

SW Marquam Hill Traffic Calming Project Phase I - Final Evaluation

Introduction

The Marquam Hill Traffic Calming Plan is a result of an interagency agreement with the City of Portland (COP) and Oregon Health Sciences University (OHSU) to mitigate impacts of institutional auto traffic on neighborhood streets. It follows recommendations made by the Citizen Advisory Committee and the Marquam Hill Plan, which was adopted by Portland City Council in July 2002.

This report identifies the goals and objectives of the project, its process and a final traffic calming plan as well as an evaluation of the effects of the plan's implementation.

Project Background

The Marquam Hill Plan identified certain local streets serving Marquam Hill for study and potential traffic calming in support of OHSU long range development. This Marquam Hill Plan and Actions Charts became part of the neighborhood improvements identified in the Portland Aerial Tram Study in June 2004.

In April 2005, City Council approved a resolution directing the City to finalize negotiations with OHSU and implement a Traffic Calming Study for Marquam Hill. A chartering meeting was held in May of 2006 and the first Citizen Advisory Committee (CAC) meeting held in June of that year.

The streets identified for this study include:

- Bancroft Street
- Condor Avenue
- Condor Lane
- Hamilton Street
- Hamilton Terrace
- 6th Avenue Drive/Gaines Street Connection

These streets are classified as local service streets. The CAC and the neighborhood were concerned that these streets experience an inappropriate amount of traffic stemming from the institutions within the area.

Over the next seven months, monthly CAC and neighborhood meetings were held to discuss traffic issues and possible mitigation measures.

Project Goals

The traffic issues expressed by the neighborhood and the CAC came down to four main concerns:

1. High volumes of vehicles on local streets from cut-through institutional traffic
2. Speeding vehicles on local streets eroding neighborhood livability
3. Bicycle/auto conflicts at Condor Lane and Terwilliger Blvd seen as dangerous

4. Lack of pedestrian amenities making streets unsafe to walk

Because of these concerns, the CAC developed three project goals for the Marquam Hill Traffic Calming Project:

1. Influence auto traffic to use arterials to access Marquam Hill institutions
2. Influence speed to slow auto traffic using local neighborhood streets
3. Enhance safety for residents, pedestrians, bicyclists and motorists

Existing Transportation System

All streets included in this project are classified as local service streets, with the exception of Condor Lane, which is a Park Service Road on City of Portland Park property. Many of these local streets function as neighborhood collectors or district collectors carrying traffic from outside the neighborhood to institutions on Marquam Hill.

Hamilton Street is classified as a City Bikeway. Hamilton Street, Hamilton Terrace, 6th Avenue Drive, upper Bancroft and Homestead are classified as City Walkways. Hamilton Terrace has sidewalk along its entire length. Hamilton Street, 6th Avenue Drive, upper Bancroft and Homestead have some sidewalk but are missing sections that would make complete pedestrian connections to Barbur, Terwilliger and Gaines.

Five Tri-Met bus lines serve OHSU and other Marquam Hill institutions. Additionally, OHSU provides tram service, satellite parking lots with shuttle service, a strong carpool program, Flex-car services, and bicycle facilities. OHSU has the strongest transportation demand management plan in the City with more than 50% of its employees arriving on-site by means other than single-occupant vehicles.

Volumes and Speed Data

The following tables summarize the streets included in the study along with their volumes in vehicles per day (vpd) and the 85th percentile speeds in miles per hour (mph)

North/South Streets	Street Width	North bound	South bound	Total Daily Traffic	85th percentile speed
Location	in Ft	Vpd	Vpd	Vpd	mph
SW Condor Lane	16	813	910	1723	21
SW Condor Ave - Barbur to Condor Ln	24	845	768	1613	27
SW Condor Ave - south of Bancroft	36	188	182	370	23
SW Hamilton Terr	36	1203	971	2174	28
SW 6th Avenue Dr	32	1969	1974	3943	28
SW Homestead Dr	24	2026	1976	4002	24
SW Viewpoint Terr	36	210	192	402	28

East/West Streets	Street Width	East Bound	West Bound	Total Daily Volume	85th percentile speed
Location	in Ft	Vpd	Vpd	Vpd	mph
SW Condor Ave -Condor Ln to Bancroft	24	173	214	387	22
SW Bancroft	50	2094	1867	3961	27
SW Hamilton St	30	308	434	742	29

Traffic volumes for local service streets are normally between 500 and 1500 vehicles per day (vpd) depending on the housing density. A volume over 2000 vpd is considered high for local service streets. SW Bancroft, SW 6th Avenue Dr and SW Homestead Dr each have over 4000 vpd, indicating much of the traffic on that street is non-local.

SW Hamilton Terrace has over 2000 vpd, while both SW Condor Lane and SW Condor Ave from Barbur to Condor Lane have close to 2000 vpd. Considering the 16' roadway width of SW Condor Lane, 1800 vpd is a very high volume amount.

All of the streets studied have 85th percentile speeds within 5 mph of the statutory speed of 25 mph. The 85th percentile speed is the speed that 85 percent of drivers on the street are driving at or below. This assumes that only 15 percent of drivers will exceed a speed that is safe for driving conditions on the road.

Crash Data

Few crashes have been reported on the local street network in this area. However, the intersection of Condor Lane and Terwilliger is of concern to residents. There is anecdotal evidence of crashes and near collisions involving bicyclists at this intersection. One such crash occurred in December 2006 and was witnessed by a resident.

The skewed angle of this intersection near a curve in the roadway, coupled with the unexpected speed of bicyclists traveling downhill at this location creates a conflict point between autos on Condor Lane and bicyclists on Terwilliger.

Project Plan

To address the safety issues of bicycle/auto conflicts at Condor Lane and Terwilliger Blvd, the City Bureau of Maintenance installed additional signs on Condor Lane at Terwilliger to alert drivers to the presence of bicycles on Terwilliger. A side-road warning sign was installed on Terwilliger south of Condor Lane to alert northbound drivers on Terwilliger of the approaching roadway entrance and bike lane striping was added through the intersection of Condor Lane.

After much discussion and exploring several traffic calming concepts, the Committee decided that speed bumps would be the most effective treatment to address the high cut-through volume and speeding problems.

The project area was divided into four street segments:

- SW Condor Ave – 3 speed bumps
- SW Hamilton Terrace – 3 speed bumps

- SW Hamilton St - 4 speed bumps
- SW 6th/Bancroft/Homestead – 5 speed bumps

Four petitions were circulated, one on each of the four street segments. A 67% majority of residents' signatures are needed for the petition to pass. Approval by residents on the project streets was between 75% and 100%.

An additional component of the plan included construction of a curb extension at Viewpoint Terrace to enforce the **Do Not Enter** condition on Viewpoint at Barbur. Access to Viewpoint from Barbur was prohibited more than 10 years ago when the intersection of Hamilton was reconstructed. Neighboring residents indicated that many drivers continue to violate the **Do Not Enter** sign at Viewpoint.

Results

The following table summarizes the changes in traffic volumes and speeds for the project:

Street	Volume				85th %-tile Speed			
	Location	pre-project	post-project	Difference	% change	pre-project	post-project	% change
SW Condor Ave - Barbur to Lane		647	559	-88	-14%	26	22	-15%
SW Condor Ave - South of Lane		1613	2092	479	30%	27	25	-7%
SW Hamilton Terr - south of Bancroft		2174	2390	216	10%	28	24	-14%
SW Hamilton St - west of Barbur		3148	2744	-404	-13%	29	25	-14%
SW Hamilton St - west of Hamilton Terr		742	638	-104	-14%	29	26	-10%
SW 6th Dr - south of Gaines		3539	2936	-603	-17%	26	26	0%
SW 6th Dr - north of Bancroft		3796	2987	-809	-21%	28	22	-21%
SW Bancroft - west of 4th		3961	3195	-766	-19%	27	21	-22%
SW Homestead Dr - north of Bancroft		3879	3152	-727	-19%	24	24	0%
Overall Neighborhood Street Totals		23499	20693	-2806	-12%	27	24	-12%

Goal 1 - Influence auto traffic to use arterials to access Marquam Hill institutions

The difference in volume represents the number of vehicles that have found alternative routes to the Marquam Hill Neighborhood. This 12% drop in overall traffic is significant, and clearly addresses the Committee's goal of reducing traffic volume. The 12% reduction equates to nearly 3000 vehicles per day that are not traveling through the neighborhood.

The increase in traffic volumes on SW Condor Ave south of SW 1st/Lane Ave may be traffic headed for SW Terwilliger using SW Condor Lane through the park area. They may be trying to avoid the other streets that have more speed bumps on them. Further traffic counts will be taken during Phase 2 to determine if volumes have increased on Condor Avenue and Condor Lane.

Traffic volumes and speeds were measured on adjacent streets that did not receive speed bumps. There has been no increase in volume or speed. In fact, volumes have dropped about 10% on these streets (Bancroft, Condor and Viewpoint.)

The curb extension at Viewpoint appears to have reduced **Do Not Enter** violations. Video taken in 2007 showed 13 autos violating the Do Not Enter signs on Viewpoint at Barbur. Recent video showed only one car and one bicycle violating the Do Not Enter sign during the same time period.

Goal 2 - Influence speed to slow auto traffic using local neighborhood streets

The statutory or “posted” speed in residential neighborhoods in the State of Oregon is 25 mph. Prior to the project, drivers were driving 3-4 mph over the speed limit. However, with the addition of speed bumps in the area, the average 85th percentile speed has dropped from 27 mph to 24 mph.

While a 3 mile-per-hour drop in the 85th percentile speed may not seem like much, more significant is virtual elimination of drivers traveling at 35 mph or more. This project has clearly addressed the speeding issue.

Goal 3 - Enhance safety for residents, pedestrians, bicyclists and motorists

The addition of pedestrian and bike warning signs on SW Condor Lane at SW Terwilliger makes pedestrian and bicycle users of that intersection much more visible. Phase 2 of this project will further evaluate safety concerns at this intersection with the construction of a curb extension or by diverting traffic from Condor Lane.

Adding sidewalk or other pedestrian amenities were outside the scope and budget for this project. However the reductions in traffic volumes and speeds create a safer environment for pedestrians and increase livability in the neighborhood.