

**82ND AVENUE OF ROSES
HIGH CRASH CORRIDOR
SAFETY PLAN**

APPENDIX

**January 2008
CITY OF PORTLAND
OFFICE OF TRANSPORTATION**

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82ND AVENUE OF ROSES HIGH CRASH CORRIDOR SAFETY PLAN

APPENDIX



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APPENDIX I

Summary of crash/accident data from corridor

82nd Avenue of Roses High Crash Corridor Safety Project Existing Conditions

82nd Ave of Roses is a 7.3-mile section of the statewide Cascade Highway North (Highway 68). It is a major city traffic street and a designated freight route. It is a major north/south route that ran from the south city limit to NE Killingsworth Ave. It also serves as a major transit line. The average daily traffic was approximately 29500 vehicles in 2005 with 0.75% truck. The corridor had a section made of four 12-lanes and a 12' lane median that ran north south. The total roadway width was about 60ft curb to curb. The posted speed was 35 mph.

Average Daily Traffic Volume (2005): 29500 vehicles

Percent trucks: 0.75%

Roadway section: 2 12'-lanes in the NB direction

2 12'-lanes in SB direction

1 18'- median lane used for two way left turning

6' Curb sidewalk on each side

Total roadway width (curb to curb): 60ft

Posted speed: 35mph

82nd Avenue of Roses High Crash Corridor Safety Project Collision data

The following is the summary of the analysis of the reported crashes that occurs on 82nd avenue during the last 10 years (1997 – 2006) between MP 0.0 and MP 7.23. Because of the variation in road characters throughout the corridor, it was necessary to break the corridor into 3 different sections for the purpose of the analysis.

Section I: North of I-84 (MP 0.0 – MP 2.30)

Length: 2.3 miles

Total crash: 647

Roadway Character:

Intersection crashes: 57% Alley crashes: 10% Straight: 30%

Crash Type:

Rear end: 38% Turning: 32% Angle: 10% Pedestrian: 2%

Injury Type

Fatal: 2 Type A: 15(2%) Type B: 92(14%) Type C: 362(56%) PDO: 362(56%)

Top Intersection Crash Location

NE Fremont: 60(12.4%)

NE Prescott: 50(7.7%)

NE Halsey : 46(7.1%)

NE Tillamook : 38(5.9%)

The total number of crashes that occurred in the above section is 647crashes. 244(38%) were rear end collisions, 209(32%) were turning movement collisions, 67(10%) were angle collisions, and 23(4%) collisions involved pedestrians.

Section 2: I-84 to SE Powell Blvd (MP2.3 – MP 4.78)

Length: 2.48 miles

Total crash: 1680

Roadway Character:

Intersection crashes: 800(48%) Alley crashes: 286(17%) Straight: 553(33%)

Crash Type:

Rear end: 783(47%) Turning: 522(31%) Angle: 142(8%) Pedestrian: 41(2%)

Injury Type

Fatal: 7 Type A: 34(2%) Type B: 166(10%) Type C: 566(34%) PDO: 912(54%)

Top Intersection Crash Location

SE Division St: 149(8.87%)

NE Glisan St: 99(5.9%)

E. Burnside Ave: 88(5.2%)

SE Powell Blvd: 85(5%)

SE Stark St: 69(4%)

SE Washington Ave: 65(4%)

Section3: SE Powell Blvd to City Limits (MP 4.7 – MP 7.23)

Length: 2.53 miles

Total crash: 1420

Roadway Character:

Intersection crashes: 737(52%) Alley crashes: 194(14%) Straight: 468(33%)

Crash Type:

Rear end: 570(40%) Turning: 470(33%) Angle: 157(11%) Pedestrian: 55(4%)

Injury Type

Fatal: 7 Type A: 32(2%) Type B: 176(12%) Type C: 436(31%) PDO: 773(54%)

Top Intersection Crash Location

SE Foster Rd: 161(11.33%)

SE Holgate: 99(7%)

SE Duke: 97(6.8%) (1 Fatal)

SE Woodstock St: 66(4.65%)

SE Flavel St: 54(3.80%) (1 Fatal)

APPENDIX II –

Distances between traffic signals data

Distance Between Traffic Signals

Note: Distances are approximate to the center of the crossing

| | Signal Location to Signal Location (north to south) |
|-------|--|
| 2637' | NE Killingsworth to NE Prescott St. (light at Webster allows for continuous turn for eastbound vehicles) |
| 1090' | NE Prescott to NE Sandy Blvd. |
| 1561' | NE Sandy Blvd. to NE Fremont St. |
| 1320' | NE Fremont St. to NE Siskiyou St. |
| 684' | NE Siskiyou St. to NE Alameda St. (pedestrian activated signal) |
| 1976' | NE Alameda St. to NE Tillamook St. |
| 1164' | NE Tillamook St. to NE Jonesmore St. |
| 602' | NE Jonesmore St. to NE Wasco St. |
| 255' | NE Wasco St. to NE Multnomah St. |
| 1924' | NE Multnomah St. to NE Glisan St. |
| 671' | NE Glisan St. to NE Davis St. |
| 647' | NE Davis St. to Burnside |
| 1333' | Burnside to SE Stark |
| 267' | SE Stark to SE Washington St. |
| 814' | SE Washington St. to SE Yamhill St. |
| 2209' | SE Yamhill St. to SE Mill St. |
| 1920' | SE Mill St. to SE Division St. |
| 1236' | SE Division St. to SE Woodward St. |
| 1458' | SE Woodward St. to SE Powell Blvd. |
| 1950' | SE Powell Blvd. to SE Boise St. |
| 665' | SE Boise St. to SE Holgate |
| 1349' | SE Holgate to SE Raymond St. |
| 1382' | SE Raymond St. to SE Foster Rd. |
| 1218' | SE Foster Rd. to SE Woodstock Blvd. |
| 1312' | SE Woodstock Blvd. to SE Duke St. |
| 2635' | SE Duke St. to SE Flavel St. |
| 1538' | SE Flavel St. to Springwater Corridor Trail ped activated light near Crystal Springs |

Top 6 locations with the greatest distance between traffic signals

1. NE Killingsworth to NE Prescott Street – 2637'
2. SE Duke St. to SE Flavel St. - 2635'
3. SE Yamhill St. to SE Mill St. - 2209'
4. NE Alameda St. to NE Tillamook St. - 1976'
5. SE Powell Blvd. to SE Boise St. - 1950'
6. NE Multnomah St. to NE Glisan St. - 1924'

Distance Between TriMet Bus Stops and Traffic Signals

Note: Distances are approximate to the center of the crossing

| | TriMet Bus Stop to Signal Location (southbound only) |
|------|---|
| 145' | NE Webster St. |
| 734' | NE Wygant St. |
| 156' | NE Prescott St. |
| 115' | NE Sandy Blvd. |
| 578' | NE Beech St. |
| 55' | NE Freemont St. |
| 622' | NE Klickitat St. |
| 81' | NE Siskiyou St. |
| 117' | NE Alameda St. |
| 658' | NE Russell St. |
| 571' | NE Thompson St. |
| 31' | NE Tillamook St. |
| 492' | NE Schulyer St. |
| 261' | NE Jonesmore St./Halsey |
| 262' | NE Hassalo St. |
| 955' | NE Pacific St./NE Oregon St. |
| 101' | NE Glisan St. |
| 45' | NE Davis St. |
| 52' | E. Burnside St. |
| 642' | SE Ash St. |
| 59' | SE Stark St. |
| 224' | SE Alder St. |
| 73' | SE Yamhill St. |
| 918' | SE Main St. |
| 805' | SE Hawthorne Blvd. |
| 46' | SE Mill St. |
| 906' | South of SE Harrison St. |
| 96' | SE Division St. |
| 477' | SE Clinton St. |
| 78' | SE Woodward St. |
| 456' | SE Tibbett St. |
| 114' | SE Powell Blvd. |
| 773' | SE Francis St. |
| 29' | SE Boise St. |
| 72' | SE Holgate St. |
| 552' | SE Schiller St. |
| 44' | SE Raymond St. |
| 601' | SE Mitchell St. |
| 273' | SE Insley St. |

| | |
|-------|----------------------------|
| 578' | SE Ramona St. |
| 75' | SE Woodstock Blvd. |
| 632' | SE Tolman St. |
| 54' | SE Duke St. |
| 826' | SE Cooper St. |
| 885' | SE Ogden St. |
| 73' | SE Flavel St. |
| 604' | SE Lambert St. |
| 96' | Springwater Corridor Trail |
| 1028' | SE Clatsop St. |

Top 5 locations with the greatest distance between bus stop and traffic signal location

1. SE Clatsop St. - 1028'
2. NE Pacific St./NE Oregon St. - 955'
3. SE Main St. - 918'
4. South of SE Harrison St. - 906'
5. SE Ogden St. - 885'

APPENDIX III -

Vehicle safety improvements at high crash intersections summary

Vehicle Safety Improvements at High Crash Intersections

| | | |
|------------|-------------|-------------|
| FY 2006-07 | | \$200,000 |
| FY 2007-08 | | \$1,000,000 |
| Future | \$0 | |
| Total | \$1,200,000 | |

Project Description:

Analyze and implement changes in the top safety problems

The Intersection Safety Analysis will provide the City with specific projects that can significantly reduce crashes and crash severity. The following are examples of improvements that would be made with additional revenue:

- ✓ Median islands to reduce conflicts
- ✓ Signage and striping changes
- ✓ Changes to signal timing
- ✓ Signal improvements to improve compliance
- ✓ Traffic calming devices
- ✓ Red light cameras
- ✓ Curb/sidewalk work to re-align intersections
- ✓ Pedestrian and bike improvements
- ✓ Transit access improvements

The following are the first ten intersections that we would improve with additional revenue.

First Ten Projects

1. SE Powell Blvd at 82nd
2. SE Division at 122nd Avenue
3. SE Powell Blvd at 136th
4. SE Division at 82nd
5. SE Powell Blvd at 174th
6. NW Skyline Blvd at Germantown Road
7. SW Barbur at Capitol Highway
8. N Lombard at Denver
9. SE 39th at Powell
10. NE Sandy at 82nd

Following Thirty Projects

1. SE POWELL BLVD at 122ND AVE
2. SE POWELL BLVD at 92ND AVE
3. NE HALSEY ST at 122ND AVE
4. SE STARK ST at 122ND AVE
5. NE COLUMBIA BLVD at MARTIN LUTHER KING JR BLVD
6. NE GLISAN ST at 122ND AVE

7. SE HOLGATE BLVD at 82ND AVE
8. SW WASHINGTON ST at 2ND AVE
9. SE FOSTER RD at 82ND AVE
10. SE DUKE ST at 82ND AVE
11. SE STARK ST at 102ND AVE
12. N WEIDLER ST at VANCOUVER AVE
13. NE FREMONT ST at MARTIN LUTHER KING JR BLVD
14. SE FOSTER RD at 96TH AVE/I-205 NB ON-RAMP
15. SE DIVISION ST at 162ND AVE
16. SE STARK ST at 148TH AVE
17. SE WASHINGTON ST at 96TH AVE/99TH AVE
18. N BROADWAY at VANCOUVER AVE/I-5 SB RAMP
19. SW JEFFERSON RD at CANYON RD/MURRAY LN
20. SE FOSTER RD at 92ND AVE
21. NE GLISAN ST at 102ND AVE
22. NE MARINE DR at 33RD DR
23. N BROADWAY at WILLIAMS AVE/I-5 NB RAMP
24. E BURNSIDE ST at 82ND AVE
25. SE FOSTER RD at 122ND AVE
26. W BURNSIDE ST at 23RD AVE/VISTA
27. NE GLISAN ST at 82ND AVE
28. SE WASHINGTON ST at 102ND AVE
29. SE WASHINGTON ST at 103RD DR
30. NE SANDY BLVD at 39TH AVE

Problems:

Portland has a number of high collision intersections that would benefit from traffic safety improvements. In order to select the intersections that would benefit the most from traffic safety enhancements we ranked projects based on number of crashes, severity of crashes, and rate of collisions per million entering vehicles. As a result we have identified 40 intersections that over the last four years accounted for 3,721 crashes, 10 fatalities, and 1,425 injuries. The economic cost of these crashes is over \$46 million.

Project cost:

First year, 80% analysis/engineering and 20% construction

Subsequent years, 20% analysis/engineering and 80% construction

The proposal is to spend \$200,000 in next six months, then \$1,000,000 next year. This will allow us to analyze and improve 12 intersections by the end of the next fiscal year. It is our goal to find additional resources to complete safety improvements at all of these intersections over the next five years.

Benefits:

This will improve safety and operation by:

- Reduce crashes in Portland's highest crash locations.
- Reduce serious injuries and fatalities.
- Reduce congestion resulting from frequent collisions

APPENDIX IV –

Sample corridor safety survey

82ND AVENUE OF ROSES HIGH CRASH CORRIDOR SAFETY PROJECT

The 82nd Avenue of Roses has been identified as Portland’s highest crash corridor. Corridor data has shown it to have some of the highest crash, injury and fatality rates in the city. The corridor is home to eight out of 37 of Portland’s high crash intersections. From 1997 to 2006, the corridor saw 3747 crashes, including 119 involving pedestrians, and 11 fatalities.

As a result, the 82nd Avenue of Roses has been designated as Portland’s first High Crash Corridor. This safety project is a newly formed joint effort between the City of Portland’s Office of Transportation (PDOT), and the Oregon Department of Transportation (ODOT) – both of which 82nd Avenue’s jurisdiction falls under. The project aims to reduce crashes, injuries and fatalities, and to improve transportation safety for all users of the corridor – drivers, walkers, bicyclists, or transit users.

The City of Portland Office of Transportation is asking community members that live and/or work on or close to the 82nd Avenue of Roses to give us their transportation safety comments, thoughts, concerns, and suggestions about their experiences of travelling along or across the corridor. Please take a moment to complete this survey and return it to us by snail mail or email (see over) -

| |
|---|
| 1) What are your biggest traffic safety concerns along the 82 nd Avenue of Roses? |
| |
| 2) What general solutions do you feel would provide the biggest impact towards improving traffic safety on the 82nd Avenue of Roses? |
| |
| 3) Do concerns regarding traffic safety currently limit your ability or willingness to walk, bike or take transit along or across the corridor? If so, please describe how... |
| |
| 4) Would or do you feel safe taking public transit along or across the 82 nd Avenue of Roses? |
| |

| |
|---|
| 5) Would or do you feel safe driving along or across the 82 nd Avenue of Roses? |
| |
| 6) Would or do you feel safe walking along or across the 82 nd Avenue of Roses? |
| |
| 7) Would or do you feel safe bicycling along or across the 82 nd Avenue of Roses? |
| |
| 8) What is your area zip code? |
| |
| 9) Please use the additional space below to leave any additional thoughts or comments. |
| |

If you are mailing this survey in by post, please send to –

Kirsty Hall
 Traffic Operations
 City of Portland Office of Transportation
 1120 SW 5th Avenue, Suite 800
 Portland, OR 97204

You may also find this survey online, by going to www.google.com, and typing “82nd Avenue Survey” into the search engine, and clicking the top link. After completing it, you may email it to us at –

kirsty.hall@trans.ci.portland.or.us

For more information on the 82nd Ave. of Roses High Crash Corridor Safety Project, please see:

<http://www.portlandonline.com/transportation/index.cfm?c=44634>

Thank you for your time!

APPENDIX V –

Results from community outreach corridor safety survey

**82nd Ave. of Roses High Crash Corridor Safety Project
Community Outreach Survey Analysis – Spring/Summer 2007**

Revised November 2, 2007

The City of Portland Office of Transportation asked residents living at or near the 82nd Ave. of Roses to respond to a High Crash Corridor Safety Project survey. A total of 203 surveys were received and recorded. Although not everyone responded to all of the questions, the majority of the respondents responded to the majority of the questions. Of the 203 surveys recorded, respondents indicated they live in the following zip code regions:

| Percentage of Respondents | Zip Code | Number of Respondents | Percentage of Respondents | Zip Code | Number of Respondents |
|---------------------------|----------|-----------------------|---------------------------|----------|-----------------------|
| Less than 1% | 97009 | 1 | Less than 1% | 97217 | 1 |
| Less than 1% | 97045 | 1 | Less than 1% | 97218 | 1 |
| 1.10% | 97202 | 2 | 27.62% | 97220 | 50 |
| Less than 1% | 97205 | 1 | 1.66% | 97230 | 3 |
| 9.39% | 97206 | 17 | 1.66% | 97231 | 3 |
| 1.66% | 97211 | 3 | Less than 1% | 97232 | 1 |
| 27.07% | 97213 | 49 | 1.10% | 97239 | 2 |
| 9.39% | 97215 | 17 | 11.60% | 97266 | 21 |
| 3.87% | 97216 | 7 | Less than 1% | 97322 | 1 |

According to the High Crash Corridor Safety Project survey, the following information is true for individuals that responded to specific transportation related questions:

- 84.2% of people have concerns about traffic safety that limit their ability or willingness to walk, bike, or take transit along 82nd Ave. of Roses.
- Less than half of respondents (43.3%) express safety concerns about taking public transit along or across the 82nd Ave. of Roses.
- 7 out of 10 respondents (70.4%) stated that they do feel safe driving along the 82nd Ave. of Roses.
- Less than one quarter of respondents (24.1%) feel safe walking along or across the 82nd Ave. of Roses.
- One respondent reported feeling safe bicycling along the 82nd Ave. of Roses; 15 respondents reported feeling safe bicycling while crossing the 82nd Ave. of Roses.

The top ten traffic safety concerns expressed by survey respondents include:

| Ranking | Traffic Safety Concerns | Category |
|----------------|--|------------------------|
| 1 | Pedestrian safety | Pedestrian Safety |
| 2 | Vehicles speeding (tie with 2 nd place) | Driver Violation |
| 3 | Pedestrians Jaywalking especially at the 82 nd Ave./ Jonesmore/ Halsey transit station (tie with 3 rd place) | Pedestrian Violation |
| 4 | Too much traffic and congestion | Ped/Bike/Driver Safety |
| 5 | Red light runners (tie with 6 th place) | Driver Violation |
| 6 | Overall bike safety (tie with 5 th place) | Bicycle Safety |
| 7 | Bicycle access | Bicycle Safety |
| 8 | Madison High School area | Pedestrian Safety |
| 9 | Vehicles making left turns | Driver Violation |
| 10 | 82 nd /Siskiyou and big box development traffic concerns | Ped/Bike/Driver Safety |

Respondents suggested the following top ten general solutions would have the biggest impacts for improving traffic safety along the 82nd Ave. of Roses:

| Ranking | Traffic Safety Issue | Category |
|----------------|---|------------------------|
| 1 | Speed reduction: PPB patrol/enforcement, traffic slowing devices, speed reader boards | Driver Violation |
| 2 | Engineering enhancements for pedestrian safety: more marked crossings, pedestrian islands, curb extensions, lighted sidewalks, increased curb height, etc. | Pedestrian Safety |
| 3 | Land use issues (tie with item #4): “big box” development, change land use, neighborhood friendly ideas – parks, community gardens, dog parks, etc., Smart Growth of retail/encourage small businesses, increase green areas, fewer businesses, new development that is small business friendly – no car sales or strip clubs | Ped/Bike/Driver Safety |
| 4 | Construct an overpass or underpass (tie with item #3) | Pedestrian Safety |
| 5 | Divert or restrict traffic including access management: implement access management, create frontage roads, move traffic off 82 nd , etc. | Ped/Bike/Driver Safety |
| 6 | Red light runners: concerns for red light runners, Red Light Running cameras | Driver Violation |
| 7 | Bike lanes / bike path | Bicycle Safety |
| 8 | More PPB ped enforcement w/ fines jaywalking (tie with #7) | Pedestrian Violation |
| 9 | Signal changes: lights timed to allow traffic to flow during high traffic times, fewer traffic lights, new light at transit mall, etc. | Driver Safety |
| 10 | Crime concerns: remove prostitution, clean up of crime and perception of crime | Ped/Bike/Driver Safety |

APPENDIX VI –

Sidewalk infrastructure needs

82nd Ave. of Roses High Crash Corridor Safety Action Plan
Sidewalk Infrastructure Needs
 October 10, 2007

- Shaded area indicates sidewalks missing in ODOT jurisdiction
- Non-shaded area indicates sidewalks missing in PDOT jurisdiction

| West of 82nd | Lineal Ft. | | East of 82nd | Lineal Ft. |
|--------------------------|-------------------|--|----------------------------|-------------------|
| Killingsworth to Alberta | 133' | | Alberta to Humbolt | 170' |
| Alberta to Wygant | 286' | | Humbolt to Wygant | 95' |
| Wygant to Going St. | 242' | | Wygant to Going Pl. | 192' |
| Going St. to Prescott | 216' | | Going Pl. to Going St. | 190' |
| Duke to Bybee | 400' | | Going St. to Prescott | 309' |
| Bybee to Ogden | 138' | | Glenwood to Bybee | 313' |
| | | | Bybee to Kanpp | 50' |
| | | | Lambert to Crystal Springs | 205' |

APPENDIX VII –

TriMet boardings and deboardings data

TriMet Passenger Census - Spring 2007
All Day Ons and Offs by Route and Stop
Weekdays

Route: 72-Killingsworth/82nd Ave - To Swan Island

| Stop Location | Location ID | Direction | Position | Ons | Offs | Total | Monthly Lifts |
|---------------------------|--------------------|------------------|-----------------|------------|-------------|--------------|----------------------|
| Clackamas Town Center | 12740 | N | AT | 172 | 4 | 176 | 13 |
| Clackamas Town Center | 12742 | N | AT | 690 | 51 | 741 | 69 |
| SE Monterey & 85th | 4001 | W | NS | 143 | 2 | 145 | 5 |
| 8300 Block SE Monterey | 11008 | W | AT | 73 | 2 | 75 | 2 |
| SE 82nd & Causey | 7941 | N | NS | 194 | 23 | 217 | 24 |
| SE 82nd & Boyer Drive | 7920 | N | NS | 170 | 33 | 203 | 27 |
| SE 82nd & King | 7918 | N | FS | 166 | 32 | 198 | 21 |
| SE 82nd & Glencoe | 7968 | N | OP | 37 | 27 | 64 | 11 |
| SE 82nd & Otty | 8015 | N | NS | 95 | 33 | 128 | 16 |
| SE 82nd & Overland | 8017 | N | FS | 100 | 48 | 148 | 40 |
| SE 82nd & Hinckley | 7983 | N | FS | 31 | 34 | 65 | 6 |
| SE 82nd & Lindy | 7995 | N | NS | 117 | 35 | 152 | 35 |
| SE 82nd & Cornwell | 7951 | N | NS | 18 | 11 | 29 | 0 |
| SE 82nd & Clatsop | 7946 | N | NS | 19 | 6 | 25 | 3 |
| SE 82nd & Crystal Springs | 7953 | N | NS | 57 | 13 | 70 | 20 |
| SE 82nd & Lambert | 7993 | N | FS | 34 | 20 | 54 | 3 |
| SE 82nd & Flavel | 7962 | N | NS | 178 | 66 | 244 | 38 |
| SE 82nd & Ogden | 7982 | N | OP | 100 | 25 | 125 | 17 |
| SE 82nd & Glenwood | 7970 | N | NS | 42 | 10 | 52 | 2 |
| SE 82nd & Duke | 7960 | N | NS | 252 | 55 | 307 | 26 |
| SE 82nd & Tolman | 8057 | N | NS | 37 | 11 | 48 | 1 |
| SE 82nd & Woodstock | 8059 | N | NS | 58 | 24 | 82 | 3 |
| SE 82nd & Ramona | 8027 | N | OP | 30 | 28 | 58 | 3 |
| SE 82nd & Foster | 7964 | N | FS | 392 | 213 | 605 | 80 |
| SE 82nd & Raymond Ct | 8029 | N | NS | 145 | 40 | 185 | 37 |
| SE 82nd & Schiller | 8040 | N | FS | 25 | 18 | 43 | 12 |
| SE 82nd & Holgate | 7984 | N | FS | 322 | 259 | 581 | 90 |
| SE 82nd & Boise | 7935 | N | FS | 240 | 67 | 307 | 68 |
| SE 82nd & Francis | 7943 | N | NS | 140 | 139 | 279 | 21 |
| SE 82nd & Rhone | 8031 | N | NS | 52 | 39 | 91 | 5 |
| SE 82nd & Powell | 8023 | N | FS | 562 | 354 | 916 | 90 |
| SE 82nd & Tibbetts | 8052 | N | OP | 75 | 32 | 107 | 15 |
| SE 82nd & Woodward | 8061 | N | NS | 61 | 35 | 96 | 6 |
| SE 82nd & Clinton | 7947 | N | NS | 16 | 25 | 41 | 4 |
| SE 82nd & Division | 7957 | N | NS | 357 | 425 | 782 | 91 |
| 2200 Block SE 82nd | 7922 | N | AT | 91 | 42 | 133 | 4 |
| SE 82nd & Mill | 8007 | N | NS | 77 | 57 | 134 | 26 |
| SE 82nd & Hawthorne | 7979 | N | NS | 29 | 21 | 50 | 0 |
| SE 82nd & Salmon | 8037 | N | OP | 15 | 21 | 36 | 0 |
| SE 82nd & Yamhill | 8065 | N | NS | 35 | 27 | 62 | 1 |
| SE 82nd & Washington | 7928 | N | NS | 45 | 148 | 193 | 13 |
| SE 82nd & Stark | 8047 | N | FS | 98 | 100 | 198 | 22 |
| SE 82nd & Ash | 7930 | N | NS | 15 | 21 | 36 | 1 |
| SE 82nd & E Burnside | 7936 | N | NS | 173 | 244 | 417 | 63 |
| NE 82nd & Davis | 7955 | N | NS | 13 | 20 | 33 | 4 |
| NE 82nd & Glisan | 7972 | N | FS | 104 | 124 | 228 | 16 |
| NE 82nd & Oregon | 8014 | N | OP | 6 | 6 | 12 | 2 |
| NE 82nd & Holladay | 7987 | N | NS | 22 | 34 | 56 | 3 |
| NE 82nd & Multnomah | 8010 | N | NS | 25 | 43 | 68 | 9 |
| NE 82nd & MAX Overpass | 7999 | N | AT | 739 | 1,177 | 1,916 | 174 |
| NE 82nd & Schuyler | 8042 | N | FS | 15 | 25 | 40 | 3 |

TriMet Passenger Census - Spring 2007
All Day Ons and Offs by Route and Stop
Weekdays

Route: 72-Killingsworth/82nd Ave - To Swan Island

| Stop Location | Location ID | Direction | Position | Ons | Offs | Total | Monthly Lifts |
|-------------------------------|--------------------|------------------|-----------------|------------|-------------|--------------|----------------------|
| NE 82nd & Tillamook | 8055 | N | NS | 39 | 37 | 76 | 1 |
| NE 82nd & Sacramento | 8036 | N | NS | 12 | 24 | 36 | 0 |
| NE 82nd & Russell | 8033 | N | NS | 42 | 37 | 79 | 0 |
| NE 82nd & Madison HS | 8001 | N | OP | 105 | 164 | 269 | 4 |
| NE 82nd & Siskiyou | 8046 | N | FS | 33 | 55 | 88 | 11 |
| NE 82nd & Klickitat | 7991 | N | NS | 10 | 50 | 60 | 13 |
| NE 82nd & Fremont | 7967 | N | NS | 88 | 147 | 235 | 35 |
| NE 82nd & Beech | 7933 | N | NS | 28 | 71 | 99 | 34 |
| NE 82nd & Sandy | 8039 | N | FS | 177 | 260 | 437 | 24 |
| NE 82nd & Prescott | 8026 | N | NS | 92 | 87 | 179 | 12 |
| NE 82nd & Wygant | 8063 | N | FS | 8 | 26 | 34 | 1 |
| NE 82nd & Alberta | 7927 | N | NS | 21 | 49 | 70 | 0 |
| NE Killingsworth & 82nd | 3216 | W | FS | 44 | 79 | 123 | 0 |
| 7700 Block NE Killingsworth | 3149 | W | AT | 1 | 3 | 4 | 0 |
| NE Killingsworth & 75th | 3215 | W | NS | 5 | 12 | 17 | 1 |
| NE Killingsworth & 72nd | 3212 | W | NS | 25 | 78 | 103 | 20 |
| NE Killingsworth & Cully | 10601 | W | NS | 115 | 195 | 310 | 15 |
| 6300 Block NE Killingsworth | 3147 | W | AT | 21 | 46 | 67 | 1 |
| NE Killingsworth & 60th | 3210 | W | NS | 86 | 107 | 193 | 2 |
| NE Killingsworth & 57th | 3209 | W | OP | 20 | 19 | 39 | 0 |
| NE Killingsworth & 54th | 3207 | W | OP | 67 | 50 | 117 | 5 |
| NE Killingsworth & 52nd | 3205 | W | OP | 44 | 47 | 91 | 20 |
| NE Killingsworth & 49th | 3203 | W | OP | 27 | 23 | 50 | 0 |
| NE Killingsworth & 46th Pl | 3201 | W | OP | 36 | 49 | 85 | 4 |
| NE Killingsworth & 42nd | 3200 | W | NS | 235 | 271 | 506 | 39 |
| NE Killingsworth & 39th | 3197 | W | NS | 12 | 10 | 22 | 1 |
| NE Killingsworth & 36th | 3196 | W | NS | 10 | 9 | 19 | 0 |
| NE Killingsworth & 35th | 3194 | W | NS | 4 | 12 | 16 | 2 |
| NE Killingsworth & 33rd | 3192 | W | FS | 110 | 116 | 226 | 17 |
| NE Killingsworth & 31st | 3189 | W | NS | 9 | 24 | 33 | 1 |
| NE 30th & Emerson | 7328 | S | NS | 12 | 15 | 27 | 0 |
| NE 30th & Sumner | 7331 | S | NS | 2 | 6 | 8 | 0 |
| NE 30th & Alberta | 7326 | S | NS | 15 | 18 | 33 | 0 |
| NE Alberta & 27th | 64 | W | NS | 74 | 45 | 119 | 4 |
| NE Alberta & 24th | 61 | W | NS | 39 | 31 | 70 | 3 |
| NE Alberta & 21st | 11472 | W | NS | 44 | 43 | 87 | 32 |
| NE Alberta & 18th | 55 | W | NS | 33 | 44 | 77 | 3 |
| NE Alberta & 15th | 53 | W | NS | 144 | 149 | 293 | 27 |
| NE Alberta & 13th | 51 | W | NS | 18 | 29 | 47 | 2 |
| NE Alberta & 11th | 49 | W | NS | 11 | 14 | 25 | 2 |
| NE Alberta & 9th | 70 | W | NS | 53 | 70 | 123 | 2 |
| NE Alberta & 7th | 10184 | W | NS | 20 | 41 | 61 | 1 |
| NE M L King & Alberta | 5890 | N | FS | 75 | 231 | 306 | 14 |
| NE M L King & Sumner | 5952 | N | NS | 11 | 50 | 61 | 7 |
| NE Killingsworth & Garfield | 10957 | W | NS | 198 | 174 | 372 | 51 |
| NE Killingsworth & N Williams | 3187 | W | NS | 10 | 32 | 42 | 1 |
| N Killingsworth & Vancouver | 3184 | W | NS | 19 | 76 | 95 | 13 |
| N Killingsworth & Commercial | 3157 | W | FS | 34 | 323 | 357 | 46 |
| N Killingsworth & Albina | 3154 | W | NS | 58 | 350 | 408 | 72 |
| N Killingsworth & Michigan | 3174 | W | NS | 13 | 34 | 47 | 4 |
| N Killingsworth & Montana | 3177 | W | NS | 2 | 33 | 35 | 0 |

TriMet Passenger Census - Spring 2007
All Day Ons and Offs by Route and Stop
Weekdays

Route: 72-Killingsworth/82nd Ave - To Swan Island

| Stop Location | Location ID | Direction | Position | Ons | Offs | Total | Monthly Lifts |
|----------------------------------|--------------------|------------------|-----------------|------------|-------------|--------------|----------------------|
| N Killingsworth & Interstate | 3170 | W | NS | 63 | 278 | 341 | 26 |
| N Killingsworth & Concord | 3159 | W | NS | 3 | 16 | 19 | 0 |
| N Killingsworth & Denver | 3163 | W | NS | 4 | 26 | 30 | 3 |
| N Killingsworth & Omaha | 3180 | W | NS | 1 | 15 | 16 | 0 |
| N Killingsworth & Delaware | 3161 | W | NS | 4 | 29 | 33 | 2 |
| N Greeley & Willamette | 3167 | S | NS | 5 | 51 | 56 | 3 |
| N Greeley & Sumner | 2227 | S | OP | 2 | 13 | 15 | 0 |
| N Greeley & Humboldt | 2202 | S | OP | 0 | 2 | 2 | 0 |
| N Going & Port Center Way | 2161 | W | FS | 3 | 26 | 29 | 0 |
| N Lagoon & Anchor | 3315 | W | NS | 71 | 147 | 218 | 12 |
| N Anchor & Channel | 115 | E | NS | 45 | 61 | 106 | 14 |
| N Lagoon & Ballast | 3316 | W | OP | 0 | 1 | 1 | 0 |
| N Lagoon & Commerce | 3317 | W | NS | 0 | 2 | 2 | 0 |
| 5500 Block N Lagoon (at Gate 18) | 3319 | W | OP | 1 | 6 | 7 | 0 |
| N Dolphin & Channel | 3318 | S | NS | 0 | 1 | 1 | 0 |
| N Channel & Dry Dock | 8496 | E | AT | 6 | 11 | 17 | 0 |
| N Channel & Dolphin | 1044 | E | OP | 0 | 1 | 1 | 0 |
| N Channel & Commerce | 1043 | E | OP | 0 | 0 | 0 | 0 |
| N Channel & Ballast | 1042 | E | OP | 0 | 0 | 0 | 0 |

TriMet Passenger Census - Spring 2007
All Day Ons and Offs by Route and Stop
Weekdays

Route: 72-Killingsworth/82nd Ave - To Clackamas Town Center

| Stop Location | Location ID | Direction | Position | Ons | Offs | Total | Monthly Lifts |
|------------------------------|--------------------|------------------|-----------------|------------|-------------|--------------|----------------------|
| N Anchor & Channel | 115 | E | NS | 87 | 8 | 95 | 10 |
| N Channel & Ports O Call | 8681 | E | AT | 11 | 3 | 14 | 0 |
| N Going & Port Center Way | 9399 | E | NS | 14 | 0 | 14 | 0 |
| N Greeley & Going Overpass | 2195 | N | AT | 1 | 0 | 1 | 0 |
| N Greeley & Humboldt | 2201 | N | AT | 3 | 1 | 4 | 0 |
| N Greeley & Sumner | 2226 | N | NS | 8 | 1 | 9 | 0 |
| N Killingsworth & Greeley | 9403 | E | FS | 56 | 4 | 60 | 4 |
| N Killingsworth & Delaware | 3160 | E | NS | 11 | 2 | 13 | 1 |
| N Killingsworth & Gay Ave | 3179 | E | NS | 13 | 1 | 14 | 0 |
| N Killingsworth & Denver | 3162 | E | NS | 27 | 5 | 32 | 2 |
| N Killingsworth & Concord | 3158 | E | NS | 21 | 3 | 24 | 0 |
| N Killingsworth & Interstate | 3169 | E | FS | 317 | 60 | 377 | 30 |
| N Killingsworth & Montana | 12878 | E | NS | 15 | 2 | 17 | 2 |
| N Killingsworth & Minnesota | 3176 | E | FS | 9 | 2 | 11 | 1 |
| N Killingsworth & Michigan | 3173 | E | NS | 27 | 9 | 36 | 2 |
| N Killingsworth & Albina | 3153 | E | NS | 292 | 55 | 347 | 43 |
| N Killingsworth & Kerby | 3171 | E | NS | 278 | 37 | 315 | 37 |
| N Killingsworth & Commercial | 3156 | E | NS | 141 | 23 | 164 | 6 |
| N Killingsworth & Vancouver | 3183 | E | NS | 101 | 35 | 136 | 15 |
| N Killingsworth & Williams | 3188 | E | NS | 26 | 10 | 36 | 1 |
| NE Killingsworth & Rodney | 3181 | E | NS | 13 | 8 | 21 | 0 |
| NE Killingsworth & Garfield | 3165 | E | NS | 14 | 41 | 55 | 2 |
| NE M L King & Killingsworth | 5927 | S | FS | 250 | 245 | 495 | 54 |
| NE Alberta & M L King | 46 | E | FS | 223 | 79 | 302 | 12 |
| NE Alberta & 7th | 11478 | E | NS | 40 | 29 | 69 | 1 |
| NE Alberta & 9th | 69 | E | NS | 73 | 59 | 132 | 1 |
| NE Alberta & 11th | 48 | E | NS | 14 | 12 | 26 | 1 |
| NE Alberta & 13th | 50 | E | NS | 27 | 20 | 47 | 1 |
| NE Alberta & 15th | 52 | E | NS | 144 | 162 | 306 | 31 |
| NE Alberta & 18th | 54 | E | NS | 41 | 42 | 83 | 2 |
| NE Alberta & 21st | 11471 | E | NS | 49 | 50 | 99 | 19 |
| NE Alberta & 24th | 60 | E | NS | 26 | 44 | 70 | 4 |
| NE Alberta & 27th | 63 | E | NS | 53 | 62 | 115 | 3 |
| NE Alberta & 30th | 11722 | E | NS | 20 | 34 | 54 | 3 |
| NE 30th & Sumner | 7330 | N | NS | 4 | 4 | 8 | 0 |
| NE 30th & Emerson | 7327 | N | NS | 6 | 8 | 14 | 0 |
| NE 30th & Killingsworth | 7329 | N | NS | 24 | 21 | 45 | 1 |
| NE Killingsworth & 32nd | 3190 | E | NS | 8 | 9 | 17 | 1 |
| NE Killingsworth & 33rd | 3191 | E | FS | 133 | 98 | 231 | 24 |
| NE Killingsworth & 35th | 3193 | E | NS | 4 | 6 | 10 | 0 |
| NE Killingsworth & 36th | 3195 | E | NS | 6 | 13 | 19 | 1 |
| NE Killingsworth & 39th | 3198 | E | NS | 10 | 14 | 24 | 0 |
| NE Killingsworth & 42nd | 3199 | E | FS | 250 | 219 | 469 | 24 |
| 4500 Block NE Killingsworth | 3144 | E | AT | 55 | 41 | 96 | 3 |
| NE Killingsworth & 49th | 3202 | E | FS | 32 | 43 | 75 | 10 |
| NE Killingsworth & 52nd | 3204 | E | FS | 84 | 95 | 179 | 19 |
| NE Killingsworth & 55th | 3208 | E | OP | 18 | 25 | 43 | 1 |
| 5700 Block NE Killingsworth | 3145 | E | AT | 16 | 17 | 33 | 0 |
| NE Killingsworth & 60th | 3146 | E | FS | 111 | 86 | 197 | 5 |
| 6400 Block NE Killingsworth | 3148 | E | AT | 30 | 20 | 50 | 1 |
| NE Killingsworth & Cully | 10600 | E | FS | 210 | 107 | 317 | 12 |

TriMet Passenger Census - Spring 2007
All Day Ons and Offs by Route and Stop
Weekdays

Route: 72-Killingsworth/82nd Ave - To Clackamas Town Center

| Stop Location | Location ID | Direction | Position | Ons | Offs | Total | Monthly Lifts |
|-----------------------------|--------------------|------------------|-----------------|------------|-------------|--------------|----------------------|
| NE Killingsworth & 72nd | 3211 | E | FS | 88 | 38 | 126 | 17 |
| 7600 Block NE Killingsworth | 3186 | E | AT | 5 | 2 | 7 | 1 |
| 8100 Block NE Killingsworth | 3185 | E | AT | 72 | 42 | 114 | 0 |
| NE 82nd & Webster | 8889 | S | OP | 30 | 15 | 45 | 1 |
| NE 82nd & Wygant | 8064 | S | NS | 37 | 9 | 46 | 0 |
| NE 82nd & Prescott | 8025 | S | FS | 102 | 99 | 201 | 15 |
| NE 82nd & Sandy | 8038 | S | NS | 249 | 183 | 432 | 22 |
| NE 82nd & Beech | 7934 | S | NS | 31 | 49 | 80 | 4 |
| NE 82nd & Fremont | 7966 | S | NS | 176 | 50 | 226 | 45 |
| NE 82nd & Klickitat | 7992 | S | NS | 49 | 21 | 70 | 8 |
| NE 82nd & Siskiyou | 8045 | S | NS | 61 | 26 | 87 | 2 |
| NE 82nd & Madison HS | 8002 | S | AT | 158 | 167 | 325 | 7 |
| NE 82nd & Russell | 8034 | S | OP | 39 | 16 | 55 | 2 |
| NE 82nd & Thompson | 8035 | S | FS | 21 | 10 | 31 | 0 |
| NE 82nd & Tillamook | 8056 | S | NS | 25 | 23 | 48 | 2 |
| NE 82nd & Schuyler | 8043 | S | NS | 52 | 16 | 68 | 5 |
| NE 82nd & MAX Overpass | 8000 | S | AT | 1,168 | 672 | 1,840 | 150 |
| NE 82nd & Hassalo | 7978 | S | OP | 146 | 90 | 236 | 2 |
| NE 82nd & Pacific | 7932 | S | FS | 34 | 14 | 48 | 3 |
| NE 82nd & Glisan | 7973 | S | NS | 141 | 85 | 226 | 20 |
| NE 82nd & Davis | 7956 | S | OP | 20 | 16 | 36 | 5 |
| NE 82nd & E Burnside | 7937 | S | NS | 300 | 147 | 447 | 60 |
| SE 82nd & Ash | 7931 | S | FS | 25 | 20 | 45 | 2 |
| SE 82nd & Stark | 8048 | S | NS | 218 | 109 | 327 | 30 |
| SE 82nd & Alder | 7929 | S | NS | 45 | 27 | 72 | 5 |
| SE 82nd & Yamhill | 8066 | S | FS | 33 | 26 | 59 | 1 |
| SE 82nd & Main | 8004 | S | NS | 15 | 16 | 31 | 0 |
| SE 82nd & Hawthorne | 7980 | S | NS | 23 | 23 | 46 | 0 |
| SE 82nd & Mill | 8008 | S | FS | 71 | 95 | 166 | 1 |
| 2200 Block SE 82nd | 7923 | S | OP | 40 | 73 | 113 | 5 |
| SE 82nd & Division | 7958 | S | NS | 449 | 299 | 748 | 88 |
| SE 82nd & Clinton | 7948 | S | NS | 27 | 15 | 42 | 4 |
| SE 82nd & Woodward | 8062 | S | FS | 28 | 55 | 83 | 8 |
| SE 82nd & Tibbetts | 8053 | S | NS | 49 | 86 | 135 | 13 |
| SE 82nd & Powell | 8024 | S | FS | 411 | 471 | 882 | 62 |
| SE 82nd & Francis | 7944 | S | NS | 142 | 150 | 292 | 24 |
| SE 82nd & Boise | 8237 | S | NS | 68 | 206 | 274 | 54 |
| SE 82nd & Holgate | 7986 | S | NS | 312 | 260 | 572 | 69 |
| SE 82nd & Schiller | 8041 | S | OP | 13 | 21 | 34 | 2 |
| SE 82nd & Raymond | 8030 | S | NS | 32 | 70 | 102 | 27 |
| SE 82nd & Mitchell | 8009 | S | FS | 66 | 148 | 214 | 43 |
| SE 82nd & Insley | 7965 | S | OP | 175 | 274 | 449 | 47 |
| SE 82nd & Ramona | 8028 | S | NS | 49 | 44 | 93 | 7 |
| SE 82nd & Woodstock | 8060 | S | NS | 36 | 67 | 103 | 4 |
| SE 82nd & Tolman | 8058 | S | NS | 11 | 37 | 48 | 1 |
| SE 82nd & Duke | 7961 | S | NS | 64 | 245 | 309 | 26 |
| SE 82nd & Cooper | 7950 | S | NS | 11 | 45 | 56 | 6 |
| SE 82nd & Ogden | 8013 | S | NS | 18 | 72 | 90 | 9 |
| SE 82nd & Flavel | 7963 | S | NS | 67 | 214 | 281 | 41 |
| SE 82nd & Lambert | 7994 | S | NS | 19 | 44 | 63 | 6 |
| SE 82nd & Crystal Springs | 7954 | S | FS | 13 | 63 | 76 | 19 |

*TriMet Passenger Census - Spring 2007
All Day Ons and Offs by Route and Stop
Weekdays*

Route: 72-Killingsworth/82nd Ave - To Clackamas Town Center

| Stop Location | Location ID | Direction | Position | Ons | Offs | Total | Monthly Lifts |
|-------------------------|--------------------|------------------|-----------------|------------|-------------|--------------|----------------------|
| SE 82nd & Clatsop | 7945 | S | OP | 5 | 18 | 23 | 2 |
| SE 82nd & Cornwell | 7952 | S | NS | 11 | 35 | 46 | 3 |
| SE 82nd & Lindy | 7996 | S | NS | 41 | 105 | 146 | 29 |
| SE 82nd & Johnson Creek | 7988 | S | FS | 29 | 73 | 102 | 10 |
| SE 82nd & Overland | 8018 | S | NS | 29 | 69 | 98 | 28 |
| SE 82nd & Otty | 8016 | S | OP | 25 | 109 | 134 | 18 |
| SE 82nd & Glencoe | 7969 | S | FS | 14 | 53 | 67 | 10 |
| SE 82nd & King | 7990 | S | FS | 20 | 161 | 181 | 20 |
| SE 82nd & Boyer Drive | 7921 | S | OP | 13 | 129 | 142 | 23 |
| SE 82nd & Causey | 7942 | S | NS | 14 | 187 | 201 | 21 |
| SE Monterey & 85th | 11004 | E | NS | 5 | 212 | 217 | 5 |
| Clackamas Town Center | 12741 | S | AT | 8 | 693 | 701 | 79 |
| Clackamas Town Center | 12740 | N | AT | 5 | 163 | 168 | 24 |

APPENDIX VIII –

Pedestrian median refuge island location selection criteria table

82nd Avenue High Crash Corridor Safety Project **Ped Refuge Island Selection Process**

Proposed Pedestrian Refuge Island locations on 82nd Avenue -

- 1) NE Wygant Street
- 2) NE Brazee Street
- 3) NE Pacific Street
- 4) SE Main Street
- 5) SE Francis Street
- 6) SE Cooper Street

How PDOT Identified These Six Locations -

The first step in this analysis involved identifying stretches of roadway along 82nd Avenue with the greatest distance between signalized intersections. These signalized intersections are currently the only form of protected/enhanced crossing facilities for pedestrians wanting to cross 82nd Avenue. A pedestrian currently wanting to cross the busy, five-lane arterial with protection currently must walk to the nearest traffic signal. PDOT identified seven stretches of roadway along the corridor with a distance between signalized intersections of 1900 feet up to over 2600 feet. Identification of seven stretches of corridor with large distances of over 1900 feet between signalized intersections, provided baseline data for where to propose installation of six pedestrian refuge islands. Once these seven stretches of corridor were identified, each was then individually analyzed for the following –

Full Criteria Used to Determine Proposed Pedestrian Refuge Islands (see table)

- 1) Distance in feet between existing signalized intersections along the corridor
- 2) Ped & bike crash history (reported injury and fatality data 1995 – 2004)
- 3) Adjacent key pedestrian generators (schools, parks, shopping malls etc)
- 4) Number of adjacent transit stops, & ped boardings & deboardings data for each stop
- 5) Any topographical factors limiting refuge island visibility for drivers
- 6) Volume of anecdotal community feedback from open houses & other events demanding enhanced crossing facilities at particular locations
- 7) Some degree of geographical equality of refuge island distribution along corridor

This data then enabled us to narrow down greatly within each of our seven identified segments of 82nd Avenue where specifically we should locate the proposed six pedestrian refuge islands.

82nd Avenue Median Island Location Selection Criteria Table

| Stretch of Roadway Identified as having large distance between signals | Distance Between Signals | Key Pedestrian Generators within stretch of roadway | # of Transit Stops within identified stretch of roadway * | Pedestrian & Bike Injury & Fatality Data 1995 – 2004 within stretch of roadway** | TriMet Boardings / Deboardings at exact proposed island location | Proposed Pedestrian Refuge Island Location |
|--|--------------------------|---|---|---|--|--|
| NE Killingsworth to NE Prescott Street | 2637 feet | - Helensview High School | Four bus stops – - two northbound - two southbound | ➤ None | Northbound – 34 Southbound - 46 | NE Wygant St |
| NE Russell Street to NE Tillamook Street | 1976 feet | - Madison High School - Glenhaven Park & skatepark - Former landfill site, selected for redevelopment potential | Two bus stops – one northbound one southbound 82 nd Ave MAX Station | ➤ None | Northbound – 79 Southbound – 31 | NE Brazee St |
| NE Multnomah Street to NE Glisan Street | 1924 feet | - Multnomah Bible College - Montavilla Community Center - Montavilla Park | Four bus stops – two northbound two southbound | ➤ Between four and six pedestrian injuries at NE Holladay Street ➤ One pedestrian fatality at NE Holladay Street ➤ One pedestrian injury at NE Hoyt Street | Northbound – 56 Southbound - 48 | NE Pacific St |
| SE Yamhill Street to SE Mill Street | 2209 feet | - Bridger Elementary School - Clark Elementary School - Berrydale Park | Four stops – two northbound two southbound | ➤ One pedestrian injury at SE Taylor Court ➤ One bike injury at SE Clay Street ➤ Two pedestrian injuries at SE Market Street | Northbound – 36 Southbound - 31 | SE Main St |
| SE Mill Street to SE Division Street | 1920 feet | - Portland Community College - Binnsmead Middle School - Harrison Park | Two bus stops - one northbound - one southbound | ➤ One pedestrian injury at SE Stephens Street | Northbound – 133 Southbound - 113 | No island proposed. |
| SE Powell Blvd to SE Boise Street | 1950 feet | - Eastport Plaza shopping center - Marshall High School - Essex Park | Three bus stops – - one northbound - two southbound | ➤ Three pedestrian injuries at SE Bush Street ➤ Three pedestrian injuries at SE Francis Street ➤ One pedestrian injury at SE Gladstone Street | Northbound – 279 Southbound - 292 | SE Francis Street |
| SE Duke Street to SE Flavel Street | 2635 feet | - Kelly Elementary School - Woodmere Elementary School | Four bus stops – two northbound two southbound | ➤ One bike injury at SE Glenwood Street ➤ Two pedestrian injuries at SE Ogden Street ➤ One pedestrian injury at SE Knapp Street ➤ One pedestrian injury at SE Henderson Street | Northbound – 52 Southbound - 56 | SE Cooper St |

* Both directions, not counting those at signalized intersections at either end of roadway

*** Not counting data at signalized intersections at either end of stretch of roadway

APPENDIX IX –

Infrastructure needs for new curb ramps

82nd Ave. of Roses High Crash Corridor Safety Action Plan
Infrastructure Needs for New Curb Ramps
Revised October 10, 2007

Legend

Existing Curb Ramp Conditions

- N** No curb ramp
- O Existing "old style" curb ramp without yellow raised domes in one direction
- O2 Existing "old style" curb ramp without yellow raised domes in two directions
- W1 Existing "new style" curb ramp with yellow raised domes in one direction
- W2 Existing "new style" curb ramp with yellow raised domes in two directions
- U Unfinished Crossing
- No through street "T" intersection

| Northern Section | | | | | |
|--------------------------------------|-----------------------|-----------|-----------|-----------|-----------|
| Item | Street at 82nd | NW | SW | SE | NE |
| 1 | Killingsworth | O | O | O | O |
| 2 | Webster | - | - | U | U |
| 3 | Alberta | U | U | O | N |
| 4 | Humbolt | - | - | U | U |
| 5 | Wygant | O | U | U | U |
| 6 | Going | U | U | U | U |
| Items above are in ODOT jurisdiction | | | | | |
| 7 | Prescott | O | O2 | O | O |
| 8 | Sycamore | O | O | - | - |
| 9 | Sandy | O | O | W1 | O |
| 10 | Failing | O | O | - | - |
| 11 | Beech | O | O | O | O |
| 12 | Milton | - | - | O | N |
| 13 | Fremont | O | O | O2 | O |
| 14 | Klickitat | O2 | O2 | O2 | O |
| 15 | Siskiyou | O | O | W1 | O |
| 16 | Russell | - | - | O | O |
| 17 | Braze | - | - | O | O |
| 18 | Sacramento | O | O | - | - |
| 19 | Thompson | - | - | O | O |
| 20 | Eugene | - | - | O | O |
| 21 | Tillamook | O | W | O | O |
| 22 | Hancock | - | - | O | O |
| 23 | Schuyler | W2 | O | N | O |
| 24 | Broadway | - | - | O | O |

| Central Section | | | | | |
|------------------------|-----------------------|-----------|-----------|-----------|-----------|
| Item | Street at 82nd | NW | SW | SE | NE |
| 25 | Jonesmore | ○ | ○ | ○ | ○ |
| 26 | Wasco | ○ | ○ | ○ | ○ |
| 27 | Multnomah | ○ | ○ | ○ | ○ |
| 28 | Hassalo | - | - | N | N |
| 29 | Holladay | ○ | ○ | ○ | ○ |
| 30 | Pacific | - | - | N | N |
| 31 | Oregon | ○ | N | - | - |
| 32 | Glisan | ○ | ○ | ○ | ○ |
| 33 | Everett | ○ | ○ | - | - |
| 34 | Davis | - | - | ○ | ○ |
| 35 | Couch | N | ○ | - | - |
| 36 | Burnside | ○ | ○ | ○ | ○ |
| 37 | Ash | ○ | ○ | ○ | ○ |
| 38 | Pine | ○ | ○ | - | ○ |
| 39 | Oak | N | ○ | - | - |
| 40 | Stark | ○ | ○ | ○ | ○ |
| 41 | Washington | ○ | ○ | ○ | ○ |
| 42 | Alder | ○ | ○ | ○ | ○ |
| 43 | Morrison | N | N | N | N |
| 44 | Yamhill | ○ | ○ | ○ | ○ |
| 45 | Taylor | ○ | N | N | N |
| 46 | Taylor Ct. | ○ | ○ | ○ | ○ |
| 47 | Salmon | N | N | - | N |
| 48 | Main | N | N | - | - |
| 49 | Madison | N | N | N | N |
| 50 | Hawthorne | ○ | ○ | N | N |
| 51 | Clay | N | N | N | N |
| 52 | Market | N | N | - | - |
| 53 | Mill | ○ | ○ | ○ | ○2 |
| 54 | Harrison | - | - | WI | N |
| 55 | Division | ○ | ○2 | ○ | ○ |
| 56 | Clinton | ○ | ○ | ○ | ○ |
| 57 | Taggart | ○ | ○ | - | N |
| 58 | Woodard | ○ | ○ | ○ | ○ |
| 59 | Brooklyn | - | - | ○ | ○ |
| 60 | Tibbetts | ○ | ○ | - | - |
| 61 | Franklin | - | - | ○ | ○ |

| Southern Section | | | | | |
|--------------------------------------|-----------------------|-----------|-----------|-----------|-----------|
| Item | Street at 82nd | NW | SW | SE | NE |
| 62 | Powell | O2 | O2 | O2 | O2 |
| 63 | Rhine | O | O | O | O |
| 64 | Lafayette | O | O | O | O |
| 65 | Rhone | O | O | O | O |
| 66 | Bush | O | O | O | O |
| 67 | Francis | O | O | O | O |
| 68 | Center | O | O | - | - |
| 69 | Gladstone | O | O | - | - |
| 70 | Boise | O | O | O | O |
| 71 | Cora | O | O | - | - |
| 72 | Holgate | O | O | O | O2 |
| 73 | Schiller | - | - | O | O |
| 74 | Liebe | - | - | O | O |
| 75 | Raymond | O | O | O | - |
| 76 | Raymond Ct. | - | - | O | O |
| 77 | Mitchell | O | O | - | - |
| 78 | Ingsley | - | - | O | O |
| 79 | Foster | O | O2 | O | O2 |
| 80 | Ellis | O | O | - | - |
| 81 | Reedway | O | O | - | - |
| 82 | Ramona | O | O | O | O |
| 83 | Knight | N | N | - | - |
| 84 | Woodstock | O | N | O | N |
| 85 | Martins | N | N | - | - |
| 86 | Carlton | N | N | - | - |
| 87 | Tolman | N | N | O | O |
| 88 | Henry | O | O | - | - |
| 89 | Duke | O | O | O | O |
| 90 | Claybourne | O | O | - | - |
| 91 | Glenwood | U | N | O | O |
| 92 | Cooper | N | N | - | - |
| 93 | Bybee | U | U | O | O |
| 94 | Ogden | N | N | - | - |
| 95 | Knapp | O | O | - | - |
| 96 | Henderson | N | N | - | - |
| 97 | Flavel | O | O | O | O |
| Items below are in ODOT jurisdiction | | | | | |
| 98 | Malden | O | O | - | - |
| 99 | Malden Ct. | O | O | - | - |
| 100 | SE Lambert | O | O | - | N |
| 101 | Crystal Springs | O | N | N | N |
| 102 | Harney | U | O | O | O |
| 103 | Clatsop | - | - | N | N |
| 104 | Luther | O | O | - | - |

APPENDIX X –

Share the Road Safety Class program summary

“Share the Road” Bicycle-Pedestrian-Motorist Safety Class (SRSC)

Summary prepared by Christopher Larsen
Judge Pro Tem, Multnomah County, Oregon

Class Goals: Improve traffic safety by increasing education of, and compliance with, Oregon law that applies to motorists, pedestrians and bicyclists who share our roadways. Reduce preventable crashes which cause property damage, injury and death to the citizens of our community through increased awareness of traffic safety issues. Provide “first-time offenders” (those eligible defendants who have never participated in this class before) with appropriate incentives to enter and successfully complete the Share the Road bicycle-pedestrian-motorist safety class as an alternative to a conviction or a fine for certain eligible non-criminal law traffic violations.

Class Description: The Share the Road Safety Class (SRSC) is two-hours in length and offered one night each month (unless additional class is added due to demand). The first SRSC class was held on March 14, 2007. The class offered on the second Wednesday night of each month at Legacy Emanuel Hospital in NE Portland. Class begins at 7:00 pm and concludes at 9:00 pm. The class is a combination of lecture and digital PowerPoint presentation that focuses 100% on traffic law and traffic safety issues. The class instruction includes: explaining applicable Oregon law that relates to motorists, pedestrians and bicycles in our community all using the public right-of-way; encouraging class participants to share the road in a safe and lawful manner; presenting videos, photos, “real life” stories, information and examples of scenarios where people are put at risk of being injured or killed as a result of illegal and unsafe bicycling, walking, and driving behavior; explaining the physical, emotional and legal consequences of traffic violations and crashes involving pedestrians, bicyclists and motorists. The class presenters include a combination of law enforcement officers, trauma nurses, transportation safety experts and advocates, judges, and other qualified persons. The class presenters emphasize why following the law enables everyone to safely share our roadways, increase the class participants knowledge and understanding of traffic laws and safety issues and seek to positively change the way people think and act when using our roadways. The presenters acknowledge the importance of law enforcement actions to target compliance with traffic laws while at the same time recognizing the need to increase public education and understanding of the traffic laws in an effort to help citizens avoid future traffic law violations. The presenters also discuss social and economic impacts of traffic law violations and crashes and the benefits of walking, biking and using mass transit.

Class Admission & Court Procedure: Law enforcement officers and court personnel have been instructed on the class eligibility requirements and the procedures for class admission and court case disposition so that all eligible first-time offenders are provided the necessary information to participate in the class at the earliest opportunity. Law enforcement officers and court staff have a “Share the Road Safety Class” information flyer to provide to eligible defendants at the time the defendant is cited for the violation and at the time of the defendant’s first appearance in court (arraignment). The citing officer is also encouraged to advise the court of a defendant’s eligibility to participate in the class by making clear and legible notes on the citation that indicate whether a defendant may take the class in return for a dismissal or discharge in a manner that is consistent with the SRSC eligibility requirements. Eligible defendants will be encouraged to enroll and complete the SRSC at the earliest possible

opportunity so that multiple court appearances can be avoided. Before a defendant is admitted into the class, a records check will be performed by Emanuel Hospital class staff to ensure that no person who has already successfully completed the SRSC is allowed to attend the class or receive the benefit of a dismissal or sentence of discharge (a conviction but no fine) of the eligible violation. Each defendant that has paid for and successfully completed the class is provided with a certificate of successful completion at the end of the class with instructions on how to file the certificate with the court. It is the defendant's responsibility for filing the original certificate of successful completion with the court in order to receive the benefit of dismissal or discharge. Only original and valid certificates will be accepted by the court (no photocopies). Those defendants that have entered a plea of guilty or no contest to the violation, or those defendants that have been found guilty after a trial to the court, and who fail to provide the court with the original certificate of successful completion by the deadline date ordered by the court or agreed upon by the parties shall be convicted of the violation and sentenced to up to the maximum fine allowed by law. A defendant's participation in SRSC does not limit the courts authority to impose additional sanctions (e.g. license suspension) or make further court orders it deems appropriate upon conviction for any violation as provided under Oregon law.

Location: Legacy Emanuel Hospital, 2801 N. Gantenbein Avenue, Portland, Oregon, 97227 in the Lorenzen Conference Center. Michael Morrison, RN, is the Share the Road Safety Class Coordinator and can be reached by calling 503.413.2672.

Class Participation Cost: Eligible defendants are required to pay \$30 in cash at the door before being admitted. Class cost may be adjusted to ensure continued operation of the class. Class cost is kept to a minimum to provide additional incentive for increased participation.

Class Operation Cost & Funding: The Initial creation and implementation of the class was accomplished by substantial volunteer efforts of the class workgroup. The continued operation of the class for the first year is through continued volunteer efforts supplemented with grant funds obtained from the Oregon Department of Transportation, Traffic Safety Division. These one-time grant funds are intended to cover all expenses of the class for the first year after which the class will be self-funded by the fees collected from the participating defendants. The class is expected to continue from year to year in perpetuity. The class was created as a separate non-profit entity at Emanuel Hospital. All financial and accounting matters are maintained through a separate account through Emanuel Hospital whose Class Coordinator is responsible for administration, database record-keeping, collections, payments and accounting.

Defendant Eligibility Requirements: *Only those defendants who have never taken the SRSC class before will be eligible to receive a dismissal or sentence of discharge under the class disposition guidelines and as authorized by the Multnomah County Circuit Court Presiding Judge's Order.* For other non-eligible defendants, the court retains the ability to require any defendant to successfully complete the class in addition to a conviction, fine or other sanction.

Database of Class Participants: JoAnne Perrin from Emanuel Hospital is the SRSC administrative clerk. Ms. Perrin will assist Mike Morrison in maintaining a list of the all class participants by using the computer database Microsoft Access to keep accurate and current records of all class participants. The database shall include the defendant's name, date of birth, court case number, and date of successful completion. A master list of all SRSC participants as well as a list of the most recent class participants will be maintained by Emanuel Hospital and available to law enforcement agencies upon request. A list of all the successful SRSC participants is provided by Emanuel to the court within five business days of the class being completed. The class coordinator shall ensure that a duplicate "back up" copy of the master list is kept in a secure location in order to prevent loss of data. The database of class participants is checked by Emanuel to insure that repeat offenders are not allowed to enroll in the class or to receive the benefit of a dismissal or sentence of discharge.

Proof of Successful Completion: SRSC staff provides each successful class participant with a "Certificate of Completion" (including the defendant's name, date of birth, court case number and completion date) at the end of each class. Defendants are solely responsible for providing the original certificate to the court on or before the applicable court date as a condition for obtaining a dismissal or sentence of discharge. The certificate is in a form that is not susceptible to forgery or duplication. It is defendant's responsibility for making a photocopy of the original certificate for their records in case of dispute. Only *original* certificates will be accepted by the court.

LIST OF APPLICABLE VIOLATIONS & DISPOSITION GUIDELINES

Note: Citations to "ORS" refers to Oregon Revised Statutes and "PCC" refers to Portland City Code.

Category I - AUTOMATIC Eligibility Which Results in a Dismissal

The following violations are subject to automatic dismissal (on motion of the state) upon the completion of the Share the Road Safety Class:

Pedestrian

ORS 814.070 Pedestrian improper position on highway
PCC 16.70.210 Pedestrian not using crosswalk

Bicycle

PCC 16.70.320 Bicycle-Operating Rules
ORS 814.485 Failure to wear bicycle helmet <16
ORS 814.486 Endangering bicycle operator or passenger
ORS 815.280 Failure to use required bicycle lighting (with purchase of lighting equipment)
ORS 814.420 Failure to use bicycle lane or path
ORS 814.430 Improper use of lanes on bicycle
ORS 814.440 Failure to signal turn on bicycle
ORS 814.450 Unlawful load on bicycle
ORS 814.460 Unlawful passenger on bicycle
ORS 814.470 Failure to use bicycle seat

Motor Vehicle

ORS 816.330 Defective lighting (with repair of defect)

Category 2 - DISCRETIONARY Eligibility Which Results in a Dismissal or Sentence of Discharge

The following violations are eligible for *dismissal* upon completion of the proposed Share the Road Safety Class on the recommendation of the officer only OR are eligible for a *sentence of discharge* upon a defendant's plea of guilty or no contest and completion of the proposed Share the Road Safety Class either on the officer's recommendation or in the court's discretion.

Pedestrian

ORS 814.020 Pedestrian fails to obey a traffic control device
ORS 814.040 Pedestrian fails to yield to a vehicle
ORS 814.070 Pedestrian improper position upon highway

Bicycle

ORS 811.025 Failure to yield to pedestrian on sidewalk
ORS 814.410 Unsafe operation of bicycle on sidewalk
ORS 811.415 Unsafe passing on the right
ORS 811.265 Failure to obey a traffic control device
ORS 811.270 Failure to obey one-way designation
ORS 811.360 When vehicle turn permitted at stop light; improper turn at stop light

Motor Vehicle

(In cases that clearly involve the interaction of pedestrians, bicyclists and motorists)

ORS 811.265 Failure to obey a traffic control device
ORS 811.360 When vehicle turn permitted at stop light; improper turn at stop light
ORS 811.415 Unsafe passing on the right
ORS 811.435 Operation of a motor vehicle on bicycle trail (lane)
ORS 811.025 Failure to yield to pedestrian on sidewalk
ORS 811.055 Failure to yield to bicyclist on sidewalk
ORS 811.050 Failure to yield to rider on a bicycle lane
ORS 811.028 Failure to stop for pedestrian
ORS 811.020 Passing a stopped vehicle at crosswalk
ORS 811.490 Improper opening of vehicle door
ORS 811.375 Unlawful or unsignaled change of lane

Any violation that is cited as a contributing factor in a Driving under the Influence of Intoxicants (DUI) incident or traffic collision involving physical injury or property damage is not eligible for dismissal or sentence of discharge through this Share the Road Safety Class.

Revised CAL 5-9-07

APPENDIX XI –

I Brake for People Pedestrian Safety Campaign summary



Sam Adams
Commissioner

Susan D. Keil
Director

Don Gardner
Engineering & Development

Lavinia Gordon
System Management

Suzanne Kahn & Eric Peterson
Maintenance

John Rist
Business Services

Paul Smith
Planning

PRESS RELEASE
For Immediate Release
October 22, 2007

Contact: Cheryl E. Kuck
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I BRAKE FOR PEOPLE

ODOT and Portland Office of Transportation Launch Pedestrian Safety Campaign

(PORTLAND, OR) – Did you know that every intersection is a legal crosswalk, whether it’s marked or not? It is! Pedestrian safety advocates, educators, and elementary school students were joined by ODOT Region 1 Manager Jason Tell, Portland Office of Transportation Director Susan Keil, and Portland Public Schools Student Transportation Director Phil Webber on Monday, October 22, to launch a pedestrian safety campaign. The campaign is designed to educate drivers on how to interact with pedestrians safely. Volunteers gathered in the auditorium at Vestal Elementary School to create a living billboard simulating the campaign’s bumper sticker, which reads “I brake for people.”

Pedestrian safety is a major concern in Portland and is regularly cited by residents as one of their top four neighborhood concerns. In downtown Portland, 72% of pedestrian collisions are a result of driver error. Citywide, 49% of pedestrian injuries happen in a crosswalk. One out of three traffic fatalities is a pedestrian or a bicyclist (Portland 1985 – 2000), and pedestrian injuries are the third leading cause of unintentional injury-related death among children.

“Our goal is to reduce pedestrian injuries and fatalities and create a safer environment for everyone,” says City Commissioner Sam Adams. “Drivers need to slow down and stop for pedestrians at both marked and unmarked crossings and allow children, older adults, and all members of our community adequate time to safely cross the street.”

Commissioner Adams notes in addition to safety campaigns like this one, engineering improvements are necessary to make our streets safer for walking, biking, and taking transit. His “Safe, Sound and Green Streets” proposal includes safety improvements at 31 of the city’s highest crash intersections and constructing 47 pedestrian islands at the city’s most dangerous crossings on high-speed, multi-lane arterials serving transit. According to Commissioner Adams, obsolete designs and increasing traffic have contributed to a system that is unsafe.

State highway facilities are part of the extensive street network in the city. Many of these state highways are heavily used by both vehicles and pedestrians and have high incidences of pedestrian injuries and fatalities.

For example, the 82nd Avenue of Roses, State Highway 213, accommodates three schools (including Vestal Elementary School) and TriMet bus line #72 that has more transit riders than any other line outside the downtown bus mall. It is also a transit junction for MAX light rail and I-84 and is a key pedestrian pathway for many residents living on both sides of the street. The 82nd Avenue of Roses averages one pedestrian fatality per year, which is higher than any other single road segment in the city.

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ODOT is a key partner in this effort, contributing approximately \$20,000 toward the "I Brake for People" Campaign. Jason Tell, ODOT Region 1 Manager, says, "Safety is ODOT's top priority. Through our support of this pedestrian campaign, ODOT strives to make our roadways and sidewalks safe to protect all members of our community. We don't want anyone to be afraid, whether they drive, walk, bike, or use transit."

Safety and access are essential for children going to and coming from school. Children are particularly vulnerable in traffic due to developmental factors that limit their ability to determine the speed of a vehicle or direction of a sound. A child's peripheral vision is 30% less than that of an adult, and children typically fail to make eye contact with drivers.

"Many parents don't let their children walk and bike to school because of traffic safety concerns," says Portland Public Schools Superintendent Carole Smith. "If we make streets safer for walking and biking, children will walk, bike, skate, and scoot more, they will be healthier, and they will be better able to tackle the academic day. We all need to do our part to create a safe environment for our kids. Please slow down and stop for people."

Funded in part by the State of Oregon, Portland Office of Transportation, and a federal Safe Communities Grant administered by ODOT, this campaign will feature transit and bus bench ads, radio traffic sponsorship sound bites, bumper stickers, and handbills – all encouraging drivers to look and stop for pedestrians wishing to cross at intersections and crosswalks.

In addition to informing drivers about Oregon crosswalk laws, the campaign demonstrates a community commitment to pedestrian safety. Members of the 82nd Avenue of Roses High Crash Corridor Safety Action Plan Advisory Committees, City of Portland Pedestrian Advisory Committee, and Willamette Pedestrian Coalition participated in Monday's event to help launch the campaign.

A media event took place Monday, October 22, from 10:00 – 10:45 a.m. on Monday, October 22, 2007 at Vestal Elementary School.

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APPENDIX XII –

“Portland Walks – Be Safe!” trainings summary

Portland Walks -- Be Safe! Trainings

The Portland Walks -- Be Safe! training includes information about Oregon's crosswalk law (Stop and Stay Stopped law), relevant Portland information about pedestrian safety, and specific behaviors both pedestrians and drivers can do to make our walking environment safer. The Pedestrian Crosswalk Safety presentation is an approximately 30 minute training (plus Q & A) directed at adult audiences (age 16 years and up) in the City of Portland. Individuals and organizations interested in receiving the training should contact Sharon White at (503) 823-7100 or sharon.white@pdxtrans.org.

Participants that have seen this training give us a positive review. Moira Green, Lloyd District Transportation Management Association, says "Thanks again for the great presentation today. I think it's obvious that there is a very high level of interest in pedestrian safety information among Lloyd District employees. We appreciate your help with ped education!"

APPENDIX XIII –

Safer Routes to Schools program summary

What is Safe Routes to School?

Safe Routes to School is a community approach to encourage and enable more people to walk and bike to school safely. It's about getting kids out of cars and onto their feet and bikes. It's also about making car, bus, and transit routes safe for our kids who can't walk and bike to school. SR2S does this primarily by identifying the safest routes from children's homes to their school and by pointing out route problems for local agencies to investigate to determine potential improvement measures. By combining the "4Es" (education, enforcement, engineering, and encouragement), SR2S provides a comprehensive approach to school traffic safety problems.

There is strong public demand and a real need for school traffic safety services that make streets and sidewalks safer for kids to walk and bike to and from school, parks, recreation centers, and friends' homes. In the annual citizen survey Service Efforts and Accomplishments, Portland residents consistently identify speeding, pedestrian safety, and bike safety as three of their top four neighborhood concerns.

Benefits of Safe Routes to School

- Safer roads for all, especially pedestrians and bicyclists
- Fewer and less severe traffic accidents
- Fewer and less severe child casualties
- Improved children's health, fitness, and development
- Less traffic congestion and air pollution
- Greater independence and freedom
- Mobilized communities working together
- Customized "Safe Routes" maps of your school on the web
- Generations of walkers and bikers becoming drivers who are more sensitive to the safety of walkers and bikers. In other words, this could keep your grandchildren safe.

For children who already walk or bike to school

- SR2S would address areas of their trip that are difficult or hazardous.
- SR2S would improve the safety of walking and biking routes through engineering measures like marked crosswalks, school zone signs, flashing beacons, parking controls, and traffic controls.
- SR2S would teach them the skills and give them the knowledge to walk, bike, and use transit safely.

For children who do not walk or bike to school

- SR2S would give them the opportunity to have regular exercise. Statistics about obesity and the sedentary existence of our children are gloomy.
- SR2S would give them a sense of freedom and responsibility.
- SR2S would connect them to their neighborhood, give them a sense of where they belong, and enhance their sense of identity.

For parents who drive their children to school

- SR2S would reduce their stress by eliminating the battle of traffic congestion during drop-off and pick-up times.
- SR2S would encourage them not to think of the car as the only choice.
- SR2S would give them the opportunity to walk and bike with their children or encourage their kids to walk in groups.

For non-parenting members of the neighborhood

- SR2S would reduce traffic in their neighborhood.
- SR2S would encourage and enable them to walk and bike more safely.
- Kids and parents who are responsible about safety generally make good neighbors.

APPENDIX XIV –

Portland Bicycle Master Plan summary

BICYCLE MASTER PLAN

EXECUTIVE SUMMARY

Introduction

Portland is considered one of the country's most bicycle-friendly cities. In October 1995, it was selected by *Bicycling Magazine* as the most bicycle friendly city in the United States. How did we get there?

Portland's first Bicycle Plan was developed in 1973 by a residents' task force. This effort led to the creation of the Portland Office of Transportation's Bicycle Program--one of the country's oldest--and the Bicycle Advisory Committee, a group of residents appointed by City Council to advise on all matters related to bicycling.

The bicycle is a key means of transportation for thousands of Portland residents and a desired means of transportation for many thousands more. Over half of Portland residents own a bicycle and ride at least occasionally. Bicycle use is rising rapidly. The bicycle share of trips is about two percent in Portland, 3.3 percent in the inner, more dense areas of town. While only 200 cyclists per day were recorded on the Hawthorne Bridge in 1975, by 1995 this number had climbed to nearly 2,000.

Many aspects of Portland encourage bicycle use. Portland's current bikeway network consists of over 150 miles of bicycle lanes, bicycle boulevards, and off-street paths. Tri-Met's entire bus fleet is equipped with bicycle racks. From July 1994 to July 1995, close to 80,000 bicycles were taken on MAX or bus and over 6,300 permits sold. Cyclists can park at over 1,400 publicly-installed bicycle racks or rent longer-term space at one of 190 bicycle lockers. Bicycle commuters can take advantage of one of the new "Bike Central" stations (providing showers, changing facilities, and long-term bicycle storage), while new cyclists will soon be able to enjoy escorted commute rides.

The energy and commitment of many organizations and businesses improve the bicycling environment. Portland's Parks Bureau and Metro's Greenspaces Program are installing dozens of miles of off-street paths, such as the Springwater corridor and Eastside Esplanade. More than a dozen bicycle shops provide crucial services to Portland Cyclists. There is an impressive array of advocacy, education, and riding groups, including the bicycle Transportation Alliance, Community Cycling Center, Critical Mass, Kaiser Permanente's Injury Prevention Program, Portland United Mountain Pedalers, Portland Wheelmen Touring Club, and Yellow Bike Program. The Portland Police Bureau and the Office of Transportation's Parking Patrol use bicycles, as do some of Portland General Electric's meter readers.

Finally, a diverse coalition of educators, administrators, bicycle advocates, and government agencies are working to make bicycling a more viable and safe option for children. These efforts include the Office of Transportation's Kids on the Move curriculum, Traffic Calming Program (installing speed bumps and signal beacons around schools), Community Traffic Safety Program (For Kids' Sake Slow Down campaign, and bicycle safety workshops), and Bicycle Program (installing bicycle racks at, and bikeways to, schools). Others involved include Portland Public Schools, parents, educators, the

Community Cycling Center (teaching children bicycle safety, repair, and riding skills), and numerous groups working to increase helmet use.

With this kind of momentum, increasing bicycle use should be a snap. However, despite all these efforts, Portland still has a long way to go to be truly bicycle-friendly. Our bikeway network is discontinuous and incomplete; only five percent of arterial streets have bicycle lanes. Bicycle parking is found at only two percent of commercial businesses outside the central city. Very few children bicycle to school even if they live less than a mile away. People from all ages, parts of the city, and walks of life have requested improvements to the bicycling environment. Numerous local surveys, focus groups, and other comment opportunities consistently demonstrate the public's interest in and commitment to bicycling as a means of transportation.

Background

The Bicycle Master Plan was created over a two and a half year period with input from over 2,000 residents, including neighborhood activists, business people, parents, educators, regular cyclists, and individuals wishing to bicycle--both for the first time and more frequently. Additional input came from staff of the Portland Office of Transportation, Tri-Met, the Port of Portland, Multnomah County, Washington County, Clackamas County, Metro, the Oregon Department of Transportation, and the Portland bureaus of Planning and Parks.

The Plan provides guidance over a 20-year period for improvements that will encourage more people to ride more frequently for daily needs. The mission of the Master Plan is to make bicycling an integral part of daily life in Portland.

Key Elements

The Bicycle Master Plan addresses five key elements:

- 1) policies and objectives that form part of Portland's Comprehensive Plan Transportation Element;
- 2) developing a recommended bikeway network;
- 3) providing end-of-trip facilities;
- 4) improving the bicycle-transit link; and
- 5) promoting bicycling through education and encouragement.

Associated with each of these elements are objectives, action items, and five-, 10-, and 20-year benchmarks to measure progress. where appropriate, the costs of achieving these benchmarks are included. these benchmarks and costs are found at the end of this Executive Summary.

In addition, the Plan provides bikeway design and engineering guidelines and a summary of laws relating to bicycle use.

APPENDIX XV –

82nd Avenue/Halsey St transit/MAX station CPTED summary



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Crime Prevention Through Environmental Design (CPTED) Partnership Report and Action Plan

**82nd Avenue Max
Platform Workgroup**

May 2007

DRAFT

Introduction

The 82nd Avenue Max Platform Workgroup formed as the result of increased crime and on-going fear of crime as well as traffic safety issues in the area of 82nd Avenue by and at the MAX platform and at the Tri-Met Bus Stops/East and West side of the street (“the site”). The group is comprised of community members, neighborhood association representatives, police personnel, crime prevention personnel, neighborhood coalition representatives, tri-met representatives; city’s planning bureau staff, and other stakeholders.

The group conducted CPTED assessments and reviewed other applicable studies and reports to come up with this report/action plan including but not limited to:

- Review of crime stats for the area
- Both day and night time CPTED assessments of the site
- Review of pedestrian injury and fatality data

Purpose of this Report/Action Plan

The purpose of this report is to develop a short-term and a long-term action plan for addressing the crime and the fear of crime at the site via proactive problem solving including but not limited to a CPTED assessment of the location, community organizing, police missions, physical improvements and community development projects in the area, and much more.

The information contained herein is based on guidelines set by the City of Portland’s Crime Prevention CPTED program and the observations of the 82nd Avenue Max Platform Workgroup conducting the assessment.

This assessment is intended to assist partners in improving the overall level of security of the assessed site and is not intended to imply that the existing security measures, or proposed security measures are absolute or perfect.

All new construction or retrofits should comply with existing city building codes, zoning, laws and fire codes.

Prior to any modifications of the property the proper licenses and variance should be obtained and inspections should be conducted by the appropriate agency.

The action items recommended in this report/action plan are identified as having the following:

"High" priority line items are considered by the 82nd Avenue Workgroup as most important.

"Medium" priority line items are somewhat less important.

"Low" priority line items are considered least important.

Priority has been assigned by the group for each line item without regard for the time frame within which the recommendation can realistically be accomplished (short-range, long-range) and without concern for whether funding sources can be practically identified.

Accordingly, it is possible that a "High" priority item may not be realized for many years. In contrast, some "Low" priority items could be potentially accomplished in a relatively short amount of time without significant capital expense.

Reasonable implementation timeline on the scale of short-term (being equal to 1 to 3 months approximately) to mid-term (up to 12 months) to long-term (over 12 months) and on-going will be used to further measure implementation opportunity of each action item.

Plan Funding

This plan does not guarantee funding from any sources; however, this report/action plan was envisioned by the group to serve as a tool for:

- Future funding requests
- Future grant proposals
- To motivate stakeholder and responsible parties to allocate funding to the site
- To develop partnerships between responsible parties where funding and in-kind work are shared among them.

CPTED Criteria Overview

The CPTED concept is that the proper design and effective use of a built environment can lead to the reduction of crime and improvement in the quality of life. CPTED reviews involve four overlapping strategies: Natural Surveillance; Territorial Reinforcement; Natural access Control and Target Hardening.

Natural Surveillance:

*Is a design concept intended to allow intruders and offenders to be easily viewable to people passing the property and those using the property.

Territorial Reinforcements

*Is a strategy to create and/or extend the property's sphere of influence, which is the perception that someone is in control of the area. Distinguishes what is private space from public space by using landscaping, pavement designs, signage and fences.

Natural Access Control

*Strategy intended to decrease the opportunity for offending by denying access to a crime target and increasing the perception of risk to the offender.

Target Hardening

*Strategy enhancements to the physical security of crime target through the use of locks, door and window types, security alarms, and other crime prevention methods.

Activity Support

*Infusion of positive activity support such as neighborhood watch organizing into the area.

Report/Action Plan Objectives

- Educate responsible parties and site stakeholders about each other's concerns and visions for the future of the site
- Promote collaboration between partners and site stakeholders in order to achieve mutual goals and a shared sense of responsibility
- Initiate change, rather than simply reacting to it, by addressing specific issues and opportunities with the site and the local community
- Achieve sensible and coordinated project and program planning within the site and apply successful strategies at other similar sites to reduce and prevent crime
- Address livability issues at the site such as public urination on property
- Develop plans and strategies for safer movement of people across 82nd Avenue
- Develop plans and strategies for maximized use of 82nd MAX platform by riders
- Weaving new partnerships of stakeholders to cover all contingencies

List of Responsible Parties and Applicable Abbreviations

CPTED – Crime Prevention Through Environmental Design

PDOT – Portland Department of Transportation

CNN – Central Northeast Neighbors, Neighborhood Coalition Office

NA – Neighborhood Association

BA – Business Association

ODOT – Oregon Department of Transportation

CP – Crime Prevention

PPB – Portland Police Bureau including Transit Police

BOP – Bureau of Planning

COP – City of Portland

ODOT – Oregon Department of Transportation

YEI – Youth Employment Institute

ONI – Office of Neighborhood Involvement including all applicable programs
(Graffiti Abatement, Liquor Licensing, etc.)

Portland Parks Bureau including the Urban Forestry Department

Union Pacific

Neighborhood Coalitions

Community Volunteers including students from local schools, area business owners, residents, etc.

APPENDIX XVI

NE 82nd Avenue of Roses Transportation and Planning Tour summary

82ND AVENUE OF ROSES CNN NORTHERN TRANSPORTATION TOUR
AUGUST 6TH 2007
TOUR COMMENT FORM SUMMARY

Stop #1 – 82nd Avenue of Roses MAX station

- ◆ Mid-block crossing issues still need to be addressed on 82nd.
- ◆ More focus needed on slowing or stopping cars than forcing peds out of direction
- ◆ More high-quality, high-density residential and commercial development surrounding the station would provide more “eyes” in the area at all times of the day and help eliminate much of the crime
- ◆ Poor design of MAX station, accessible only from one side of 82nd, needs to be addressed
- ◆ Aesthetics of the area need to be addressed – MAX station and surrounding vicinity are unfriendly environments not in keeping with pedestrian scale
- ◆ Additional shelter from elements needed for this busy transit transfer point
- ◆ Insufficient time given for peds trying to cross at the light, particularly the elderly.
- ◆ Security at MAX station is welcome addition, but needs to be around the clock, not just at peak hours
- ◆ Improved street lighting, and other aesthetic additions (twinkle lights in bushes etc) could prove very effective in reducing crime

Stop #2 – Glenhaven Skate Park, at Glenhaven Park

- ◆ Consensus is this is a great use of public space
- ◆ Providing kids with constructive ways to spend their time out of doors keeps them from loitering and causing trouble elsewhere – skatepark is working proof of this
- ◆ Concerns about access to and from skatepark and MAX station/transit lines, particularly given cresting of hill on 82nd adjacent to skatepark & its impacts on ped and vehicle visibility
- ◆ More lighting at night around the skatepark would improve safety and reduce potential crime
- ◆ Concern about child safety, with proposed auto-oriented
- ◆ Passive surveillance needed on site

Stop #3 – Proposed big box development at NE 82nd & Siskiyou, former landfill site

- ◆ Anticipated will generate extra 7000 to 11,000 extra auto trips per day, leading to congestion and safety concerns for traffic
- ◆ Concerns with site chosen, given proximity to Madison High School, and Glenhaven Park
- ◆ Poster child for the worst kind of development being proposed – large, auto-dominated, suburban.
- ◆ Mixed-use activity/development with less auto-trips generated is needed to realize its full potential
- ◆ Anticipated store will have 900 parking spots – huge impact on 82nd Avenue

Stop #4 – 82nd & Sandy, high crash intersection

- ◆ Poor sight lines for peds and vehicles
- ◆ Speeding traffic on both Sandy & 82nd makes for particularly dangerous intersection
- ◆ Long crossing distance either side of this intersection along 82nd for pedestrians – 1000 feet until next signalized crossing each direction

- ◆ Intersection has great examples of good and bad pedestrian planning. Columbia Knoll corner has wide, smooth sidewalks with proper curb ramps and good clearance. Opposite corner has narrow, crumbling sidewalks with poor curb ramp access, and poor clearance around trees and bushes

Stop #5 – Cascade MAX station & new Ikea development

- ◆ Given the big-box nature of Ikea, its proximity to transit is a positive step reducing auto-centric nature of the development
- ◆ Cascade Station is a pleasing development – with buildings fronting the street, consideration given to aesthetics of development including landscaping and lighting, and good bike, rail, pedestrian and auto access

Stop #6 – CNN offices to hear transportation funding initiatives

- ◆ Possible good revenue generators for consideration – speeding tickets & other fines; gas tax; user fees; freeway tolls

Land use/zoning transportation-related comments

- ◆ Desperately need an 82nd Avenue Master Plan – long overdue next step – has been over 20 years since any planning has been done to create a vision for the future in terms of land-use, zoning, and transportation of the corridor
- ◆ More intense, mixed-use zoning needed. Need help to get demonstration projects launched in order to begin finding the right balance between autos and pedestrians.
- ◆ Consider using on-street parking to calm targeted stretches of corridor
- ◆ Need more signaled and unsignaled intersections for pedestrian crossings

APPENDIX XVII

Examples / photographs of engineering tools proposed in action plan matrix

Examples of Engineering Tools Proposed in Action Plan Matrix

Pedestrian Refuge Island Examples

1) "Z" Pedestrian Refuge Island



2) Standard Pedestrian Refuge Island – Colored concrete



Leading Pedestrian Interval (LPI) Signals

“Leading Pedestrian Interval – Pedestrians who cross in the crosswalk during the green light have trouble with drivers who turn into their path and refuse to yield. This conflict has been the cause of many pedestrian injuries and deaths, and is one of the main deterrents of blind people concerned with crossing streets independently. The Leading Pedestrian Interval (LPI) provides a few seconds head start to the pedestrians. The pedestrian signal begins while the signal for the drivers remains red; after pedestrians have had a few seconds to commence crossing the street, the drivers get a green signal.”

Curb Ramps



New Sidewalk Infill



Speed Reader Boards



Enhanced One Way Signage

