

I-5 Ship Canal Bridge Noise Study

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In this Issue:

- Acoustics experts evaluate innovative strategies for reducing traffic noise
- Noise reduction strategy to be tested on the Ship Canal Bridge
- Get involved and stay up to date

Acoustics experts evaluate innovative strategies for reducing traffic noise

WSDOT received \$5 million in funding from the 2005 Transportation Partnership Account to evaluate highway traffic noise in neighborhoods surrounding the I-5 Ship Canal Bridge. With this funding, we have been evaluating new and innovative methods to determine the best approach for reducing highway noise. Highway noise from the bridge reaches surrounding neighborhoods by reverberating or reflecting off the bridge decks, and directly from the car tires as they travel over the pavement. We focused our analysis on noise coming from the express lanes to best address the highway noise in this area. As you might imagine, reducing multiple types of highway noise is a unique challenge. This spring we hosted a workshop with acoustics experts from around the country to review strategies for reducing highway traffic noise from the bridge. To best address each type of noise, they recommended the following:

- To reduce reverberant and/or reflective noise: Install noise-absorptive materials on the ceiling above the I-5 express lanes.
- To reduce noise at the source: Replace or rehabilitate the pavement.
- To reduce noise near the source: Modify existing bridge barriers to block and/or absorb noise.

Noise reduction strategy to be tested on Ship Canal Bridge

Based on the experts recommendations and available funding, WSDOT plans to install a 1,000-foot test section of noise-absorptive material on a portion of the ceiling of the I-5 express lanes. We will monitor the test section to evaluate the noise reduction benefits and durability in this location. The Ship Canal Bridge consists of a steel truss section in the middle and concrete approaches on both the north and south sides. The results of a recent structural analysis show that the north approach would require retrofit work to accommodate a ceiling modification, while the south concrete approach would not require this additional work. The project team plans to proceed with a test section on the south concrete approach. We are determining the exact configuration and limits of the test section, and plan to begin installation in late 2009. We will continue to evaluate the feasibility and effectiveness of other options proposed by the expert panel.

Get involved and stay up to date on the I-5 Ship Canal Bridge Noise Study

We recently participated in local community council meetings and meetings with neighborhood groups about the I-5 Ship Canal Bridge Noise Study. If your group or business would like a briefing, please contact us at

NWNoiseWalls@wsdot.wa.gov or 206-770-3636. You can also visit our Web site to learn more about the project: www.wsdot.wa.gov/Projects/I5/ShipCanalBridge

If you have any questions about the project or would like to be added to the project e-mail list, please contact: Erin Fletcher, P.E.

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