



**PORTLAND PARKS & RECREATION**

Healthy Parks, Healthy Portland



**Red Electric Trail Planning Study**

**May 2007**

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# **Red Electric Trail Planning Study 2007**

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# Executive Summary

Trails are an important part of our park and recreation system. They are used by people of all ages and abilities to exercise, relax, socialize or travel to destinations such as school and work. Recent studies conducted by the Oregon Parks and Recreation Department (OPRD) found that the most popular outdoor activities were running and walking for exercise and walking for pleasure – and identified a growing need for trail connectivity, trail maintenance, and trail development closer to where people live.

Portland has completed two-thirds of a proposed 220-mile network of regional trails that connect to adjacent communities and significant natural features. However, the three existing trails in southwest Portland (Marquam, Terwilliger and Willamette Greenway Trails) are distant from many of the area's residents. One of the recommendations in Portland Parks and Recreation's (PP&R's) strategic plan, *Parks 2020 Vision*, was the study of the Red Electric trail in southwest Portland to connect with Tualatin Hills Park and Recreation District's trail system along Fanno Creek. This Trail Study was also recommended in two earlier projects. The *Southwest Urban Trails Plan*, completed in July 2000 by the Portland Office of Transportation (PDOT), recommended the Red Electric historic rail alignment as one of seven possible walking routes in southwest Portland. In January 2003, the *Fanno Creek Greenway Trail Action Plan* was finalized recommending that the Red Electric alignment be studied as the easternmost portion of that regional trail system extending to Tigard. The Fanno Creek study, prepared by a partnership including PP&R, PDOT, Metro, Washington County, THPRD, and the Cities of Beaverton, Tualatin, and Tigard, involved substantial public outreach.

In October 2003, PP&R began the Red Electric Trail Study to investigate potential routes for an east-west trail that would extend the Fanno Creek Greenway Trail, creating a continuous, 16-mile bike and pedestrian trail between the Tualatin and Willamette Rivers. Since the study extended beyond Portland's city limits, staff and citizens from Washington County, Tualatin Hills Park and Recreation District (THPRD), and the City of Beaverton also contributed to the effort. THPRD would serve as the lead agency for developing recommended trail segments in Beaverton and unincorporated Washington County.

A comprehensive public involvement process was developed by PP&R staff that focused the initial public outreach on landowners and neighbors living along potential routes. Staff walked the routes with residents during a series of tours in February and March 2004. At a public open house held in June 2004, the broader community



1. Eastern end of existing Fanno Creek Greenway Trail



2. People walking in unimproved right-of-way



3. Cyclist using Terwilliger Trail rather than bike lane

## Executive Summary



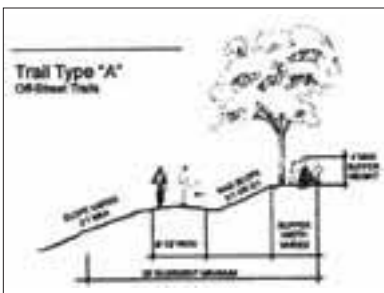
4. One of the Public Open Houses



5. Walking tour



6. Fanno Creek Greenway Trail



7. Trail Type A – Off-street Trail

reviewed and commented on all the routes that had been studied. A recommended route, and several alternatives, together with preliminary costs were developed and presented at an open house in October 2004. In August/September 2005 the draft trail study was released for public review and comment, which resulted in a revised draft document of January 2006. The study served as a catalyst for considerable public debate on issues ranging from the actual need for a trail to specific impacts from the use of the trail on neighbors and neighborhoods.

Four main goals are used in siting a trail. These are safety, connectivity, response to context, and diversity of users.

- Safety is the top concern. Ideally, cars and trucks along or crossing a trail should be minimized. Where trail routes coincide with vehicles, higher speeds and traffic volumes decrease users' perception of safety and tend to discourage less expert users.
- Connectivity with other trails or sidewalks is important because increased trail length makes longer trips possible, increasing usefulness for commuting and exercise effectiveness.
- Response to context means that a trail changes to meet opportunities and constraints of its surroundings.
- Diversity of users refers to activity, age, and ability. Trails have health benefits that all should share, including those with disabilities.

Determining a recommended route began with using these goals to eliminate the least suitable alignments, including routes not likely to accommodate bicycles or wheelchairs. Routes using all or parts of major thoroughfares were also rejected due to concerns for user safety. Site analysis also considered natural features such as topography, soils, hydrology, and slope stability as well as existing development, parks and open space, zoning, and circulation. Staff reviewed potential routes and trail types in the field to evaluate road crossings, note sight distance constraints, select potential sidewalk locations and locate right-of-way encroachments. This resulted in a recommended route, with some other options that could still meet project criteria. The east end of the recommended route was revised after the January 2006 draft to reflect input from the new PDOT Community and School Traffic Safety Partnership. The final recommended route uses SW Vermont Street in order to avoid driveways on SW Capitol Highway.

Cost estimates were developed for each project-sized segment. The recommended route in Portland would cost \$16.5 million; the alternate route using SW Taylors Ferry Road would cost \$15 million. The totals are high because the easternmost segment is particularly



expensive. Costs might be reduced in some areas if sidewalks were not required or existing pavement could be reused. There are a variety of sources for funding trails, but implementation will probably be delayed due to other priorities. Fortunately, PP&R's estimated operations and maintenance expense of \$20,000 per year for all off-street trails is not prohibitive.

The trail study offers a primary recommended route, as well as a few other options, all of which will result in a safe and useful east-west route for diverse trail users. The trail will look different along various stretches of the route, based on the existing conditions, topography, and other features. Although likely to take decades to design and construct, it will ultimately offer increased recreational opportunities as well as transportation use to southwest Portland residents and visitors.



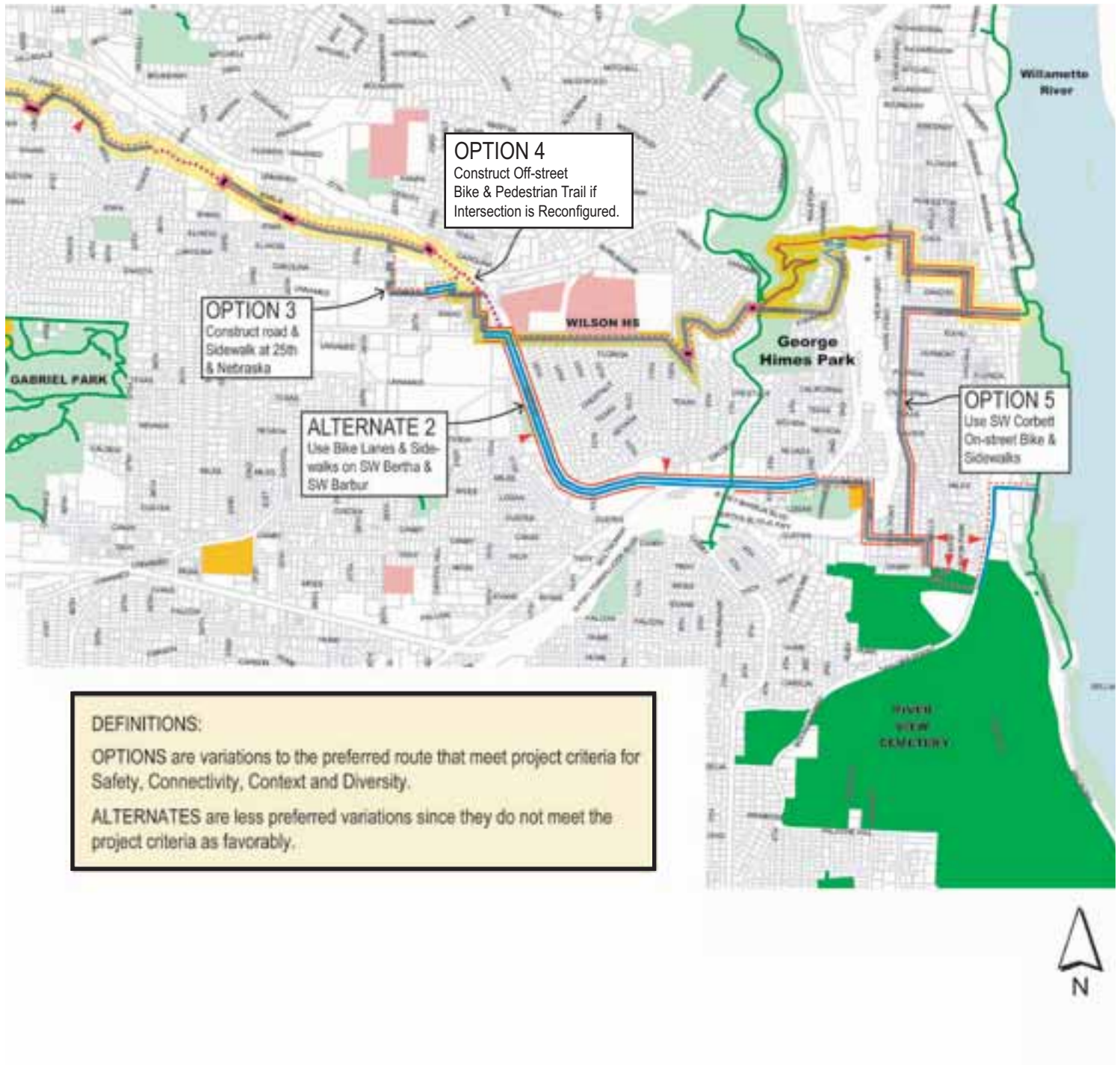
*8. Detail of sign (Fanno Creek Greenway Action Plan)*

## Executive Summary



May 2007





## Recommended Red Electric Trail Routes (May 2007)



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# Study Background

## STUDY GOAL

The purpose of this study is to find a route at the east end of the Fanno Creek Greenway that could complete the 16-mile-long bike and pedestrian trail between the Tualatin and Willamette Rivers (Appendix A1). Although the Red Electric rail alignment in SW Portland was abandoned many years ago, many former railroad alignments have been successfully converted for use as trails. The Fanno Creek Greenway begins at the confluence of Fanno Creek and the Tualatin River in Tigard. It parallels the creek north through Beaverton and unincorporated Washington County threading together libraries, schools, community centers, historic buildings, parks, and natural areas. (See Appendices A2 and A3.) Trail development along Fanno Creek began in the mid-1970s. Since then the Tualatin Hills Park and Recreation District (THPRD) and the Cities of Tigard and Beaverton have completed over 2/3 of 10 miles outside of Portland. The study identifies opportunities and constraints for trail development in several locations and provides a recommended alignment. Where developing trail along the original Red Electric rail alignment is not recommended, alternative routes are provided.

## STUDY AREA

The project area stretches approximately four miles from the Willamette River to SW Oleson Road in Southwest Portland. The project was identified in the *Southwest Urban Trails Plan* (July 2000) by Portland's Office of Transportation (Appendix A4). Southwest residents instigated that study by noting that many southwest neighborhood streets are narrow, with little or no pavement and have disconnected or missing sidewalks – all of which makes walking to local destinations difficult. Although some existing rights-of-way are simply undeveloped, many of the paved streets lack sidewalks. To highlight the disparity within the city, an April 2004 editorial in *The Multnomah Village Voice* said, “In Southeast Portland, about 88 percent of the streets have sidewalks, while 12 percent of streets do not. In Southwest, about 88 percent of streets do not have sidewalks, while 12 percent, including parts of Capitol Highway, do have sidewalks.” (See Appendix D22.10)

Although bike lanes have been striped on some major southwest streets, they are too few and discontinuous to constitute a fully usable bike network. There are few existing off-street multi-use trails in southwest Portland and few opportunities to create them. The Willamette Greenway and Terwilliger Trails are on the eastern extents of southwest Portland, while the Marquam Trail to the north is a steep,



9. Fanno Creek Greenway Trail in Tigard



10. Fanno Creek Greenway in Beaverton



11. Fanno Creek Greenway Trail west of Garden Home Recreation Center

Study Background

*In southwest, about 88 percent of streets do not have sidewalks, while 12 percent...do have sidewalks.*  
Don Snedecor



12. Unimproved right-of-way



13. Willamette Greenway Trail

narrow, pedestrian-only route. The proposed alignment developed in this study could provide an east-west alternative transportation corridor for southwest Portland that connects to downtown Portland. The route links the Willamette River Greenway (and the 40-Mile Loop) to Beaverton and Tigard via the Fanno Creek Greenway (Appendix A5).

Portland Parks and Recreation (PP&R) led the study, but the Portland Office of Transportation (PDOT) contributed a substantial part of the technical work and assisted with public meetings. Documentation presented in this draft was made available for review in September 2005 and was finalized once comments had been incorporated.

The study text was shortened by putting most of the material developed for mailings and public meetings in the appendices. Appendix A has the majority of illustrations, organized chronologically in the order in which they were used. They provide a visual record of when trail routes were suggested, studied, and selected. Appendix B contains the majority of public involvement materials. Duplicate invitations that differ only in geographic location were not included but are summarized in the Appendix B content list. Appendix C has articles, editorials, and letters to the editor from various newspapers. Appendix D has selected correspondence, representing typical input and response. It is divided into geographical area and presented chronologically.

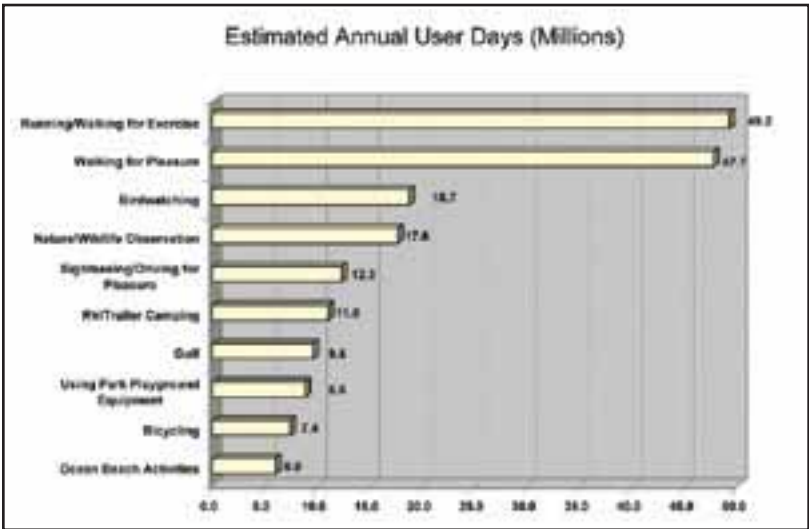


Figure 1.  
*Estimated Annual User Days (Oregon Statewide Comprehensive Outdoor Recreation Plan 2003-2007)*

## TRAIL GOALS

Trails are an important part of our park and recreation system. They are used by people of all ages and abilities to exercise, relax, socialize or travel to destinations such as school and work. Portland Parks and Recreation (PP&R) is committed to providing trails throughout Portland in response to local, state, and national studies indicating high demand for walking and biking. The *2003-2007 Oregon Statewide Comprehensive Outdoor Recreation Plan* (January 2003) surveyed both Oregonians and visitors to Oregon. This study revealed that “The most popular everyday activities are running and walking for exercise and walking for pleasure....these activities are generally engaged in near home, and on a regular basis.”<sup>1</sup> The *Oregon Non-Motorized Trail Plan* identified several top issues and concerns: need for trail connectivity, need for trail maintenance and need for more trails in close proximity to where people live.<sup>2</sup>

When PP&R did surveys of popular park and recreation activities in 1999, both walking and bicycling on trails rated highest. A 2004 PP&R survey found that 77% of Portlanders used trails each year and over 50% at least monthly. Although much of the demand for trails and pathways can be met with sidewalks and bikeways on streets and trails in parks, regional trails provide unique recreational and transportation benefits due to their longer length and potential for connectivity. Portland has completed two-thirds of a proposed 220-mile network of regional trails that connect to adjacent communities and significant natural features. However, the three existing trails in southwest Portland (Marquam, Terwilliger and Willamette Greenway Trails) are distant from many of the area’s residents. One of the recommendations in PP&R’s strategic plan, *Parks 2020 Vision*, was the study of the Red Electric trail in southwest Portland to connect with Tualatin Hills Park and Recreation District’s trail system along Fanno Creek.

Siting and design of every trail requires consideration of four main goals: safety, connectivity, response to context, and diversity of users. Diversity of users refers to activity, age, and ability. Although the overall recreational trail system includes challenging segments for the most fit and expert, the general aim is to provide challenge levels suitable for all ages and abilities. Trails provide potential health benefits for all, including



14. Terwilliger Trail walkers



15. Willamette Greenway cyclists

### GOALS FOR RED ELECTRIC TRAIL

- *Fanno Creek to Willamette Greenway connectivity*
- *Diversity of users – young, old, disabled, less fit, pedestrians, runners, bikers, rollerbladers, baby strollers = multi-use design with accessible grades*
- *Recreational character over transportation service = scenic quality, destinations such as parks, schools, natural areas*
- *Safe – off-street preferable, no or few or slow vehicles, minimize busy street crossings*
- *Context – minimize impacts to environmentally sensitive areas, neighbors, use of private property*

<sup>1</sup> *Oregon Statewide Comprehensive Outdoor Recreation Plan 2003-2007*, p. 3.

<sup>2</sup> *Oregon Non-Motorized Trail Plan*, p. 3.

## Study Background

*Studies show that a ten mile-per-hour increase in speed, from 20 mph to 30 mph, increases the risk of death for a pedestrian in a collision nine-fold.<sup>3</sup>*



16. Bikes on shoulder of busy N Marine Drive



17. Meeting with neighbors

those with disabilities. Where possible, trail design should accommodate diverse modes – walkers and runners, bicyclists and rollerbladers, wheelchairs and baby strollers.

Response to context means that a trail changes to meet opportunities and constraints of its surroundings. Trail width, slope and material may change to fit neighboring development, vegetation, drainage needs, vehicle circulation patterns and so forth. Although the trail may be less consistent over its length, the adaptations enliven the overall trail experience and fit more suitably within the neighborhood.

Connectivity is important because trail length makes longer trips possible, increasing usefulness for commuting and exercise. Trails should have multiple access points from the surrounding system of sidewalks and bikeways to make shorter trips and loops possible.

Safety is the top concern. Ideally, cars and trucks along or crossing a trail should be minimized. If the trail parallels a roadway, separate bicycle and pedestrian space is preferred unless there are few vehicles and low travel speed. Higher speeds and traffic volumes decrease users' perception of safety and tend to discourage less experienced users.

The main objective of the Red Electric study is to recommend a trail alignment that connects the Willamette and Fanno Creek Greenways, implementing a portion of the regional trails plan. It should be developed as a fully accessible, multi-use path to serve diverse users – young to old, disabled and able-bodied, foot and non-motorized wheeled traffic. The route should be selected and improved to fulfill recreational needs, although it also will be a valuable transportation route. A route with better scenic quality and links to parks, schools, and commercial destinations is desirable, even if it is somewhat longer or less direct. Safety is the top priority, particularly for less experienced users who will benefit by minimizing travel along or across busy streets. Impacts to environmentally sensitive areas and private property should be avoided or minimized.

### PUBLIC INVOLVEMENT PROCESS

PP&R staff developed a public involvement process for this study based on discussion with Southwest Neighborhoods, Inc. (SWNI) staff. (See Appendix B with public involvement plan, mailings, meeting agendas and comment cards.) It was determined that it would be

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<sup>3</sup> Pedestrian Facilities Users Guide: Providing Safety and Mobility



best to discuss the possible trail routes with people most immediately affected – adjacent residents/property owners – before broadening the public discussion to include neighborhood associations, SWNI Parks and Trails committees, 40-Mile Loop Land Trust members, and others.

The initial route identified in the *SW Urban Trails Plan* and other readily apparent possibilities were mapped and divided into six areas so that site-specific issues could be discussed with each group of residents/owners. A first letter (Appendix B3) introduced the project and showed an overall map (Appendix B4) of the study area. The second letter (Appendix B5), with one of six detailed maps (Appendix A6-A11), was sent to each group inviting residents to meet with PP&R staff to learn about the project background and to discuss issues and concerns. These meetings (Appendix B12-B15) began November 24, 2003 and continued through the second week of December. PP&R offered to meet with neighbors, at their request, starting in January 2004, to hear suggestions and concerns at their different sites. Those attending the first meetings suggested additional routes; another set of meetings was held to introduce “new” neighbors to the project (Appendix B28). Walking tours were held in February and March 2004 (Appendix B25-B27).

Staff also discussed the project and public process with the Neighborhood Association chairs for Hillsdale, Hayhurst, South Burlingame, and Corbett/Terwilliger/Lair Hill Neighborhood Associations (Appendix B29-B30). Similarly, staff from the City of Beaverton’s Neighborhood Office and chairs from the Raleigh West and Denney Whitford Neighborhood Associations and the unincorporated CPO3 neighborhood were told about the process and invited to participate. A second round of meetings with adjacent neighbors was held in May 2004 (Appendix B31-B35, B39-B40). Neighborhood Association chairpeople, SWNI subcommittee members, and representatives of bike, pedestrian, and trail advocacy groups were invited (Appendix B36-B38) to a project preview before the first Public Open House in June 2004 (Appendix B43-B53).

Many of the immediate neighbors had never heard about the Red Electric trail until they got their letters in the mail. The study was not initially publicized through the neighborhood associations or local papers, so it was unfamiliar to everyone who had not participated in prior *SW Urban Trails Plan* or *Fanno Creek Greenway Trail Action Plan* planning efforts. The decision was made to meet with immediately affected neighbors first so they wouldn’t be in meetings with and feel pressure from other neighbors who supported



*18. Walking tour of Red Electric right-of-way north of Hayhurst Elementary School*



*19. Walking tour heading north on SW 33rd Place to former Red Electric alignment on SW Bertha Boulevard*

### THE MOST COMMON TRAIL-RELATED CONCERNS HEARD FROM NEIGHBORS INCLUDE:

- Concern about loss of property value and/or privacy
- Safety and security issues related to new people from out of the neighborhood passing by their homes
- Loss of use of property – some currently use city right-of-way for their yards/parking
- Liability concerns

## Study Background



20. Undeveloped public right-of-way (SW Fairvale Court) on former Red Electric route



21. Meeting with neighbors



22. Walking Tour in Pendleton Park

the idea but weren't as directly impacted. This was intended to avoid pitting neighbor against neighbor. Some neighbors seemed to appreciate this approach; others unfortunately surmised that they had been cut out of the process.

The former Red Electric rail alignment is still apparent in some locations but many of the possible alignments studied are on small, quiet residential streets or undeveloped right-of-way, as well as on some private property. Some neighbors have been adamant that bikes and pedestrians would pose security and vandalism concerns for them and would negatively impact their neighborhood. In some areas, residents are concerned that trail development would use undeveloped right-of-way (public property) that individuals have incorporated into their yards and take responsibility for maintaining.

In summary, there were roughly 900 people on the list of immediately adjacent property owners who were invited to the series of events listed below. Here are counts of participants and a brief description:

- November/December 2003: A series of neighbor meetings were held, followed by additional meetings with neighbors on newly suggested routes. Over 150 people attended this series of meetings. There was a high level of concern expressed on a variety of topics. These ranged from things such as strangers in the neighborhood, to impacts such as noise, litter, and vandalism, to potential liability and responsibility. Some welcomed the idea of a trail, feeling the lack of sidewalks to major destinations (schools, parks, stores) was a safety and livability concern.
- February/March 2004: The project team held a series of 'walking office hours' along various sections of the proposed route to discuss issues and possibilities and see site-specific conditions, as requested by immediate neighbors. Nearly 60 people attended these tours. The comments shared by the neighbors on these walks generally were the same as those expressed during the November/December 2003 meetings. Specific locations for issues regarding traffic, parking, drainage, and risk of landslides, as well as impacts to residents' gardens and lawns were documented. Some people continued to express their support for the trail, with suggestions of alternate routes.
- May 2004: PP&R hosted follow-up meetings with the neighbors to report back. This concluded work on opportunities and challenges for various potential trail segments and aired remaining neighbor concerns. There continued to be a mix of opinions, with some neighbors strongly opposed, expressing their dissatisfaction that the project had not simply stopped due to their opposition, while others voiced their support for the trail concept. Cumulatively, about 50 people attended this series of meetings.

- June 19, 2004: Roughly 50 people attended the first Public Open House, including a wider variety of southwest residents in addition to those who had been involved in our ‘neighbors only’ meetings up to this point. Based on comment cards filled out at this meeting, three out of four people supported the idea of the Red Electric trail, but concerns still remained among those immediate neighbors who continued to attend the meetings (Appendix B54).
- October 16, 2004: Nearly 100 people attended the second Public Open House. A recommended route plus some alternatives and options were presented together with how segments of trail might be developed. People were encouraged to submit comment forms as well as fill out identical forms on-line if they were unable to attend the meeting (Appendix B59-B63).



23. October Open House

Staff also attended small group meetings in residents’ homes to hear concerns of neighbors in local areas (Appendix B64).

Concerns regarding additional trail development in George Himes Park were raised right before and during the October 2004 Open House. Although the park trails are not heavily used, some nearby residents have concerns about improving or adding trails that would bring more users, particularly bicyclists, into the park. Staff, neighbors, and representatives from various advocacy groups met to tour George Himes Park a few days before the Open House (Appendix B56). Additional concepts were developed for the Open House with more additional work done after the Open House based on suggestions by attendees.



24. George Himes Park (Marquam Trail)

There continues to be general support for the trail, as well as strong opposition from some neighbors. (See Appendix D for some correspondence.) Over 260 people commented on the proposed trail using the on-line survey following the October Open House, with fewer than 20 opposing the trail idea (Appendix B63).



25. Comment Form

A project website was developed in January 2004. All project materials, including background information, Red Electric history, project maps, meeting schedules, and summaries of meetings were posted on the project website. The materials from the June and October 2004 Open Houses were posted on the website. This included the comment forms from people unable to attend the meeting. Web usage varied each month with over 1,000 visits in October when the final project Open House was held.

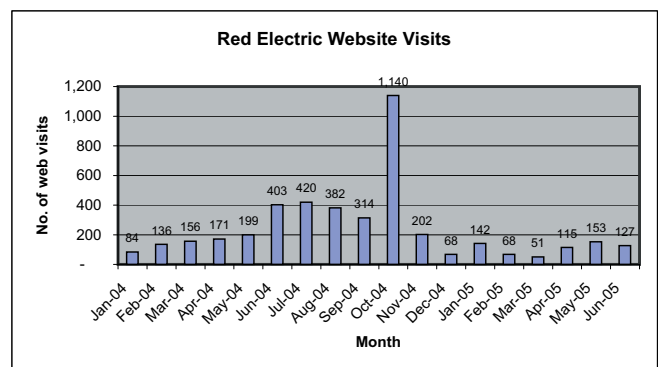


Figure 2.  
Red Electric Website Visits

### PUBLIC RESPONSES FROM PUBLIC COMMENT PERIOD

The Draft Red Electric Trail Planning Study (August 2005) was released for public comment in late August of 2005 through the month of September 2005. The document was posted to the web, as well as a copy being made available at the Garden Home, Southwest and Fulton Park Community Centers, the Multnomah Arts Center, the office of SW Neighborhood Inc, and several copies at the Hillsdale Library. All parties who had been interested in the project were notified by postcard of the public comment period.

A total of 30 comments were received on the project by letter, fax, e-mail, phone and via the web. There were mixed feelings about the project, just as there had been throughout the project. Of the thirty people commenting, opinions were split equally between being supportive or opposing the trail concept, with some people being neutral on some aspects of the plan and feeling strongly about other aspects of the recommendations.

Some were flat out opposed to the project – feeling it was a waste of money, an unnecessary and unwanted improvement, and that the staff was both incompetent and unwilling to hear the public's opposition. Some wanted the project to go away, and were bothered by the fact that by their opposition it had not done so. Some felt that staff ignored their concerns and had intentionally made public input challenging.

General concerns that several brought up as their reasoning for opposing the trail were the impacts on neighboring property owners, costs, slope of terrain, strangers, litter and vandalism, and interference with a landslide area. Some felt that the route proposed was wrong, dangerous, or ill advised, and they preferred that other routes should have been more carefully considered.

By contrast, half of those people responding praised the staff and the project. These were equally split between general appreciation for the study, the future trail it represents and the staff efforts, and those who liked the plan overall but wanted to share specific comments or suggestions on various sections.



Among those in favor of the trail some people highlighted the benefits of trails, how their neighborhoods lacked sidewalks, the good balance between bike and pedestrian needs and the importance of trail connectivity. Some offered to help with trail maintenance. Others thanked the staff for their inclusive and transparent process, while others accused them of being too deferential to a handful of neighbors who were opposed to the trail.

Many comments included detailed concerns or suggestions about specific stretches of the proposed trail. These were from both trail supporters and opponents, but focused on particular stretches of the trail. Comments are included in the Appendix D.

The project staff has reviewed these detailed comments and concerns. They met on-site with one group of neighbors to hear these concerns in person, and respond. Additional study and cost estimates were done for one neighbor suggestion regarding Slavin Road. The final report reflects some of the suggestions made, and responds to comments as appropriate. It also includes better explanations by staff of the reasoning for various recommendations, in response to some of these concerns.

### TRAIL PLANNING IN SOUTHWEST PORTLAND

This trail study is the outgrowth of specific recommendations from two earlier projects. One was the *Southwest Urban Trails Plan*, a project of the Portland Office of Transportation (PDOT), which recommended the Red Electric historic rail alignment (Appendix A4) as one of seven possible walking routes in southwest Portland. The other was the *Fanno Creek Greenway Trail Action Plan*, which also recommended the Red Electric alignment be studied as the easternmost portion of a partially existing 16-mile-long trail. In Portland, three routes to complete the connection to the Willamette Greenway were proposed: a bike route on SW Multnomah Boulevard, a pedestrian route north of SW Multnomah Boulevard, and the potential multi-modal Red Electric (Appendix A12-A13). Both planning efforts included residents on the project team and involved substantial public outreach. There is also a more extensive, region-wide history of trail planning that includes the greater Fanno Creek Greenway. This includes the *Urban Outdoors Plan* (1972), the *40-Mile Loop Master Plan* (1983), Rails-to-Trails movement, and *Metropolitan Greenspaces Master Plan* (2002). (See Appendix B14 for summary of planning background used at public meetings.)

#### FANNO CREEK GREENWAY TRAIL – TRAIL TO THE FUTURE

- link neighborhoods, parks, schools, community centers and businesses
- provide an environment for learning about local history
- provide safe corridors for walking and biking to school and work
- connect trails and parks for walking, biking, in-line skating, running, strolling and bird watching
- provide much needed habitat for fish and wildlife
- improve air and water quality by filtering runoff, holding floodwaters and reducing auto use.<sup>4</sup>

<sup>4</sup>“Fanno Creek Greenway Trail: Connecting the Willamette & Tualatin Rivers” flyer, Appendix A1-A2

## Study Background

### Partners for Fanno Creek Greenway Trail Action Plan

- 40-Mile Loop Land Trust
- FANS of Fanno
- Southwest Urban Trails
- Metro
- City of Portland  
Portland Parks and Recreation  
Portland Office of Transportation  
Bureau of Environmental Services
- City of Beaverton
- City of Tigard
- City of Durham
- Tualatin Hills Park and Recreation District
- Unified Sewerage Agency (now Clean Water Services)
- Audubon Society of Portland
- Three Rivers Land Conservancy
- National Park Service  
Rivers, Trails and Conservation Assistance Program

The *Parks 2020 Vision* plan adopted in July 2001 documents challenges with access, trails, and connectivity in southwest Portland. Its recommendations include:

- *Build on and implement the work of the Southwest Urban Trails Plan to develop a connected system of trails and walks.*
- *If feasible, develop and implement plans for the Red Electric trail to connect with Tualatin Hills Park and Recreation District's trail system along Fanno Creek.*<sup>5</sup>

The *Red Electric Line Trail Planning Study* was funded by the 2000 MTIP/STIP (Metropolitan Transportation Improvement Program/ State Transportation Improvement Program). PP&R requested a \$150,000 total budget with \$15,450 matching funds provided by PP&R. Funding comes from the Federal Highway Administration through the Oregon Department of Transportation (Regional Transportation Enhancements, Congestion Mitigation Air Quality or State Transportation Improvements Program). Metro manages the regional selection process and funds were originally expected to be available October 2000 (federal FY 2001). The contract required to start the project received all needed signatures on October 20, 2003.

### RED ELECTRIC HISTORY

The “Red Electric” name refers to the alignment in southwest Portland of the historic Red Electric train. The line was one of the original sections of the Oregon and California Railroad, one of the oldest railroad lines in Oregon. Construction of this westside route began in April 1868 and was completed to Hillsboro in December 1871. The rails ran along SW 4th Avenue from Union Station to what has become SW Barbur Boulevard, then south to today's SW Bertha Boulevard and then north and west along the entire length of SW Bertha Boulevard. From the intersection of Bertha and Capitol Highway, the line continued into Beaverton traveling through what is now generally a residential area on or near street rights-of-way such as SW Fairvale Drive and Court. From 1871 to 1912, the line carried passenger and freight trains pulled by steam locomotives. In 1914, Southern Pacific electrified the line and it became one of their primary routes for the Red Electric interurban system. The passenger cars were colored red with distinctive round windows. In 1930, the Red Electric ceased operation and the rails were removed. (See Appendix A14 for map of full system. See Appendix D6 for additional information.)

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<sup>5</sup> *Parks 2020 Vision*, p. 74.

The study area is quite large, extending from SW Multnomah Boulevard, SW Taylors Ferry Road and Riverview Cemetery in the south to SW Beaverton-Hillsdale and Capitol Highways in the north. To the west, some potential routes would start west of the current trail ending at SW Oleson Road while the eastern boundary is the Willamette River. The study area extends past the west boundary of Portland and Multnomah County. There is a complicated mixture of jurisdictions with unincorporated Washington County, Beaverton, and Portland. Tualatin Hills Park and Recreation District (THPRD) serves both Beaverton and unincorporated Washington County and would be the lead agency for additional trail implementation outside Portland city limits (Appendix A15).



26. Red Electric train





# Site Analysis

## NATURAL FEATURES

Southwest Portland is characterized by steep hills, three major watersheds (Willamette River, Fanno and Tryon Creeks), several smaller stream corridors (Woods, Stephens, Vermont, and Pendleton Creeks), and large areas of natural vegetation and forest cover (Appendix A16). Some public and private properties that have significant natural features were given environmental overlay zoning, which restricts development. The *Fanno Creek and Tributaries Conservation Plan* notes that most of the Fanno watershed has a “wind-deposited soil that erodes easily and does not soak-up storm water very quickly.”<sup>6</sup>

*This top soil is over a harder layer of soil called a “fragipan.” Very little water can soak down through this... When it rains, the top two to five feet of soil saturate because water can penetrate no lower. This situation causes aquifers to perch on fragipans during the winter. This is a naturally occurring but dangerous situation. Erosion potential is higher; there is a lot of storm water run-off, and land slides result if vegetation is removed from slopes.*<sup>7</sup>

The basalt below the silt fractured when it cooled and stores water that flows as underground streams. The combination of slopes, impermeable soils, springs, and streams require creative, often expensive solutions to manage stormwater. The runoff drains to the main-stem and tributaries of Fanno Creek. The *Conservation Plan* notes that severe flooding is more likely due to urbanization. In 1977, significant flooding put portions of SW 56th, 60th, and Oleson Road under water because flows in some streams were greater than culverts could pass.

When this silt is on slopes it becomes “very unstable when wet, and the potential for slope failure is particularly high after winter rains have saturated the soil.”<sup>8</sup> The *Southwest Hills Resource Protection Plan* notes that “landslides, mud slides and slumps are common on steep areas in the West Hills.”<sup>9</sup>



27. Red Electric train



28. Fanno Creek



29. Pendleton Creek

<sup>8</sup> *Southwest Hills Resource Protection Plan: Inventory, Analysis and Regulations for the Protection of Wetlands, Water Bodies, Fish and Wildlife Habitats, Open Space and Natural Areas*, p. 41.

<sup>9</sup> *Ibid.*, p. 41.

<sup>6</sup> *Fanno Creek and Tributaries Conservation Plan*, p. 10

<sup>7</sup> *Ibid.*, p. 10.

## Site Analysis



30. Rowhouses on SW Nebraska



31. SW Multnomah Boulevard



32. Hillsdale Town Center

### DEVELOPMENT

The background report for Southwest Community Plan (1997) notes that this part of Portland was slow to grow because of the hills and numerous water courses, with most of the housing stock built after 1940. Most neighborhoods consist of single-family detached dwellings on large to average-sized lots, although a few neighborhoods have recently added rowhouse development. The commercial, retail, and employment areas tend to be located along the major streets. This strip development pattern encourages auto use although better-developed pedestrian facilities in Hillsdale and Multnomah provide some access by pedestrians and cyclists (Appendix A17).

### CIRCULATION

There are several major transportation routes through southwest Portland, but relatively few smaller connecting streets (Appendix A18-A19). Much of the area lacks a grid system of connections and a substantial number of streets are not developed to City standards and lack shoulders, bike lanes and sidewalks. The Southwest Community Plan background report considers the street system in southwest Portland significantly different than other areas of the city.

*It has no overall grid pattern due to topography, stream corridors and other factors. Small individual grids “float” within the larger network of arterials and collectors.... Many streets – both local streets and others in the collector system – are not improved to urban standards. Local Improvements Districts (LIDs) are one way streets are improved. In Southwest, the cost of LIDs can be more expensive than in other parts of the city because of environmental constraints and stormwater management requirements. Southwest lacks community consensus on whether existing urban street standards are appropriate; until some degree of consensus emerges, major improvement programs are unlikely.”<sup>10</sup>*

The Southwest Community Plan proposed improving “accessibility in Southwest Portland using the existing street network to the greatest extent possible and, where needed, create new street connections and off-street pedestrian and bicycle trails and paths.”<sup>11</sup>

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<sup>10</sup> Proposed Southwest Community Plan: Background Report and Proposed Vision and Policies, p. 69.

<sup>11</sup> Ibid., p. 71.

The *Recommended Hillsdale Town Center Plan* addressed the challenges of having a major arterial (SW Capitol Highway) pass through the town center. It identifies many issues and includes several concept plans, but no single plan was endorsed. Projects that the Red Electric trail might help implement or be affected by include:

- *T1c Realignment of the Bertha/Beaverton-Hillsdale/Capitol Highway intersection to allow for more protected turning movements, improve pedestrian access and safety, slow traffic, and optimize opportunity sites for development.*<sup>12</sup>
- *T1e Development of sidewalks along Sunset, 18th Drive, Capitol Highway, Bertha Boulevard, Beaverton-Hillsdale Highway, and at or near Bertha Court.*<sup>13</sup>
- *T6 Explore the feasibility of creating short and long term bicycle facilities.*<sup>14</sup>
- *T17 Complete the bicycle lanes on Bertha between Vermont and Beaverton-Hillsdale Highway.*<sup>15</sup>
- *ER8 Provide trail connections from Hillsdale to Terwilliger Parkway, Willamette Greenway and Fanno Creek.*<sup>16</sup>

## PARKS AND OPEN SPACES

Much of the park area in southwest Portland has been left as natural open space rather than developed with sports fields or recreation facilities. The steep slopes and stormwater management issues constrain development, but more passive activities such as walking and birdwatching can be provided. There are large, publicly-owned natural open spaces such as Marquam Nature Park and Tryon Creek State Park. Several privately owned cemeteries also preserve large areas of open space, as does Alpenrose Dairy, which also provides regional recreation facilities on private land. Terwilliger Parkway and the Willamette Greenway are two regional recreation attractions. Although some park and natural areas have internal trail systems, the regional trails (Willamette Greenway, Marquam and Terwilliger Trails) are to the north and east sides of the community.



33. Detail from Recommended Hillsdale Town Center Plan



34. Marquam Trail in Marquam Nature Park



35. Alpenrose Dairy Little League stadium

<sup>12</sup> Recommended Hillsdale Town Center Plan, p. 50.

<sup>13</sup> Ibid., p. 50.

<sup>14</sup> Ibid., p. 51.

<sup>15</sup> Ibid., p. 52.

<sup>16</sup> Ibid., p. 68.

## Site Analysis



36. *Terwilliger Trail*



37. *Fanno Creek Greenway Trail Center in former Oregon Electric alignment*

### OPPORTUNITIES AND CONSTRAINTS

Southwest Portland is a challenging area in which to develop an east-west trail. Both topography and development patterns make siting a long connected route difficult. Typically, many trails use the moderate longitudinal slope found paralleling creeks and rivers or reuse old railway grades. The existing Fanno Creek Greenway Trail in Washington County does benefit from the gentle slope of the Fanno Creek watershed. The recent segment west of the Garden Home Recreation Center was constructed on the former route of the Oregon Electric Railroad, a nearby competitor to the Red Electric. Unfortunately, Portland's more rapid development turned the remainder of the Oregon Electric into SW Multnomah Boulevard and the Red Electric railroad into SW Barbur and Bertha Boulevards. Fanno Creek tributaries such as Pendleton and Vermont Creeks have been mostly restrained to narrow channels squeezed by residential and commercial development. Only portions of Stephens Creek (in the Willamette watershed) not obliterated by SW Barbur Boulevard and I-5, next to SW Bertha Boulevard and Taylors Ferry Road, retain potential for a parallel trail. Undeveloped or underdeveloped public rights-of-way show the most potential for providing a continuous route.



# Trail Design & Alignment

## TRAIL CROSS-SECTIONS

The initial meetings with neighbors focused on gathering input on alignments that had been suggested by previous work. There were many suggestions for alternative alignments and questions about what the trail would look like. The response was that pavement would be needed to provide an accessible, multi-modal trail; it could be on-street bikeway or bike lanes, sidewalk or off-street trail of various widths and materials. Although photographs of other trails were provided, people wanted more graphic options that they could envision in their neighborhoods. The Trail Types illustrated in Appendix A22 were developed by PP&R and PDOT staff to show the range of possibilities.

Trail Type 'A' is the typical off-street path. Types 'B' through 'E' are on-street options for public rights-of-way that also serve motorized vehicles. They illustrate where pedestrians, bicycles, and vehicles travel and indicate how parking and stormwater runoff would be accommodated. Most residents have used some off-street Type 'A' trails and they were generally perceived as more desirable. Some felt that none of the on-street sections qualified as "trails" although many existing regional trails do mix on- and off-street segments. Some felt that anything that provided pavement for pedestrians and bicyclists was badly needed while others wanted no change in existing roads.

## ACCESSIBILITY AND THE AMERICANS WITH DISABILITIES ACT

The regulations regarding accessibility and the Americans with Disabilities Act (ADA) are very technical and continually evolving. One challenge that became apparent is that PDOT and PP&R use different regulatory guidance. Transportation staff work in public rights-of-way where the most recent regulations require making "improvements to the maximum extent feasible." Constraints are often set by existing buildings, limited right-of-way, underground structures/utilities. However, pedestrian access routes in street right-of-way can have the same grade as an adjacent roadway. In Portland, this is often steeper than the widely used 1:20 or 1:12 of accessible routes. However, it does assume that sidewalks have curbs that provide vertical separation from vehicles. The Trail Type 'B' proposal that pedestrians, cyclists, and vehicles share pavement in low traffic volume streets would not provide this separation (Appendix A22, D7-D8).

Parks staff typically don't work in public rights-of-way and some resources for "trails used as transportation facilities (shared use paths)"<sup>17</sup> allow running slope to be 1:10 maximum for 30 feet maximum. PP&R does



38. Off-street trail



39. Sidewalk and bike lane



40. Road with shared pedestrian, bicycle and automobile use



41. Motorized wheelchair in bike lane

<sup>17</sup> Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas: Final Report, p. 16.

## Trail Design & Alignment



42. Narrow road, shared by pedestrians, bicycles and automobiles

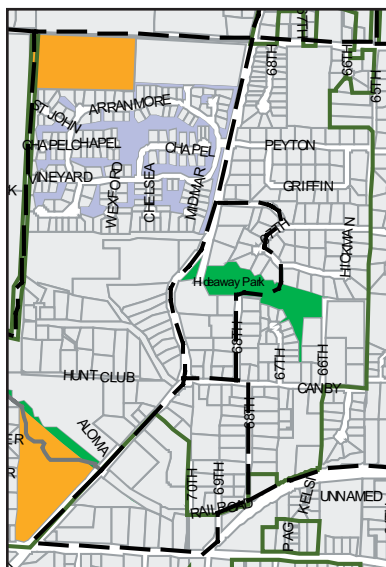


43. Landscaping in public right-of-way

gain flexibility in adapting to site conditions or trying innovative solutions by having all projects reviewed by the City-County Advisory Committee on the Disabled (CCACD) as allowed by the ADA. Since Trail Type 'B' does meet some guidance used by transportation planners, PP&R and PDOT staff met with the CCACD (Appendix D9). The committee felt that a common sense approach might be better than literal adherence to guidelines. Some wheelchair users noted that they sometimes preferred bike lanes to sidewalks in order to avoid all the warped cross-slopes at driveways and curb cuts. A visually-impaired member felt that the more rustic ambience of road without curbs and sidewalks could be enjoyed by all, but signage should probably alert drivers to pedestrians in the shared roadway. Since advisors to transportation staff felt that the cross-section could be used experimentally, Trail Type 'B' should be considered when design and construction funds are available. Benefits include minimizing pavement width in rights-of-way where neighbors make private use of public land as well as less expensive stormwater management. However, all cost estimates were done with sidewalk and conventional storm drainage facilities.

### POTENTIAL TRAIL ROUTES

The number of potential routes grew as more neighbors were consulted. (Appendix A21 illustrates all potential routes.) Although site visits and successive rounds of input generated additional possibilities, some suggestions that were not likely to serve bicycles or wheelchairs (due to narrowness, steep slope, numerous sharp curves, etc.) were discarded fairly early. This included the loop to THPRD's Hideaway Park as well as the interim pedestrian route proposed in the *Fanno Creek Greenway Trail Action Plan* (Appendix A12-A13). These routes still have value for connecting pedestrians to the future trail but would not merit funding as regional trails. Many of the additional routes suggested are streets that are not fully developed with sidewalks and bike lanes or bikeways (Appendix A18-A19). The trail project was sometimes perceived as a way to provide missing infrastructure that was not built when land was subdivided, for example, to improve existing roadways. In other locations, the alternatives were suggested so that the trail would not be near someone's front or back yard. In locations where homes are constructed up to property lines, landowners use the public right-of-way as private yards and trail development would impact this use.



Hideaway Park east of SW Oleson Road.

Some of the routes were major thoroughfares: SW Multnomah Boulevard, Vermont Street, Shattuck Road, and Taylors Ferry Road. These had the advantage of being direct, continuous, and well-known. Unfortunately, with a limited number of through roads in southwest

Portland, these all carry considerable traffic. Although mapped as “city bikeways” in Portland’s *Transportation System Plan*, such busy roads are often not used by a wide range of riders. (See Appendix A18 which was developed for use by the Bicycle Advisory Committee to the Portland Office of Transportation.) Public comment on the SW Multnomah Boulevard bike option, during development of the *Fanno Creek Greenway Trail Action Plan*, confirmed that even dedicated cyclists avoid these bike lanes and use quieter neighborhood streets. The Bike Master Plan in Beaverton’s *Transportation System Plan* also uses major streets but plans to supplement them with a substantial number of off-street trails. (See portion of plan at Appendix A23. The update by City of Beaverton, Washington County, and the Tualatin Parks and Recreation District began October 2005 and was expected to be complete in early fall 2006. The printed revision (dated October 2006) was received in March 2007 (Appendix A35).)

Since safety is a top priority, PDOT supplied data on the number and speed of vehicles at different locations (Appendix A24). The map on problematic routes highlights some of the routes with higher posted speeds, which are frequently exceeded. It also shows the number of cars in a 24-hour period. Less experienced bicyclists are not confident enough to ride along streets with more cars going at faster speeds. Trucks and buses can also be intimidating due to their size (Appendix A25). Although these routes have many useful destinations, the noise and fumes of so many vehicles can also degrade the pedestrian experience. Although development of bike lanes and sidewalks along these thoroughfares would provide transportation benefits, they did not have good potential as a combined transportation/recreation route similar to the existing Fanno Creek and Willamette Greenway Trails.

For discussions with neighbors, then the general public, the overall trail was divided into six initial areas (Appendix A6-A11, A21). Opportunities and constraints for each were developed through site visits, walking tours, and public meetings with neighbors. (See Appendix B40 for Opportunities and Challenges for each area.)

### TRAIL RECOMMENDATIONS, OPTIONS, AND ALTERNATES

At the second round of neighbor meetings in May and a stakeholder meeting and public Open House in June, all suggested routes were described. The first recommendations to drop from further consideration were those routes suitable for only pedestrians or impacted by high traffic volumes and speed. Opportunities and constraints were described for remaining potential routes and comments were requested.



44. SW Multnomah Boulevard bike lanes



45. Bus and bicycle

*“A 2002 report from the Federal Highway Administration (FHWA) states that while 95 percent of pedestrians are likely to survive being struck by a vehicle traveling at 20 miles per hour, only 15 percent are likely to live through a collision with a vehicle traveling at 40 mph.”<sup>18</sup>*

<sup>18</sup> *Mean Streets: How Far Have We Come? Pedestrian Safety, 1994-2003*, p. 19.



## Trail Design & Alignment



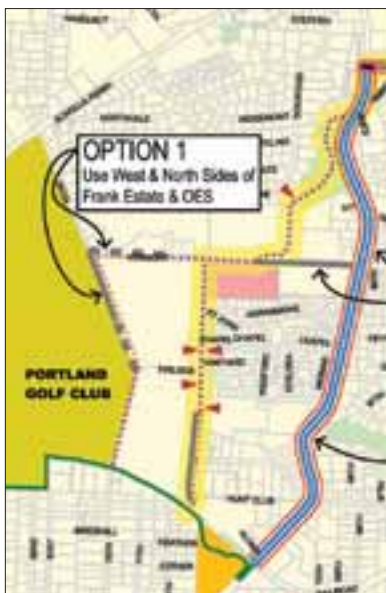
46. SW Vermont has several steep, sustained hills



47. Oleson Road: Existing Condition



48. Oleson Road: Simulated Condition



Based on feedback and further fieldwork, additional segments that relied on the busy streets were removed from consideration. Then combinations of different short segments were analyzed. The map in Appendix A28 was developed to show trail types that could be developed at each trail segment. Then PP&R staff were joined by additional traffic safety, engineering, and right-of-way staff from the Portland Office of Transportation on field visits to analyze road crossings, sight distance constraints, potential sidewalk location, right-of-way encroachments, and other design considerations. Transportation staff generally evaluates transportation solutions for cost, efficiency in moving vehicles, safety for all modes, and similar engineering values. For this trail project, they also considered “recreational values” that make a route more attractive to bicyclists and pedestrians. This sometimes meant a trade-off of longer length to avoid steep grade or tying together scenic routes and recreation destinations.

At the second public Open House in October, recommended trail routes were presented. This was illustrated on a map (Appendix A29) that included “options” that are variations to the preferred routes that meet project criteria for safety, connectivity, context, and diversity. “Alternates” were routes with less preferred variations that do not meet the project criteria as favorably. The following discussion begins with the western areas and moves eastward.

### SW OLESON ROAD

#### SW Garden Home Road to SW Dover Street

Washington County has developed a design for major capital improvements to portions of SW Oleson Road in the Red Electric study area while the Red Electric route was being considered. (See Appendix A25-A26). Since using bike lanes and sidewalks along the improved street is a potential Red Electric option, project updates were provided at public meetings for the Red Electric trail study. The final plan is to provide two travel lanes with center left turn lanes at selected intersections, sidewalks and bike lanes. The project land use process was recently completed with land use approval from both Washington County and the City of Beaverton. Construction is tentatively scheduled to start at south and be done in phases. The portion north of SW Vermont will start later in 2007 with overall project completion by the end of 2008.

At several locations, the center turn lane also provides space for protective medians that will allow pedestrians to cross SW Oleson more safely. A pair of crossings to be located near Lambs Thriftway and the Garden Home Recreation Center (between SW Garden



Home Road and SW Aloma Way) will provide a direct connection to the existing east end of the Fanno Creek Greenway Trail. Additional crossings at SW Miles Court and SW Dover Street will supplement the traffic signal, ramps, and crosswalk at SW Vermont Street. Bike lanes (5' wide) and sidewalks (6' wide) will be constructed on both sides of the street. Posted speed will remain 35 mph.

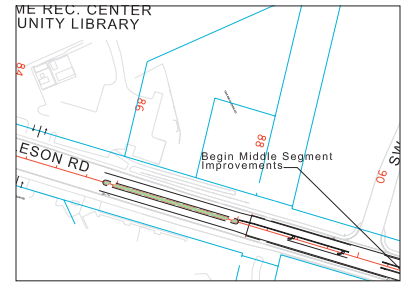
### WASHINGTON COUNTY RECOMMENDATIONS

Fanno Creek Greenway Trail and/or SW Garden Home Road to SW Dover Street and/or Alpenrose Dairy

At the west end, SW Oleson Road is an “alternate” or “fallback” on-street connection because sidewalks and bike lanes would be on a busy street. The recommended route on the east side of the Frank Estate and Oregon Episcopal School has easement challenges but would minimize on-street travel and reuse some existing private trail. The route labeled Option 1 (Appendix A1) would be better than SW Oleson but has more on-street distance and additional slope challenges. Determining what should be done and facilitating it will depend on additional public process by the City of Beaverton, Washington County, and Tualatin Hills Park and Recreation District when the bicycle/trails map is updated. Additional opportunity will occur if Oregon Episcopal School begins to expand according to its master plan. There is currently a single access (SW Nicol Road) to the school and it connects to the busy SW Scholls Ferry Road. Making an additional connection by completing SW Vermont would reduce driving distance to school from some directions, but an improved bicycle-pedestrian route might provide an alternative to driving.

Some multi-family housing north of SW Vermont and west of SW Oleson is extremely close to Fanno Creek and vulnerable to flooding. When redeveloped, environmental and flood hazard regulation will likely require buildings be set back from the creek, which might make room for trail between new buildings and the creek. This route would allow bicycle-pedestrian connection to SW Willowmere Drive if a bridge were constructed over Fanno Creek at the former pump station site. Baumann Park along the main-stem of Fanno Creek is to have a master plan soon and may be a site for mitigation work (tree planting) connected to the SW Oleson Road project.

If the route closer to Fanno Creek north of SW Vermont is not developed, then Option 2 (Appendix A1) would use on-street bike lanes and sidewalks along the north end of the SW Oleson Road project. The last part of trail in Washington County would use SW Dover Street, which might benefit from some traffic calming that widens one or both sidewalks and narrows lanes or removes one lane of parking.



*Proposed medians on SW Oleson Road between Garden Home Recreation Center and Lamb's Thriftway*



*49. Existing trail between Frank Estate and Oregon Episcopal School*



*50. View of wetlands and Ivy Lake Court apartments from SW Vermont near Montclair Elementary School*



*51. Ivy Lake Court and Fanno Creek*

## Trail Design & Alignment



52. SW Dover Street looking east towards Alpenrose Dairy



52. Alpenrose Dairy from northwest



54. SW Fairvale Court on east side of SW Shattuck (from northeast corner of Alpenrose Dairy)

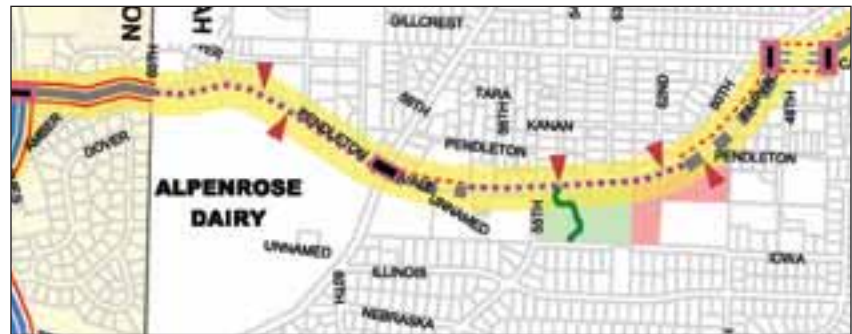


55. Former Red Electric roadbed at north side of Pendleton Park

### WEST SIDE OF SW PORTLAND RECOMMENDATIONS

SW Dover Street at west side of Alpenrose Dairy to SW Fairvale Court and SW Cameron Road

At the west end of Portland, a substantial length of off-street trail is possible with cooperation from Alpenrose Dairy. The civic-minded Cadonau family has already provided impressive recreational features for public benefit. Improvements include Little League fields and stadium, velodrome for bicycle racing, quarter midget race track, Dairyville museum, opera house, and picnic area. The trail could reduce vehicle trips by visitors, helping minimize the impact of dairy truck traffic on



the neighborhood. A street connection that linked to SW Pendleton Court, a public right-of-way west of SW Shattuck, would be a likely requirement if the Alpenrose property were redeveloped. However, if Alpenrose Dairy were willing, developing the trail on private land would minimize impact to its northern neighbors who use SW Pendleton Court. The former Red Electric alignment appears to have been just south of the SW Pendleton Court right-of-way, which is offset from SW Fairvale Court on the east side of SW Shattuck. Crossing from the northeast corner of the Alpenrose property to SW Fairvale Court would avoid a jog in the trail at SW Shattuck. (See Appendix A30.)

Residents in or near SW Fairvale Court between SW Shattuck and SW Cameron raised the possibility of improving two alternative routes: SW Shattuck and SW Cameron; SW Shattuck and SW Illinois. Neither solution works as well as using the former Red Electric route because trail users would have to travel along busy Shattuck and Cameron. Since some review comments of the draft study still urged improvement of SW Shattuck and Cameron instead of undeveloped SW Fairvale right-of-way, PDOT did cost estimate. The \$4,761,000 cost of major city streets is nearly four times as expensive as the \$1,277,000 for off-street and culdesac route. The extra road crossings at SW Cameron or Illinois are oblique intersections. The crest of hill, truck entrances to Alpenrose Dairy and speeding on SW Shattuck

add additional danger to route crossing at SW Illinois. Using SW Fairvale Court right-of-way might require development of a short street segment next to westernmost property, currently gravel and used by a landscaping business. However, traffic to those parcels, even if redeveloped to housing, is likely to be minimal. This alignment would make an all-weather, bicycle-pedestrian connection to Vermont Hills Community Garden, Vermont Hills Methodist Church, Pendleton Park, and Hayhurst Elementary School, where a sometimes muddy footpath already demonstrates demand. With about a dozen homes and no through street, the portion of SW Fairvale Court south of SW Cameron might be suitable for developing as Trail Type “B” – vehicles, pedestrians, and cyclists sharing a narrow road – rather than adding sidewalk.

### CENTER OF SW PORTLAND RECOMMENDATIONS

SW Cameron Road at SW Fairvale Court to SW Cullen to SW Bertha Boulevard at SW Capitol Hwy

North of SW Cameron, the alignment recommendation along SW Cullen rather than SW Fairvale is due primarily to land ownership and development history. SW Fairvale appears to be right next to former rail line and has the more gentle curves and slopes typical of railroad. However, SW Cullen is longer since a portion of SW Fairvale was converted from rail right-of-way to private lots. Some of these lots have homes very recently constructed on or close to optimal trail route. Neither SW Fairvale or SW Cullen offers the best crossing of SW



Cameron, but improving a short segment of SW Cameron and adding two crosswalks should provide safe crossings in both directions. Both streets have similar grade, street crossing and susceptibility to landslides. SW Cullen is not as level and gently curving as SW Fairvale which was influenced by railroad slope and curve requirements. Since both streets have narrow pavement, need for on-street parking and homes



56. SW Fairvale Court - west end of semi-improved roadway

*Seven in ten Americans (71%) say they walked or rode a bike to school when they were a child. But, today most school-aged children (7 to 17 years old) are either driven by a parent (53%) or a school bus (38%). Less than two in ten (17%) walk.<sup>19</sup>*



57. SW Cameron looking east toward SW Cullen



58. SW Cullen north of SW Cameron

<sup>19</sup> *Pedestrian Facilities Users Guide: Providing Safety and Mobility*, p. 17.



## Trail Design & Alignment



59. SW Cullen Boulevard



60. SW Cullen Boulevard east of SW 39th Avenue (proposed subdivision site)



61. View west of private property at SW Bertha Boulevard and SW 33rd Place

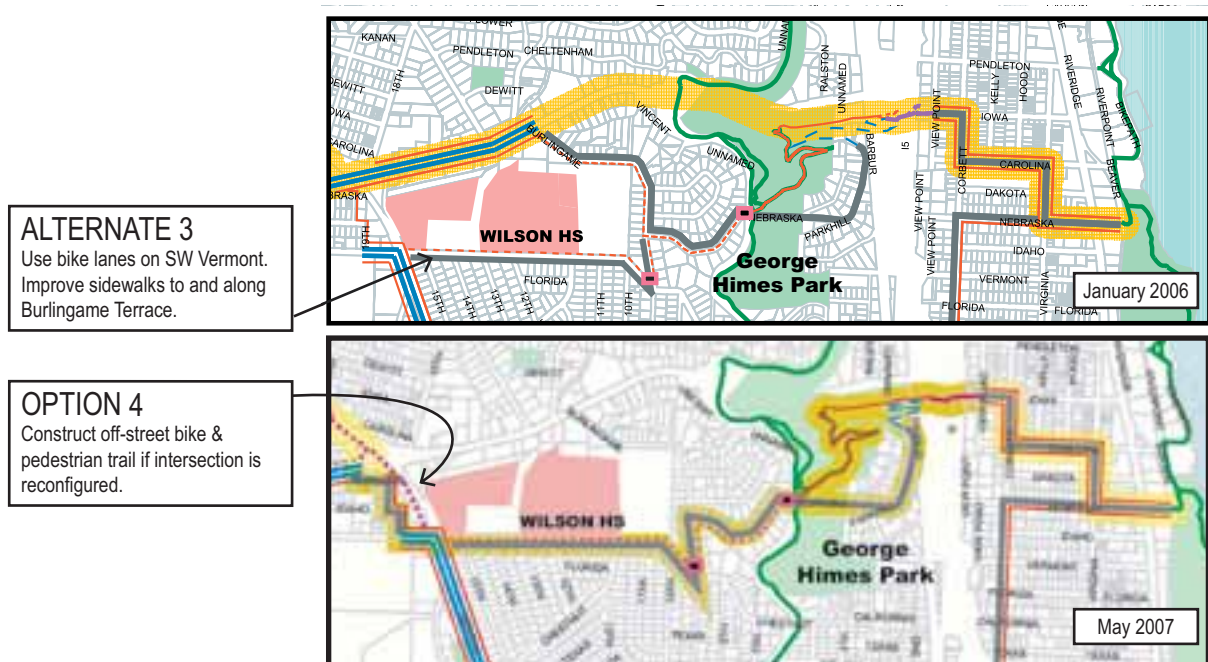


62. SW Bertha west of Hillsdale Town Center

next to property lines due to steep hillside, many homeowners have landscaped a portion of the public right-of-way. Although some private use of public land will need to be reduced, a “county road” character and screening/fencing for privacy and security can be provided.

Two private properties are located between the east end of SW Cullen Boulevard and the west end of SW Bertha Boulevard. A recent land division application (LU05-128857 LDS EN/PC05-130134) will divide an approximately 48,000-square-foot site into four lots, an environmental resource tract and a common green street (Appendix A29). A trail could fit in the street improvements or open space tract that would not be developed due to site constraints and environmental zoning. The east private property is owned by a long-time resident opposed to trail use. (See Appendix D2-D5, D14-D15, D21, D23-D24.) Historically, PP&R has worked with willing sellers or donors and has not condemned property for trail connections. Therefore, as long as this property remains a single-family residence, there would be a gap in the trail. Staff did explore bypass routes to be used on an interim basis but all had grade and sight distance challenges as well as more neighbors who did not want trail users next to their homes. Although it may take decades, the property is likely to redevelop and a trail connection to improve pedestrian and bicycle connectivity would be a likely requirement for land use approval.

SW Bertha Boulevard north of Capitol Highway has paving and some curbs and sidewalks. It also has more traffic than neighboring dead-end streets so a curb and sidewalk may be needed for pedestrian safety. Some neighbors suggested traffic calming to discourage through traffic, but that decision should be made through traffic study when this segment is designed. The recommended route might require an easement at the apartment building and then could extend over city-owned property managed by PDOT. Since the route is adjacent to the problematic intersection of Beaverton-Hillsdale Highway, SW Capitol Highway, and SW Bertha Boulevard, trail location and design will have to respond to future changes of intersection. Option 3 (Appendix A1) would avoid the intersection by improving SW 25th Avenue and SW Nebraska but is not preferred due to steep grade and narrowness.



## EAST SIDE OF SW PORTLAND RECOMMENDATIONS

### SW Capitol Hwy at SW Bertha Boulevard to SW Macadam Boulevard

The eastern portion of this segment of trail had the most alternatives because no solution was ideal. Using SW Vermont from Oregon Episcopal School or SW Oleson Road to SW Chestnut was considered because it made a good connection to the Southwest Community Center, Gabriel Park, Mary Rieke Elementary School, and Wilson High School. Traffic speed, volume, and use by buses and trucks together with several long steep climbs were factors that disqualified it (Appendix A24-A25). A SW Bertha to Vermont to Chestnut route was initially rejected because Bertha slopes down before Vermont goes uphill (1,175 feet at 6.8%) and would require use of dangerous intersections at SW Burlingame Avenue or SW Terwilliger Boulevard. Following public comment on the draft study, this route was added to the Recommended Route map (Appendix A34) as Alternate 3. Alternatives are less preferred variations since they do not meet the project criteria as favorably. The first detail shows the recommended route and alternative when the Planning Study was completed in January 2006. The second shows the revision proposed after a site tour and discussions with PDOT staff of the Community & School Traffic Safety Partnership. This team did not contribute to the initial Red Electric analysis but their subsequent crash analysis work has helped to identify the type of places where automobile-bike-pedestrian crashes are more likely to occur. PP&R accepts their recommendation that the greater number of cars and driveways on SW Capitol Highway creates more dangerous conflict points than SW Vermont.



63. Looking west at bridge over former Red Electric and existing SW Bertha Boulevard and Beaverton-Hillsdale Highway



64. SW Capitol Hwy in Hillsdale Town Center

## Trail Design & Alignment



65. SW Capitol Hwy looking east to SW Terwilliger Boulevard and Terwilliger Trail

The recommended route presented at the final Open House is shorter, has many important destinations, and may still be used by more expert cyclists. The January 2006 analysis noted that the Hillsdale Town Center generates heavy traffic (including trucks and buses) and has many driveway crossings but found that pedestrian and bicycle travel is possible because traffic speeds are controlled by a series of traffic signals, crosswalks are marked and signed, and street trees will grow to shade recently improved bike lanes and wide sidewalks. Although the community helped develop a capital improvement plan for SW Capitol Highway which confirms the need for sidewalk extension east to SW Terwilliger Boulevard and Terwilliger Trail, PP&R will not seek the estimated \$697,000 for curb and sidewalk on the south side as part of Red Electric Trail construction. PDOT is currently working on safety enhancements on SW Vermont.



66. George Himes Park

### GEORGE HIMES PARK

SW Terwilliger Boulevard at SW Burlingame Terrace to SW Viewpoint Terrace

Getting down the steep east face of the west hills was particularly challenging. The recommended route, shown at the October Open House (Appendix A34), proposed using the north side of the ravine in George Himes Park (below SW Capitol Highway) and building an elevated structure for two-way bicycle passage on a different alignment than a combination of paved trail and stairs for pedestrians. The revised recommendation (former Option #4) would use SW Burlingame Avenue and Burlingame Terrace to reach SW Terwilliger Boulevard. Pedestrians could use existing trails in George Himes Park while cyclists would continue east on SW Nebraska Street and SW Parkhill Drive. This route has two steep segments (200 feet at average 17% and 450 feet at average 8.8%) but much less traffic and a dramatic view of Mt. Hood. An elevated structure for two-way bicycle passage would be needed to descend down the south side of the ravine east of George Himes Park in ODOT right-of-way. Both sides of the ravine are severely degraded by invasive plants and the overall habitat value of the park (according to the *Southwest Hills Resource Protection Plan*) is limited since it is surrounded by SW Capitol Highway, Terwilliger and Barbur Boulevard, and I-5 freeway. Some nearby residents, park users and representative of Friends of Marquam fear that additional use, particularly by bicyclists, would degrade the park. Supporters note that the park's security issues could be reduced with increased usage and that views of the structure could be enhanced by using vegetated gabions to support the trail (Appendix C12).



67. George Himes Park Trail, between SW Nebraska and Marquam Trail



68. Middle section of SW Parkhill



One citizen suggestion from the October 2005 Open House proposed keeping bicycles out of the park by adding a lower level to a new SW Barbur Boulevard bridge, then developing a trail to and on SW Slavin Road. While this connection would add valuable connectivity between neighborhoods divided by SW Barbur Boulevard, the route is twice as long as the recommended route, developed after the Open House. The proposed SW Slavin route goes north over a mile before SW Seymour Street connects to SW Corbett Avenue where cyclists could finally cross I-5. It also depends on replacement of a bridge (“no compelling reason to replace this structure”) that an ODOT structural design engineer says is “not going to be replaced any time soon.”<sup>20</sup> After additional advocacy in late 2006, PP&R had PDOT engineers develop design recommendations and estimated costs for this route. The estimated cost of \$5,668,000 does not include property acquisition or bridge improvements. The recommended solution would use switchbacks down the south side of ravine closer to or possibly under the SW Barbur Boulevard bridge on Oregon Department of Transportation property outside George Himes Park. It would join an improvement to the existing Marquam Trail through George Himes that passes under the I-5 bridge then use quiet neighborhood streets and the traffic signal on SW Macadam Avenue to connect to the Willamette Greenway at north end of Willamette Park. (See Appendix D30-D35 for further comments on George Himes Park.)

### SOUTHERN ALTERNATE AT EAST SIDE OF PORTLAND SW Bertha Boulevard at SW Capitol Highway to SW Macadam Boulevard at SW Taylors Ferry Road

Alternate #2 (Appendix A1), which uses more of the original Red Electric route on SW Bertha Boulevard south of Capitol Highway, was less favored because the trail location would be so auto-dominated. SW Bertha Boulevard has gentle slope, sidewalks, bike lanes, and Stephens Creek Natural Area, but the traffic noise can be loud. The route next to the SW Barbur Boulevard at Terwilliger intersection is both noisy and confusing. If the recommended solution in George Himes Park is too expensive or lacks enough community support, an accessible/bikeable route could potentially be designed on undeveloped land currently owned by Riverview Abbey Mausoleum. Cyclists and pedestrians could avoid the Bertha segment by using SW Vermont and existing Terwilliger Trail and bike lanes as traffic volumes and speeds are lower east of Fulton Park Community Center. In addition to some steep segments of neighborhood streets, this route requires significant improvements to lower section of SW Taylors Ferry Road.



69. South side of Barbur Bridge structure (below end of SW Parkhill)



70. Marquam Trail between Barbur and I-5 bridges (east of George Himes Park)



71. SW Bertha Boulevard south of SW Capitol Hwy



72. SW Kelly at SW Canby Street



73. SW Taylors Ferry Road

<sup>20</sup> Appendix D34.1





# Trail Implementation

## TRAIL COSTS

Staff at the Office of Transportation prepared cost estimates for project-sized segments of the recommended route. They estimated quantities of each item from flaggers to erosion control and excavation to paving, including all the lights, signs, stormwater features and property acquisition that were likely. Design, permits, construction management, and standard PDOT contingency are included. Although some rights-of-way have existing pavement, those without curbs were not built to City standards. Therefore, a conservative assumption was made that existing pavement would be removed and entirely new road would be constructed. Testing during project design might find usable pavement that would not require full reconstruction. Cost estimates for all on-street segments include sidewalk expense although some locations with low traffic volume might experiment with sharing roadway. This would also reduce costs for stormwater management. The cost estimates represent the maximum cost for design and construction of each potential project. The first total (#1-6a) is the cost for the recommended route that would link to the Willamette Greenway at the north end of Willamette Park. The second total (#1-4, 7) is the cost for the alternate that uses more of SW Bertha Boulevard and links to Willamette Greenway at the south end of Willamette Park by using SW Taylors Ferry Road. Cost estimates were not prepared for the trails outside Portland city limits. Public comments on the draft study indicated continued preferences for some alternatives, options, and non-recommended routes. Staff did additional cost estimates so that different combinations of segments could be compared. (See Appendix A33.)

## FUNDING AND PRIORITIES

The overall project is expensive for two main reasons. First, building even a narrow 20' road with single 6' sidewalk and stormwater facilities is far more expensive than building standard 12' trail with drainage swale. Second, all routes would need expensive retaining walls to support trail on steep side slopes. Fortunately, the project would be eligible for regional transportation funds in either bike/trail or pedestrian categories. Metropolitan Transportation Improvement Projects (MTIP) are selected approximately every two years. The selection process is managed by Metro and the Joint Policy Advisory Committee on Transportation (JPACT) who have established a target for the average length of bike and pedestrian improvements to be completed each selection period. Transportation Enhancements (TE) funding is available on a similar schedule, but projects compete statewide and the Oregon Department of Transportation (ODOT) manages the selection process. Recent MTIP



74. Springwater Three Bridges Project - McLoughlin overpass



75. Marine Drive Trail Gap - NE 112th Avenue



76. Willamette Greenway - Waud Bluff Trail

## Trail Implementation

| No.       | Segment location  | Trail design  | Estimated Cost                               |
|-----------|---|---|--|
| 1a.       | SW Dover Street to SW Shattuck  | 12' wide a.c. trail, 2' gravel shoulders  | \$288,000                                    |
| 1b.       | SW Fairvale Court from SW Shattuck to Cameron Road  | 12' wide a.c. trail, 2' gravel shoulders 20' roadway, curbs both sides, 6' wide sidewalk one side   | \$1,277,000                                  |
| 2.        | SW Cameron Road from Fairvale to Cullen Boulevard and on SW Cullen from Cameron to SW 39th Avenue   | 20' roadway, curbs both sides, 6' wide sidewalk one side except<br>SW Cameron: 32' wide with bike lanes and sidewalks both sides  | \$3,425,700                                  |
| 3.        | SW Cullen Boulevard from SW 39th to 35th Avenue, private land acquisition from 35th to 33rd then SW Bertha from 39th to 30th Avenue   | SW Cullen and SW Bertha: 20' roadway, curbs both sides, 6' wide sidewalk on one side except<br>12' wide a.c. trail, 2' gravel shoulders in off-street segment   | \$2,348,000                                  |
| 4.        | SW Bertha Boulevard at 30th to SW 21st at SW Capitol Highway  | 20' roadway, curbs both sides, 6' wide sidewalk one side except 12' wide a.c. trail, 2' gravel shoulder in off-street segment (on fill) [on structure]  | \$2,068,000<br>[\$3,207,000]                 |
| 5b. & 5c. | SW Vermont and SW Chestnut from SW Bertha to SW Burlingame Avenue; SW Burlingame Avenue from SW Vermont to SW Burlingame Terrace, SW Burlingame Terrace from SW Burlingame Avenue to SW Terwilliger Boulevard | SW Vermont: 6' wide sidewalk<br>SW Chestnut: 7' wide sidewalk next to wall<br>SW Burlingame Avenue and Terrace: 20' roadway, 6' wide sidewalk on one side   | \$2,369,000                                  |
| 6a.       | SW Nebraska (at SW Terwilliger Boulevard) to SW Parkhill through George Himes Park & ODOT r/w to SW Iowa at SW Viewpoint Terrace  | Bike trail: existing roadway at SW Nebraska and Parkhill; 12' wide a.c. trail, 2' wide gravel shoulder on retaining wall. Pedestrian trail: Upgrade existing route to 6' wide a.c. with allowance for retaining walls | \$4,739,000                                  |
|           | <b>TOTAL</b><br><b>TOTAL if structure required</b>  |   | <b>\$16,514,700</b><br><b>[\$17,653,700]</b> |

| No. | Segment location  | Trail design  | Estimated Cost                               |
|-----|---|---|--|
| 1-4 | SW Dover Street to SW 21st at Capitol Highway (on fill) [on structure]  | As shown above, in #1-#4  | \$ 9,406,700<br>[\$10,545,700]               |
| 7.  | SW Miles and SW Kelly, Hood and Fulton to SW Taylors Ferry Road and north side Taylors Ferry Road as needed to SW Macadam | 6' wide sidewalks both sides SW Miles Street; 12' wide a.c. trail, 2' wide gravel shoulder on retaining wall, 12' wide concrete sidewalk on SW Taylors Ferry Road | \$ 5,574,000                                 |
|     | <b>TOTAL</b><br><b>TOTAL if structure required</b>  |   | <b>\$14,980,700</b><br><b>[\$16,119,700]</b> |

Figure 3.  
Trail Cost Estimates for Recommended Route and Alternate 2

projects include Springwater Three Bridges (\$4.71 million), Marine Drive Trails Gap (\$966,000), and Springwater Sellwood Gap (\$1.237 million). The Waud Bluff Trail to Swan Island (\$1.2 million) was funded through Transportation Enhancements. These budgets include the 11% local match that is supplied by the City's General Fund or by PP&R System Development Charges (SDCs).

During the public meetings, PP&R staff noted that there are other priorities for trail funding and that there will be a delay before any Red Electric trail implementation. Top priorities include the Willamette Greenway Trail at South Waterfront/North Macadam, last gaps in the Marine Drive Trail and Columbia Slough Trail near West Delta Park. Although implementation will not happen immediately, input on which segments should be done first was sought. Every segment had supporters. The case for starting at the west was that costs were moderate and access was provided to the long length of existing Fanno Creek Greenway Trail. The case for starting at the east was that it provided a critical connection through the barrier of SW Barbur Boulevard and I-5 freeway. If scoring criteria for MTIP still support projects in town centers, projects on either side of the Hillsdale Town Center might be more likely to secure funding. Realistically, completing all segments will probably take ten to twenty years and a bond measure or levy might be needed to secure the balance of funds.

### TRAILHEADS, OPERATIONS AND MAINTENANCE

The Red Electric trail will mainly serve southwest residents living nearby rather than being a major "destination" like the Springwater Corridor or Marine Drive Trail. However, providing drinking fountains and restrooms at some locations will increase user comfort. Willamette Park at the east end and Pendleton Park near the west end have these facilities. When the intersection of SW Beaverton-Hillsdale Highway, SW Bertha Boulevard, and SW Capitol Highway is redeveloped, a multi-modal transit/bicycle/pedestrian development is suggested by the *Recommended Hillsdale Town Center Plan*. Some residents fear that trail users who cannot walk or ride to the trail (due to distance or lack of bike and pedestrian facilities) will park on their streets. Although this problem has not developed on other trails in Portland, it might be possible to share parking at Alpenrose Dairy, Vermont Hills Methodist Church, Glencullen Baptist Church or Wilson High School when not needed by primary users. Shared parking agreements reduce the need for new pavement by utilizing existing parking lots at specified times when the owner does not use some or all of their existing parking capacity.



77. Proposed Willamette Greenway at North Macadam (South Waterfront)



78. Existing Fanno Creek Greenway Trail west of SW Oleson Road



79. Pendleton Park restroom



80. Existing gravel parking area in Hillsdale Town Center

## Trail Implementation



81. Overflow parking area at northeast corner of Alpenrose Dairy



82. Fanno Creek Greenway Trail



83. Springwater Corridor



84. Willamette Greenway Trail

Operations and maintenance cost for the recommended project will be approximately \$22,000/year. This relatively low cost for PP&R is due to the amount of trail that is in or along a road. In those areas, the Office of Transportation maintains the roadway (if built to City standards) and adjacent property owners maintain the curb and sidewalk. The recommended route in Portland has about 6,200 feet of off-street trail and 17,300 feet of on-street trail. The recommended route in Washington County is 5,800 feet of off-street trail and 2,300 feet of on-street. O&M impacts would be similar in Washington County. Although the use of the improved SW Oleson Road would minimize additional capital expenditure and operating expense, it would include over 7,000 feet of on-street trail. The recommended off-street route would provide a safer, more pleasant experience for the widest range of users.

### CONCLUSION

Following agency review, the project electronic mailing list (listserv) noted that the plan was available on the web for review. Following revisions based on public comment, Parks Board review, and Bureau Director's approval, the study will be presented to City Council. Options of adding route(s) to the *Transportation System Plan* and/or *Comprehensive Plan* are also possible but require input by Commissioners in charge of PP&R and Transportation. Different segments of the proposed trail will be evaluated as trail funding opportunities arise. Staff will also work to secure needed easements when land is developed.

A recommended route and estimated costs demonstrate that developing an east-west, multi-modal trail that extends the Fanno Creek Greenway Trail is possible. In fact, the trail might use the Fanno Creek Greenway Trail name rather than Red Electric since it does not reuse the railroad route everywhere. Although many neighbors on potential routes expressed concerns during the study, support for trail development is likely to grow if southwest Portland continues to lack bicycle and pedestrian infrastructure. Although Portland recently updated the Local Improvement District (LID) process, street improvements remain the responsibility of adjacent landowners and limited City funds are not likely to upgrade local streets. Off-street trail, shared road, and signing existing sidewalks are far less expensive than full street improvements. Projects seen as "maintenance" rarely get regional transportation funds, but bike/trail and pedestrian projects do get funded in order to meet targets for each travel mode.



To conclude, extending the Fanno Creek Greenway Trail to the Willamette River would provide a much-needed setting for residents of southwest Portland, Beaverton, and Washington County to travel east-west without using automobiles. It is challenging terrain through which to weave trail, but much of the southwest has few places to walk or ride. The recommended route would connect recreation facilities such as THPRD's Garden Home Recreational Center, Baumann Park, Alpenrose Dairy, Pendleton Park, Wilson Pool, George Himes Park, and Willamette Park. The route will certainly be used for exercise but also offers areas for quiet contemplation of wildlife, Fanno Creek, and forested areas.

The use of as much off-street trail or quiet streets as possible would enhance use by the young, old, and disabled. The trail would help provide "Safe Routes to Schools" such as Oregon Episcopal School, Montclair, Hayhurst, and Mary Rieke Elementary Schools, Gray Middle School, Wilson High School, and Portland French School. It also passes near several churches and retirement or care centers to and from which visitors, guests or residents could walk and ride. Getting fresh air and sunshine is particularly valuable to seniors. They can stay fit and travel independently, even if they no longer drive.

Having a through route for bicyclists will encourage cycling to work, school, visits, and errands. Cycling skills are best developed separate from traffic or sharing road with low speed and numbers of vehicles. The proposed route would reconnect Hillsdale and Hayhurst to neighbors along the Willamette River and the growing employment area of South Waterfront District. More residents would be able to access Terwilliger, Willamette Greenway and Springwater on the Willamette Trails. It would also promote cycling to the west by those unwilling to use bike lanes on busy Beaverton-Hillsdale Highway.

The existing Fanno Creek Greenway Trail enhances the watershed, residences, and communities from Tigard to Garden Home. Being able to reach it and extending it to the Willamette River will make southwest Portland more walkable, bikeable, livable. This is a long-term vision that will require citizen input, cooperation, and support. PP&R and PDOT thank all those who have worked with us to select a route.



85. Marine Drive Trail



86. Marine Drive Trail



87. Trailhead at Peninsula Crossing Trail



88. Fanno Creek Greenway Trail



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