

Getting there safely



2018 Regional Transportation Plan update

TRANSPORTATION SAFETY

High Injury Corridors - DRAFT

January 2017

REGIONAL HIGH INJURY CORRIDORS

Regional High Injury Corridors (HICs) are stretches of roadways in the Portland metropolitan area where the highest concentrations of severe crashes involving a motor vehicle occur on the regional transportation network.¹ Metro developed a replicable and quantitative assessment of the crash performance on roadways on the regional transportation network to support planning and prioritization of corridor safety efforts.

A majority (60%) of severe crashes in the region occur on 23% of the roadways on the regional transportation network, and 6% of all streets in the region.

| Corridors | Miles of Streets | % of all severe crashes (2010-2014) | % regional transportation network (1,739 miles) | % of all streets (6,565 miles) |
|--|------------------|-------------------------------------|---|--------------------------------|
| Regional HIC (auto, bike, pedestrian) | 398 | 60% | 23% | 6% |
| Auto HIC (auto only) | 282 | 50% | 16% | 4% |
| Bike HIC (bike/auto) | 177 | 50% | 10% | 3% |
| Ped HIC (pedestrian/auto) | 133 | 50% | 8% | 2% |

Purpose

Metro developed the HICs to help meet the safety goals and targets of the Regional Transportation Plan (RTP).² As part of the 2018 update of the RTP, Metro is updating the 2012 Regional Transportation Safety Plan and the 2012 Metro State of Safety Report. The 2014 RTP identified the need to identify HICs in the update of the transportation safety plan to provide another tool to support planning and prioritization of safety efforts.

The 2012 Metro State of Safety Report identified several factors contributing to high severe crash rates in the region: arterial roadways, multi-lane roadways, lack of lighting, and behavior (e.g. drunk driving). At the time, however, Metro lacked the ability to quantify risk by specific roadways.

¹ The regional transportation network is comprised of the arterial and throughway, freight, transit, bicycle and pedestrian networks shown in the network maps in Chapter 2 of the 2014 Regional Transportation Plan, <http://www.oregonmetro.gov/regional-transportation-plan>

² Metro is currently updating the RTP, including the safety performance measures and targets. A new safety target will be proposed in the 2018 RTP: "By 2035 eliminate transportation related fatalities and serious injuries for all users of the region's transportation system, with a 16% reduction by 2020 (as compared to the 2015 five year rolling average), and a 50% reduction by 2025."

A recommendation of the 2014 Regional Transportation Safety Plan was to develop performance measurements to identify high-crash arterials in the region. Metro began to research methods for identifying regional high injury corridors in 2015 to fulfill this recommendation and incorporate the findings into the update Regional Transportation Safety Plan and the 2018 RTP.

Project evaluation criteria and evaluation processes for the RTP have not yet been decided on, but safety will most likely be included and high injury corridors may also be used in the RTP evaluation. Projects submitted to the RTP will identify if they are on a high injury corridor and whether they are a safety project.³ This information will be used to help assess the level of investment in the plan specifically directed towards safety and specifically addressing safety issued on a high injury corridor. This information may also possibly be used in the RTP project evaluation.

High Injury Corridors

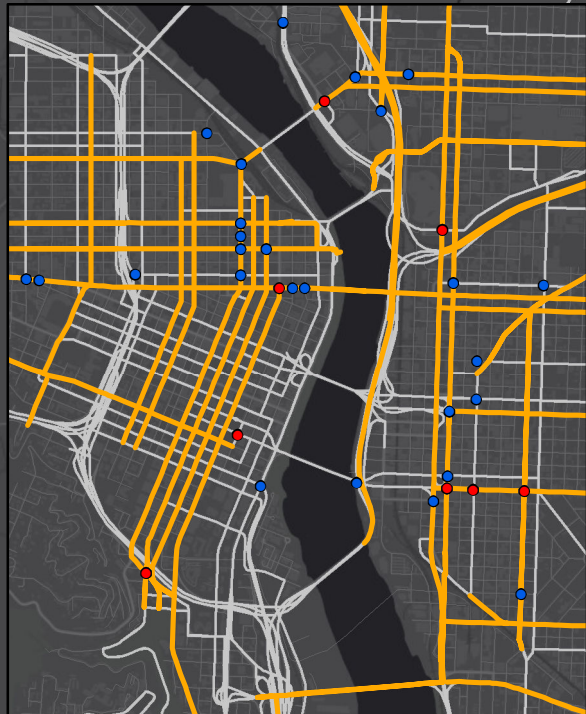
The following maps show the combined high injury corridors and for each mode. The thirty-five corridors with the highest severe crashes per miles for each mode and combined are listed after each map. A full list of corridors for each mode and combined is provided at the end of the report.

³ In the RTP, regional safety projects are defined as infrastructure projects with the primary intent to address a safety issue, and allocate a majority of the project cost to a documented safety countermeasure(s) to address a specific documented risk, or improve safety for vulnerable users, including people walking and bicycling, older adults and youth. Example safety countermeasures include, but are not limited to, FHWA's nine proven safety countermeasures: road diets, medians and pedestrian crossing islands, pedestrian hybrid beacons, roundabouts, access management, retroreflective backplates, safety edge, enhanced curve delineation, and rumble strips.

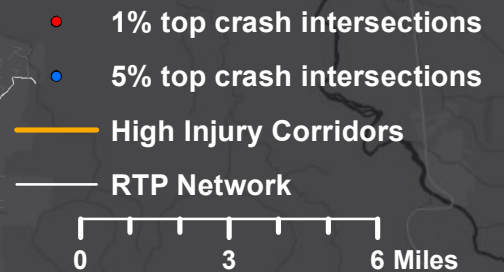
Oregon Metro High Injury Corridors

**60% of Severe Crashes
Occur on 6% of All Streets**

Central City



Source data: Metro Regional Transportation Plan (RTP) Network, RTP Bikeways, RTP Pedways, ODOT crash data (2010-2014)



| Top 35 Combined (Ped/Bike/Auto) High Injury Corridors –Severe Crashes per Mile | | | | | | | | | |
|--|--|--|---|---------------------|--------|-------------------------|----------------|------|------|
| Corridor | From | To | Jurisdiction | # of Severe Crashes | Length | Severe Crashes per Mile | In Top 35 HIC? | | |
| | | | | | | | Ped | Bike | Auto |
| I-5 Southbound | I-405 at Fremont Bridge | Burnside Bridge | Portland | 13 | 1.5 | 8.61 | | | X |
| Adair | Baseline | Pacific Highway | Cornelius & Forest Grove | 13 | 1.5 | 8.48 | | X | X |
| Division | 7 th | 190 th | Gresham & Portland | 80 | 9.6 | 8.29 | X | X | X |
| I-5 Northbound | Marquam Bridge | I-405 at Fremont Bridge | Portland | 18 | 2.5 | 7.13 | | | X |
| 181 st | Sandy | 182 nd (Merging) | Gresham | 14 | 2.1 | 6.62 | X | X | X |
| Tualatin Valley Highway | Hocken | 10 th | Washington Co, Beaverton & Hillsboro | 55 | 8.3 | 6.60 | | X | X |
| Broadway | SW 4 th | Naito | Portland | 13 | 2.0 | 6.36 | X | X | X |
| Ross Island Bridge | Grand | I-5 | Portland | 8 | 1.4 | 5.81 | | | X |
| 82 nd | Killingsworth | E. Berkeley | Clackamas Co, Gladstone & Portland | 75 | 13.4 | 5.60 | X | X | |
| Foster | 136 th | 50 th & Powell | Portland | 26 | 4.7 | 5.57 | X | X | |
| 102 nd | Sandy | Cherry Blossom (Merging) | Maywood Park & Portland | 15 | 2.9 | 5.19 | X | | X |
| Powell | Burnside | McLoughlin | Portland | 65 | 12.9 | 5.04 | X | X | |
| I-84 Westbound | 82 nd | Martin Luther King Jr. | Gresham & Portland | 24 | 4.8 | 5.04 | | | X |
| Rosa Parks | 42 nd | Killingsworth | Portland | 8 | 1.6 | 4.98 | | | X |
| 96 th | 99 th & Washington | Division | Portland | 5 | 1.0 | 4.96 | X | | X |
| I-5 Southbound | Hwy 217 | Tualatin River | Tigard | 5 | 1.0 | 4.85 | | | X |
| 185 th | Springville | Farmington | Washington Co & Hillsboro | 29 | 6.0 | 4.82 | | X | X |
| SE/NE 162 nd | Powell | Sandy | Gresham & Portland | 18 | 3.8 | 4.76 | X | | |
| Martin Luther King Jr. | Columbia Blvd. | Division | Multnomah Co, Beaverton & Portland | 27 | 5.8 | 4.66 | X | X | |
| Sunset Highway (Eastbound) | Hwy 217 | Tunnel | Portland | 9 | 1.9 | 4.63 | | | X |
| Grand Avenue | Broadway | Powell | Portland | 16 | 3.5 | 4.63 | X | X | |
| Highway 217 Southbound | Beaverton Hillsdale | Sunset Highway | Beaverton | 8 | 1.8 | 4.57 | | | X |
| Washington Street | Stark | Thorburn | Portland | 9 | 2.0 | 4.56 | | | X |
| Tualatin Valley Highway | 341 st | 17 th | Washington Co, Cornelius & Hillsboro | 5 | 1.1 | 4.54 | | | X |
| Halsey | I-84 at NE 67th | Sandy | Portland | 7 | 1.6 | 4.48 | | | X |
| McLoughlin | Jefferson | Oregon City Bridge | Clack Co, Gladstone, Milwaukie, Ore City | 30 | 6.8 | 4.41 | X | | |
| Highway 8 / Canyon | Hocken | Sunset Highway | Portland | 17 | 3.9 | 4.41 | | | |
| I-205 Southbound | Washington State Line | Marine Dr | Beaverton | 7 | 1.6 | 4.36 | | | X |
| Wiedler | 24 th | Broadway (Merging) | Portland | 6 | 1.4 | 4.31 | | X | |
| Highway 217 – Northbound | Pacific Highway | Scholls Ferry | Beaverton & Tigard | 7 | 1.6 | 4.29 | | | X |
| I - 84 Eastbound | I-5 | I-205 | Portland | 21 | 4.9 | 4.28 | | | X |
| Highway 8 / Baseline | TV Highway (near SW 17 th) | TV Highway (near SE 10 th) | Hillsboro | 7 | 1.7 | 4.22 | X | | |
| Beaverton Hillsdale | Capitol Highway | Lombard | Washington Co, Beaverton & Portland | 22 | 5.3 | 4.13 | | | X |
| 112 th | Holgate | Market | Beaverton | 6 | 1.5 | 3.98 | | | |
| Highway 217 - Northbound | Beaverton Hillsdale | Sunset Highway | Clack Co, Wash Co, Lake Oswego, Tigard & Tualatin | 7 | 1.8 | 3.96 | | | X |

Oregon Metro High Injury Corridors

**50% of Severe Auto Crashes
Occur on 4% of All Streets**

Central City



Source data: Metro Regional Transportation Plan (RTP) Network, RTP Bikeways, RTP Pedways, ODOT crash data (2010-2014)

— Auto HIC
— RTP Network

0 3 6 Miles

Top 35 Auto High Injury Corridors – Severe Crashes per Mile

| Corridor | From | To | Jurisdiction | # of Crashes | Length | Severe Crashes per Mile |
|----------------------------|-----------------------------|-----------------------|---|--------------|--------|-------------------------|
| I-5 Southbound | I-405 at Fremont Bridge | Burnside Bridge | Portland | 11 | 1.5 | 7.28 |
| Adair | Baseline | Pacific | Cornelius & Forest Grove | 11 | 1.5 | 7.18 |
| I-5 Northbound | Marquam Bridge | I-405 | Portland | 16 | 2.5 | 6.34 |
| Division | 7 th | 190 th | Gresham & Portland | 54 | 9.6 | 5.60 |
| 181 st | Sandy | 182 nd | Gresham | 11 | 2.1 | 5.20 |
| Ross Island Bridge | Grand | I-5 | Portland | 7 | 1.4 | 5.08 |
| Rosa Parks | Cully | Killingsworth | Portland | 8 | 1.6 | 4.98 |
| I-5 - Southbound | Hwy 217 | Tualatin River | Tigard | 5 | 1.0 | 4.85 |
| Tualatin Valley Highway | Hocken | 10 th | Washington County, Beaverton, & Hillsboro | 40 | 8.3 | 4.80 |
| Sunset Highway (Eastbound) | Hwy 217 | Tunnel | Multnomah County, Beaverton, & Portland | 9 | 1.9 | 4.63 |
| Hwy 217 Southbound | Sunset Highway | Beaverton Hillsdale | Beaverton | 8 | 1.8 | 4.57 |
| I-84 Westbound | Martin Luther King Jr. | 82 nd | Portland | 21 | 4.8 | 4.41 |
| I-205 Southbound | Washington State Line | Marine Dr | Portland | 7 | 1.6 | 4.36 |
| Hwy 217 Northbound | Scholls Ferry | Pacific Highway | Beaverton & Tigard | 7 | 1.6 | 4.29 |
| 185 th | Springville | Farmington | Washington County & Hillsboro | 25 | 6.0 | 4.16 |
| I-84 Eastbound | I-5 | I-205 | Portland | 20 | 4.9 | 4.07 |
| Washington Street | Stark St. | Thorburn | Portland | 8 | 2.0 | 4.05 |
| 96 th | SE Washington St. | SE Division St. | Portland | 4 | 1.0 | 3.97 |
| Hwy 217 Northbound | Beaverton Hillsdale | Sunset Highway | Beaverton | 7 | 1.8 | 3.96 |
| I-5 Northbound | Kruse | Nyberg | Clack. Co, Wash. Co, L. Oswego, Tigard & Tualatin | 11 | 2.8 | 3.96 |
| Broadway | SW 4 th | Naito | Portland | 8 | 2.0 | 3.92 |
| Halsey | I-84 at NE 67 th | Sandy | Portland | 6 | 1.6 | 3.84 |
| 47 th | Glisan | Wistaria | Portland | 4 | 1.0 | 3.83 |
| 102 nd | Sandy | Cherry Blossom | Maywood Park & Portland | 11 | 2.9 | 3.81 |
| Tualatin Sherwood | Pacific Highway | Nyberg | Washington County & Sherwood & Tualatin | 17 | 4.5 | 3.75 |
| I-205 Southbound | Washington State Line | Division | Portland | 4 | 1.1 | 3.70 |
| Brookwood | Shute | Sunset Highway | Hillsboro | 4 | 1.1 | 3.68 |
| Tualatin Valley Highway | 341 st | 17 th | Washington County, Cornelius, & Hillsboro | 4 | 1.1 | 3.63 |
| I-5 Southbound | Nyberg | Kruse | Tigard & Tualatin | 5 | 1.4 | 3.62 |
| I-205 Northbound | Airport Way | Washington State Line | Portland | 6 | 1.7 | 3.59 |
| I-5 Southbound | Wilsonville Road | Miley | Clackamas County & Wilsonville | 4 | 1.1 | 3.58 |
| SE Bob Schumacher Road | Idleman & Otty | Stevens | Clackamas County & Happy Valley | 4 | 1.1 | 3.49 |
| I-5 Northbound | Bertha Blvd | Marquam Bridge | Portland | 11 | 3.2 | 3.45 |
| Allen | Davis | 92 nd | Beaverton | 10 | 2.9 | 3.41 |
| Beaverton Hillsdale | Capitol Highway | Lombard | Washington County, Beaverton, & Portland | 18 | 5.3 | 3.38 |

Oregon Metro High Injury Corridors

50% of Pedestrian Crashes
Occur on 2% of All Streets

Central City



Source data: Metro Regional Transportation Plan (RTP) Network, RTP Bikeways, RTP Pedways, ODOT crash data (2010-2014)

----- Pedestrian HIC
—— RTP Network

0 3 6 Miles

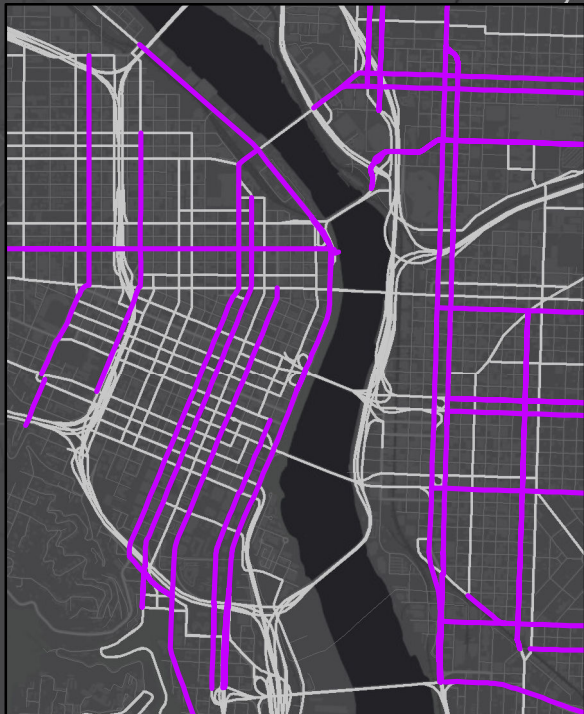
34 Pedestrian High Injury Corridors –Severe Crashes per Mile

| Corridor | From | To | Jurisdiction | # of Severe Crashes | Length (MI) | Severe Crashes per Mile | # of Minor Crashes |
|------------------------------|--|--|--|---------------------|-------------|-------------------------|--------------------|
| Division | 7 th | 190 th | Gresham & Portland | 22 | 9.6 | 2.28 | 61 |
| 82 nd | Killingsworth | Causey | Clackamas Co., Gladstone & Portland | 27 | 13.4 | 2.02 | 93 |
| Broadway | SW 4 th | Naito | Portland | 4 | 2.0 | 1.96 | 24 |
| McLoughlin | Jefferson | Oregon City Bridge | Clackamas Co., Gladstone, Milwaukie, Oregon City | 13 | 6.8 | 1.91 | 32 |
| Foster | 136 th | 50 th Ave & Powell Blvd. | Portland | 8 | 4.7 | 1.71 | 18 |
| East Burnside | 75 th | 124 th | Portland | 4 | 2.6 | 1.55 | 7 |
| SW 4 th | Sheridan | Burnside | Portland | 2 | 1.3 | 1.53 | 20 |
| SE 28 th | Madison | Knott | Portland | 3 | 2.0 | 1.49 | 5 |
| SE/NE 102 nd | Sandy | Cherry Blossom | Maywood Park & Portland | 4 | 2.9 | 1.38 | 19 |
| Burnside | At SW Barnes | NE 68 th | Portland | 14 | 10.2 | 1.37 | 56 |
| Alberta | 33 rd | Martin Luther King Jr. | Portland | 2 | 1.5 | 1.34 | 13 |
| SE/NE 162 nd | Powell | Sandy | Gresham & Portland | 5 | 3.8 | 1.32 | 11 |
| Highway 212 | I-205 | East of HWY 224 Interchange | Clackamas County & Happy Valley | 3 | 2.4 | 1.25 | 9 |
| Baseline | TV Highway (near SW 17 th) | TV Highway (near SE 10 th) | Hillsboro | 2 | 1.7 | 1.21 | 12 |
| Powell | Burnside | McLoughlin | Gresham & Portland | 15 | 12.9 | 1.16 | 75 |
| Grand | Broadway | Powell | Portland | 4 | 3.5 | 1.16 | 12 |
| SE 182 nd | Highland & Powell | 181 st | Gresham | 2 | 1.7 | 1.15 | 7 |
| Everett | Westover | Naito | Portland | 2 | 1.8 | 1.10 | 13 |
| SW/NW 6 th Ave. | Sheridan | Irving | Portland | 2 | 1.8 | 1.10 | 10 |
| Martin Luther King Jr. | Columbia | Division | Portland | 6 | 5.8 | 1.03 | 31 |
| SE 96 th | Washington Street | Division | Portland | 1 | 1.0 | 0.99 | 5 |
| SE 181 st | Sandy | 182 nd | Gresham | 2 | 2.1 | 0.95 | 16 |
| Sandy | 7 th | 165 th | Maywood Park & Portland | 9 | 9.6 | 0.94 | 41 |
| Multnomah Street | Steel Bridge | 21 st | Portland | 2 | 2.2 | 0.91 | 14 |
| Kane | 257 th & Stark | Orient & Palmquist | Gresham & Troutdale | 2 | 2.2 | 0.89 | 15 |
| SW/NW 11 th | Lovejoy | Market | Portland | 1 | 1.1 | 0.89 | 7 |
| Cesar E. Chavez | Wistaria | Woodstock | Portland | 4 | 4.7 | 0.85 | 27 |
| SW/ NW 10 th Ave. | Northrup | Market | Portland | 1 | 1.2 | 0.80 | 8 |
| Broadway | Broadway Bridge | Sandy | Portland | 2 | 2.5 | 0.80 | 26 |
| Lovejoy | Cornell | Broadway | Portland | 1 | 1.3 | 0.77 | 8 |
| NE/SE 122 nd | Skidmore | Foster | Portland | 4 | 5.5 | 0.73 | 30 |
| 1 st | Glencoe | Wood | Hillsboro | 1 | 1.5 | 0.68 | 12 |
| Hawthorne | 51 st | Martin Luther King Jr. | Portland | 2 | 3.1 | 0.66 | 18 |
| SW/NW 5 th | Irving | Sheridan | Portland | 1 | 1.8 | 0.55 | 14 |



Oregon Metro High Injury Corridors

**50% of Bike Crashes
Occur on 3% of All Streets**

Central City



Source data: Metro Regional Transportation Plan (RTP) Network, RTP Bikeways, RTP Pedways, ODOT crash data (2010-2014)

 Bike HIC
 RTP Network

0 3 6 Miles

Top 35 Bike High Injury Corridors –Severe Crashes per Mile

| Corridor | From | To | Jurisdiction | # of Severe Crashes | Length (MI) | Severe Crashes per Mile | # of Minor Crashes |
|-------------------------|-------------------------|---------------------------|---------------------------------------|---------------------|-------------|-------------------------|--------------------|
| SE 50 th | Powell | Division | Portland | 2 | 1.1 | 1.79 | 5 |
| NE Wielder | 24 th | Broadway | Portland | 2 | 1.4 | 1.44 | 19 |
| Marine Drive | 122 nd | Portland Airport | Portland | 3 | 2.7 | 1.12 | 3 |
| NW Everett | Westover | Naito | Portland | 2 | 1.8 | 1.10 | 13 |
| Skidmore | Interstate | Martin Luther King Jr. | Portland | 1 | 1.0 | 0.99 | 11 |
| SW/NE 257 th | I-84 | Kane & Stark | Troutdale | 2 | 2.1 | 0.97 | 6 |
| SE 28 th | Woodstock | Gladstone | Portland | 1 | 1.1 | 0.88 | 3 |
| SE Ankeny | 28 th | Martin Luther King Jr. | Portland | 1 | 1.2 | 0.84 | 14 |
| 10 th | Cornelius Schefflin | Oleander | Cornelius | 1 | 1.2 | 0.81 | 3 |
| Powell | Burnside | McLoughlin | Gresham & Portland | 9 | 12.9 | 0.70 | 45 |
| Martin Luther King Jr. | Columbia | Division | Portland | 4 | 5.8 | 0.69 | 38 |
| SW/NW 18 th | Thurman | Collins & Jefferson | Portland | 1 | 1.5 | 0.69 | 7 |
| Ainsworth | Vancouver | 27 th | Portland | 1 | 1.5 | 0.67 | 5 |
| Gladstone | 42 nd | 52 nd | Portland | 1 | 1.5 | 0.67 | 7 |
| Hawthorne | 51 st | Martin Luther King Jr. | Portland | 2 | 3.1 | 0.66 | 46 |
| Adair | Baseline | Pacific | Cornelius & Forest Grove | 1 | 1.5 | 0.65 | 6 |
| Foster | 136 th | 50 th & Powell | Portland | 3 | 4.7 | 0.64 | 25 |
| Oak | Baseline & T.V. Highway | 10 th | Hillsboro | 1 | 1.6 | 0.62 | 4 |
| Tualatin Valley Highway | Hocken | 10 th | Washington Co., Beaverton & Hillsboro | 5 | 8.3 | 0.60 | 26 |
| Grand | Broadway | Powell | Portland | 2 | 3.5 | 0.58 | 34 |
| Broadway | SW 4 th | Naito | Portland | 1 | 2.0 | 0.49 | 37 |
| Clinton | 50 th | 12 th | Portland | 1 | 2.1 | 0.48 | 7 |
| Williams | Jessup | Wheeler | Portland | 2 | 4.2 | 0.48 | 25 |
| Vancouver | Weilder | Martin Luther King Jr. | Portland | 3 | 6.3 | 0.47 | 30 |
| SE/NE 181 st | Sandy | 182 nd | Gresham | 1 | 2.1 | 0.47 | 19 |
| Multnomah | Steel Bridge | 21 st | Portland | 1 | 2.2 | 0.45 | 16 |
| Cesar E. Chavez | Wistaria | Woodstock | Portland | 2 | 4.7 | 0.42 | 19 |
| Division | 7 th | 190 th | Gresham & Portland | 4 | 9.6 | 0.41 | 52 |
| Belmont | 69 th | Grand | Portland | 2 | 4.8 | 0.41 | 15 |
| Broadway | Broadway Bridge | Sandy | Portland | 1 | 2.5 | 0.40 | 54 |
| SE 11 th | Sandy | Clinton | Portland | 1 | 2.6 | 0.39 | 19 |
| Multnomah Blvd. | Garden Home | I-5 | Portland | 1 | 2.7 | 0.37 | 10 |
| 185 th | Springville | Farmington | Washington Co. & Hillsboro | 2 | 6.0 | 0.33 | 21 |
| Barbur Drive | 65 th | Sheridan | Portland | 2 | 6.3 | 0.32 | 26 |
| NE/SE 82 nd | Killingsworth | Berkeley St. | Clackamas Co., Gladstone & Portland | 4 | 13.4 | 0.30 | 61 |

Methodology

Metro reviewed methods used by San Francisco, Los Angeles, Florida, Toledo, Hillsborough County MPO, Kentucky, San Diego, Mid-Ohio Regional Planning Commission, Portland and ODOT. Metro had several goals for the methodology:

- that it be replicable so that it could be used over time to track changes;
- that it be quantifiable so that assessments could be made objectively;
- that it focus on severe crashes and not fender benders;
- that it focus on the regional transportation network;
- that it identify high injury corridors and not only hot spots;
- that it capture a majority of the fatal and severe crashes in the region while also resulting in a subset of roadways in order to support planning and prioritization;
- that segments be normalized by segment length.

Metro primarily utilized the approaches developed by San Francisco and Portland and then developed a GIS based analysis that achieved the goals.⁴

1. 2010-2014 crash data from the Oregon Department of Transportation was analyzed weighting fatal and severe crashes higher than other crashes.
2. Regional transportation networks for freight, arterial and throughway, transit, bicycle and pedestrians identified in the 2014 RTP were combined into one regional transportation network.
3. Corridors were created based on the location of severe crashes, which were given an aggregate crash score based on the frequency and severity of crashes, normalized by the length of the segment.
4. The corridors identified as high injury corridors are the roadway segments with the highest crash score per mile on the regional transportation network. The analysis was done separately for auto only crashes, bicycle/auto crashes, and pedestrian/auto crashes to identify the corridors where at least 50% of all severe crashes for each of the modes are occurring.
5. The combined high injury corridors identify 60% of all severe crashes.

⁴ "Identifying High Injury Density Corridors and Areas for Targeted Safety Improvements to Reduce Severe and Fatal Pedestrian Injuries: A Methodology" 2013

http://www.sfhealthequity.org/images/Merged_HIC_Methods_2015.pdf

Portland High Crash Network: <https://www.portlandoregon.gov/transportation/54892> and High Collision Intersections: <https://www.portlandoregon.gov/transportation/article/549274>

6. Intersections with the highest weighted crash scores are also identified. There are 42 intersections, or 1% of all 4,200 intersections in the region that have a weighted crash score greater than 128. There are 174 intersections in the top 5%, with weighted crash scores higher than 80.

The crashes/ corridors are not normalized by vehicle miles traveled (VMT) or by population. Normalizing by VMT and population is helpful to understand crash rates, and the Metro State of Safety Report provides crash rates at various levels of geography. The high injury corridors weighted crash scores are purposefully not normalized by VMT or population because the intent was to identify corridors and intersections with the highest concentrations of severe crashes, compared to the rest of the region, no matter the number of VMT or population. This intent is tied directly to achieving a zero deaths and severe injuries target.

Consistency with other high crash locations

In the Portland metropolitan area several jurisdictions have identified high crash networks or locations, including Portland, Washington County, Clackamas County, and Hillsboro. Additionally, ODOT and many jurisdictions use Safety Priority Index System (SPIS) and All Roads Transportation Safety (ARTS) program high crash locations. The regional high injury corridors do not contradict the locations identified by these agencies, but do provide:

- a regionally consistent methodology for the regional transportation network,
- focus on fatal and severe crashes,
- are specific to the urban region,
- and identify corridors as opposed to hot spots.⁵

Both ARTS and SPIS focus on specific locations, while the HICs identify corridors. HICs and ARTS focus on severe crashes. SPIS captures locations where there are also high frequency and rate of crashes, in addition to severe crashes; a roadway segment becomes a SPIS site if a location has three or more crashes or one or more fatal crashes over the three year period. The ARTS program identifies hotspot locations, defined as a location that has at least one fatal or serious injury crash within the last five years. SPIS sites and ARTS hotspots overlap with the high injury corridors and the regional high crash intersections identify high crash locations that are not necessarily on a high injury corridor.

High risk areas

Identifying areas that have high crash risk factors (posted speed, signalized intersections, unlit streets, number of liquor establishments, lack of medians, driveway density, etc.) but do not have high concentrations of severe crashes provides a useful for further prioritizing safety efforts. Metro is exploring availability of data, resources, possibility of developing high risk

⁵ The San Francisco analysis noted that “corridor-level and area-level analysis is necessary for efficient and effective injury prevention.” http://www.sfhealthequity.org/images/Merged_HIC_Methods_2015.pdf

corridors, however most corridors with identified high risk factors will overlap with the high injury corridors. Part of the reason the 2012 RTSP recommended identifying high injury corridors, as opposed to high crash locations, is that a corridor approach highlights the roadways that have high risk factors. Metro reviewed the “Risk Based Pedestrian and Bicycle Project Corridors” identified in ODOT’s Pedestrian and Bicycle Safety Implementation Plan (2014) and found that every risk based corridor in that plan overlapped with a regional HIC.⁶

⁶ https://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/docs/pdf/13452_report_final_partsA+B.pdf

GIS ANALYSIS METHODOLOGY

Part 1:

1. Prepare streets and crashes for analysis
 - Streets:
 - Combine RTP networks and save a copy of those within the study area
 - Recalculate empty "STREETNAME" and "DIRECTION" fields as NULL
 - Create a dataset of only the freeways/highways dissolved by "STREETNAME" and "DIRECTION"
 - Create a dataset of streets other than freeways/highways dissolved by "STREETNAME", where the name is not NULL
 - Merge the freeways and non-freeways datasets
 - Break the streets at each intersection
 - Crashes:
 - Select crashes within the study area that occurred during or after a specified year
 - Save a copy of the selected crashes that intersect the RTP Network
2. Select and merge streets where crashes occurred
 - Create a layer of the crashes where the injury severity is Fatal/A or B/C for modes pedestrian or bicycle
 - Flag RTP cross-streets that intersect the crashes layer
 - Combine street segments with the same "STREETNAME", "DIRECTION", and crash flag (1/yes or 0/no)
 - Add adjacent street segments that are equal or less than ¼ mile
3. Separate multi-part streets that are more than 75 feet apart
4. Combine streets by name, direction, and buffer location to get crash corridors

Part 2:

1. Join crashes to corridors and calculate weighted sum by mode and normalized by street length

| Corridors (percent severe injuries) | Miles | RTP Network (1,739 miles) | All Streets (6,565 miles) |
|-------------------------------------|-------|---------------------------|---------------------------|
| Regional HIC (60%) | 398 | 23% | 6% |
| RHIC – auto (50%) | 282 | 16% | 4% |
| RHIC – bike (50%) | 177 | 10% | 3% |
| RHIC – ped. (50%) | 133 | 8% | 2% |

>= 5280 feet

60% severe crashes

ALL HIGH INJURY CORRIDORS

All modes

| Combined (Ped/Bike/Auto) High Injury Corridors –Severe Crashes per Mile | | | | | | | | | |
|---|-------------------------------|-----------------------------|--|---------------------|--------|-------------------------|--------------|---------------|---------------|
| Corridor | From | To | Jurisdiction | # of Severe Crashes | Length | Severe Crashes per Mile | # Severe Ped | # Severe Bike | # Severe Auto |
| I-5 Southbound | I-405 at Fremont | Burnside Bridge | Portland | 13 | 1.5 | 8.61 | 2 | 0 | 11 |
| Adair | Baseline | Pacific | Cornelius & Forest Grove | 13 | 1.5 | 8.48 | 1 | 1 | 11 |
| Division | 7 th | 190 th | Gresham & Portland | 80 | 9.6 | 8.29 | 22 | 4 | 54 |
| I-5 Northbound | Marquam Bridge | I-405 | Portland | 18 | 2.5 | 7.13 | 2 | 0 | 16 |
| 181 st | Sandy | 182 nd (Merging) | Gresham | 14 | 2.1 | 6.62 | 2 | 1 | 11 |
| Tualatin Valley Highway | Hocken | 10 th | Washington Co. & Beaverton & Hillsboro | 55 | 8.3 | 6.60 | 10 | 5 | 40 |
| Broadway | SW 4 th | Naito | Portland | 13 | 2.0 | 6.36 | 4 | 1 | 8 |
| Ross Island Bridge | Grand | I-5 | Portland | 8 | 1.4 | 5.81 | 1 | 0 | 7 |
| 82 nd | Killingsworth | E. Berkeley | Clackamas Co. & Gladstone & Portland | 75 | 13.4 | 5.60 | 27 | 4 | 44 |
| Foster | 136 th | 50 th & Powell | Portland | 26 | 4.7 | 5.57 | 8 | 3 | 15 |
| 102 nd | Sandy | Cherry Blossom (Merging) | Maywood Park & Portland | 15 | 2.9 | 5.19 | 4 | 0 | 11 |
| Powell | Burnside | McLoughlin | Gresham & Portland | 65 | 12.9 | 5.04 | 15 | 9 | 41 |
| I-84 Westbound | 82 nd | Martin Luther King Jr. | Portland | 24 | 4.8 | 5.04 | 2 | 1 | 21 |
| Rosa Parks | 42 nd | Killingsworth | Portland | 8 | 1.6 | 4.98 | 0 | 0 | 8 |
| 96 th | 99 th & Washington | Division | Portland | 5 | 1.0 | 4.96 | 1 | 0 | 4 |
| I-5 Southbound | Hwy 217 | Tualatin River | Tigard | 5 | 1.0 | 4.85 | 0 | 0 | 5 |
| 185 th | Springville | Farmington | Washington County & Hillsboro | 29 | 6.0 | 4.82 | 2 | 2 | 25 |
| 162 nd | Powell | Sandy | Gresham & Portland | 18 | 3.8 | 4.76 | 5 | 1 | 12 |
| Martin Luther | Columbia | Division | Portland | 27 | 5.8 | 4.66 | 6 | 4 | 17 |
| Sunset Highway (Eastbound) | Hwy 217 | Tunnel | Multnomah Co. Beaverton & Portland | 9 | 1.9 | 4.63 | 0 | 0 | 9 |
| Grand Avenue | Broadway | Powell | Portland | 16 | 3.5 | 4.63 | 4 | 2 | 10 |
| Highway 217 Southbound | Beaverton Hillsdale | Sunset-Baltic | Beaverton | 8 | 1.8 | 4.57 | 0 | 0 | 8 |
| Washington Street | Stark | Thornburn | Portland | 9 | 2.0 | 4.56 | 1 | 0 | 8 |
| Tualatin Valley Highway | 341 st | 17 th | Washington Co. Cornelius & Hillsboro | 5 | 1.1 | 4.54 | 1 | 0 | 4 |
| Halsey | I-84 at NE 67th | Sandy | Portland | 7 | 1.6 | 4.48 | 1 | 0 | 6 |
| McLoughlin | Jefferson | Oregon City Bridge | Clackamas Co, Gladstone, Milwaukie & Oregon City | 30 | 6.8 | 4.41 | 13 | 1 | 16 |
| Highway 8 / 6 | Hocken | Sunset Hwy | Beaverton | 17 | 3.9 | 4.41 | 3 | 1 | 13 |
| I-205 Southbound | Washington State Line | Marine Dr | Portland | 7 | 1.6 | 4.36 | 0 | 0 | 7 |

Combined (Ped/Bike/Auto) High Injury Corridors –Severe Crashes per Mile

| Corridor | From | To | Jurisdiction | # of Severe Crashes | Length | Severe Crashes per Mile | # Severe Ped | # Severe Bike | # Severe Auto |
|--------------------------|--|--|--|---------------------|--------|-------------------------|--------------|---------------|---------------|
| Weilder | 24 th | Broadway | Portland | 6 | 1.4 | 4.31 | 0 | 2 | 4 |
| Highway 217 – Northbound | Pacific Highway | Scholls Ferry | Beaverton & Tigard | 7 | 1.6 | 4.29 | 0 | 0 | 7 |
| I - 84 Eastbound | I-5 | I-205 | Portland | 21 | 4.9 | 4.28 | 1 | 0 | 20 |
| Highway 8 / Baseline | TV Highway (near SW 17 th) | TV Highway (near SE 10 th) | Hillsboro | 7 | 1.7 | 4.22 | 2 | 0 | 5 |
| Beaverton Hillsdale | Capitol Highway | Lombard | Washington Co. Beaverton & Portland | 22 | 5.3 | 4.13 | 4 | 0 | 18 |
| 112 th | Holgate | Market | Portland | 6 | 1.5 | 3.98 | 1 | 0 | 5 |
| Highway 217 - Northbound | Beaverton Hillsdale | Sunset Highway | Beaverton | 7 | 1.8 | 3.96 | 0 | 0 | 7 |
| I-5 Northbound | Nyberg | Kruse | Clackamas Co. Washington Co, Lake Oswego Tigard & Tualatin | 11 | 2.8 | 3.96 | 0 | 0 | 11 |
| Cedar Hills | Farmington | Cornell | Beaverton | 13 | 3.3 | 3.92 | 2 | 0 | 11 |
| 257 th | I-84 | Stark | Troutdale | 8 | 2.1 | 3.90 | 1 | 2 | 5 |
| Everett | Westover | Naito | Portland | 7 | 1.8 | 3.85 | 2 | 2 | 3 |
| 47 th | Glisan | Wistaria | Portland | 4 | 1.0 | 3.83 | 0 | 0 | 4 |
| Sandy | 7 th | 165 th | | 36 | 9.6 | 3.76 | 9 | 0 | 27 |
| Allen | Davis | 92nd | Beaverton | 11 | 2.9 | 3.75 | 0 | 1 | 10 |
| Tualatin Sherwood | Pacific | Nyberg | Washington Co. Sherwood & Tualatin | 17 | 4.5 | 3.75 | 0 | 0 | 17 |
| I-5 Southbound | Bertha Blvd | Powell | Portland | 10 | 2.7 | 3.73 | 1 | 0 | 9 |
| Highway 212 | 122 nd / Highway 224 | Clackamas Highway / 224 | Clackamas County & Happy Valley | 6 | 1.6 | 3.72 | 1 | 0 | 5 |
| I-205 Southbound | Division St | Washington | Portland | 4 | 1.1 | 3.70 | 0 | 0 | 4 |
| Brookwood | Shute | Sunset Highway | Hillsboro | 4 | 1.1 | 3.68 | 0 | 0 | 4 |
| I-205 Southbound | Killingsworth | Alderwood | Maywood Park & Portland | 6 | 1.6 | 3.66 | 1 | 0 | 5 |
| Highway 8 / Pacific | Baseline | E St. (Forest Grove) | Cornelius & Forest Grove | 9 | 2.5 | 3.63 | 1 | 0 | 8 |
| I-5 Southbound | Nyberg | Kruse | Tigard & Tualatin | 5 | 1.4 | 3.62 | 0 | 0 | 5 |
| Cesar E. Chavez | Wistaria | Woodstock | Portland | 17 | 4.7 | 3.61 | 4 | 2 | 11 |
| I-5 Southbound | Multnomah | Capitol Highway | Portland | 6 | 1.7 | 3.59 | 1 | 0 | 5 |
| I-205 Northbound | Airport Way | Washington State Line | Portland | 6 | 1.7 | 3.59 | 0 | 0 | 6 |
| I-5 Southbound | Wilsonville Rd | Miley | Clackamas County & Wilsonville | 4 | 1.1 | 3.58 | 0 | 0 | 4 |
| Kane | 257 th & Stark | Orient & Stark | Gresham & Troutdale | 8 | 2.2 | 3.56 | 2 | 0 | 6 |
| Burnside | 75 th | 124 th | Portland | 9 | 2.6 | 3.49 | 4 | 0 | 5 |
| 122 nd | Skidmore | Foster | Portland | 19 | 5.5 | 3.48 | 4 | 0 | 15 |
| 11 th | Sandy | Clinton | Portland | 9 | 2.6 | 3.48 | 1 | 1 | 7 |
| Barbur | 65 th | Sheridan | Portland | 22 | 6.3 | 3.47 | 3 | 2 | 17 |

Combined (Ped/Bike/Auto) High Injury Corridors –Severe Crashes per Mile

| Corridor | From | To | Jurisdiction | # of Severe Crashes | Length | Severe Crashes per Mile | # Severe Ped | # Severe Bike | # Severe Auto |
|----------------------|-----------------------------|-----------------------------|--|---------------------|--------|-------------------------|--------------|---------------|---------------|
| Farmington | 170 th | Beaverton Hillsdale | Washington County & Beaverton | 18 | 5.2 | 3.46 | 4 | 1 | 13 |
| 182 nd | Powell | 181 st (Merging) | Gresham | 6 | 1.7 | 3.45 | 2 | 0 | 4 |
| Burnside | Barnes | 68 th | Portland | 35 | 10.2 | 3.42 | 14 | 1 | 20 |
| 1 st | Glencoe (Merging) | Wood | Hillsboro | 5 | 1.5 | 3.38 | 1 | 0 | 4 |
| 6 th | Sheridan | Irving (Union Station) | Portland | 6 | 1.8 | 3.29 | 2 | 0 | 4 |
| Hawthorne | 51 st | Martin Luther King, Jr. | Portland | 10 | 3.1 | 3.28 | 2 | 2 | 6 |
| Lovejoy | Cornell | Broadway | Portland | 4 | 1.3 | 3.08 | 1 | 0 | 3 |
| Murray | Barrows | Walker | Beaverton & Tigard | 18 | 5.9 | 3.08 | 1 | 2 | 15 |
| 4 th | Sheridan | Burnside | Portland | 4 | 1.3 | 3.06 | 2 | 0 | 2 |
| Highway 224 | 82nd | Rusk Rd. | Clackamas County & Milwaukie | 4 | 1.3 | 3.01 | 1 | 0 | 3 |
| Highway 8 / Baseline | Tualatin Valley Highway | Pacific | Cornelius | 7 | 2.3 | 3.01 | 1 | 0 | 6 |
| Highway 8 / Baseline | Jenkins | Brookwood & Main | Washington Co, Beaverton & Hillsboro | 14 | 4.6 | 3.01 | 1 | 0 | 13 |
| Cornell | Main | Butler | Hillsboro | 16 | 5.3 | 3.01 | 1 | 1 | 14 |
| Evergreen | Glencoe | Cornell | Washington Co & Hillsboro | 21 | 7.0 | 3.00 | 1 | 1 | 19 |
| Millikan | Tualatin Valley Highway | Hocken | Beaverton | 5 | 1.7 | 2.99 | 1 | 1 | 3 |
| Skidmore | Interstate | Martin Luther King, Jr. | Portland | 3 | 1.0 | 2.98 | 0 | 1 | 2 |
| 158 th | Cornell | Jenkins | Beaverton | 5 | 1.7 | 2.92 | 1 | 1 | 3 |
| Highway 212 | Mckinley | 122nd Ave / Hwy 224 | Clackamas Co & Happy Valley | 7 | 2.4 | 2.91 | 3 | 0 | 4 |
| Johnson Creek | 45 th | Highgate | Clackamas Co, Happy Valley, Milwaukie & Portland Airport | 10 | 3.5 | 2.88 | 0 | 1 | 9 |
| Capitol Highway | Lesser (Merging) | Taylor's Ferry | Portland | 4 | 1.4 | 2.87 | 1 | 0 | 3 |
| Burnside | 127 th | Powell | Gresham & Portland | 26 | 9.1 | 2.85 | 3 | 2 | 21 |
| Jennings | River | Webster | Clackamas Co & Gladstone | 6 | 2.1 | 2.84 | 1 | 0 | 5 |
| Pacific Highway | Main | Barbur | Washington Co, Portland, Sherwood, Tigard & Tualatin | 31 | 10.9 | 2.84 | 5 | 2 | 24 |
| Hogan | 242 nd (Merging) | Butler | Gresham & Troutdale | 11 | 3.9 | 2.83 | 1 | 2 | 8 |
| Lombard | 42 nd | Pier Park | Portland | 23 | 8.5 | 2.70 | 8 | 1 | 14 |
| 50 th | Powell | Division | Portland | 3 | 1.1 | 2.69 | 1 | 2 | 0 |
| Gladstone | 42 nd | 52 nd | Portland | 4 | 1.5 | 2.68 | 1 | 1 | 2 |
| Garden Home | Multnomah | 92 nd Place | Washington Co, Beaverton & Portland | 3 | 1.1 | 2.66 | 0 | 0 | 3 |
| Glisan | Cesar E Chavez | 202 nd | Gresham & Portland | 30 | 11.5 | 2.61 | 6 | 3 | 21 |
| Glisan | Steel Bridge | 24 th | Portland | 5 | 1.9 | 2.60 | 2 | 0 | 3 |

Combined (Ped/Bike/Auto) High Injury Corridors –Severe Crashes per Mile

| Corridor | From | To | Jurisdiction | # of Severe Crashes | Length | Severe Crashes per Mile | # Severe Ped | # Severe Bike | # Severe Auto |
|--------------------|------------------------------|-------------------------|---|---------------------|--------|-------------------------|--------------|---------------|---------------|
| Lower Barnes Ferry | Pilkington | Upper Boones Ferry | Durham, Lake Oswego & Tualatin | 3 | 1.2 | 2.51 | 0 | 0 | 3 |
| Stark | 76 th | Historic Columbia River | Multnomah Co, Gresham, Portland & Troutdale | 30 | 12.0 | 2.50 | 7 | 2 | 21 |
| 28 th | Madison | Knott | Portland | 5 | 2.0 | 2.48 | 3 | 0 | 2 |
| Oak | Baseline & T.V. West | 10 th | Hillsboro | 4 | 1.6 | 2.47 | 1 | 1 | 2 |
| 10 th | Cornelius Schefflin | Oleander | Cornelius | 3 | 1.2 | 2.44 | 0 | 1 | 2 |
| 10 th | Northrup | Market | Portland | 3 | 1.2 | 2.40 | 1 | 0 | 2 |
| Broadway | Broadway Bridge | Sandy | Portland | 6 | 2.5 | 2.39 | 2 | 1 | 3 |
| Holgate | 136 th | McLoughlin Blvd | Portland | 24 | 10.0 | 2.39 | 4 | 2 | 18 |
| Killingsworth | Greeley | Sandy | Portland | 23 | 9.8 | 2.35 | 8 | 2 | 13 |
| Minter Bridge | Noland | Tualatin Valley Highway | Washington Co & Hillsboro | 3 | 1.3 | 2.29 | 0 | 0 | 3 |
| Main | Brookwood | Oak | Hillsboro | 8 | 3.5 | 2.27 | 0 | 0 | 8 |
| Multnomah | Garden Home | I-5 | Portland | 6 | 2.7 | 2.22 | 0 | 1 | 5 |
| Belmont | 69 th | Grand | Portland | 10 | 4.8 | 2.07 | 2 | 2 | 6 |
| 185 th | Thurman | Jefferson & Columbia | Portland | 3 | 1.5 | 2.06 | 1 | 1 | 1 |
| Alberta | 33 rd | Martin Luther King Jr | Portland | 3 | 1.5 | 2.01 | 2 | 0 | 1 |
| Molalla | Garden Meadow | 7 th | Oregon City | 4 | 2.0 | 1.97 | 0 | 0 | 4 |
| Multnomah | Steel Bridge | 21 st | Portland | 4 | 2.2 | 1.82 | 2 | 1 | 1 |
| 223 rd | Halsey | Eastman (Merging) | Fairview & Gresham & Wood Village | 3 | 1.7 | 1.81 | 0 | 0 | 3 |
| 11 th | Lovejoy | Market | Portland | 2 | 1.1 | 1.77 | 1 | 0 | 1 |
| 5 th | Irving | Sheridan | Portland | 3 | 1.8 | 1.64 | 1 | 0 | 2 |
| Williams | Jessup | Wheeler | Portland | 6 | 4.2 | 1.44 | 0 | 2 | 4 |
| Sunnyside | 82 nd | 119 th | Clackamas Co & Happy Valley | 3 | 2.1 | 1.40 | 0 | 0 | 3 |
| Division | Troutdale | Eastwood | Multnomah Co & Gresham | 6 | 4.4 | 1.35 | 3 | 0 | 3 |
| Capitol Highway | Beaverton Hillsdale / Bertha | Barbur | Portland | 3 | 2.3 | 1.31 | 1 | 0 | 2 |
| Eastman | 223 rd & Fairview | Towle (South Of Powell) | Gresham | 2 | 1.7 | 1.17 | 0 | 0 | 2 |
| 26 th | Holgate | Division | Portland | 1 | 1.0 | 1.00 | 0 | 0 | 1 |
| 30 th | Division | Stark | Portland | 1 | 1.0 | 1.00 | 0 | 0 | 1 |
| Jefferson | Vista | 3 rd | Portland | 1 | 1.0 | 0.99 | 0 | 0 | 1 |
| Ankney | 28 th | Martin Luther King Jr | Portland | 1 | 1.2 | 0.84 | 0 | 1 | 0 |

Auto only

| Auto High Injury Corridors –Severe Crashes per Mile | | | | | | |
|---|-----------------------------|-----------------------|---|--------------|--------|-------------------------|
| Corridor | From | To | Jurisdiction | # of Crashes | Length | Severe Crashes per Mile |
| I-5 Southbound | I-405 at Fremont Bridge | Burnside Bridge | Portland | 11 | 1.5 | 7.28 |
| Adair | Baseline | Pacific | Cornelius & Forest Grove | 11 | 1.5 | 7.18 |
| I-5 Northbound | Marquam Bridge | I-405 | Portland | 16 | 2.5 | 6.34 |
| Division | 7 th | 190 th | Gresham & Portland | 54 | 9.6 | 5.60 |
| 181 st | Sandy | 182 nd | Gresham | 11 | 2.1 | 5.20 |
| Ross Island Bridge | Grand | I-5 | Portland | 7 | 1.4 | 5.08 |
| Rosa Parks | Cully | Killingsworth | Portland | 8 | 1.6 | 4.98 |
| I-5 - Southbound | Hwy 217 | Tualatin River | Tigard | 5 | 1.0 | 4.85 |
| Tualatin Valley Highway | Hocken | 10 th | Washington County, Beaverton, & Hillsboro | 40 | 8.3 | 4.80 |
| Sunset Highway (Eastbound) | Hwy 217 | Tunnel | Multnomah County, Beaverton, & Portland | 9 | 1.9 | 4.63 |
| Hwy 217 Southbound | Sunset Highway | Beaverton Hillsdale | Beaverton | 8 | 1.8 | 4.57 |
| I-84 Westbound | Martin Luther King Jr. | 82 nd | Portland | 21 | 4.8 | 4.41 |
| I-205 Southbound | Washington State Line | Marine Dr | Portland | 7 | 1.6 | 4.36 |
| Hwy 217 Northbound | Scholls Ferry | Pacific Highway | Beaverton & Tigard | 7 | 1.6 | 4.29 |
| 185 th | Springville | Farmington | Washington County & Hillsboro | 25 | 6.0 | 4.16 |
| I-84 Eastbound | I-5 | I-205 | Portland | 20 | 4.9 | 4.07 |
| Washington Street | Stark St. | Thorburn | Portland | 8 | 2.0 | 4.05 |
| 96 th | SE Washington St. | SE Division St. | Portland | 4 | 1.0 | 3.97 |
| Hwy 217 Northbound | Beaverton Hillsdale | Sunset Highway | Beaverton | 7 | 1.8 | 3.96 |
| I-5 Northbound | Kruse | Nyberg | Clack. Co, Wash. Co, L. Oswego, Tigard & Tualatin | 11 | 2.8 | 3.96 |
| Broadway | SW 4 th | Naito | Portland | 8 | 2.0 | 3.92 |
| Halsey | I-84 at NE 67 th | Sandy | Portland | 6 | 1.6 | 3.84 |
| 47 th | Glisan | Wistaria | Portland | 4 | 1.0 | 3.83 |
| 102 nd | Sandy | Cherry Blossom | Maywood Park & Portland | 11 | 2.9 | 3.81 |
| Tualatin Sherwood | Pacific Highway | Nyberg | Washington County & Sherwood & Tualatin | 17 | 4.5 | 3.75 |
| I-205 Southbound | Washington State Line | Division | Portland | 4 | 1.1 | 3.70 |
| Brookwood | Shute | Sunset Highway | Hillsboro | 4 | 1.1 | 3.68 |
| Tualatin Valley Highway | 341 st | 17 th | Washington County, Cornelius, & Hillsboro | 4 | 1.1 | 3.63 |
| I-5 Southbound | Nyberg | Kruse | Tigard & Tualatin | 5 | 1.4 | 3.62 |
| I-205 Northbound | Airport Way | Washington State Line | Portland | 6 | 1.7 | 3.59 |
| I-5 Southbound | Wilsonville Road | Miley | Clackamas County & Wilsonville | 4 | 1.1 | 3.58 |
| SE Bob Schumacher Road | Idleman & Otty | Stevens | Clackamas County & Happy Valley | 4 | 1.1 | 3.49 |

| Auto High Injury Corridors –Severe Crashes per Mile | | | | | | |
|---|--|--|--|--------------|--------|-------------------------|
| Corridor | From | To | Jurisdiction | # of Crashes | Length | Severe Crashes per Mile |
| I-5 Northbound | Bertha Blvd | Marquam Bridge | Portland | 11 | 3.2 | 3.45 |
| Allen | Davis | 92 nd | Beaverton | 10 | 2.9 | 3.41 |
| Beaverton Hillsdale | Capitol Highway | Lombard | Washington County, Beaverton, & Portland | 18 | 5.3 | 3.38 |
| Canyon | Hocken | Sunset Highwa | Beaverton | 13 | 3.9 | 3.37 |
| I-5 Southbound | Bertha Blvd | Powell | Portland | 9 | 2.7 | 3.36 |
| 112 th | Holgate | Cherry Blossom | Portland | 5 | 1.5 | 3.32 |
| Cedar Hills | Farmington | Cornell | Beaverton | 11 | 3.3 | 3.32 |
| 82 nd | Killingsworth | Causey | Clackamas County & Gladstone & Portland | 44 | 13.4 | 3.29 |
| Pacific | Baseline | E St (Forest Grove) | Cornelius & Forest Grove | 8 | 2.5 | 3.23 |
| Foster | 136 th | 50 th & Powell | Portland | 15 | 4.7 | 3.21 |
| Powell | Burnside | McLoughlin | Gresham & Portland | 41 | 12.9 | 3.18 |
| 162 nd | Powell | Sandy | Gresham & Portland | 12 | 3.8 | 3.17 |
| Hwy 212 | Highway 224 (near 122 nd) | Highway 224 (near 152 nd) | Clackamas County & Happy Valley | 5 | 1.6 | 3.10 |
| I-5 Northbound | Multnomah | 99W | Portland | 9 | 2.9 | 3.06 |
| I205 Southbound | Killingsworth | Alderwood | Maywood Park & Portland | 5 | 1.6 | 3.05 |
| Baseline | TV Highway (near SW 17 th) | TV Highway (near SE 10 th) | Hillsboro | 5 | 1.7 | 3.01 |
| I-5 Southbound | Multnomah | Capitol Highway | Portland | 5 | 1.7 | 2.99 |
| I-205 Northbound | South of SE Sunnybrook Blvd. | Strawberry | Clackamas County | 6 | 2.0 | 2.99 |
| Martin Luther King Jr. | Columbia | Division | Portland | 17 | 5.8 | 2.93 |
| Grand | Broadway | Powell | Portland | 10 | 3.5 | 2.89 |
| Weidler | 24 th | Broadway | Portland | 4 | 1.4 | 2.87 |
| Brockman | 125 th & Greenway | Beard | Beaverton | 3 | 1.1 | 2.82 |
| Sandy | 7 th | 165 th | Maywood Park & Portland | 27 | 9.6 | 2.82 |
| I-5 Northbound | Rosa Parks | Columbia | Portland | 3 | 1.1 | 2.81 |
| Baseline | Jenkins | Brookwood & Main | Washington County, Beaverton & Hillsboro | 13 | 4.6 | 2.80 |
| Avery | Tualatin Sherwood | Boones Ferry | Tualatin | 3 | 1.1 | 2.78 |
| I-5 Southbound | Rosa Parks | Columbia | Portland | 3 | 1.1 | 2.77 |
| Butler | 190 th & Pleasant View | Regner | Gresham | 5 | 1.8 | 2.75 |
| 122 nd | Skidmore | Foster | Portland | 15 | 5.5 | 2.75 |
| Evergreen | Glencoe | Cornell | Washington County & Hillsboro | 19 | 7.0 | 2.71 |
| 11 th | Sandy | Clinton | Portland | 7 | 2.6 | 2.70 |
| 1 st | Glencoe | Wood | Hillsboro | 4 | 1.5 | 2.70 |
| Barbur | 65 th | Sheridan | Portland | 17 | 6.3 | 2.68 |
| Bethany | West Union | Cornell | Washington County & Beaverton | 3 | 1.1 | 2.68 |
| Kane | 257 th & Stark | Orient & Palmquist | Gresham & Troutdale | 6 | 2.2 | 2.67 |

| Auto High Injury Corridors –Severe Crashes per Mile | | | | | | |
|---|-------------------------|-------------------------|--|--------------|--------|-------------------------|
| Corridor | From | To | Jurisdiction | # of Crashes | Length | Severe Crashes per Mile |
| Garden Home | Multnomah | 92 nd Place | Washington County, Beaverton, &Portland | 3 | 1.1 | 2.66 |
| Cornell | Main | Butler | Hillsboro | 14 | 5.3 | 2.63 |
| Highway 47 | David Hill | Martin | Washington County & Forest Grove | 4 | 1.5 | 2.62 |
| Johnson Creek | 42 nd | Highgate | Clackamas Co, Happy Valley, Milwaukie & PDX | 9 | 3.5 | 2.59 |
| Baseline | Tualatin Valley Highway | Pacific | Cornelius | 6 | 2.3 | 2.58 |
| I-5 Northbound | Wilsonville Road | Miley | Clackamas County & Wilsonville | 3 | 1.2 | 2.58 |
| Brookwood | Shute | Tualatin Valley Highway | Hillsboro | 10 | 3.9 | 2.57 |
| Murray | Barrows | Walker | Beaverton & Tigard | 15 | 5.9 | 2.56 |
| Halsey | 84 th | 244 th | Fairview, Gresham, PDX, Troutdale & W.V. | 24 | 9.5 | 2.54 |
| Lower Boones Ferry | Pilkington | Upper Boones Ferry | Lake Oswego & Tualatin | 3 | 1.2 | 2.51 |
| Farmington | 170 th | Beaverton Hillsdale | Washington County & Beaverton | 13 | 5.2 | 2.50 |
| Orient | Kane & Palmquist | Welch | Gresham | 3 | 1.2 | 2.49 |
| Barnes | Burnside | 118 th | Washington County, Beaverton & Portland | 8 | 3.2 | 2.48 |
| 257 th | I-84 | Kane & Stark | Troutdale | 5 | 2.1 | 2.44 |
| Jennings | River | Webster | Clackamas County & Gladstone | 5 | 2.1 | 2.37 |
| McLoughlin | Jefferson | Willamette Drive | Clack Co, Gladstone, Milwaukie & Oregon City | 16 | 6.8 | 2.35 |
| Cesar E. Chavez | Wistaria | Woodstock | Portland | 11 | 4.7 | 2.33 |
| Lovejoy | Cornell | Broadway | Portland | 3 | 1.3 | 2.31 |
| Burnside | 127 th | Powell | Gresham & Portland | 21 | 9.1 | 2.30 |
| 182 nd | Highland & Powell | 181 st | Gresham | 4 | 1.7 | 2.30 |

Pedestrian/Auto

| Pedestrian High Injury Corridors – Severe Crashes per Mile | | | | | | | |
|--|-------------------|-------------------------------|---|-------------|--------|----------------|------------|
| Corridor | From | To | Jurisdiction | # of Severe | Length | Severe Crashes | # of Minor |
| Division | 7 th | 190 th | Gresham & Portland | 22 | 9.6 | 2.28 | 61 |
| 82 nd | Killingsworth | Causey | Clackamas Co., Gladstone & PDX | 27 | 13.4 | 2.02 | 93 |
| Broadway | 4 th | Naito | Portland | 4 | 2.0 | 1.96 | 24 |
| McLoughlin | Jefferson | Oregon City Bridge | Clackamas Co., Gladstone, Milwaukie, & Portland | 13 | 6.8 | 1.91 | 32 |
| Foster | 136 th | 50 th Ave & Powell | Portland | 8 | 4.7 | 1.71 | 18 |
| Burnside | 75 th | 124 th | Portland | 4 | 2.6 | 1.55 | 7 |
| 4 th | Sheridan | Burnside | Portland | 2 | 1.3 | 1.53 | 20 |
| 28 th | Madison | Knott | Portland | 3 | 2.0 | 1.49 | 5 |
| 102 nd | Sandy | Cherry Blossom | Maywood Park & Portland | 4 | 2.9 | 1.38 | 19 |
| Burnside | Barnes | NE 68 th | Portland | 14 | 10.2 | 1.37 | 56 |

| Pedestrian High Injury Corridors – Severe Crashes per Mile | | | | | | | |
|--|-------------------------------------|-------------------------------------|-------------------------|-------------|--------|----------------|------------|
| Corridor | From | To | Jurisdiction | # of Severe | Length | Severe Crashes | # of Minor |
| Alberta | 33 rd | Martin Luther King | Portland | 2 | 1.5 | 1.34 | 13 |
| 162 nd | Powell | Sandy | Gresham & Portland | 5 | 3.8 | 1.32 | 11 |
| Highway 212 | I-205 | East of HWY 224 | Clackamas County | 3 | 2.4 | 1.25 | 9 |
| Baseline | TV Highway (near 65 th) | TV Highway (near 65 th) | Hillsboro | 2 | 1.7 | 1.21 | 12 |
| Powell | Burnside | McLoughlin | Gresham & Portland | 15 | 12.9 | 1.16 | 75 |
| Grand | Broadway | Powell | Portland | 4 | 3.5 | 1.16 | 12 |
| 182 nd | Highland & Powell | 181 st | Gresham | 2 | 1.7 | 1.15 | 7 |
| Everett | Westover | Naito | Portland | 2 | 1.8 | 1.10 | 13 |
| 6 th | Sheridan | Irving & Stanton | Portland | 2 | 1.8 | 1.10 | 10 |
| Martin Luther King | Columbia | Division | Portland | 6 | 5.8 | 1.03 | 31 |
| 96 th | 99 th & Washington | Division & Powell | Portland | 1 | 1.0 | 0.99 | 5 |
| 181 st | Sandy | 182 nd | Gresham | 2 | 2.1 | 0.95 | 16 |
| Sandy | 7 th | 165 th | Maywood Park & Portland | 9 | 9.6 | 0.94 | 41 |
| Multnomah | Steel Bridge | 21 st | Portland | 2 | 2.2 | 0.91 | 14 |
| Kane | 257 th & Stark | Orient & Palmquist | Gresham & Troutdale | 2 | 2.2 | 0.89 | 15 |
| 11 th | Lovejoy | Market | Portland | 1 | 1.1 | 0.89 | 7 |
| Cesar E. Chavez | Wistaria | Woodstock | Portland | 4 | 4.7 | 0.85 | 27 |
| 10 th | Northrup | Market | Portland | 1 | 1.2 | 0.80 | 8 |
| Broadway | Broadway Bridge | Sandy | Portland | 2 | 2.5 | 0.80 | 26 |
| Lovejoy | Cornell | Broadway | Portland | 1 | 1.3 | 0.77 | 8 |
| 122 nd | Skidmore | Foster | Portland | 4 | 5.5 | 0.73 | 30 |
| 1 st | Glencoe | Wood | Hillsboro | 1 | 1.5 | 0.68 | 12 |
| Hawthorne | 51 st | Martin Luther King | Portland | 2 | 3.1 | 0.66 | 18 |
| 5 th | Irving | Sheridan | Portland | 1 | 1.8 | 0.55 | 14 |
| Jefferson | Vista | 3 rd | Portland | 0 | 1.0 | 0.00 | 8 |

Bicycle/Auto

| Bike High Injury Corridors –Severe Crashes per Mile | | | | | | | |
|---|-------------------|------------------------|--------------|---------------------|--------|-------------------------|--------------------|
| Corridor | From | To | Jurisdiction | # of Severe Crashes | Length | Severe Crashes per Mile | # of Minor Crashes |
| SE 50 th | Powell | Division | Portland | 2 | 1.1 | 1.79 | 5 |
| NE Weidler | 24 th | Broadway | Portland | 2 | 1.4 | 1.44 | 19 |
| Marine Drive | 122 nd | Portland Airport | Portland | 3 | 2.7 | 1.12 | 3 |
| NW Everett | Westover | Naito | Portland | 2 | 1.8 | 1.10 | 13 |
| Skidmore | Interstate | Martin Luther King Jr. | Portland | 1 | 1.0 | 0.99 | 11 |
| 257 th | I-84 | Kane & Stark | Troutdale | 2 | 2.1 | 0.97 | 6 |
| SE 28 th | Woodstock | Gladstone | Portland | 1 | 1.1 | 0.88 | 3 |
| SE Ankney | 28 th | Martin Luther King Jr. | Portland | 1 | 1.2 | 0.84 | 14 |

| Bike High Injury Corridors –Severe Crashes per Mile | | | | | | | |
|---|------------------------------|---------------------------|---------------------------------------|---------------------|--------|-------------------------|--------------------|
| Corridor | From | To | Jurisdiction | # of Severe Crashes | Length | Severe Crashes per Mile | # of Minor Crashes |
| 10 th | Cornelius Schefflin | Oleander | Cornelius | 1 | 1.2 | 0.81 | 3 |
| Powell | Burnside | McLoughlin | Gresham & Portland | 9 | 12.9 | 0.70 | 45 |
| Martin Luther King Jr. | Columbia | Division | Portland | 4 | 5.8 | 0.69 | 38 |
| 18 th | Thurman | Collins & Jefferson | Portland | 1 | 1.5 | 0.69 | 7 |
| Ainsworth | Vancouver | 27 th | Portland | 1 | 1.5 | 0.67 | 5 |
| Gladstone | 42 nd | 52 nd | Portland | 1 | 1.5 | 0.67 | 7 |
| Hawthorne | 51 st | Martin Luther King Jr. | Portland | 2 | 3.1 | 0.66 | 46 |
| Adair | Baseline | Pacific | Cornelius & Forest Grove | 1 | 1.5 | 0.65 | 6 |
| Foster | 136 th | 50 th & Powell | Portland | 3 | 4.7 | 0.64 | 25 |
| Oak | Baseline & T.V. Highway | 10 th | Hillsboro | 1 | 1.6 | 0.62 | 4 |
| Tualatin Valley Highway | Hocken | 10 th | Washington Co., Beaverton & Hillsboro | 5 | 8.3 | 0.60 | 26 |
| Grand | Broadway | Powell | Portland | 2 | 3.5 | 0.58 | 34 |
| Broadway | SW 4 th | Naito | Portland | 1 | 2.0 | 0.49 | 37 |
| Clinton | 50 th | 12 th | Portland | 1 | 2.1 | 0.48 | 7 |
| Williams | Jessup | Wheeler | Portland | 2 | 4.2 | 0.48 | 25 |
| Vancouver | Weilder | Martin Luther King Jr. | Portland | 3 | 6.3 | 0.47 | 30 |
| 181 st | Sandy | 182 nd | Gresham | 1 | 2.1 | 0.47 | 19 |
| Multnomah | Steel Bridge | 21 st | Portland | 1 | 2.2 | 0.45 | 16 |
| Cesar E. Chavez | Wistaria | Woodstock | Portland | 2 | 4.7 | 0.42 | 19 |
| Division | 7 th | 190 th | Gresham & Portland | 4 | 9.6 | 0.41 | 52 |
| Belmont | 69 th | Grand | Portland | 2 | 4.8 | 0.41 | 15 |
| Broadway | Broadway Bridge | Sandy | Portland | 1 | 2.5 | 0.40 | 54 |
| 11 th | Sandy | Clinton | Portland | 1 | 2.6 | 0.39 | 19 |
| Multnomah | Garden Home | I-5 | Portland | 1 | 2.7 | 0.37 | 10 |
| 185 th | Springville | Farmington | Washington Co. & Hillsboro | 2 | 6.0 | 0.33 | 21 |
| Barbur Drive | 65 th | Sheridan | Portland | 2 | 6.3 | 0.32 | 26 |
| 82 nd | Killingsworth | Berkeley St. | Clackamas Co., Gladstone & Portland | 4 | 13.4 | 0.30 | 61 |
| Naito | Ross Island Bridge | 15 th & Front | Portland | 1 | 4.0 | 0.25 | 19 |
| 26 th | Holgate | Division | Portland | 0 | 1.0 | 0.00 | 11 |
| 4 th | Sheridan | Burnside | Portland | 0 | 1.3 | 0.00 | 14 |
| Capitol Highway | Beaverton Hillsdale & Bertha | Barbur Blvd | Portland | 0 | 2.3 | 0.00 | 24 |
| 30 th | Division | Stark | Portland | 0 | 1.0 | 0.00 | 9 |
| 28 th | Madison | Knott | Portland | 0 | 2.0 | 0.00 | 16 |
| Eastman | 223 rd & Fairview | Towle | Gresham | 0 | 1.7 | 0.00 | 13 |
| 6 th | Sheridan | Irving & Stanton | Portland | 0 | 1.8 | 0.00 | 10 |
| 122 nd | Skidmore | Foster | Portland | 0 | 5.5 | 0.00 | 32 |

| Bike High Injury Corridors –Severe Crashes per Mile | | | | | | | |
|---|-------------------------------|--------------------|----------------------------------|---------------------|--------|-------------------------|--------------------|
| Corridor | From | To | Jurisdiction | # of Severe Crashes | Length | Severe Crashes per Mile | # of Minor Crashes |
| 96th | 99 th & Washington | Division & Powell | Portland | 0 | 1.0 | 0.00 | 6 |
| Kane | 257 th & Stark | Orient & Palmquist | Gresham & Troutdale | 0 | 2.2 | 0.00 | 12 |
| 25 th | Evergreen | Veterans | Washington County & Hillsboro | 0 | 1.8 | 0.00 | 9 |
| Burnside | 75 th | 124 th | Portland | 0 | 2.6 | 0.00 | 13 |
| 14 th | Northrup | Jefferson | Portland | 0 | 1.0 | 0.00 | 5 |
| Cornell | Main | Butler | Hillsboro | 0 | 5.3 | 0.00 | 22 |
| 223 rd | Halsey | Eastman & Fairview | Fairview, Gresham & Wood Village | 0 | 1.7 | 0.00 | 8 |
| Morrison | 25 th | Grand | Portland | 0 | 2.0 | 0.00 | 9 |
| Division | Troutdale | Eastwood | Multnomah County & Gresham | 0 | 4.4 | 0.00 | 19 |
| 1 st | Salmon | Grover | Portland | 0 | 1.2 | 0.00 | 5 |
| Greenburg | Hall | North Dakota | Beaverton & Tigard | 0 | 1.1 | 0.00 | 5 |
| Sagert | Boones Ferry | 65 th | Tualatin | 0 | 1.2 | 0.00 | 5 |

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and sustainable transportation and living choices for people and businesses in the region. Voters have asked Metro to help with the challenges and opportunities that affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to providing services, operating venues and making decisions about how the region grows. Metro works with communities to support a resilient economy, keep nature close by and respond to a changing climate. Together we're making a great place, now and for generations to come.

Metro Council President

Tom Hughes

Metro Council

Shirley Craddick, District 1

Carlotta Collette, District 2

Craig Dirksen, District 3

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Bob Stacey, District 6

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