Valley													4	2	11, 6	13, 10	1	7, 6	28									88
Rosemere			24																									24
Shumway	13	1	2																									16
Starcrest																			4	1	2							7
West Hazel Dell										1	1		4			4			10									20
Total Washington	13	1	26	0	0	0	0	0	0	3	1	0	8	2	17	29	2	20	50	1	2	0	0	0	0	0	0	175
Total Corridor	45	1	30	7	0	4	0	0	0	3	1	0	20	3	19	38	8	21	50	1	2	0	0	0	0	0	0	200

Note: Numbers in bold denote baseline impacts.

1. Constructing the Salmon Creek Park-and-ride would have eight full impacts to industrial parcels in Pleasant Valley, and they would likely be full acquisitions.

* Minor Impact: The proposed option would take less than half of the affected parcel;

Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and

Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

**Table 3.2.9.2 Option 6-6-Lane Bridge
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial ¹			Commercial			Rural			Other			Total	
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Neighborhood/Area																										
Oregon																										
Boise				7		4							1	1	1											14
Hayden Island													1			3	1, 2	3								10
Humboldt													3													3
Kenton/Bridgeton									1				7	1	1	2	1	1								1
Piedmont/Arbor Lodge	30, 2		4													2										36
Total Oregon	32	0	4	7	0	4	0	0	0	1	0	0	12	2	2	7	4	4	0	0	0	0	0	0	0	79
Washington																										
Arnada	1		3													5										9
Esther Short																3										3
Hudson's Bay/Central Park							2		1							2	1	6								12
NE Hazel Dell																2	1	3	8							14
Pleasant Valley												4	2	11, 6	13, 10	1	7, 6	28								88
Rosemere			24																							24
Shumway	13	1	2																							16
Starcrest																		4	1	2						7
West Hazel Dell							1	1		4						4			10							20
Total Washington	14	1	29	0	0	0	0	0	0	3	1	1	8	2	17	39	3	22	50	1	2	0	0	0	0	193
Total Corridor	46	1	33	7	0	4	0	0	0	4	1	1	20	4	19	46	7	26	50	1	2	0	0	0	0	2

Note: Numbers in bold denote baseline impacts.

1. Constructing the Salmon Creek Park-and-ride would affect eight industrial parcels in Pleasant Valley, and they would likely be full acquisitions.

* Minor Impact: The proposed option would take less than half of the affected parcel;

Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and

Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

**Table 3.2.9.3 Option 6-10-Lane Bridge
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial ¹			Commercial			Rural			Other			Total
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Neighborhood/Area																									
Oregon																									
Boise				7		4							1	1	1										14
Hayden Island													2, 1	2		5, 3	1, 2	2							18
Humboldt													3												15
Kenton/Bridgeton													2, 7	2	1	2	1								15
Piedmont/Arbor Lodge	31, 2		4												2										39
Total Oregon	33	0	4	7	0	4	0	0	0	0	0	0	16	5	2	12	4	2	0	0	0	0	0	0	89
Washington																									
Esther Short																2									2
Hudson's Bay/Central Park							4		2							2		4							12
NE Hazel Dell																2	1	3	8						14
Pleasant Valley													4	2	11, 6	13, 10	1	7, 6	28						88
Rosemere			24																						24
Shumway	13	1	2																						16
Starcrest																		4	1	2					7
West Hazel Dell							1	1		4			4			4		10							20
Total Washington	13	1	26	0	0	0	0	0	0	5	1	2	8	2	17	33	2	20	50	1	2	0	0	0	183
Total Corridor	46	1	30	7	0	4	0	0	0	5	1	2	24	7	19	45	6	22	50	1	2	0	0	0	183

Note: Numbers in bold denote baseline impacts.

1. Constructing the Salmon Creek Park-and-ride would affect eight industrial parcels in Pleasant Valley, and they would likely be full acquisitions.

* Minor Impact: The proposed option would take less than half of the affected parcel;
 Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
 Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.2.10 Option 7

No conceptual design was completed for Option 7 and no impacts to existing or planned land uses were determined.

3.2.11 Option 8: New Arterial Road Connecting the Ports of Vancouver and Portland

Potential impacts to existing land uses are included in Table 3.2.11.1 with baseline impacts in bold.

Corridor Impacts

Option 8 would affect 95 parcels in addition to the 80 parcels affected by baseline improvements, for a total of 185 affected parcels. The majority of impacts (110 parcels) would be located in Oregon. Impacts would be primarily to industrial areas (73 parcels), followed by commercial (37 parcels), rural (31 parcels), single-family residential (18 parcels), multi-family residential (10 parcels), and public/open space (6 parcels).

Corridor-wide, the majority of impacts would be minor. Of the total 175 parcels affected, 104 would be minor impacts, mainly to industrial, rural, and commercial areas. Option 8 would require full acquisition of 48 parcels, the majority in industrial use, although there would also be eight acquisition of single-family residences. Acquisition would require the any existing businesses, homes, or other uses to relocate and would limit potential future development or use of the property.

County Impacts

In Multnomah County, 91 parcels would be affected in addition to the 19 affected by baseline improvements, for a total of 110 parcels affected. 59 of the impacts would be to industrial uses (28 would be minor impacts and 18 would be full acquisitions). 18 single-family residential parcels would be affected; ten of those would be minor and eight would be full acquisitions. The remaining affected parcels are in commercial, multi-family residential, public/open space, and rural use.

In Clark County, a total of 65 parcels would be affected, although the majority (61 parcels) are also affected by baseline improvements. The only new impacts from this option would be to four industrial uses.

Neighborhood Impacts

Option 8 would affect seven neighborhood/areas in Multnomah County. The Northwest Industrial area would experience the majority of impacts to industrial, single-family residential, and public/open space areas. The St. Johns and Kenton/Bridgeton neighborhoods would also experience impacts, primarily to industrial, commercial, single and multi-family residential uses, and public/open space. To a lesser degree, impacts would occur to commercial and industrial areas in Hayden Island, Portsmouth, Piedmont/Arbor Lodge, and University Park.

Option 8 would affect five neighborhoods/areas in Clark County, but the majority of impacts are already included in the baseline. The only new impacts would be in the NE Hazel Dell neighborhood with four additional industrial uses affected.

**Table 3.2.11.1 Option 8
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Neighborhood/Area																									
Oregon																									
Hayden Island												1				3	2		4	2					12
Kenton/Bridgeton							1					9,7	5	2,1	2	1									28
Northwest Industrial	4		2				3		2			4	4	13											32
Piedmont/Arbor Lodge	2																								2
Portsmouth												2				3									5
St John's	4		6	6	1	3						4	4	2											30
University Park												1													1
Total Oregon	10	0	8	6	1	3	0	0	0	4	0	2	28	13	18	8	3	0	4	2	0	0	0	0	110
Washington																									
Esther Short												2	2												4
NE Hazel Dell																2	1	3	8						14
Pleasant Valley														6	10		6								22
Starcrest																		4	1	2				7	
West Hazel Dell												4			4			10						18	
Total Washington	0	0	0	0	0	0	0	0	0	0	0	0	6	2	6	16	1	9	22	1	2	0	0	0	65
Total Corridor	10	0	8	6	1	3	0	0	0	4	0	2	34	15	24	24	4	9	26	3	2	0	0	0	175

Note: Numbers in bold denote baseline impacts.

* Minor Impact: The proposed option would take less than half of the affected parcel;
Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.3 Planned Land Uses

At this stage, the design for each option is conceptual, not final. The impacts to planned land uses described in the following sections should not be considered definitive. Impacts are likely to change as more detailed designs are completed. The analysis should only be used for comparing the options.

3.3.1 Baseline Option 1a

Potential impacts to planned land uses are included in Table 3.3.1.1.

Corridor Impacts

Option 1a does not involve improvements in Oregon, so corridor impacts would be limited to Washington. Overall, this option would affect 61 parcels, with the majority of impacts considered minor and allowing the existing land use to continue. Most of impacts would be in areas with commercial uses (27 parcels), followed by multi-family residential (20 parcels), mixed-use (6 parcels), single-family residential (5 parcels), and industrial uses (3 parcels)

Although the majority of impacts would be minor, Option 1a would involve full acquisitions of 14 parcels. Eight of these parcels are designated for commercial use, four for mixed-use, and two parcels are designated for multi-family use. Acquisition would eliminate the potential of any future development on those parcels.

Option 1a has two park-and-rides located within the I-5 corridor, one at the 99th Street /I-5 interchange and the other at the 83rd Street/I-205 interchange. All of the impacts for the two park-and-rides are in the Pleasant Valley area. Five parcels would be acquired for right-of-way and another would experience minor encroachment. There would be one full acquisition and one minor impact to mixed-use parcels, and one minor impact to a planned multi-family parcel. These impacts are included in the overall total of affected parcels discussed above.

County Impacts

The only impacts would be in Clark County so impacts are the same as those included corridor impacts.

Neighborhood Impacts

Option 1a would affect four neighborhoods/areas. The majority of impacts would occur in Pleasant Valley with 22 affected parcels (primarily minor impacts to commercial parcels) followed by West Hazel Dell (18 affected parcels) and NE Hazel Dell (14 affected parcels). In addition to I-5 improvements, two park-and-ride's (99th Street, and 83rd Street/I-205 intersection) are included in this option. A total of nine parcels would be affected by construction of these park-and-rides.

The majority of impacts would be minor. Nine commercial parcels within the Pleasant Valley neighborhood would be affected by a frontage road that was redesigned as a part of the proposed/ongoing improvements near 78th Street (WA) to provide access to existing businesses. Another frontage road directly across I-5 from this frontage road would affect seven multi-family residential parcels within the NE Hazel Dell neighborhood.

**Table 3.3.1.1 Option 1a
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential ¹			Mixed use ²			Public/open space			Industrial			Commercial ^{1,2}			Rural			Other			Total			
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full				
Type of Impact*																												
Neighborhood/Area (WA)																												
Washington																												
NE Hazel Dell				8				1	1								2	2									14	
Pleasant Valley							1		3								12	6									22	
Starcrest				4	1	2																					7	
West Hazel Dell	5			5									3			5											18	
Total Washington	5	0	0	17	1	2	1	1	4	0	0	0	3	0	0	19	0	8	0	0	0	0	0	0	0	0	0	61
Total Corridor	5	0	0	17	1	2	1	1	4	0	0	0	3	0	0	19	0	8	0	0	0	0	0	0	0	0	0	61

The following park-and-ride facilities are include in the overall impacts to planned land uses for Option 1a:

- ¹. The park-and-ride facility at 83rd Street/I-205 would result in full acquisition of the parcels designated for commercial use.
- ² The park-and-ride facility at 99th Street and I-5 would require acquisition of two commercial parcels and encroachment on a third; encroachment of one mixed-use parcel, and minor impact to another; and one minor impact to multi-family parcels.

* Minor Impact: The proposed option would take less than half of the affected parcel;
 Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
 Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.3.2 Baseline Option 1b

No additional improvements in the I-5 corridor are associated with Option 1b, other than those included in Option 1a. Option 1b involves improvements outside of I-5 corridor (described in Section 2.1.2) that have been reviewed in separate studies and are not included here.

3.3.3 Baseline Option 1c

Option 1c builds Option 1a and Option 1b. Potential impacts to planned land uses are included in Table 3.3.3.1.

Corridor Impacts

Overall, this option would affect 8 parcels in addition to those included in 1a and 1b, for a total of 69 parcels. In Oregon, there are eight affected parcels in the Hayden Island and Kenton/Bridgeton neighborhoods; seven of those are designated for industrial use. In addition, one would have a multi-family parcel minor impact. The impacts to six of the seven industrial parcels would be minor, but the remaining parcel would be acquired for right-of-way.

In Washington, there would no additional impacts, over those described in previous options.

Corridor-wide, the majority of impacts would be minor. Of the 69 affected parcels, Option 1c would have full acquisition impacts on 15 parcels. Eight of these parcels are designated for commercial use, four for mixed-use, two multi-family residential, and one industrial use. Acquisition would likely eliminate the potential of any future development.

County Impacts

In Multnomah County, eight parcels would be affected; seven of those are designated for industrial uses and one for multi-family residential. The impacts to seven of the eight parcels would be minor, including the multi-family residential parcel.

In Clark County, there would be no additional impacts above those included in previous options.

Neighborhood Impacts

Option 1c would affect two neighborhoods in Multnomah County. The Kenton/Bridgeton neighborhoods would have the majority of impacts, with five minor encroachments and one full acquisition to industrial parcels and one minor impact to a multi-family designated parcel. On Hayden Island one industrially designated parcel would have a minor encroachment.

There would be no additional impacts to neighborhoods in Clark County.

**Table 3.3.3.1 Option 1c
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total	
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Neighborhood/Area																										
Oregon																										
Hayden Island													1												1	
Kenton/Bridgeton				1									5	1											7	
Total Oregon	0	0	0	1	0	0	0	0	0	0	0	0	6	0	1	0	0	0	0	0	0	0	0	0	0	8
Washington																										
NE Hazel Dell				8				1	1							2	2								14	
Pleasant Valley							1		3							12	6								22	
Starcrest				4	1	2																			7	
West Hazel Dell	5			5								3			5										18	
Total Washington	5	0	0	17	1	2	1	1	4	0	0	0	3	0	0	19	0	8	0	0	0	0	0	0	61	
Total Corridor	5	0	0	18	1	2	1	1	4	0	0	0	9	0	1	19	0	8	0	0	0	0	0	0	69	

Note: includes impacts from option 1a

* Minor Impact: The proposed option would take less than half of the affected parcel;
Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.3.4 Baseline Option 1d

Impacts to planned land use are included in Table 3.3.4.1, Table 3.3.4.2, and Table 3.3.4.3. There would be no impacts to planned land uses south of Lombard Street in Oregon, because the improvements would be located within existing right-of-way.

Corridor Impacts

Option 1d builds from option 1a, 1b, and 1c. Overall, this option would affect 11 additional parcels, for a total of 80 parcels. The majority, 60 parcels, would be minor impacts. Twenty-four parcels are commercial, 20 for multi-family residential, 11 industrial, five single-family residential, and one for mixed-use. There would also be two minor impacts to single-family residential parcels.

Option 1d would have a full impact on 15 parcels, that same total as Option 1c. Eight of these parcels are to commercial uses, followed by four mixed-use, two multi-family, and one industrial use. These impacts would likely require the any existing businesses or other uses to relocate or would limit the potential of any future development.

Option 1d also tests two alternatives, labeled 1d(a) and 1d(c). Alternative 1d(a) would provide new access between Columbia Boulevard and I-5 to/from the north. Traffic from Columbia Blvd. would access northbound I-5 via the Victory Blvd. interchange while southbound I-5 would access Columbia Blvd. at a new at-grade signalized intersection.

If a decision is made to not build a new Columbia River crossing, Alternative 1d(c) would offer a potential opportunity to remove the existing I-5/Hayden Island interchange by rerouting traffic through the Marine Drive Interchange. Marine Drive to Hayden Island access under this spot improvement would be provided along a new arterial roadway across North Portland Harbor.

The potential impacts are illustrated in Table 3.3.4.2 and Table 3.3.4.3. These impacts are not included in the overall baseline impacts because they may or may not be included in this option.

County Impacts

In Multnomah County, 19 parcels would be affected, 11 more than in Option 1c. Eight of these parcels are designated for industrial uses, eight for commercial, and three for multi-family residential. The impacts to 15 of the 19 parcels would be minor. Option 1d would involve one full acquisition of an industrial parcel.

In Clark County, there would be no additional impacts, other than those included in previous options.

Neighborhood Impacts

Option 1d would affect three neighborhoods in Multnomah County. As in previous options, the Kenton/Bridgeton neighborhoods would have the majority of impacts, to parcels designated for

commercial, industrial, and multi-family residential use. Hayden Island would have four minor and two major encroachment impacts to parcels designated for commercial and industrial use. Two multi-family residential parcels would also be affected in the Piedmont/Arbor Lodge neighborhood.

Option 1d would affect four neighborhoods/areas in Clark County - the same impacts as in previous options. The majority of impacts would occur in Pleasant Valley with 22 affected parcels. West Hazel Dell (18 affected parcels), NE Hazel Dell (14 parcels), and (seven multi-family residential parcels).

If Alternative 1da were implemented, it would require acquisition of nine parcels and have minor impacts to two industrial parcels. All of these impacts are within the Kenton/Bridgeton neighborhood. If 1dc were implemented, it would have one minor impact to an industrially designated parcel and one minor impact to a public/open space parcel. These impacts also would be within the Kenton/Bridgeton neighborhood. These impacts are not included Table 3.3.4.1.

**Table 3.3.4.1 Option 1d
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total	
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Neighborhood/Area																										
Oregon																										
Hayden Island													1			3	2									6
Kenton/Bridgeton				1									6	1		2	1									11
Piedmont/Arbor Lodge				2																						2
Total Oregon	0	0	0	3	0	0	0	0	0	0	0	0	7	0	1	5	2		0	0	0	0	0	0	0	19
Washington																										
NE Hazel Dell				8				1	1							2	2									14
Pleasant Valley							1		3							12	6									22
Starcrest				4	1	2																				7
West Hazel Dell	5			5								3			5											18
Total Washington	5	0	0	17	1	2	1	1	4	0	0	0	3	0	0	19	0	8	0	0	0	0	0	0	0	61
Total Corridor	5	0	0	20	1	2	1	1	4	0	0	0	10	0	1	24	3	8	0	0	0	0	0	0	0	80

Note: Includes impacts from Option 1a, Option 1c, and Option 1d. The impacts listed above do not include the potential impacts for 1d(a) and 1d(c). These are described in section 3.3.4 and are listed in Table 3.3.4.2 and Table 3.3.4.3.

* Minor Impact: The proposed option would take less than half of the affected parcel;
Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

**Table 3.3.4.2 Option 1d-Alternative 1d(a)
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Neighborhood/Area Oregon Kenton/Bridgeton										2		9													11
Total Oregon	0	0	0	0	0	0	0	0	0	2	0	9	0	0	0	0	0	0	0	0	0	0	0	0	11
Total Corridor	0	0	0	0	0	0	0	0	0	2	0	9	0	0	0	0	0	0	0	0	0	0	0	0	11

**Table 3.3.4.3 Option 1d-Alternative 1d(c)
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Neighborhood/Area Oregon Kenton/Bridgeton										1			1												2
Total Oregon	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Total Corridor	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2

* Minor Impact: The proposed option would take less than half of the affected parcel;
 Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
 Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.3.5 Option 2

Expected impacts to planned land uses are included in Table 3.3.5.1 with baseline impacts in bold. Impacts for improvements to the I-5/I-205 interchange have been documented in the *Interstate-5 / Interstate-205 North Corridor Study Route Development Plan and Interstate 5 / Interstate 205 Corridor Strategy Report* and *SEPA Checklist* prepared by WSDOT in February, 2001.

The impacts of improvements to the I-5/I-205 interchange area are not included in this analysis. However, other improvements throughout the I-5 corridor are addressed below.

Corridor Impacts

Option 2 would affect 145 parcels in addition to the 80 parcels affected by the baseline options for a total of 228 parcels. The majority of impacts (184 parcels) would be in Washington. Impacts would be primarily to parcels designated for commercial use (81 parcels), followed by single-family residential (74 parcels), industrial (38 parcels), multi-family residential (23 parcels), mixed use (eight parcels), and public/open space (four parcels).

Corridor-wide, the majority of impacts would be minor. Of the total 228 parcels affected, 131 would be minor impacts, mainly to single-family residential (46 minor impacts), commercial (36 minor impacts), industrial (23 minor impacts), and multi-family residential (20 minor impacts). Option 2 would require full acquisition of 81 parcels, the majority (37 parcels) designated for commercial use, although 26 single-family residential lots would also be acquired for right-of-way. Acquisition would eliminate future development for the planned use.

In addition to the Central County and 99th Street Park-and-rides included in Option 1a, this option also adds new park-and-rides or increases capacity at existing facilities. Table 3.2.5.1 lists all of the park-and-rides included in this option. Only three park-and-rides, Salmon Creek, 99th Street, and Central County fall within the I-5 corridor itself. The impacts of these are included in Table 3.3.5.1. The impacts of the remaining facilities are shown for reference, but are not shown in the table because they are not within the I-5 corridor.

County Impacts

In Multnomah County, 25 parcels would be affected, beyond the 19 parcels affected by the baseline. Most of those parcels are designated for commercial uses (23). This option also would affect 16 industrial parcels, only one would be a full acquisition. The majority of impacts to industrial uses would be minor (14 parcels). The remaining impacts are minor impacts to three multi-family residential and two public/open space.

The majority of impacts would be in Clark County, where there would be 181 affected parcels. Impacts would be concentrated in commercial areas with about an equal number of minor encroachments (29) and full acquisitions (26). Impacts in industrial areas (22 parcels) would mostly be minor, as would impacts to single-family residential (46 parcels). However, 26 single-

family parcels would be acquired for right-of-way. Twenty multi-family parcels designated for multi-family residential use would also be affected, most (17) by only minor encroachments.

Neighborhood Impacts

Option 2 would affect three neighborhoods/areas in Multnomah County. Hayden Island and Kenton/Bridgeton would have the same number parcels affected - 21 each. These are concentrated in industrial and commercial areas. The Piedmont/Arbor Lodge neighborhoods would have two minor impacts to single-family residential uses.

Option 2 would affect eight neighborhoods/areas in Clark County. The majority of impacts would occur in Pleasant Valley with 84 affected parcels (primarily minor impacts to single-family residential and commercial uses) followed by Rosemere with full acquisition of 24 single-family residential parcels. Other affected neighborhoods include West Hazel Dell with 20 affected parcels, NE Hazel Dell and Esther Short each with 14 affected parcels, primarily to commercial and multi-family residential uses. In the Shumway neighborhood, there would be 12 impacts, mostly minor, to single-family residential. Parcels in the Starcrest and Arnada neighborhood would also have impacts, mostly minor impacts to single and multi-family residential uses.

**Table 3.3.5.1 Option 2
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial ¹			Commercial			Rural			Other			Total	
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Neighborhood/Area																										
Oregon																										
Hayden Island										1			2, 3	2, 2	11										21	
Kenton/Bridgeton				1					2	7, 6	1	1	2	1											21	
Piedmont/Arbor Lodge				2																					2	
Total Oregon	0	0	0	3	0	0	0	0	0	2	0	0	14	1	1	7	5	11	0	0	0	0	0	0	0	4
Washington																										
Arnada	2	1														1										4
Esther Short																3	2	9								14
NE Hazel Dell				8				1	1							2		2							14	
Pleasant Valley	28						2, 1		3				6	2	8	8, 12	1	8, 6							84	
Rosemere			24																						24	
Shumway	9	1	2																						12	
Starcrest	2			4	1	2																			9	
West Hazel Dell	5			5					1	1		3			5										20	
Total Washington	46	2	26	17	1	2	3	1	4	1	1	0	9	2	11	29	3	26	0	0	0	0	0	0	0	181
Total Corridor	46	2	26	20	1	2	3	1	4	3	1	0	23	3	12	36	8	37	0	0	0	0	0	0	0	225

Note: Numbers in bold denote baseline impacts.

1. Constructing the Salmon Creek Park-and-ride would require full acquisition of eight industrial parcels in Pleasant Valley.

* Minor Impact: The proposed option would take less than half of the affected parcel;

Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and

Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.3.6 Option 3b: LRT from the Expo Park-and-ride to Clark College

The impacts of LRT alignment included in this option are already well documented in the *South/North Corridor Project Draft Environmental Impact Statement*. Refer to that document for specific land use impact information.

3.3.7 Option 3c

Option 3c would include several park-and-rides, some already evaluated in the *North Corridor Interstate MAX Light Rail Project Final Environmental Impact Statement* and the environmental assessment completed for the Airport MAX extension. Park-and-rides related to Interstate Max and Airport MAX are not included in the overall impacts for this option. Park-and-rides not evaluated in the above documents are included in the impacts for this option. Table 3.2.7.1 lists all park-and-rides associated with this option.

Potential impacts to planned land uses for Option 3c are included in Table 3.3.7.1 with baseline impacts in bold.

Corridor Impacts

In addition to the 80 parcels that would be affected by construction the baseline improvements, Option 3c would affect an additional 159 parcels. Overall, Option 3c would affect 239 parcels, the majority (197 parcels) in Washington. Impacts would be primarily to commercial uses (134 parcels), followed by residential (40 parcels), multi-family residential (27 parcels), industrial (18 parcels), public/open space (12 parcels), mixed-use (6 parcels), and rural areas (2 parcels).

Corridor-wide, the majority of impacts would be minor. Of the 239 parcels affected, 128 would be minor impacts, mainly to commercial, multi-family residential, single-family residential, industrial, and public/open space areas. This option would also require full acquisition of 80 parcels, the majority in commercial use, but 14 single-family residential parcels would also be acquired for right-of-way. Potential future development of these parcels would be eliminated.

In addition to the Central County and 99th Street Park-and-rides included in Option 1a, this option also would add several new park-and-rides. Table 3.2.7.1 lists all park-and-rides included in this option. Park-and-rides related to Interstate Max and Airport MAX are not included in the overall impacts. All other impacts are included, either as a part of the baseline (99th Street and Central County) or as impacts related to this option.

County Impacts

In Multnomah County, 23 parcels would be affected in addition to the 19 affected by construction of baseline improvements. Twenty-two parcels designated for commercial uses would be affected. This option would also affect 14 industrial parcels, although only one would be a full impact. The majority of impacts to industrial uses would be minor. The remaining impacts would be primarily minor impacts to public/open space and multi-family residential.

The majority of impacts would be in Clark County, where 136 parcels would be affected in addition to the 61 parcels affected by baseline improvements. The majority of impacts would be concentrated in commercial areas (93 parcels) with about an equal number of minor encroachments and full acquisitions. Impacts to single-family residential would involve 20 minor and six major encroachments, and 14 full acquisitions. Impacts to multi-family residential include 21 minor encroachments and two full acquisitions. There would also be minor impacts to eight public/open space parcels.

Neighborhood Impacts

Option 3c would affect three neighborhoods/areas in Multnomah County. Hayden Island and Kenton/Bridgeton would each have 20 parcels affected. These would be concentrated in commercial and industrial areas. The Piedmont/Arbor Lodge neighborhoods also would have two minor impacts to multi-family residential parcels. All new impacts for this option would be in the Kenton Bridgeton and Hayden Island neighborhoods.

Option 3c would affect 13 neighborhoods/areas in Clark County. The majority of impacts would occur in Pleasant Valley with 58 parcels affected (primarily commercially designated) followed by Meadow Homes with 38 affected parcels. The majority of these impacts would be in commercial areas, but there would also be 21 single-family residential lots affected. Eight of these would be minor encroachments, five would be major encroachments, and eight parcels would be full acquisitions. Other affected neighborhoods would include West Hazel Dell, Esther Short, County areas, Sunnyside, Starcrest, Ellsworth, Springs/Fellman, Arnada, and Walnut Grove. The majority of impacts in these areas would be to parcels designated for commercial and residential use.

**Table 3.3.7.1 Option 3c
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total			
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full				
Neighborhood/Area																												
Oregon																												
Hayden Island																1			2, 3	2 , 2	10							20
Kenton/Bridgeton				1						2		1	5 , 6	1	1	2	1											20
Piedmont/Arbor Lodge				2																								2
Total Oregon	0	0	0	3	0	0	0	0	0	2	0	1	12	1	1	7	5	10	0	0	0	0	0	0	0	0	0	42
Washington																												
Arnada																			3	1	2							6
County				3															12									15
Ellsworth	7																											7
Springs/Fellman																												
Esther Short																			1	1	13							15
Hudson's Bay/Central Park										7	1																	8
Meadow Homes	8	5	8																4	2	9	2						38
NE Hazel Dell				8				1	1										2		2							14
Pleasant Valley			6				1		3						1	4, 12	11	14, 6										58
Starcrest				4	1	2																						7
Sunnyside										1									6	1								8
Walnut Grove		1		1																	1							3
West Hazel Dell	5			5									3			5												
Total Washington	20	6	14	21	1	2	1	1	4	8	1	0	3	0	1	46	16	47	2	0	0	0	0	0	0	0	0	197
Total Corridor	20	6	14	24	1	2	1	1	4	10	1	1	15	1	2	56	21	57	2	0	0	0	0	0	0	0	0	239

Note: Numbers in bold denote baseline impacts.

- * Minor Impact: The proposed option would take less than half of the affected parcel;
- Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
- Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.3.8 Option 4: Commuter Rail

This impacts associated with this option are not included in this evaluation. They are being evaluated separately.

3.3.9 Option 6a

Potential impacts to planned land uses are included in Tables 3.3.9.1, 3.3.9.2, and 3.3.9.3 with baseline options in bold. Option 6 adds several new park-and-rides, or increases the capacity of existing facilities. The park-and-ride additions/improvements are the same as those included in Option 2 (see Table 3.2.5.1). Only three of the listed park-and-rides (Salmon Creek, 99th Street, and Central County) fall within the I-5 corridor and are included in Tables 3.3.9.1, 3.3.9.2, and 3.3.9.3. The remaining facilities are included for reference, but are not included in the totals on the tables because they are located outside of the I-5 corridor.

Corridor Impacts

In addition to the 80 parcels affected by the baseline improvements, Option 6 would affect between 173 and 192 parcels, depending on the Columbia River crossing selected. This option tests three separate alternatives for crossing the Columbia River: a four-lane tunnel, a six-lane bridge, and a ten-lane bridge. All would have varying degrees of impacts to planned land uses.

Corridor Impacts with a Four Lane Tunnel

Option 6 with a four-lane tunnel would affect 173 parcels in addition to the 80 affected by baseline improvements for a total of 253 parcels affected. The majority (175 parcels) is located in Washington. Impacts would be primarily to single-family residential uses (90 parcels), followed by commercial (67 parcels), multi-family residential, (51 parcels), industrial (35 parcels), and public/open space uses (4 parcels).

Corridor-wide, the majority of impacts would be minor. Of the total 253 affected parcels, 166 would be minor encroachments to single-family residential, commercial, multi-family, and industrial uses. Full acquisition of 73 parcels (30 single-family residential, 19 commercial, and 12 industrial uses) would be required. There would also be acquisition of parcels designated for multi-family, mixed-use, and public/open space. Acquisition and use for I-5 improvements would eliminate potential future development for other uses.

Corridor Impacts with a Six-Lane Bridge

Option 6 with a six-lane bridge would affect 192 parcels in addition to the 80 parcels affected by baseline improvements for a total of 272 parcels affected. The majority (193 parcels) is located in Washington. Impacts would be primarily to single-family residential uses (94 parcels), followed by commercial (79 parcels), multi-family residential (51 parcels), Industrial (36 parcels), and mixed-use and public/open space with six impacts each.

Corridor-wide, the majority of impacts would be minor. Of the total 272 parcels affected, 176 would be minor encroachments, mainly to single-family residential, commercial, and multi-

family residential uses. However 82 parcels would be acquired for right-of-way, including 33 planned for single-family residential, 24 commercial, 13 industrial, six for multi-family residential, four for mixed-use, and two for public open space.

Corridor Impacts with a Ten-Lane Bridge

Option 6 with a ten-lane bridge would affect 192 parcels in addition to the 80 affected by baseline improvements, for a total of 272 parcels affected. The majority (193 parcels) would be in Washington. Impacts would be primarily to single-family residential uses (91 parcels), followed by commercial (73 parcels), multi-family residential (51 parcels), industrial (43 parcels), mixed-use (6), and public/open space (8).

Corridor-wide, the majority of impacts would be minor. Of the total 272 affected parcels, 180 would be minor impacts. However, 76 parcels would be full acquisitions, including 30 designated for single-family residential, 20 for commercial, 13 for industrial, seven for multi-family residential, four for mixed-use, and two for public open space use.

County Impacts

County Impacts with a Four Lane Tunnel

In Multnomah County, 59 parcels would be affected in addition the 19 affected by baseline improvements, for a total of 78 parcels affected. Single-family residential would have the highest number of affected parcels (17), followed by commercial (16). This option would affect 14 industrial parcels; 11 would be minor encroachment impacts. Thirty-one parcels designated for multi-family residential use would be affected, 27 would be minor and four would be full acquisitions.

The majority of impacts would be in Clark County, with 114 parcels affected in addition to the 61 affected by baseline improvements, for a total of 175 parcels affected. Seventy-three parcels designated for single-family residential would be affected, including 26 full acquisitions. Fifty-one commercial parcels would be affected, the majority minor (33 parcels). However, 18 parcels would be full acquisitions. This option would affect 20 multi-family residential parcels (17 minor encroachments).

County Impacts with a Six-Lane Bridge

In Multnomah County, 60 parcels would be affected, in addition to the 19 parcels affected by baseline improvements, for a total of 79 single-family residential parcels affected. The highest number of affected parcels (32) are designated for multi-family use, followed by single-family residential (17) and commercial (15). This option would also affect 15 industrial parcels.

The majority of impacts would be in Clark County, with 132 parcels affected in addition to the 61 affected by baseline improvements, for a total of 193 parcels affected. The greatest number of parcels designated for single-family residential use (77) including full acquisition of 29 parcels. Sixty-four parcels designated for commercial uses would be affected, the majority of

impacts would be minor (43 parcels), but there would also be 20 full acquisitions. This option would affect 20 multi-family residential parcels. Seventeen would be minor encroachments.

County Impacts with a Ten-Lane Bridge

In Multnomah County, 89 parcels would be affected. Multi-family residential areas would have the highest number of affected parcels (31), followed by industrial (17) and commercial (18). This option would also affect 18 single-family residential parcels.

The majority of impacts would be in Clark County, with 183 affected parcels. Impacts would be spread among single-family residential, commercial, multi-family residential, and industrial areas. Seventy-three single-family residential parcels would be affected; 46 would be minor, but there would also be 26 full acquisitions. Fifty-five commercial parcels would be affected, the majority minor (37 parcels), but would also be 18 full acquisitions. This option would affect 20 multi-family residential parcels, 17 would be minor impacts and two would be full acquisitions.

Neighborhood Impacts

Neighborhood Impacts with a Four Lane Tunnel

Option 6 with four-lane tunnel would affect five neighborhoods/areas in Multnomah County. The Piedmont/Arbor Lodge neighborhoods would have the majority of impacts with 38 parcels affected, primarily single and multi-family residential uses. The Kenton/Bridgeton neighborhoods would have 12 industrial and commercial parcels affected, nine of those impacts would be minor. Hayden Island would have 11 to industrial and commercial parcels affected, the majority would be major encroachments or full acquisitions. The Boise and Humboldt neighborhoods would also see some impacts, primarily to multi-family residential and industrial areas.

Option 6 would affect seven neighborhoods/areas in Clark County. The majority of impacts would occur in Pleasant Valley with 88 affected parcels. Impacts in the Rosemere neighborhood would include 24 full acquisitions of single-family residential parcels. Other affected neighborhoods would include West Hazel Dell with 20 affected parcels, Shumway with 16 parcels, and NE Hazel Dell with 14 affected parcels. The Hudson's Bay/Central Park area would have impacts to six parcels, including two minor impacts to park/open space and four full acquisitions of commercial uses. Parcels in the Starcrest neighborhood would also have some impacts, mostly minor impacts to multi-family residential uses.

Neighborhood Impacts with a Six-Lane Bridge

Option 6 with a six-lane bridge would affect five neighborhoods/areas in Multnomah County. In the Piedmont/Arbor Lodge neighborhoods 34 single and multi-family residential parcels would be affected. In the Kenton/Bridgeton neighborhoods 14 industrial and commercial parcels would be affected and nine impacts would be minor. On Hayden Island 10 industrial and commercial parcels would be affected. The Boise and Humboldt neighborhoods would see some impacts, primarily to multi-family residential and industrial areas.

Option 6 would affect nine neighborhoods/areas in Clark County. The majority of impacts would occur in Pleasant Valley with 88 affected parcels. Impacts in the Rosemere neighborhood would include 24 full acquisitions of single-family residential parcels. Other affected neighborhoods would include West Hazel Dell with 20 affected parcels, Shumway (16), NE Hazel Dell (14 affected parcels). In the Hudson's Bay/Central Park area, 12 parcels would be affected including full acquisitions of two park/open space parcels and six commercial parcels. Parcels in Arnada, Starcrest, and Esther Short neighborhoods would also be affected - mostly minor impacts to single and multi-family parcels.

Neighborhood Impacts with a Ten-Lane Bridge

Option 6 with a ten-lane bridge would affect five neighborhoods/areas in Multnomah County. The Piedmont/Arbor Lodge neighborhoods would have the majority of impacts with 39 parcels affected, including full acquisition of six parcels. In the Kenton/Bridgeton neighborhoods 15 industrial and commercial would be affected but, 11 of those impacts would be minor. On Hayden Island 18 industrial and commercial uses would be affected. The Boise and Humboldt neighborhoods would see some impacts, primarily to multi-family residential and industrial areas.

Option 6 with a ten-lane bridge would affect eight neighborhoods/areas in Clark County. The majority of impacts would occur in Pleasant Valley with 88 parcels affected. In the Rosemere neighborhood 24 single-family residential parcels would be acquired for right-of-way. Other affected neighborhoods would include West Hazel Dell (20 affected parcels), Shumway (16), and NE Hazel Dell (14). In the Hudson's Bay/Central Park area 12 parcels would be affected, including two park/open space and six commercial parcels that would be fully acquired. Parcels in Starcrest and Esther Short neighborhoods would also have some impacts, mostly minor impacts to single and multifamily uses.

**Table 3.3.9.1 Option 6a- 4-Lane Tunnel
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial ¹			Commercial			Rural			Other			Total	
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Neighborhood/Area																										
Oregon																										
Boise				7		4							1	1	1										14	
Hayden Island													1			1, 3	3, 2	1							11	
Humboldt													3												12	
Kenton/Bridgeton				1									6		1	2	1, 1								38	
Piedmont/Arbor Lodge	11, 2		4	17, 2												2										
Total Oregon	13	0	4	27	0	4	0	0	0	0	0	0	11	1	2	8	7	1	0	0	0	0	0	0	0	78
Washington																										
Hudson's Bay/Central Park										2								4							6	
NE Hazel Dell				8				1	1	1						2	2								14	
Pleasant Valley	28						1		3				6	2	10	14, 12	6, 6								88	
Rosemere			24																						24	
Shumway	13	1	2																						16	
Starcrest				4	1	2																			7	
West Hazel Dell	5			5						1	1		3			5									20	
Total Washington	46	1	26	17	1	2	1	1	4	1	1	2	9	2	10	33	0	18	0	0	0	0	0	0	0	175
Total Corridor	59	1	30	44	1	6	1	1	4	1	1	2	20	3	12	41	7	19	0	0	0	0	0	0	0	253

Note: Numbers in bold denote baseline impacts.

1. Constructing the Salmon Creek Park-and-ride would result in full acquisition of eight industrial parcels in Pleasant Valley.

* Minor Impact: The proposed option would take less than half of the affected parcel;

Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and

Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

**Table 3.3.9.2 Option 6a- 6-Lane Bridge
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial ¹			Commercial			Rural			Other			Total			
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full				
Neighborhood/Area																												
Oregon																												
Boise				7		4							1	1	1												14	
Hayden Island													1			3	1, 2	3									10	
Humboldt													2		1												3	
Kenton/Bridgeton				1						1			6	1	1	2	1	1									1	
Piedmont/Arbor Lodge	13		4	17, 2												2											38	
Total Oregon	13	0	4	27	0	4	0	0	0	0	1	0	10	2	3	7	4	4	0	0	0	0	0	0	0	0	0	79
Washington																												
Arnada	1		3															5									9	
Esther Short																		3									3	
Hudson's Bay/Central Park										1		2				2	1	6									12	
NE Hazel Dell				8				1	1							2		2									14	
Pleasant Valley	28						1		3				6	2	10	14, 12		6, 6									88	
Rosemere			24																								24	
Shumway	13	1	2																								16	
Starcrest				4	1	2																					7	
West Hazel Dell	5			5						1	1		3			5											20	
Total Washington	47	1	29	17	1	2	1	1	4	2	1	2	9	2	10	43	1	20	0	0	0	0	0	0	0	0	0	193
Total Corridor	60	1	33	44	1	6	1	1	4	2	2	2	19	4	13	50	5	24	0	0	0	0	0	0	0	0	0	272

Note: Numbers in bold denote baseline impacts.

1. Constructing the Salmon Creek Park-and-ride would result in full acquisition of eight industrial parcels in Pleasant Valley.

* Minor Impact: The proposed option would take less than half of the affected parcel;

Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and

Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

**Table 3.3.9.3 Option 6a-10-Lane Bridge
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial ¹			Commercial			Rural			Other			Total			
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full				
Neighborhood/Area																												
Oregon																												
Boise				7		4							1	1	1												14	
Hayden Island													2, 1	2		5, 3	1, 2	2									18	
Humboldt													2		1												15	
Kenton/Bridgeton				1									2, 6	2	1	2	1										15	
Piedmont/Arbor Lodge	14		4	15, 2	1	1										2											39	
Total Oregon	14		4	25	1	5	0	0	0	0	0	0	14	5	3	12	4	2	0	0	0	0	0	0	0	0	0	89
Washington																												
Esther Short																2											2	
Hudson's Bay/Central Park										4		2				2		4									12	
NE Hazel Dell				8				1	1							2		2									14	
Pleasant Valley	28						1		3				6	2	10	14, 12		6, 6									88	
Rosemere			24																								24	
Shumway	13	1	2																								16	
Starcrest				4	1	2																					7	
West Hazel Dell	5			5						1	1		3			5											20	
Total Washington	46	1	26	17	1	2	1	1	4	5	1	2	9	2	10	37	0	18	0	0	0	0	0	0	0	0	0	183
Total Corridor	60	1	30	42	2	7	1	1	4	5	1	2	23	7	13	49	4	20	0	0	0	0	0	0	0	0	0	206

Note: Numbers in bold denote baseline impacts.

1. Constructing the Salmon Creek Park-and-ride would result in full acquisition of eight industrial parcels in Pleasant Valley.

* Minor Impact: The proposed option would take less than half of the affected parcel;

Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and

Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.3.10 Option 7

No conceptual design was completed for Option 7 so analysis of impacts to planned land uses was completed.

3.3.11 Option 8

Potential impacts to planned land uses are included in Table 3.3.11.1 with baseline impacts in bold.

Corridor Impacts

Option 8 would affect 95 parcels in addition to the 80 affected by baseline improvements, for a total of 175 parcels affected. The majority (110 parcels) would be located in Oregon. The majority of affected parcels would be industrial (65 parcels), followed by commercial (38 parcels), multi-family residential (33 parcels), rural (six parcels), single-family residential (21 parcels), and public/open space (six parcels).

Corridor-wide, the majority of impacts would be minor. Of the total 175 affected parcels, 104 would be minor impacts, mainly to parcels designated for industrial, rural, and commercial areas. Option 8 would require full acquisition of 48 parcels, the majority designated for industrial uses, although eight single-family residential parcels would be acquired for right-of-way. The potential to develop these parcels in accordance with adopted plans would be eliminated.

County Impacts

In Multnomah County, 91 parcels would be affected, in addition to the 19 affected by baseline improvements, for a total of 110 parcels affected. A total of 58 of the affected parcels are designated for industrial uses; 27 of the 59 would be minor impacts and 18 would be full acquisitions. This option would affect 16 Single-family residential parcels; eight of those would be minor encroachments and eight would be full acquisitions. The remaining impacts to commercial, multi-family residential, public/open space, and rural parcels would be primarily minor encroachments.

In Clark County, 65 parcels, would be affected, but most of these (61) would also be affected by in the baseline improvements. Impacts would be concentrated in commercial areas (27 parcels), and multi-family residential (20 parcels).

Neighborhood Impacts

Option 8 would affect seven neighborhoods/areas in Multnomah County. The Northwest Industrial area would have the majority of impacts, with impacts to 32 parcels. The St. Johns and Kenton/Bridgeton neighborhoods would also have impacts, primarily to industrial, commercial, and public open space, although single and multi-family residential parcels in the St John's neighborhood would also be affected.

Option 8 would affect five neighborhoods/areas in Clark County, although the majority of impacts are already included in the baseline. The only new impacts would be to NE Hazel Dell with 4 additional impacts to industrial uses.

**Table 3.3.11.1 Option 8
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total	
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Type of Impact*	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full		
Neighborhood/Area																										
Oregon																										
Hayden Island													1			3	2		4	2					12	
Kenton/Bridgeton				1					1				9, 6	5	2, 1	2	1									28
Northwest Industrial	4		2						3		2		4	4	13											32
Piedmont/Arbor Lodge				2																						2
Portsmouth													2			3										5
St John's	4		6	4, 2	1	3							4	4	2											30
University Park													1													1
Total Oregon	8	0	8	9	1	3	0	0	0	4	0	2	27	13	18	8	3	0	4	2	0	0	0	0	0	110
Washington																										
Esther Short													2	2												4
NE Hazel Dell				8												2	2									14
Pleasant Valley							1		1	1						12	6									22
Starcrest				4	1	2																				7
West Hazel Dell	5			5									3			5										18
Total Washington	0	0	0	17	1	2	1	1	4	0	0	0	5	2	0	19	0	8	0	0	0	0	0	0	0	65
Total Corridor	13	0	8	26	2	5	1	1	4	4	0	2	32	15	18	27	3	8	4	2	0	0	0	0	0	175

Note: Numbers in bold denote baseline impacts.

* Minor Impact: The proposed option would take less than half of the affected parcel;
Major Impact: The proposed option would take half of more of the parcel, but would likely still conform to existing land use codes; and
Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

3.4 Comparison of Alternatives

3.4.1 Existing Land Use

The overall impacts for each option varies considerably (see Table 3.4.1.1), affecting not only the I-5 corridor, but also surrounding neighborhoods. The majority of impacts would occur in Washington, except for Option 8, where improvements would be located almost exclusively in the Oregon. Generally, for all options, the greatest impacts to existing land uses would be to commercial and industrial properties. This is overwhelmingly the case for the baseline options, which would have only two minor impacts to single family residential uses.

Once the planned improvements to the I-5 corridor have been made (the baseline), the options that build on the baseline would have much greater impacts to residential property. Options 2, 3c and Option 6 would have the most significant effects to single-family residential uses, with the greatest impacts from Option 6. Option 8 would have the fewest residential impacts of any non-baseline option, and would also have the lowest number of impacts to commercial uses. In contrast, Option 6 would have the greatest impacts no matter what bridge or tunnel structure is chosen, but the two bridge configurations would have the greatest impacts to existing and planned land uses.

3.4.2 Planned Land Use

The number of parcels affected is the same for existing or planned land uses, however portion of each land type changes. Acquiring land for transportation improvements eliminates the potential availability for the planned use. This could affect the ability of local jurisdictions to accommodate planned population and employment growth. Although the impacts are minimal in terms of the total available land planned for each use, there may be some areas where the impact falls largely in one or a few land use categories. Table 3.4.2.1 illustrates the overall impacts to planned land uses.

Generally, each option shows a greater impact to planned single and multi-family residential uses than existing land uses, largely because some areas are planned to change from an existing use that is less intensive, such as rural, to more intensive, such as single and multi-family residential. The most notable changes between existing and planned land used are in Clark County, where impacts to existing rural areas change to impacts to planned residential uses. This is most noticeable in the Pleasant Valley area, where that majority of impacts to existing rural areas would change to impacts to planned residential uses.

In Oregon, difference in impacts to existing and planned land uses is less because the areas where the improvements would occur in Oregon are already developed. In any case, Option 8 would have the least impact in terms of number of parcels affected, and Option 6 having the greatest impact, although the level of impact, primarily to commercial and industrial lands would vary based on the bridge configuration.

**Table 3.4.1.1 Comparison of the Alternatives
Potential Impacts to Existing Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Baseline																									
Baseline Option 1a	0	0	0	0	0	0	0	0	0	0	0	0	7	0	3	16	1	9	22	1	2	0	0	0	61
Baseline Option 1c	0	0	0	0	0	0	0	0	0	0	0	0	14	0	4	16	1	9	22	1	2	0	0	0	69
Baseline Option 1d	2	0	0	0	0	0	0	0	0	0	0	0	15	0	4	21	4	9	22	1	2	0	0	0	80
Non-Baseline																									
Option 2	13	2	26	0	0	0	0	0	0	3	1	0	9	3	11	17	4	28	28	0	0	0	0	0	145
Option 3c	15	5	8	3	0	0	0	0	0	10	1	1	2	1	3	34	16	49	4	3	4	0	0	0	159
Option 6 w/ 4 lane tunnel	43	1	30	7	0	4	0	0	0	3	1	0	8	3	12	17	4	12	28	0	0	0	0	0	173
Option 6 w/ 6 lane bridge	44	1	33	7	0	4	0	0	0	4	1	1	8	4	12	25	3	17	28	0	0	0	0	0	192
Option 6 w/ 10 lane bridge	44	1	30	7	0	4	0	0	0	5	1	2	12	7	12	24	2	13	28	0	0	0	0	0	192
Option 8	8	0	8	6	1	3	0	0	0	4	0	2	22	15	17	3	0	0	4	2	0	0	0	0	95
Total (Baseline and option)																									
Option 2	15	2	26	0	0	0	0	0	0	3	1	0	24	3	15	38	8	37	50	1	2	0	0	0	225
Option 3c	17	5	8	3	0	0	0	0	0	10	1	1	17	1	7	55	20	58	26	4	6	0	0	0	239
Option 6 w/ 4 lane Tunnel	45	1	30	7	0	4	0	0	0	3	1	0	23	3	16	38	8	21	50	1	2	0	0	0	253
Option 6 w/ 6 lane Bridge	46	1	33	7	0	4	0	0	0	4	1	1	23	4	16	46	7	26	50	1	2	0	0	0	272
Option 6 w/ 10 lane Bridge	46	1	30	7	0	4	0	0	0	5	1	2	27	7	16	45	6	22	50	1	2	0	0	0	272
Option 8 and Baseline	10	0	8	6	1	3	0	0	0	4	0	2	37	15	21	24	4	9	26	3	2	0	0	0	175

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Full Impact: The proposed option would take the entire parcel, or render lot size requirements nonconforming with existing or planned land use minimum.

**Table 3.4.2.1 Comparison of the Alternatives
Potential Impacts to Planned Land Uses**

Land use	Single-family residential			Multi-family residential			Mixed use			Public/open space			Industrial			Commercial			Rural			Other			Total
	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	Minor	Major	Full	
Baseline																									
Baseline Option 1a	5	0	0	17	1	2	1	1	4	0	0	0	3	0	0	19	0	8	0	0	0	0	0	0	61
Baseline Option 1c	5	0	0	18	1	2	1	1	4	0	0	0	9	0	1	19	0	8	0	0	0	0	0	0	69
Baseline Option 1d	5	0	0	20	1	2	1	1	4	0	0	0	10	0	1	24	3	8	0	0	0	0	0	0	80
Non-Baseline																									
Option 2	30	1	0	0	0	0	13	1	26	3	1	0	13	3	8	14	5	27	0	0	0	0	0	0	145
Option 3c	15	6	14	4	0	0	0	0	0	10	1	1	5	1	1	32	18	49	2	0	0	0	0	0	159
Option 6 w/ 4 lane tunnel	54	1	30	24	0	4	0	0	0	1	1	2	10	3	11	17	4	11	0	0	0	0	0	0	173
Option 6 w/ 6 lane bridge	55	1	33	24	0	4	0	0	0	2	2	2	9	4	12	26	2	16	0	0	0	0	0	0	192
Option 6 w/ 10 lane bridge	55	1	30	22	1	5	0	0	0	5	1	2	13	7	12	25	1	12	0	0	0	0	0	0	192
Option 8	8	0	8	6	1	3	0	0	0	4	0	2	22	15	17	3	0	0	4	2	0	0	0	0	95
Total (Baseline and option)																									
Option 2	35	1	0	20	1	2	14	2	30	3	1	0	23	3	9	38	8	35	0	0	0	0	0	0	225
Option 3c	20	6	14	24	1	2	1	1	4	10	1	1	15	1	2	56	21	57	2	0	0	0	0	0	239
Option 6 w/ 4 lane Tunnel	59	1	30	44	1	6	1	1	4	1	1	2	20	3	12	41	7	19	0	0	0	0	0	0	253
Option 6 w/ 6 lane Bridge	60	1	33	44	1	6	1	1	4	2	2	2	19	4	13	50	5	24	0	0	0	0	0	0	272
Option 6 w/ 10 lane Bridge	60	1	30	42	2	7	1	1	4	5	1	2	23	7	13	49	4	20	0	0	0	0	0	0	272
Option 8	13	0	8	26	2	5	1	1	4	4	0	2	32	15	18	27	3	8	4	2	0	0	0	0	175

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APPENDIX A: GIS CLASSIFICATION

APPENDIX B: PLANS CONSISTENCY