



**Summary of Challenges**  
**Implementation of the Essential Pedestrian Network**  
June 2006

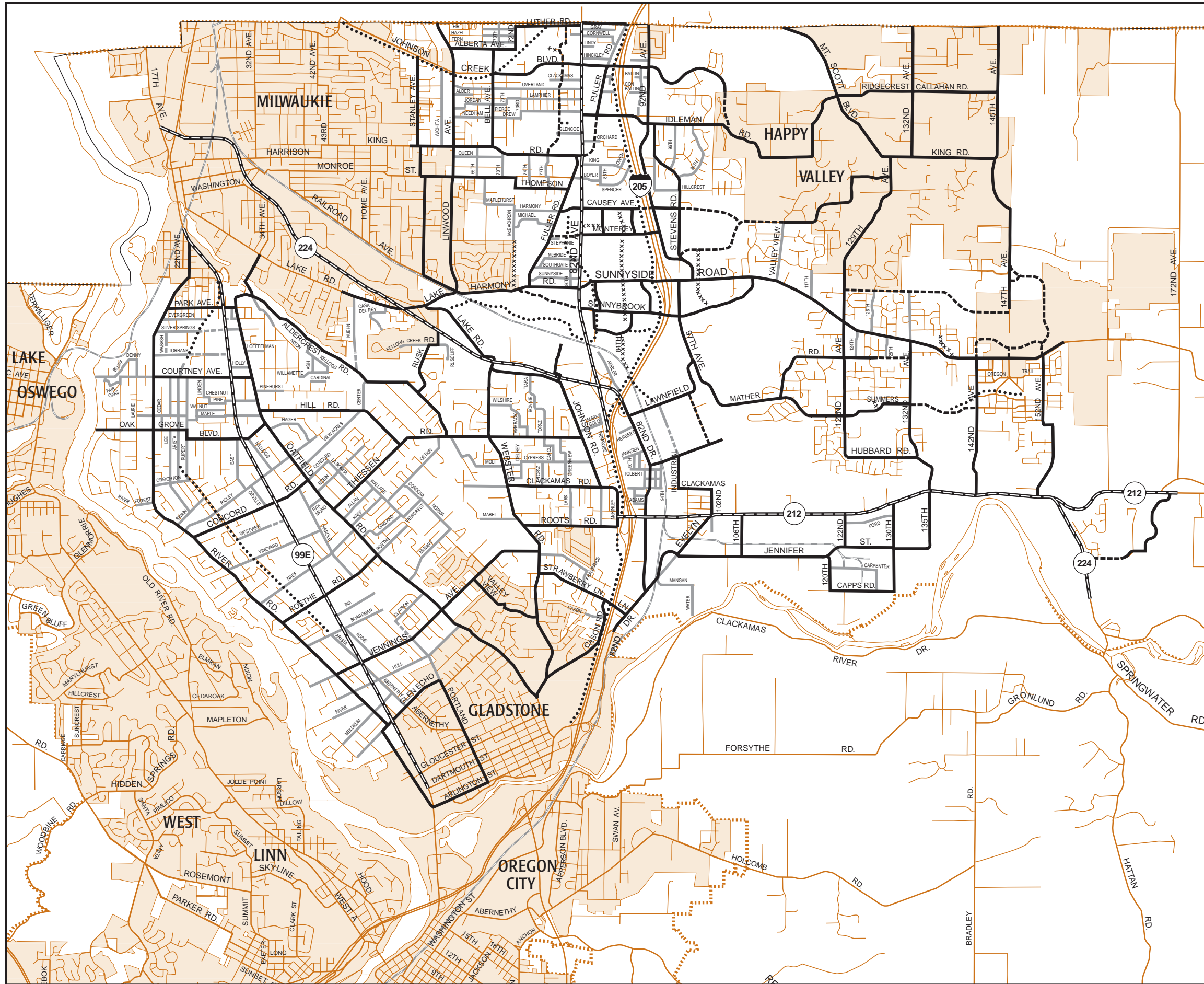
**I. Overall Project Purpose**

The Clackamas County Comprehensive Plan envisions “an environment which encourages people to bicycle and walk on networked systems that facilitate and promote the enjoyment of bicycling and walking as safe and convenient transportation modes.” Adopted in 1996 and updated in 2003, the County’s *Pedestrian Master Plan* lays forth a plan to implement this vision. The *Pedestrian Master Plan* outlines goals, objectives, policies and programs to create a networked system of pedestrian facilities that is safe and convenient.

One of the tools identified in the County’s *Pedestrian Master Plan* is the Essential Pedestrian Network (EPN). The EPN was identified to prioritize the creation of a networked system of pedestrian facilities in the urban areas of unincorporated Clackamas County. The EPN includes the streets that provide direct access to most major pedestrian destinations, which includes all arterial and collector and selected local streets. See Essential Pedestrian Network Map on the next page.

Ten years after the adoption of the EPN there is a perception that the network is not being constructed as was envisioned in the *Pedestrian Master Plan*. The Implementation Tools for the Essential Pedestrian Network project was initiated to identify elements that will encourage /contribute to the completion of the EPN network.

The focus of this project is on smaller, residential infill and redevelopment activities, and is not a review of policies related to new subdivision and commercial / industrial developments. There still is a significant need for sidewalks on existing roads in existing neighborhoods. The intent of the project is to identify if there are design alternatives and /or financing options that will encourage /contribute to the construction of additional pedways.



# Essential Pedestrian Network

- STATE HIGHWAY
- ARTERIALS/COLLECTORS
- PROPOSED ARTERIALS/COLLECTORS
- LOCALS
- PROPOSED LOCALS
- MULTI-USE TRAILS
- PEDESTRIAN CONNECTION



**Clackamas County**

DEPARTMENT OF TRANSPORTATION & DEVELOPMENT  
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CLACKAMAS COUNTY COMPREHENSIVE PLAN **MAP V-8**

## **History of Pedestrian Facilities in urban unincorporated Clackamas County**

Urban unincorporated Clackamas County has many neighborhoods that were developed to nearly full capacity in the 1950's, 1960's and 1970's without sidewalks. The streets in these neighborhoods often have substandard right-of way, narrow paved width and gravel shoulders. As development continued to fill in the once-rural areas around these neighborhoods and infill occurred in the neighborhoods, vehicle volumes increased, and more through trips began to travel these streets. This resulted in a greater need for safer, separated pedestrian facilities on many streets, although shared vehicle/pedestrian facilities still worked on some streets and was an important part of the character of many neighborhoods.

Clackamas County has for many years struggled to find the money to bring its formerly rural road network in the unincorporated urban areas up to standards for urban streets and roads. Many streets and roads have inadequate lane widths, various other safety concerns, and roadside ditches for storm drainage. The need for pedestrian safety improvements must be considered in the context of the struggle to update the entire road system and the lack of money for other safety and capacity improvements.

In the early 1990s, with the adoption of the state's Transportation Planning Rule, the County briefly adopted a policy to require sidewalks with new development on all streets, including all existing local streets. In 1996, with the adoption of the Clackamas County Pedestrian Master Plan, a network of streets was identified as the Essential Pedestrian Network (EPN). The EPN network was designed to provide direct access to most major pedestrian destinations. The EPN was substituted for the policy to require sidewalks on all streets for three reasons:

- The sidewalk inventory showed only a few scattered sidewalks in many neighborhoods;
- Existing development provided little potential to achieve a complete sidewalk system just by requiring sidewalks with new development; and
- There were many negative public comments regarding the requirement to provide sidewalks on every local street.

The EPN attempted to balance Transportation Planning Rule requirements with a pragmatic approach to improving pedestrian access on local streets that retains the character of many existing neighborhoods and recognizes funding limitations. A description of how the local streets were originally selected to be on the EPN is included in Appendix A.

Currently, the street policy adopted for development on existing local streets is:

“Sidewalk improvements will be required on the frontage of an existing local street when the street is part of the Essential Pedestrian Network for the County as identified in the Comprehensive Plan.”

Sidewalk improvements are not required for partitions<sup>1</sup> for residential development on existing local streets not shown to be on the Essential Pedestrian Network. Sidewalks are required on all arterial and collector level streets, all new streets for any type development, and on local streets zoned for commercial and industrial development or where residential subdivisions are proposed.

**Description of EPN**

The Essential Pedestrian Network includes arterial streets, collector streets, local streets, pedestrian connections, and trails. Sixty-five percent (65 %) of the road miles of the EPN are on arterial or collector streets.

<b>Summary of Functional Classification of Roads on the Essential Pedestrian Network</b>		
<b>Functional Classification</b>	<b>MILES</b>	<b>PERCENT</b>
Arterials (State Hwy, Arterials, New Arterials)	72.42	39.57%
Collector (Existing and New)	45.86	25.05%
Local (Existing and New)	48.80	26.66%
Off road (Multi-use Trails and Ped Connections)	15.96	8.72%
<b>Total</b>	<b>183.04</b>	

**II. Challenges to completing the EPN**

A set of issues with the construction of sidewalks were identified through a series of interviews with professionals involved in planning, requiring and constructing sidewalks and through the initial existing conditions analysis. A summary of the interviews is included in Appendix B and the initial existing conditions analysis is included in Appendix C.

These challenges to completing the EPN are grouped into the following categories:

- Funding
- Physical constraints
- Other factors

**A. Funding**

Lack of funding to construct infill/retrofit sidewalk projects is one of the significant challenges to completing a networked system of pedestrian facilities along existing roads in Clackamas County. In the late 1990’s, the County ended

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<sup>1</sup> Partitions are land divisions of three lots or less. They are typically used for infill development in existing neighborhoods.

it's "pedway program" which had provided additional funds for pedestrian projects. Infill / retrofitting projects on local roads face additional hurdles because the majority of them are not included in the CIP. Finally, partitions are the primary development activity that requires sidewalks on local streets. In some instances however, these improvement are deferred to a later date and may not be built.

The county currently has four techniques for financing pedestrian ways:

- Clackamas County Pedway Program
- Capital Improvement Plan
- Developers
- Grant Funding

### **Clackamas County Pedway Program**

At the time of it's inception in 1996, many sidewalk construction projects on the EPN were anticipated to be funded by the Clackamas County Pedway Program. The County Board of Commissioners created the Pedway Program in 1993, which committed a portion of the County road fund to pay for bike and pedestrian improvements. The focus of the Pedway Program was to improve pedestrian and bicycle access and safety, primarily around schools. Each year, potential projects were submitted by school districts, Citizens Planning Organizations, and citizens. Projects were evaluated and ranked by the Citizens Advisory Committee and approved by the Board of County Commissioners.

The primary source of funding was the State gas tax allocation to the County. The County Commissioners had also contributed additional money above the one percent minimum required by the state to support the Pedway Program. Some projects also received outside grants or were leveraged through joint projects with cities or the State.

In 1997 there was a dramatic decrease in the amount of funding allocated to stand-alone sidewalk projects. Only \$140,000 a year has been allocated since 1997, which is the minimum required by the 1% set aside rule. There is no longer a full time staff member dedicated to the development and construction of pedways and bikeways.

Due to this reduction of funding, the completion of the Essential Pedestrian Network relies heavily upon construction/reconstruction of roads in the Capital Improvement Program, development activities and grant funding.

## **Capital Improvement Plan**

The *Pedestrian Master Plan* includes the list of high priority pedestrian projects that is incorporated in the overall Transportation Capital Improvement Plan and Program (CIP). The 20-year plan of the CIP prioritizes the transportation projects that will be needed over a twenty-year horizon to meet the safety needs and accommodate the transportation needs of the forecasted population and employment growth. In 2003, under the guidance of the Pedestrian and Bikeway Advisory Committee, the priority pedestrian project lists were reviewed and updated.

Included within the *Pedestrian Master Plan* is a description of the project prioritization process. Essentially, all of the streets on the EPN that were missing sidewalk segments were used as the initial selection set for the prioritization process. The Plan describes the evaluation criteria for the selection of priority projects.

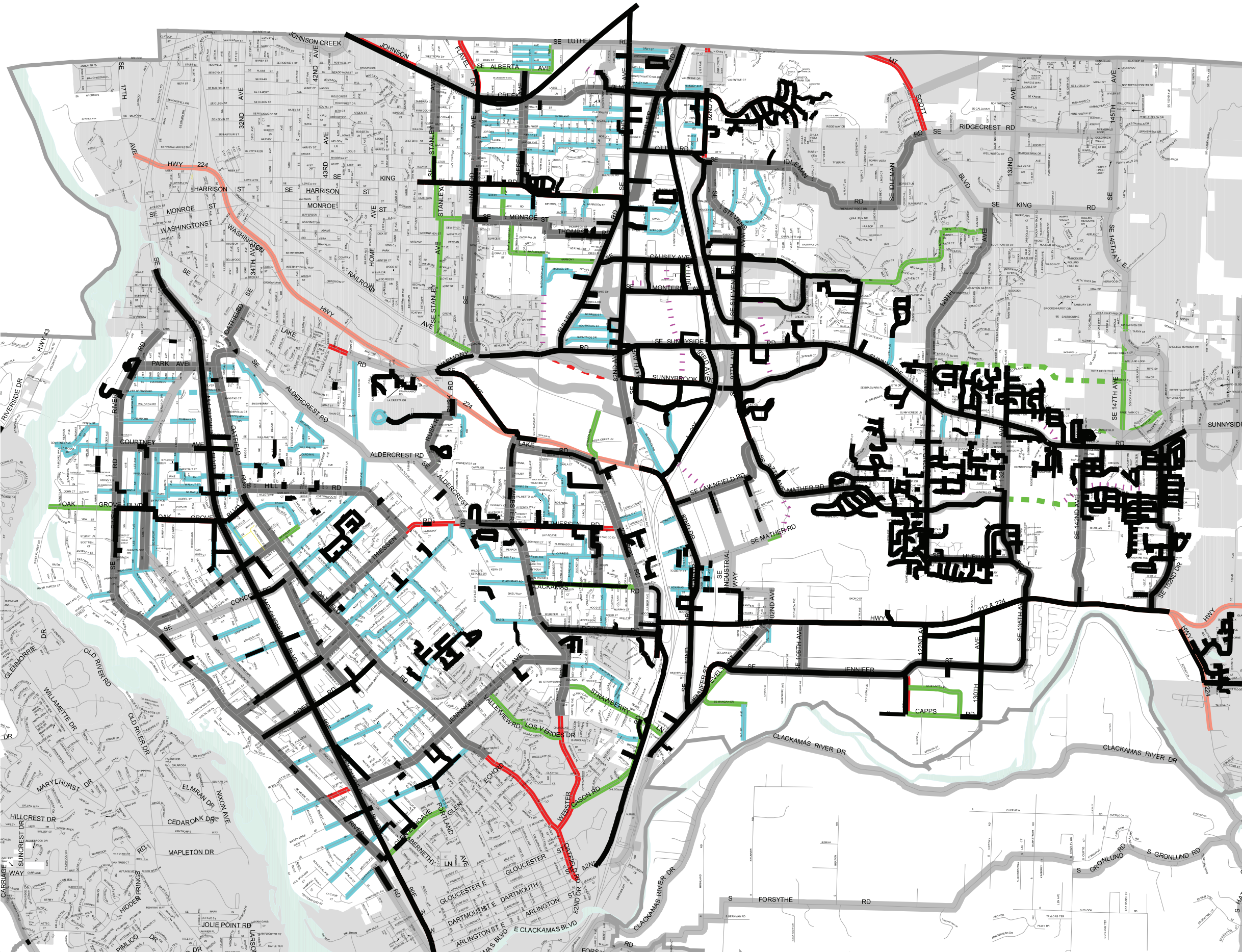
Over two hundred and fifty (250) street segments were considered when developing the pedestrian priority project lists. The 44 segments that received 50 points (out of a potential of 100) were included on the high priority project list. Only four of the high priority projects are local roads. For the remaining 127 local streets on the EPN, 146 segments were not included on the high priority list or within the CIP. Constructing sidewalks on these streets relies almost exclusively on development activities, such as partitions.
















A map of the proposed sidewalk network to be completed through CIP project is on the next page.

ESSENTIAL PEDESTRIAN NETWORK  
Implementation Tools

MAP 2  
20 Year Pedestrian Network

Existing Sidewalks and  
Projects in the 20 Year CIP



-  Streets with 75% complete sidewalks
-  Street with 50% on Right Side
-  Other local streets
-  Projects on 20 Year Ped List
-  Projects on the 20 year ROad list (not Ped specific)
-  Needed EPN not on 20 year CIP
-  Arterial
-  New Arterial
-  Collector
-  New Collector
-  Local
-  New Local
-  Ped Connection
-  State
-  Incorporated Areas



GEOGRAPHIC INFORMATION SYSTEMS  
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## **Developer Financed Sidewalks**

The Zoning Development Ordinance (ZDO) requires that sidewalks, accessways, and walkways shall be developed within all urban subdivisions, partitions located on the EPN, and structural additions to existing commercial or industrial buildings exceeding 10 percent of the assessed value of the existing structure, or for additions of 1,000 square feet or more within the Urban Growth Boundary. The Mt. Hood Urban area is excluded from this requirement.

Sidewalks are required to be built on both sides of a new street within a subdivision, or any new or reconstructed street. They are also required on the street frontage(s) adjacent to a development or subdivision. Sidewalk requirements may be reduced by staff to one side of a street if a topographic or natural area require a reduction in road standards or where new cul-de-sacs are 350 feet or less in length and cannot be extended.

Partitions are the one development activity where the Essential Pedestrian Network is used to identify which streets require sidewalks as a condition of approval. All other development actions, such as development review or subdivisions, require sidewalks regardless of whether or not a street is on the Essential Pedestrian Network. Partitions (land divisions of 2 or 3 parcels) are generally not required to provide sidewalks unless they are located on the Essential Pedestrian Network.

### Deferral Process for partitions located on the EPN

It should be noted that there is a deferral (not a waiver) process in place for construction of sidewalks in partitions located on EPN streets. In some instances, the requirement for construction of sidewalks is deferred to a later point in time.

A deferral is considered in situations when there are no sidewalks in the vicinity, there is a storm drainage issue, narrow frontage, and/or the ultimate road alignment is likely to change. An agreement will be developed between the developer and the County Engineering Division laying out the conditions of the deferral. Please see Appendix D for more information.

## **Grant Funding**

The final source of funding for sidewalk projects is through grant programs. The Clackamas County Capital Improvement Plan (January 26, 2006) includes information about various funding sources for transportation projects. Most often, a project needs to be on the Capital Improvement Program or identified as a need in a planning document to be eligible for grant funding. The programs used most often for pedestrian related specific projects include: Transportation

Enhancement, Community Development Block Grants and the State Bicycle and Pedestrian Program.

Transportation Enhancement (TE)

These funds are generally available for a wide range of projects that enhance or preserve the transportation system, but are not usually funded by other sources. States are required to set aside 10% of their STP funds for enhancement projects that may include ferry improvements, renovation of historic transportation facilities, and construction of multi-modal pathways. The Oregon Department of Transportation (ODOT) controls this fund and allocates funds to local jurisdictions through a competitive selection process.

Community Development Block Grants (CDBG)

These funds can be used to construct a wide range of projects that enhance low and moderate-income communities. They can be used for transportation projects in an area where at least 51% of the residents have low or moderate income. Funds are available in 3-year cycles; the next cycle starts in 2006. Because the funds are to help local residents, transportation projects funded from this source are usually sidewalks or reconstruction of local streets. Project selection takes place at the Department of Housing and Urban Development (HUD).

State Bicycle and Pedestrian Program

The State administers the Pedestrian and Bicycle Facility Improvement Grant Program. Bi-annually, the Oregon Department of Transportation, ODOT, works with local jurisdictions to identify sections of urban highways, local city streets and county roads where improvements are needed for pedestrians and/or bicyclists. Special consideration is given to construction projects that consider the needs of school children, the elderly, the disabled, transit users and others unable to use a car.

**B. Physical Constraints**

In order to summarize the challenges to implementing the EPN a brief survey of existing conditions was completed, which is included in Appendix C. A more detailed existing conditions analysis will be completed in the next phase of the project, using input from the review of the Summary of Challenges memo.

There are primarily three challenges created by the physical environment that make it difficult to construct sidewalks in infill or retrofitting situations:

- Insufficient existing ROW
- Natural Features: topography, wetlands and streams
- Impacts to storm drainage
- Lack of redevelopment opportunities

## **Insufficient Right of Way**

Overall, insufficient right-of-way is one of the largest contributing factors to the expense and difficulty of constructing sidewalks on existing streets (whether arterials, collectors or locals). Right of way issues include the cost of purchasing additional ROW, the fact that people use existing ROW for personal purposes, and that there are natural features (such as slope / wetlands / stream buffers) which limit the ability to construct sidewalks in existing ROW.

The average existing ROW width for the streets on the EPN was recorded into a database. This was then compared to the minimum ROW width standards outlined in Table V-3 of the Clackamas County Comprehensive Plan. Over 40% of the local roads on the Essential Pedestrian Network have substandard right-of-way widths. Nearly 50% of the existing streets on the EPN in this area have substandard right-of-way widths, which means that purchase of right of way will likely be required to build sidewalks.

## **Natural Features: topography, wetlands and streams**

The natural features of the urban unincorporated portion of Clackamas County has shaped the transportation system

### Topography

Oatfield Ridge which extends from Milwaukie southeast to Gladstone has limited the east-west connections between the Oak Grove / Jennings Lodge area and the neighborhoods around Webster Road / Thiessen Road. The streets in this area, including the ones designated on the Essential Pedestrian Network, often have narrow right-of-way due to the topographical challenges. There are also streets in the Overland Park neighborhood east of Milwaukie and along the base of Altemont (east of Stevens Road) where the slopes create additional difficulties.

The roads most notably impacted by slopes/topography include:

- Aldercrest Road
- Kellogg and Ash
- Willamette
- Center Ave
- Portions of Thiessen Ave
- Jennings
- Oetkin Road
- Denny / Bluff / Fair Oaks
- Rusk Rd and Tiara Way
- Lawnfield Road
- 135<sup>th</sup> Ave
- 142<sup>nd</sup> Ave and 152<sup>nd</sup> Ave
- 92<sup>nd</sup> Ave.
- 95<sup>th</sup> Ave. and 99<sup>th</sup> Ave
- Stevens Way
- Idelman Road
- Overland
- Jordan
- Needham
- King
- Bell
- 77<sup>th</sup>
- Flavel
- Alberta

### Wetlands

Clackamas County has a “Conservation Wetland District” which is an overlay district that consists of conservation wetlands and generally includes a requirement to not disturb a twenty-five (25) foot buffer around the wetland as identified in the Clackamas County Comprehensive Plan Wetland Inventory. The standards and procedures of the Conservation Wetland Zoning District (CW) apply to all development, alterations and vegetation removal on any property containing any portion of a conservation wetland or a conservation wetland buffer area. In some cases, existing sub-standard ROW width may be due to the existence of wetlands. Construction of sidewalks or other pedways that infringe on a wetland or wetland buffer are required to meet the CW standards. There are approximately 20 streets that could potentially be impacted by known wetlands and wetland conservation areas.

Streets on the EPN that might be impacted by wetlands include:

- Ambler
- Boardman
- Clackamas
- Courtney
- Glen Echo
- Hull
- Jennings
- Johnson
- Lake Road
- Lawnfield
- Linwood
- Mabel
- Mather
- Roethe
- Stanley
- Summers Lane Extension
- Webster

### Streams

Streams are woven throughout urban unincorporated Clackamas County. Over 90 street segments are within 50 feet of a stream. Similar to steep slopes and the existence of wetland, streams create obstacles to completing the Essential Pedestrian Network.

### **Impacts to Storm Drainage**

In unincorporated urban Clackamas County which has a limited system of curbs, gutters and piped storm drainage, the majority of the cost of building a sidewalk improvement may actually be the cost of building storm drainage. Also, if there is no adequate storm drainage facility to direct the storm water into, a traditional sidewalk with curbs may negatively impact the adjoining properties.

The street segments on the Essential Pedestrian Network are located in two sanitary sewer districts: Water Environment Services (Clackamas County Service District 1) and the Oak Lodge Sanitary District. Each of these districts are responsible for storm water management in their areas, although the county road department is in charge of storm drainage on county streets. Interviews with staff

from each of the districts provided information about the impact of sidewalks to storm drainage.

#### Water Environment Services (WES)

Mike Nacrelli of WES stated that WES requires stormwater treatment, infiltration, and detention for all projects involving over 5000 square feet of new impervious surface. The Engineering division of County Department of Transportation and Development typically requires curbs and gutters as a stormwater conveyance tool. There are few alternative/innovative approaches to stormwater management other than curbs and gutters, and only a few have been constructed within WES' district. They include a "green street" project at the Eagle Landing development, and pervious sidewalks in the Sunnyside Village.

There are a few flood prone basins that require extra detention, such as Upper Kellogg Creek, Cedar Creek, and Johnson Creek. There are also places that soils percolate well near the Overland Park area and next to the Clackamas River. Most other areas have poorly draining clay soils.

The bottom line is a lack of nearby sidewalks usually means a lack of drainage systems. An isolated stretch of curb and sidewalk in such areas can create (or compound) drainage problems, unless there's an existing roadside ditch to discharge to.

#### Oak Lodge Sanitary District (OLSD)

Gary Floyd, of the OLSD said that a primary goal of the Oak Lodge Sanitary District was to eliminate cross lot drainage onto private property. In addition, they were looking at ways to reduce impervious surface. He noted that when "green streets" concepts are being discussed, maintenance needs to be included in the cost. As far as developers are concerned, they will incorporate the costs of sidewalks into their project

He reiterated that curbs are an important stormwater conveyance tool, but installing them where there is no supporting drainage causes problems. Sidewalks, however, are important where there is a need for pedestrian safety (from traffic).

Approximately 25% of the OLSD area has good infiltration, mainly in the southern portion, along the river. The district is working to reduce cross-lot drainage; there are many areas where public (road) water is conveyed through inferior pipes on private property without easements.

OLSD agrees that there are ways to construct pedestrian facilities without requiring curbs. Curbs sometimes "re-direct" and concentrate flows of surface water to new locations, and there needs to be accommodations for it.

Often a public system “outfall” isn’t available or the slope of the properties contributes to creating a new problem.

### **Lack of Redevelopment Opportunities**

The completion of the Essential Pedestrian Network along the existing local street network is dependent nearly entirely on small residential infill and redevelopment activities. To assess the viability of completion of the EPN on local streets, a quick visual review of the properties that were at least twice the size of the underlying zoning was conducted. The Oak Lodge / Oatfield neighborhood and the Overland Park neighborhood were the areas with the greatest opportunity for partitioning. While there is a chance for partitioning in these areas, it may be unrealistic to assume that all of the properties will redevelop. Additional research should be conducted during the Existing Conditions analysis to quantify the potential to acquire sidewalk segments through partitioning on local streets.

### **C. Other factors that create challenges to construction sidewalks**

Through the interviews with professionals involved in the construction of sidewalks, a few other factors were noted as contributing to the challenge of completing the Essential Pedestrian Network. These include the historic use of ROW as personal property, the lack of community support for sidewalks, the perception that sidewalks may create drainage onto private property and the requirements for landscape strips.

These items are difficult to quantify or locate geographically. These issues typically arise after a road reconstruct project has been identified and the engineers are working with the community to develop the details of the project. There can be resistance to the construction of sidewalks by the property owners directly adjacent to the project. They may be frustrated with the use of property that they had considered their own, especially if they are not supportive of sidewalks in general. Also, when sidewalks and curbs are installed on an adjoining property, people have been concerned that the storm water will go onto their property. Finally, when a sidewalk is required to be located behind a landscape strip, the extra right of way width of the landscape strip can cause a number of problems. When the adjoining properties do not have sidewalks, and have not made a sidewalk dedication in front of their property, it is challenging to match the grade and create a way to get access to the end of the walkway back to the street.

### **III. Conclusions**

The Summary of Challenges memo was completed to gain a better understanding of the reasons why sidewalks are not being constructed. These “challenges” help to identify the type of information needed for each street segment to determine if an alternative sidewalk design would be appropriate or could help in the completion of the Essential Pedestrian Network.. A separate memo, “Sidewalk Design Alternative Background” creates a backdrop for the development of the sidewalk design alternatives, beginning to layout potential design alternatives that are used in other jurisdictions.

#### **Data Collection Recommendations**

The biggest challenges to completing of the EPN include:

1. Funding
  - i. Reductions in dedicated funding to Clackamas County Pedway Program
  - ii. Lack of Capital Improvement Plan funding for local roads
  - iii. Reliance on partitions for development of sidewalks on local streets
  - iv. Grant funding is focused on arterials and collectors
2. Physical Constraints
  - i. Insufficient existing ROW
  - ii. Natural Features: topography, wetlands and streams
  - iii. Cost of storm drainage improvements
  - iv. Lack of redevelopment opportunities
3. Other Factors
  - i. Historic use of ROW as personal property
  - ii. Lack of community support
  - iii. Impact of the perception of drainage onto their property
  - iv. Challenges created by lot-by-lot sidewalk development

Data is not available or cannot be collected for each street for all of the above items. The challenges listed under “Other Factors” are difficult to quantify and would need to be addressed on a project by project basis. Table 1 is a proposal for the data that will be used collected during the next step of the project. The purpose of this data collection is to:

- provide information to what types of design alternatives would be useful, and
- create a data base that will be used to help determine when and where to apply the sidewalk design alternatives and/or financing options.

**Table 1  
Data Collection Recommendations**

<b>Challenge</b>	<b>Data</b>	<b>How it can help</b>
<b>Funding</b>	Is it on the 20 year CIP? 5 year CIP?	Informs about other anticipated funding opportunities
	Is there a potential for partitions?	Knowledge about how much sidewalk could be obtained through partitioning
	Is there adjacent vacant land?	Informs about the potential of new sidewalks through subdivision
<b>Physical Constraints</b>	Is it impacted by topography (10% or 25% slope)?	Contributes to the understanding of limitations
	Is it near a wetland?	Contributes to the understanding of limitations
	Is it near a stream?	Contributes to the understanding of limitations
	Is the existing ROW width substandard?	Contributes to the understanding of limitations
	Are natural features a potential reason for substandard ROW?	Could identify locations where sidewalks on one side of the street are appropriate
	Does a “piped” stormwater system exist nearby?	Could identify locations where a “green street” design may be appropriate
	Do the soils percolate well in the area?	Could identify locations where a “green street” design may be appropriate
	Is it a flood prone area that requires extra storm water detention?	Could identify locations where a “green street” design may be appropriate
	Is there a potential for partitioning?	Assesses viability of completing EPN through partitioning on local streets

**Appendix A**  
**Original Criteria Used to**  
**Identify the Essential Pedestrian Network**

The Essential Pedestrian Network for the urban area consists of all arterial roads, collectors (whether major collectors or neighborhood collectors) and selected local streets in the north east urban unincorporated area. The significance of roads on the Essential Pedestrian Network is that while these roads may not have been initially developed with sidewalks it is now deemed essential to add or complete sidewalks along them. The intent was that sidewalks would not be waived along these roads in the development process.

Even in 1996, it was recognized that if sidewalks were retrofitted on only two of these local streets per year it would take in excess of 75 years to complete the network. The criteria for prioritizing County capital expenditures would be an important in determining which sidewalks are retrofitted each year.

The following criteria were used for selection of the existing local streets identified on the Essential Pedestrian Network. The list of streets, with the section criteria identified, is included in the Pedestrian Master Plan. It was recommended that direct routes be provided through several excessively long blocks, with street connections usually preferred unless ODOT prohibits motor vehicular access. If a street connection is prohibited or impractical due to topography or other reasons, an accessway was intended to be provided.

**Local Road Selection Criteria**

- |    |  |                   |
|----|--|-------------------|
| 1) | Streets having commercial or industrial <u>frontage</u> . Extend Essential Network designation at least ¼ mile from commercial or industrial zoning. | CRITERION F       |
| 2) | Streets with frontage that is more than 25% <u>vacant</u> .  | CRITERION V       |
| 3) | Streets connecting to collectors or arterials and within ¼ mile of an existing or planned <u>school</u> or <u>park</u> .                             | CRITERION S and P |
| 4) | Streets <u>connecting</u> two or more collectors or arterials.   | CRITERION C       |
| 5) | Streets connecting <u>transit</u> stops to neighborhoods. Extend Essential Network designation at least ¼ mile from transit stop.                    | CRITERION T       |
| 6) | Streets where filling in small <u>gaps</u> in the existing or planned network of sidewalks would result in continuity.                               | CRITERION G       |
| 7) | Streets are in a <u>Metro</u> designated 2040 Regional Center or Town Center.  | CRITERION M       |

## **Appendix B**

### **Summary of Information from Interviews with Planners, Engineers and Developers**

Through a series of interviews with planners and engineers that implement the EPN, several issues have been identified that make the construction of sidewalks more challenging. These challenges include:

- Natural features, such as slope/topography, wetland, stream protection and other environmental regulations
- Right-of-way, either not enough or people using existing public ROW for personal use
- Impacts of storm drainage requirements
- Overall lack of funds for construction of transportation facilities.

Several planners, engineers and a developer of small projects were interviewed to gain an understanding of the different challenges and potential solutions to completing the essential pedestrian network. In addition to the conditions discussed above (slopes/topography, existing ROW, wetlands/stream and storm drainage) other challenges to completing the essential pedestrian network include:

- Lack of public funding
- Historic use of ROW as personal property
- Lack of community support
- When a sidewalk is required behind a landscape strip in existing areas, it may cause the sidewalk to be set behind adjacent properties. It is challenging to match the grade and create a way to get access to the end of the walkway back to the street.
- Developers do not want to pay for sidewalks
- A lack of sidewalks usually means a lack of drainage systems. An isolated stretch of curb and sidewalk in such areas can create (or compound) drainage problems, unless there's an existing roadside ditch to discharge to.
- The impact of the perception of drainage onto their property. When a sidewalk segment is put in, the water needs to drain somewhere. If they are a neighbor, people are very concerned that the storm water will go onto their property.
- Maintenance of green streets is an issue. Jody thinks that the green streets design should only be used on local streets.

#### Ideas for solutions

- Do not require sidewalk for partition activity on local streets
- Green streets design
- Sidewalk on one side of the streets
- Pathways similar to those required in Lake Oswego. They do not always require curbs and do not always require concrete. It depends on the

character of the neighborhood. In some places it may be appropriate to widen the pavement and stripe for a walkway.

- Eliminate the EPN and require all developers to construct sidewalks
- All streets should have safe places for people to walk

**Appendix C**  
**Initial Existing Conditions Analysis**  
**Essential Pedestrian Network**

**I. Completion Status**

There are 183 miles of streets on the Essential Pedestrian Network in urban unincorporated Clackamas County. There are over 400 street segments identified on the EPN. The data for the EPN are collected by street segment.

**Miles of Essential Pedestrian Network Segment  
by percentage completion by street classification**

Street Classification	Miles with No Sidewalks	1%-50% of segment with sidewalk	51%-99% of segment with sidewalk	Complete Sidewalk	In a city <sup>2</sup>	Total
Arterial	1.8	24.5	11.7	8.1	8.5	54.5
Collector	11.2	16.6	5.3	5.9	7.0	46.2
Local	29.3	16.3	1.4	1.4	0.3	48.7
Multi-use	5.2	0.0	5.1	2.2	0.0	12.6
Trail						
Ped Connection	3.3	0.0	0.0	0.1	0.0	3.4
State	0.0	4.9	12.2	0.0	1.0	18.0
<b>Total</b>	<b>50.9</b>	<b>62.3</b>	<b>35.7</b>	<b>17.6</b>	<b>16.8</b>	<b>183.3</b>

Over the past 10 years progress has been made toward completion of the Essential Pedestrian Network. Sidewalks have been included on street improvement projects identified in the Capital Improvement Plan. Grant funds (Oregon State Pedestrian and Bicycle Grants, CDBG, and MTIP) have also allowed the completion of sidewalks on several roads such as Roots Road, Fuller Road and Addie Road.

The arterial and collector roads are where the most sidewalks are being completed. Only arterials and collectors are included in the CIP for general street improvements. Most grant funded projects have also been located on arterials and collectors. Examples street improvements in the past ten years include:

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<sup>2</sup> Although the EPN is generally a program for streets and roads in the unincorporated urban area, the county's street network sometimes includes areas that are located in incorporated cities, for a variety of reasons. For example, some areas of the EPN have been annexed into the city of Happy Valley.

- Sunnyside Road widening
- Bob Schumacher Road
- Sunnybrook Blvd
- Causey extension
- Jennifer / 135<sup>th</sup> Ave
- Monterey Overpass
- Eckert Lane

There have only been a few instances during the past ten years where sidewalks were not constructed during general street improvement projects. These were primarily due to lack of right-of-way and limited funding. Every effort is made to include sidewalks on at least one-side of the street. An example of a recent general road improvement where sidewalks were not constructed is the improvement of Concord Road between River Road and McLoughlin Blvd. This was a location where right of way constraints could not be overcome.

There has been less improvement in the number of miles of sidewalks added to local streets in the past 10 years. Unfortunately, it is also these local streets that provide access to schools and parks to pedestrians. Over 90% of the miles of local roads on the Essential Pedestrian Network do not have sidewalks on at least 50% of the segment. Sixty percent (60%) of the local road miles have no sidewalks at all.

The amount of funds available often limits the scope of projects. Community Development Block Grants and State of Oregon Pedestrian and Bicycle grants have funded sidewalks on portions of Concord Road, Oak Grove Blvd, Webster Road and Roots Road. Fuller Road is one of the few fully-funded pedestrian and bikeway specific improvement projects that completed sidewalks on both sides of the street. It was funded through the Metropolitan Transportation Improvement Program.

## **II. Survey of Existing Sidewalks by Area**

To understand how these challenges impact the development of the EPN, the urban unincorporated area of Clackamas County has been divided into six areas. Below is a description of each area and the greatest challenges it faces.

### **Oak Lodge / Oatfield**

The Oak Lodge / Oatfield area is bounded by the Willamette River on the west to the Oatfield ridge on the east. It extends from the Milwaukie city limits on the north to the Gladstone city limits on the south. The majority of this area is in the Oak Lodge Sanitary District. There are approximately 47 miles of existing streets identified on the Essential Pedestrian Network in this area and 3.7 miles of trails or future roads.

Very few of the local and collector streets have sidewalks. While there is not a large amount of vacant land that would allow for new subdivisions, this area does have the largest number of properties that have the potential for partitioning.

*Topography:* Some of the area, such as along Aldercrest Road, east and west of Oatfield Road and west of River Road, has slopes of greater than 10%. The roads most notably impacted by slopes/topography include:

- Aldercrest Road
- Kellogg / Ash / Willamette
- Center
- Portions of Thiessen, Oetkin and Jennings
- Denny / Bluff / Fair Oaks

*Right-of-way:* Over 40% of the existing streets have substandard right-of-way widths, which means that purchase of right of way will likely be required to build sidewalks. In addition, in many places people have used existing right of way for personal use, and some are resistant to giving it back.

*Storm Drainage:* The majority of this area is located the Oak Lodge Sanitary District, with a portion on the eastern edge in WES sewer service district. There are some storm water collection lines in the area, but the provision of these facilities is not consistent throughout the area.

**Webster / Thiessen:**

The Webster / Thiessen area includes neighborhoods to the east of Oatfield ridge to the I-205 freeway. To the north the area is bounded by Hwy 224 and by Gladstone on the south. The area is within the Clackamas County Service District #1 (Water Environment Services district). There are approximately 15 miles of roads on the EPN within the area. There is not a strong potential for a significant number of partitions to occur in this area.

*Topography:* The area does not have many places with steep slopes, except for a portion around Rusk Road and Tiara Way

*Wetlands:* There is a stream that travels along the western and southern edge of the area. In some places, between Clackamas Road and Mabel Ave and between Mabel Ave. and Webster, there are wetlands that surround the stream. These natural features may impact the provision of sidewalks along Clackamas Road, Mabel Ave and Webster Road.

*Right-of-way:* Nearly 50% of the existing streets on the EPN in this area have substandard right-of-way widths, which means that purchase of right of way will likely be required to build sidewalks.

*Storm Drainage:* The area is located within the WES sewer service district. There are some storm water collection lines in the area, but the provision of these facilities is not consistent throughout the area.

**Clackamas Business and Clackamas Industrial area:**

The Clackamas Business and Clackamas Industrial areas are east of I-205 and extend to the cities of Happy Valley and Damascus on the east. On the north it is bounded by Clackamas River Bluffs and the Clackamas River on the south. There are approximately 17 miles of roads or pedestrian connections in the area on the Essential Pedestrian Network

*Topography:* The area is generally flat. However, roads accessing Mather Road and the Sunnyside area are significantly impacted by steep slopes. These roads include:

- Lawnfield Road
- 135<sup>th</sup> Ave
- 142<sup>nd</sup> Ave and 152<sup>nd</sup> Ave

*Wetlands:* There are wetlands in the area, but none appear to impact the Essential Pedestrian Network

*Right-of-way:* Only about 25% of the existing streets on the EPN in this area have substandard right-of-way widths. The majority of the area is zoned for industrial and commercial uses. Construction of sidewalks is usually required in these areas when new development occurs.

*Storm Drainage:* The area is located within the WES sewer service district. Presently, there is an extensive storm water collection system in the area.

**Sunnyside:**

The Sunnyside area extends east of I-205 to the edge of Happy Valley on the east and north. The Clackamas River Bluff bound the area on the southwest and to the south. There are approximately 17 miles of roads or pedestrian connections in the area on the Essential Pedestrian Network. Since the area has developed after the 1970's, when stricter sidewalk requirements were applied, this area has the greatest amount of sidewalks completed.

*Topography:* Mt Talbert and the canyon around a stream west of 142<sup>nd</sup> Ave create many topographical challenges in the areas. Also, as the roads traverse north into Happy Valley, there are slope issues to

contend with. The roads most significantly impacted by topography in this area:

- Summers Lane extension between 132<sup>nd</sup> and 142<sup>nd</sup> Ave.
- 122<sup>nd</sup> Ave and 132<sup>nd</sup>, north of Sunnyside Road.
- 142<sup>nd</sup> Ave and 152<sup>nd</sup> Ave
- Valley View Road

*Wetlands:* There are wetlands in the area, one of which may impact Mather Road and the other may impact the pedestrian connection to Clackamas High School

*Right-of-way:* Only about 30% of the existing street miles on the EPN in this area have substandard right-of-way widths. Except for some places along Valley View Drive and 122<sup>nd</sup> Ave, there is little potential for adding sidewalks through partition activity.

*Storm Drainage:* The area is located within the WES sewer service district. Presently, there is an extensive storm water collection system in the area.

**East I-205 / 92<sup>nd</sup> Ave.**

To the north of the Sunnyside area, along 92<sup>nd</sup> Ave is the East I-205 / 92<sup>nd</sup> Ave area. Extending from I-205 to the Happy Valley city limits on the east. The area covers from Clackamas County line on the north and Sunnyside Road to the south. There are approximately 6 miles of roads or pedestrian connections in the area on the Essential Pedestrian Network. The area is a mix of commercial uses in the south to existing residential in the north.

*Topography:* Almost all of the streets in this area are impacted by slopes of 10% and greater. The streets in this area include:

- 92<sup>nd</sup> Ave.
- 95<sup>th</sup> Ave. and 99<sup>th</sup> Ave
- Stevens Way
- Idelman Road

*Wetlands:* This area does not appear to be impacted by wetlands.

*Right-of-way:* About 40% of the existing street miles on the EPN in this area have substandard right-of-way widths. There is some potential for partitioning in the area, but all of these properties are impacted by the area's steep topography.

*Storm Drainage:* The area is located within the WES sewer service district. Presently, there is an extensive storm water collection system in the area.

**Overland Park / Clackamas Regional Center:**

The Overland Park / Clackamas Regional Center area is located between the City of Milwaukie and I-205. It extends from the Clackamas County line to the north and Hwy 224 to the south. The area has 43 miles of roads or pedestrian connections on the EPN. It includes the commercial core for Clackamas (the Clackamas Regional Center) and some older residential neighborhoods, such as Overland Park

*Topography:* While most of the area is generally flat, there are some issues with slope between Overland Road and King. Also, the area north of Johnson Creek Blvd and south of Flavel Drive has slopes of greater than 25%. The roads impacted by topography include:

- Overland
- Jordan
- Needham
- King
- Bell
- 77<sup>th</sup>
- Flavel
- Alberta

*Streams:* While the roads in this area do not appear to be impacted by wetlands, Johnson Creek is a significant natural feature that traverses the northern edge of the area. The roads that cross Johnson Creek typically have narrow bridges, making pedestrian access difficult

*Right-of-way:* About 27% of the existing street miles on the EPN in this area have substandard right-of-way widths. There is some potential for partitioning in the area, but there are other issues, such as the provision of sewer service that may impact this development.

*Storm Drainage:* Most of the area is located within the WES sewer service district. The area south of King Road and east of 82<sup>nd</sup> Ave has an extensive storm water collection line system. The Overland Park residential area, however, does not have a piped storm water collection system.

## **Appendix D**

### **Deferral Process for partitions located on the EPN**

There is a deferral (not a waiver) process in place for construction of sidewalks in partitions located on EPN streets. In some instances, the requirement for construction of sidewalks is deferred to a later point in time.

A deferral is considered in situations where:

- there are no sidewalks in the vicinity,
- there is a storm drainage issue, and/or
- the ultimate road alignment is likely to change.

A factor can also be a narrow frontage. There are some situations where these issues are identified up front and a recommendation will be made in the record that the Engineering Division would support a deferral if requested.

Basically, sidewalk construction is deferred to an unspecified time, but can be required when asked by the County. The “Street Improvement Agreement”, signed by the developer, identifies four cases when the County can require the deferred improvements to be constructed:

- “(1) When said improvements are part of a larger project to be financed or paid for by the formation of a Local Improvement District
- (2) When said improvements are part of a larger public project to be financed or paid for in whole or in part by the County or other public agency.
- (3) When said improvements are part of a larger project to be constructed by a third party and involves the sharing of design and/or construction expenses by the owner(s) of property in addition to the property described in Section 1, or
- (4) When construction of said improvements are deemed to be appropriate by the County Engineer in conjunction with construction of improvements by others adjacent to the improvements described in Section 2.<sup>3</sup> “

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<sup>3</sup> This is taken directly from the “Street Improvement Agreement” form. Section 1 and Section 2 are found in the Street Improvement Agreement.