



## MEMO

**TO:** Technical Review Team  
**FROM:** Lori Mastrantonio-Meuser, Senior Planner  
**DATE:** September 21, 2006  
**RE:** Sidewalk Design Options Analysis

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### Introduction

A number of steps influenced the analysis for the sidewalk/pathway design options. There have been four Technical Review Team (TRT) meetings, three Pedestrian Bicycle Advisory Committee (PBAC) meetings and a Round Table Discussion regarding sidewalk/pathway design options. Future TRT and PBAC meetings are scheduled. In addition, an Interested Parties list was created.

The TRT has met and discussed the sidewalk/pathway funding and design alternatives. Ideas have been shared and issues discussed regarding drainage, physical constraints, lack of sufficient right-of-way, construction costs and engineering techniques. The TRT supports the design alternatives described in this document.

The Interested Parties list includes representatives from the Oak Lodge Community Council, several Citizen Planning Organizations (CPOs), Clackamas County Social Services, representatives from the cities of Portland, Gresham, Milwaukie, Gladstone, Lake Oswego, Happy Valley and Damascus, Metro, North Clackamas Parks and Recreation District (NCPRD), Willamette Pedestrian Coalition, and the Clackamas County Development Agency and Economic Development Committee.

Numerous ideas regarding alternative sidewalk designs and funding options were discussed with many of the Interested Parties members individually. This was helpful in organizing the Round Table Discussion regarding designing sidewalk/pathway alternatives and creating new ways to fund these improvements.

The PBAC is the long established County Pedestrian/Bicycle Committee. The PBAC is the advisory committee for this project. The PBAC reviews the work completed by the County and will make recommendations to the Clackamas County Planning Commission regarding the design and financing alternative proposals. The project will and has been discussed at the PBAC regular meetings

which are generally held every other month. It is anticipated that the PBAC will review information at least 6 times during the project, more frequently as needed.

A policy and literary review of sidewalk design alternatives has been completed as part of the Implementation Tools for the Essential Pedestrian Network (EPN) project. This included review of policies in other local jurisdictions related to the construction of sidewalks/pathways and review of literature related to low impact development design or Green Streets. After researching various sidewalk/pathway designs and discussing the designs with the TRT, PBAC and various jurisdictions, the following three design options are recommended:

1. Allow sidewalks to be constructed on only one side of the street when improving an existing local street under certain conditions
2. Use of a 'Ribbon Sidewalk' or pathway design
3. Construct new sidewalks/pathways using design alternatives related to "Green Streets" or low impact development features

### Proposal Discussion

- Requirement of Sidewalk on One Side of the Street

Constructing sidewalks along both sides of a street that is not built to county standards and has physical constraints (steep slopes and/or natural features) is very costly. In some cases retaining walls might be needed due to excessive slopes. Lack of adequate ROW (right-of-way) and drainage improvements compound the problem. To help ensure at least some type of connection, the option of requiring a sidewalk along one side of the street is recommended.

There are a number of streets on the EPN in established residential neighborhoods with limited ROW and physical constraints and where a sidewalk or pathway connection is needed. Requiring a sidewalk on one side of the street is a practical solution for specific streets with these limitations and constraints. One example of such a street is Aldercrest Street in the north urban area of the county. The neighborhood within which this street is located includes a school and a park, important destinations for pedestrians.

The Clackamas County Zoning and Development Ordinance currently allows sidewalk requirements to be reduced by staff to one side of the street when topographic or natural areas require a reduction in road standards and when new cul-de-sacs which are 350 feet or less in length and cannot be extended.

- Use of a 'Ribbon Sidewalk' or Pathway Design

The City of Olympia created what is called the Ribbon Sidewalk, an at grade sidewalk, separated from the roadway. This is not unlike the street design and pedestrian pathway designs allowed by the City of Lake Oswego. The street design has some similarities of a modified Green Street design. At the Roundtable Discussion the representative from the

City of Olympia described some of the specific characteristics of the Ribbon Sidewalk design including maintenance issues.

Some designs include no curb and include a 5' wide grass separation area between the sidewalk and the roadway. One problem that they are having is that sometimes the public uses the grass area for parking. Drivers park on part of the grass and on part of the sidewalk. To solve this problem the city is planning to strategically plant street trees to keep the public from parking on the 5' wide grass strip. Because it's less expensive to construct without a curb the design does not include a curb.

The city deals with a variety of ROW widths. In some situations where a narrow ROW exists the city will use a curb tight sidewalk. In other cases they may purchase ROW. Most improvements are within the ROW.

The city works with the power and utility companies to move poles (utility, telephone, etc.) to the back of sidewalks. The companies are cooperative but it's important to give them sufficient notice to reposition the poles.

The city has a Fee in Lieu of Construction and the city is reviewing its effectiveness. They believe the fee is too low and will need to update the fee to reflect actual costs.

The city uses porous or permeable concrete for sidewalks and pathways. They have found that there is a need to maintain the porous sidewalks every one to two years. Utilizing porous concrete may save money upfront regarding storm water improvements but it will have ongoing maintenance costs associated with the life of the sidewalk. The city plans to purchase a sweeper/vacuum to clean the pathways.

- Construction of New Sidewalks/Pathways Using Design Alternatives Related to "Green Streets" or Low Impact Development Features

At the Roundtable Discussion the cities of Gresham and Lake Oswego described their Green Street programs and alternative sidewalk/pathway design options.

The City of Gresham has many street design standards including several for Green Streets. The city is trying to address if there is a better way to build these roads. Green Streets decrease run-off but utilize more ROW (right-of-way). With 30% of the land going toward ROW/improvements, the development community is skeptical of the standard Green Street design that generally includes swales along each side of the street resulting in the need for more ROW than the standard street design. They are also open to ideas from the development community and have, for at least one project (Palmquist St.), accepted a new Green Street design without swales.

The city is also trying permeable pavement. Maintenance and build-up of material on the street is not an issue, but it may be for permeable sidewalks. Permeable pavers have been used on a boulevard project. The city has found that a hardscape material is needed next

to parking for pedestrians as they exit cars. Using permeable pavers results in build-up and therefore creates a maintenance concern.

The City of Lake Oswego has a more flexible street design approach to street design. Its emphasis is more related to sustainability than a specific Green Street standard. If a standard sidewalk is not constructed, the city designs sidewalks and/or pathways on a case-by-case situation depending on the neighborhood, existing facilities and existing rights-of-way conditions. As a part of the city's Transportation System Plan, there are specific roads identified where sidewalks will only be required on one side of the street. There is no set roadway standard. The design of the streets is influenced by aesthetics as well as input from the neighborhood. Improvements are sometimes completed through infill development and often results in piecemeal development.

The sidewalk/pathway is often about five feet wide (asphalt or concrete) and separated from the 2-lane curbless road (usually with landscaping, but no swales) by about 2-5 feet. This design is similar to the City of Olympia's Ribbon Sidewalk which could also be considered to be a modified Green Street design. The city has, in many ways been constructing a modified green street for years, with a curbless road design.

There was some discussion at the Roundtable workshop that it is very difficult to construct a Green Street design on a site-by-site infill basis. A number of problems arise including drainage issues. The city is working on a Green Street demonstration project along 10<sup>th</sup> street.

The city often maintains the improvements although technically the property owner is responsible to maintaining the pathway.

The city collects an SDC (System Development Charge) for sidewalk/pathway improvements that is separate from one collected for transportation improvements.

#### Proposed Code Language

Recommended code language changes will likely be inserted in Section 1007.05 PEDESTRIAN/BICYCLE CIRCULATION B.