PORTLAND BICYCLE COUNT REPORT 2012

Introduction

Each year since the early 1990s, the Portland Bureau of Transportation (PBOT) has counted bicycle trips at various locations throughout the city. The majority of these counts have been conducted manually by volunteer counters and city staff standing at street corners and on bridges during the two-hour rush ("peak period") counting bicycles that pass. In addition to the overall number of trips, PBOT also records the gender of each person and whether they are wearing a helmet. Most counts are still conducted in this manner, though in the early 2000s PBOT added a number of 24-hour automated "hose" counts (pressure-sensitive pneumatic hoses) on some bridges and trails. These counts, while they do not record gender or helmet use, provide a more precise record of the ebb and flow of bicycle traffic over 24-hour periods. In August of 2012 PBOT, in conjunction with Multnomah County, added an automated 24-hour bicycle counter to the deck of the Hawthorne Bridge. This counter, known as a "bike barometer" records bicycle activity every day and around the clock.

Summary of the 2012 Bicycle Count:

- **Bicycle use in Portland continued its two decade long upward trend.**
- **2012 bicycle counts showed a citywide 3.3 percent annual growth compared to the same locations counted in 2011.**
- **Bicycle counts showed a one-year decline in both NW and SW Portland.**
- **Bicycle traffic on Portland's five principal bicycle-friendly bridges (Broadway, Steel, Burnside, Morrison and Hawthorne bridges) showed the highest number of bicycle trips since annual counts began in 2000/2001.**
- **Of 216 locations counted, 69 (32 percent) had daily bicycle traffic of more than 1000 trips.**
- **Since the 2000/2001 counts, the overall trend in bicycle traffic was up 211 percent; more than a tripling in use.**
- **Helmet use remained at historic high levels, with 80 percent of all people wearing their helmet. Helmet use is highest in SW Portland (90 percent) and North Portland (83 percent) and lowest in East Portland (63 percent). Helmet use in 2012 continued to be more prevalent among female riders (86 percent) than for male riders (77 percent).**
- **Female riders represented 31 percent of bicyclists citywide, remaining essentially unchanged since 2003.**

Prior to 2008 the majority of counts were concentrated in close-in neighborhoods and the Central City. Beginning in 2008, the city placed an emphasis on increasing the total number of counts citywide, with a particular focus on locations in Southwest and East Portland (east of I-205). Each year since PBOT has expanded the number of counted locations, from 121 locations in 2008 to 216 in 2012, the highest number of locations

counted since the volunteer count program began. Altogether, volunteers manually counted more than 38,500 bicycle trips, representing more than 190,000 daily bicycle trips.[1]

Annual bicycle counts constitute one of the City's three principal means of assessing progress in its efforts to make the bicycle an integral part of daily life in Portland.[2] This report identifies the key findings from the latest round of bicycle counts conducted between July 20 and September 30, 2012. The report also provides graphical representation of the data and includes a staff analysis.

The 2012 count demonstrates a continuation of the two-decade upward trend of bicycle use in Portland. Of 150 locations that were counted in both 2011 and 2012 (including four of the bicycle-friendly Willamette River bridges and trails), 67 locations showed a decrease compared to 2011 while 79 locations showed an increase (and four locations showed no change). Overall, bicycle use increased approximately three percent compared to 2011. Helmet use has remained at 80 percent usage, which was the same in 2011. The split of male to female cyclists also remained essentially steady since 2003, with 69 percent of cyclists identified as male.

All the data discussed in this portion of the report is displayed graphically in the appendix.

Highlights

Bicycle-Friendly Willamette River Bridge Counts

Portland added a fifth bridge to the roster of bicycle-friendly downtown bridges: The Morrison Bridge. 2012 was the first year that the bridge pathway was open for traffic during the spring, summer and fall.

Combined traffic on the five bicycle-friendly bridges totaled 18,794 in the summer of 2012, just under three percent higher than in 2011.

The Hawthorne and Broadway bridges showed growth in use while the Steel and Burnside showed declines in use compared to 2011.

Non-Bridge Counts

Volunteers and staff manually counted 214 locations city wide. Unlike the automated counts, these manual counts provide data about gender and helmet use.

2012 Non-Bridge Bicycle Counts Compared with Prior Years

DISTRICT/ LOCATION	% CHANGE SINCE 2000/01	BASED ON # LOCATIONS	% CHANGE SINCE 2011	BASED ON # LOCATIONS
Citywide Total	**211%**	32	**3.3%**	146
Central City (west side)	209%	6	0.1%	18
North	285%	5	8.5%	19
Northeast	143%	6	9.3%	24
Southeast	242%	7	3.0%	25
East	Na	Na	11.0%	21
Northwest	148%	4	-5.7%	9
Southwest (excluding Central City)	139%	4	-6.6%	30

[1] The two-hour peak period counts are multiplied by five to provide an estimate of total daily bicycle traffic at each counted location This is a standard traffic engineering rule of thumb. Its accuracy is borne out by our 24-hour automated counts.

[2] The other two means include data from the US Department of Commerce (either the annual American Community Survey or the decennial US Census), and the annual resident survey conducted by the City Auditor's Office.

Citywide Manual Counts

Since 2000/2001, every district in the City has seen consistent and significant growth in bicycle use. The largest gains have been made in North and Southeast Portland. In every district of the city with data from 2000 bicycle activity has either more than doubled or more than tripled.

For the first time the one-year comparison showed significant declines in bicycle use in Northwest and residential Southwest Portland. East, North and Northeast Portland showed strong increases.

2012 Compared with 2011: Helmet Use

DISTRICT/ LOCATION	% 2011	% 2012	CHANGE IN % POINTS
Citywide Total	80%	80%	0
Central City (west side)	81%	83%	2
North	84%	83%	-1
Northeast	79%	79%	0
Southeast	77%	79%	2
East	58%	63%	5
Northwest	77%	80%	3
Southwest (excluding Central City)	90%	90%	0

Helmet Use

Helmet use in Portland has been trending steadily upward since the early 1990s. In 1992 only 44 percent of Portland cyclists used a helmet. Helmet use has been at or near 80 percent since 2008.

Helmet use is highest in Southwest Portland at 90 percent and lowest in East Portland at 63 percent. Though lowest, helmet use in East Portland showed the highest one-year growth.

As has been the case in every year since 1992, women wear helmets at a higher rate than do men. In 2012 approximately 86 percent of female riders wore helmets compared to 76 percent of men.

Gender Split

Because cities with high bicycle mode shares typically achieve a balance between male and female ridership, gender parity is considered an important indicator of success in creating safe, comfortable and attractive conditions for bicycling. Women represented 31.4 percent of all bicyclists counted during Portland's summer 2012 counts. That percentage has varied only incrementally since 2003.

Depending on location of the City, the district-wide proportion of women riders fluctuated between 25 percent and 35 percent. The highest proportion of women riding bicycles was observed in Inner Northeast Portland and the lowest was in East Portland. There was little change in proportion of female riders compared to 2011, though growth was greatest in East Portland.

Percentage of Bicyclists Identified as Female

DISTRICT/ LOCATION	% 2011	% 2012	CHANGE IN % POINTS
Citywide Total	31.4%	31.4%	0.0
Central City (west side)	31.1%	30.8%	-0.3
North	34.6%	34.8%	0.2
Northeast	35.4%	35.4%	0.0
Southeast	32.2%	31.2%	-1.0
East	19.3%	21.1%	1.8
Northwest	32.0%	31.2%	-0.8
Southwest (excluding Central City)	23.6%	24.8%	0.8

The proportion of women riders at individual locations ranged from a low of 9 percent at East Burnside & 122nd Avenue to a high of 43 percent at several locations.

Year-Round Counts

The best indication of seasonal bicycling activity is provided by the daily totals recorded throughout the year on the Hawthorne Bridge.

The first figure in the Appendix shows the counts collected in 2012 on the Hawthorne Bridge compared to summer time peak counts from 2009, 2007, 2005 and 2003. While the graph demonstrates the drop in bicycle use associated with the seasons, it also demonstrates that winter bicycle use in 2012 was generally higher than were the summertime peaks from 2005.

Crash Data

The City of Portland reports an indexed bicycle crash rate based on the reported number of crashes and the number of daily bicycle trips across four of the central Willamette River bridges. A chart displaying the change in that rate over time is included in this report.

2012 Locations with Highest and Lowest Share of Female Cyclists*

RANK	LOCATION	% TRIPS BY WOMEN	TOTAL DAILY TRIPS
1	NE Broadway & 7th	43%	1,530
2	NE Hancock & 47th	43%	680
3	SE Spokane & 15th	43%	675
4	SW Moody & Gibbs	43%	1,890
5	NE Morris & 7th	42%	880
6	SW Moody & River Parkway	42%	2,005
7	N Michigan & Rosa Parks	42%	550
8	N Vancouver & Ainsworth	42%	1,160
9	N Vancouver & Going	41%	3,225
10	N Vancouver & Russell	41%	5,160
...			
161	NE 1-205 path and Airport Wy O'pass	16%	455
162	SW Multnomah & 45th	16%	405
163	NE 102nd & Pacific	16%	250
164	NE Halsey & 122nd	16%	380
165	SW Jackson & 6th	15%	485
166	N Union Path at I-5 ramp	15%	580
167	NE Maywood Pl & I-205 path	14%	295
168	N Fessenden & Peninsula Xing Trail	11%	350
169	SW Barbur Blvd & Capitol Hwy	10%	290
170	E Burnside & 122nd	9%	400

*minimum 50 people counted during 2-hour peak

Beginning in 2008, in response to the city's Community Policing Agreement with the Police Bureau , the Bicycle Transportation Alliance and the Willamette Pedestrian Coalition, the Police Bureau amended their procedures for reporting crashes, resulting in more of the crashes involving a bicycle being reported. This increase does not necessarily represent a real increase the number of overall bicycle-involved crashes. The elevation may simply have occurred because fewer crashes are going unreported. Because of this lowered threshold for reporting, reported bicycle crashes no longer offer an "apples to apples" comparison to bicycle crashes reported prior to 2008.

Reported bicycle crashes declined in 2011 (the last full year for which data is available) for the first time since 2007.

Census Data

This year's count report includes maps showing bicycle commuting from US Census data in 1990 and 2000 as well as data from the US Census American Community Survey, which report census-tract level data in rolling five-year averages. These maps show the progression in bicycle use in Portland over this period.

The red circle on the maps displays a four-mile radius centered on the Burnside Bridge.

APPENDIX: GRAPHS AND CHARTS

Graphs

Daily Hawthorne Bridge Counts

Summer Bicycle Traffic (5 Central City Bicycle Bridges)

Bicycle Traffic across Five Main Portland Bicycle Bridges Juxtaposed with Bikeway Miles

Bicycle Traffic at City Count Locations: Bridge and Non-Bridge Traffic

Changes in Bicycle Traffic Bride and Non-Bridge Locations 2012

Annual Growth in Bicycle Traffic Bridge and Non-Bridge Locations 2007-2012

Annual Growth in Bicycle Traffic City Districts 2007-2012

Daily Bicycle Counts by Section of City

- SE Portland
- North Portland
- East Portland
- NE Portland
- West Portland (Central City)
- Southwest Portland (not including Central City)
- Northwest Portland (not including Central City)
- Greenways

City of Portland Bicycle Counts by Year by Gender

City of Portland Bicycle Counts by Sector 2012 by Gender

City of Portland Bicycle Counts by Year by Helmet Use

City of Portland Bicycle Counts by Sector 2012 by Helmet Use

City of Portland Bicycle Counts by Sector 2012 by Gender and Helmet Use

Combined Bicycle Traffic over Five Main Portland Bicycle Bridges Juxtaposed with Bicycle Crashes

Maps

2012 Bicycle Count Locations by Daily Bicycle Traffic

2012 Bicycle Count Locations by Percentage of Women

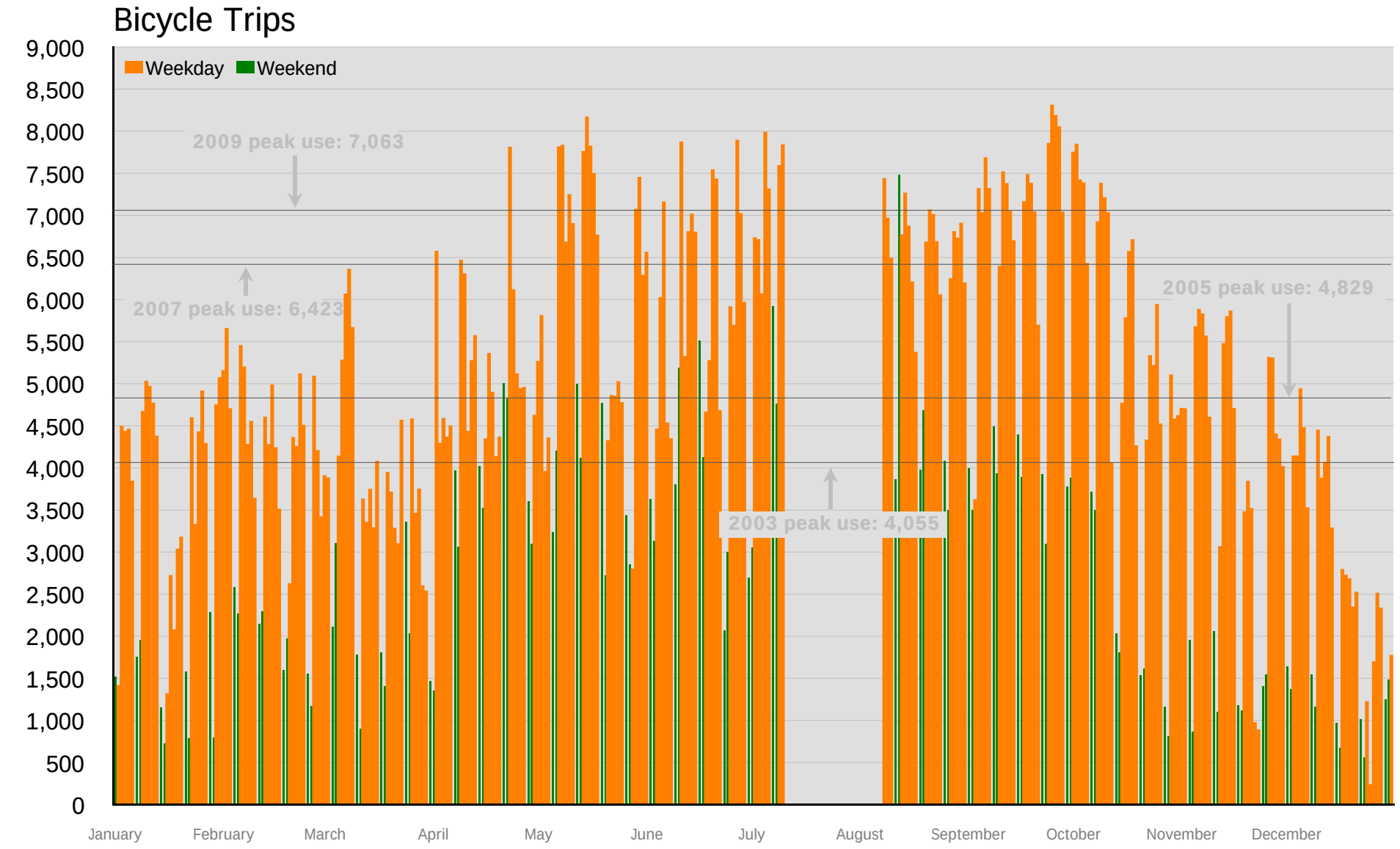
2012 Bicycle Count Locations by Percentage of Helmet Use

Portland Oregon Bicycle Commute Mode Split by Census Tract

- 1990 US Census
- 2000 US Census
- 2005-2009 ACS
- 2006-2010 ACS
- 2007-2011 ACS

Daily Hawthorne Bridge Counts

January 1 2012-December 31 2012

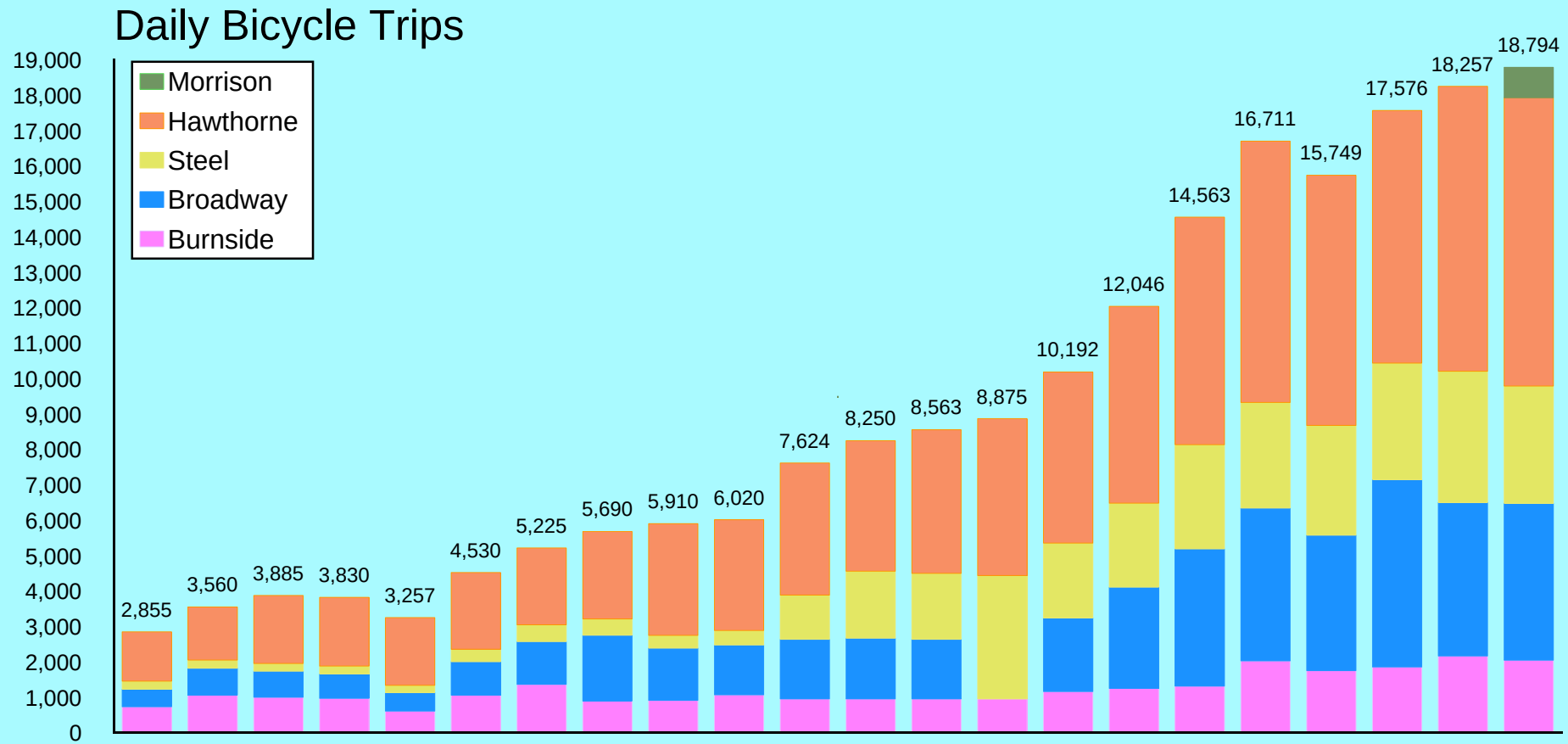


Daily by month

source: Portland Bureau of Transportation

Summer Bicycle Traffic

5 Central City Bicycle Bridges**



	Before 1992	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Morrison																						860
Hawthorne	1,390	1,500	1,920	1,940	1,910	2,165	2,170	2,471	3,154	3,125	3,729	3,682	4,055	4,428	4,829	5,557	6,423	7,379	7,063	7,133	8,044	8,136
Steel	230	230	220	220	200	350	475	460	360	410	1,250	1,891	1,860	3,482	2,112	2,373	2,943	2,982	3,101	3,287	3,703	3,311
Broadway	495	755	735	690	527	950	1,205	1,854	1,476	1,405	1,680	1,712	1,683	*	2,081	2,856	3,872	4,315	3,825	5,291	4,335	4,432
Burnside	740	1,075	1,010	980	620	1,065	1,375	905	920	1,080	965	965	965	965	1,170	1,260	1,325	2,035	1,760	1,865	2,175	2,055

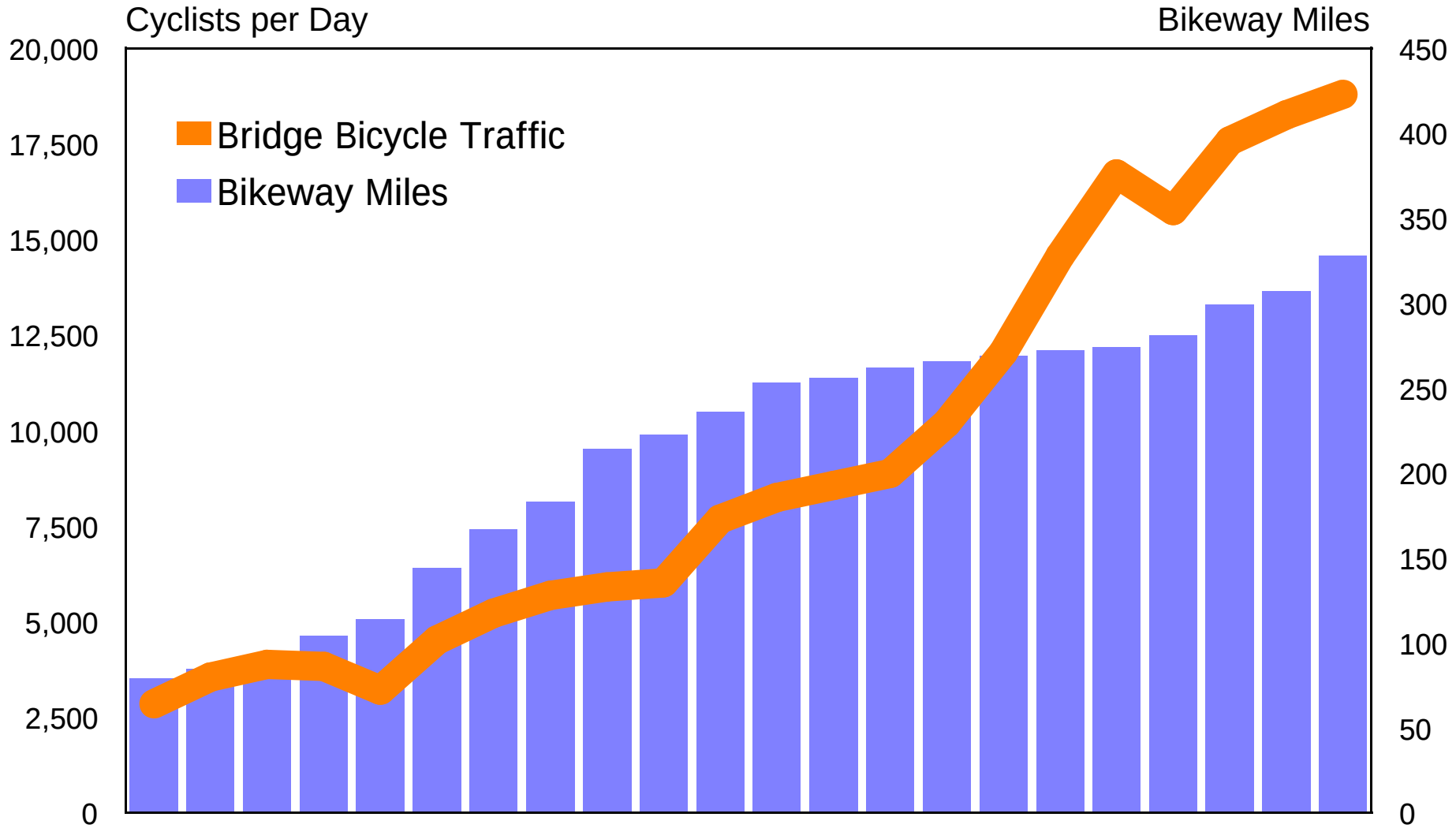
Year

Based on either 24-hour hose counts or extrapolated from 4-6 pm counts

* Broadway Bridge closed for construction during time of count.

** 2012 was the first year that the Morrison Birdge bikeway was open all summer to bicycle traffic.

Bicycle Traffic across Five Main Portland Bicycle Bridges Juxtaposed with Bikeway Miles

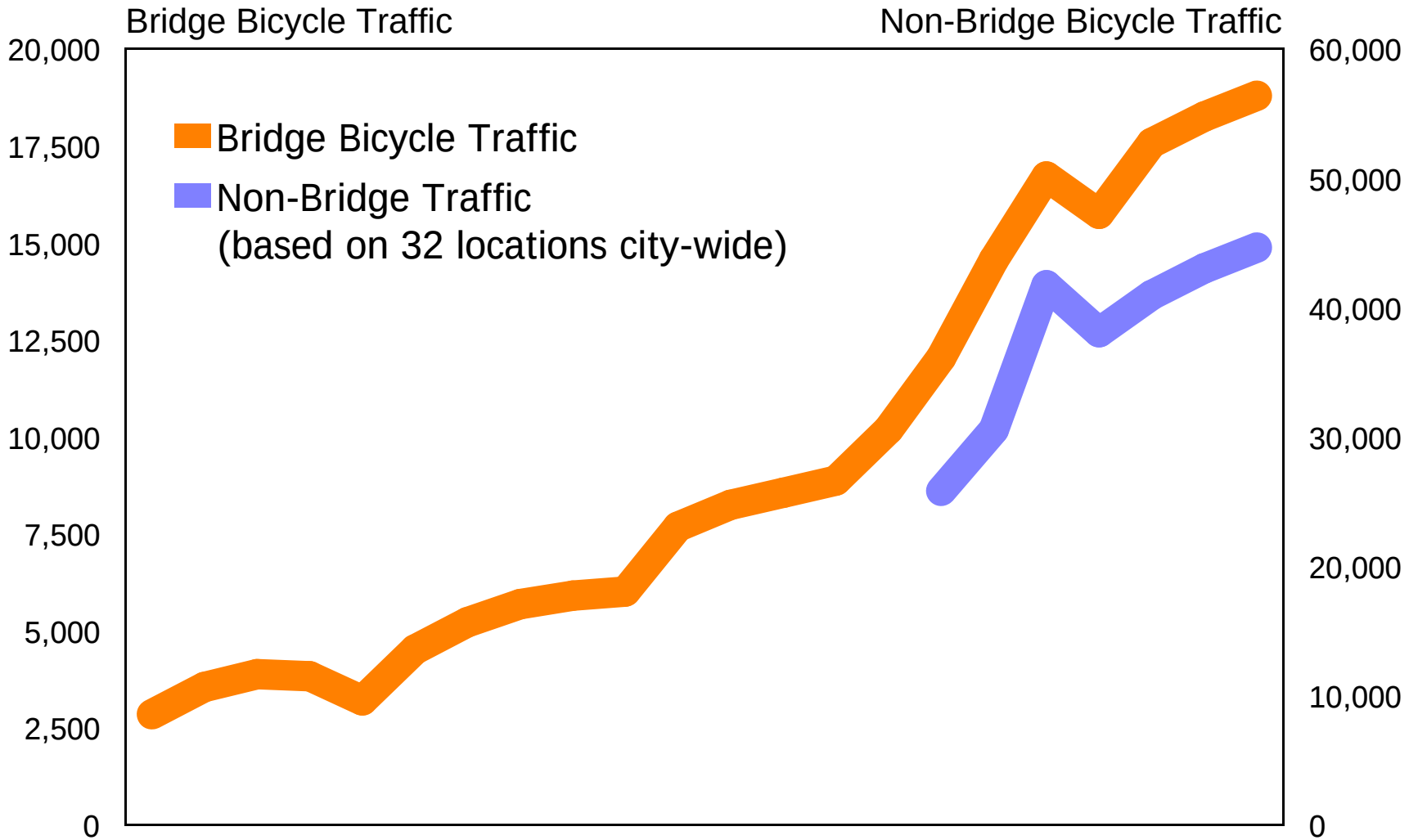


	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bridge Bicycle Traffic	2,850	3,555	3,885	3,830	3,207	4,520	5,225	5,690	5,910	6,015	7,686	8,250	8,562	8,875	10,192	12,046	14,563	16,711	15,749	17,576	18,257	18,794
Bikeway Miles	79	84.5	87	104	114	144	167	183	214	222.5	236	253	256	262	265.5	269	272	274	281	299	307	328

Extrapolated from peak period counts

Year

Bicycle Traffic at City Count Locations
Bridge and Non-Bridge Traffic



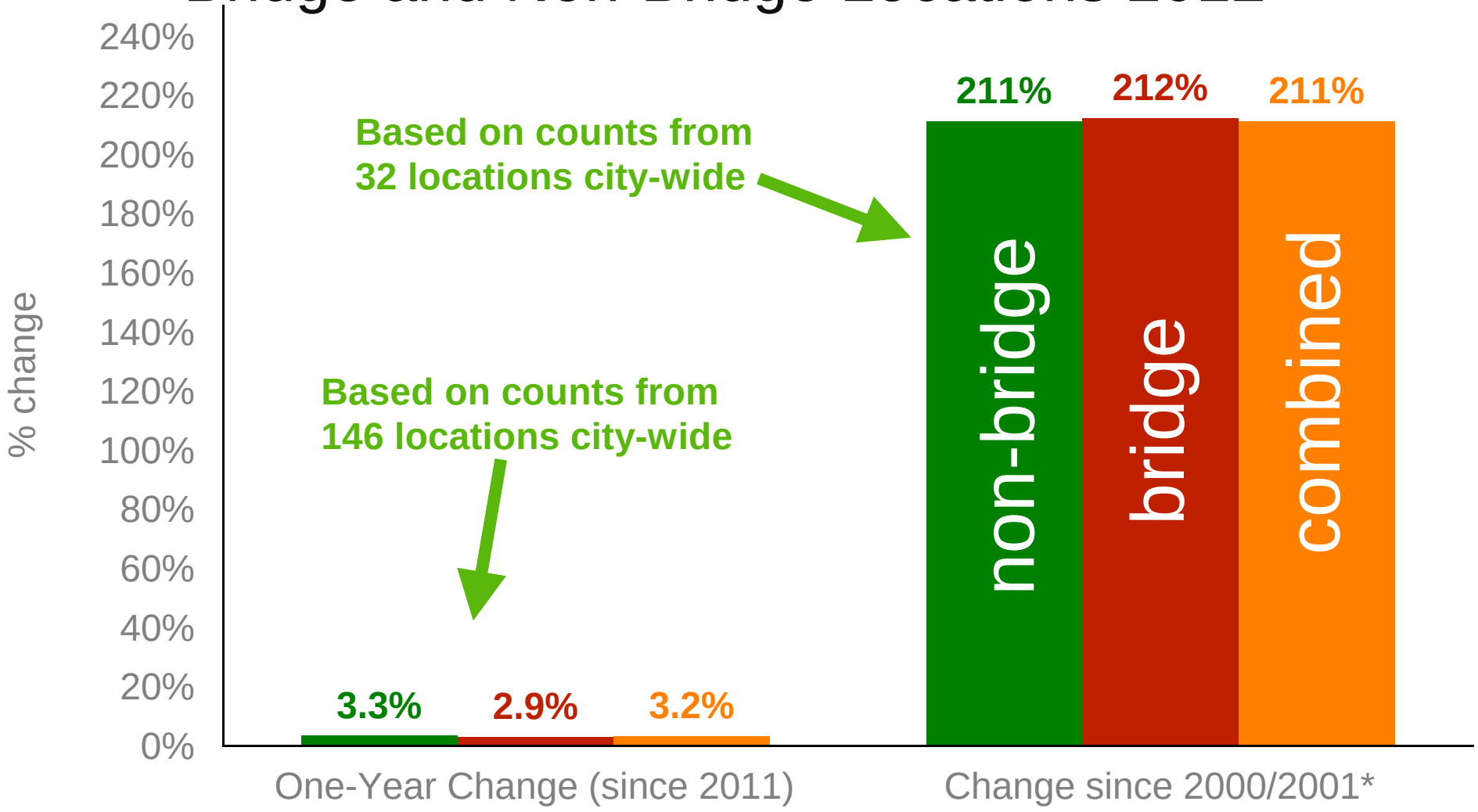
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bridge Bicycle Traffic	2,850	3,555	3,885	3,830	3,207	4,520	5,225	5,690	5,910	6,015	7,686	8,250	8,562	8,875	10,192	12,046	14,563	16,711	15,749	17,618	25,718	27,794
Non-Bridge Traffic (based on 32 locations city-wide)																25,820	30,560	41,730	38,540	49,654	30,440	40,640

Based on 24-hour hose counts or extrapolated from peak period counts

Year

Changes in Bicycle Traffic

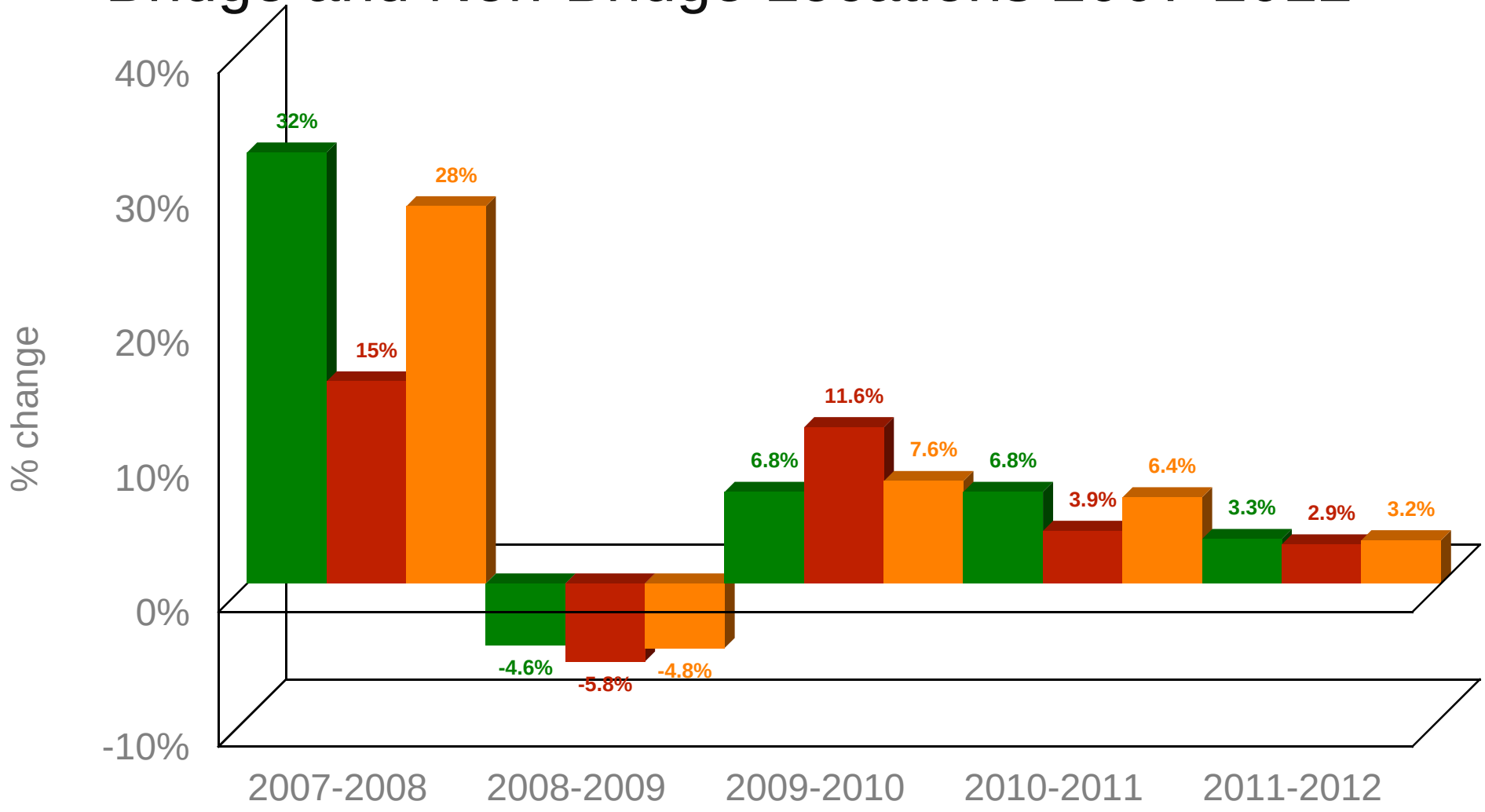
Bridge and Non-Bridge Locations 2012



Based on manual and automated bicycle counts
*used the higher of data available 2000/2001

Annual Growth in Bicycle Traffic

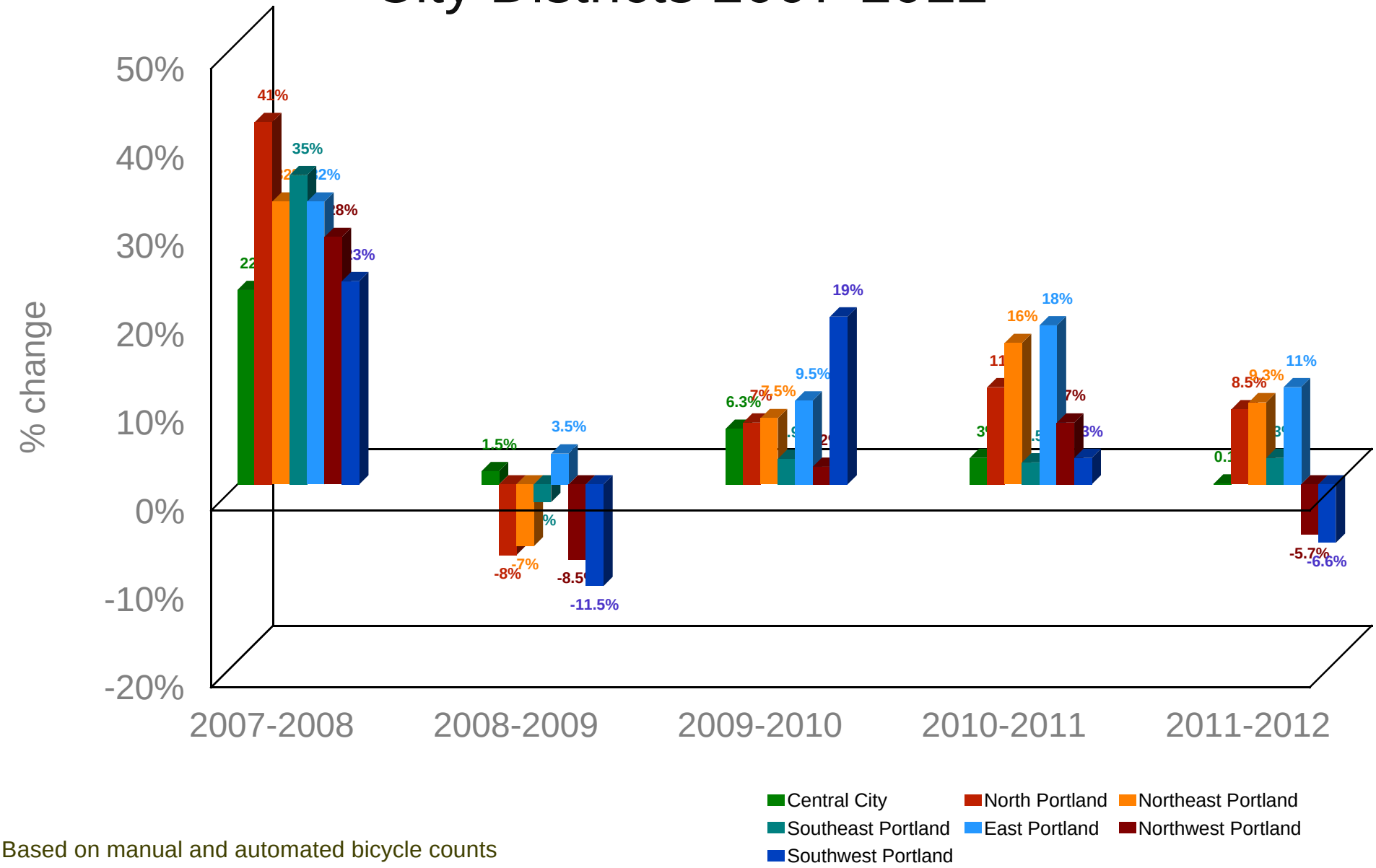
Bridge and Non-Bridge Locations 2007-2012



Based on manual and automated bicycle counts

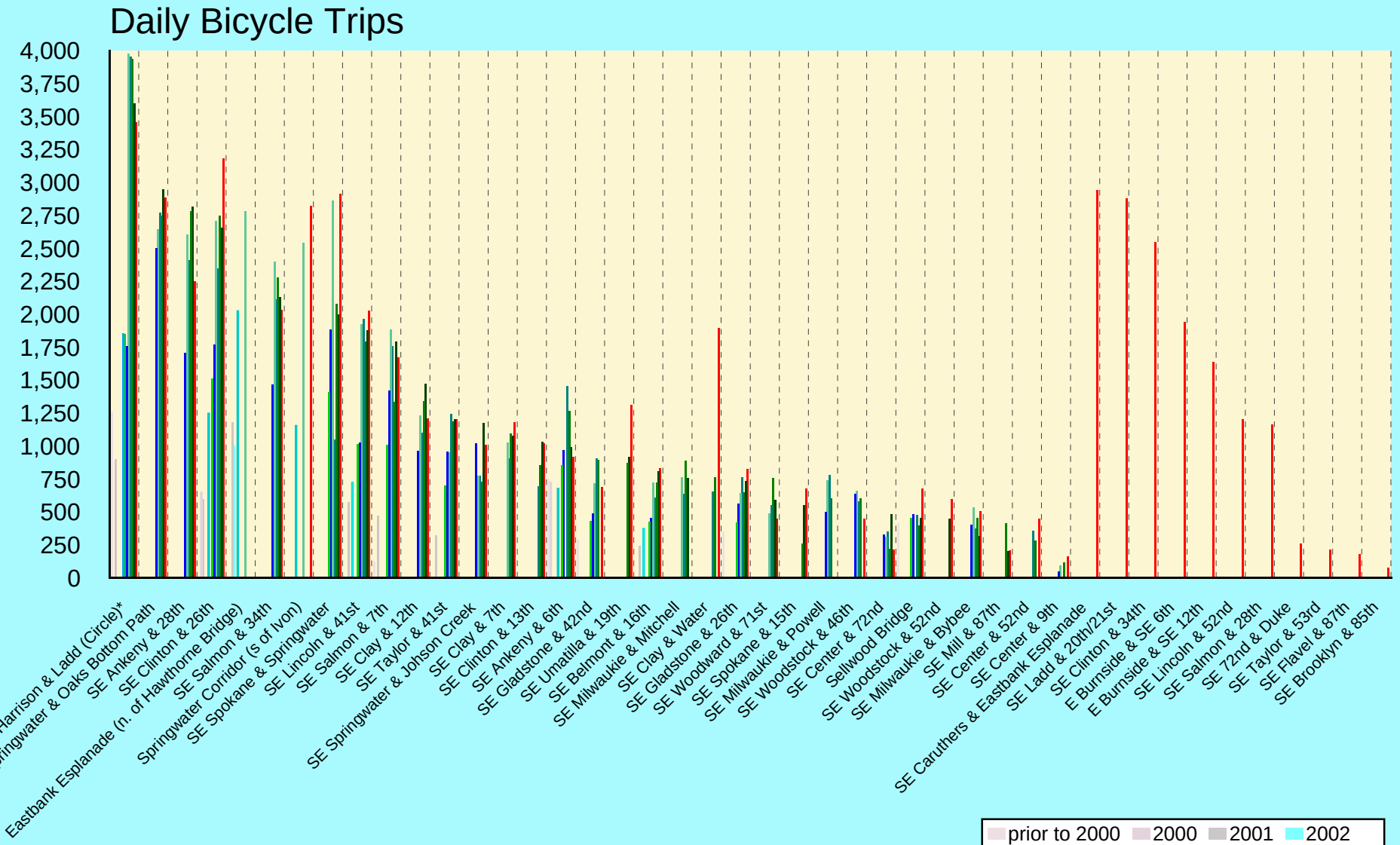
Annual Growth in Bicycle Traffic

City Districts 2007-2012



Based on manual and automated bicycle counts

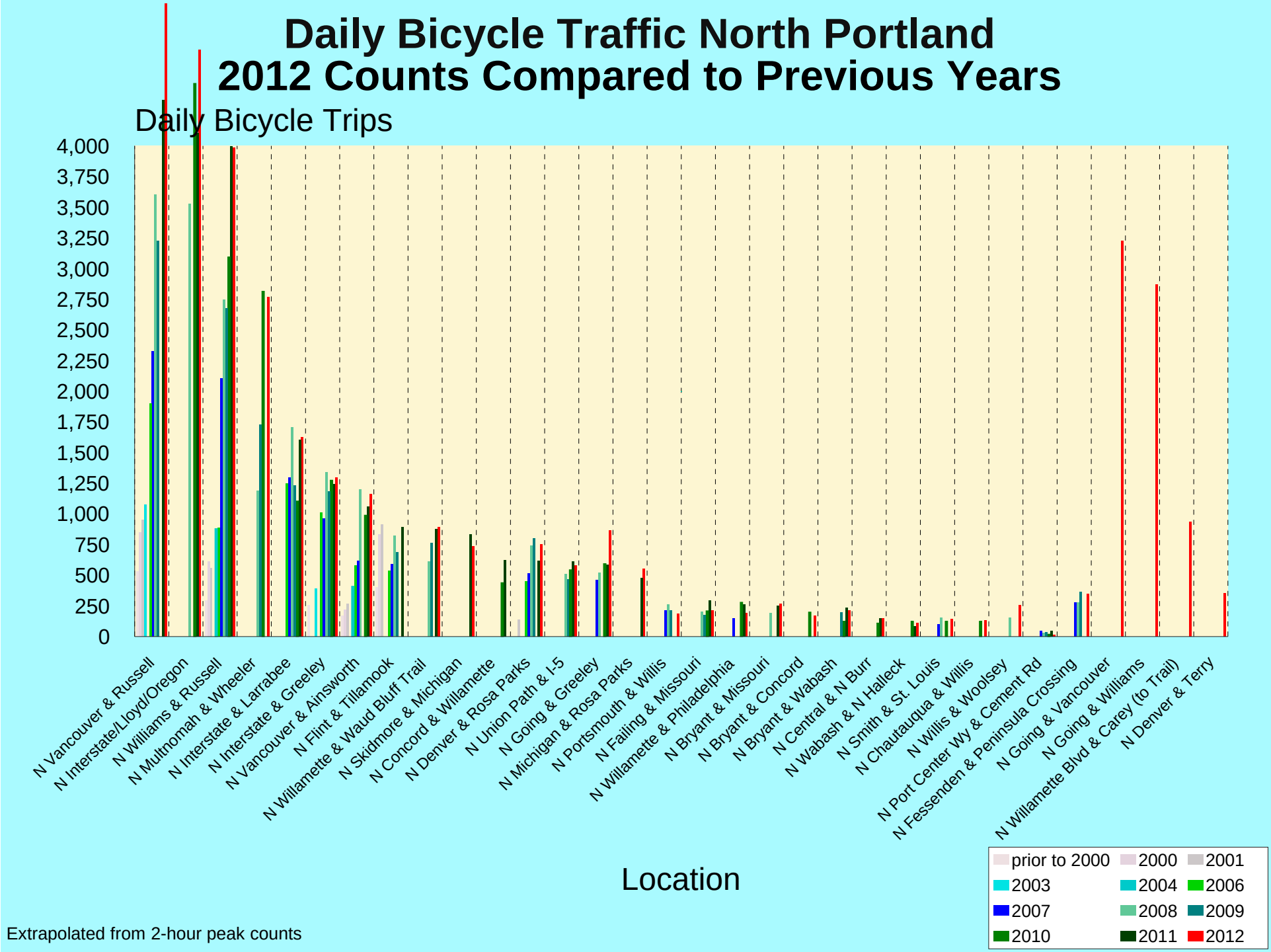
Daily Bicycle Traffic Inner SE Portland
2012 Counts Compared to Previous Years



Based on either 24-hour hose counts or extrapolated from 2-hour peak counts

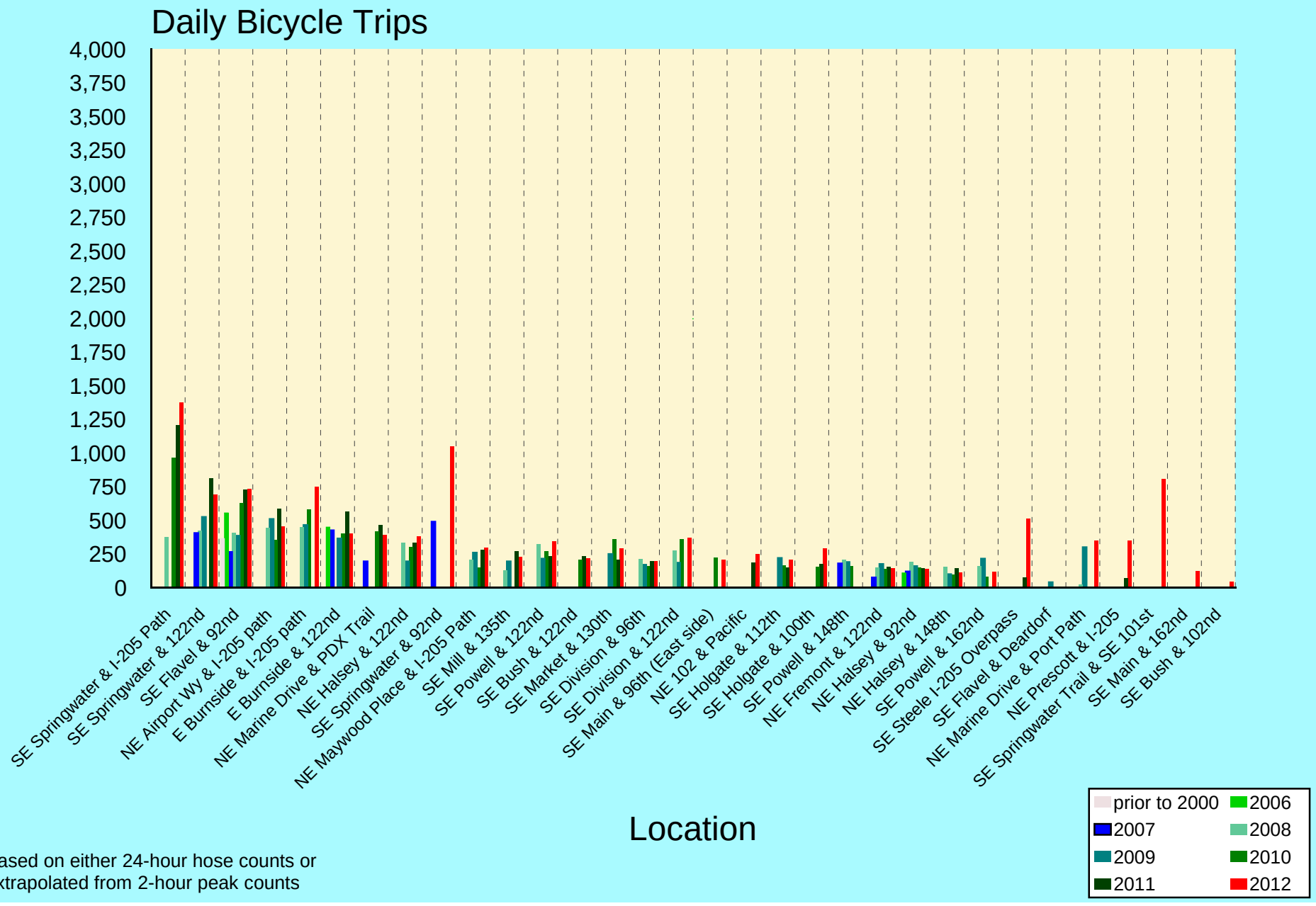
*Counted at NW corner of circle, compared to counts at SE corner in the years prior to 2008.

Daily Bicycle Traffic North Portland
2012 Counts Compared to Previous Years



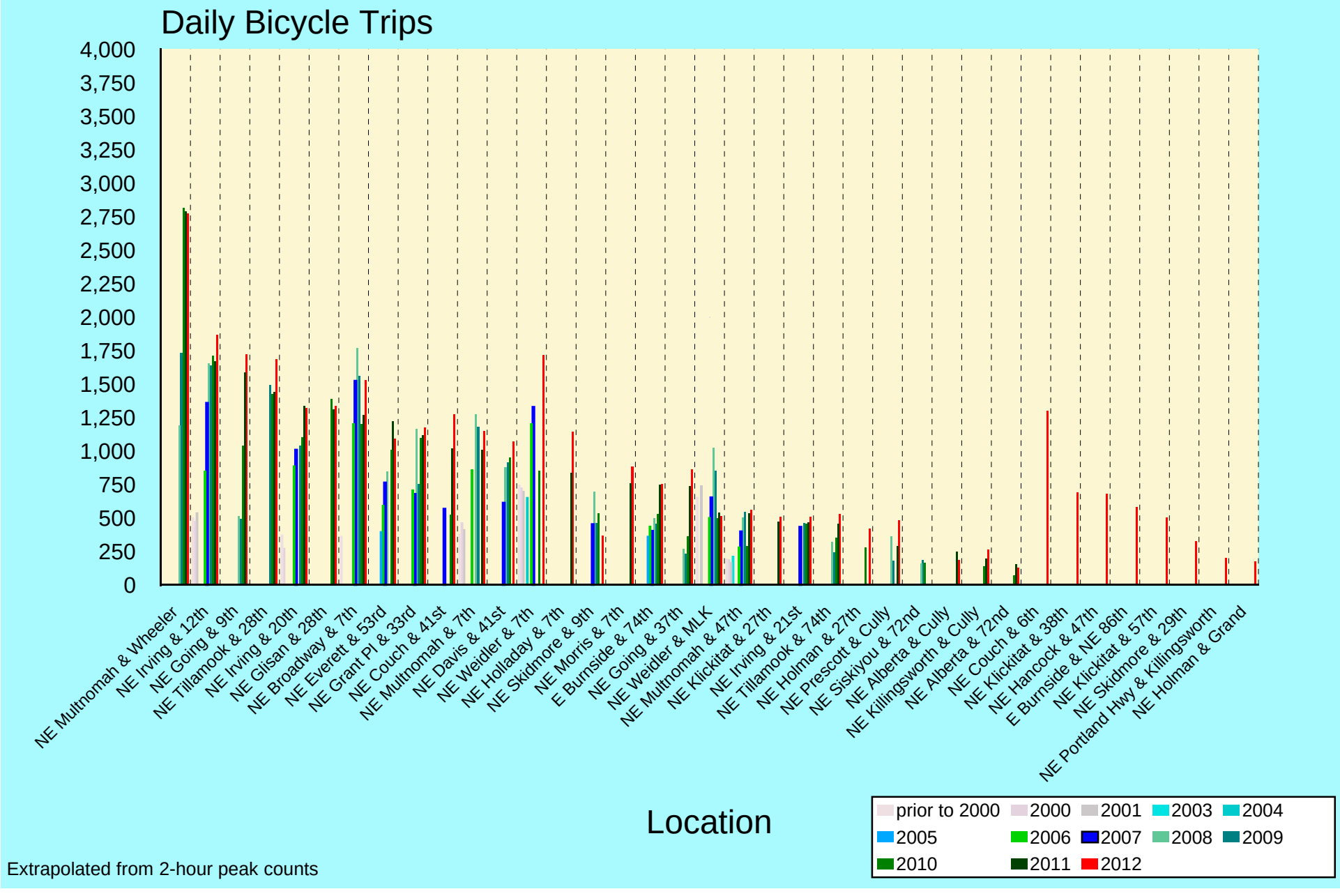
Extrapolated from 2-hour peak counts

Daily Bicycle Traffic East Portland
2012 Counts Compared to Previous Years



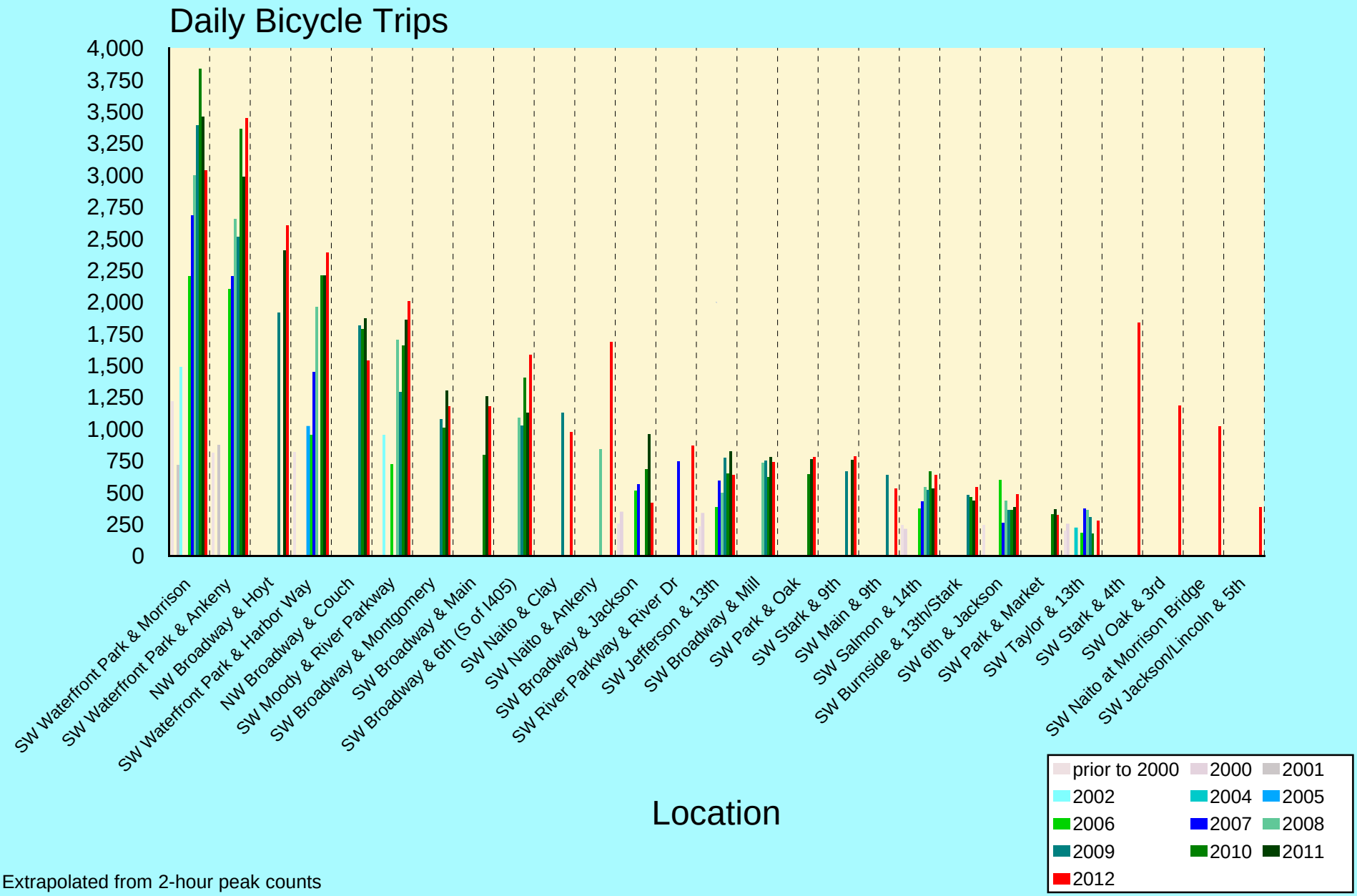
Based on either 24-hour hose counts or extrapolated from 2-hour peak counts

Daily Bicycle Traffic Inner NE Portland
2012 Counts Compared to Previous Years



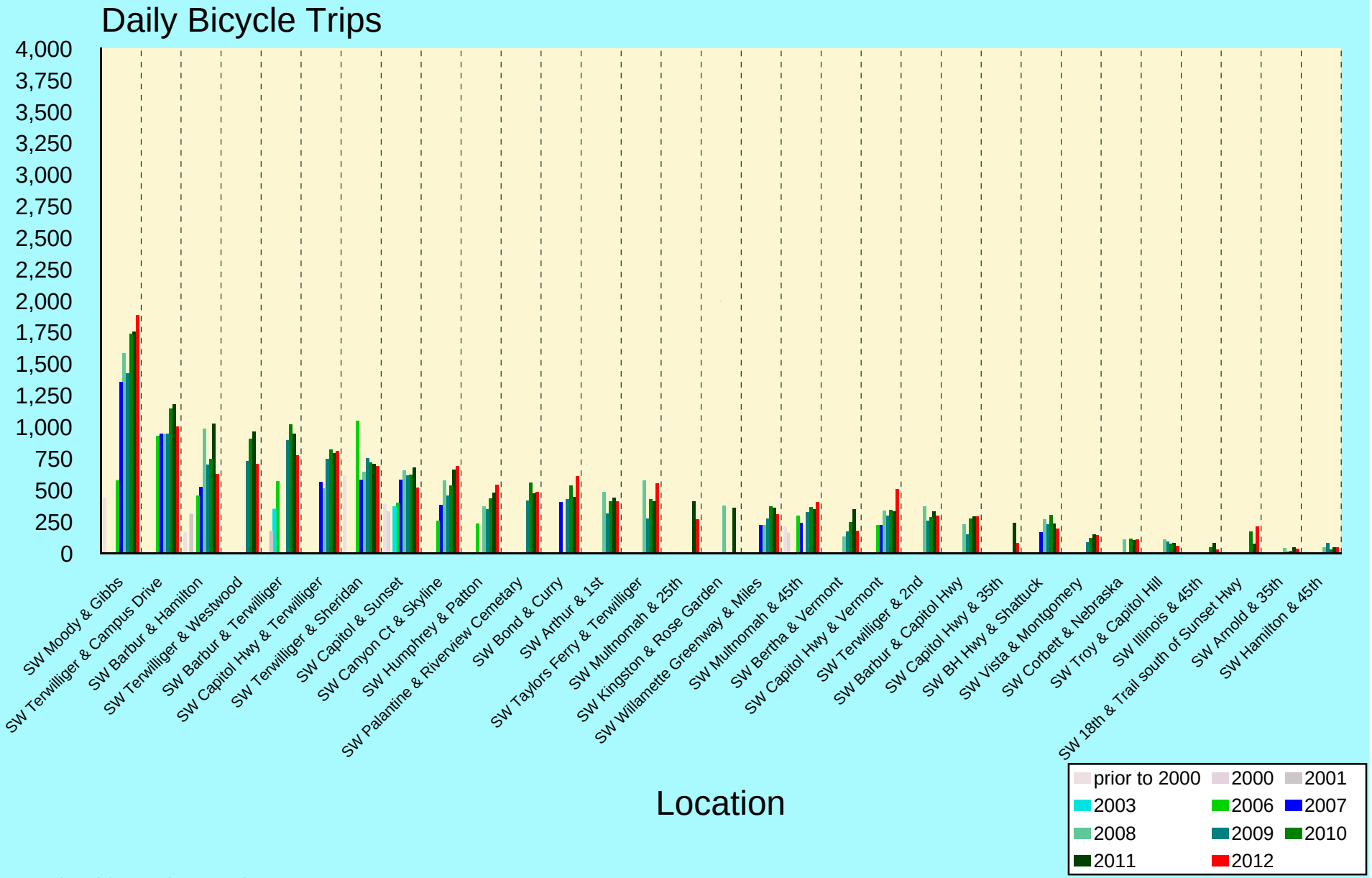
Extrapolated from 2-hour peak counts

Daily Bicycle Traffic West Portland (Central City)
2012 Counts Compared to Previous Years



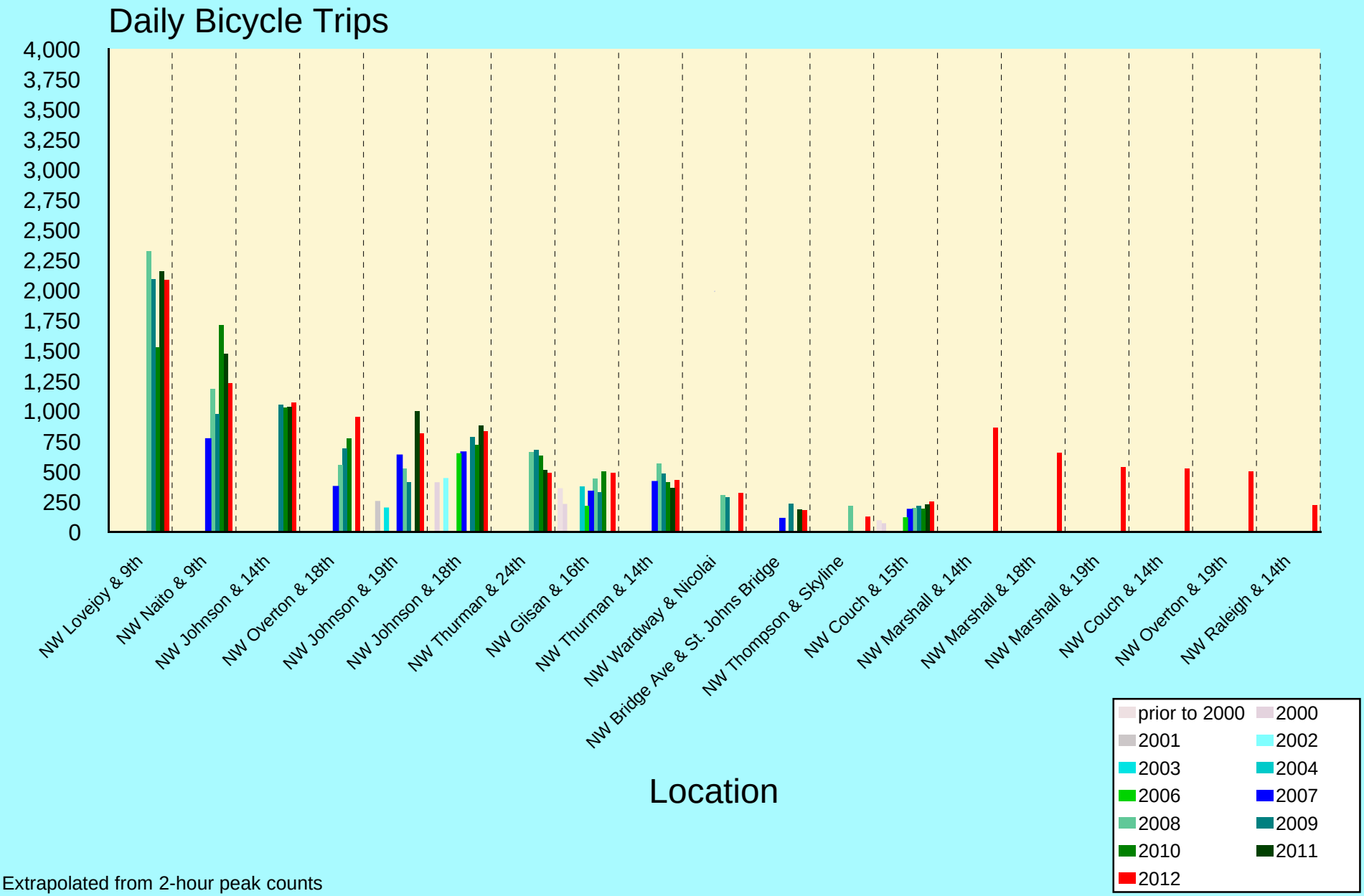
Extrapolated from 2-hour peak counts

Daily Bicycle Traffic Southwest Portland (not incl. Central City)
2012 Counts Compared to Previous Years



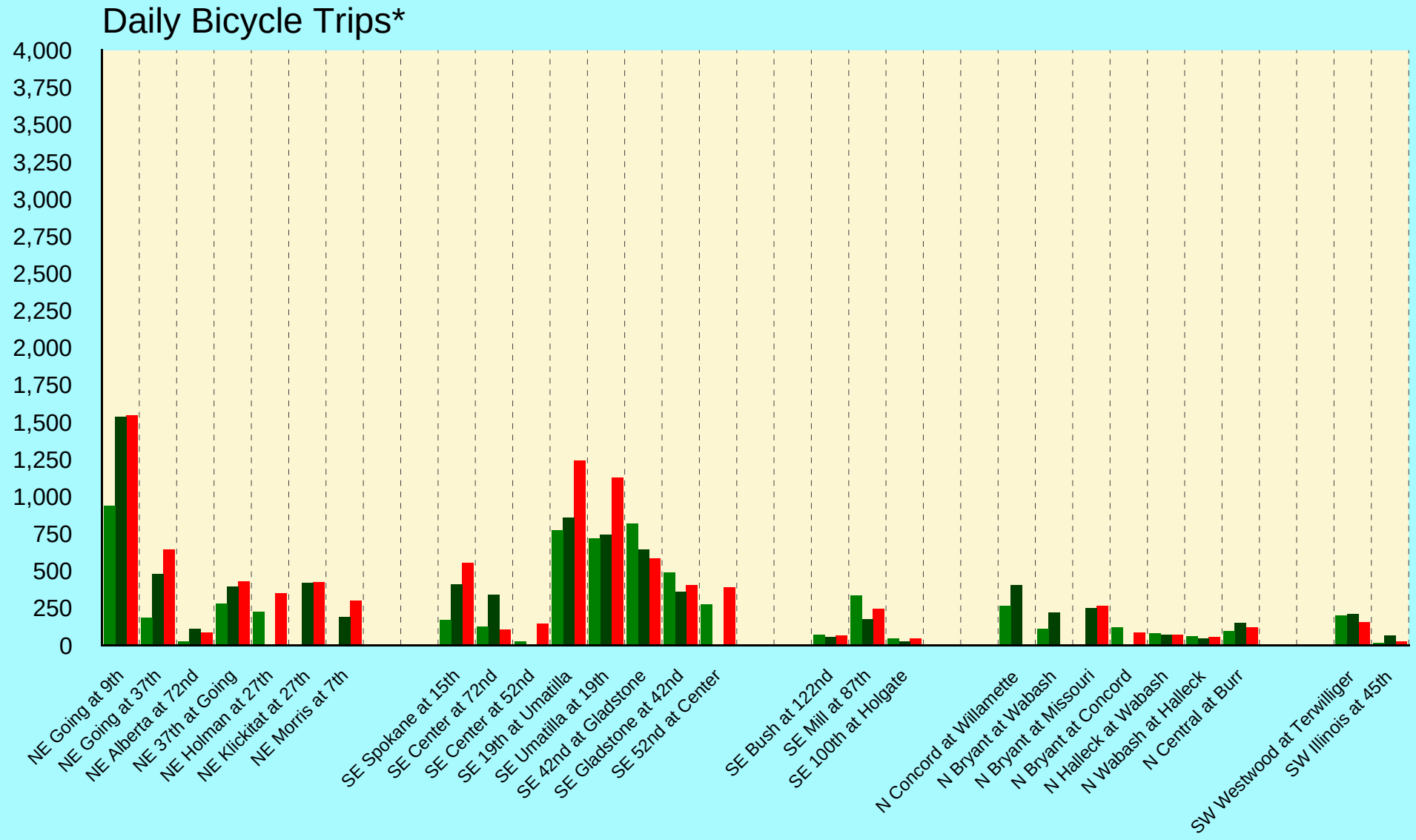
Extrapolated from 2-hour peak counts

Daily Bicycle Traffic Northwest Portland (not incl. Central City)
2012 Counts Compared to Previous Years



Extrapolated from 2-hour peak counts

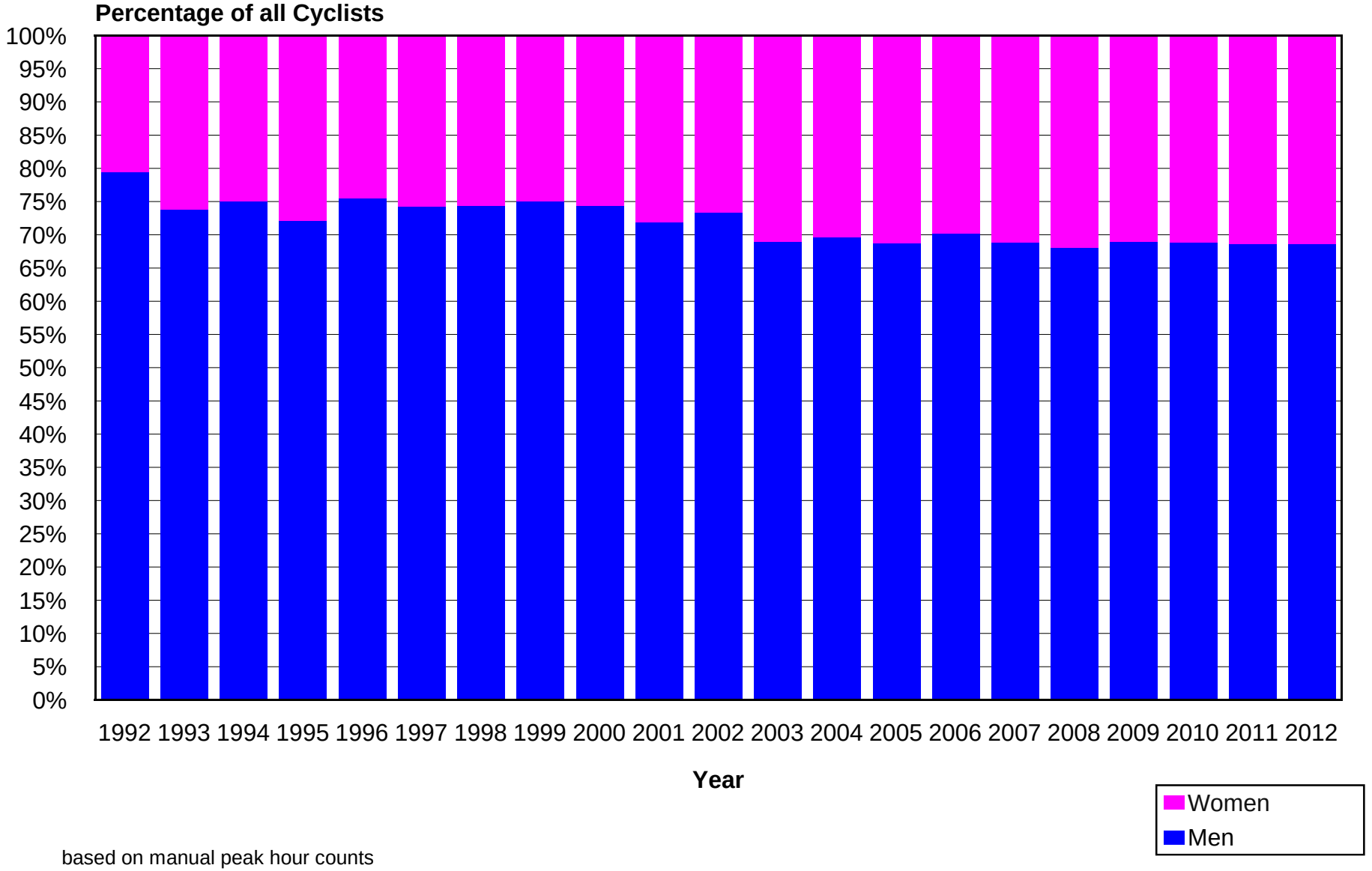
Daily Bicycle Traffic Greenways
2012 Counts Compared to Previous Years



*Counts include bicycles traveling on the greenway
(does not include bicycles crossing the greenway)

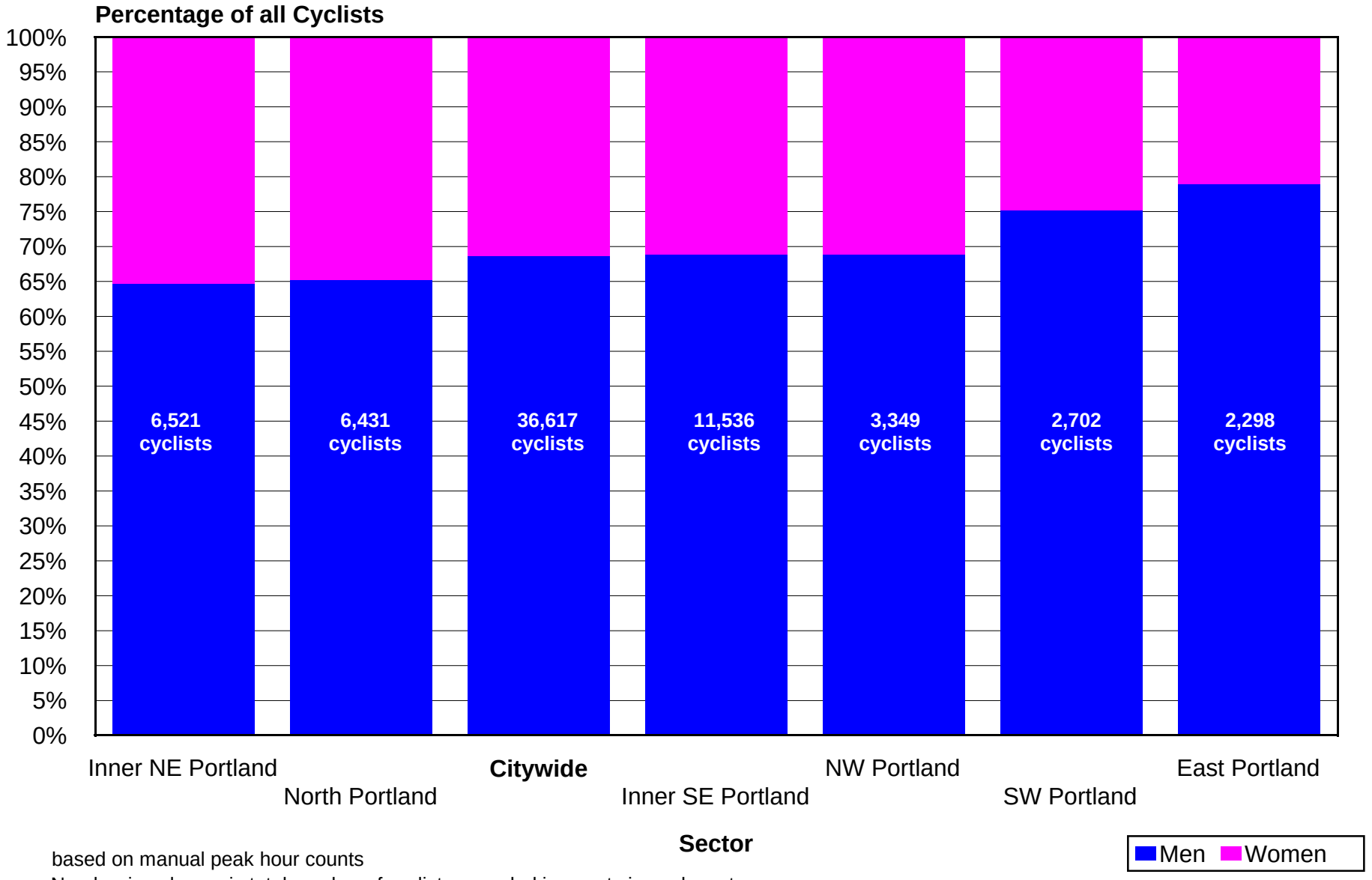
Extrapolated from 2-hour peak counts

City of Portland Bicycle Counts by Year By Gender



based on manual peak hour counts

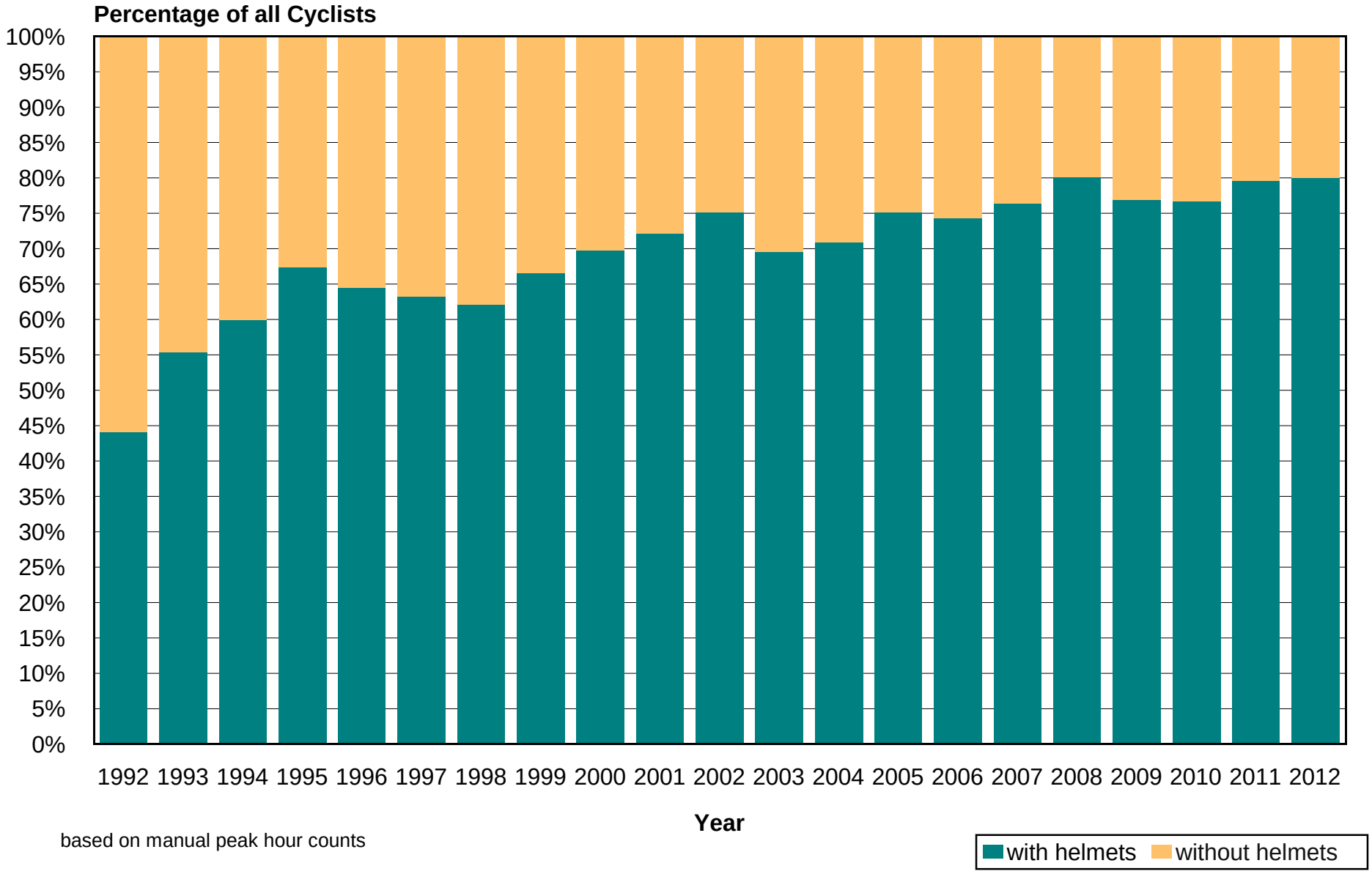
City of Portland Bicycle Counts by Sector 2012
By Gender



based on manual peak hour counts

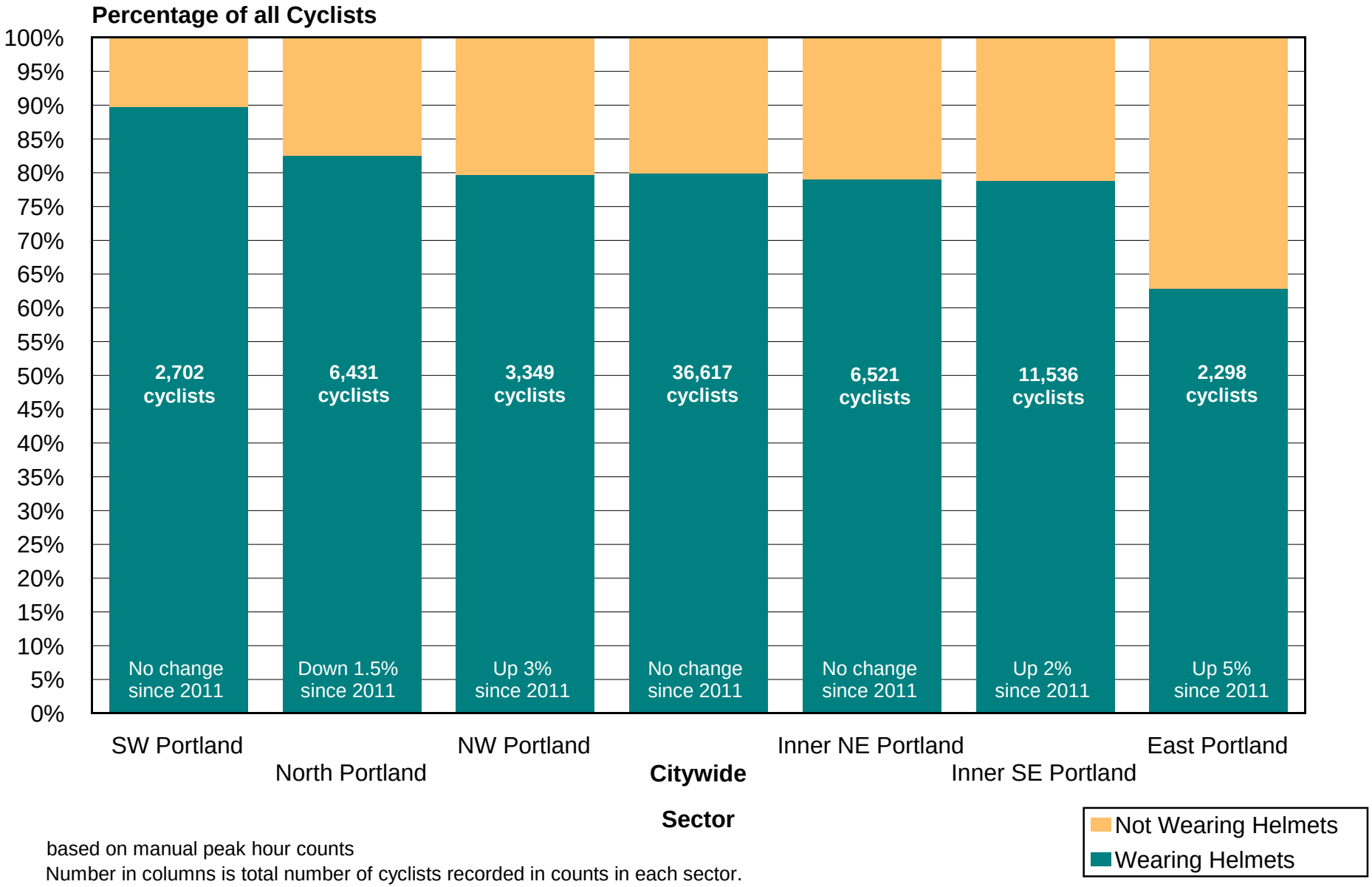
Number in columns is total number of cyclists recorded in counts in each sector.

City of Portland Bicycle Counts by Year By Helmet Use



based on manual peak hour counts

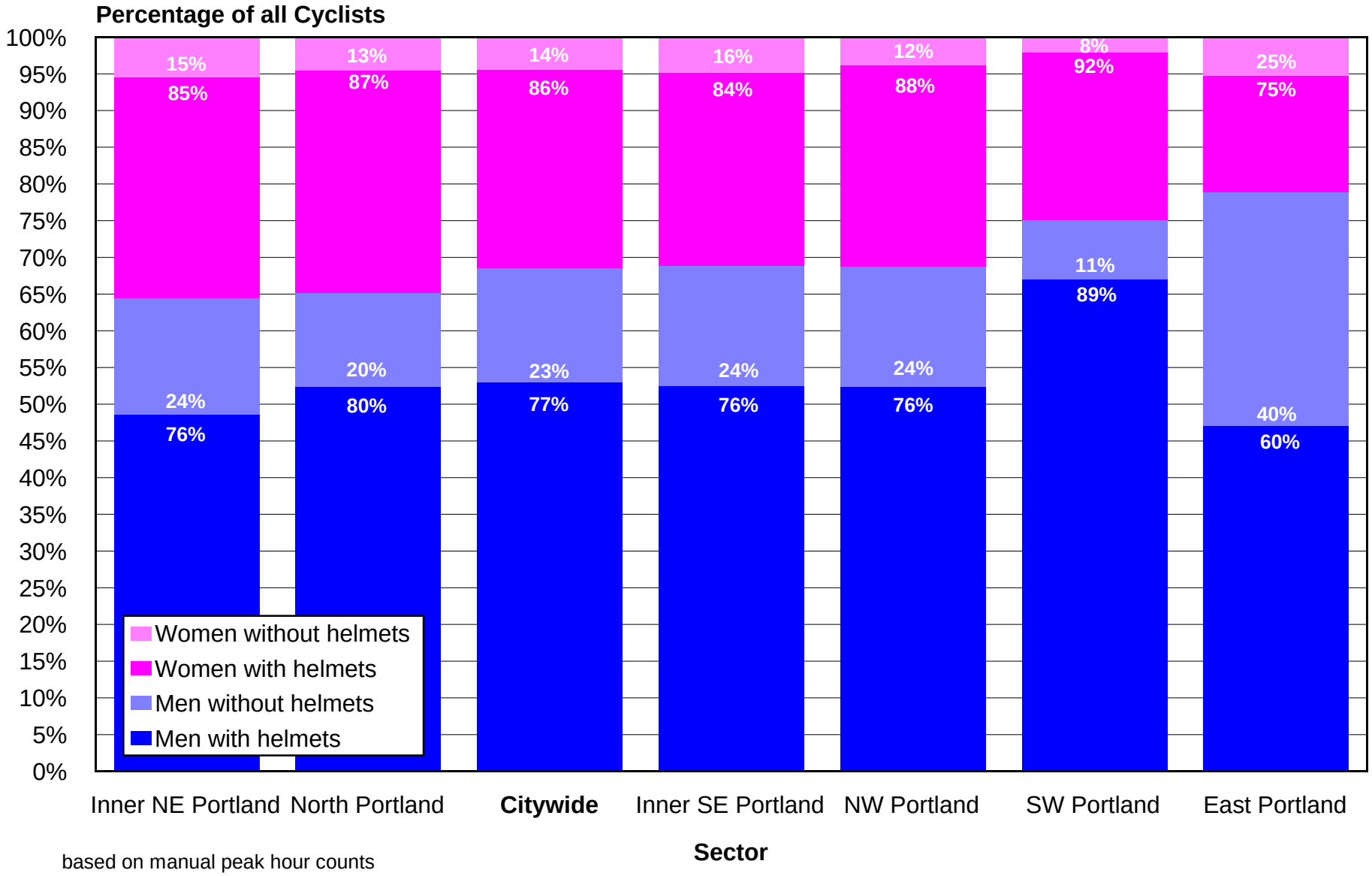
City of Portland Bicycle Counts by Sector 2012
By Helmet Use



based on manual peak hour counts

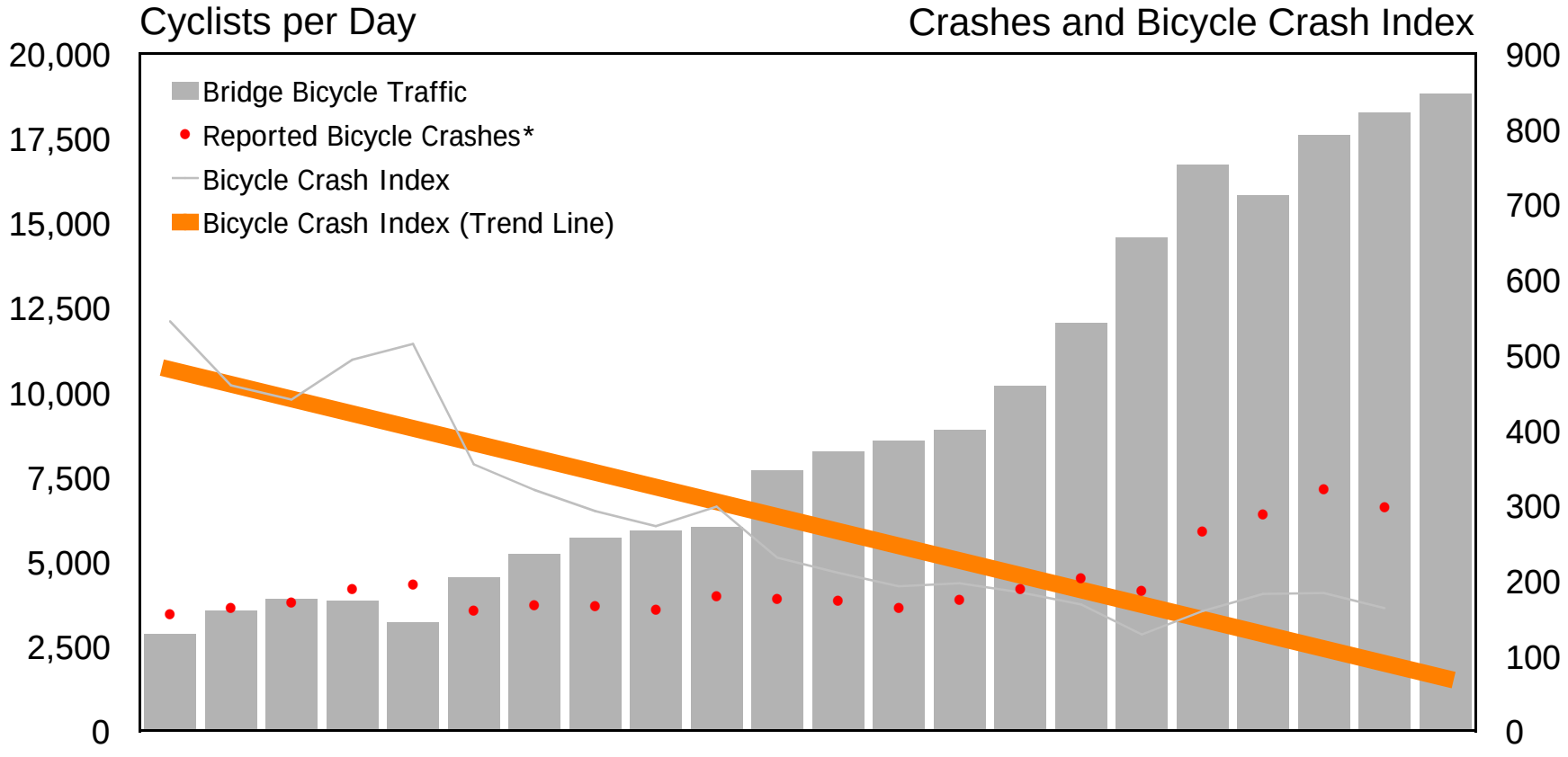
Number in columns is total number of cyclists recorded in counts in each sector.

City of Portland Bicycle Counts by Sector 2012
By Gender and Helmet Use



based on manual peak hour counts

Combined Bicycle Traffic over Five Main Portland Bicycle Bridges Juxtaposed with Bicycle Crashes



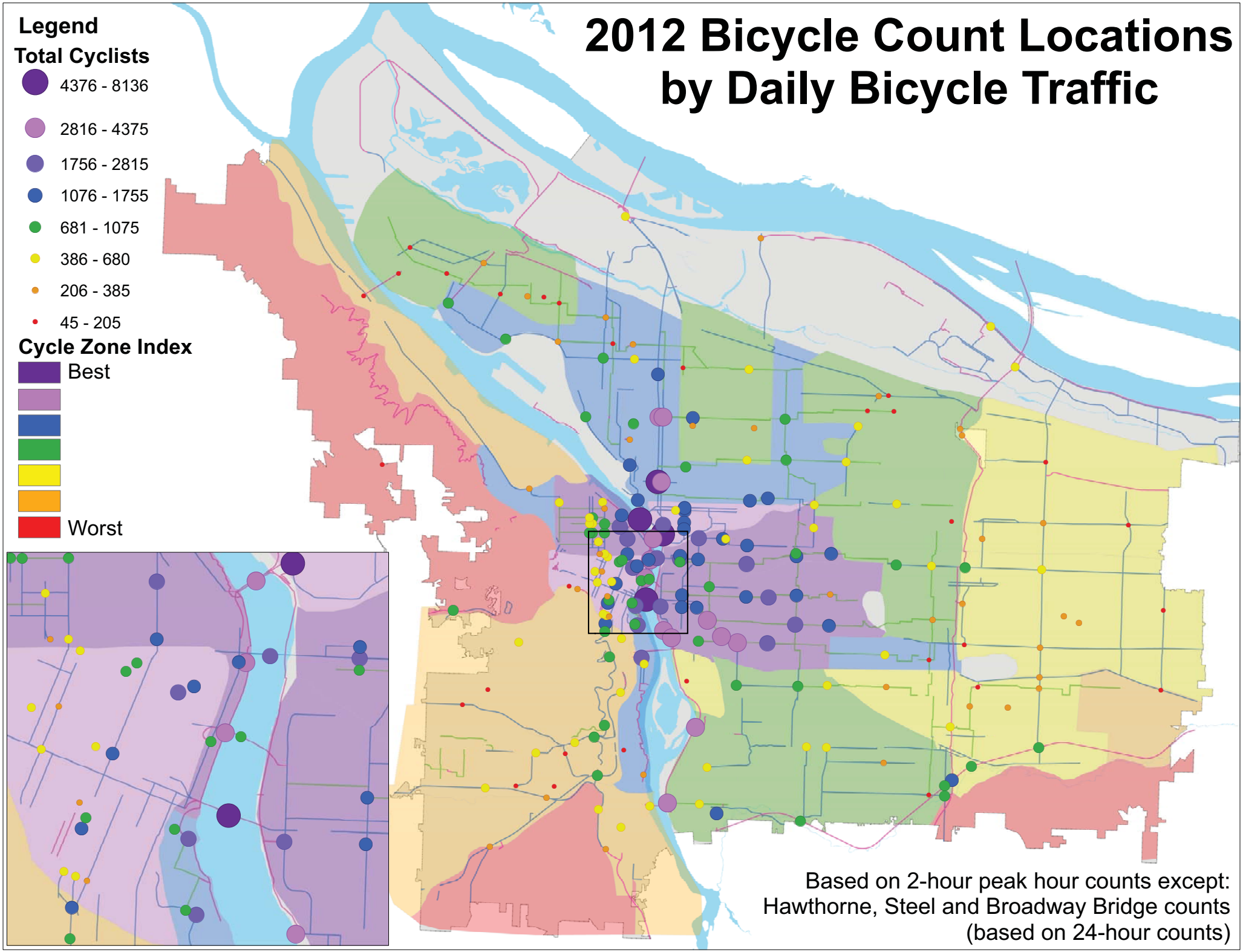
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bridge Bicycle Traffic	2,850	3,555	3,885	3,830	3,207	4,520	5,225	5,690	5,910	6,015	7,686	8,250	8,562	8,875	10,192	12,046	14,563	16,711	15,794	17,576	18,257	18,794
Reported Bicycle Crashes*	155	163	171	189	195	160	167	166	161	179	175	173	164	174	188	203	186	265	287	321	297	*
Bicycle Crash Index	544	459	440	493	514	354	320	292	272	298	230	210	192	196	184	168	128	159	182	183	163	*
Bicycle Fatalities	2	0	4	3	2	1	5	3	0	0	5	0	4	1	4	0	6	0	4	0	2	2

Extrapolated from peak period counts

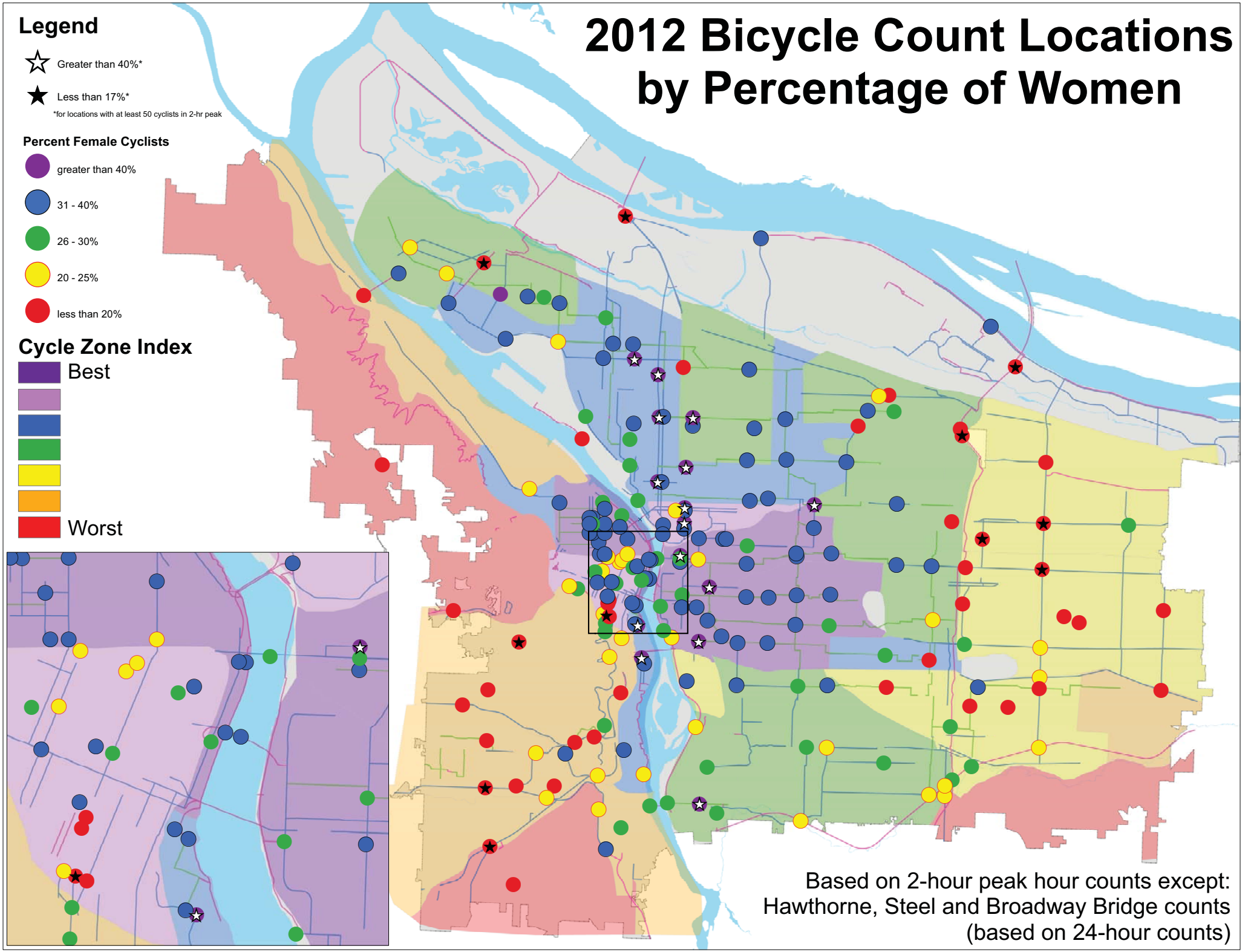
Year

"Crash Rate" represents an indexing of annual reported crashes to daily bicycle trips across the four main bicycle bridges.
*2008, 2009 Reported Bicycle Crashes data reflects a decision by the Portland Police Bureau to lower the threshold for reporting bicycle-involved crashes. This change, beginning in January 2008 means that crashes previously unreported by Portland Police are now entering the reporting system. There have been no indications in the operation of our system that leads the city to condude that the increase in reported crashes is representative of changes in actual crash activity with in the city.

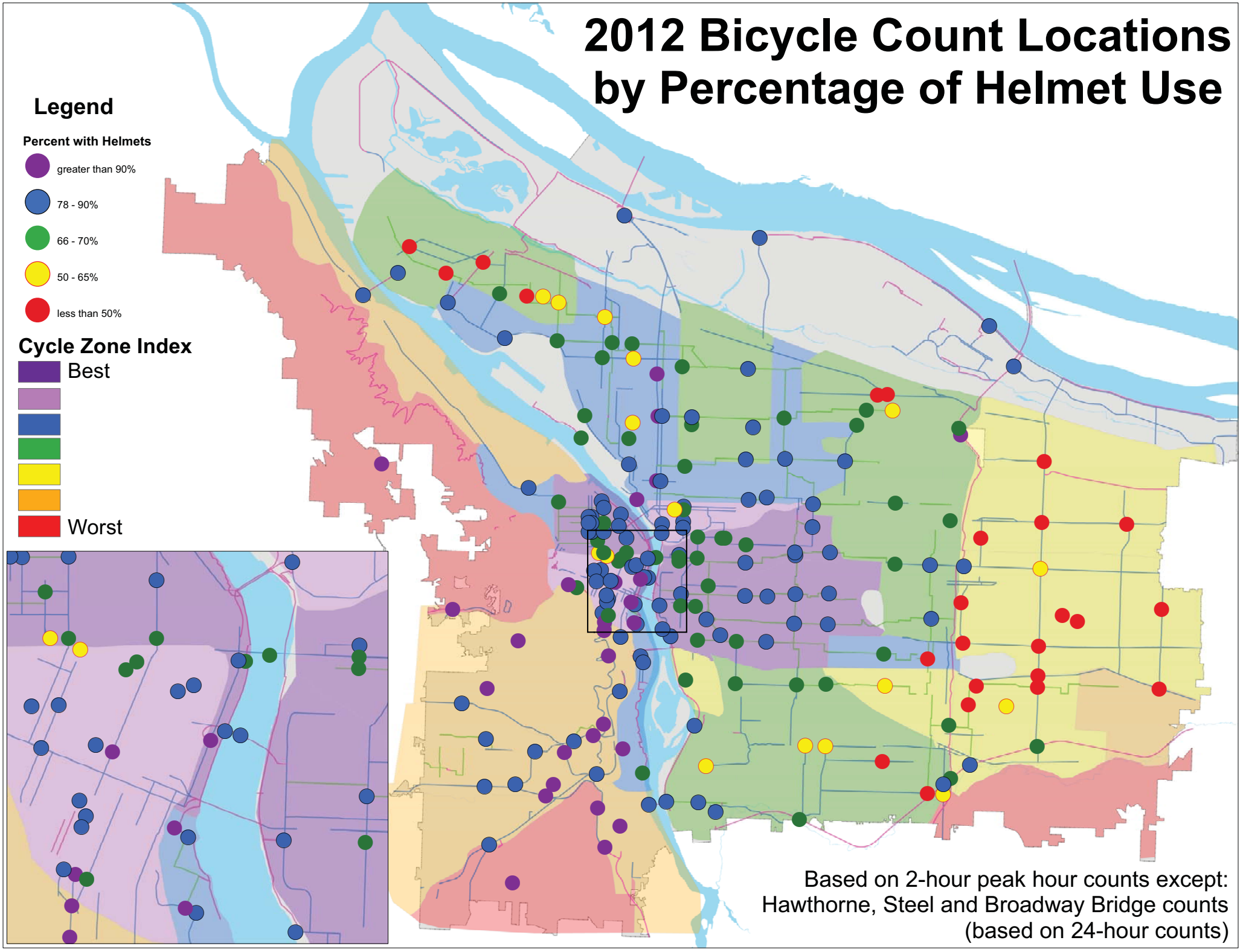
2012 Bicycle Count Locations by Daily Bicycle Traffic



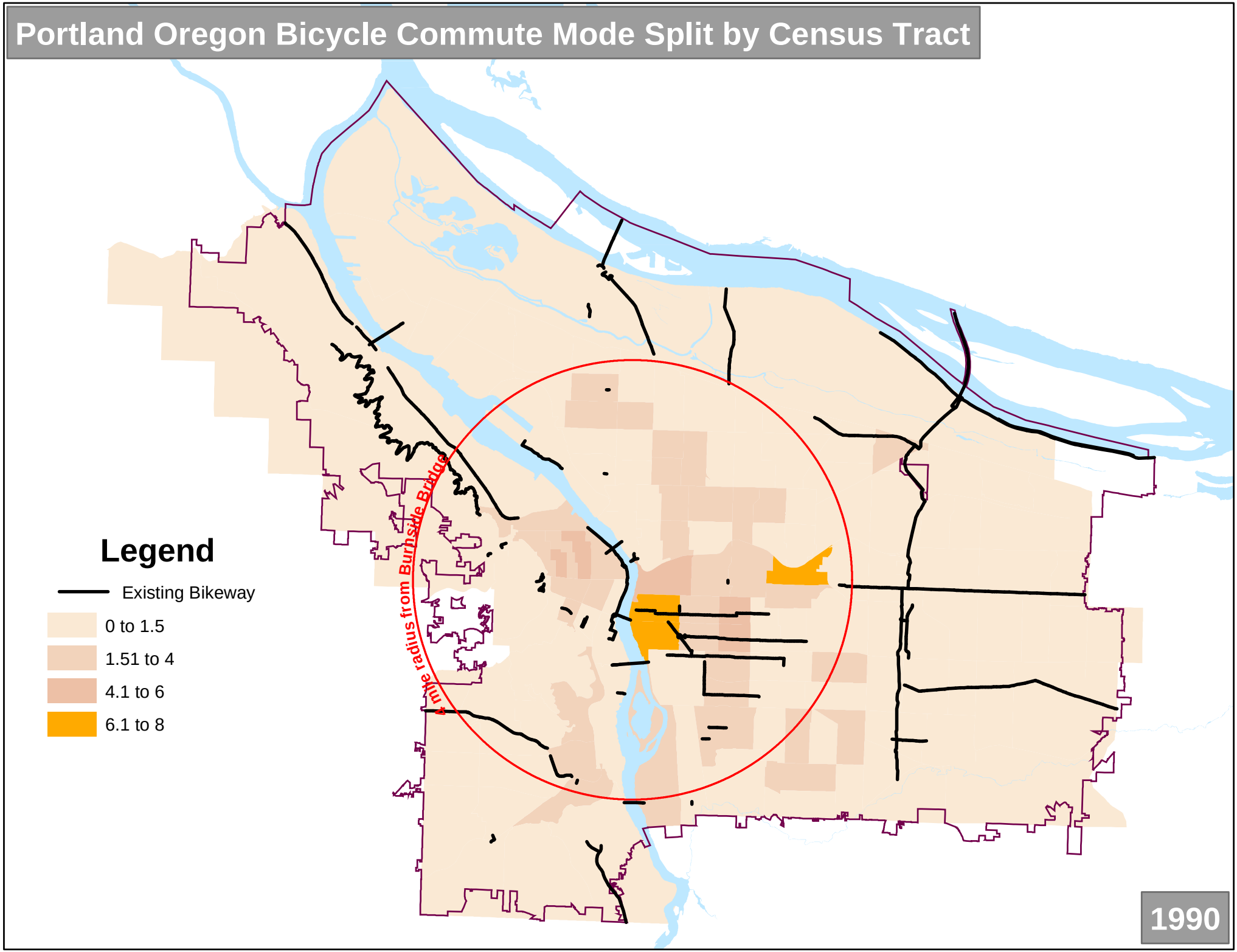
2012 Bicycle Count Locations by Percentage of Women



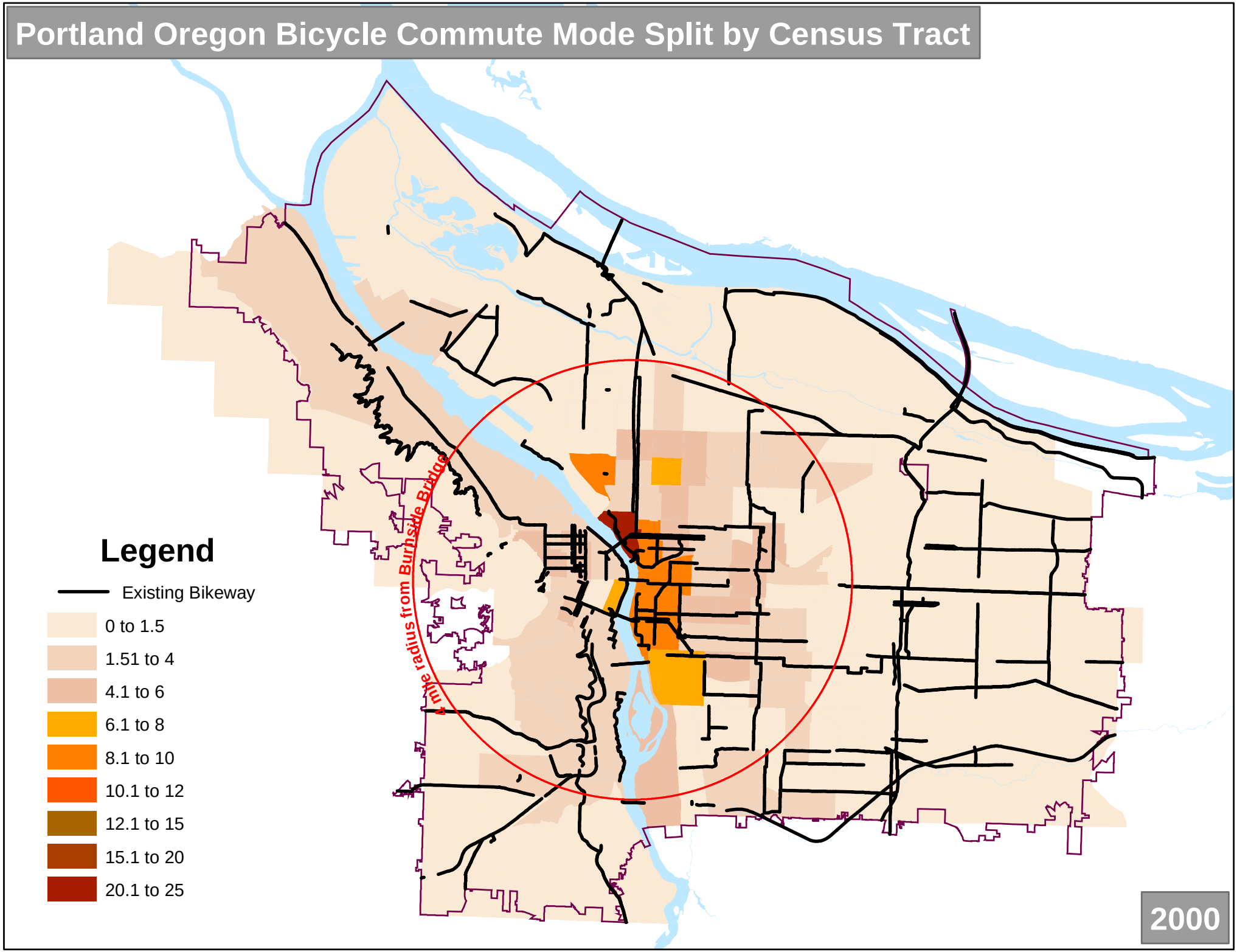
2012 Bicycle Count Locations by Percentage of Helmet Use



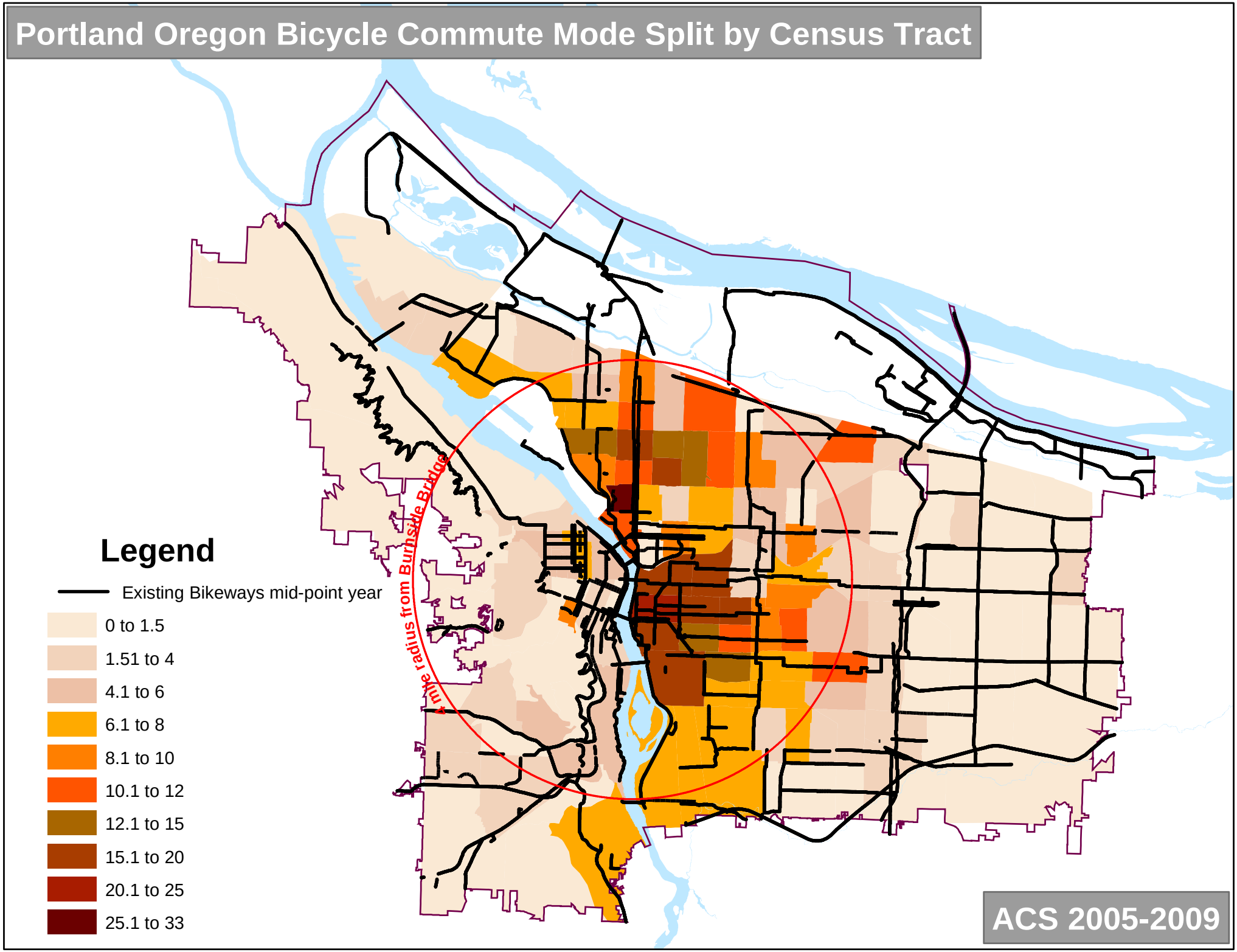
Portland Oregon Bicycle Commute Mode Split by Census Tract



Portland Oregon Bicycle Commute Mode Split by Census Tract

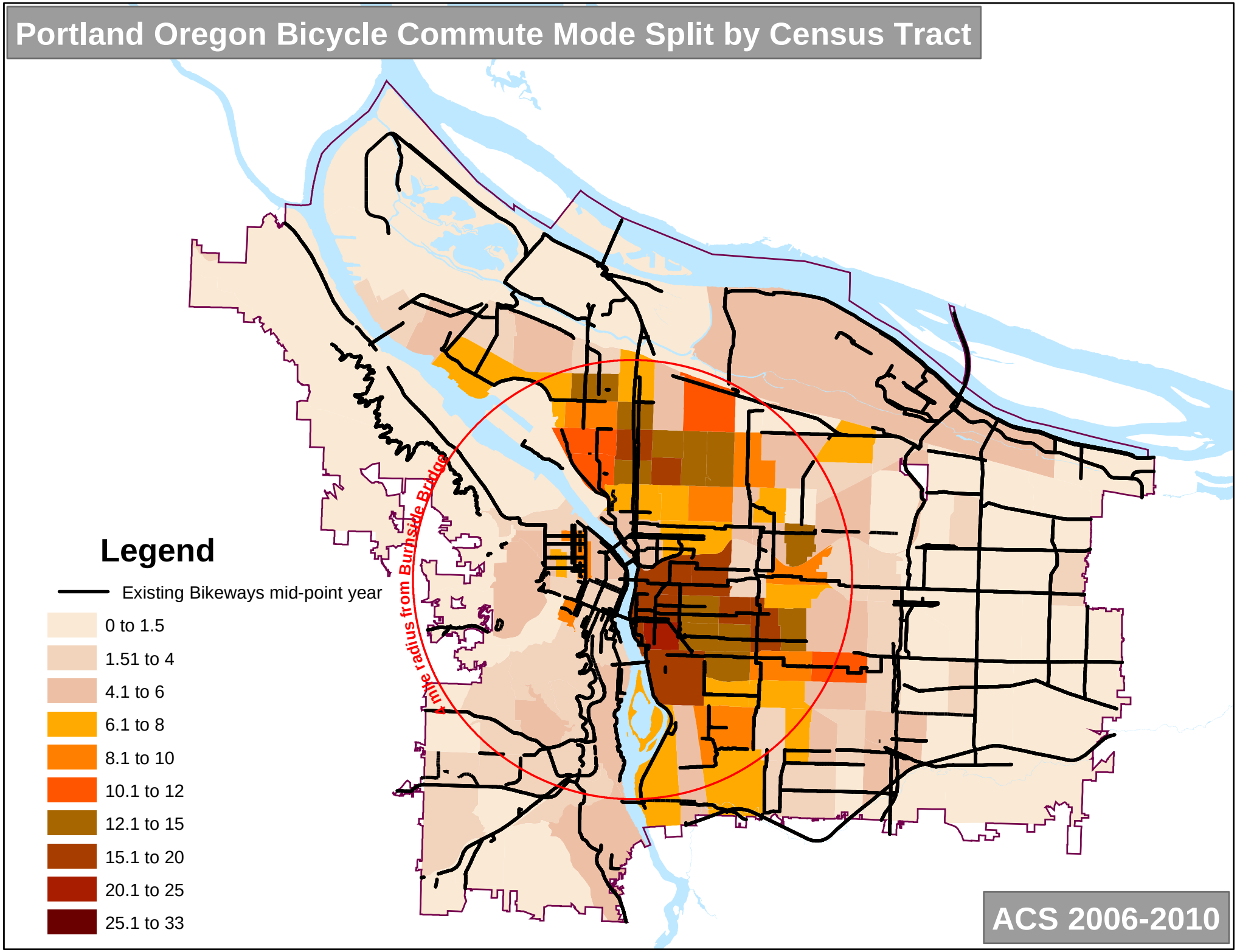


Portland Oregon Bicycle Commute Mode Split by Census Tract



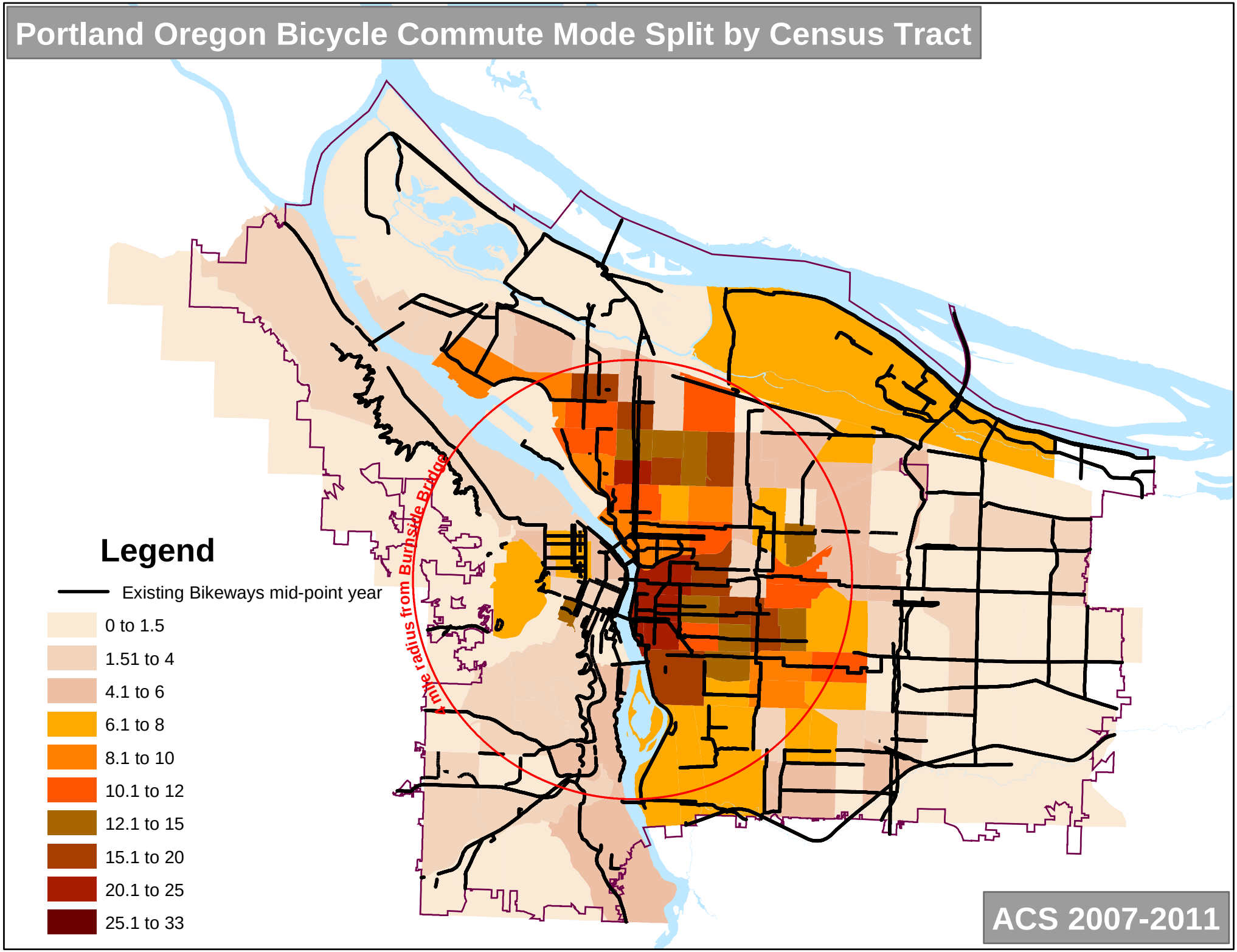
ACS 2005-2009

Portland Oregon Bicycle Commute Mode Split by Census Tract



ACS 2006-2010

Portland Oregon Bicycle Commute Mode Split by Census Tract



ACS 2007-2011