

Implementation Plan

This section discusses potential segmentation of the build alternatives into multiple projects for implementation of improvements to the NSH from Rabbit Creek Road to 36th Avenue. The potential projects are identified based on a logical progression of capacity improvements, cost and efficiency, and economic constructibility. Appendix F includes cost estimates for each alternative project.

As part of preliminary engineering efforts, the feasibility of an eight-lane mainline for the NSH was examined. Although that scenario was dropped during the preliminary engineering screening, the design considerations have included some elements to facilitate a potential future project. For example, the new bridge structures along the NSH include widths to accommodate medians for cost-effectively adding future lanes.

4.1 Build Alternative 1 Construction Phasing

The following potential phases of construction were identified for Build Alternative 1:

- Phase I—six-lane mainline widening and other improvements
- Phase II—Tudor Road interchange improvements

In general, the construction phasing to achieve this alternative would begin at the north terminus of the corridor, 36th Avenue, and progress south. To minimize overlapping and sacrificial construction as the cross-street grade separations are constructed, NSH would be concurrently widened to a six-lane facility.

4.1.1 Construction Phase I, Mainline Widening and Other Improvements

During the first construction phase, a northbound and a southbound lane would be added on the outside of the NSH from Tudor Road to O'Malley Road. All bridge structures reconstructed during this phase would be designed and constructed to accommodate NSH median lane widening for an eight-lane facility that could be constructed as a potential future project. Frontage roads and pedestrian facilities would be constructed at their ultimate locations during this phase. Continuous lighting and noise barriers would also be provided. (Note that the need for noise barriers has not yet been analyzed.)

4.1.1.1 Project 1—NSH Grade Separation at International Airport Road

This project would add northbound and southbound outside freeway lanes from the existing auxiliary lanes about 800 feet south of the 36th Avenue intersection to the Dowling Road interchange north-side ramps. The Tudor Road interchange ramp gores would require reconstruction to accommodate the extra lane width. Under the existing Tudor Road bridge, the side slopes would be cut back or the median width would be reduced to accommodate the extra freeway lanes.

At IAR, the grade of the mainline section would be elevated to allow construction of the IAR overcrossing. IAR would be constructed under the raised freeway to connect with Alpenhorn Avenue, and the frontage road intersections would be realigned. The freeway and frontage road bridge structures over Campbell Creek would also be reconstructed, and the raised mainline grade would allow for a future Campbell Creek trail connection.

This project is scheduled for funding as part of Phase 2, Design, in federal fiscal year 2005 in the current Statewide Transportation Improvement Program. (Other projects have not yet been included in the 6-year construction plan.)

The Project 1 scope includes the following:

- Outside mainline widening to six lanes
- IAR grade separation structure for mainline
- Campbell Creek bridges for mainline and frontage roads
- Signalized intersections for IAR at the frontage roads
- Continuous illumination
- Pedestrian and bicycle facilities

4.1.1.2 Project 2—NSH Grade Separation at 68th Avenue and Half-Diamond Interchange at 76th Avenue

This project would construct additional outside freeway lanes from the north Dowling Road interchange ramps to the north Dimond Boulevard interchange ramps. The ramp gores at the Dowling Road and Dimond Boulevard interchanges would be reconstructed for additional lane width. Project 2 would provide the Dimond Boulevard loop ramp with its own dedicated northbound lane. Raising the NSH to cross over 76th and 68th avenues would be constructed during this project.

The existing Dowling Road interchange bridge may either be replaced or widened during this project, depending on whether its length is adequate for future expansion of Dowling Road. If the bridge length is not an issue at the time of this project, another option is to taper the six-lane mainline into the median to utilize the existing structure entirely. The cost estimate (Appendix F) assumes the replacement of the Dowling Road bridge structure.

The Project 2 scope includes the following:

- Outside mainline widening to six lanes
- Dowling Road bridge replacement (Keeping the existing structure is optional. The estimate in Appendix F is based on replacement.)
- 76th and 68th avenue grade separation structures on mainline
- Signalized intersections for 76th and 68th avenues at the frontage roads
- Sandlewood Place upgrades

- Continuous illumination
- Pedestrian and bicycle facilities

4.1.1.3 Project 3—NSH Half-Diamond Interchange at 92nd Avenue

This project would extend the outside freeway lanes from the south Dimond Boulevard interchange ramps to the north O'Malley Road ramps. The ramp gores at the Dimond Boulevard and O'Malley Road interchanges would require reconstruction for the additional widths.

The mainline bridge over Dimond Boulevard would require replacement, and the extra lane width required would affect the loop ramp in the southeast quadrant. When the existing southeast loop ramp was constructed, the NSH median width was reduced to accommodate the entrance lane. The median would be reconstructed to full width during this project.

Another option is to not replace the Dimond Boulevard bridge structure and to retain the reduced median in the areas near the bridge. The current lane configuration provides two southbound and three northbound lanes that include the loop ramp. The build alternatives would need to be modified to incorporate only two lanes across the Dimond Road bridge. The third southbound lane between O'Malley Road and Dimond Boulevard could be omitted or could be designed to extend only between the ramps. With this option, the additional median space would not be available for a future eight-lane configuration unless the bridge was replaced at that time.

The NSH crossing over 92nd Avenue would be constructed. The west side frontage road would be constructed from Dimond Boulevard to O'Malley Road. Minor intersection channelization improvements would be constructed at the Huffman and O'Malley road interchanges, as required. The Sandlewood Place upgrade and extension from Dimond Boulevard to 76th Avenue, in conjunction with intersection rechannelization of Dimond Boulevard, would solve the current problem of traffic not using the loop ramp. The clearance of the mainline bridge over Dimond Boulevard could also be increased during this project.

The Project 3 scope includes the following:

- Mainline widening to six-lane facility
- Dimond Boulevard bridge replacement (Keeping the existing structure is optional. The estimate in Appendix F is based on replacement.)
- Signalized intersections at Dimond Boulevard
- 92nd Avenue grade separation with slip ramps
- Signalized intersections at 92nd Avenue and frontage roads
- O'Malley Road intersection improvements at the ramps
- Continuous illumination
- Pedestrian and bicycle facilities

4.1.1.4 Project 4—Separated Pathway Improvements from O'Malley Road South

This project would extend the separated shared-use pathway system from Rabbit Creek Road to O'Malley Road and provide ADA improvements to the Rabbit Creek pedestrian overcrossing. It could also include minor intersection improvement at the Rabbit Creek Road interchange, noise wall installations, and landscaping.

The Project 4 scope includes the following:

- Pedestrian and bicycle facilities
- Rabbit Creek Road pedestrian overcrossing improvements

4.1.2 Construction Phase II, Tudor Road Interchange

This project would reconstruct the Tudor Road interchange with one of the following options:

- Option 1 – Diamond Interchange
 - Tudor Road bridge replacement
 - Ramp improvements
 - Signalized intersections at Tudor Road and frontage roads
 - Continuous illumination
 - Pedestrian and bicycle facilities
- Option 2 – Northwest Loop Ramp
 - Tudor Road bridge replacement
 - Ramp improvements, including new northwest quadrant loop ramp
 - Signalized intersections at Tudor Road and frontage roads
 - Continuous illumination
 - Pedestrian and bicycle facilities

4.2 Build Alternative 2 Construction Phasing

The potential projects for construction of the Build Alternative 2 would be accomplished in a single phase.

4.2.1 Construction of Mainline Widening and Other Improvements

Similar to the construction for Build Alternative 1, the construction phasing to achieve this alternative generally would begin at the north terminus of the corridor, 36th Avenue, and progress south. To minimize overlapping and sacrificial construction as the cross-street grade separations are constructed, NSH would be concurrently widened to a six-lane facility.

A northbound and a southbound lane would be added on the outside of the NSH from Tudor Road to O'Malley Road. All bridge structures reconstructed during this phase would be designed and constructed to accommodate NSH median lane widening for an eight-lane facility that could be constructed as a potential future project. Frontage roads and pedestrian

facilities would be constructed at their ultimate locations during this phase. Continuous lighting and noise barriers would also be provided. (Note that the need for noise barriers has not yet been analyzed.)

4.2.1.1 Project 1—International Airport Interchange

This project would add northbound and southbound outside freeway lanes from just south of the 36th Avenue intersection to the Dowling Road interchange and would taper them into the mainline section. The Tudor interchange ramp gores would require reconstruction to accommodate the extra lane width. Under the existing Tudor Road bridge, the side slopes would be cut back or the median width reduced to accommodate the extra freeway lanes.

At IAR, the grade of the mainline section would be elevated to allow construction of the IAR interchange. IAR would be constructed under the raised freeway to join with new freeway ramps connected to Alpenhorn Avenue and the frontage road intersections. The northbound exit for IAR would be a two-lane ramp with an auxiliary lane that tapers to the mainline south of the crest vertical curve over Dowling Road. The southern ramps at the Tudor Road interchange and the northern ramps on the Dowling Road interchange would be removed. The freeway and frontage road bridge structures over Campbell Creek would also be reconstructed in this project, and the raised mainline grade would allow for a future Campbell Creek trail connection.

This project is scheduled for funding as part of Phase 2, Design, in federal fiscal year 2005 in the current Statewide Transportation Improvement Program. (Other projects have not yet been included in the 6-year construction plan.)

The Project 1 scope includes the following:

- Outside mainline widening to six lanes
- IAR interchange structure for mainline
- Campbell Creek bridges for mainline and frontage roads
- Signalized intersections for IAR at the frontage roads
- Continuous illumination
- Pedestrian and bicycle facilities

4.2.1.2 Projects 2, 3, and 4

These projects for Build Alternative 2 are the same as those described under Phase I for Build Alternative 1.

4.3 Potential Future Construction of Eight-Lane Mainline

A potential future project for the NSH corridor not included in the current build alternatives is widening of the mainline to eight lanes from 36th Avenue to Dimond Boulevard. This phase would add one northbound and southbound lane by widening NSH on the inside into the median. This project could be implemented when additional north-south capacity is

required along the mainline. The NSH structures constructed for both build alternatives would be designed to allow for future median widening.

The scope for a future eight-lane facility project includes the following:

- Mainline lane widening into median, addition of concrete barrier
- Median storm drain systems in sag vertical curves
- Revised striping