

# SW Denney Road Scholls Ferry Road to SW 105th Ave

## Preferred Alternative Design Memorandum

Revised November 9, 2023

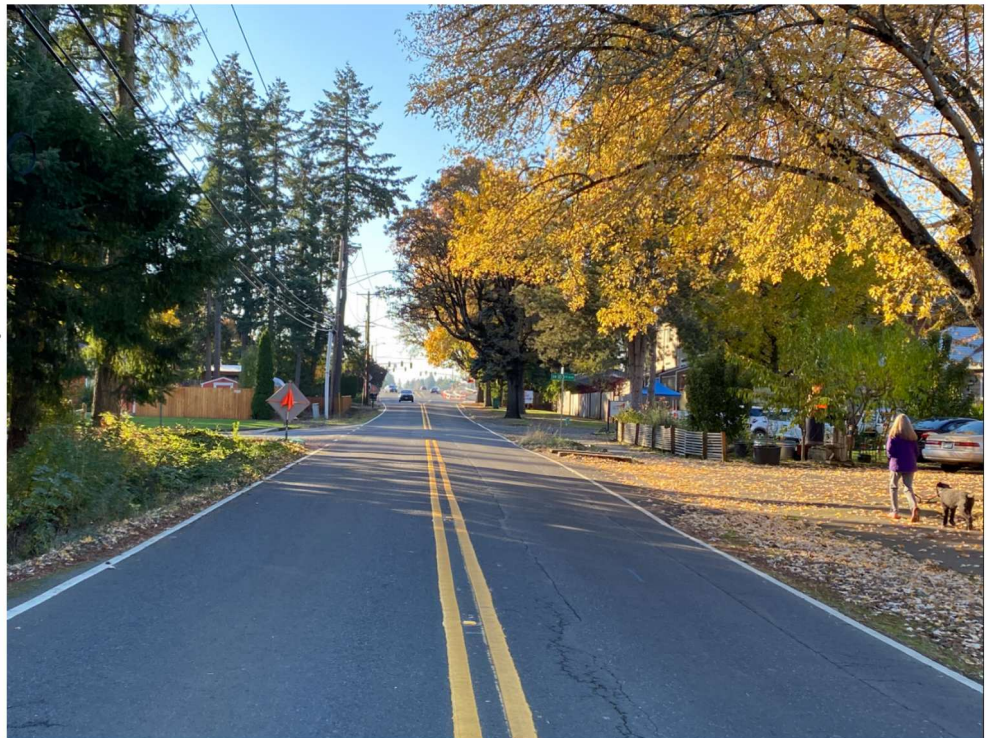
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# SW Denney Road (Scholls Ferry Road to SW 105th Ave)

## Preferred Alternative Design Memorandum

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## Introduction and Purpose

The purpose of this memorandum is to outline the design criteria and present the significant components of the preliminary design for the SW Denney Road (SW Scholls Ferry Road to SW 105<sup>th</sup> Ave) Project as depicted in the Preliminary Design Strip Map, included for reference.

## Project Limits

The improvements include both sides of SW Denney Road between the easterly edge of SW 105<sup>th</sup> Avenue and SW Scholls Ferry Road. Improvements to the easterly edge of SW 105<sup>th</sup> Avenue will align with improvements from ODOT's Highway 217 project to the west. Improvements at the east end will include widening, intersection improvements, and a new signal at SW Scholls Ferry Road.

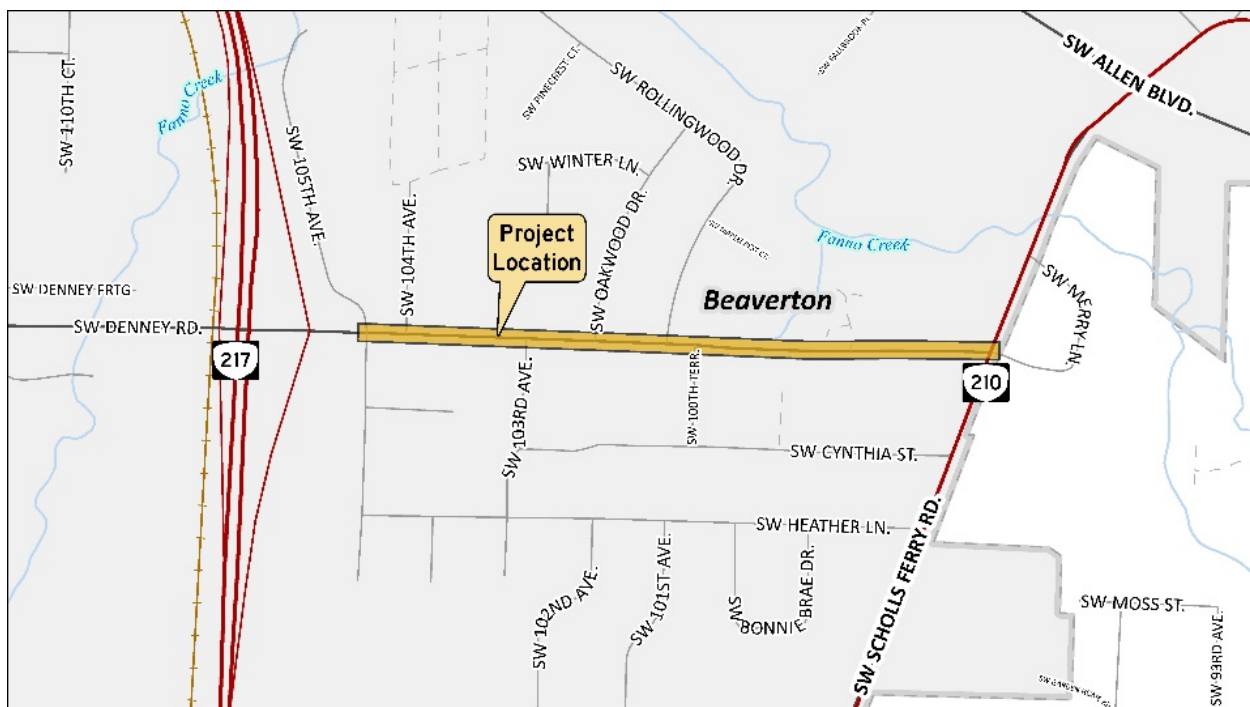


Figure 1: Project Vicinity

## **Public Engagement Process**

During this project there were several different opportunities for the public to learn about the project and provide feedback on the proposed alternatives.

### Points of Public Engagement

The public was first notified of the upcoming project through mailers, email notifications, and a project sign posted along the corridor. Project information was also posted to the Project Website managed by Washington County.

#### *Open House #1: Opportunities and Constraints*

The design team held an initial open house on December 8, 2022 to share the primary goals of the project, as well as to listen to the priorities and ideas of the public. Based on feedback from this event and coordination with City and County staff, the design team developed three design alternatives for the corridor.

#### *Open House #2: Design Alternatives*

On April 6, 2023, the design team hosted a second open house event to present the three design alternatives and gather feedback. During this event, feedback from the public centered around providing safer pedestrian and bicycle facilities, traffic calming measures, and a desire to protect existing trees along the corridor.

#### *Beaverton Bicycle Advisory Committee: Presentation of Alternatives*

On April 13, 2023, the design team presented the design alternatives to the Beaverton Bicycle Advisory Committee (BAC). The primary feedback from the BAC was that the City standard of a 5-foot minimum bike lane was insufficient for this corridor. The BAC preferred to see bicycles separated from vehicle traffic. Following this feedback, the design team refined the proposed alternatives to show an increased bike lane width.

#### *Beaverton City Council 1-on-1 Briefings*

In May 2023, Beaverton staff held one-on-one briefings with City Councilors to discuss the project and solicit specific feedback. Overall, councilors were supportive of the project and excited to see the improvements, particularly for the bicycle and pedestrian users in the area. Each councilor provided feedback on the proposed alternatives and support for individual alternatives was relatively widespread.

#### *Beaverton School District Coordination*

With the close proximity of McKay Elementary and Whitford Middle Schools to the south, the team reached out to the Beaverton School District's Safe Routes to School Coordinator to confirm their preferences for the optimal types of bicycle facilities for school-aged children. Their response was clear that they preferred the buffered bike lanes on both sides of Denney Road over a shared use path on one side.

#### *Arborist Coordination*

The design team held a field meeting to review the proposed design with the City Arborist and the Project Arborist. The feedback from this meeting further refined the design with a special emphasis on maintaining as many mature and healthy existing trees along Denney Road as possible, especially the significant mature white oaks. With the guidance of Beaverton's City Arborist and consultation with the project's Arborist, the roadway and sidewalk pavements were adjusted in order to minimize the impacts to the existing trees.

## Design Alternatives Development and Refinement

Improvements along SW Denney Road extend from SW 105<sup>th</sup> Ave to SW Scholls Ferry Road. Improvements will include adding bike lanes, curb and gutter, planters, and sidewalk. The design team proposed three alternatives for analysis and review with the public, the City of Beaverton, and Washington County. All alternatives included a turn lane from SW 105<sup>th</sup> Avenue to SW Oakwood Drive and at SW Scholls Ferry Rd as recommended by the traffic analysis. Outlined below are the unique elements of each design.

### Alternative 1: 3-Lane City Standard Section

Alternative 1 utilized the City of Beaverton standard 3-lane section with a center turn lane, on-street bike lanes, and a separated sidewalk as shown in Figure 2. This alternative had the greatest right of way impacts and required the highest number of tree removals, but provided a two-way left turn lane for the entire corridor.

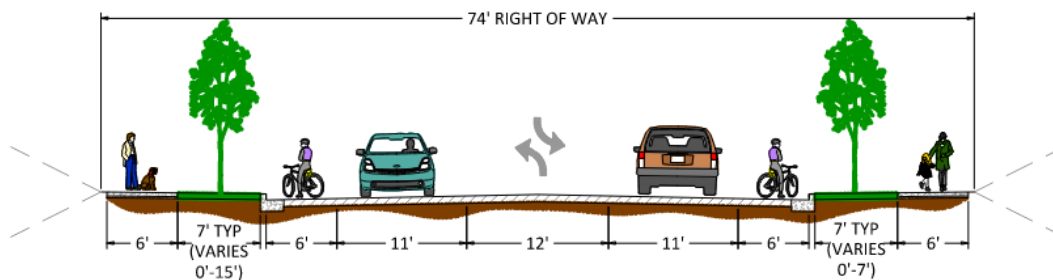


Figure 2: Alternative 1, 3-Lane Typical Section

### Alternative 2: 3-Lane & 2-Lane Combination City Standard Section

Alternative 2 utilized a combination of the City of Beaverton standard 3-lane and 2-lane sections. With this alternative, a turn lane was proposed from SW 105<sup>th</sup> Ave to SW Oakwood Drive and at the intersection of SW Denney Road and SW Scholls Ferry Road. Figures 3 and 4 show the typical sections for this alternative. Of the three alternatives presented, Alternative 2 had the greatest opportunity to protect existing trees.

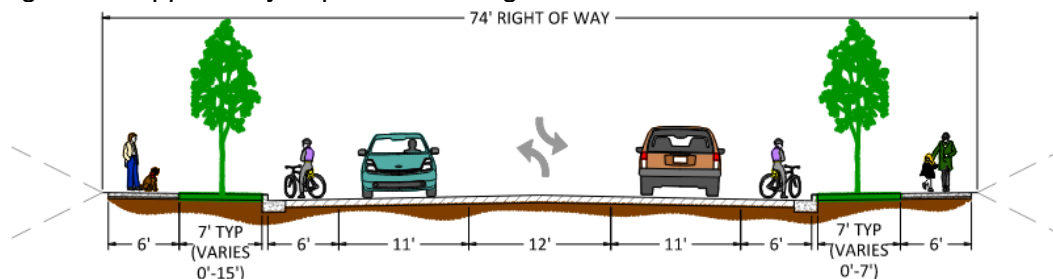


Figure 3: Alternative 2, 3-Lane Typical Section

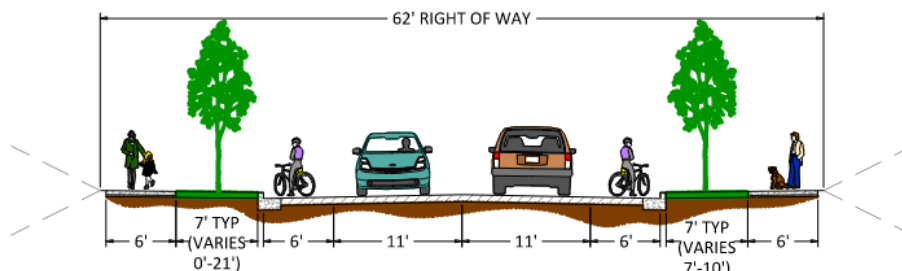


Figure 4: Alternative 2, 2-Lane Typical Section



### Alternative 3: 3-Lane & 2-Lane Combination with North Side Shared-Use Path

Alternative 3 utilized a combination of a 2-lane section and a 3-lane section to provide a turn lane at SW 105<sup>th</sup> Avenue to SW Oakwood Drive and at the intersection of SW Denney Road and SW Scholls Ferry Road. Unlike Alternatives 1 and 2, this alternative proposed a shared-use path on the north side of the corridor. Figures 5 and 6 show the typical sections for this alternative. Of the three alternatives presented, Alternative 3 had the least right of way impacts.

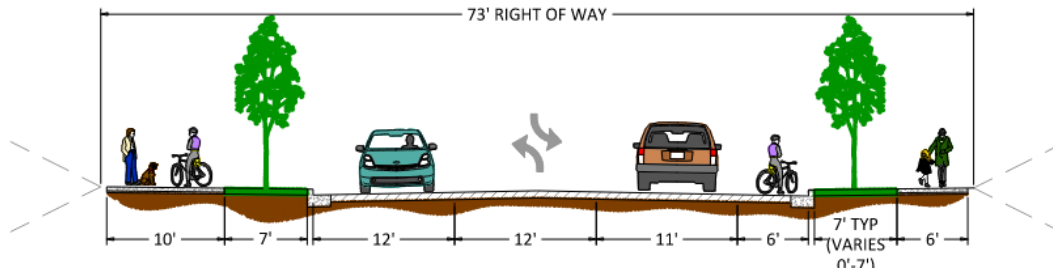


Figure 5: Alternative 3, 2-Lane Typical Section

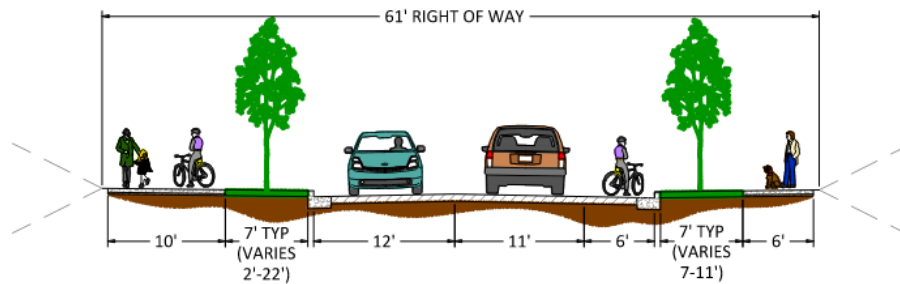


Figure 6: Alternative 3, 2-Lane Typical Section

### Design Refinements

After discussions with the public, City Councilors, and other key stakeholders, a hybrid Preferred Design Alternative was developed. The Preferred Design Alternative incorporates elements of the Buffered Bike Lanes (Alternative 2) with the additional of a short segment of 2-lane section between 104<sup>th</sup> and 103<sup>rd</sup> to minimize impacts to significant trees. Figures 7 and 8 show the typical sections for the preferred alternative. See the Appendix for a Preliminary Design Strip Map of the corridor and an Alternatives Analysis Matrix comparing the different designs.

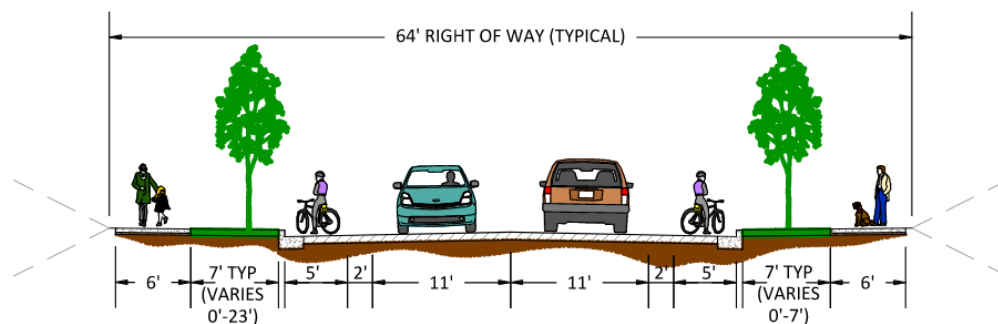


Figure 7: Preferred Alternative, 2-Lane Typical Section

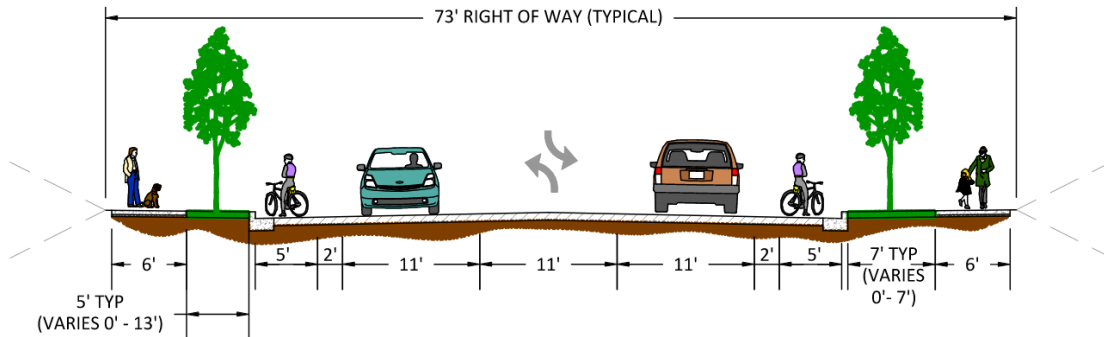


Figure 8: Preferred Alternative, 3-Lane Typical Section

## Arborist Evaluation

### Existing Conditions Evaluation

The project arborist identified 113 trees within the project corridor. Of these, 16 were identified as Significant Grove Trees as defined by the City of Beaverton. The arborist also noted priority of preservation; 12 were noted of critical priority, 18 of high priority, 28 of moderate priority, and 55 of low priority.

### Preliminary Impacts Evaluation

The design team reviewed the preferred alternative design with the arborist both in a desk review and field walk to review potential impacts and refine the design to minimize impacts to high value tree canopy along the corridor. Following this review, the design team updated the preferred alternative design to maximize preservation while still meeting the design objectives identified in the alternatives analysis process. See Table 2 below for a summary of the trees impacted for the preferred alternative.

Table 1: Summary of Tree Impacts

Trees Impacted	Priority of Preservation
6*	High Priority
10	Moderate Priority
20	Low Priority
<b>Total: 36</b>	

\*2 of which are designated Significant Grove Trees

## Natural Resources

### Clean Water Services

A Sensitive Area Pre-Screening application was submitted to Clean Water Services for the project Area of Potential Effect (APE). Clean Water Services found no impacts and issued a Service Provider Letter for the project.

### U.S. Army Corps of Engineers and Oregon Department of State Lands

A Wetland Delineation was conducted for the project APE and submitted to the U.S. Army Corps of Engineers (USACOE) and Oregon Department of State Lands (DSL) for concurrence. Both agencies concurred that there are no jurisdictional wetlands or waters within the APE.

## **Traffic Analysis**

A traffic analysis was completed for the corridor. Below is a summary of the key findings:

- An evaluation of recent crash data indicated that no mitigations are needed at study intersections based on crash rate analysis.
- Based on the unsignalized left turn lane analysis using 2025 and 2045 PM peak hour traffic volumes, eastbound left turn pockets at Denney Road/104th Avenue and Denney Road/Oakwood Drive are warranted.
- Based on existing, opening year, and future year operations analysis, left turn lanes are not needed along the corridor to meet mobility standards (V/C ratio). However, an eastbound left turn lane with a storage length of 250 feet is recommended at Denney Road/SW Scholls Ferry Road to improve operations and reduce eastbound queueing. Additionally, the northbound left turn lane striping should be modified to provide 175 feet of striped storage space.
- Based on existing, opening year, and future year queueing analysis, adding an eastbound left turn lane at Denney Road/SW Scholls Ferry Road would significantly reduce the queue on Denney Road, reducing the spillback across several driveways. In 2045, the 95th percentile queue would be reduced from 375 feet to 250 feet, a difference of about five vehicles.
- NCHRP 562 analysis does not indicate the need for crossing treatments on Denney Road based on existing pedestrian volumes. However, since pedestrian volumes are expected to grow with the introduction of continuous pedestrian facilities on Denney Road as part of this project, a marked crosswalk and active-when-present device is recommended at Denney Road/SW 103rd Avenue to improve pedestrian safety and connectivity to Camille Park and McKay Elementary School to the south.
- Based on existing measured speeds, speeding already occurs along this corridor. Widening the roadway has potential to increase speeding due to driver perception. However, maintaining relatively narrow travel lane widths (12 feet or less) and providing adequate signage for pedestrian and bike conflict points may aid in lowering speeds and improving roadway safety.

## **Reference Documents:**

Preferred Alternative Strip Map November 9, 2023  
Alternatives Analysis Matrix November 9, 2023