ONNA Residential Burglary Analysis

3/9/17 **Jay Elder**

One of ONNA's 3 goals for 2017 - 2022 is to reduce crime in the ONNA neighborhoods (herafter ONNANS), ideally by 20%. When Community Programs officer Amy Stull was asked what types of crime were higher than average in ONNANS, she suggested residential burglaries (RBs). Burglaries can be residential or commercial. The FBI's annual 2015 "Crime in the United States" report shows that:

- **The total burglary rate in the US has decreased by 48% from 1996 to 2015.**
- **The Washington State burglary rate has dropped 23% since 2010**
- **But, in 2014, Washington State had the 7th-highest burglary rate in the US.**

Amy made general Olympia and ONNANS crime data available to me. I was given the total number of RBs in Olympia each year from 2011 to 2016. I also had the census' estimated population of Olympia over those same years.

I was also given the month and location of RBs in ONNANS for each year. With this, I plotted maps to see if there was a pattern in the locations in the ONNANS, and/or times of year the burglaries were committed.

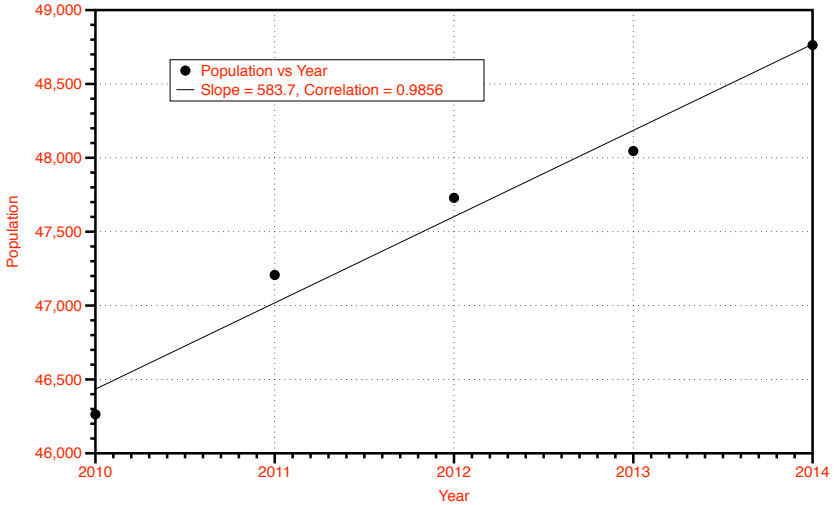
Having only the population data for ONNAS in 2010, I assumed the ONNAS population growth rate was the same as Olympia's. This might be a false assumption, because ONNA neighborhoods are fairly well-established and may have seen less growth than other parts of Olympia.

To calculate the RB rate per 100,000 people for Olympia and ONNAS, I divided the RBs for the year by the population, then multiplied by 100,000.

If ONNAS' population growth rate was less than Olympia's, this would make estimated ONNAS populations too large, and therefore, ONNANS RB rates too small. So if this assumption is in error, ONNAS RB rates are actually higher than calculated below.

Population Calculations and per 100,000 Crime

The FBI Uniform Crime Statistics Table 6 (by Metropolitan Area) gave a population for Olympia each year. A graph of Olympia population vs year at right shows a fairly linear relationship, where Olympia's population has grown by about 600 people per year during that period.



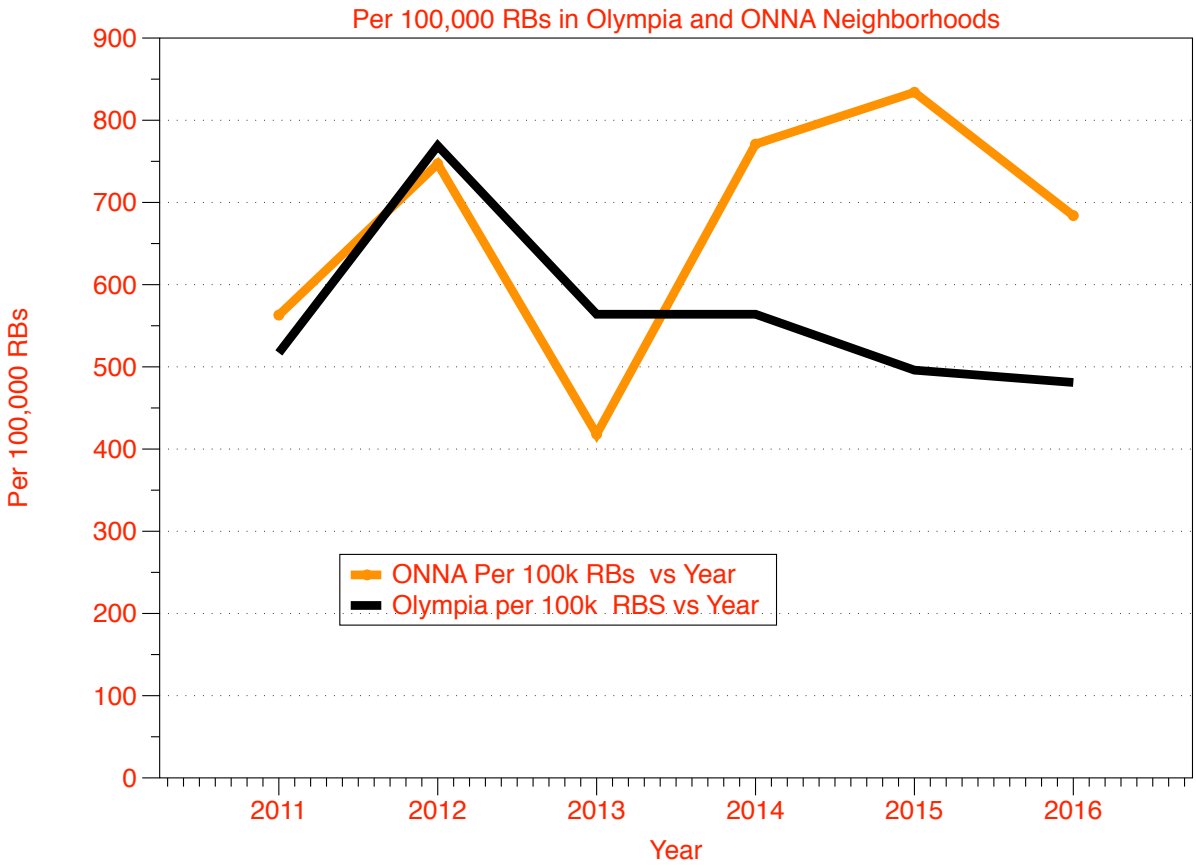
We have only the population of the ONNA areas for 2010; 7134 people. But we don't know what it is afterwards. If we assume the ONNA population grew by the same percentage as Olympia as a whole, from 2010-2016, we can estimate its population (green cells below) and per 100,000 burglary rates (magenta cells below).

Population and per capita crime

Year	Olympia population	Olympia RBs	Oly Per 100k	ONNA Population	ONNA RBs	ONNA per 100k	ONNA÷ Olympia
2010	46264		0	7134		0	
2011	47207	244	517	7279	41	563	1.09
2012	47729	367	769	7360	55	747	0.97
2013	48046	271	564	7409	31	418	0.74
2014	48763	275	564	7519	58	771	1.37
2015	48990	243	496	7554	63	834	1.68
2016	49316	237	481	7605	52	684	1.42

The 2013 ONNA burglaries number doesn't include January data, so the RB rate is actually higher than .74

The ONNAS RB rate outpaced Olympia's sometime during 2013. ONNAS definitely have a uniquely high RB problem since 2013. a graph comparing the RB rates for all of Olympia (black), vs ONNAS is below.

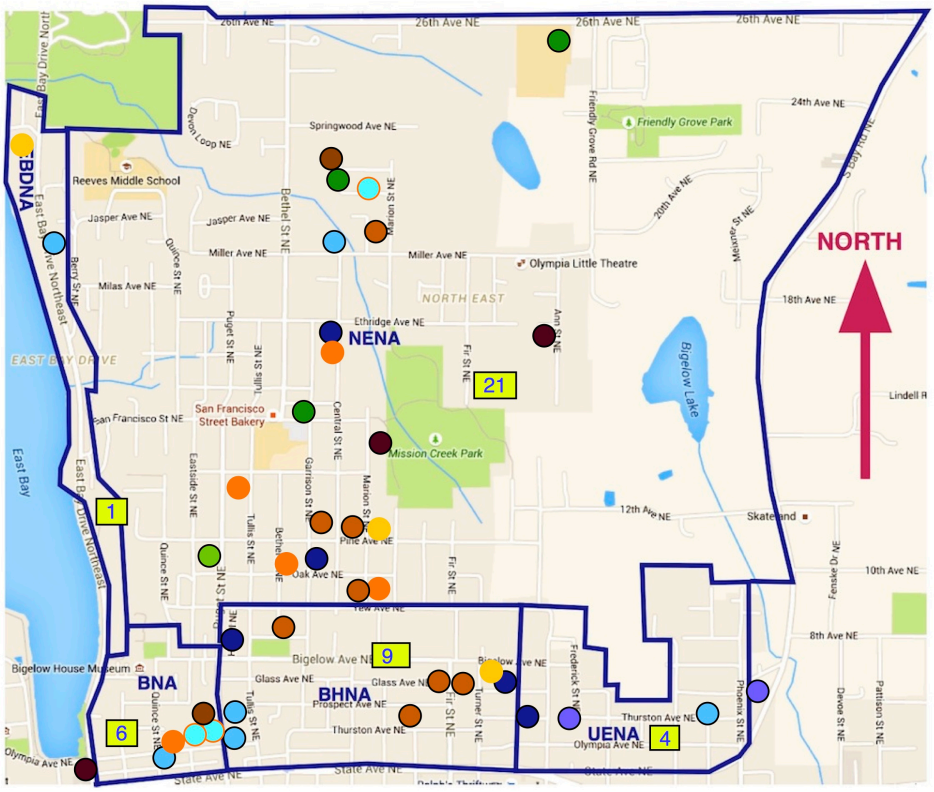


ONNA RB Locations and Times of Year Maps **An RB is represented by a colored dot, where the color corresponds to a month of the year. Tallies for each month and neighborhood are given in boxes.**

2011

2011 ONNA RBs (41)

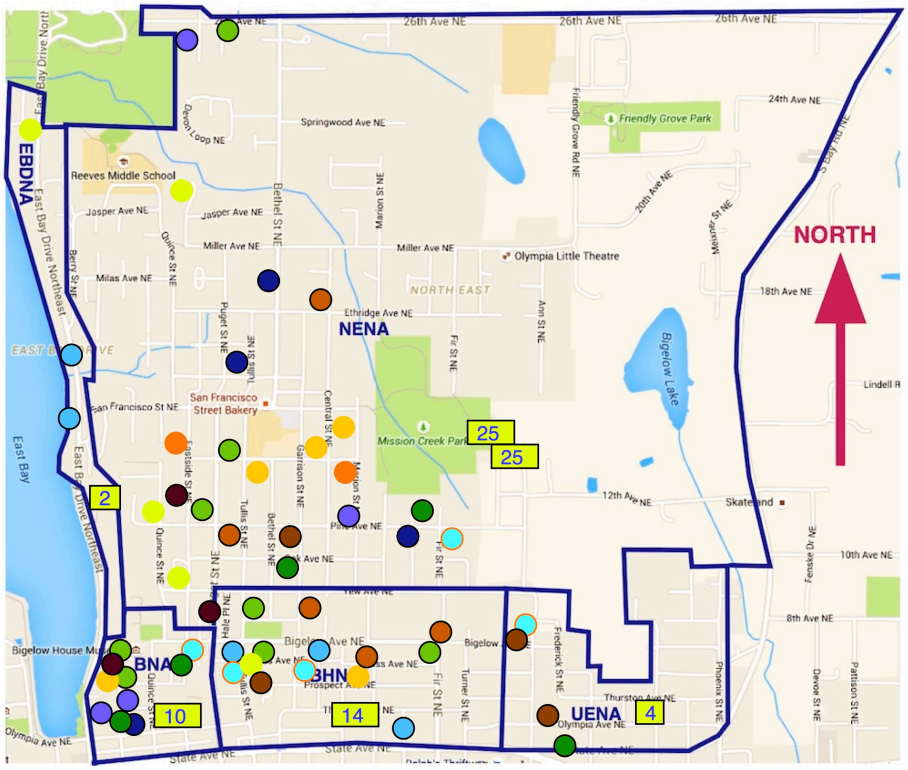
- January 5
- February 2
- March 6
- April 3
- May 1
- June 3
- July 0
- August 3
- September 5
- October 8
- November 2
- December 3



2012

2012 ONNA RBs (55)

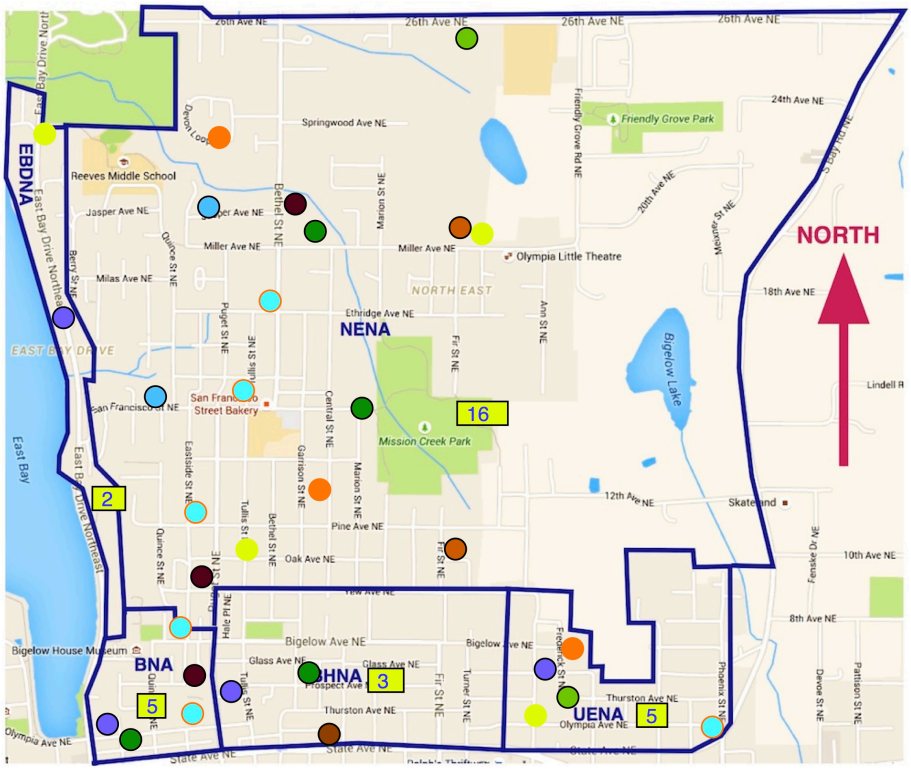
- January 4
- February 4
- March 5
- April 5
- May 8
- June 5
- July 5
- August 5
- September 2
- October 5
- November 4
- December 3



2013

2013 ONNA RBs (31, no January)

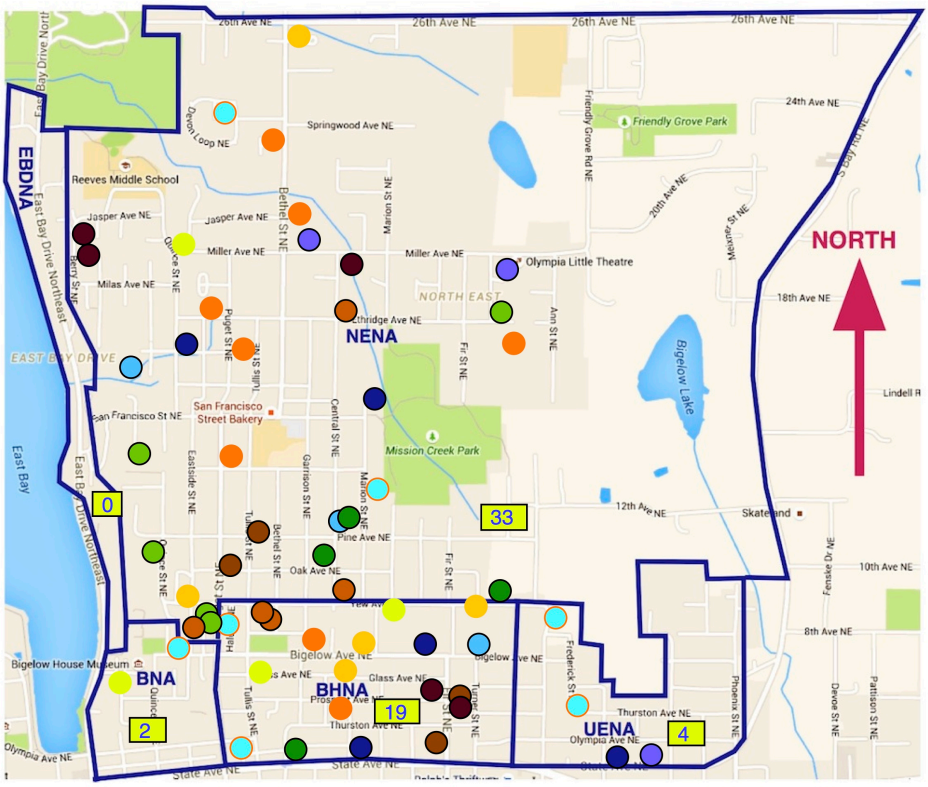
- January 0
- February 5
- March 2
- April 6
- May 2
- June 3
- July 4
- August 0
- September 3
- October 2
- November 1
- December 3



2014

2014 ONNA RBS (58)

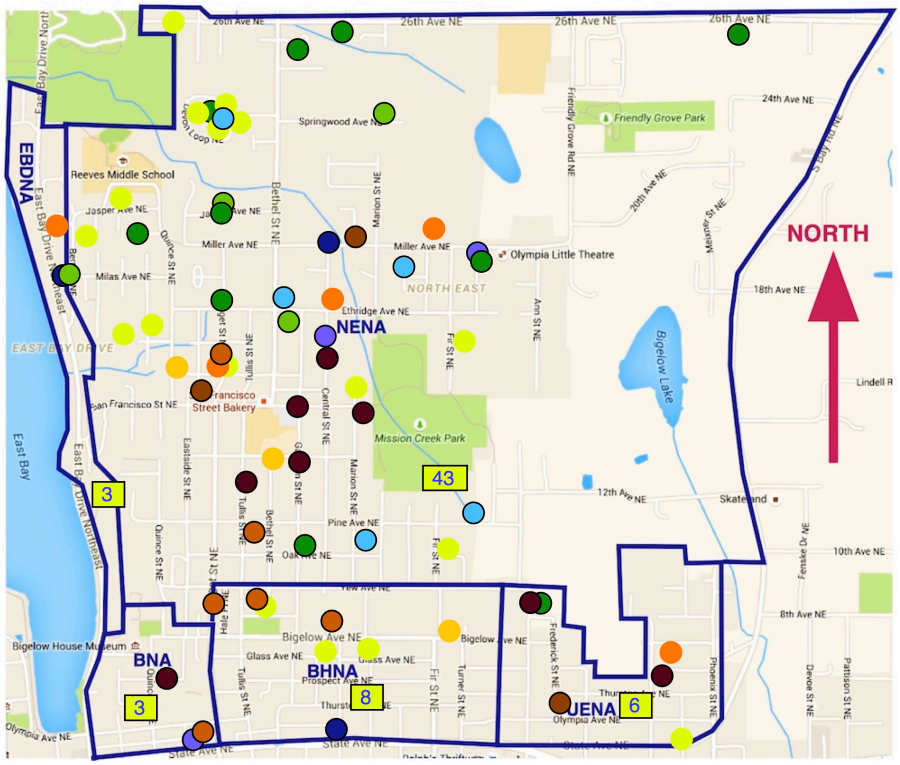
- January 5
- February 3
- March 3
- April 7
- May 5
- June 4
- July 4
- August 5
- September 8
- October 5
- November 4
- December 5



2015

2015 ONNA RBs (63 RBs)

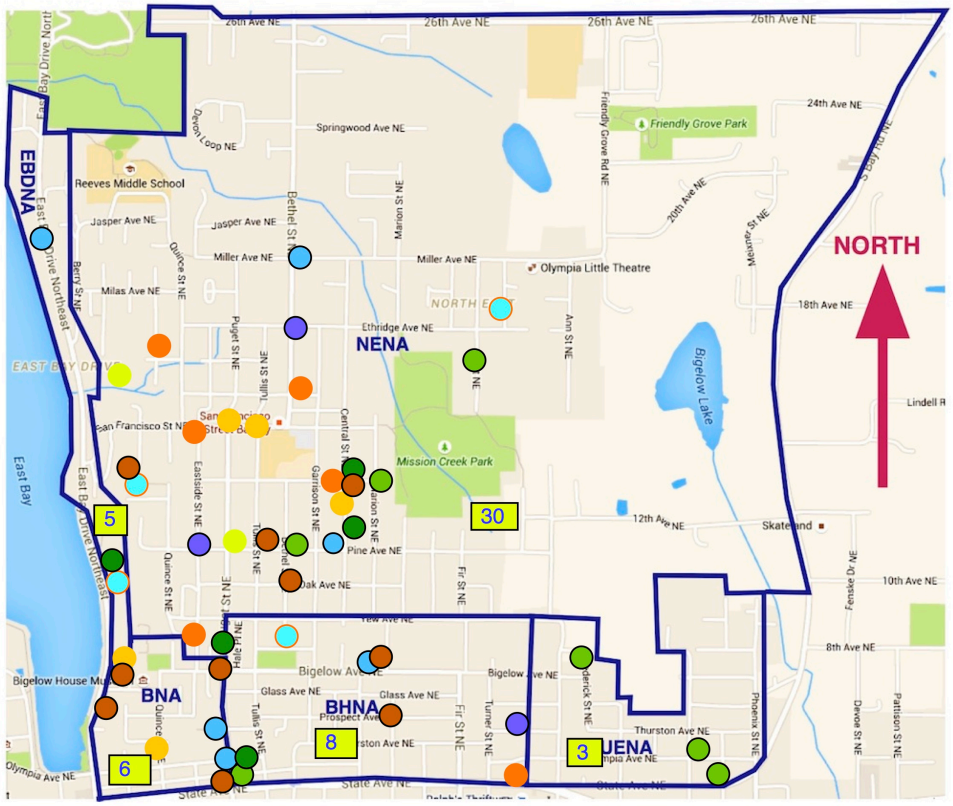
- January 3
- February 3
- March 5
- April 0
- May 4
- June 9
- July 16
- August 3
- September 4
- October 6
- November 2
- December 8



2016

2016 ONNA RBs (52)

- January 0
- February 3
- March 6
- April 4
- May 7
- June 5
- July 3
- August 5
- September 6
- October 9
- November 1
- December 3

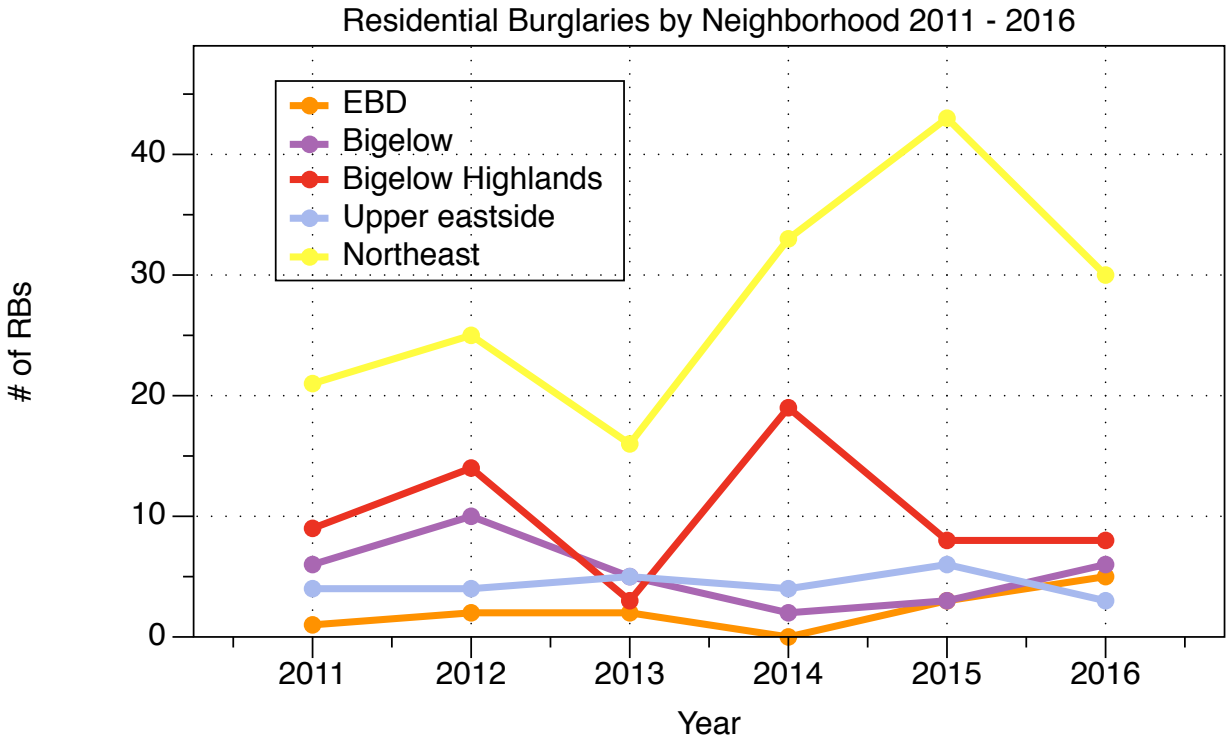


By-Neighborhood Analysis

The maps above list RBs for each neighborhood in a year. On a chart, these are:

NA	2011	2012	2013	2014	2015	2016	Total
EBD	1	2	2	0	3	5	13
Bigelow	6	10	5	2	3	6	32
Bigelow Highlands	9	14	3	19	8	8	61
Upper Eastside	4	4	5	4	6	3	26
Northeast	21	25	16	33	43	30	168
Total	41	55	31	58	63	52	300

Graphed, the data looks like this:



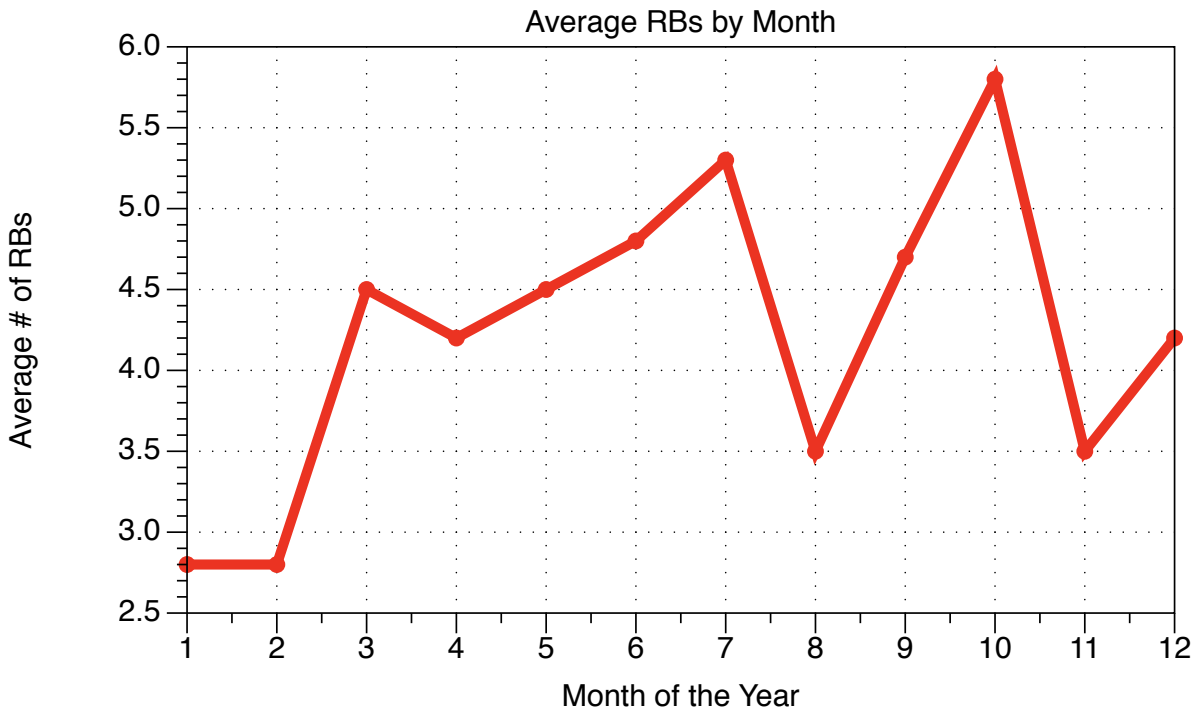
East Bay Drive NA has seen an increase in RBs since 2014
Bigelow NA saw a decrease in RBs after 2012, but an increase since 2014
Bigelow Highlands NA has seen a large decrease in RBs since 2014
Upper eastside NA has had unchanging RBs since 2011
Northeast NA has saw a large increase in RBs since 2013, but a decrease since 2015

Time of Year

The tallies of RBs in each month are shown below: = missing data

Month	2011	2012	2013	2014	2015	2016	Average
January	5	4	0	5	3	0	2.8
February	2	4	5	3	3	3	2.8
March	6	5	2	3	5	6	4.5
April	3	5	6	7	0	4	4.2
May	1	8	2	5	4	7	4.5
June	3	5	3	4	9	5	4.8
July	0	5	4	4	16	3	5.3
August	3	5	0	5	3	5	3.5
September	5	2	3	8	4	6	4.7
October	8	5	2	5	6	9	5.8
November	2	4	1	4	2	8	3.5
December	3	3	3	5	8	3	4.2
Total	41	55	31	58	63	59	51.2

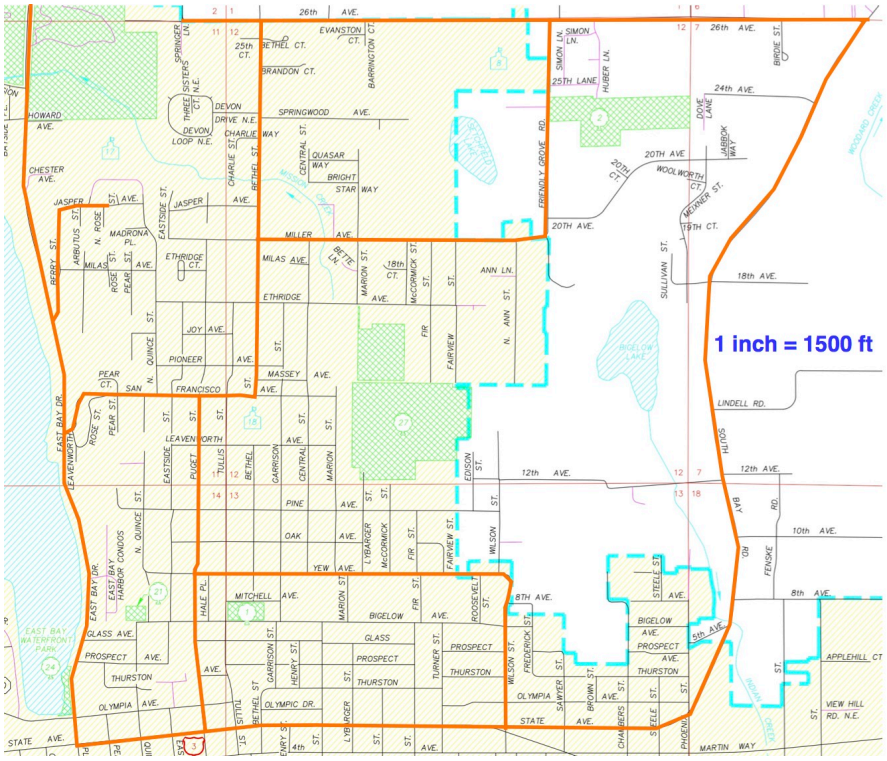
Over the last 6 years, October has the most RBs. RBs are lowest in January/February, begin rising in March to a peak in July, then drop in August and peak again in October.



Living Near Arterials:

Arterials are shown in orange at right

Lengths of arterial intervals are give on the charts below



North-South Arterial	From	To	Feet
East Bay Dr	State	Priest Point	10448
Berry	State	San Francisco	2139
Puget	State	San Francisco	4642
Bethel	San Francisco	26th	5273
Friendly Grove	Miller	26th	3107
Wilson	State	Yew	2051
South Bay Drive	State	26th	10607
Total Feet			38267
Total Miles			7.2

East West Arterial	From	To	Feet
State	East Bay Drive	Priest Point Park	8662
Yew	Puget	Wilson	4256
San Francisco	East Bay	Bethel	3036
Miller	Berhel	Friendly Grove	4008
Friendly Grove	Miller	26th	3020
26th	Gull Harbor	South Bay Rd	9600
Total Feet			32582
Total miles			6.2

There are about 31 miles of roads in ONNAS and 13.4 of them are arterials

	2011	2012	2013	2014	2015	2016	Average
Total RBs	41	55	31	58	63	52	50
Arterial # of RBs	13	15	15	15	17	20	15.83
Arterial RBs/mile	0.97	1.12	1.12	1.12	1.27	1.49	1.18
Other # of RBs	28	40	16	43	46	32	34.17
Other RBs/ mile	1.51	2.15	0.86	2.31	2.47	1.72	1.84

The average RB per mile of road per year is 1.18 along arterials and 1.84 on non-arterials. So it is about 56% more likely to have your house burglarized on a back-street as opposed to an arterial.

Summary:

1. **In the US and Washington State, burglary rates have dropped, but Washington is still 7th highest for burglaries.**

2. **Rewsidential burglary rates in Olympia as a whole have dropped by about 19% from 2011 to 2016**

3. **Since 2014, ONNA residential burglary rates have been 37 to 68 % higher than in Olympia as a whole. If ONNANS population didn't grow as fast as the rest of Olympia, ONNANS RB rates could be even higher.**

4. **Since 2014, RB rates in NENA and BHNA have decreased, while neighborhoods closer to downtown, BNA and EBDNA, have seen RB rate increases. Some possible reasons:**

   - **NENA and BHNA have beefed up their Blockwatch programs**
   - **RBs may stem from criminals living temporarily in a particular neighborhood. RBs in that area stop when criminals move away or are arrested.**
   - **Living near-downtown may put a resident at higher risk for RBs**

5. **July (vacations?) and October (Christmas shopping in advance?) are peak RB months**

6. **Living by an arterial decreases RB risk.**