

8. I-405 Plan: Roadway System

The I-405 Plan includes approximately 150 roadway improvements focused on moving traffic safely and providing congestion relief on local arterials, at intersections and on state roads throughout the I-405 corridor.

I-405 Improvements

The roadway improvements proposed by the I-405 Plan include:

- Two additional lanes each direction the entire length of I-405
- Collector-distributor and auxiliary lanes
- Interchange improvements on I-405
- Connecting freeway capacity to I-405
- Connecting arterial capacity to I-405
- Expanding capacity and improving connections on north-south arterials

The new capacity on the roadways will be assisted by Intelligent Transportation Systems (ITS), an innovative technology used to improve roadway efficiency and safety.



Additional Lanes

The I-405 Plan includes addition of up to two general-purpose (GP) lanes in each direction for most sections of I-405. Collector-distributor lanes and auxiliary lanes will augment the new GP lanes.

Collector-distributor (C-D) and auxiliary lanes are used to reduce bottlenecks and congestion at specific locations and to improve traffic operations and safety. C-D lanes provide more time for traffic to safely enter or exit from the roadway by providing lanes removed from general traffic. These lanes are being considered as a design option along I-405 in certain sections. Auxiliary lanes provide additional freeway capacity for safe merging between interchanges. Some auxiliary lanes are in the form of “hill-climbing” lanes to accommodate slow-moving vehicles up steep grades.

North Section Roadway Improvements

General Purpose Traffic Lanes

- Up to two lanes each direction would be added to I-405.
- Collector-distributor and auxiliary lanes at NE 160th St through NE 195th St (Bothell); from SR-522 through NE 160th St; NE 116th St through NE 132nd St (Kirkland)

These C-D/auxiliary lanes could be in addition to the through traffic lanes, or could substitute for through lanes in certain locations. Specific decisions will be made during the project-level design phase.

Interchanges

The widening of I-405 is likely to require full or partial redesign and reconstruction of the following interchanges in the north section:

- I-5 Swamp Creek (added ramp capacity; HOV ramps)
- SR-527 (full reconstruction; HOV connections)
- NE 195th St (full or partial reconstruction; possible HOV connections)
- SR-522 (added ramp capacity and separated through lanes on I-405; HOV ramps)
- NE 160th St (partial redesign)
- NE 128th St HOV Interchange (under design by Sound Transit; minimal changes)
- NE 124th St (full reconstruction)
- NE 116th St (partial reconstruction)

The north section includes two locations for consideration of new I-405 freeway interchanges:

- Between NE 195th St and County Line (Bothell): Locations could include Monte Villa Parkway or the vicinity of NE 240th Street. The interchange would serve commercial development to/from the east only, with no connections to residential neighborhoods in Bothell to the west. A full or half interchange design will be considered, with C-D connections to the NE 195th and possibly SR-527 interchanges.
- NE 132nd St (Kirkland): A half interchange, to-and-from the north only, is envisioned at NE 132nd Street. This interchange would be the companion to the south-oriented half diamond at NE 116th Street. The interchange would be connected via C-D to the NE 124th St ramps.

Central Section Roadway Improvements

General Purpose Traffic Lanes

The I-405 Plan includes the addition of two lanes in each direction to most of the central section of I-405. However, it may be possible to only add one lane in each direction in the section of I-405 between SR-520 and NE 70th Street.

Collector-Distributor and Auxiliary Lanes

Collector-distributor (C-D) and auxiliary traffic lanes are anticipated in the following segments:

- NE 85th St through NE 70th St in Kirkland (C-D lanes)
- SR-520 through I-90 interchange in Bellevue (combination of auxiliary and C-D lanes through downtown to tie to existing and new interchanges)
- I-90 through Coal Creek Parkway in Bellevue (C-D lanes and braided ramps, ties to possible auxiliary lanes on I-405 to the south)

These C-D/auxiliary lanes could be in addition to added through-traffic lanes, or could substitute for through-lanes in certain locations.

Interchanges

Widening I-405 would require full or partial redesign and construction of the following:

- NE 85th St (full reconstruction; possibly with HOV ramps)
- NE 70th St (full reconstruction)
- SR-520 (major reconstruction; HOV ramps; ties to SR-520 improvements)
- NE 8th St (under design Bellevue Access Project; minimal changes)
- NE 4th St (under design Bellevue Access Project; minimal changes)
- SE 8th St (under design Bellevue Access Project; minimal changes)
- I-90 (added ramp capacity; HOV ramps)
- Coal Creek Pkwy (partial reconstruction)

The central section also includes two locations in downtown Bellevue for consideration of new I-405 freeway interchanges:

- NE 10th St (half interchange to/from the north only; connections to downtown Bellevue C-D roads and connections to SR-520)
- NE 2nd St (half interchange to/from the south only; connections to downtown Bellevue C-D roads)

South Section Roadway Improvements

General Purpose Traffic Lanes

Two lanes each direction would be added to this section of I-405.

Collector-Distributor and Auxiliary Lanes

Collector-distributor (C-D) and auxiliary traffic lanes are anticipated in the following segments:

- Coal Creek Parkway in Bellevue to Park Drive/SR-900 in Renton (auxiliary lanes between interchanges and/or hill-climbing lanes along the Kennydale Hill segments from NE 44th St to Park Drive)
- SR-169 through SR-167 in Renton (C-D and auxiliary lanes tied to the SR-167 interchange redesign)

These C-D/auxiliary lanes could be in addition to the through traffic lanes, or could substitute for through lanes in certain locations.

Interchanges

Widening of I-405 would require full or partial redesign and construction of the following interchanges in the south section:

- SE 112th Ave (partial reconstruction)
- NE 44th St (full reconstruction)
- NE 30th St (partial reconstruction)
- Park Drive (partial reconstruction)
- N 8th St HOV interchange (under design by Sound Transit)
- SR-169 (partial reconstruction)
- SR-167 (full reconstruction; HOV connections)
- SR-181 (partial reconstruction)
- I-5 (added ramp capacity; HOV connections)

Widen SR-167



SR-167 would be widened by up to two lanes in each direction from the expanded I-405/SR-167 interchange south to the interchange at S 180th St in Renton. Ramp merges and weaves will require the equivalent of two additional lanes along SR-167 for a section extending about one mile south of I-405. The final design at the S 180th interchange and transition of the added lanes back to SR-167 to the south will be determined during the

next phase of project evaluation. A separate SR-167 corridor study will examine the transportation facility and service needs along the freeway from I-405 south to Puyallup.

Improve Capacity of Connecting Freeways

To avoid bottlenecks at I-405 connections, the capacity of connecting freeways and ramps will be increased. Much of this capacity will be in the form of expanded ramp lanes and queuing areas on I-5, I-90, SR-520 and SR-522. Some limited lane capacity would be added to I-405 at SR-518 and SR-525 to transition from I-405 to these smaller facilities.

Arterial Improvements

I-405 arterial improvements will complement the Program's capacity enhancements. The arterial improvements categories include:

- I-405 Arterial Connection Projects, primarily east-west arterial capacity expansions intended to improve operation and connection to I-405 at new or existing interchanges. The improvements range from adding lanes approaching the interchanges to making intersection improvements. Some arterial improvements also include recommendations for HOV priority treatments.
- North-South Arterial Projects complete some of the "missing links" along north-south arterials and provide needed capacity improvements. Arterial improvements will help

balance the localized north-south demand on I-405.

- Several other arterial projects are located throughout the corridor to improve traffic circulation and capacity.

Several of these projects are already called for in local agency plans and the Eastside Transportation Partnership (ETP).

North Section Arterial Improvements

The north arterial improvements impact the cities of Bothell and Woodinville and include new interchanges and additional lanes.

An example of a north arterial improvement is the addition of two new connections to SR-202 on the west side of the Sammamish Valley. A new overcrossing of SR-522 will allow traffic to bypass downtown Woodinville. Willows Road will be extended from NE 124th Street to NE 145th to connect with SR-202. The resulting facility will provide a new parallel arterial to I-405 in the Sammamish Valley.

Central Section Arterial Improvements

The arterial improvements in the central section (Bellevue, Redmond, Kirkland) are targeted at improving traffic flow. Improvements include limited arterial widening in Kirkland and Bellevue to improve connections to I-405 and general arterial widening in Redmond to connect to SR-202 and SR-520.

South Section Arterial Improvements

The arterial projects in the southern part of the corridor improve several routes in Newcastle, Renton and Tukwila and King County. Example projects include the Coal Creek Parkway widening from SE 72nd Street in Newcastle to Renton. Pedestrian and bicycle facilities will be included and traffic signals will be installed to control traffic flow.

The arterial projects also include improvements to SR-181 (West Valley Highway/ Interurban Ave) to SR-169 (Maple Valley Highway), providing smooth connections to I-405.

Traffic circulation improvements in downtown Renton and the Southcenter area of Tukwila will facilitate local trips on arterial streets rather than I-405.

Analysis of Managed Lanes

The I-405 Corridor Program considered managing the access or utilizing high-occupancy/tolls (HOT) on one or more lanes on I-405. The potential effects of creating a managed lane facility, including pricing effects, revenues, equity, access and operation were not studied. The Program committees recommended further consideration of managed lanes after more detailed study and policy considerations have been accomplished. The committees consider pricing a regional issue.