

# WEST PORTLAND INTERSECTIONS

CAPITOL HIGHWAY-BARBUR BLVD.-  
TAYLORS FERRY ROAD- I-5 FREEWAY

Patty Lee

November 4, 1995

## BACKGROUND

West Portland was an old established, quiet, low density residential community south of Portland and north of Tigard in Multnomah County . After the war lots developed in the area were at least 10,000 square feet to half an acre or more and the roads were basically unimproved and allowed no connectivity because the roads dead ended depending on the development. The area was park poor and the largest one was not maintained. Residents enjoyed the rural lifestyle and put up with inconveniences for low property taxes and unusually large scale lots with lots of trees. The Blue Bus line ran regularly throughout the neighborhood providing excellent service after the demise of the old Oregon Electric. Still residents were very dependent upon the automobile. Barbur Boulevard was a big event when it was built in the forties as it was a faster link to Portland than Capitol Highway and Slavin Road. In the late fifties the county put a moratorium on new housing starts until sewers could be installed. Also in the late fifties the I-5 freeway was finished with a Capitol Highway off ramp going to Taylors Ferry Road and then east to Capitol and on-ramps from Capitol Highway, Barbur intersection going north and south. They were the first on-ramps going north to Portland and from Portland going south to Salem. Later ODOT built ramps at Spring Garden, Multnomah-Terwilliger and finally Terwilliger going north. The on-ramp at Capitol Highway is the first on-ramp south of Portland going south on I-5. The intersection moved well until Portland Community College was built on a campus south of Capitol Highway on 49th leading to Mountain Park, which was just being developed on Mt Sylvania. The Community College was auto oriented with massive parking lots paved to accommodate them. Also at this time in the sixties, sewers were installed, the moratorium lifted by the County and new housing starts were rife. All the while, no new roads were built to accommodate the tremendous growth and the total dependence on the automobile. The Blue Bus line was swallowed by Tri-Met and the service went from pretty good to pretty bad. The only significant new project was to widen Capitol Highway and 49th to Mountain Park and Lake Oswego with a four lane speedway. As the area has increased population with the growth of single family homes on smaller lots and multiple apartment dwellings, so has the automobile increased. It is not safe to walk or bicycle because the roads have no shoulders of significant width or have the rural roads increased in width to accommodate bikes or pedestrians. The increased automobile traffic in the area along with the popularity of the Community College has strained the intersections at West Portland to the max, especially at certain peak times. In 1988 the total number of vehicles entering the intersections was 42,209 in a fourteen hour period of counting. The last count in 1992 was over 48,000 cars using the intersections

## CAPITOL HIGHWAY PEDESTRIAN TRANSPORTATION PLAN

It has been several years since the idea germinated in the SWNI Coalition Transportation Committee when they applied for an ICTEA grant to study the possibility of making Capitol Highway a parkway with pedestrian and bicycle paths lined with trees to make it a distinctive pleasant roadway. Finally the study project got underway headed by Bill Hoffman and Matt Brown from the City of Portland Transportation Bureau and a Citizen's Advisory Committee selected from each of the Neighborhoods bordering on Capitol Highway a year ago. The committee first walked the entire Capitol Highway on two successive Saturdays to get the feel of what it was like to be a pedestrian and to better understand the project they were going to work on. The weather was cold and wet, but there were at least twenty to thirty intrepid walkers determined to see this long awaited project get off to a good start.

Quoting from the Capitol Highway Draft Plan, "To anyone who has traveled along Capitol Highway, whether in a car or bus, on foot or on a bike, the West Portland segment must be one of the most frustrating transportation experiences they have experienced. For motorists and transit riders, there is an incredible amount of congestion to deal with, along with a lack of direct access to certain destinations and restricted turning movements along Barbur. Pedestrians and bicyclists must try to find their way through a multitude of confusing traffic movements, and pedestrians in particular find crossings wide and even non-existent."

The planners felt the issues at this intersection were too broad to deal with and it required a process which falls well outside the scope of the Capitol Highway Plan. The process involves the Oregon Department of Transportation, Oregon Department of Environmental Quality, City of Portland, Southwest Portland residents, Washington County, City of Tigard, and others. They felt that the solution to this problem should be a focus of its own specific study, and this is a recommendation of the Capitol Highway Plan.

Because the Pedestrian Plan could not deal with this incredible problem, I felt it important to get something started to solve some of the problem.

## West Portland

To anyone who has traveled along Capitol Highway, whether in a car or bus, on foot or on a bike, the West Portland segment must be one of the most frustrating transportation experiences they have experienced. For motorists and transit riders, there is an incredible amount of congestion to deal with, along with a lack of direct access to certain destinations and restricted turning movements along Barbur. Pedestrians and bicyclists must try to find their way through a multitude of confusing traffic movements, and pedestrians in particular find crossings which seem impossibly wide or even non-existent.

The designation of West Portland as a Town Center in the Metro 2040 plan, as well as the potential for a future light rail line down Barber Boulevard, do carry some hope that this area can redevelop into a more pedestrian friendly and less congested activity center. Currently, a "vision group" has been created by concerned residents and business owners to explore long range ideas about how this area can begin to transform itself.

To a certain extent, there is one major cause of these problems, namely the interface of surface streets with Interstate 5. Ramps to and from I-5 create a great deal of traffic movement in the area, often cause a great deal of congestion, and create pedestrian and bicycle barriers because of the kinds of movements which occur.

There are many examples of the complications generated by the I-5 ramps in this area, but the solution to all of these remains the same: access to I-5 must be reconfigured or relocated in order to make any *substantial* improvements for all of the transportation modes in this area. This is a process which falls well outside of the scope of the Capitol Highway Plan, involving a great number of stakeholders (Oregon Department of Transportation, Oregon Department of Environmental Quality, City of Portland, Southwest Portland residents, Washington County, City of Tigard, and others). The solution to this problem should be the focus of its own specific study, and this is a recommendation of the Capitol Highway Plan.

Until these issues can be given a greater level of detailed thought and analysis, the Capitol Highway Plan does not recommend making any substantial improvements to the West Portland area. Figure 27, however, illustrates some recommendations which can be carried forward in order to help establish better pedestrian access and to alleviate, to a small degree, some of the congestion pressures which are being placed on this area.

First among these recommendations is developing new sidewalks in the West Portland area where they do not currently exist. This includes the area along Taylors Ferry Road from the I-5 ramp to Capitol, as well as along the west side of Capitol from Brugger to Taylors Ferry and the east side of Capitol from Taylors Ferry to Barbur (Figure 26). A new sidewalk is not recommended on the west side of Capitol between Taylors Ferry and Barbur due to the presence of the I-5 on-ramp and the inability to get a pedestrian safely across that area.

A new full signal should be placed at the intersection of Taylors Ferry and Capitol to help meter traffic and lessen congestion, as well as to help give pedestrians protected crossings. As part of the intersection improvements there, the island formed by the right turn slip lane from Taylors Ferry to Capitol should be removed, forcing traffic to slow down and turn, or made larger to allow for a more substantial landing area for pedestrians crossing the intersection. Just west of the intersection, where the I-5 ramp meets Taylors Ferry, a large island should be constructed to give pedestrians a refuge when crossing the off-ramp. Striping and signage should indicate to motorists that there is a pedestrian crossing in this location, and that they should be prepared to yield to pedestrians at both intersections.

Where Capitol Highway crosses Barbur, there is little opportunity to improve the current situation for pedestrians for a couple of reasons. First, both Barbur and Capitol cross I-5 in this location, meaning that both roads are accommodated on one structure over the freeway. This makes any sort of roadway reconfiguration to improve the intersection infeasible since the structure would have to be rebuilt to accommodate any changes.

Another restriction on immediate change in this area is the need to maintain adequate capacity for Barbur and Capitol. The intersection is already operating at a poor level of service, as the intersection is barely able to accommodate all of the traffic which is moving through it. This gives the timing of the signals great importance in helping to move cars through the intersection and to prevent air quality problems, and, unfortunately, this timing comes at the pedestrian's expense.

Along Barbur Boulevard, one opportunity for improving pedestrian access in the West Portland area is at the Barbur/Huber intersection. Because of the lack of pedestrian crossings on the west leg of the Barbur/Capitol intersection, there needs to be a way to get pedestrians across the street west of that intersection. A logical point to do this is at Huber, where pedestrians traveling north on Capitol Highway can safely cross to destinations like Capitol Plaza on the north side of Barbur.

This crossing can be facilitated by building a median refuge in the middle of Barbur Boulevard. The best location for this would probably be just west of the Huber/Barbur intersection where its placement would not conflict with left-turning vehicles. This solution is fairly inexpensive, and provides benefits to pedestrians by allowing them to cross only one traffic direction at a time.

South of the Barbur/Capitol intersection, sidewalks are already planned for both sides of the roadway, and only one change is envisioned for the area between Barbur and Huber. At the intersection of Huber and Capitol, curb radii are extremely wide, and in the future, as redevelopment occurs, care should be taken to reduce the radius of each of these corners in order to shorten the crossing distances for pedestrians.

Bike lanes through the West Portland segment are problematic, again because of the complex traffic movements. From Brugger to Taylors Ferry, bike lanes will be striped on the roadway. However, bike lanes will not be striped between Taylors Ferry and Huber due to the high volume of right turns and the zig-zagging of cars through this section. We feel that bicycles will be safer through this area if they operate in traffic rather than to the side of traffic.

As an example, bicyclists which are heading southbound on Capitol Highway through the Taylors Ferry intersection must not get caught on the right side of vehicles which wish to turn right onto the I-5 ramp or Barbur Boulevard. The safest place for bikes in this area is actually between the two lanes, where they are taken out of conflict with cars in the right turn lane. In addition, because of the amount of congestion found in this area, traffic tends to move at a slow speed, enabling bicycles to operate in traffic.

*Recommendations:*

Continue to study long range solutions for West Portland transportation problems. (A grant application for further study was submitted by the Bureau of Planning in July, 1995.) Include ideas such as permitting left turns from Barbur to Capitol; relocating one or all of the I-5 ramps in this location; putting a "lid" over the freeway; implementing light rail down Barbur Boulevard.

Provide new sidewalks along Capitol Highway from Taylors Ferry to Barbur (east side) and Taylors Ferry to Brugger (west side). Provide a new sidewalk along Taylors Ferry from Capitol to the existing path west of the I-5 off-ramp.

Provide a full signal at Taylors Ferry/Capitol.

Provide a median refuge and pedestrian crossing at Barbur/Huber.

Provide a better crossing refuge at I-5/Taylors Ferry

Remove the slip lane at Taylors Ferry Capitol, or widen the radius to get a more substantial refuge.

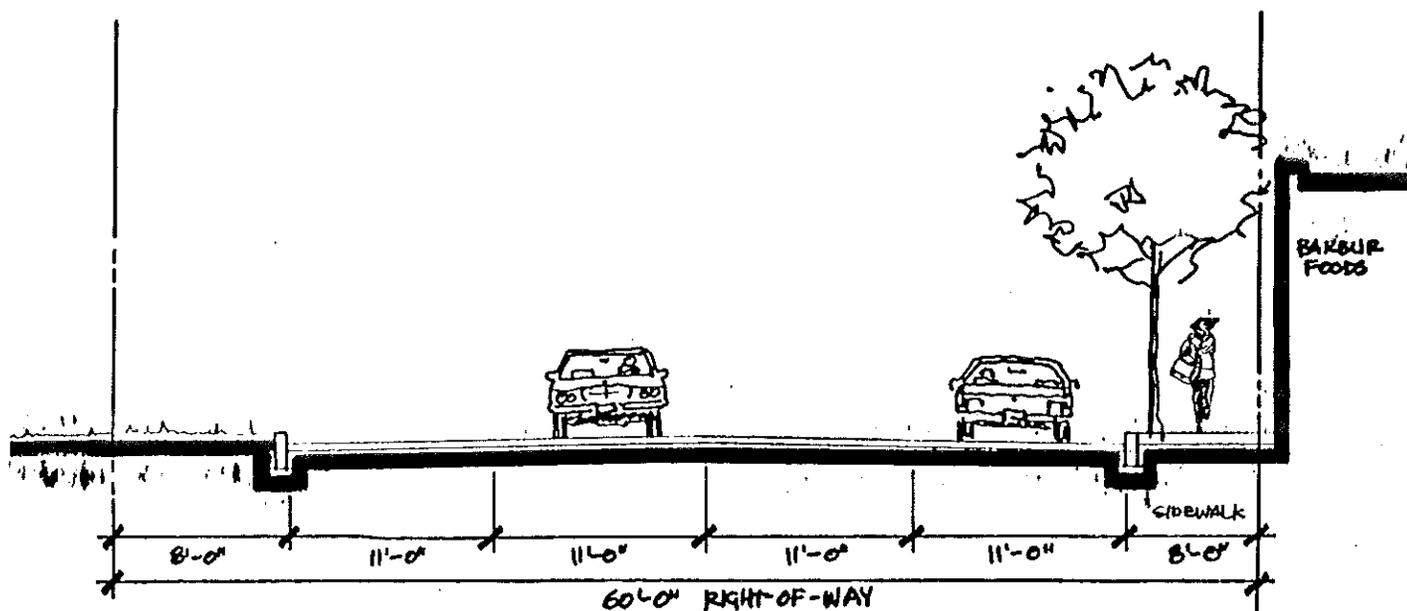


Figure 26 Proposed Section, Taylors Ferry to Barbur Boulevard

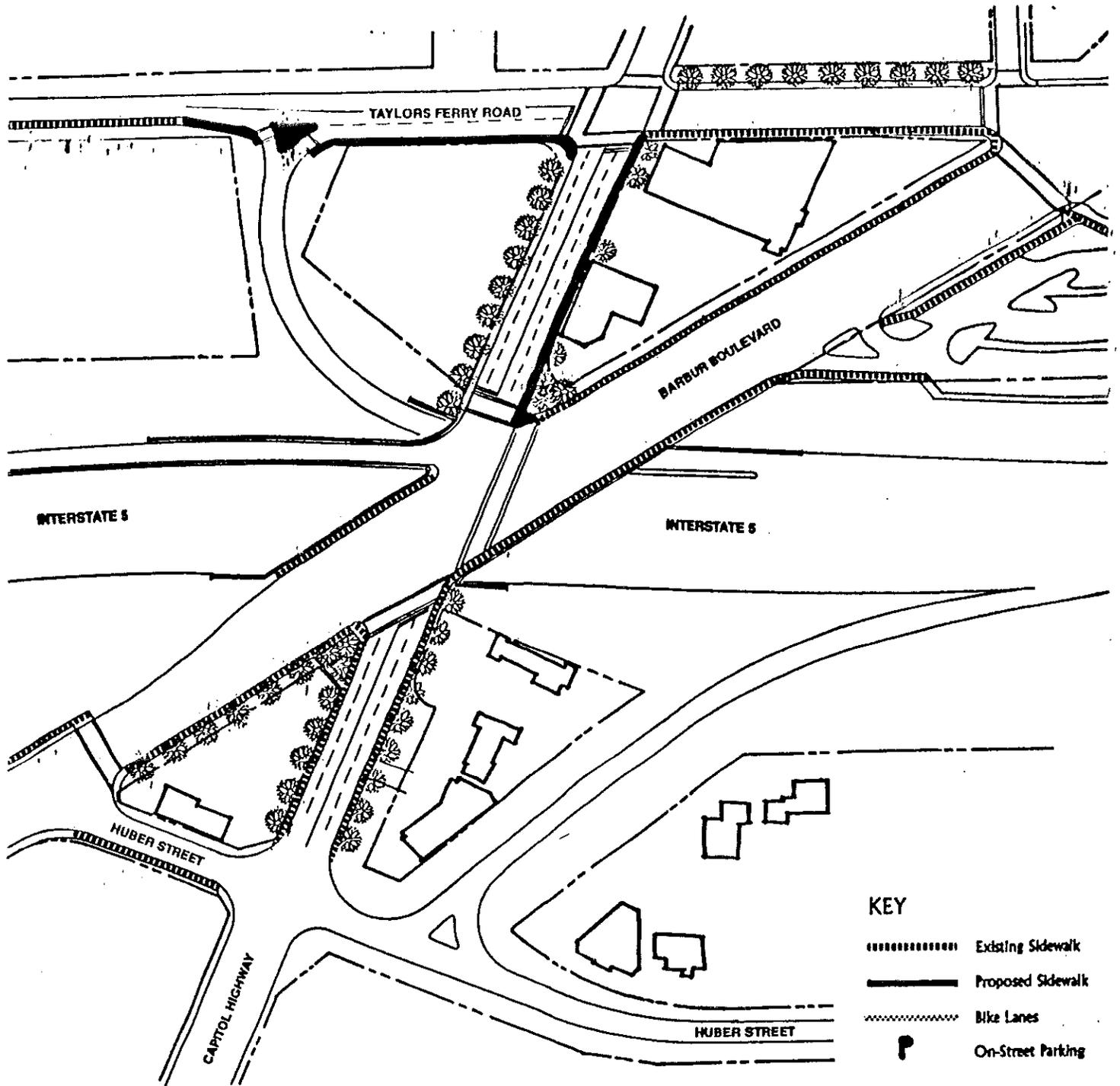


Figure 27 Proposed Plan, West Portland (Taylors Ferry to Huber)

## **STREET CLASSIFICATIONS in the WEST PORTLAND INTERSECTIONS**

I-5 Freeway - North and South

Barbur Boulevard - Major City Traffic Street

Capitol Highway - District Collector

Huber - Neighborhood Collector

Taylor's Ferry Road - Neighborhood Collector & Major Truck Street

Taylor's Ferry Road and Capitol Highway - Complex Intersection

Barbur Transit Center - Buses 12 - 41- 43

## OBJECTIVE OF THIS PROJECT

The objective of my project is to start some massive wheels turning in ODOT and PDOT to work together to solve the automobile congestion problems at the intersection of Capitol Highway and Taylors Ferry Road and Capitol Highway and Barbur Blvd. This study will also be presented to the Southwest Neighborhood Coalition Transportation Committee to include the project as urgent in the Southwest Community Plan that is in process at this time.

## RECOMMENDATIONS

### FIRST PHASE - Level I - Doable - Some with analysis and some with public process

- A new full signal should be placed at the intersection of Taylors Ferry and Capitol to help meter traffic and lesson congestion. The Barbur/Capitol intersection is already operating at a poor level of service, as the intersection is barely able to accommodate all of the traffic which is moving through it. This makes signal timing very important to help move cars through the intersections and to prevent air quality problems. During the peak hours of morning and evening traffic left turns at his intersection should be prohibited. There are other alternatives especially using 41st Ave. The light would balance delay to meet the demand and alo control how many cars are backed up on the freeway
- Allow left turns from Barbur to Capitol. This alone will take many cars out of the Taylors Ferry intersection who have to make a left turn there to get onto Capitol to go south. ODOT has already agreed to allow Tri Met busses to make a left turn with Tri Met funding the light. However a letter from ODOT to PDOT indicates they would be willing to allow cars turning left off Barbur going south on Capitol, if left turns off Capitol onto Barbur and the I-5 south on-ramp were not allowed. Instead they would cross to the Taylors Ferry intersection and go around and back to Barbur. It is called a trade-off. If this is done, there should be a right turn only lane going east on Taylors Ferry, thereby eliminating parking on the street which currently involves four cars.
- Restripe at Capitol and Huber to create a left turn holding lane for cars trying to get on the I-5 northbound ramp and Jackson High School. There is already a left turn light but considerable jockeying to make sure they

don't get stuck behind cars waiting to turn. This may require some right of way plus analysis and public process.

- Restripe lanes north of Taylors Ferry to make two lanes on the west to include a right turn only lane onto Taylors Ferry Road. This would help eliminate such a long backup line of cars on Capitol
- Tri-Met Bus #41 should use 41st Ave. going to and from the Transit Station eliminating the wide, traffic stopping turn at the Taylors Ferry intersection.

### **SECOND PHASE Level II Need Public Process and money**

- ODOT should buy or condemn the property available at Capitol and the south on -ramp and the Capitol Highway exit from the freeway. This would give them area to expand lanes and help create safe pedestrian crossings. It is absolutely useless as commercial because of impossible access
- Reconfigure or relocating access to I-5 in order to make substantial improvements for all the transportation modes in this area is a debatable subject. There are those who figure this idea is the panacea and others who are just as vehemently opposed. It would put a lot of pressure elsewhere. Just as the idea of students using Lesser Road to get to Barbur or I-5 is apparently not acceptable because Lesser is a Neighborhood Collector and they want to keep the traffic on a District Collector such as Capitol Highway.
- Continue to study long range solutions for West Portland Transportation problems. A grant application for further study was submitted to the Bureau of Planning in July 1995. A grant was awarded November 7, 1995, so a comprehensive study will be done in this area. The designation of West Portland as a Town Center in the Metro 2040 Plan, as well as the potential for a future light rail line down Barbur Blvd. do carry some hope that the area can redevelop into a more pedestrian and less congested activity center. Currently a "vision group" has been created by concerned residents and business owners to explore long range ideas about how this area can begin to transform itself.

### **IDEAS THAT COULD BE TRIED**

Cars going to and from Portland Community College create a great deal of the congestion. PCC should continue their effort to be a good neighbor.

- Suggest Jitney service every 5 minutes to Transit Station on Barbur
- Run the Barbur Bus every ten minutes rather than twenty and have more express routes to Portland from the Barbur Station
- Give bus pass deals to students to encourage the use of transit
- PCC should survey the students at Registration to find out what their transit needs are and what would help keep cars at home.
- PCC should be put into a process such as has been done at OHSU to encourage students to use the bus.

Other ideas to keep cars from peak traffic periods.

- Variable work schedules.
- Encourage businesses to allow their employees to work at home through their computer network
- Encourage people to plan their automobile trips so they do all their errands on one day instead of multiple trips
- People will use Mass transit if the scheduling is adequate and the buses take no longer than twenty minutes to get to town. When residents in our neighborhood were asked why they did or didn't use the bus, it was because most of them didn't because of poor scheduling or too long a trip like forty minutes, when you can drive downtown in ten.

## ODOT

ODOT has a small amount of money for sidewalks on Barbur Blvd at the intersection and other 'improvements'. The project would change an existing westbound 17' lane on the north side of Barbur, east of Capitol to a 12' auto/truck lane and a 5' bike-lane and add a new 12' auto/truck storage/right-turn lane to I-5, curb and a 6' sidewalk the length of the "triangle". Other TSM dollars will make some small changes to Barbur, one would be a bus stop at Luradel, in front of the restaurant. There are also several changes Tri-Met was proposing to the streets to better access the Barbur Transit center. It is noted that some of what Tri-Met wants to do "doesn't fit in with ODOT's plans", but they were working on those inconsistencies with PDOT and ODOT. Tri-Met's main purpose was to add a bus/bike only lane on the south side of Barbur, and a left-turn lane westbound to southbound to Capitol from Barbur. A sidewalk on Barbur west of the intersection at Huber is in the plan and they would like a pedestrian island included.

This piecemeal approach by one agency makes the current mish mash even worse. Again, it will take community involvement to help make well planned beneficial changes to these intersections. The time is now and it is urgent.

Region 1 Traffic Unit  
Phone: 731-8300

Oregon

DEPARTMENT OF  
TRANSPORTATION

DATE: October 24, 1995

Region 1

Lewis Wardrip PE  
Bureau of Traffic Management  
City of Portland  
1120 SW 5th Avenue  
Portland OR 97204

FILE CODE:

SUBJECT: Barbur at Capitol Project

The capacity analysis shows providing a left turn on Barbur to south on Capitol Highway is feasible if the northbound left-turns are prohibited from Capitol to westbound Barbur and southbound I-5. To provide for these left-turns Huber between Capitol and Barbur would need to be converted to a two-way street. The left-turn from Barbur to Huber would be prohibited, since it is provided at Capitol, to provide an adequate Level of Service for the left-turns from Huber to Barbur. The storage required for a left turn lane from Barbur to Capitol eliminates the median turn lane for vehicles wishing to turn into the businesses along the north side of Barbur between Capitol and Taylor's Ferry.

This change to the traffic pattern would eliminate the out-of-direction traffic of vehicles turning left on Barbur who now use Taylors Ferry or Huber: 226 vehicles in the a.m. peak hour and 317 in the p.m. peak hour. Eliminating the north-bound Capitol left-turn to I-5 would add out-of-direction travel for 109 vehicles in the a.m. peak hour and 98 vehicles in the p.m. peak hour. These vehicles would either go around the block (Capitol, Taylors Ferry and Barbur) to enter I-5 or enter I-5 at the North Tigard Interchange. These changes improves the Level-Of-Service (LOS) of Capitol at Huber and Taylors Ferry in the a.m. and p.m. peaks and Capitol at Barbur in the critical p.m. peak.

Pedestrian crossing of Barbur on both sides of Capitol would be feasible with the elimination of left-turns from Capitol. Left-turning vehicles from Capitol to Barbur and I-5 were involved in seven reported accidents from 1-1-91 to 12-31-93.

Providing a left-turn for vehicles from Barbur to southbound on Capitol was not included in the scope of the present project. If the City with the involvement of the community finds these changes beneficial and desirable and would like them to be considered in the project the City may request it.

The traffic counts and a number of capacity analysis sheets for different possible intersection configurations are attached.



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Trade-offs of allowing left-turns from Barbur westbound to Capitol southbound:

		<u>Existing Project LOS</u> <u>V/C</u> <u>Critical Movements</u>	<u>Proposed Change LOS</u>
Barbur (NS)at Capitol (EW)	a.m.	C-D 77% EB Left & right NB Left & thru	D 83% SB,EB thru WB left
	p.m.	E 92% NB left & thru WB right	D 85% WB right & left SB
Capitol (NS) at Huber(EW)	a.m.	C 72% SB, WB	B 58% NB,SB,EB,WB
	p.m.	C 68% EB right WB	B 61% NB left & thru SB left & thru
Existing Barbur left to Huber	a.m.	C 10.7 sec. delay	Proposed D 21.4 sec. delay Left from Huber
	p.m.	B 9 sec. delay	C 11.9 sec. delay

The analysis of the proposed left from Huber to Barbur assumed the only conflict is the northbound traffic on Barbur due to the gaps provided by the signal at Capitol. The volume assumed all the vehicles turning left from Capitol to Barbur and 25% of the vehicles turn left from Capitol to I-5 turn here. Half of the existing traffic from Capitol continue using the ramp by going around the block and 25% divert to 53rd and enter the freeway at the North Tigard Interchange.

		<u>Existing V/C</u>	<u>Proposed</u>
Taylors Ferry(EW) at Capitol(NS)	a.m.	EB * 1.13	E .93
		WB C .66	A .38
		NB B .59	B .51
		SB * 1.09	D .85
	p.m.	EB C .70	B .57
		WB * 1.28	* 1.11
		NB B .60	B .52
		SB * 1.47	* 1.06

\*Exceeds capacity

*Fredrick A. Sawyer*

Fredrick A. Sawyer, PTE, PLS  
Region 1 Traffic Safety Specialist

FAS:fn

cc: Joe Walsh, Tri-Met  
Larry Krettler  
Paul Hailey

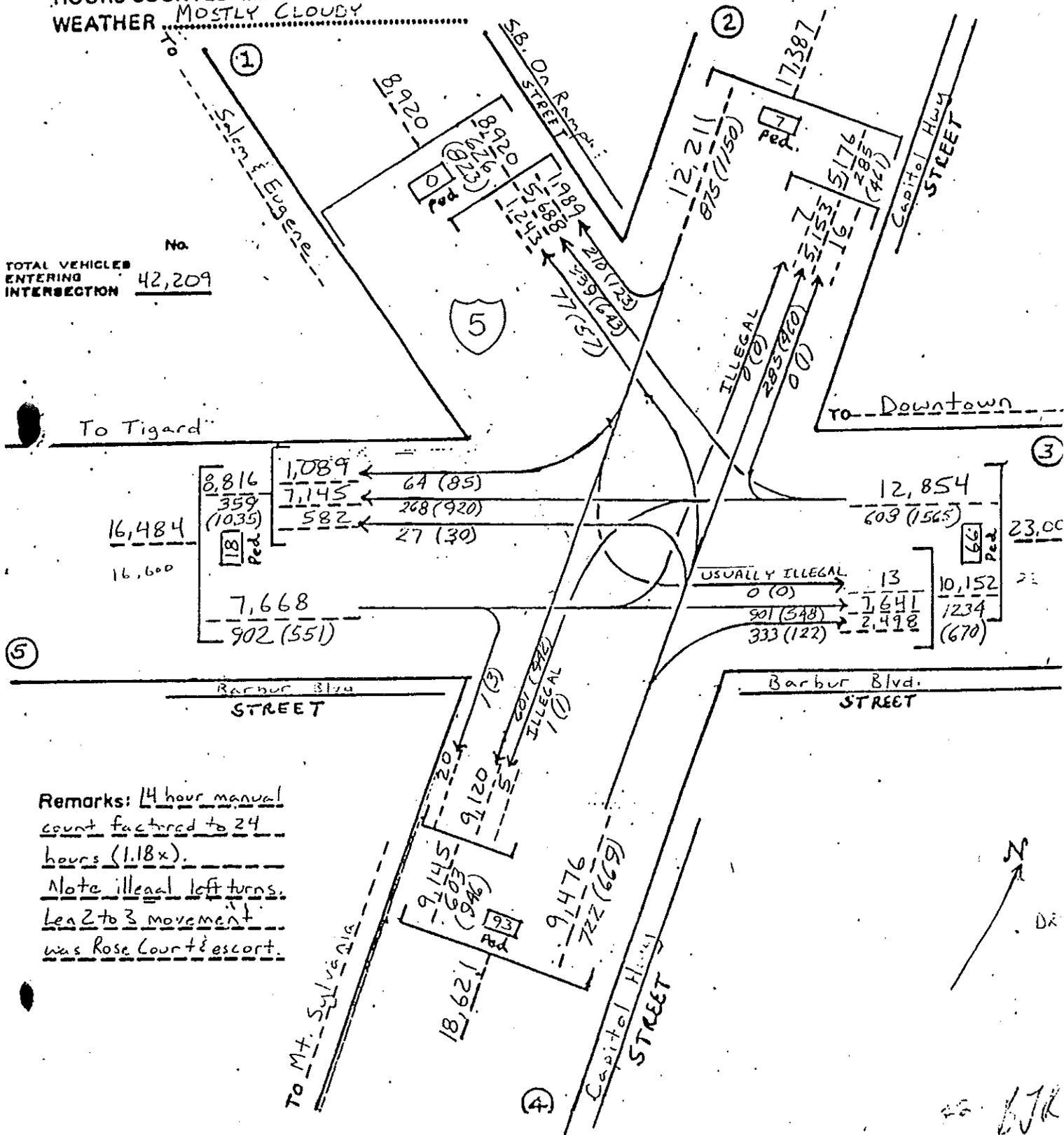
barbcap.doc

OREGON STATE HIGHWAY DIVISION  
TRAFFIC ENGINEERING SECTION

TWENTY-FOUR HOUR VEHICULAR VOLUME

DATE JUNE 6 (PM) & 7 (AM), 1988  
 DAY OF WEEK MONDAY & TUESDAY  
 ACTUAL COUNT (VEH.) 14 HRS.  
 HOURS COUNTED 6 AM TO 8 PM  
 PEDESTRIAN COUNT 14 HRS.  
 HOURS COUNTED 6 AM TO 8 PM  
 WEATHER MOSTLY CLOUDY

CITY OR COUNTY S.W. PORTLAND, MULTNOMAH CO.  
 INTERSECTION OF PACIFIC HWY WEST #1W  
 (BARBUR BLVD) @ CAPITOL HWY (FAU 9407) & SOUTH  
 BOUND ON RAMP TO PACIFIC HWY #1 (I-5)  
 MILE POST 6.21 (1W) & NEAR 295.04 (1)  
 CLASSIFICATION ALL VEHICLES



Remarks: 14 hour manual count factored to 24 hours (1.18x).  
 Note illegal left turns. Lea 2 to 3 movement was Rose Court & escort.

6/7/88

#	Transportation Demand Management (TDM) Strategies
1	Voluntary No-Drive Days (PSA)
2	Voluntary No-Drive Days (Incentives)
3	Auto Restricted Zones
4	Peak Period Restrictions for Congested Areas
5	Pedestrian/Transit Malls
6	Mandatory No Drive Days
7	Regional Parking Pass/Transit Pass
8	HOV Preferential Parking at Shopping Centers
9	Limit/Prohibit Construction of New Parking Facilities
10	Reduce Number of Existing Parking Spaces
11	Curb Parking Restrictions (time limits)
12	Residential Parking Controls (permits)
13	Increase Existing Fees for Off-Street Parking
14	Implement Fees for Existing Free Off-Street Parking
15	Increase Meter Fees for On-Street Parking
16	Schedule Adjustments to Improve Transfer Connections
17	Bus Shelters
18	Specialized Scheduling/Subscription Service
19	Fast Link (10 minute corridors)
20	Transit Marketing Programs (Ongoing Effort)
21	Free passes for Special Events, Shopping Trips
22	Transit Incentives
23	Dial-a-ride/Demand Responsive Service
24	Taxi deregulation/Group Riding
25	Shuttle Service to Shopping Centers
26	Jitney Service
27	Build Additional Park & Ride Lots
28	Peak-Hour Pricing
29	All Day Road Pricing
30	Individual Lane Pricing
31	VMT/Emission Based Charges(Reg. Fee to VMT based)
32	Convert SOV Lane to HOV
33	Regional Carpool Matching Program
34	Regional Vanpool Programs

## ODOT Survey of Oregon Business Interest in SOV Reduction Programs

N = 130 Businesses  
Employees = 1946  
Interviews = 122

### Availability of Transit

Within 3 blocks of transit	72.0%
3 - 11 blocks of transit	17.0%

### Company Support

Concerned about Motor Vehicle Pollution	47.0%
Reduction is company goal	41.0%
Employee transportation needs are company concern	44.0%
Company dedicated to reduce drive alone	22.0%

### Reduction Options

Willing to allow staggered work hours	53.0%
Willing to consider providing employee incentives	52.0%
Willing to consider building future sites near transit	52.0%
Willing to consider allowing 4-10 workday	42.0%

### Telecommuting Options

Willing to allow one day work at home	38.0%
Percent of employees who could work at home	7.9%
Percent of extra cost company should pay	70.0%

### Interest in Programs/Recognition

Receive statewide recognition	27.0%
Want advice on setting up program	38.0%
Willing to sign pledge with other companies to reduce SOV	24.0%

### Interest in Services and Information

Financial incentives/tax breaks	58.0%
Newsletter w/case studies	50.0%
Workshops by ODOT	28.0%

### Perceived Barriers to implementing TDM

Too time consuming	66.0%
Cost of program	61.0%
Will not benefit company	60.0%
Lack of information on programs	56.0%
No public transit as an alternative	17.0%

