

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

NE 132nd Street is an important multi-modal roadway serving the needs of the residents in the area as well as being an important arterial connection in the Totem Lake urban center. Growth in the Kirkland, Bellevue and Redmond area is expected to continue at a significant rate and this corridor will continue to play a major role. WSDOT is beginning design for a new half interchange at I-405 and NE 132nd Street and Sound Transit, in conjunction with WSDOT, is completing the HOV direct access ramps at NE 128th Street.

Existing traffic counts and projections show a heavy southeast to northwest commuting pattern that crosses the study area along NE 116th Street, NE 124th Street and NE 132nd Street. Modeling for the year 2030 indicates that capacity will need to be added to the east-west corridors in order to reduce congestion and intersection delays. This capacity could be added at either NE 124th Street or NE 132nd Street. Increasing NE 132nd Street to a five lane roadway between 100th Ave NE and 132nd Ave NE would significantly change the nature and character of the corridor. It would be necessary to take large amounts of right-of-way along the entire corridor, in some cases entire properties would need to be purchased. In contrast NE 124th Street is currently a five-lane major arterial in a largely commercial area. Business and large apartment complexes are set well off the existing roadway. Adding a lane in either direction would not significantly impact most properties along this corridor. NE 124th Street currently has a full interchange at I-405. Travel demand modeling indicates that NE 124th Street is where drivers would prefer to travel if capacity is increased.

The travel demand modeling also indicates that the planned half interchange at I-405 and NE 132nd Street will not significantly alter the traffic patterns and volumes along the NE 132nd Street corridor between 100th Ave NE and 132nd Ave NE. Congestion on I-405 will continue to increase at a significant rate. The only planned improvement to I-405 in this area between now and 2030 is the addition of one lane in the northbound direction. This will not be enough to handle the increased volume in northbound traffic. Drivers will continue to look for alternate north-south routes. As a result the half interchange will not be the most significant contributor to traffic along NE 132nd Street.

Recommendations

This study indicates that capacity does need to be added to the east-west corridors between 100th Ave NE and 132nd Ave NE. Adding travel lanes to NE 124th Street would increase capacity, allow drivers to maintain their desired routes with full access to the Totem Lake interchange at I-405 and keep NE 132nd Street and NE 116th Street as primarily residential arterial corridors.

In order to manage peak period congestion, maintain acceptable travel times and intersection level of service, we recommend several improvement projects to be implemented along NE 132nd Street. While these projects are critical for improving traffic flow to meet future demand, they can be constructed independently of each

other and they do not need to be completed before the half interchange at I-405 is constructed.

Based on the corridor analysis, we recommend WSDOT make two modifications to the preliminary interchange design. This will maintain flow and take advantage of the two westbound lanes on NE 132nd Street. See layout in Appendix A.

- 116th Way NE should be restriped for northbound exclusive left turn and left + right turn lane.
- Modify the southbound off-ramp to remove the traffic island and stripe for one left turn lane, one through + left lane and one through + right lane.

In addition to the modifications to the half-interchange project discussed above, we have identified the following projects necessary to meet 2030 traffic volume projections along the NE 132nd Street corridor. Budget level estimates for each improvement are shown in parentheses.

- Maintain the proposed three-lane cross section for NE 132nd Street. (see typical cross-section in Appendix A).
- Implement the following intersection and roadway improvement projects along NE 132nd Street (see plan layouts and cost estimates in Appendix A):
 - 100th Avenue NE intersection – Extend the westbound left and right turn lanes to 500 feet (\$1 million).
 - Juanita High School intersection – Add a 250-foot eastbound right turn lane (\$750,000).
 - 108th Avenue NE intersection – Add a 250-foot westbound right turn lane (\$500,000).
 - Modify the signal at the fire station to include a pedestrian actuated option (\$300,000).
 - NE 132nd Street West Segment: Overlay and restripe roadway, add landscaped center medians and perform sidewalk repairs between the east end of the 100th Avenue NE intersection project and the west end of the I-405 project (\$1.2 million).
 - NE 132nd Street Central Segment: Overlay and restripe roadway, add landscaped center medians and perform sidewalk repairs between the east end of the I-405 project and the west end of the 124th Avenue NE project (\$300,000).
 - 124th Avenue NE intersection – Continue to monitor this intersection to verify the traffic model conclusions of this study. If the eastbound to northbound left turn volumes remain as high as the model is anticipating then the City will need to extend the existing eastbound left turn lane to 500 feet and add a second 500-foot eastbound left turn lane. Widen and restripe east leg at the intersection to match west leg. Widen and restripe north leg for 1000 feet to provide two northbound through lanes, one southbound left turn lane and one southbound through/right turn lane. Restripe south leg at the intersection to match north leg (\$4.5 million).
 - NE 132nd Street East Segment: Overlay and restripe roadway, add landscaped center medians and perform sidewalk repairs between the

- east end of the 124th Avenue NE project and the west end of the 132nd Avenue NE project (\$1 million).
 - 132nd Avenue NE intersection – Extend eastbound left and right turn lanes to 500 feet (\$700,000).
- Integrate components of the Kirkland ITS Plan into the NE 132nd Street corridor as part of either Overlay or Intersection projects.
 - Upgrade the traffic signal controllers and consider video detection for the intersections
 - Install interconnect system from 100th Avenue NE to 132nd Avenue NE
 - Install CCTV cameras to monitor and manage traffic congestion and queues. Locations could include 100th Avenue NE, Totem Lake Boulevard and 124th Avenue NE intersections to provide visibility throughout the two-mile corridor.
 - Implement transit signal priority in the corridor to assist transit passage through the congested intersections. In particular, passage through the interchange area near I-405 will be critical for transit schedule maintenance.
- Work with King County Metro to consolidate transit stops with improved pedestrian crossing treatments in conjunction with overlay project segments and construction of landscaped medians through the corridor.
- Explore pedestrian-level lighting for the corridor, in conjunction with sidewalk and transit stop enhancements.

See Appendix A for corridor layouts and preliminary cost estimates.

Priorities for Implementation

There are many changes underway in the Totem Lake area that will influence travel patterns and traffic demand on NE 132nd Street. This corridor analysis reflects the expected traffic growth assigned to the corridor based on current traffic volumes and patterns.

Changes in circulation are expected with the new NE 128th Street arterial connection across I-405 that provides HOV direct access to I-405. WSDOT plans to construct a half-interchange at NE 132nd Street and this will likely result in additional shifts in traffic and circulation.

The intersection LOS analysis indicates that the 100th Avenue NE/124th Avenue NE intersection projects should be the first ones to be constructed, due to the high level of congestion. The project at 100th Avenue NE is likely warranted regardless of the circulation changes near I-405. A project to improve access at the Juanita High School signal would also be justified near-term.

We recommend that the City monitor traffic volumes on NE 132nd Street, especially east of I-405 to affirm the sequence of the intersection projects in the proposed Master Plan for NE 132nd Street Roadway. The restriping, crosswalk and sidewalk enhancements and center medians could be incorporated into the arterial overlay program or could be stand alone projects.