

# Executive Summary

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## Background and Study Area Description

The New Seward Highway (NSH), a facility that has evolved through continuous upgrades during the last 25 years, is the primary north-south traffic carrier for the Anchorage Bowl. This centrally located freeway provides important transportation functions for Southcentral Alaska residents, commercial goods movement, and visitors.

The NSH corridor from Rabbit Creek Road to 36th Avenue, shown in Figure ES-1, is the study area for the preliminary engineering efforts documented in this report. This preliminary engineering work was conducted for the Alaska Department of Transportation and Public Facilities (ADOT&PF) in support of an environmental impact statement (EIS).

Today the NSH is a controlled-access facility from Rabbit Creek Road to the 36th Avenue at-grade intersection. This 7.1-mile portion of the NSH has diamond interchanges at spacing of 1 to 1.5 miles and has an average daily traffic count ranging from 20,000 to 60,000 vehicles. During the morning commute period, traffic volume increases, travel speed reduces, and traffic often diverts over to frontage roads as travelers make their way to midtown and downtown Anchorage employment centers. During evening peak hours, the traffic exiting at ramps often backs up onto the freeway, creating potentially unsafe conditions. The constant stop-and-start congested traffic flow common during the peak periods is a situation that jeopardizes the safety of travelers.

As part of long-range planning efforts, the Anchorage Metropolitan Area Transportation Solutions (AMATS), the metropolitan planning organization for Anchorage, determined that a major investment study (MIS) was warranted to assess options and needs for the study area. The proposed improvements would be designed in the near future to adequately provide for the purposes and needs through the year 2035, which is designated as the design year. The MIS examined the transportation demand and system performance and identified potential solutions to promote mobility and safety while reducing congestion (CH2M HILL, 2002). Recommendations of the MIS were adopted by the AMATS Policy Committee in October 2002.

During subsequent preliminary engineering efforts, additional data were collected and options were screened for feasibility. The scenarios for NSH improvements were refined to identify alternatives that will be advanced for further study in an environmental impact statement (EIS).

## Purpose of and Need for Action

The purpose of the proposed action is to construct improvements to the NSH corridor between Rabbit Creek Road and 36th Avenue that will provide additional capacity, connectivity, and safety enhancements. A viable transportation project will address current

and future travel demand and mobility needs for the NSH corridor within the framework of the National Environmental Policy Act (NEPA) process.

Improvements to the NSH corridor from Rabbit Creek Road to 36th Avenue would address these specific needs:

- Increase corridor capacity to accommodate recent growth and future demand — Improvements of the NSH corridor in the study area are needed to address recent and anticipated growth in areas served by the corridor. The highway is currently performing at less-than-desirable levels during peak demand. Without improvements, traffic flow will continue to deteriorate. In addition, improvements that reduce congestion could lessen the detrimental impacts to air quality from carbon monoxide in vehicle emissions.
- Improve system connectivity and linkage of existing roadways — Discontinuous east-west routes created by roads that are interrupted by the NSH force circuitous routes and short trips on and off the NSH. They also add to congestion on the NSH and existing east-west streets. East-west connectivity is needed to improve mobility for pedestrian, bicycle, and motorized travel.
- Enhance intermodal transportation — Improving the ability of the NSH in the study area to connect sectors of intermodal transportation is needed to increase mobility, serve regional growth, and enhance transportation efficiency and safety.
- Upgrade design features to meet industry standards and improve safety — Bringing NSH corridor design features — structures, illumination, and roadway geometric design — up to current standards can promote safer travel.

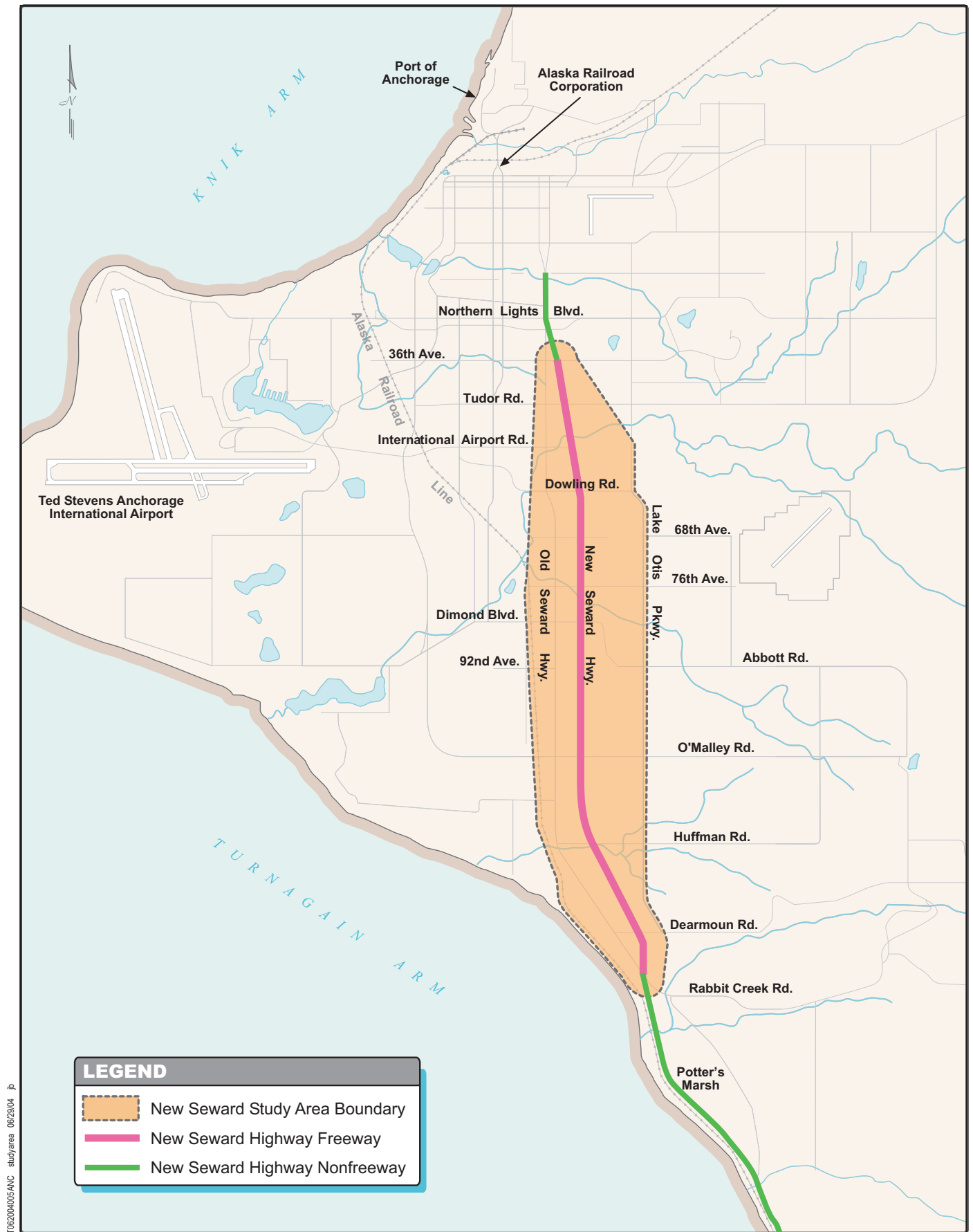
## Alternatives

### Alternatives Development

Engineering analysis of potential alternatives to meet travel needs along the NSH corridor from Rabbit Creek Road to 36th Avenue has included the ADOT&PF 1999 Reconnaissance Study, the MIS, and alternatives refinement that began in 2003.

During the MIS, alternatives evaluation focused on transportation modes, approaches to minimize reliance on automobiles, and highway system improvements. On the basis of background and condition studies, public involvement input, and analytical evaluation findings, the MIS recommendations identified the following alternatives for NSH corridor improvements in the study area for continued evaluation (CH2M HILL, 2002):

- The no-build alternative, as required in NEPA procedures for a benchmark comparison against other alternatives
- The HOV lane alternative for feasibility with complementary intermodal integration of bus transit improvements and transportation system management (TSM) and traffic demand management (TDM) strategies
- Six-lane expansion alternative (including the east-west crossing alternative) with refinements to address capacity-demand balance and spot improvements



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**FIGURE ES-1**  
**New Seward Highway Corridor,**  
**Rabbit Creek Road to 36th Avenue,**  
**Study Area**

Anchorage, Alaska





- Six-lane expansion alternative (including the east-west crossing alternative) with an International Airport Road (IAR) interchange and refinements to address capacity-demand balance and spot improvements
- Bus transit and TSM/TDM strategies as companion elements of an integrated multimodal transportation solution that includes highway improvements

Preliminary engineering evaluation further developed information about the feasibility of components in the MIS-recommended alternatives. Potential scenarios for interchanges, grade separations, arterial extensions, frontage roads, pedestrian and bicycle components, and mainline variations were examined. Analysis included updates of travel forecasts and operational modeling for peak-period travel conditions to refine information on performance metrics of the alternatives. The following alternatives were found to be the most reasonable solutions to satisfy the purpose and need of the proposed project:

- No Build Alternative (through 2035) (required by NEPA)
- Build Alternative 1—Mainline expansion with grade separations and Tudor Road interchange improvements
- Build Alternative 2—Mainline expansion with grade separations and IAR interchange

In addition, both build alternatives include TSM/TDM strategies to improve the efficiency of operation on the NSH corridor.

## Description of Alternatives

Figure ES-2 shows the build alternative segments discussed below.

### No Build Alternative

The No Build Alternative maintains the existing four-lane divided highway from Rabbit Creek Road to 36th Avenue. No improvements to the mainline, interchanges, or frontage roads within the corridor would be performed.

### Build Alternative 1—Freeway Expansion with Grade Separations and Tudor Road Interchange Improvements

From **Rabbit Creek Road to O'Malley Road** improvements consist of pedestrian and bicycle improvements and continuous illumination.

From **O'Malley Road to Dimond Boulevard**, the NSH mainline is widened from the existing four lanes to six lanes. The west frontage road is extended south from Dimond Boulevard to O'Malley Road. Pathways are included adjacent to both east and west frontage roads. Interchange improvements include ramp widening at O'Malley Road and a new half-diamond interchange constructed at 92nd Avenue with slip ramps. In addition, 92nd Avenue is extended west to Old Seward Highway (OSH).

From **Dimond Boulevard to Dowling Road**, the widened NSH mainline continues, and pathways are included adjacent to both east and west frontage roads. As part of new grade separations at 76th and 68th avenues, the existing frontage roads are reconstructed. The Dimond Boulevard interchange undergoes ramp and channelization upgrades and bridge

replacement. The west side ramp intersection is realigned to the east to provide continuity to the Homer Drive frontage road and 92nd Avenue. On the east side, an extension of Sandlewood Place provides continuity to the north for Brayton Drive. A new half-diamond interchange joins 76th Avenue with the NSH and incorporates grade separation to allow the extension of 76th Avenue to Brayton Drive. The grade separation at 68th Avenue permits an extension of 68th Avenue between Homer and Brayton drives.

From **Dowling Road to Tudor Road**, the widened NSH mainline continues, and pathways for bicycle and pedestrian travel are constructed the length of the segment. At the Dowling Road interchange, the ramps are reconstructed to accommodate the wider mainline. At IAR, grade separation incorporates raising the NSH by bridge, and extension of IAR connects Homer and Brayton drives. Bridges over the nearby Campbell Creek for the mainline and frontage roads are reconstructed.

From **Tudor Road to 36th Avenue**, bicycle and pedestrian improvements include a new separated pathway on the east side of the NSH. Two options are being considered for design of the Tudor Road interchange: (1) upgrading the existing diamond interchange to provide dual left-turn lanes on Tudor Road serving westbound-to-southbound traffic; and (2) constructing a loop ramp in the northwest quadrant of the interchange to serve westbound to southbound traffic.

**Illumination.** From Huffman Road to 36th Avenue, continuous illumination is added to the NSH to augment the high-mast lighting already available at the interchanges.

**TSM/TDM Components.** The TSM elements of Build Alternative 1 include advanced traffic management focus at 36th Avenue and selected auxiliary lane treatment for the critical sections of the NSH mainline where bottlenecks have been identified. The TDM program includes expanded transit service and promotion of initiatives designed to reduce single occupant vehicle travel.

### **Build Alternative 2—Freeway Expansion with Grade Separations and IAR Interchange**

Improvements in the first three segments of the study area—Rabbit Creek Road to O'Malley Road, O'Malley Road to Dimond Boulevard, and Dimond Boulevard to Dowling Road—are the same as those described for Build Alternative 1. The illumination and TSM/TDM improvements for Build Alternative 2 are also identical to those under Build Alternative 1.

From **Dowling Road to Tudor Road**, the mainline and pathway improvements are the same as those for Build Alternative 1. Dowling Road interchange modifications include removal of the northern entrance and exit ramps. A new interchange at IAR consists of a diamond configuration. The NSH is raised over IAR on a bridge, and IAR is extended east to meet Brayton Drive. The existing Campbell Creek bridge on IAR and the NSH bridges over Campbell Creek are reconstructed.

**Tudor Road to 36th Avenue.** The NSH mainline, pathway, and 36th Avenue intersection improvements, as well as the TSM/TDM components, are the same as those described for Build Alternative 1. Two options are being studied for use at the Tudor Road interchange: (1) removal of the southern ramps joining Tudor Road to the NSH to accommodate the IAR



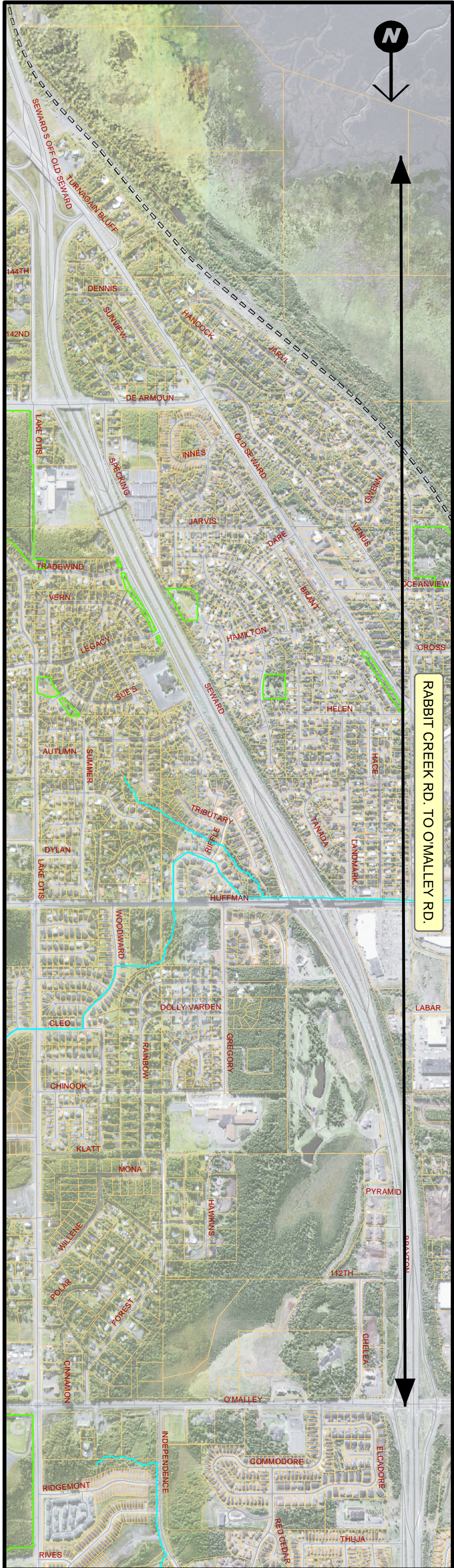
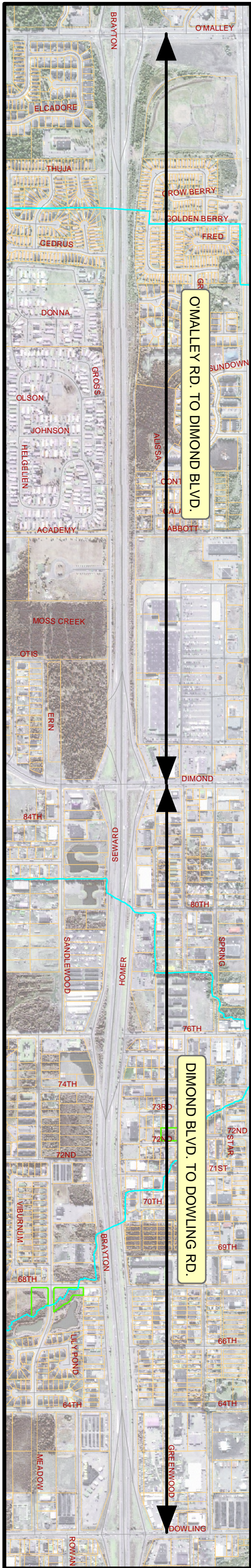
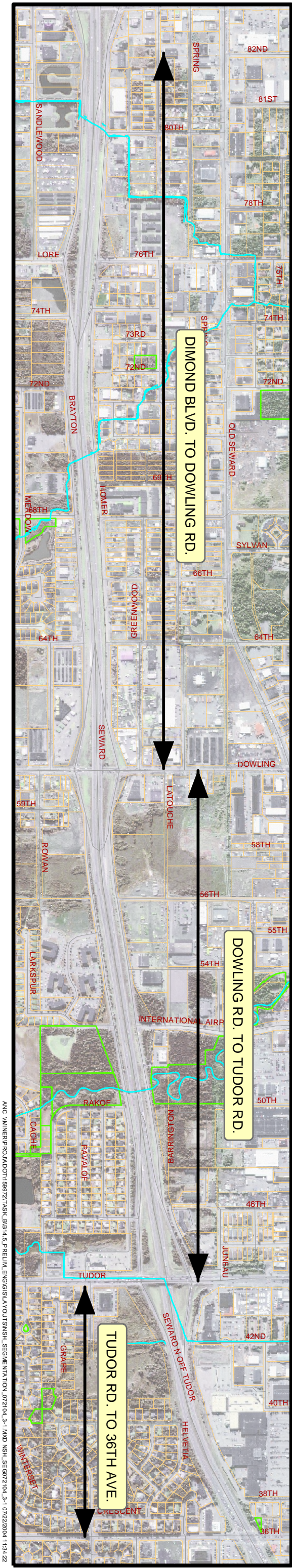


FIGURE ES-2  
New Seward Highway Segments



interchange; and (2) construction of hook ramps in the northeast quadrant of the interchange to serve NSH traffic northbound to Tudor Road and Tudor Road traffic traveling north on the NSH.

### **Comparison of Alternatives with Purpose and Need**

The build alternatives were compared to the purpose and need for the proposed project and found to adequately address the purpose and need. The No Build Alternative does not address the purpose and need for the proposed project.

### **Comparison of Impacts for Alternatives**

Preliminary impacts were identified for the No Build Alternative and each build alternative. Comparisons of cost, right-of-way, and environmental impacts are shown in Table ES-1.

### **Alternatives Considered but Not Advanced**

Additional information on alternatives not carried forward from the screening process is provided. The topics covered include HOV lanes, a multimodal solution consisting primarily of bus service and other TSM/TDM strategies, and various options for roadway improvements.

## **Implementation Plan**

As part of the preliminary engineering effort, the potential segmentation of the build alternatives into multiple projects for implementation of improvements to the NSH from Rabbit Creek Road to 36th Avenue was considered. The potential projects are identified based on a logical progression of capacity improvements, cost and efficiency, and economic constructibility.

TABLE ES-1  
Preliminary Impacts of Alternatives

<b>Cost by Segment<sup>1</sup></b>	<b>No Build</b>	<b>Build Alternative 1</b>	<b>Build Alternative 2</b>
Rabbit Creek Road to O'Malley Road (Segment involves construction of pathways and minor ramp work.)	NA	\$9,540,000	\$9,540,000
O'Malley Road to Dimond Blvd. (includes O'Malley Rd. interchange)	NA	\$38,268,000	\$38,268,000
Dimond Boulevard to Dowling Road (includes Dimond Blvd. interchange)	NA	\$46,742,000	\$46,742,000
Dowling Road to Tudor Road (includes Dowling Rd. interchange)	NA	\$34,691,000	\$36,592,000
Tudor Road to 36th Avenue (includes Tudor Rd. interchange)			
Cost of Option 1	NA	\$13,881,000	\$13,593,000
Cost of Option 2	NA	\$43,301,000	\$20,659,000
Total alternative costs (includes right-of-way cost)			
Cost of Option 1	NA	\$143,122,000	\$145,095,000
Cost of Option 2	NA	\$172,542,000	\$151,801,000
<b>Right-of-Way Category</b>	<b>No Build</b>	<b>Build Alt. 1 Option1/Option 2</b>	<b>Build Alt. 2 Option1/Option 2</b>
Number of Parcels	NA	23/27	22/26
Full takes	NA	0/2	0/4
Partial takes	NA	22/24	22/26
Relocations	NA	0/2	0/4
Total right-of-way cost for Option 1 <sup>2</sup>	NA	\$1,326,942	\$1,339,692
Total right-of-way cost for Option 2 <sup>2</sup>	NA	\$29,474,842	\$6,522,256

TABLE ES-1  
Preliminary Impacts of Alternatives

Environmental Impacts by Category <sup>2</sup>	No Build	Build Alternative 1	Build Alternative 2
Cultural resources	No	No	No
Wetlands (acres)		Option 1/Option 2	Option 1/Option 2
MOA Class A	0	0.47	0.71
MOA Class B	0	0.11	0.11 / 0.49
MOA Class C	0	0.25	0.62
Jurisdictional/non-jurisdictional <sup>3</sup>	Minor	1.36 / 0.61	1.97 / 0.94
Total wetland fill area <sup>3</sup>	Minor	2.56 / 2.63	2.88 / 3.36
Essential Fish Habitat	Present	Present	Present
Wildlife	No	No	No
Number of streams crossed	7	7	7
Number of bridges (over streams)	0	5 (Campbell Creek)	5 (Campbell Creek)
Number of stream culverts required	Huffman Rd. Project	3	3
Channel reconstruction	No	Yes (Little Campbell Creek and Fish Creek)	Yes (Little Campbell Creek and Fish Creek)
Coastal Management Program (Furrow Creek)	Applies	Applies	Applies
Air quality	Applies	Applies	Applies
Floodplain	No	No	No
Noise <sup>4</sup>	No	No	No
Water quality	Applies	Applies	Applies
MOA parkland (acres)	No	No	No

<sup>1</sup> Project cost estimates are based on 2004 dollars without inflation. Segment costs were interpolated from the construction phasing estimates in Appendix F.

<sup>2</sup> Right-of-way cost estimates are based on the *Summary Report, Appraisal Assignment New Seward Highway Alignment Survey*, prepared by Black-Smith & Richards, Inc., January 2004.

<sup>3</sup> Wetland impacts of less than 0.2 acre are considered a "minor" impact for a segment.

<sup>4</sup> Noise impacts may be mitigated as projects are developed for each segment.

Applies = Indicates that compliance with an act, rule, or ordinance is required.

AWMP = Anchorage Wetlands Management Plan

Improvement = The habitat will be enhanced.

Minor = Wetland impacts of less than 0.2 acre for a segment are considered minor.

NA = Not applicable

No = No known impacts at this time.

Present = Indicates that Essential Fish Habitat occurs in the segment.

Yes = There is an impact, and the degree of impact has not been quantified.

