



Department of Civil and Environmental Engineering
CE454 Urban Transportation Systems

Final Report

Feasibility Evaluation and Recommended Bridge Alignment
Pedestrian Bridge Installation
Wildwood Trail Burnside Crossing

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DISCLAIMER

“This report is the result of an academic exercise. The results and recommendations are the opinions of the student authors only.”

INTRODUCTION

The Wildwood Trail system extends approximately 40 miles throughout the West Hills area of Portland. This scenic trail is designed for recreational pedestrian use.

Several gaps exist along the trail system. The object of this study is the gap in the Wildwood Trail at West Burnside Road where pedestrian traffic from the trail is forced to cross a busy and potentially dangerous location on West Burnside Road. Daily traffic on W. Burnside is in the order of 24,000 vehicles per day creating and a dangerous pedestrian/vehicle interface. A proposed solution to improve public safety is the construction of a pedestrian bridge above W. Burnside, alleviating the pedestrian/vehicle interface. The project report includes:

- Results of site investigation
- Optimal bridge site location
- Preliminary cost estimate of bridge installation

Portland State University is pleased to submit the findings of this project.

METHODOLOGY

A site investigation and document investigation with the City of Portland Department of Parks and Recreation and The Office of Transportation were conducted. Additionally a Geotechnical site investigation was performed

Documentation

The problem of the W. Burnside crossing is well known within transportation departments in Portland due to the West Burnside Pedestrian Access Study conducted in 1996. This comprehensive study conducted for the City of Portland Bureau of Transportation Engineering and Development Pedestrian Program outlines the problems associated with a cross walk of any kind including such hazards as limited sight distances, grade of the canyon, and heavy traffic volume. Although less expensive than a bridge, a crosswalk does not remove the pedestrian/vehicle interface and is an unrealistic approach to solving the problem.

Site Investigation

Concurrent with the document investigation, a site investigation and site survey were performed. What becomes immediately apparent at the Wildwood Trail crossing is the speed and volume of vehicular traffic on W. Burnside at this location, further investigation reveals limited sight distances in both westbound and eastbound directions with the eastbound sight distances being

critical. Eastbound traffic is on a downhill grade which increases the stopping distance while navigating a turn in a heavily vegetated canyon which severely reduces sight distance (see Fig. 1). Due to this limitation in sight distance and heavy traffic flow, the installation of a marked crosswalk or signalized crosswalk are impractical and may even increase the hazard to both pedestrians and motorists. The construction of a tunnel is also impractical both for the topography of the area and due to buried utilities.

RESULTS

A site survey was performed to obtain topographic information concerning trail alignment, overhead utilities, and roadway location. Surrounding terrain slopes up sharply on both the north and south sides of West Burnside Road. The area surrounding the trail is wooded with dense underbrush. Evidence of previous slope failures was noted on the North Slope above W. Burnside indicating the need for further Geotechnical investigation for the proper design of the bridge foundations.

A plan view of the survey with the recommended bridge alignment is shown in Figure 1. The total span of the bridge is expected to be 130 feet. The proposed alignment was chosen to minimize span and difference in elevation of the bridge supports. The proposed alignment will also provide access to the trail from the parking lot on the South side of W. Burnside by utilizing the existing south trailhead. It is recommended that the North trailhead be removed and returned to native vegetation to discourage use after the pedestrian bridge is installed. The recommended bridge alignment will provide sufficient vehicle clearance for traffic on W. Burnside.

A Cost summary conducted for the Bureau of Transportation Engineering & Development estimated the cost of a pedestrian bridge at this location at \$1.3 million in 2003 dollars. The \$1M+ cost is supported by internal memos using the recent Three Bridges project as a guideline.

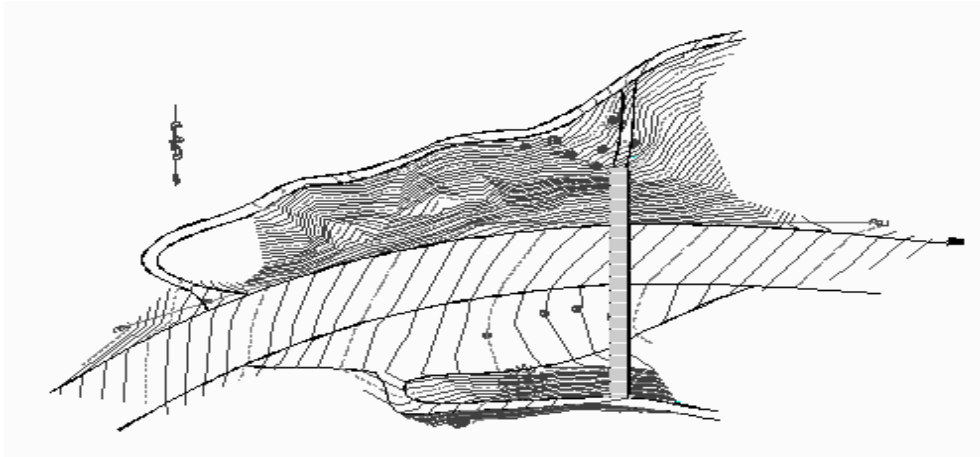


Fig. 1 showing the topography of the Wildwood Trail and location of proposed pedestrian bridge.

This investigation recognizes that current pedestrian traffic at this intersection is mainly recreational in use and that the expenditure of public funds on more generally accessible transportation projects take priority. It can not be ignored that the current situation at the Wildwood Trail/W. Burnside intersection is, as it currently exists, a danger to both pedestrians and motorists and must be addressed with bridge funding, design, and construction.

REFERENCES

References are included as Appendices

APPENDICES

West Burnside Pedestrian Access Study, MURASE Associates and kpff Consulting Engineers, City of Portland Bureau of Transportation Engineering and Development Pedestrian Program, June 30 1996

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