

Added Capacity & Noise Walls, SR-527 – 164th Street SE to 132nd Street SE

Project Description

Location

City of Mill Creek

SR-527 MP 6.72 – MP 8.85

Purpose & Need

This project was developed to address congestion on a section of SR-527 between 164th Street SE and 132nd Street SE. SR 527 highway passes through downtown Mill Creek. This route serves as the main north-south gateway to the city. Rapid commercial and residential development in and around the city of Mill Creek has strained the existing highway's capacity. In the design of the project, the city requested that the Washington State Department of Transportation (WSDOT) meet the city's design standards, which are more stringent than WSDOT's own standards.

Context

This project is located in a suburban area north of the city of Everett. Rapid development is occurring in both the commercial and residential land uses. The city is located near environmentally sensitive areas with a number of creeks and wooded areas running through the city. Bicycle and pedestrian traffic is currently limited throughout the corridor, but growth in pedestrian and bicycle traffic is expected. The project is classified as urban, although the highway maintains a rural feel with tree-lined roadsides.

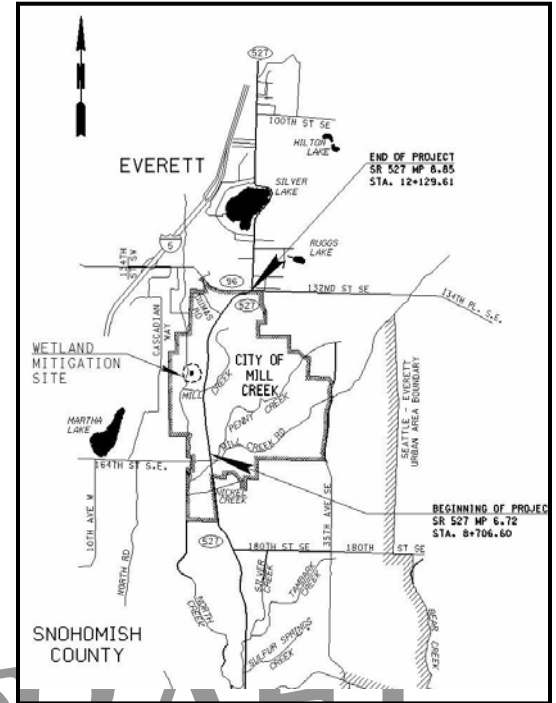
Initial Design Concept

To relieve congestion and increase capacity and mobility, SR-527 will be widened to five lanes with a bicycle lane in each direction. Work items include walls, drainage, wetland mitigation, and traffic signal modifications.

Challenges

The original project concept was the basis for establishing the project budget and schedule. Design elements meeting the city's criteria were added later in the process. The city's changes introduced additional costs, and the potential to impact the delivery schedule. The placement and aesthetics of the noise walls were the focus of the city's modifications to the initial design concept. The project also impacted Mill Creek and Penny Creek, which introduced some environmental mitigation concerns.

Exhibit 1 – Project Vicinity Map



Challenges

- Community collaboration
- Funding for the project
- Construction under traffic
- Meeting city standards
- Environment impact

Funding

The project has funding from WSDOT and the city of Mill Creek. WSDOT's budget for the original concept was about \$26 million. As part of the mitigation for creek impacts, WSDOT contributed \$150,000 to the city for the Penny Creek fish-passage culvert retrofit project.

The city of Mill Creek reflected its commitment to the project by contributing some construction costs.

Schedule

Scoping started in late 1990, and the design was completed in mid-2001. Construction will occur in three phases. Phase 1 consisted of noise and retaining walls and was completed in mid-2002. Phase 2 will widen SR-527, and Phase 3 will have a roadside revegetation focus.

Process

Public Participation

Several open houses were held to hear the public's concerns, requests, and ideas. Large-scale plots of the highway were laid out for the public to write their comments on, allowing the citizens to place their comments right where they applied, making it easier for everyone to understand the comment. This turned out to be a very effective approach, which was well received by the public.

The city and WSDOT partnered on the design of all landscaping features for both the roadside and the planted medians. Plant types were selected to match the corridor "look" as defined by the city's streetscape plans. The "look" varied from the commercial areas to the residential areas of the highway corridor.

The project represents a partnership commitment with local agencies, neighbors, and the public.

Results

Design /Construction Considerations

Solutions

- Public participation
- City contributed more money
- Work with contractor to lessen traffic impacts
- Work on design elements without affecting budget
- Communication with other agencies

The noise walls were an aspect of the design that the city was concerned could detract from the city's streetscape ideals. WSDOT's State Architect, Landscape Architect, and design team worked with the city to develop an artistic design that included a leaf pattern band along the top three feet of the noise wall panels with a "tree bark" finish below. The special "leaf relief" pattern did not add to the construction costs. WSDOT's Architect prepared the life-sized clay molds, and the contractor picked up the molds and sent them to a manufacturer to have the five different inverse rubber molds made.

The design commitments also included that the noise walls would meander where possible, not just parallel to the highway, preserving a portion of existing trees and landscaping, as well as

matching the city's meandering sidewalk concept. The city asked for specific designs with respect to the stepping affect at the top of the walls, and asked that each step be the same dimension consistent throughout the entire project, rather than random dimensions. The city also asked that the back of the noise walls have a "tree bark" finish to give the adjacent private property owners a respectable-looking barrier. An adjacent soldier pile retaining wall also utilized the "tree bark" finish for corridor continuity.

The walls were installed before the highway widening, at the request of the adjacent property owners and the city, to provide safety and noise abatement during the highway widening construction.

Traffic Impact

To minimize the initial impact to businesses, the contract required the contractor to provide a two-way-left-turn lane in the commercial areas during the winter holiday period to assist shoppers accessing the businesses.

Financial Contribution

As a result of the public participation, the city of Mill Creek reflected their commitment to the project by participating in construction costs. In addition, many large developments located along the highway frontage contributed money to improvements in the project.

Exhibit 2 – Leaf-Relief Top Banner with “Tree Bark” Finish Below



Exhibit 3 – Meandering Noise Walls with Retainina Wall Below



Exhibit 4 – Top of Noise Wall Steps Mirrored with Retaining Wall

